Longfield Solar Farm

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APFP Regulation 5(2)(a)

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Contents

1. EXECUTIVE SUMMARY

1.1. This assessment considers the potential impacts on ground-based receptors such as roads, rail and residential dwellings as well as aviation assets. A 1km survey area around the Order limits is considered adequate for the assessment of residential receptors and road receptors, whilst a 30km study area is chosen for aviation receptors. Within the respective study areas of the Order limits, there are 133 residential receptors, 80 road receptors and eight rail receptors which were considered. As per the methodology section, where there are several residential receptors within close proximity, a representative dwelling or dwellings is/are chosen for full assessment as the impacts will not vary to any significant degree. Where small groups of receptors have been evident, the receptors on either end of the group have been assessed in detail. 34 residential, 24 road and five rail receptors were dismissed as they are located within the no reflection zones. 19 aerodromes are located within the 30km study area; however, only Andrewsfield Airfield and Earls Colne Airfield required a detailed assessment as the Scheme is located within their respective safeguarding buffer zones. The other 17 aerodromes did not require a detailed assessment due to their size and/or orientation in relation to the Scheme.

1.2. Geometric analysis was conducted at 99 individual residential receptors, 56 road receptors and three rail receptors. Also, geometric analysis was conducted at four runways and two Air Traffic Control Towers (ATCT) at Andrewsfield Airfield and Earls Colne Airfield.

1.3. The assessment concludes that:

- Solar reflections are theoretically possible at 93 of the 99 residential receptors assessed within the 1km study area. The initial bald-earth[1] scenario identified potential impacts as **High** at 75 receptors, **Medium** at six receptors, **Low** at 12 receptors and **None** at the remaining six receptors. Upon reviewing the actual visibility of the receptors, glint and glare impacts remain **High** for 10 receptors and reduce to **Low** for seven receptors and **None** for all remaining receptors. Once mitigation was considered impacts remained **Low** for seven receptors but reduced to **None** for all remaining receptors. Therefore, overall impacts on residential receptors are **acceptable**.

- Solar reflections are theoretically possible at 53 of the 56 road receptors assessed within the 1km study area. Upon reviewing the actual visibility of the receptors, glint and glare impacts remain **High** for eight receptors and reduce to **None** for the remaining 48 receptors. Once mitigation impacts were implemented, overall impacts at all road receptors reduce to **None**.

[1] The model does not 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.

- Solar reflections are theoretically possible at two of the three rail receptors assessed within the 1km study area. Upon reviewing the actual visibility of the receptors, glint and glare impacts reduce to **None** for all receptors. Therefore, overall impacts for rail receptors are **None**.

- Four runways and two ATCT's were assessed in detailed at Earls Colne Airfield and Andrewsfield Airfield and the impacts were found to be **None.**

1.4. Mitigation measures are required to be put in place due to the **High** impacts that were found during the visibility analysis at Residential Receptors 16, 17, 18, 22, 23, 32, 38, 73, 74 and 96 and Road Receptors 7, 8, 16, 17, 18, 19, 22 and 53. This includes hedgerows to be grown, infilled, gapped up and maintained to a height of at least 3m in those areas outlined in paragraph 7.1. Until those hedgerows are grown sufficiently, a temporary 3m wooden solid hoarding will be implemented and then removed once the hedgerows are of a sufficient height.

1.5. The effects of glint and glare and their impact on local receptors has been analysed in detail and there is predicted to be **Low** impacts at seven Residential Receptors, whilst the remaining ground-based receptors are expected to have **No Impacts** once mitigation measures have been considered. Impacts upon aviation receptors are predicted to be **None.** Therefore, overall impacts are **Negligible**.

2. INTRODUCTION

BACKGROUND

2.1. Neo Environmental Ltd has been appointed by the Applicant to undertake a Glint and Glare Assessment for a proposed solar farm development (the "Scheme") on lands approximately 7km northeast of the centre of Chelmsford (the "Order limits").

SCHEME DESCRIPTION

2.2. The Scheme will consist of the construction of rows of solar photovoltaic ('PV') panels, Battery Energy Storage Systems (BESS), and associated development such as maintenance tracks, inverters, and transformers.

SITE DESCRIPTION

2.3. The Order limits comprises of approximately 453 ha of land contained within 31 fields. The field boundaries consist of hedgerows. Ground levels within the Order limits vary from approximately 40m AOD along the southern boundary to 60m AOD at the northwest boundary.

2.4. The Order limits is centred at approximate grid reference E 575252, N 213541. The wider landscape contains the village of Terling, which is located c. 1.3km to the northeast of the Order limits.

SCOPE OF REPORT

2.5. Although there may be small amounts of glint and glare from the metal structures associated with the solar farm, this is not likely to be significant and the main source of glint and glare will be from the panels themselves and this will be the focus of this assessment.

2.6. Solar panels are designed to absorb as much light as possible and not to reflect it. However, glint can be produced as a reflection of the sun from the surface of the solar PV panel. This can also be described as a momentary flash. This may be an issue due to visual impact and viewer distraction on ground-based receptors and on aviation.

2.7. Glare is significantly less intense in comparison to glint and can be described as a continuous source of bright light, relative to diffused lighting. This is not a direct reflection of the sun, but a reflection of the sky around the sun.

2.8. This report focusses on the effects of glint and glare and its impact on local receptors and will be supported with the following Figures and Appendices.

- Appendix A: Figures
  - Figure 1: Residential Receptor Map
  - Figure 2: Road Receptor Map
  - Figure 3: Rail Receptor Map
  - Figure 4: Earls Colne Airfield
  - Figure 5: Andrewsfield Airfield Aerodrome Chart
  - Figure 6: Site Layout
- Appendix B: Residential Receptor Glare Results 10 Degrees
- Appendix C: Residential Receptor Glare Results 20 Degrees
- Appendix D: Road Receptor Glare Results 10 Degrees
- Appendix E: Road Receptor Glare Results 20 Degrees
- Appendix F: Rail Receptor Glare Results 10 Degrees
- Appendix G: Rail Receptor Glare Results 20 Degrees
- Appendix H: Aviation Receptor Glare Results 10 Degrees
- Appendix I: Aviation Receptor Glare Results 20 Degrees
- Appendix J: Visibility Assessment Evidence
- Appendix K: Solar Module Glare and Reflectance Technical Memo[2]

2 Sunpower Corporation (September 2009), T09014 Solar Module Glare and Reflectance Technical Memo

STATEMENT OF AUTHORITY

2.9. This Glint and Glare Assessment has been produced by Tom Saddington and Michael McGhee of Neo Environmental. Having completed a civil engineering degree in 2012, Michael has produced Glint and Glare assessments for over 1GW of solar farm developments across the UK and Ireland. Tom has an undergraduate degree in Bioengineering and graduated with an MSc in Environmental and Energy Engineering in January 2020. He has been working on various technical assessments including glint and glare reports for numerous solar farms in Ireland and the UK.

DEFINITIONS

2.10. This study examined the potential hazard and nuisance effects of glint and glare in relation to ground-based receptors, which includes the occupants of surrounding dwellings as well as road users. The US Federal Aviation Administration (FAA) in their "*Technical Guidance for Evaluating Selected Solar Technologies on Airports*"[3] have defined the terms 'Glint' and 'Glare' as meaning;

- Glint – "*A momentary flash of bright light*"
- Glare – "*A continuous source of bright light*"

2.11. Glint and glare are essentially the unwanted reflection of sunlight from reflective surfaces. This study used a multi-step process of elimination to determine which receptors have the potential to experience the effects of glint and glare. It then examined, using a computer-generated geometric model, the times of the year and the times of the day such effects could occur. This is based on the relative angles between the sun, the panels, and the receptor throughout the year.

General Nature of Reflectance from Photovoltaic Panels

2.12. In terms of reflectance, photovoltaic solar panels are by no means a highly reflective surface. They are designed to absorb sunlight and not to reflect it. Nonetheless, photovoltaic panels have a flat polished surface, which omits 'specular' reflectance rather than a 'diffuse' reflectance, which would occur from a rough surface. Several studies have shown that photovoltaic panels (as opposed to Concentrated Solar Power) have similar reflectance characteristics to water, which is much lower than the likes of glass, steel, snow and white concrete by comparison (See **Appendix K: Solar Module Glare and Reflectance Technical**

3 Harris, Miller, Miller & Hanson Inc. (November 2010). Technical Guidance for Evaluating Selected Solar Technologies on Airports; 3.1.2 Reflectivity. Technical Guidance for Evaluating Selected Solar Technologies on Airports. Available at:

https://www.faa.gov/airports/environmental/policy_guidance/media/airport-solar-guide.pdf

Memo). Similar levels of reflectance can be found in rural environments from the likes of shed roofs and the lines of plastic mulch used in cropping. In terms of the potential for reflectance from photovoltaic panels to cause hazard and/ or nuisance effects, there have been a number of studies undertaken in respect of schemes in close proximity to airports. The most recent of these was compiled by the Solar Trade Association (STA) in April 2016 and used a number of case studies and expert opinions, including that from Neo. The summary of this report states that "*the STA does not believe that there is cause for concern in relation to the impact of glint and glare from solar PV on aviation and airports…*"[4].

Time Zones / Datum's

2.13. Locations in this report are given in Eastings and Northings using the 'British National Grid' grid reference system unless otherwise stated.

2.14. England uses British Summer Time (BST, UTC + 01:00) in the summer months and Greenwich Mean Time (UTC+0) in the winter period. For the purposes of this report all time references are in GMT.

4 Solar Trade Association. (April 2016). Summary of evidence compiled by the Solar Trade Association to help inform the debate around permitted development for non - domestic solar PV in Scotland. Impact of solar PV on aviation and airports. Available at: http://www.solar-trade.org.uk/wp-content/uploads/2016/04/STA-glint-and-glare-briefing-April-2016-v3.pdf

3. LEGISLATION AND GUIDANCE

NATIONAL PLANNING POLICY GUIDANCE (NPPG) ON RENEWABLE AND LOW CARBON ENERGY (UK) [5]

3.1. Paragraph 013 (Reference ID: 5-013-20150327) sets out planning considerations that relate to large scale ground-mounted solar PV farms. This determines that the deployment of large-scale solar farms can have a negative impact on the rural environment, particularly in undulating landscapes. However, the visual impact of a well-planned and well-screened solar farm can be properly addressed within the landscape if planned sensitively. Considerations to be taken into account by local planning authorities are;

- *"the proposal's visual impact, the effect on landscape of glint and glare and on neighbouring uses and aircraft safety;*
- *the extent to which there may be additional impacts if solar arrays follow the daily movement of the sun."*

PLANNING GUIDANCE FOR THE DEVELOPMENT OF LARGE-SCALE GROUND MOUNTED SOLAR PV SYSTEMS

3.2. As outlined within the British Research Establishment (BRE) document 'Planning Guidance for the Development of Large-Scale Ground Mounted Solar PV Systems'[6]

"Glint may be produced as a direct reflection of the sun in the surface of the solar PV panel. It may be the source of the visual issues regarding viewer distraction. Glare is a continuous source of brightness, relative to diffused lighting. This is not a direct reflection of the sun, but rather a reflection of the bright sky around the sun. Glare is significantly less intense than glint.

Solar PV panels are designed to absorb, not reflect, irradiation. However, the sensitivities associated with glint and glare, and the landscape/ visual impact and the potential impact on aircraft safety, should be a consideration. In some instances, it may be necessary to seek a glint and glare assessment as part of a planning application. This may be particularly important if 'tracking' panels are proposed as these may cause differential diurnal and/or seasonal impacts.

[5] NPPG Renewable and Low Carbon Energy.

[6] BRE (2013) *Planning Guidance for the Development of Large Scale Ground Mounted Solar PV Systems*.

The potential for solar PV panels, frames and supports to have a combined reflective quality should be assessed. This assessment needs to consider the likely reflective capacity of all of the materials used in the construction of the solar PV farm."

NATIONAL POLICY STATEMENT FOR RENEWABLE ENERGY INFRASTRUCTURE (EN-3), ADOPTED 2011

3.3. Section 2.4 of EN-3 provides policy on Criteria for "good design" for energy infrastructure. Paragraph 2.4.1 of this section refers back to the criteria for good design in NPS EN-1. Paragraph 2.4.2 of EN-3 goes on to state that: "Proposals for renewable energy infrastructure should demonstrate good design in respect of landscape and visual amenity".

INTERIM CAA GUIDANCE – SOLAR PHOTOVOLTAIC SYSTEMS (2010)

3.4. There is little guidance on the assessment of glint and glare from solar farms with regards to aviation safety. The Civil Aviation Authority (CAA) have published interim guidance on 'Solar Photovoltaic Systems[7]', and they also intend to undertake a review of the potential impacts of solar PV developments upon aviation, however this is yet to be published.

3.5. The interim guidance identifies the key safety issues with regards to aviation, including *"glare, dazzling pilots leading them to confuse reflections with aeronautical lights."* It is outlined that solar farm developers should be aware of the requirements to comply with the Air Navigation Order (ANO), published in 2009. In particular, developers should take cognisant of the following articles of the ANO[8], including:

- *"Article 137 – Endangering safety of an aircraft – A person must not recklessly or negligently act in a manner likely to endanger an aircraft, or any person in an aircraft."*
- *Article 221 - Lights liable to endanger – "A person must not exhibit in the United Kingdom any light which:*
  - *a) by reason of its glare is liable to endanger aircraft taking off or from landing at an aerodrome; or*
  - *b) by reason of its liability to be mistaken for an aeronautical ground light liable to endanger aircraft"*

[7] CAA (2010) Interim CAA Guidance – Solar Photovoltaic Systems

[8] CAA (2015) Air Navigation: The Order and Regulations

- *Article 222 – Lights which dazzle or distract – "A person must not in the United Kingdom direct or shine any light at any aircraft in flight so as to dazzle or distract the pilot of the aircraft."*

3.6. Relevant studies generally agree that there is potential for glint and glare from photovoltaic panels to cause a hazard or nuisance for surrounding receptors, but that the intensity of such reflections is similar to that emanating from still water. This is considerably lower than for other manmade materials such as glass, steel or white concrete (SunPower – 2009).

3.7. These Articles are considered within the assessment of glint and glare of the Scheme.

US Federal Aviation Administration Policy

3.8. The US Federal Aviation Administration (FAA) in their Solar Guide (Federal Aviation Authority, 2010)[9] incorporates a chapter on the impact and assessment of glint from solar panels and provides a quantitative threshold which is lacking in the English guidance. It concludes that (although subject to revision):

> *"…evidence suggests that either significant glare is not occurring during times of operation or if glare is occurring, it is not a negative effect and is a minor part of the landscape to which pilots and tower personnel are exposed."*

3.9. The current policy (Federal Register, 2013)[10] requires that an ocular impact assessment must be assessed at 1-minute intervals from when the sun rises above the horizon until the sun sets below the horizon. Specifically, the developer must use the 'Solar Glare Hazard Analysis Tool' (SGHAT) tool specifically and reference its results as this was developed by the FAA and Sandia National Laboratories as a standard and approved methodology for assessing potential impacts on aviation interests, although it notes other assessment methods may be considered. The SGHAT tool has since been licensed to a private organisation who were also involved in its development and it is the software model used in this assessment.

3.10. Crucially, the policy provides a quantitative threshold which is lacking in the English guidance. This outlines that a solar development will not automatically receive an objection on glint grounds if low intensity glint is visible to pilots on final approach. In other words, low intensity glint with a low potential to form a temporary after-image would be considered acceptable under US guidance. Due to the lack of legislation and guidance within England, this US document has been utilised as guidance for this report.

3.11. The FAA guidance states that for a solar PV development to obtain FAA approval or to receive no objection, the following two criteria must be met:

[9] FAA (2010), Technical Guidance for Evaluating Selected Solar Technologies on Airports.

[10] FAA (2013), Interim Policy, *FAA Review of Solar Energy System Projects on Federally Obligated Airports*.

- No potential for glint or glare in the existing or planned Air Traffic Control Tower (ATCT); and

- No potential for glare (glint) or "low potential for after-image" along the final approach path for any existing or future runway landing thresholds (including planned or interim phases), as shown by the approved layout plan (ALP). The final approach path is defined as 2 miles from 50 feet above the landing threshold using a standard 3-degree glide path.

3.12. The geometric analysis included later in this report, which defines the extent and time at which glint may occur, is required by the FAA as the methodology to be used when assessing glint and glare impacts on aviation receptors. This report follows the methodology required by the FAA as it offers the most robust assessment method currently available.

4. METHODOLOGY

4.1. A desk-based assessment was undertaken to identify when and where glint and glare may be visible at receptors within the vicinity of the Scheme, throughout the day and the year.

SUN POSITION AND REFLECTION MODEL

Sun Data Model

4.2. The calculations in the solar position calculator are based on equations from Astronomical Algorithms[11]. The sunrise and sunset results are theoretically accurate to within a minute for locations between +/- 72° latitude, and within 10 minutes outside of those latitudes. However, due to variations in atmospheric composition, temperature, pressure, and conditions, observed values may vary from calculations.

Solar Reflection Model

4.3. The position of the sun is calculated at one-minute intervals of a typical year.

4.4. In order to determine if a solar reflection will reach a receptor, the following variables are required:

- Sun position;
- Observer location, and;
- Tilt, orientation, and extent of the modules in the solar array.

4.5. The model assumes that the azimuth and horizontal angle of the sun is the same across the whole solar farm. This is considered acceptable due to the distance of the sun from the Scheme and the miniscule differences in location of the sun over the Scheme.

4.6. Once the position of the sun is known for each time interval, a vector reflection equation determines the reflected sun vector, based on the normal vector of the solar array panels. This assumes that the angle of reflection is equal to the angle of incidence reflected across a normal plane. In this instance, the plane being the vector which the solar panels are facing.

4.7. On knowing the vector of the solar reflection, the azimuth is calculated and the horizontal reflection from multiple points within the solar farm. These are then compared with the azimuth and horizontal angle of the receptor from the solar farm to determine if it is within range to receive solar reflections.

[11] Jean Meeus, Astronomical Algorithms (Second Edition), 1999

4.8. The solar reflection in the model is considered to be specular as a worst-case scenario. In practice the light from the sun will not be fully reflected as solar panels are designed to absorb light rather than reflect it. The text above and in Appendix K outlines the reflective properties of solar glass and compares it to other reflective surfaces. Although the exact figures in this report could be debated, it is included as a visual guide and it agrees with most other reports, in that solar glass has less reflective properties than other types of glass and that the amount of reflective energy drops as the angle of incidence decreases.

4.9. Most modern panels have a slight surface texture which should have a small effect on diffusing the solar radiation further. This has not been modelled and the approach is therefore a worst-case scenario and likely to overestimate the actual impact slightly.

Determination of Ocular Impact

4.10. The software used for this assessment is based on the Sandia Laboratories Solar Glare Hazard Analysis Tool (SGHAT). This tool is specifically mentioned in the FAA guidance as the software which should be used in this type of assessment.

4.11. Determination of the ocular impact requires knowledge of the direct normal irradiance, PV module reflectance, size and orientation of the array, optical properties of the PV module, and ocular parameters. These values are used to determine the retinal irradiance and subtended source angle used in the ocular hazard plot.

4.12. The ocular impact[12] of viewed glare can be classified into three levels based on the retinal irradiance and subtended source angle: low potential for after-image (green), potential for after-image (yellow), and potential for permanent eye damage (red).

4.13. Green glare can be ignored when looking at ground based and some aviation receptors. Green glare does not cause temporary flash blindness and happens at an instant with very slight disturbance. As per FAA guidelines mitigation is only required for green glare when affecting an Air Traffic Control Tower, but not for when affecting pilots. Therefore, it can be assumed that green glare is acceptable for ground-based receptors.

4.14. The subtended source angle represents the size of the glare viewed by an observer, while the retinal irradiance determines the amount of energy impacting the retina of the observer. Larger source angles can result in glare of high intensity, even if the retinal irradiance is low.

Relevant Parameters of the Scheme

[12] Ho, C.K., C.M. Ghanbari, and R.B. Diver, 2011, Methodology to Assess Potential Glint and Glare Hazards From Concentrating Solar Power Plants: Analytical Models and Experimental Validation, Journal of Solar Energy Engineering-Transactions of the Asme, 133(3).

4.15. The photovoltaic panels are oriented in a southwards direction to maximise solar gain and will remain in a fixed position throughout the day and during the year (i.e. they will not rotate to track the movement of the sun). The panels will face south and will be inclined at an angle of between 10 - 30 degrees. The worst case will be at either 10- or 30-degrees tilt for each receptor. These angles of inclination are as secured in the scheme's **Design Principles [EN010118/APP/7.3]**

4.16. The height of the panels above ground level is a maximum of 3m and points at the top of the panels are used to determine the potential for glint and glare generation. This is the worst-case scenario being assessed.

IDENTIFICATION OF RECEPTORS

Ground Based Receptors

4.17. Glint is most likely to impact upon a ground-based receptor close to dusk and dawn when the sun is at its lowest in the sky. Therefore, any effect would likely occur early in the day or late in the day, reflected to the west at dawn and east at dusk.

4.18. A 1km study area from the panels was deemed appropriate for the assessment of ground-based receptors as this contained a good spread of residential and road receptors in most directions from the Scheme. The further distance a receptor is from a solar farm, the less chance it has of being affected by glint and glare due to scattering of the reflected beam and atmospheric attenuation, in addition to obstructions from ground sources, such as any intervening vegetation or buildings. This study area has been established based on being acceptable for the previous Glint and Glare Assessments for over 1GW of solar farms.

4.19. An observer height of 2m was utilised for residential receptors, as this is a typical height for a ground-floor window, however the visibility assessment assesses floors above the ground floor level. With regards to road users, a receptor height of 1.5m was employed as this is typical of eye level. Rail driver's eye level was assumed to be 2.75m above the rail for signal signing purposes and therefore this is the height used for assessment purposes.

4.20. An assessment was undertaken to determine zones where solar reflections will never be directed near ground level.

4.21. Where there are several residential receptors within proximity, a representative dwelling or dwellings is/are chosen for full assessment as the impacts will not vary to any significant degree. Where small groups of receptors have been evident, the receptors on either end of the group have been analysed in detail with the worst-case impacts attributed to that receptor.

Aviation

4.22. Glint is only considered to be an issue with regards to aviation safety when the solar farm lies within close proximity to a runway, particularly when the aircraft is descending to land. En-route activities are not considered an issue as the flight will most likely be at a higher altitude than the solar reflection.

4.23. Should a solar farm be proposed within the safeguarded zone of an aerodrome then a full geometric study may be required which would determine if there is potential for glint and glare at key locations, most likely on the descent to land.

4.24. Buffer zones to identify aviation assets vary depending on the safeguarding criteria of that asset. All aerodromes within 30km will be identified, however generally the detailed assessments are only required within 20km for large international/licensed aerodromes; 10km for military aerodromes; and 5km for small aerodromes.

MAGNITUDE OF IMPACT

Static Receptors

4.25. Although there is no specific guidance set out to identify the magnitude of impact from solar reflections, the following criteria has been set out for the purposes of this report:

- High - Solar reflections impacts of over 30 hours per year or over 30 minutes per day
- Medium - Solar reflections impacts between 20 and 30 hours per year or between 20 minutes and 30 minutes per day
- Low - Solar reflections impacts between 0 and 20 hours per year or between 0 minutes and 20 minutes per day
- None - Effects not geometrically possible or no visibility of reflective surfaces likely due to high levels of intervening screening

Moving Receptors (Road and Rail)

4.26. Again, no specific guidance is available to identify the magnitude of impact from solar reflections on moving receptors except in aviation, however it is thought that a similar approach should be applied to moving receptors as aviation, based on the ocular impact and the potential for after-image.

4.27. The FAA guidance states that for a solar PV development to obtain FAA approval or to receive no objection the following criteria must be met:

- No potential for glare (glint) or "*low potential for after-image*" along the final approach path for any existing or future runway landing thresholds (including planned or interim phases), as shown by the approved layout plan (ALP).

4.28. The FAA produced an evaluation of glare as a hazard and concluded in their report[13] that:

> *"The more forward the glare is and the longer the glare duration, the greater the impairment to the pilots' ability to see their instruments and to fly the aircraft. These results taken together suggest that any sources of glare at an airport may be potentially mitigated if the angle of the glare is greater than 25 deg from the direction that the pilot is looking in. We therefore recommend that the design of any solar installation at an airport consider the approach of pilots and ensure that any solar installation that is developed is placed such that they will not have to face glare that is straight ahead of them or within 25 deg of straight ahead during final approach."*

4.29. It is reasonable to assume that although this report was assessing pilots vision impairment that it can be also used to drivers of other vehicles. Therefore, the driver's field of view will also be analysed where required and if the glare is greater than 25 degrees either side of their line of sight, then any impacts will reduce to low.

Moving Receptors (Aviation)

Approach Paths

4.30. Each final approach path which has the potential to receive glint is assessed using the SGHAT model. The model assumes an approach bearing on the runway centreline, a 3-degree glide path with the origin 50ft (15.24m) above the runway threshold.

4.31. The computer model considers the pilots field of view. The azimuthal field of view (AFOV) or horizontal field of view (HFOV) as it is sometimes referred, refers to the extents of the pilot's horizontal field of view measured in degrees left and right from directly in front of the cockpit. The vertical field of view (VFOV) refers to the extents of the pilot's vertical field of view measured in degrees from directly in front of the cockpit. The HFOV is modelled at 90 degrees left and right from the front of the cockpit whilst the VFOV is modelled at 30 degrees.

4.32. The FAA guidance states that there should be no potential for glare or '*low potential for after-image*' at any existing or future planned runway landing thresholds for the Scheme to be acceptable.

[13] Federal Aviation Authority, Evaluation of Glare as a Hazard for General Aviation Pilots on Final Approach (2015)

Air Traffic Control Tower (ATCT)

4.33. An air traffic controller uses the visual control room to monitor and direct aircraft on the ground, approaching and departing the aerodrome. It is essential that air traffic controllers have a clear unobstructed view of the aviation activity. The key areas on an aerodrome are the views towards the runway thresholds, taxiways, and aircraft bays.

4.34. The FAA guidance states that no solar reflection towards the ATCT should be produced by a proposed solar development, however this should be assessed on a site by site case and will depend on the operations at a particular aerodrome.

4.35. In order to determine the impact on the ATCT, the location and height of the tower will need to be fed into the SGHAT model and where there is a potential for 'low potential for After-Image' or more, then mitigation measures will be required.

Assessment Limitations

4.36. Below is a list of assumptions and limitations of the model and methods used within this report:

- The model does not 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 model assumes that there are clear skies 100% during daylight hours so provides an absolute worst-case scenario;
- The model 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;
- Due to variations in atmospheric composition, temperature, pressure and conditions, observed values may vary slightly from calculated positions; and
- The model does not account for the effects of diffraction; however, buffers are applied as a factor of safety.

5. BASELINE CONDITIONS

GROUND BASED RECEPTORS REFLECTION ZONES

5.1. Based on the relatively flat topography in the area, solar reflections between five degrees below the horizontal plane to five degrees above it are described as near horizontal. Reflections from the proposed solar farm within this arc have the potential to be seen by receptors at or near ground level.

5.2. Further analysis showed that this will only occur between the azimuth of 251.24 degrees and 290.92 degrees in the western direction (late day reflections) and 72.61 degrees and 111.57 degrees in the eastern direction (morning reflections) and therefore any ground-based receptor outside these arcs will not have any impact from solar reflections.

5.3. **Figure 1, 2 and 3 of Appendix A** show the respective study areas whilst also subtracting from this the areas where solar reflections will not impact on ground-based receptors due to the reasons set out in **paragraphs 5.1 to 5.2.**

Residential Receptors

5.4. Residential receptors located within 1km of the Order limits have been identified (**Table 5-1**). Glint was assumed to be possible if the receptor is located within the ground-based receptor zones outlined previously.

5.5. There are 34 residential receptors (Receptors 100 to 133) which are within the no-reflection zones and are clearly identifiable in **Figure 1: Appendix A.** The process of how these are calculated is explained in **paragraphs 5.1 to 5.2** of this report.

5.6. As per the methodology section, where there are a number of residential receptors within close proximity, a representative dwelling or dwellings is/are chosen for detailed analysis as the impacts will not vary to any significant degree. Where small groups of receptors are evident, the receptors on either end of the group have been assessed in detail.

Table 5-1: Residential Receptors

Receptor	Easting	Northing	Glint and Glare Possible
1	573761	215647	Yes
2	573802	215544	Yes
3	573668	215451	Yes
4	573190	214805	Yes

5	573341	214784	Yes
6	573444	214738	Yes
7	573470	214731	Yes
8	573517	214661	Yes
9	573857	214600	Yes
10	573871	214538	Yes
11	573851	214413	Yes
12	573452	214491	Yes
13	573361	214431	Yes
14	573346	214420	Yes
15	573231	214189	Yes
16	573091	214120	Yes
17	573070	214101	Yes
18	573046	214073	Yes
19	573889	214129	Yes
20	573929	214087	Yes
21	574505	213978	Yes
22	574404	213850	Yes
23	574386	213828	Yes
24	573984	213785	Yes
25	574019	213619	Yes
26	574106	213440	Yes
27	573625	213262	Yes
28	573629	213189	Yes
29	573629	212804	Yes
30	573675	212807	Yes
31	574579	213508	Yes
32	574656	213478	Yes

33	574543	213366	Yes
34	574494	213017	Yes
35	574515	212835	Yes
36	574494	212767	Yes
37	574545	212811	Yes
38	574913	212748	Yes
39	575035	212634	Yes
40	575120	212618	Yes
41	575362	212408	Yes
42	575317	212342	Yes
43	575228	212274	Yes
44	575006	212061	Yes
45	574994	212054	Yes
46	575213	212072	Yes
47	575468	212131	Yes
48	575469	212099	Yes
49	575540	211964	Yes
50	575646	211881	Yes
51	575690	211785	Yes
52	575745	211736	Yes
53	575196	211322	Yes
54	575496	211469	Yes
55	575779	211594	Yes
56	575797	211637	Yes
57	575952	211792	Yes
58	575938	211721	Yes
59	575972	211605	Yes
60	575984	211592	Yes

61	575953	211536	Yes
62	576026	211439	Yes
63	577312	211566	Yes
64	577772	211741	Yes
65	577786	211772	Yes
66	577657	211823	Yes
67	577668	211858	Yes
68	577856	211914	Yes
69	577872	211995	Yes
70	577871	212210	Yes
71	577877	212279	Yes
72	577775	212342	Yes
73	576563	212758	Yes
74	576458	212763	Yes
75	577171	213464	Yes
76	576978	213372	Yes
77	576957	213450	Yes
78	576265	213298	Yes
79	576169	213337	Yes
80	575898	214064	Yes
81	576659	214362	Yes
82	576548	214705	Yes
83	576527	214601	Yes
84	576417	214597	Yes
85	576303	214655	Yes
86	576224	214711	Yes
87	576229	214844	Yes
88	576113	214877	Yes

89	575950	214833	Yes
90	575808	214909	Yes
91	575859	214755	Yes
92	575755	214295	Yes
93	575508	214226	Yes
94	575287	214092	Yes
95	575395	214519	Yes
96	575353	214504	Yes
97	574589	214415	Yes
98	575099	214879	Yes
99	575601	215360	Yes
100	575219	216094	No
101	575033	216038	No
102	574973	215958	No
103	574902	215943	No
104	574853	215928	No
105	574730	215959	No
106	574775	216102	No
107	574752	216189	No
108	574758	216269	No
109	574717	216275	No
110	574632	216074	No
111	573996	216075	No
112	573970	216088	No
113	576032	211419	No
114	576063	211332	No
115	576065	211323	No
116	576078	211192	No

117	576070	211119	No
118	576317	211172	No
119	576079	211018	No
120	576073	210989	No
121	576120	210899	No
122	576141	210869	No
123	576137	210806	No
124	576138	210698	No
125	576367	210666	No
126	576419	210697	No
127	576484	210735	No
128	576560	210708	No
129	576480	210978	No
130	576768	210899	No
131	576860	210947	No
132	576963	210959	No
133	577023	210986	No

Road / Rail Receptors

5.7. There are six roads within the 1km study area that requires a detailed Glint and Glare Assessment: the A12, Leighs Road, Boreham Road, Cranham Road, Terling Hall Road and Waltham Road. There are some minor roads which serve dwellings; however, these have been dismissed as vehicle users of these roads will likely be travelling at low speeds and therefore, there is a negligible risk of safety impacts resulting from glint and glare of the Scheme.

5.8. The ground receptor no-reflection zones are clearly identifiable on **Figure 2: Appendix A** and the process of how these are calculated is explained in **paragraphs 5.1 to 5.2** of this report.

5.9. **Table 5-2** shows a list of receptors points within the study area which are 200m apart.

Table 5-2: Road Based Receptors

Receptor	Easting	Northing	Glint and Glare Possible
1	573764	215509	Yes
2	573719	215328	Yes
3	573725	215128	Yes
4	573704	214930	Yes
5	573731	214746	Yes
6	573821	214590	Yes
7	573836	214391	Yes
8	573885	214201	Yes
9	573913	214008	Yes
10	573948	213813	Yes
11	574031	213632	Yes
12	574125	213460	Yes
13	574197	213274	Yes
14	574325	213131	Yes
15	574470	213007	Yes
16	574568	212833	Yes
17	574734	212724	Yes
18	574932	212725	Yes
19	575117	212665	Yes
20	575241	212509	Yes
21	575336	212334	Yes
22	575427	212156	Yes
23	575518	211978	Yes
24	575635	211817	Yes
25	575778	211680	Yes
26	575946	211597	Yes

27	577101	211070	Yes
28	577284	211151	Yes
29	577729	211523	Yes
30	577733	211716	Yes
31	577828	211892	Yes
32	577865	212088	Yes
33	577831	212276	Yes
34	577786	212466	Yes
35	577569	213272	Yes
36	577382	213333	Yes
37	577186	213367	Yes
38	577000	213439	Yes
39	576888	213601	Yes
40	576738	213716	Yes
41	576708	213907	Yes
42	576691	214103	Yes
43	576728	214292	Yes
44	576724	214470	Yes
45	576877	214596	Yes
46	573589	214785	Yes
47	573472	214627	Yes
48	573395	214445	Yes
49	573288	214279	Yes
50	573145	214140	Yes
51	572996	214007	Yes
52	574393	212755	Yes
53	574197	212789	Yes
54	573999	212794	Yes

55	573801	212772	Yes
56	573601	212775	Yes
57	575301	216105	No
58	575103	216091	No
59	574939	215980	No
60	574753	215949	No
61	574618	216091	No
62	574449	216190	No
63	574291	216312	No
64	573977	216256	No
65	573978	216057	No
66	573940	215867	No
67	573864	215682	No
68	576060	211437	No
69	576086	211239	No
70	576101	211039	No
71	576118	210840	No
72	576190	210659	No
73	576367	210753	No
74	576547	210840	No
75	576729	210923	No
76	576915	210998	No
77	576432	210672	No
78	576601	210779	No
79	576775	210877	No
80	576948	210978	No

5.10. There is one railway line that passes along the eastern boundary of the Order limits which will require assessment.

5.11. **Table 5-3** shows a list of rail receptor points within the study area which are 200m apart.

Table 5-3: Rail Based Receptors

Receptor	Easting	Northing	Glint and Glare Possible
1	577042	211082	Yes
2	577226	211160	Yes
3	577408	211243	Yes
4	576134	210664	No
5	576310	210760	No
6	576489	210850	No
7	576670	210934	No
8	576856	211007	No

Aviation Receptors

5.12. Aerodromes within 30km of the Order limits can be found **Table 5-4.**

Table 5-4: Airfields within close proximity

Airfield	Distance	Use
Braintree Rayne Airfield	8.42km	Small Unlicensed Aerodrome
Andrewsfield Airfield	10.91km	Licensed Aerodrome
High Easter Airfield	12.59km	Small Unlicensed Aerodrome
Stow Maries Airfield	14.76km	Small Unlicensed Aerodrome
Wethersfield Airfield	17.68km	Small Unlicensed Aerodrome
Earls Colne Airfield	15.30km	Licensed Aerodrome
Nappsfield Airfield	26.41km	Small Unlicensed Aerodrome
Willingale Airfield	17.40km	Small Unlicensed Aerodrome
Wethersfield Airfield	17.68km	Small Unlicensed Aerodrome
Fyfield Airfield	17.76km	Small Unlicensed Aerodrome
London Stansted Airport	21.79km	International Airport

Laindon Airfield	22.30km	Small Unlicensed Aerodrome
Wormingford Airfield	22.84km	Small Unlicensed Aerodrome
London Southend Airport	24.67km	International Airport
Audley End Airfield	26.23km	Small Unlicensed Aerodrome
North Weald Airfield	26.40km	Small Unlicensed Aerodrome
Waits Farm Airfield	27.34km	Small Unlicensed Aerodrome
West Horndon Airfield	27.58km	Small Unlicensed Aerodrome
Stapleford Airfield	29.58km	Small Unlicensed Aerodrome
Bulphan Airfield	29.81km	Small Unlicensed Aerodrome

5.13. As shown in **Table 5-4** there are 20 aerodromes within 30km of the Order limits. However, only Earls Colne and Andrewsfield will require a detailed assessment as the Scheme is located within the 20km safeguarding buffer zone for international airports and licensed airfields, outlined in **paragraph 4.24.**

5.14. The other 18 aerodromes do not require detailed assessments due to their location in relation to the Scheme falling outside of the buffer zones outlined in **paragraph 4.24.**

Earls Colne Airfield

5.15. Earls Colne Airfield is designated as a Licensed Airfield. It is located approximately 3 nautical miles (NM) or 5.6km southeast of the town of Halstead.

5.16. The elevation of the aerodrome at the Aerodrome Reference Point (ARP) is 227ft (69.19m). It has two grass strip runways, details of which are given in **Table 5-5.** See **Figure 4: Appendix A** for the Aerodrome Chart.

Table 5-5: Runways at Earls Colne Airfield

Runway Designation	True Bearing (°)	Length (m)	Width (m)
Runway 06	060.28	939	30
Runway 24	240.29	939	30

5.17. The threshold locations and heights of the runways at Earls Colne Airfield are given in **Table 5-6.**

Table 5-6: Earls Colne Airfield Runway Threshold Locations and Heights

Runway Designation	Threshold Latitude	Threshold Longitude	Height AOD (m)
06	51° 54' 44.03'' N	000° 40' 41.25'' E	69.19
24	51° 54' 56.60'' N	000° 41' 16.54'' E	67.97

5.18. One ATCT at Earls Colne Airfield has been analysed, see **Table 5-7.**

Table 5-7: ATCT at Earls Colne Airfield

	Latitude	Longitude	Height AOD (m)	ATCT Height (m)
ATCT	51° 54' 40" N	000° 40' 33" E	69.62	5.00

Andrewsfield Airfield

5.19. Andrewsfield Airfield is designated as a Licensed Airfield. It is located approximately 4 nautical miles (NM) or 7.4km southeast of the town of Braintree.

5.20. The elevation of the aerodrome at the Aerodrome Reference Point (ARP) is 286ft (87.17m). It has four grass strip runways, details of which are given in **Table 5-8.** See **Figure 5: Appendix A** for the Aerodrome Chart.

Table 5-8: Andrewsfield Airfield Runways

Runway Designation	Bearing (°)	Length (m)	Width (m)
09L	085.11	799	18
09R	085.11	799	18
27L	265.12	799	18
27R	265.12	799	18

5.21. Runway 09L and Runway 09R will be assessed as only Runway 09 as the impacts will be the same due to the runways bordering each other.

5.22. Runway 27L and Runway 27R will be assessed as only Runway 27 as the impacts will be the same due to the runways bordering each other.

5.23. The threshold locations and heights of the runways at Norwich Airport are given in **Table 5-9.**

Table 5-9: Andresfield Airfield Runway Threshold Locations and Heights

Runway Designation	Threshold Latitude	Threshold Longitude	Height AOD (m)
09	51° 53′ 41″ N	000° 26′ 42″ E	83.18
27	51° 53′ 43″ N	000° 27′ 19″ E	84.82

5.24. There is one ATCT present at Andrewsfield Airfield that has been assessed. **Table 5-10** shows the location and height of the ATCT. The height of the ATCT has been found using Google Earth 3D modelling, this gave a value of 5m tall.

Table 5-10: ATCT at Andrewsfield Airfield

	Latitude	Longitude	Height AOD (m)	ATCT Height (m)
ATCT	51° 53′ 46″ N	000° 27′ 06″ E	89.30	5.00

6. IMPACT ASSESSMENT

6.1. Following the methodology outlined earlier in this report, geometrical analysis comparing the azimuth and horizontal angle of the receptors from the Scheme and the solar reflection was conducted. Although this assessment did not take into account obstructions such as vegetation and buildings, discussion on the potentially impacted receptors is provided where necessary.

GROUND BASED RECEPTORS

Residential Receptors

6.2. **Table 6-1** identifies the receptors that will experience solar reflections based on solar reflection modelling and whether the reflections will be experienced in the morning (AM), evening (PM), or both.

6.3. The 34 receptors which were within the no-reflection zones outlined previously have been excluded from the detailed modelling as they will never receive any glint and glare impacts from the Scheme.

6.4. **Appendix B and C** shows the analysis with the solar panels at a tilt angle of 10 and 30 degrees. **Table 6-1** shows the worst-case impact at each receptor, based on a theoretical modelled impact without consideration of local vegetation or other obstacles and assuming no cloud at any point in the year.

Table 6-1: Potential for Glint and Glare impact on Residential Receptors

Receptor	Glint Possible from Order limits		Potential Glare Impact (per year)		Magnitude of Impact	Worst Case Tilt
	AM	PM	Minutes	Hours		
1	No	No	0	0.00	None	N/A
2	No	No	0	0.00	None	N/A
3	No	No	0	0.00	None	N/A
4	Yes	No	14	0.23	Low	30
5	Yes	No	1939	32.32	High	10
6	Yes	No	1936	32.27	High	10
7	Yes	No	2425	40.42	High	10

Receptor	Glint Possible from Order limits		Potential Glare Impact (per year)		Magnitude of Impact	Worst Case Tilt
	AM	PM	Minutes	Hours		
8	Yes	No	16	0.27	Low	10
9	Yes	No	2218	36.97	High	10
10	Yes	No	1960	32.67	High	30
11	Yes	No	2239	37.32	High	30
12	Yes	No	1586	26.43	High	30
13	No	No	1844	30.73	High	30
14	Yes	No	1545	25.75	Medium	10
15	Yes	No	385	6.42	Low	10
16	Yes	No	3017	50.28	High	10
17	Yes	No	2805	46.75	High	10
18	Yes	No	2846	47.43	High	10
19	Yes	No	2332	38.87	High	10
20	Yes	No	3334	55.57	High	10
21	Yes	Yes	6029	100.48	High	10
22	Yes	Yes	6767	112.78	High	30
23	Yes	Yes	7324	122.07	High	30
24	Yes	No	3054	50.90	High	30
25	Yes	No	2949	49.15	High	30
26	Yes	No	5276	87.93	High	10
27	No	No	4338	72.30	High	10
28	Yes	No	4235	70.58	High	10
29	Yes	No	2653	44.22	High	10
30	Yes	No	2243	37.38	High	10
31	Yes	No	5929	98.82	High	10
32	Yes	Yes	6363	106.05	High	10

Receptor	Glint Possible from Order limits		Potential Glare Impact (per year)		Magnitude of Impact	Worst Case Tilt
	AM	PM	Minutes	Hours		
33	Yes	No	3558	59.30	High	10
34	Yes	No	965	16.08	Low	10
35	Yes	No	3418	56.97	High	30
36	Yes	No	3082	51.37	High	30
37	Yes	No	3765	62.75	High	30
38	Yes	Yes	9119	151.98	High	10
39	Yes	Yes	6578	109.63	High	10
40	Yes	Yes	7899	131.65	High	10
41	Yes	No	5262	87.70	High	10
42	Yes	No	4098	68.30	High	10
43	Yes	No	725	12.08	Low	30
44	Yes	No	1083	18.05	Low	30
45	Yes	No	499	8.32	Low	30
46	Yes	No	2663	44.38	High	30
47	Yes	No	5332	88.87	High	10
48	Yes	No	1200	20.00	Medium	10
49	Yes	No	3767	62.78	High	10
50	Yes	No	3909	65.15	High	10
51	Yes	No	3753	62.55	High	10
52	Yes	No	3631	60.52	High	10
53	Yes	No	0	0.00	None	N/A
54	Yes	No	1929	32.15	High	10
55	Yes	No	1183	19.72	Low	10
56	Yes	No	3045	50.75	High	10
57	Yes	No	4546	75.77	High	10

Receptor	Glint Possible from Order limits		Potential Glare Impact (per year)		Magnitude of Impact	Worst Case Tilt
	AM	PM	Minutes	Hours		
58	Yes	No	3718	61.97	High	10
59	Yes	No	2596	43.27	High	10
60	Yes	No	2604	43.40	High	10
61	Yes	No	1564	26.07	Medium	10
62	Yes	No	0	0.00	None	N/A
63	No	Yes	0	0.00	None	N/A
64	No	Yes	2677	44.62	High	10
65	No	Yes	2961	49.35	High	10
66	No	Yes	2647	44.12	High	10
67	No	Yes	2308	38.47	High	10
68	No	Yes	3112	51.87	High	10
69	No	Yes	3469	57.82	High	10
70	No	Yes	3813	63.55	High	10
71	No	Yes	3772	62.87	High	10
72	No	Yes	3451	57.52	High	10
73	No	Yes	4824	80.40	High	10
74	No	Yes	4724	78.73	High	10
75	No	Yes	1840	30.67	High	30
76	No	Yes	2468	41.13	High	30
77	No	Yes	2499	41.65	High	30
78	No	Yes	5610	93.50	High	10
79	No	Yes	5807	96.78	High	10
80	No	Yes	4388	73.13	High	30
81	No	Yes	2381	39.68	High	30
82	No	Yes	1127	18.78	Low	30

Receptor	Glint Possible from Order limits		Potential Glare Impact (per year)		Magnitude of Impact	Worst Case Tilt
	AM	PM	Minutes	Hours		
83	No	Yes	2112	35.20	High	30
84	No	Yes	2009	33.48	High	30
85	No	Yes	1546	25.77	Medium	30
86	No	Yes	1309	21.82	Medium	30
87	No	Yes	631	10.52	Low	30
88	No	Yes	960	16.00	Low	30
89	No	Yes	1716	28.60	Medium	30
90	No	Yes	2343	39.05	High	30
91	No	Yes	2078	34.63	High	30
92	No	Yes	2998	49.97	High	30
93	Yes	Yes	6592	109.87	High	10
94	Yes	Yes	9525	158.75	High	10
95	No	Yes	2956	49.27	High	10
96	No	Yes	5312	88.53	High	10
97	Yes	Yes	7672	127.87	High	10
98	No	Yes	2112	35.20	High	30
99	No	Yes	57	0.95	Low	30

6.5. As can be seen in **Table 6-1,** there is a **High** impact at 75 receptors, **Medium** at six receptors, **Low** at 12 receptors and **None** at the remaining six receptors. **Appendix B and C** show detailed analysis of when the glare impacts are possible, whilst also showing which parts of the solar farm the solar glint is reflected from.

6.6. **Appendix J** shows 2021 Google Earth images that give an insight into how each receptor will be impacted by the glint and glare from the Scheme. There is a mixture of images used, which include aerial, ground level and street level. The aerial images show the location of the receptor with the solar farm drawn as a white polygon and can be seen on the images when the solar farm is theoretically visible. The area of the solar farm from where reflections may be possible has been drawn as a yellow polygon. The ground level terrain is based on the height data of the surrounding land showing no intervening vegetation or buildings. The white and yellow

polygons can be seen in this view also. The street view gives a good indication as to whether the area of the solar farm where reflections are theoretically possible will be visible from the receptor point.

Receptors 4 - 7

6.7. The 'Glare Reflections on the PV Footprint' chart shown in **Appendix B**, shows that a northern section of the Scheme can potentially impact on the receptors.

6.8. The first image in **Appendix J** is an aerial image which shows the receptors' location in relation to the Scheme. Also, it shows that there is likely to be sufficient vegetation east of the receptors to screen views of the Scheme where glint and glare is possible. The second image is taken where the red dot is located on the aerial image, with a view towards the Scheme and of the vegetation that is located to the east of the receptors. This image confirms that there is sufficient vegetation to screen all views of the Scheme where glint and glare is possible. Therefore, the impact is reduced to **None**.

Receptor 8

6.9. The 'Glare Reflections on the PV Footprint' chart shown in **Appendix B**, shows that a northern section of the Scheme can potentially impact on the receptor.

6.10. The first image in **Appendix J** shows the view with no obstructions. This image shows its location in relation to the Scheme and the topography of the area. The second image has been taken next to the receptor with a view towards the Scheme. This image confirms that there is sufficient vegetation to the east of the receptor to screen all views of the Scheme where glint and glare is possible. Therefore, the impact is reduced to **None**.

Receptor 9

6.11. The 'Glare Reflections on the PV Footprint' chart shown in **Appendix B**, shows that a northern section of the Scheme can potentially impact on the receptor.

6.12. The first image in **Appendix J** is an aerial image which shows the receptor's location in relation to the Scheme. Also, it shows that there is likely to be sufficient vegetation east of the receptor to screen views of the Scheme where glint and glare is possible. The second image is taken where the red dot is located on the aerial image, with a view towards the Scheme and of the vegetation that is located to the east of the receptor. This image confirms that there is sufficient vegetation to screen all views of the Scheme where glint and glare is possible. Therefore, the impact is reduced to **None**.

Receptors 10 and 11

6.13. The 'Glare Reflections on the PV Footprint' chart shown in **Appendix B**, shows that a northern section of the Scheme can potentially impact on the receptors.

6.14. The first image in Appendix J is an aerial image which shows the receptors' location in relation to the Scheme. Also, it shows that there is likely to be sufficient vegetation east of the receptors to screen views of the Scheme where glint and glare is possible. The second image is taken where the red dot is located on the aerial image, with a view towards the Scheme and of the vegetation that is located to the east of the receptors. This image confirms that there is sufficient vegetation to screen all views of the Scheme where glint and glare is possible. Therefore, the impact is reduced to None.

Receptor 12

6.15. The 'Glare Reflections on the PV Footprint' chart shown in Appendix B, shows that a northern section of the Scheme can potentially impact on the receptor.

6.16. The first image in Appendix J is an aerial image which shows the receptor's location in relation to the Scheme. Also, it shows that there is likely to be sufficient vegetation east of the receptor to screen views of the Scheme where glint and glare is possible. The second image is taken where the red dot is located on the aerial image, with a view towards the Scheme and of the vegetation that is located to the east of the receptor. This image confirms that there is sufficient vegetation to screen all views of the Scheme where glint and glare is possible. Therefore, the impact is reduced to None.

Receptors 13 and 14

6.17. The 'Glare Reflections on the PV Footprint' chart shown in Appendix B, shows that a northern section of the Scheme can potentially impact on the receptors.

6.18. The first image in Appendix J is an aerial image which shows the receptors' location in relation to the Scheme. Also, it shows that there is likely to be sufficient buildings and vegetation east of the receptors to screen views of the Scheme where glint and glare is possible. The second image is taken where the red dot is located on the aerial image, with a view towards the Scheme and of the vegetation that is located to the east of the receptors. This image confirms that there is sufficient vegetation to screen all views of the Scheme where glint and glare is possible. Therefore, the impact is reduced to None.

Receptor 15

6.19. The 'Glare Reflections on the PV Footprint' chart shown in Appendix B, shows that a northern section of the Scheme can potentially impact on the receptor.

6.20. The first image in Appendix J is an aerial image which shows the receptor's location in relation to the Scheme. Also, it shows that there is likely to be sufficient buildings and vegetation east of the receptor to screen views of the Scheme where glint and glare is possible. The second image is taken where the red dot is located on the aerial image, with a view towards the receptor and of the vegetation that is located to the east of the receptor. This image confirms

that there is sufficient vegetation to screen all views of the Scheme where glint and glare is possible. Therefore, the impact is reduced to **None**.

Receptors 16 - 18

6.21. The 'Glare Reflections on the PV Footprint' chart shown in **Appendix B**, shows that a northern section of the Scheme can potentially impact on the receptors.

6.22. The first image in **Appendix J** is an aerial image which shows the receptors' location in relation to the Scheme. The second image is taken where the red dot is located on the aerial image, with a view towards the Scheme. This image confirms that the vegetation along the western boundary of the Scheme is insufficient to screen all views of the Scheme where glint and glare is possible. Therefore, the impact remains **High**.

Receptors 19 and 20

6.23. The 'Glare Reflections on the PV Footprint' chart shown in **Appendix B**, shows that a northern section of the Scheme can potentially impact on the receptors.

6.24. The first image in **Appendix J** is an aerial image which shows the receptors' location in relation to the Scheme. The second image is taken where the red dot is located on the aerial image, with a view of the vegetation that is located to the east of each receptor. This image confirms that the vegetation to the east of Receptor 19 is sufficient to screen all views of the Scheme where glint and glare is possible. However, this image confirms that the vegetation to the east of Receptor 20 is insufficient to screen all views of the Scheme where glint and glare is possible. Therefore, the impact upon Receptor 19 reduces to **None**, but remains **High** for Receptor 20.

6.25. However, the impacts at Receptor 20 occur when the sun is directly behind the Scheme and low in the sky. The images in **Appendix J** shows an example of where the sun will be in relation to the Scheme. In this image it shows the sun, areas where glare occurs from the Scheme and view from the receptor at the time of which glare impacts will occur. The reflections from the Scheme will be much less intense than the sun's direct glare and therefore it will be this which will be the main impact on the residential receptor, not the reflections from the Scheme. Therefore, as the sun's glare will be the main impact on this receptor point, during the times when glare occurs from the Scheme, the impact can be reduced to **low**.

Receptor 21

6.26. The 'Glare Reflections on the PV Footprint' chart shown in **Appendix B**, shows that a northern section of the Scheme can potentially impact on the receptor.

6.27. The first image in **Appendix J** is an aerial image which shows the receptor's location in relation to the Scheme. Also, it shows that there is likely to be sufficient vegetation surrounding the receptor to screen views of the Scheme where glint and glare is possible. The second image is taken where the red dot is located on the aerial image, with a view towards the receptor and

of the vegetation that is surrounding the receptor. This image confirms that there is sufficient vegetation to screen all views of the Scheme where glint and glare is possible. Therefore, the impact is reduced to **None**.

Receptors 22 - 23

6.28. The 'Glare Reflections on the PV Footprint' chart shown in **Appendix B**, shows that a northern section of the Scheme can potentially impact on the receptors.

6.29. The first image in **Appendix J** is an aerial image which shows the receptors' location in relation to the Scheme. Also, it shows that there is likely to be sufficient vegetation east of the receptors to screen views of the Scheme where glint and glare is possible. The second image is taken where the red dot is located on the aerial image, with a view of the vegetation that is located to the east of the receptors. The third image is also taken where the red dot in located on the aerial image, with a view towards the west of the receptors. This third image confirms that there is insufficient vegetation located to the west of the receptors to screen views of the Scheme where glint and glare is possible. Therefore, the impact remains **High**.

Receptor 24

6.30. The 'Glare Reflections on the PV Footprint' chart shown in **Appendix B**, shows that a central section of the Scheme can potentially impact on the receptor.

6.31. The first image in **Appendix J** is an aerial image which shows the receptor's location in relation to the Scheme. Also, it shows that there is likely to be sufficient buildings and vegetation east of the receptor to screen views of the Scheme where glint and glare is possible. The second image is taken where the red dot is located on the aerial image, with a view towards the Scheme and of the obstacles that are east of the receptor. This image confirms that there are sufficient buildings and vegetation to screen all views of the Scheme where glint and glare is possible. Therefore, the impact is reduced to **None**.

Receptor 25

6.32. The 'Glare Reflections on the PV Footprint' chart shown in **Appendix B**, shows that a northern section of the Scheme can potentially impact on the receptor.

6.33. The first image in **Appendix J** is an aerial image which shows the receptor's location in relation to the Scheme. Also, it shows that there is likely to be sufficient vegetation east of the receptor to screen views of the Scheme where glint and glare is possible. The second image is taken where the red dot is located on the aerial image, with a view towards the Scheme and of the vegetation that is located to the east of the receptor. This image confirms that there is sufficient vegetation to screen all views of the Scheme where glint and glare is possible. Therefore, the impact is reduced to **None**.

Receptor 26

6.34. The 'Glare Reflections on the PV Footprint' chart shown in **Appendix B**, shows that a northern section of the Scheme can potentially impact on the receptor.

6.35. The first image in **Appendix J** is an aerial image which shows the receptor's location in relation to the Scheme. Also, it shows that there is likely to be sufficient vegetation east of the receptor to screen views of the Scheme where glint and glare is possible. The second image is taken where the red dot is located on the aerial image, with a view towards the Scheme and of the vegetation that is located to the east of the receptor. This image confirms that there is sufficient vegetation to screen all views of the Scheme where glint and glare is possible. Therefore, the impact is reduced to **None**.

Receptors 27 and 28

6.36. The 'Glare Reflections on the PV Footprint' chart shown in **Appendix B**, shows that a central section of the Scheme can potentially impact on the receptor.

6.37. The first image in **Appendix J** is an aerial image which shows the receptor's location in relation to the Scheme. Also, it shows that there is likely to be sufficient vegetation east of the receptor to screen views of the Scheme where glint and glare is possible. The second image is taken where the red dot is located on the aerial image, with a view towards the Scheme and of the vegetation that is located to the east of the receptor. This image confirms that there is sufficient vegetation to screen all views of the Scheme where glint and glare is possible. Therefore, the impact is reduced to **None**.

Receptors 29 and 30

6.38. The 'Glare Reflections on the PV Footprint' chart shown in **Appendix B**, shows that a northern section of the Scheme can potentially impact on the receptors.

6.39. The first image in **Appendix J** is an aerial image which shows the receptors' location in relation to the Scheme. Also, it shows that there is likely to be sufficient vegetation east of the receptors to screen views of the Scheme where glint and glare is possible. The second image is taken where the red dot is located on the aerial image, with a view towards the receptors and of the vegetation that is located to the east of the receptors. This image confirms that there is sufficient vegetation to screen all views of the Scheme where glint and glare is possible. Therefore, the impact is reduced to **None**.

Receptor 31

6.40. The 'Glare Reflections on the PV Footprint' chart shown in **Appendix B**, shows that a central section of the Scheme can potentially impact on the receptor.

6.41. The first image in **Appendix J** is an aerial image which shows the receptor's location in relation to the Scheme. Also, it shows that there is likely to be sufficient vegetation east of the receptor to screen views of the Scheme where glint and glare is possible. The second image is taken

where the red dot is located on the aerial image, with a view towards the Scheme and of the vegetation that is located to the east of the receptor. This image confirms that there is sufficient vegetation to screen all views of the Scheme where glint and glare is possible. Therefore, the impact is reduced to **None**.

Receptor 32

6.42. The 'Glare Reflections on the PV Footprint' chart shown in **Appendix B**, shows that a central section of the Scheme can potentially impact on the receptor.

6.43. The first image in **Appendix J** is an aerial image which shows the receptor's location in relation to the Scheme. The second image is taken where the red dot is located on the aerial image, with a view towards the Scheme and of the vegetation that is located to the east of the receptor. This image confirms that there is insufficient vegetation to screen all views of the Scheme where glint and glare is possible. Therefore, the impact remains **High**.

Receptor 33

6.44. The 'Glare Reflections on the PV Footprint' chart shown in **Appendix B**, shows that a central section of the Scheme can potentially impact on the receptor.

6.45. The first image in **Appendix J** is an aerial image which shows the receptor's location in relation to the Scheme. Also, it shows that there is likely to be sufficient vegetation east of the receptor to screen views of the Scheme where glint and glare is possible. The second image is taken where the red dot is located on the aerial image, with a view towards the Scheme and of the vegetation that is located to the east of the receptor. This image confirms that there is sufficient vegetation to screen all views of the Scheme where glint and glare is possible. Therefore, the impact is reduced to **None**.

Receptor 34

6.46. The 'Glare Reflections on the PV Footprint' chart shown in **Appendix B**, shows that a central section of the Scheme can potentially impact on the receptor.

6.47. The first image in **Appendix J** is an aerial image which shows the receptor's location in relation to the Scheme. Also, it shows that there is likely to be sufficient vegetation east of the receptor to screen views of the Scheme where glint and glare is possible. The second image is taken where the red dot is located on the aerial image, with a view of the vegetation that is located to the east of the receptor. This image confirms that there is sufficient vegetation to screen all views of the Scheme where glint and glare is possible. Therefore, the impact is reduced to **None**.

Receptor 35

6.48. The 'Glare Reflections on the PV Footprint' chart shown in **Appendix B**, shows that a central section of the Scheme can potentially impact on the receptor.

6.49. The first image in **Appendix J** is an aerial image which shows the receptor's location in relation to the Scheme. Also, it shows that there is likely to be sufficient vegetation east of the receptor to screen views of the Scheme where glint and glare is possible. The second image is taken where the red dot is located on the aerial image, with a view of the vegetation that is located to the east of the receptor. This image confirms that there is sufficient vegetation to screen all views of the Scheme where glint and glare is possible. Therefore, the impact is reduced to **None**.

Receptors 36 and 37

6.50. The 'Glare Reflections on the PV Footprint' chart shown in **Appendix B**, shows that a central section of the Scheme can potentially impact on the receptors.

6.51. The first image in **Appendix J** is an aerial image which shows the receptors' location in relation to the Scheme. Also, it shows that there is likely to be sufficient vegetation east of the receptors to screen views of the Scheme where glint and glare is possible. The second image is taken where the red dot is located on the aerial image, with a view towards the receptors and of the vegetation that is located to the east of the receptors. This image confirms that there is sufficient vegetation to screen all views of the Scheme where glint and glare is possible. Therefore, the impact is reduced to **None**.

Receptor 38

6.52. The 'Glare Reflections on the PV Footprint' chart shown in **Appendix B**, shows that a central section of the Scheme can potentially impact on the receptor.

6.53. The first image in **Appendix J** is an aerial image which shows the receptor's location in relation to the Scheme. The second image is taken where the red dot is located on the aerial image, with a view towards the Scheme and of the vegetation that is surrounding the receptor. This image confirms that there is insufficient vegetation to screen all views of the Scheme where glint and glare is possible. Therefore, the impact remains **High**.

Receptor 39

6.54. The 'Glare Reflections on the PV Footprint' chart shown in **Appendix B**, shows that a central section of the Scheme can potentially impact on the receptor.

6.55. The first image in **Appendix J** is an aerial image which shows the receptor's location in relation to the Scheme. Also, it shows that there is likely to be sufficient vegetation east and west of the receptor to screen views of the Scheme where glint and glare is possible. The second image is taken where the red dot is located on the aerial image, with a view of the vegetation that is located to the east of the receptor. The third image is also taken where the red dot in located on the aerial image, with a view of the vegetation that is located to the west of the receptor. These images confirm that the vegetation is sufficient to screen all views of the Scheme where glint and glare is possible. Therefore, the impact reduces to **None**.

Receptor 40

6.56. The 'Glare Reflections on the PV Footprint' chart shown in **Appendix B**, shows that a central section of the Scheme can potentially impact on the receptor.

6.57. The first image in **Appendix J** is an aerial image which shows the receptor's location in relation to the Scheme. Also, it shows that there is likely to be sufficient vegetation east and west of the receptor to screen views of the Scheme where glint and glare is possible. The second image is taken where the red dot is located on the aerial image, with a view of the vegetation that is located to the east of the receptor. The third image is also taken where the red dot in located on the aerial image, with a view of the vegetation that is located to the west of the receptor. These images confirm that the vegetation is insufficient to the east of the receptor to screen all views of the Scheme where glint and glare is possible. Therefore, the impact remains **High**.

Receptor 41

6.58. The 'Glare Reflections on the PV Footprint' chart shown in **Appendix B**, shows that a central section of the Scheme can potentially impact on the receptor.

6.59. The first image in **Appendix J** is an aerial image which shows the receptor's location in relation to the Scheme. Also, it shows that there is likely to be sufficient buildings east and vegetation west of the receptor to screen views of the Scheme where glint and glare is possible. The second image is taken where the red dot is located on the aerial image, with a view of the buildings that are located to the east of the receptor. The third image is also taken where the red dot in located on the aerial image, with a view of the vegetation that is located to the west of the receptor. These images confirm that the buildings and vegetation are sufficient to screen all views of the Scheme where glint and glare is possible. Therefore, the impact reduces to **None**.

Receptors 42 - 43

6.60. The 'Glare Reflections on the PV Footprint' chart shown in **Appendix B**, shows that a southern section of the Scheme can potentially impact on the receptors.

6.61. The first image in **Appendix J** is an aerial image which shows the receptors' location in relation to the Scheme. Also, it shows that there is likely to be sufficient vegetation east of the receptors to screen views of the Scheme where glint and glare is possible. The second image is taken where the red dot is located on the aerial image, with a view towards the Scheme and of the vegetation that is located to the east of the receptors. This image confirms that there is sufficient vegetation to screen all views of the Scheme where glint and glare is possible. Therefore, the impact is reduced to **None**.

Receptors 44 - 46

6.62. The 'Glare Reflections on the PV Footprint' chart shown in **Appendix B**, shows that a southern section of the Scheme can potentially impact on the receptors.

6.63. The first image in **Appendix J** is an aerial image which shows the receptors' location in relation to the Scheme. Also, it shows that there is likely to be sufficient vegetation east of the receptors to screen views of the Scheme where glint and glare is possible. The second image is taken where the red dot is located on the aerial image, with a view towards the Scheme and of the vegetation that is located to the east of the receptors. This image confirms that there is sufficient vegetation to screen all views of the Scheme where glint and glare is possible. Therefore, the impact is reduced to **None**.

Receptors 47 - 48

6.64. The 'Glare Reflections on the PV Footprint' chart shown in **Appendix B**, shows that a southern section of the Scheme can potentially impact on the receptors.

6.65. The first image in **Appendix J** is an aerial image which shows the receptors' location in relation to the Scheme. Also, it shows that there is likely to be sufficient vegetation east of the receptors to screen views of the Scheme where glint and glare is possible. The second image is taken where the red dot is located on the aerial image, with a view towards the Scheme and of the vegetation that is located to the east of the receptors. This image confirms that there is sufficient vegetation to screen all views of the Scheme where glint and glare is possible. Therefore, the impact is reduced to **None**.

Receptor 49

6.66. The 'Glare Reflections on the PV Footprint' chart shown in **Appendix B**, shows that a southern section of the Scheme can potentially impact on the receptor.

6.67. The first image in **Appendix J** is an aerial image which shows the receptor's location in relation to the Scheme. Also, it shows that there is likely to be sufficient vegetation east of the receptor to screen views of the Scheme where glint and glare is possible. The second image is taken where the red dot is located on the aerial image, with a view of the vegetation that is located to the east of the receptor. This image confirms that there is sufficient vegetation to screen all views of the Scheme where glint and glare is possible. Therefore, the impact is reduced to **None**.

Receptor 50

6.68. The 'Glare Reflections on the PV Footprint' chart shown in **Appendix B**, shows that a southern section of the Scheme can potentially impact on the receptor.

6.69. The first image in **Appendix J** shows the view with no obstructions. This image shows its location in relation to the Scheme and the topography of the area. The second image has been taken

next to the receptor with a view towards the Scheme. This image confirms that there is sufficient vegetation to the east of the receptor to screen all views of the Scheme where glint and glare is possible. Therefore, the impact is reduced to **None**.

Receptors 51 - 52

6.70. The 'Glare Reflections on the PV Footprint' chart shown in **Appendix B**, shows that a southern section of the Scheme can potentially impact on the receptors.

6.71. The first image in **Appendix J** is an aerial image which shows the receptors' location in relation to the Scheme. Also, it shows that there is likely to be sufficient vegetation east of the receptors to screen views of the Scheme where glint and glare is possible. The second image is taken where the red dot is located on the aerial image, with a view towards the Scheme and of the vegetation that is located to the east of the receptors. This image confirms that there is sufficient vegetation to screen all views of the Scheme where glint and glare is possible. Therefore, the impact is reduced to **None**.

Receptors 54 - 56

6.72. The 'Glare Reflections on the PV Footprint' chart shown in **Appendix B**, shows that a southern section of the Scheme can potentially impact on the receptors.

6.73. The first image in **Appendix J** is an aerial image which shows the receptors' location in relation to the Scheme. Also, it shows that there is likely to be sufficient vegetation east of the receptors to screen views of the Scheme where glint and glare is possible. The second image is taken where the red dot is located on the aerial image, with a view towards the Scheme and of the vegetation that is located to the east of the receptors. This image confirms that there is sufficient vegetation to screen all views of the Scheme where glint and glare is possible. Therefore, the impact is reduced to **None**.

Receptor 57

6.74. The 'Glare Reflections on the PV Footprint' chart shown in **Appendix B**, shows that a southern section of the Scheme can potentially impact on the receptor.

6.75. The image in **Appendix J** is an aerial image which shows the receptor's location in relation to the Scheme. Also, it shows that there is sufficient vegetation east of the receptor to screen views of the Scheme where glint and glare is possible. Therefore, the impact is reduced to **None**.

Receptor 58

6.76. The 'Glare Reflections on the PV Footprint' chart shown in **Appendix B**, shows that a southern section of the Scheme can potentially impact on the receptor.

6.77. The first image in Appendix J is an aerial image which shows the receptor's location in relation to the Scheme. Also, it shows that there is likely to be sufficient vegetation east of the receptor to screen views of the Scheme where glint and glare is possible. The second image is taken where the red dot is located on the aerial image, with a view of the vegetation that is located to the east of the receptor. This image confirms that there is sufficient vegetation to screen all views of the Scheme where glint and glare is possible. Therefore, the impact is reduced to None.

Receptors 59 - 60

6.78. The 'Glare Reflections on the PV Footprint' chart shown in Appendix B, shows that a southern section of the Scheme can potentially impact on the receptors.

6.79. The first image in Appendix J is an aerial image which shows the receptors' location in relation to the Scheme. Also, it shows that there is likely to be sufficient vegetation east of the receptors to screen views of the Scheme where glint and glare is possible. The second image is taken where the red dot is located on the aerial image, with a view towards the Scheme and of the vegetation that is located to the east of the receptors. This image confirms that there is sufficient vegetation to screen all views of the Scheme where glint and glare is possible. Therefore, the impact is reduced to None.

Receptor 61

6.80. The 'Glare Reflections on the PV Footprint' chart shown in Appendix B, shows that a southern section of the Scheme can potentially impact on the receptor.

6.81. The first image in Appendix J is an aerial image which shows the receptor's location in relation to the Scheme. Also, it shows that there is likely to be sufficient vegetation east of the receptor to screen views of the Scheme where glint and glare is possible. The second image is taken where the red dot is located on the aerial image, with a view of the vegetation that is located to the east of the receptor. This image confirms that there is sufficient vegetation to screen all views of the Scheme where glint and glare is possible. Therefore, the impact is reduced to None.

Receptors 64 - 65

6.82. The 'Glare Reflections on the PV Footprint' chart shown in Appendix B, shows that a southern section of the Scheme can potentially impact on the receptors.

6.83. The first image in Appendix J is an aerial image which shows the receptors' location in relation to the Scheme. Also, it shows that there is likely to be sufficient vegetation west of the receptors to screen views of the Scheme where glint and glare is possible. The second image is taken where the red dot is located on the aerial image, with a view of the vegetation that is located to the west of the receptors. This image confirms that there is sufficient vegetation to screen all views of the Scheme where glint and glare is possible. Therefore, the impact is reduced to None.

Receptors 66 - 67

6.84. The 'Glare Reflections on the PV Footprint' chart shown in **Appendix B**, shows that a southern section of the Scheme can potentially impact on the receptors.

6.85. The image in **Appendix J** is an aerial image which shows the receptors' location in relation to the Scheme. Also, it shows that there is sufficient vegetation west of the receptors to screen views of the Scheme where glint and glare is possible. Therefore, the impact is reduced to **None**.

Receptors 68 - 69

6.86. The 'Glare Reflections on the PV Footprint' chart shown in **Appendix B**, shows that a southern section of the Scheme can potentially impact on the receptors.

6.87. The first image in **Appendix J** is an aerial image which shows the receptors' location in relation to the Scheme. Also, it shows that there is likely to be sufficient vegetation west of the receptors to screen views of the Scheme where glint and glare is possible. The second image is taken where the red dot is located on the aerial image, with a view of the vegetation that is located to the west of the receptors. This image confirms that there is sufficient vegetation to screen all views of the Scheme where glint and glare is possible. Therefore, the impact is reduced to **None**.

Receptors 70 - 72

6.88. The 'Glare Reflections on the PV Footprint' chart shown in **Appendix B**, shows that a central section of the Scheme can potentially impact on the receptors.

6.89. The first image in **Appendix J** is an aerial image which shows the receptors' location in relation to the Scheme. Also, it shows that there is likely to be sufficient vegetation west of the receptors to screen views of the Scheme where glint and glare is possible. The second image is taken where the red dot is located on the aerial image, with a view of the vegetation that is located to the west of the receptors. This image confirms that there is sufficient vegetation to screen all views of the Scheme where glint and glare is possible. Therefore, the impact is reduced to **None**.

Receptors 73 - 74

6.90. The 'Glare Reflections on the PV Footprint' chart shown in **Appendix B**, shows that a central section of the Scheme can potentially impact on the receptors.

6.91. The image in **Appendix J** is an aerial image which shows the receptors' location in relation to the Scheme. Also, it shows that there is insufficient vegetation west of the receptors to screen views of the Scheme where glint and glare is possible. Therefore, the impact remains **High**.

Receptors 75 - 77

6.92. The 'Glare Reflections on the PV Footprint' chart shown in **Appendix B**, shows that a northern section of the Scheme can potentially impact on the receptors.

6.93. The first image in **Appendix J** is an aerial image which shows the receptors' location in relation to the Scheme. Also, it shows that there is likely to be sufficient vegetation west of the receptors to screen views of the Scheme where glint and glare is possible. The second image is taken where the red dot is located on the aerial image, with a view towards the Scheme and vegetation. This image confirms that the topography of the land is sufficient to screen all views of the Scheme where glint and glare is possible. Therefore, the impact is reduced to **None**.

Receptors 78 - 79

6.94. The 'Glare Reflections on the PV Footprint' chart shown in **Appendix B**, shows that a central section of the Scheme can potentially impact on the receptors.

6.95. The image in **Appendix J** is an aerial image which shows the receptors' location in relation to the Scheme. Also, it shows that there is insufficient vegetation west of the receptors to screen views of the Scheme where glint and glare is possible. Therefore, the impact remains **High**. However, the impacts at the receptors occur when the sun is directly behind the Scheme and low in the sky. The image in **Appendix J** shows an example of where the sun will be in relation to the Scheme. In this image it shows the sun, areas where glare occurs from the Scheme and view from the receptors at the time of which glare impacts will occur. The reflections from the Scheme will be much less intense than the sun's direct glare and therefore it will be this which will be the main impact on the residential receptors, not the reflections from the Scheme. Therefore, as the sun's glare will be the main impact on these receptor points, during the times when glare occurs from the Scheme, the impact can be reduced to **low**.

Receptor 80

6.96. The 'Glare Reflections on the PV Footprint' chart shown in **Appendix B**, shows that a northern section of the Scheme can potentially impact on the receptor.

6.97. The first image in **Appendix J** is an aerial image which shows the receptor's location in relation to the Scheme. Also, it shows that there is likely to be sufficient buildings and vegetation west of the receptor to screen views of the Scheme where glint and glare is possible. The second image is taken where the red dot is located on the aerial image, with a view towards the Scheme and of the buildings west of the receptor. This image confirms that the buildings west of the receptor are sufficient to screen all views of the Scheme where glint and glare is possible. Therefore, the impact is reduced to **None**.

Receptor 81

6.98. The 'Glare Reflections on the PV Footprint' chart shown in **Appendix B**, shows that a northern section of the Scheme can potentially impact on the receptor.

6.99. The first image in Appendix J is an aerial image which shows the receptor's location in relation to the Scheme. Also, it shows that there is likely to be sufficient vegetation west of the receptor to screen views of the Scheme where glint and glare is possible. The second image is taken where the red dot is located on the aerial image, with a view towards the Scheme and of the vegetation west of the receptor. This image confirms that the vegetation west of the receptor is sufficient to screen all views of the Scheme where glint and glare is possible. Therefore, the impact is reduced to None.

Receptor 82

6.100. The 'Glare Reflections on the PV Footprint' chart shown in Appendix B, shows that a northern section of the Scheme can potentially impact on the receptor.

6.101. The first image in Appendix J is an aerial image which shows the receptor's location in relation to the Scheme. Also, it shows that there is likely to be sufficient vegetation west of the receptor to screen views of the Scheme where glint and glare is possible. The second image is taken where the red dot is located on the aerial image, with a view towards the Scheme and of the vegetation west of the receptor. This image confirms that the vegetation west of the receptor is sufficient to screen all views of the Scheme where glint and glare is possible. Therefore, the impact is reduced to None.

Receptors 83 - 89

6.102. The 'Glare Reflections on the PV Footprint' chart shown in Appendix B, shows that a northern section of the Scheme can potentially impact on the receptors.

6.103. The first image in Appendix J is an aerial image which shows the receptors' location in relation to the Scheme. Also, it shows that there is likely to be sufficient vegetation west of the receptors to screen views of the Scheme where glint and glare is possible. The second image is taken where the red dot is located on the aerial image, with a view towards the Scheme and vegetation. This image confirms that the vegetation west of the receptors is sufficient to screen all views of the Scheme where glint and glare is possible. Therefore, the impact is reduced to None.

Receptor 90

6.104. The 'Glare Reflections on the PV Footprint' chart shown in Appendix B, shows that a northern section of the Scheme can potentially impact on the receptor.

6.105. The first image in Appendix J is an aerial image which shows the receptor's location in relation to the Scheme. Also, it shows that there is likely to be sufficient vegetation west of the receptor to screen views of the Scheme where glint and glare is possible. The second image is taken where the red dot is located on the aerial image, with a view towards the Scheme and of the vegetation west of the receptor. This image confirms that the vegetation west of the receptor

is sufficient to screen all views of the Scheme where glint and glare is possible. Therefore, the impact is reduced to None.

Receptor 91

6.106. The 'Glare Reflections on the PV Footprint' chart shown in Appendix B, shows that a northern section of the Scheme can potentially impact on the receptor.

6.107. The first image in Appendix J is an aerial image which shows the receptor's location in relation to the Scheme. Also, it shows that there is likely to be sufficient vegetation west of the receptor to screen views of the Scheme where glint and glare is possible. The second image is taken where the red dot is located on the aerial image, with a view towards the Scheme and of the vegetation west of the receptor. This image confirms that the vegetation west of the receptor is sufficient to screen all views of the Scheme where glint and glare is possible. Therefore, the impact is reduced to None.

Receptor 92

6.108. The 'Glare Reflections on the PV Footprint' chart shown in Appendix B, shows that a northern section of the Scheme can potentially impact on the receptor.

6.109. The first image in Appendix J is an aerial image which shows the receptor's location in relation to the Scheme. Also, it shows that there is likely to be sufficient vegetation west of the receptor to screen views of the Scheme where glint and glare is possible. The second image is taken where the red dot is located on the aerial image, with a view towards the receptor and of the vegetation west of the receptor. This image confirms that the vegetation west of the receptor is sufficient to screen all views of the Scheme where glint and glare is possible. Therefore, the impact is reduced to None.

Receptor 93

6.110. The 'Glare Reflections on the PV Footprint' chart shown in Appendix B, shows that a northern section of the Scheme can potentially impact on the receptor.

6.111. The first image in Appendix J is an aerial image which shows the receptor's location in relation to the Scheme. The second image is taken where the red dot is located on the aerial image, with a view east from the receptor. The third image is taken where the red dot is located on the aerial image, with a view west from the receptor. Both these images confirm that there is insufficient screening to screen views of the Scheme where glint and glare is possible. However, the impacts at receptor 93 occur when the sun is directly behind the Scheme and low in the sky. The images in Appendix J shows an example of where the sun will be in relation to the Scheme. In this image it shows the sun, areas where glare occurs from the Scheme and view from the receptor at the time of which glare impacts will occur. The reflections from the Scheme will be much less intense than the sun's direct glare and therefore it will be this which will be the main impact on the residential receptor, not the reflections from the Scheme.

Therefore, as the sun's glare will be the main impact on this receptor point, during the times when glare occurs from the Scheme, the impact can be reduced to low.

Receptor 94

6.112. The 'Glare Reflections on the PV Footprint' chart shown in Appendix B, shows that a northern section of the Scheme can potentially impact on the receptor.

6.113. The first image in Appendix J is an aerial image which shows the receptor's location in relation to the Scheme. Also, it shows that there is likely to be sufficient vegetation west of the receptor to screen views of the Scheme where glint and glare is possible. The second image is taken where the red dot is located on the aerial image, with a view towards the Scheme and of the vegetation east of the receptor. The third image is taken where the red dot is located on the aerial image, with a view towards the Scheme and of the vegetation west of the receptor. These images show that the receptor will receive intermittent views of the Scheme where glint and glare is possible; the fact that they are intermittent still means there is a low impact. Therefore, the impact reduces to Low.

Receptor 95

6.114. The 'Glare Reflections on the PV Footprint' chart shown in Appendix B, shows that a northern section of the Scheme can potentially impact on the receptor.

6.115. The first image in Appendix J is an aerial image which shows the receptor's location in relation to the Scheme. Also, it shows that there is likely to be sufficient vegetation west of the receptor to screen views of the Scheme where glint and glare is possible. The second image is taken where the red dot is located on the aerial image, with a view towards the Scheme and of the vegetation west of the receptor. This image shows that the vegetation will intermittently screen views of the Scheme where glint and glare is possible, which is sufficient to provide screening. Therefore, the impact reduces to Low.

Receptor 96

6.116. The 'Glare Reflections on the PV Footprint' chart shown in Appendix B, shows that a northern section of the Scheme can potentially impact on the receptor.

6.117. The first image in Appendix J is an aerial image which shows the receptor's location in relation to the Scheme. The second image is taken where the red dot is located on the aerial image, with a view towards the Scheme. This image shows that the vegetation will be insufficient to screen views of the Scheme where glint and glare is possible. Therefore, the impact remains High.

Receptor 97

6.118. The 'Glare Reflections on the PV Footprint' chart shown in **Appendix B**, shows that a northern section of the Scheme can potentially impact on the receptor.

6.119. The image in **Appendix J** is an aerial image which shows the receptor's location in relation to the Scheme. Also, it shows that there is insufficient vegetation east of the receptor to screen views of the Scheme where glint and glare is possible. However, the impacts at receptor 97 occur when the sun is directly behind the Scheme and low in the sky. The images in **Appendix J** shows an example of where the sun will be in relation to the Scheme. In this image it shows the sun, areas where glare occurs from the Scheme and view from the receptor at the time of which glare impacts will occur. The reflections from the Scheme will be much less intense than the sun's direct glare and therefore it will be this which will be the main impact on the residential receptor, not the reflections from the Scheme. Therefore, as the sun's glare will be the main impact on this receptor point, during the times when glare occurs from the Scheme, the impact can be reduced to **low**.

Receptor 98

6.120. The 'Glare Reflections on the PV Footprint' chart shown in **Appendix B**, shows that a northern section of the Scheme can potentially impact on the receptor.

6.121. The image in **Appendix J** is an aerial image which shows the receptor's location in relation to the Scheme. Also, it shows that there is insufficient vegetation west of the receptor to screen views of the Scheme where glint and glare is possible. However, the impacts at receptor 98 occur when the sun is directly behind the Scheme and low in the sky. The images in **Appendix J** shows an example of where the sun will be in relation to the Scheme. In this image it shows the sun, areas where glare occurs from the Scheme and view from the receptor at the time of which glare impacts will occur. The reflections from the Scheme will be much less intense than the sun's direct glare and therefore it will be this which will be the main impact on the residential receptor, not the reflections from the Scheme. Therefore, as the sun's glare will be the main impact on this receptor point, during the times when glare occurs from the Scheme, the impact can be reduced to **low**.

Receptor 99

6.122. The 'Glare Reflections on the PV Footprint' chart shown in **Appendix B**, shows that a northern section of the Scheme can potentially impact on the receptor.

6.123. The first image in **Appendix J** is an aerial image which shows the receptor's location in relation to the Scheme. Also, it shows that there is likely to be sufficient vegetation west of the receptor to screen views of the Scheme where glint and glare is possible. The second image is taken where the red dot is located on the aerial image, with a view towards the Scheme and of the vegetation west of the receptor. This image confirms that the vegetation west of the receptor

is sufficient to screen all views of the Scheme where glint and glare is possible. Therefore, the impact is reduced to **None**.

Residential Area 1

6.124. This encompasses a number of residential receptors including those at receptor points 27-28 (assessed above) (See **Figure 1: Appendix A**). Each receptor assessed represents multiple receptors as they are in close proximity of each other, so the worst-case scenario is assumed for the impact of glint and glare. All receptors had no initial impacts from glint and glare, so not requiring a visibility analysis. Therefore, as per the initial bald-earth assessment for these two receptors, the impacts on the other receptors within this area are assessed as being **None (worst case scenario)**.

Residential Area 2

6.125. This encompasses a number of residential receptors including those at receptor points 68-69 (assessed above) (See **Figure 1: Appendix A**). Each receptor assessed represents multiple receptors as they are in close proximity of each other, so the worst-case scenario is assumed for the impact of glint and glare. All receptors were considered within the visibility analysis and it was concluded that their impacts were similar. As per the assessments of these two receptors, the impacts on the other receptors within this area are assessed as being **None (worst case scenario).**

Residential Area 3

6.126. This encompasses a number of residential receptors including those at receptor points 75-77 (assessed above) (See **Figure 1: Appendix A**). Each receptor assessed represents multiple receptors as they are in close proximity of each other, so the worst-case scenario is assumed for the impact of glint and glare. All receptors were considered within the visibility analysis and it was concluded that their impacts were similar. As per the assessments of these three receptors, the impacts on the other receptors within this area are assessed as being **None (worst case scenario).**

Residential Area 4

6.127. This encompasses a number of residential receptors including those at receptor points 78-79 (assessed above) (See **Figure 1: Appendix A**). Each receptor assessed represents multiple receptors as they are in close proximity of each other, so the worst-case scenario is assumed for the impact of glint and glare. All receptors were considered within the visibility analysis and it was concluded that their impacts were similar. As per the assessments of these two receptors, the impacts on the other receptors within this area are assessed as being **None (worst case scenario).**

Residential Area 5

6.128. This encompasses a number of residential receptors including those at receptor points 82-89 (assessed above) (See **Figure 1: Appendix A**). Each receptor assessed represents multiple receptors as they are in close proximity of each other, so the worst-case scenario is assumed for the impact of glint and glare. All receptors were considered within the visibility analysis and it was concluded that their impacts were similar. As per the assessments of these eight receptors, the impacts on the other receptors within this area are assessed as being **None (worst case scenario).**

Road Receptors

6.129. **Table 6-2** shows a summary of the modelling results for each of the Road Receptor Points whilst the detailed results and ocular impact charts can be viewed in **Appendix D and E.**

6.130. The 24 receptors (57 – 80) within the no-reflection zones outlined previously have been excluded from the detailed modelling as they will never receive glint and glare impacts from the Scheme.

Table 6-2: Potential for Glint and Glare impact on Road Based Receptors

Receptor	Green Glare (mins)	Yellow Glare (mins)	Red Glare (mins)	Magnitude of Impact	Worst Case Tilt
1	0	0	0	None	N/A
2	0	35	0	High	30
3	0	1372	0	High	30
4	0	2218	0	High	30
5	0	1404	0	High	30
6	0	3471	0	High	10
7	0	4984	0	High	10
8	0	6118	0	High	10
9	0	3627	0	High	10
10	0	2493	0	High	10
11	0	1818	0	High	30
12	0	2214	0	High	10
13	0	1354	0	High	10

14	0	2428	0	High	30
15	0	3117	0	High	30
16	0	5861	0	High	30
17	0	3638	0	High	10
18	0	6050	0	High	30
19	0	6987	0	High	30
20	0	3643	0	High	10
21	0	3108	0	High	30
22	0	4255	0	High	30
23	0	3193	0	High	30
24	0	2771	0	High	30
25	0	2914	0	High	30
26	0	3058	0	High	30
27	0	0	0	None	N/A
28	0	1155	0	High	10
29	0	2219	0	High	30
30	0	2674	0	High	30
31	0	2619	0	High	30
32	0	2690	0	High	30
33	0	2472	0	High	30
34	0	2173	0	High	30
35	0	2235	0	High	30
36	0	1374	0	High	30
37	0	878	0	High	30
38	0	1566	0	High	30
39	0	1753	0	High	10
40	0	2672	0	High	10
41	0	2751	0	High	10

42	0	543	0	High	30
43	0	1724	0	High	30
44	0	2138	0	High	30
45	0	2291	0	High	30
46	0	5	0	High	30
47	0	2709	0	High	10
48	0	0	0	None	N/A
49	0	4	0	High	30
50	0	3138	0	High	10
51	0	3217	0	High	10
52	0	3244	0	High	30
53	0	2909	0	High	30
54	0	2532	0	High	30
55	0	1844	0	High	30
56	0	3	0	High	30

6.131. As can be seen in Table 6-2, there are 53 receptor points which have potential glare impacts with the "potential for after-image" (yellow glare), which is a High impact. Appendix D and E shows detailed analysis of when the glint and glare impacts are possible, whilst also showing from which parts of the solar farm the solar glint is reflected from.

6.132. Appendix J shows two 2021 Google Earth images taken towards the Scheme location at each of the receptor points where an impact is anticipated. The first image is a ground level terrain view and is based on the height data of the surrounding land showing no intervening vegetation or buildings. The solar farm has been drawn as a white polygon and can be seen on the images when the solar farm is theoretically visible. The area of the solar farm from where reflections may be possible has been drawn as a yellow polygon. The second image is a street view image pointing in the same direction as the terrain image. This gives a good indication as to whether the area of the solar farm where reflections are theoretically possible will be visible from the receptor point.

6.133. As can be seen in Appendix J, views of the Scheme from all receptors, with exception of receptors 7, 8, 16, 17, 18, 19, 22 and 53, are blocked by a mixture of intervening vegetation, buildings, and topography. Therefore, impacts upon these receptors reduce to None. Impacts upon receptors 7, 8, 16, 17, 18, 19, 22 and 53, remain High.

Rail Receptors

6.134. **Table 6-3** shows a summary of the modelling results for each of the Rail Receptor Points whilst the detailed results and ocular impact charts can be viewed in **Appendix F and G**.

6.135. The five receptors within the no-reflection zones outlined previously have been excluded from the detailed modelling as they will never receive glint and glare impacts from the Scheme.

Table 6-3: Potential for Glint and Glare impact on Rail Based Receptors

Receptor	Green Glare (mins)	Yellow Glare (mins)	Red Glare (mins)	Magnitude of Impact	Worst Case Tilt
1	0	0	0	None	N/A
2	0	796	0	High	10
3	0	1444	0	High	10

6.136. As can be seen in **Table 6-3,** there are two receptor points which have potential glare impacts with the "potential for after-image" (yellow glare), which is a **High** impact. **Appendix F and G** shows detailed analysis of when the glint and glare impacts are possible, whilst also showing from which parts of the solar farm the solar glint is reflected from.

6.137. **Appendix J** shows 2021 Google Earth images that give an insight into how each receptor will be impacted by the glint and glare from the Scheme. There is a mixture of images taken, which include aerial, ground level and street level. The aerial images show the location of the receptor with the solar farm drawn as a white polygon and can be seen on the images when the solar farm is theoretically visible. The area of the solar farm from where reflections may be possible has been drawn as a yellow polygon. The ground level terrain is based on the height data of the surrounding land showing no intervening vegetation or buildings. The white and yellow polygons can be seen in this view also. The street view gives a good indication as to whether the area of the solar farm where reflections are theoretically possible will be visible from the receptor point.

Receptor 2

6.138. The 'Glare Reflections on the PV Footprint' chart shown in **Appendix F**, shows that a southern section of the Scheme can potentially impact on the receptor.

6.139. The image in **Appendix J** is an aerial image which shows the receptor's location in relation to the Scheme. The second image has been taken where the red point is located on the aerial image, which shows that the railway is built into the ground. This second image confirms that the verge to the north of the railway line will be sufficient to screen all views of the Scheme where glint and glare is possible. Therefore, the impact is reduced to **None**.

Receptor 3

6.140. The 'Glare Reflections on the PV Footprint' chart shown in **Appendix F**, shows that a southern section of the Scheme can potentially impact on the receptor.

6.141. The image in **Appendix J** is an aerial image which shows the receptor's location in relation to the Scheme. The second image has been taken where the red point is located on the aerial image and utilises Google Earth's 3D Modelling. This second image shows that the railway line is built into the ground with verges either side of the railway line. This image confirms that the verges will be sufficient to screen all views of the Scheme where glint and glare is possible. Therefore, the impact is reduced to **None**.

Aviation Receptors

6.142. **Table 6-4** shows a summary of the modelling results for each of the runway approach paths and the ATCT's, whilst the detailed results and ocular impact charts can be viewed in **Appendix H and I.**

Table 6-4: Summary of Earls Colne Airfield and Andrewsfield Airfield Glare Results

Component	Green Glare (mins)	Yellow Glare (mins)	Red Glare (mins)
Earls Colne Airfield			
Runway 06	0	0	0
Runway 24	0	0	0
ATCT	0	0	0
Andrewsfield Airfield			
Runway 09	0	0	0
Runway 27	0	0	0
ATCT	0	0	0

6.143. As can be seen in **Table 6-4** there is no glare anticipated at all of the runways and both ATCTs.

6.144. Therefore, the impact on aviation assets is **None** and **not significant**.

7. MITIGATION

7.1. It is proposed that mitigation measures are put in place due to the **High** impacts that were found during the visibility analysis at Residential Receptors 16, 17, 18, 22, 23, 32, 38, 73, 74 and 96 and Road Receptors 7, 8, 16, 17, 18, 19, 22 and 53. These measures include:

- Hedgerows to be implemented along the following boundaries (See **Figure 6: Appendix A** for PDA reference): Western border of PDA 5, 6, 19, 21, 22, 26 and 28, southeast border of PDA 6, southwest border of PDA 15, southern border of PDA 21, northern border of PDA 27 and eastern border of PDA 10. These hedgerows will be infilled and maintained to a height of at least 3m and will screen all views of the Scheme where glint and glare is possible from Residential Receptors 16, 17, 18, 22, 23, 32, 38, 73, 74 and 96 and Road Receptors 7, 8, 16, 17, 18, 19, 22 and 53.

- Until those hedgerows are grown sufficiently, a temporary 3m temporary wooden solid hoarding will be implemented and then removed once the hedgerows are of a sufficient height. These measures are confirmed within ***Chapter 10: Landscape and Visual***, of this ES, **[EN010118/APP/6.1]** and within the ***Outline Landscape and Ecological Management Plan*** (OLEMP) **[EN010118/APP/7.13]**.

7.2. **Tables 7-1, 7-2, 7-3 and 7-4** show the impacts at each stage of the glint and glare analysis, with the final residual impacts considered once the mitigation is in place.

Table 7-1: Residual Glint and Glare Impacts on Residential Receptors

Receptor	Magnitude of Impact		
	After Geometric Analysis	After Visibility Analysis	Residual Impacts
1	None	None	None
2	None	None	None
3	None	None	None
4	Low	None	None
5	High	None	None
6	High	None	None
7	High	None	None
8	Low	None	None

9	High	None	None
10	High	None	None
11	High	None	None
12	High	None	None
13	High	None	None
14	Medium	None	None
15	Low	None	None
16	High	High	None
17	High	High	None
18	High	High	None
19	High	None	None
20	High	Low	Low
21	High	High	None
22	High	High	None
23	High	None	None
24	High	None	None
25	High	None	None
26	High	None	None
27	High	None	None
28	High	None	None
29	High	None	None
30	High	None	None
31	High	None	None
32	High	High	None
33	High	None	None
34	Low	None	None
35	High	None	None
36	High	None	None

37	High	None	None
38	High	High	None
39	High	None	None
40	High	None	None
41	High	None	None
42	High	None	None
43	Low	None	None
44	Low	None	None
45	Low	None	None
46	High	None	None
47	High	None	None
48	Medium	None	None
49	High	None	None
50	High	None	None
51	High	None	None
52	High	None	None
53	None	None	None
54	High	None	None
55	Low	None	None
56	High	None	None
57	High	None	None
58	High	None	None
59	High	None	None
60	High	None	None
61	Medium	None	None
62	None	None	None
63	None	None	None
64	High	None	None

65	High	None	None
66	High	None	None
67	High	None	None
68	High	None	None
69	High	None	None
70	High	None	None
71	High	None	None
72	High	None	None
73	High	High	None
74	High	High	None
75	High	None	None
76	High	None	None
77	High	None	None
78	High	Low	Low
79	High	Low	Low
80	High	None	None
81	High	None	None
82	Low	None	None
83	High	None	None
84	High	None	None
85	Medium	None	None
86	Medium	None	None
87	Low	None	None
88	Low	None	None
89	Medium	None	None
90	High	None	None
91	High	None	None
92	High	None	None

93	High	Low	Low
94	High	Low	None
95	High	Low	Low
96	High	High	None
97	High	Low	Low
98	High	Low	Low
99	Low	None	None

Table 7-2: Residual Glint and Glare Impacts on Road Receptors

Receptor	Magnitude of Impact		
	After Geometric Analysis	After Visibility Analysis	Residual Impacts
1	None	None	None
2	High	None	None
3	High	None	None
4	High	None	None
5	High	None	None
6	High	None	None
7	High	High	None
8	High	High	None
9	High	None	None
10	High	None	None
11	High	None	None
12	High	None	None
13	High	None	None
14	High	None	None
15	High	None	None
16	High	High	None
17	High	High	None

18	High	High	None
19	High	High	None
20	High	None	None
21	High	None	None
22	High	High	None
23	High	None	None
24	High	None	None
25	High	None	None
26	High	None	None
27	None	None	None
28	High	None	None
29	High	None	None
30	High	None	None
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32	High	None	None
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35	High	None	None
36	High	None	None
37	High	None	None
38	High	None	None
39	High	None	None
40	High	None	None
41	High	None	None
42	High	None	None
43	High	None	None
44	High	None	None
45	High	None	None

46	High	None	None
47	High	None	None
48	None	None	None
49	High	None	None
50	High	None	None
51	High	None	None
52	High	None	None
53	High	High	None
54	High	None	None
55	High	None	None
56	High	None	None

Table 7-3: Residual Glint and Glare Impacts on Rail Receptors

Receptor	Magnitude of Impact		
	After Geometric Analysis	After Visibility Analysis	Residual Impacts
1	None	None	None
2	High	None	None
3	High	None	None

Table 7-4: Residual Glint and Glare Impacts on Aviation Receptors

Receptor	Magnitude of Impact		
	After Geometric Analysis	After Visibility Analysis	Residual Impacts
Earls Colne Airfield			
Runway 06	None	None	None
Runway 24	None	None	None
ATCT	None	None	None
Norwich Airport			

Runway 09	None	None	None
Runway 27	None	None	None
ATCT	None	None	None

8. SUMMARY

8.1. There is little guidance or policy available in the UK at present in relation to the assessment of glint and glare from Scheme developments. However, it is recognised as a potential impact which needs to be considered for a Scheme, therefore this assessment considers the potential impacts on ground-based receptors such as roads, rail, and residential dwellings as well as aviation assets.

8.2. This assessment considers the potential impacts on ground-based receptors such as roads, rail and residential dwellings as well as aviation assets. A 1km survey area around the Order limits is considered adequate for the assessment of residential receptors and road receptors, whilst a 30km study area is chosen for aviation receptors. Within the respective study areas of the Order limits, there are 133 residential receptors, 80 road receptors and eight rail receptors which were considered. As per the methodology section, where there are several residential receptors within close proximity, a representative dwelling or dwellings is/are chosen for full assessment as the impacts will not vary to any significant degree. Where small groups of receptors have been evident, the receptors on either end of the group have been assessed in detail. 34 residential, 24 road and five rail receptors were dismissed as they are located within the no reflection zones. 19 aerodromes are located within the 30km study area; however, only Andrewsfield Airfield and Earls Colne Airfield required a detailed assessment as the Scheme is located within their respective safeguarding buffer zones. The other 17 aerodromes did not require a detailed assessment due to their size and/or orientation in relation to the Scheme.

8.3. Geometric analysis was conducted at 99 individual residential receptors, 56 road receptors and three rail receptors. Also, geometric analysis was conducted at four runways and two Air Traffic Control Towers (ATCT) at Andrewsfield Airfield and Earls Colne Airfield.

8.4. The assessment concludes that:

- Solar reflections are possible at 93 of the 99 residential receptors assessed within the 1km study area. The initial bald-earth scenario identified potential impacts as **High** at 75 receptors, **Medium** at six receptors, **Low** at 12 receptors and **None** at the remaining six receptors. Upon reviewing the actual visibility of the receptors, glint and glare impacts remain **High** for 10 receptors and reduce to **Low** for seven receptors and **None** for all remaining receptors. Once mitigation was considered impacts remained **Low** for seven

receptors but reduced to **None** for all remaining receptors. Therefore, overall impacts on residential receptors are considered to be not significant and therefore **acceptable**.

- Solar reflections are possible at 53 of the 56 road receptors assessed within the 1km study area. Upon reviewing the actual visibility of the receptors, glint and glare impacts remain **High** for eight receptors and reduce to **None** for the remaining 48 receptors. Once mitigation impacts were implemented, overall impacts at all road receptors reduce to **None**.

- Solar reflections are possible at two of the three rail receptors assessed within the 1km study area. Upon reviewing the actual visibility of the receptors, glint and glare impacts reduce to **None** for all receptors. Therefore, overall impacts for rail receptors are **None**.

- Four runways and two ATCT's were assessed in detailed at Earls Colne Airfield and Andrewsfield Airfield and the impacts were found to be **None.**

8.5. Mitigation measures are required to be put in place due to the **High** impacts that were found during the visibility analysis at Residential Receptors 16, 17, 18, 22, 23, 32, 38, 73, 74 and 96 and Road Receptors 7, 8, 16, 17, 18, 19, 22 and 53. This includes hedgerows to be grown, infilled, gapped up and maintained to a height of at least 3m in those areas outlined in **paragraph 7.1**. Until those hedgerows are grown sufficiently, a temporary 3m temporary wooden solid hoarding will be implemented and then removed once the hedgerows are of a sufficient height.

8.6. The effects of glint and glare and their impact on local receptors has been analysed in detail and there is predicted to be **Low** impacts at seven Residential Receptors, whilst the remaining ground-based receptors are expected to have **No Impacts** once mitigation measures have been considered. Impacts upon aviation receptors are predicted to be **None.** Therefore, overall impacts are **Negligible**.

9. APPENDICES

APPENDIX A: FIGURES

- Figure 1: Residential Receptor Map
- Figure 2: Road Receptor Map
- Figure 3: Rail Receptor Map

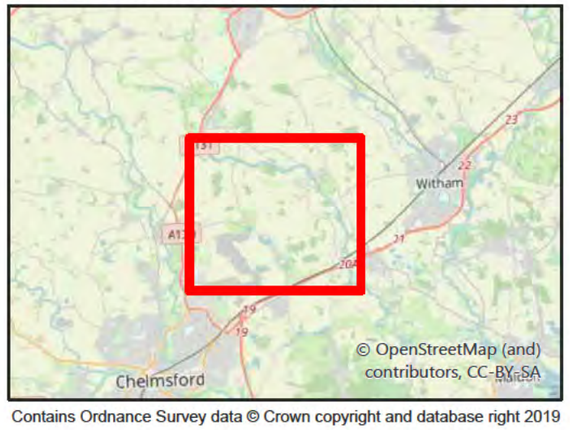
Longfield Solar Farm
Residential Based Receptors
Figure 1

Key

- Development Boundary
- Panel Boundary
- 1km Study Area
- Glare Not Possible at Receptor
- Glare Possible at Receptor
- Residential Area
- Non-Reflection Zones

0 0.25 0.5 1 Kilometers

Neo Office Address:
Wright Business Centre, 1 Lonmay Road, Glasgow, G33 4EL



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Date: 13/08/2021
Drawn By: Scott Griffin
Scale (A3): 1:22,500
Drawing No: NEO00870/001I/A

ENVIRONMENTAL

Longfield Solar Farm
Road Based Receptors
Figure 2

Key

- Development Boundary
- Panel Boundary
- 1km Study Area
- Glare Not Possible at Receptor
- Glare Possible at Receptor
- Non-Reflection Zones

0 0.25 0.5 1 Kilometers

Neo Office Address:
Wright Business Centre, 1 Lonmay Road, Glasgow, G33 4EL

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Drawing No: NEO00870/002I/A

ENVIRONMENTAL

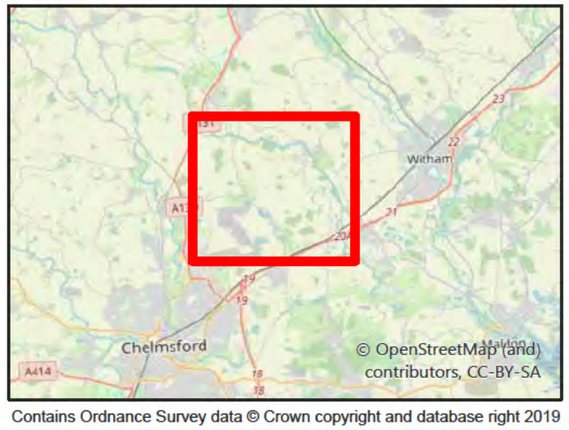
Longfield Solar Farm
Rail Based Receptors
Figure 3

Key

- Development Boundary
- Panel Boundary
- 1km Study Area
- Glare Not Possible at Receptor
- Glare Possible at Receptor
- Non-Reflection Zones

0 0.25 0.5 1 Kilometers

Neo Office Address:
Wright Business Centre, 1 Lonmay Road, Glasgow, G33 4EL



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Date: 13/08/2021
Drawn By: Scott Griffin
Scale (A3): 1:22,500
Drawing No: NEO00870/003I/A

neo ENVIRONMENTAL

AERODROME CHART - ICAO

ARP 515452N 0004057E

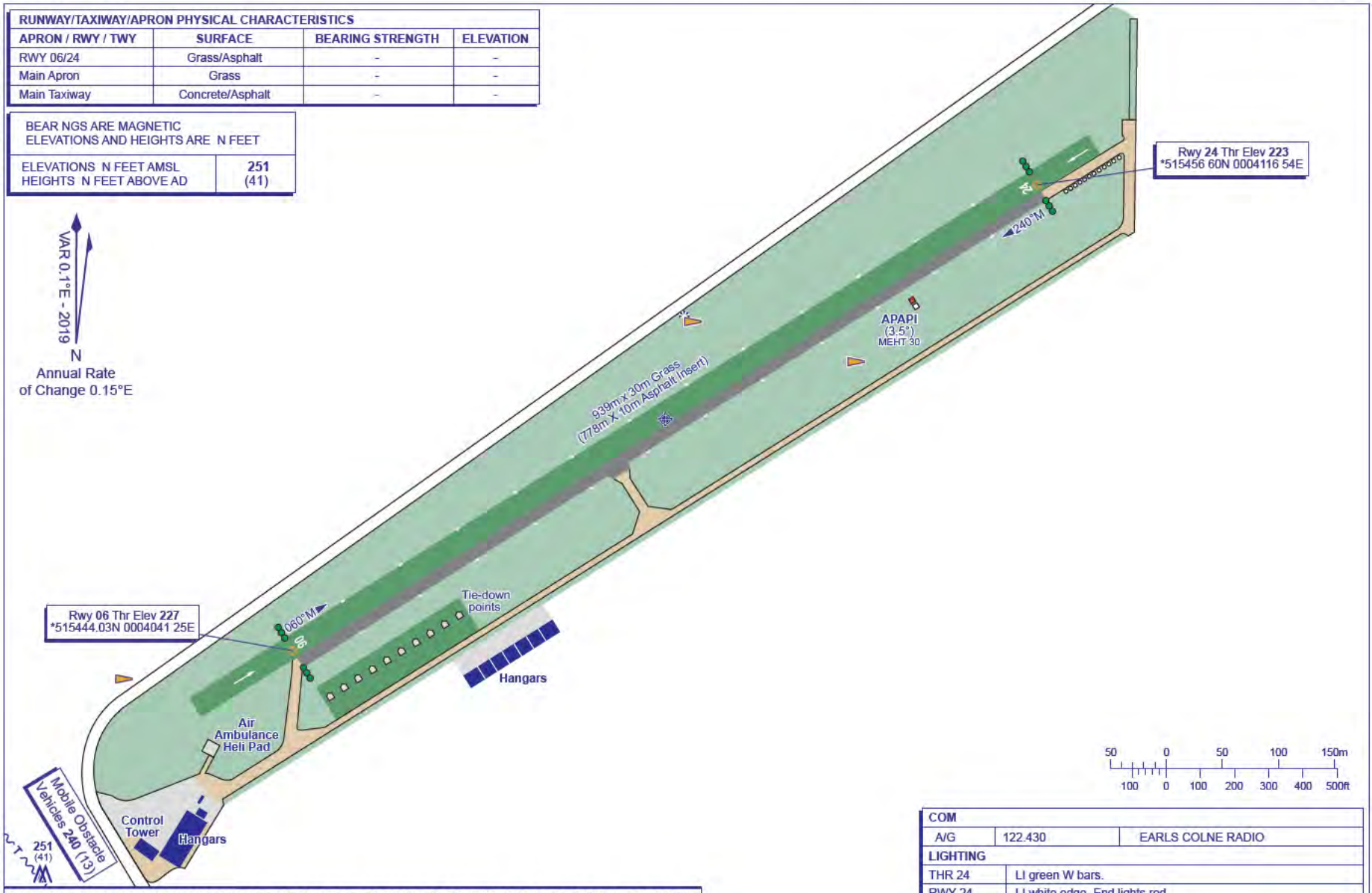
AD ELEV 227FT

EARLS COLNE
EGSR

AERO INFO DATE 29 NOV 18

RUNWAY/TAXIWAY/APRON PHYSICAL CHARACTERISTICS			
APRON / RWY / TWY	SURFACE	BEARING STRENGTH	ELEVATION
RWY 06/24	Grass/Asphalt	-	-
Main Apron	Grass	-	-
Main Taxiway	Concrete/Asphalt	-	-

BEAR NGS ARE MAGNETIC ELEVATIONS AND HEIGHTS ARE N FEET	
ELEVATIONS N FEET AMSL HEIGHTS N FEET ABOVE AD	251 (41)



COM		
A/G	122.430	EARLS COLNE RADIO
LIGHTING		
THR 24	LI green W bars.	
RWY 24	LI white edge. End lights red.	

CHANGE (3/19): MAG VAR/ANNUAL RATE OF CHANGE. RUNWAY HEADINGS. COM FREQUENCY AMENDED.

BEAR NGS ARE MAGNETIC ELEVATIONS AND HEIGHTS ARE N FEET	
ELEVATIONS IN FEET AMSL HEIGHTS N FEET ABOVE AD	291 (5)

VAR 0.0°E - 2019

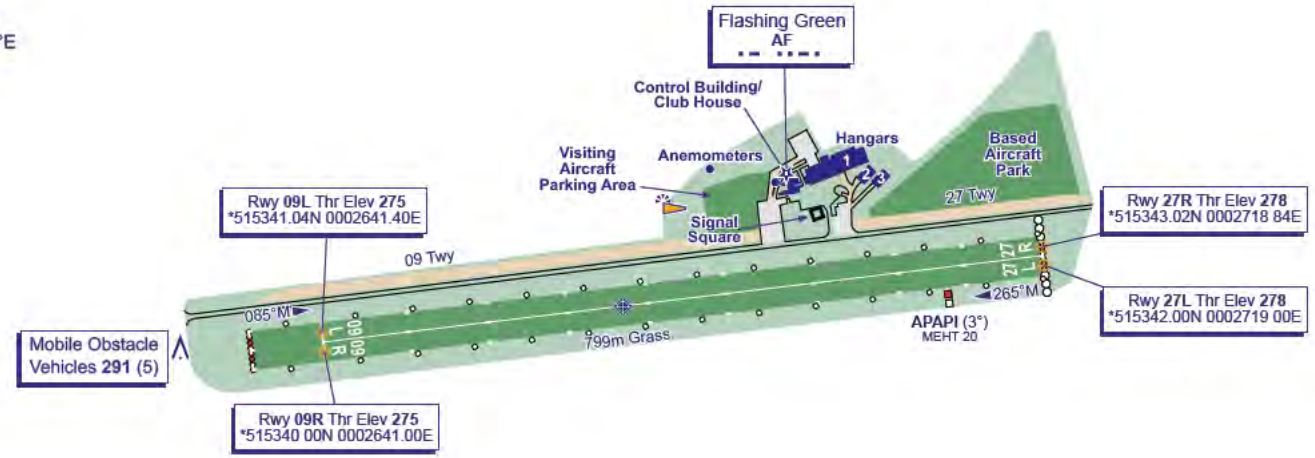
N

Annual Rate of Change 0.15°E

RUNWAY/TAXIWAY/APRON PHYSICAL CHARACTERISTICS			
APRON / RWY / TWY	SURFACE	BEARING STRENGTH	ELEVATION
RWY 09L/27R	Grass	-	-
RWY 09R/27L	Grass	-	-
Main Apron	Asphalt	-	-
Taxiway 09	Grass	-	-
Taxiway 27	Grass	-	-

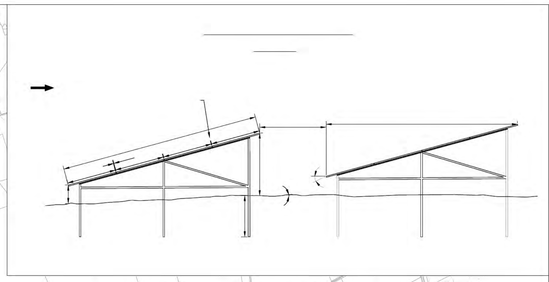
50 0 50 100 150m

100 0 500ft



COM		
A/G	130.555	ANDREWSFIELD RADIO
LIGHTING		
THR 09/27	LI.	
RWY 09/27	LI omni-d white edge. End lights red.	

CHANGE (4/19): FREQUENCY. WINDSOCK LIT. MAG VAR. RUNWAY MAG BEARINGS.



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eDF renewables

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NOTES:

RA

ARCUS

ForgeSolar

Longfield Solar Farm

Longfield Solar Farm Residential 10 Deg

Created Aug. 13, 2021
Updated Aug. 26, 2021
Time-step 1 minute
Timezone offset UTC0
Site ID 57362.10147

Project type Advanced
Project status: active
Category 100 MW to 1 GW

Misc. Analysis Settings

DNI: **varies (1,000.0 W/m^2 peak)**
Ocular transmission coefficient: **0.5**
Pupil diameter: **0.002 m**
Eye focal length: **0.017 m**
Sun subtended angle: **9.3 mrad**

Analysis Methodologies:

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

Summary of Results Glare with potential for temporary after-image predicted

PV Name	Tilt	Orientation	"Green" Glare	"Yellow" Glare	Energy Produced
	deg	deg	min	min	kWh
PV array 1	10.0	180.0	404	116,557	-
PV array 2	10.0	180.0	0	170,304	-

Component Data

PV Array(s)

Total PV footprint area: 3,752,421 m^2

Name: PV array 1
Axis tracking: Fixed (no rotation)
Tilt: 10.0 deg
Orientation: 180.0 deg
Footprint area: 1,402,760 m^2
Rated power: -
Panel material: Light textured glass with AR coating
Vary reflectivity with sun position? Yes
Correlate slope error with surface type? Yes
Slope error: 9.16 mrad

Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	m	m	m
1	51.804787	0.520991	57.12	3.00	60.12
2	51.803301	0.521098	57.74	3.00	60.74
3	51.803115	0.522965	57.06	3.00	60.06
4	51.802691	0.521463	58.12	3.00	61.12
5	51.802160	0.521570	58.34	3.00	61.34
6	51.801735	0.521634	58.41	3.00	61.41
7	51.801337	0.521334	58.53	3.00	61.53
8	51.801191	0.520798	58.56	3.00	61.56
9	51.800740	0.520519	59.45	3.00	62.45
10	51.800554	0.520240	59.54	3.00	62.54
11	51.799811	0.520647	59.49	3.00	62.49
12	51.799919	0.521295	59.70	3.00	62.70
13	51.799216	0.521574	59.41	3.00	62.41
14	51.797292	0.522218	57.37	3.00	60.37
15	51.797464	0.522647	57.43	3.00	60.43
16	51.796389	0.524149	55.65	3.00	58.65
17	51.796893	0.525265	55.84	3.00	58.84
18	51.797398	0.526273	55.88	3.00	58.88
19	51.798565	0.527925	56.38	3.00	59.38
20	51.798526	0.529256	56.57	3.00	59.57
21	51.797026	0.531294	57.56	3.00	60.56
22	51.796296	0.530028	59.16	3.00	62.16
23	51.796601	0.529599	58.99	3.00	61.99
24	51.796588	0.528827	59.00	3.00	62.00
25	51.795381	0.527024	58.65	3.00	61.65
26	51.793330	0.529385	57.34	3.00	60.34
27	51.793582	0.529900	58.05	3.00	61.05
28	51.795148	0.531380	58.74	3.00	61.74
29	51.793901	0.533204	57.20	3.00	60.20
30	51.794046	0.533848	56.68	3.00	59.68
31	51.794591	0.534985	56.71	3.00	59.71
32	51.794962	0.536444	54.53	3.00	57.53
33	51.795599	0.538054	52.38	3.00	55.38
34	51.796555	0.538740	53.53	3.00	56.53
35	51.797139	0.538225	53.69	3.00	56.69
36	51.797669	0.538697	53.47	3.00	56.47
37	51.797619	0.539062	53.35	3.00	56.35
38	51.797924	0.539706	53.42	3.00	56.42
39	51.798295	0.539813	54.38	3.00	57.38
40	51.798468	0.540757	55.18	3.00	58.18
41	51.798269	0.540907	54.45	3.00	57.45
42	51.798893	0.542668	54.20	3.00	57.20
43	51.801521	0.541295	53.70	3.00	56.70
44	51.801799	0.541424	53.52	3.00	56.52
45	51.802277	0.540630	53.29	3.00	56.29
46	51.803073	0.539664	51.85	3.00	54.85
47	51.803750	0.538827	52.99	3.00	55.99
48	51.804201	0.537690	52.47	3.00	55.47
49	51.804612	0.535652	54.42	3.00	57.42
50	51.807372	0.537969	46.50	3.00	49.50
51	51.807943	0.536274	47.63	3.00	50.63
52	51.808089	0.534407	47.58	3.00	50.58
53	51.808831	0.533077	43.93	3.00	46.93
54	51.809468	0.531103	39.62	3.00	42.62
55	51.809521	0.528828	39.21	3.00	42.21
56	51.808314	0.528270	44.59	3.00	47.59
57	51.809084	0.527626	43.35	3.00	46.35
58	51.809375	0.526682	43.20	3.00	46.20
59	51.808752	0.526189	45.89	3.00	48.89
60	51.806841	0.525867	52.84	3.00	55.84
61	51.806908	0.524579	54.18	3.00	57.18

62	51.805952	0.524837	55.76	3.00	58.76
63	51.804944	0.524987	56.69	3.00	59.69
64	51.804228	0.524665	57.39	3.00	60.39
65	51.803909	0.526103	58.34	3.00	61.34
66	51.803936	0.526875	58.45	3.00	61.45
67	51.802556	0.528764	58.67	3.00	61.67
68	51.803392	0.530008	58.65	3.00	61.65
69	51.802542	0.531446	57.77	3.00	60.77
70	51.801945	0.532068	57.63	3.00	60.63
71	51.801693	0.532884	57.58	3.00	60.58
72	51.801348	0.533270	58.29	3.00	61.29
73	51.800645	0.532648	59.02	3.00	62.02
74	51.800711	0.531939	58.11	3.00	61.11
75	51.799517	0.531038	59.24	3.00	62.24
76	51.798920	0.530437	58.22	3.00	61.22
77	51.798880	0.529086	57.88	3.00	60.88
78	51.798734	0.527862	56.42	3.00	59.42
79	51.799225	0.527004	57.56	3.00	60.56
80	51.799729	0.526854	57.42	3.00	60.42
81	51.801043	0.524944	59.21	3.00	62.21
82	51.801587	0.525502	58.41	3.00	61.41
83	51.803179	0.523292	56.99	3.00	59.99
84	51.804294	0.524365	57.17	3.00	60.17

Name: PV array 2
Axis tracking: Fixed (no rotation)
Tilt: 10.0 deg
Orientation: 180.0 deg
Footprint area: 2,349,662 m^2
Rated power: -
Panel material: Light textured glass with AR coating
Vary reflectivity with sun position? Yes
Correlate slope error with surface type? Yes
Slope error: 9.16 mrad

Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	m	m	m
1	51.799882	0.546503	50.73	3.00	53.73
2	51.799126	0.544829	52.71	3.00	55.71
3	51.798064	0.541117	53.39	3.00	56.39
4	51.797533	0.541696	52.60	3.00	55.60
5	51.797321	0.542833	51.75	3.00	54.75
6	51.796631	0.542748	49.86	3.00	52.86
7	51.796724	0.541246	50.32	3.00	53.32
8	51.796737	0.540130	51.17	3.00	54.17
9	51.796352	0.539529	51.24	3.00	54.24
10	51.795928	0.538971	51.47	3.00	54.47
11	51.795304	0.538413	52.49	3.00	55.49
12	51.794415	0.535473	55.88	3.00	58.88
13	51.793924	0.534358	56.70	3.00	59.70
14	51.793419	0.533650	57.22	3.00	60.22
15	51.792875	0.534765	57.14	3.00	60.14
16	51.792331	0.536182	56.85	3.00	59.85
17	51.791536	0.535145	56.80	3.00	59.80
18	51.791682	0.534737	56.90	3.00	59.90
19	51.790275	0.532592	56.13	3.00	59.13
20	51.789704	0.531068	53.92	3.00	56.92
21	51.788576	0.530853	51.99	3.00	54.99
22	51.787859	0.529223	48.96	3.00	51.96
23	51.787448	0.529394	48.11	3.00	51.11
24	51.786744	0.530038	47.80	3.00	50.80
25	51.786067	0.531626	47.16	3.00	50.16
26	51.785935	0.533107	49.22	3.00	52.22
27	51.786731	0.535810	52.30	3.00	55.30
28	51.786559	0.536068	51.54	3.00	54.54
29	51.786705	0.536947	52.17	3.00	55.17
30	51.786094	0.536518	52.38	3.00	55.38
31	51.784634	0.538664	49.95	3.00	52.95
32	51.783360	0.540102	49.54	3.00	52.54
33	51.784090	0.541690	51.06	3.00	54.06
34	51.782536	0.542762	50.36	3.00	53.36
35	51.782404	0.542119	49.21	3.00	52.21
36	51.781567	0.542526	48.20	3.00	51.20
37	51.781328	0.541389	47.81	3.00	50.81
38	51.780625	0.541818	47.01	3.00	50.01
39	51.780837	0.543020	46.97	3.00	49.97
40	51.780147	0.543363	45.85	3.00	48.85
41	51.779696	0.542956	45.30	3.00	48.30
42	51.779178	0.543385	45.52	3.00	48.52
43	51.779165	0.543921	46.43	3.00	49.43
44	51.779749	0.545402	47.23	3.00	50.23
45	51.778408	0.547161	46.24	3.00	49.24
46	51.778700	0.547762	46.26	3.00	49.26
47	51.777638	0.549007	45.35	3.00	48.35
48	51.778501	0.550723	44.16	3.00	47.16
49	51.777492	0.550809	44.37	3.00	47.37
50	51.776231	0.551925	43.20	3.00	46.20
51	51.776523	0.552483	42.43	3.00	45.43
52	51.775792	0.553384	43.24	3.00	46.24
53	51.776323	0.555036	44.10	3.00	47.10
54	51.776416	0.555335	44.03	3.00	47.03
55	51.777040	0.555936	44.24	3.00	47.24
56	51.777492	0.556751	44.85	3.00	47.85
57	51.777970	0.557609	44.02	3.00	47.02
58	51.778434	0.559240	43.22	3.00	46.22
59	51.778819	0.561257	42.29	3.00	45.29
60	51.779165	0.562609	41.71	3.00	44.71
61	51.780320	0.562995	39.68	3.00	42.68

62	51.781647	0.560656	42.82	3.00	45.82
63	51.784382	0.562330	47.96	3.00	50.96
64	51.785059	0.559176	47.28	3.00	50.28
65	51.784992	0.558875	47.52	3.00	50.52
66	51.784594	0.556987	47.09	3.00	50.09
67	51.783652	0.555785	46.53	3.00	49.53
68	51.784116	0.554627	46.10	3.00	49.10
69	51.784647	0.554863	47.33	3.00	50.33
70	51.785218	0.553296	49.80	3.00	52.80
71	51.783227	0.550700	49.61	3.00	52.61
72	51.783306	0.548254	49.08	3.00	52.08
73	51.784103	0.548533	49.92	3.00	52.92
74	51.784873	0.549477	51.66	3.00	54.66
75	51.785563	0.548275	51.91	3.00	54.91
76	51.788775	0.542761	53.99	3.00	56.99
77	51.788603	0.542160	54.11	3.00	57.11
78	51.789664	0.540744	55.91	3.00	58.91
79	51.791801	0.544177	51.62	3.00	54.62
80	51.790063	0.546709	50.56	3.00	53.56
81	51.792707	0.551826	46.73	3.00	49.73
82	51.793158	0.553371	46.31	3.00	49.31
83	51.793835	0.554916	45.72	3.00	48.72
84	51.795016	0.555903	44.79	3.00	47.79
85	51.795380	0.553705	46.91	3.00	49.91
86	51.796004	0.552139	47.48	3.00	50.48
87	51.796813	0.550723	45.94	3.00	48.94
88	51.796176	0.548491	47.06	3.00	50.06
89	51.796654	0.547397	49.72	3.00	52.72
90	51.795911	0.545594	48.25	3.00	51.25
91	51.797132	0.543835	51.38	3.00	54.38
92	51.797410	0.544286	52.82	3.00	55.82
93	51.798061	0.544007	52.74	3.00	55.74
94	51.798047	0.545015	51.90	3.00	54.90
95	51.797490	0.545616	51.83	3.00	54.83
96	51.798883	0.548470	49.95	3.00	52.95
97	51.799534	0.547397	50.24	3.00	53.24

Discrete Observation Receptors

Number	Latitude	Longitude	Ground elevation	Height above ground	Total Elevation
	deg	deg	m	m	m
OP 1	51.812279	0.519188	45.45	2.00	47.45
OP 2	51.811848	0.520422	43.94	2.00	45.94
OP 3	51.811404	0.518652	47.19	2.00	49.19
OP 4	51.805081	0.510588	61.48	2.00	63.48
OP 5	51.804816	0.512766	61.67	2.00	63.67
OP 6	51.804378	0.514279	61.03	2.00	63.03
OP 7	51.804319	0.514644	61.38	2.00	63.38
OP 8	51.803642	0.515320	60.63	2.00	62.63
OP 9	51.803012	0.520239	58.94	2.00	60.94
OP 10	51.802444	0.520410	59.29	2.00	61.29
OP 11	51.801383	0.519997	59.31	2.00	61.31
OP 12	51.802056	0.514316	60.61	2.00	62.61
OP 13	51.801665	0.512900	60.41	2.00	62.41
OP 14	51.801565	0.512707	60.88	2.00	62.88
OP 15	51.799495	0.510894	63.98	2.00	65.98
OP 16	51.798931	0.508888	66.58	2.00	68.58
OP 17	51.798749	0.508496	66.46	2.00	68.46
OP 18	51.798543	0.508174	66.69	2.00	68.69
OP 19	51.798785	0.520302	61.17	2.00	63.17
OP 20	51.798371	0.520962	60.42	2.00	62.42
OP 21	51.797226	0.529216	58.72	2.00	60.72
OP 22	51.796144	0.527768	59.42	2.00	61.42
OP 23	51.795932	0.527489	59.28	2.00	61.28
OP 24	51.795620	0.521631	55.06	2.00	57.06
OP 25	51.794094	0.522125	55.76	2.00	57.76
OP 26	51.792528	0.523219	57.76	2.00	59.76
OP 27	51.791045	0.516267	58.74	2.00	60.74
OP 28	51.790395	0.516159	58.88	2.00	60.88
OP 29	51.786957	0.515923	57.52	2.00	59.52
OP 30	51.786964	0.516589	56.90	2.00	58.90
OP 31	51.792983	0.530119	59.09	2.00	61.09
OP 32	51.792724	0.531256	58.92	2.00	60.92
OP 33	51.791908	0.529156	56.01	2.00	58.01
OP 34	51.788584	0.528629	52.27	2.00	54.27
OP 35	51.786964	0.528876	49.87	2.00	51.87
OP 36	51.786331	0.528554	48.96	2.00	50.96
OP 37	51.786615	0.529096	48.74	2.00	50.74
OP 38	51.786051	0.534553	51.89	2.00	53.89
OP 39	51.785026	0.536269	51.80	2.00	53.80
OP 40	51.784810	0.537503	51.57	2.00	53.57
OP 41	51.782835	0.540903	50.49	2.00	52.49
OP 42	51.782228	0.540205	49.49	2.00	51.49
OP 43	51.781674	0.538870	47.38	2.00	49.38
OP 44	51.779827	0.535563	47.27	2.00	49.27
OP 45	51.779749	0.535338	47.54	2.00	49.54
OP 46	51.779847	0.538562	43.36	2.00	45.36
OP 47	51.780371	0.542349	48.18	2.00	50.18
OP 48	51.780062	0.542279	46.00	2.00	48.00
OP 49	51.778863	0.543291	47.54	2.00	49.54
OP 50	51.778000	0.544798	46.77	2.00	48.77
OP 51	51.777154	0.545297	46.67	2.00	48.67
OP 52	51.776701	0.546045	46.19	2.00	48.19
OP 53	51.773129	0.537947	45.14	2.00	47.14
OP 54	51.774399	0.542283	40.69	2.00	42.69
OP 55	51.775408	0.546494	43.76	2.00	45.76
OP 56	51.775823	0.546784	44.98	2.00	46.98
OP 57	51.777131	0.549128	45.59	2.00	47.59
OP 58	51.776490	0.548865	44.52	2.00	46.52
OP 59	51.775441	0.549332	44.24	2.00	46.24
OP 60	51.775292	0.549525	44.54	2.00	46.54

OP 61	51.774837	0.549058	43.86	2.00	45.86
OP 62	51.773945	0.550025	40.79	2.00	42.79
OP 63	51.774582	0.568598	37.45	2.00	39.45
OP 64	51.776096	0.575409	29.35	2.00	31.35
OP 65	51.776354	0.575785	28.82	2.00	30.82
OP 66	51.776869	0.573864	32.53	2.00	34.53
OP 67	51.777141	0.574063	33.40	2.00	35.40
OP 68	51.777576	0.576772	27.86	2.00	29.86
OP 69	51.778366	0.577040	25.37	2.00	27.37
OP 70	51.780228	0.577148	25.46	2.00	27.46
OP 71	51.781058	0.578215	26.57	2.00	28.57
OP 72	51.781496	0.575737	30.38	2.00	32.38
OP 73	51.785557	0.558552	49.02	2.00	51.02
OP 74	51.785723	0.556932	49.53	2.00	51.53
OP 75	51.791748	0.567652	43.78	2.00	45.78
OP 76	51.790991	0.564862	44.38	2.00	46.38
OP 77	51.791609	0.564551	44.58	2.00	46.58
OP 78	51.790560	0.554380	51.08	2.00	53.08
OP 79	51.790912	0.553093	50.35	2.00	52.35
OP 80	51.797510	0.549386	49.64	2.00	51.64
OP 81	51.799972	0.560689	38.38	2.00	40.38
OP 82	51.803136	0.559069	43.00	2.00	45.00
OP 83	51.802155	0.558801	39.29	2.00	41.29
OP 84	51.802155	0.557277	43.70	2.00	45.70
OP 85	51.802659	0.555679	46.30	2.00	48.30
OP 86	51.803130	0.554391	46.72	2.00	48.72
OP 87	51.804324	0.554938	46.61	2.00	48.61
OP 88	51.804689	0.553458	46.42	2.00	48.42
OP 89	51.804437	0.550668	47.18	2.00	49.18
OP 90	51.805180	0.548640	43.00	2.00	45.00
OP 91	51.803767	0.549145	47.82	2.00	49.82
OP 92	51.799749	0.547503	51.05	2.00	53.05
OP 93	51.799136	0.543952	53.54	2.00	55.54
OP 94	51.797991	0.540712	55.08	2.00	57.08
OP 95	51.801667	0.543104	53.85	2.00	55.85
OP 96	51.801680	0.541871	54.82	2.00	56.82
OP 97	51.801103	0.530670	59.92	2.00	61.92
OP 98	51.805081	0.538360	52.37	2.00	54.37
OP 99	51.809247	0.545849	37.00	2.00	39.00

Summary of PV Glare Analysis

PV configuration and total predicted glare

PV Name	Tilt	Orientation	"Green" Glare	"Yellow" Glare	Energy Produced	Data File
	deg	deg	min	min	kWh	
PV array 1	10.0	180.0	404	116,557	-	-
PV array 2	10.0	180.0	0	170,304	-	-

Distinct glare per month

Excludes overlapping glare from PV array for multiple receptors at matching time(s)

PV	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
pv-array-1 (green)	0	0	0	0	0	0	0	0	0	0	0	0
pv-array-1 (yellow)	0	1	894	1851	2708	3004	2935	2223	1322	148	0	0
pv-array-2 (green)	0	0	0	0	0	0	0	0	0	0	0	0
pv-array-2 (yellow)	0	59	1215	2297	3183	3306	3316	2745	1670	307	0	0

PV & Receptor Analysis Results

Results for each PV array and receptor

PV array 1 potential temporary after-image

Component	Green glare (min)	Yellow glare (min)
OP: OP 1	0	0
OP: OP 2	0	0
OP: OP 3	0	0
OP: OP 4	0	12
OP: OP 5	0	1939
OP: OP 6	0	1936
OP: OP 7	0	2425
OP: OP 8	0	16
OP: OP 9	0	2218
OP: OP 10	0	1608
OP: OP 11	0	2175
OP: OP 12	0	1568
OP: OP 13	0	1784
OP: OP 14	0	1545
OP: OP 15	0	2
OP: OP 16	0	2526
OP: OP 17	0	2318
OP: OP 18	0	2311
OP: OP 19	0	1814
OP: OP 20	0	2739
OP: OP 21	0	4541
OP: OP 22	0	4838

OP: OP 23	0	5094
OP: OP 24	0	2846
OP: OP 25	0	2657
OP: OP 26	0	2490
OP: OP 27	0	2258
OP: OP 28	0	2027
OP: OP 29	0	0
OP: OP 30	0	0
OP: OP 31	0	1642
OP: OP 32	0	1482
OP: OP 33	0	0
OP: OP 34	0	0
OP: OP 35	0	0
OP: OP 36	0	0
OP: OP 37	0	0
OP: OP 38	0	0
OP: OP 39	0	0
OP: OP 40	0	0
OP: OP 41	0	0
OP: OP 42	0	0
OP: OP 43	0	0
OP: OP 44	0	0
OP: OP 45	0	0
OP: OP 46	0	0
OP: OP 47	0	0
OP: OP 48	0	0
OP: OP 49	0	0
OP: OP 50	0	0
OP: OP 51	0	0
OP: OP 52	0	0
OP: OP 53	0	0
OP: OP 54	0	0
OP: OP 55	0	0
OP: OP 56	0	0
OP: OP 57	0	0
OP: OP 58	0	0
OP: OP 59	0	0
OP: OP 60	0	0
OP: OP 61	0	0
OP: OP 62	0	0
OP: OP 63	0	0
OP: OP 64	0	524
OP: OP 65	0	712
OP: OP 66	0	615
OP: OP 67	0	615
OP: OP 68	11	1017
OP: OP 69	47	1337
OP: OP 70	107	1626
OP: OP 71	145	1695
OP: OP 72	94	1717
OP: OP 73	0	1485
OP: OP 74	0	1344

OP: OP 75	0	1623
OP: OP 76	0	1809
OP: OP 77	0	1851
OP: OP 78	0	1731
OP: OP 79	0	1906
OP: OP 80	0	2270
OP: OP 81	0	1952
OP: OP 82	0	351
OP: OP 83	0	982
OP: OP 84	0	996
OP: OP 85	0	734
OP: OP 86	0	498
OP: OP 87	0	175
OP: OP 88	0	315
OP: OP 89	0	689
OP: OP 90	0	904
OP: OP 91	0	1703
OP: OP 92	0	2061
OP: OP 93	0	2278
OP: OP 94	0	2394
OP: OP 95	0	2956
OP: OP 96	0	5312
OP: OP 97	0	7575
OP: OP 98	0	1994
OP: OP 99	0	0

PV array 1 - OP Receptor (OP 1)

No glare found

PV array 1 - OP Receptor (OP 2)

No glare found

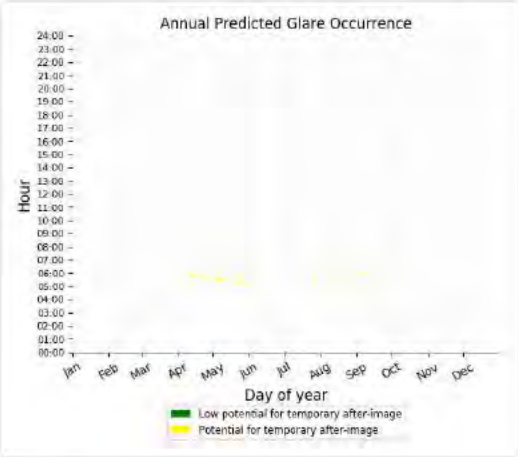
PV array 1 - OP Receptor (OP 3)

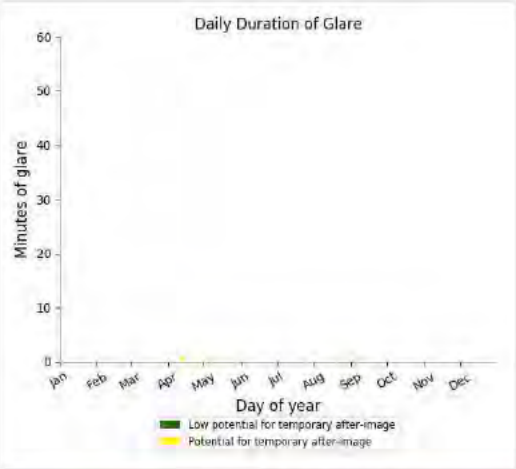
No glare found

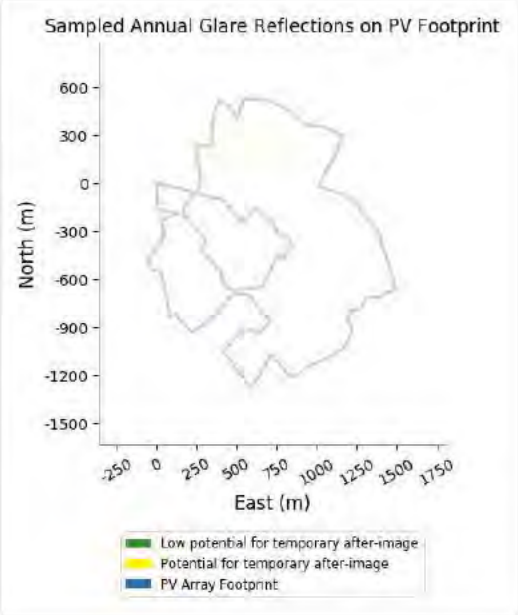
PV array 1 - OP Receptor (OP 4)

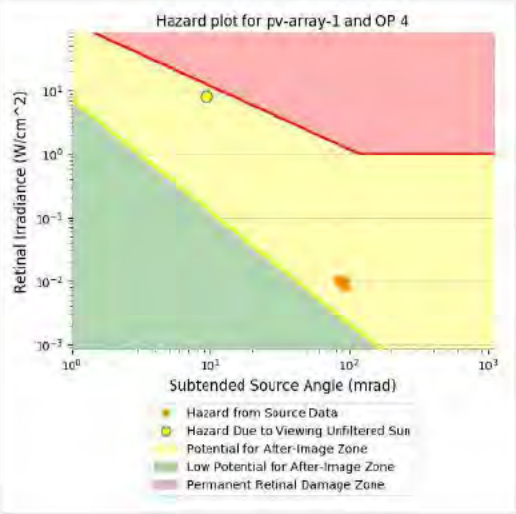
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 12 minutes of "yellow" glare with potential to cause temporary after-image.





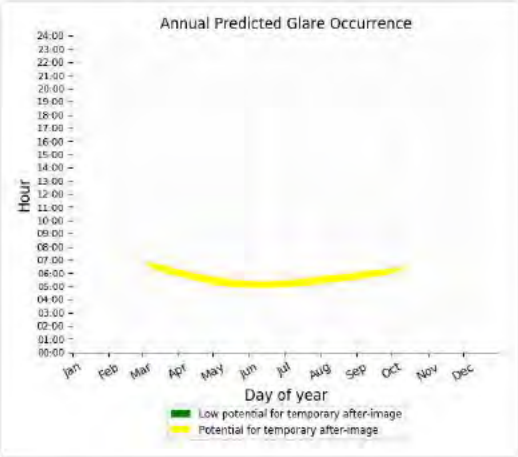


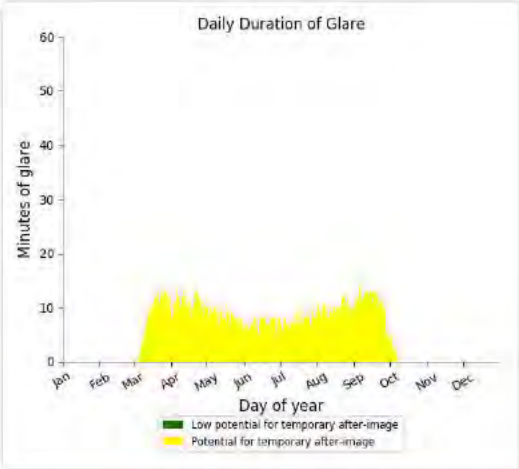


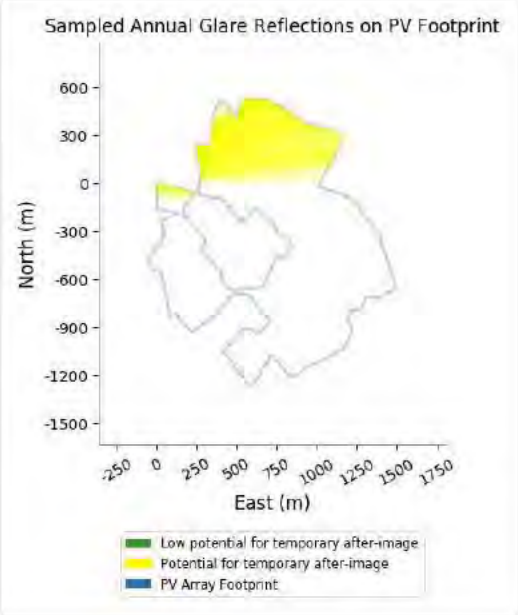
PV array 1 - OP Receptor (OP 5)

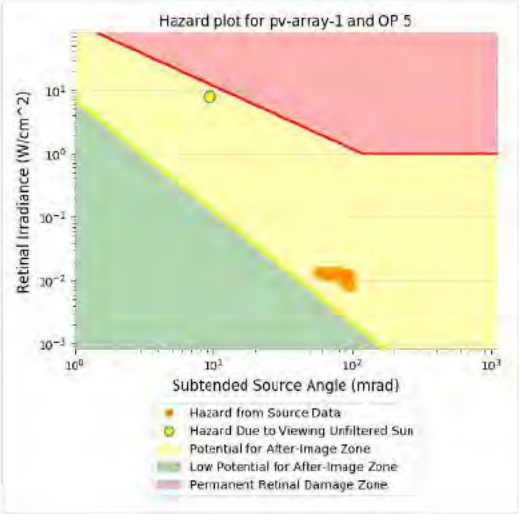
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 1,939 minutes of "yellow" glare with potential to cause temporary after-image.





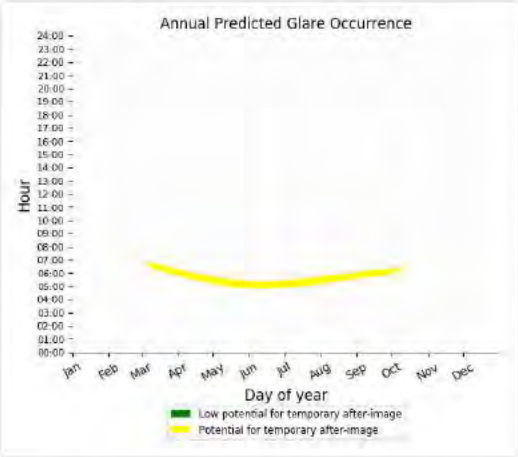


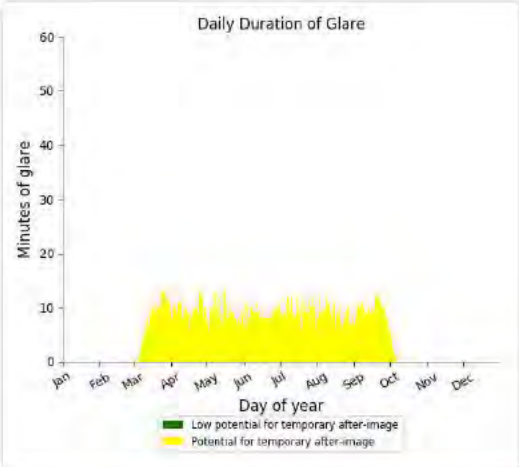


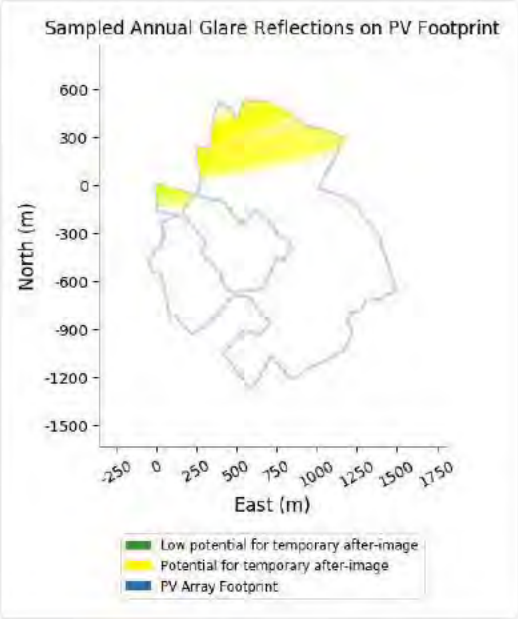
PV array 1 - OP Receptor (OP 6)

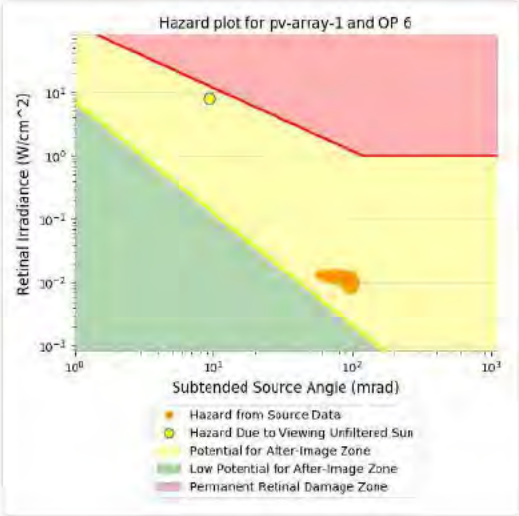
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 1,936 minutes of "yellow" glare with potential to cause temporary after-image.





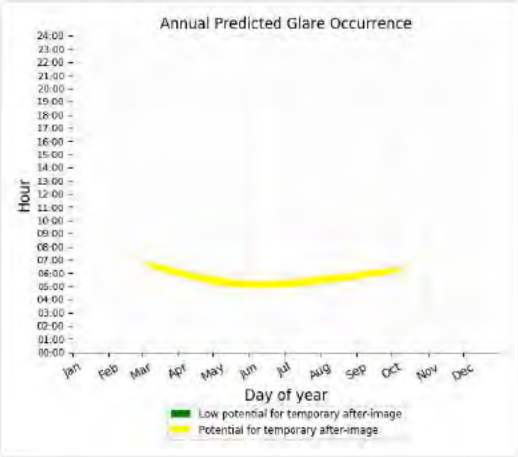


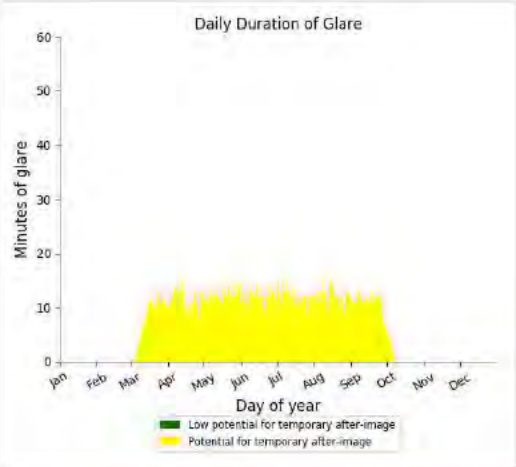


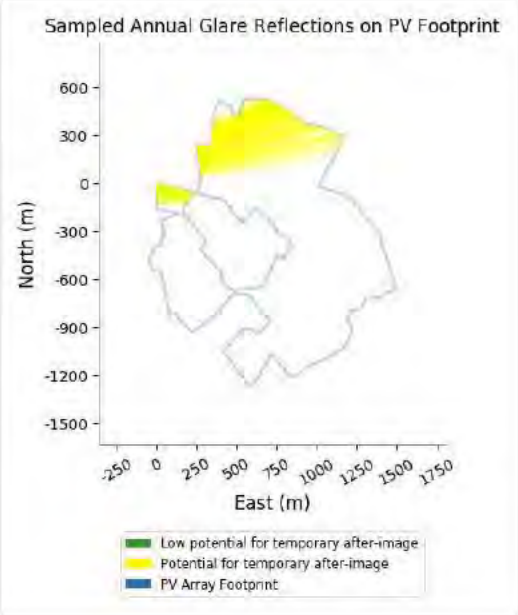
PV array 1 - OP Receptor (OP 7)

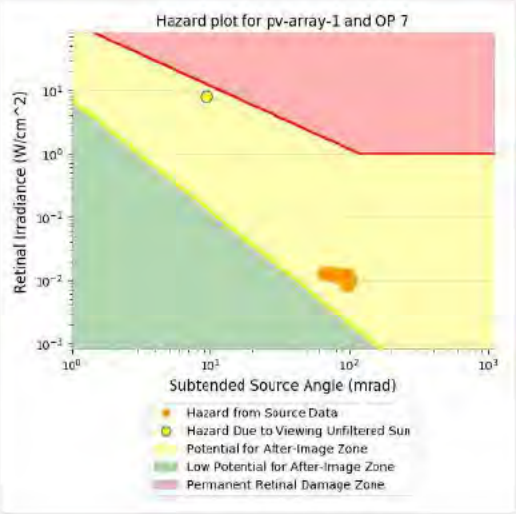
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 2,425 minutes of "yellow" glare with potential to cause temporary after-image.





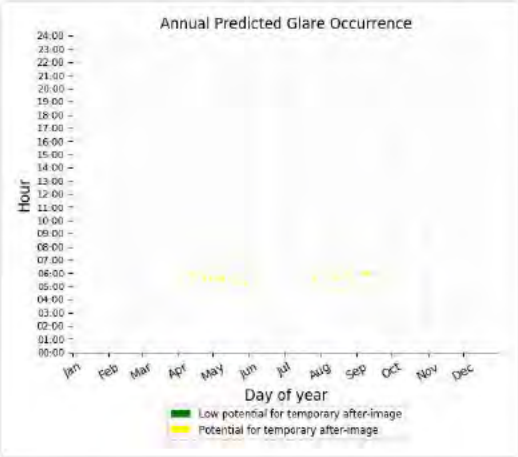


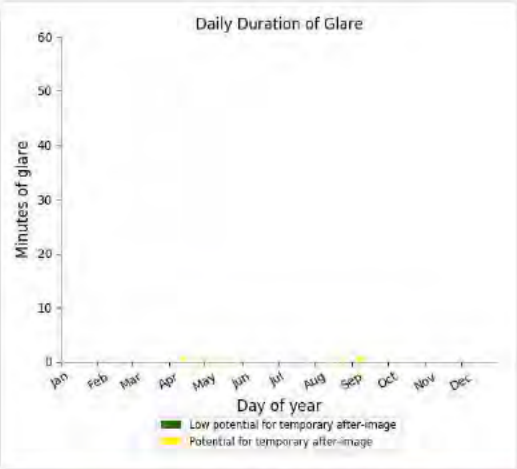


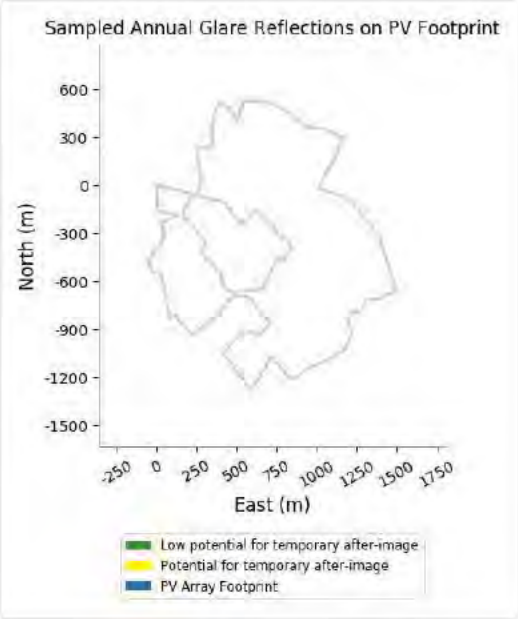
PV array 1 - OP Receptor (OP 8)

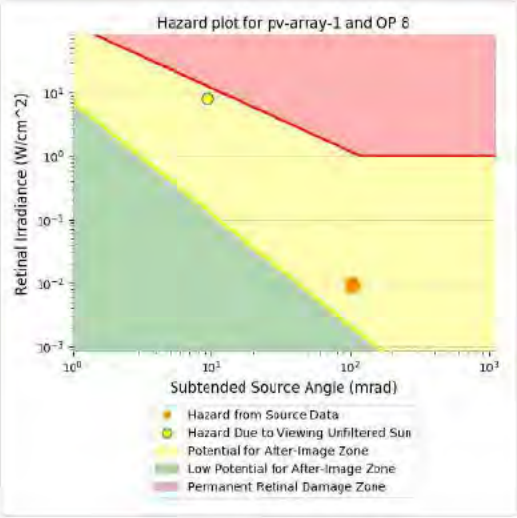
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 16 minutes of "yellow" glare with potential to cause temporary after-image.





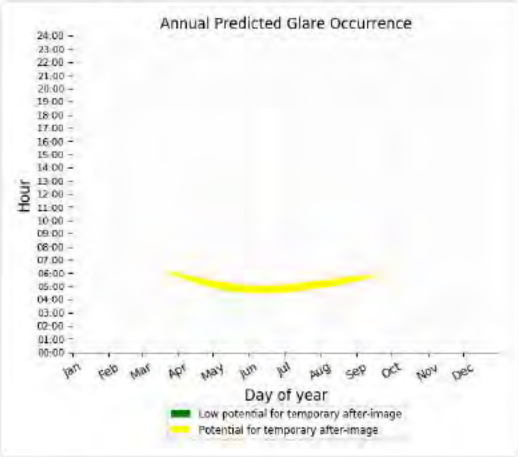


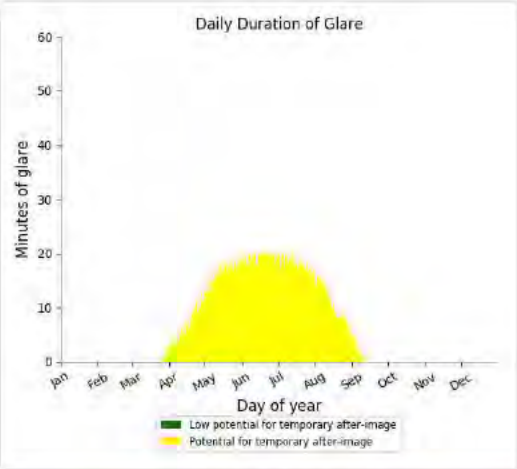


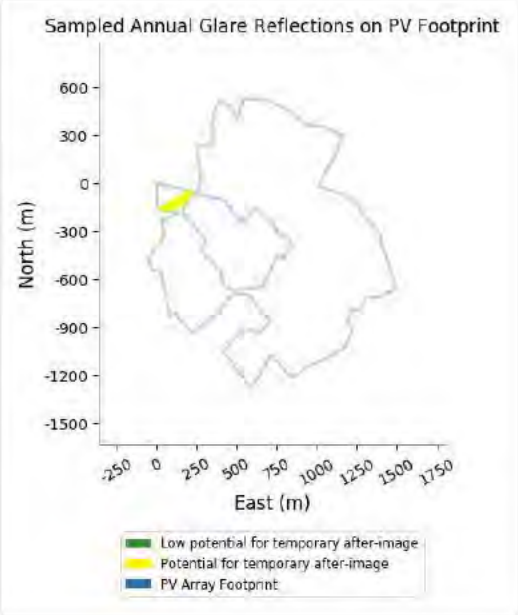
PV array 1 - OP Receptor (OP 9)

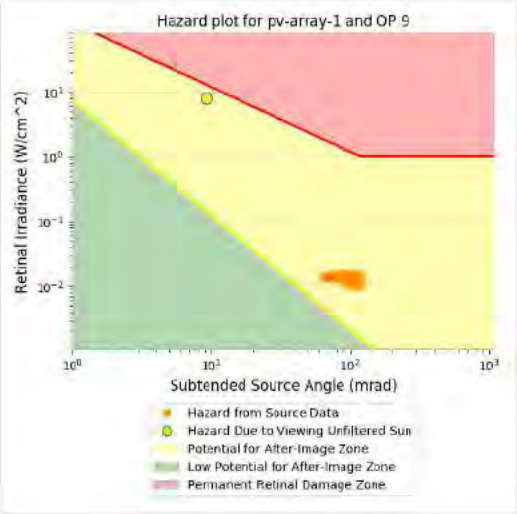
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 2,218 minutes of "yellow" glare with potential to cause temporary after-image.





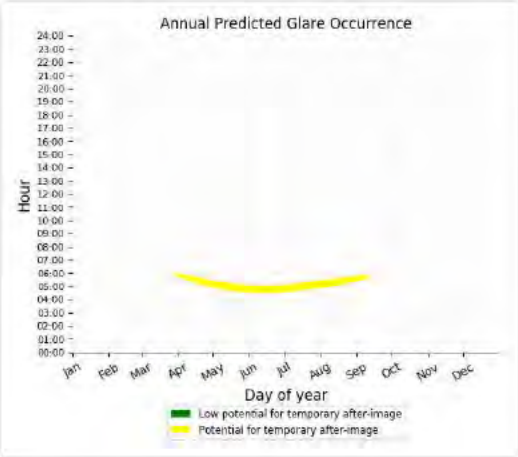


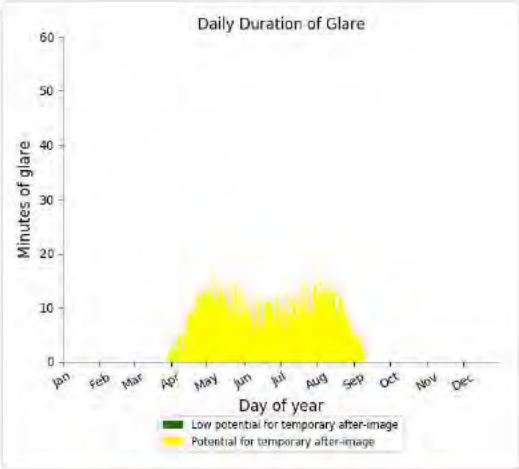


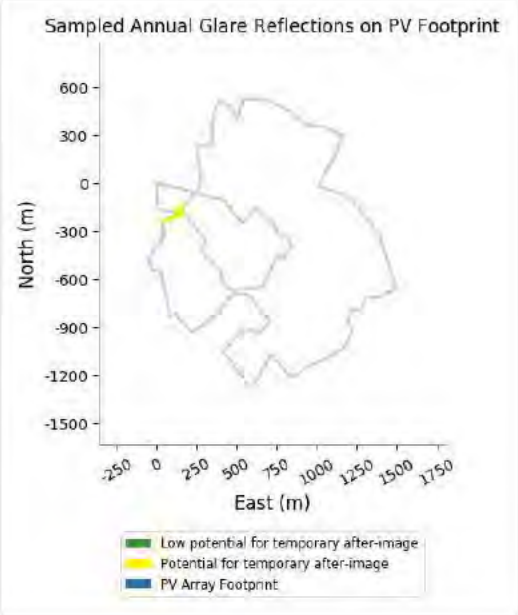
PV array 1 - OP Receptor (OP 10)

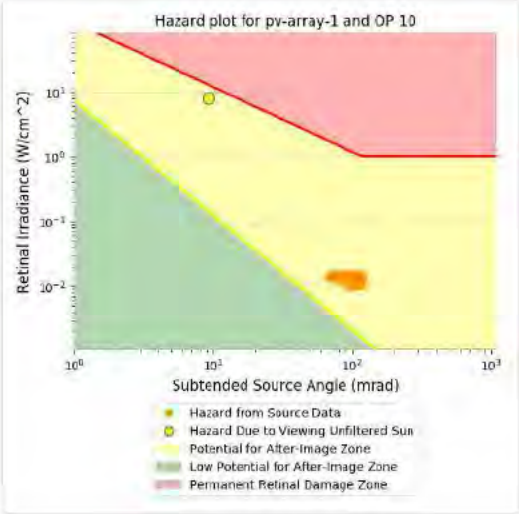
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 1,608 minutes of "yellow" glare with potential to cause temporary after-image.





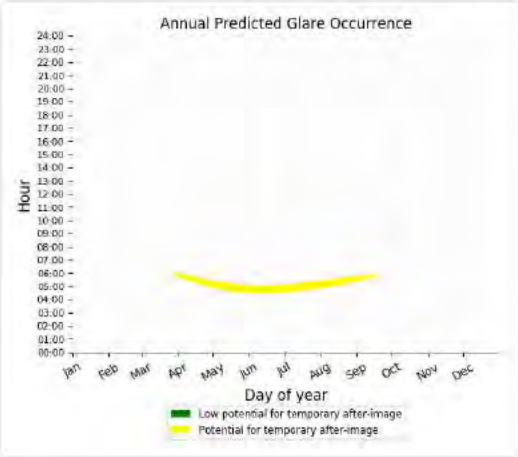


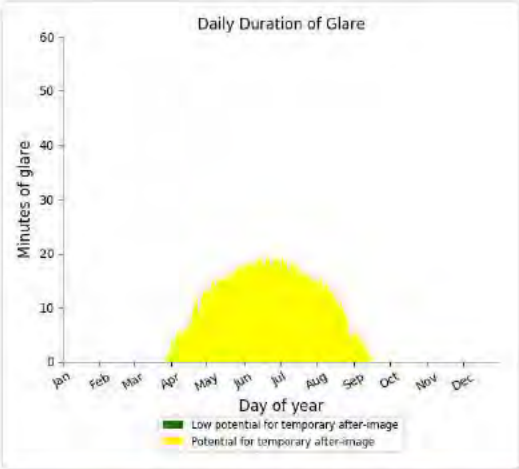


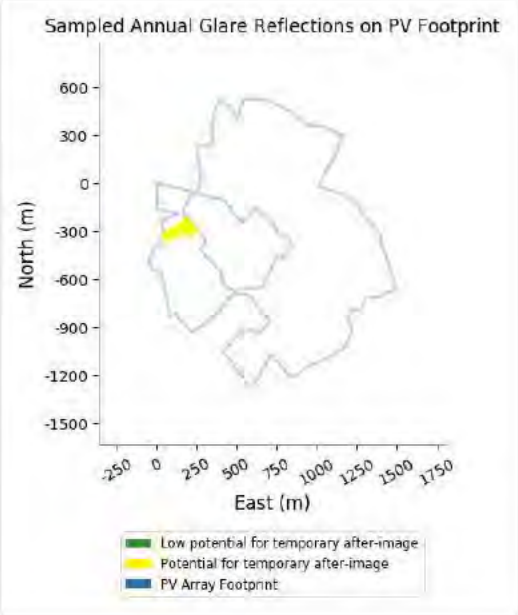
PV array 1 - OP Receptor (OP 11)

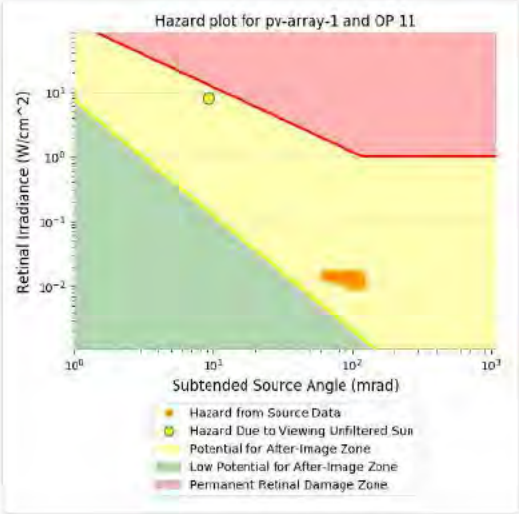
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 2,175 minutes of "yellow" glare with potential to cause temporary after-image.





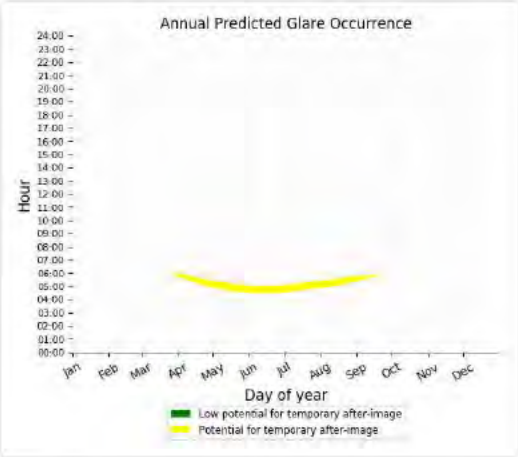


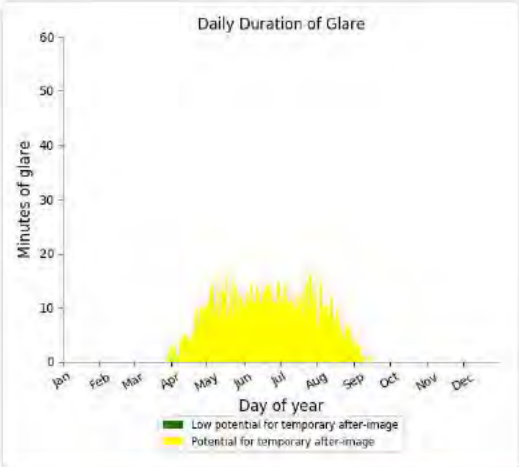


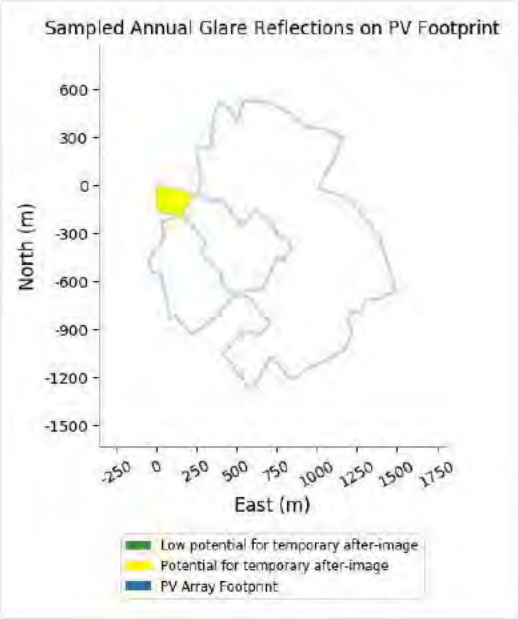
PV array 1 - OP Receptor (OP 12)

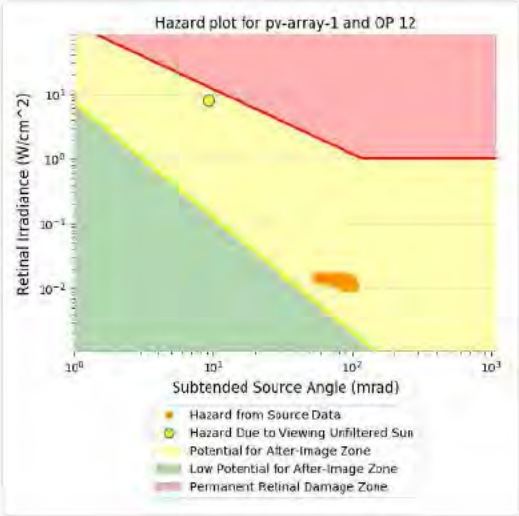
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 1,568 minutes of "yellow" glare with potential to cause temporary after-image.





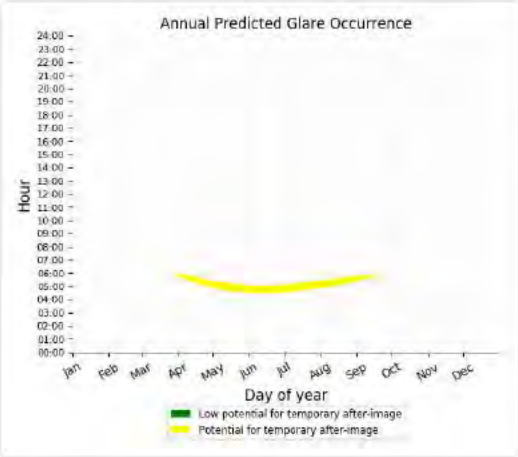


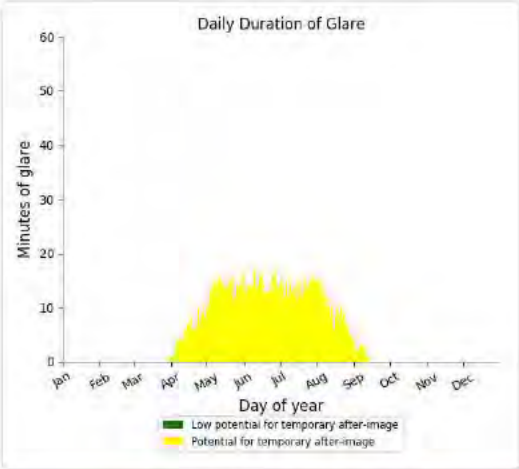


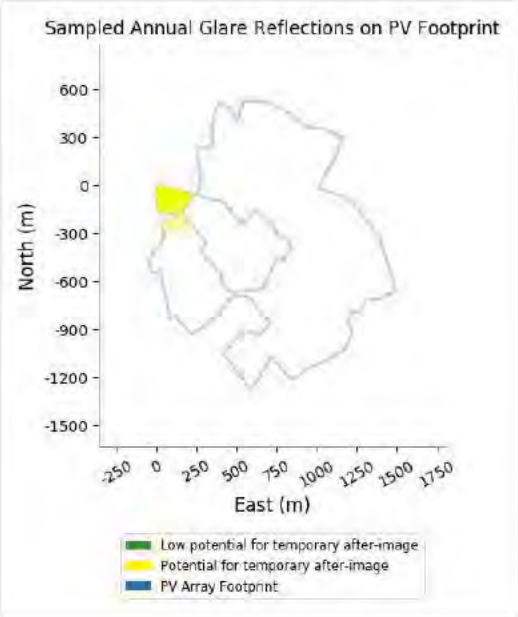
PV array 1 - OP Receptor (OP 13)

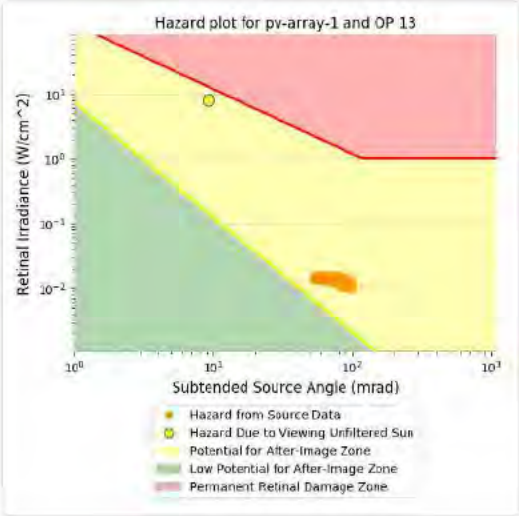
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 1,784 minutes of "yellow" glare with potential to cause temporary after-image.





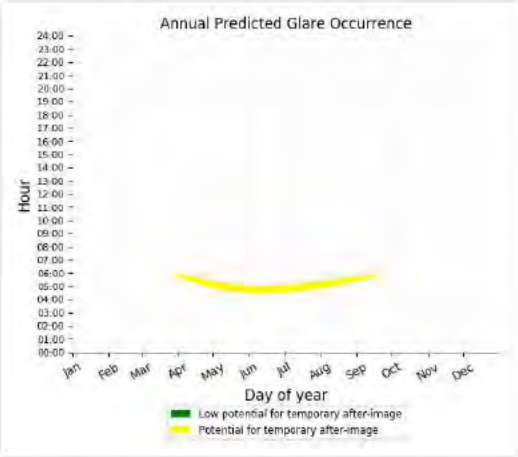


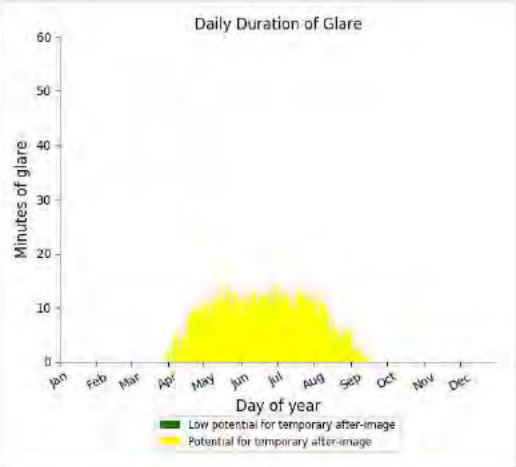


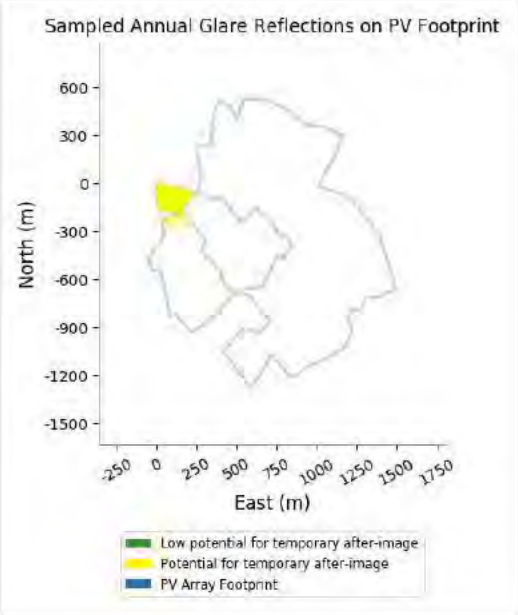
PV array 1 - OP Receptor (OP 14)

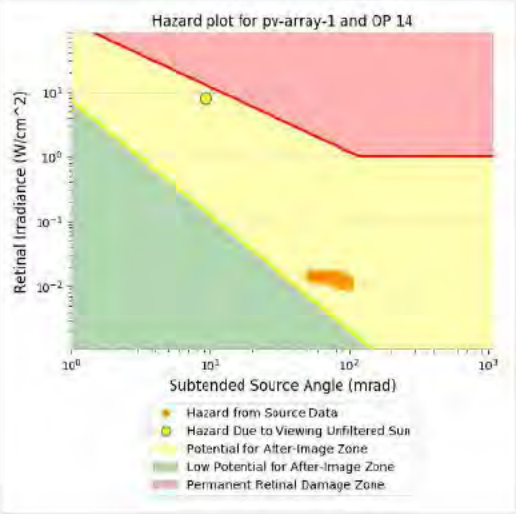
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 1,545 minutes of "yellow" glare with potential to cause temporary after-image.





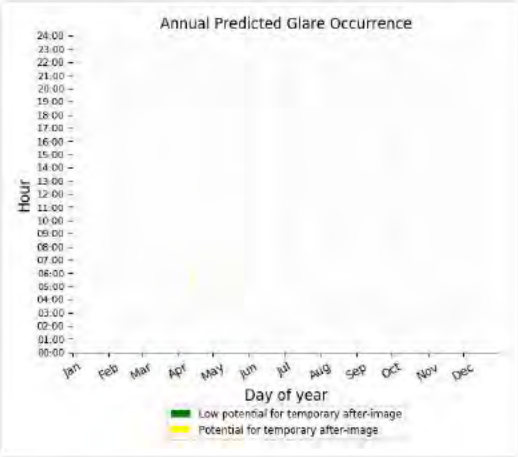


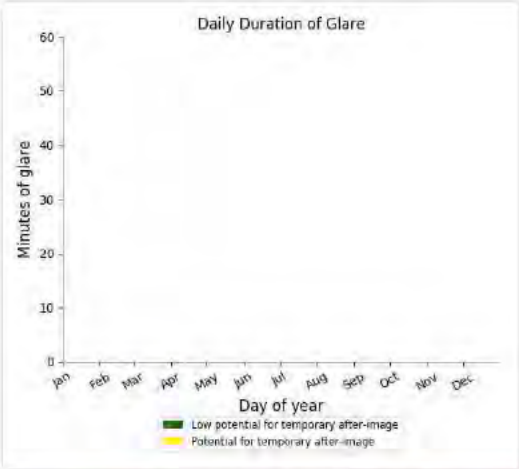


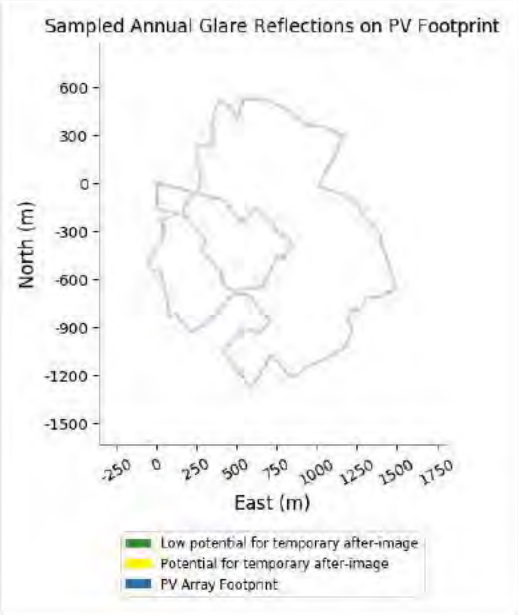
PV array 1 - OP Receptor (OP 15)

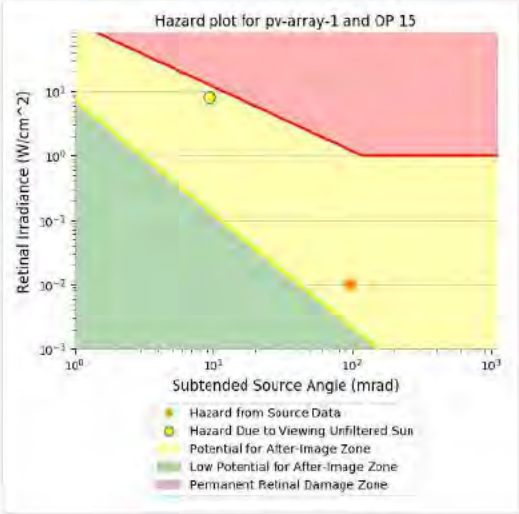
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 2 minutes of "yellow" glare with potential to cause temporary after-image.





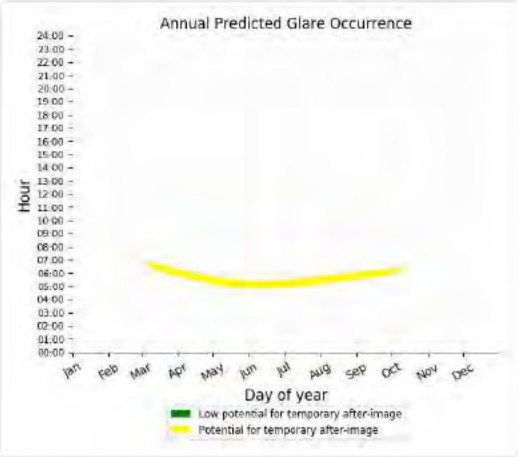


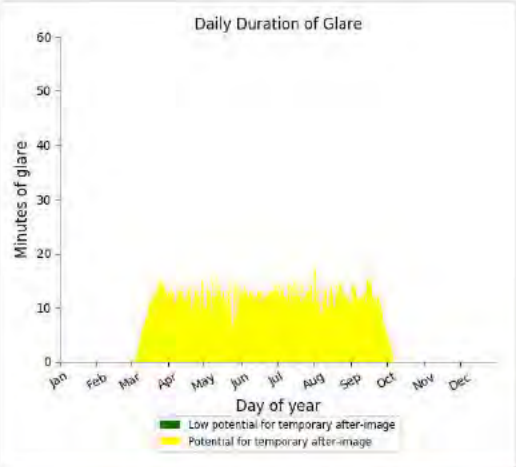


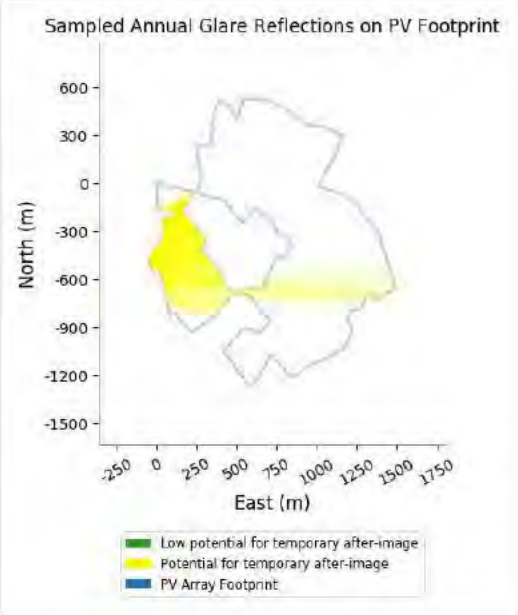
PV array 1 - OP Receptor (OP 16)

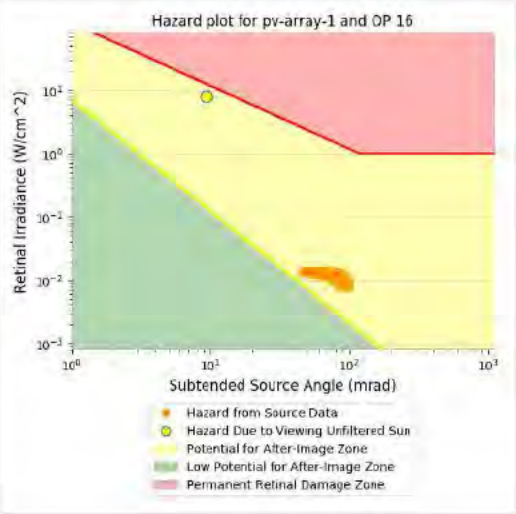
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 2,526 minutes of "yellow" glare with potential to cause temporary after-image.





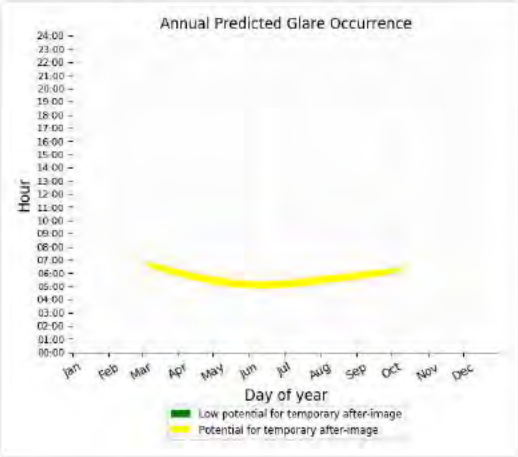


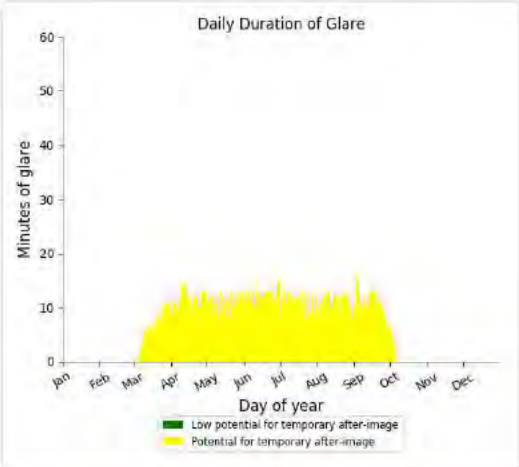


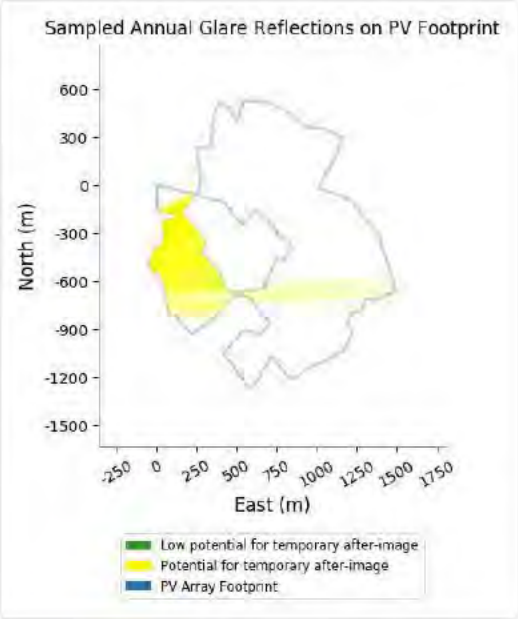
PV array 1 - OP Receptor (OP 17)

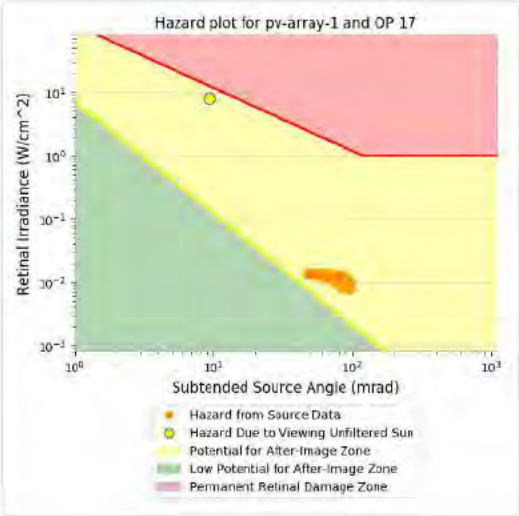
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 2,318 minutes of "yellow" glare with potential to cause temporary after-image.





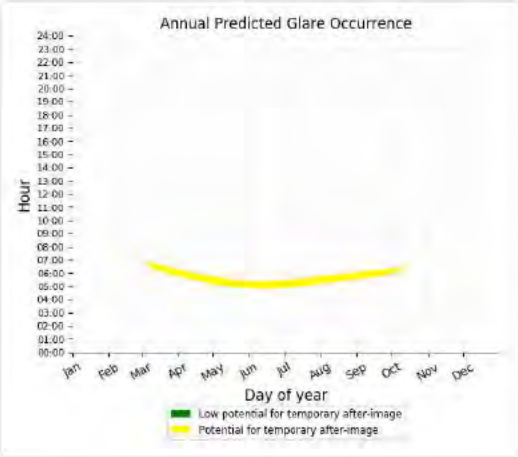


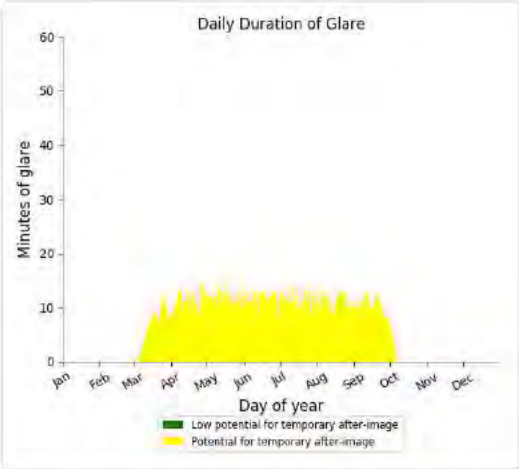


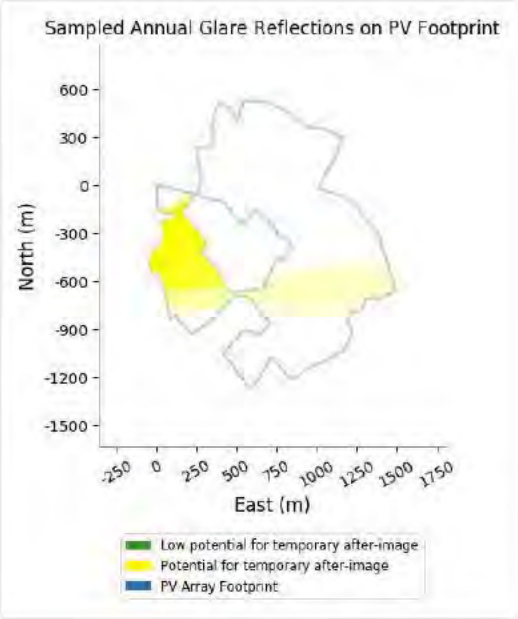
PV array 1 - OP Receptor (OP 18)

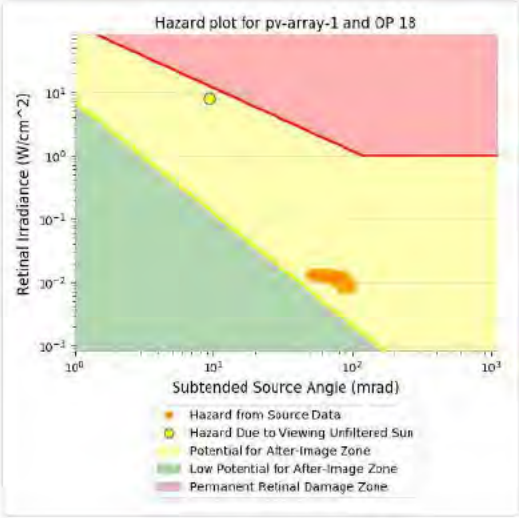
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 2,311 minutes of "yellow" glare with potential to cause temporary after-image.





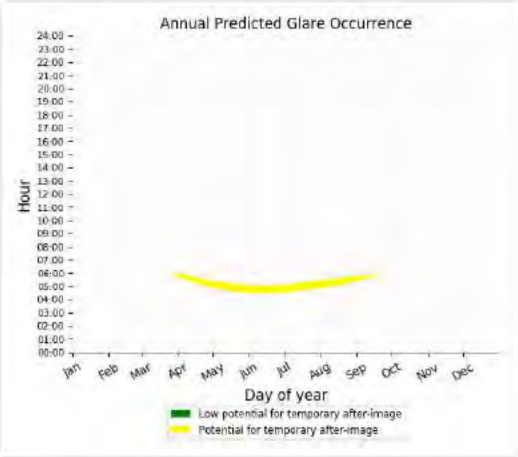


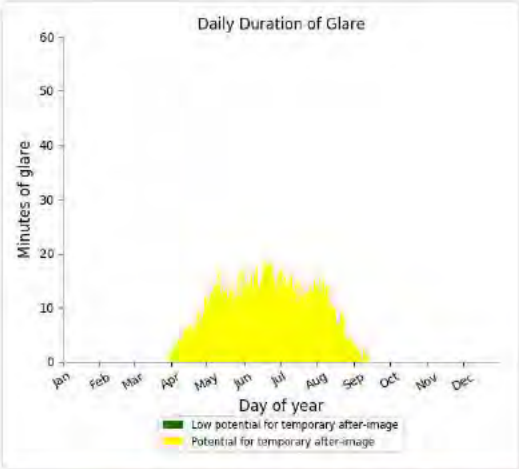


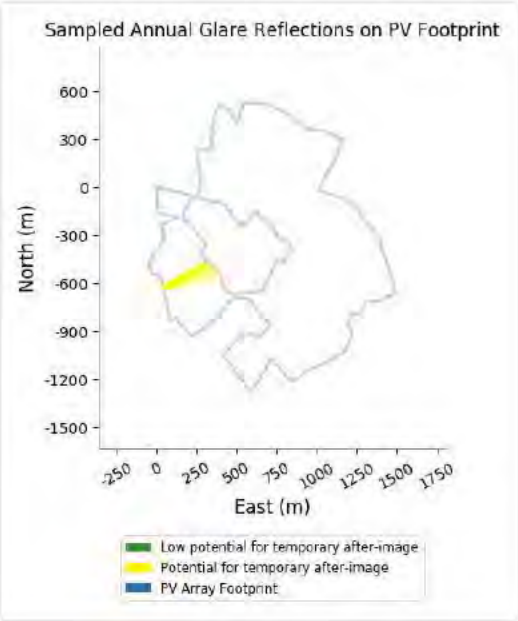
PV array 1 - OP Receptor (OP 19)

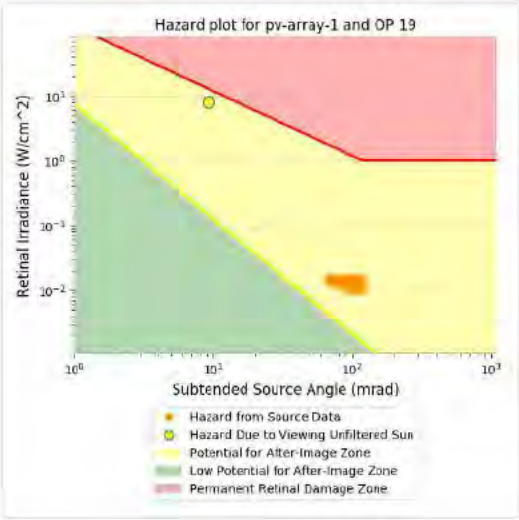
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 1,814 minutes of "yellow" glare with potential to cause temporary after-image.





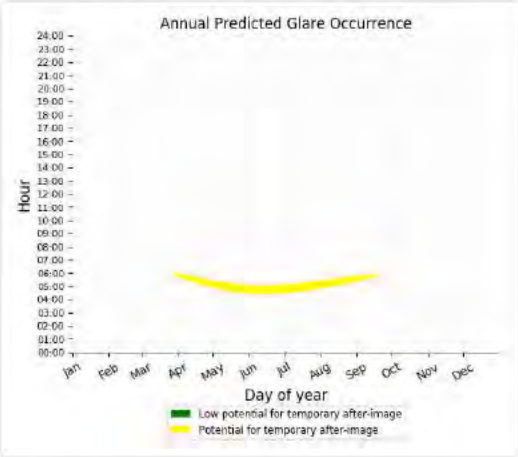


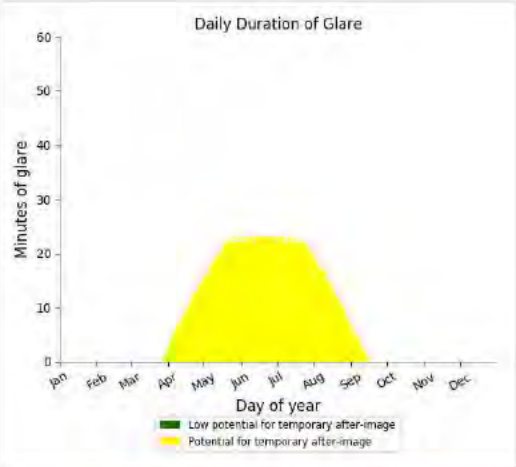


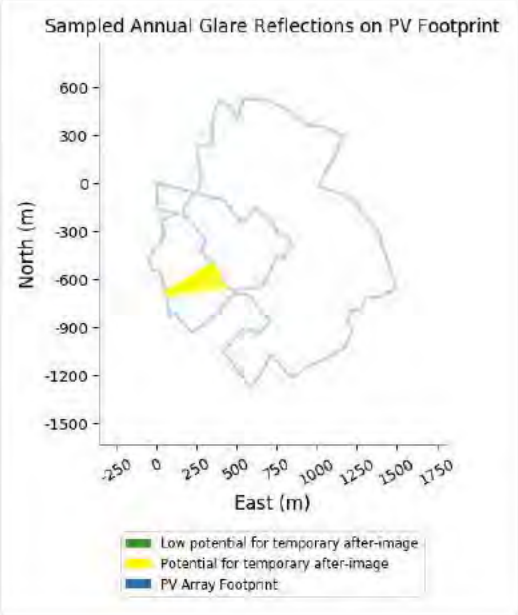
PV array 1 - OP Receptor (OP 20)

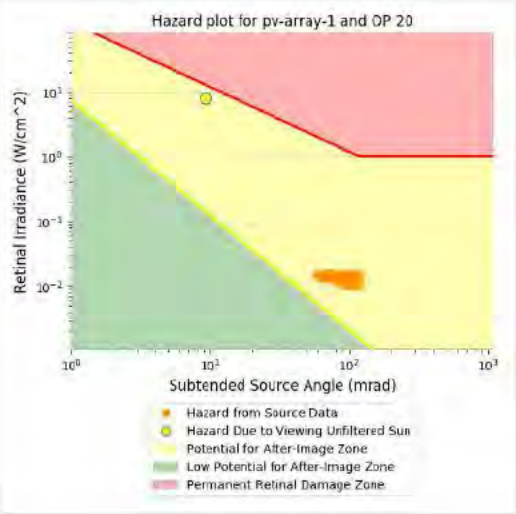
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 2,739 minutes of "yellow" glare with potential to cause temporary after-image.





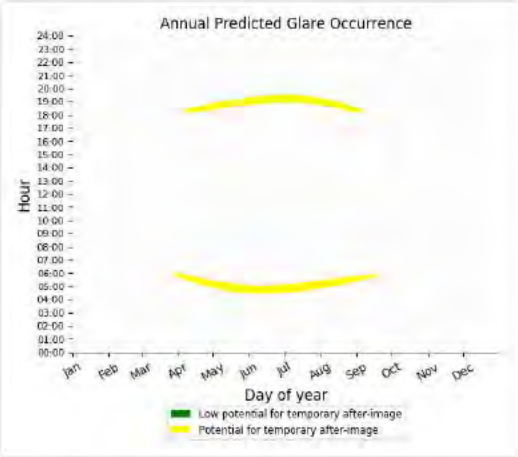


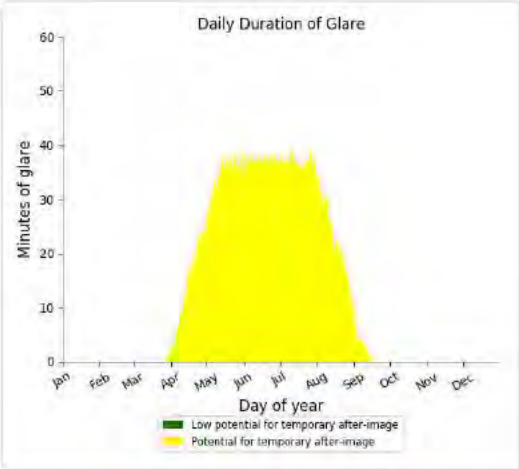


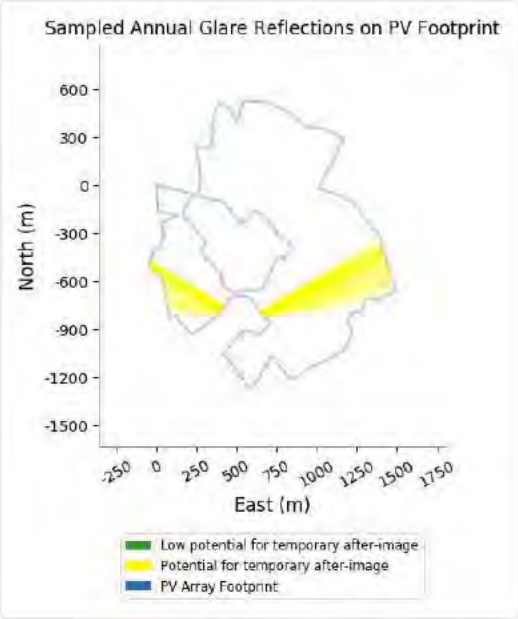
PV array 1 - OP Receptor (OP 21)

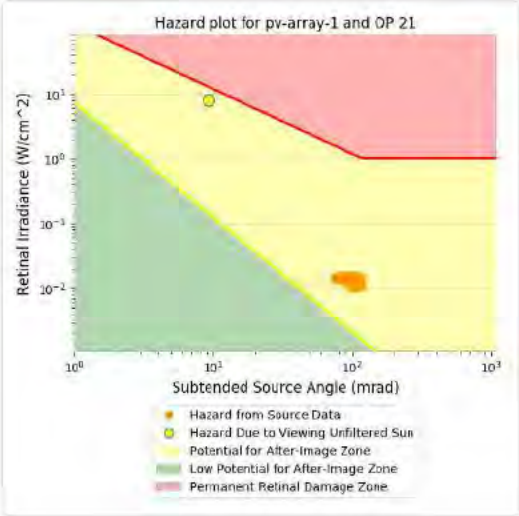
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 4,541 minutes of "yellow" glare with potential to cause temporary after-image.





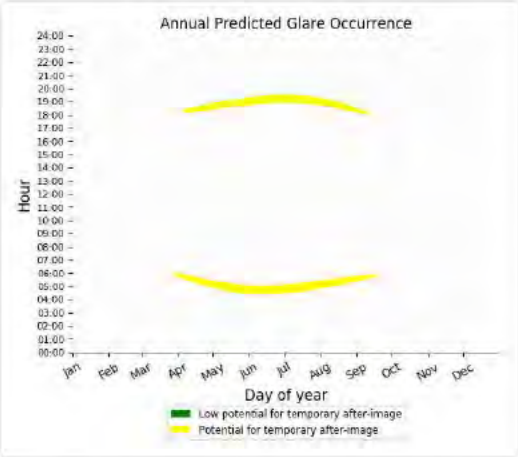


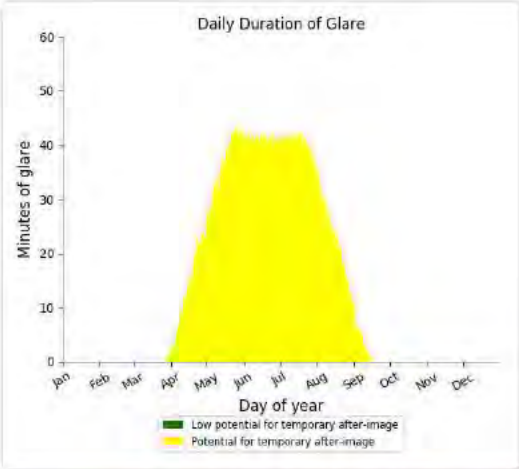


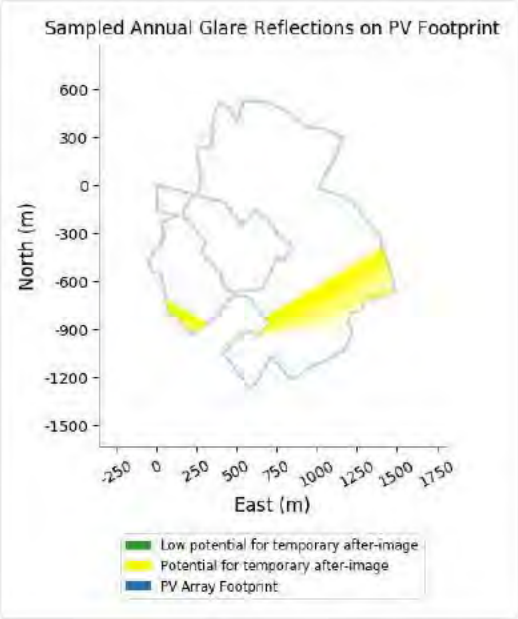
PV array 1 - OP Receptor (OP 22)

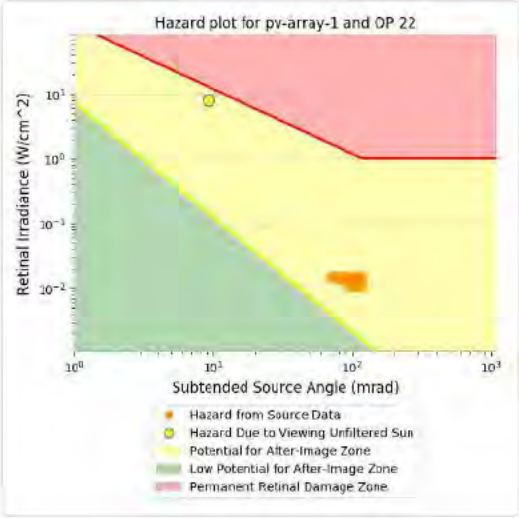
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 4,838 minutes of "yellow" glare with potential to cause temporary after-image.





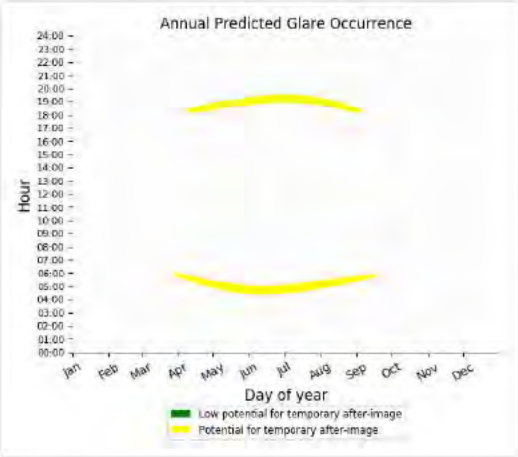


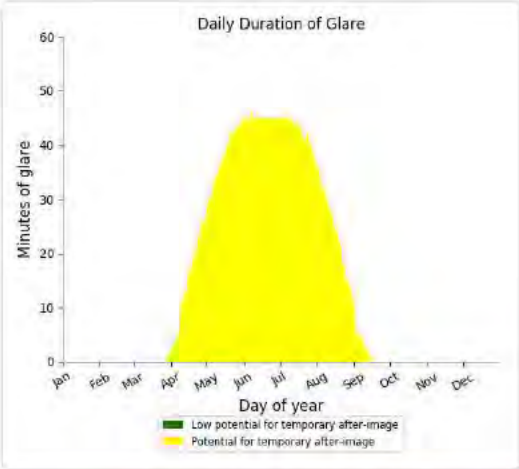


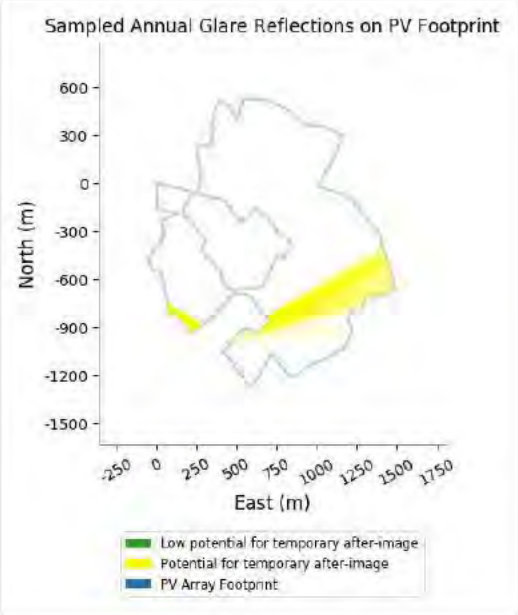
PV array 1 - OP Receptor (OP 23)

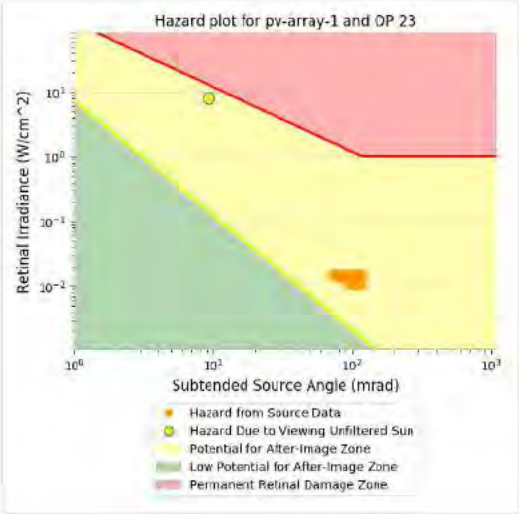
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 5,094 minutes of "yellow" glare with potential to cause temporary after-image.





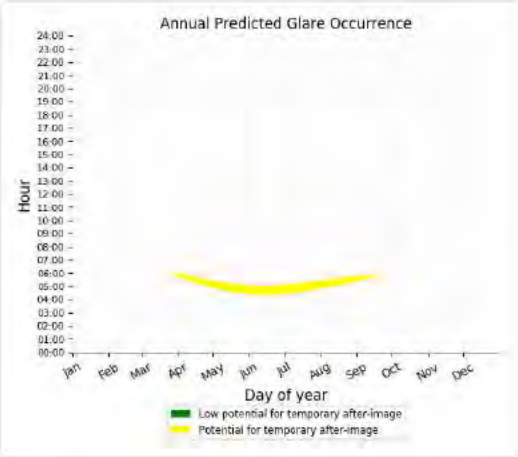


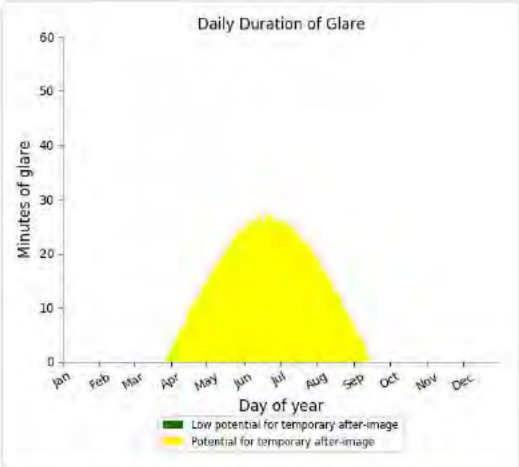


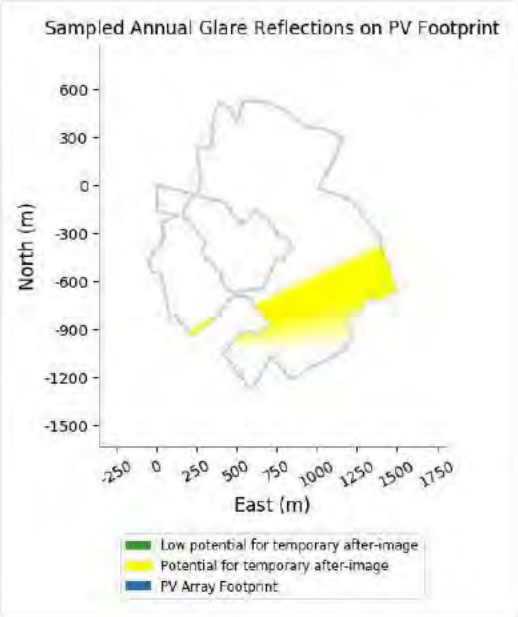
PV array 1 - OP Receptor (OP 24)

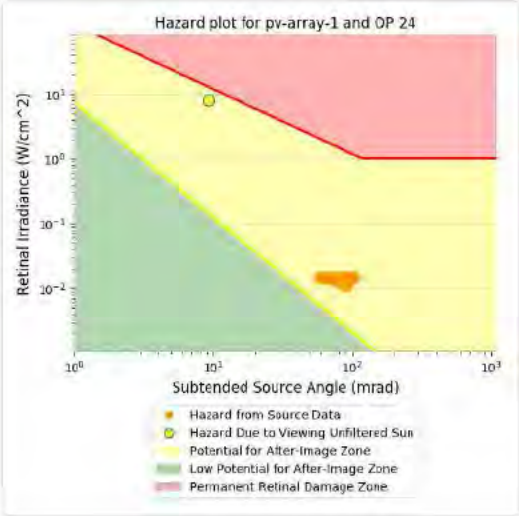
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 2,846 minutes of "yellow" glare with potential to cause temporary after-image.





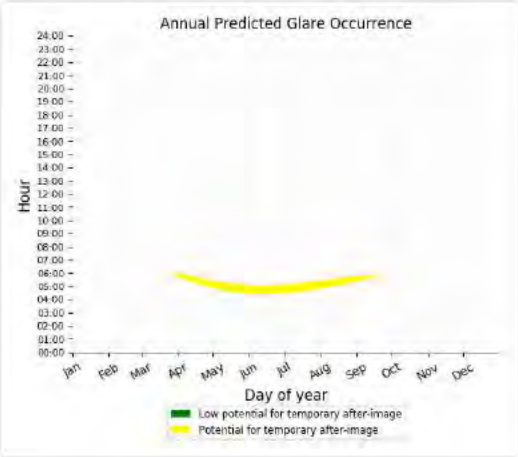


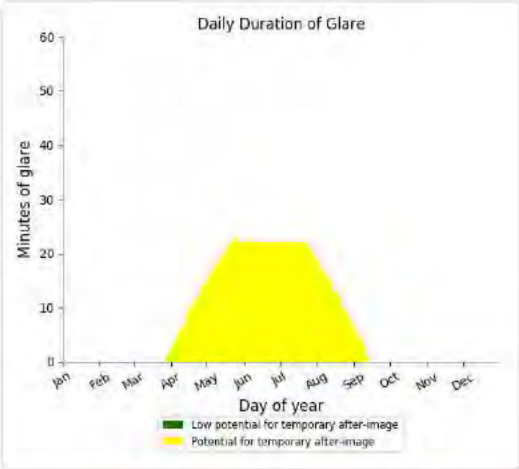


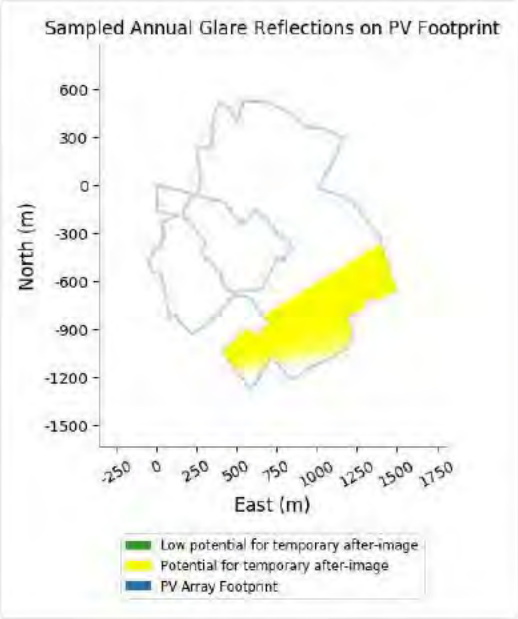
PV array 1 - OP Receptor (OP 25)

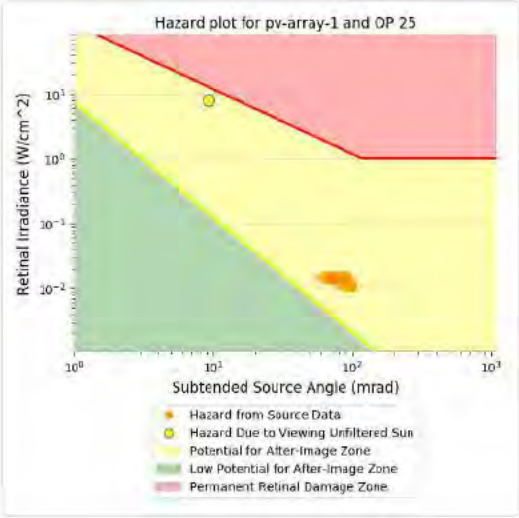
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 2,657 minutes of "yellow" glare with potential to cause temporary after-image.





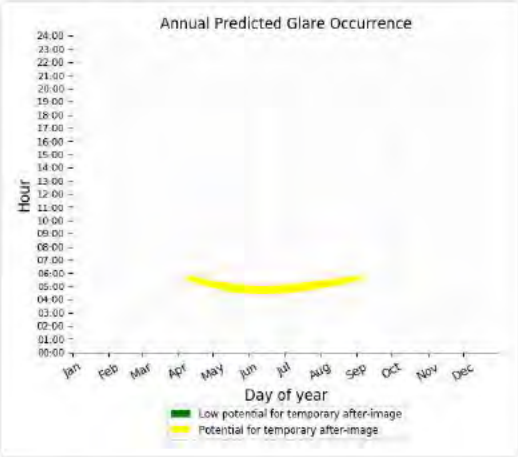


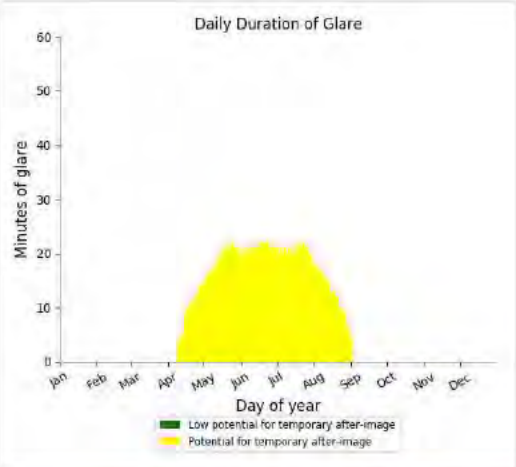


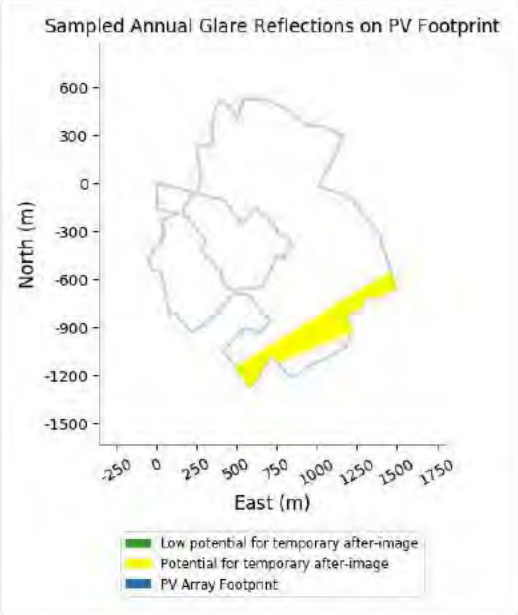
PV array 1 - OP Receptor (OP 26)

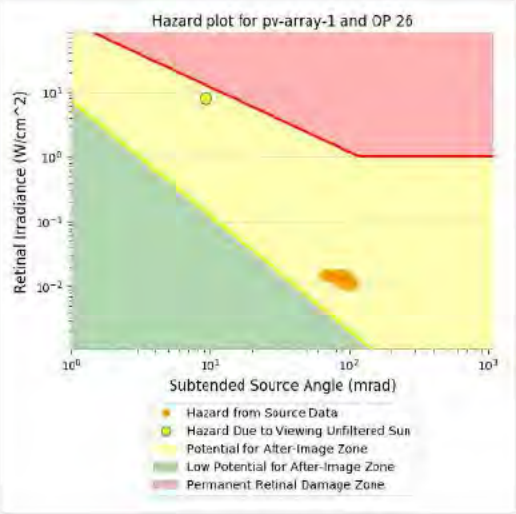
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 2,490 minutes of "yellow" glare with potential to cause temporary after-image.





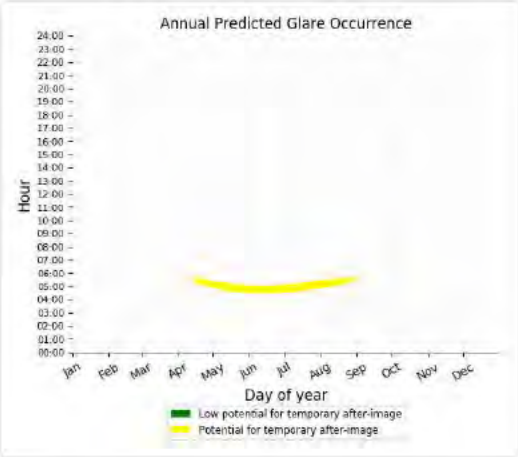


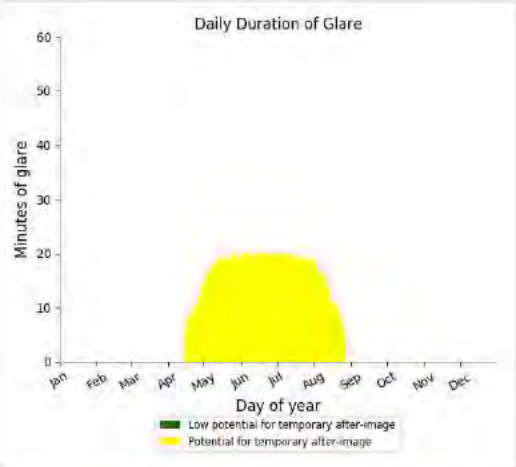


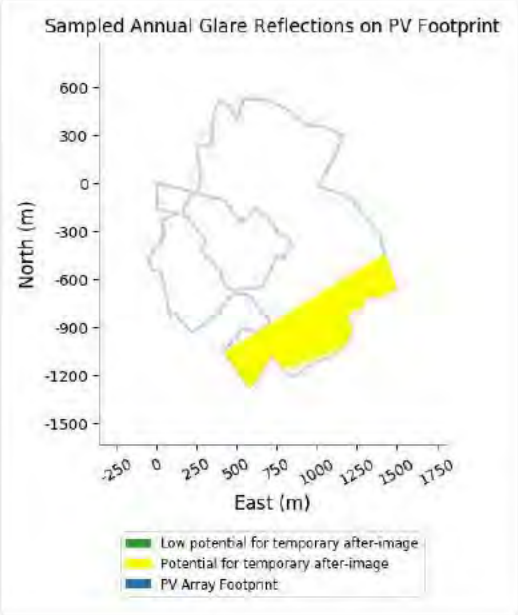
PV array 1 - OP Receptor (OP 27)

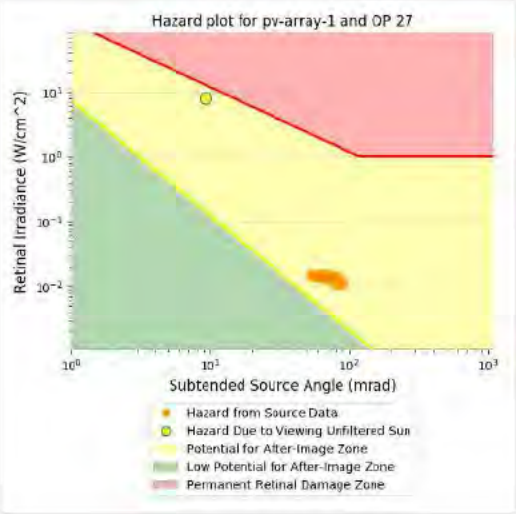
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 2,258 minutes of "yellow" glare with potential to cause temporary after-image.





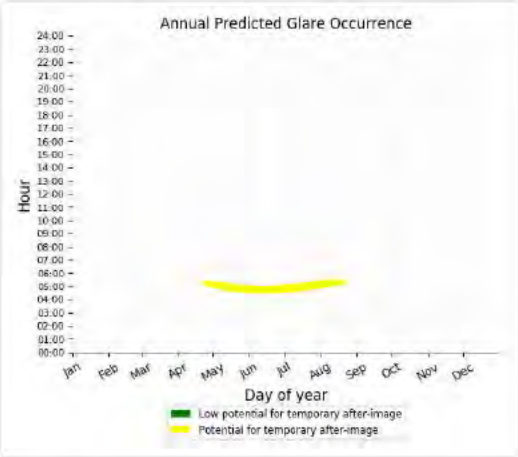


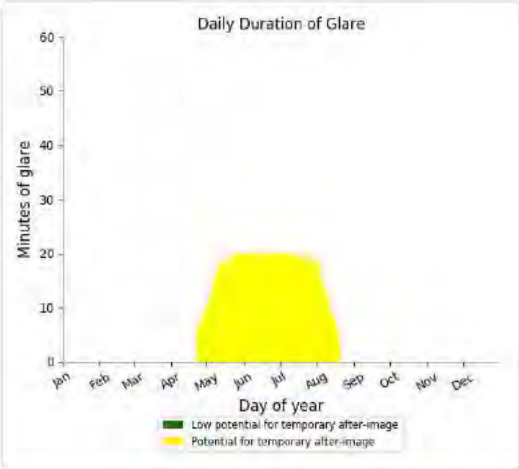


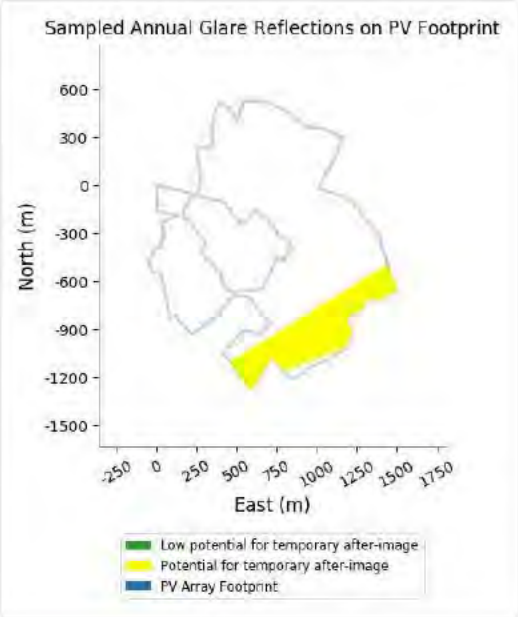
PV array 1 - OP Receptor (OP 28)

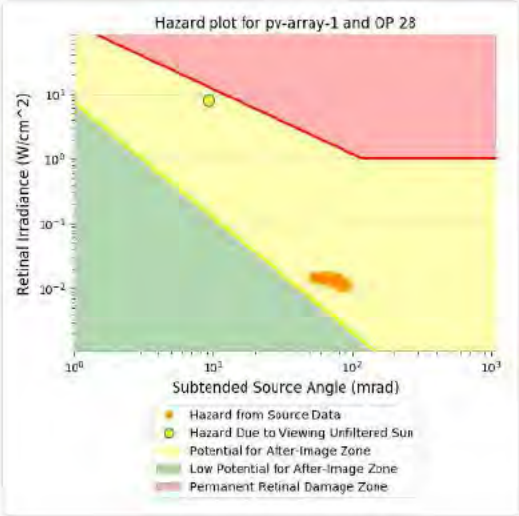
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 2,027 minutes of "yellow" glare with potential to cause temporary after-image.









PV array 1 - OP Receptor (OP 29)

No glare found

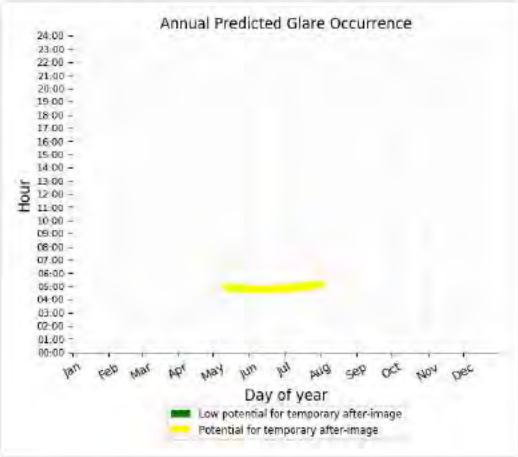
PV array 1 - OP Receptor (OP 30)

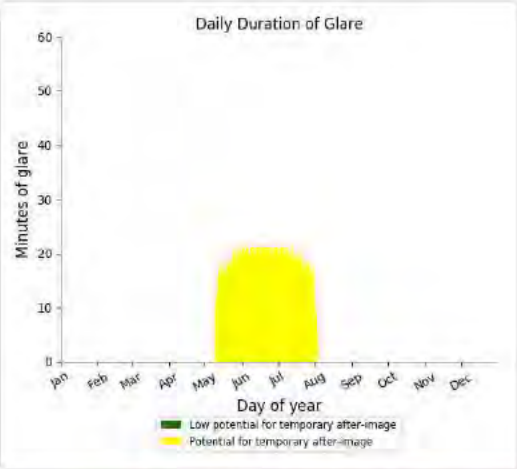
No glare found

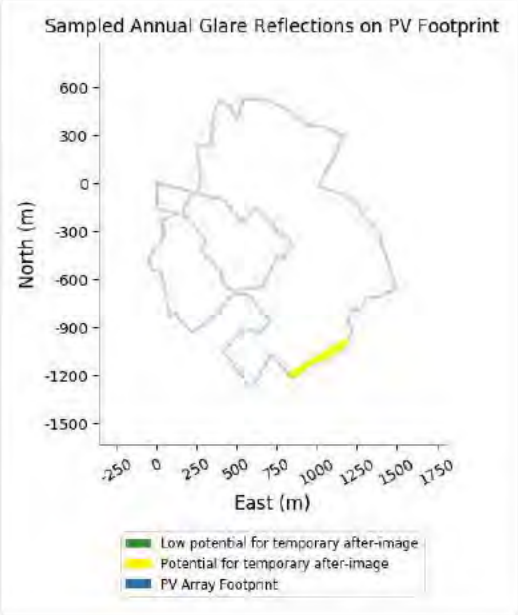
PV array 1 - OP Receptor (OP 31)

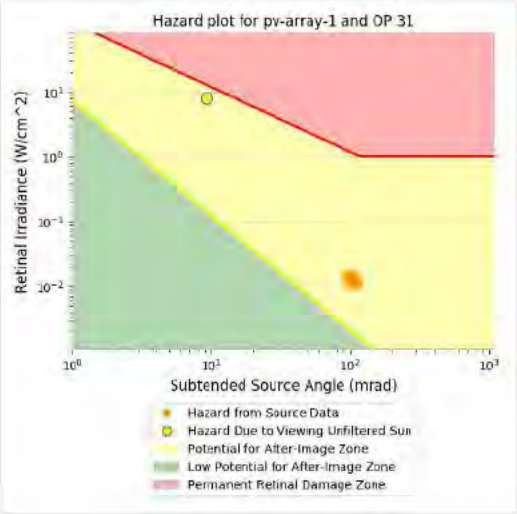
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 1,642 minutes of "yellow" glare with potential to cause temporary after-image.





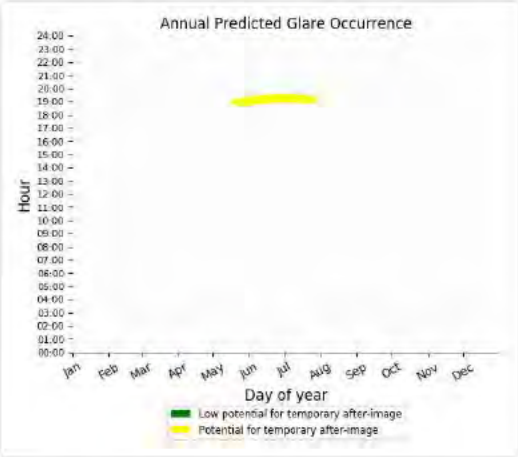


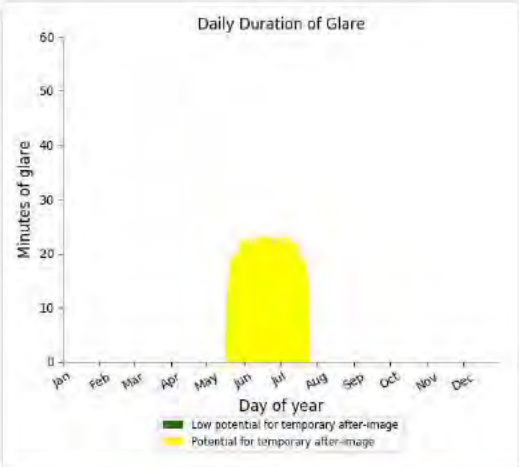


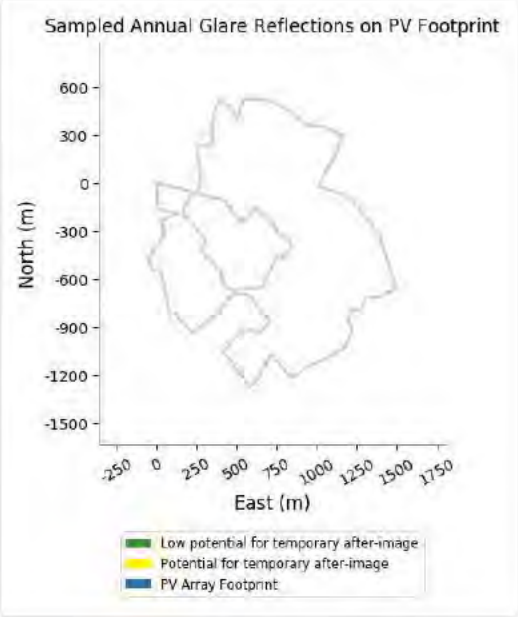
PV array 1 - OP Receptor (OP 32)

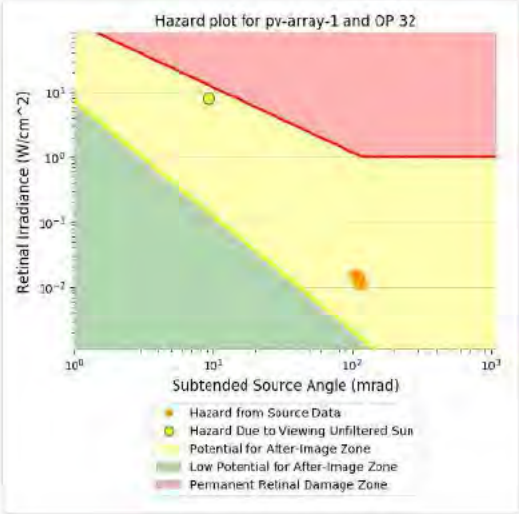
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 1,482 minutes of "yellow" glare with potential to cause temporary after-image.









PV array 1 - OP Receptor (OP 33)

No glare found

PV array 1 - OP Receptor (OP 34)

No glare found

PV array 1 - OP Receptor (OP 35)

No glare found

PV array 1 - OP Receptor (OP 36)

No glare found

PV array 1 - OP Receptor (OP 37)

No glare found

PV array 1 - OP Receptor (OP 38)

No glare found

PV array 1 - OP Receptor (OP 39)
No glare found

PV array 1 - OP Receptor (OP 40)
No glare found

PV array 1 - OP Receptor (OP 41)
No glare found

PV array 1 - OP Receptor (OP 42)
No glare found

PV array 1 - OP Receptor (OP 43)
No glare found

PV array 1 - OP Receptor (OP 44)
No glare found

PV array 1 - OP Receptor (OP 45)
No glare found

PV array 1 - OP Receptor (OP 46)
No glare found

PV array 1 - OP Receptor (OP 47)
No glare found

PV array 1 - OP Receptor (OP 48)
No glare found

PV array 1 - OP Receptor (OP 49)
No glare found

PV array 1 - OP Receptor (OP 50)
No glare found

PV array 1 - OP Receptor (OP 51)
No glare found

PV array 1 - OP Receptor (OP 52)
No glare found

PV array 1 - OP Receptor (OP 53)
No glare found

PV array 1 - OP Receptor (OP 54)
No glare found

PV array 1 - OP Receptor (OP 55)
No glare found

PV array 1 - OP Receptor (OP 56)
No glare found

PV array 1 - OP Receptor (OP 57)
No glare found

PV array 1 - OP Receptor (OP 58)

No glare found

PV array 1 - OP Receptor (OP 59)

No glare found

PV array 1 - OP Receptor (OP 60)

No glare found

PV array 1 - OP Receptor (OP 61)

No glare found

PV array 1 - OP Receptor (OP 62)

No glare found

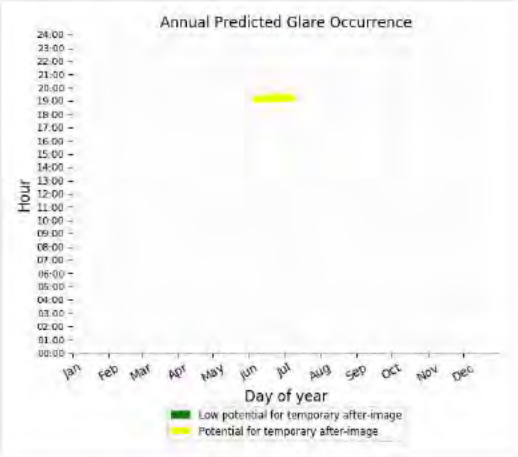
PV array 1 - OP Receptor (OP 63)

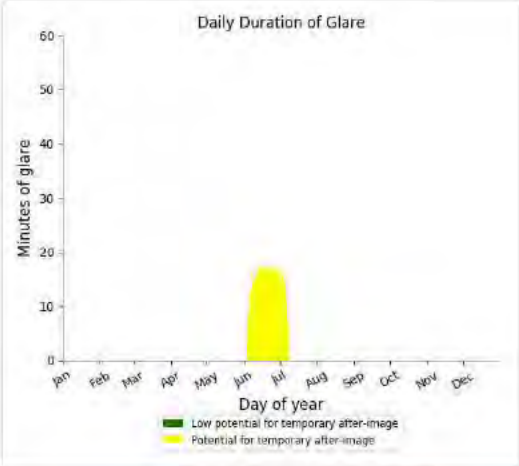
No glare found

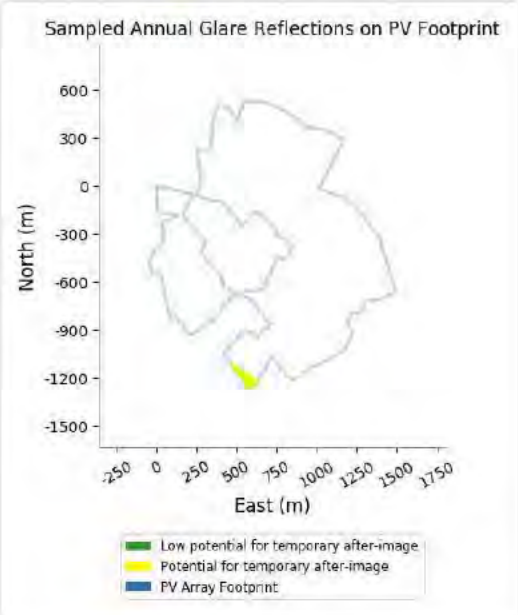
PV array 1 - OP Receptor (OP 64)

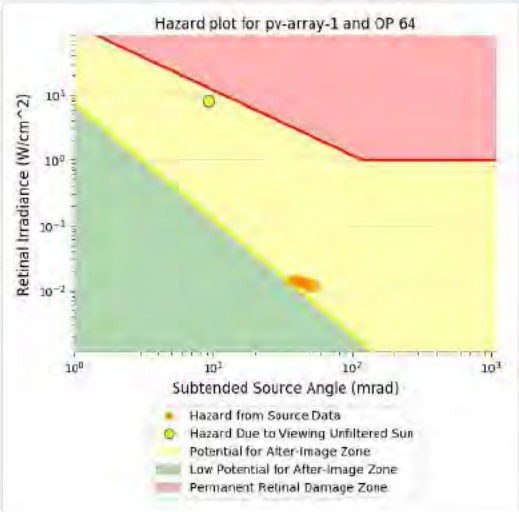
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 524 minutes of "yellow" glare with potential to cause temporary after-image.





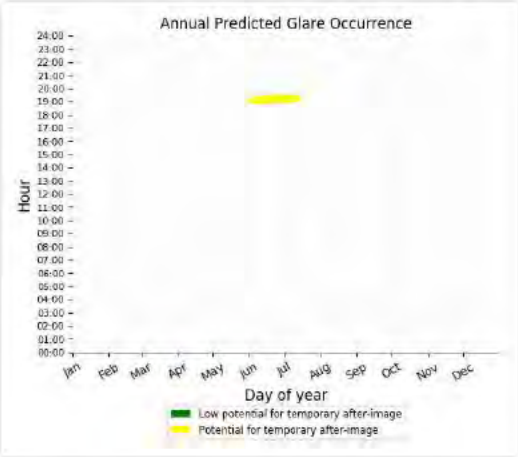


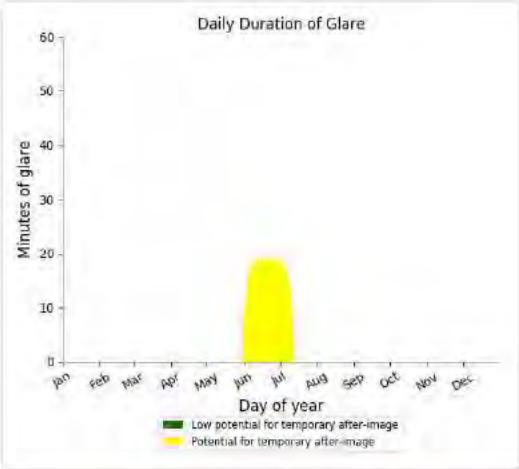


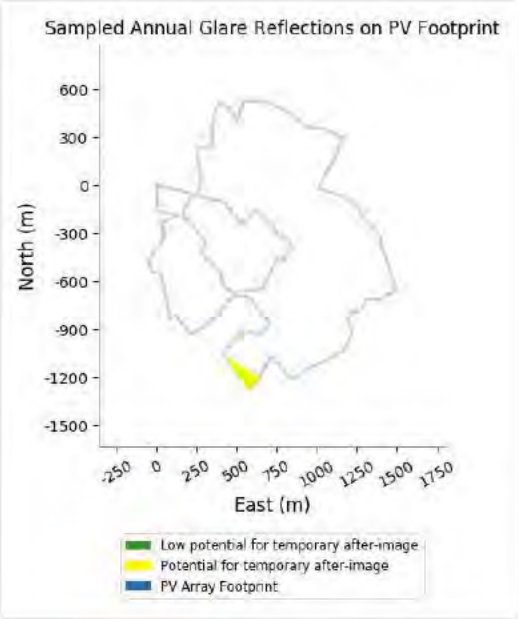
PV array 1 - OP Receptor (OP 65)

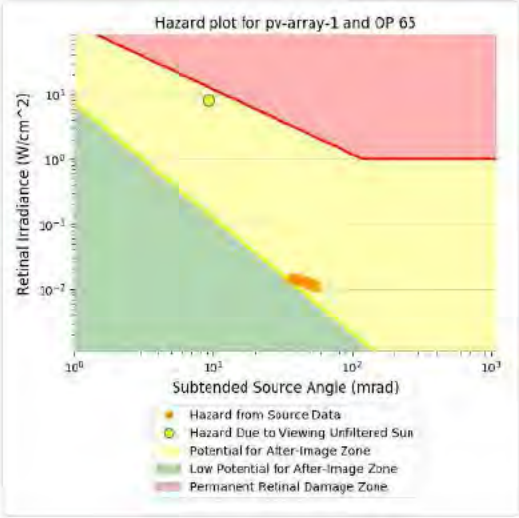
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 712 minutes of "yellow" glare with potential to cause temporary after-image.





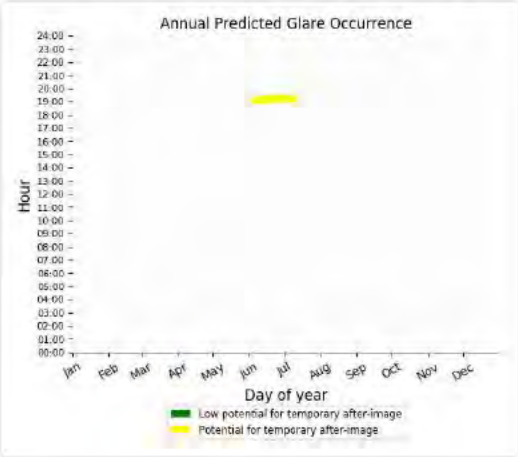


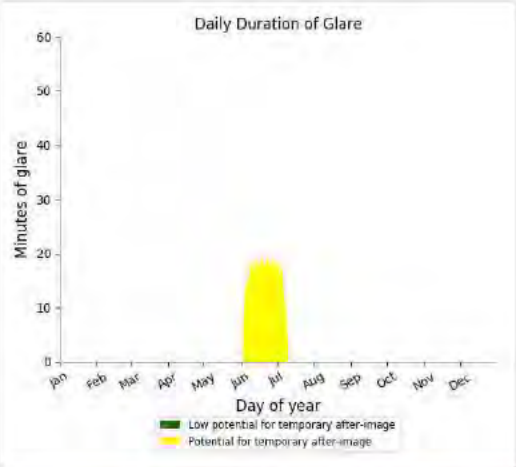


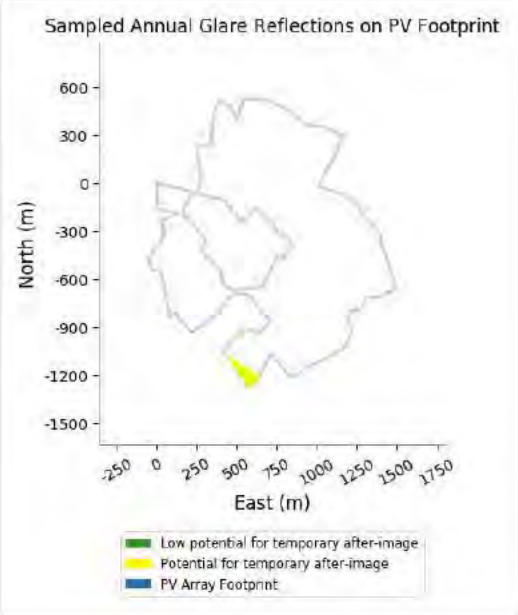
PV array 1 - OP Receptor (OP 66)

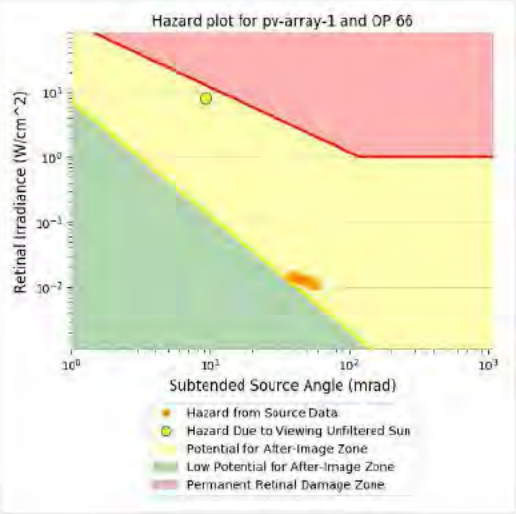
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 615 minutes of "yellow" glare with potential to cause temporary after-image.





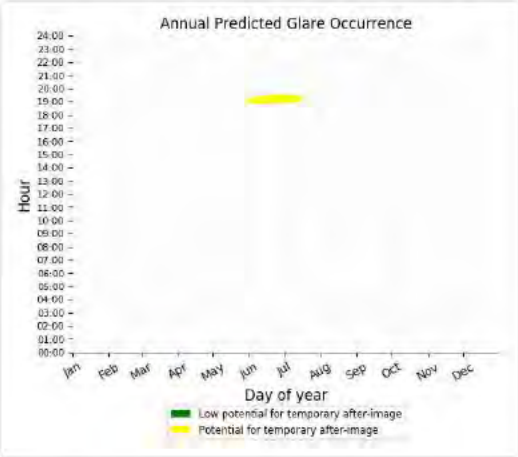


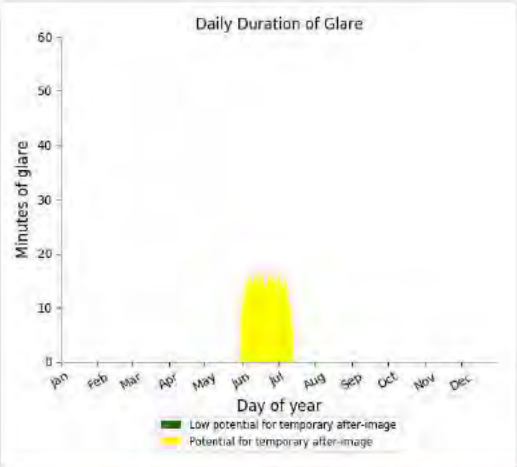


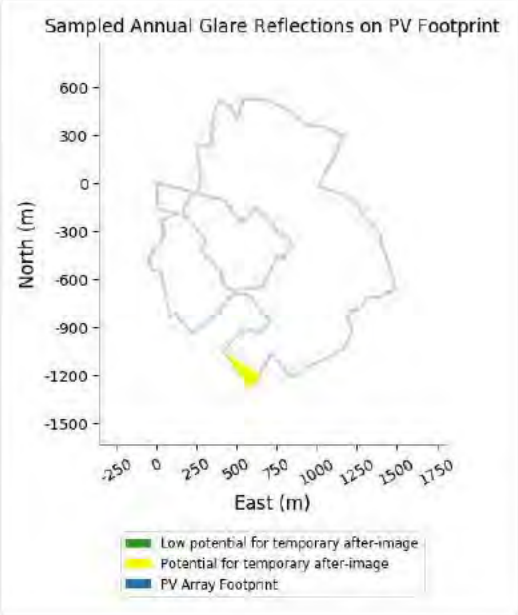
PV array 1 - OP Receptor (OP 67)

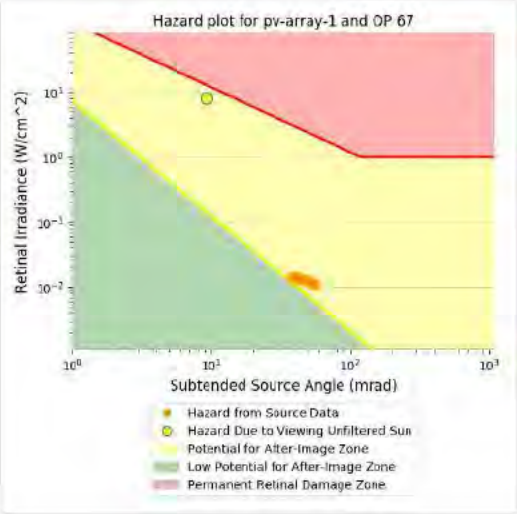
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 615 minutes of "yellow" glare with potential to cause temporary after-image.





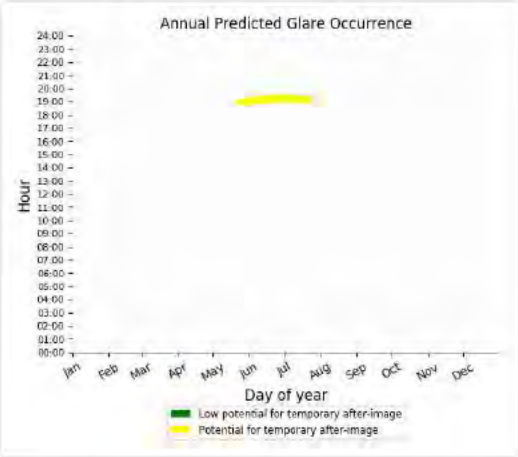


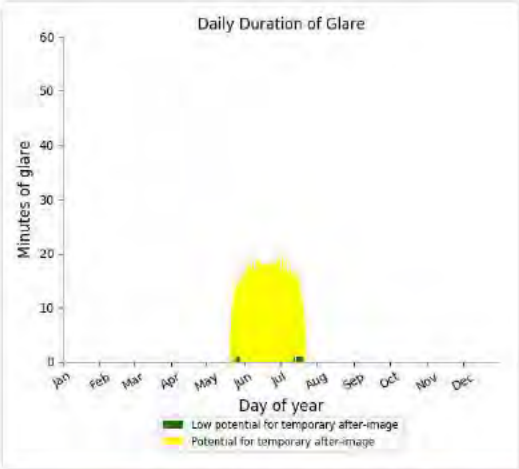


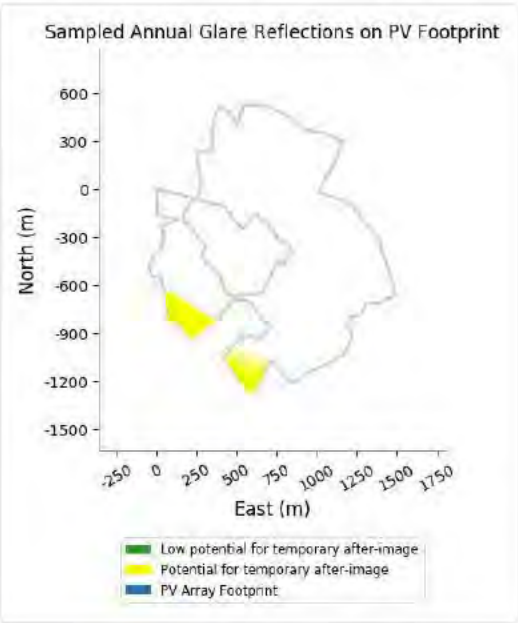
PV array 1 - OP Receptor (OP 68)

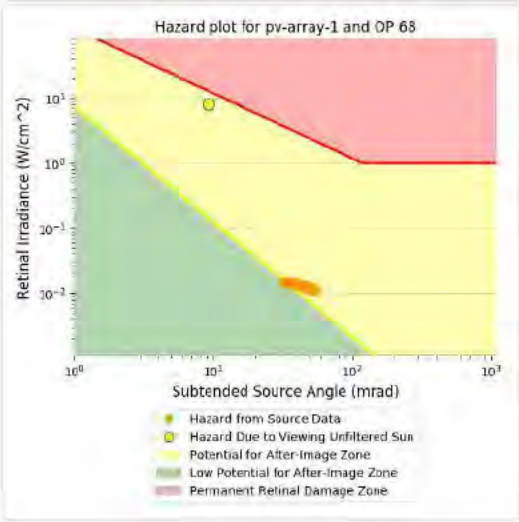
PV array is expected to produce the following glare for receptors at this location:

- 11 minutes of "green" glare with low potential to cause temporary after-image.
- 1,017 minutes of "yellow" glare with potential to cause temporary after-image.





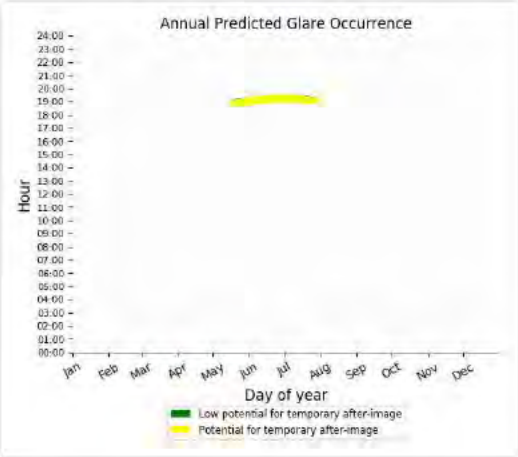


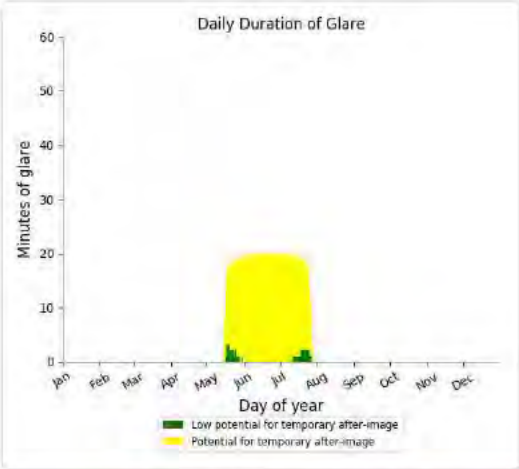


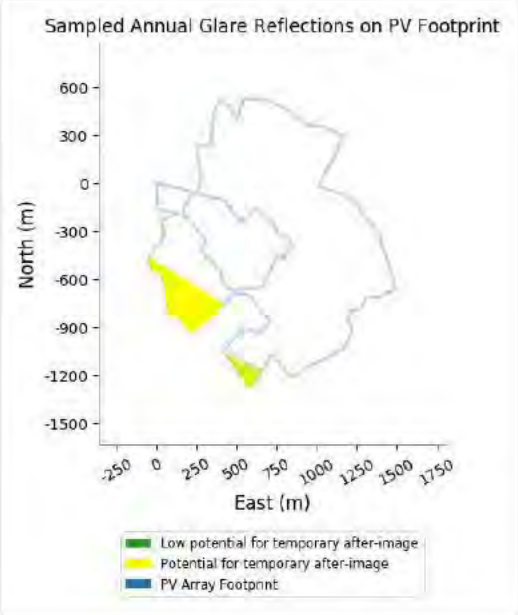
PV array 1 - OP Receptor (OP 69)

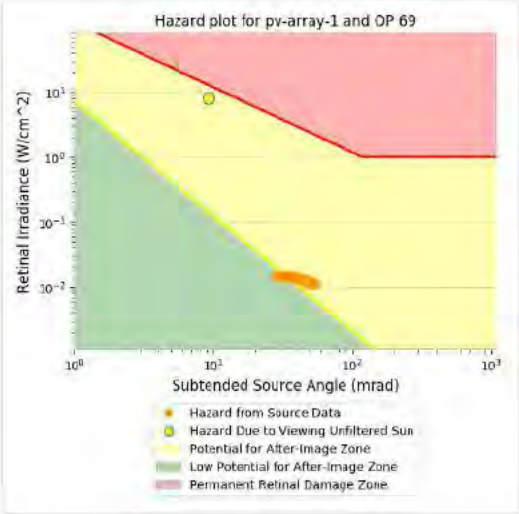
PV array is expected to produce the following glare for receptors at this location:

- 47 minutes of "green" glare with low potential to cause temporary after-image.
- 1,337 minutes of "yellow" glare with potential to cause temporary after-image.





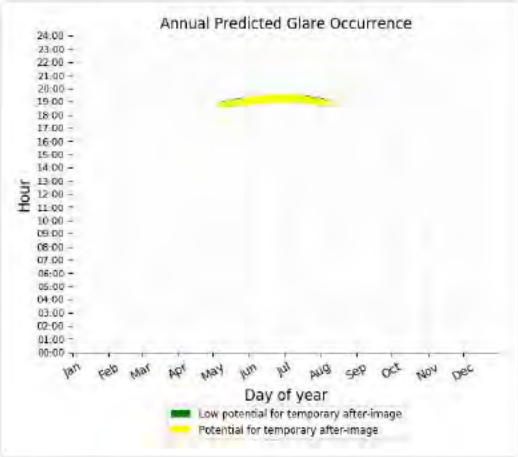


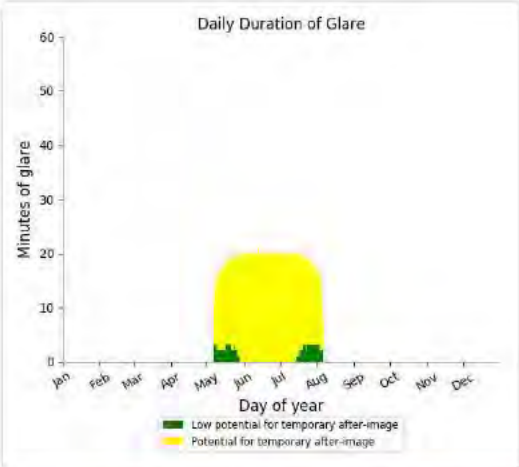


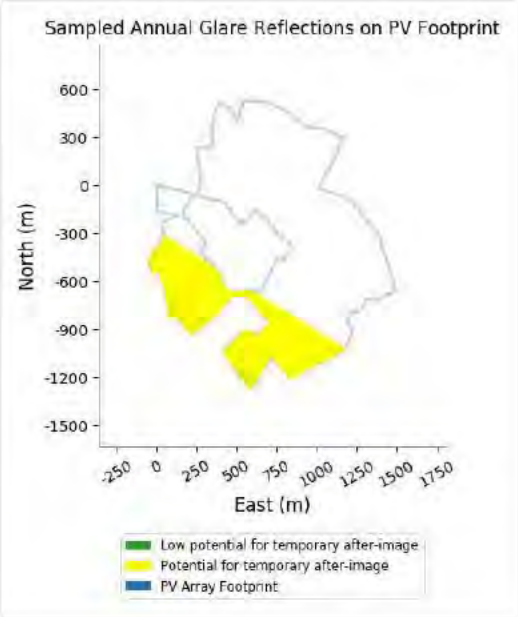
PV array 1 - OP Receptor (OP 70)

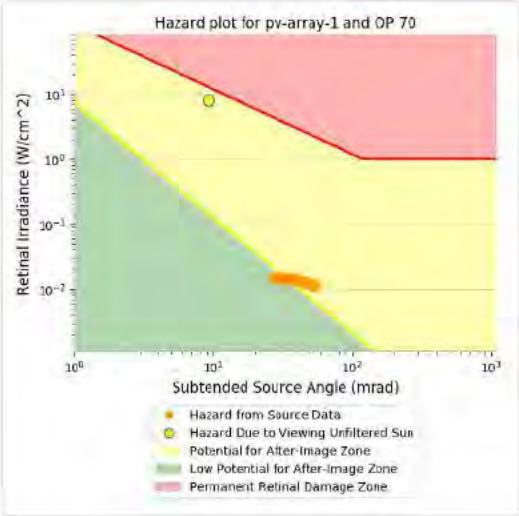
PV array is expected to produce the following glare for receptors at this location:

- 107 minutes of "green" glare with low potential to cause temporary after-image.
- 1,626 minutes of "yellow" glare with potential to cause temporary after-image.





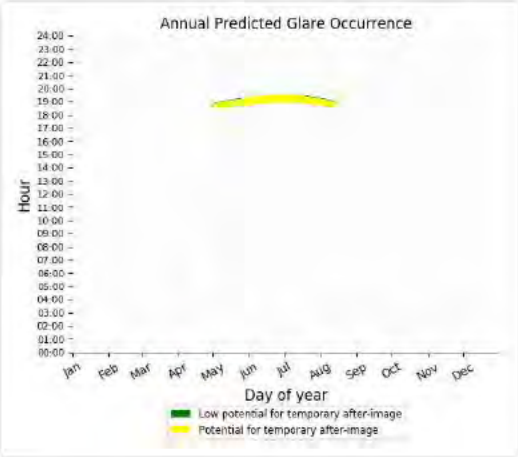


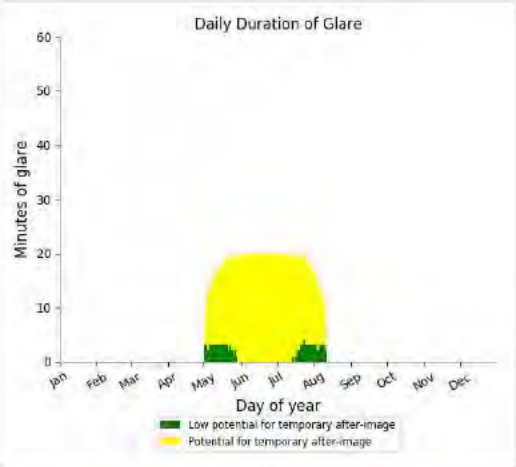


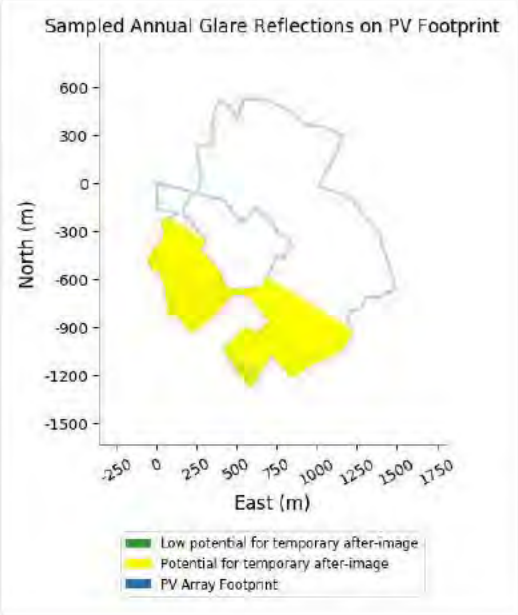
PV array 1 - OP Receptor (OP 71)

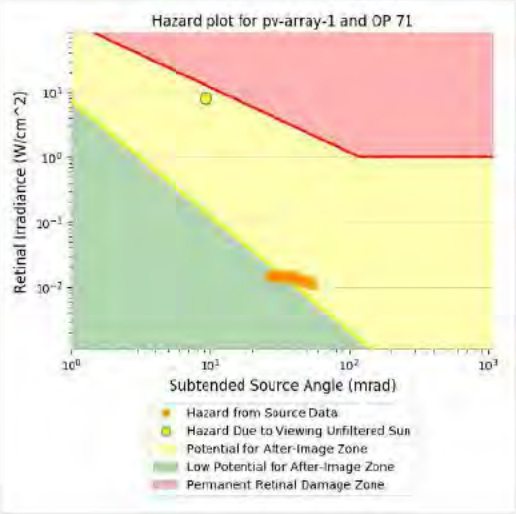
PV array is expected to produce the following glare for receptors at this location:

- 145 minutes of "green" glare with low potential to cause temporary after-image.
- 1,695 minutes of "yellow" glare with potential to cause temporary after-image.





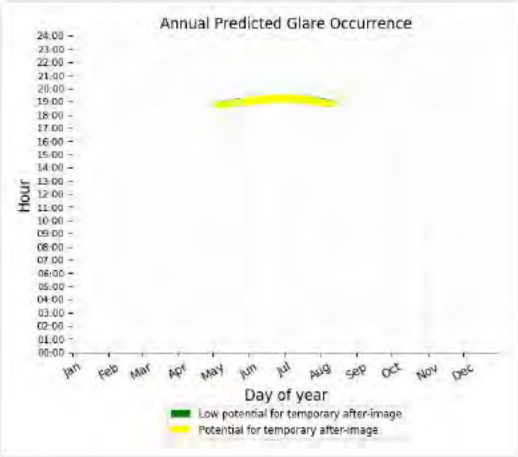


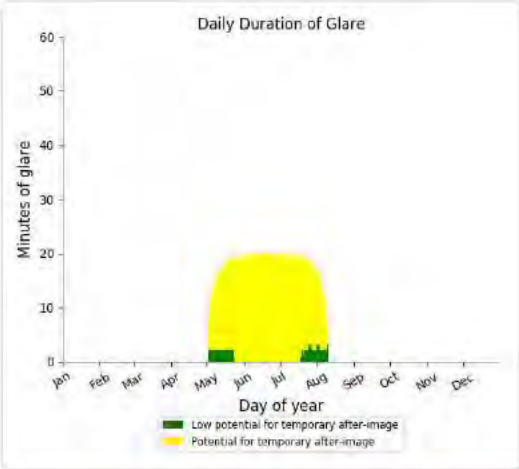


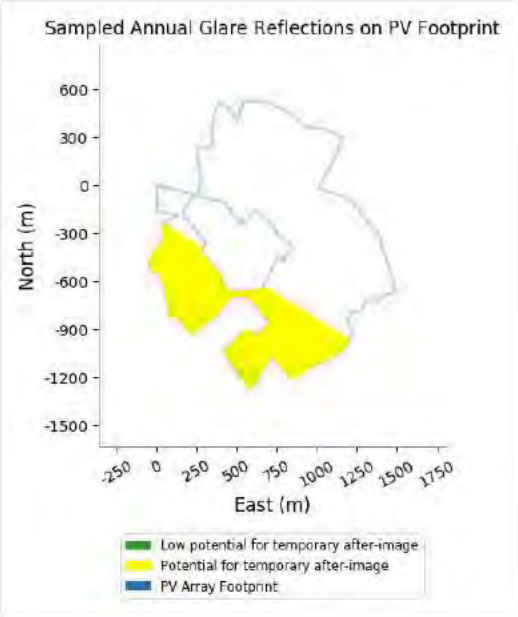
PV array 1 - OP Receptor (OP 72)

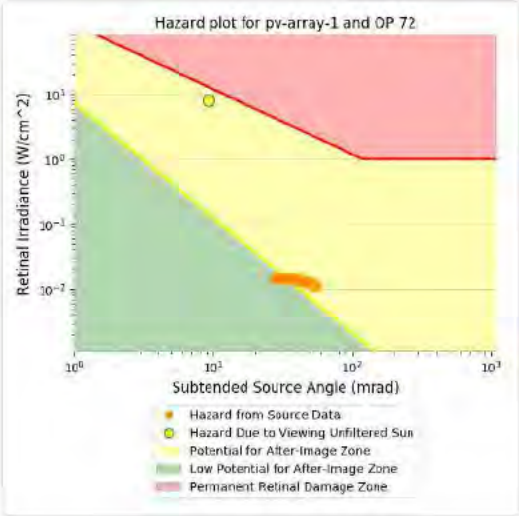
PV array is expected to produce the following glare for receptors at this location:

- 94 minutes of "green" glare with low potential to cause temporary after-image.
- 1,717 minutes of "yellow" glare with potential to cause temporary after-image.





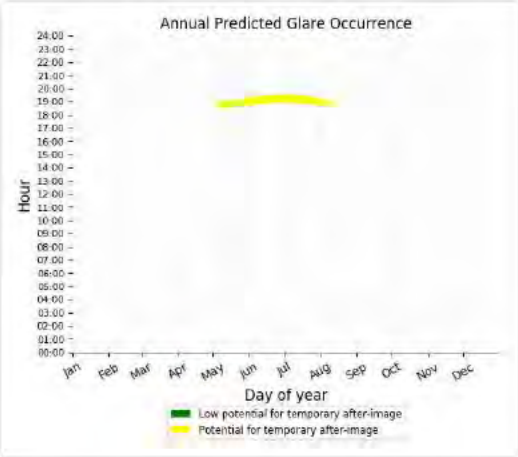


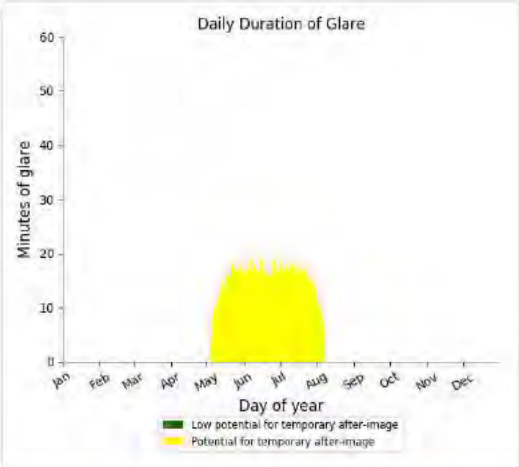


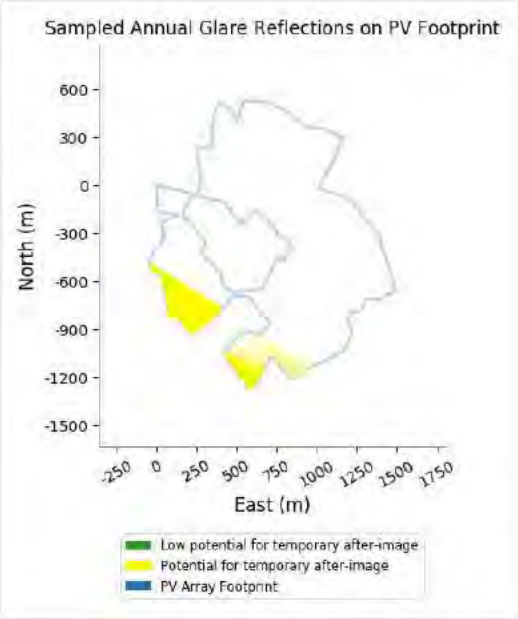
PV array 1 - OP Receptor (OP 73)

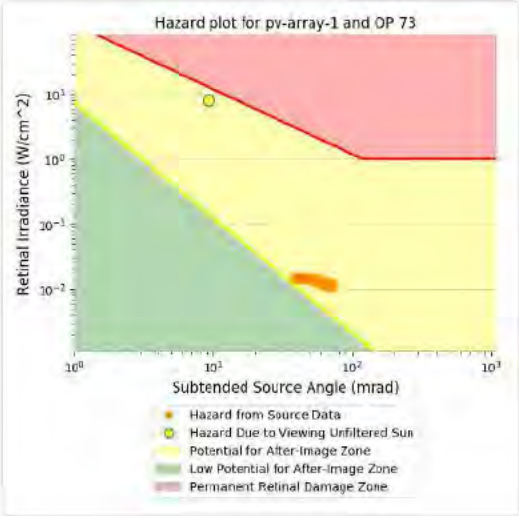
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 1,485 minutes of "yellow" glare with potential to cause temporary after-image.





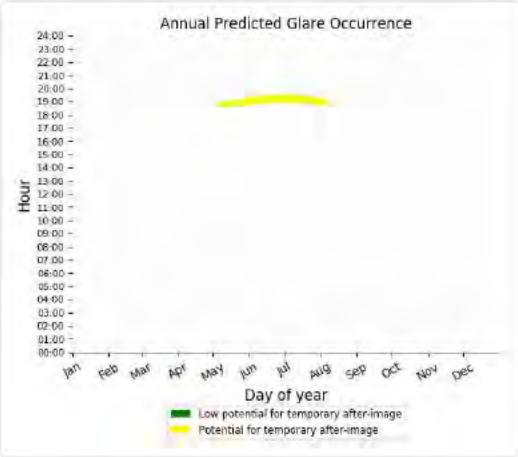


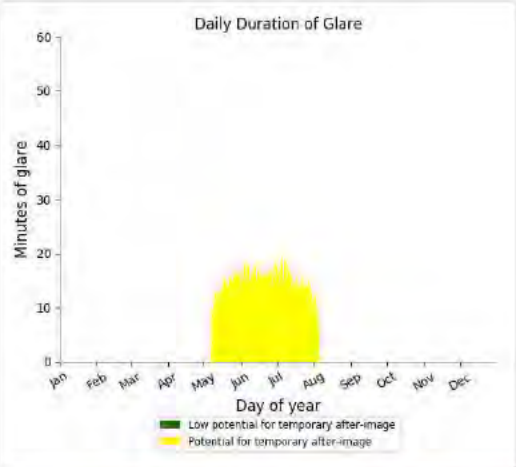


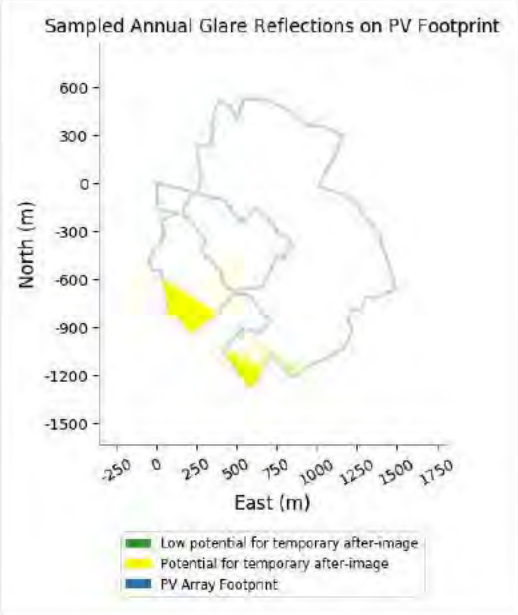
PV array 1 - OP Receptor (OP 74)

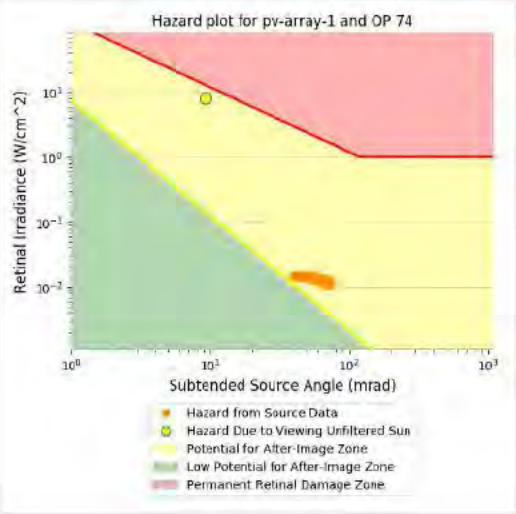
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 1,344 minutes of "yellow" glare with potential to cause temporary after-image.





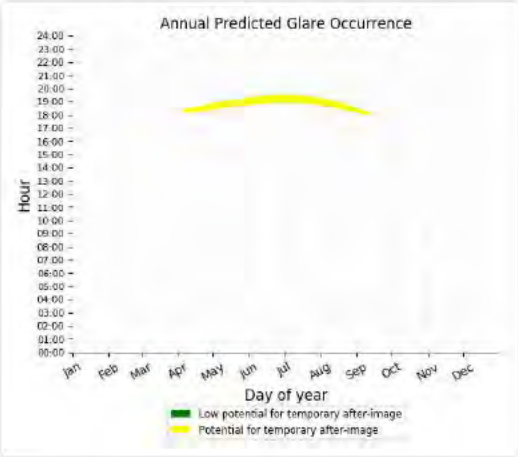


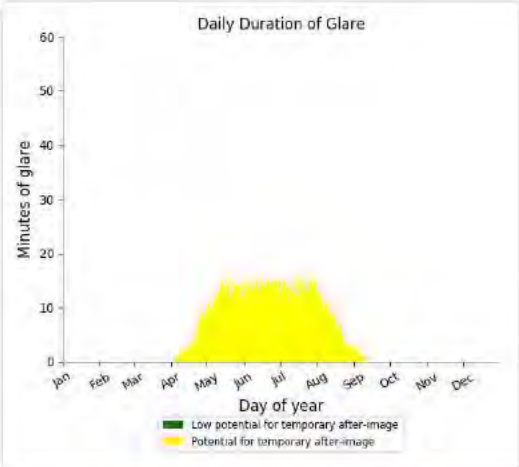


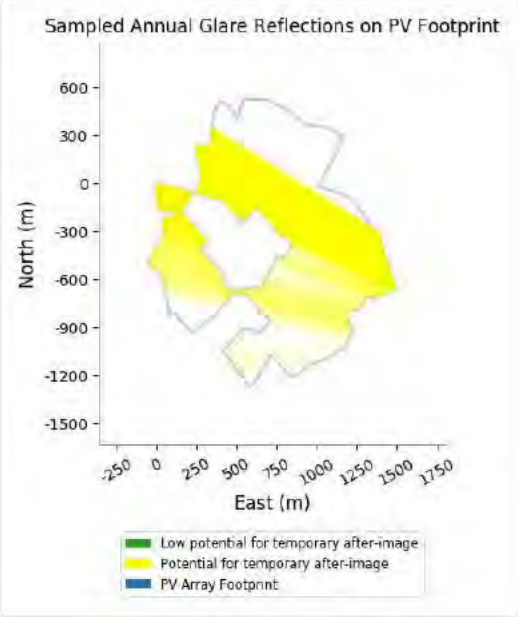
PV array 1 - OP Receptor (OP 75)

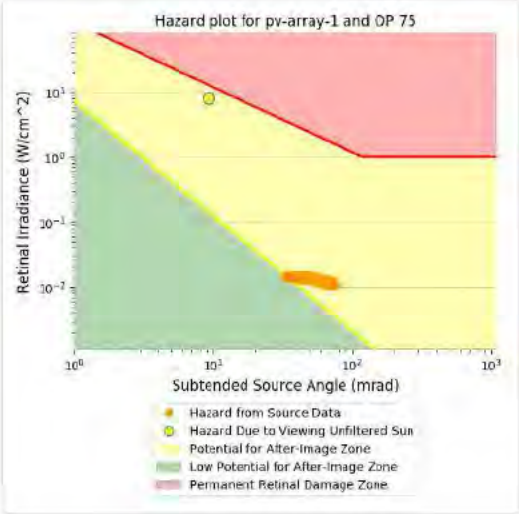
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 1,623 minutes of "yellow" glare with potential to cause temporary after-image.





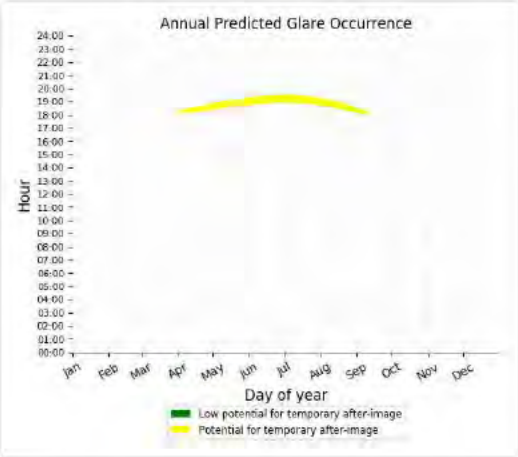


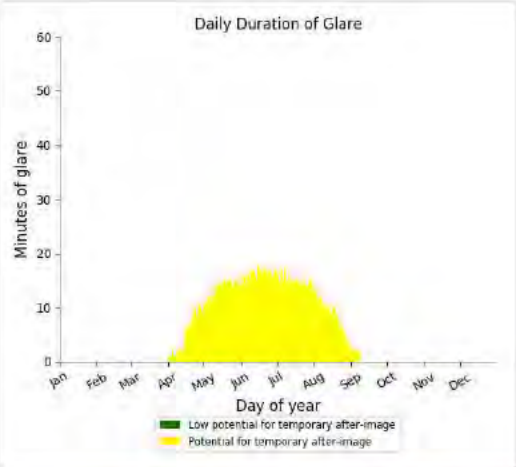


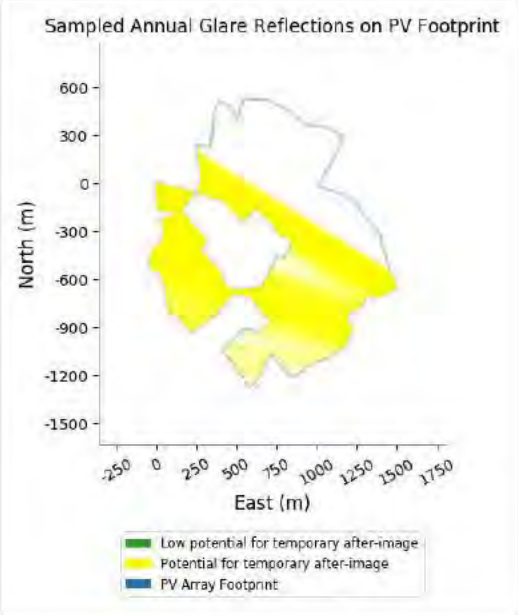
PV array 1 - OP Receptor (OP 76)

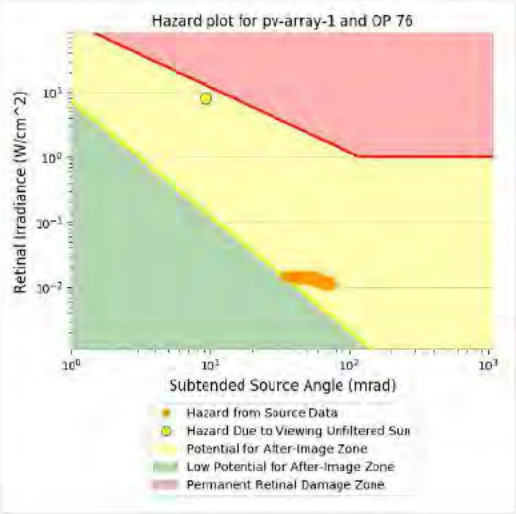
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 1,809 minutes of "yellow" glare with potential to cause temporary after-image.





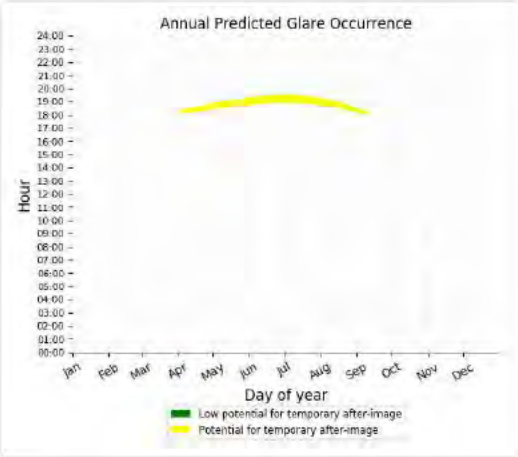


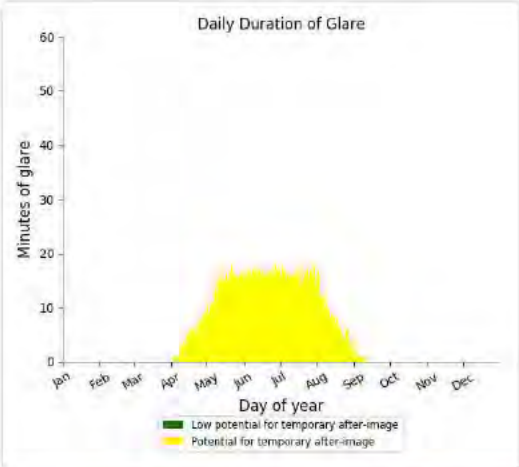


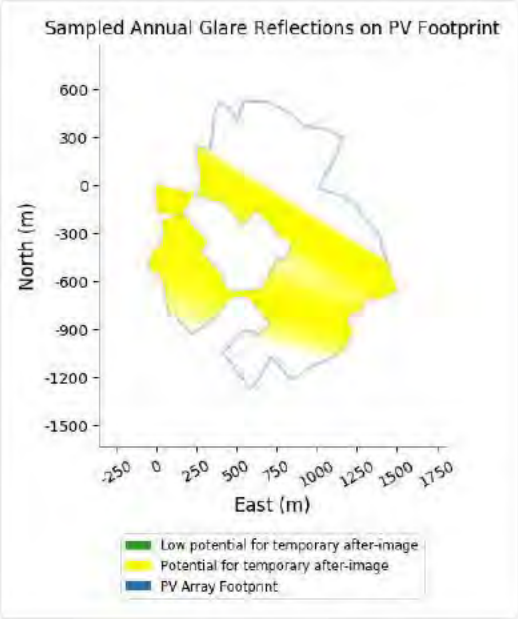
PV array 1 - OP Receptor (OP 77)

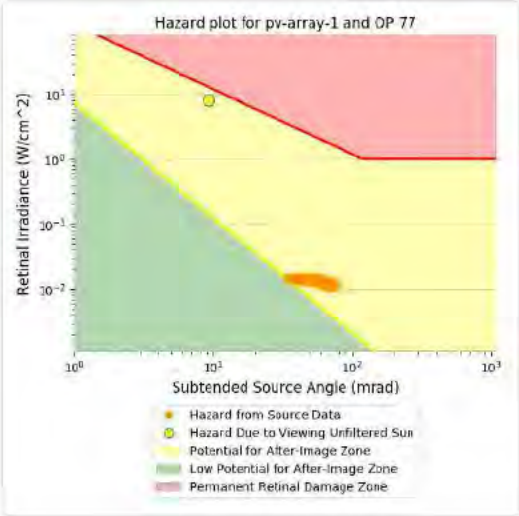
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 1,851 minutes of "yellow" glare with potential to cause temporary after-image.





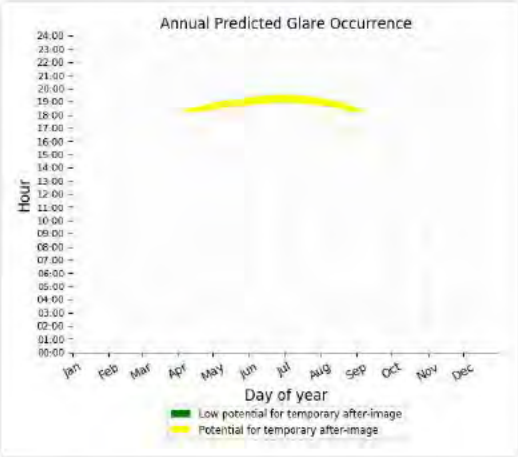


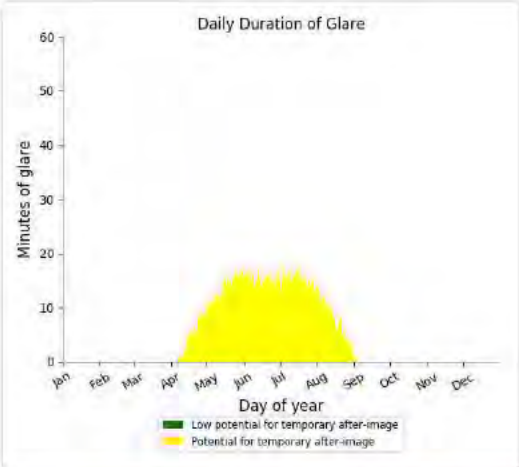


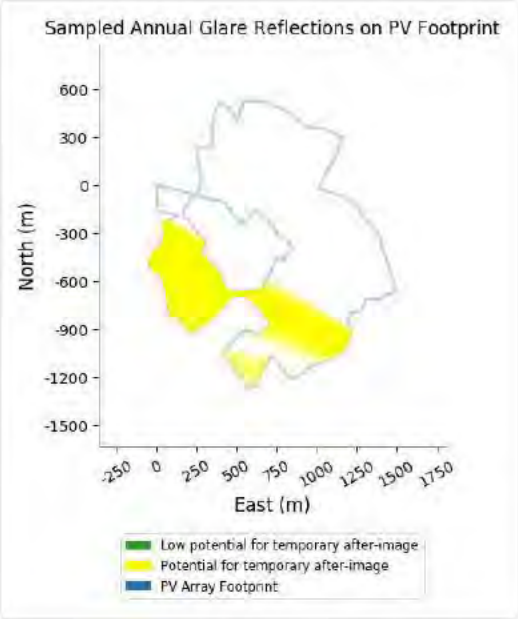
PV array 1 - OP Receptor (OP 78)

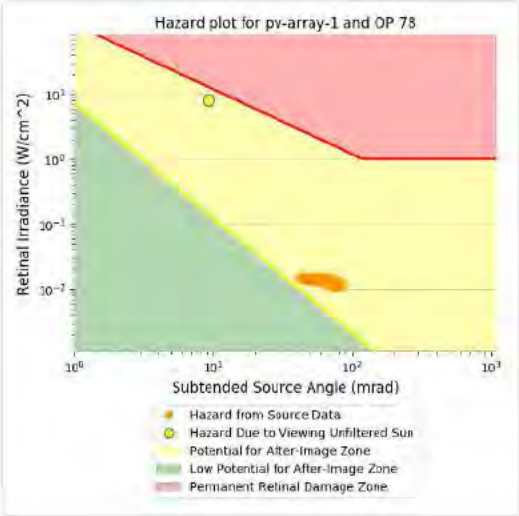
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 1,731 minutes of "yellow" glare with potential to cause temporary after-image.





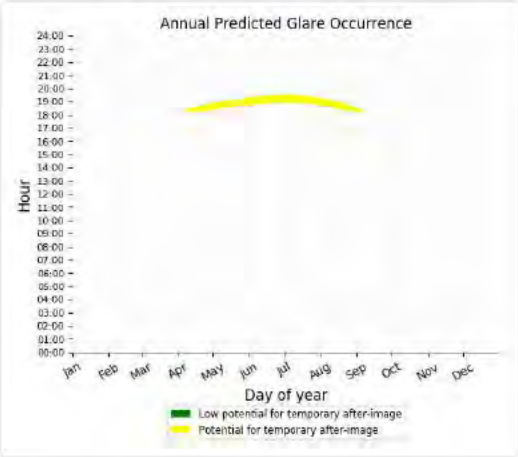


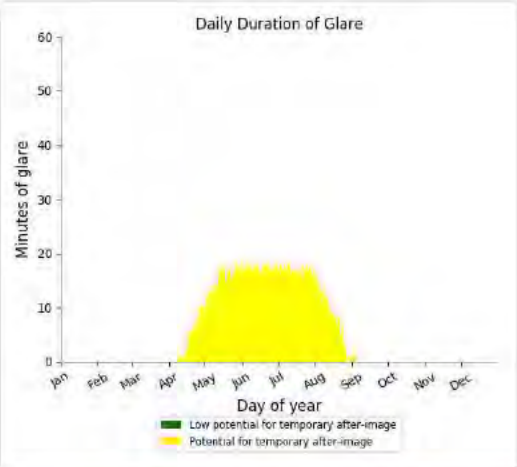


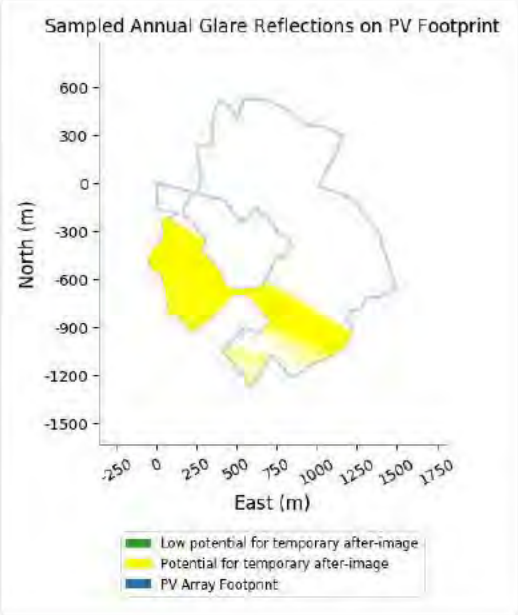
PV array 1 - OP Receptor (OP 79)

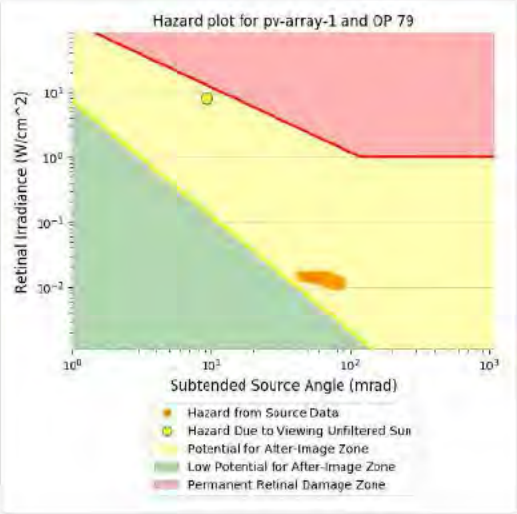
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 1,906 minutes of "yellow" glare with potential to cause temporary after-image.





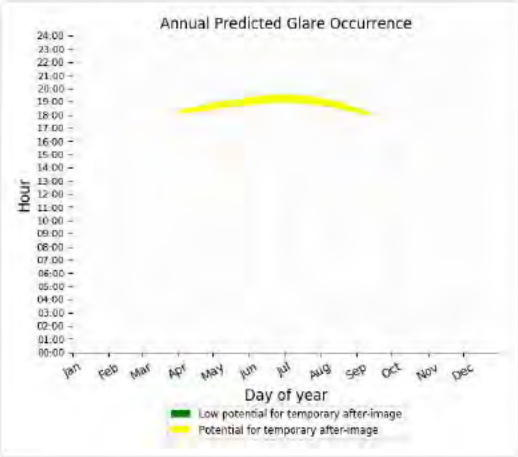


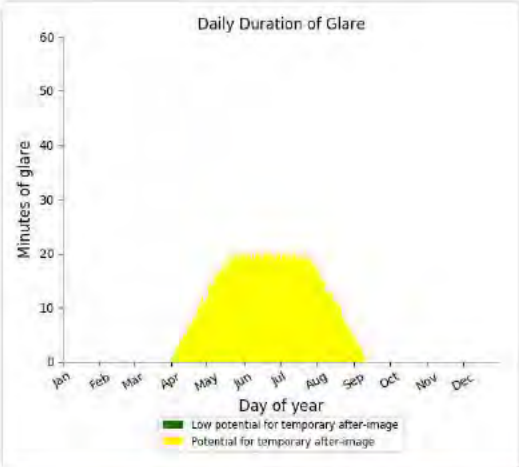


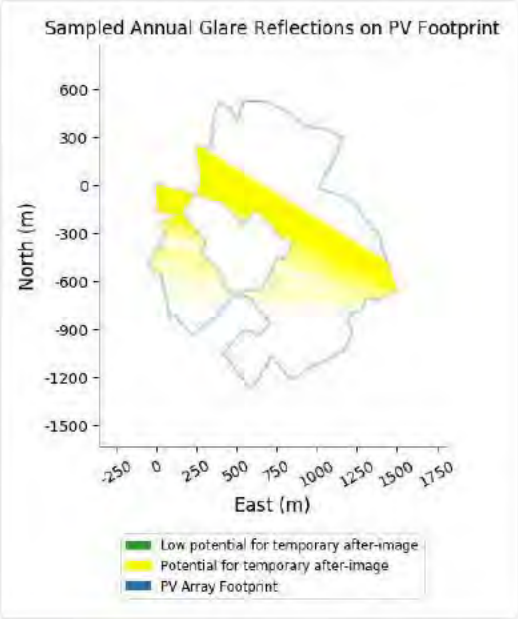
PV array 1 - OP Receptor (OP 80)

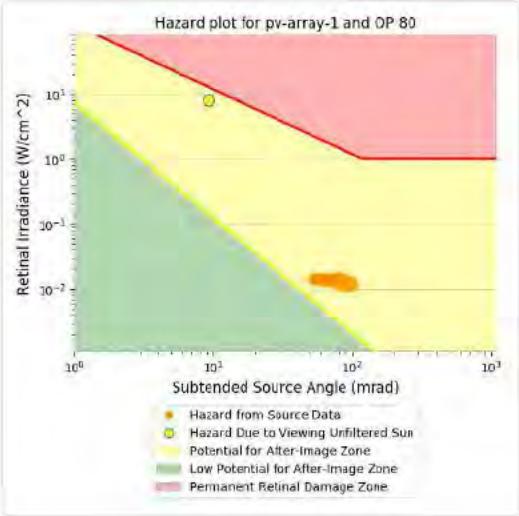
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 2,270 minutes of "yellow" glare with potential to cause temporary after-image.





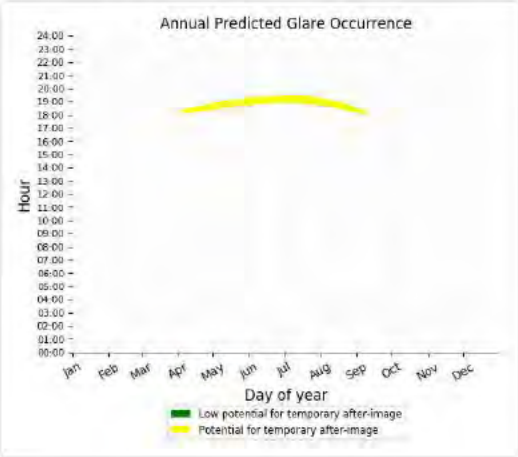


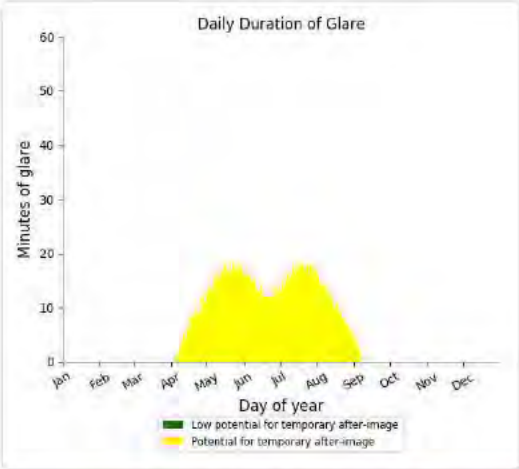


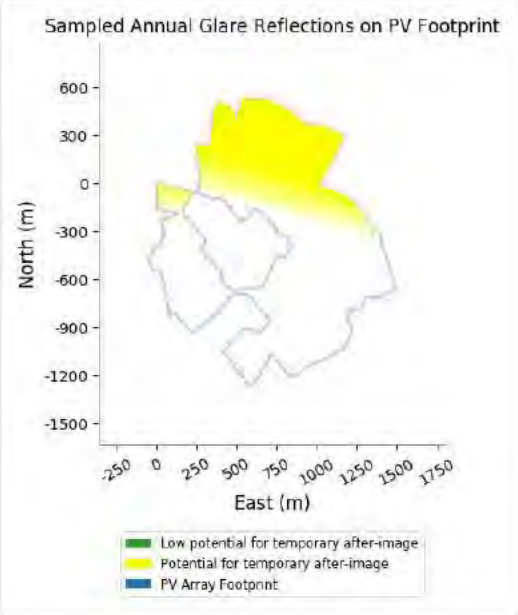
PV array 1 - OP Receptor (OP 81)

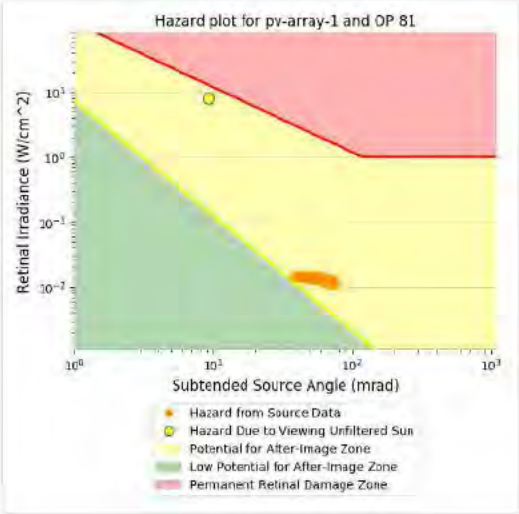
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 1,952 minutes of "yellow" glare with potential to cause temporary after-image.





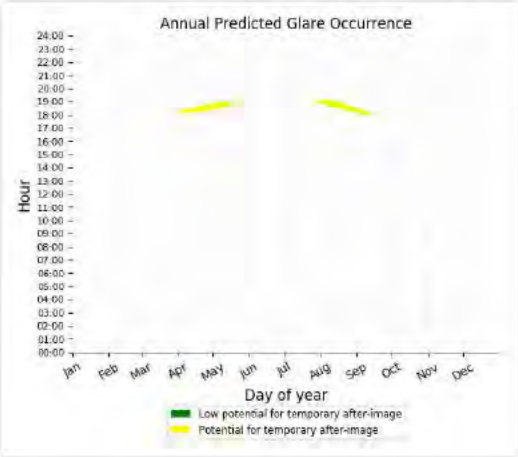


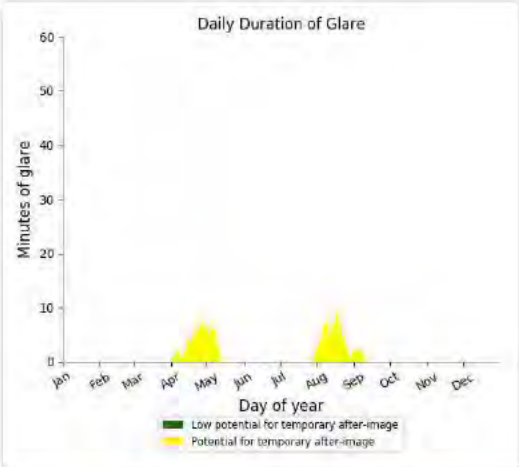


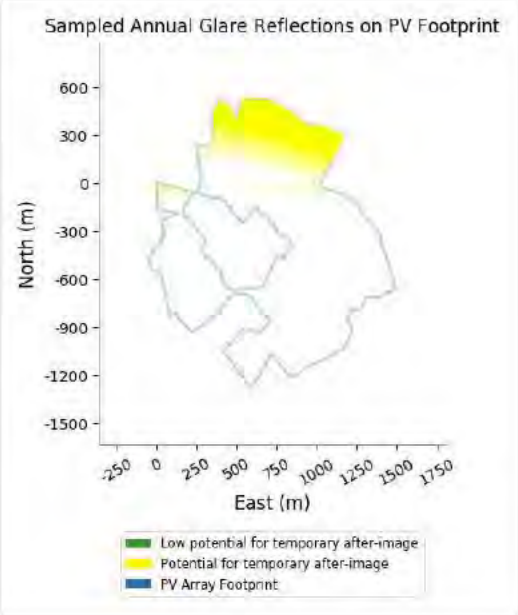
PV array 1 - OP Receptor (OP 82)

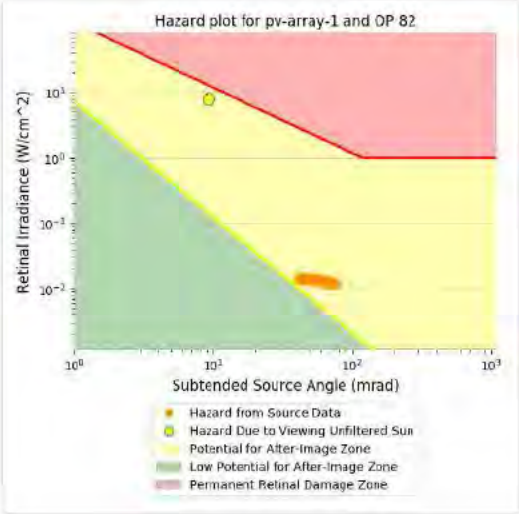
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 351 minutes of "yellow" glare with potential to cause temporary after-image.





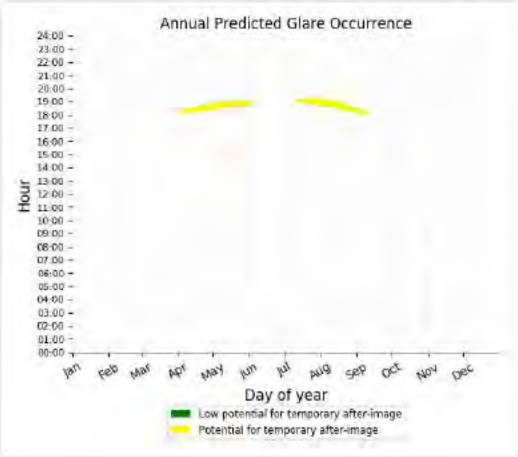


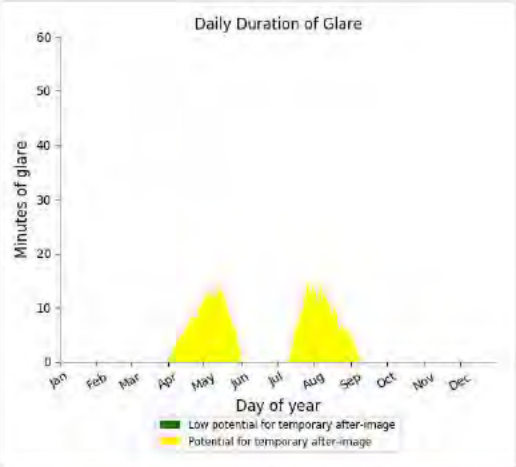


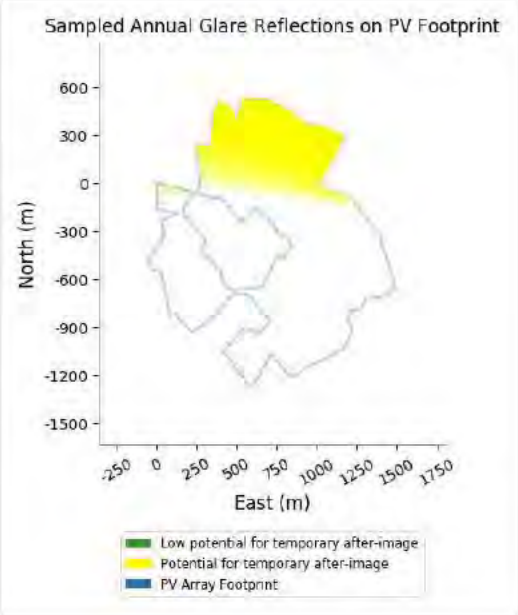
PV array 1 - OP Receptor (OP 83)

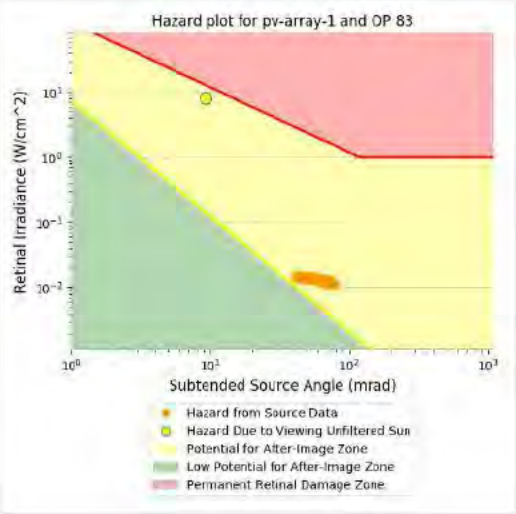
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 982 minutes of "yellow" glare with potential to cause temporary after-image.





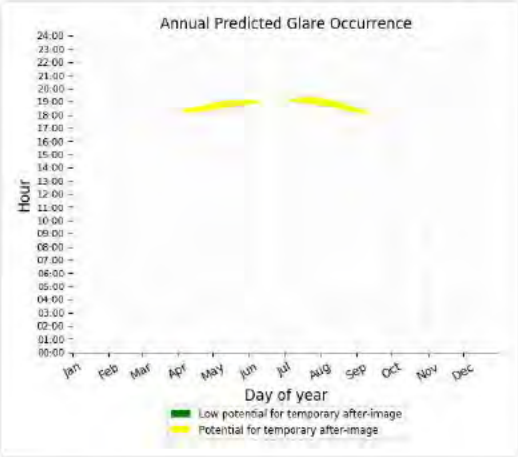


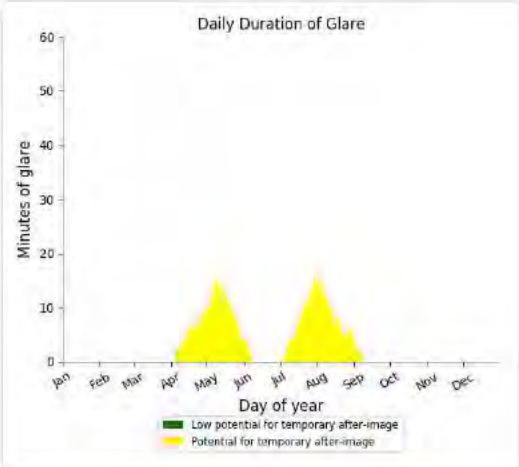


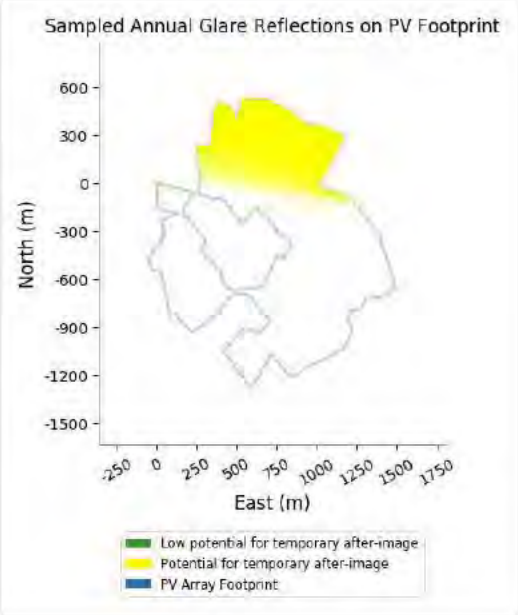
PV array 1 - OP Receptor (OP 84)

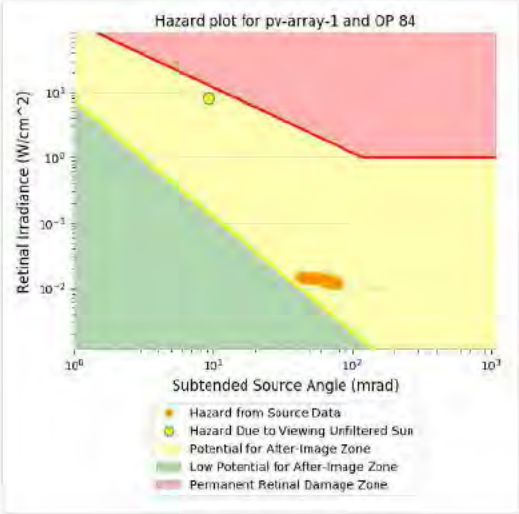
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 996 minutes of "yellow" glare with potential to cause temporary after-image.





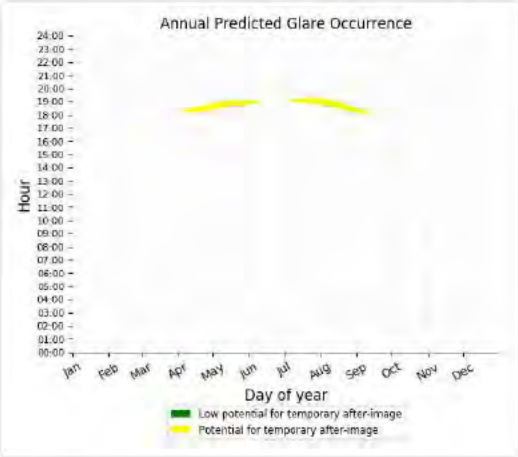


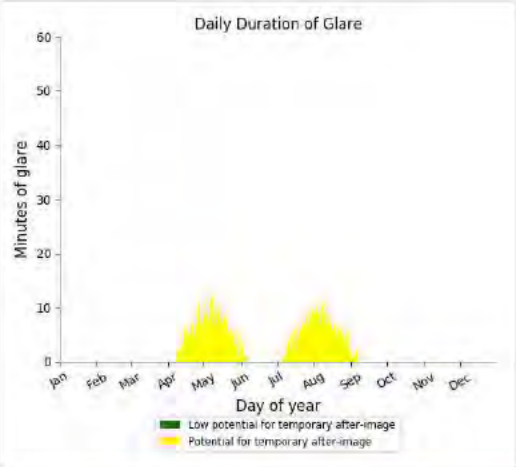


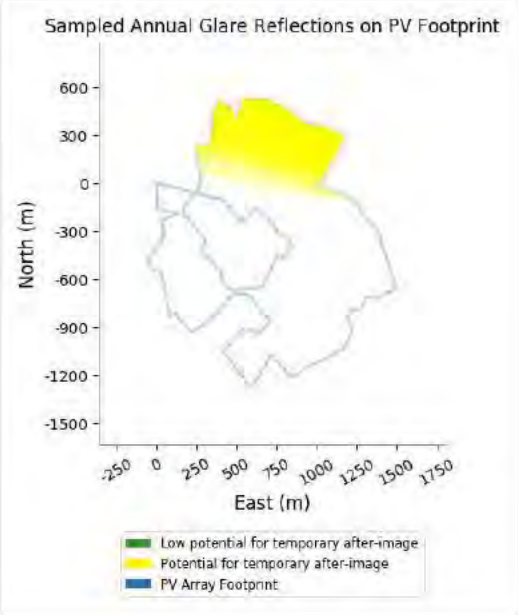
PV array 1 - OP Receptor (OP 85)

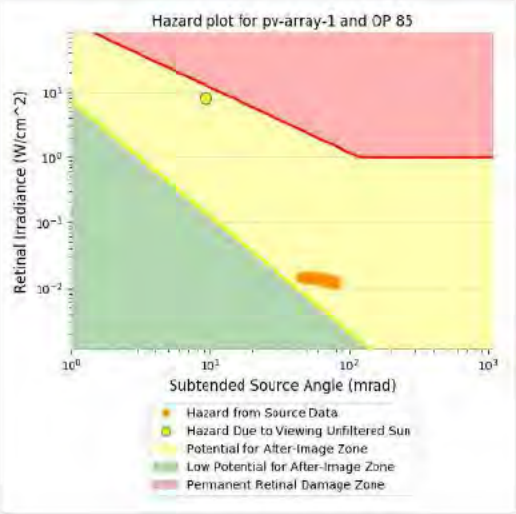
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 734 minutes of "yellow" glare with potential to cause temporary after-image.





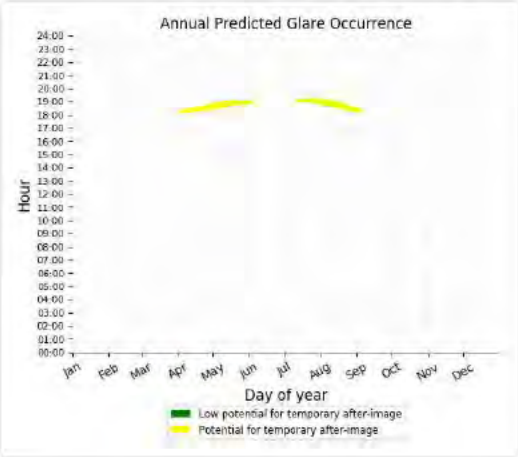


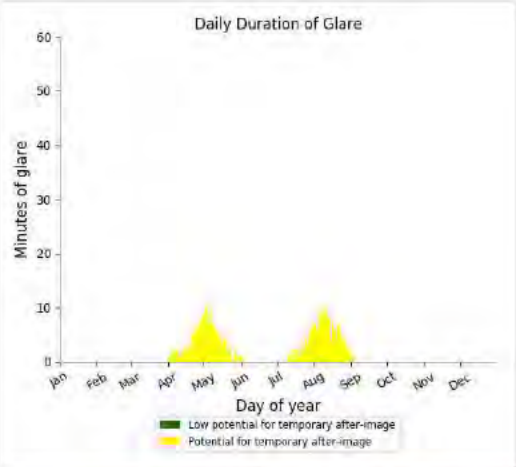


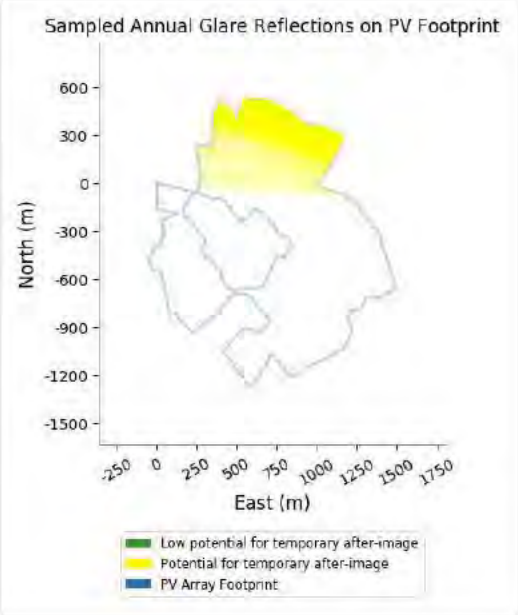
PV array 1 - OP Receptor (OP 86)

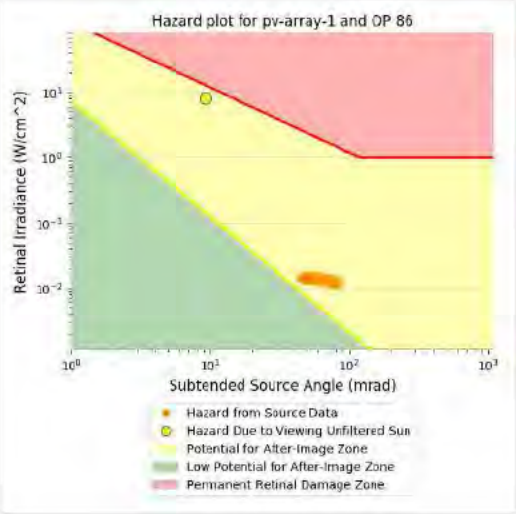
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 498 minutes of "yellow" glare with potential to cause temporary after-image.





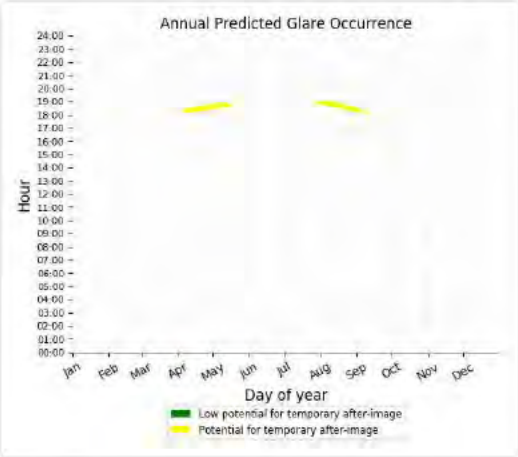


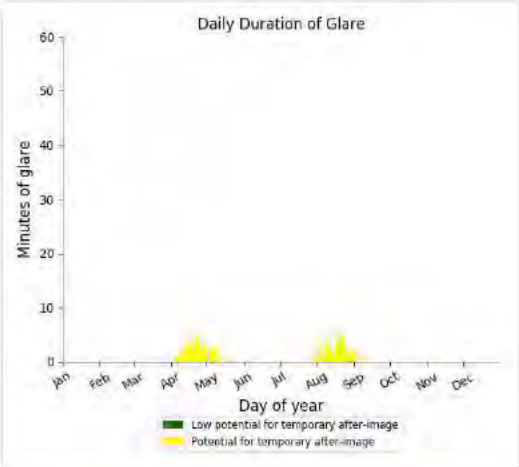


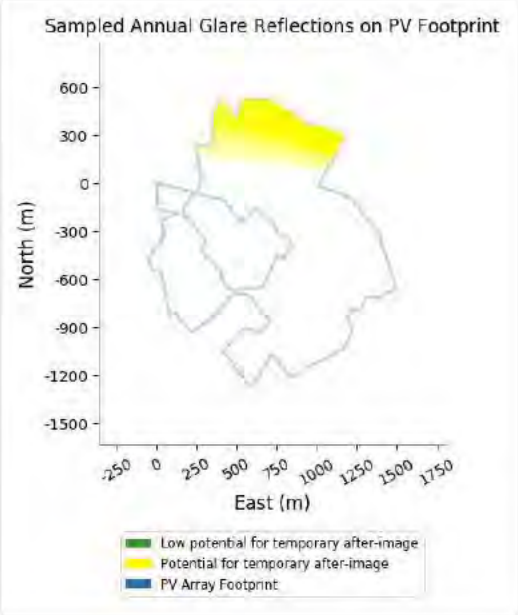
PV array 1 - OP Receptor (OP 87)

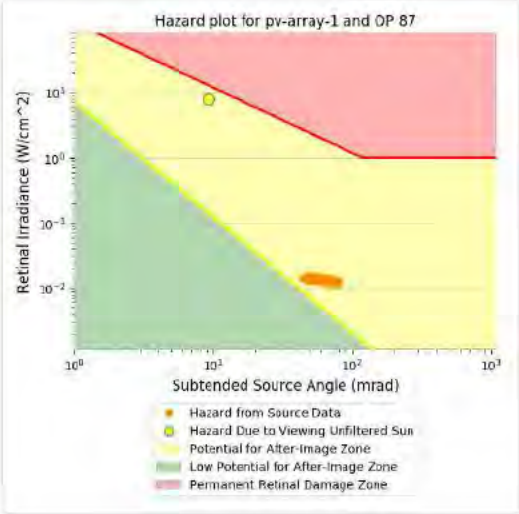
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 175 minutes of "yellow" glare with potential to cause temporary after-image.





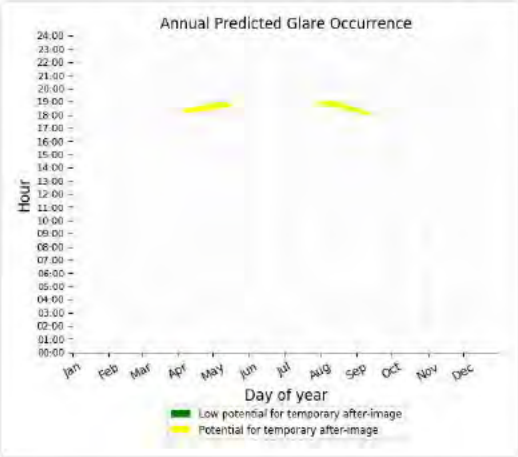


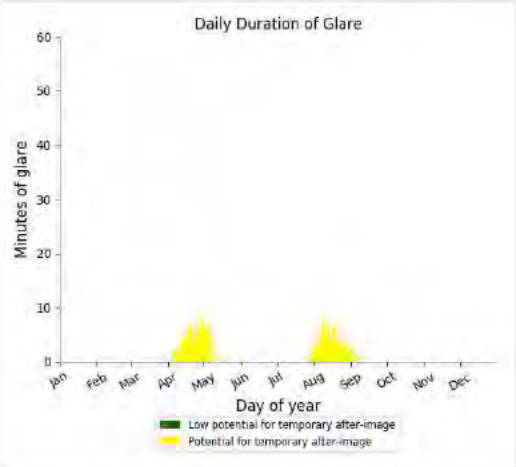


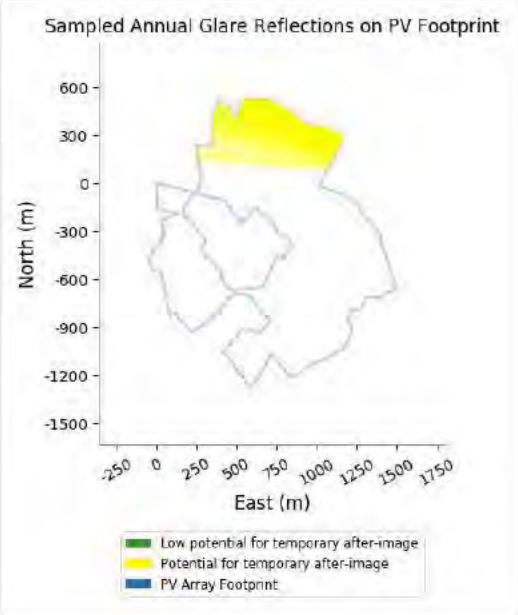
PV array 1 - OP Receptor (OP 88)

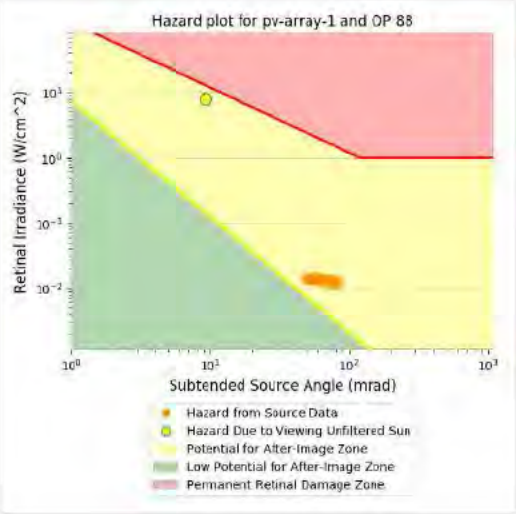
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 315 minutes of "yellow" glare with potential to cause temporary after-image.





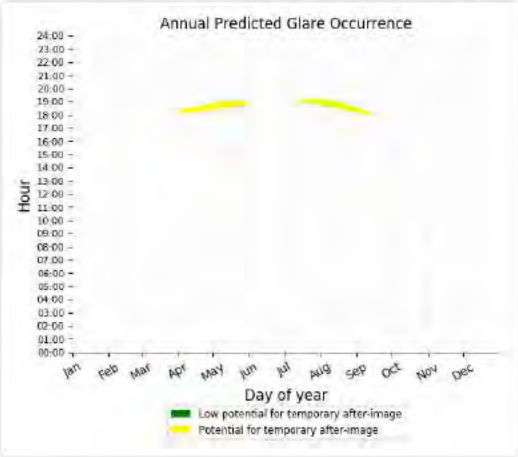


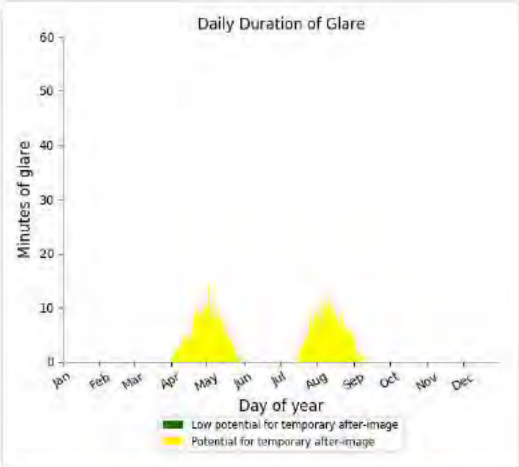


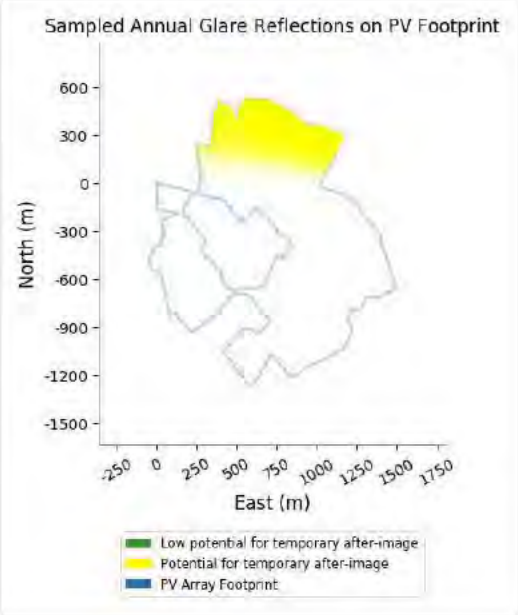
PV array 1 - OP Receptor (OP 89)

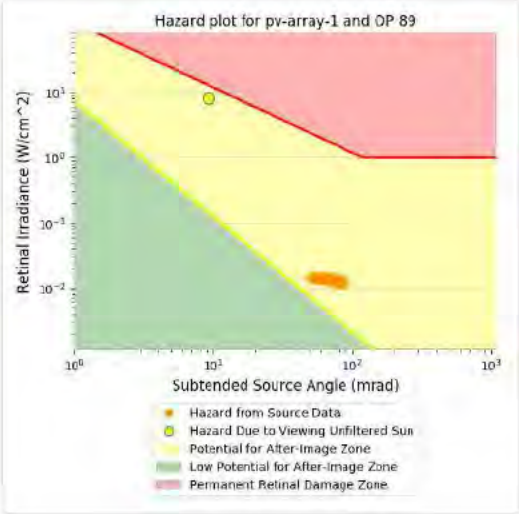
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 689 minutes of "yellow" glare with potential to cause temporary after-image.





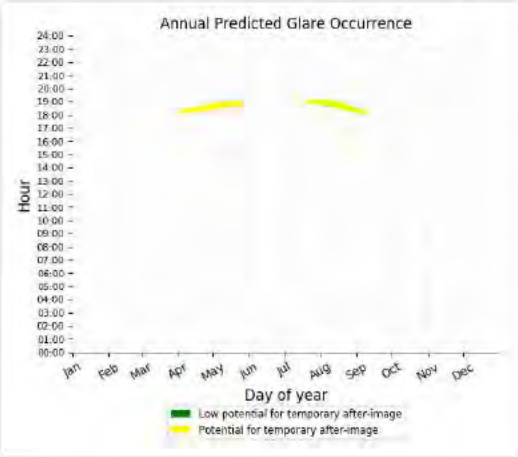


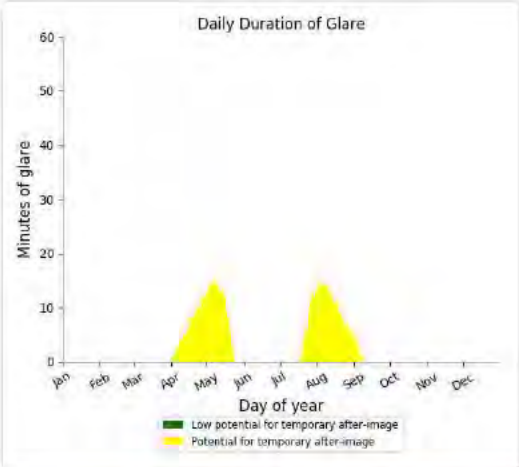


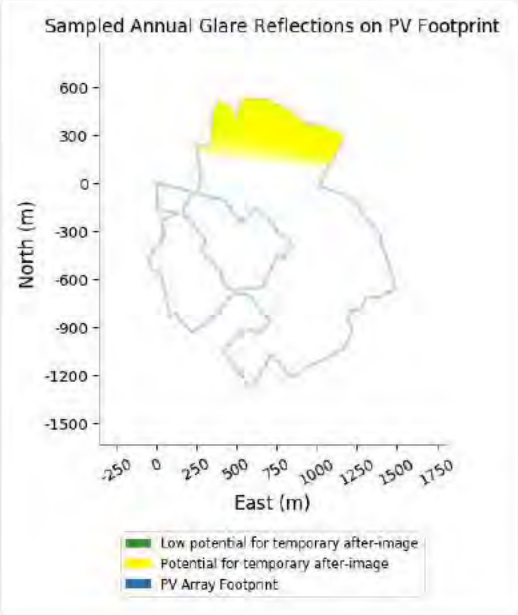
PV array 1 - OP Receptor (OP 90)

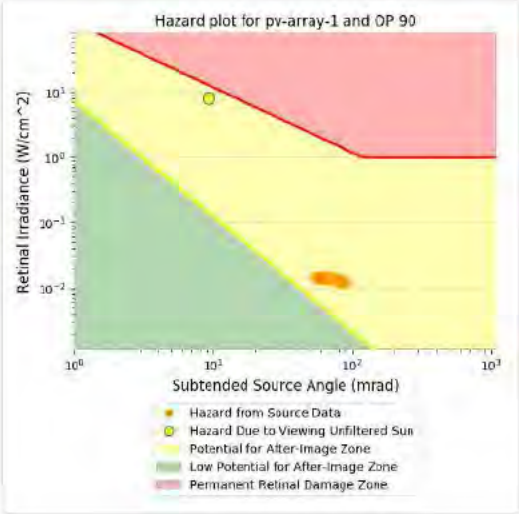
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 904 minutes of "yellow" glare with potential to cause temporary after-image.





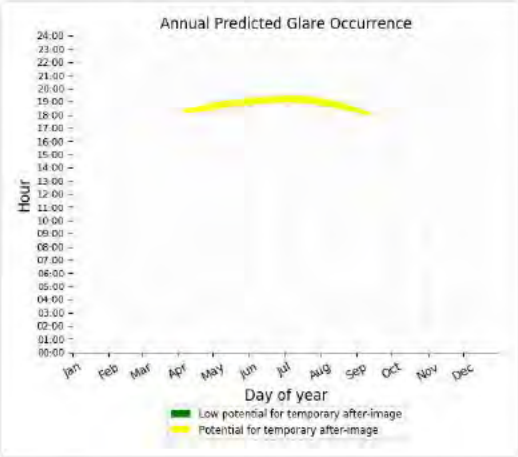


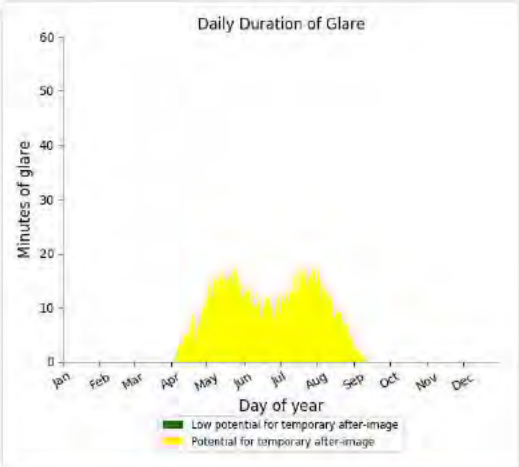


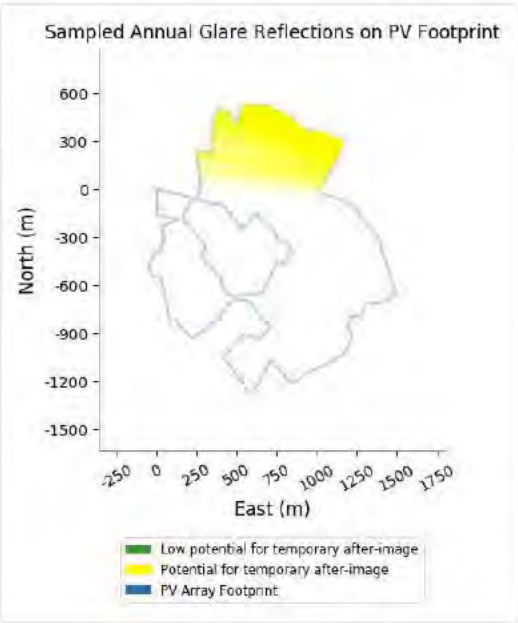
PV array 1 - OP Receptor (OP 91)

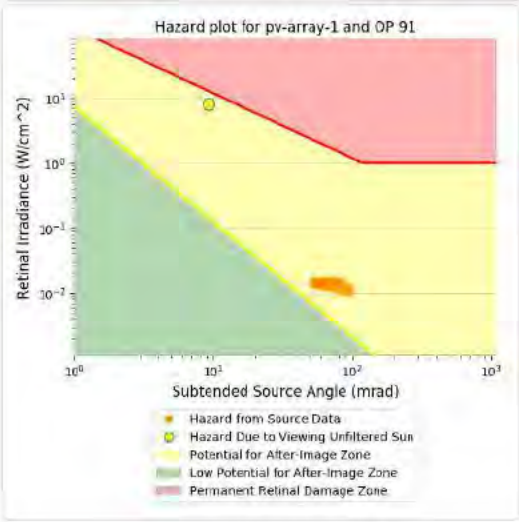
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 1,703 minutes of "yellow" glare with potential to cause temporary after-image.





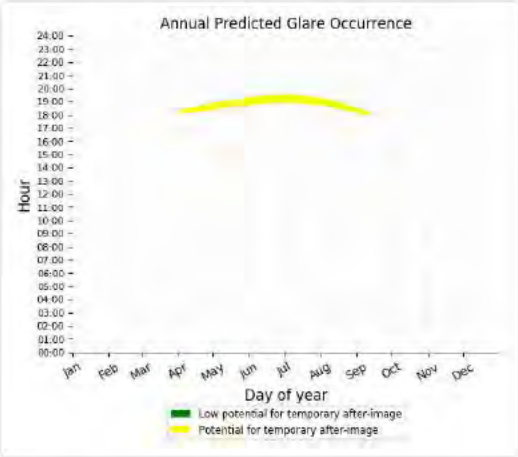


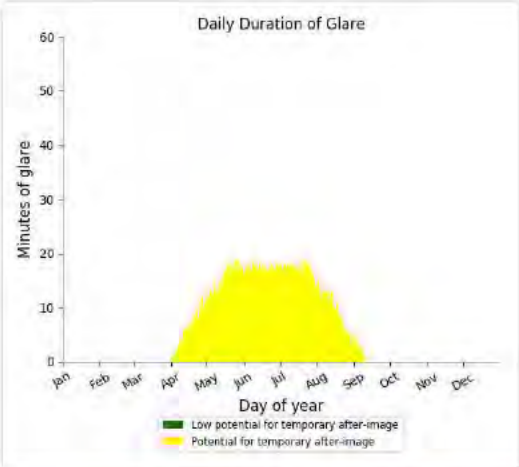


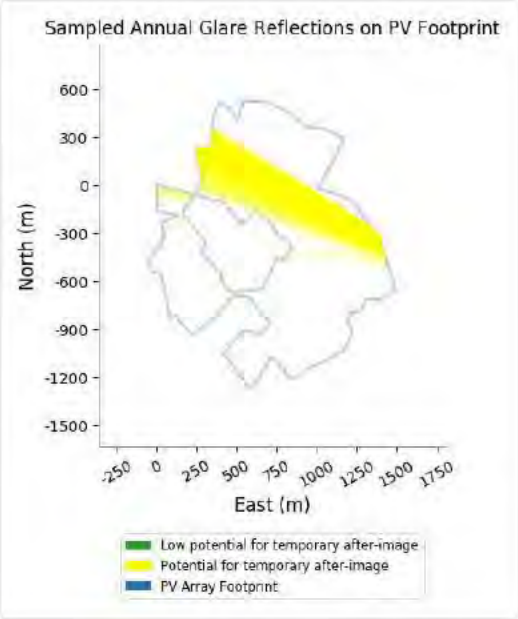
PV array 1 - OP Receptor (OP 92)

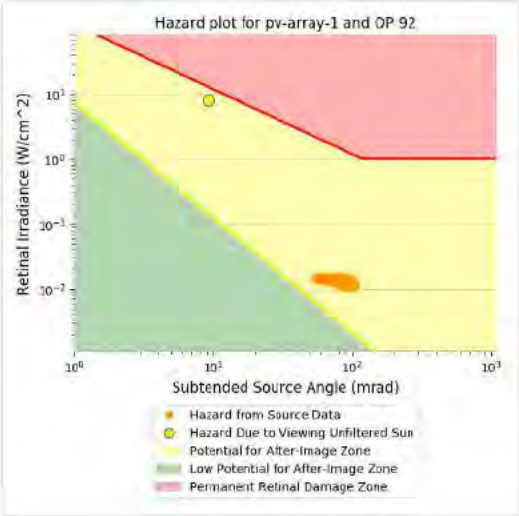
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 2,061 minutes of "yellow" glare with potential to cause temporary after-image.





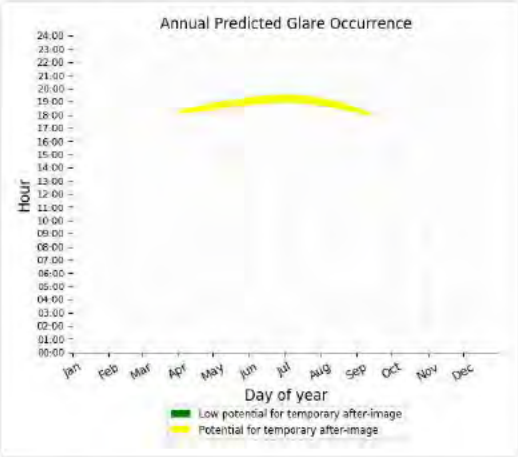


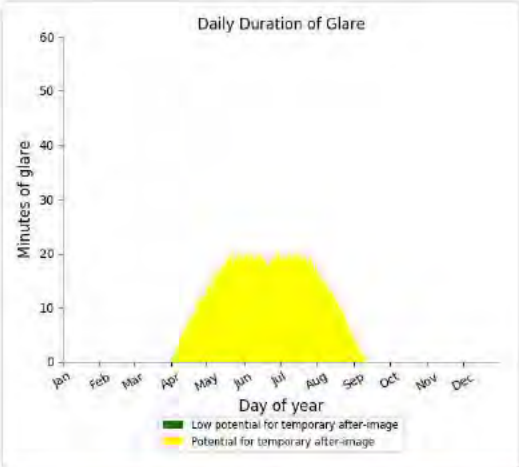


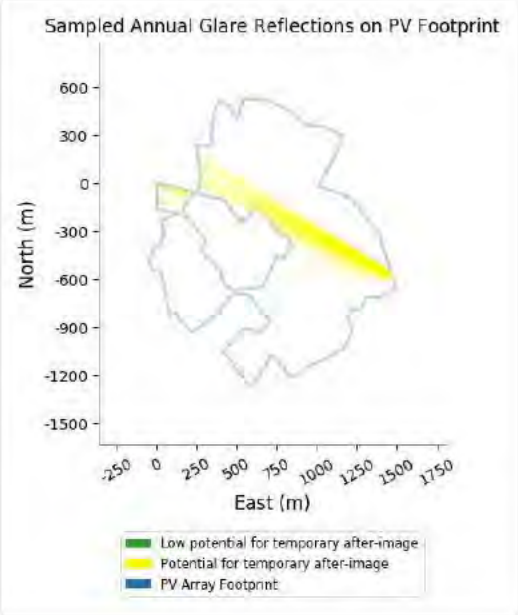
PV array 1 - OP Receptor (OP 93)

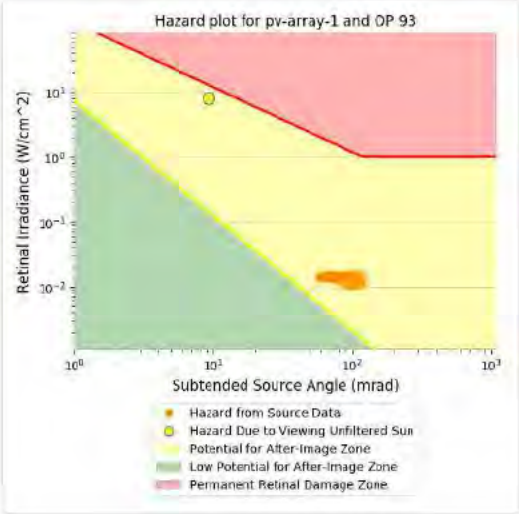
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 2,278 minutes of "yellow" glare with potential to cause temporary after-image.





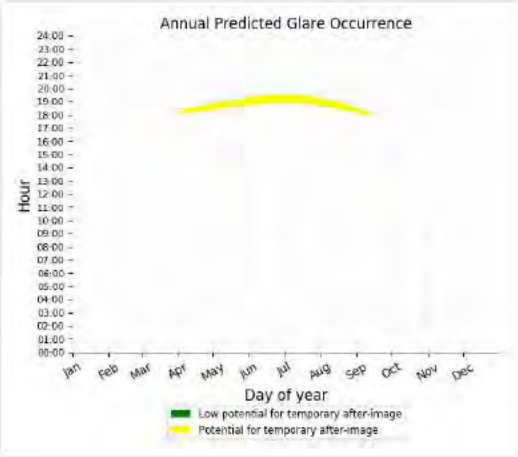


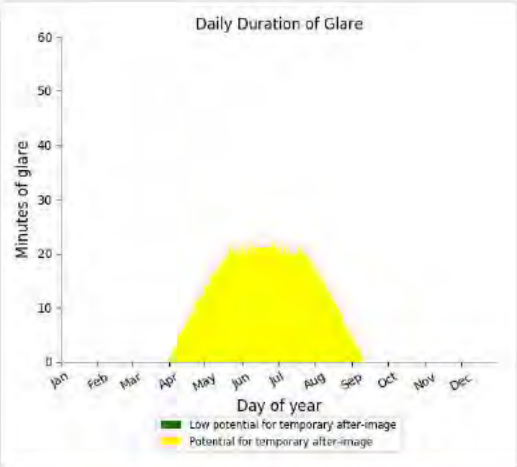


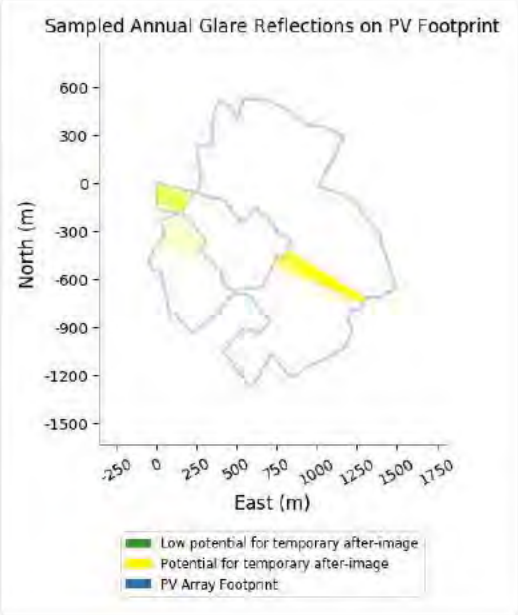
PV array 1 - OP Receptor (OP 94)

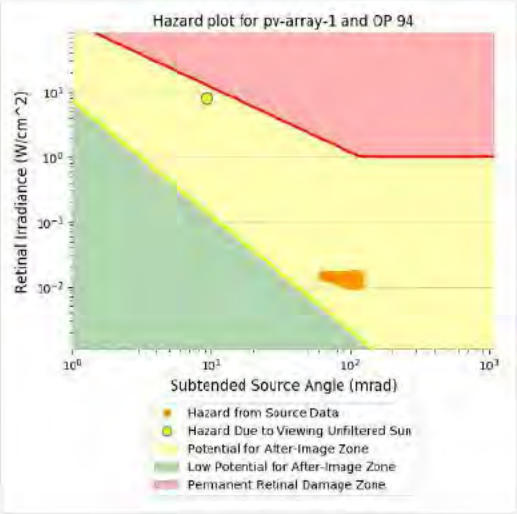
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 2,394 minutes of "yellow" glare with potential to cause temporary after-image.





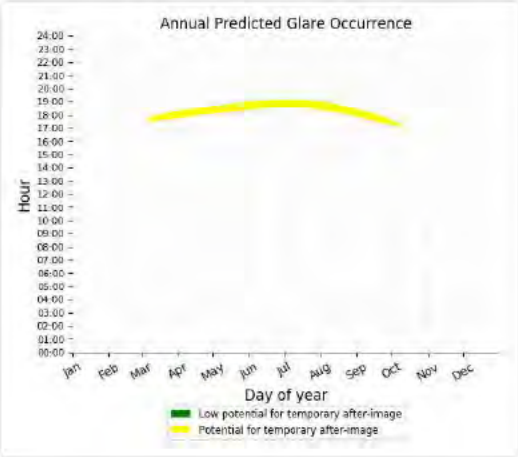


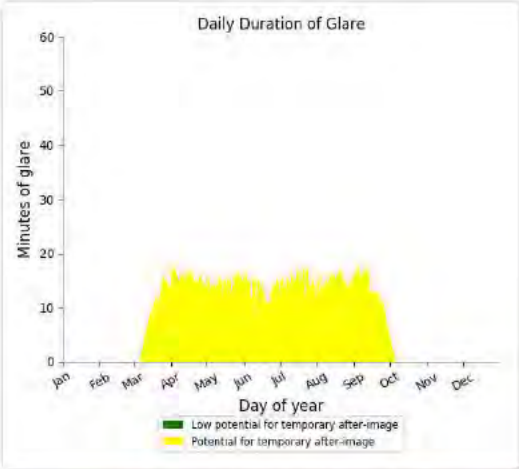


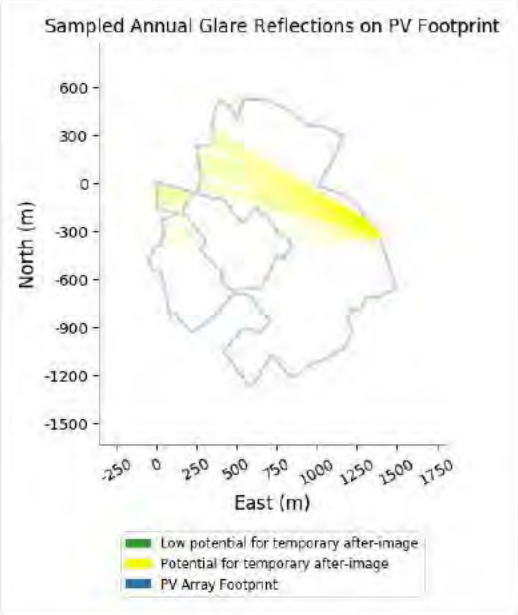
PV array 1 - OP Receptor (OP 95)

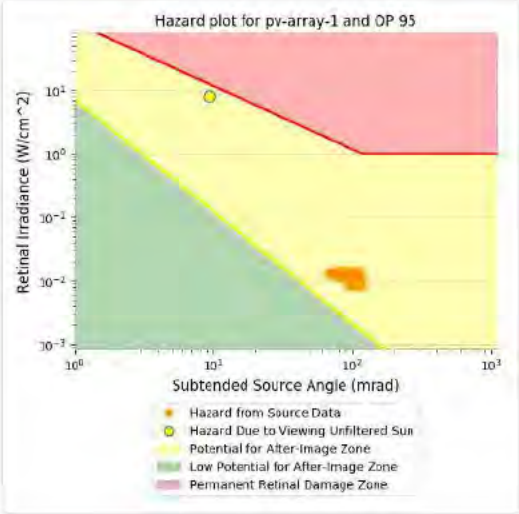
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 2,956 minutes of "yellow" glare with potential to cause temporary after-image.





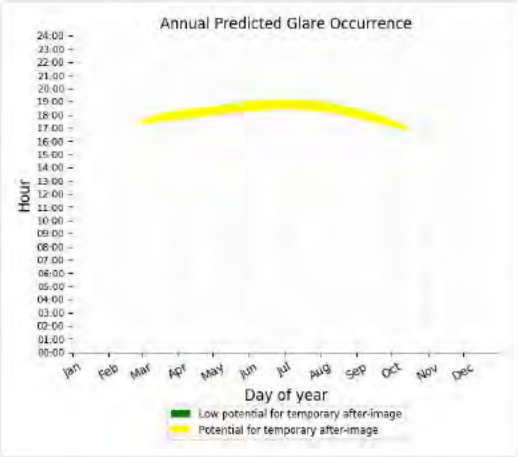


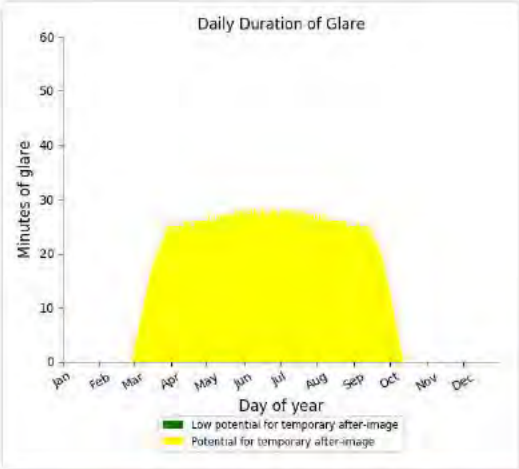


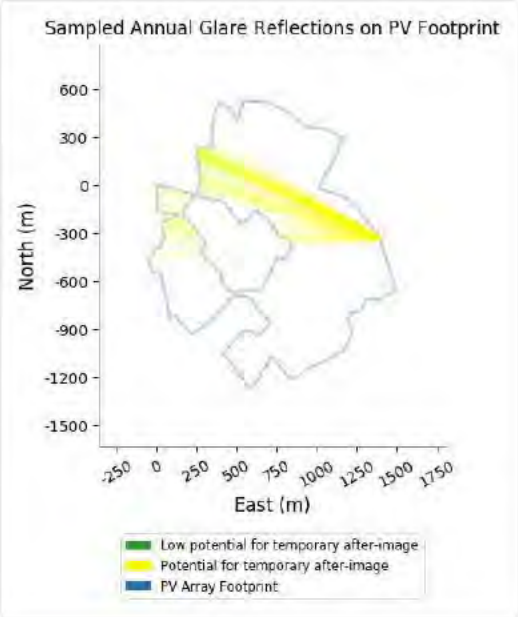
PV array 1 - OP Receptor (OP 96)

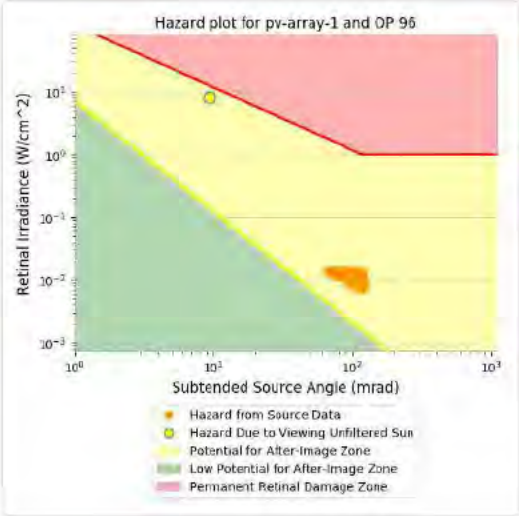
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 5,312 minutes of "yellow" glare with potential to cause temporary after-image.





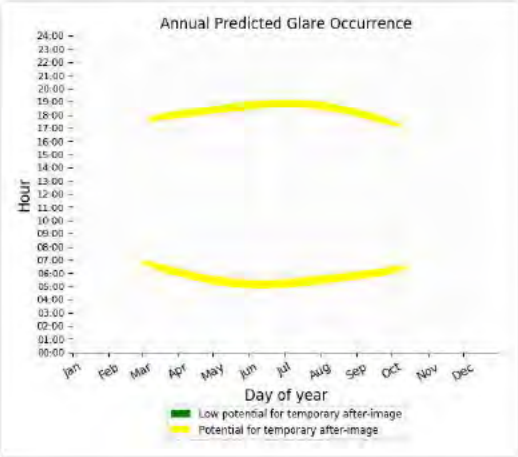


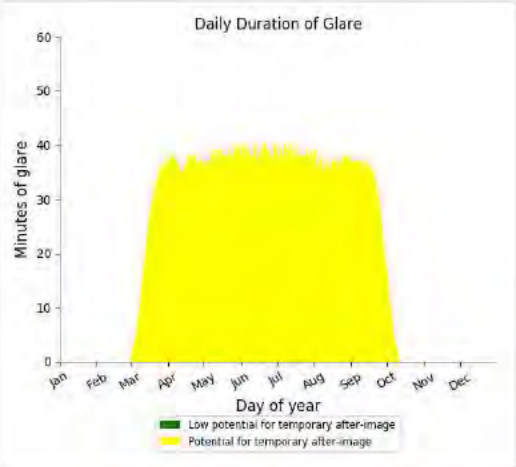


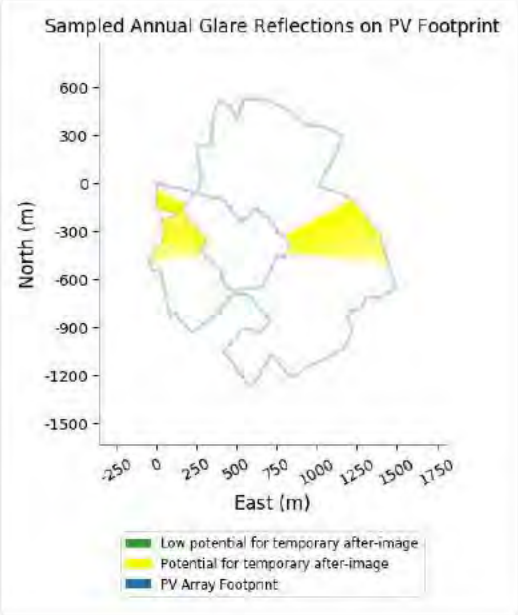
PV array 1 - OP Receptor (OP 97)

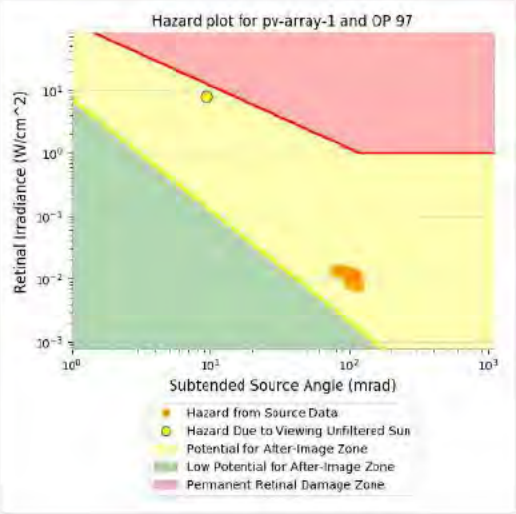
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 7,575 minutes of "yellow" glare with potential to cause temporary after-image.





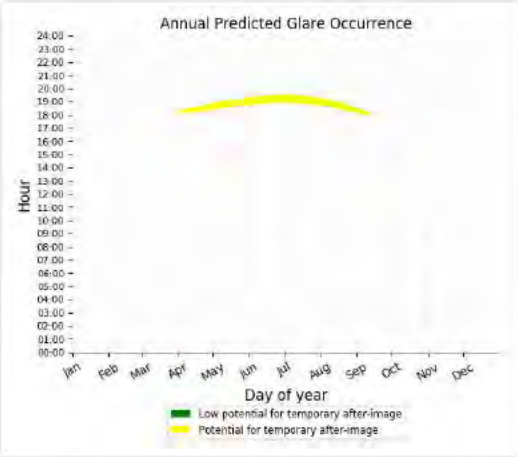


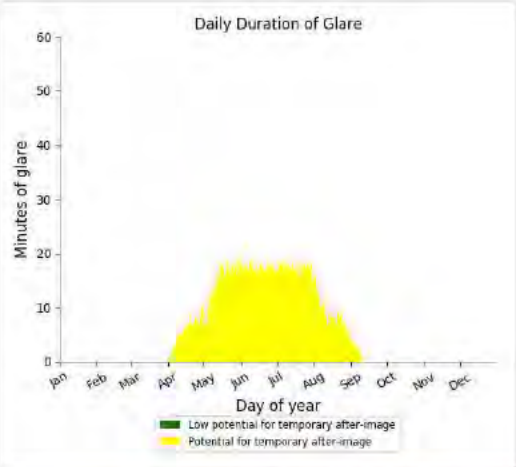


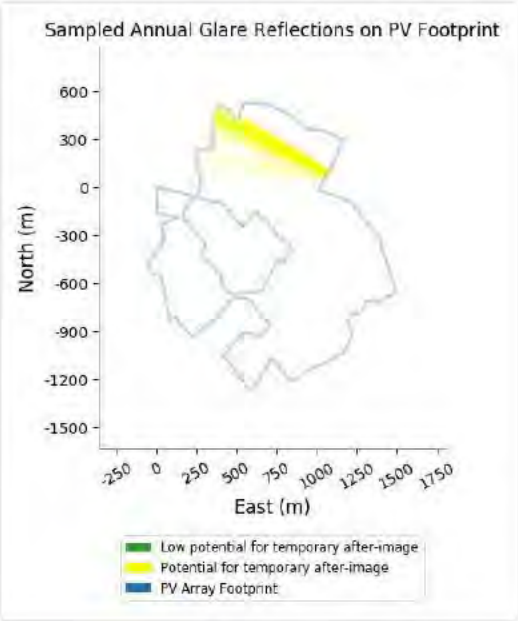
PV array 1 - OP Receptor (OP 98)

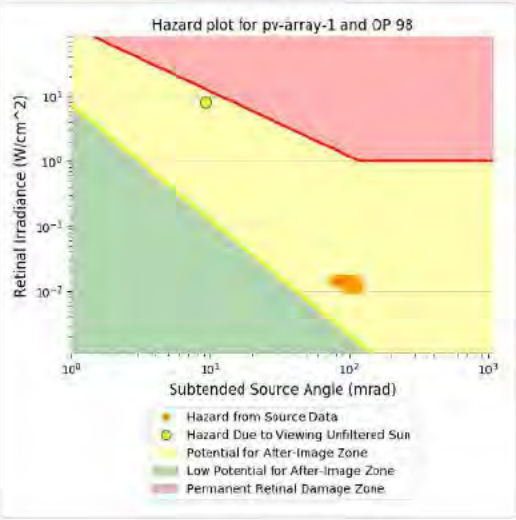
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 1,994 minutes of "yellow" glare with potential to cause temporary after-image.









PV array 1 - OP Receptor (OP 99)

No glare found

PV array 2 potential temporary after-image

Component	Green glare (min)	Yellow glare (min)
OP: OP 1	0	0
OP: OP 2	0	0
OP: OP 3	0	0
OP: OP 4	0	0
OP: OP 5	0	0
OP: OP 6	0	0
OP: OP 7	0	0
OP: OP 8	0	0
OP: OP 9	0	0
OP: OP 10	0	0
OP: OP 11	0	0

OP: OP 12	0	0
OP: OP 13	0	0
OP: OP 14	0	0
OP: OP 15	0	383
OP: OP 16	0	491
OP: OP 17	0	487
OP: OP 18	0	535
OP: OP 19	0	518
OP: OP 20	0	595
OP: OP 21	0	1488
OP: OP 22	0	1690
OP: OP 23	0	1933
OP: OP 24	0	83
OP: OP 25	0	0
OP: OP 26	0	2786
OP: OP 27	0	2080
OP: OP 28	0	2208
OP: OP 29	0	2653
OP: OP 30	0	2243
OP: OP 31	0	4287
OP: OP 32	0	4881
OP: OP 33	0	3558
OP: OP 34	0	965
OP: OP 35	0	2768
OP: OP 36	0	2757
OP: OP 37	0	2749
OP: OP 38	0	9119
OP: OP 39	0	6578
OP: OP 40	0	7899
OP: OP 41	0	5262
OP: OP 42	0	4098
OP: OP 43	0	664
OP: OP 44	0	976
OP: OP 45	0	476
OP: OP 46	0	2561
OP: OP 47	0	5332
OP: OP 48	0	1200
OP: OP 49	0	3767
OP: OP 50	0	3909
OP: OP 51	0	3753
OP: OP 52	0	3631
OP: OP 53	0	0
OP: OP 54	0	1929
OP: OP 55	0	1183
OP: OP 56	0	3045
OP: OP 57	0	4546
OP: OP 58	0	3718
OP: OP 59	0	2596
OP: OP 60	0	2604
OP: OP 61	0	1564
OP: OP 62	0	0
OP: OP 63	0	0

OP: OP 64	0	2153
OP: OP 65	0	2249
OP: OP 66	0	2032
OP: OP 67	0	1693
OP: OP 68	0	2095
OP: OP 69	0	2132
OP: OP 70	0	2187
OP: OP 71	0	2077
OP: OP 72	0	1734
OP: OP 73	0	3339
OP: OP 74	0	3380
OP: OP 75	0	1
OP: OP 76	0	647
OP: OP 77	0	635
OP: OP 78	0	3879
OP: OP 79	0	3901
OP: OP 80	0	1866
OP: OP 81	0	0
OP: OP 82	0	0
OP: OP 83	0	0
OP: OP 84	0	0
OP: OP 85	0	0
OP: OP 86	0	0
OP: OP 87	0	0
OP: OP 88	0	0
OP: OP 89	0	0
OP: OP 90	0	0
OP: OP 91	0	0
OP: OP 92	0	214
OP: OP 93	0	4314
OP: OP 94	0	7131
OP: OP 95	0	0
OP: OP 96	0	0
OP: OP 97	0	97
OP: OP 98	0	0
OP: OP 99	0	0

PV array 2 - OP Receptor (OP 1)

No glare found

PV array 2 - OP Receptor (OP 2)

No glare found

PV array 2 - OP Receptor (OP 3)

No glare found

PV array 2 - OP Receptor (OP 4)

No glare found

PV array 2 - OP Receptor (OP 5)

No glare found

PV array 2 - OP Receptor (OP 6)

No glare found

PV array 2 - OP Receptor (OP 7)

No glare found

PV array 2 - OP Receptor (OP 8)

No glare found

PV array 2 - OP Receptor (OP 9)

No glare found

PV array 2 - OP Receptor (OP 10)

No glare found

PV array 2 - OP Receptor (OP 11)

No glare found

PV array 2 - OP Receptor (OP 12)

No glare found

PV array 2 - OP Receptor (OP 13)

No glare found

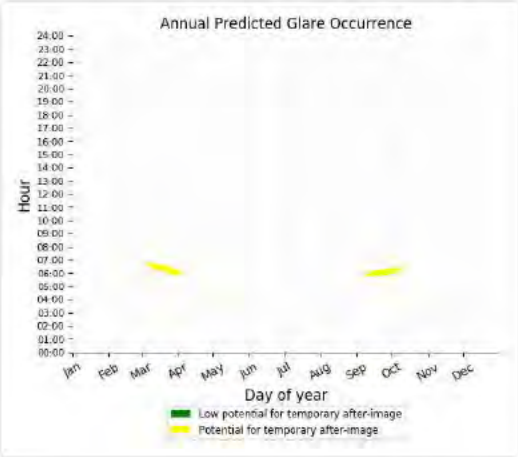
PV array 2 - OP Receptor (OP 14)

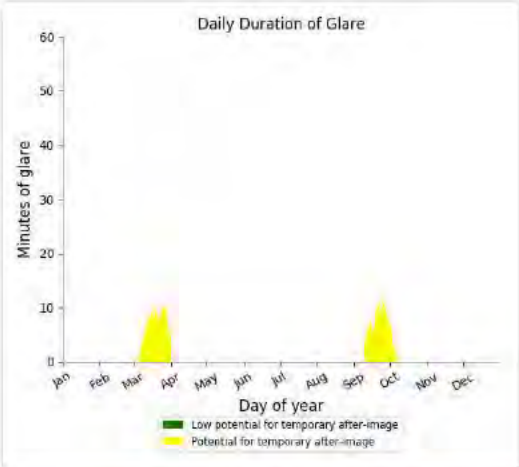
No glare found

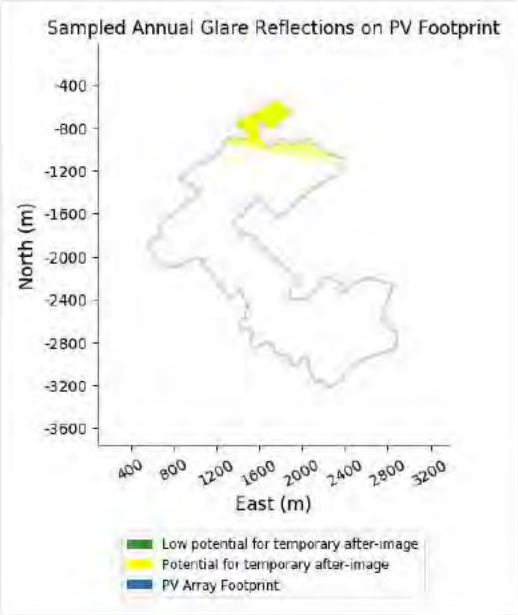
PV array 2 - OP Receptor (OP 15)

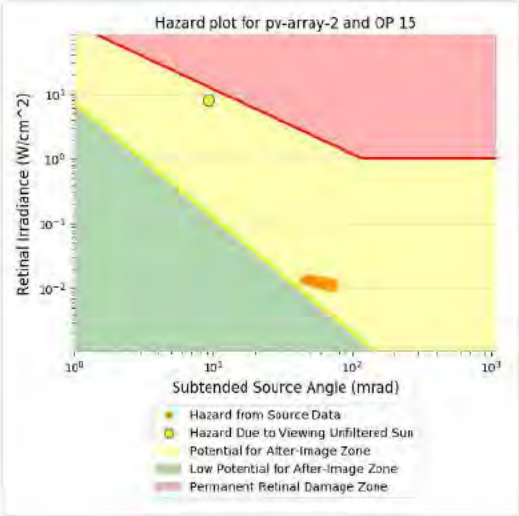
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 383 minutes of "yellow" glare with potential to cause temporary after-image.





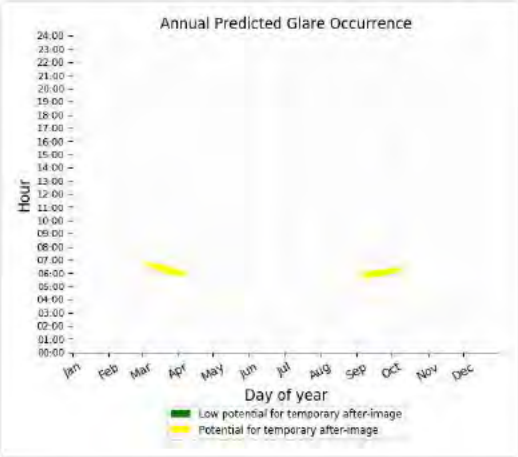


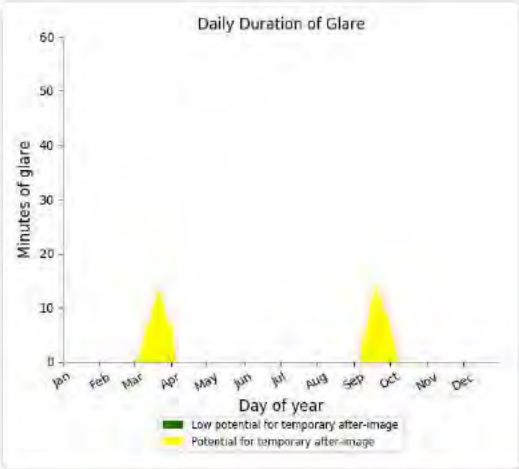


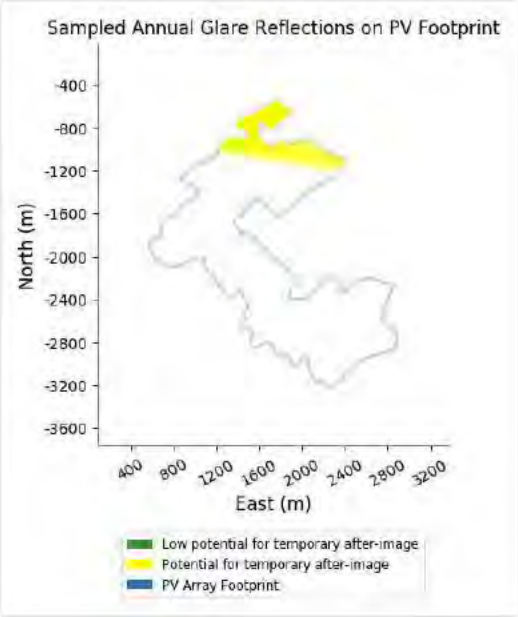
PV array 2 - OP Receptor (OP 16)

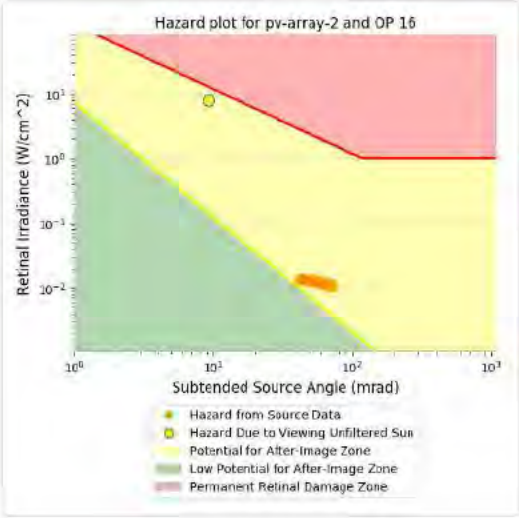
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 491 minutes of "yellow" glare with potential to cause temporary after-image.





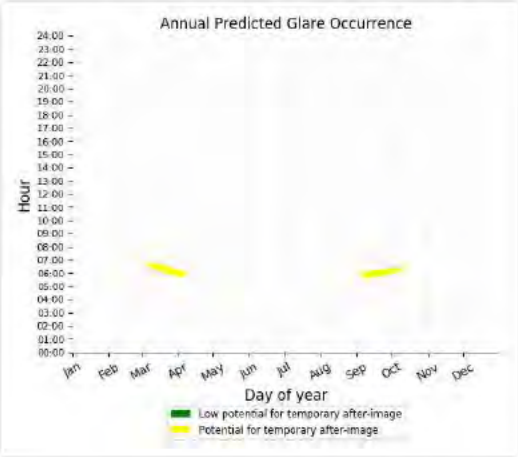


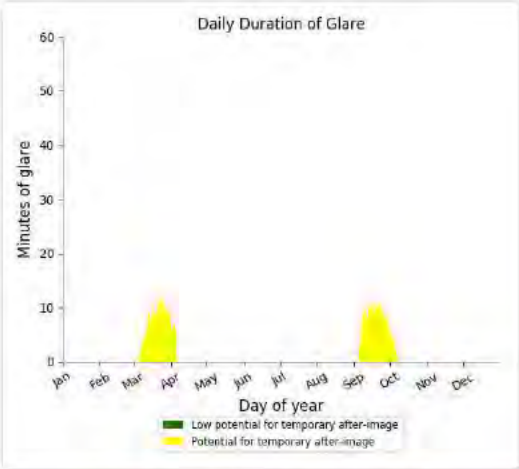


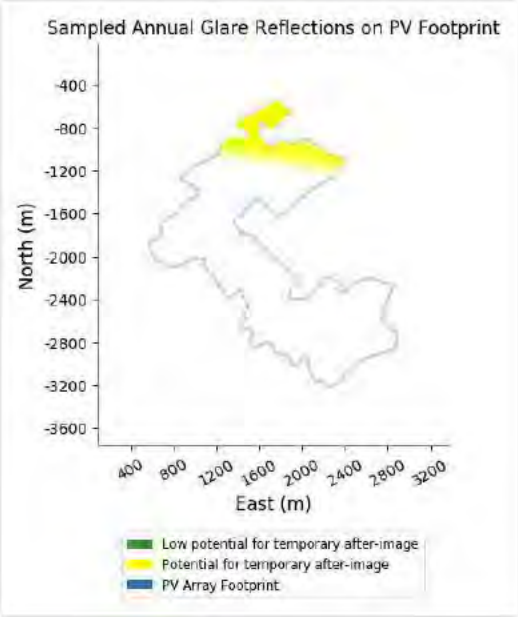
PV array 2 - OP Receptor (OP 17)

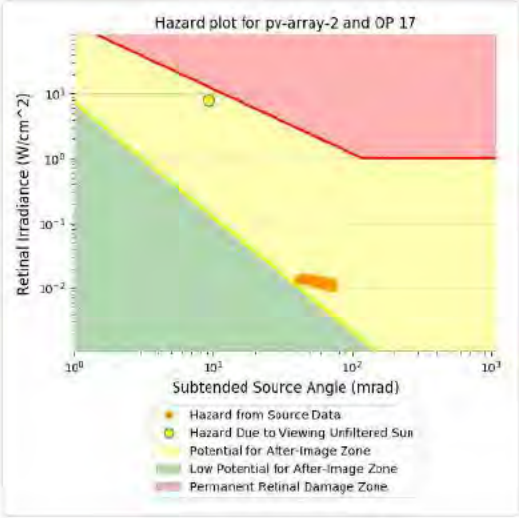
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 487 minutes of "yellow" glare with potential to cause temporary after-image.





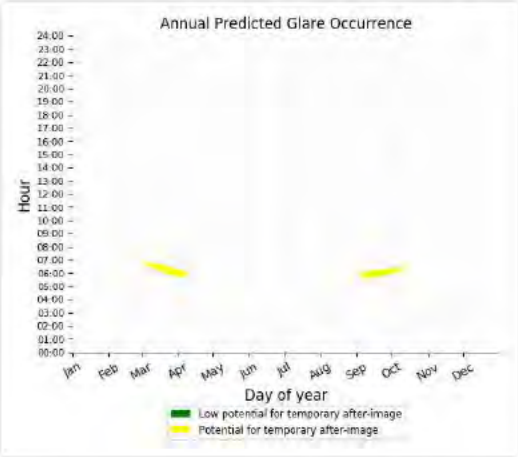


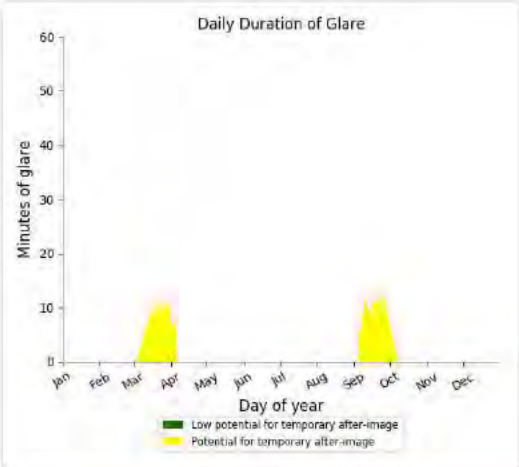


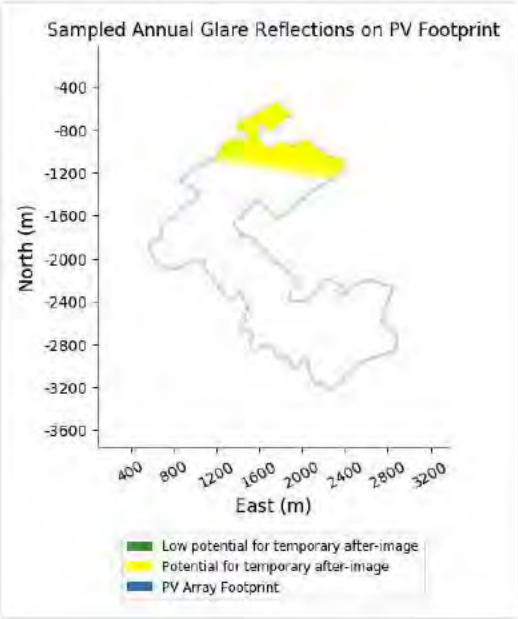
PV array 2 - OP Receptor (OP 18)

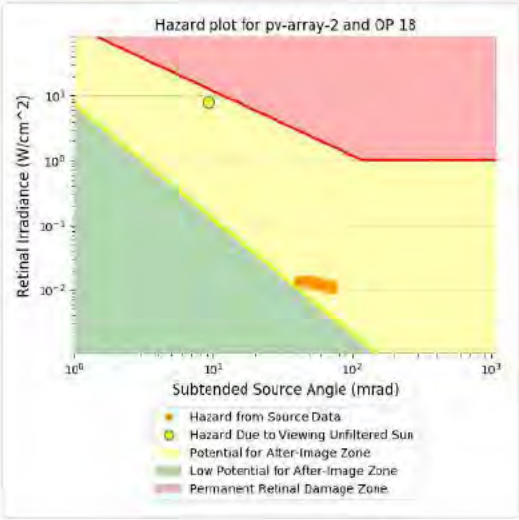
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 535 minutes of "yellow" glare with potential to cause temporary after-image.





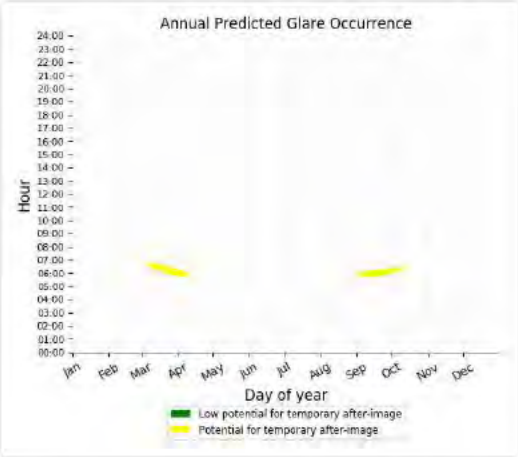


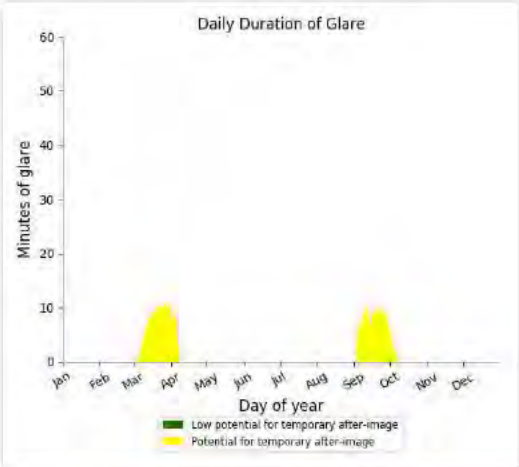


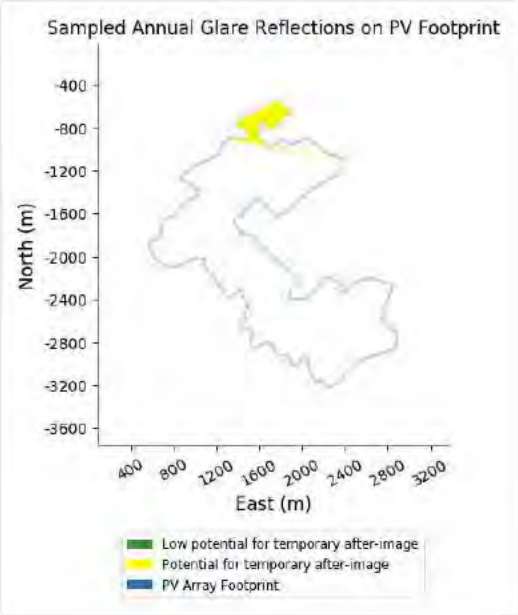
PV array 2 - OP Receptor (OP 19)

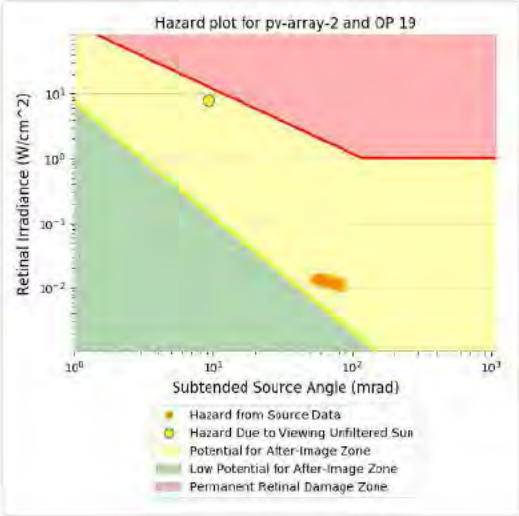
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 518 minutes of "yellow" glare with potential to cause temporary after-image.





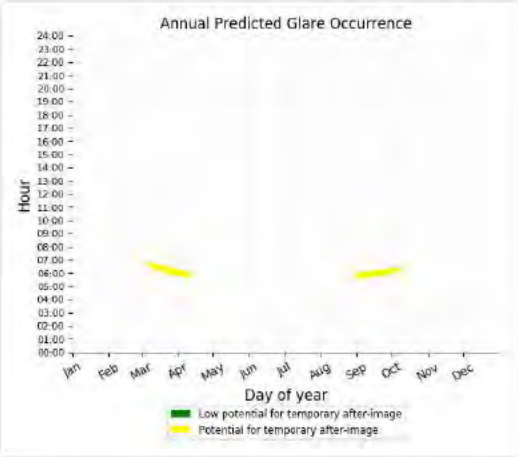


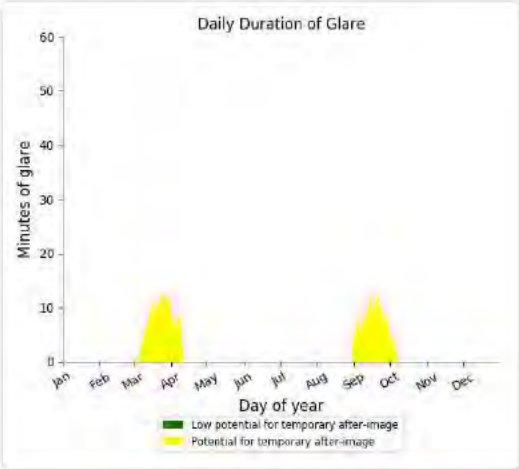


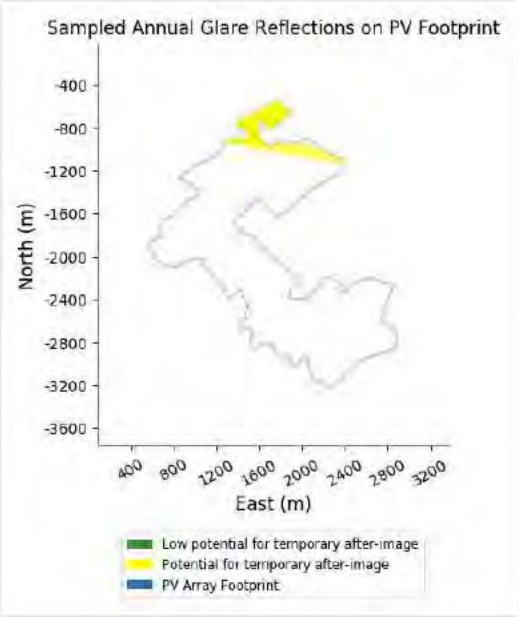
PV array 2 - OP Receptor (OP 20)

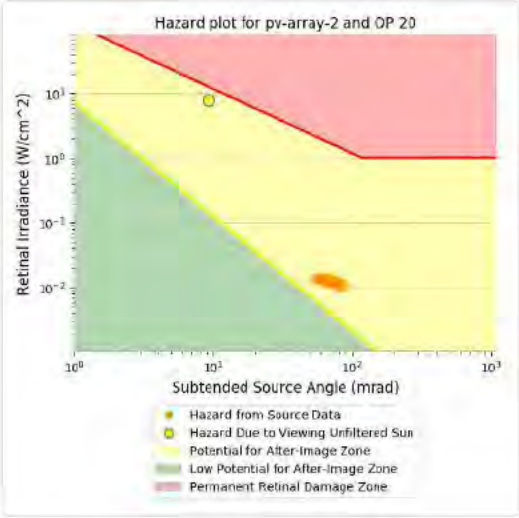
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 595 minutes of "yellow" glare with potential to cause temporary after-image.





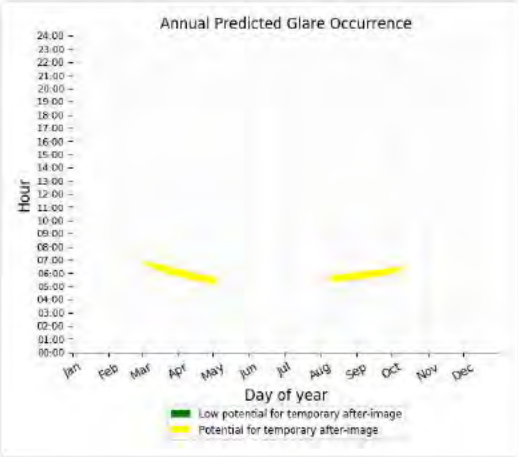


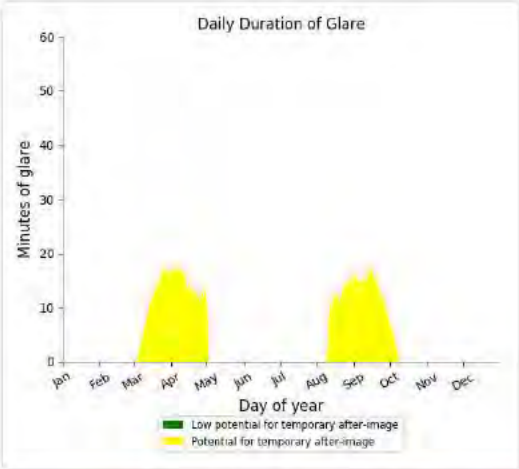


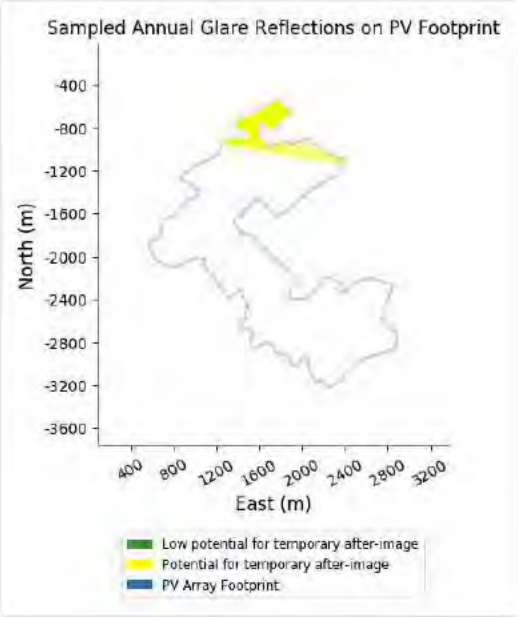
PV array 2 - OP Receptor (OP 21)

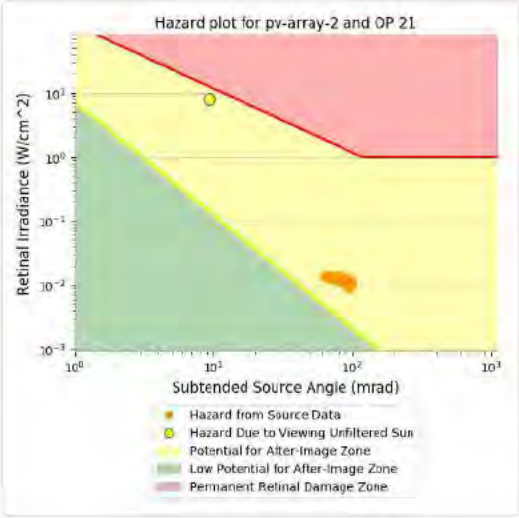
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 1,488 minutes of "yellow" glare with potential to cause temporary after-image.





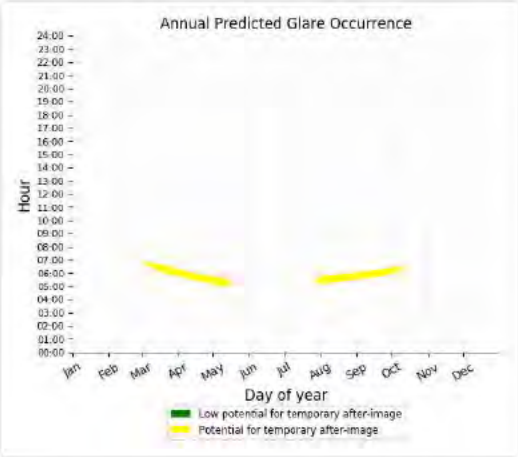


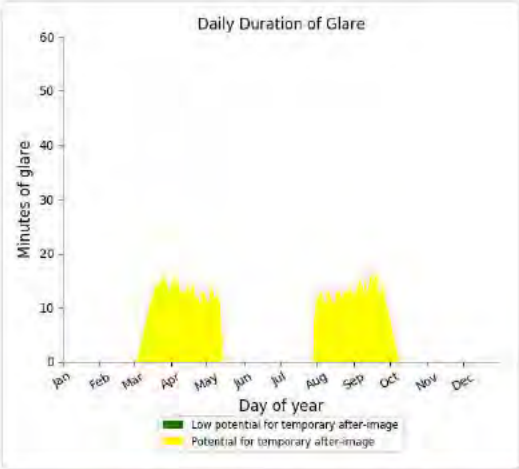


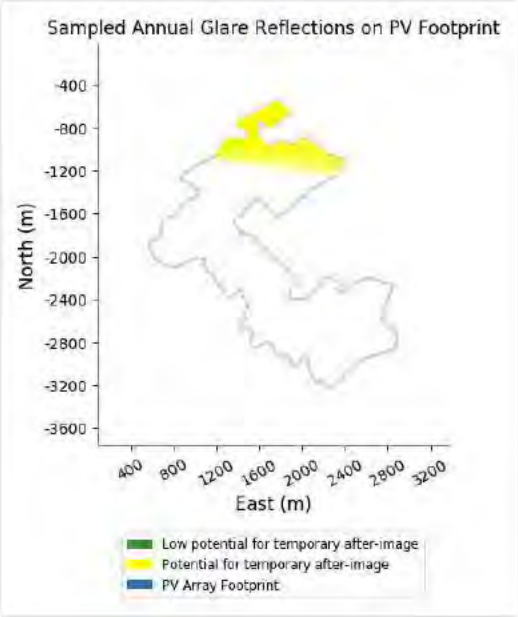
PV array 2 - OP Receptor (OP 22)

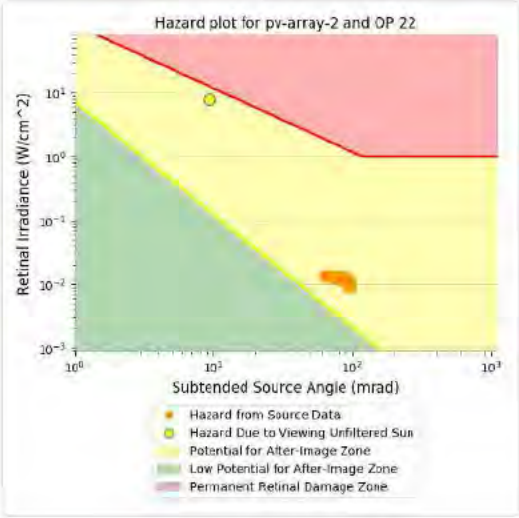
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 1,690 minutes of "yellow" glare with potential to cause temporary after-image.





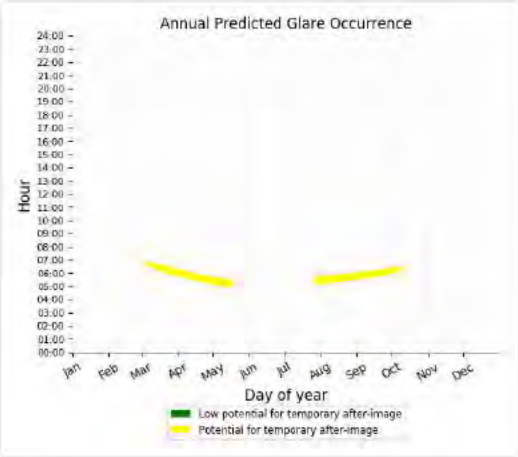


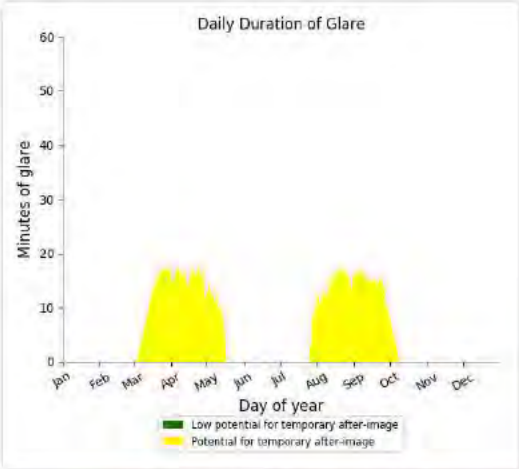


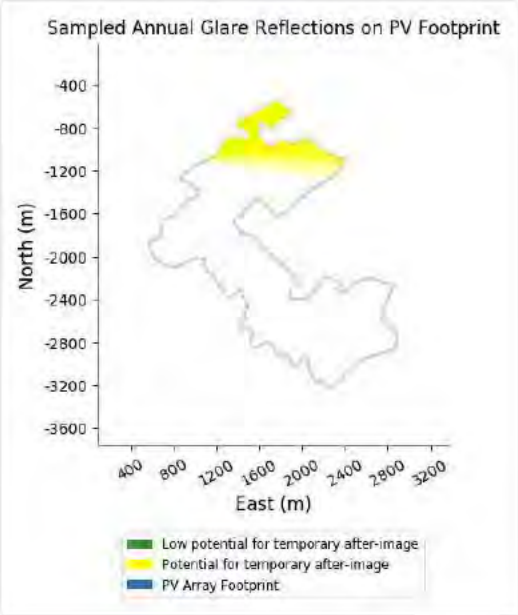
PV array 2 - OP Receptor (OP 23)

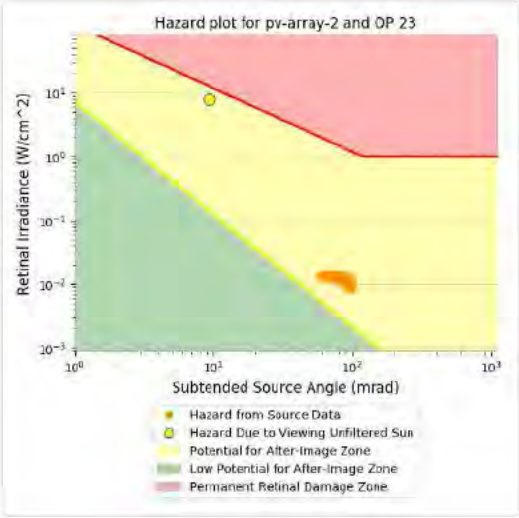
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 1,933 minutes of "yellow" glare with potential to cause temporary after-image.





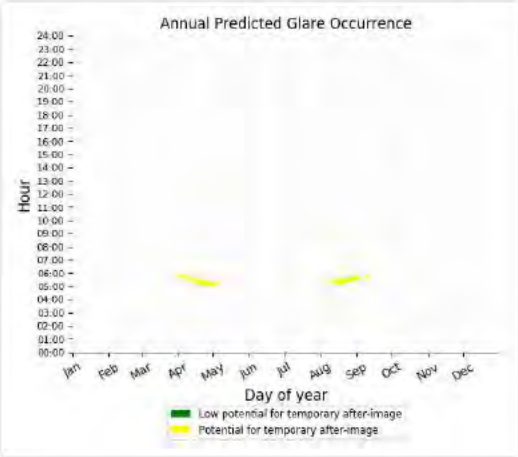


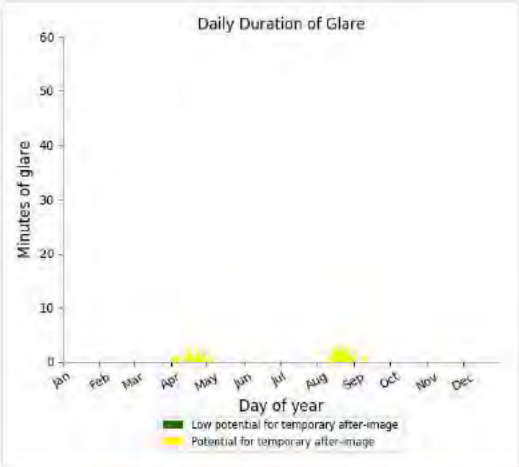


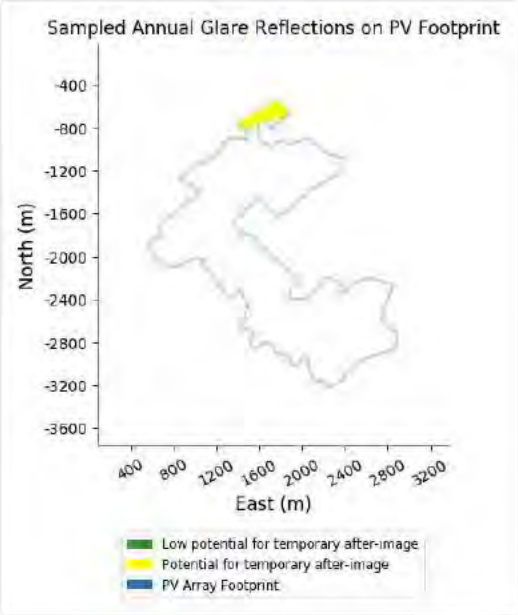
PV array 2 - OP Receptor (OP 24)

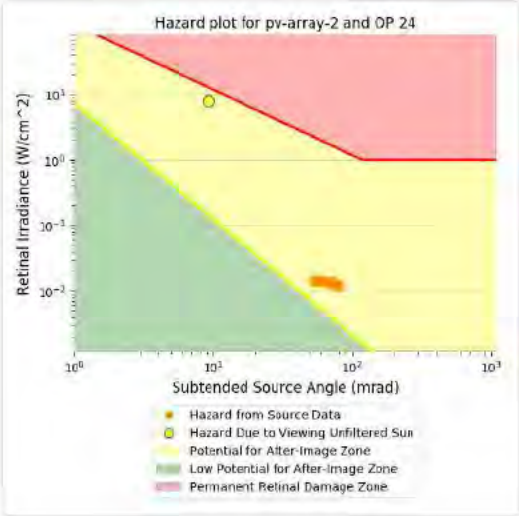
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 83 minutes of "yellow" glare with potential to cause temporary after-image.









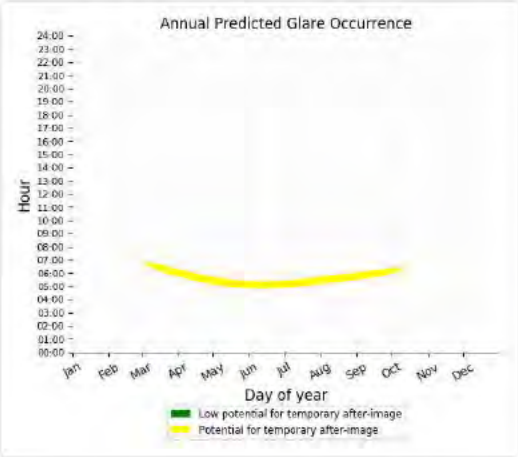
PV array 2 - OP Receptor (OP 25)

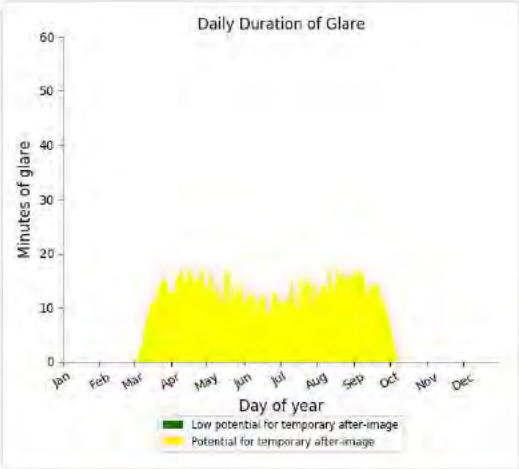
No glare found

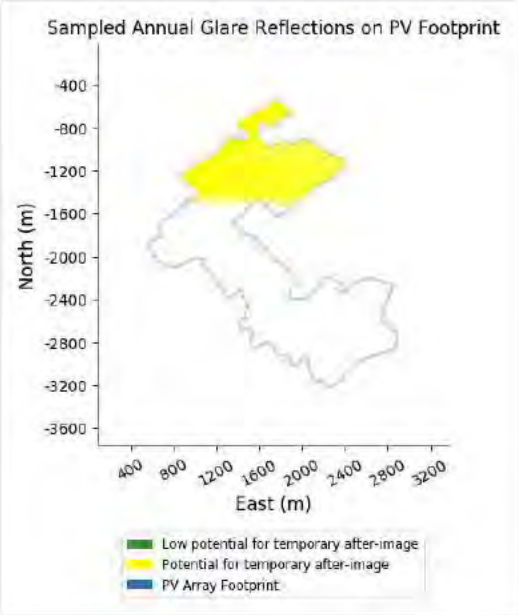
PV array 2 - OP Receptor (OP 26)

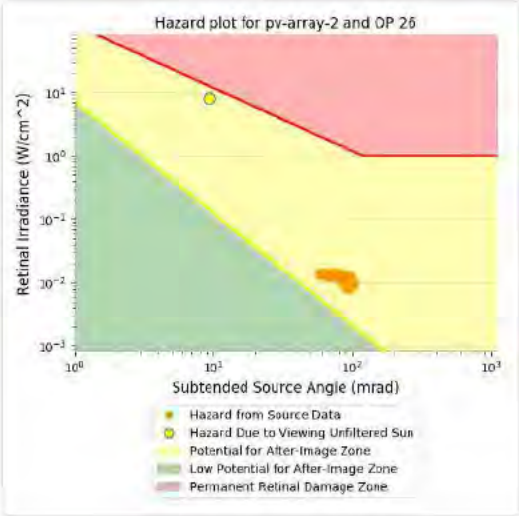
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 2,786 minutes of "yellow" glare with potential to cause temporary after-image.





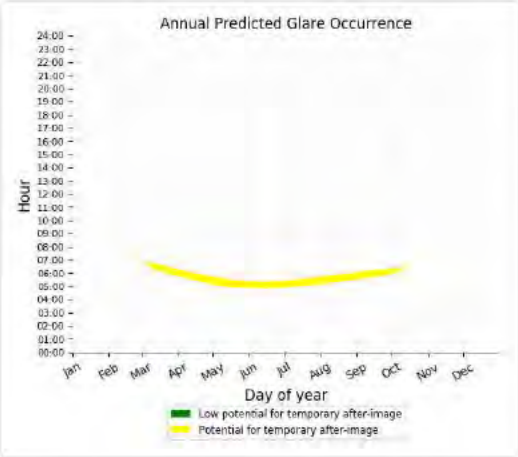


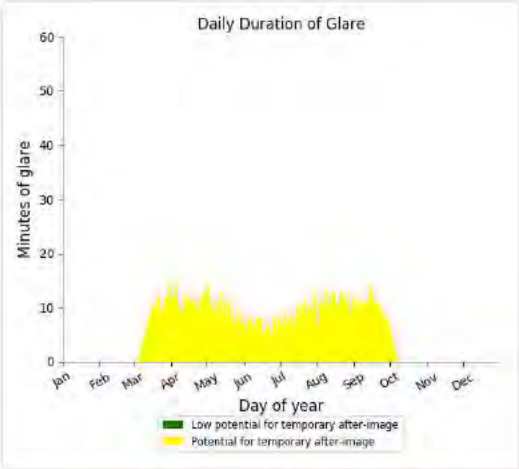


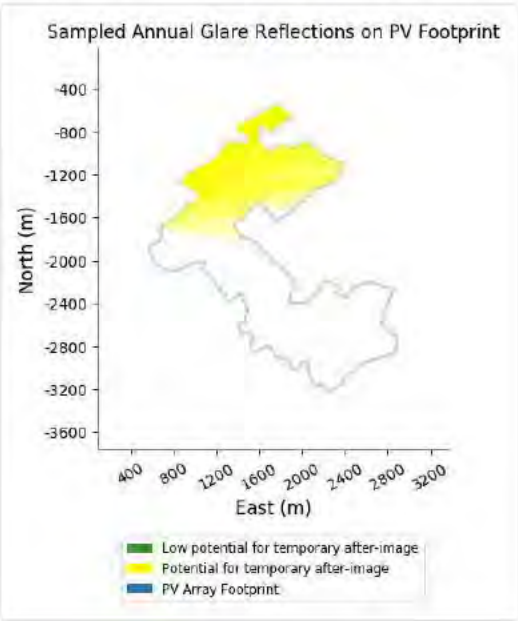
PV array 2 - OP Receptor (OP 27)

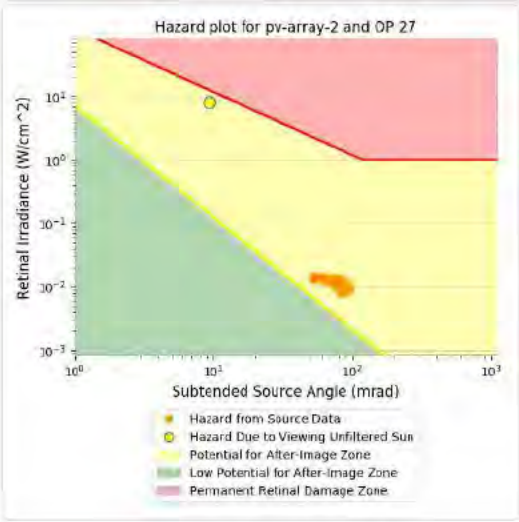
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 2,080 minutes of "yellow" glare with potential to cause temporary after-image.





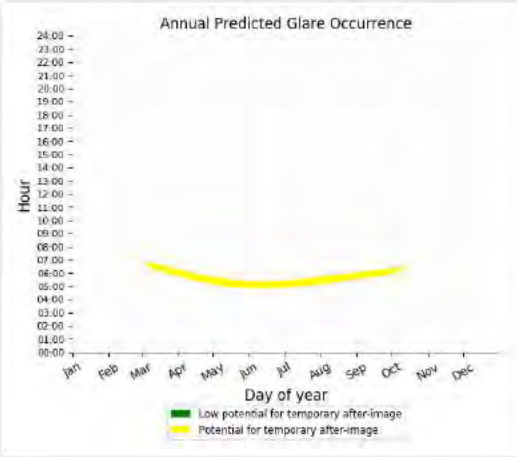


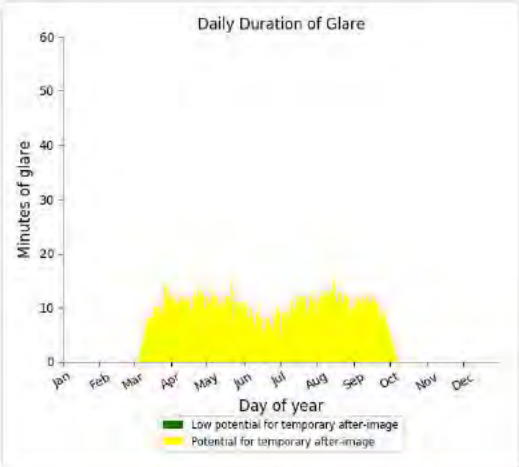


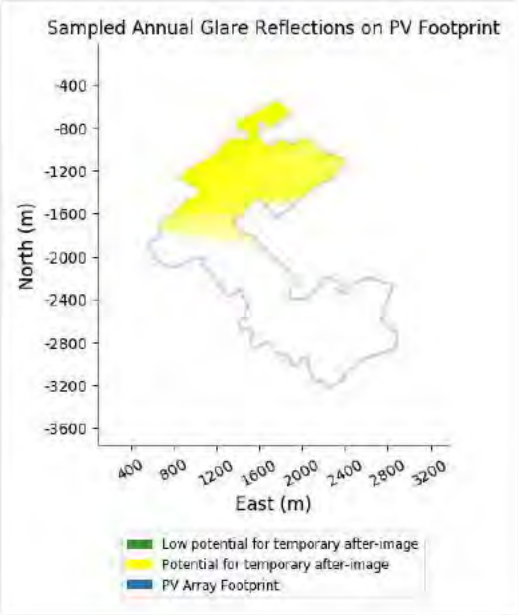
PV array 2 - OP Receptor (OP 28)

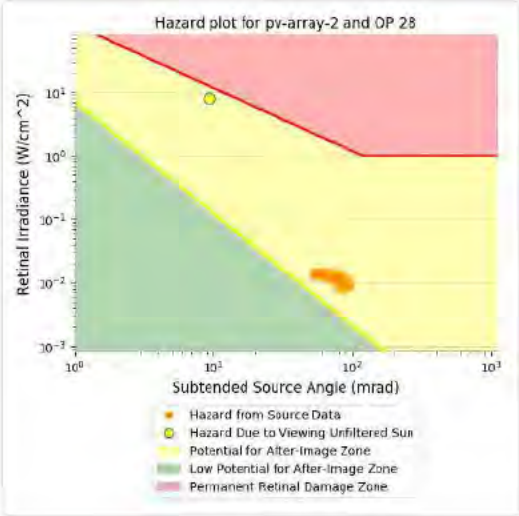
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 2,208 minutes of "yellow" glare with potential to cause temporary after-image.





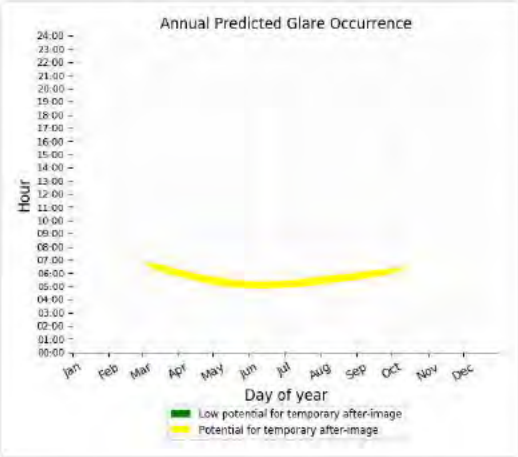


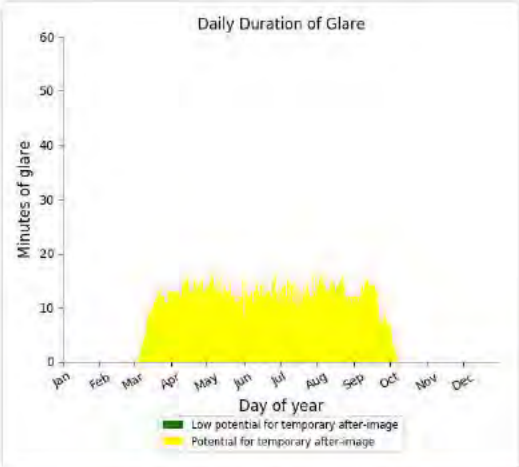


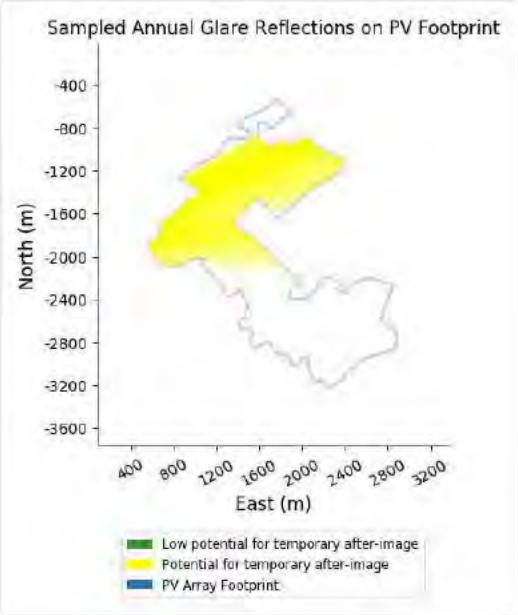
PV array 2 - OP Receptor (OP 29)

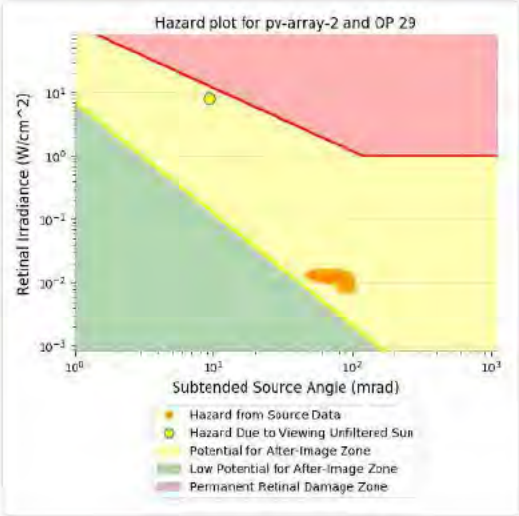
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 2,653 minutes of "yellow" glare with potential to cause temporary after-image.





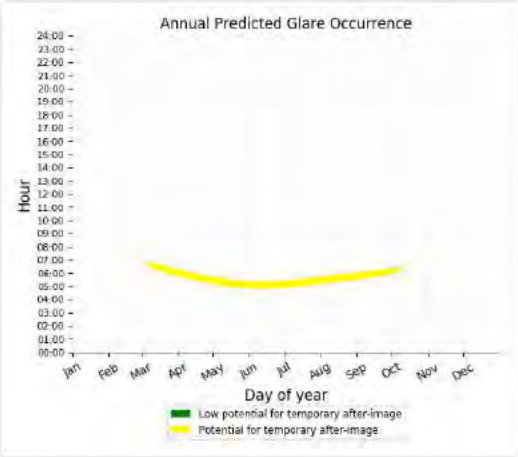


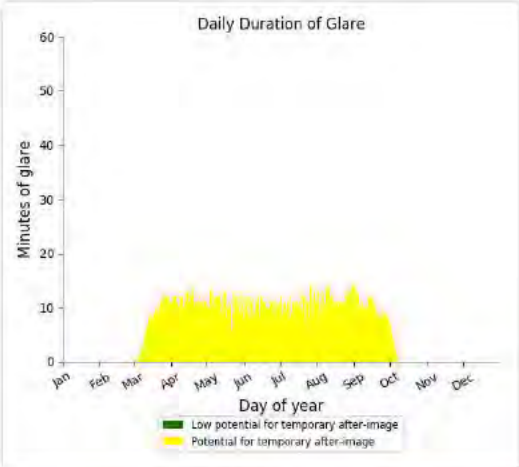


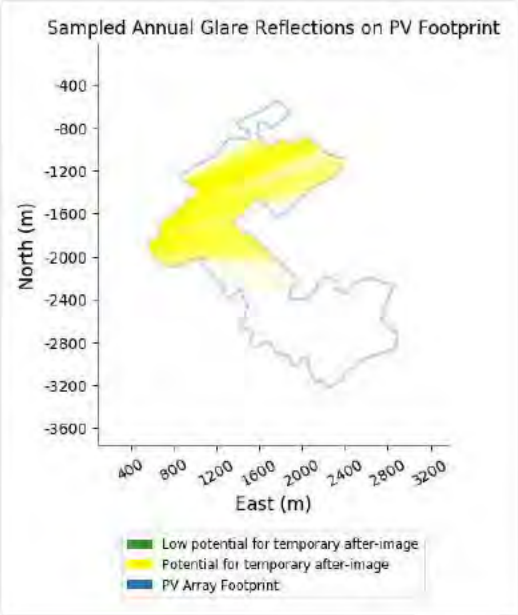
PV array 2 - OP Receptor (OP 30)

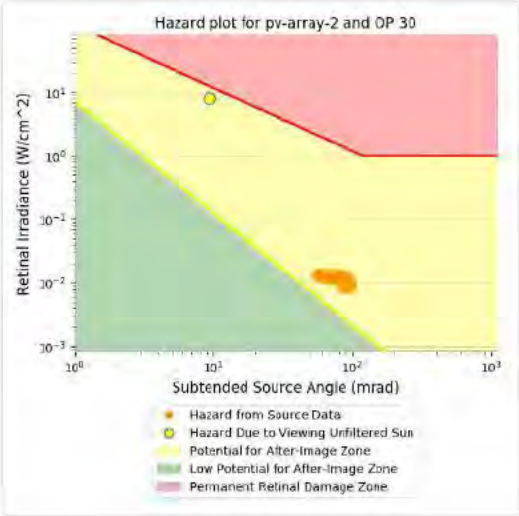
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 2,243 minutes of "yellow" glare with potential to cause temporary after-image.





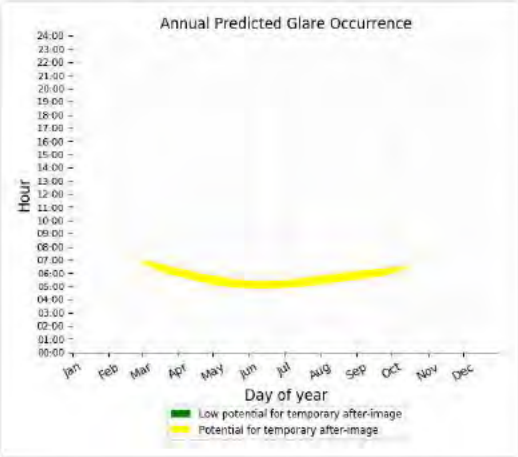


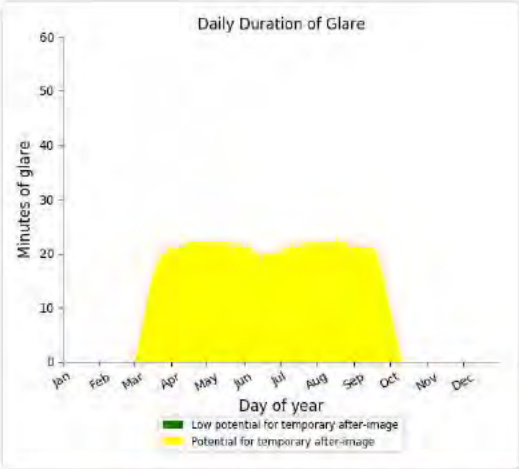


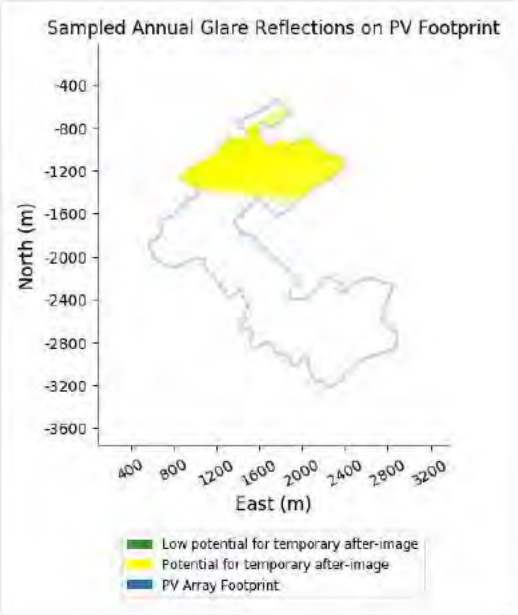
PV array 2 - OP Receptor (OP 31)

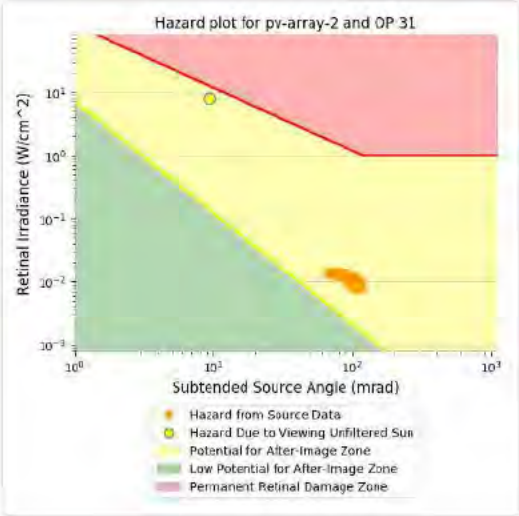
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 4,287 minutes of "yellow" glare with potential to cause temporary after-image.





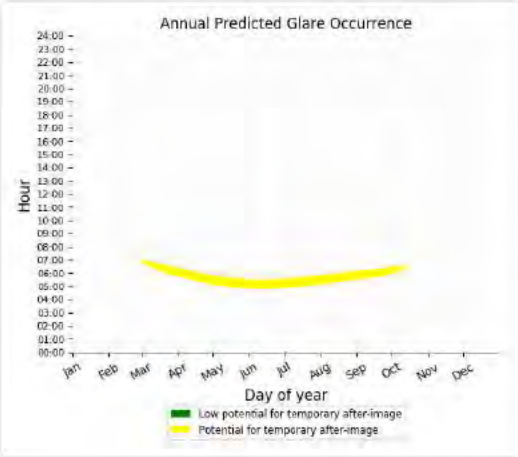


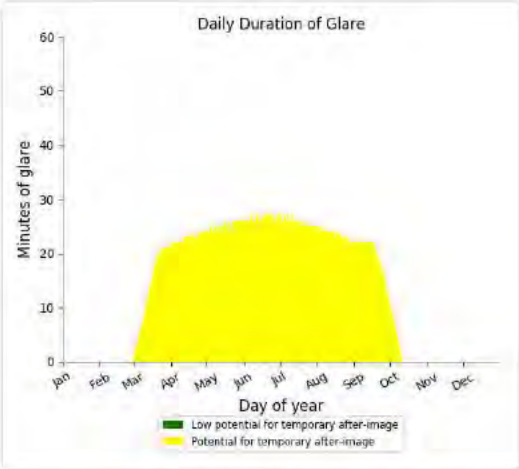


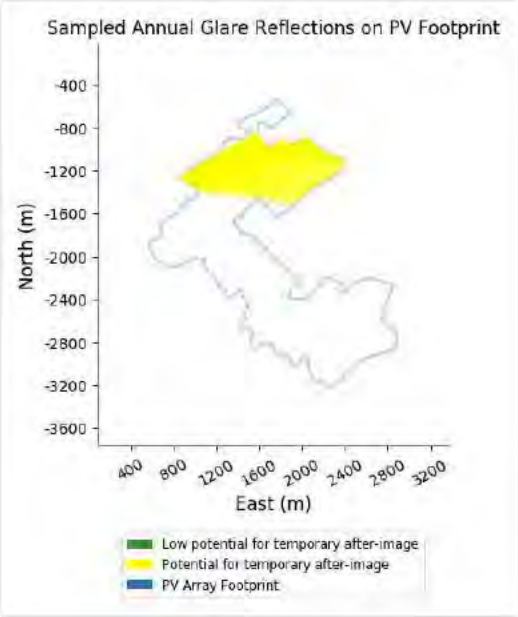
PV array 2 - OP Receptor (OP 32)

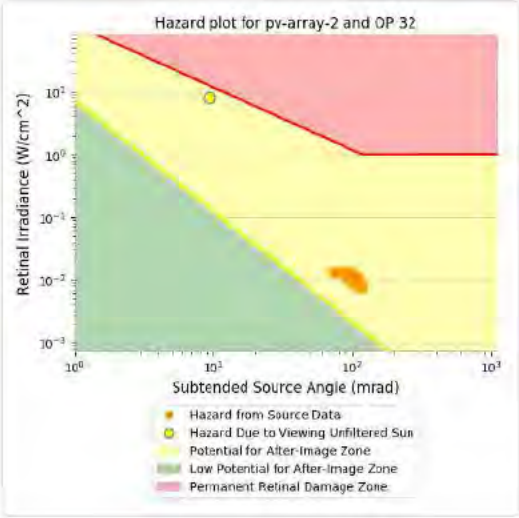
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 4,881 minutes of "yellow" glare with potential to cause temporary after-image.





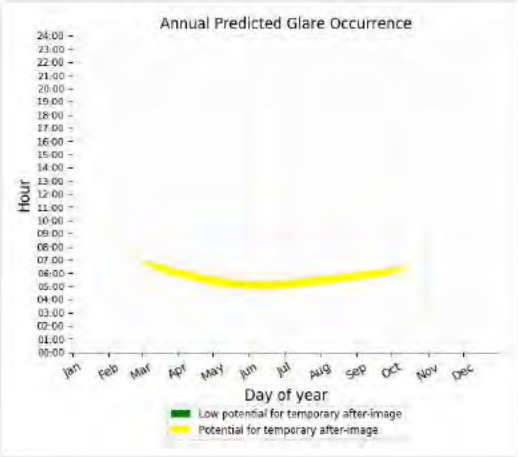


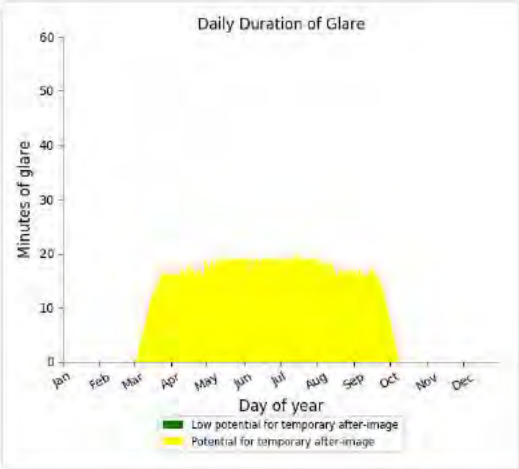


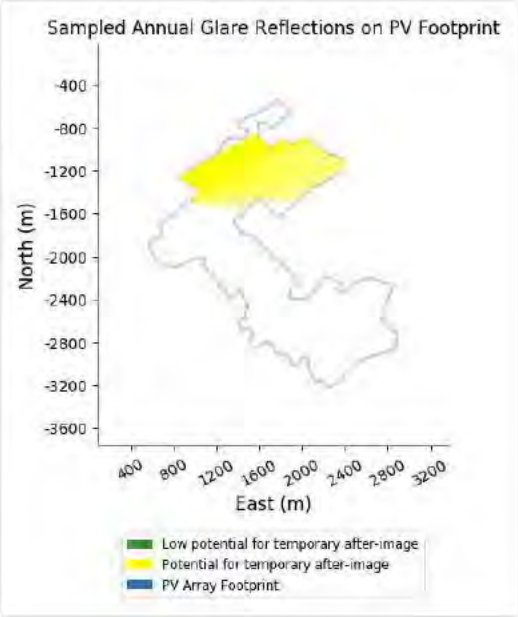
PV array 2 - OP Receptor (OP 33)

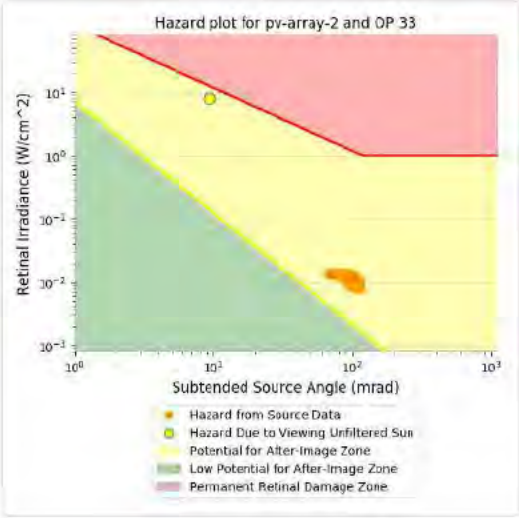
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 3,558 minutes of "yellow" glare with potential to cause temporary after-image.





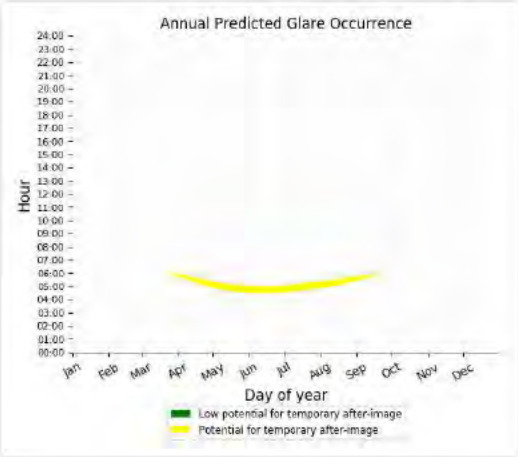


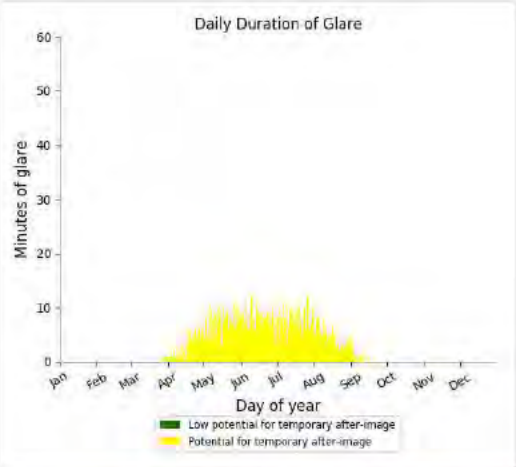


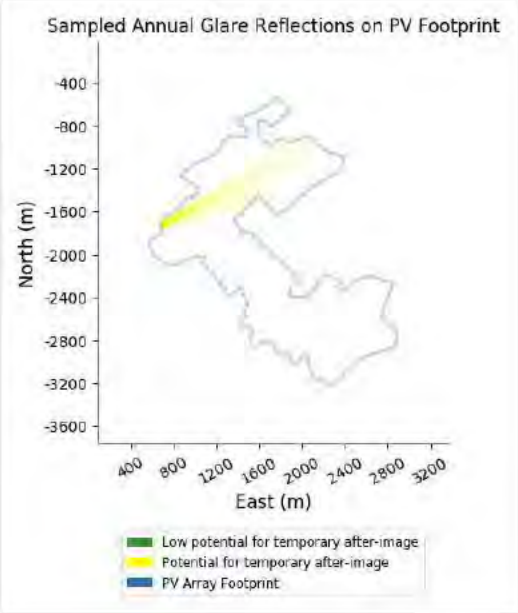
PV array 2 - OP Receptor (OP 34)

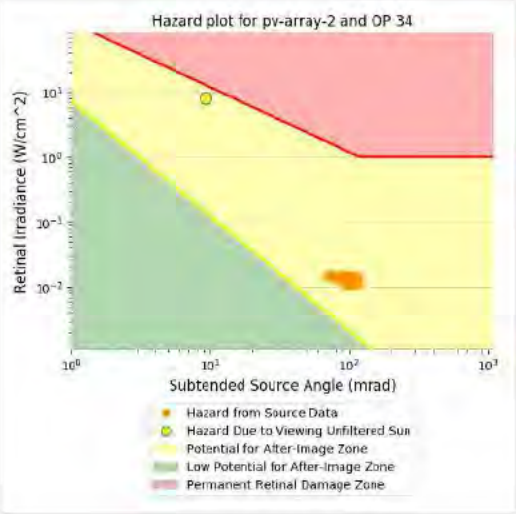
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 965 minutes of "yellow" glare with potential to cause temporary after-image.





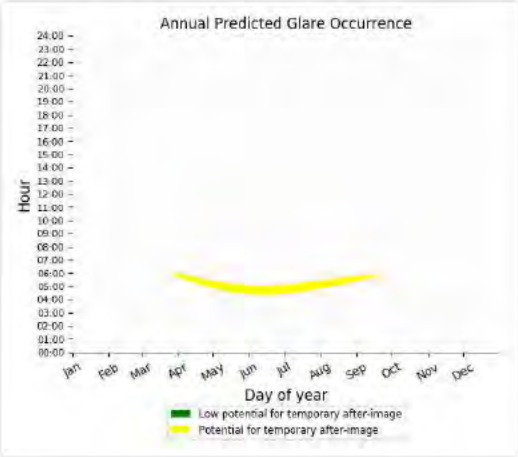


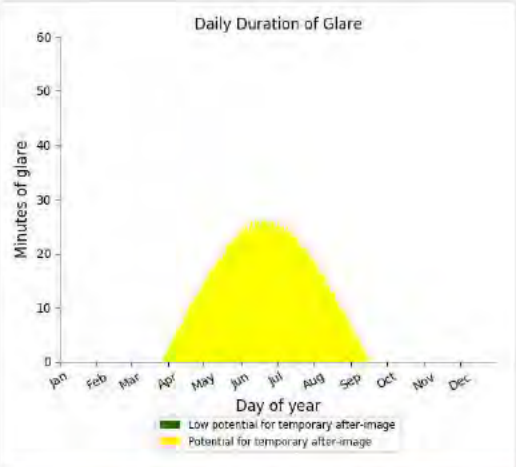


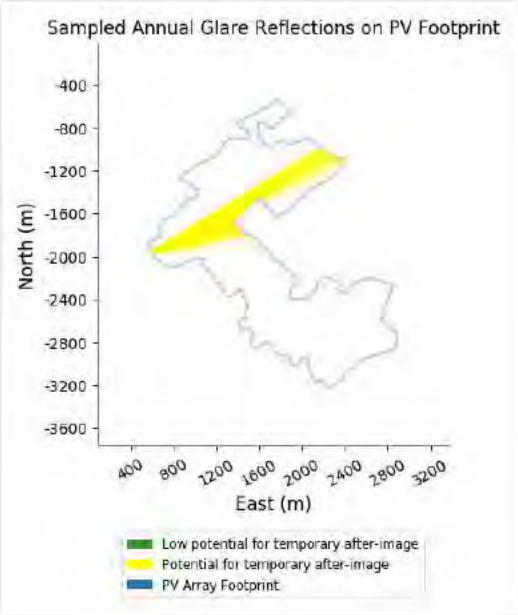
PV array 2 - OP Receptor (OP 35)

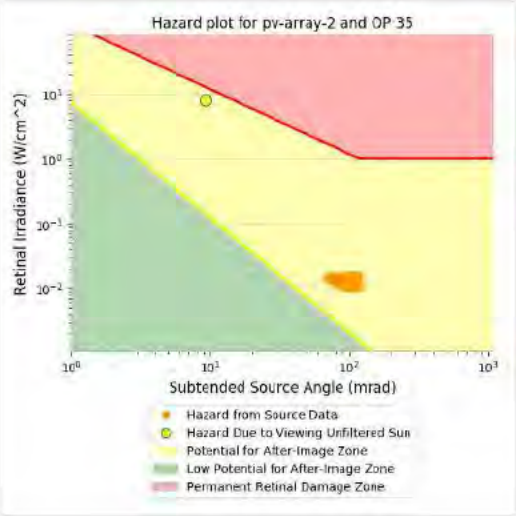
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 2,768 minutes of "yellow" glare with potential to cause temporary after-image.





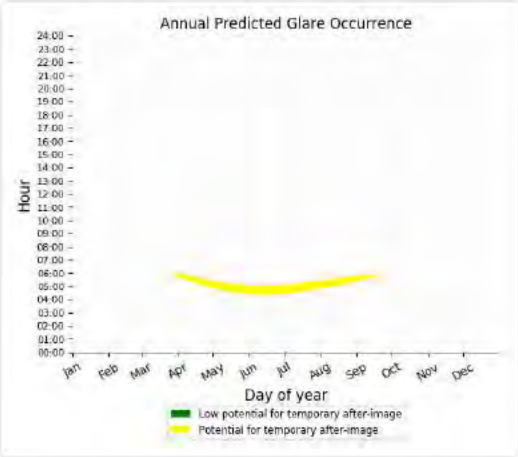


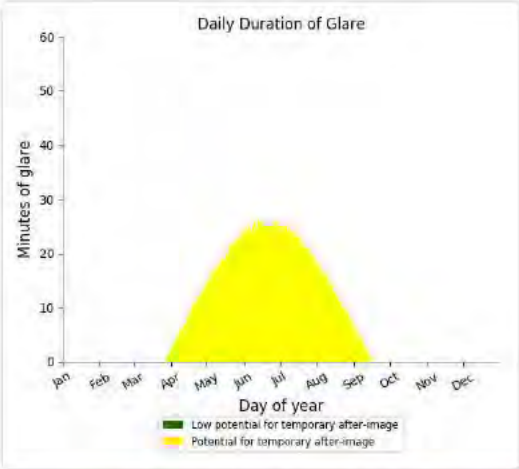


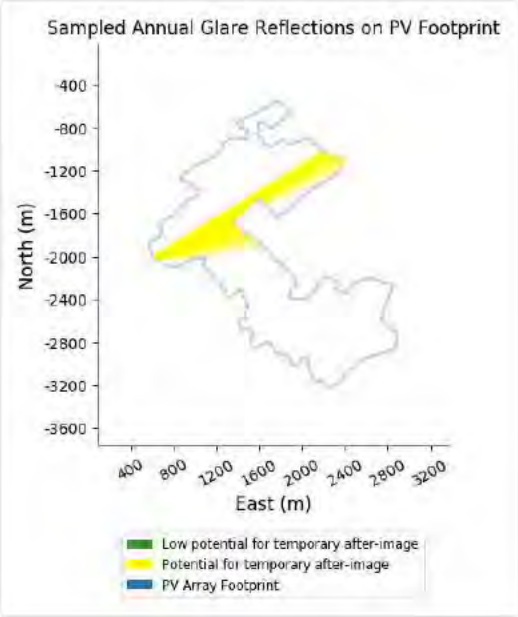
PV array 2 - OP Receptor (OP 36)

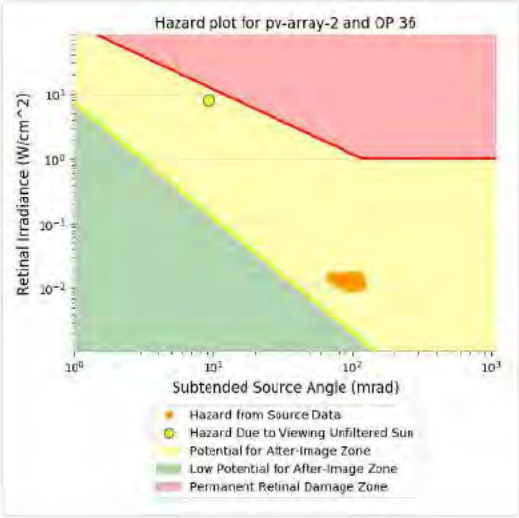
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 2,757 minutes of "yellow" glare with potential to cause temporary after-image.





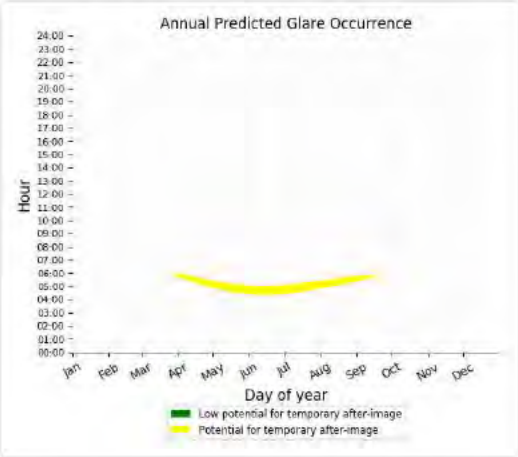


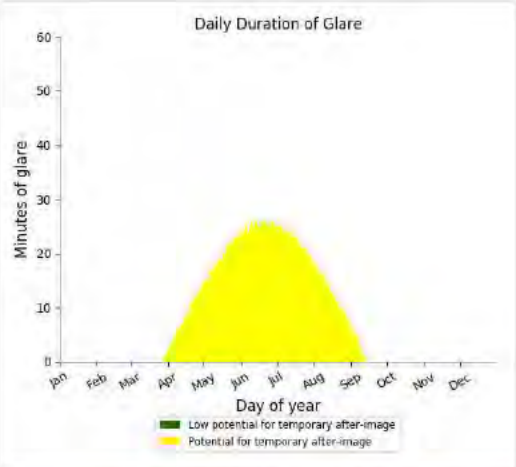


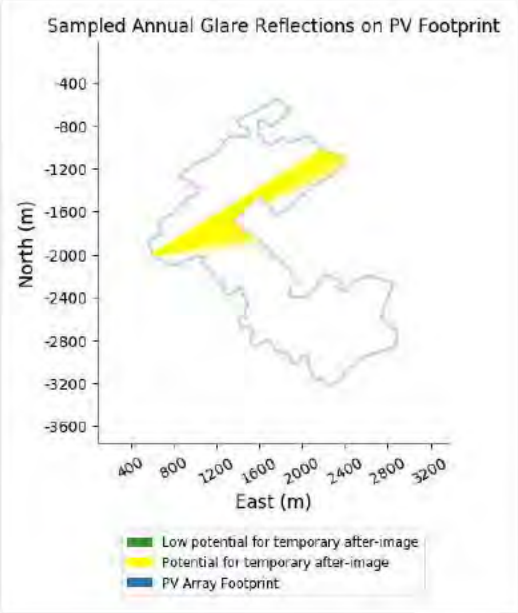
PV array 2 - OP Receptor (OP 37)

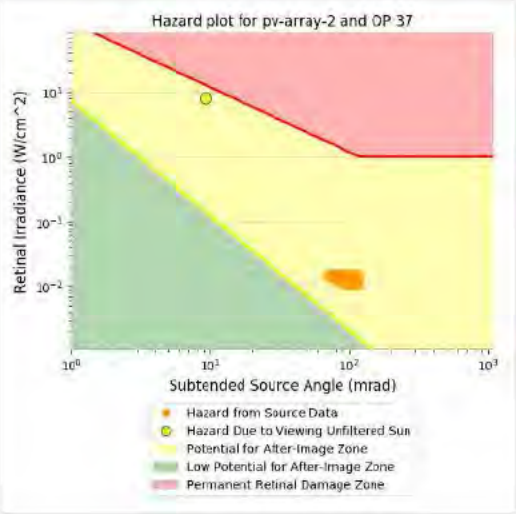
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 2,749 minutes of "yellow" glare with potential to cause temporary after-image.





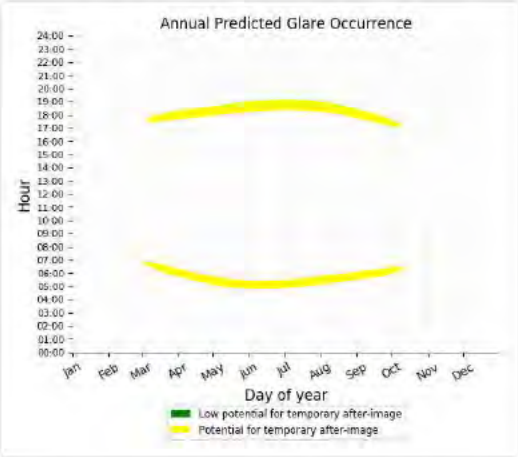


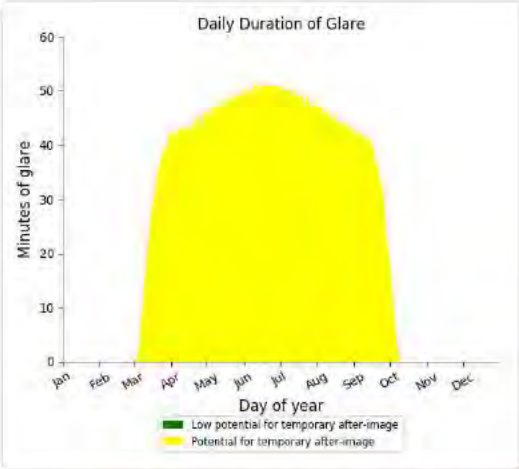


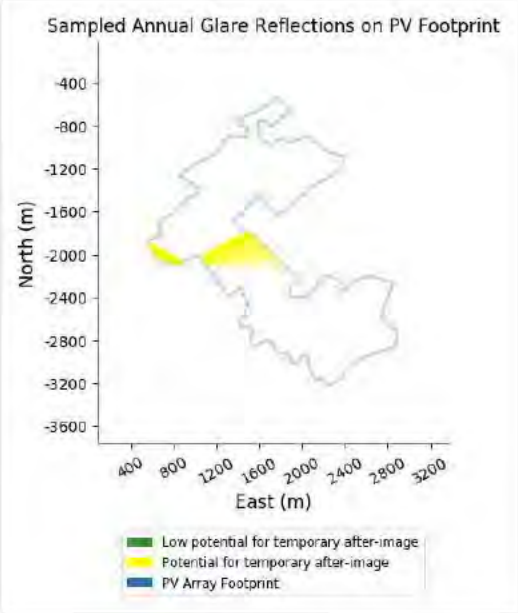
PV array 2 - OP Receptor (OP 38)

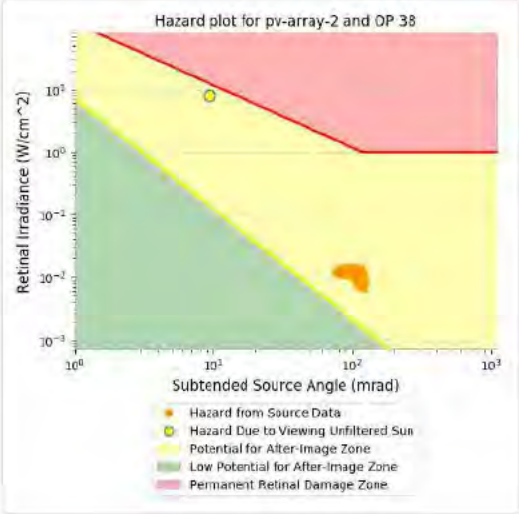
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 9,119 minutes of "yellow" glare with potential to cause temporary after-image.





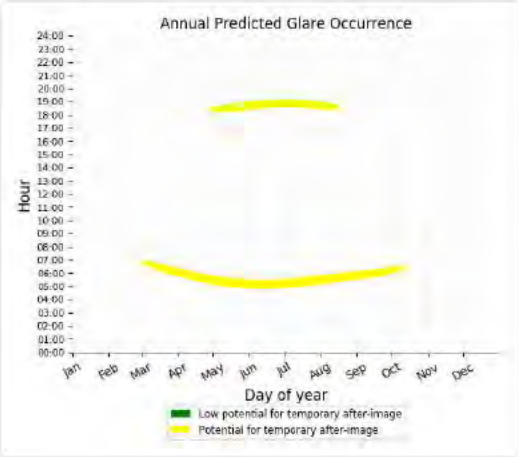


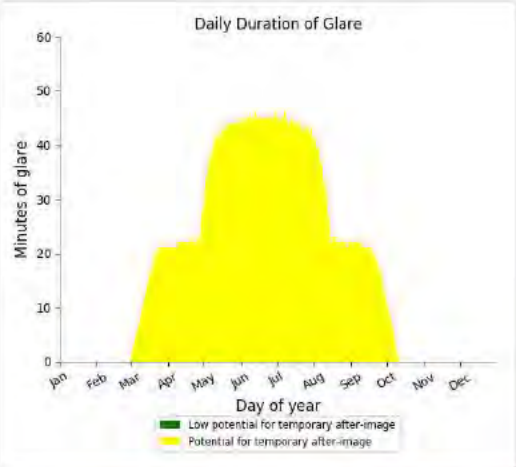


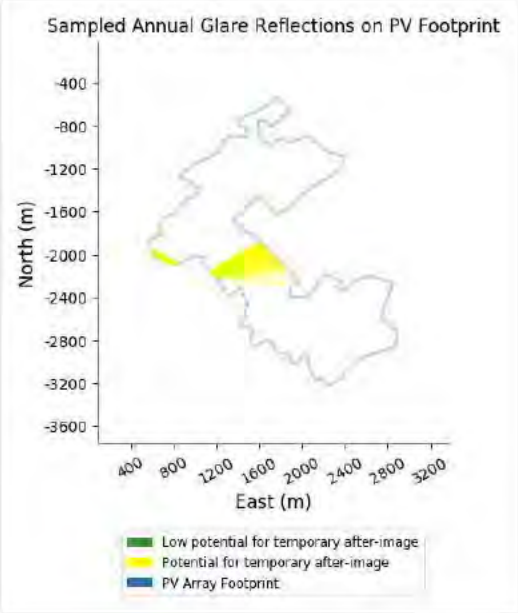
PV array 2 - OP Receptor (OP 39)

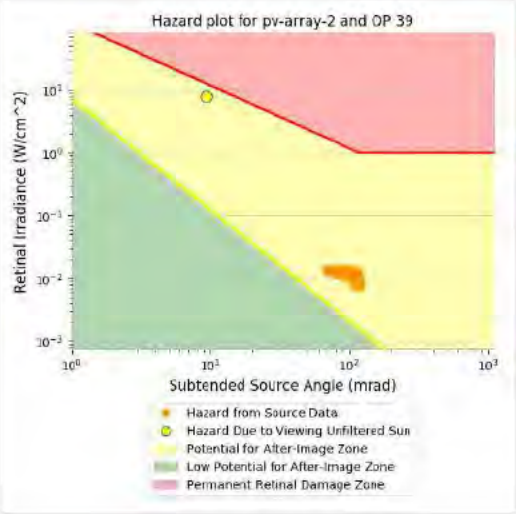
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 6,578 minutes of "yellow" glare with potential to cause temporary after-image.





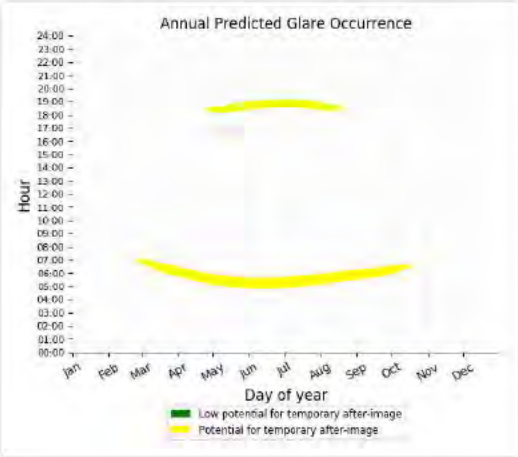


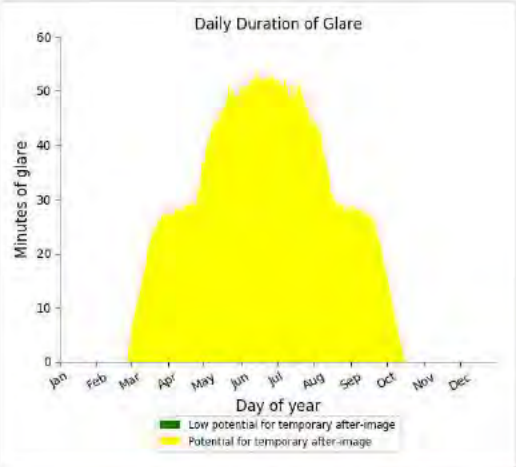


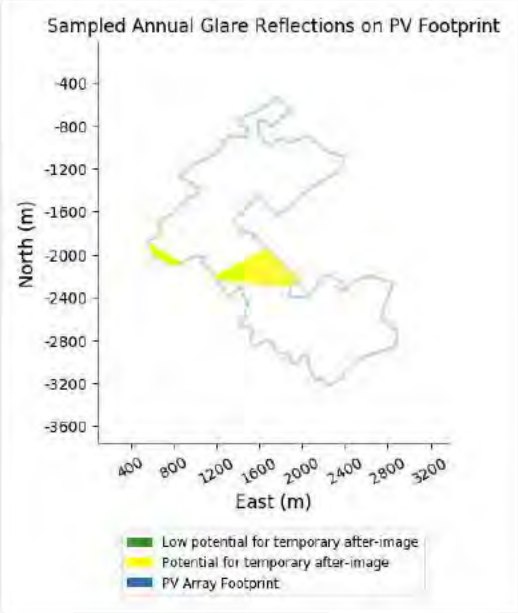
PV array 2 - OP Receptor (OP 40)

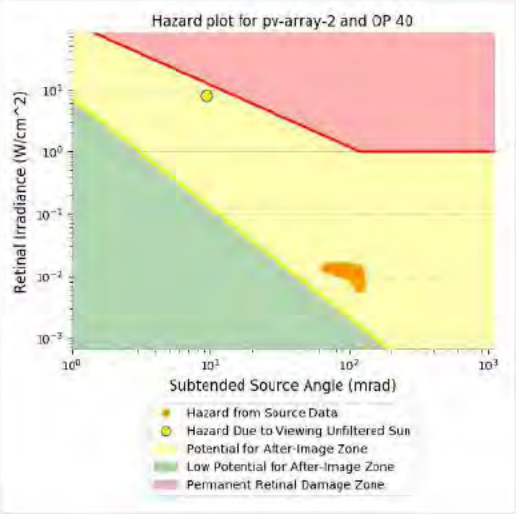
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 7,899 minutes of "yellow" glare with potential to cause temporary after-image.





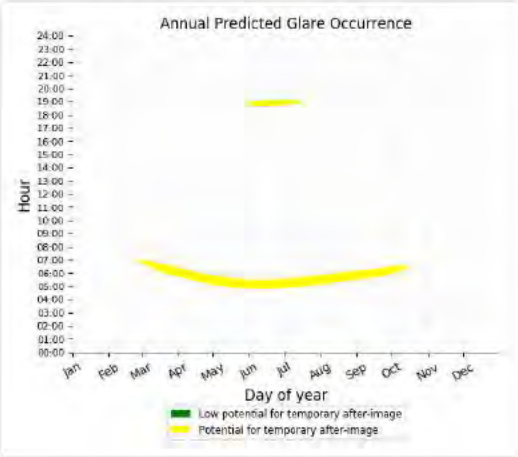


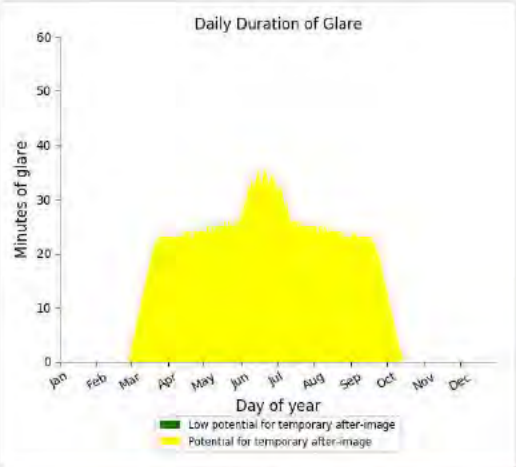


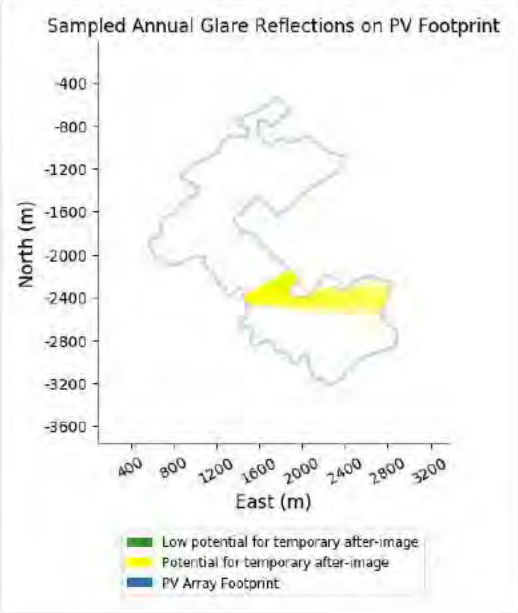
PV array 2 - OP Receptor (OP 41)

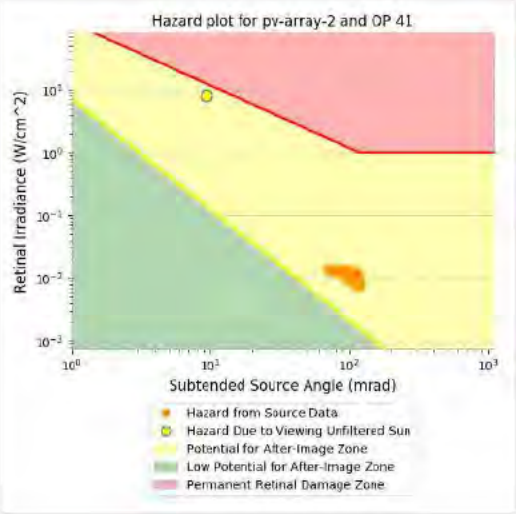
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 5,262 minutes of "yellow" glare with potential to cause temporary after-image.





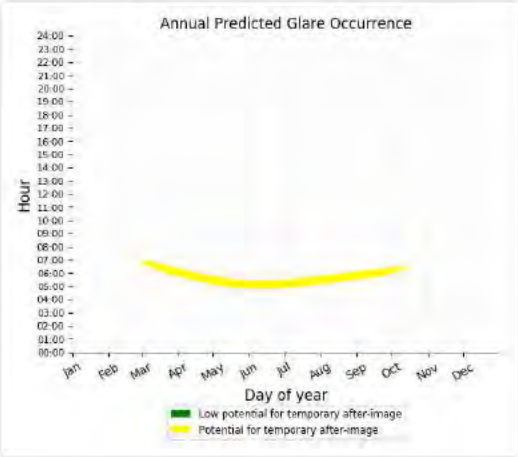


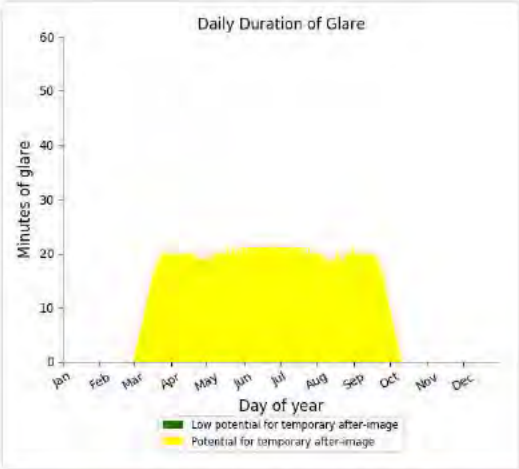


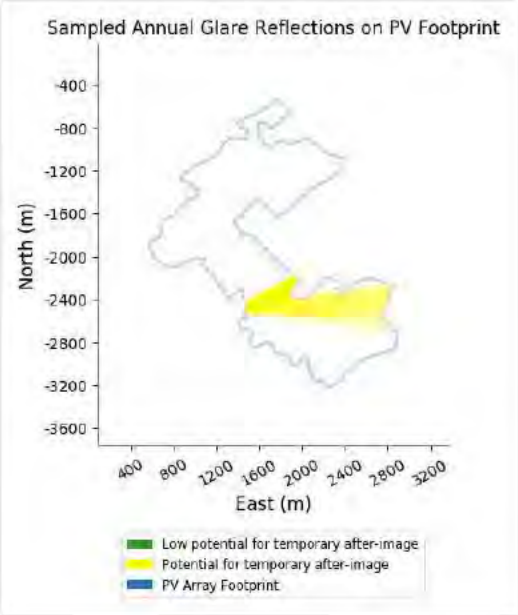
PV array 2 - OP Receptor (OP 42)

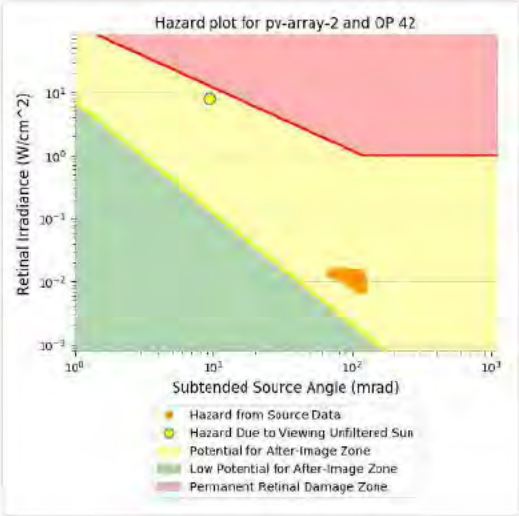
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 4,098 minutes of "yellow" glare with potential to cause temporary after-image.





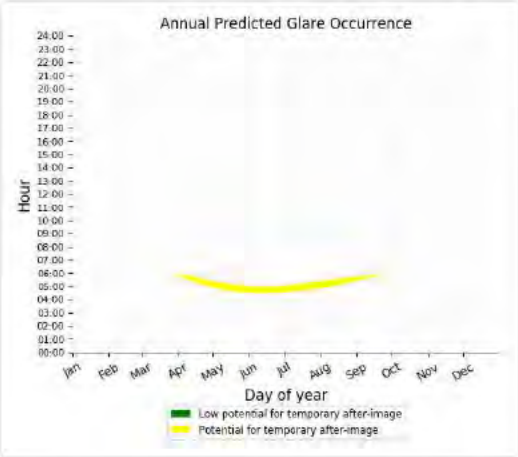


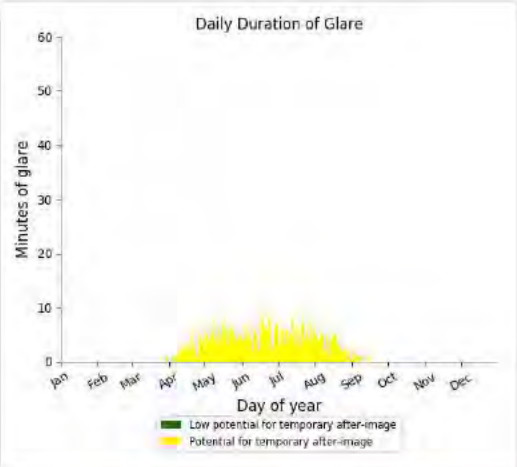


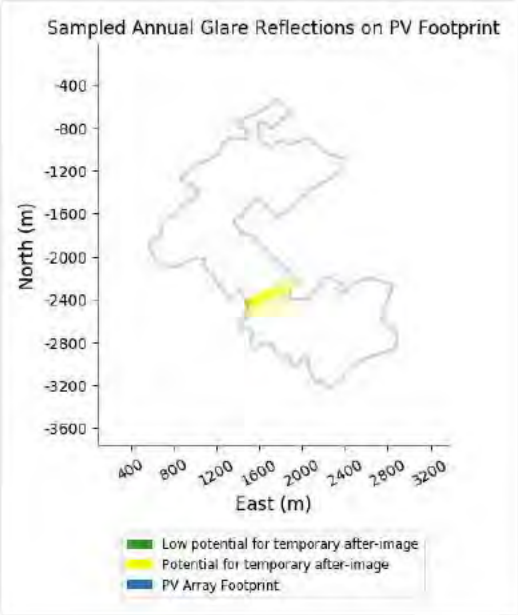
PV array 2 - OP Receptor (OP 43)

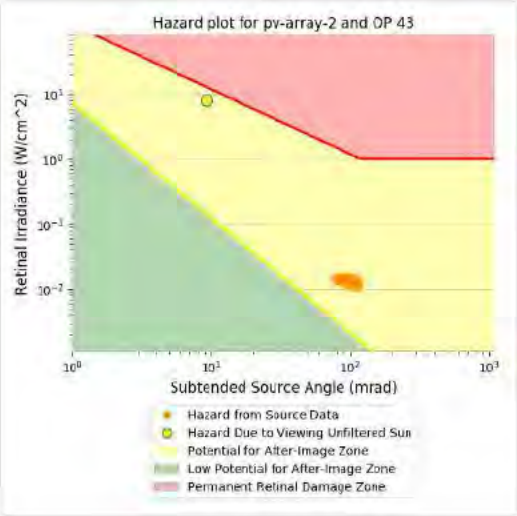
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 664 minutes of "yellow" glare with potential to cause temporary after-image.





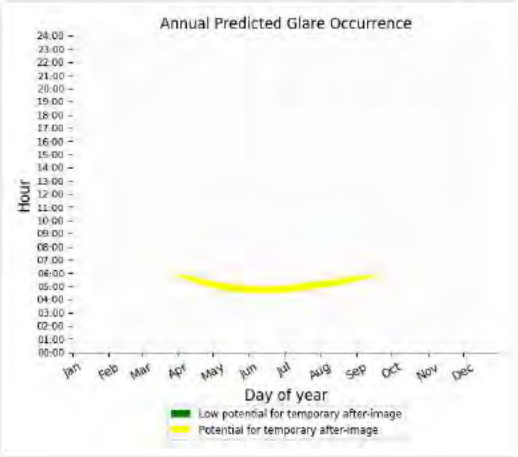


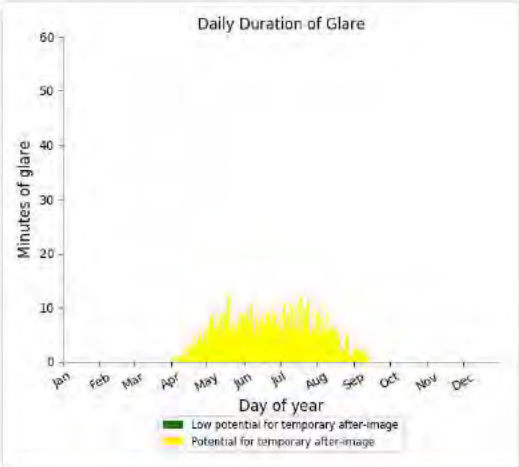


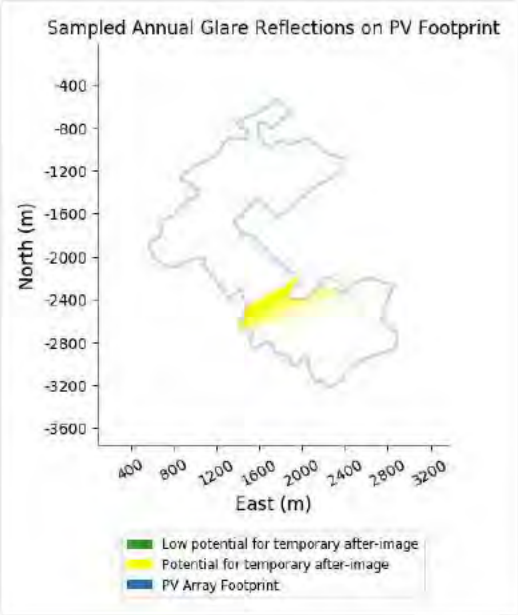
PV array 2 - OP Receptor (OP 44)

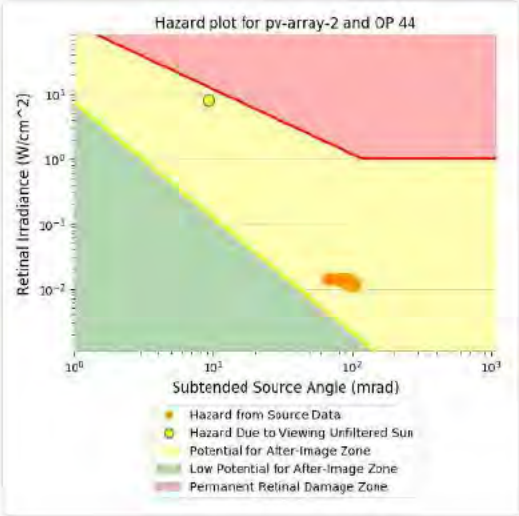
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 976 minutes of "yellow" glare with potential to cause temporary after-image.





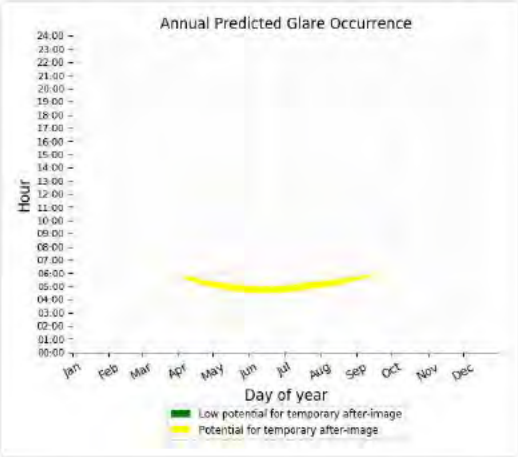


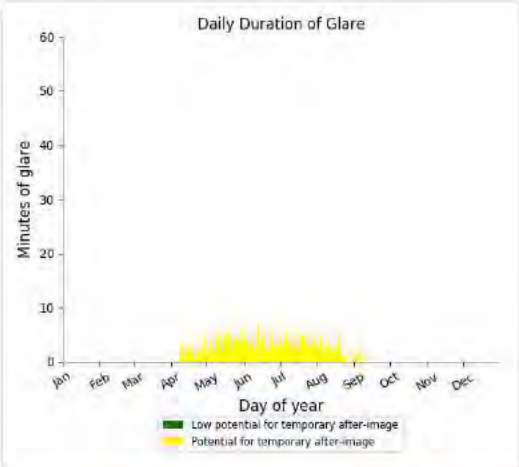


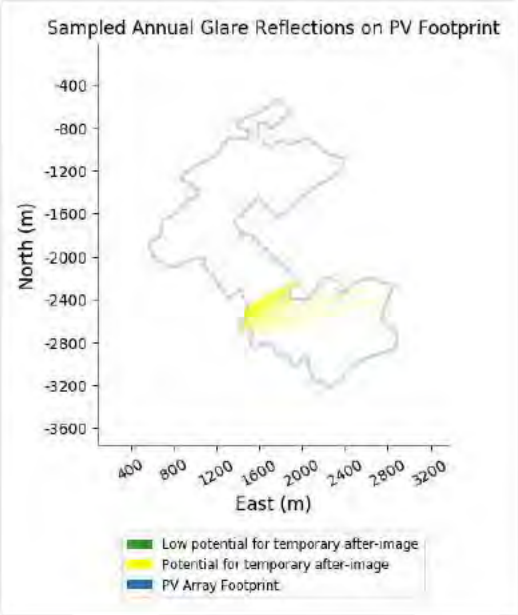
PV array 2 - OP Receptor (OP 45)

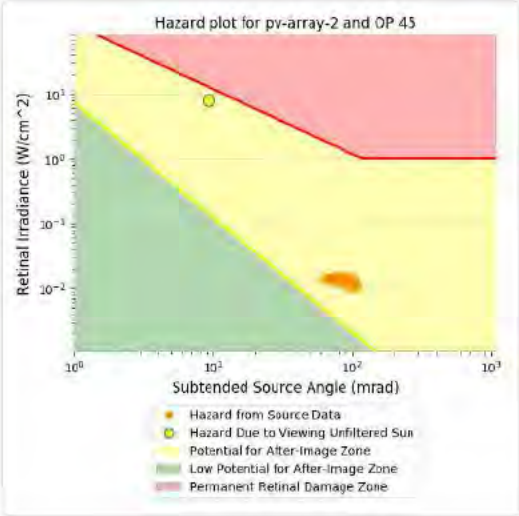
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 476 minutes of "yellow" glare with potential to cause temporary after-image.





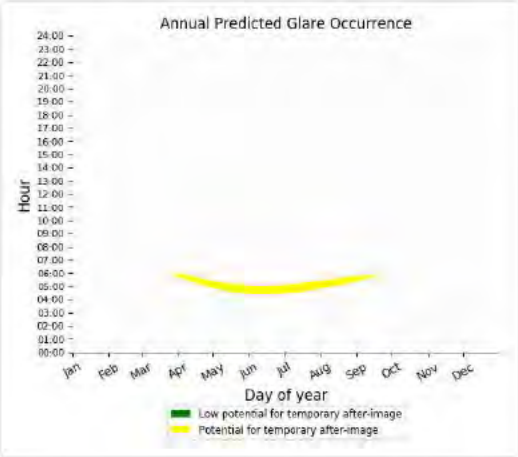


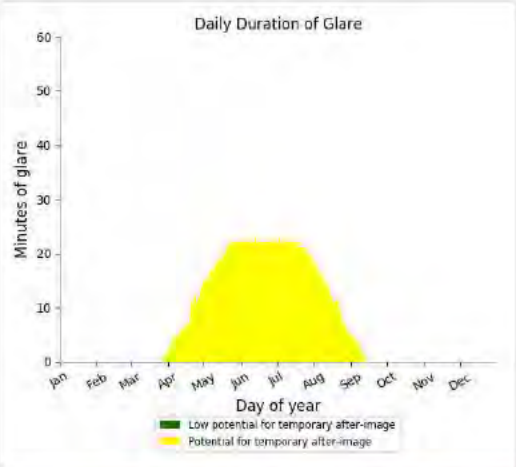


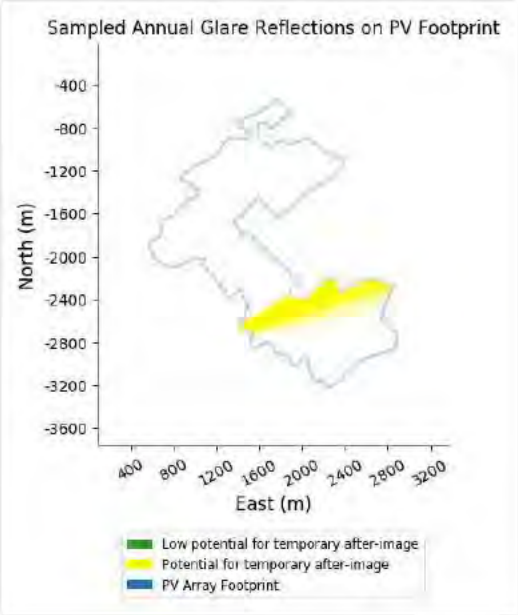
PV array 2 - OP Receptor (OP 46)

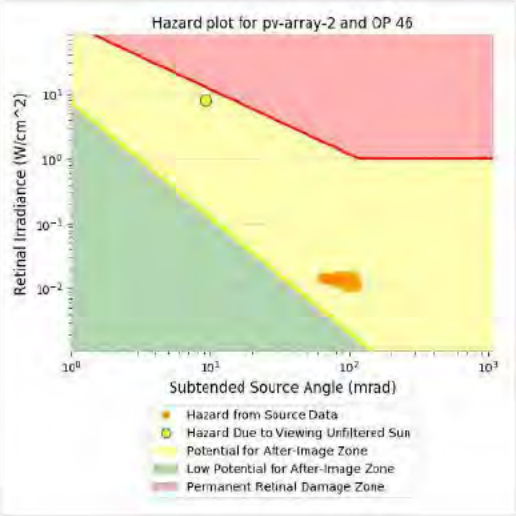
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 2,561 minutes of "yellow" glare with potential to cause temporary after-image.





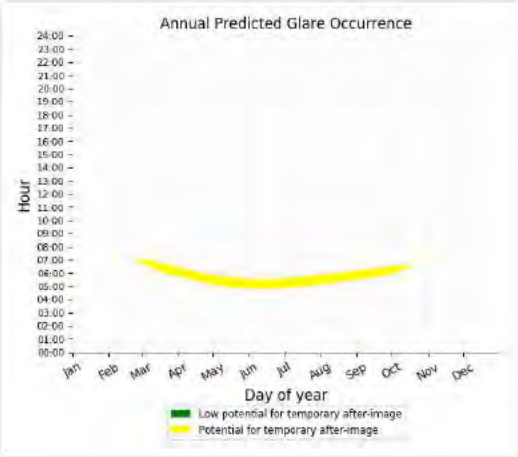


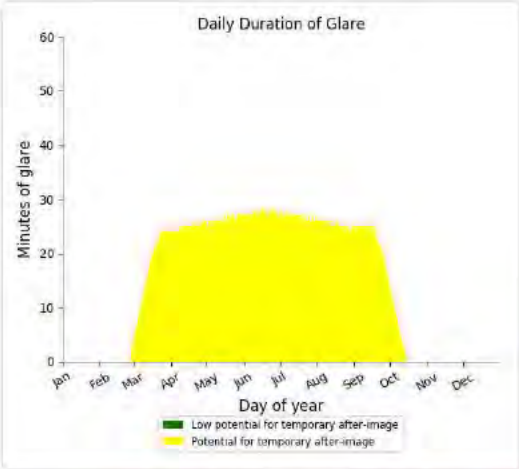


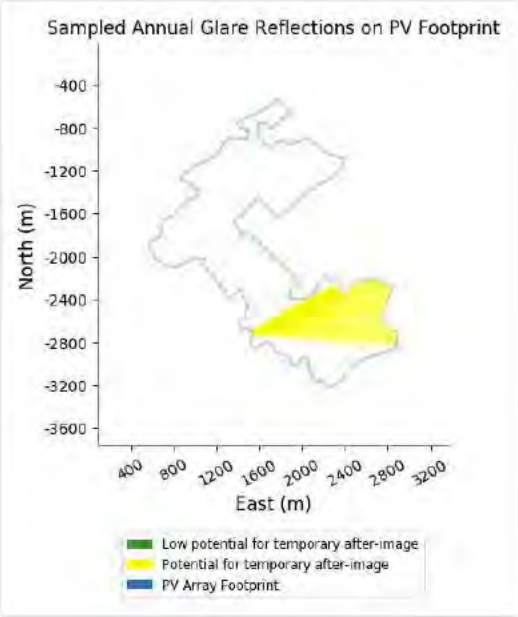
PV array 2 - OP Receptor (OP 47)

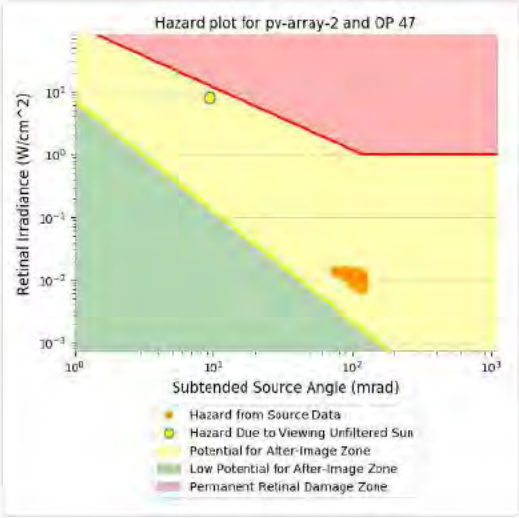
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 5,332 minutes of "yellow" glare with potential to cause temporary after-image.





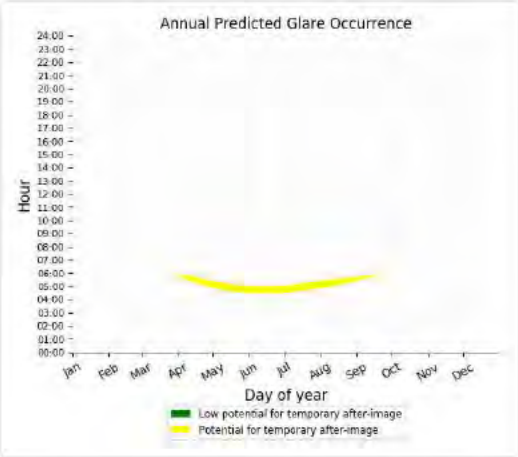


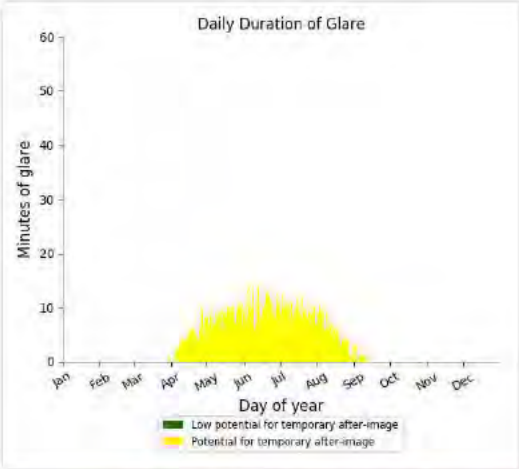


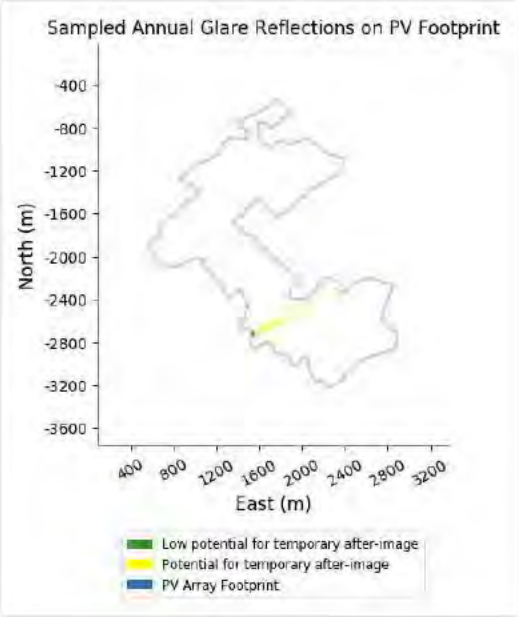
PV array 2 - OP Receptor (OP 48)

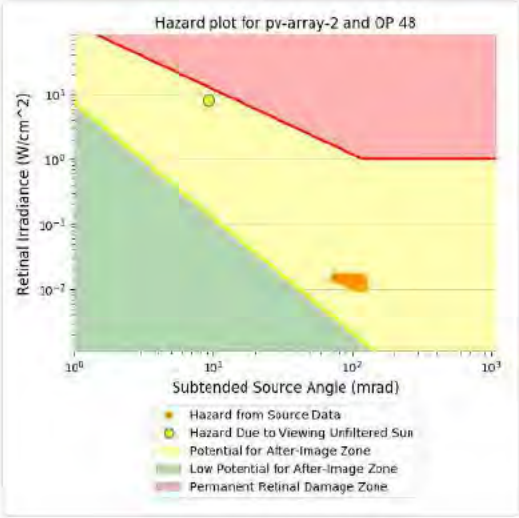
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 1,200 minutes of "yellow" glare with potential to cause temporary after-image.





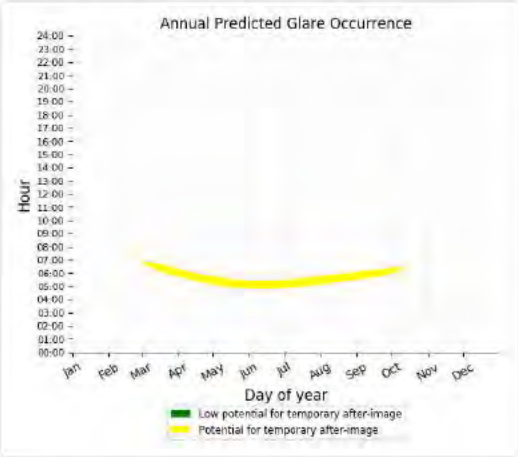


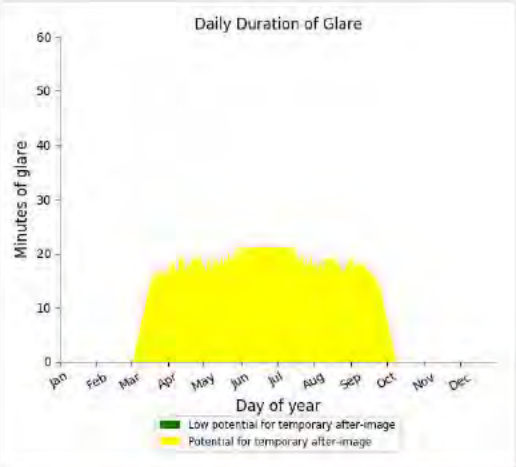


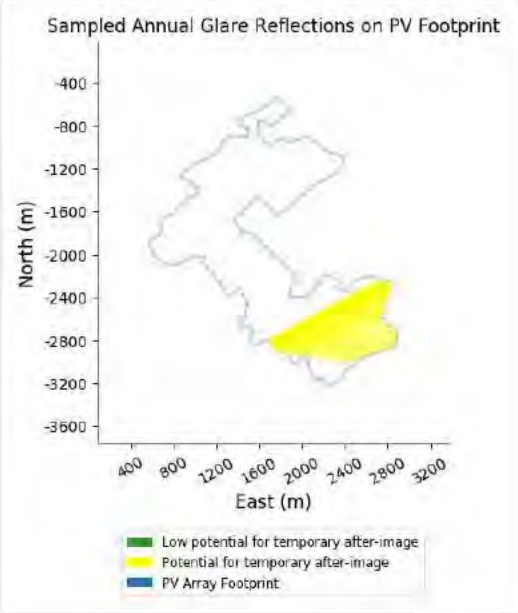
PV array 2 - OP Receptor (OP 49)

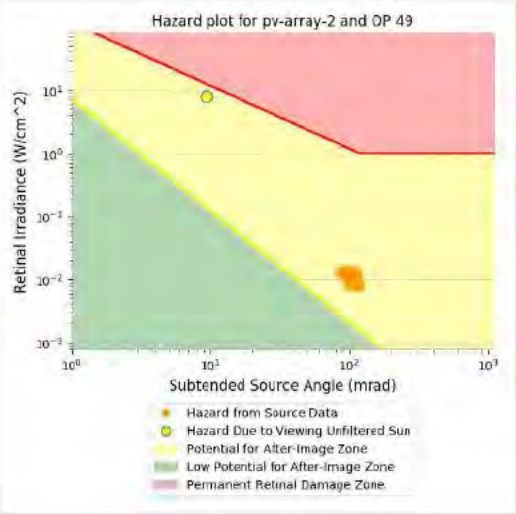
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 3,767 minutes of "yellow" glare with potential to cause temporary after-image.





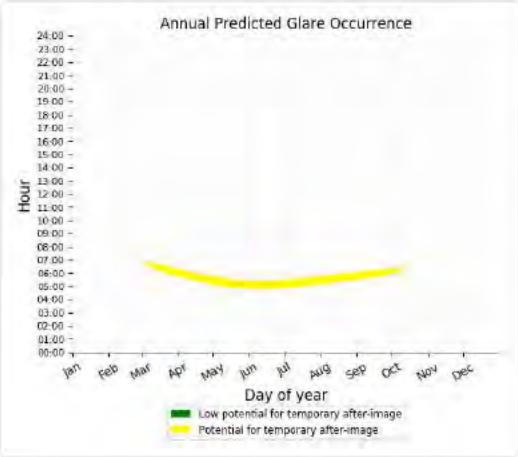


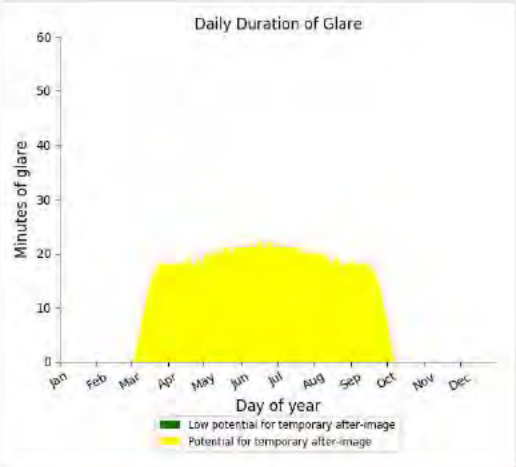


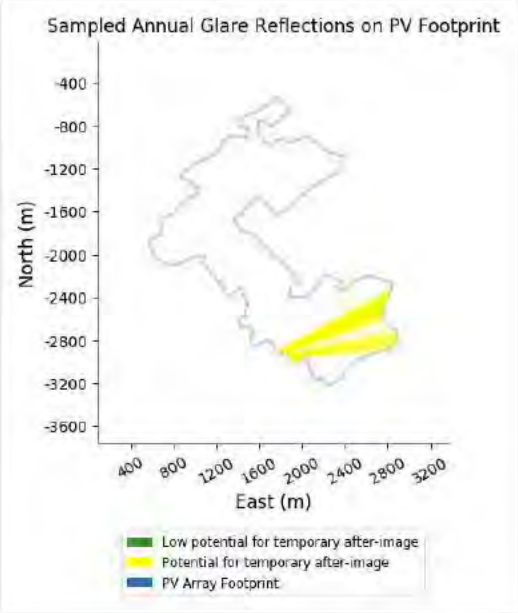
PV array 2 - OP Receptor (OP 50)

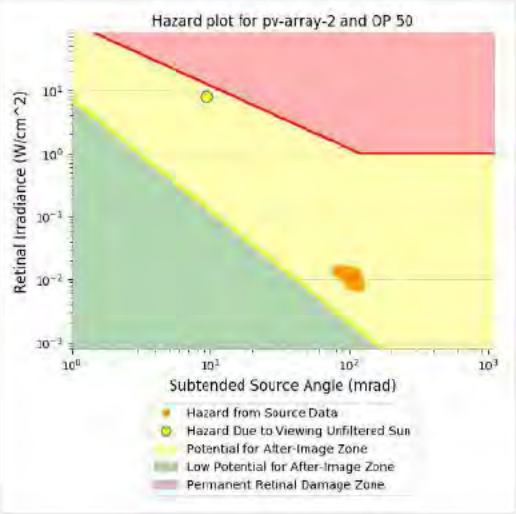
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 3,909 minutes of "yellow" glare with potential to cause temporary after-image.





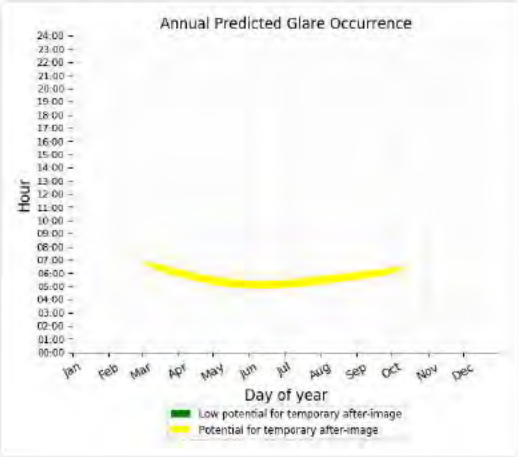


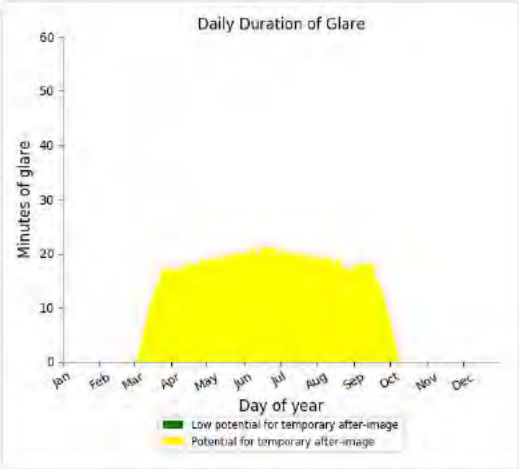


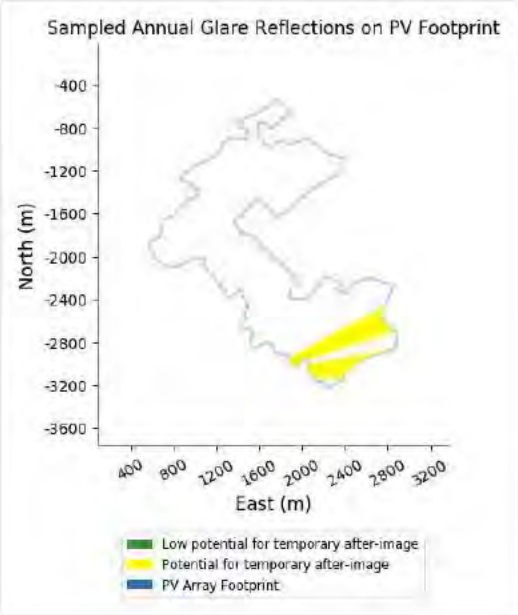
PV array 2 - OP Receptor (OP 51)

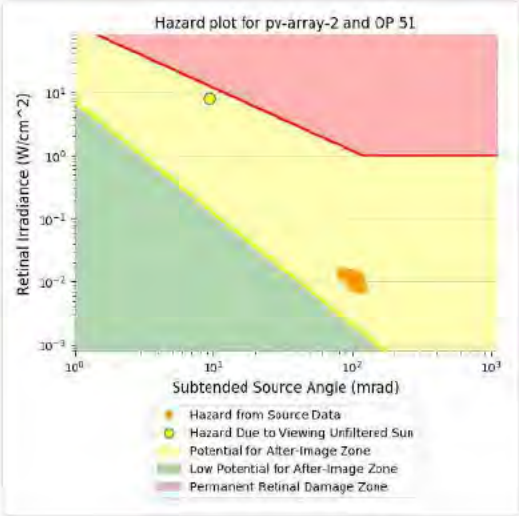
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 3,753 minutes of "yellow" glare with potential to cause temporary after-image.





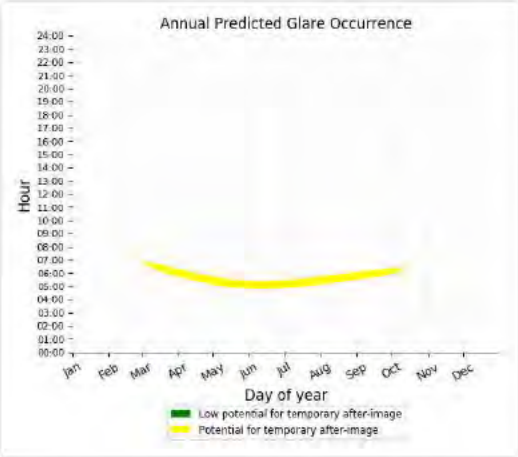


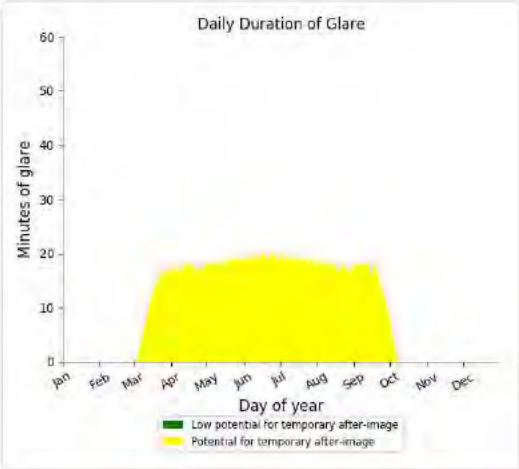


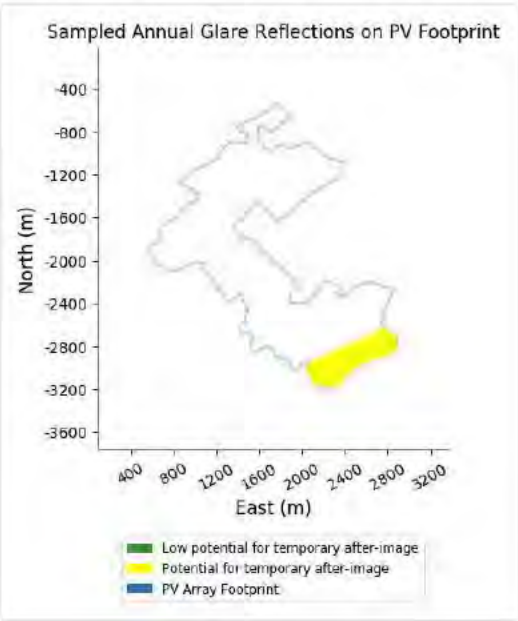
PV array 2 - OP Receptor (OP 52)

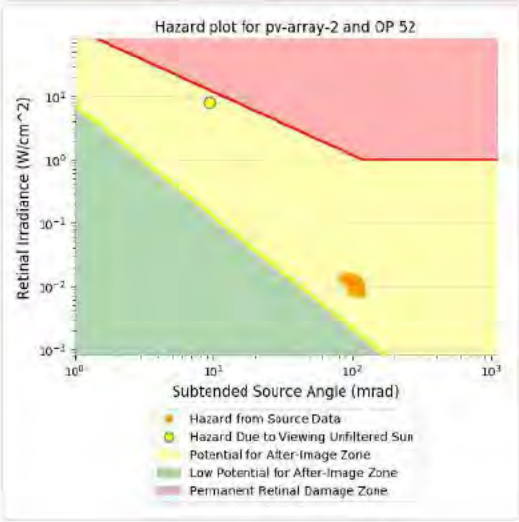
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 3,631 minutes of "yellow" glare with potential to cause temporary after-image.









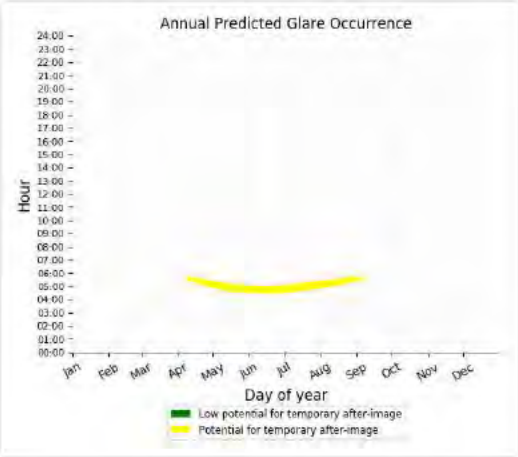
PV array 2 - OP Receptor (OP 53)

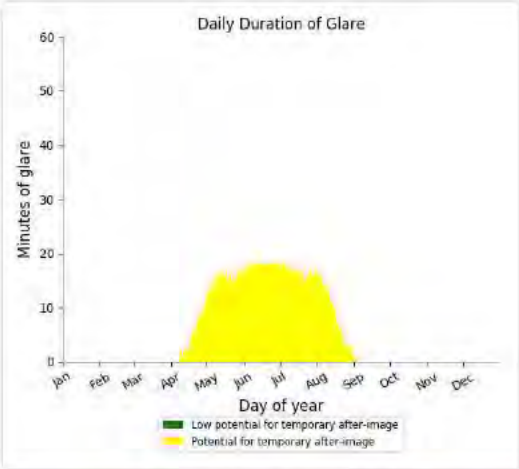
No glare found

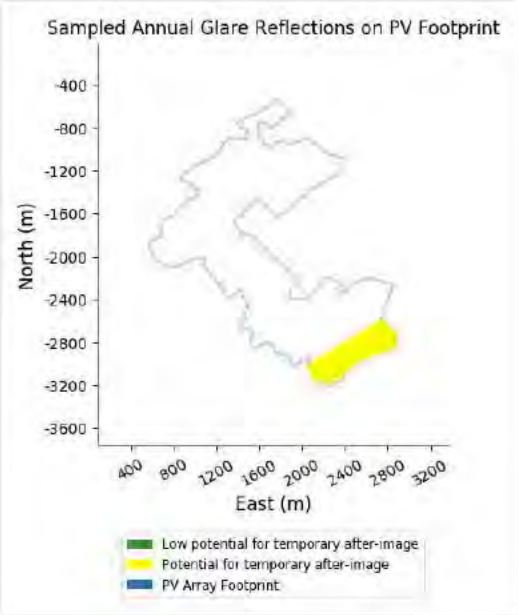
PV array 2 - OP Receptor (OP 54)

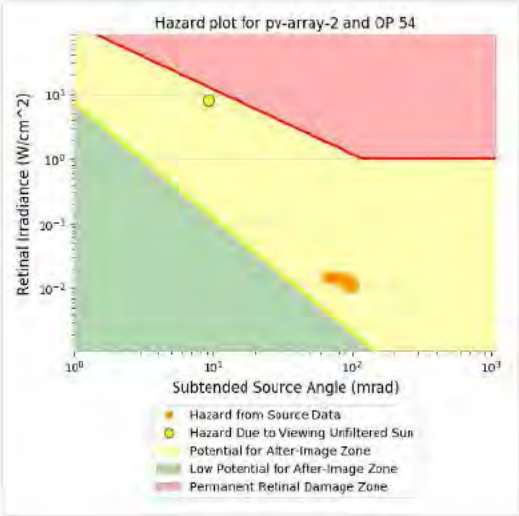
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 1,929 minutes of "yellow" glare with potential to cause temporary after-image.





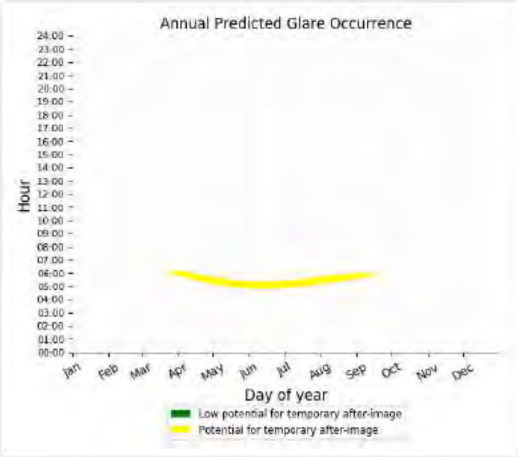


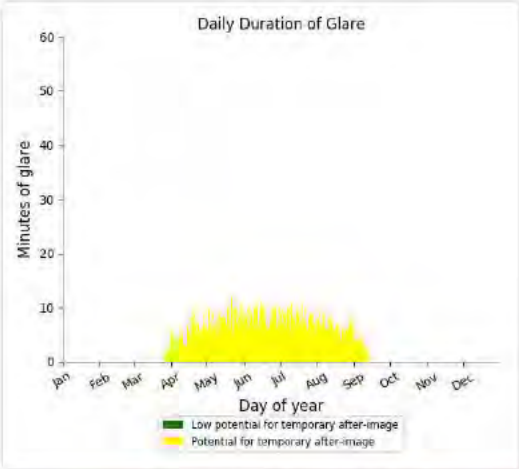


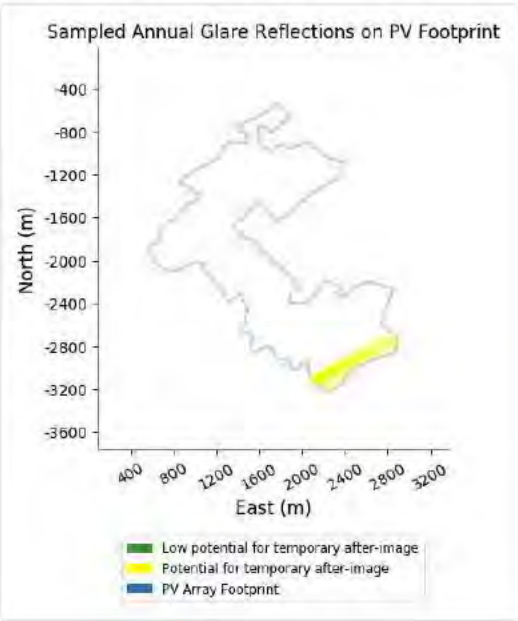
PV array 2 - OP Receptor (OP 55)

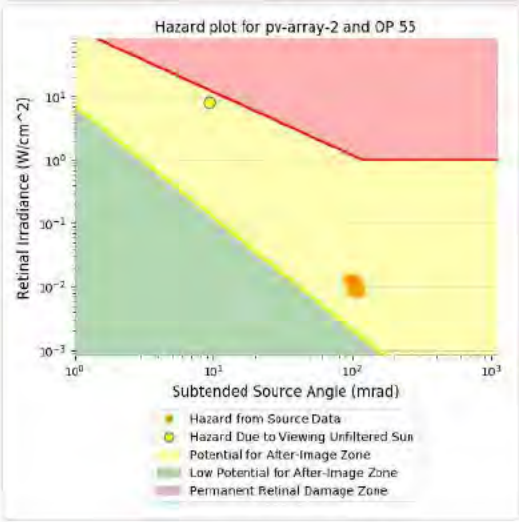
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 1,183 minutes of "yellow" glare with potential to cause temporary after-image.





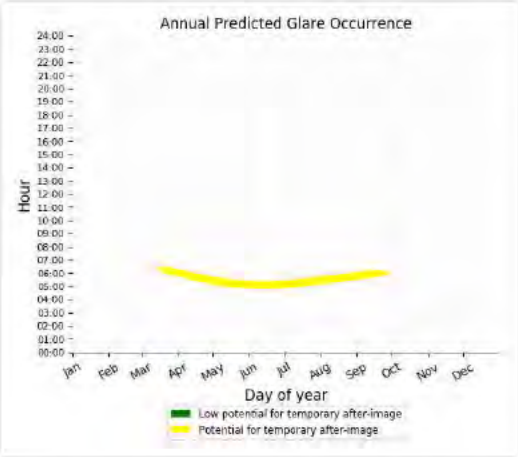


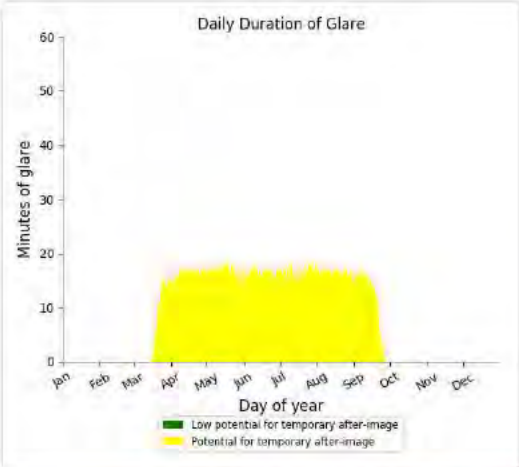


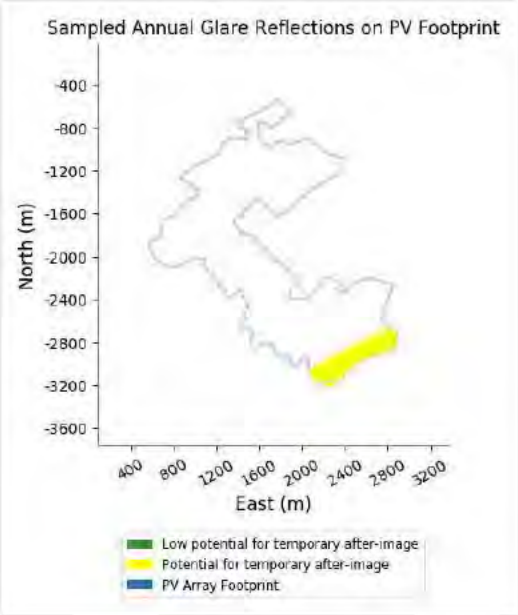
PV array 2 - OP Receptor (OP 56)

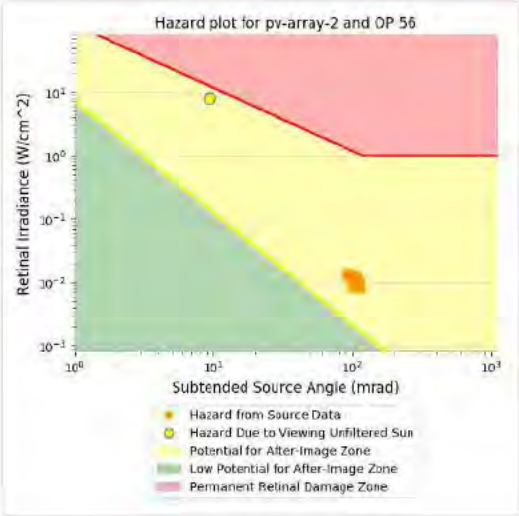
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 3,045 minutes of "yellow" glare with potential to cause temporary after-image.





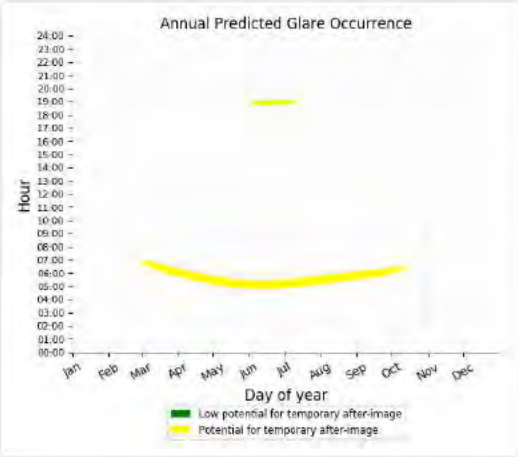


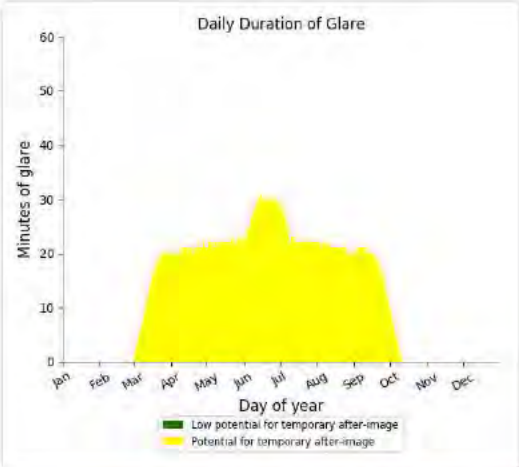


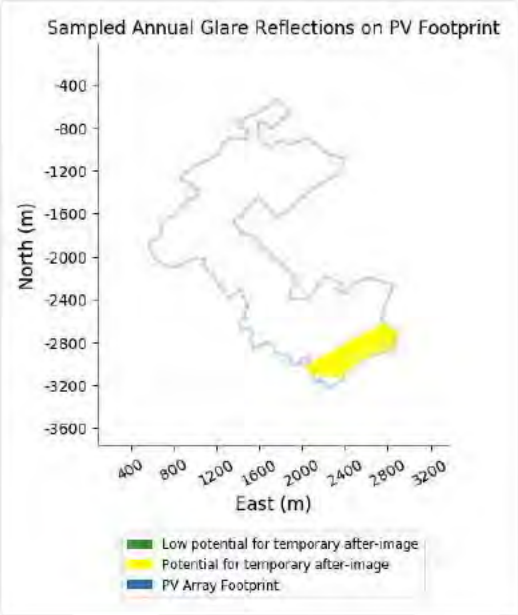
PV array 2 - OP Receptor (OP 57)

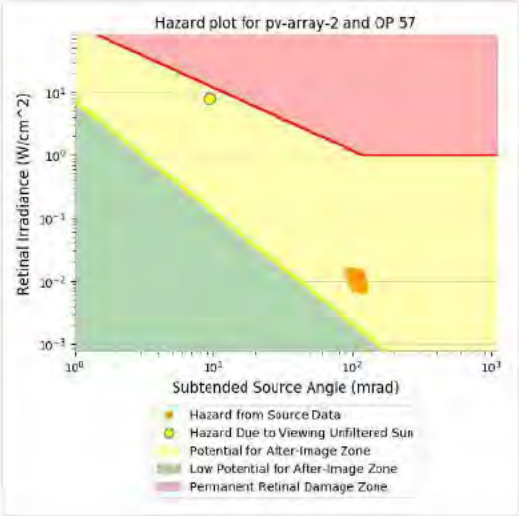
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 4,546 minutes of "yellow" glare with potential to cause temporary after-image.





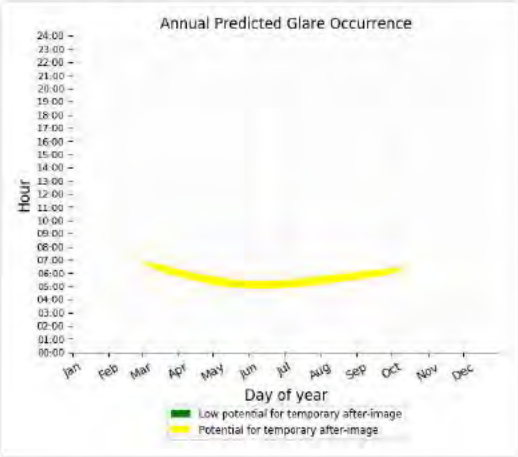


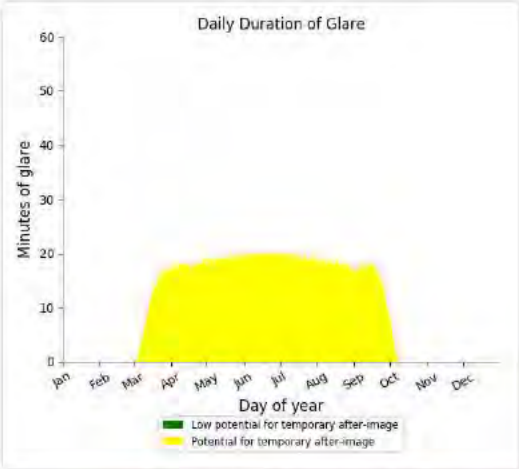


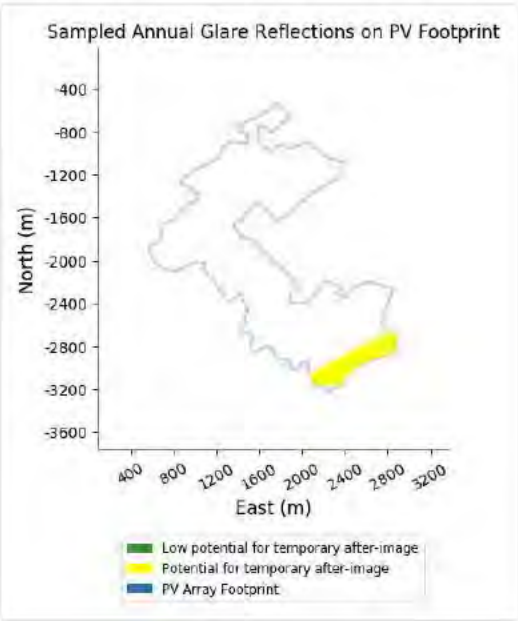
PV array 2 - OP Receptor (OP 58)

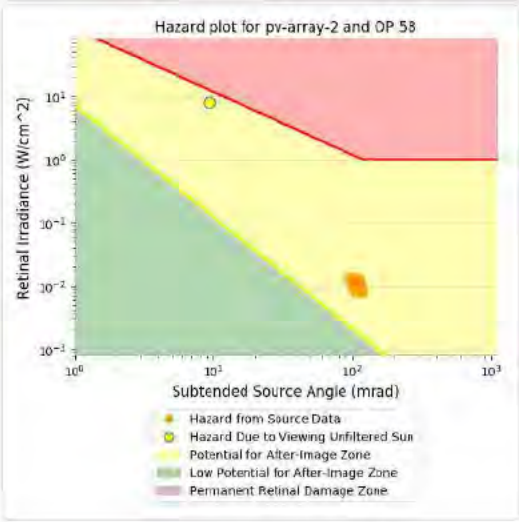
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 3,718 minutes of "yellow" glare with potential to cause temporary after-image.





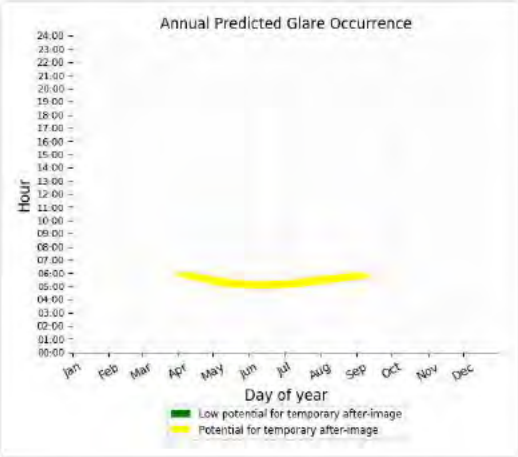


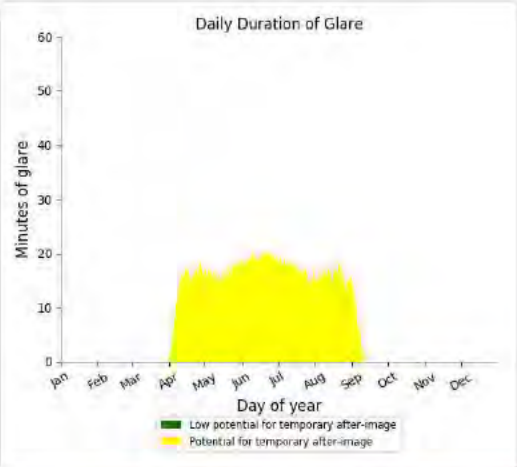


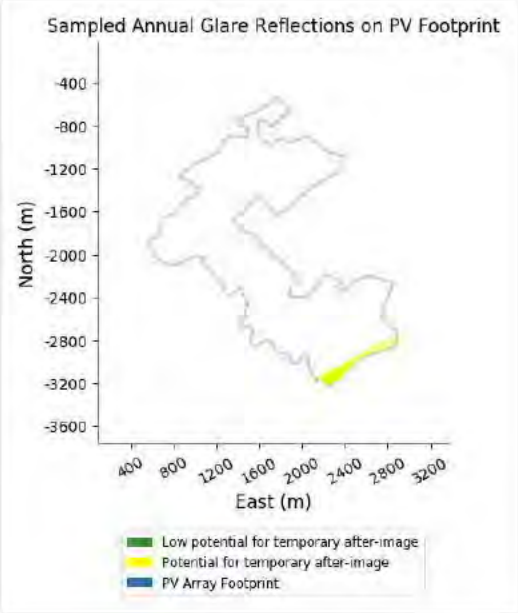
PV array 2 - OP Receptor (OP 59)

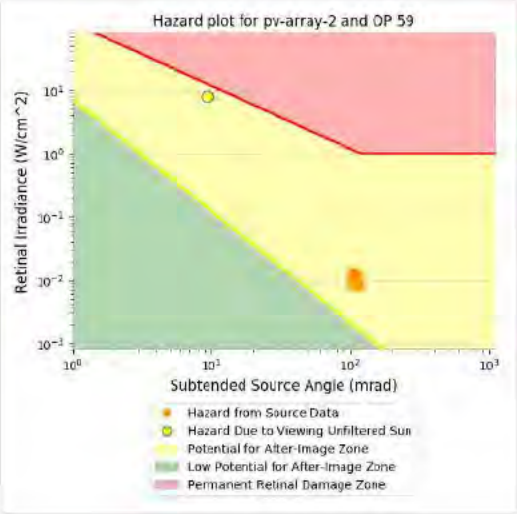
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 2,596 minutes of "yellow" glare with potential to cause temporary after-image.





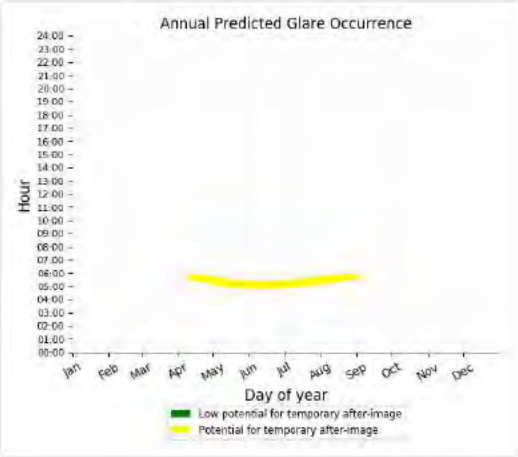


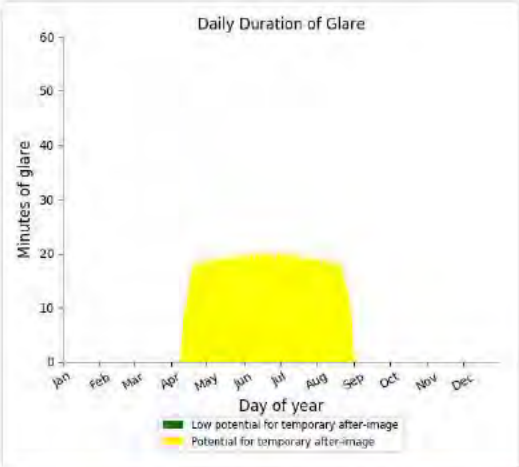


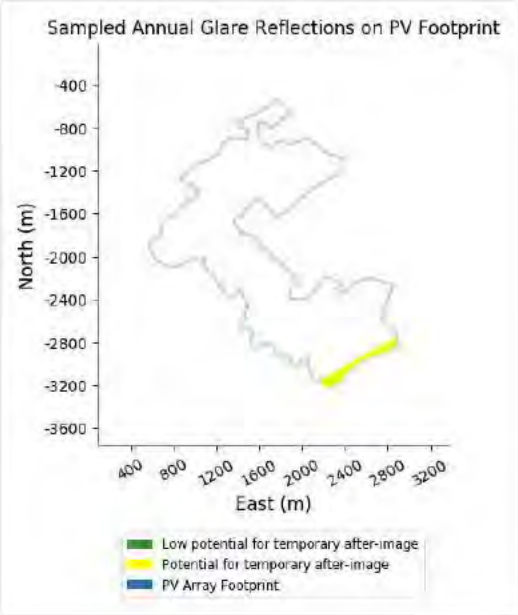
PV array 2 - OP Receptor (OP 60)

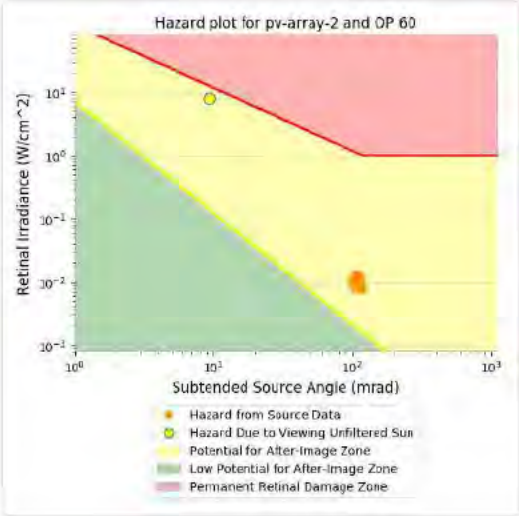
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 2,604 minutes of "yellow" glare with potential to cause temporary after-image.





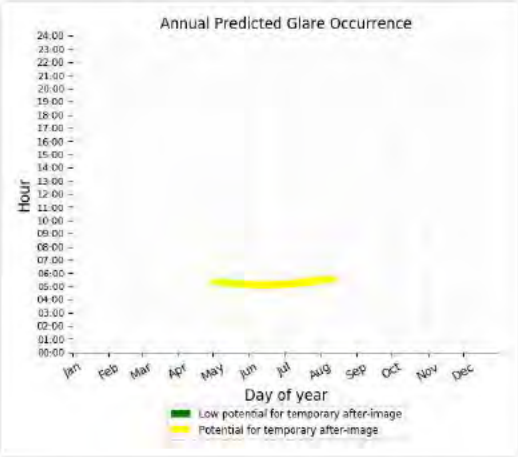


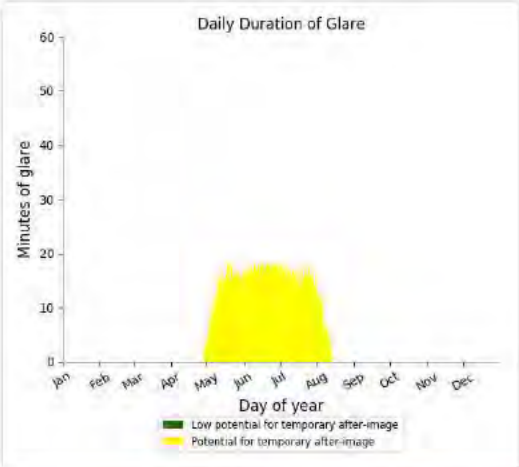


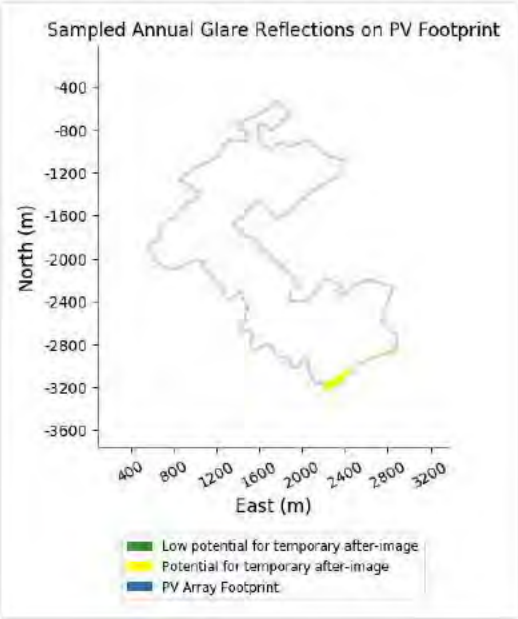
PV array 2 - OP Receptor (OP 61)

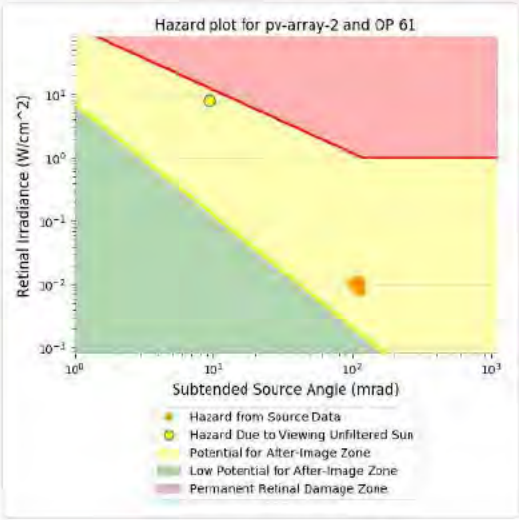
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 1,564 minutes of "yellow" glare with potential to cause temporary after-image.









PV array 2 - OP Receptor (OP 62)

No glare found

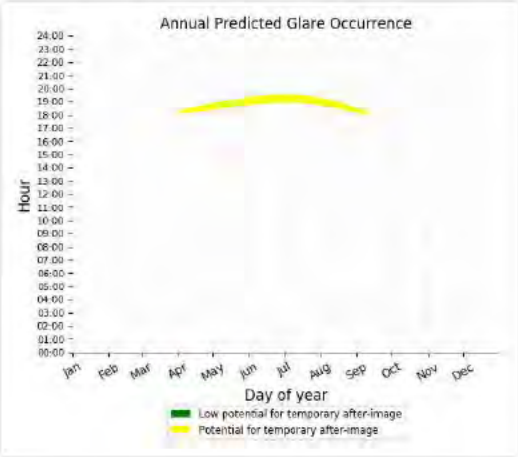
PV array 2 - OP Receptor (OP 63)

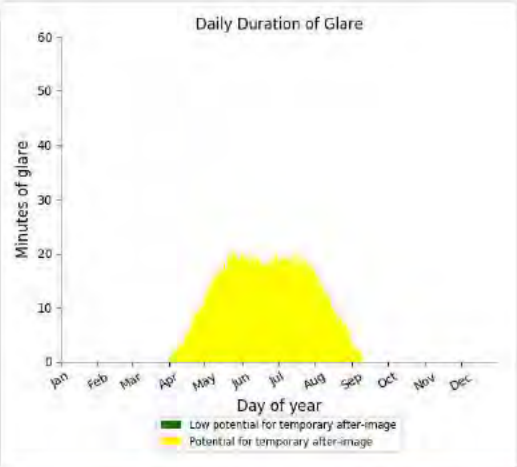
No glare found

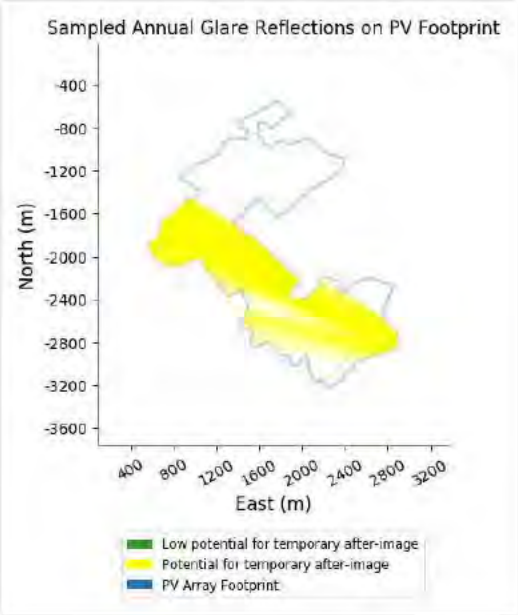
PV array 2 - OP Receptor (OP 64)

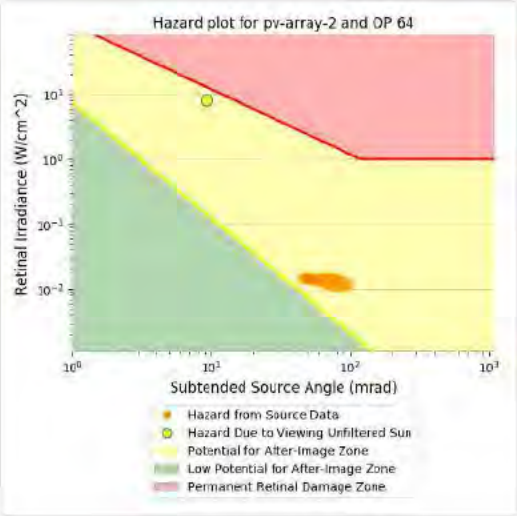
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 2,153 minutes of "yellow" glare with potential to cause temporary after-image.





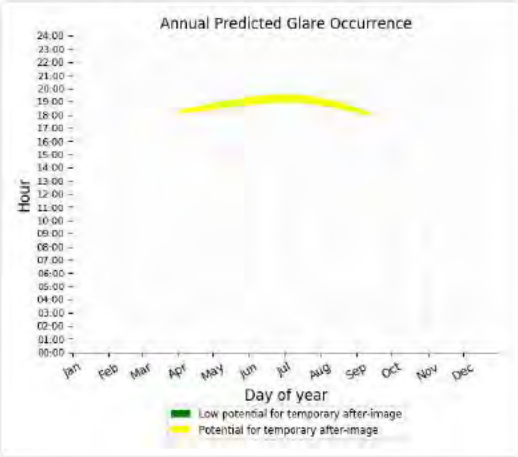


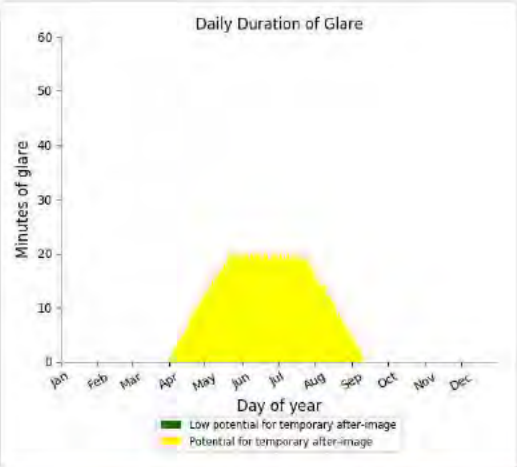


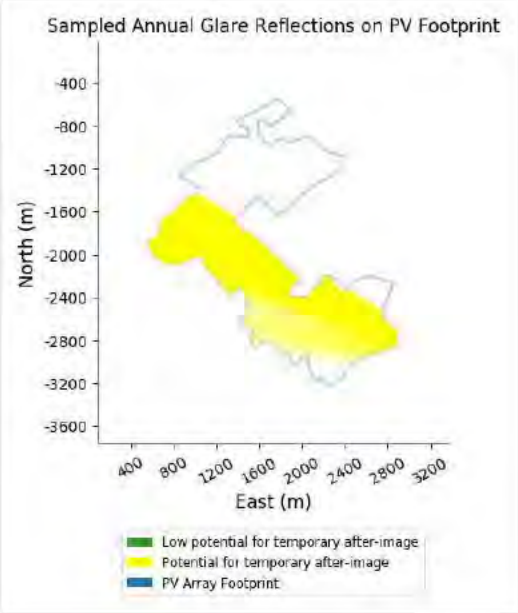
PV array 2 - OP Receptor (OP 65)

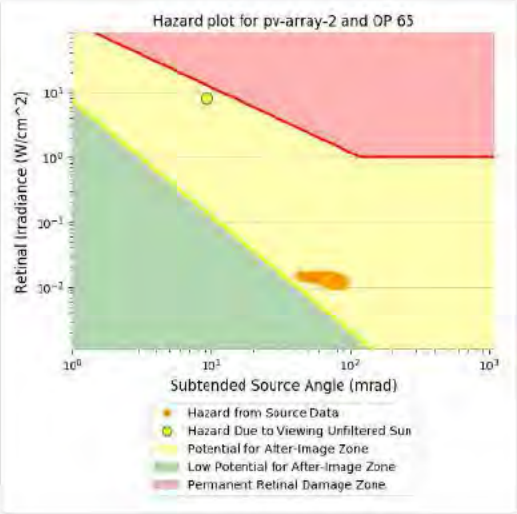
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 2,249 minutes of "yellow" glare with potential to cause temporary after-image.





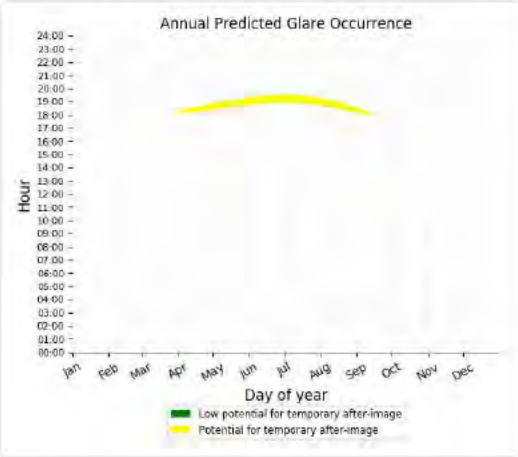


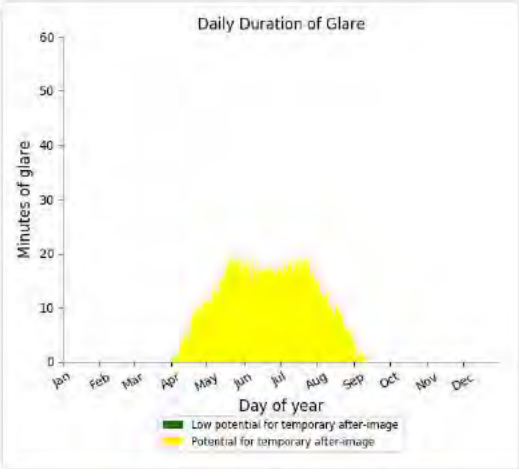


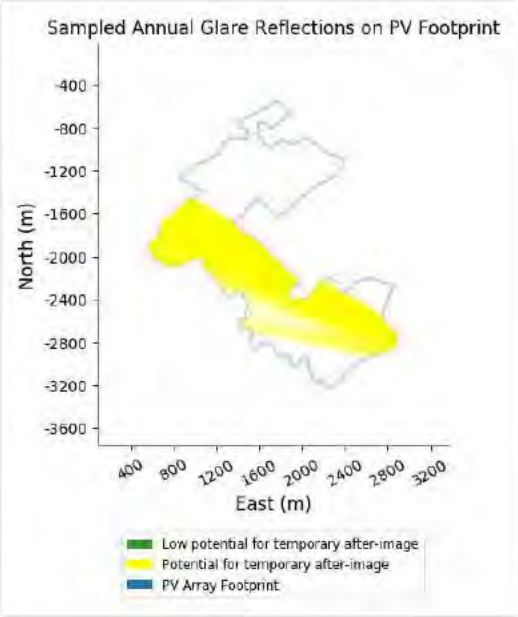
PV array 2 - OP Receptor (OP 66)

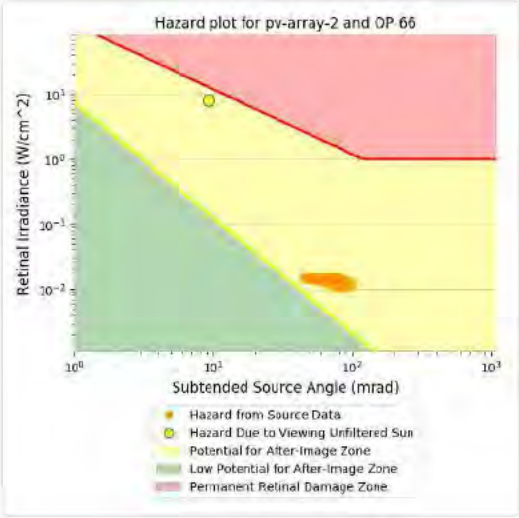
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 2,032 minutes of "yellow" glare with potential to cause temporary after-image.





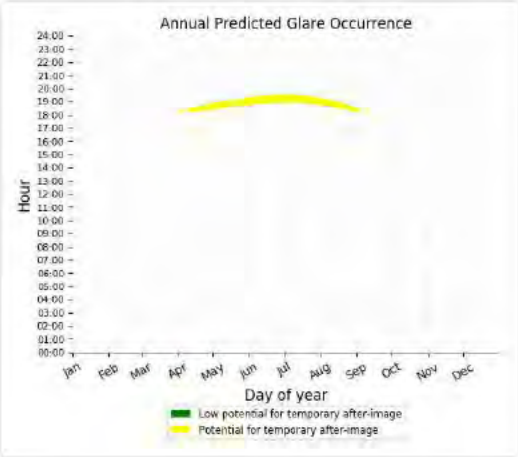


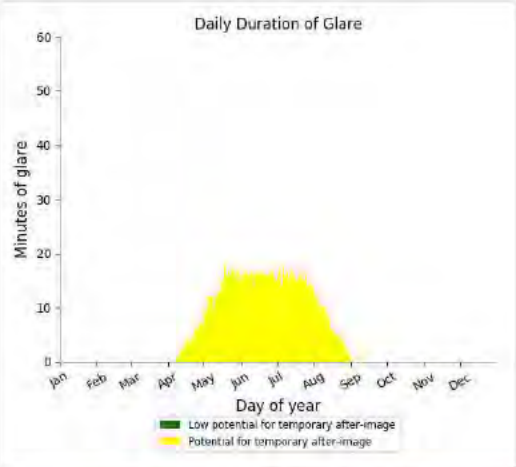


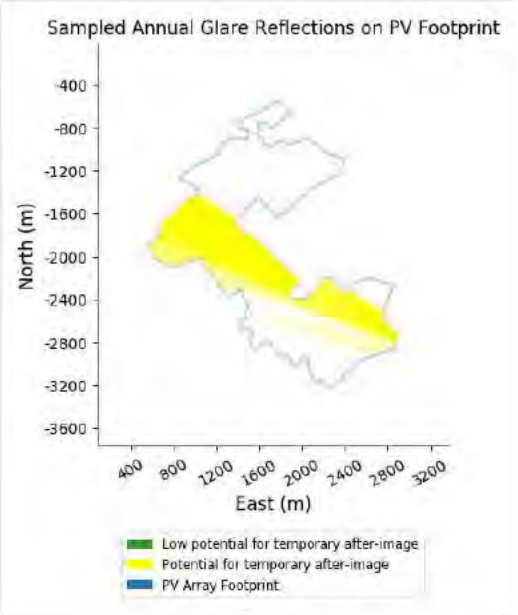
PV array 2 - OP Receptor (OP 67)

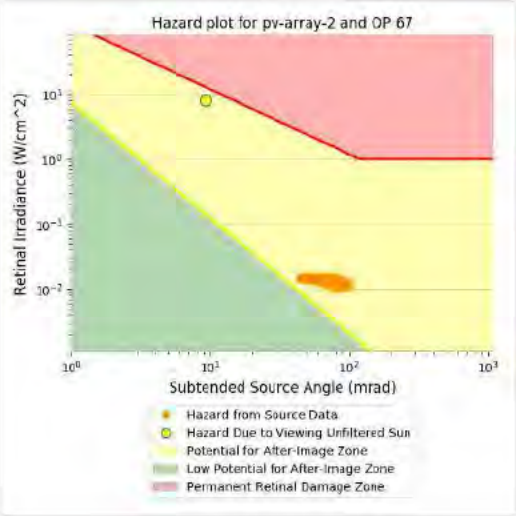
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 1,693 minutes of "yellow" glare with potential to cause temporary after-image.





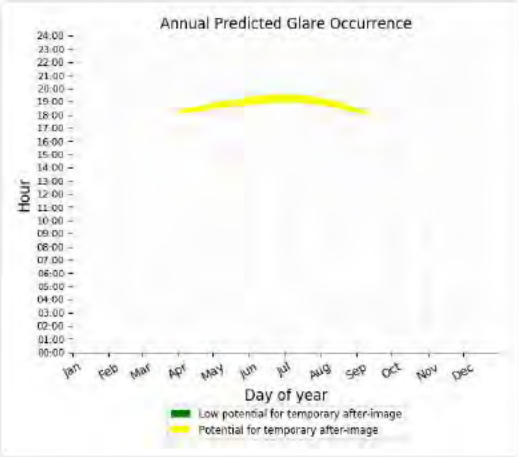


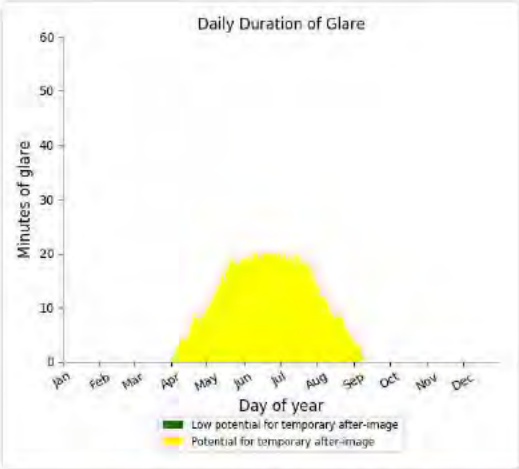


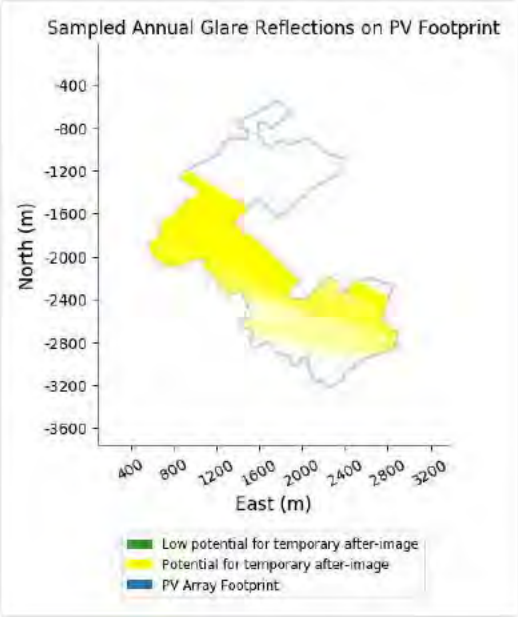
PV array 2 - OP Receptor (OP 68)

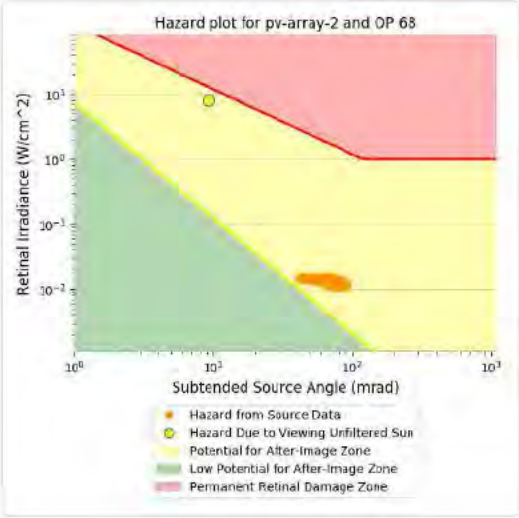
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 2,095 minutes of "yellow" glare with potential to cause temporary after-image.





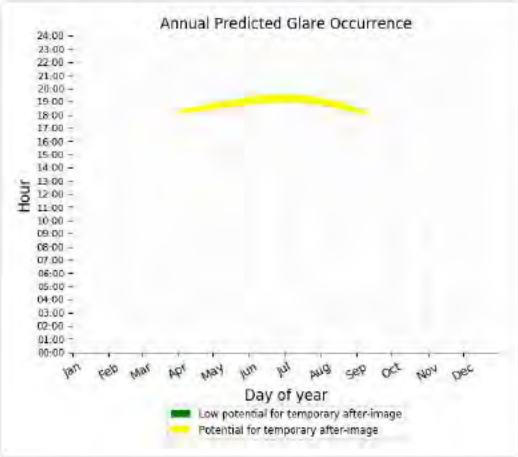


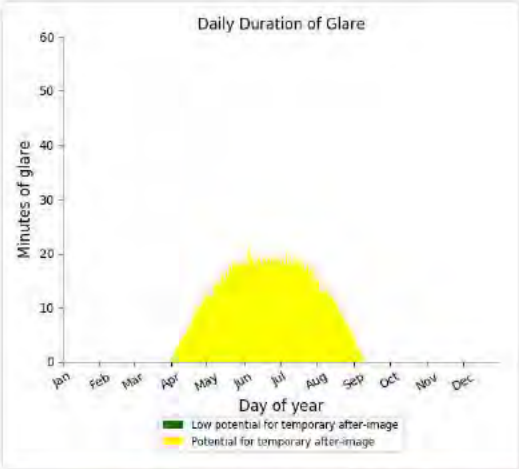


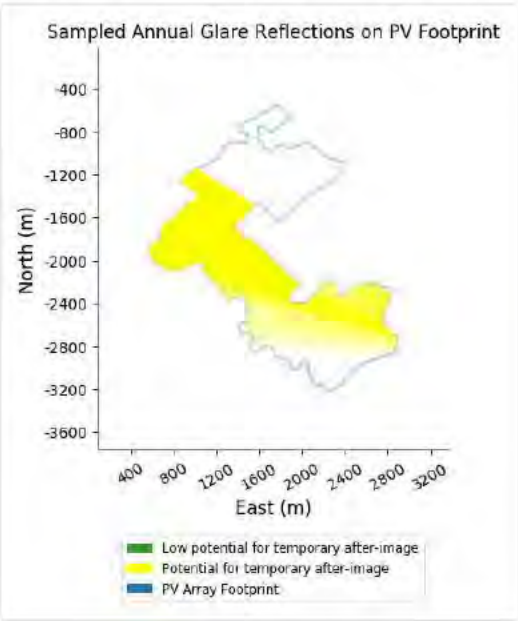
PV array 2 - OP Receptor (OP 69)

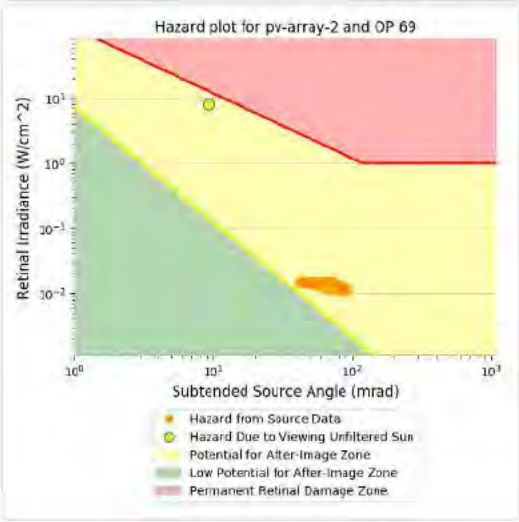
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 2,132 minutes of "yellow" glare with potential to cause temporary after-image.





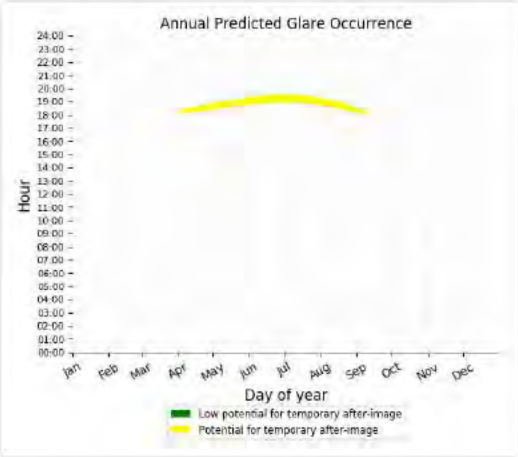


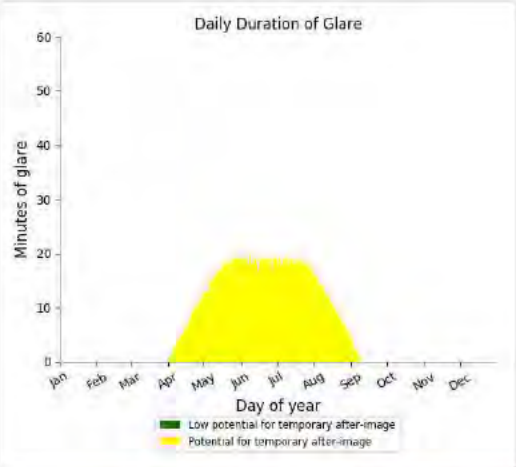


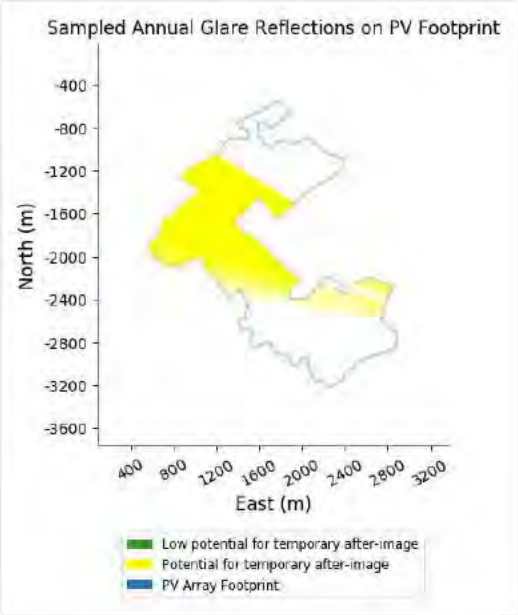
PV array 2 - OP Receptor (OP 70)

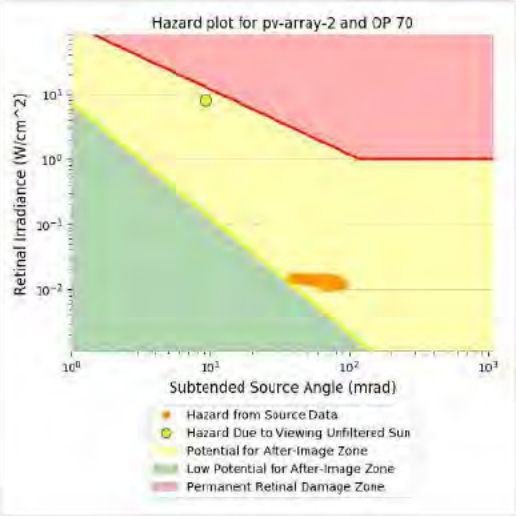
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 2,187 minutes of "yellow" glare with potential to cause temporary after-image.





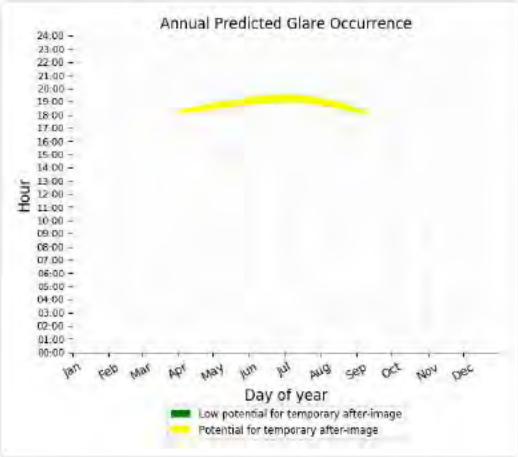


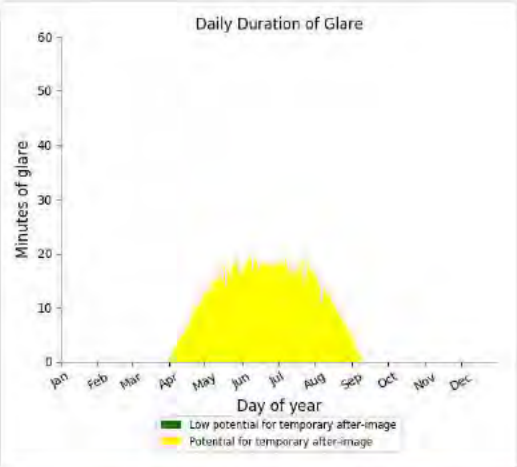


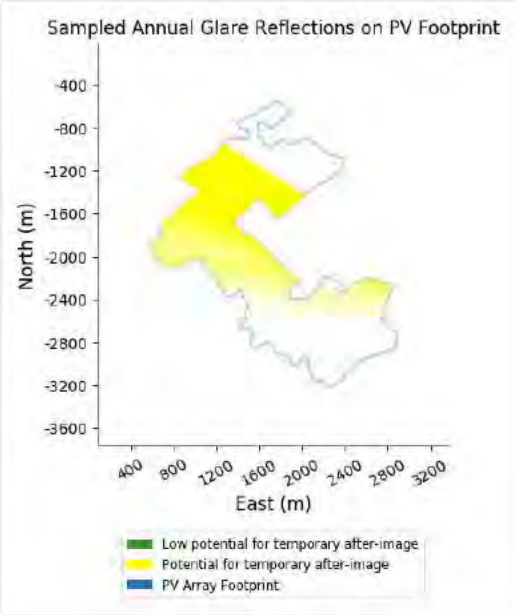
PV array 2 - OP Receptor (OP 71)

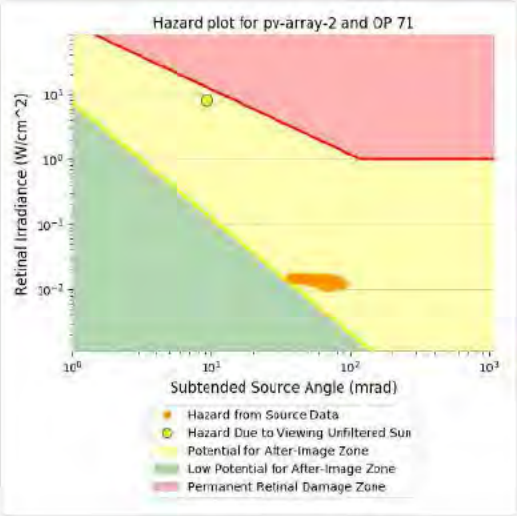
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 2,077 minutes of "yellow" glare with potential to cause temporary after-image.





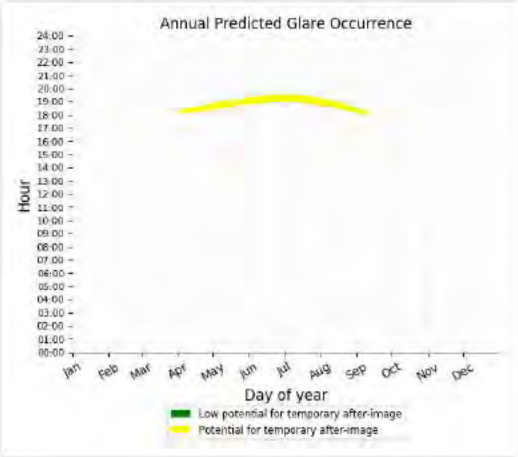


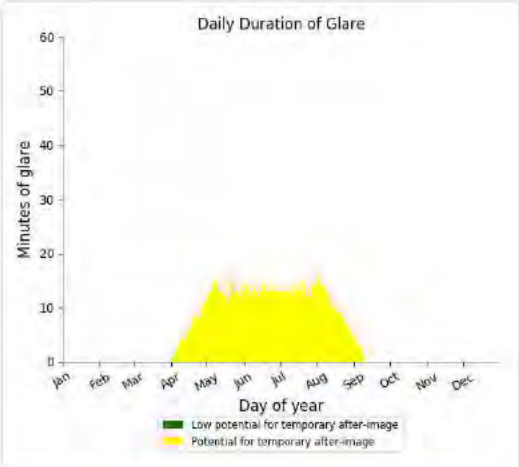


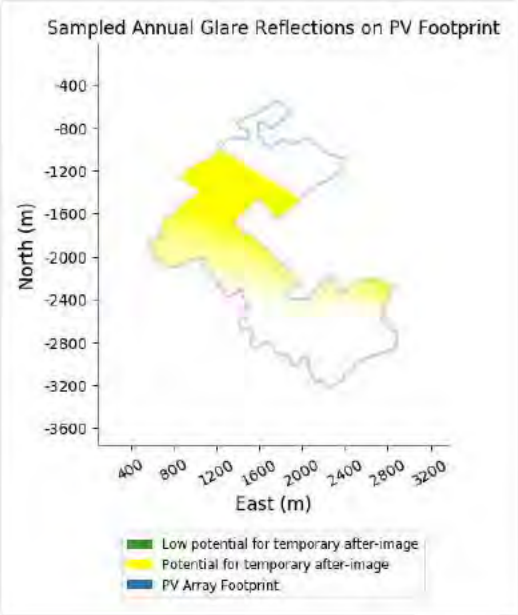
PV array 2 - OP Receptor (OP 72)

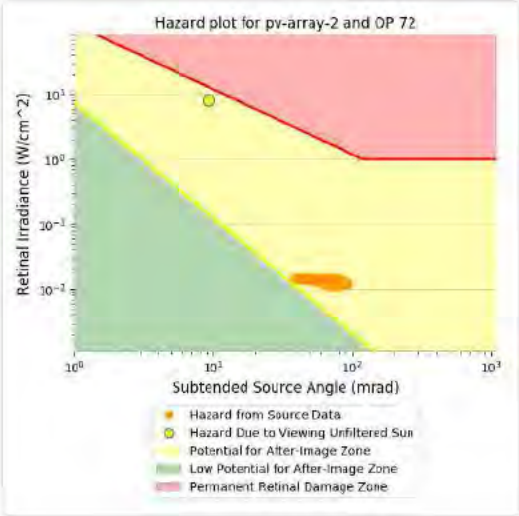
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 1,734 minutes of "yellow" glare with potential to cause temporary after-image.





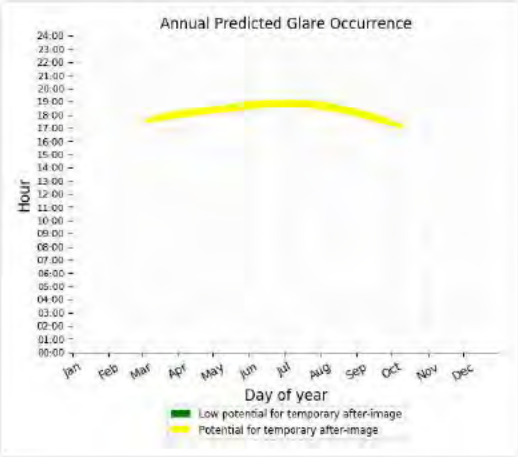


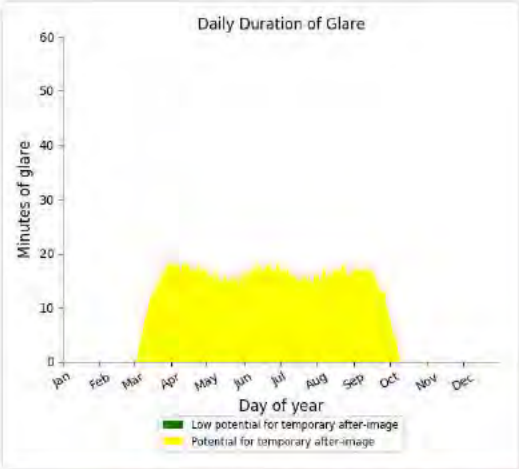


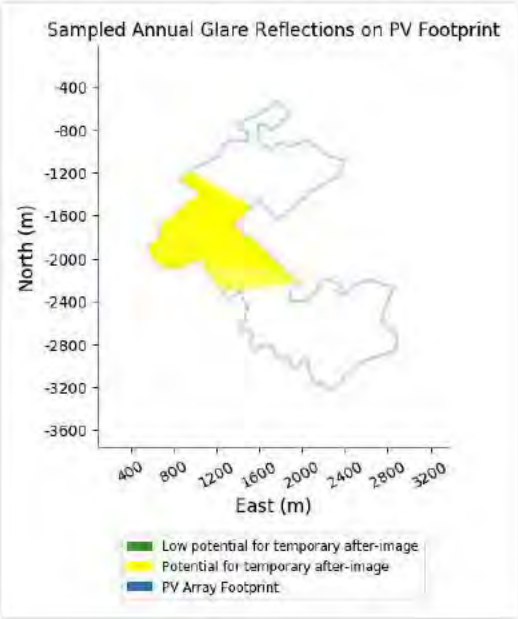
PV array 2 - OP Receptor (OP 73)

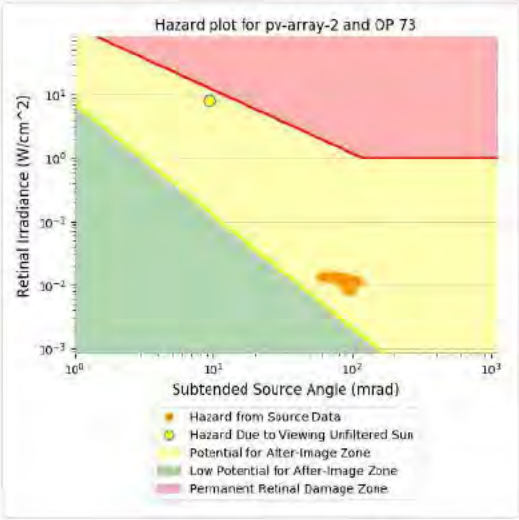
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 3,339 minutes of "yellow" glare with potential to cause temporary after-image.





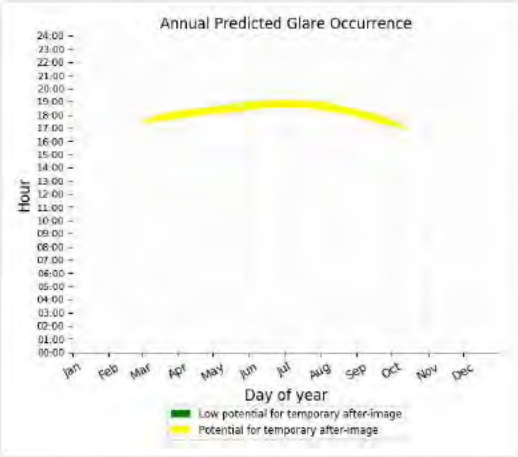


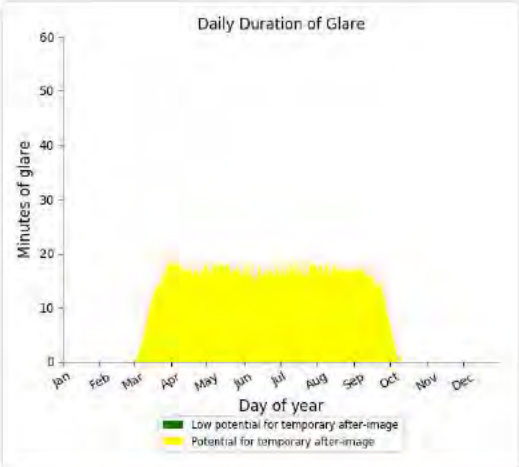


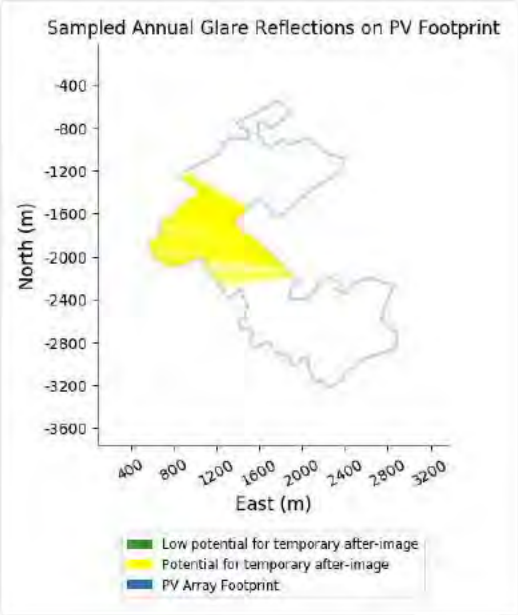
PV array 2 - OP Receptor (OP 74)

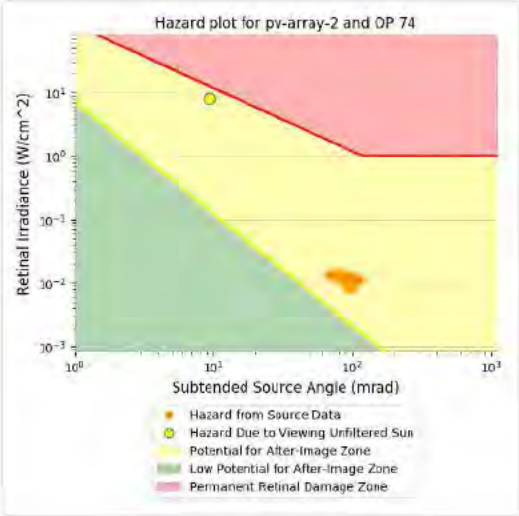
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 3,380 minutes of "yellow" glare with potential to cause temporary after-image.





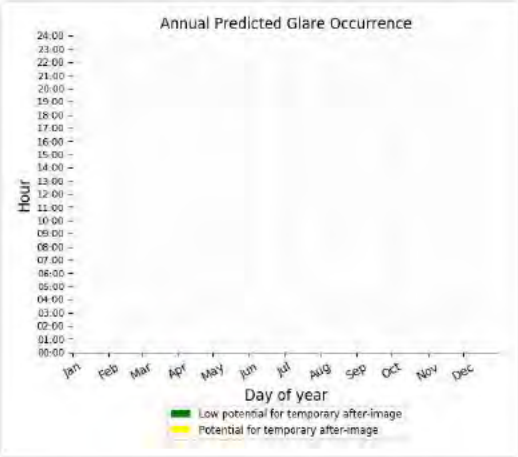


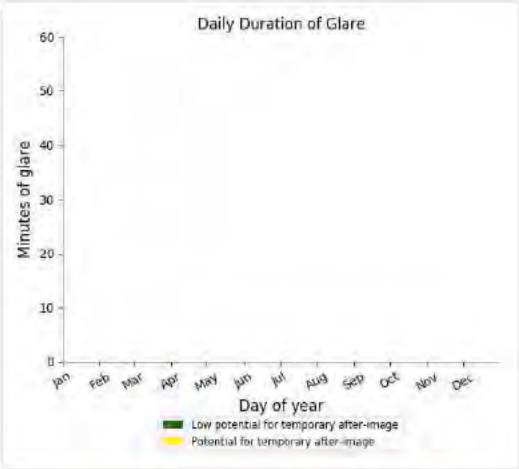


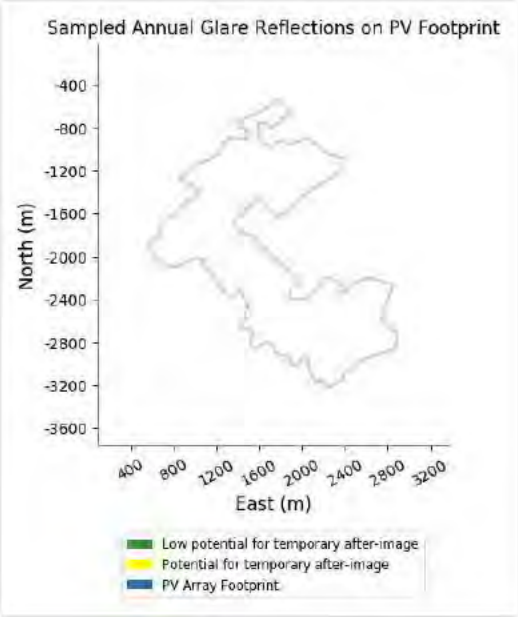
PV array 2 - OP Receptor (OP 75)

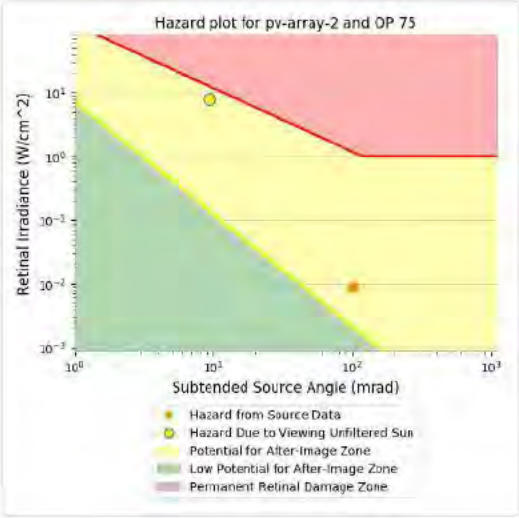
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 1 minutes of "yellow" glare with potential to cause temporary after-image.





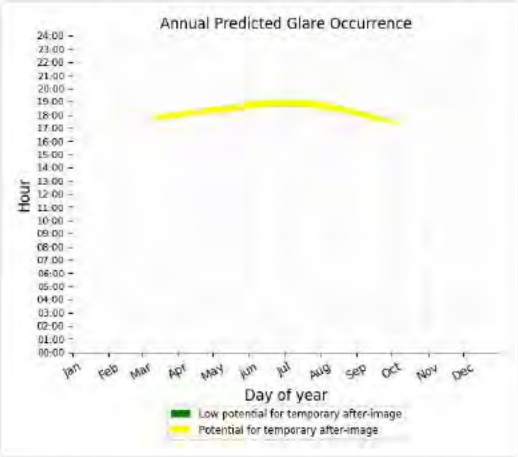


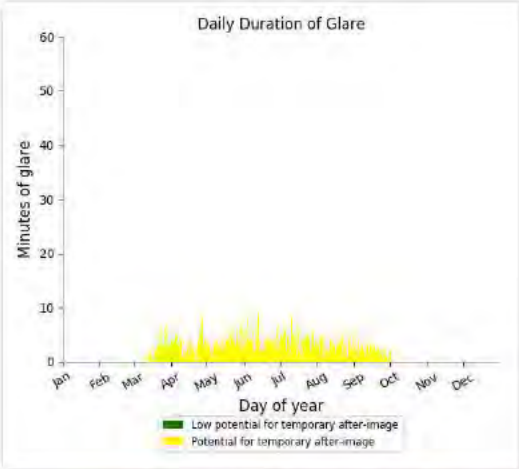


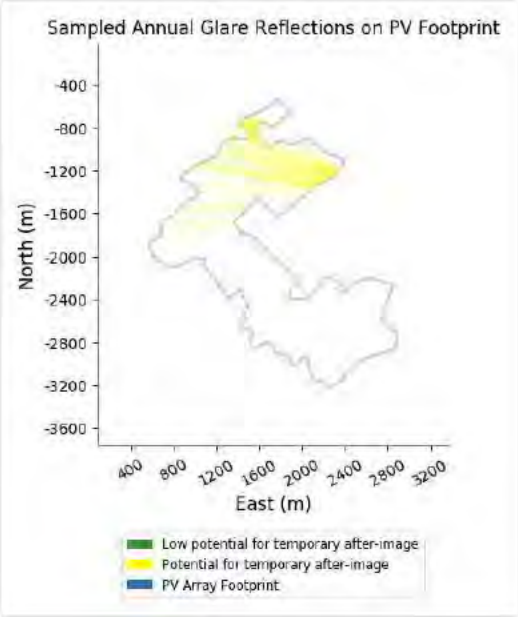
PV array 2 - OP Receptor (OP 76)

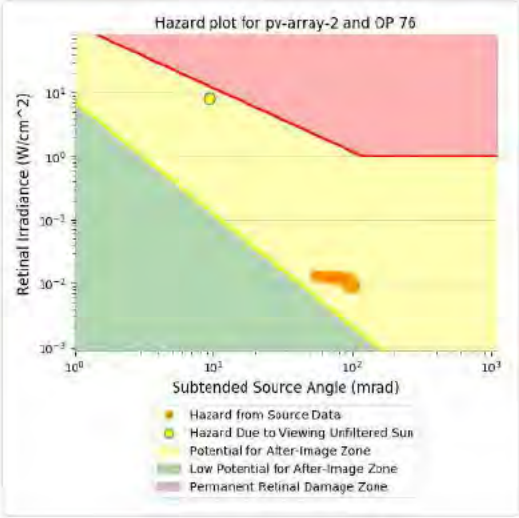
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 647 minutes of "yellow" glare with potential to cause temporary after-image.





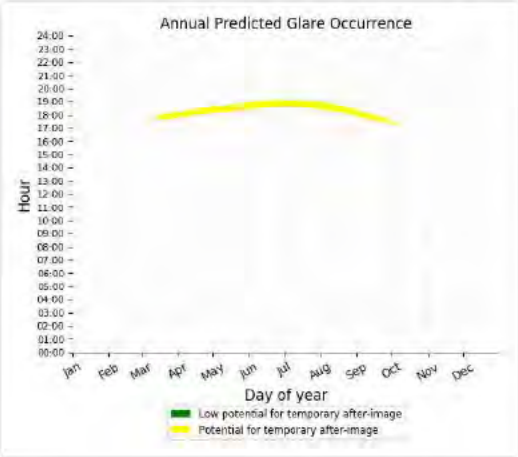


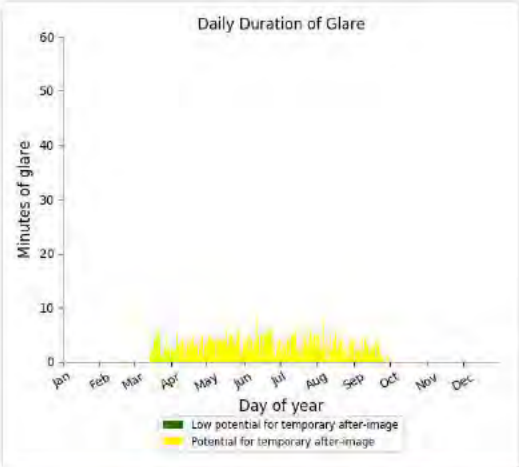


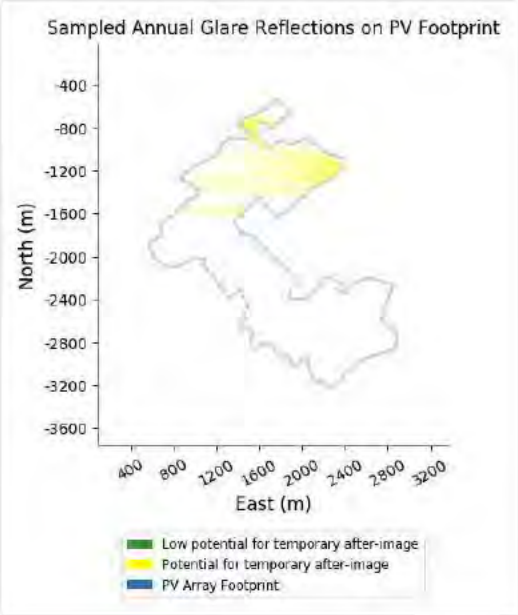
PV array 2 - OP Receptor (OP 77)

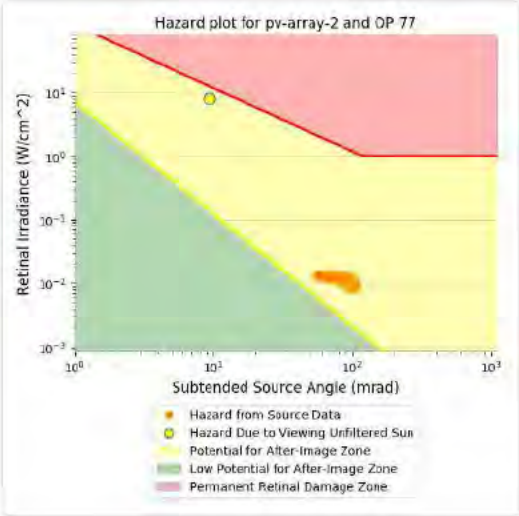
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 635 minutes of "yellow" glare with potential to cause temporary after-image.





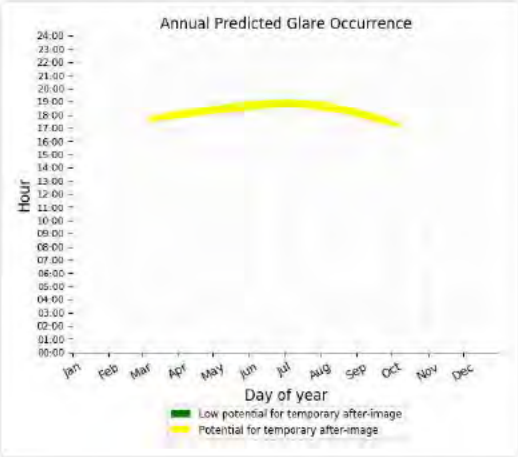


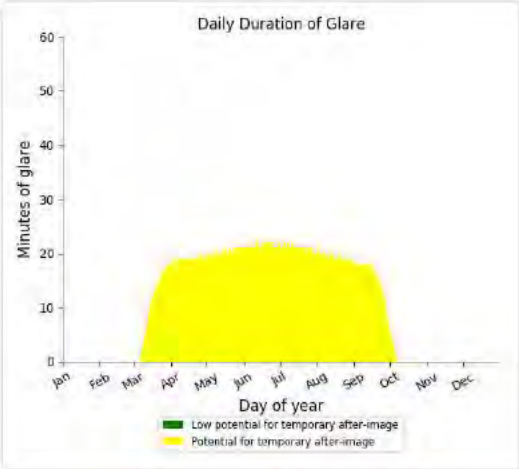


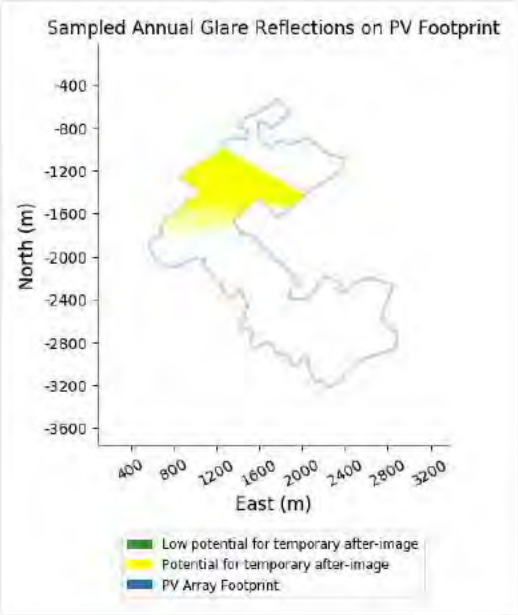
PV array 2 - OP Receptor (OP 78)

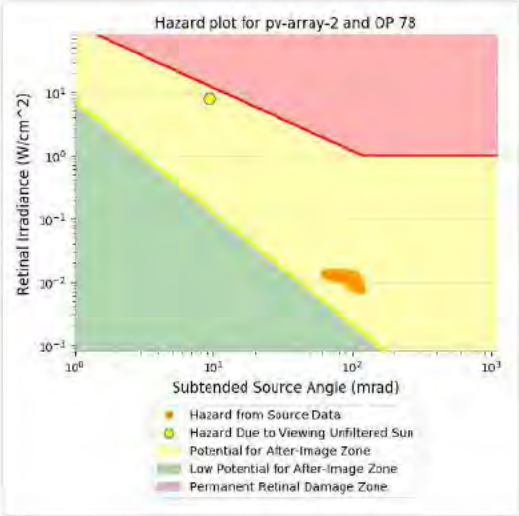
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 3,879 minutes of "yellow" glare with potential to cause temporary after-image.





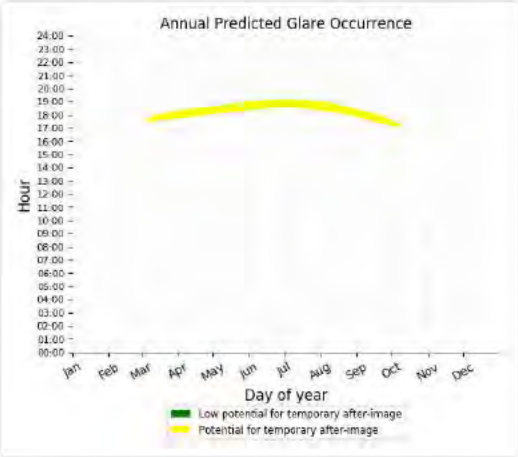


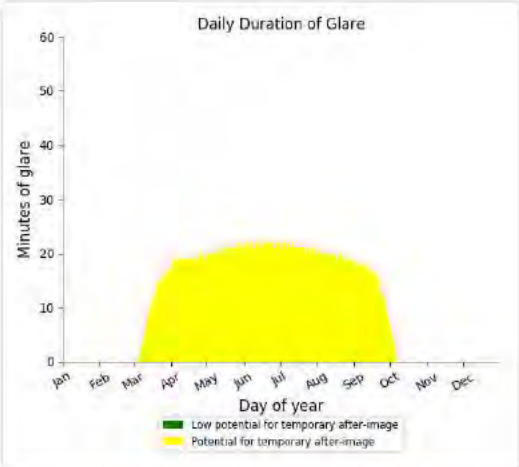


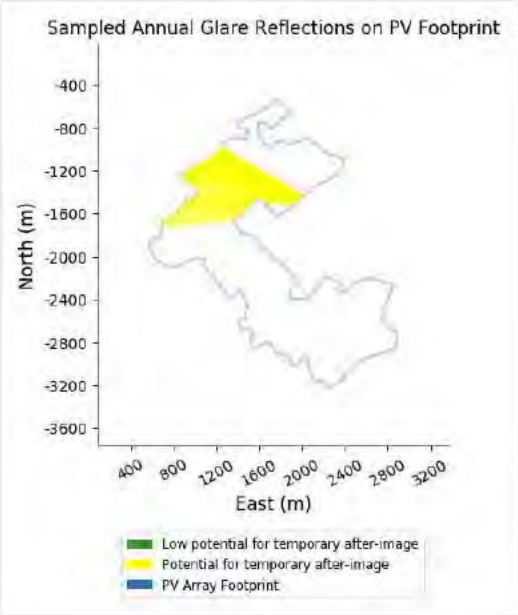
PV array 2 - OP Receptor (OP 79)

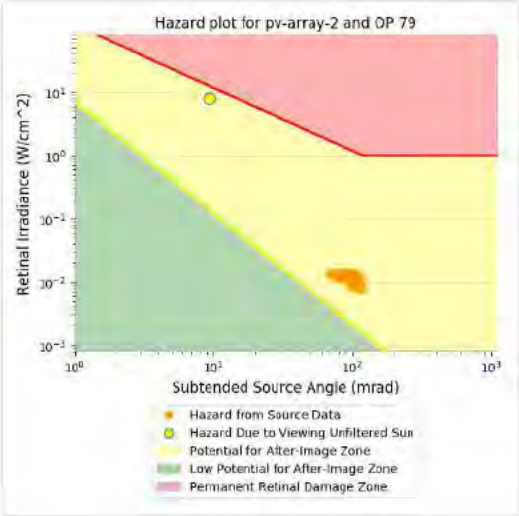
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 3,901 minutes of "yellow" glare with potential to cause temporary after-image.





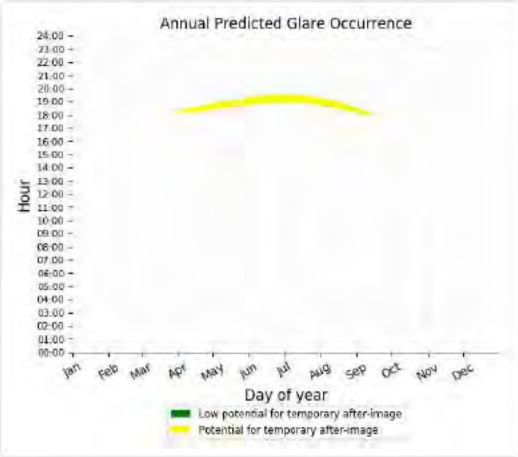


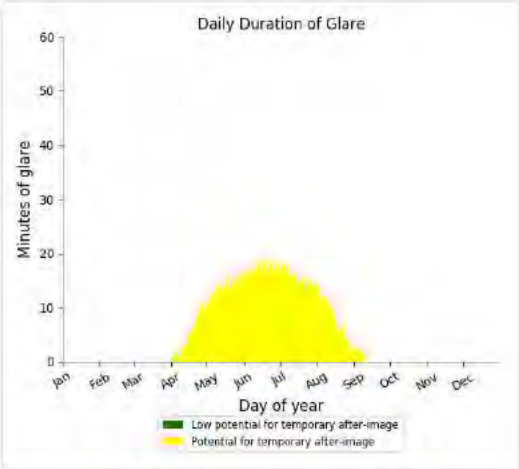


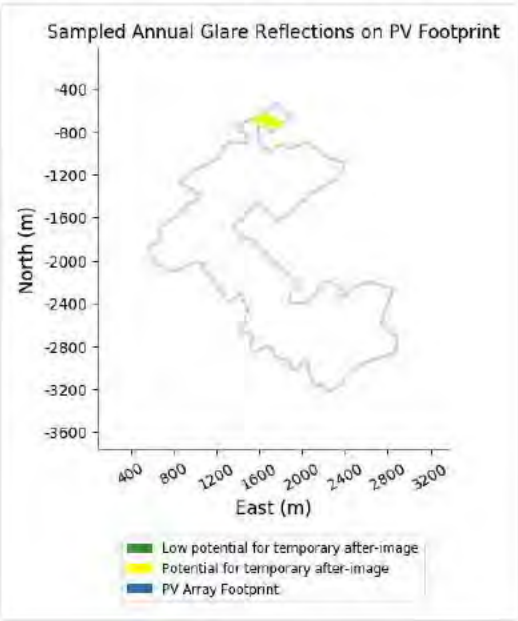
PV array 2 - OP Receptor (OP 80)

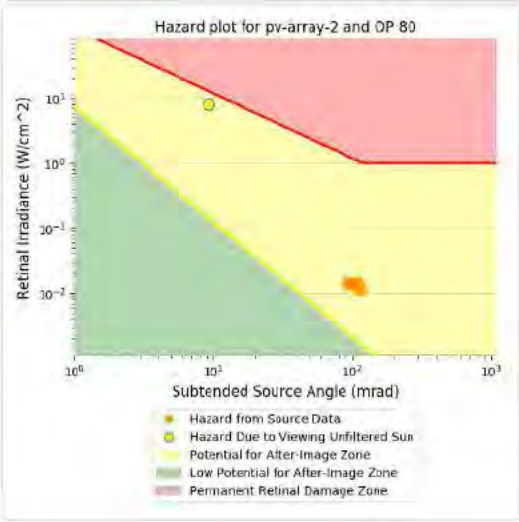
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 1,866 minutes of "yellow" glare with potential to cause temporary after-image.









PV array 2 - OP Receptor (OP 81)

No glare found

PV array 2 - OP Receptor (OP 82)

No glare found

PV array 2 - OP Receptor (OP 83)

No glare found

PV array 2 - OP Receptor (OP 84)

No glare found

PV array 2 - OP Receptor (OP 85)

No glare found

PV array 2 - OP Receptor (OP 86)

No glare found

PV array 2 - OP Receptor (OP 87)

No glare found

PV array 2 - OP Receptor (OP 88)

No glare found

PV array 2 - OP Receptor (OP 89)

No glare found

PV array 2 - OP Receptor (OP 90)

No glare found

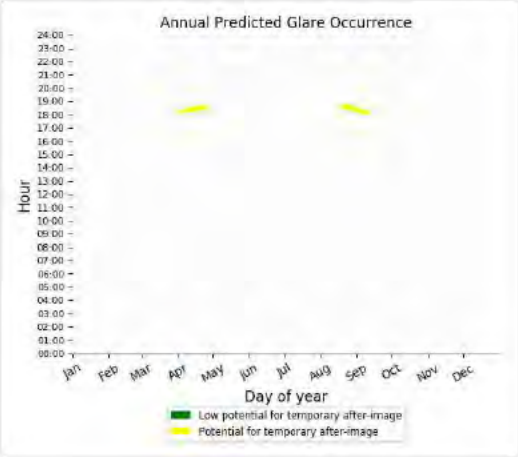
PV array 2 - OP Receptor (OP 91)

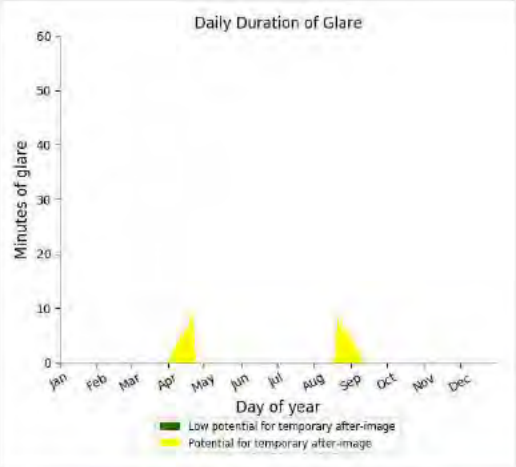
No glare found

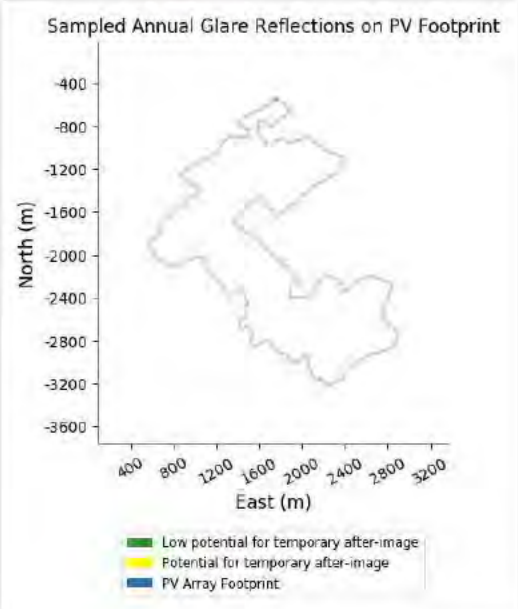
PV array 2 - OP Receptor (OP 92)

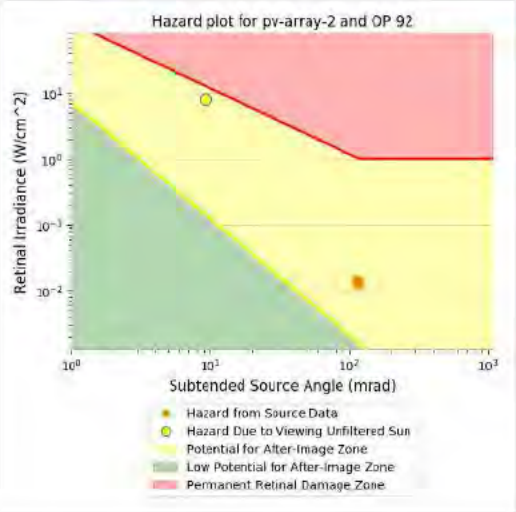
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 214 minutes of "yellow" glare with potential to cause temporary after-image.





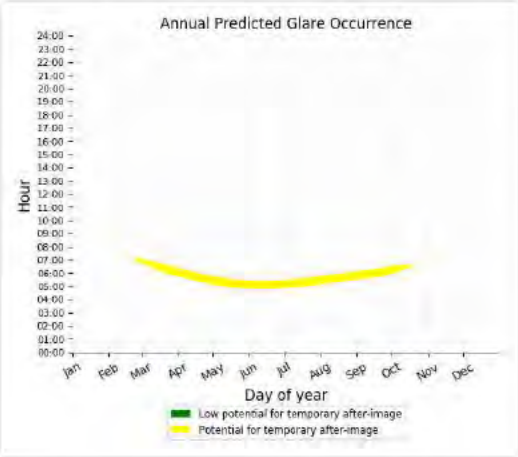


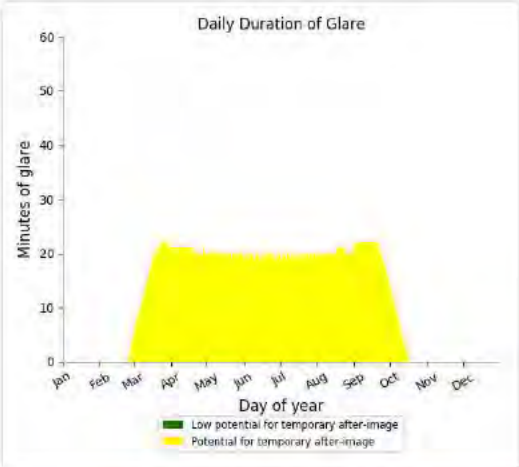


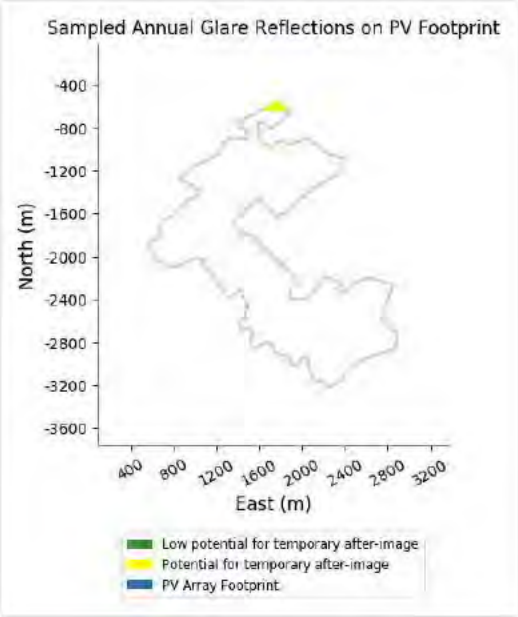
PV array 2 - OP Receptor (OP 93)

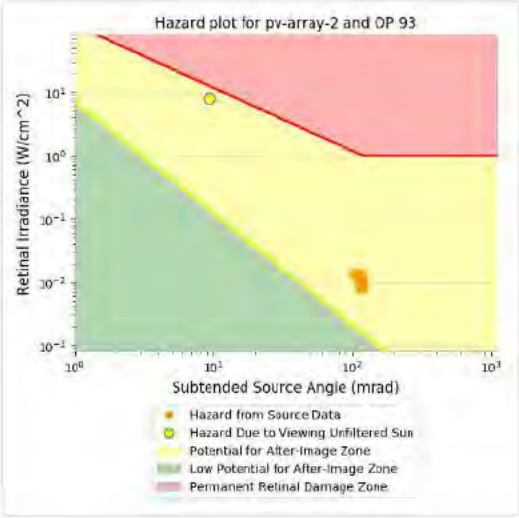
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 4,314 minutes of "yellow" glare with potential to cause temporary after-image.





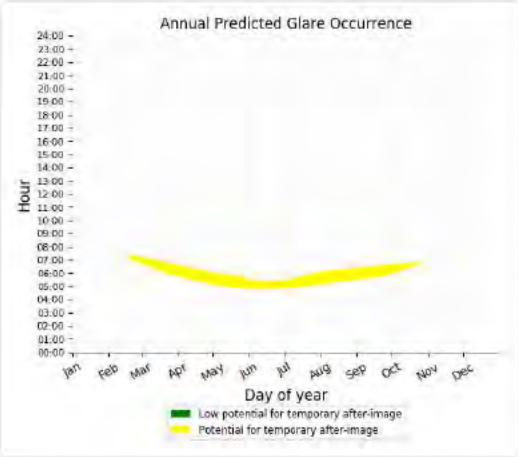


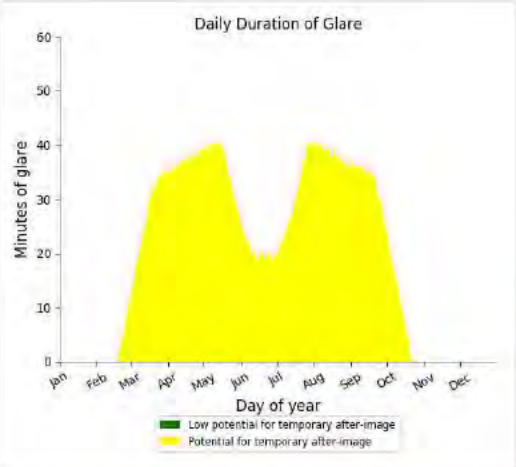


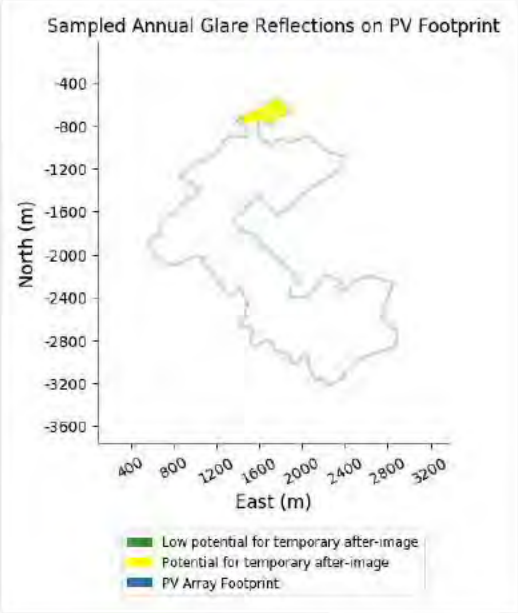
PV array 2 - OP Receptor (OP 94)

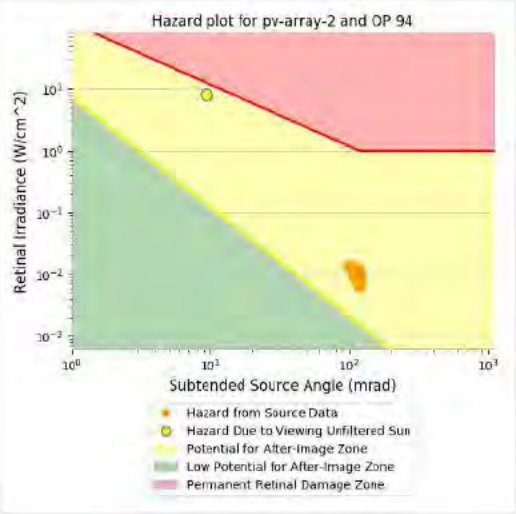
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 7,131 minutes of "yellow" glare with potential to cause temporary after-image.









PV array 2 - OP Receptor (OP 95)

No glare found

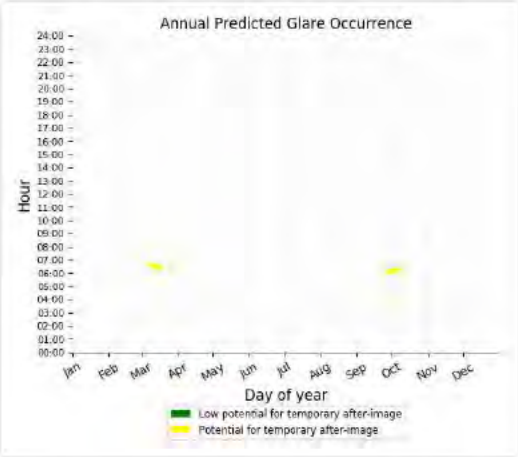
PV array 2 - OP Receptor (OP 96)

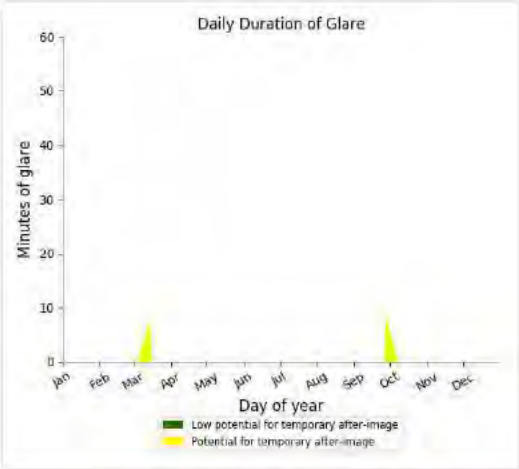
No glare found

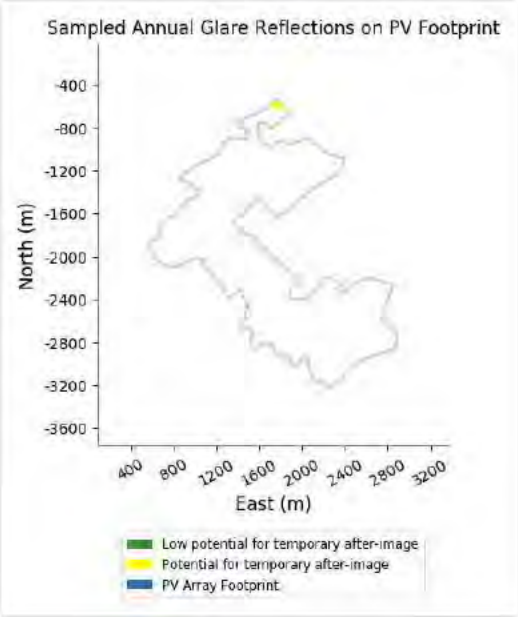
PV array 2 - OP Receptor (OP 97)

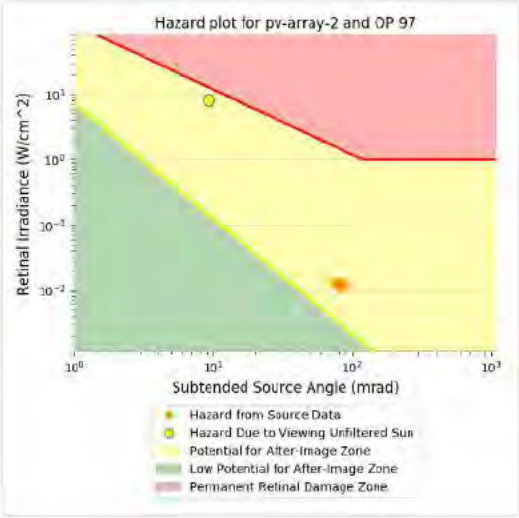
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 97 minutes of "yellow" glare with potential to cause temporary after-image.









PV array 2 - OP Receptor (OP 98)

No glare found

PV array 2 - OP Receptor (OP 99)

No glare found

Assumptions

- Times associated with glare are denoted in Standard time. For Daylight Savings, add one hour.
- Glare analyses do not account for physical obstructions between reflectors and receptors. This includes buildings, tree cover and geographic obstructions
- Detailed system geometry is not rigorously simulated.
- The glare hazard determination relies on several approximations including observer eye characteristics, angle of view, and typical blink response time. Actual values and results may vary.
- The system output calculation is a DNI-based approximation that assumes clear, sunny skies year-round. It should not be used in place of more rigorous modeling methods.
- Several V1 calculations utilize the PV array centroid, rather than the actual glare spot location, due to algorithm limitations. This may affect results for larg PV footprints. Additional analyses of array sub-sections can provide additional information on expected glare.
- The subtended source angle (glare spot size) is constrained by the PV array footprint size. Partitioning large arrays into smaller sections will reduce the maximum potential subtended angle, potentially impacting results if actual glare spots are larger than the sub-array size. Additional analyses of the combined area of adjacent sub-arrays can provide more information on potential glare hazards. (See previous point on related limitations.)

- Hazard zone boundaries shown in the Glare Hazard plot are an approximation and visual aid. Actual ocular impact outcomes encompass a continuous, nc discrete, spectrum.
- Glare locations displayed on receptor plots are approximate. Actual glare-spot locations may differ.
- Glare vector plots are simplified representations of analysis data. Actual glare emanations and results may differ.
- Refer to the **Help page** for detailed assumptions and limitations not listed here.

ForgeSolar

Longfield Solar Farm

Longfield Solar Farm Residential 30 Deg

Created Aug. 26, 2021
Updated Aug. 26, 2021
Time-step 1 minute
Timezone offset UTC0
Site ID 57957.10147

Project type Advanced
Project status: active
Category 100 MW to 1 GW

Misc. Analysis Settings

DNI: **varies (1,000.0 W/m^2 peak)**
Ocular transmission coefficient: **0.5**
Pupil diameter: **0.002 m**
Eye focal length: **0.017 m**
Sun subtended angle: **9.3 mrad**

Analysis Methodologies:

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

Summary of Results Glare with potential for temporary after-image predicted

PV Name	Tilt	Orientation	"Green" Glare	"Yellow" Glare	Energy Produced
	deg	deg	min	min	kWh
PV array 1	30.0	180.0	1	110,617	-
PV array 2	30.0	180.0	0	148,824	-

Component Data

PV Array(s)

Total PV footprint area: 3,752,421 m^2

Name: PV array 1
Axis tracking: Fixed (no rotation)
Tilt: 30.0 deg
Orientation: 180.0 deg
Footprint area: 1,402,760 m^2
Rated power: -
Panel material: Light textured glass with AR coating
Vary reflectivity with sun position? Yes
Correlate slope error with surface type? Yes
Slope error: 9.16 mrad

Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	m	m	m
1	51.804787	0.520991	57.12	3.00	60.12
2	51.803301	0.521098	57.74	3.00	60.74
3	51.803115	0.522965	57.06	3.00	60.06
4	51.802691	0.521463	58.12	3.00	61.12
5	51.802160	0.521570	58.34	3.00	61.34
6	51.801735	0.521634	58.41	3.00	61.41
7	51.801337	0.521334	58.53	3.00	61.53
8	51.801191	0.520798	58.56	3.00	61.56
9	51.800740	0.520519	59.45	3.00	62.45
10	51.800554	0.520240	59.54	3.00	62.54
11	51.799811	0.520647	59.49	3.00	62.49
12	51.799919	0.521295	59.70	3.00	62.70
13	51.799216	0.521574	59.41	3.00	62.41
14	51.797292	0.522218	57.37	3.00	60.37
15	51.797464	0.522647	57.43	3.00	60.43
16	51.796389	0.524149	55.65	3.00	58.65
17	51.796893	0.525265	55.84	3.00	58.84
18	51.797398	0.526273	55.88	3.00	58.88
19	51.798565	0.527925	56.38	3.00	59.38
20	51.798526	0.529256	56.57	3.00	59.57
21	51.797026	0.531294	57.56	3.00	60.56
22	51.796296	0.530028	59.16	3.00	62.16
23	51.796601	0.529599	58.99	3.00	61.99
24	51.796588	0.528827	59.00	3.00	62.00
25	51.795381	0.527024	58.65	3.00	61.65
26	51.793330	0.529385	57.34	3.00	60.34
27	51.793582	0.529900	58.05	3.00	61.05
28	51.795148	0.531380	58.74	3.00	61.74
29	51.793901	0.533204	57.20	3.00	60.20
30	51.794046	0.533848	56.68	3.00	59.68
31	51.794591	0.534985	56.71	3.00	59.71
32	51.794962	0.536444	54.53	3.00	57.53
33	51.795599	0.538054	52.38	3.00	55.38
34	51.796555	0.538740	53.53	3.00	56.53
35	51.797139	0.538225	53.69	3.00	56.69
36	51.797669	0.538697	53.47	3.00	56.47
37	51.797619	0.539062	53.35	3.00	56.35
38	51.797924	0.539706	53.42	3.00	56.42
39	51.798295	0.539813	54.38	3.00	57.38
40	51.798468	0.540757	55.18	3.00	58.18
41	51.798269	0.540907	54.45	3.00	57.45
42	51.798893	0.542668	54.20	3.00	57.20
43	51.801521	0.541295	53.70	3.00	56.70
44	51.801799	0.541424	53.52	3.00	56.52
45	51.802277	0.540630	53.29	3.00	56.29
46	51.803073	0.539664	51.85	3.00	54.85
47	51.803750	0.538827	52.99	3.00	55.99
48	51.804201	0.537690	52.47	3.00	55.47
49	51.804612	0.535652	54.42	3.00	57.42
50	51.807372	0.537969	46.50	3.00	49.50
51	51.807943	0.536274	47.63	3.00	50.63
52	51.808089	0.534407	47.58	3.00	50.58
53	51.808831	0.533077	43.93	3.00	46.93
54	51.809468	0.531103	39.62	3.00	42.62
55	51.809521	0.528828	39.21	3.00	42.21
56	51.808314	0.528270	44.59	3.00	47.59
57	51.809084	0.527626	43.35	3.00	46.35
58	51.809375	0.526682	43.20	3.00	46.20
59	51.808752	0.526189	45.89	3.00	48.89
60	51.806841	0.525867	52.84	3.00	55.84
61	51.806908	0.524579	54.18	3.00	57.18

62	51.805952	0.524837	55.76	3.00	58.76
63	51.804944	0.524987	56.69	3.00	59.69
64	51.804228	0.524665	57.39	3.00	60.39
65	51.803909	0.526103	58.34	3.00	61.34
66	51.803936	0.526875	58.45	3.00	61.45
67	51.802556	0.528764	58.67	3.00	61.67
68	51.803392	0.530008	58.65	3.00	61.65
69	51.802542	0.531446	57.77	3.00	60.77
70	51.801945	0.532068	57.63	3.00	60.63
71	51.801693	0.532884	57.58	3.00	60.58
72	51.801348	0.533270	58.29	3.00	61.29
73	51.800645	0.532648	59.02	3.00	62.02
74	51.800711	0.531939	58.11	3.00	61.11
75	51.799517	0.531038	59.24	3.00	62.24
76	51.798920	0.530437	58.22	3.00	61.22
77	51.798880	0.529086	57.88	3.00	60.88
78	51.798734	0.527862	56.42	3.00	59.42
79	51.799225	0.527004	57.56	3.00	60.56
80	51.799729	0.526854	57.42	3.00	60.42
81	51.801043	0.524944	59.21	3.00	62.21
82	51.801587	0.525502	58.41	3.00	61.41
83	51.803179	0.523292	56.99	3.00	59.99
84	51.804294	0.524365	57.17	3.00	60.17

Name: PV array 2
Axis tracking: Fixed (no rotation)
Tilt: 30.0 deg
Orientation: 180.0 deg
Footprint area: 2,349,662 m^2
Rated power: -
Panel material: Light textured glass with AR coating
Vary reflectivity with sun position? Yes
Correlate slope error with surface type? Yes
Slope error: 9.16 mrad

Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	m	m	m
1	51.799882	0.546503	50.73	3.00	53.73
2	51.799126	0.544829	52.71	3.00	55.71
3	51.798064	0.541117	53.39	3.00	56.39
4	51.797533	0.541696	52.60	3.00	55.60
5	51.797321	0.542833	51.75	3.00	54.75
6	51.796631	0.542748	49.86	3.00	52.86
7	51.796724	0.541246	50.32	3.00	53.32
8	51.796737	0.540130	51.17	3.00	54.17
9	51.796352	0.539529	51.24	3.00	54.24
10	51.795928	0.538971	51.47	3.00	54.47
11	51.795304	0.538413	52.49	3.00	55.49
12	51.794415	0.535473	55.88	3.00	58.88
13	51.793924	0.534358	56.70	3.00	59.70
14	51.793419	0.533650	57.22	3.00	60.22
15	51.792875	0.534765	57.14	3.00	60.14
16	51.792331	0.536182	56.85	3.00	59.85
17	51.791536	0.535145	56.80	3.00	59.80
18	51.791682	0.534737	56.90	3.00	59.90
19	51.790275	0.532592	56.13	3.00	59.13
20	51.789704	0.531068	53.92	3.00	56.92
21	51.788576	0.530853	51.99	3.00	54.99
22	51.787859	0.529223	48.96	3.00	51.96
23	51.787448	0.529394	48.11	3.00	51.11
24	51.786744	0.530038	47.80	3.00	50.80
25	51.786067	0.531626	47.16	3.00	50.16
26	51.785935	0.533107	49.22	3.00	52.22
27	51.786731	0.535810	52.30	3.00	55.30
28	51.786559	0.536068	51.54	3.00	54.54
29	51.786705	0.536947	52.17	3.00	55.17
30	51.786094	0.536518	52.38	3.00	55.38
31	51.784634	0.538664	49.95	3.00	52.95
32	51.783360	0.540102	49.54	3.00	52.54
33	51.784090	0.541690	51.06	3.00	54.06
34	51.782536	0.542762	50.36	3.00	53.36
35	51.782404	0.542119	49.21	3.00	52.21
36	51.781567	0.542526	48.20	3.00	51.20
37	51.781328	0.541389	47.81	3.00	50.81
38	51.780625	0.541818	47.01	3.00	50.01
39	51.780837	0.543020	46.97	3.00	49.97
40	51.780147	0.543363	45.85	3.00	48.85
41	51.779696	0.542956	45.30	3.00	48.30
42	51.779178	0.543385	45.52	3.00	48.52
43	51.779165	0.543921	46.43	3.00	49.43
44	51.779749	0.545402	47.23	3.00	50.23
45	51.778408	0.547161	46.24	3.00	49.24
46	51.778700	0.547762	46.26	3.00	49.26
47	51.777638	0.549007	45.35	3.00	48.35
48	51.778501	0.550723	44.16	3.00	47.16
49	51.777492	0.550809	44.37	3.00	47.37
50	51.776231	0.551925	43.20	3.00	46.20
51	51.776523	0.552483	42.43	3.00	45.43
52	51.775792	0.553384	43.24	3.00	46.24
53	51.776323	0.555036	44.10	3.00	47.10
54	51.776416	0.555335	44.03	3.00	47.03
55	51.777040	0.555936	44.24	3.00	47.24
56	51.777492	0.556751	44.85	3.00	47.85
57	51.777970	0.557609	44.02	3.00	47.02
58	51.778434	0.559240	43.22	3.00	46.22
59	51.778819	0.561257	42.29	3.00	45.29
60	51.779165	0.562609	41.71	3.00	44.71
61	51.780320	0.562995	39.68	3.00	42.68

62	51.781647	0.560656	42.82	3.00	45.82
63	51.784382	0.562330	47.96	3.00	50.96
64	51.785059	0.559176	47.28	3.00	50.28
65	51.784992	0.558875	47.52	3.00	50.52
66	51.784594	0.556987	47.09	3.00	50.09
67	51.783652	0.555785	46.53	3.00	49.53
68	51.784116	0.554627	46.10	3.00	49.10
69	51.784647	0.554863	47.33	3.00	50.33
70	51.785218	0.553296	49.80	3.00	52.80
71	51.783227	0.550700	49.61	3.00	52.61
72	51.783306	0.548254	49.08	3.00	52.08
73	51.784103	0.548533	49.92	3.00	52.92
74	51.784873	0.549477	51.66	3.00	54.66
75	51.785563	0.548275	51.91	3.00	54.91
76	51.788775	0.542761	53.99	3.00	56.99
77	51.788603	0.542160	54.11	3.00	57.11
78	51.789664	0.540744	55.91	3.00	58.91
79	51.791801	0.544177	51.62	3.00	54.62
80	51.790063	0.546709	50.56	3.00	53.56
81	51.792707	0.551826	46.73	3.00	49.73
82	51.793158	0.553371	46.31	3.00	49.31
83	51.793835	0.554916	45.72	3.00	48.72
84	51.795016	0.555903	44.79	3.00	47.79
85	51.795380	0.553705	46.91	3.00	49.91
86	51.796004	0.552139	47.48	3.00	50.48
87	51.796813	0.550723	45.94	3.00	48.94
88	51.796176	0.548491	47.06	3.00	50.06
89	51.796654	0.547397	49.72	3.00	52.72
90	51.795911	0.545594	48.25	3.00	51.25
91	51.797132	0.543835	51.38	3.00	54.38
92	51.797410	0.544286	52.82	3.00	55.82
93	51.798061	0.544007	52.74	3.00	55.74
94	51.798047	0.545015	51.90	3.00	54.90
95	51.797490	0.545616	51.83	3.00	54.83
96	51.798883	0.548470	49.95	3.00	52.95
97	51.799534	0.547397	50.24	3.00	53.24

Discrete Observation Receptors

Number	Latitude	Longitude	Ground elevation	Height above ground	Total Elevation
	deg	deg	m	m	m
OP 1	51.812279	0.519188	45.45	2.00	47.45
OP 2	51.811848	0.520422	43.94	2.00	45.94
OP 3	51.811404	0.518652	47.19	2.00	49.19
OP 4	51.805081	0.510588	61.48	2.00	63.48
OP 5	51.804816	0.512766	61.67	2.00	63.67
OP 6	51.804378	0.514279	61.03	2.00	63.03
OP 7	51.804319	0.514644	61.38	2.00	63.38
OP 8	51.803642	0.515320	60.63	2.00	62.63
OP 9	51.803012	0.520239	58.94	2.00	60.94
OP 10	51.802444	0.520410	59.29	2.00	61.29
OP 11	51.801383	0.519997	59.31	2.00	61.31
OP 12	51.802056	0.514316	60.61	2.00	62.61
OP 13	51.801665	0.512900	60.41	2.00	62.41
OP 14	51.801565	0.512707	60.88	2.00	62.88
OP 15	51.799495	0.510894	63.98	2.00	65.98
OP 16	51.798931	0.508888	66.58	2.00	68.58
OP 17	51.798749	0.508496	66.46	2.00	68.46
OP 18	51.798543	0.508174	66.69	2.00	68.69
OP 19	51.798785	0.520302	61.17	2.00	63.17
OP 20	51.798371	0.520962	60.42	2.00	62.42
OP 21	51.797226	0.529216	58.72	2.00	60.72
OP 22	51.796144	0.527768	59.42	2.00	61.42
OP 23	51.795932	0.527489	59.28	2.00	61.28
OP 24	51.795620	0.521631	55.06	2.00	57.06
OP 25	51.794094	0.522125	55.76	2.00	57.76
OP 26	51.792528	0.523219	57.76	2.00	59.76
OP 27	51.791045	0.516267	58.74	2.00	60.74
OP 28	51.790395	0.516159	58.88	2.00	60.88
OP 29	51.786957	0.515923	57.52	2.00	59.52
OP 30	51.786964	0.516589	56.90	2.00	58.90
OP 31	51.792983	0.530119	59.09	2.00	61.09
OP 32	51.792724	0.531256	58.92	2.00	60.92
OP 33	51.791908	0.529156	56.01	2.00	58.01
OP 34	51.788584	0.528629	52.27	2.00	54.27
OP 35	51.786964	0.528876	49.87	2.00	51.87
OP 36	51.786331	0.528554	48.96	2.00	50.96
OP 37	51.786615	0.529096	48.74	2.00	50.74
OP 38	51.786051	0.534553	51.89	2.00	53.89
OP 39	51.785026	0.536269	51.80	2.00	53.80
OP 40	51.784810	0.537503	51.57	2.00	53.57
OP 41	51.782835	0.540903	50.49	2.00	52.49
OP 42	51.782228	0.540205	49.49	2.00	51.49
OP 43	51.781674	0.538870	47.38	2.00	49.38
OP 44	51.779827	0.535563	47.27	2.00	49.27
OP 45	51.779749	0.535338	47.54	2.00	49.54
OP 46	51.779847	0.538562	43.36	2.00	45.36
OP 47	51.780371	0.542349	48.18	2.00	50.18
OP 48	51.780062	0.542279	46.00	2.00	48.00
OP 49	51.778863	0.543291	47.54	2.00	49.54
OP 50	51.778000	0.544798	46.77	2.00	48.77
OP 51	51.777154	0.545297	46.67	2.00	48.67
OP 52	51.776701	0.546045	46.19	2.00	48.19
OP 53	51.773129	0.537947	45.14	2.00	47.14
OP 54	51.774399	0.542283	40.69	2.00	42.69
OP 55	51.775408	0.546494	43.76	2.00	45.76
OP 56	51.775823	0.546784	44.98	2.00	46.98
OP 57	51.777131	0.549128	45.59	2.00	47.59
OP 58	51.776490	0.548865	44.52	2.00	46.52
OP 59	51.775441	0.549332	44.24	2.00	46.24
OP 60	51.775292	0.549525	44.54	2.00	46.54

OP 61	51.774837	0.549058	43.86	2.00	45.86
OP 62	51.773945	0.550025	40.79	2.00	42.79
OP 63	51.774582	0.568598	37.45	2.00	39.45
OP 64	51.776096	0.575409	29.35	2.00	31.35
OP 65	51.776354	0.575785	28.82	2.00	30.82
OP 66	51.776869	0.573864	32.53	2.00	34.53
OP 67	51.777141	0.574063	33.40	2.00	35.40
OP 68	51.777576	0.576772	27.86	2.00	29.86
OP 69	51.778366	0.577040	25.37	2.00	27.37
OP 70	51.780228	0.577148	25.46	2.00	27.46
OP 71	51.781058	0.578215	26.57	2.00	28.57
OP 72	51.781496	0.575737	30.38	2.00	32.38
OP 73	51.785557	0.558552	49.02	2.00	51.02
OP 74	51.785723	0.556932	49.53	2.00	51.53
OP 75	51.791748	0.567652	43.78	2.00	45.78
OP 76	51.790991	0.564862	44.38	2.00	46.38
OP 77	51.791609	0.564551	44.58	2.00	46.58
OP 78	51.790560	0.554380	51.08	2.00	53.08
OP 79	51.790912	0.553093	50.35	2.00	52.35
OP 80	51.797510	0.549386	49.64	2.00	51.64
OP 81	51.799972	0.560689	38.38	2.00	40.38
OP 82	51.803136	0.559069	43.00	2.00	45.00
OP 83	51.802155	0.558801	39.29	2.00	41.29
OP 84	51.802155	0.557277	43.70	2.00	45.70
OP 85	51.802659	0.555679	46.30	2.00	48.30
OP 86	51.803130	0.554391	46.72	2.00	48.72
OP 87	51.804324	0.554938	46.61	2.00	48.61
OP 88	51.804689	0.553458	46.42	2.00	48.42
OP 89	51.804437	0.550668	47.18	2.00	49.18
OP 90	51.805180	0.548640	43.00	2.00	45.00
OP 91	51.803767	0.549145	47.82	2.00	49.82
OP 92	51.799749	0.547503	51.05	2.00	53.05
OP 93	51.799136	0.543952	53.54	2.00	55.54
OP 94	51.797991	0.540712	55.08	2.00	57.08
OP 95	51.801667	0.543104	53.85	2.00	55.85
OP 96	51.801680	0.541871	54.82	2.00	56.82
OP 97	51.801103	0.530670	59.92	2.00	61.92
OP 98	51.805081	0.538360	52.37	2.00	54.37
OP 99	51.809247	0.545849	37.00	2.00	39.00

Summary of PV Glare Analysis

PV configuration and total predicted glare

PV Name	Tilt	Orientation	"Green" Glare	"Yellow" Glare	Energy Produced	Data File
	deg	deg	min	min	kWh	
PV array 1	30.0	180.0	1	110,617	-	-
PV array 2	30.0	180.0	0	148,824	-	-

Distinct glare per month

Excludes overlapping glare from PV array for multiple receptors at matching time(s)

PV	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
pv-array-1 (green)	0	0	0	0	0	0	0	0	0	0	0	0
pv-array-1 (yellow)	0	0	568	2171	2568	2502	2586	2488	1206	0	0	0
pv-array-2 (green)	0	0	0	0	0	0	0	0	0	0	0	0
pv-array-2 (yellow)	0	0	798	2590	2974	2917	2969	2949	1553	14	0	0

PV & Receptor Analysis Results

Results for each PV array and receptor

PV array 1 potential temporary after-image

Component	Green glare (min)	Yellow glare (min)
OP: OP 1	0	0
OP: OP 2	0	0
OP: OP 3	0	0
OP: OP 4	0	14
OP: OP 5	0	1676
OP: OP 6	0	1539
OP: OP 7	0	1894
OP: OP 8	0	16
OP: OP 9	0	2053
OP: OP 10	0	1960
OP: OP 11	0	2239
OP: OP 12	0	1586
OP: OP 13	0	1844
OP: OP 14	0	1517
OP: OP 15	0	4
OP: OP 16	0	2012
OP: OP 17	0	1809
OP: OP 18	0	1867
OP: OP 19	0	1763
OP: OP 20	0	2898
OP: OP 21	0	4846
OP: OP 22	0	5366

OP: OP 23	0	5656
OP: OP 24	0	2695
OP: OP 25	0	2949
OP: OP 26	0	2338
OP: OP 27	0	1789
OP: OP 28	0	1369
OP: OP 29	0	0
OP: OP 30	0	0
OP: OP 31	0	549
OP: OP 32	0	0
OP: OP 33	0	0
OP: OP 34	0	0
OP: OP 35	0	0
OP: OP 36	0	0
OP: OP 37	0	0
OP: OP 38	0	0
OP: OP 39	0	0
OP: OP 40	0	0
OP: OP 41	0	0
OP: OP 42	0	0
OP: OP 43	0	0
OP: OP 44	0	0
OP: OP 45	0	0
OP: OP 46	0	0
OP: OP 47	0	0
OP: OP 48	0	0
OP: OP 49	0	0
OP: OP 50	0	0
OP: OP 51	0	0
OP: OP 52	0	0
OP: OP 53	0	0
OP: OP 54	0	0
OP: OP 55	0	0
OP: OP 56	0	0
OP: OP 57	0	0
OP: OP 58	0	0
OP: OP 59	0	0
OP: OP 60	0	0
OP: OP 61	0	0
OP: OP 62	0	0
OP: OP 63	0	0
OP: OP 64	0	0
OP: OP 65	0	0
OP: OP 66	0	0
OP: OP 67	0	0
OP: OP 68	0	0
OP: OP 69	0	36
OP: OP 70	0	794
OP: OP 71	0	1068
OP: OP 72	0	1015
OP: OP 73	0	635
OP: OP 74	0	493

OP: OP 75	1	1838
OP: OP 76	0	1941
OP: OP 77	0	1984
OP: OP 78	0	1622
OP: OP 79	0	1854
OP: OP 80	0	2463
OP: OP 81	0	2372
OP: OP 82	0	1127
OP: OP 83	0	2112
OP: OP 84	0	2009
OP: OP 85	0	1546
OP: OP 86	0	1309
OP: OP 87	0	631
OP: OP 88	0	960
OP: OP 89	0	1716
OP: OP 90	0	2343
OP: OP 91	0	2078
OP: OP 92	0	2180
OP: OP 93	0	2480
OP: OP 94	0	2683
OP: OP 95	0	2495
OP: OP 96	0	4302
OP: OP 97	0	6114
OP: OP 98	0	2112
OP: OP 99	0	57

PV array 1 - OP Receptor (OP 1)

No glare found

PV array 1 - OP Receptor (OP 2)

No glare found

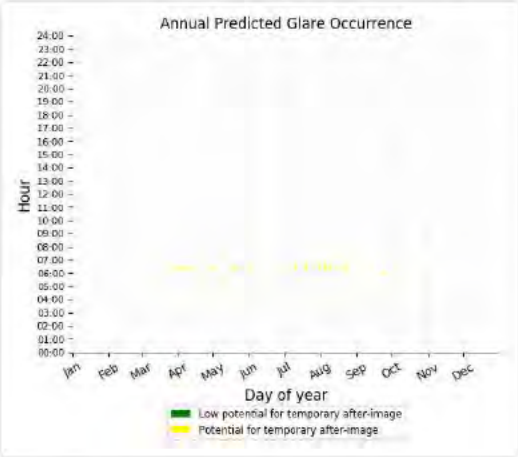
PV array 1 - OP Receptor (OP 3)

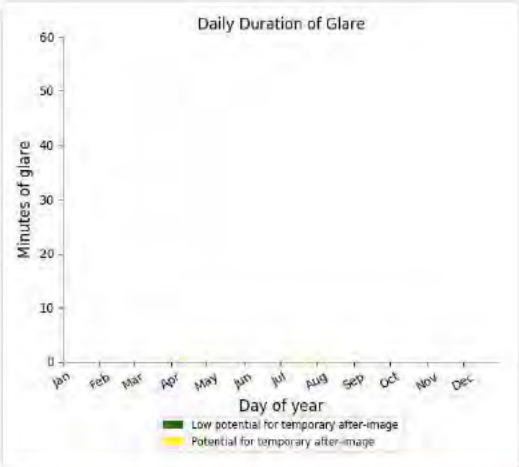
No glare found

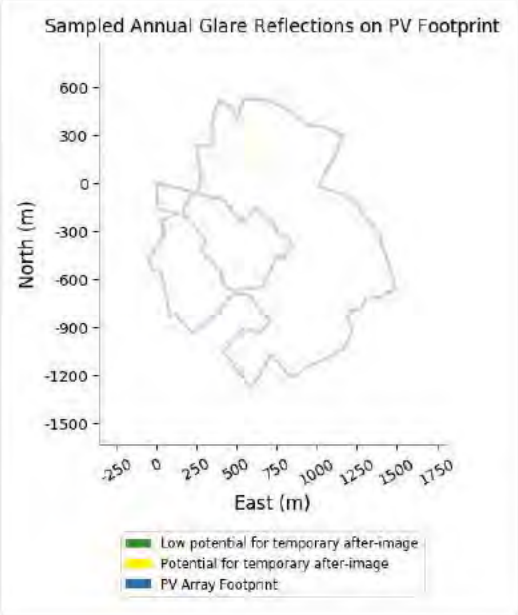
PV array 1 - OP Receptor (OP 4)

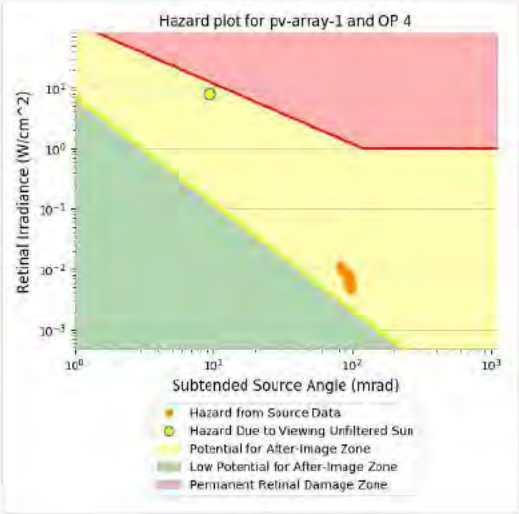
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 14 minutes of "yellow" glare with potential to cause temporary after-image.





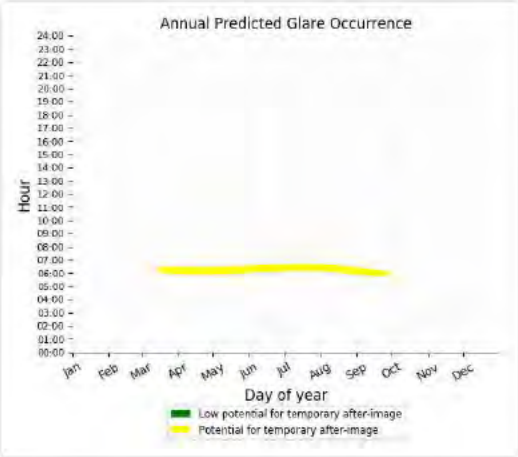


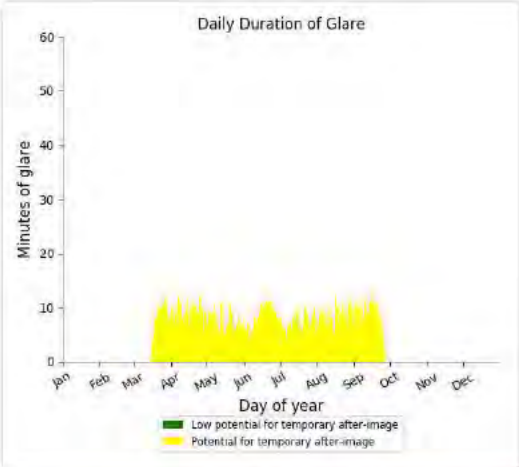


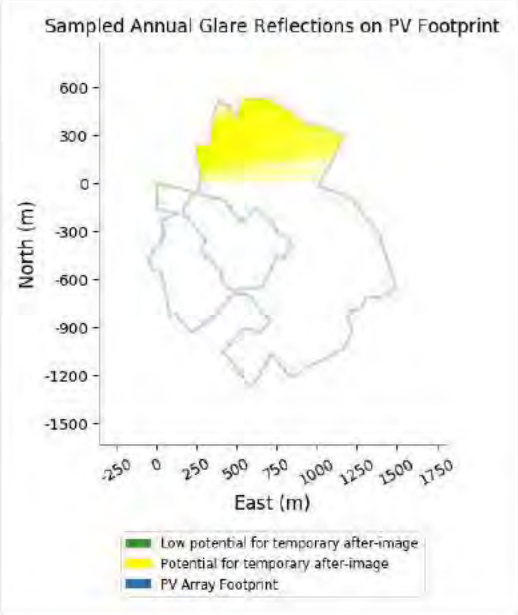
PV array 1 - OP Receptor (OP 5)

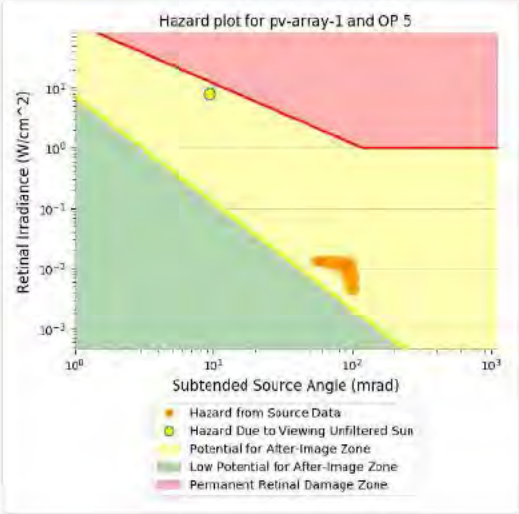
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 1,676 minutes of "yellow" glare with potential to cause temporary after-image.





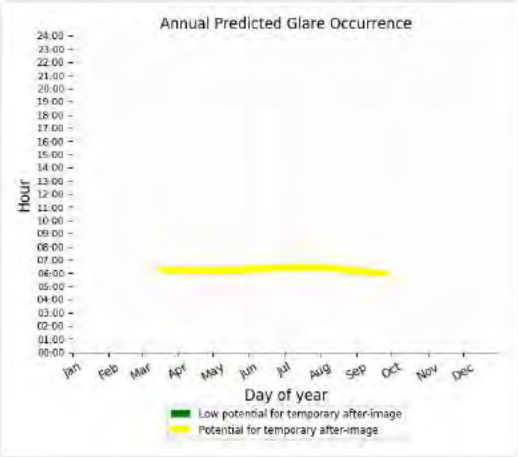


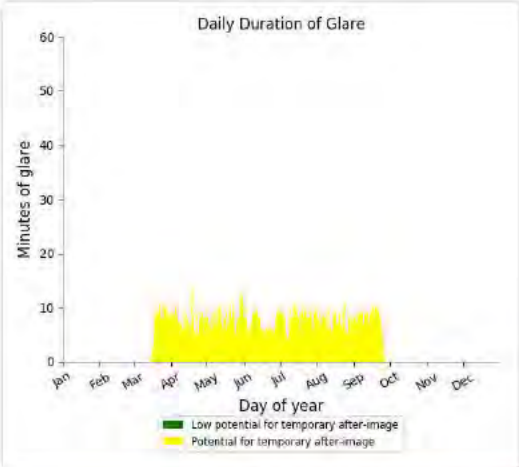


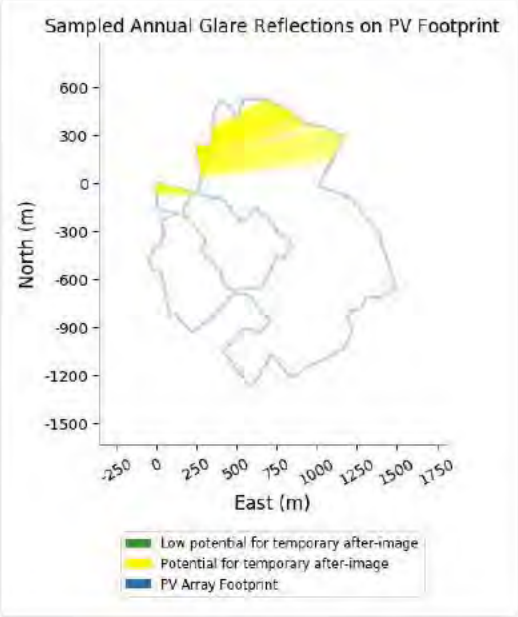
PV array 1 - OP Receptor (OP 6)

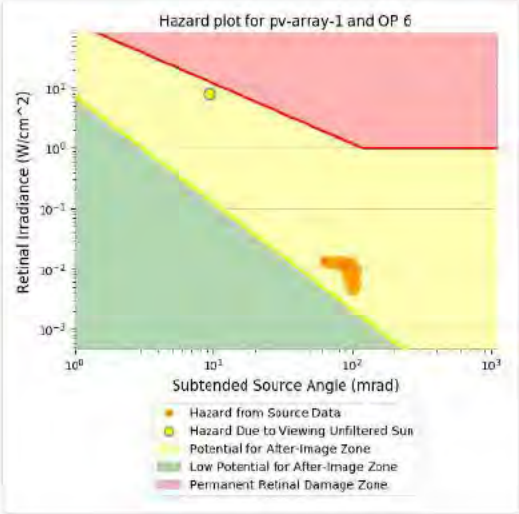
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 1,539 minutes of "yellow" glare with potential to cause temporary after-image.





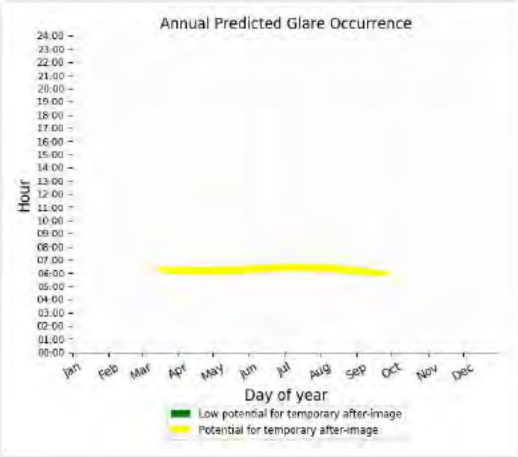


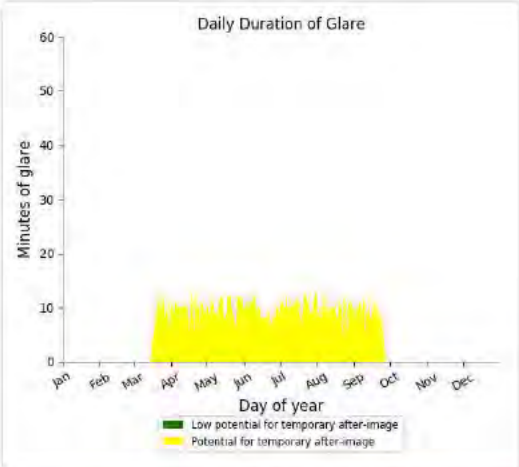


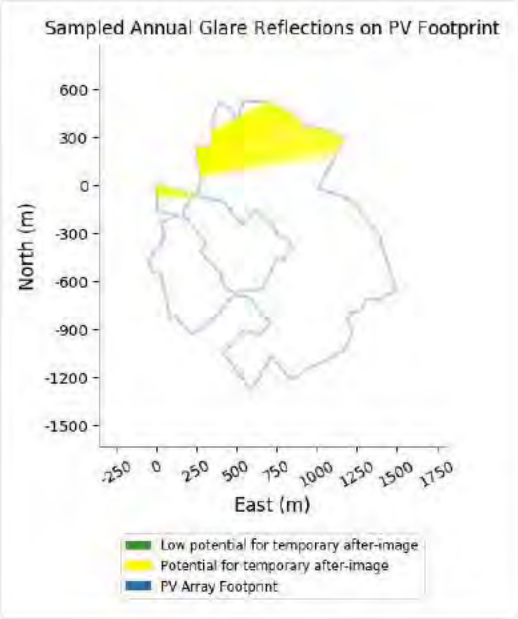
PV array 1 - OP Receptor (OP 7)

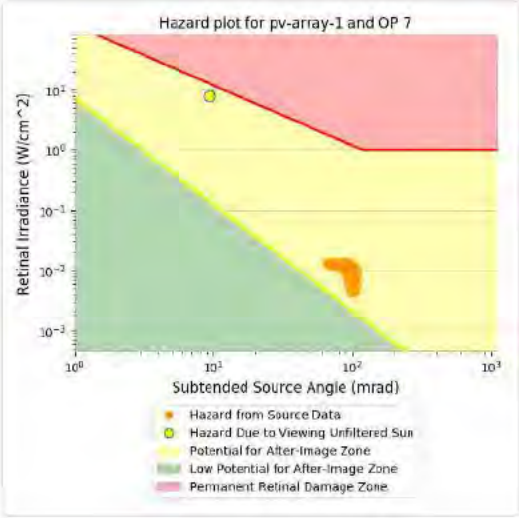
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 1,894 minutes of "yellow" glare with potential to cause temporary after-image.





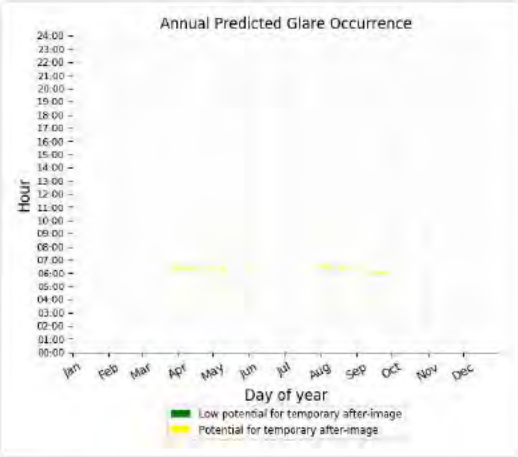


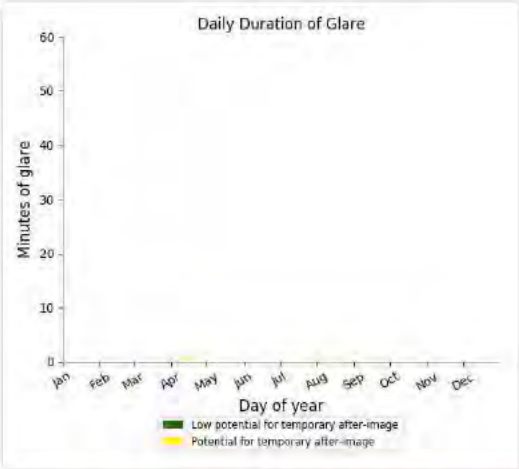


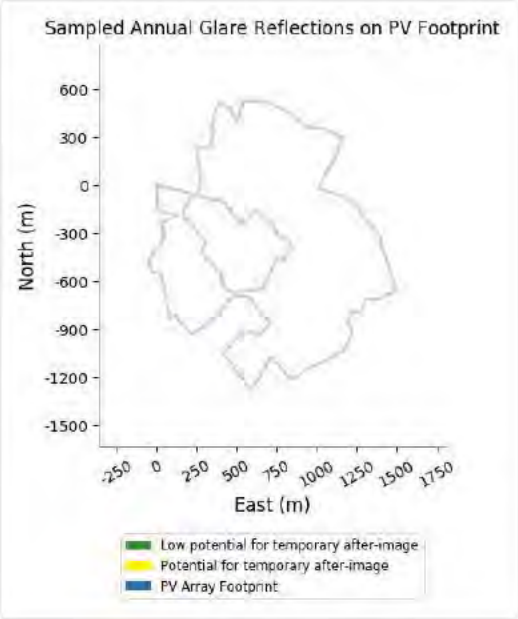
PV array 1 - OP Receptor (OP 8)

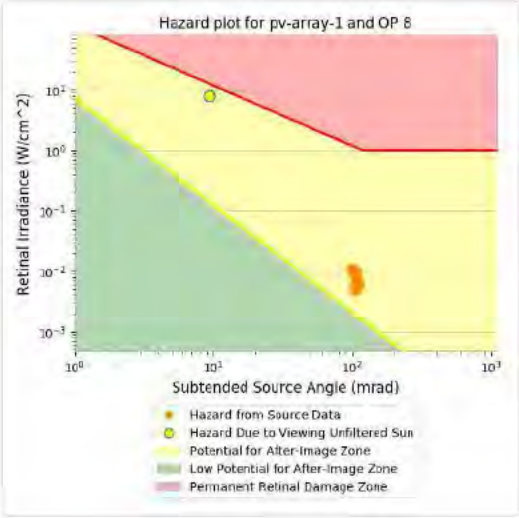
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 16 minutes of "yellow" glare with potential to cause temporary after-image.





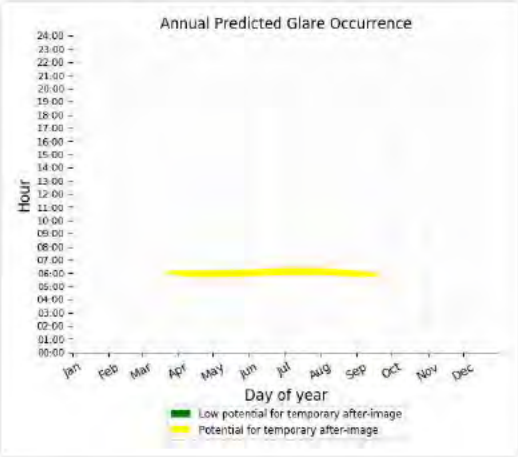


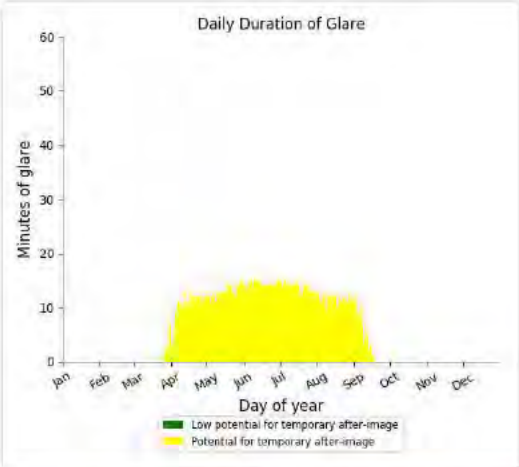


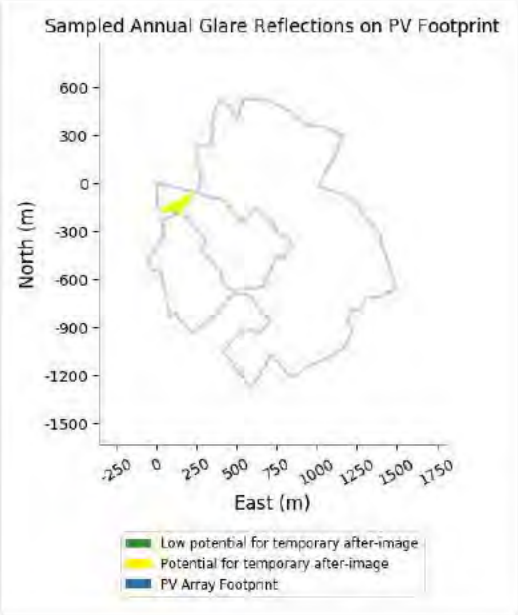
PV array 1 - OP Receptor (OP 9)

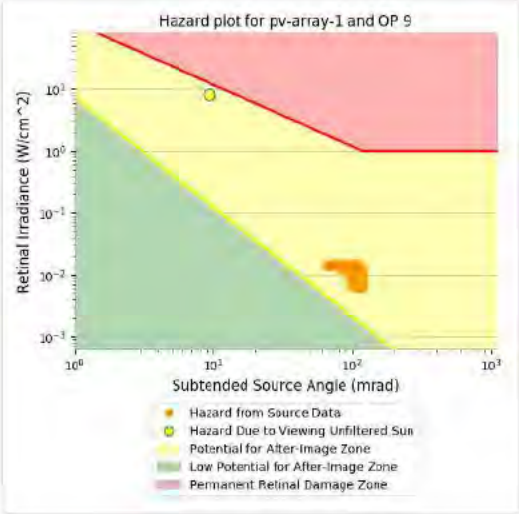
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 2,053 minutes of "yellow" glare with potential to cause temporary after-image.





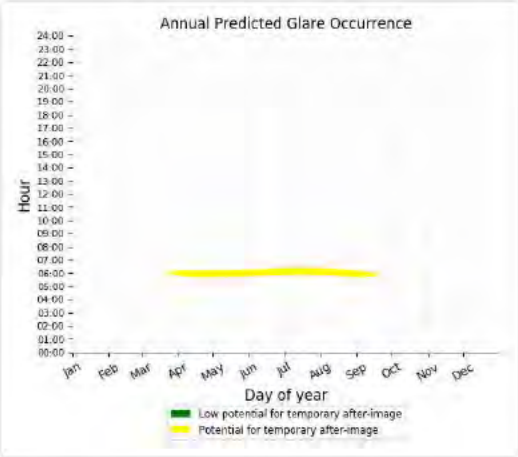


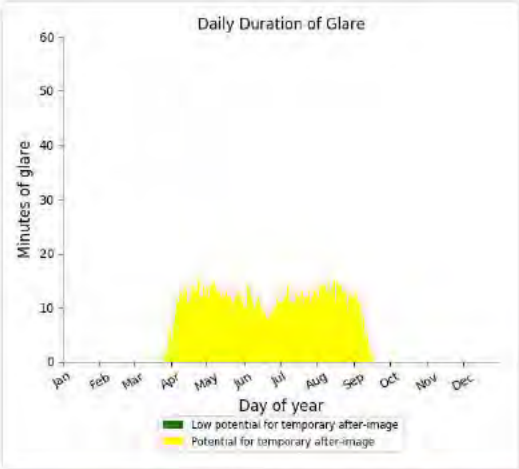


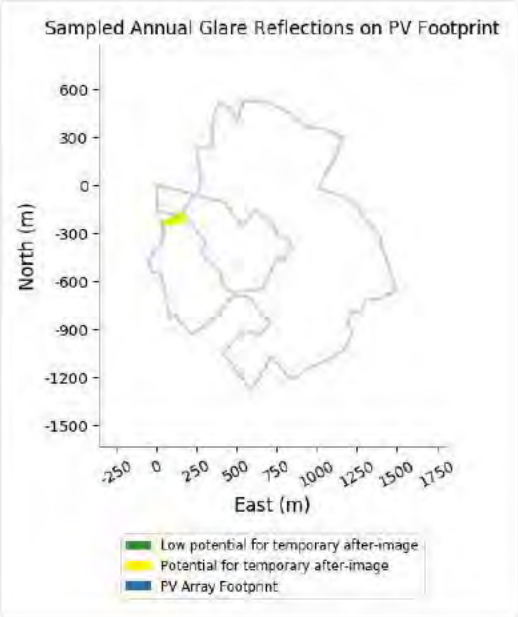
PV array 1 - OP Receptor (OP 10)

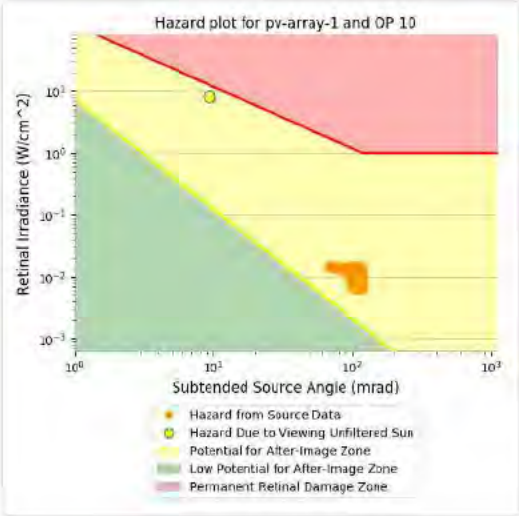
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 1,960 minutes of "yellow" glare with potential to cause temporary after-image.





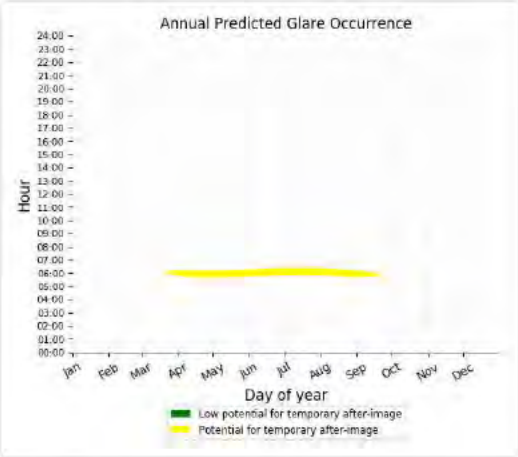


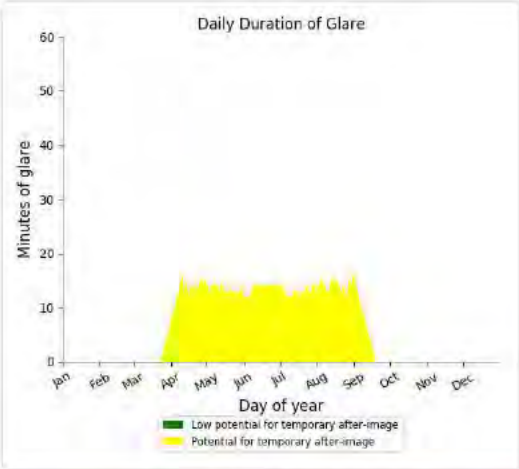


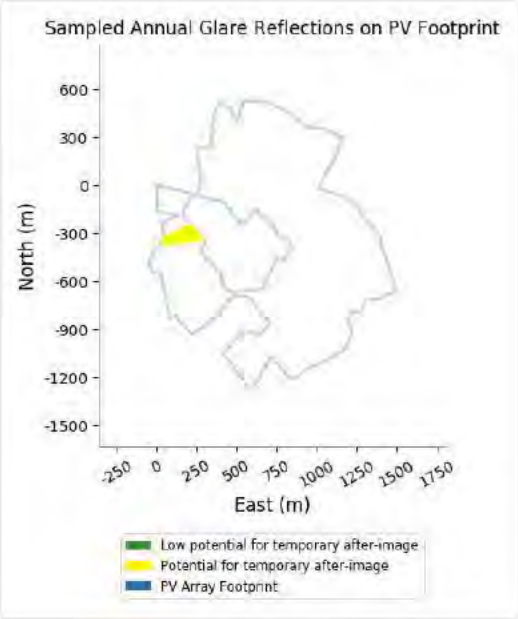
PV array 1 - OP Receptor (OP 11)

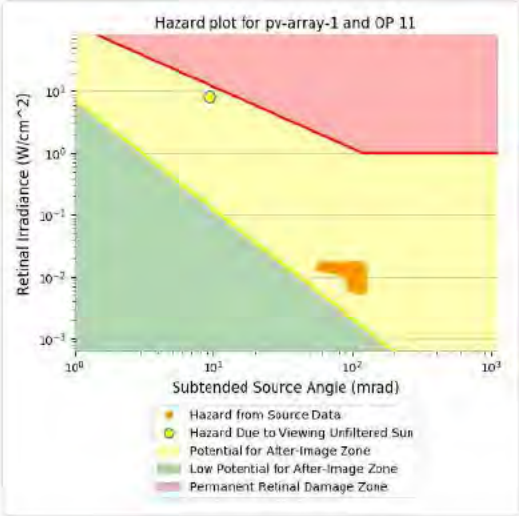
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 2,239 minutes of "yellow" glare with potential to cause temporary after-image.





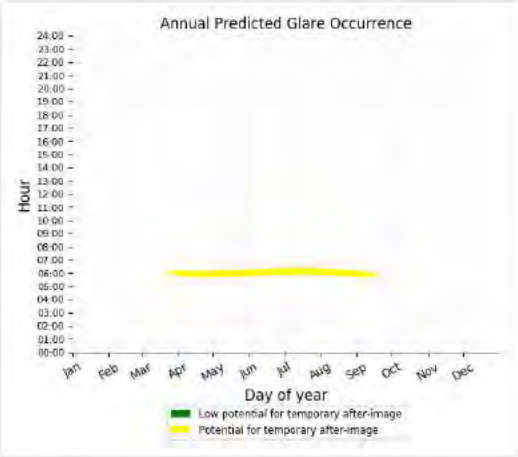


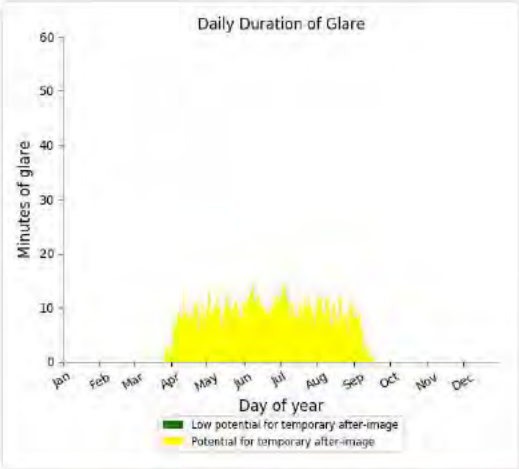


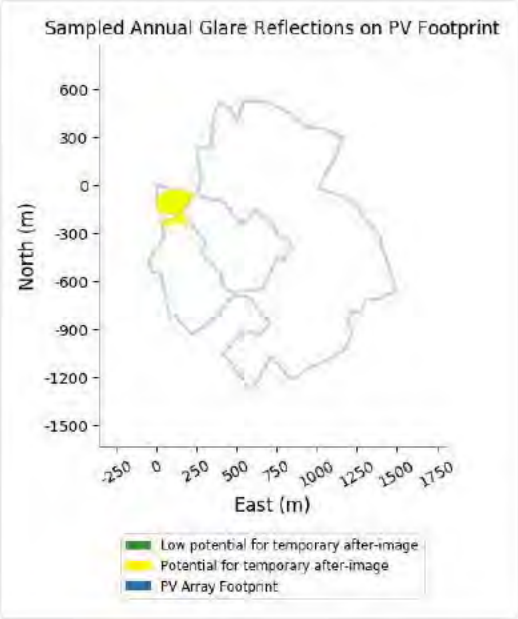
PV array 1 - OP Receptor (OP 12)

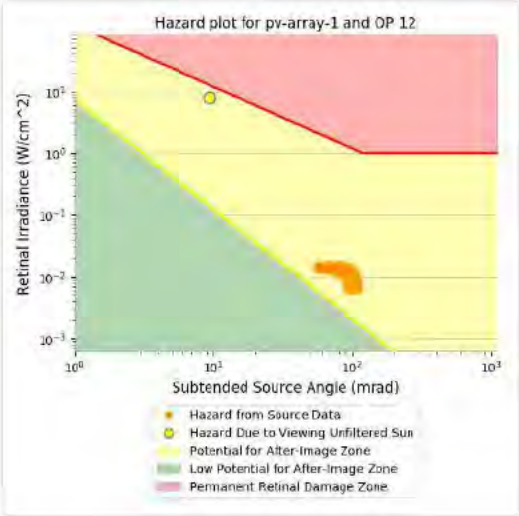
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 1,586 minutes of "yellow" glare with potential to cause temporary after-image.





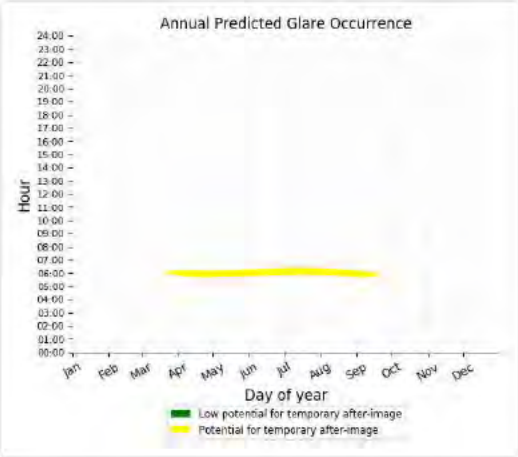


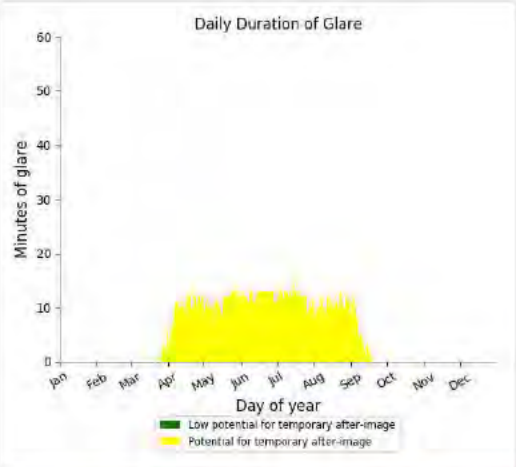


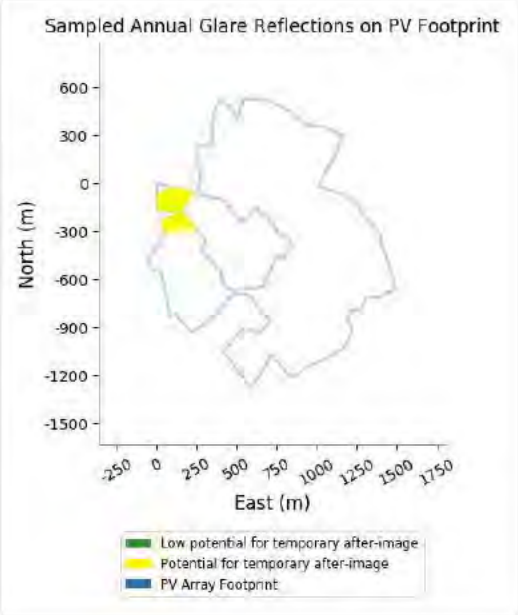
PV array 1 - OP Receptor (OP 13)

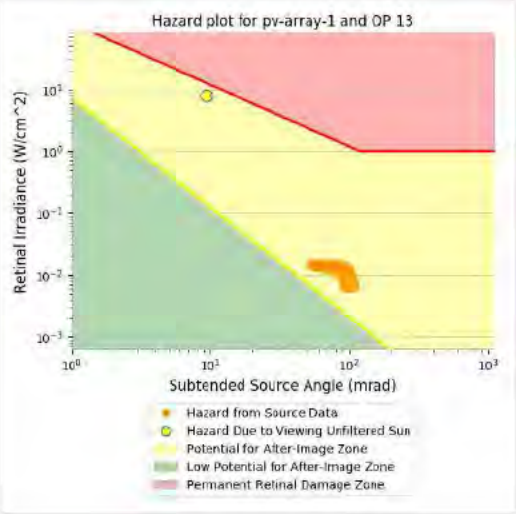
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 1,844 minutes of "yellow" glare with potential to cause temporary after-image.





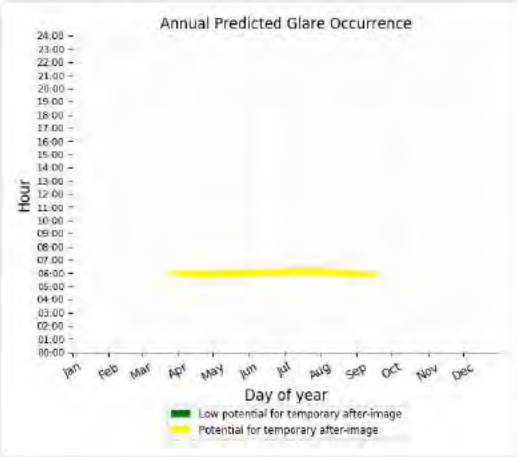


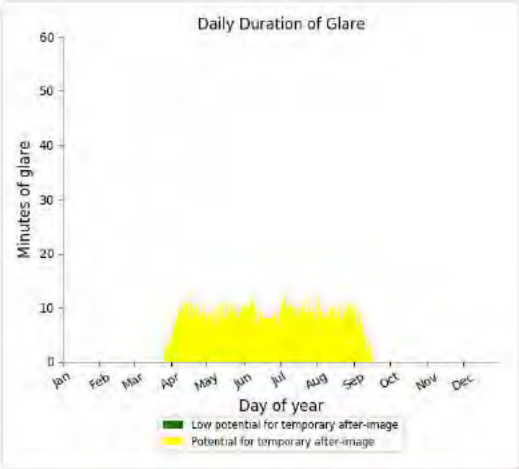


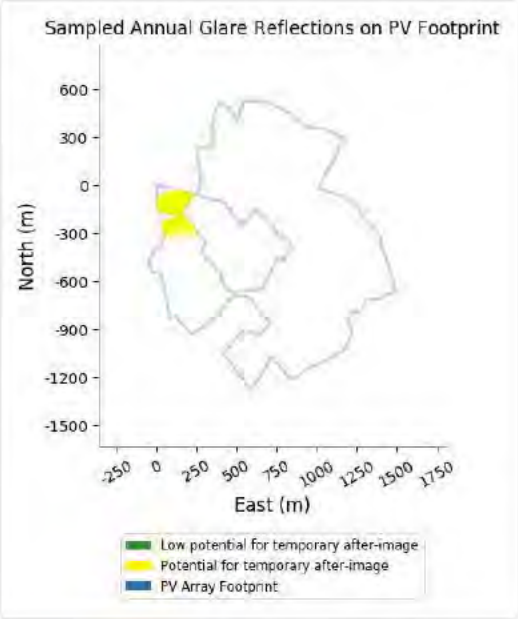
PV array 1 - OP Receptor (OP 14)

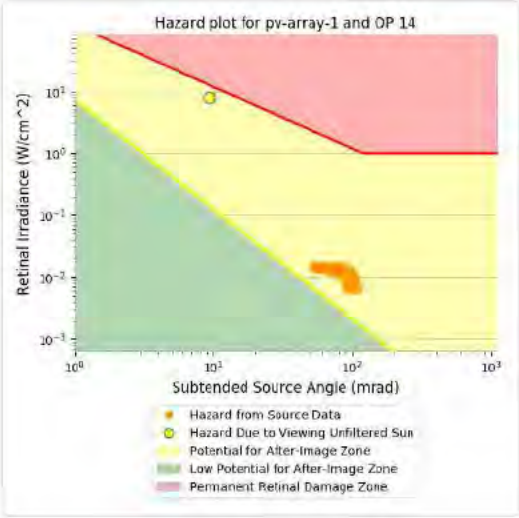
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 1,517 minutes of "yellow" glare with potential to cause temporary after-image.





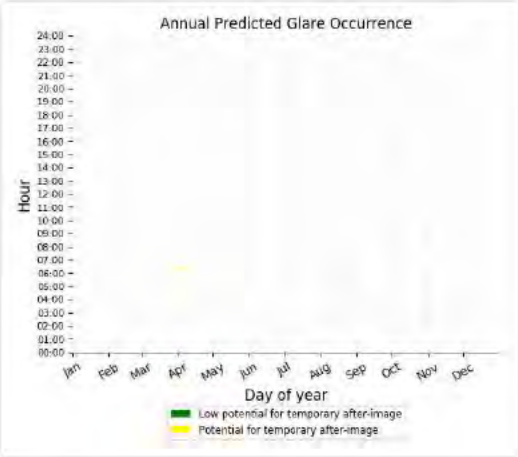


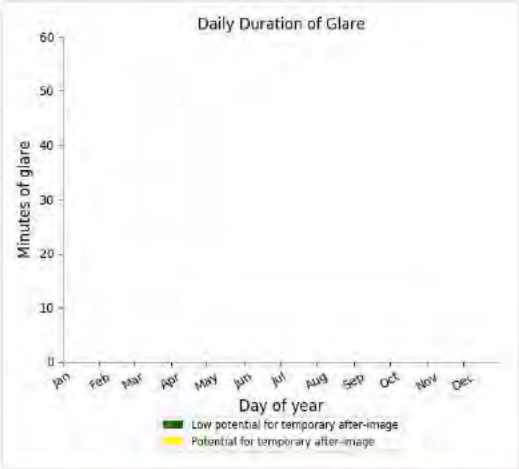


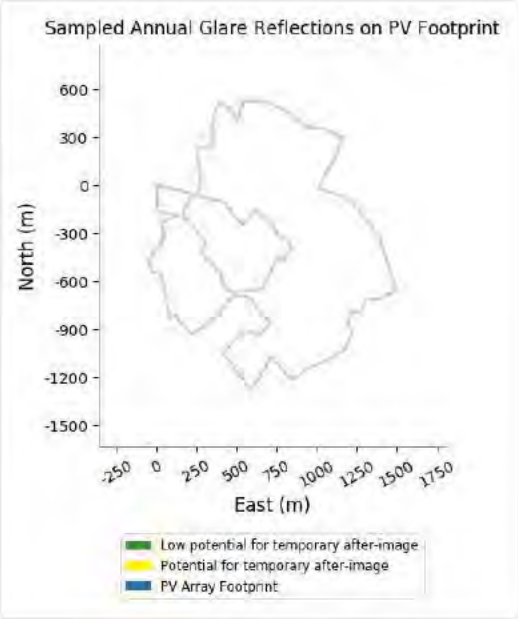
PV array 1 - OP Receptor (OP 15)

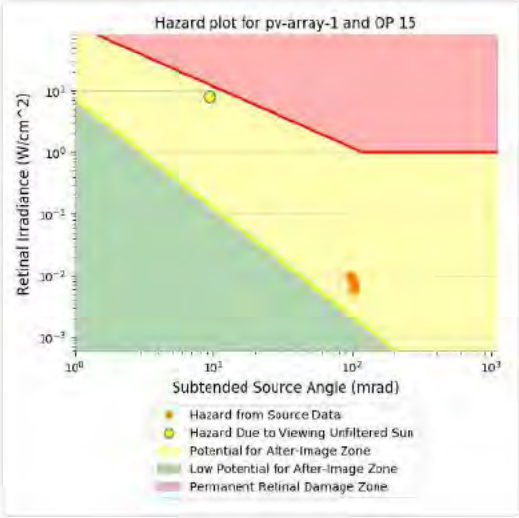
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 4 minutes of "yellow" glare with potential to cause temporary after-image.





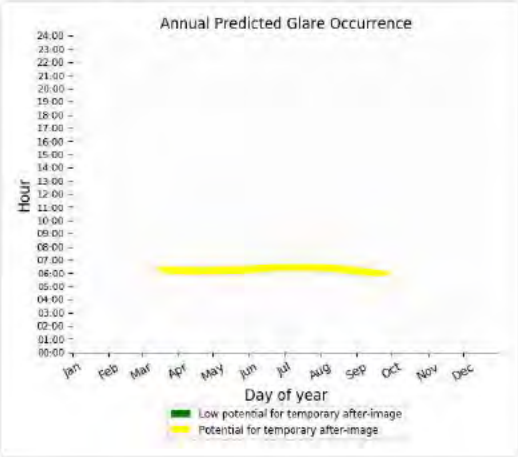


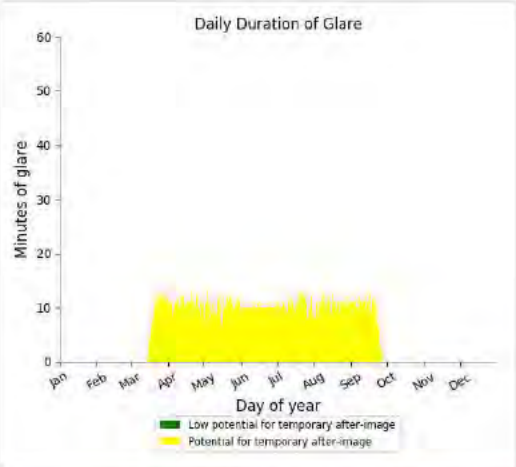


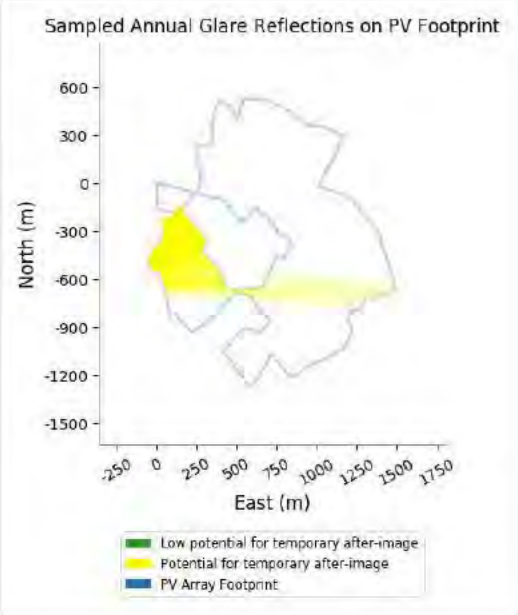
PV array 1 - OP Receptor (OP 16)

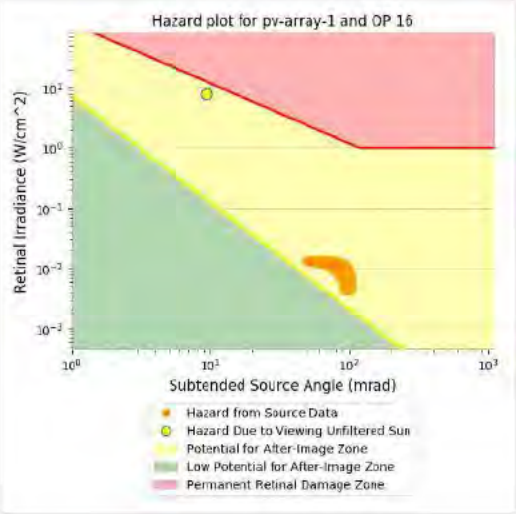
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 2,012 minutes of "yellow" glare with potential to cause temporary after-image.





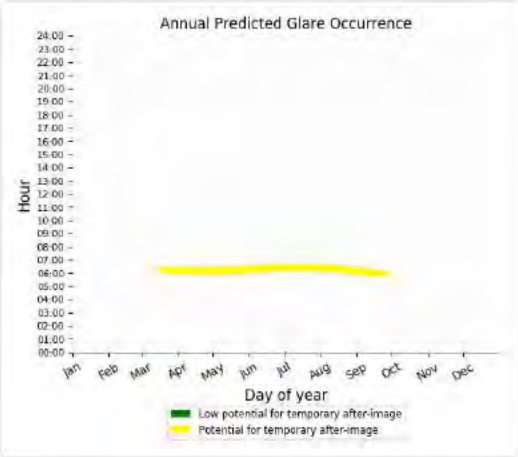


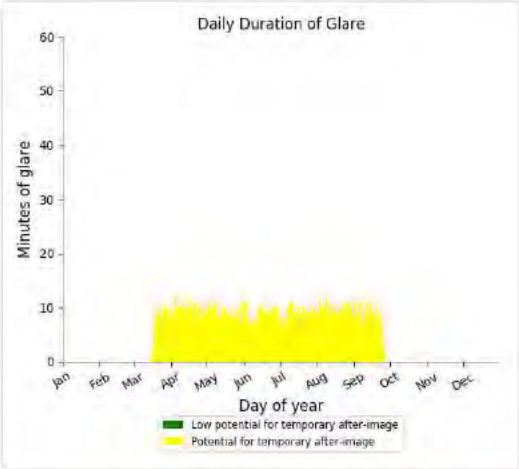


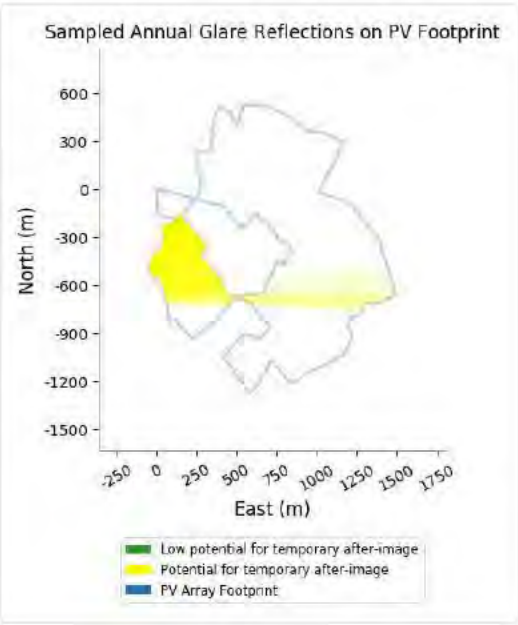
PV array 1 - OP Receptor (OP 17)

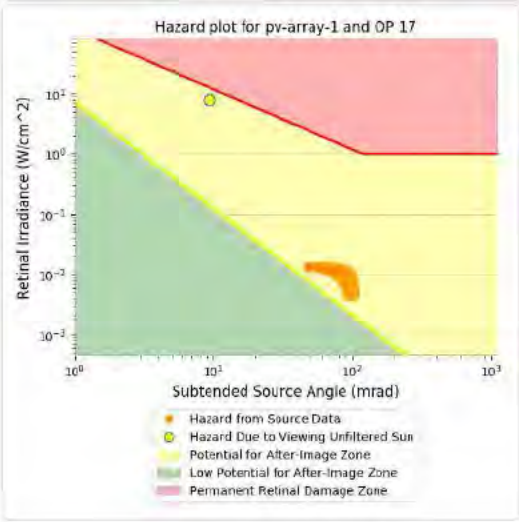
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 1,809 minutes of "yellow" glare with potential to cause temporary after-image.





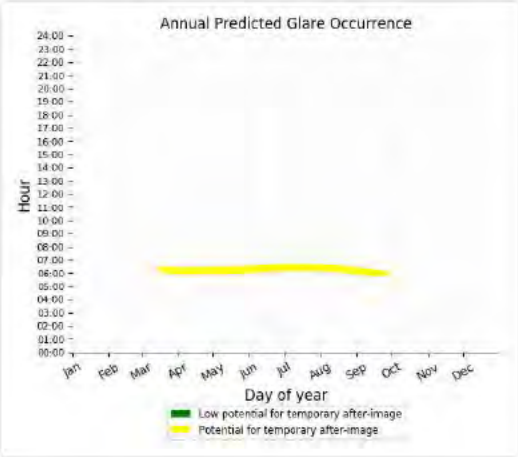


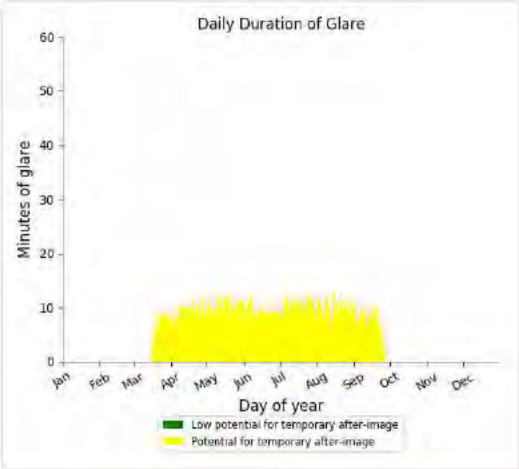


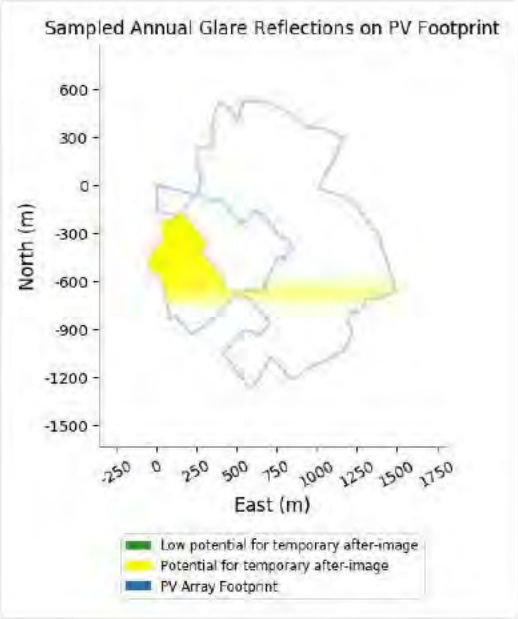
PV array 1 - OP Receptor (OP 18)

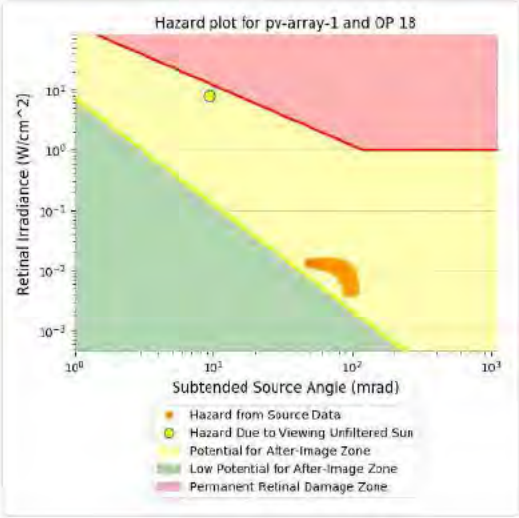
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 1,867 minutes of "yellow" glare with potential to cause temporary after-image.





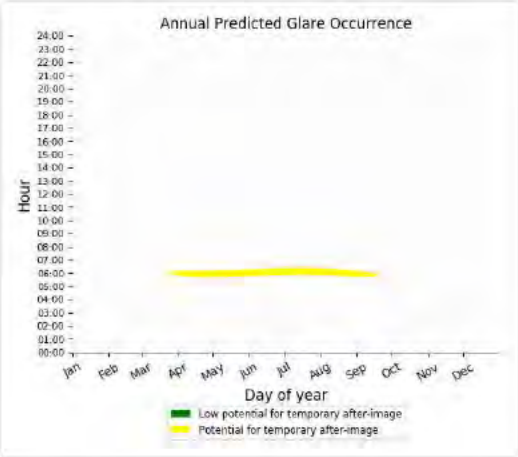


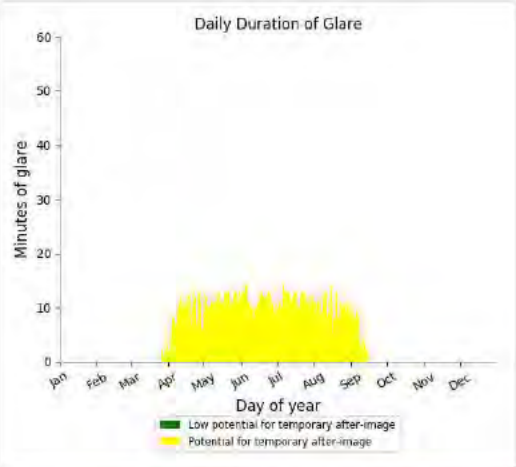


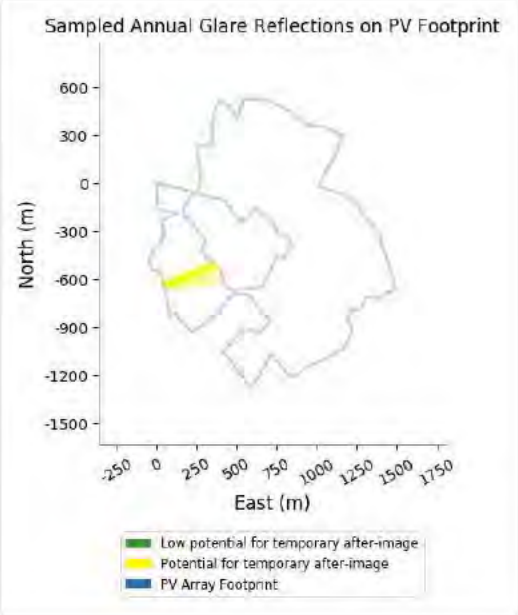
PV array 1 - OP Receptor (OP 19)

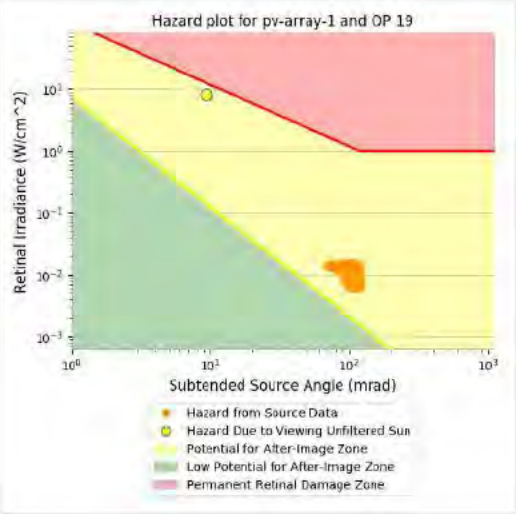
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 1,763 minutes of "yellow" glare with potential to cause temporary after-image.





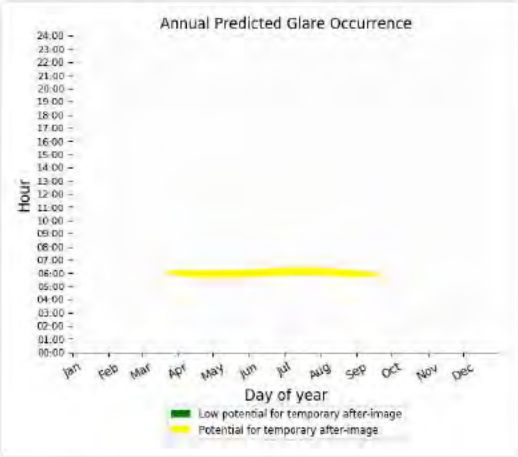


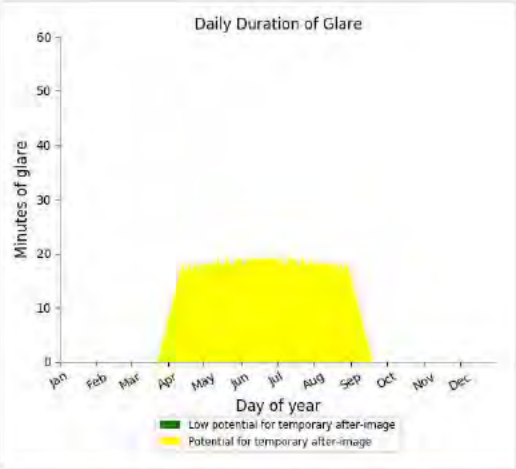


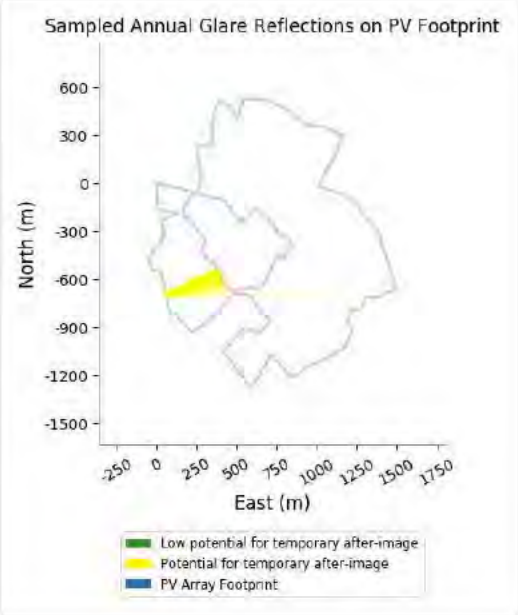
PV array 1 - OP Receptor (OP 20)

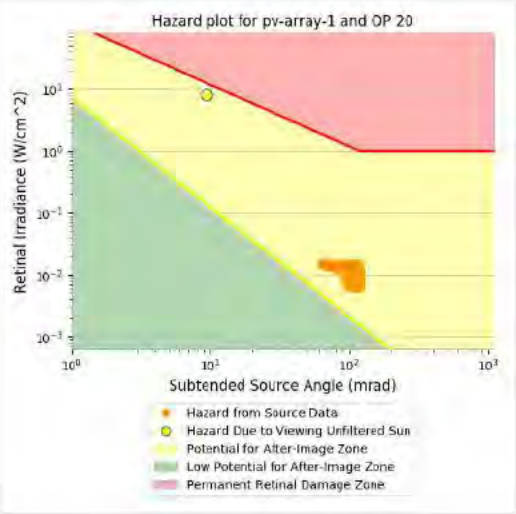
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 2,898 minutes of "yellow" glare with potential to cause temporary after-image.





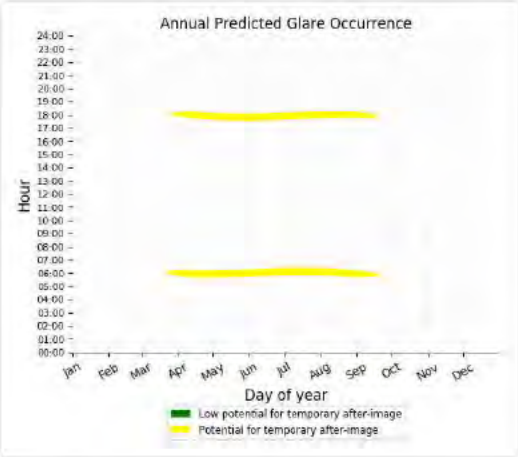


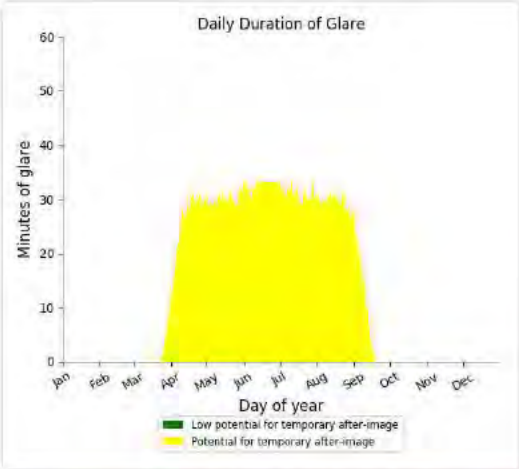


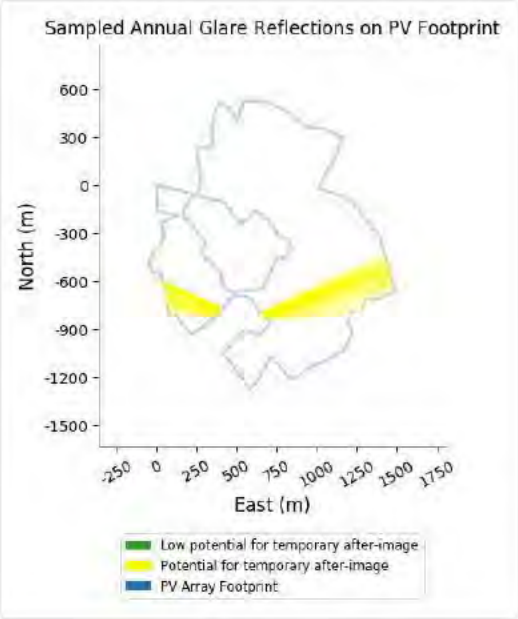
PV array 1 - OP Receptor (OP 21)

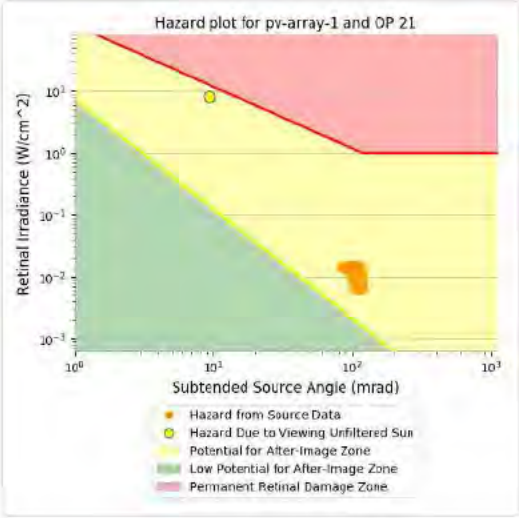
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 4,846 minutes of "yellow" glare with potential to cause temporary after-image.





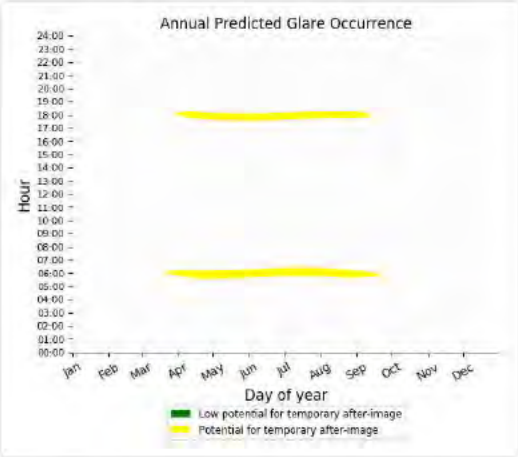


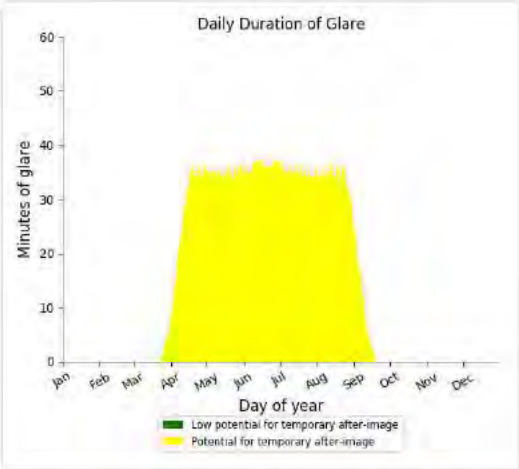


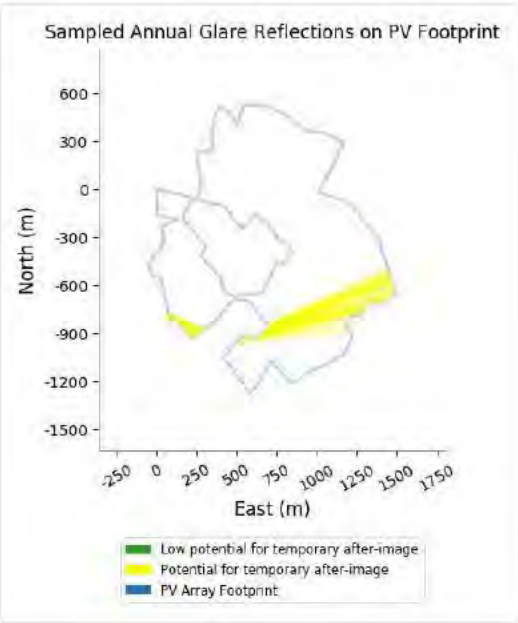
PV array 1 - OP Receptor (OP 22)

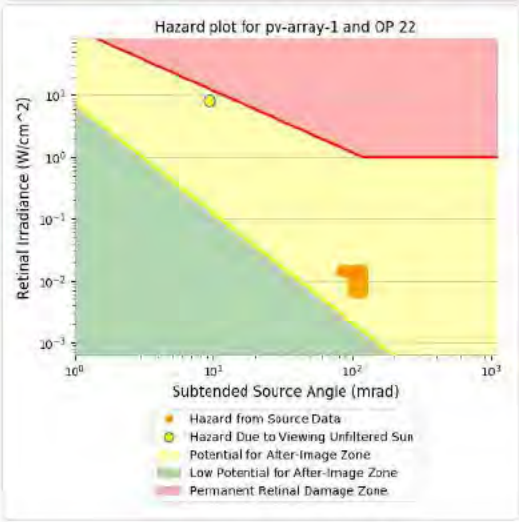
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 5,366 minutes of "yellow" glare with potential to cause temporary after-image.





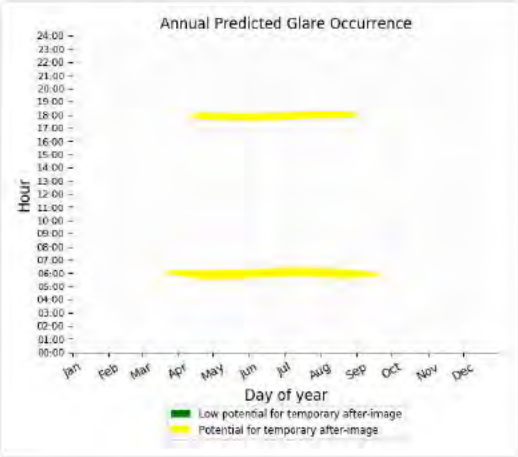


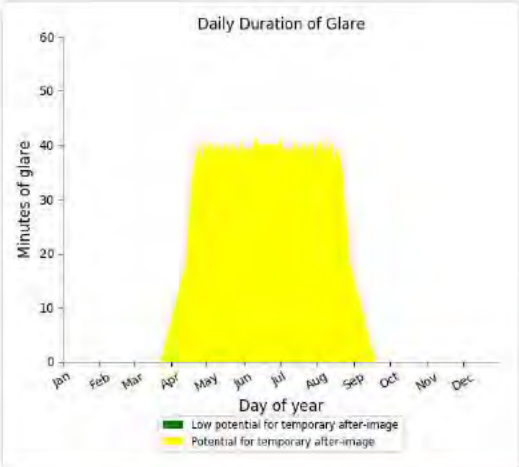


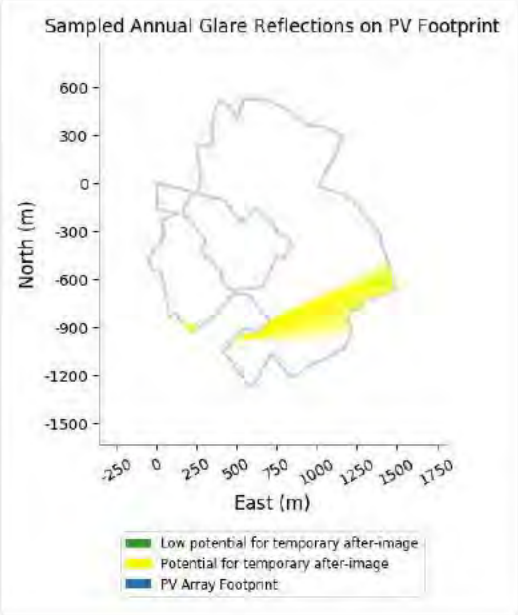
PV array 1 - OP Receptor (OP 23)

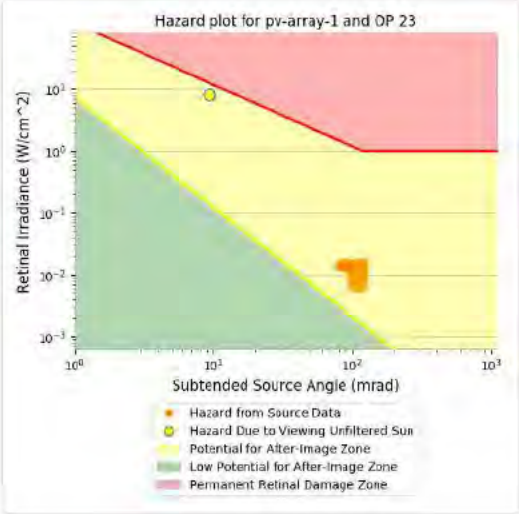
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 5,656 minutes of "yellow" glare with potential to cause temporary after-image.





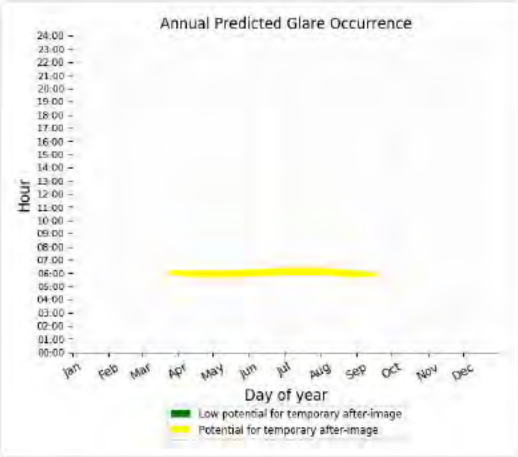


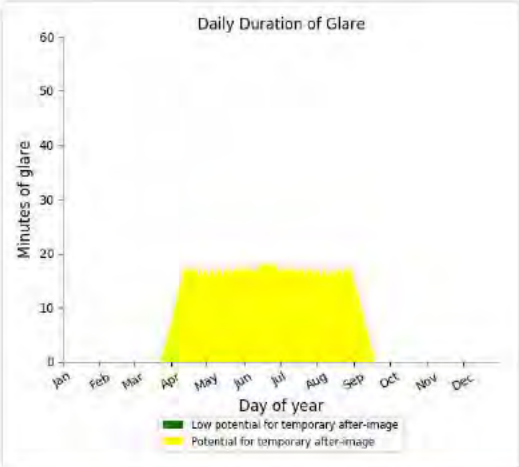


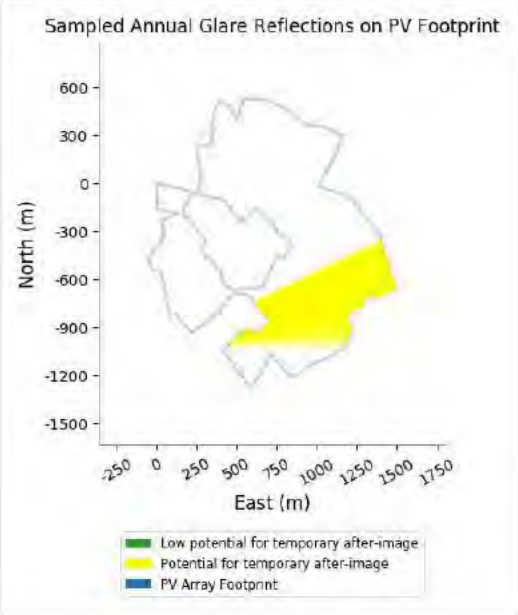
PV array 1 - OP Receptor (OP 24)

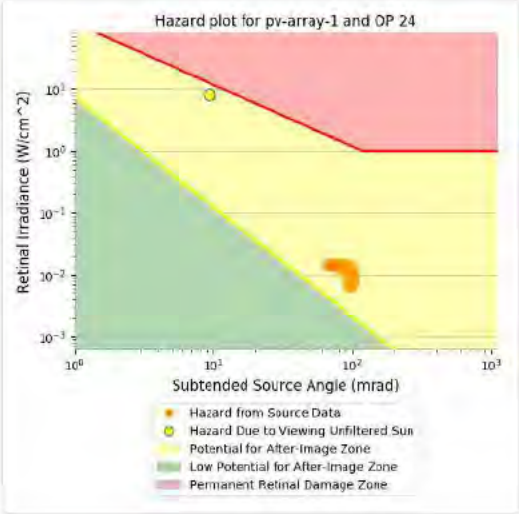
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 2,695 minutes of "yellow" glare with potential to cause temporary after-image.





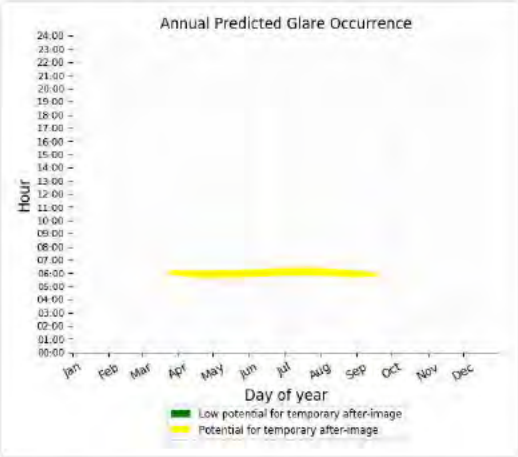


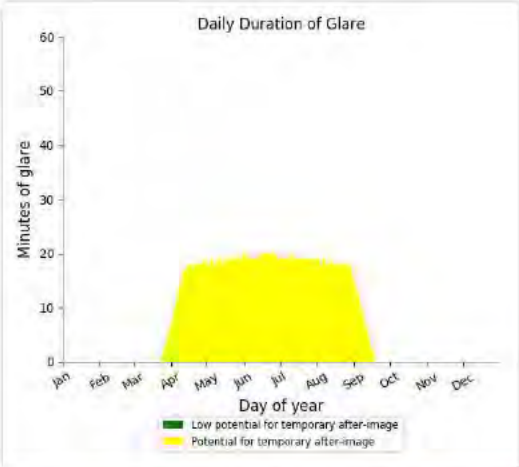


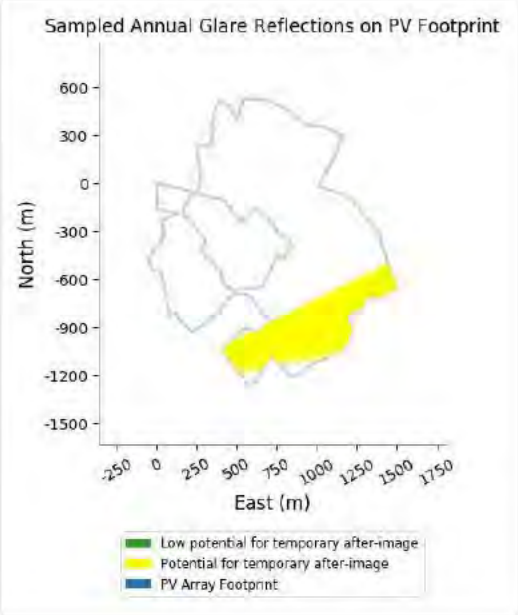
PV array 1 - OP Receptor (OP 25)

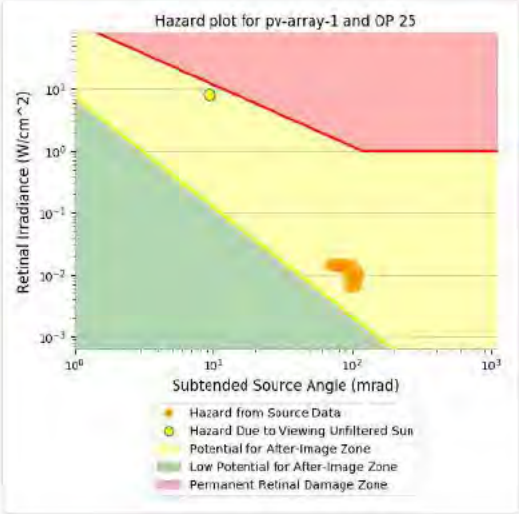
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 2,949 minutes of "yellow" glare with potential to cause temporary after-image.





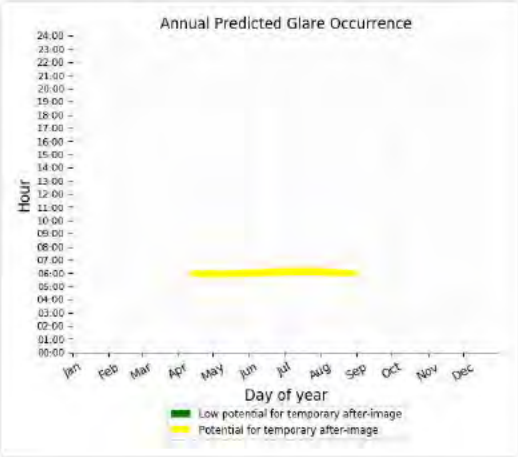


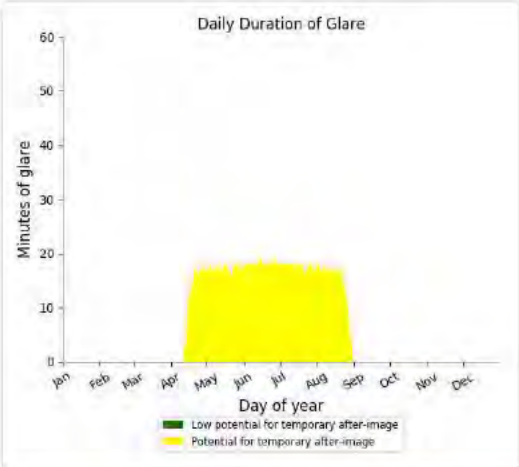


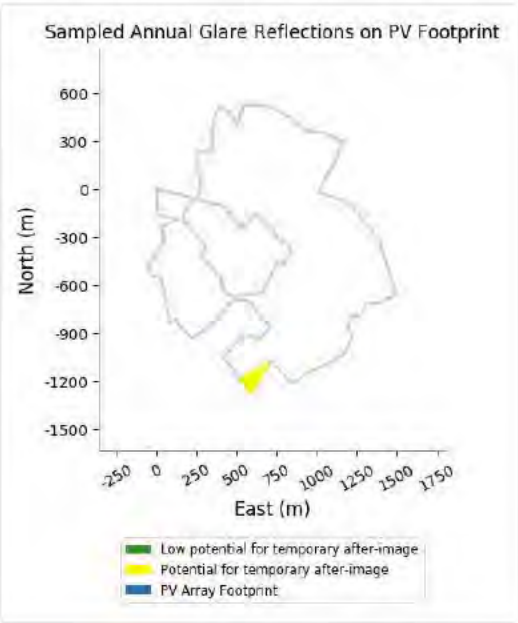
PV array 1 - OP Receptor (OP 26)

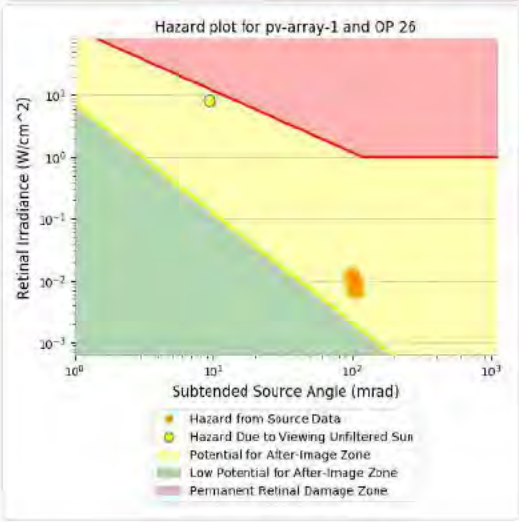
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 2,338 minutes of "yellow" glare with potential to cause temporary after-image.





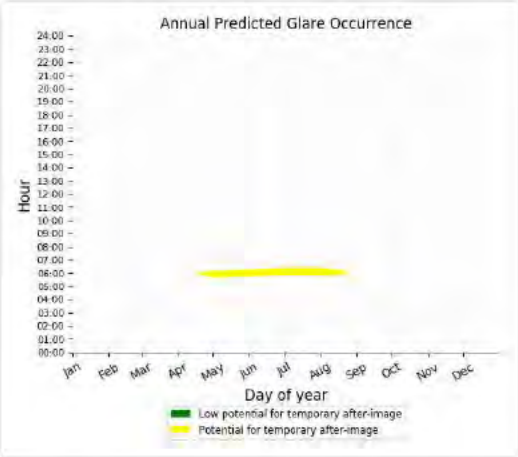


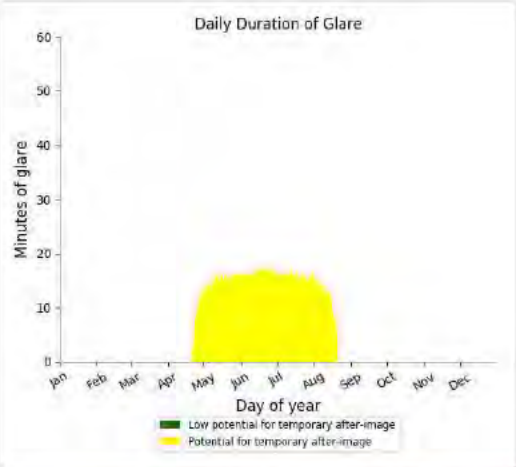


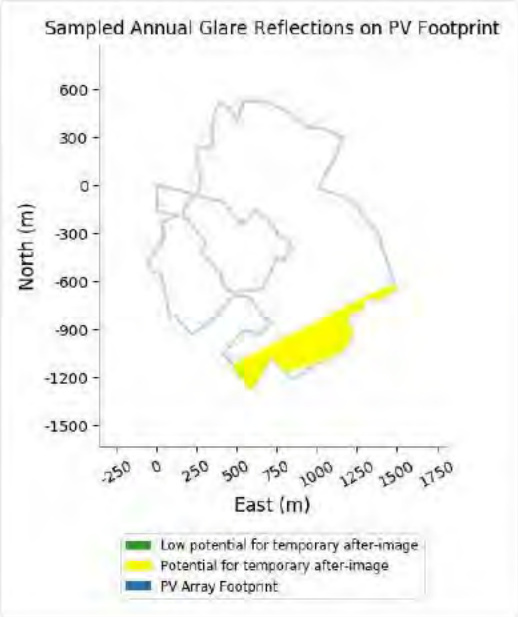
PV array 1 - OP Receptor (OP 27)

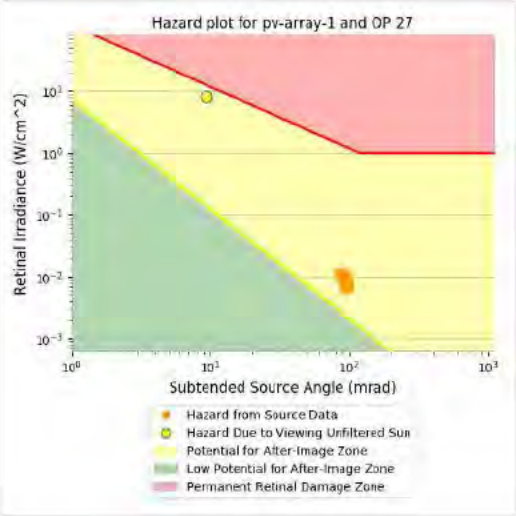
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 1,789 minutes of "yellow" glare with potential to cause temporary after-image.





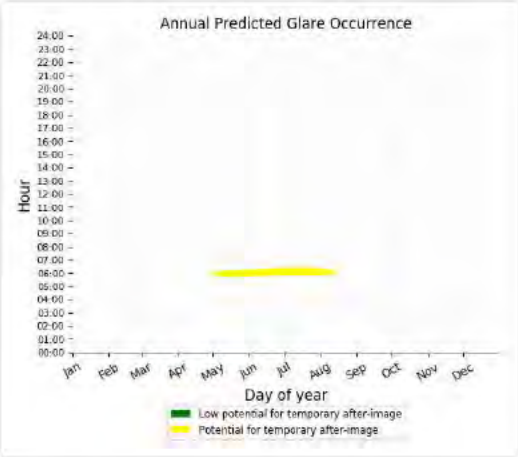


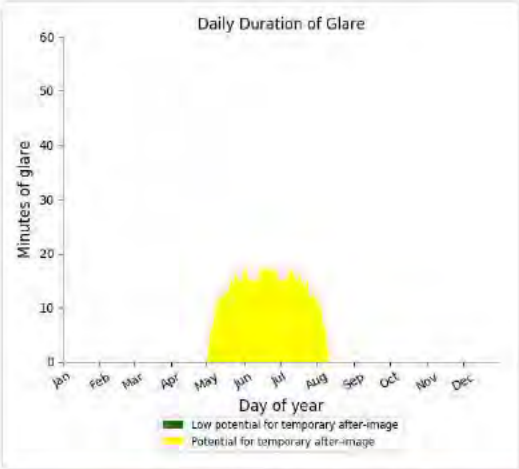


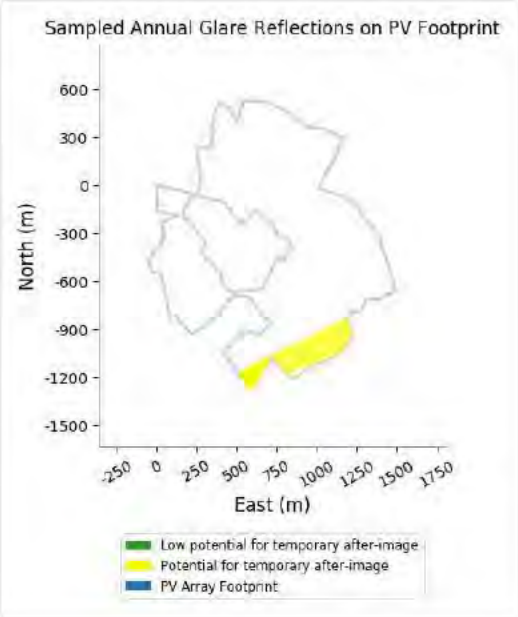
PV array 1 - OP Receptor (OP 28)

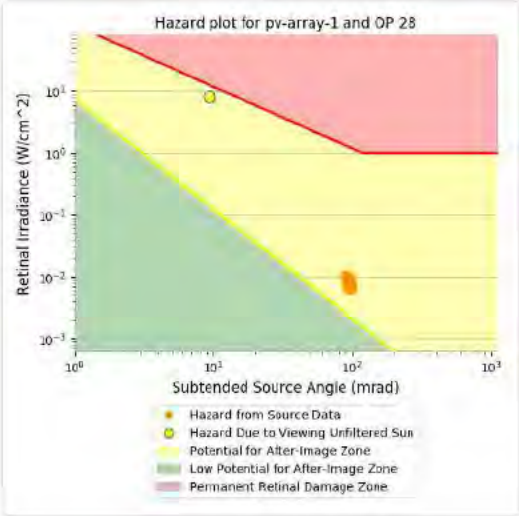
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 1,369 minutes of "yellow" glare with potential to cause temporary after-image.









PV array 1 - OP Receptor (OP 29)

No glare found

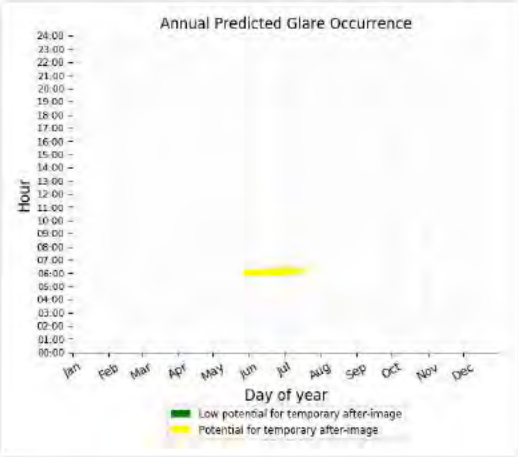
PV array 1 - OP Receptor (OP 30)

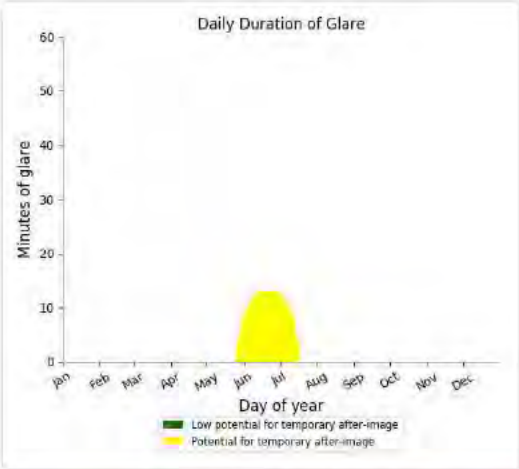
No glare found

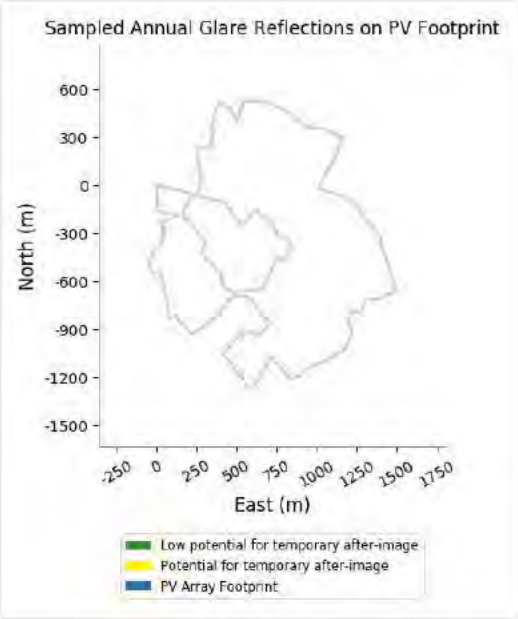
PV array 1 - OP Receptor (OP 31)

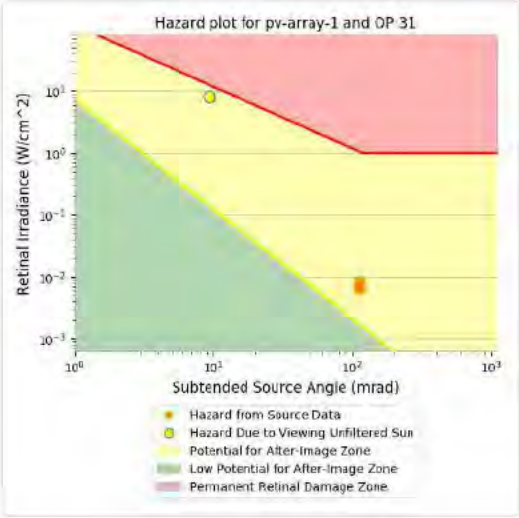
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 549 minutes of "yellow" glare with potential to cause temporary after-image.









PV array 1 - OP Receptor (OP 32)

No glare found

PV array 1 - OP Receptor (OP 33)

No glare found

PV array 1 - OP Receptor (OP 34)

No glare found

PV array 1 - OP Receptor (OP 35)

No glare found

PV array 1 - OP Receptor (OP 36)

No glare found

PV array 1 - OP Receptor (OP 37)

No glare found

PV array 1 - OP Receptor (OP 38)
No glare found

PV array 1 - OP Receptor (OP 39)
No glare found

PV array 1 - OP Receptor (OP 40)
No glare found

PV array 1 - OP Receptor (OP 41)
No glare found

PV array 1 - OP Receptor (OP 42)
No glare found

PV array 1 - OP Receptor (OP 43)
No glare found

PV array 1 - OP Receptor (OP 44)
No glare found

PV array 1 - OP Receptor (OP 45)
No glare found

PV array 1 - OP Receptor (OP 46)
No glare found

PV array 1 - OP Receptor (OP 47)
No glare found

PV array 1 - OP Receptor (OP 48)
No glare found

PV array 1 - OP Receptor (OP 49)
No glare found

PV array 1 - OP Receptor (OP 50)
No glare found

PV array 1 - OP Receptor (OP 51)
No glare found

PV array 1 - OP Receptor (OP 52)
No glare found

PV array 1 - OP Receptor (OP 53)
No glare found

PV array 1 - OP Receptor (OP 54)
No glare found

PV array 1 - OP Receptor (OP 55)
No glare found

PV array 1 - OP Receptor (OP 56)
No glare found

PV array 1 - OP Receptor (OP 57)

No glare found

PV array 1 - OP Receptor (OP 58)

No glare found

PV array 1 - OP Receptor (OP 59)

No glare found

PV array 1 - OP Receptor (OP 60)

No glare found

PV array 1 - OP Receptor (OP 61)

No glare found

PV array 1 - OP Receptor (OP 62)

No glare found

PV array 1 - OP Receptor (OP 63)

No glare found

PV array 1 - OP Receptor (OP 64)

No glare found

PV array 1 - OP Receptor (OP 65)

No glare found

PV array 1 - OP Receptor (OP 66)

No glare found

PV array 1 - OP Receptor (OP 67)

No glare found

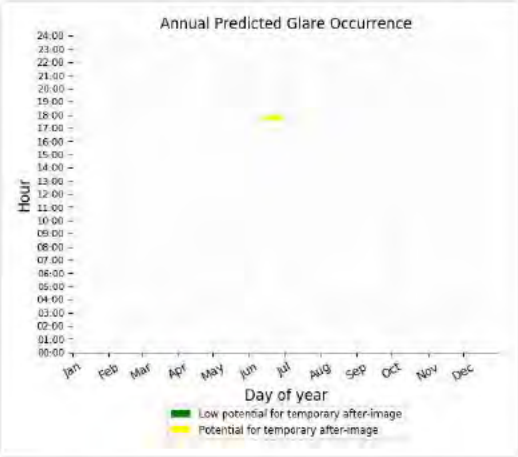
PV array 1 - OP Receptor (OP 68)

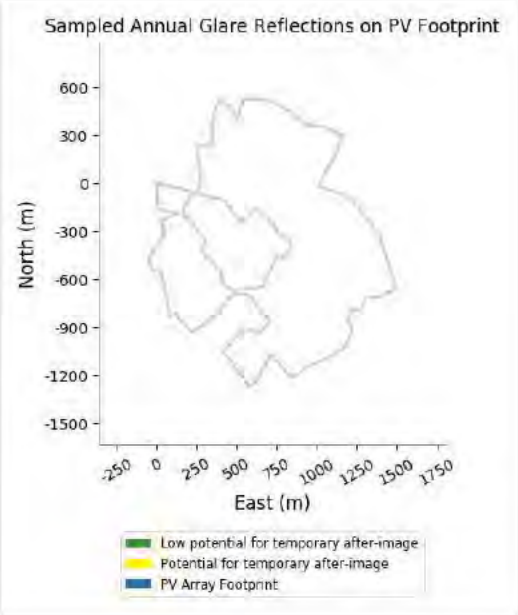
No glare found

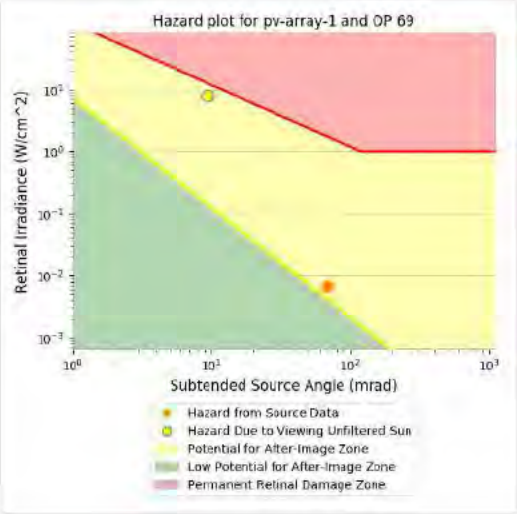
PV array 1 - OP Receptor (OP 69)

PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 36 minutes of "yellow" glare with potential to cause temporary after-image.



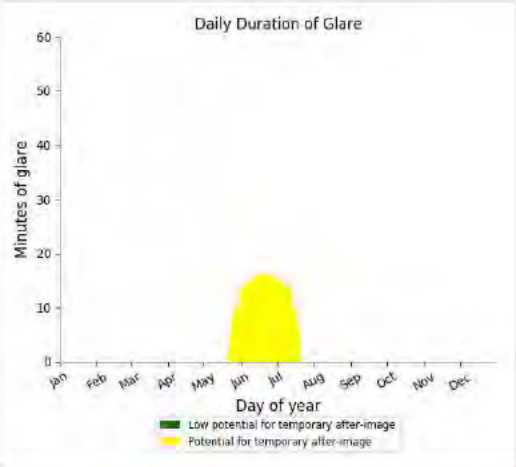


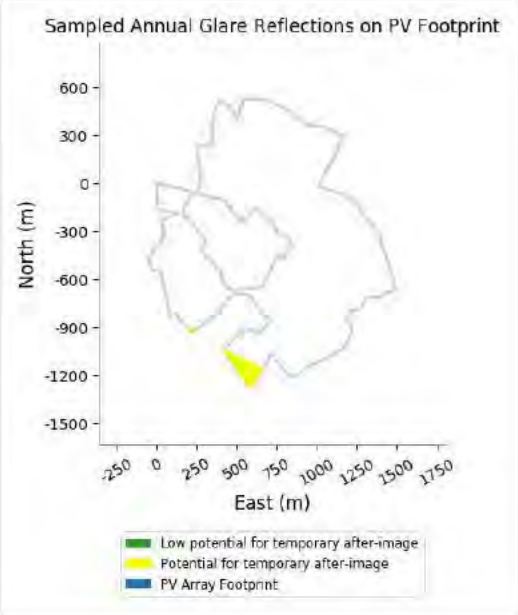


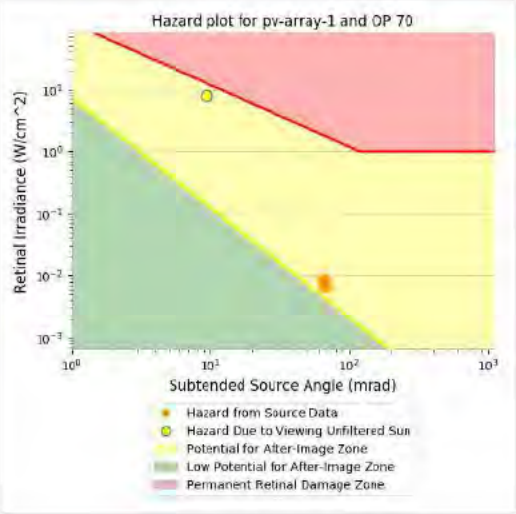
PV array 1 - OP Receptor (OP 70)

PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 794 minutes of "yellow" glare with potential to cause temporary after-image.



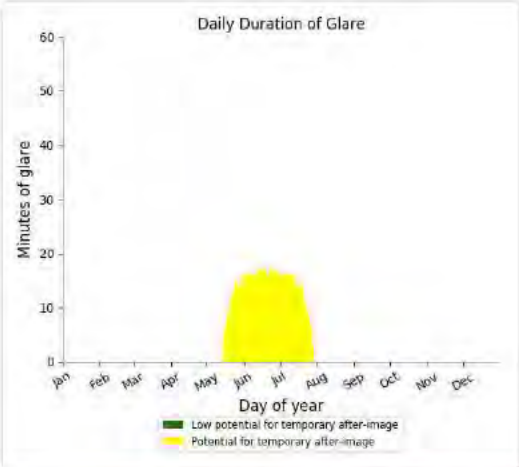


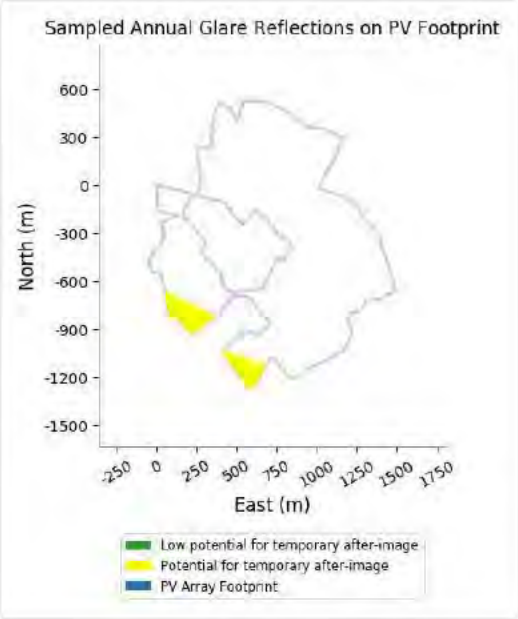


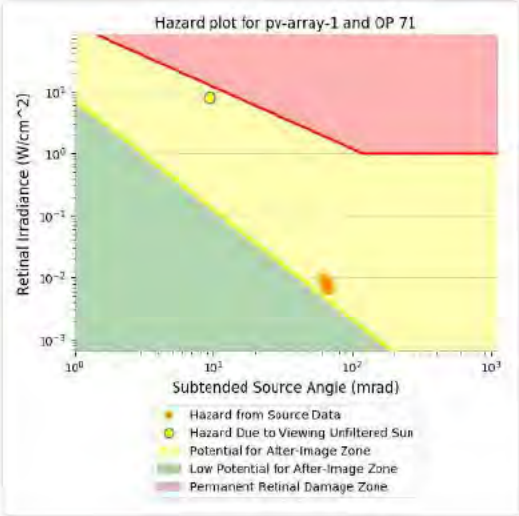
PV array 1 - OP Receptor (OP 71)

PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 1,068 minutes of "yellow" glare with potential to cause temporary after-image.



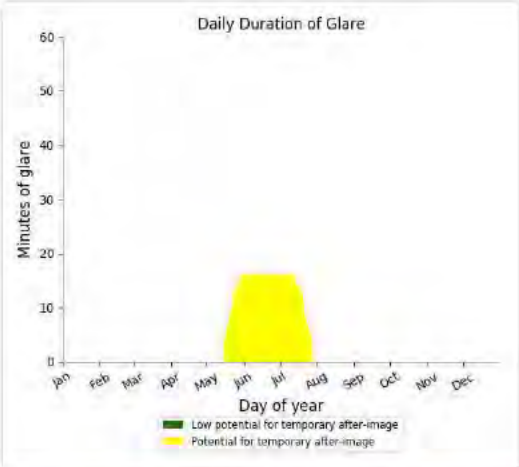


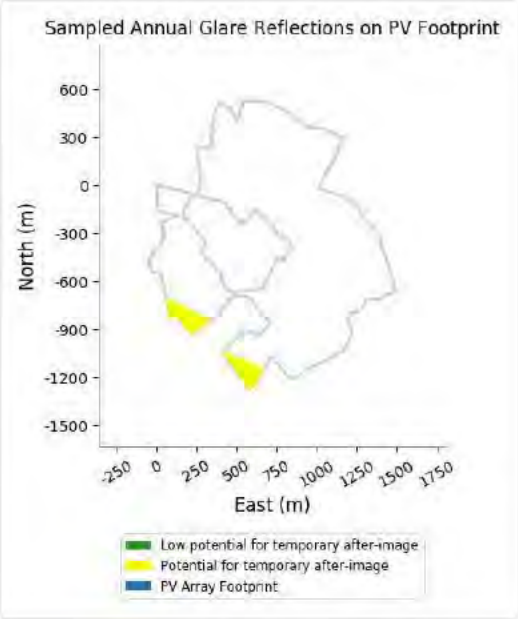


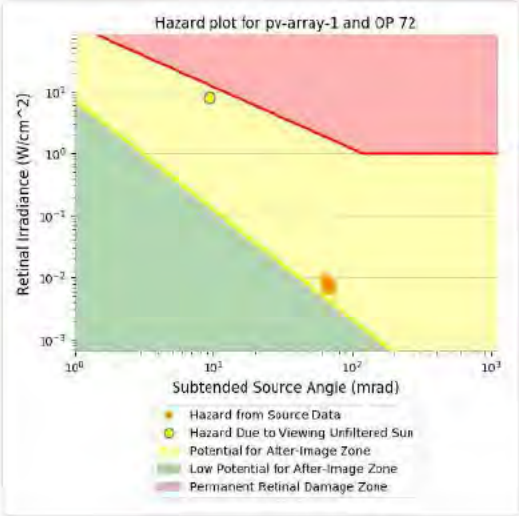
PV array 1 - OP Receptor (OP 72)

PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 1,015 minutes of "yellow" glare with potential to cause temporary after-image.



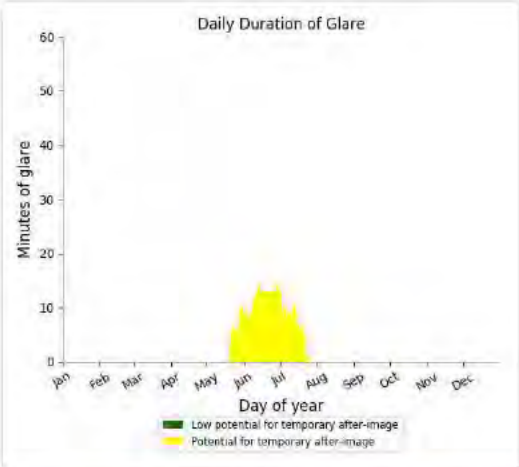


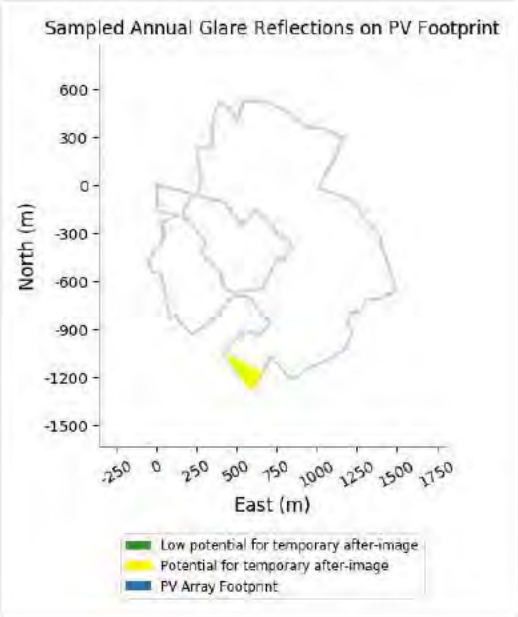


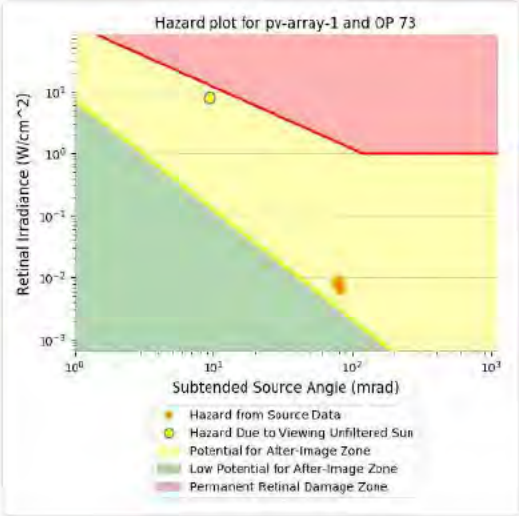
PV array 1 - OP Receptor (OP 73)

PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 635 minutes of "yellow" glare with potential to cause temporary after-image.



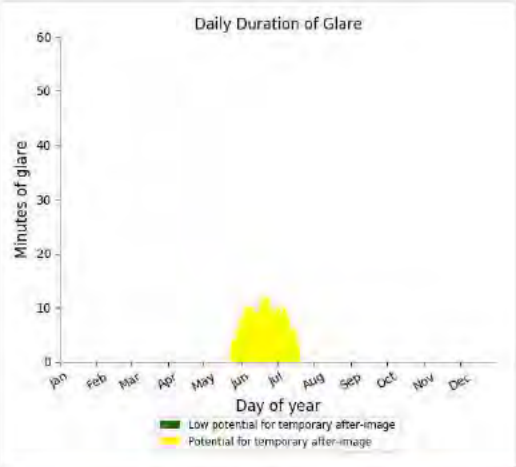


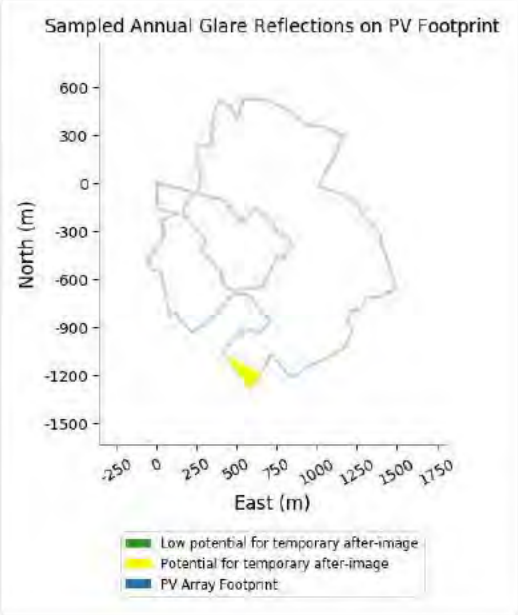


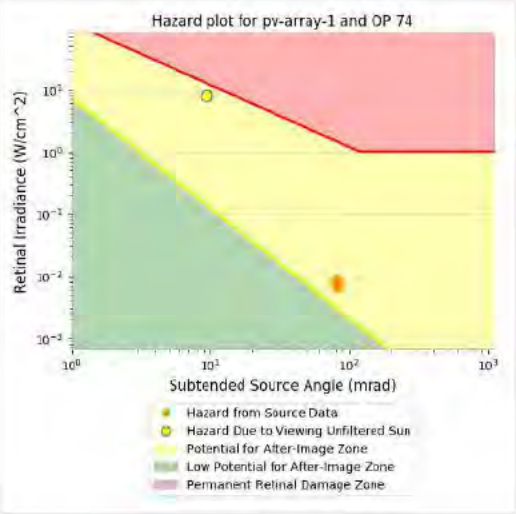
PV array 1 - OP Receptor (OP 74)

PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 493 minutes of "yellow" glare with potential to cause temporary after-image.



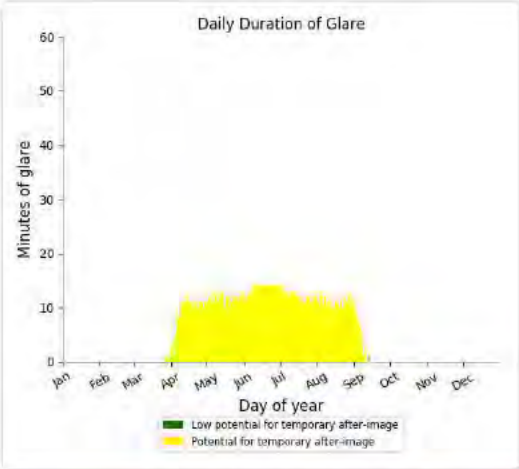


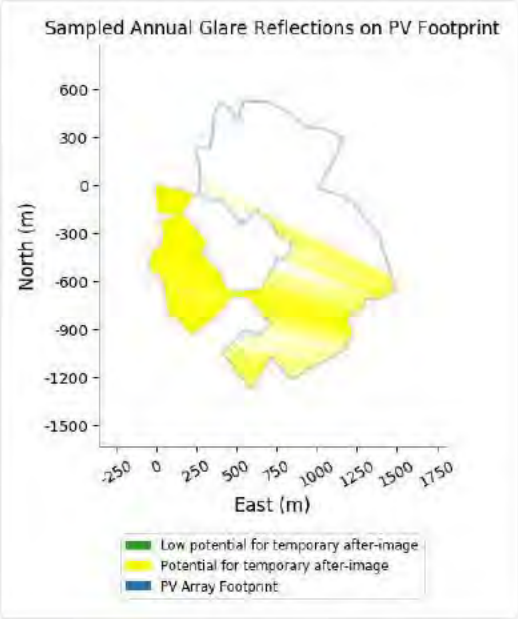


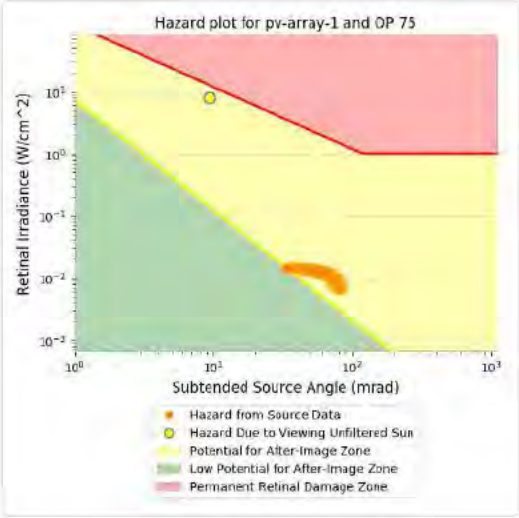
PV array 1 - OP Receptor (OP 75)

PV array is expected to produce the following glare for receptors at this location:

- 1 minutes of "green" glare with low potential to cause temporary after-image.
- 1,838 minutes of "yellow" glare with potential to cause temporary after-image.



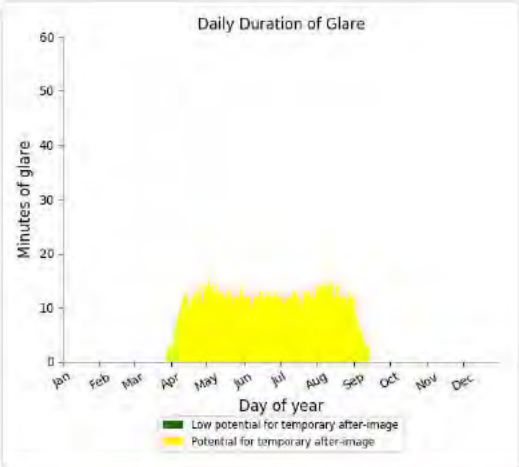


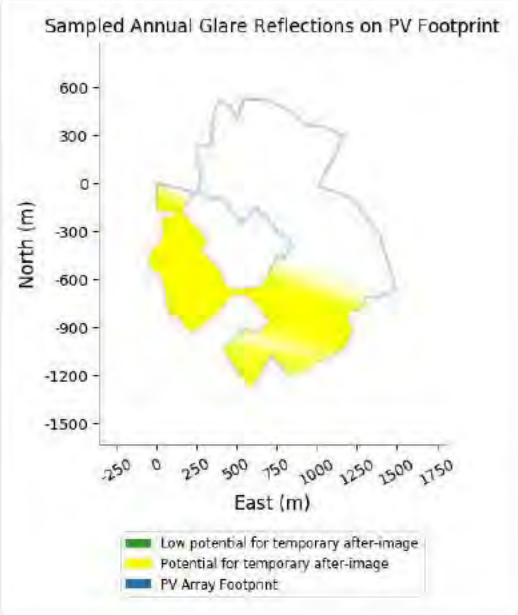


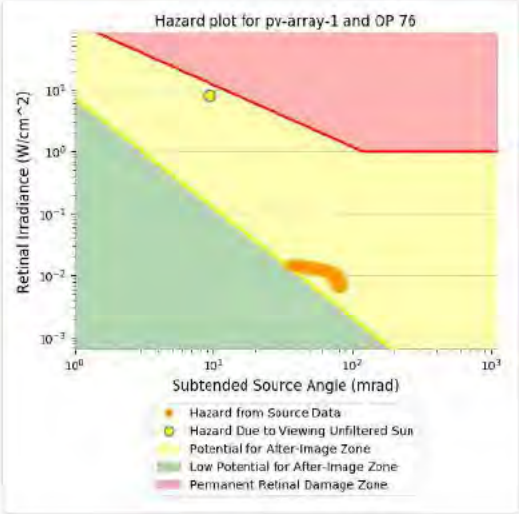
PV array 1 - OP Receptor (OP 76)

PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 1,941 minutes of "yellow" glare with potential to cause temporary after-image.



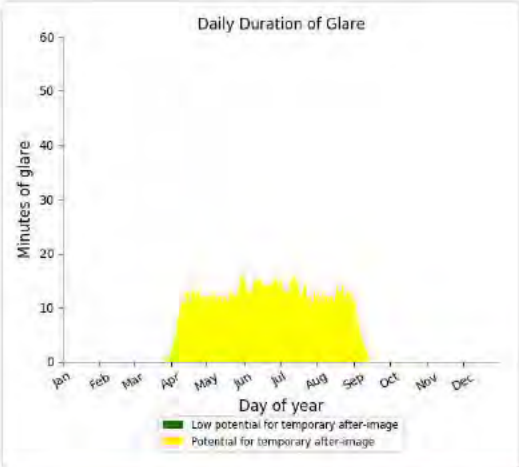


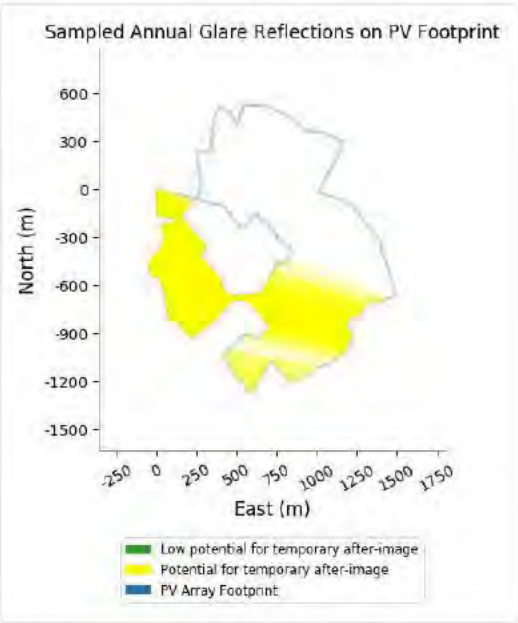


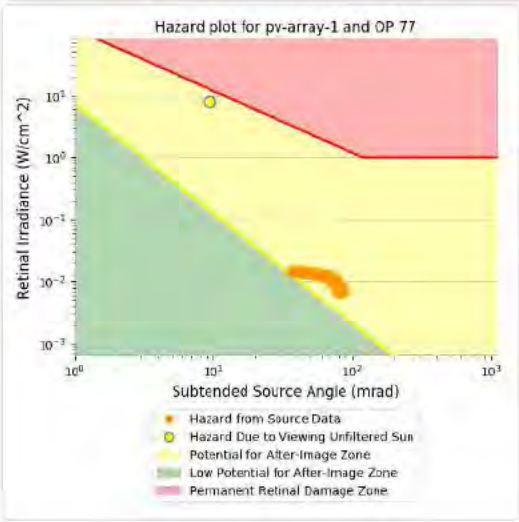
PV array 1 - OP Receptor (OP 77)

PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 1,984 minutes of "yellow" glare with potential to cause temporary after-image.



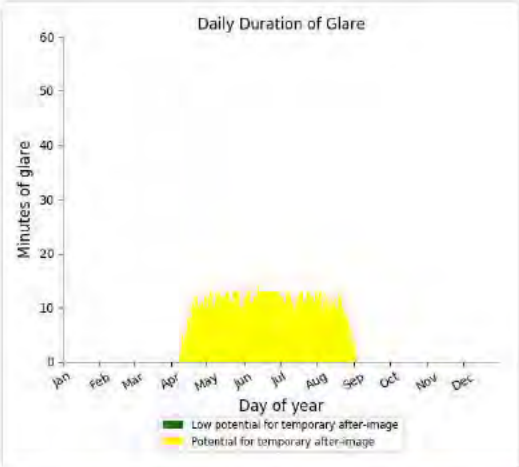


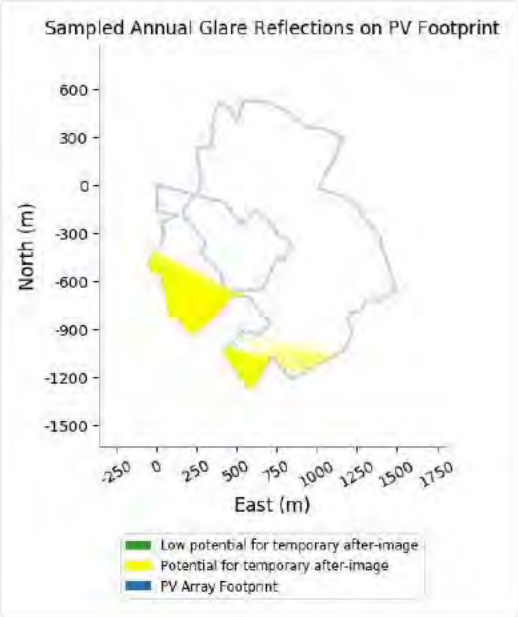


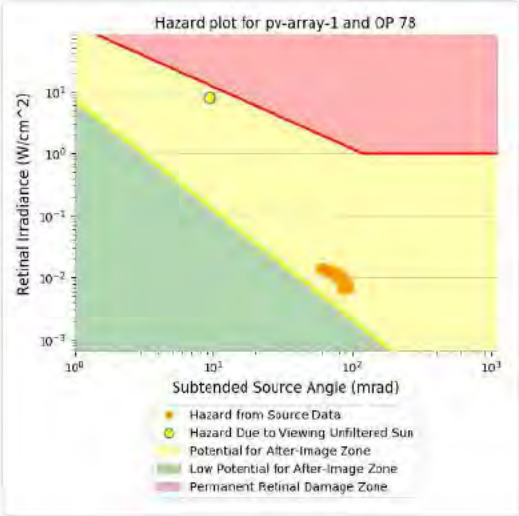
PV array 1 - OP Receptor (OP 78)

PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 1,622 minutes of "yellow" glare with potential to cause temporary after-image.



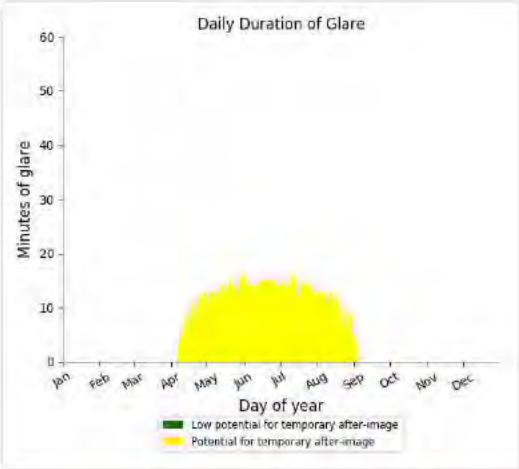


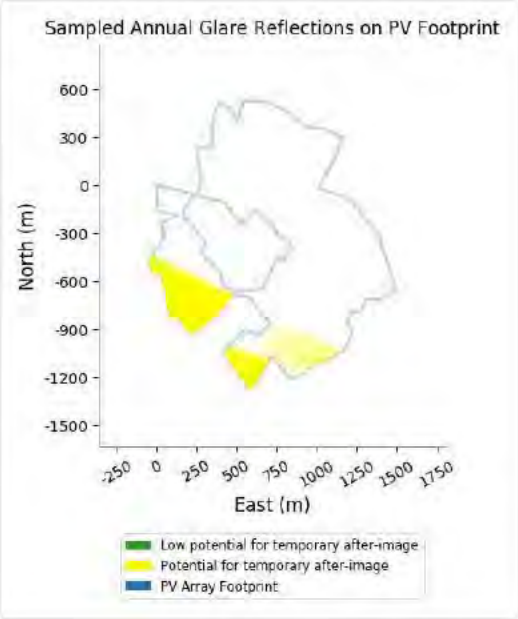


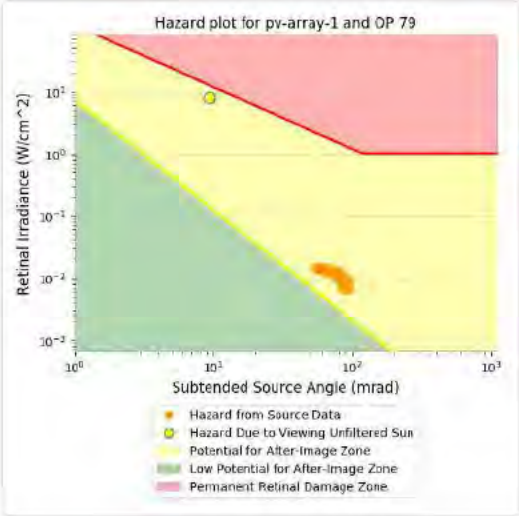
PV array 1 - OP Receptor (OP 79)

PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 1,854 minutes of "yellow" glare with potential to cause temporary after-image.



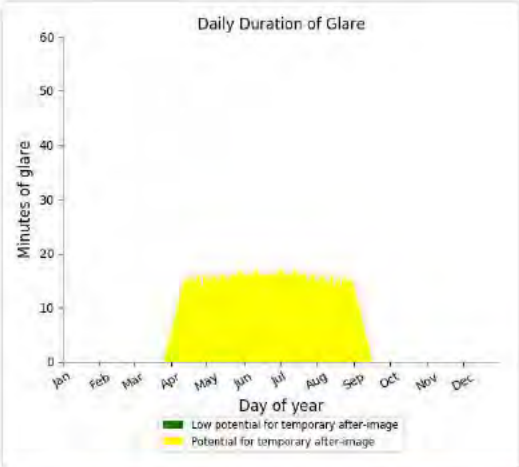


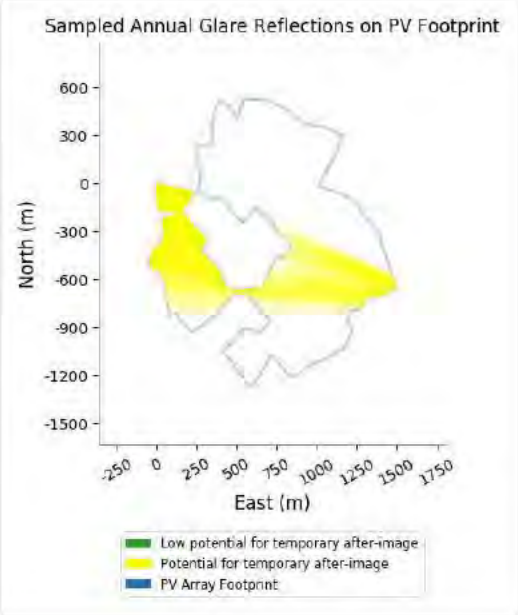


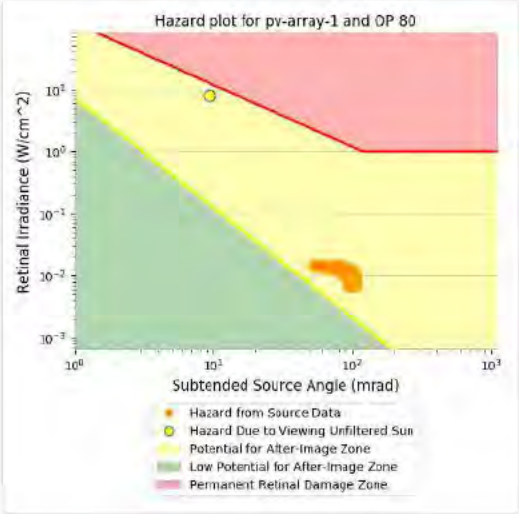
PV array 1 - OP Receptor (OP 80)

PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 2,463 minutes of "yellow" glare with potential to cause temporary after-image.



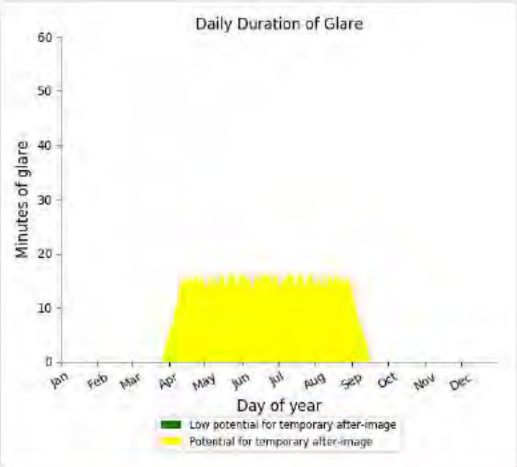


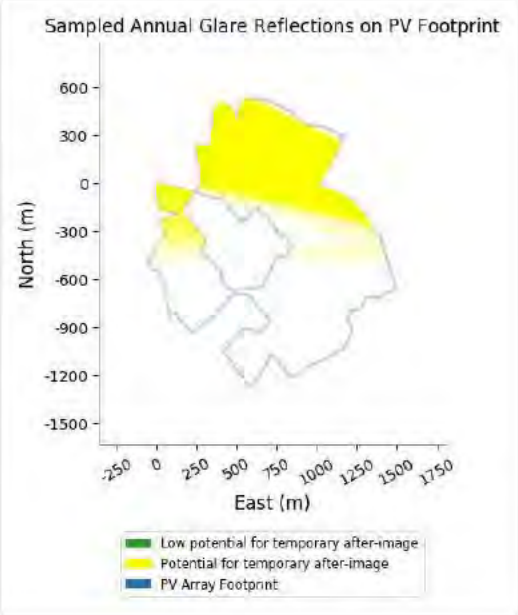


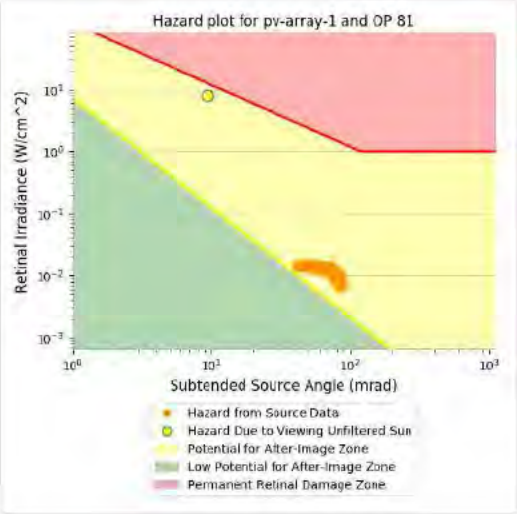
PV array 1 - OP Receptor (OP 81)

PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 2,372 minutes of "yellow" glare with potential to cause temporary after-image.



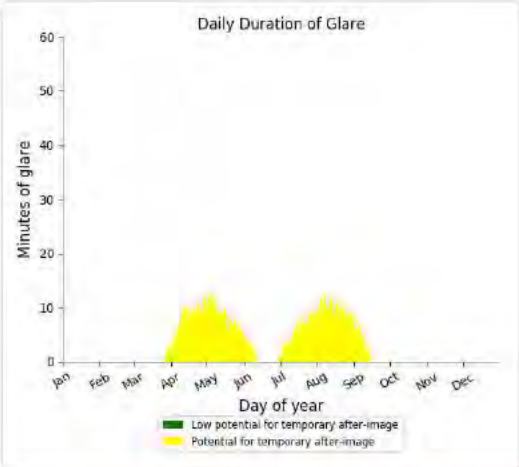


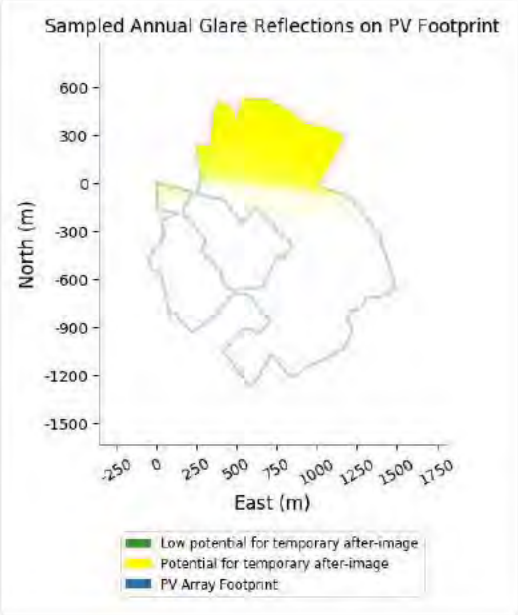


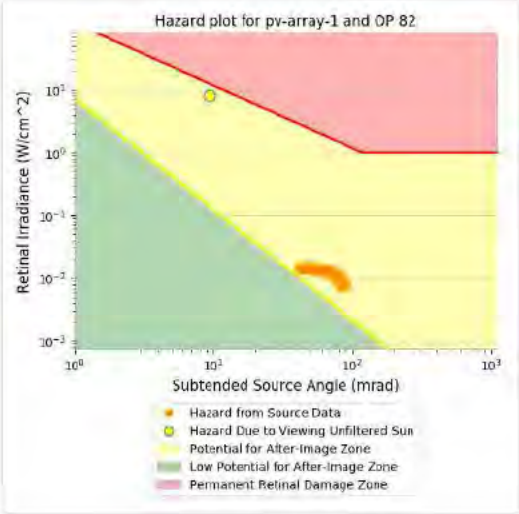
PV array 1 - OP Receptor (OP 82)

PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 1,127 minutes of "yellow" glare with potential to cause temporary after-image.



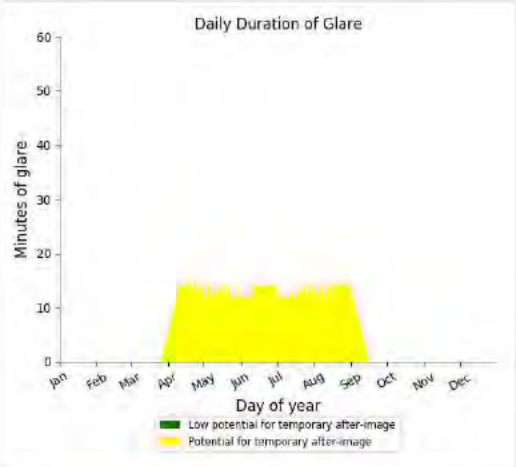


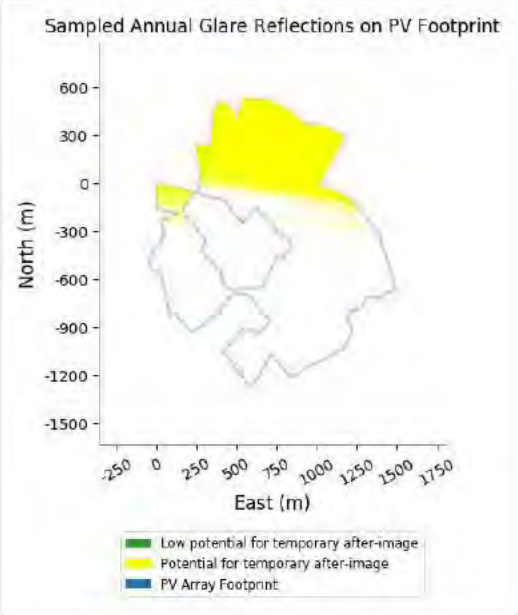


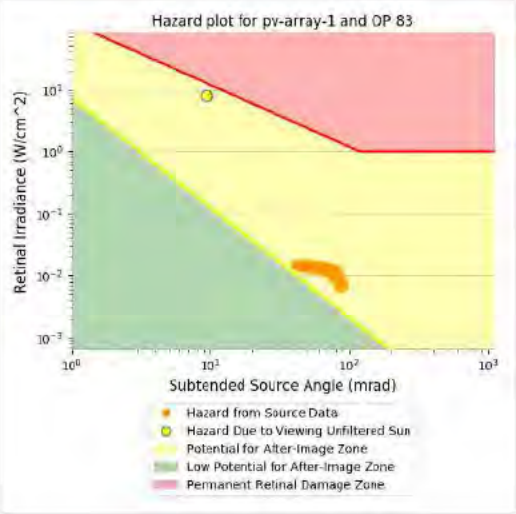
PV array 1 - OP Receptor (OP 83)

PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 2,112 minutes of "yellow" glare with potential to cause temporary after-image.



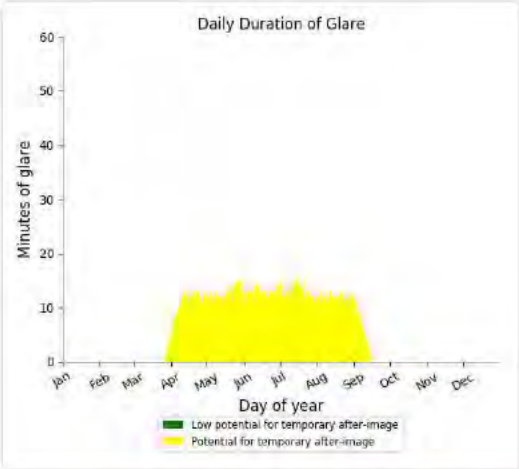


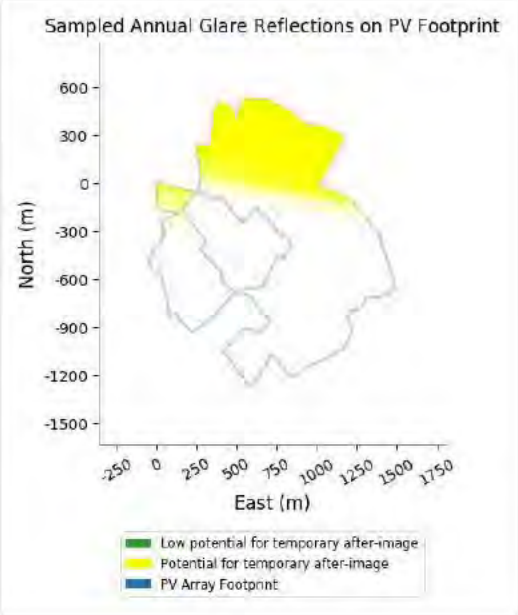


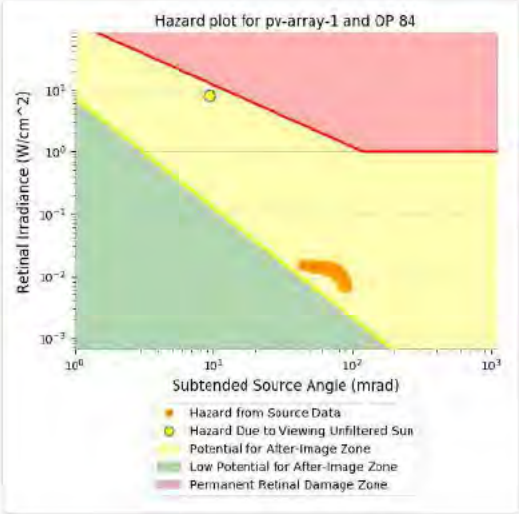
PV array 1 - OP Receptor (OP 84)

PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 2,009 minutes of "yellow" glare with potential to cause temporary after-image.



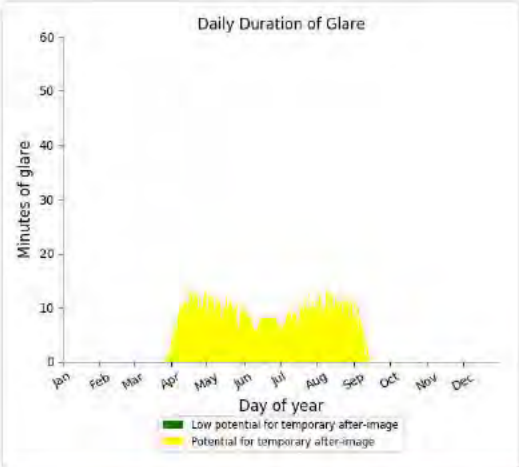


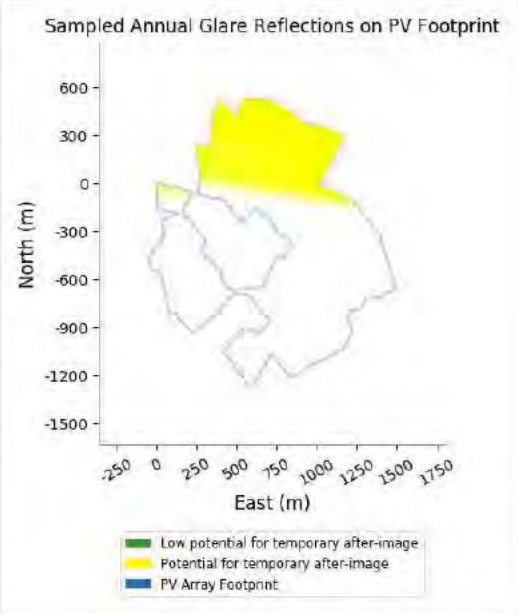


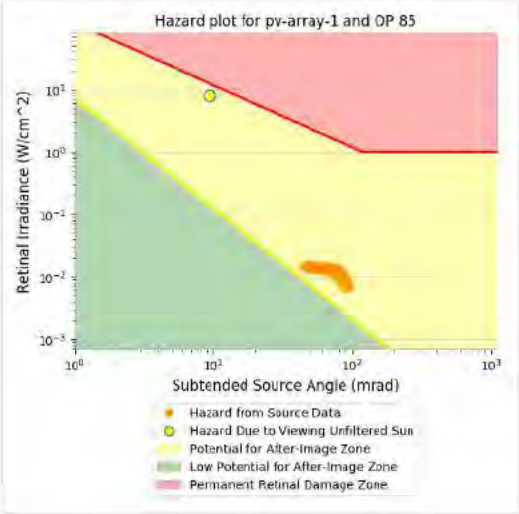
PV array 1 - OP Receptor (OP 85)

PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 1,546 minutes of "yellow" glare with potential to cause temporary after-image.



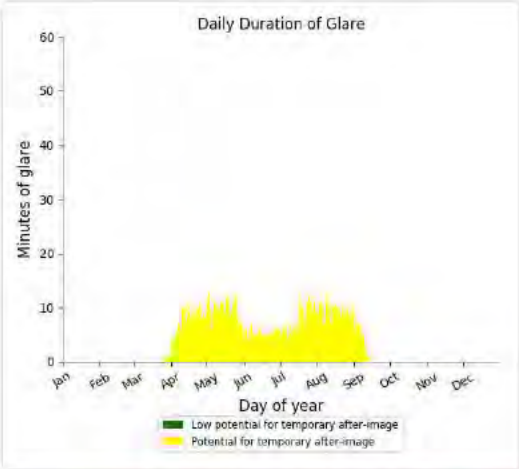


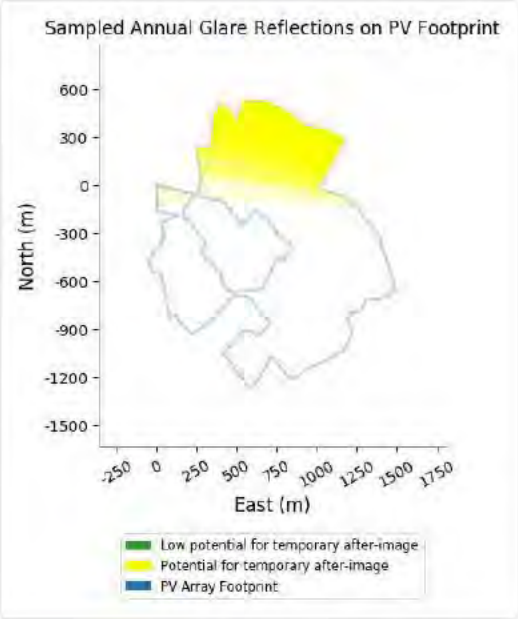


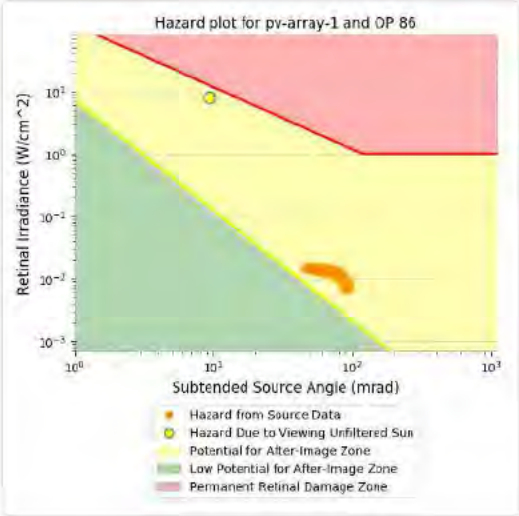
PV array 1 - OP Receptor (OP 86)

PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 1,309 minutes of "yellow" glare with potential to cause temporary after-image.



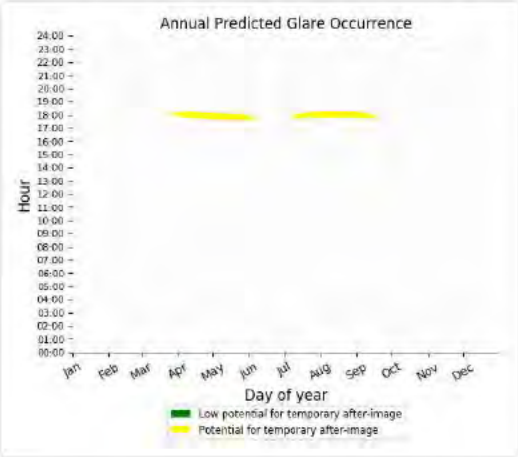


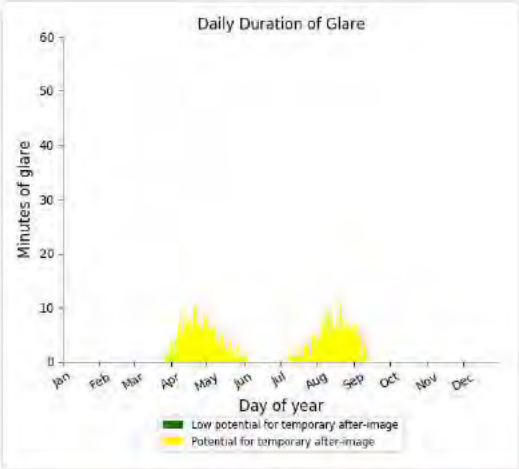


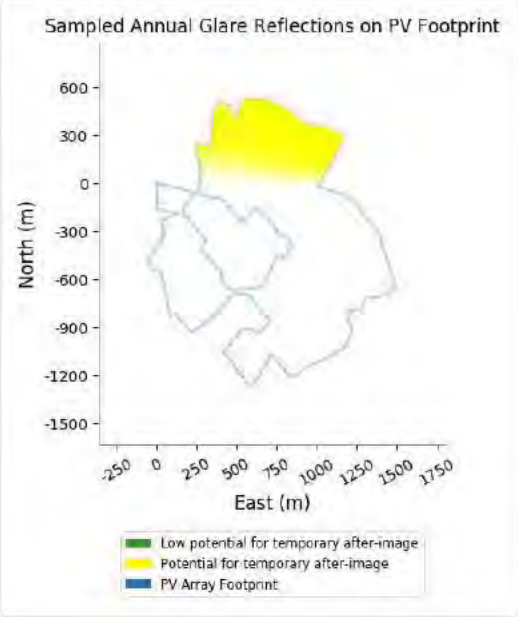
PV array 1 - OP Receptor (OP 87)

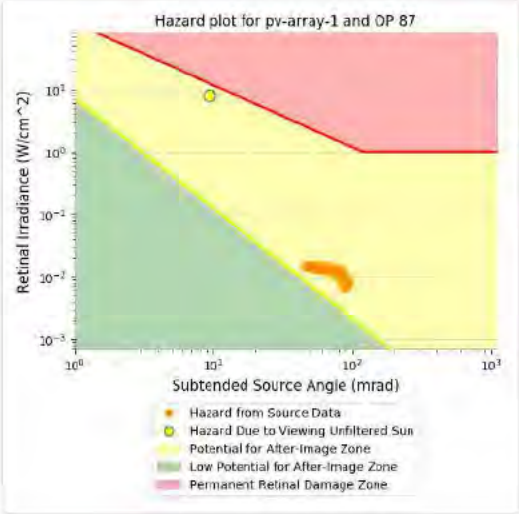
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 631 minutes of "yellow" glare with potential to cause temporary after-image.





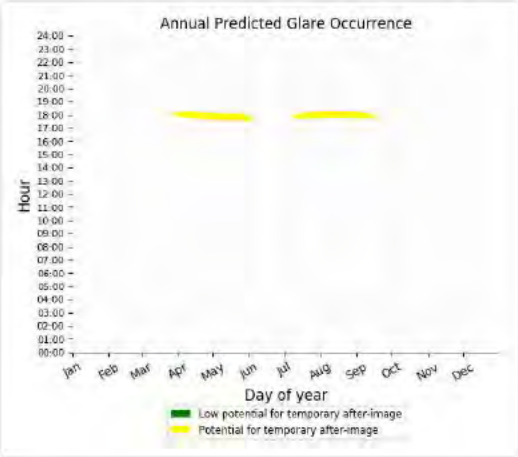


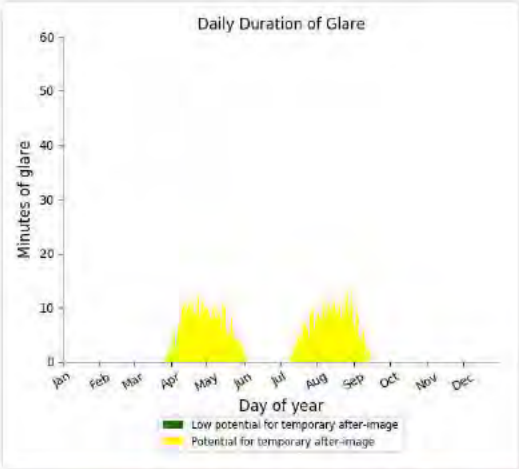


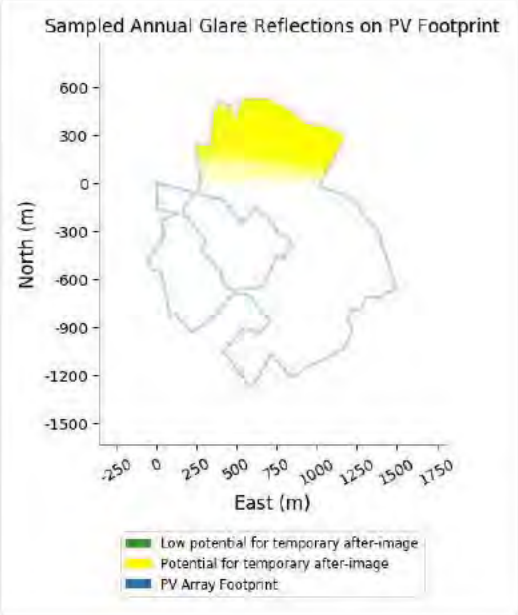
PV array 1 - OP Receptor (OP 88)

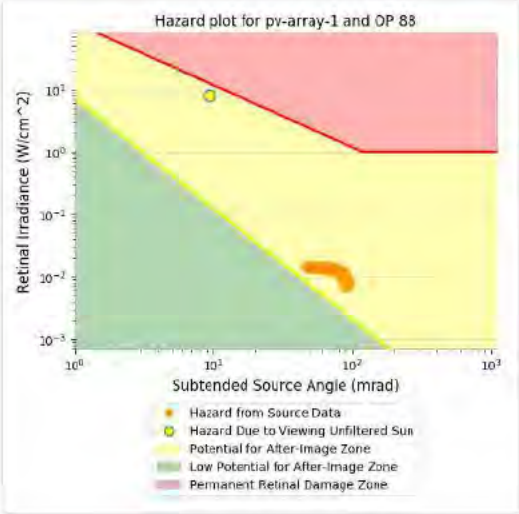
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 960 minutes of "yellow" glare with potential to cause temporary after-image.





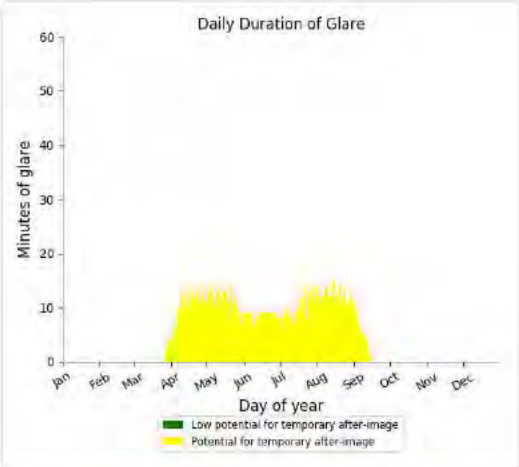


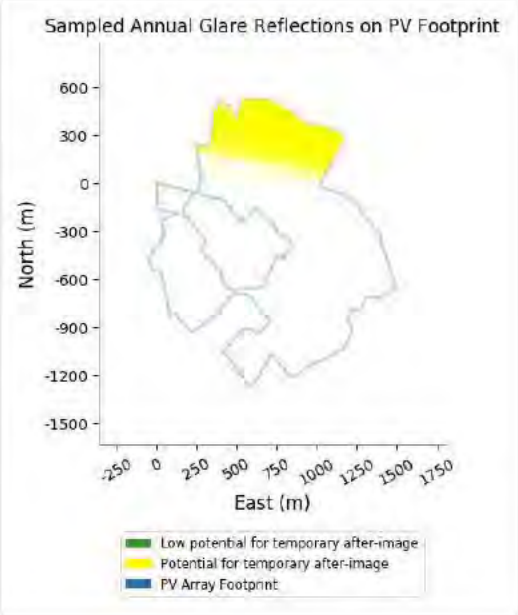


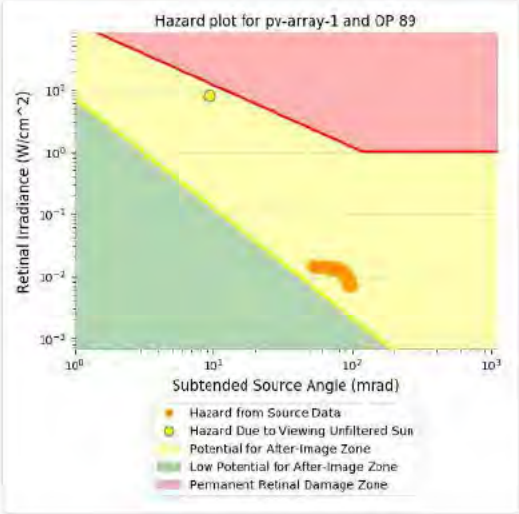
PV array 1 - OP Receptor (OP 89)

PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 1,716 minutes of "yellow" glare with potential to cause temporary after-image.



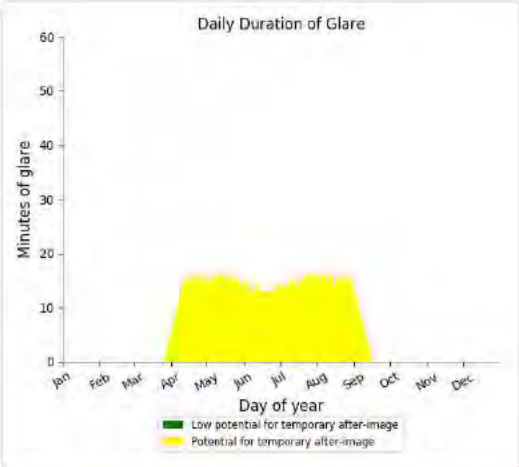


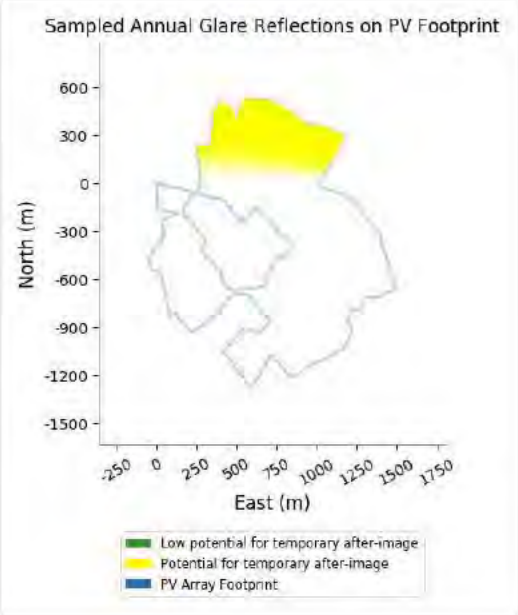


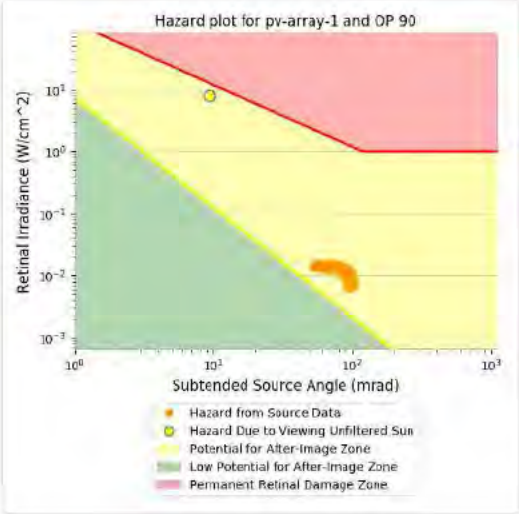
PV array 1 - OP Receptor (OP 90)

PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 2,343 minutes of "yellow" glare with potential to cause temporary after-image.



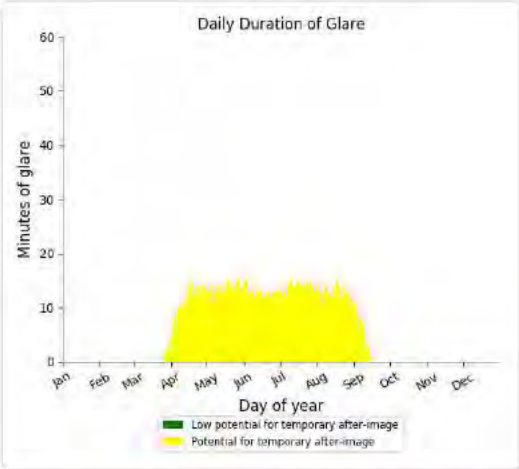


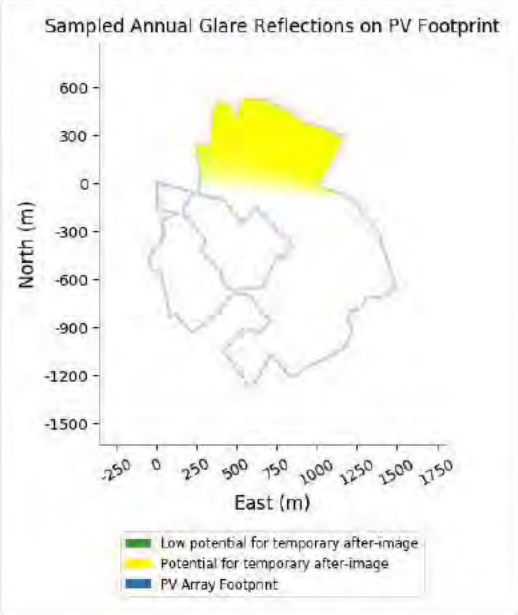


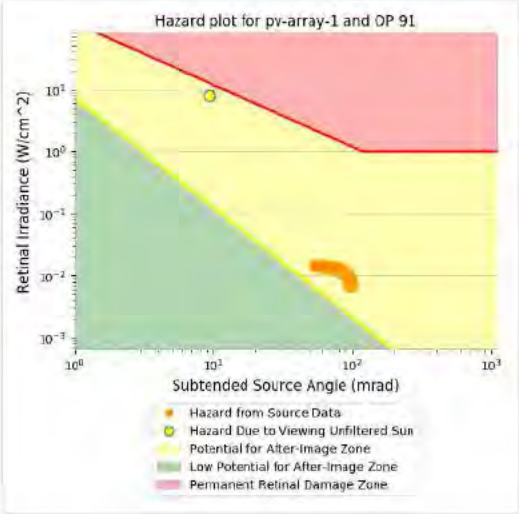
PV array 1 - OP Receptor (OP 91)

PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 2,078 minutes of "yellow" glare with potential to cause temporary after-image.



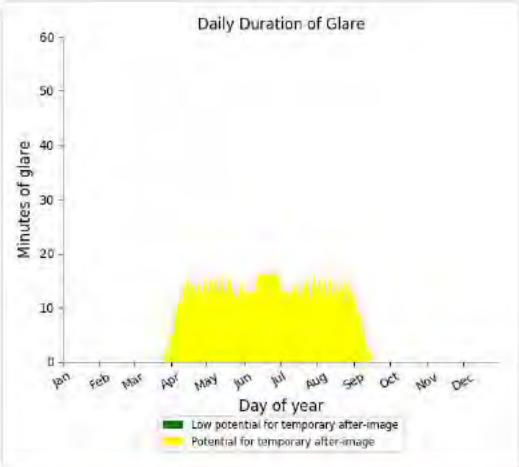


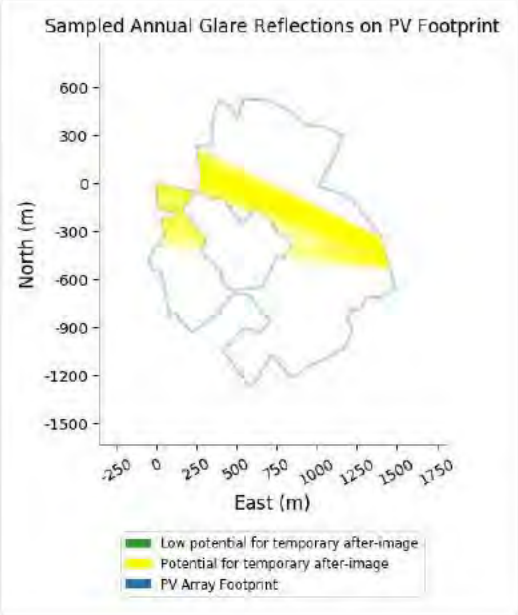


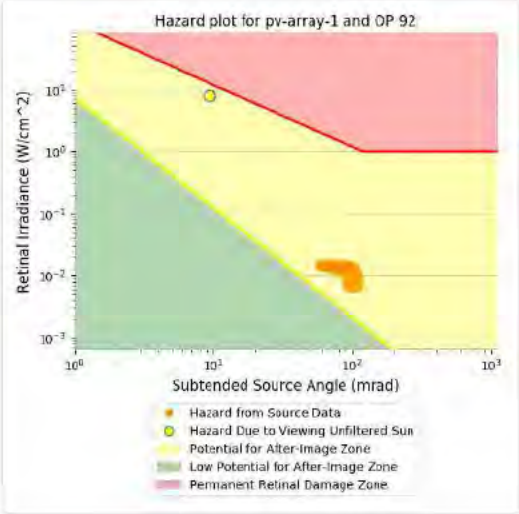
PV array 1 - OP Receptor (OP 92)

PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 2,180 minutes of "yellow" glare with potential to cause temporary after-image.



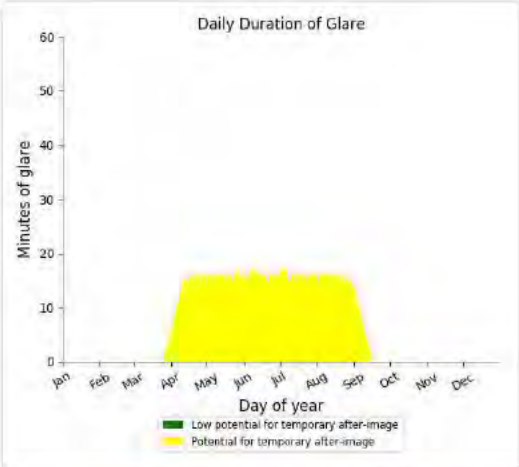


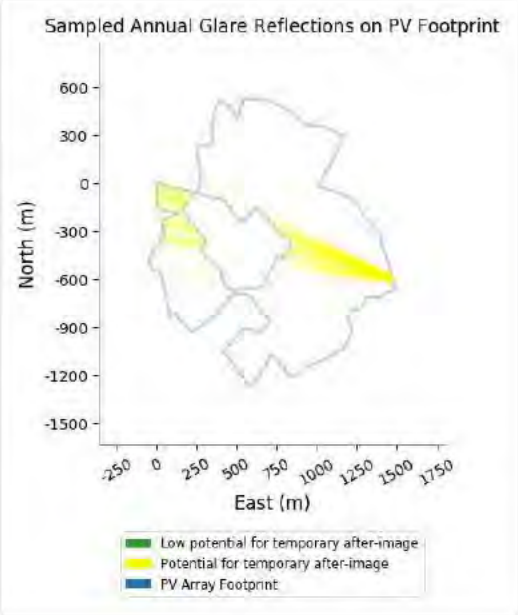


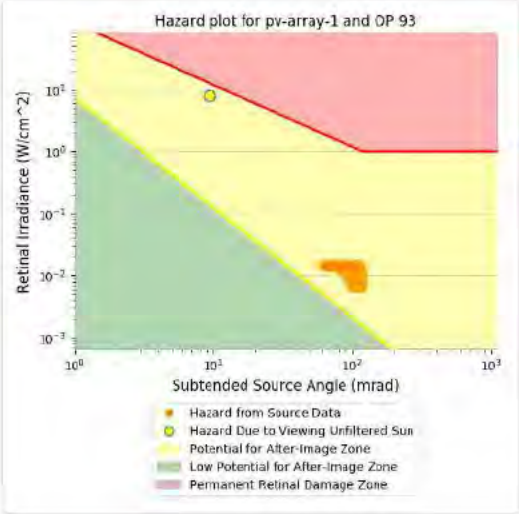
PV array 1 - OP Receptor (OP 93)

PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 2,480 minutes of "yellow" glare with potential to cause temporary after-image.



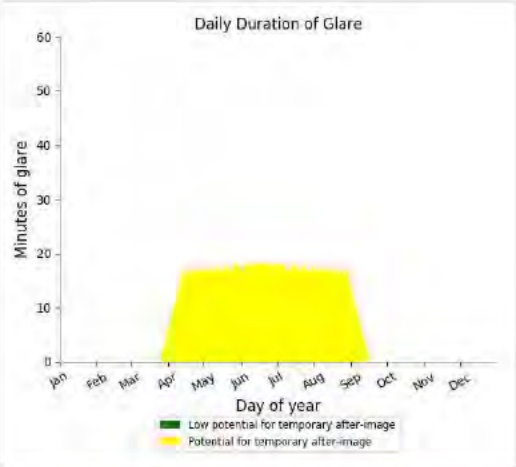


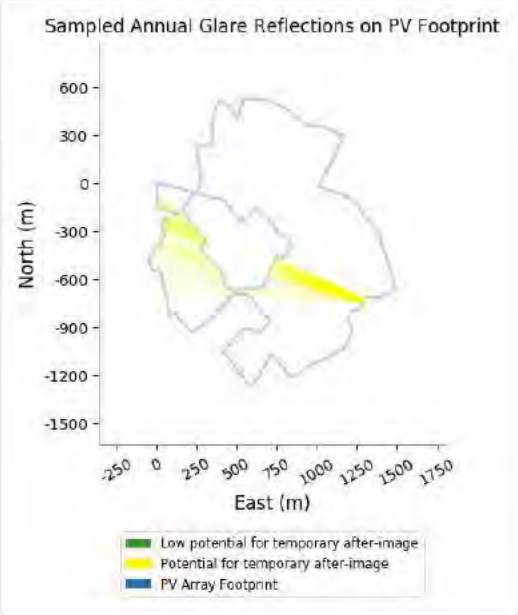


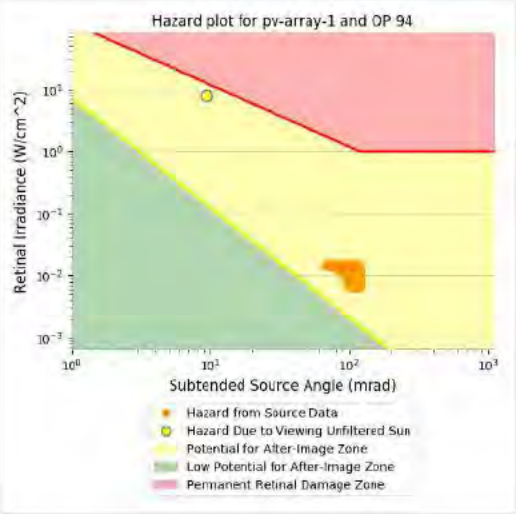
PV array 1 - OP Receptor (OP 94)

PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 2,683 minutes of "yellow" glare with potential to cause temporary after-image.



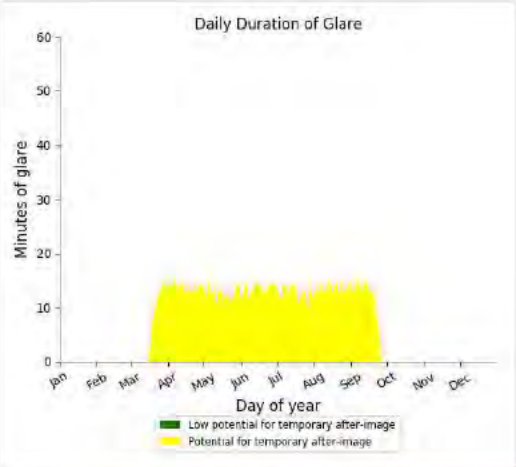


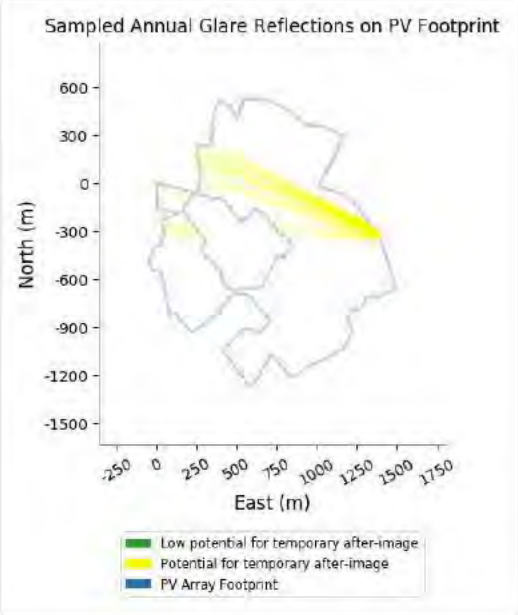


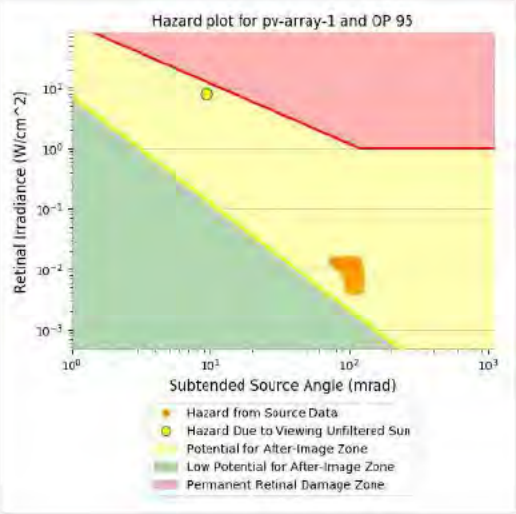
PV array 1 - OP Receptor (OP 95)

PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 2,495 minutes of "yellow" glare with potential to cause temporary after-image.



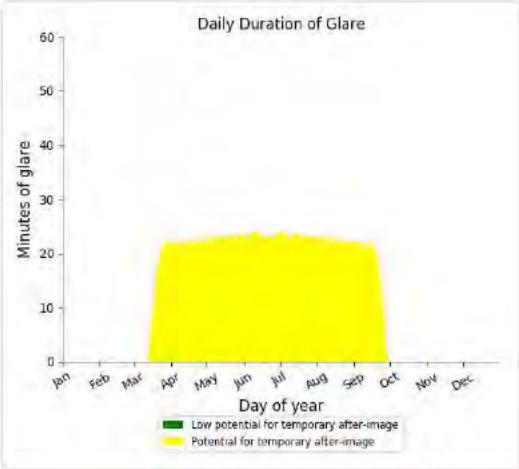


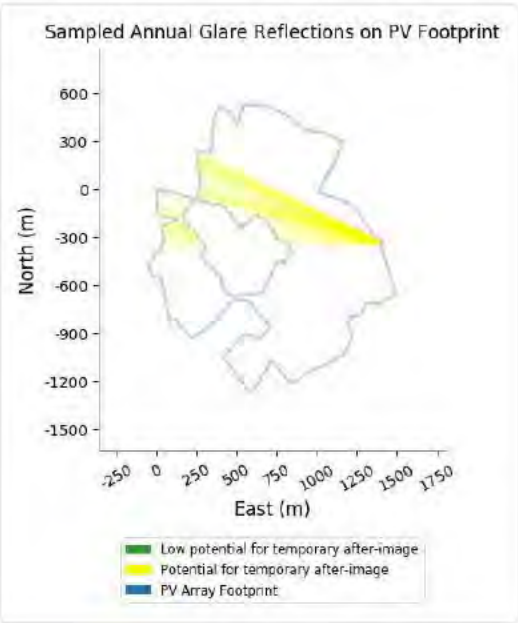


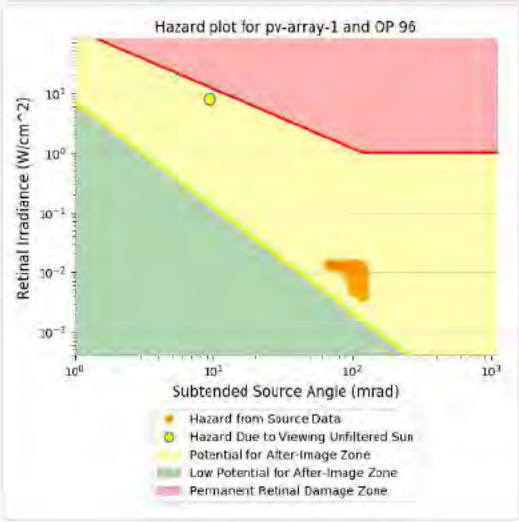
PV array 1 - OP Receptor (OP 96)

PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 4,302 minutes of "yellow" glare with potential to cause temporary after-image.



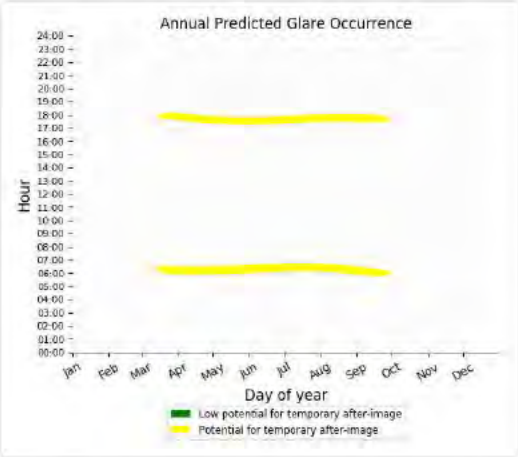


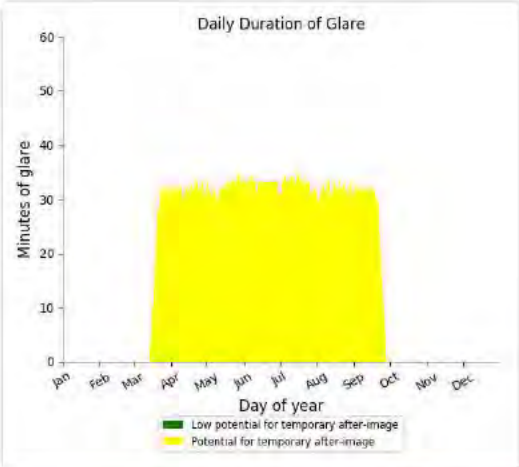


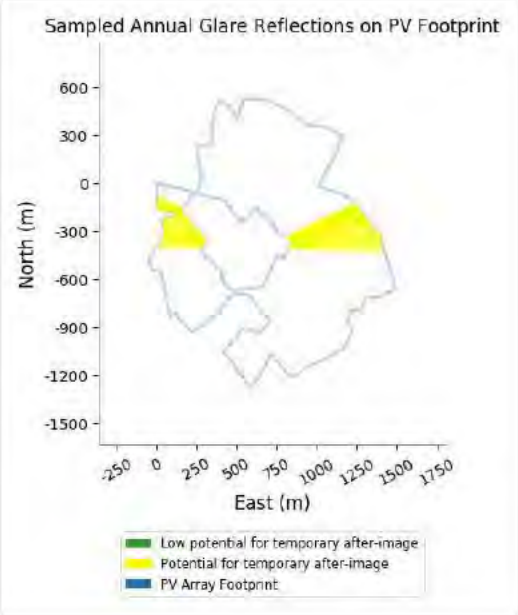
PV array 1 - OP Receptor (OP 97)

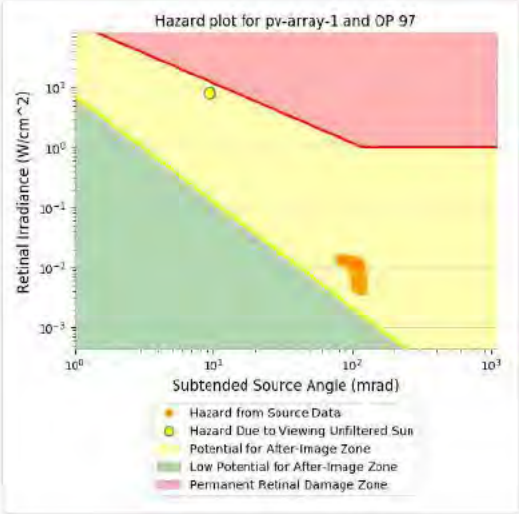
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 6,114 minutes of "yellow" glare with potential to cause temporary after-image.





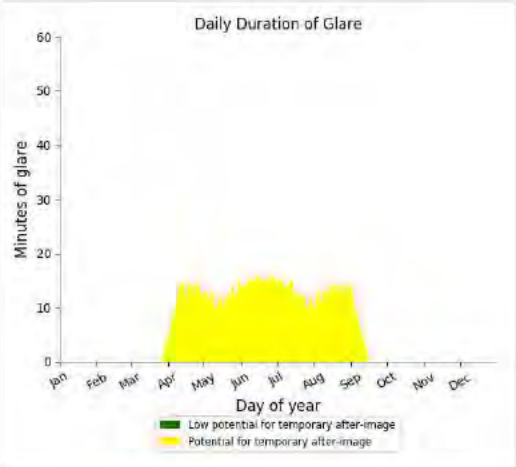


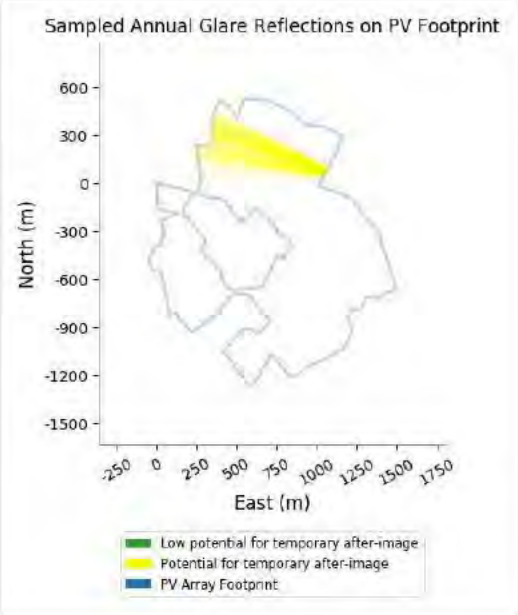


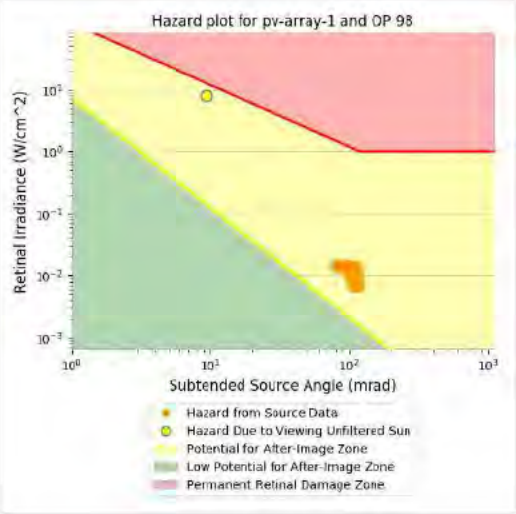
PV array 1 - OP Receptor (OP 98)

PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 2,112 minutes of "yellow" glare with potential to cause temporary after-image.



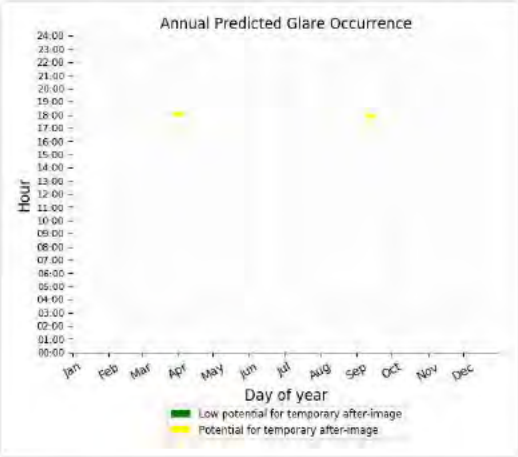


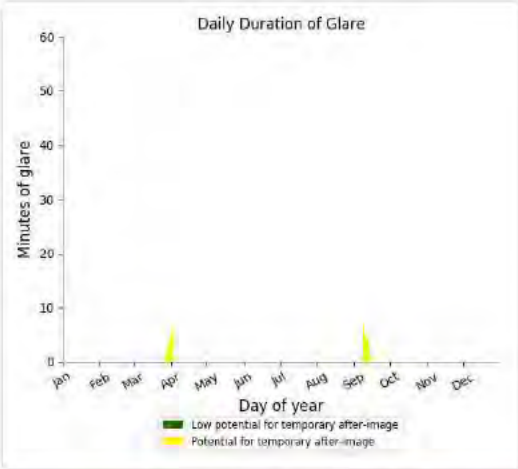


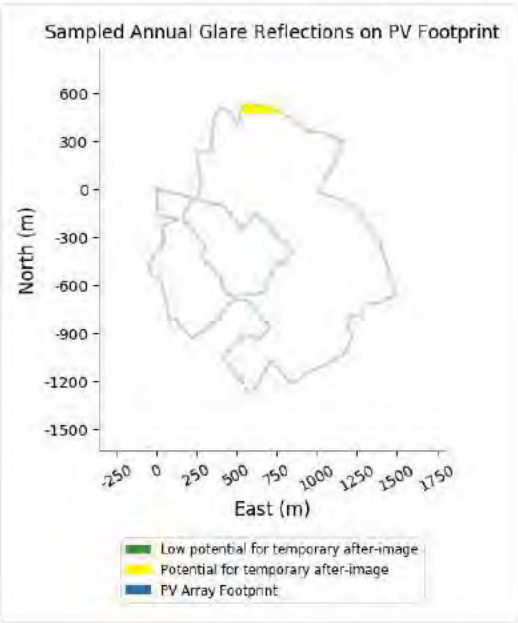
PV array 1 - OP Receptor (OP 99)

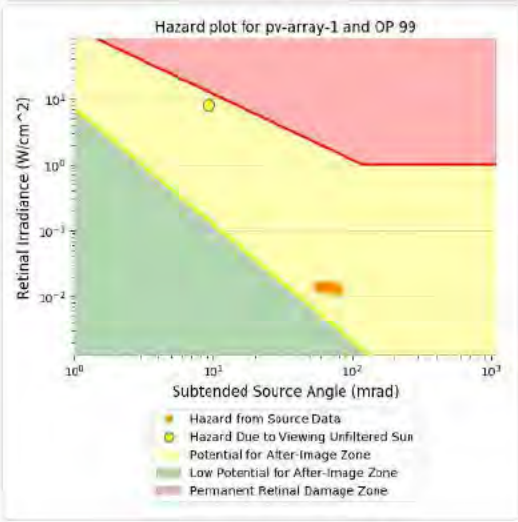
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 57 minutes of "yellow" glare with potential to cause temporary after-image.









PV array 2 potential temporary after-image

Component	Green glare (min)	Yellow glare (min)
OP: OP 1	0	0
OP: OP 2	0	0
OP: OP 3	0	0
OP: OP 4	0	0
OP: OP 5	0	0
OP: OP 6	0	0
OP: OP 7	0	0
OP: OP 8	0	0
OP: OP 9	0	0
OP: OP 10	0	0
OP: OP 11	0	0
OP: OP 12	0	0
OP: OP 13	0	0

OP: OP 14	0	0
OP: OP 15	0	154
OP: OP 16	0	237
OP: OP 17	0	248
OP: OP 18	0	280
OP: OP 19	0	295
OP: OP 20	0	359
OP: OP 21	0	1183
OP: OP 22	0	1401
OP: OP 23	0	1668
OP: OP 24	0	359
OP: OP 25	0	0
OP: OP 26	0	2370
OP: OP 27	0	1809
OP: OP 28	0	1863
OP: OP 29	0	2135
OP: OP 30	0	1840
OP: OP 31	0	3462
OP: OP 32	0	3953
OP: OP 33	0	2872
OP: OP 34	0	945
OP: OP 35	0	3418
OP: OP 36	0	3082
OP: OP 37	0	3765
OP: OP 38	0	7486
OP: OP 39	0	5243
OP: OP 40	0	6278
OP: OP 41	0	4002
OP: OP 42	0	3242
OP: OP 43	0	725
OP: OP 44	0	1083
OP: OP 45	0	499
OP: OP 46	0	2663
OP: OP 47	0	4236
OP: OP 48	0	1191
OP: OP 49	0	2970
OP: OP 50	0	3149
OP: OP 51	0	3024
OP: OP 52	0	2914
OP: OP 53	0	0
OP: OP 54	0	1691
OP: OP 55	0	1066
OP: OP 56	0	2711
OP: OP 57	0	3481
OP: OP 58	0	2992
OP: OP 59	0	2167
OP: OP 60	0	2206
OP: OP 61	0	1204
OP: OP 62	0	0
OP: OP 63	0	0
OP: OP 64	0	2291
OP: OP 65	0	2441

OP: OP 66	0	2118
OP: OP 67	0	1841
OP: OP 68	0	2253
OP: OP 69	0	2456
OP: OP 70	0	2565
OP: OP 71	0	2388
OP: OP 72	0	2234
OP: OP 73	0	2651
OP: OP 74	0	2766
OP: OP 75	0	2
OP: OP 76	0	527
OP: OP 77	0	515
OP: OP 78	0	3177
OP: OP 79	0	3185
OP: OP 80	0	1925
OP: OP 81	0	9
OP: OP 82	0	0
OP: OP 83	0	0
OP: OP 84	0	0
OP: OP 85	0	0
OP: OP 86	0	0
OP: OP 87	0	0
OP: OP 88	0	0
OP: OP 89	0	0
OP: OP 90	0	0
OP: OP 91	0	0
OP: OP 92	0	818
OP: OP 93	0	3290
OP: OP 94	0	5451
OP: OP 95	0	0
OP: OP 96	0	0
OP: OP 97	0	0
OP: OP 98	0	0
OP: OP 99	0	0

PV array 2 - OP Receptor (OP 1)

No glare found

PV array 2 - OP Receptor (OP 2)

No glare found

PV array 2 - OP Receptor (OP 3)

No glare found

PV array 2 - OP Receptor (OP 4)

No glare found

PV array 2 - OP Receptor (OP 5)

No glare found

PV array 2 - OP Receptor (OP 6)

No glare found

PV array 2 - OP Receptor (OP 7)

No glare found

PV array 2 - OP Receptor (OP 8)

No glare found

PV array 2 - OP Receptor (OP 9)

No glare found

PV array 2 - OP Receptor (OP 10)

No glare found

PV array 2 - OP Receptor (OP 11)

No glare found

PV array 2 - OP Receptor (OP 12)

No glare found

PV array 2 - OP Receptor (OP 13)

No glare found

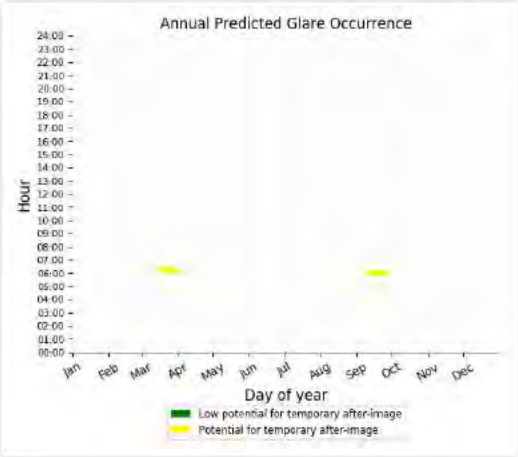
PV array 2 - OP Receptor (OP 14)

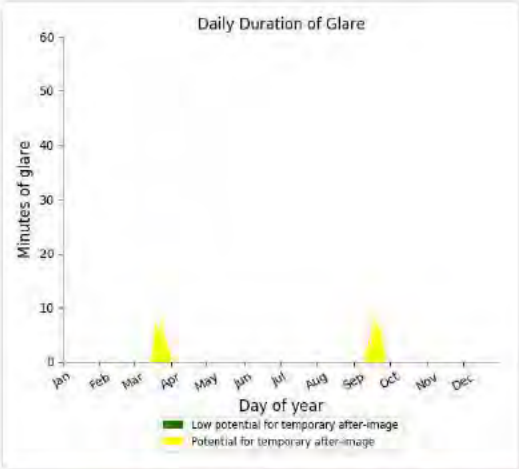
No glare found

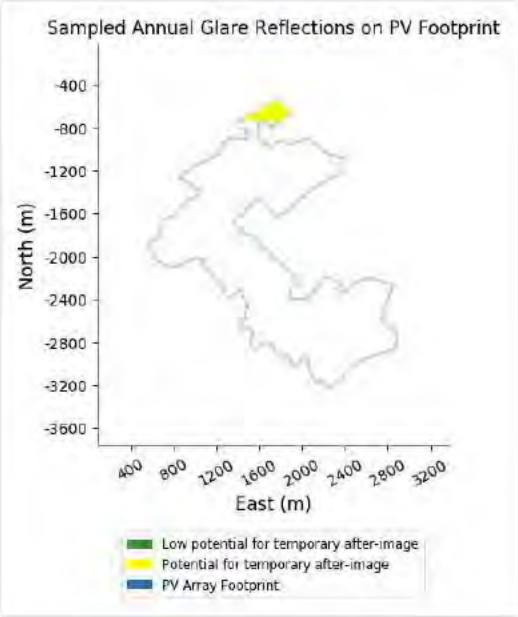
PV array 2 - OP Receptor (OP 15)

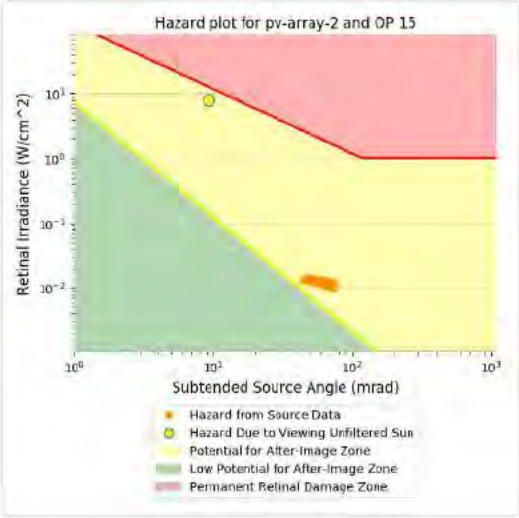
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 154 minutes of "yellow" glare with potential to cause temporary after-image.





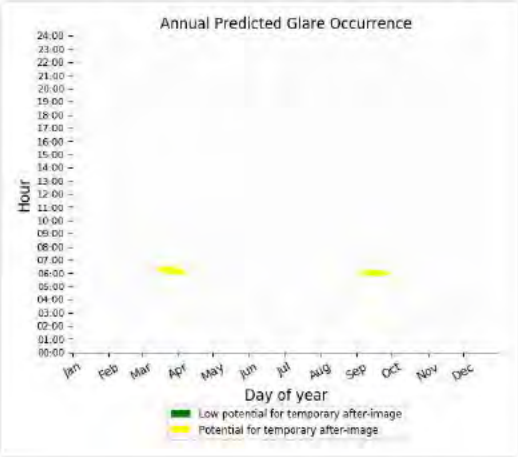


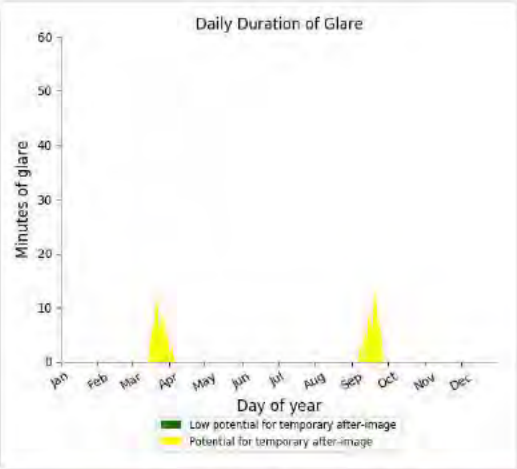


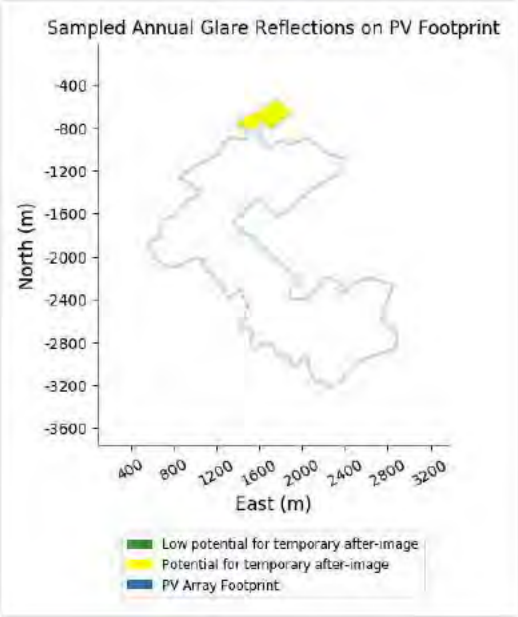
PV array 2 - OP Receptor (OP 16)

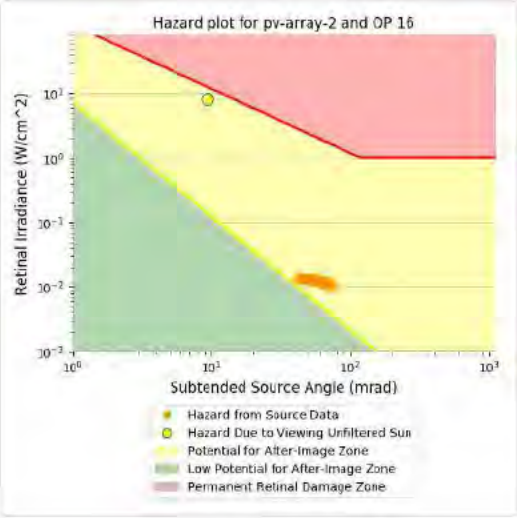
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 237 minutes of "yellow" glare with potential to cause temporary after-image.





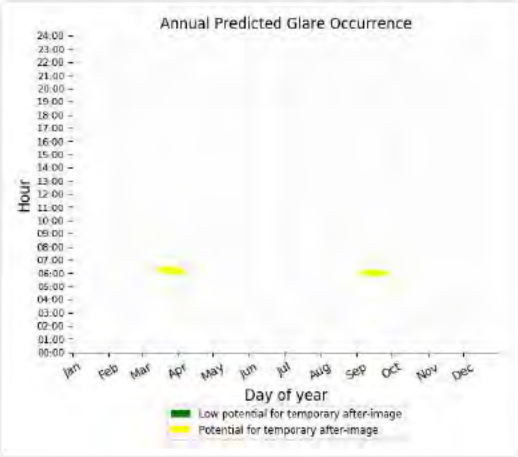


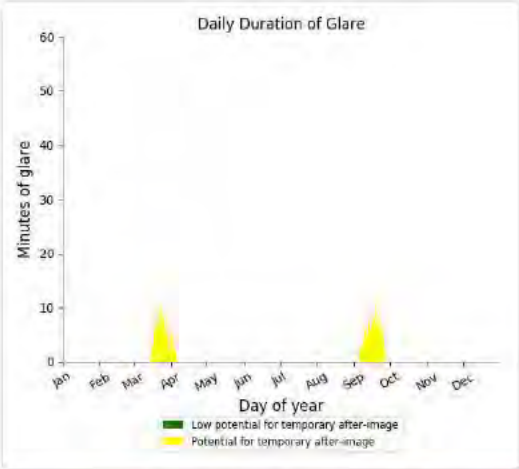


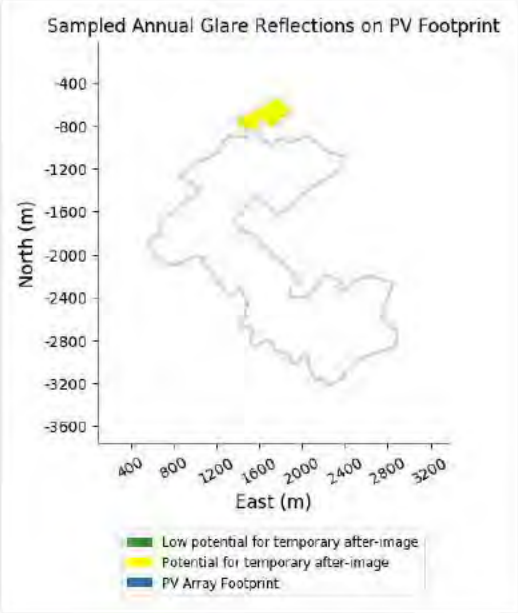
PV array 2 - OP Receptor (OP 17)

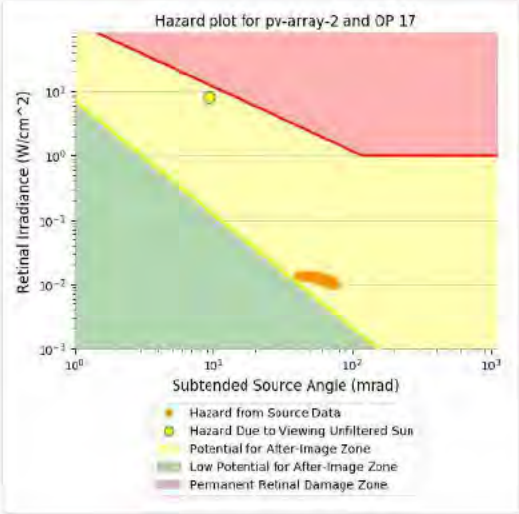
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 248 minutes of "yellow" glare with potential to cause temporary after-image.





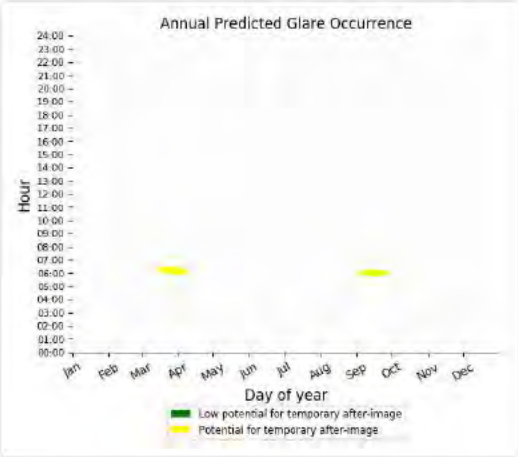


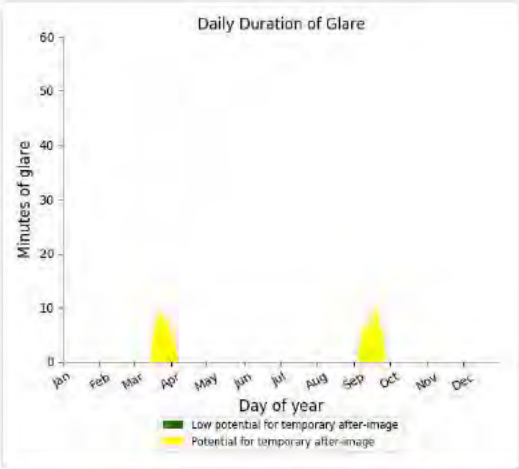


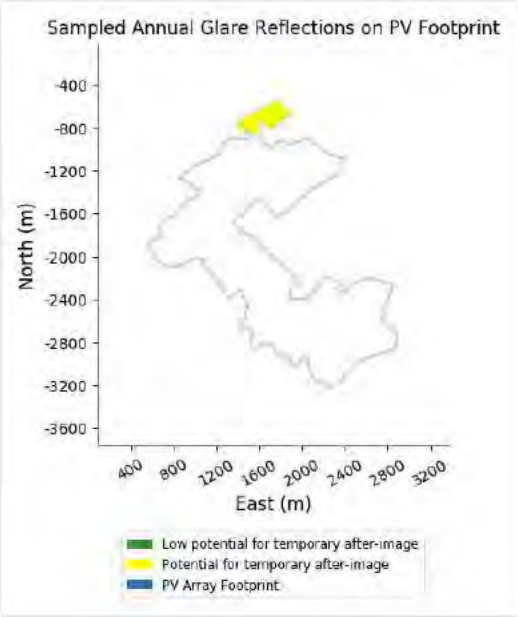
PV array 2 - OP Receptor (OP 18)

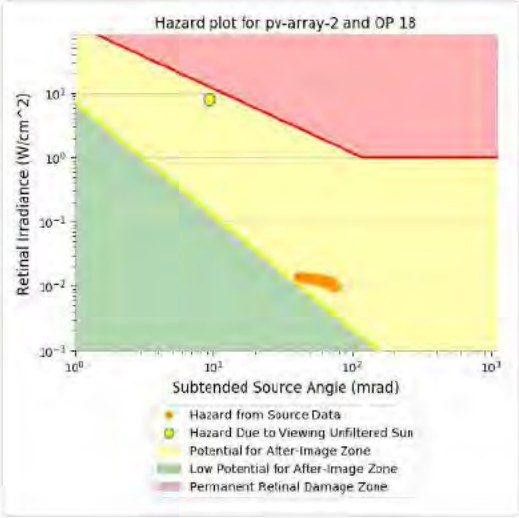
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 280 minutes of "yellow" glare with potential to cause temporary after-image.





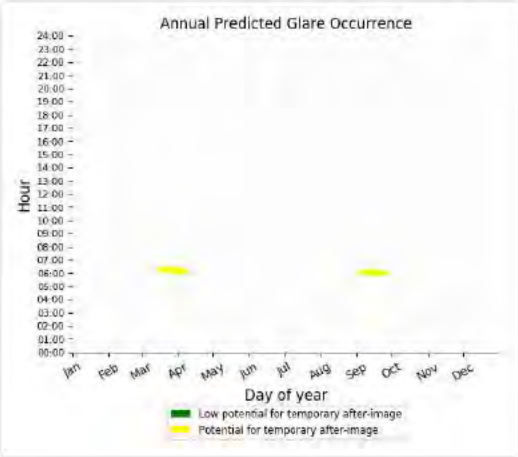


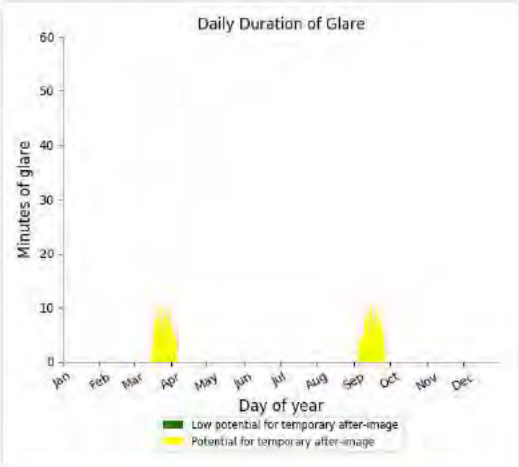


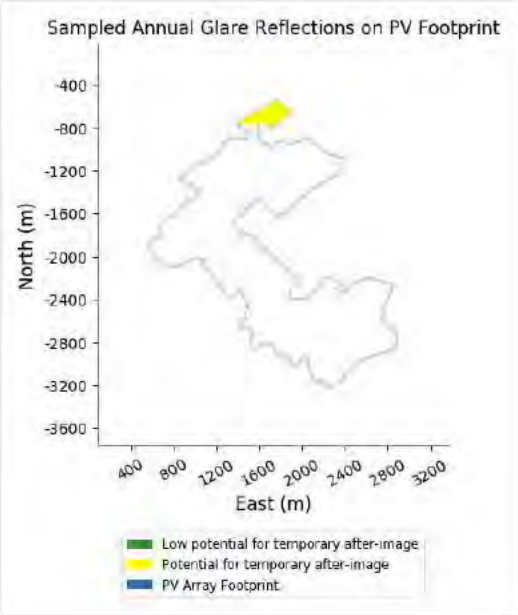
PV array 2 - OP Receptor (OP 19)

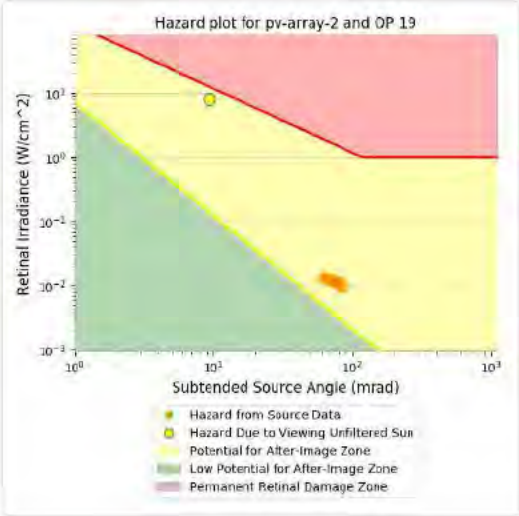
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 295 minutes of "yellow" glare with potential to cause temporary after-image.





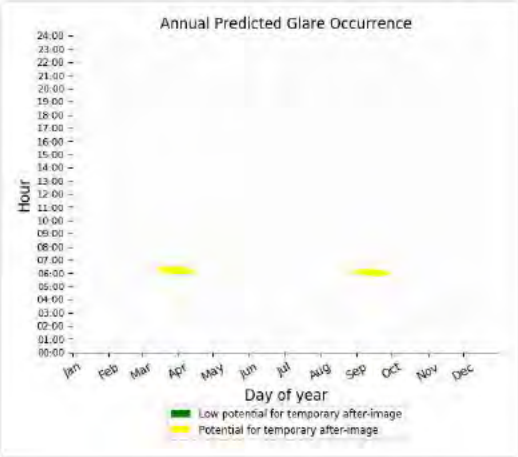


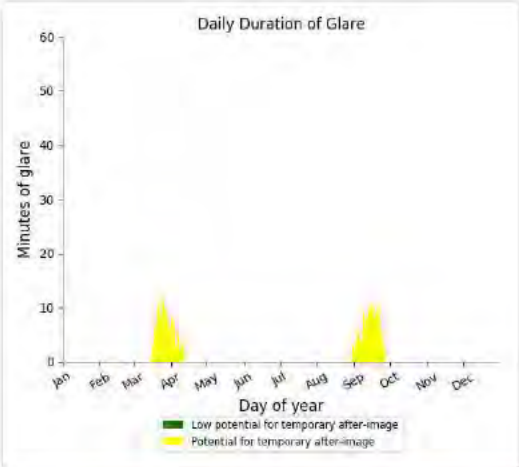


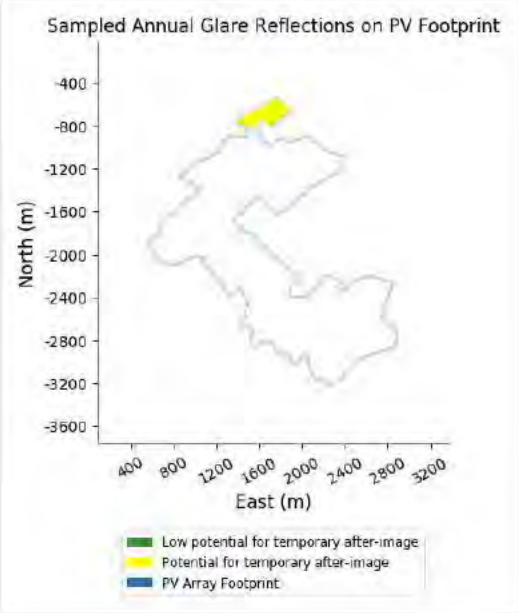
PV array 2 - OP Receptor (OP 20)

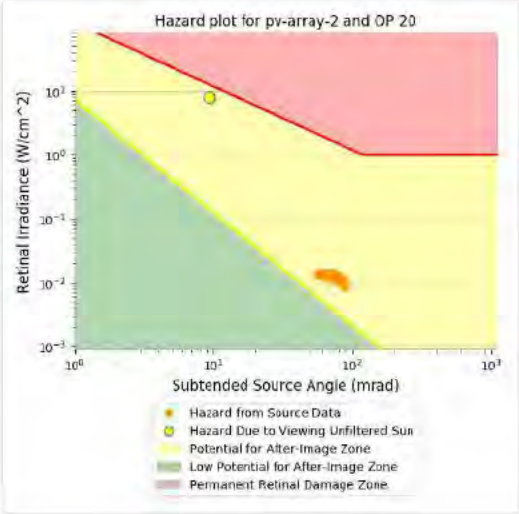
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 359 minutes of "yellow" glare with potential to cause temporary after-image.





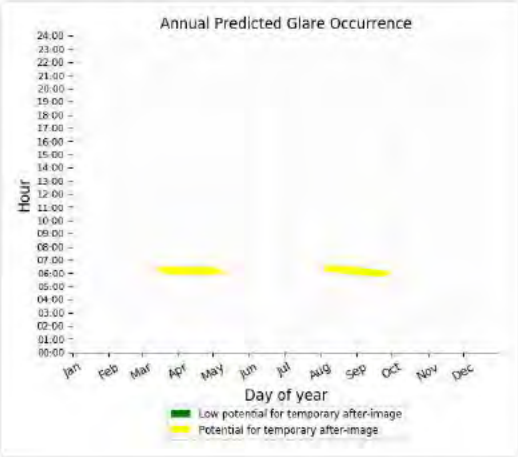


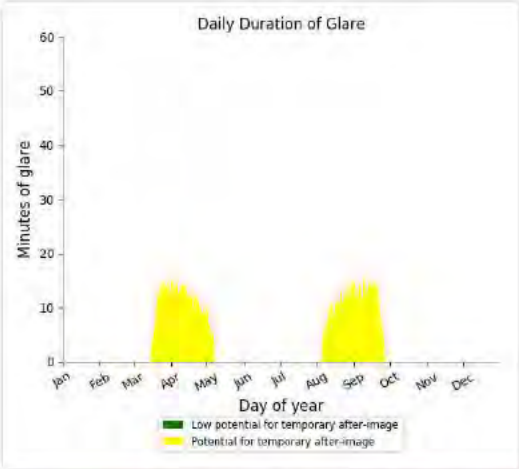


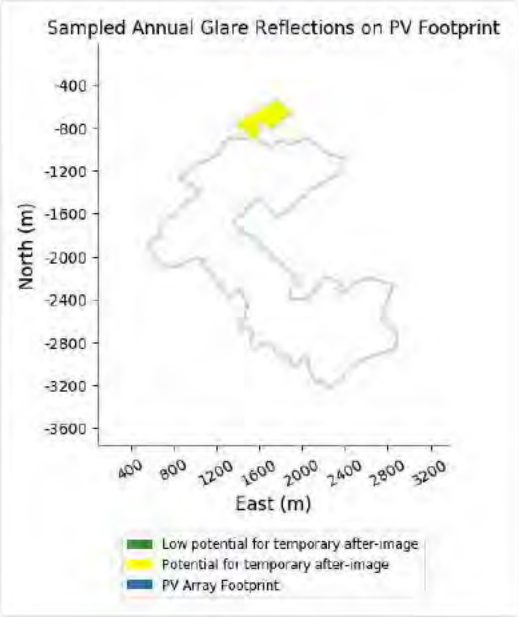
PV array 2 - OP Receptor (OP 21)

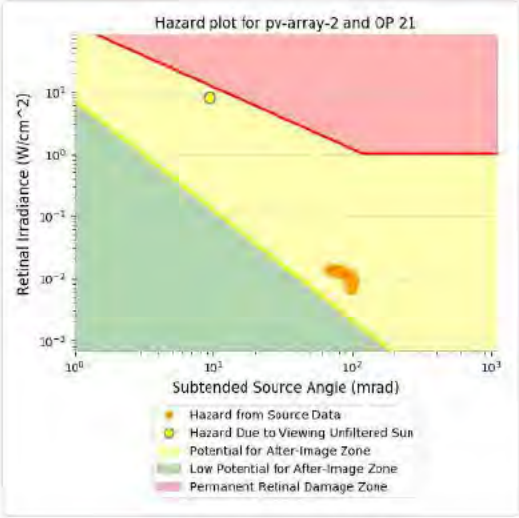
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 1,183 minutes of "yellow" glare with potential to cause temporary after-image.





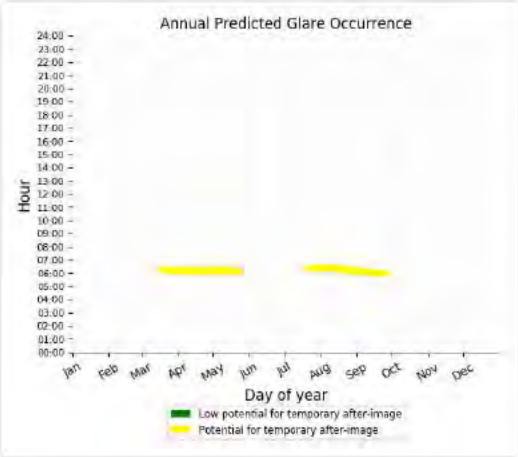


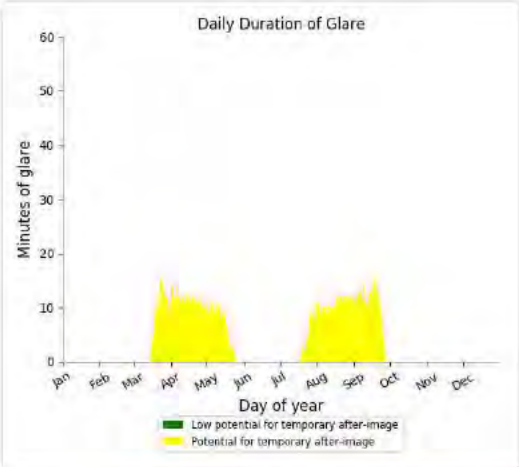


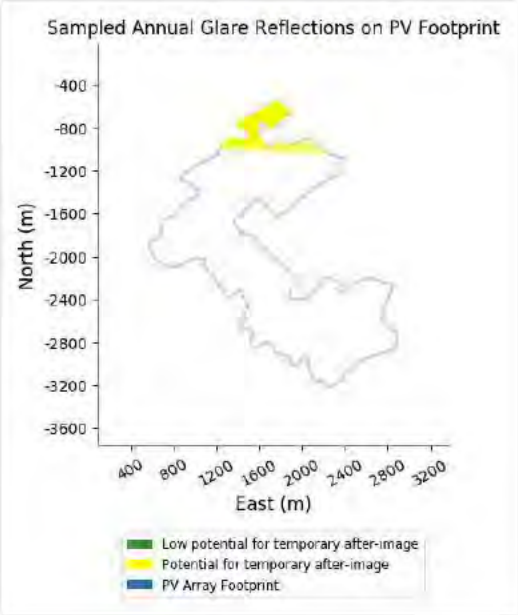
PV array 2 - OP Receptor (OP 22)

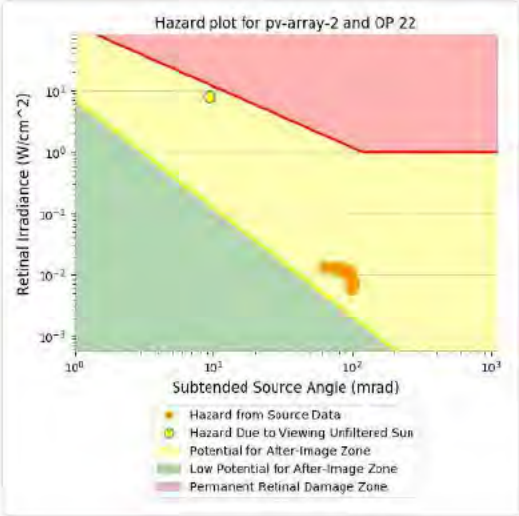
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 1,401 minutes of "yellow" glare with potential to cause temporary after-image.





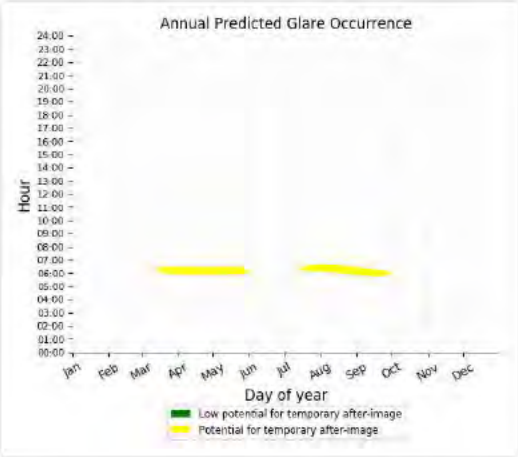


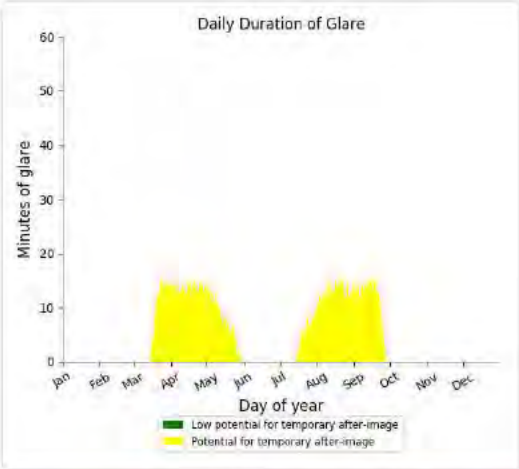


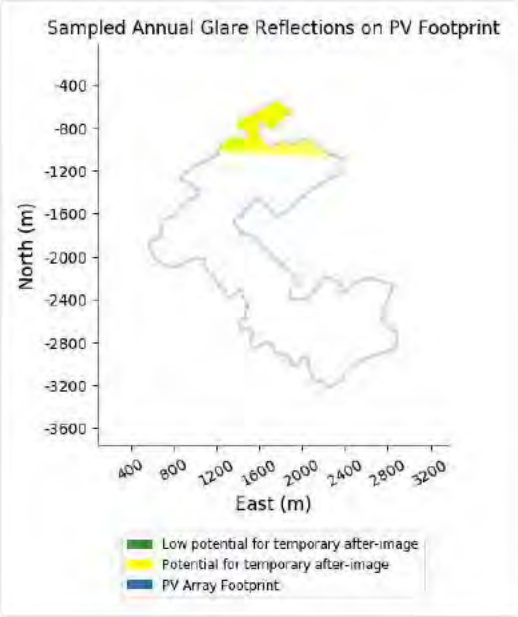
PV array 2 - OP Receptor (OP 23)

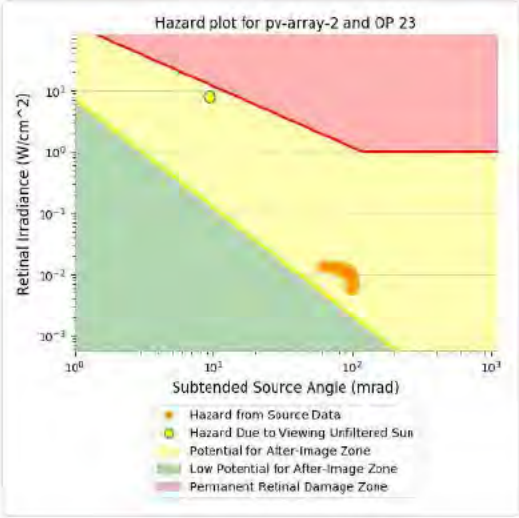
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 1,668 minutes of "yellow" glare with potential to cause temporary after-image.





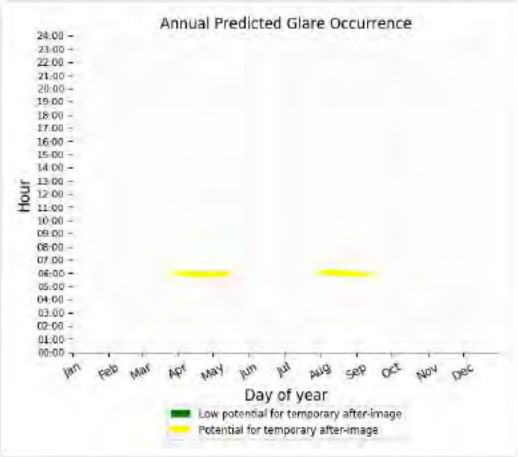


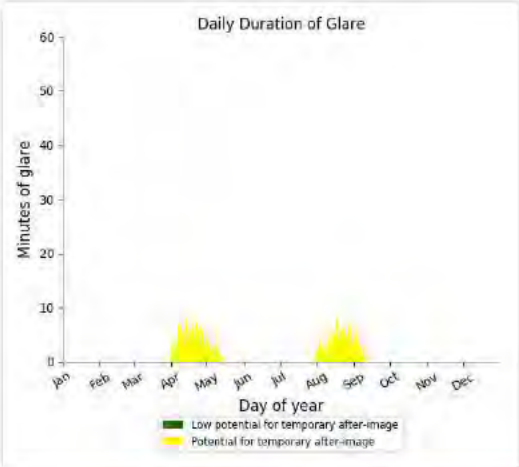


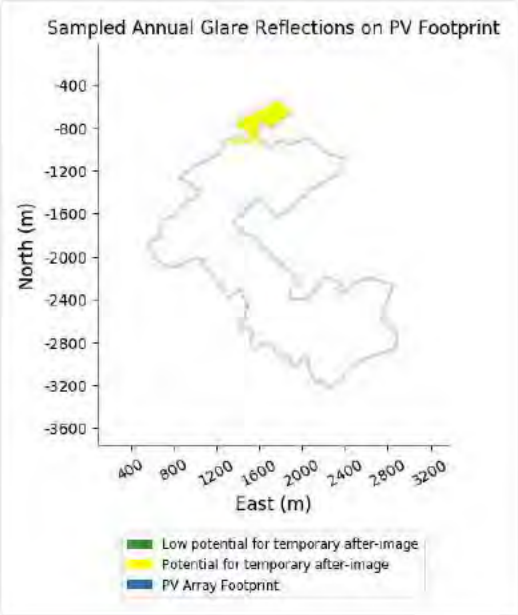
PV array 2 - OP Receptor (OP 24)

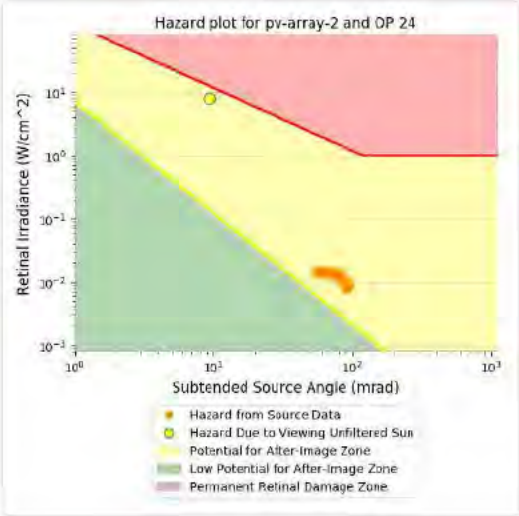
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 359 minutes of "yellow" glare with potential to cause temporary after-image.









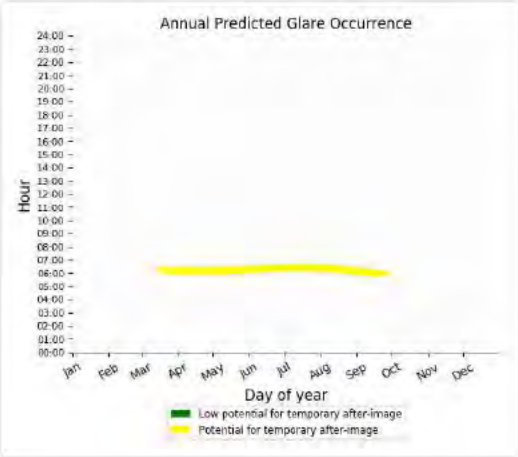
PV array 2 - OP Receptor (OP 25)

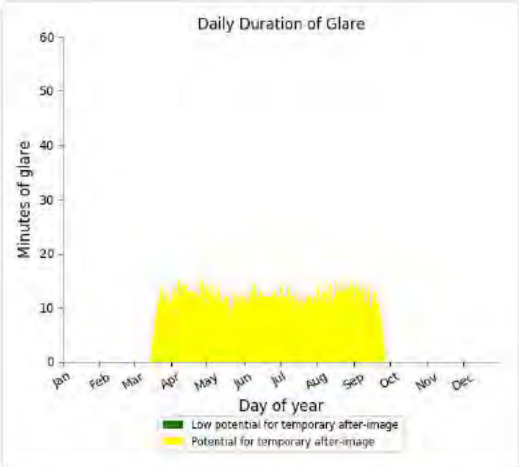
No glare found

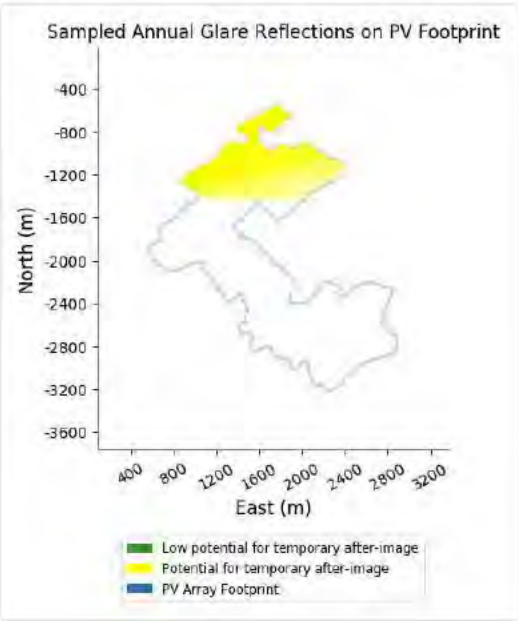
PV array 2 - OP Receptor (OP 26)

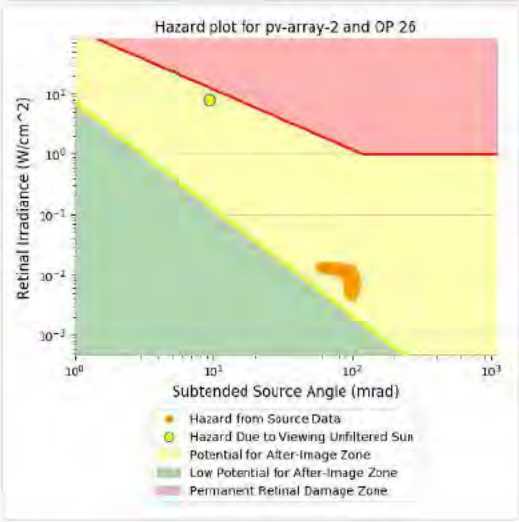
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 2,370 minutes of "yellow" glare with potential to cause temporary after-image.





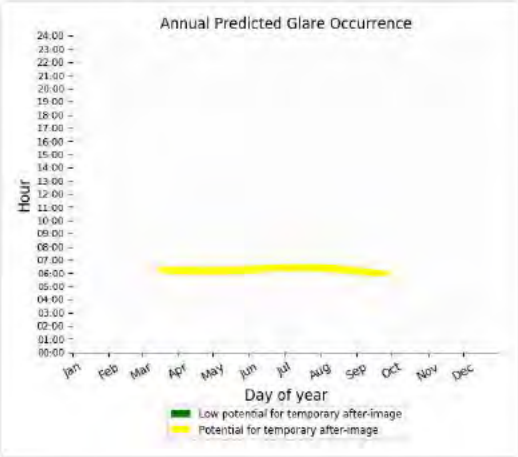


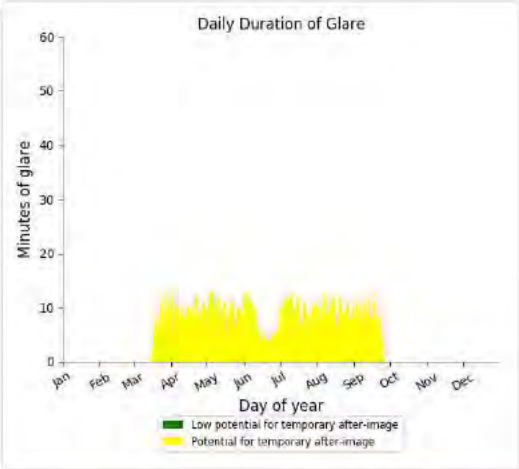


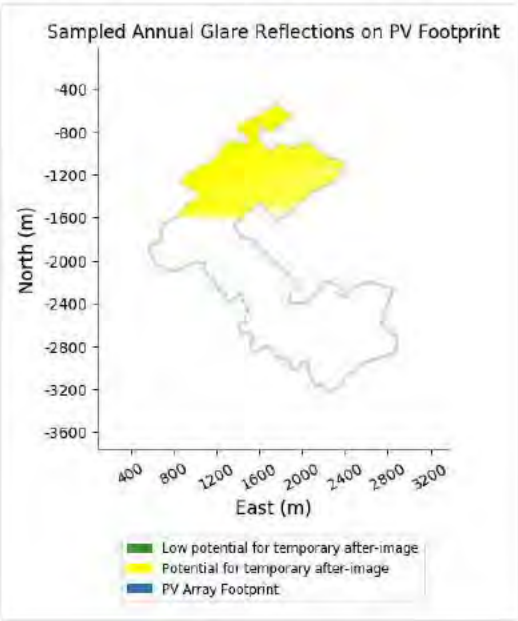
PV array 2 - OP Receptor (OP 27)

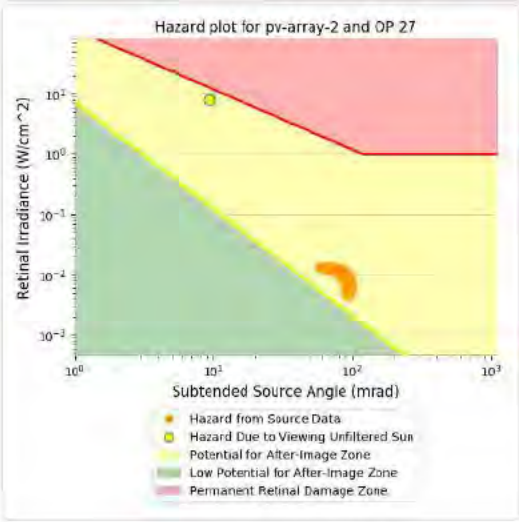
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 1,809 minutes of "yellow" glare with potential to cause temporary after-image.





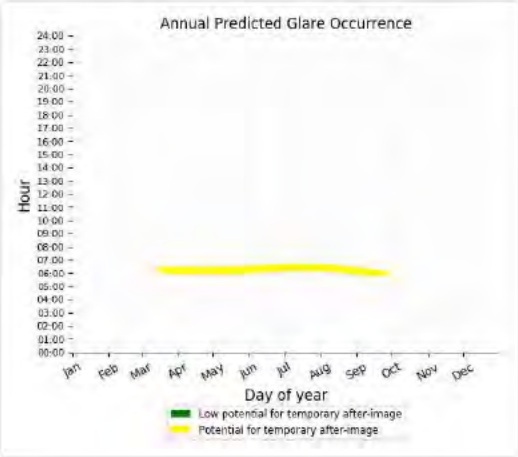


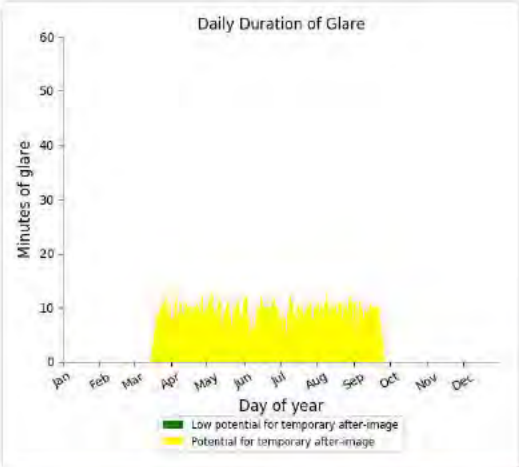


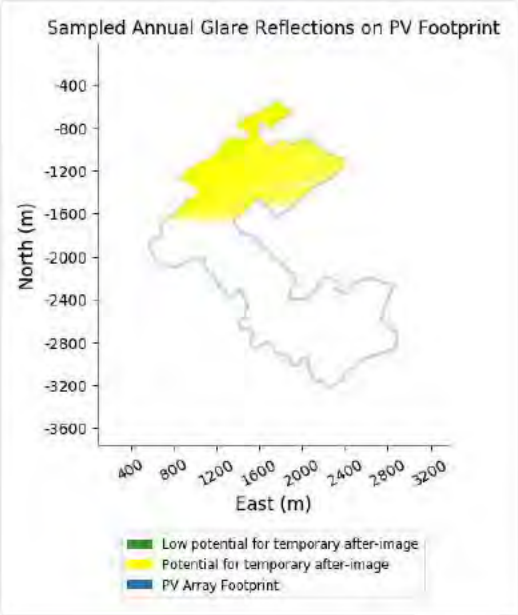
PV array 2 - OP Receptor (OP 28)

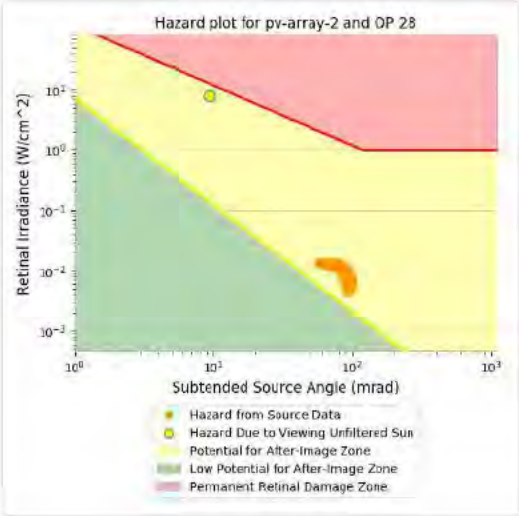
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 1,863 minutes of "yellow" glare with potential to cause temporary after-image.





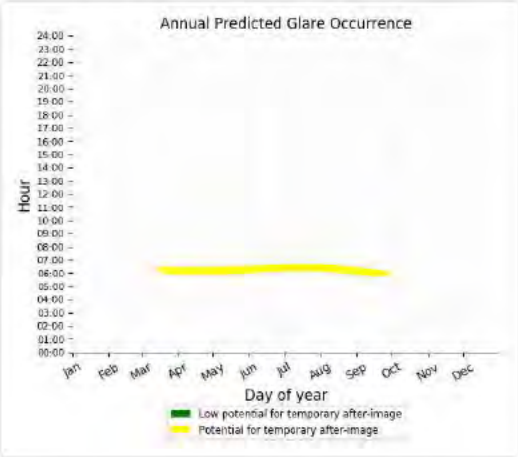


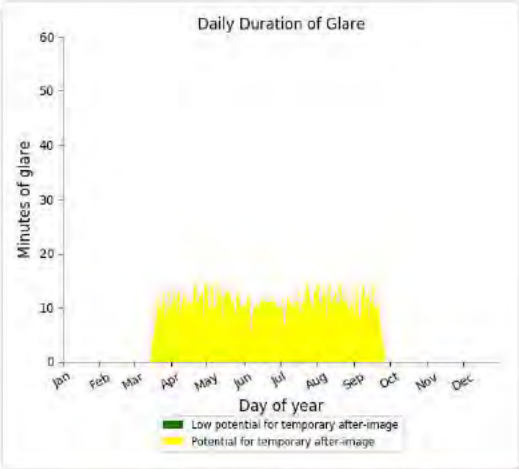


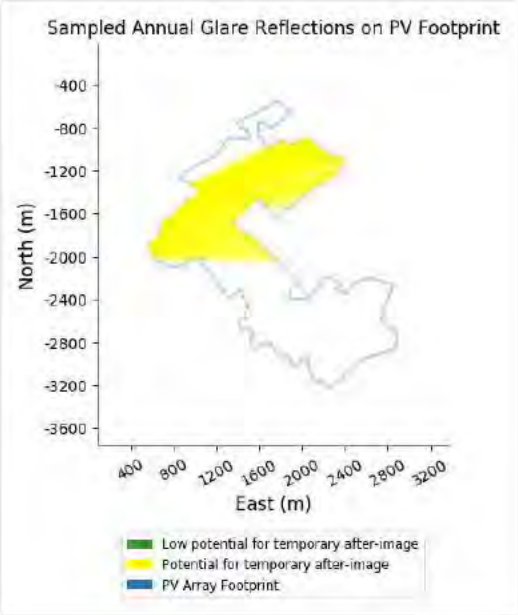
PV array 2 - OP Receptor (OP 29)

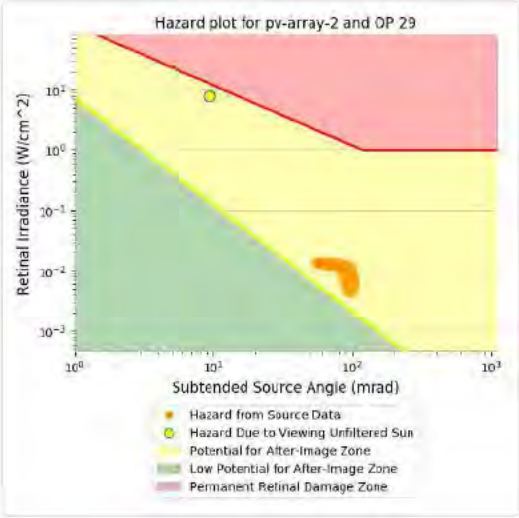
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 2,135 minutes of "yellow" glare with potential to cause temporary after-image.





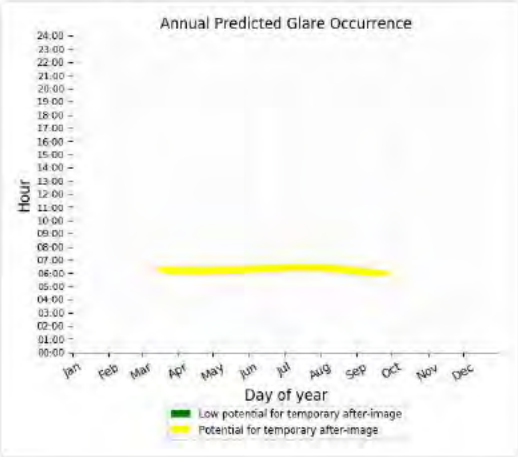


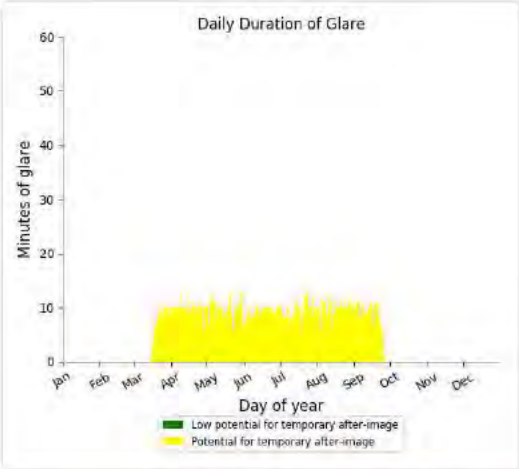


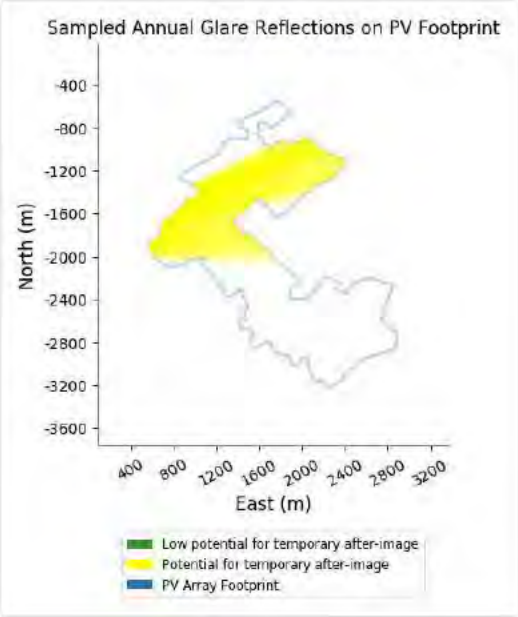
PV array 2 - OP Receptor (OP 30)

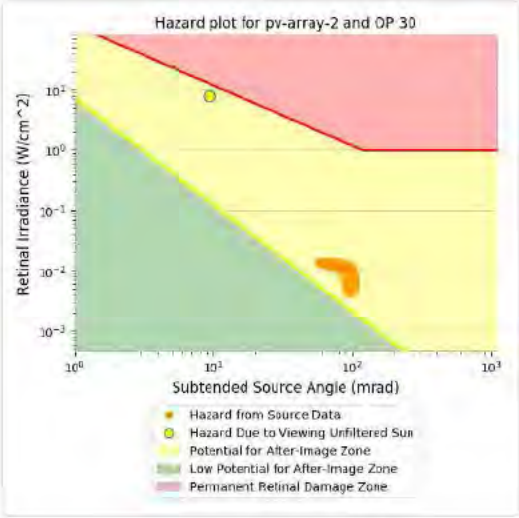
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 1,840 minutes of "yellow" glare with potential to cause temporary after-image.





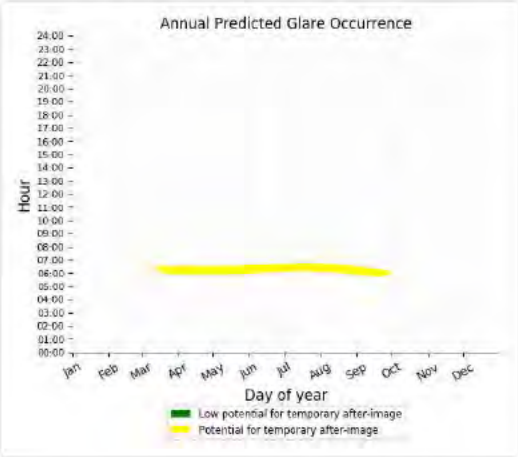


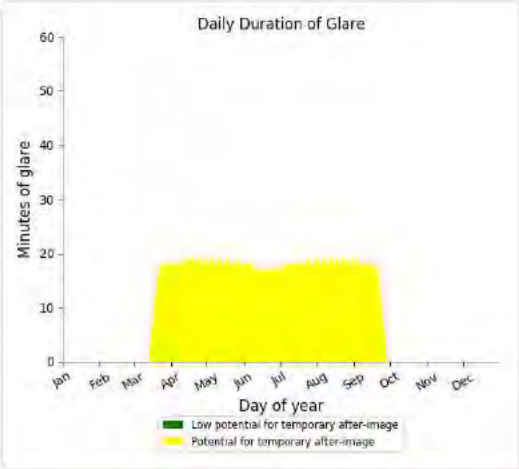


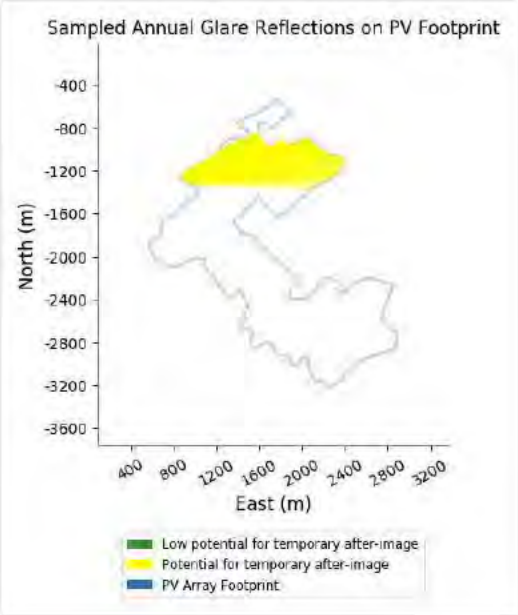
PV array 2 - OP Receptor (OP 31)

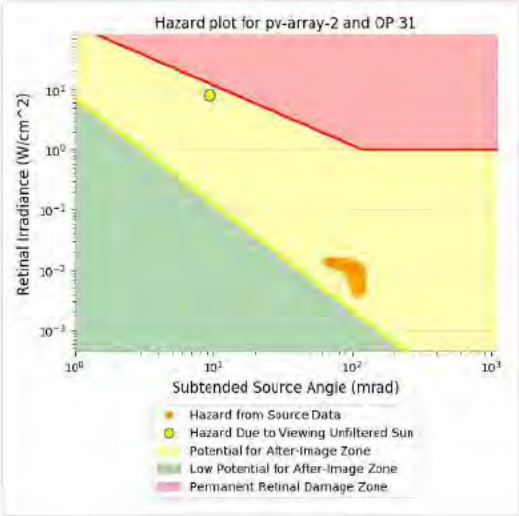
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 3,462 minutes of "yellow" glare with potential to cause temporary after-image.





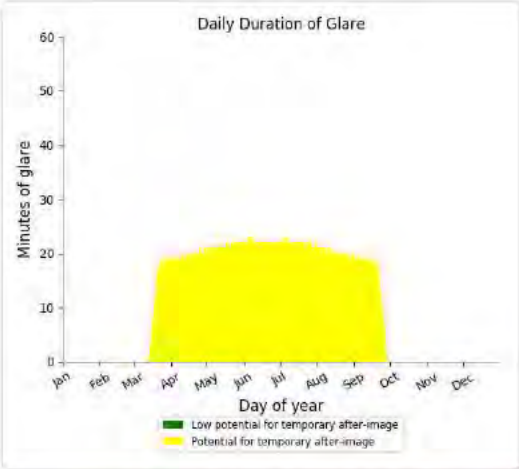


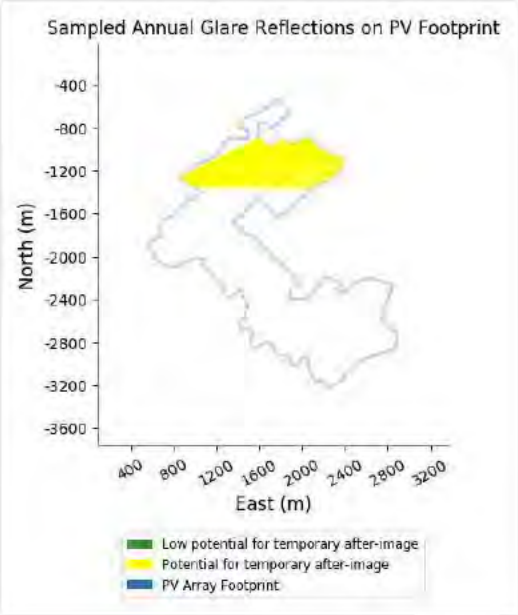


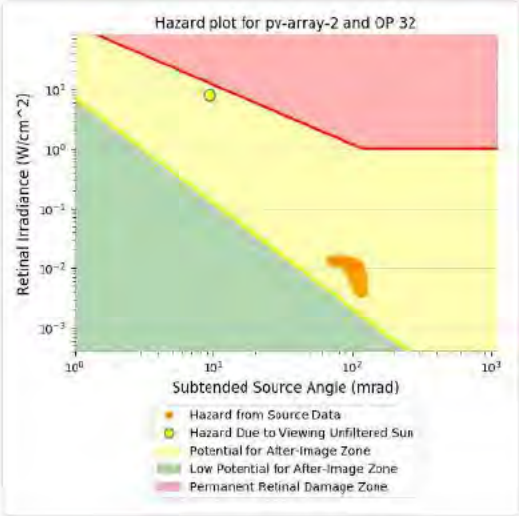
PV array 2 - OP Receptor (OP 32)

PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 3,953 minutes of "yellow" glare with potential to cause temporary after-image.



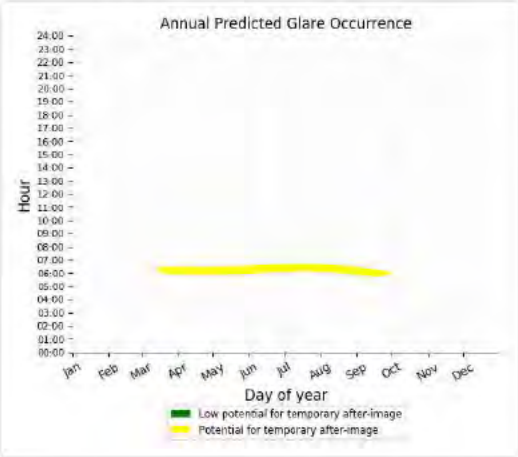


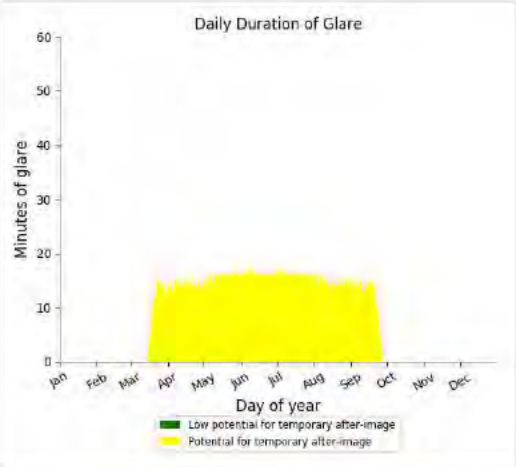


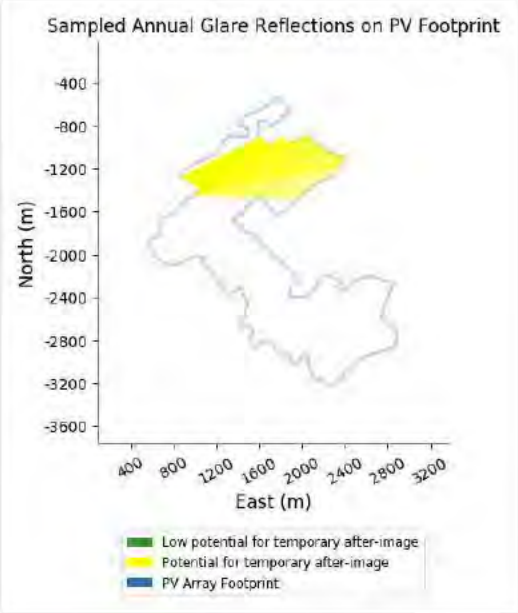
PV array 2 - OP Receptor (OP 33)

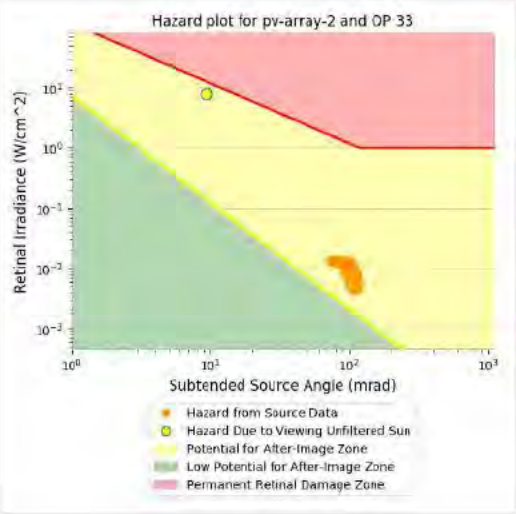
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 2,872 minutes of "yellow" glare with potential to cause temporary after-image.





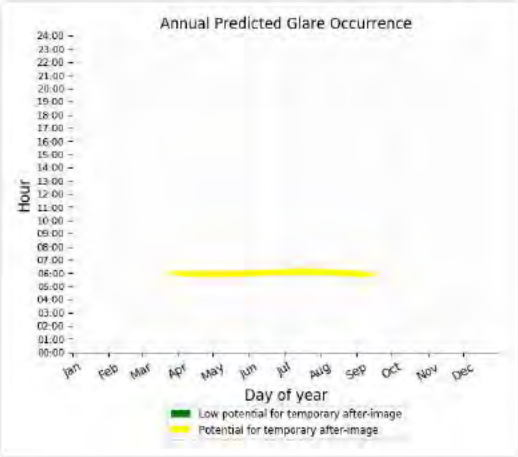


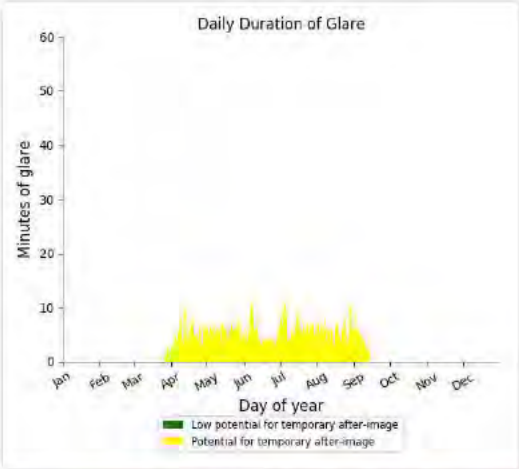


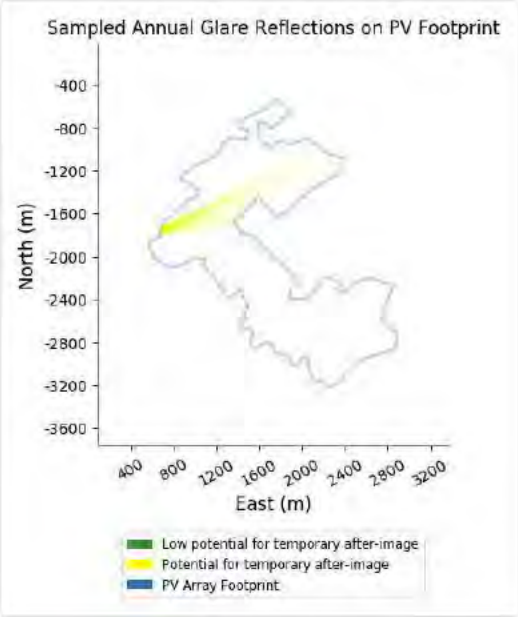
PV array 2 - OP Receptor (OP 34)

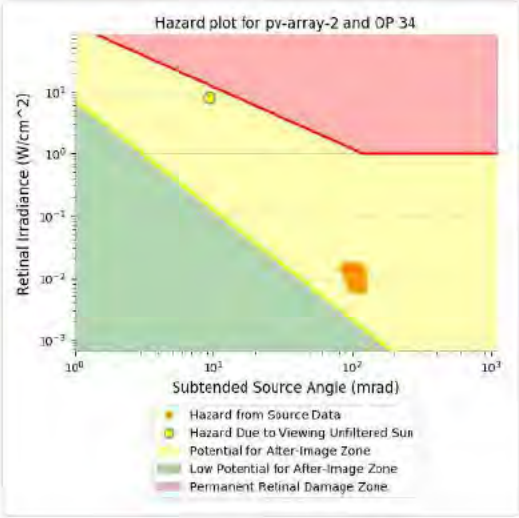
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 945 minutes of "yellow" glare with potential to cause temporary after-image.





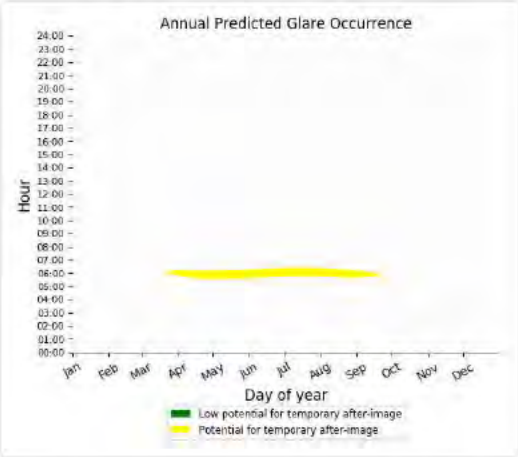


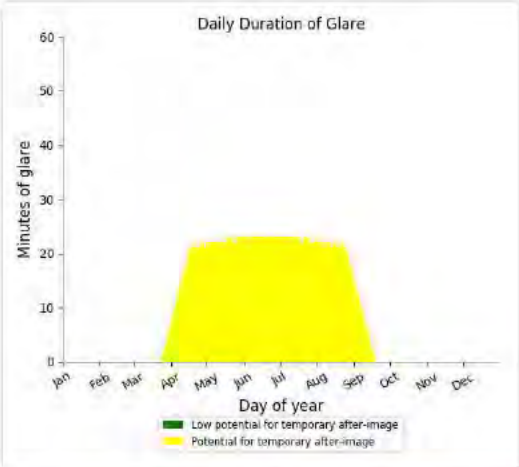


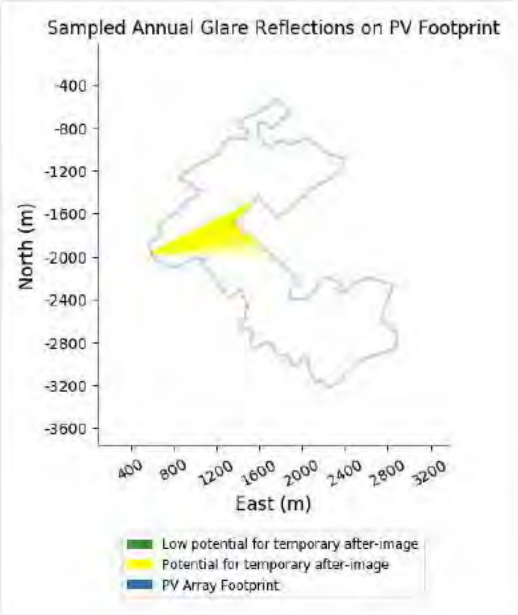
PV array 2 - OP Receptor (OP 35)

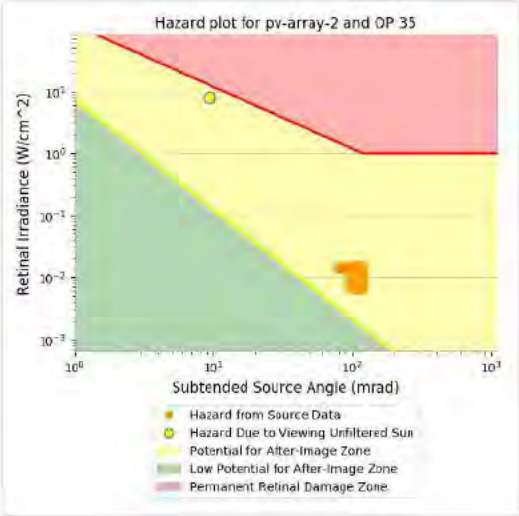
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 3,418 minutes of "yellow" glare with potential to cause temporary after-image.





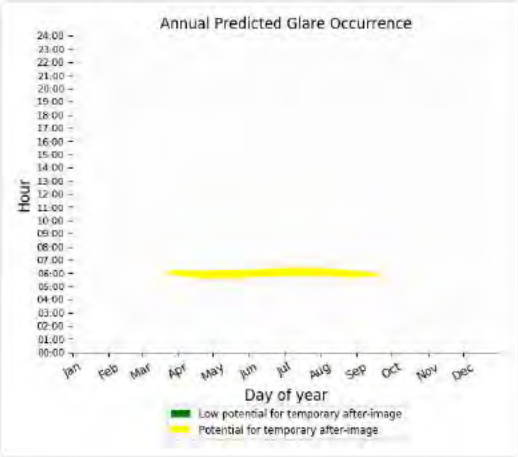


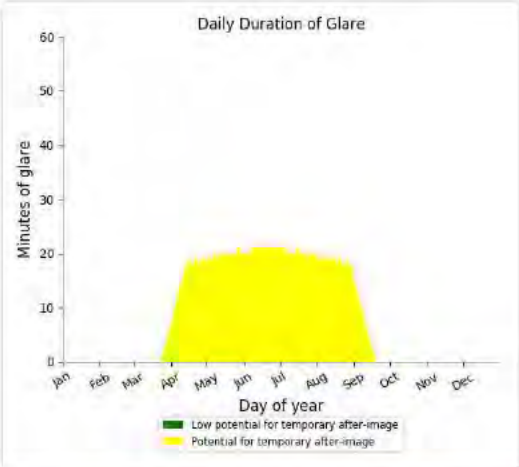


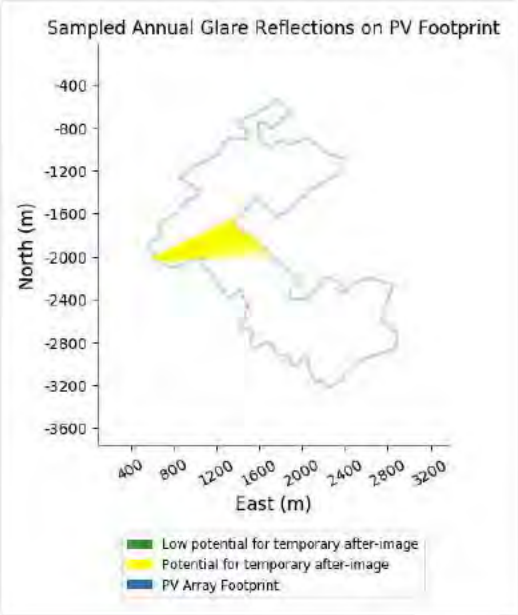
PV array 2 - OP Receptor (OP 36)

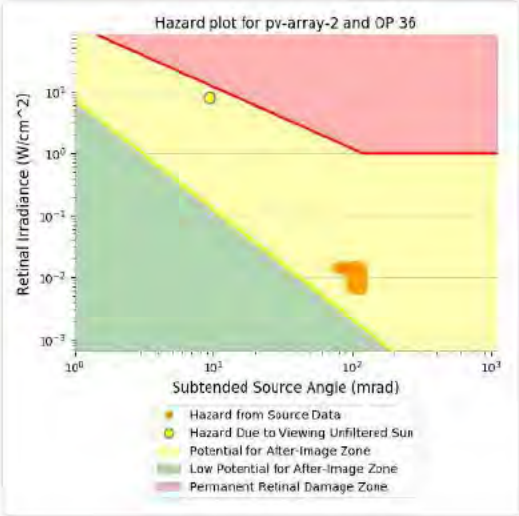
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 3,082 minutes of "yellow" glare with potential to cause temporary after-image.





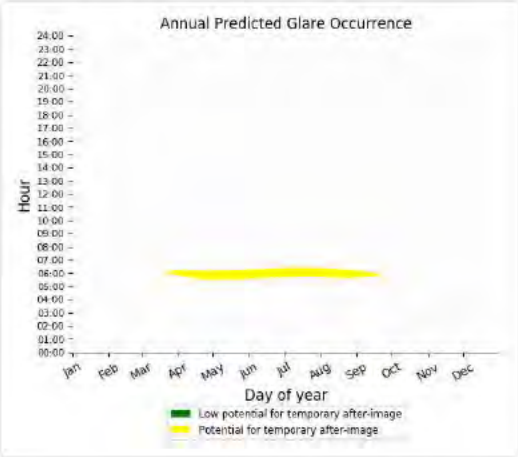


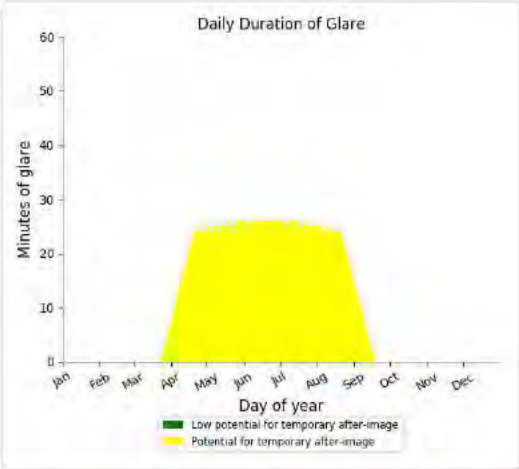


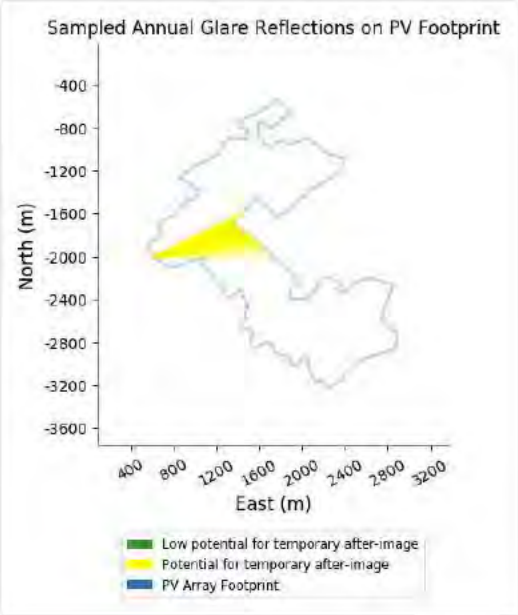
PV array 2 - OP Receptor (OP 37)

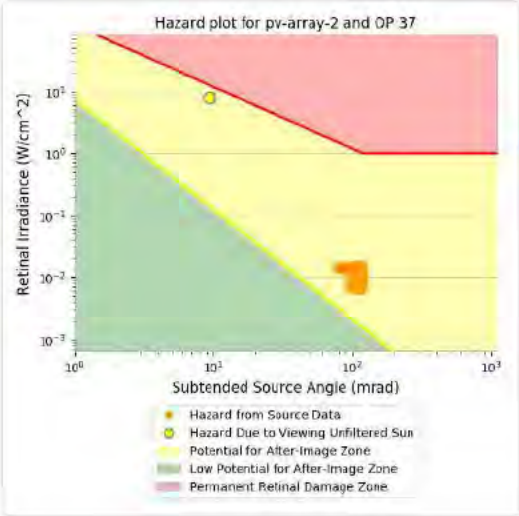
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 3,765 minutes of "yellow" glare with potential to cause temporary after-image.





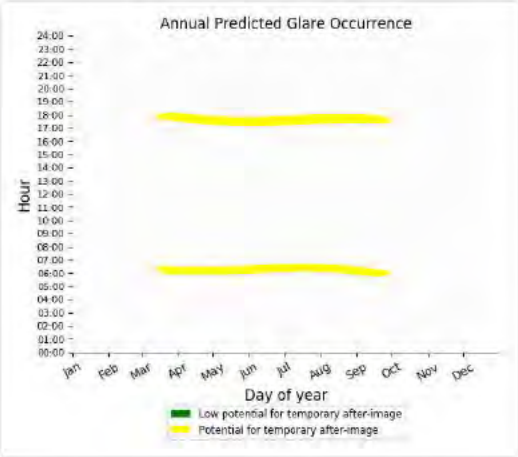


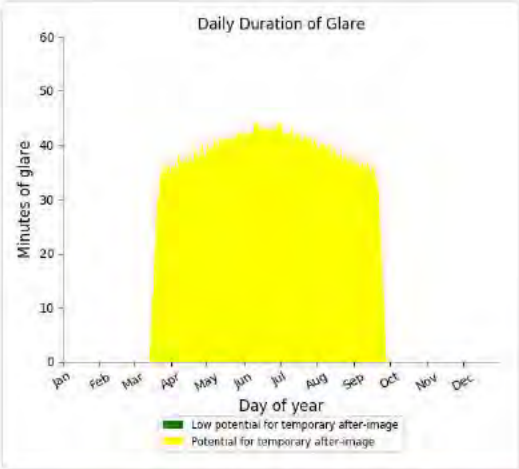


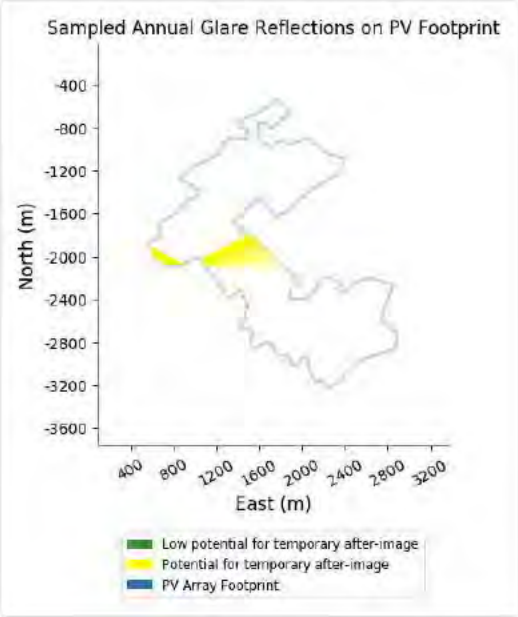
PV array 2 - OP Receptor (OP 38)

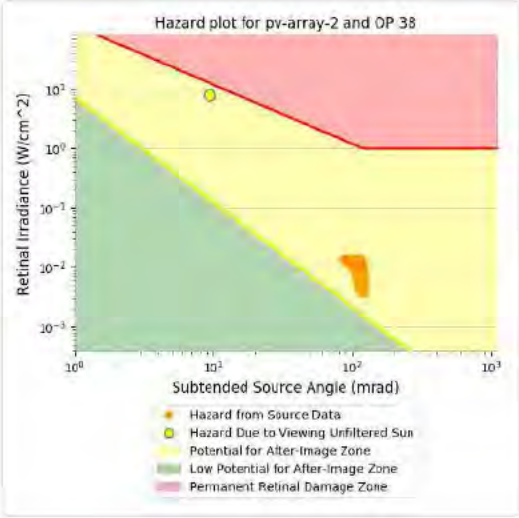
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 7,486 minutes of "yellow" glare with potential to cause temporary after-image.





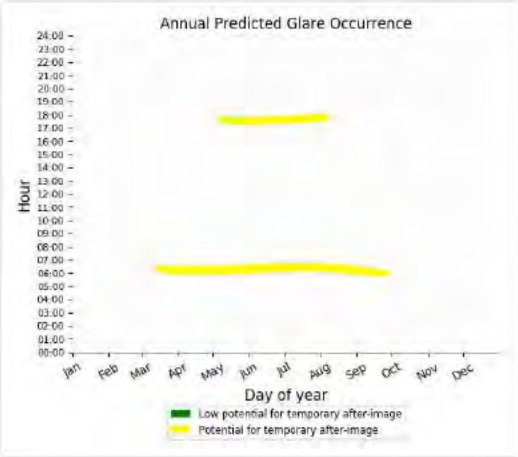


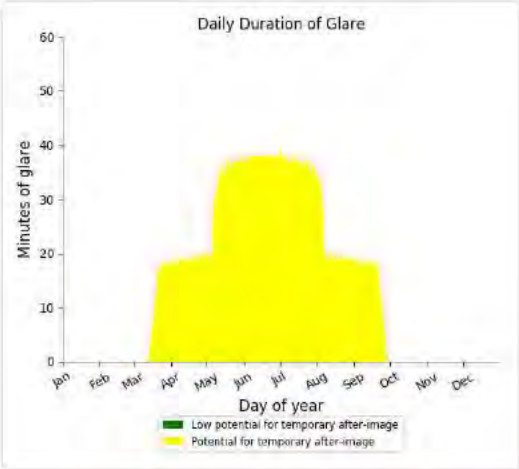


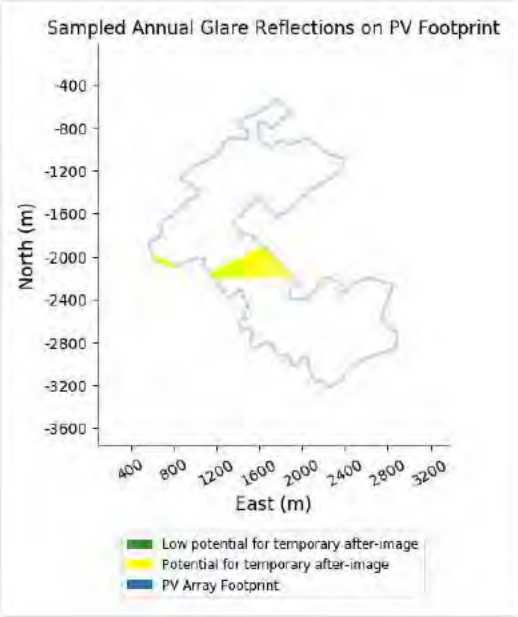
PV array 2 - OP Receptor (OP 39)

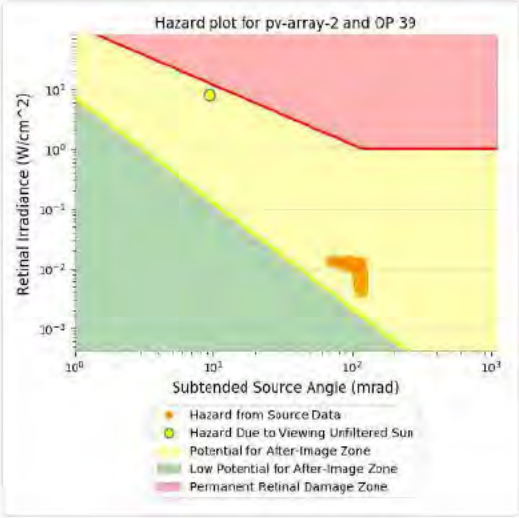
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 5,243 minutes of "yellow" glare with potential to cause temporary after-image.





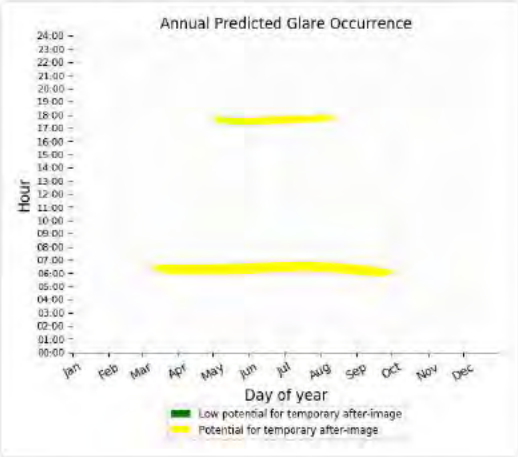


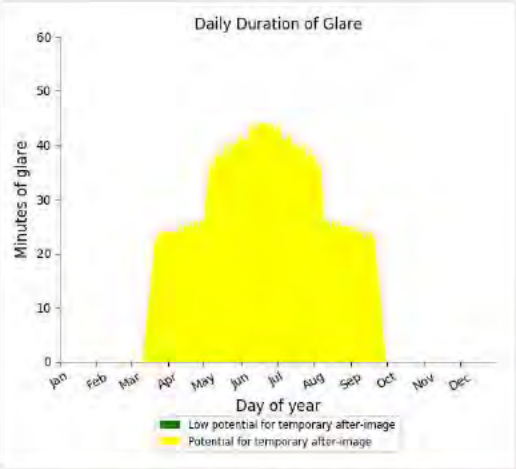


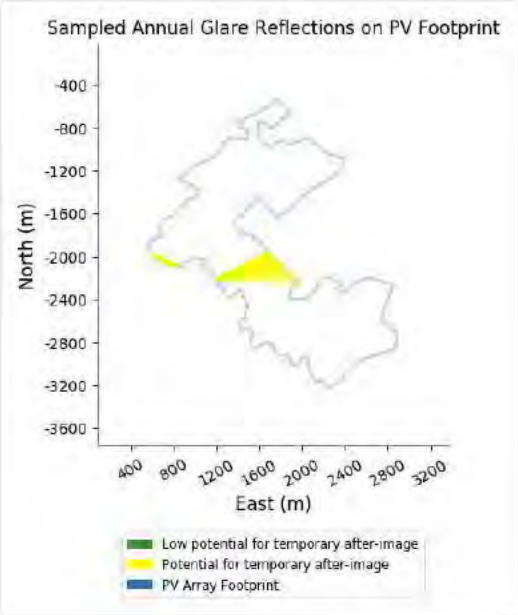
PV array 2 - OP Receptor (OP 40)

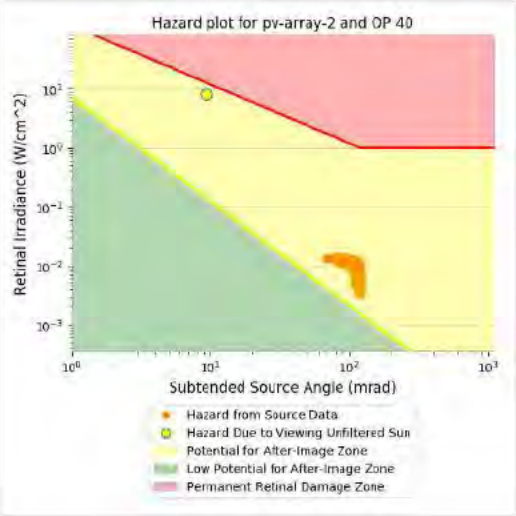
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 6,278 minutes of "yellow" glare with potential to cause temporary after-image.





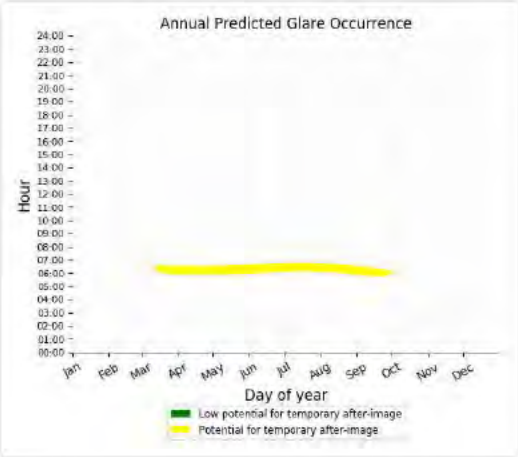


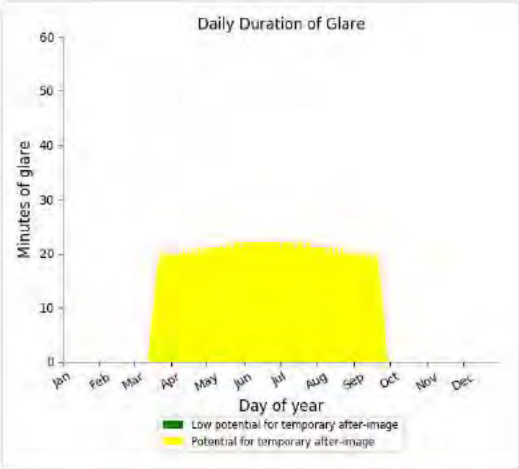


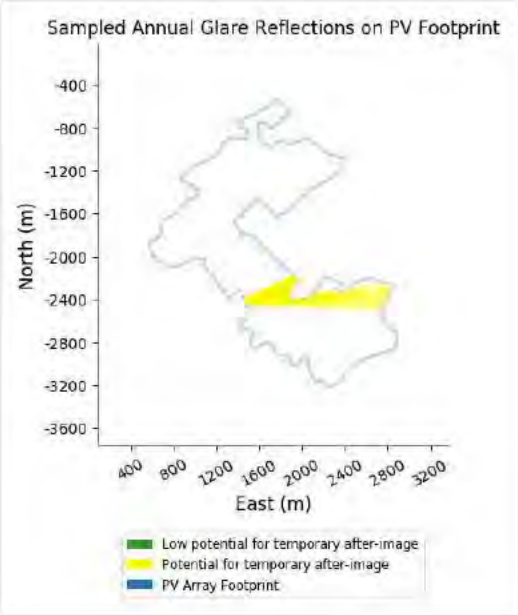
PV array 2 - OP Receptor (OP 41)

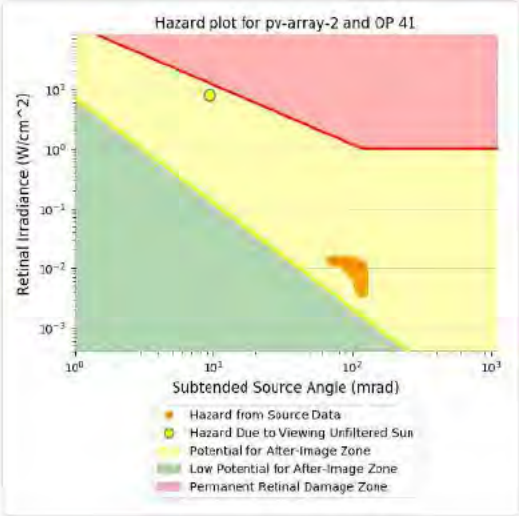
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 4,002 minutes of "yellow" glare with potential to cause temporary after-image.





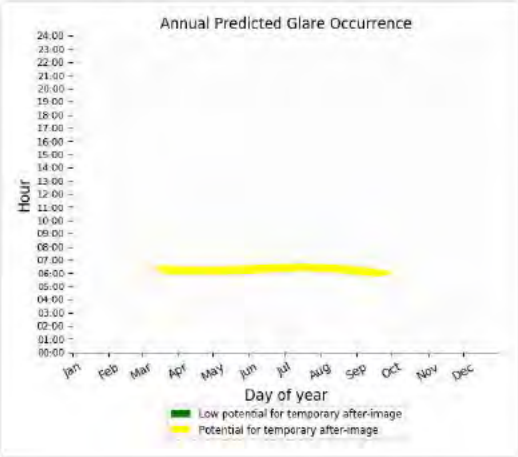


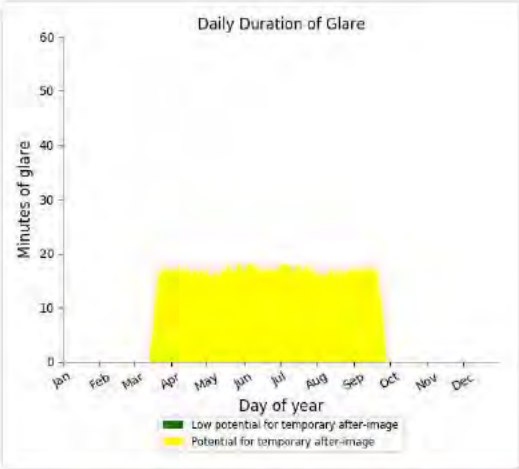


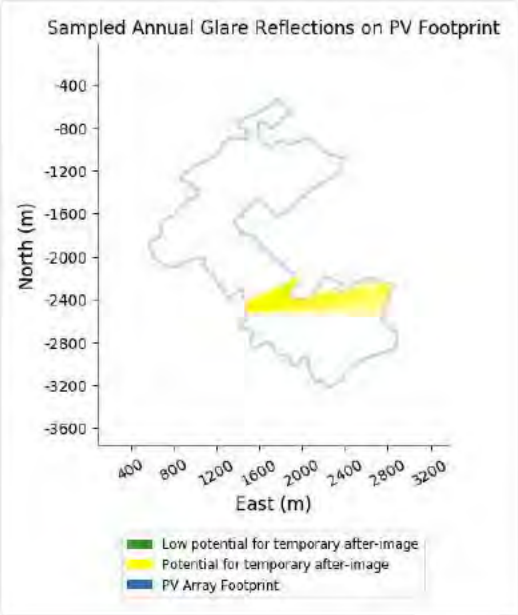
PV array 2 - OP Receptor (OP 42)

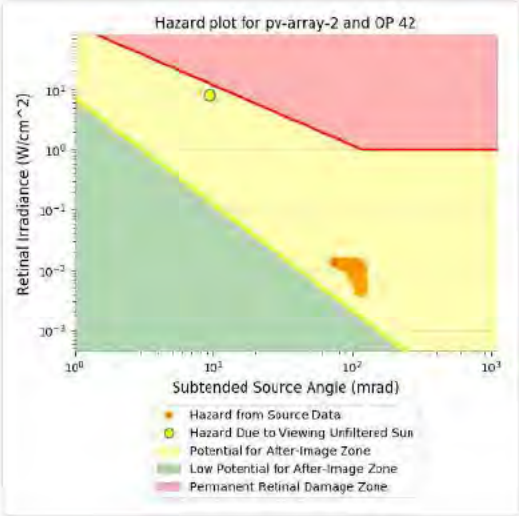
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 3,242 minutes of "yellow" glare with potential to cause temporary after-image.





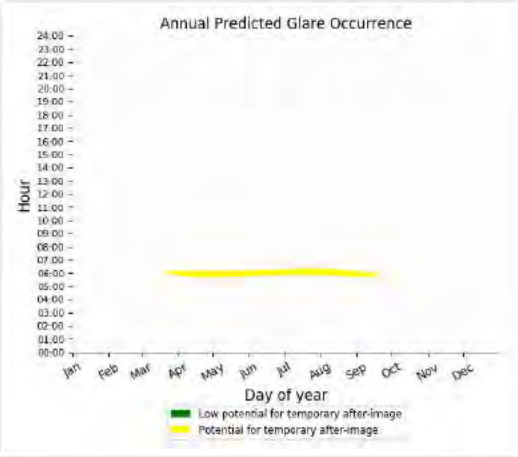


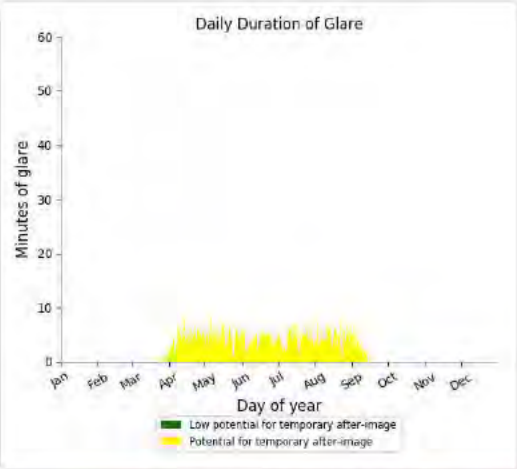


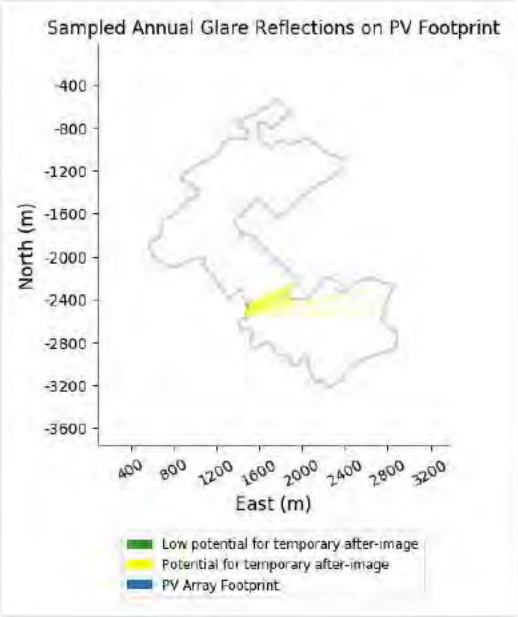
PV array 2 - OP Receptor (OP 43)

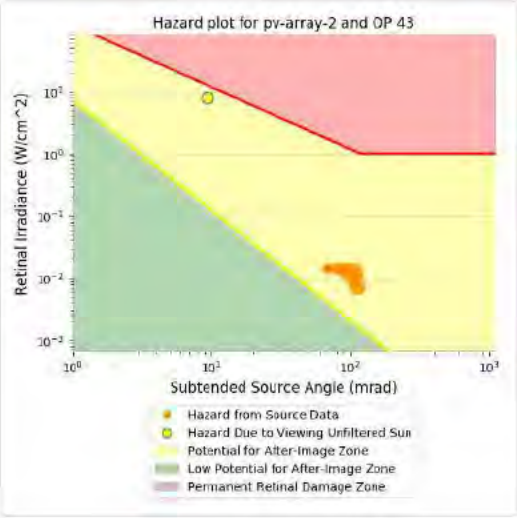
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 725 minutes of "yellow" glare with potential to cause temporary after-image.





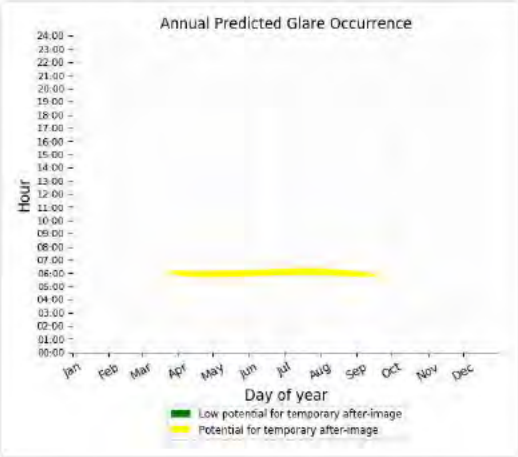


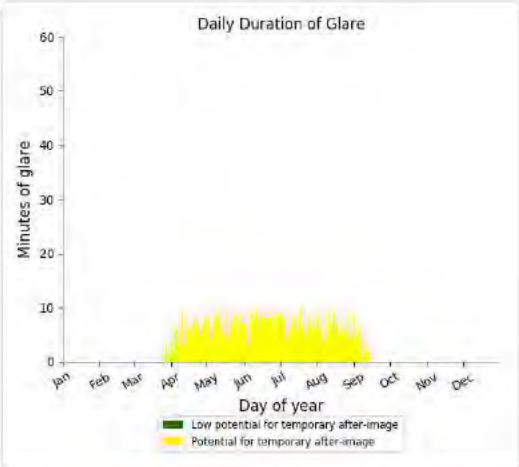


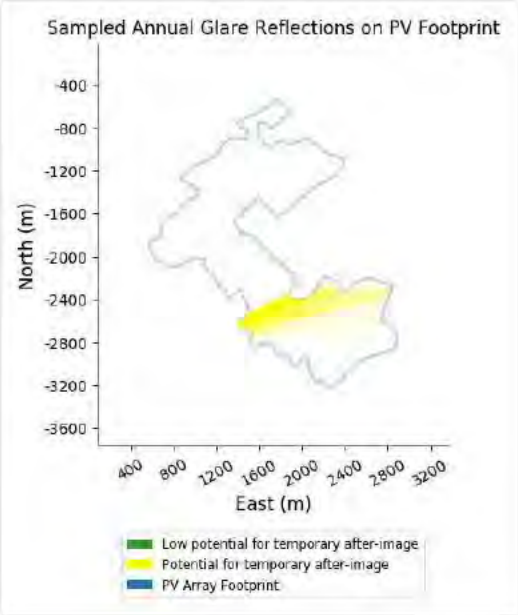
PV array 2 - OP Receptor (OP 44)

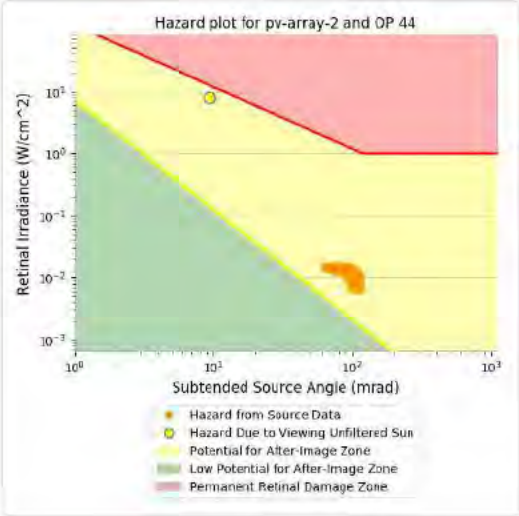
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 1,083 minutes of "yellow" glare with potential to cause temporary after-image.





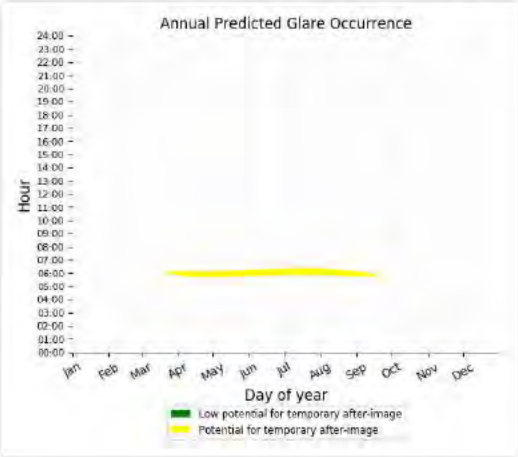


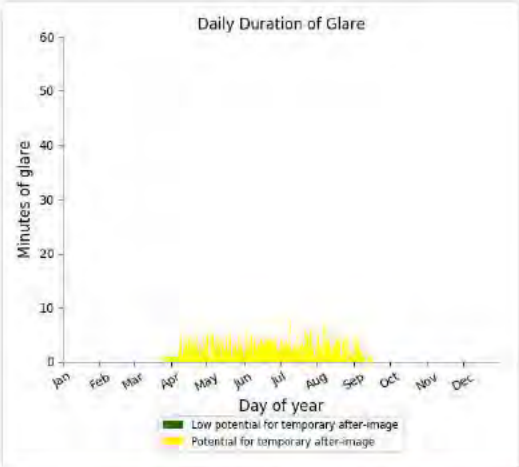


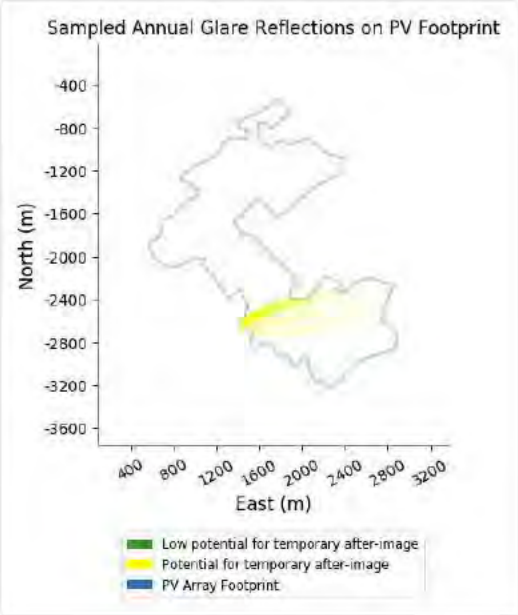
PV array 2 - OP Receptor (OP 45)

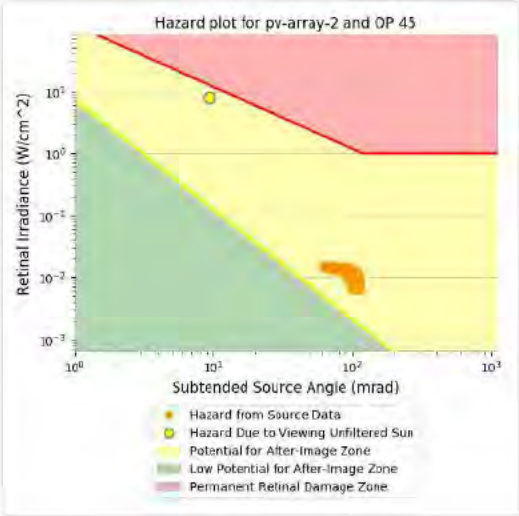
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 499 minutes of "yellow" glare with potential to cause temporary after-image.





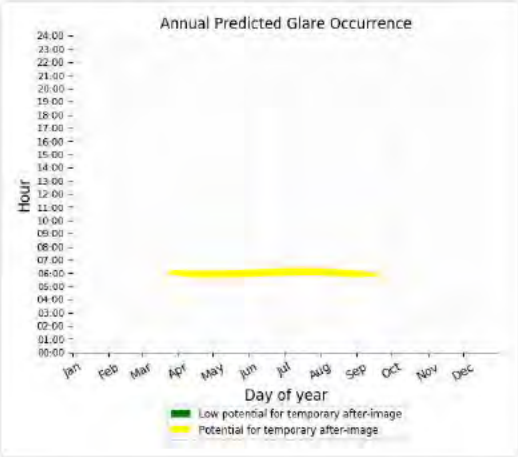


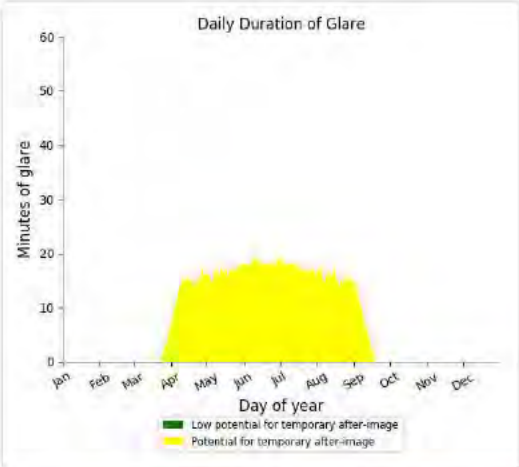


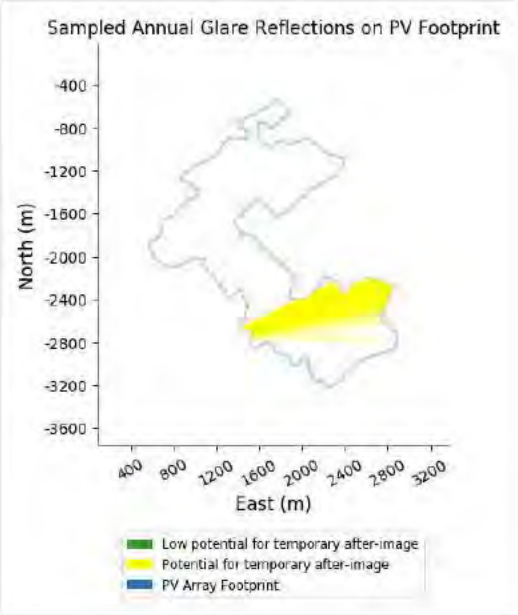
PV array 2 - OP Receptor (OP 46)

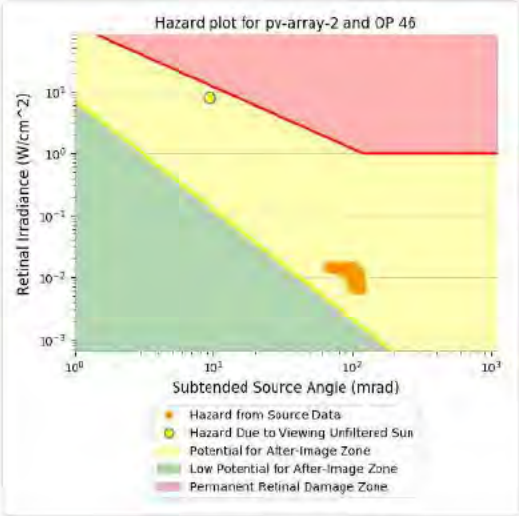
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 2,663 minutes of "yellow" glare with potential to cause temporary after-image.





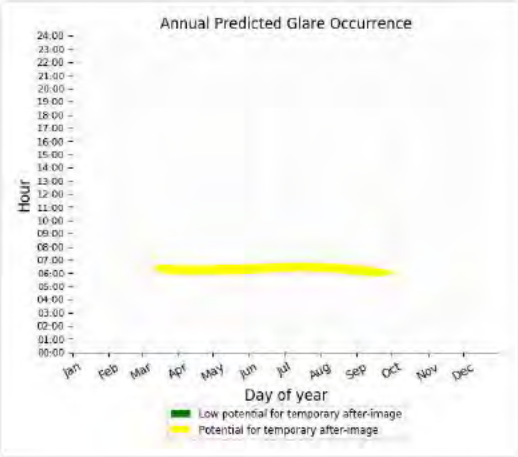


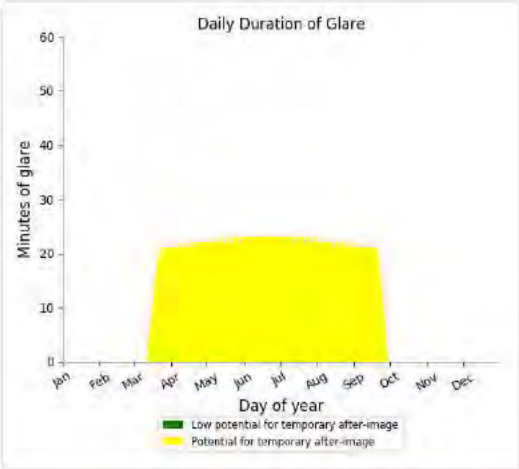


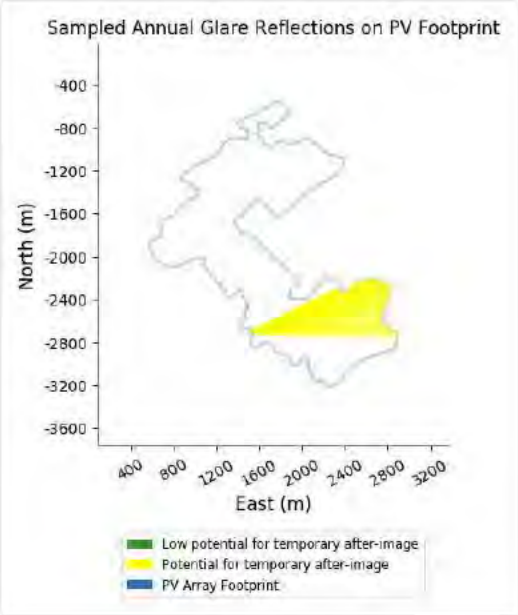
PV array 2 - OP Receptor (OP 47)

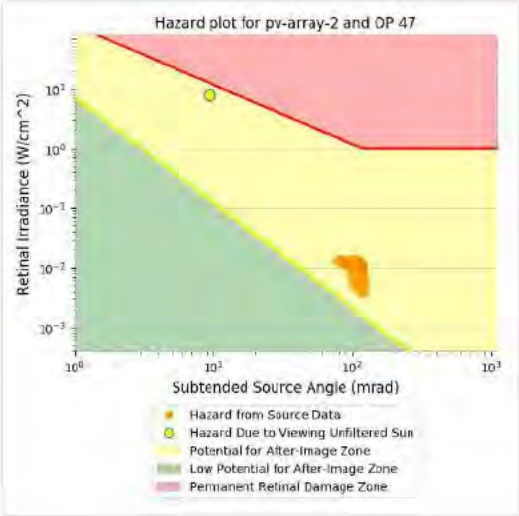
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 4,236 minutes of "yellow" glare with potential to cause temporary after-image.





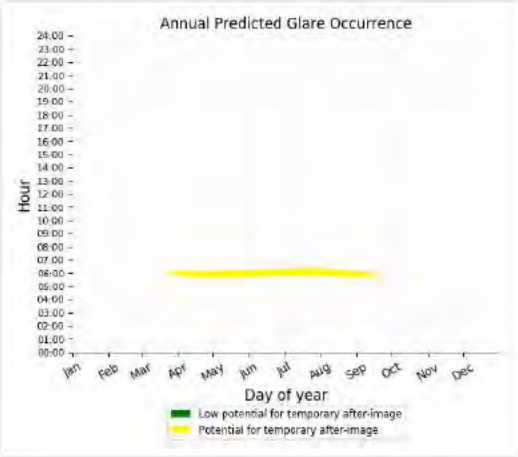


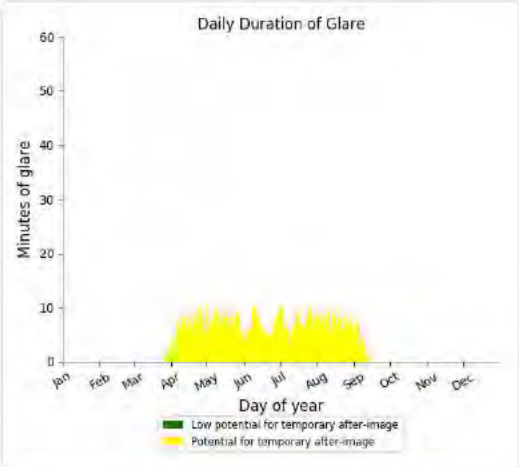


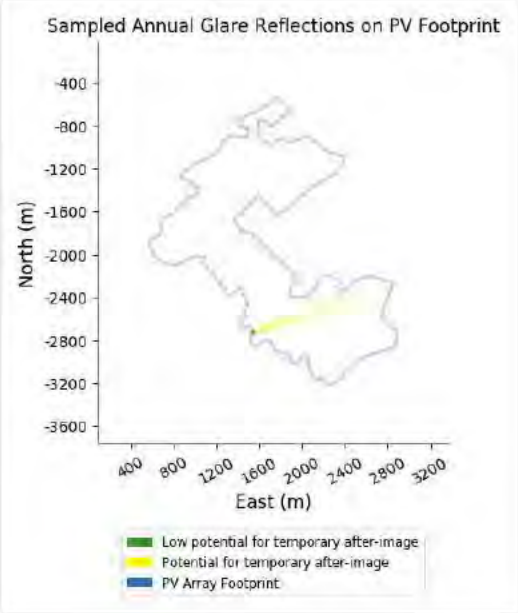
PV array 2 - OP Receptor (OP 48)

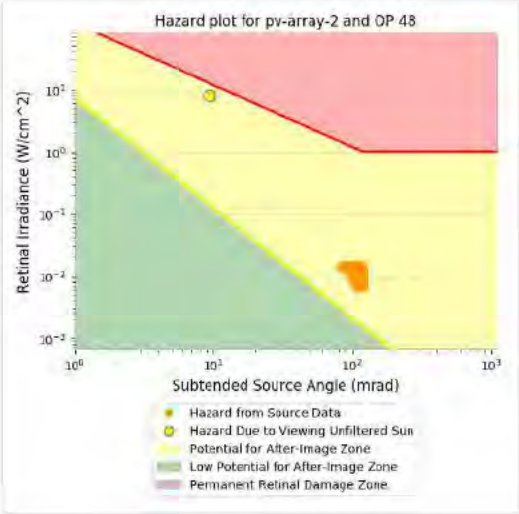
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 1,191 minutes of "yellow" glare with potential to cause temporary after-image.





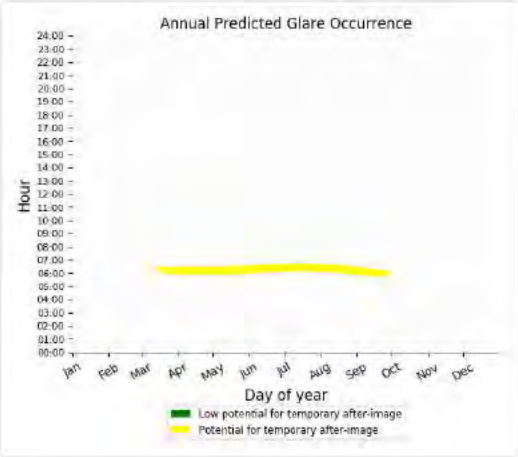


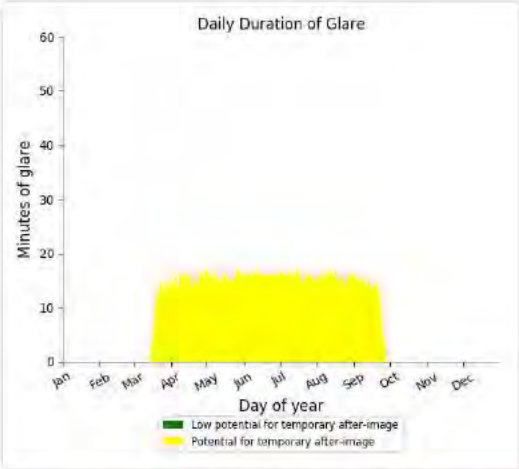


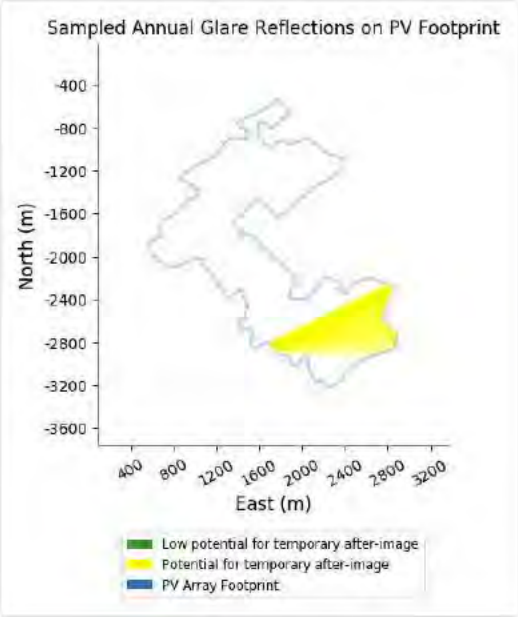
PV array 2 - OP Receptor (OP 49)

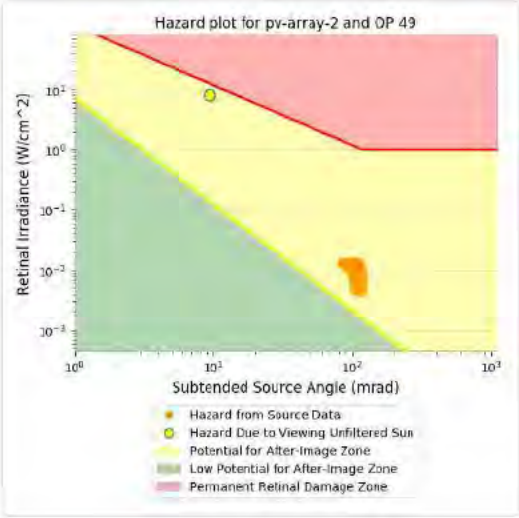
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 2,970 minutes of "yellow" glare with potential to cause temporary after-image.





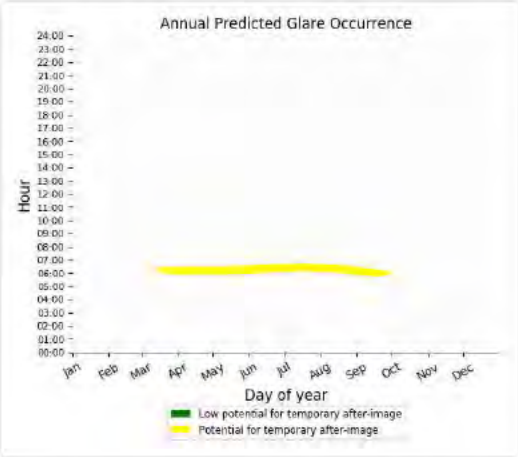


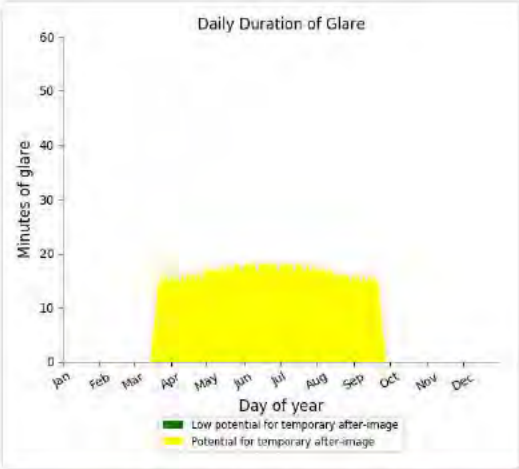


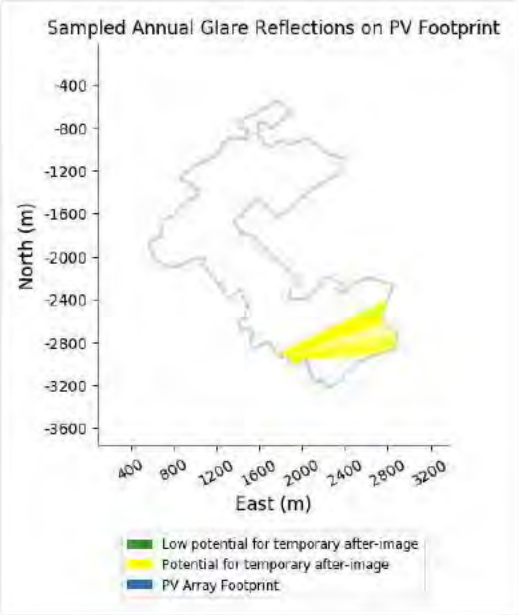
PV array 2 - OP Receptor (OP 50)

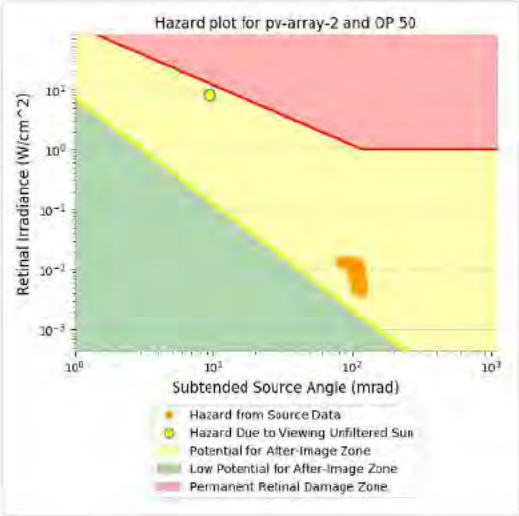
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 3,149 minutes of "yellow" glare with potential to cause temporary after-image.





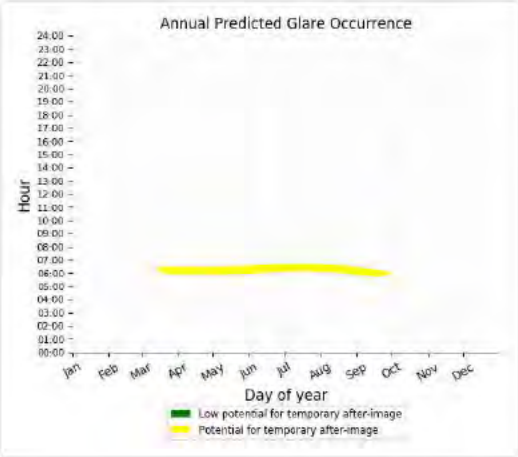


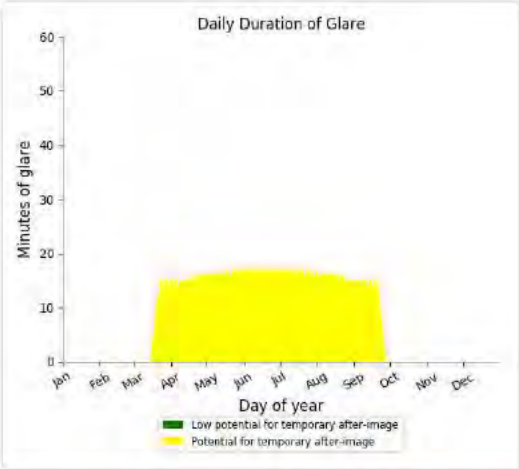


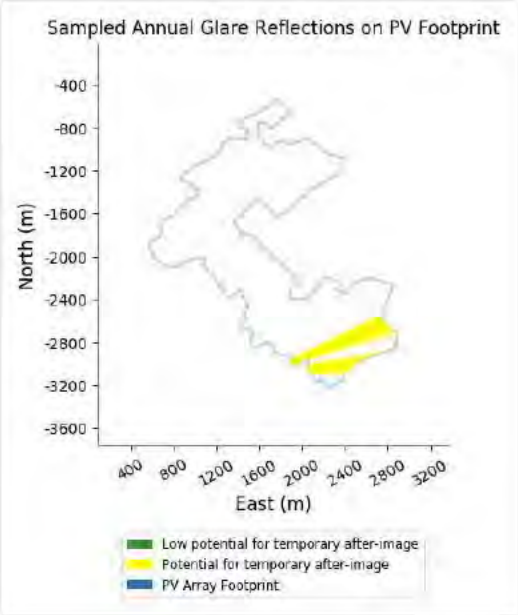
PV array 2 - OP Receptor (OP 51)

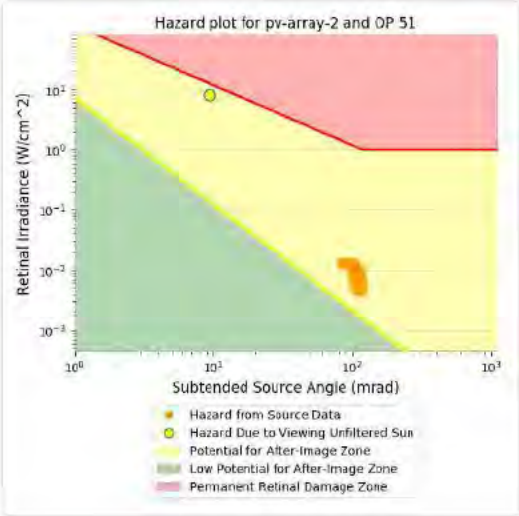
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 3,024 minutes of "yellow" glare with potential to cause temporary after-image.





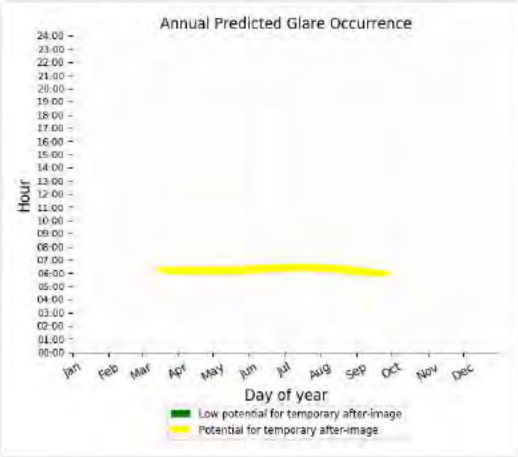


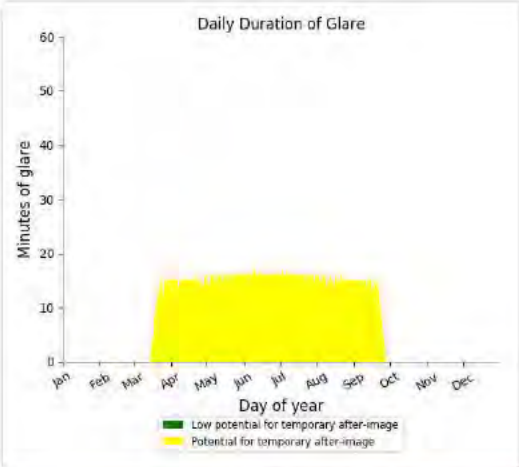


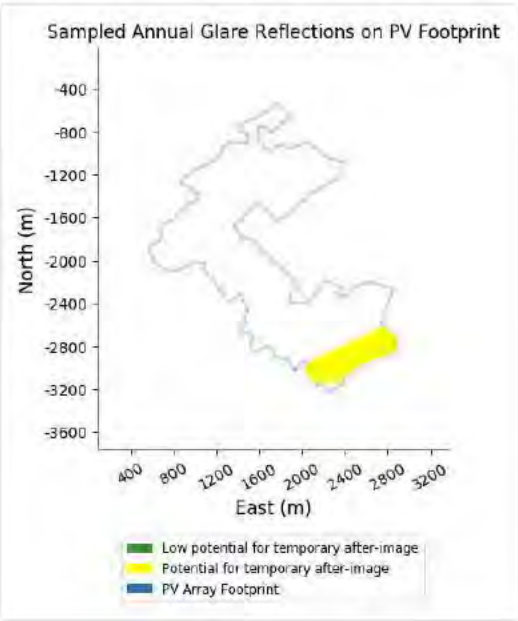
PV array 2 - OP Receptor (OP 52)

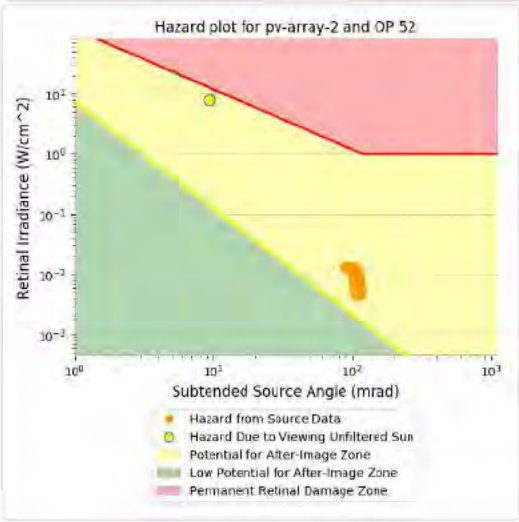
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 2,914 minutes of "yellow" glare with potential to cause temporary after-image.









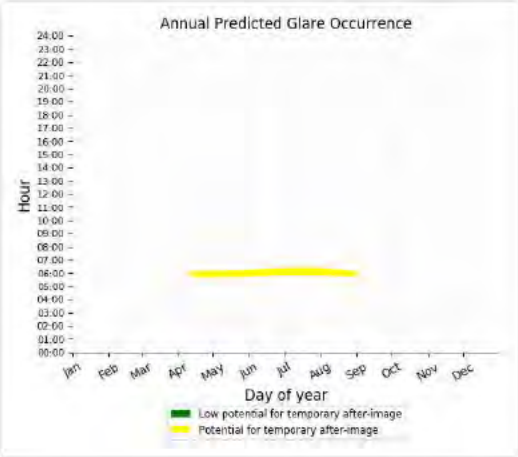
PV array 2 - OP Receptor (OP 53)

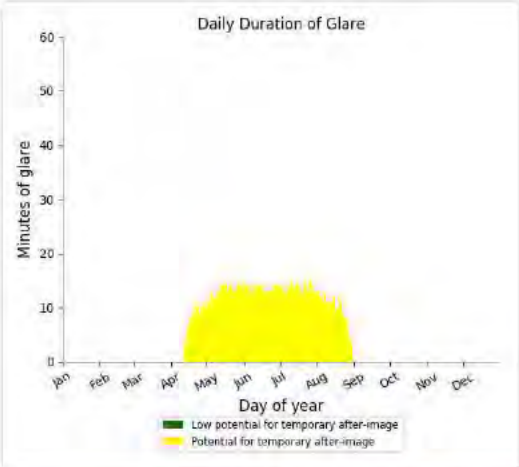
No glare found

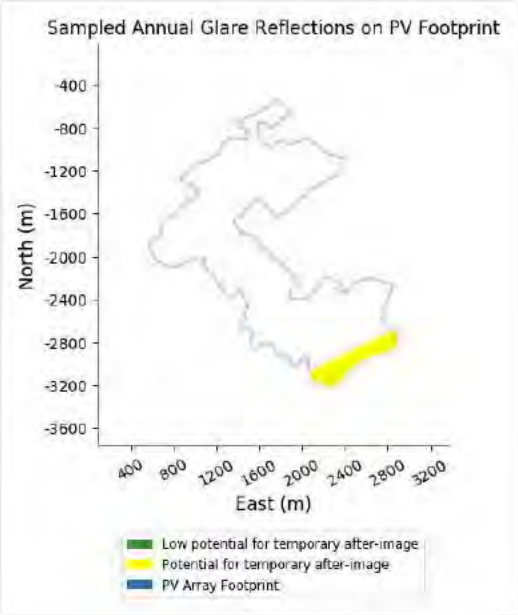
PV array 2 - OP Receptor (OP 54)

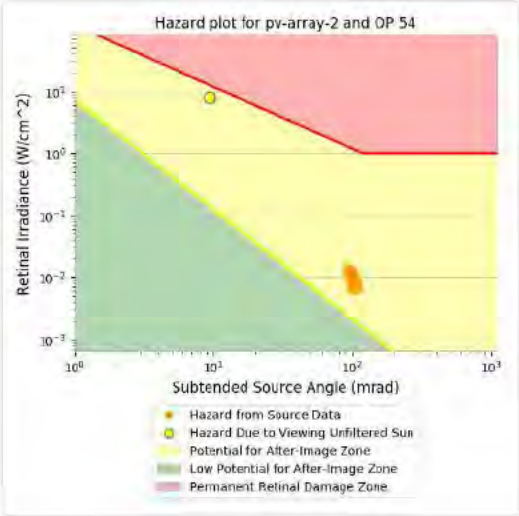
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 1,691 minutes of "yellow" glare with potential to cause temporary after-image.





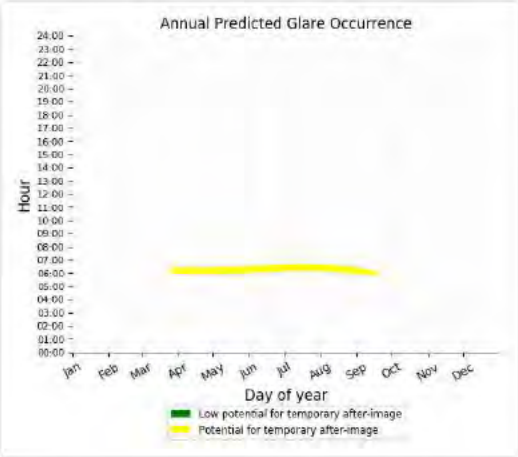


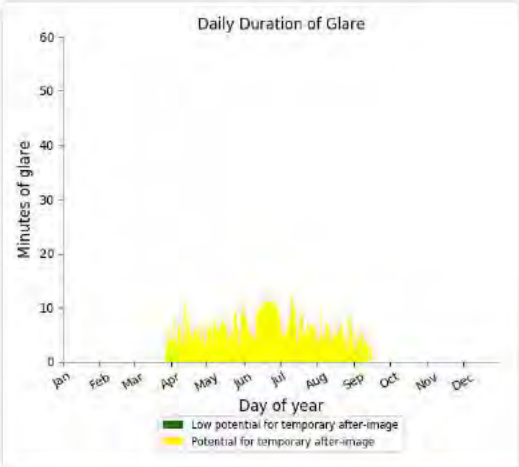


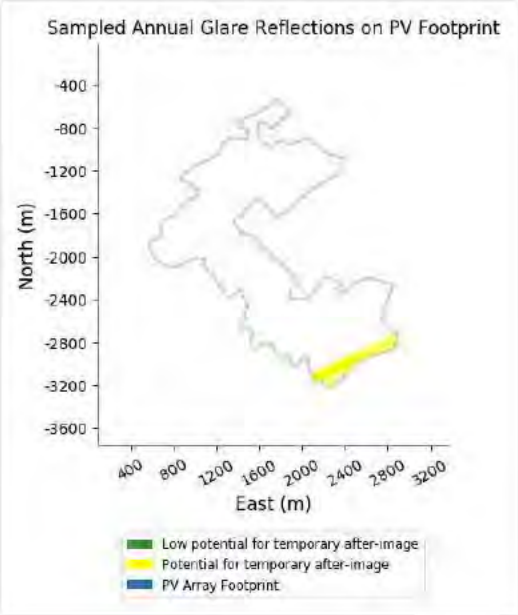
PV array 2 - OP Receptor (OP 55)

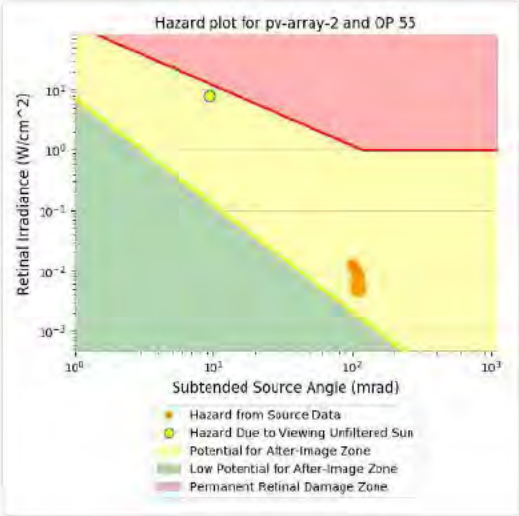
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 1,066 minutes of "yellow" glare with potential to cause temporary after-image.





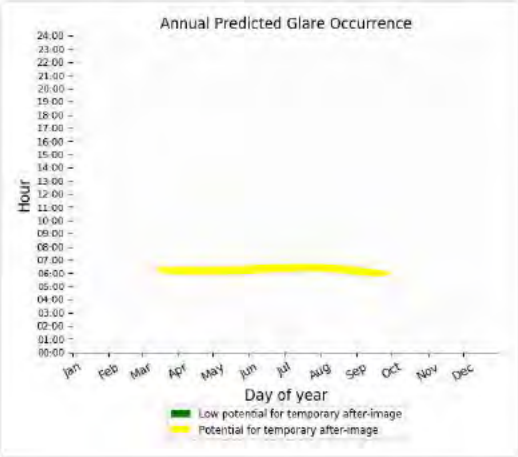


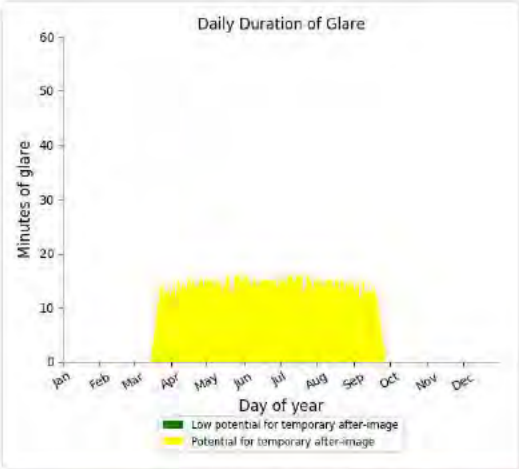


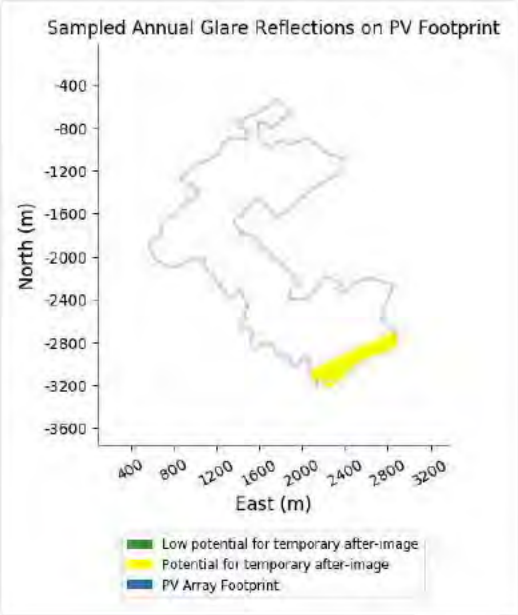
PV array 2 - OP Receptor (OP 56)

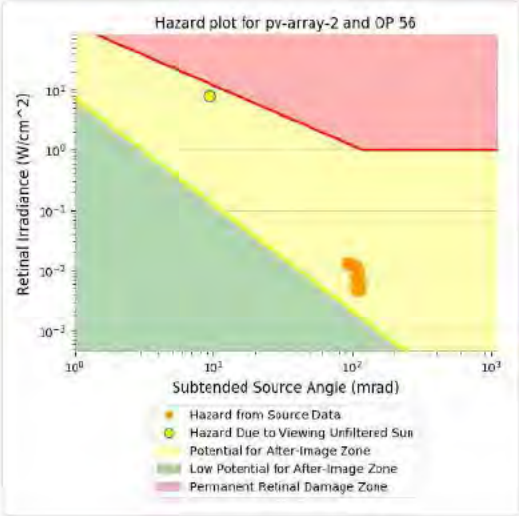
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 2,711 minutes of "yellow" glare with potential to cause temporary after-image.





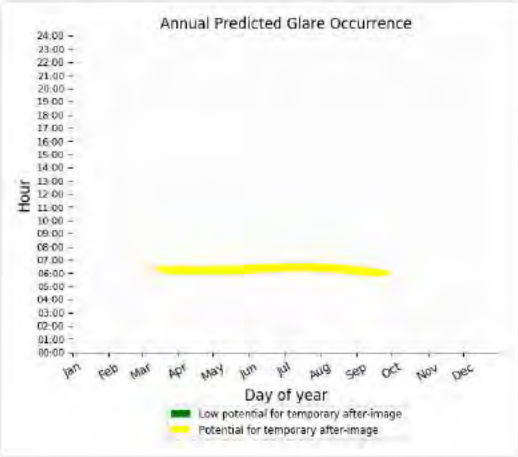


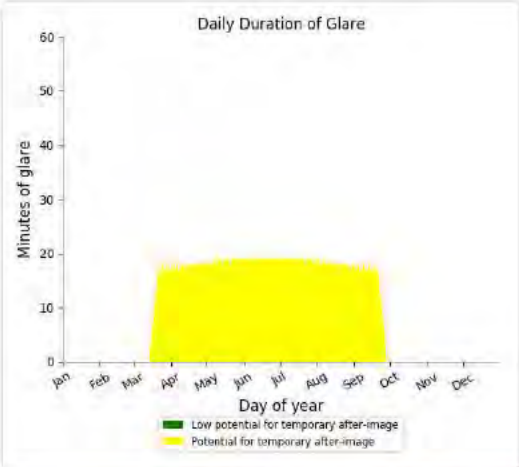


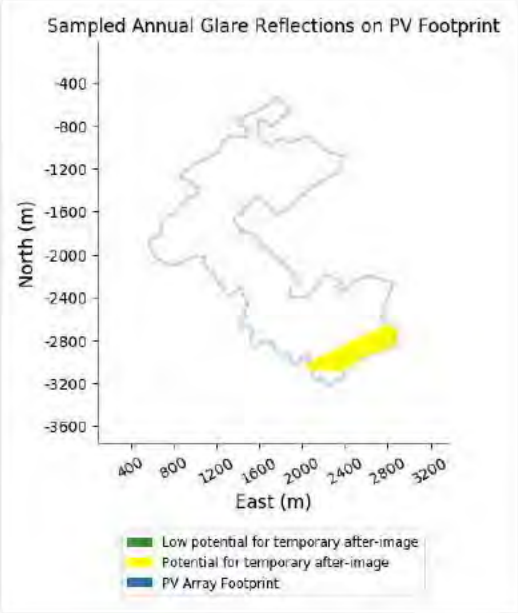
PV array 2 - OP Receptor (OP 57)

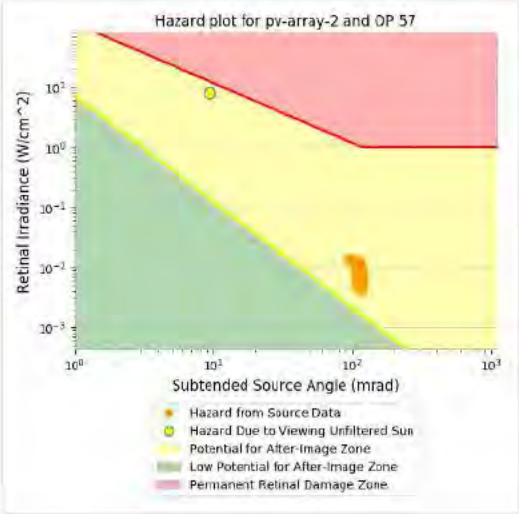
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 3,481 minutes of "yellow" glare with potential to cause temporary after-image.





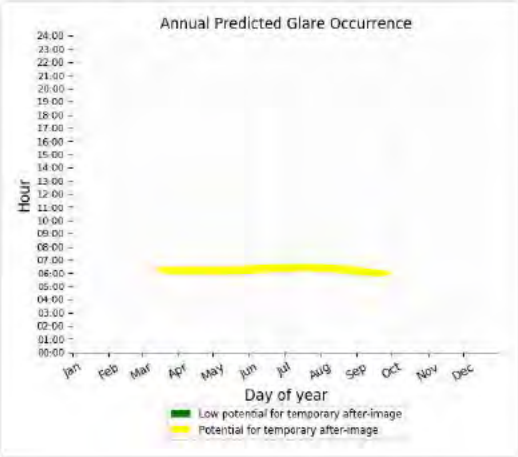


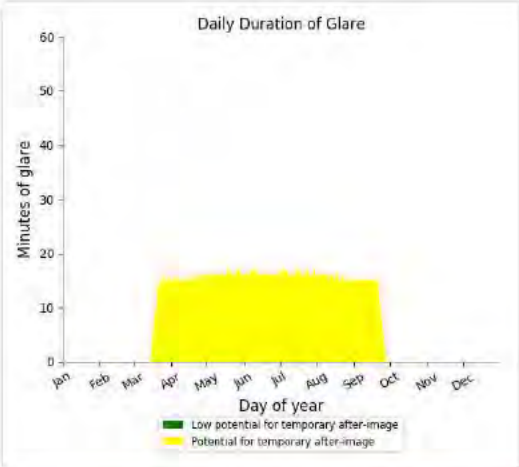


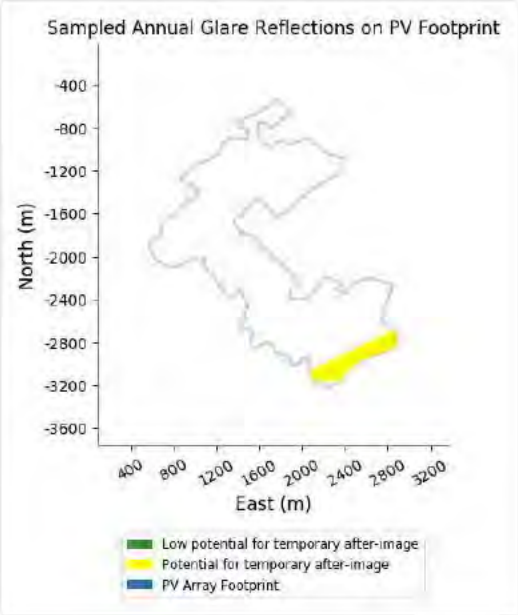
PV array 2 - OP Receptor (OP 58)

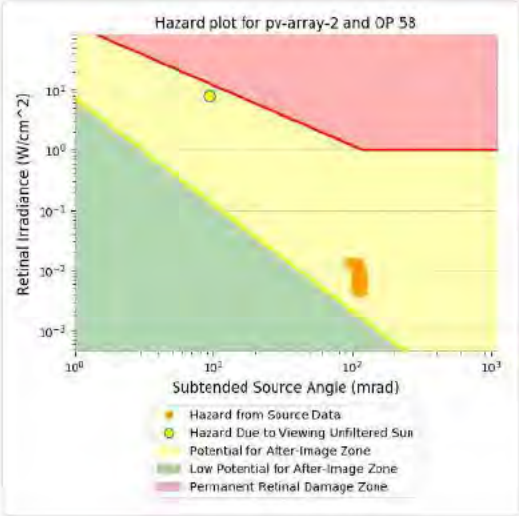
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 2,992 minutes of "yellow" glare with potential to cause temporary after-image.





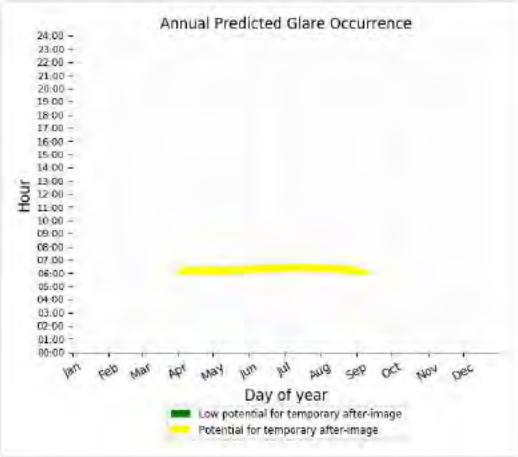


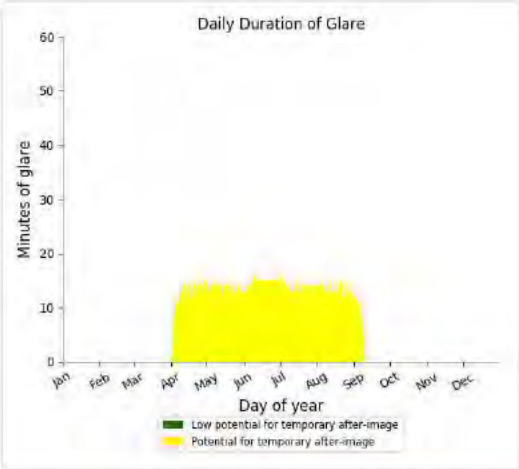


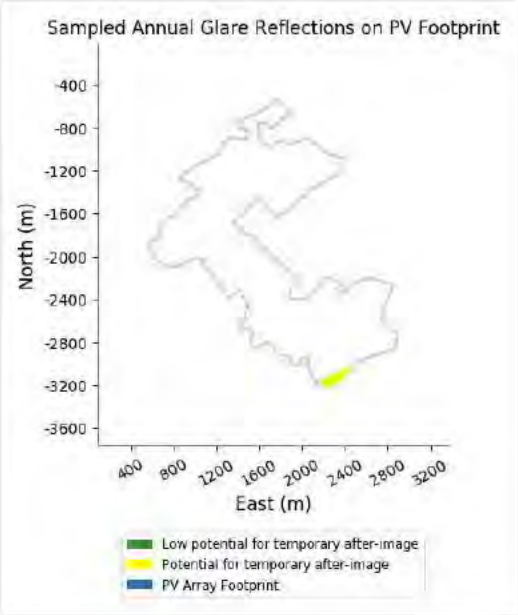
PV array 2 - OP Receptor (OP 59)

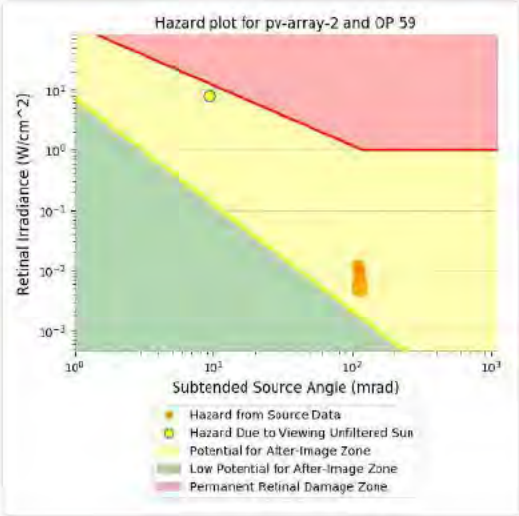
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 2,167 minutes of "yellow" glare with potential to cause temporary after-image.





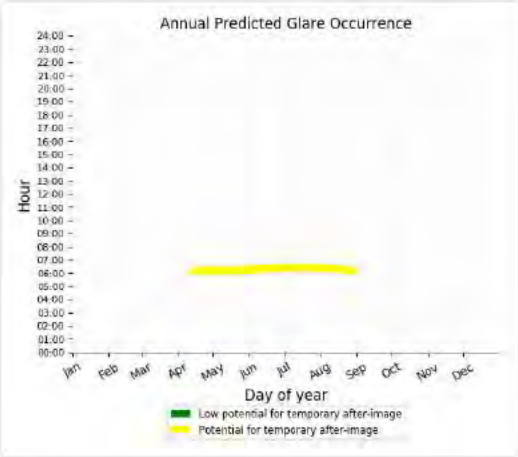


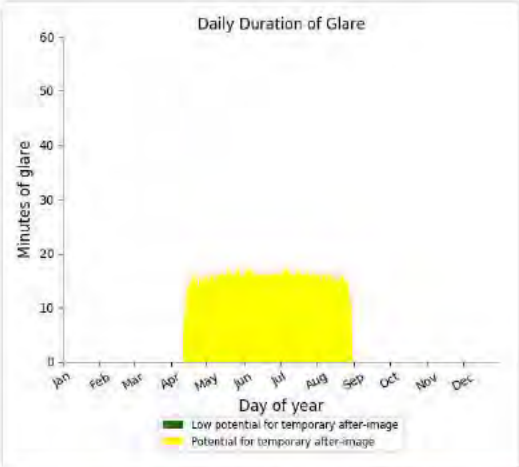


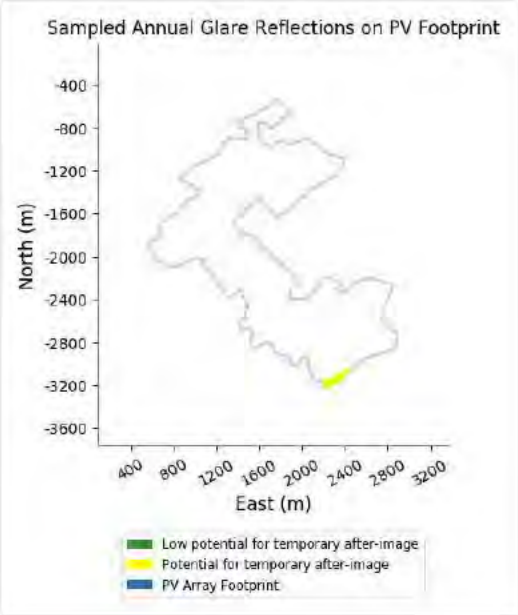
PV array 2 - OP Receptor (OP 60)

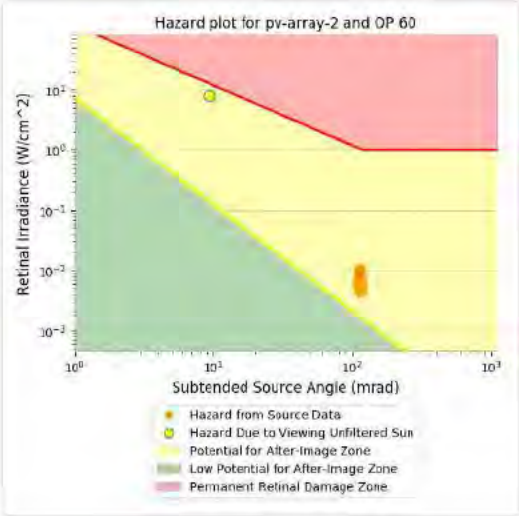
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 2,206 minutes of "yellow" glare with potential to cause temporary after-image.





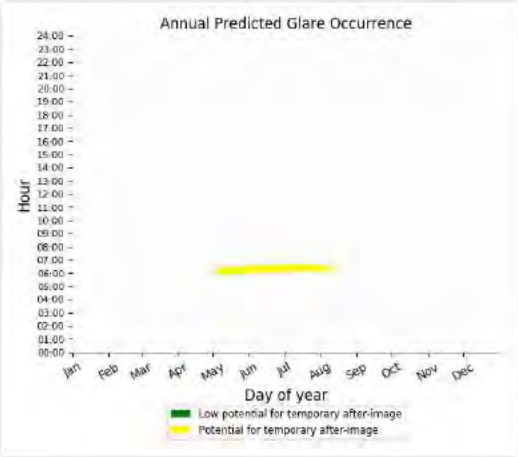


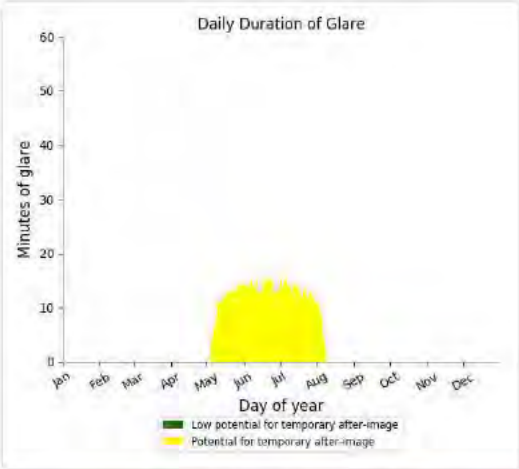


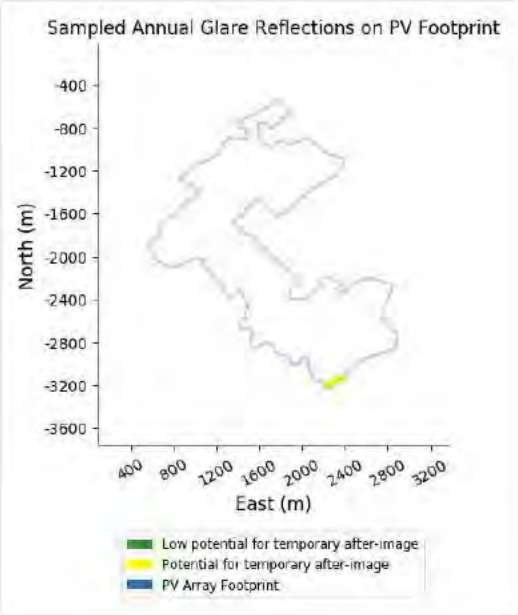
PV array 2 - OP Receptor (OP 61)

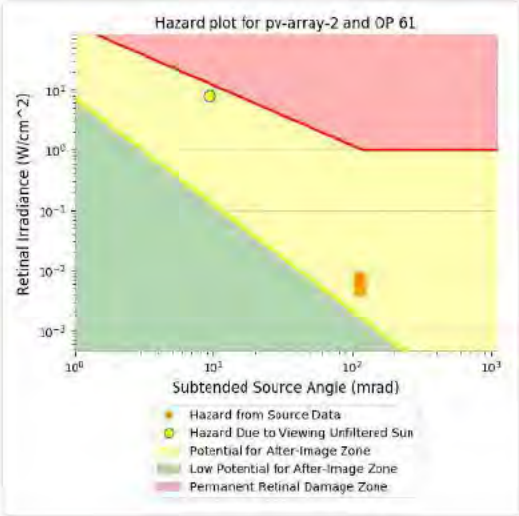
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 1,204 minutes of "yellow" glare with potential to cause temporary after-image.









PV array 2 - OP Receptor (OP 62)

No glare found

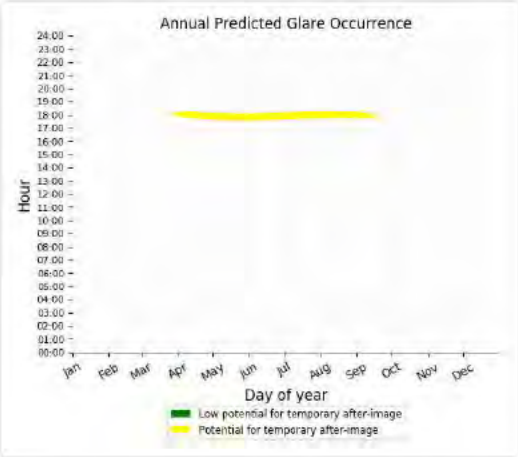
PV array 2 - OP Receptor (OP 63)

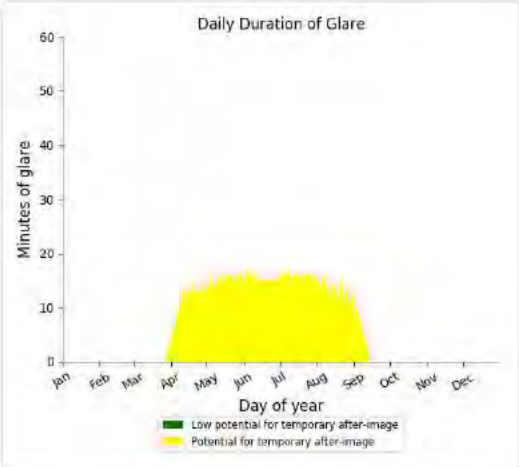
No glare found

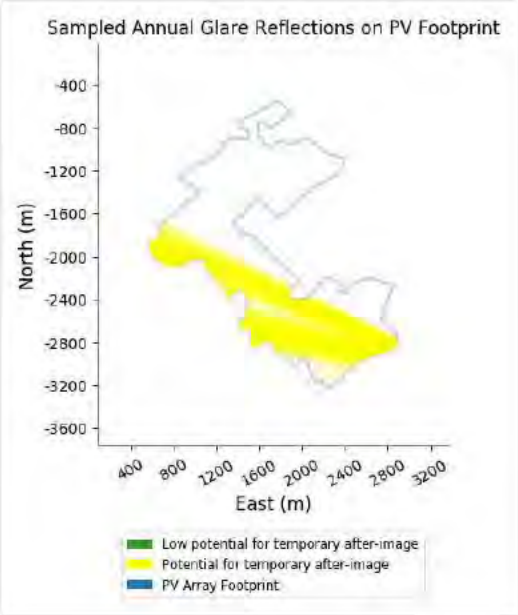
PV array 2 - OP Receptor (OP 64)

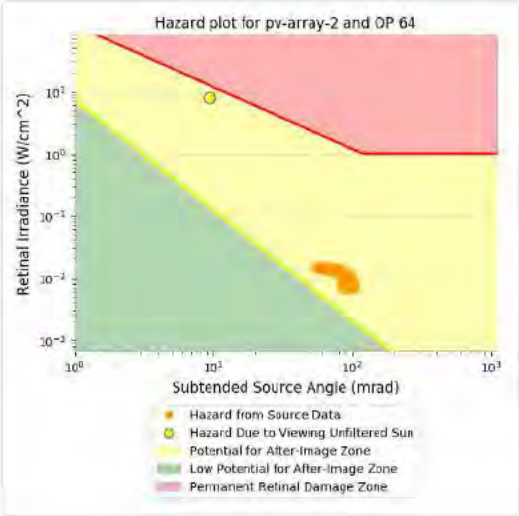
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 2,291 minutes of "yellow" glare with potential to cause temporary after-image.





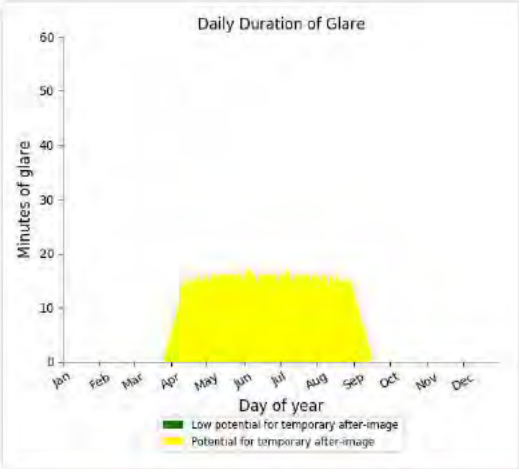


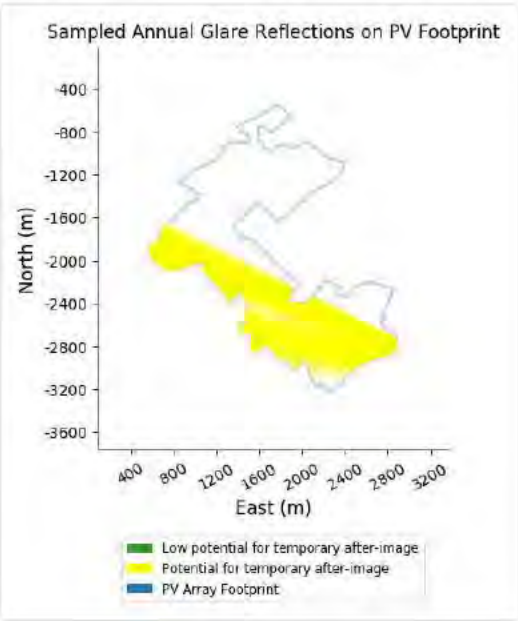


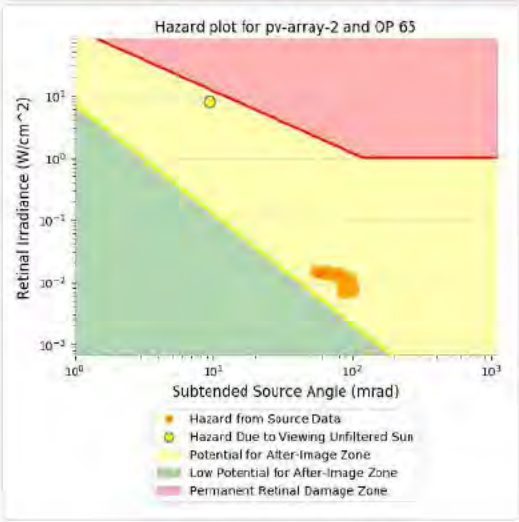
PV array 2 - OP Receptor (OP 65)

PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 2,441 minutes of "yellow" glare with potential to cause temporary after-image.



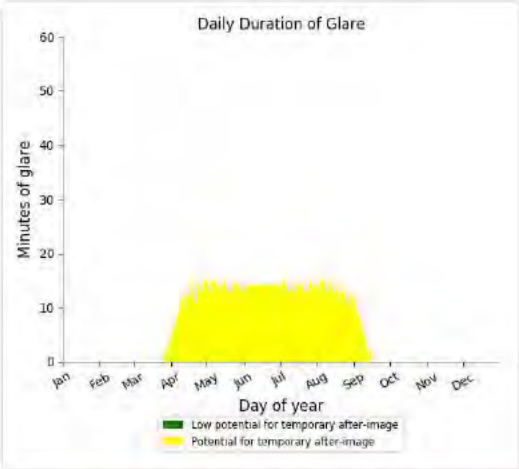


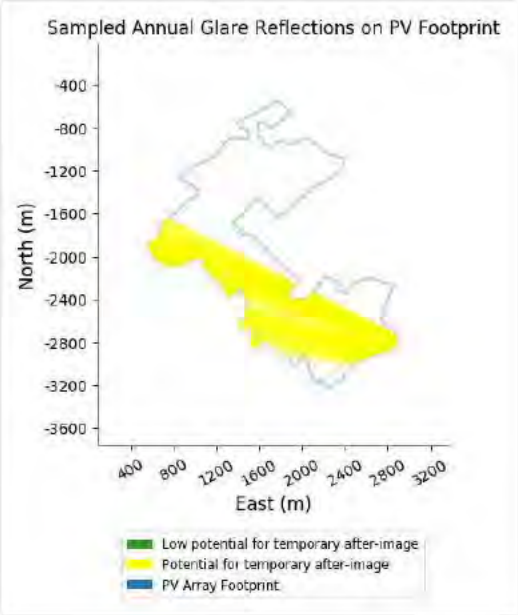


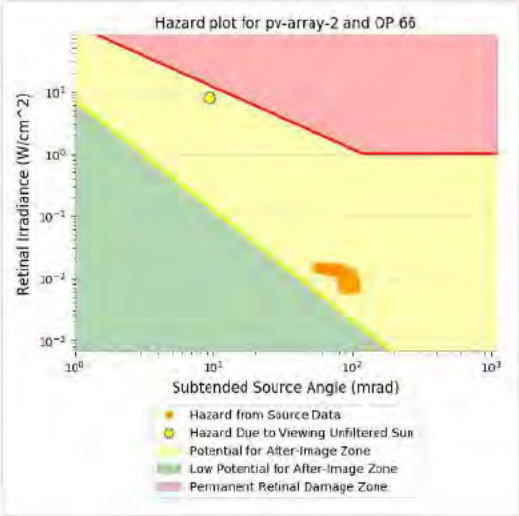
PV array 2 - OP Receptor (OP 66)

PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 2,118 minutes of "yellow" glare with potential to cause temporary after-image.



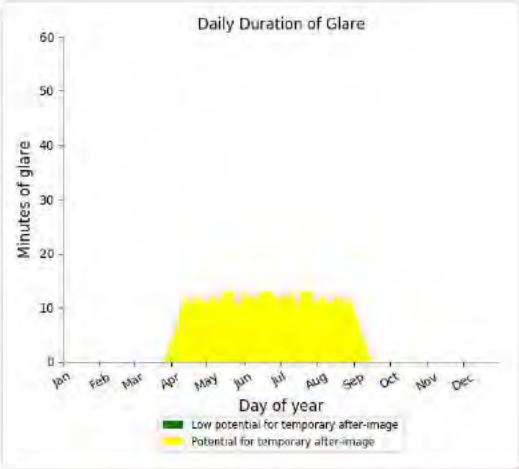


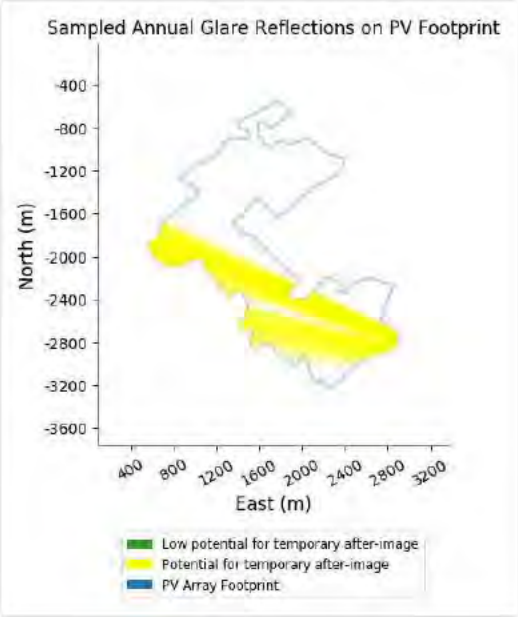


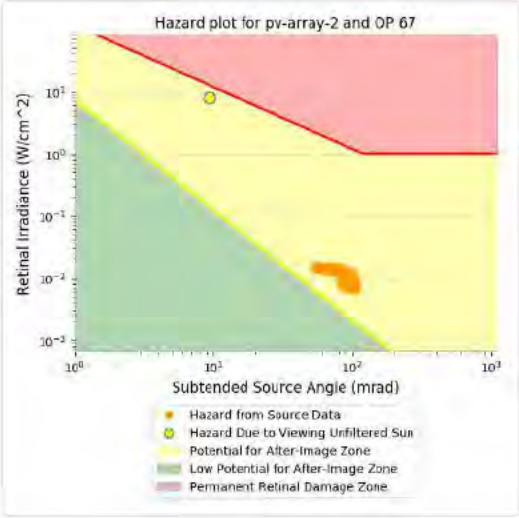
PV array 2 - OP Receptor (OP 67)

PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 1,841 minutes of "yellow" glare with potential to cause temporary after-image.



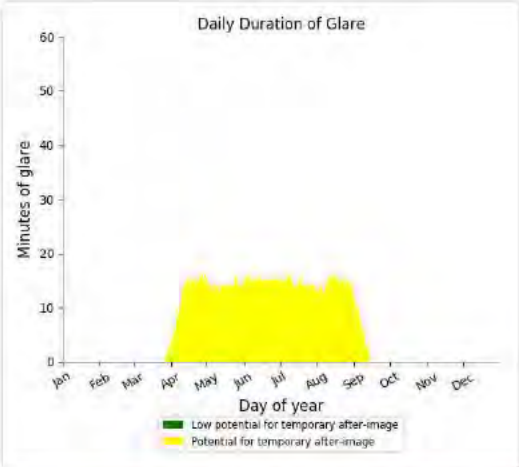


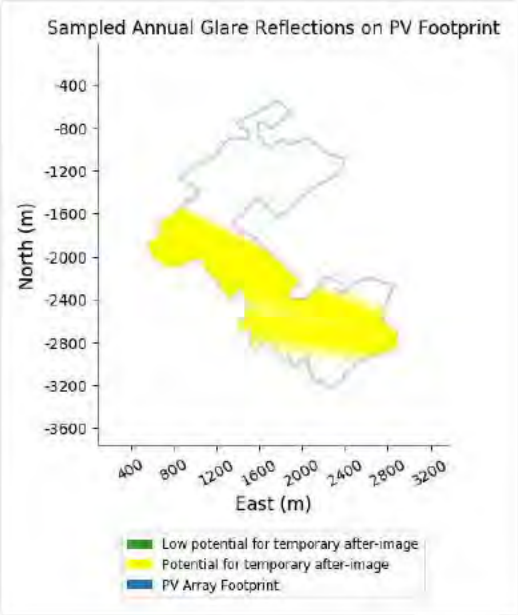


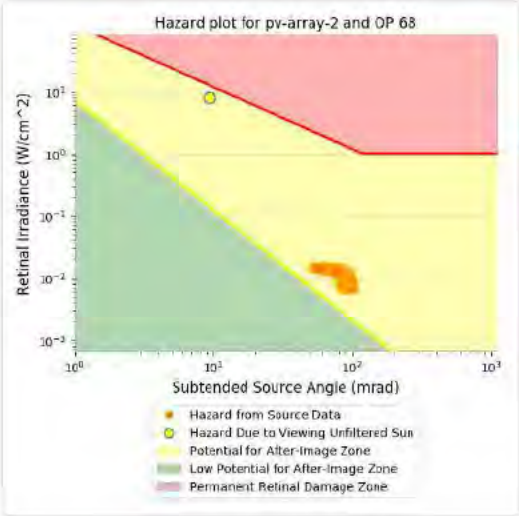
PV array 2 - OP Receptor (OP 68)

PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 2,253 minutes of "yellow" glare with potential to cause temporary after-image.



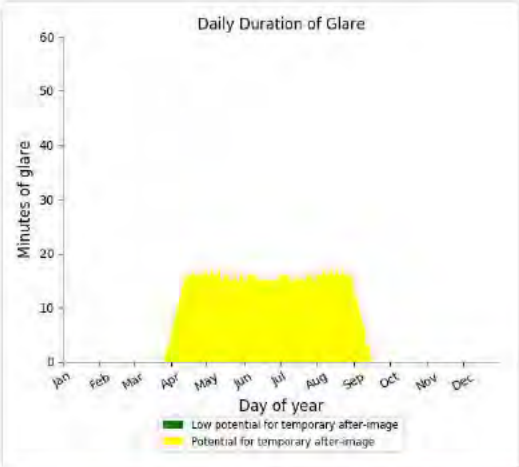


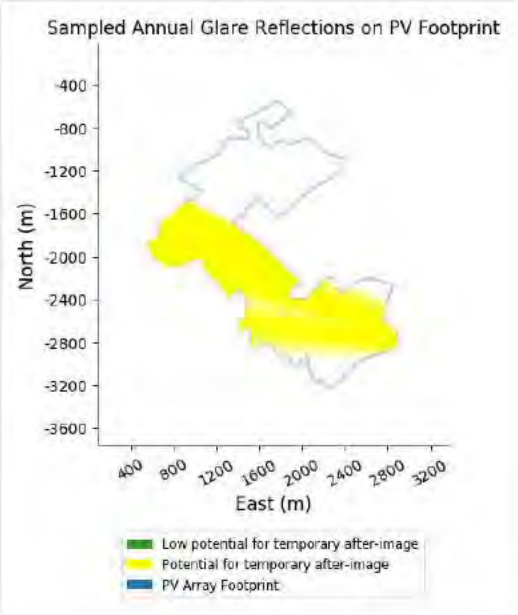


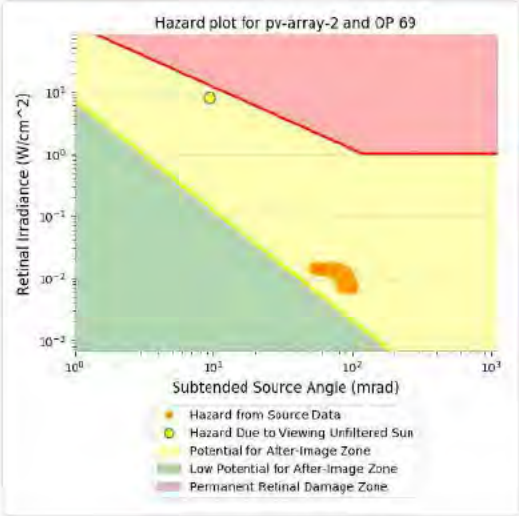
PV array 2 - OP Receptor (OP 69)

PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 2,456 minutes of "yellow" glare with potential to cause temporary after-image.



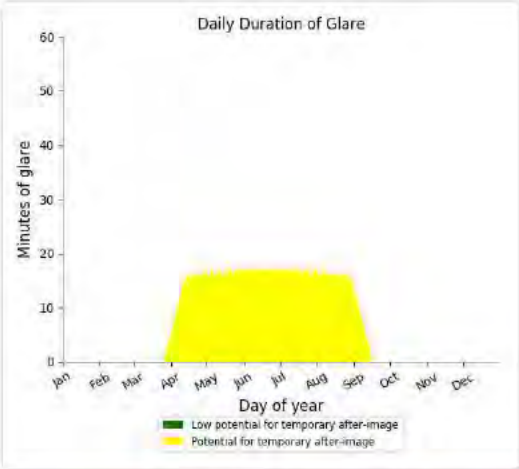


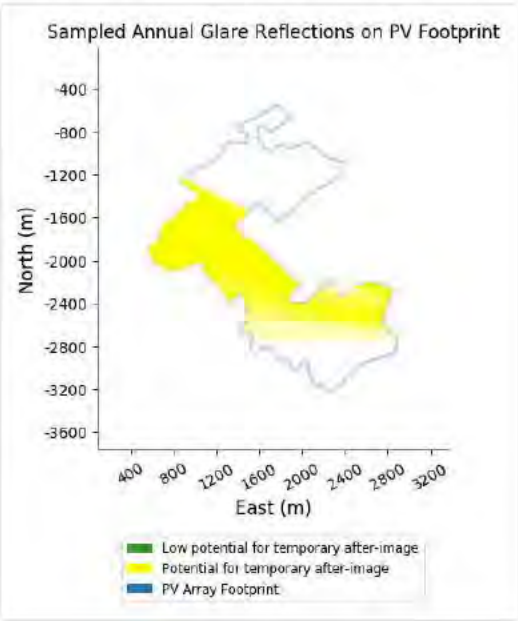


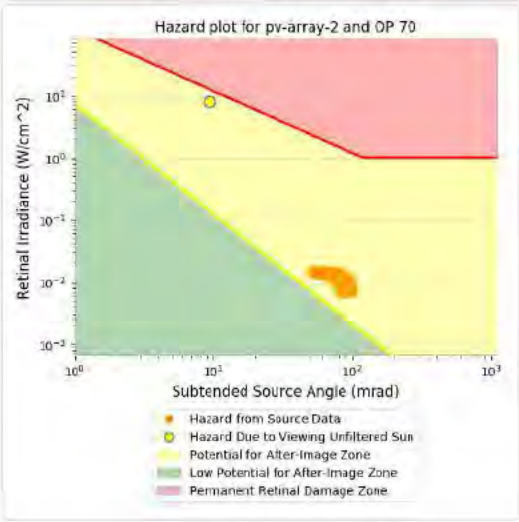
PV array 2 - OP Receptor (OP 70)

PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 2,565 minutes of "yellow" glare with potential to cause temporary after-image.



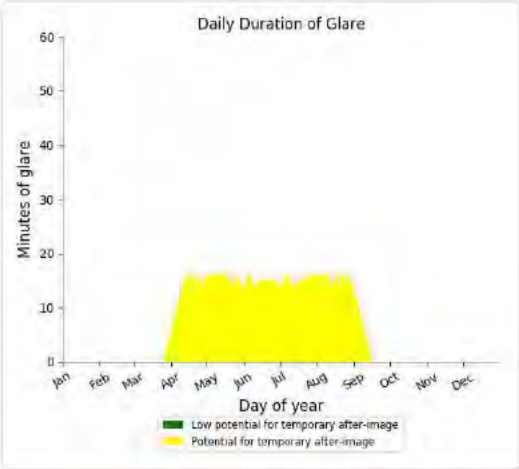


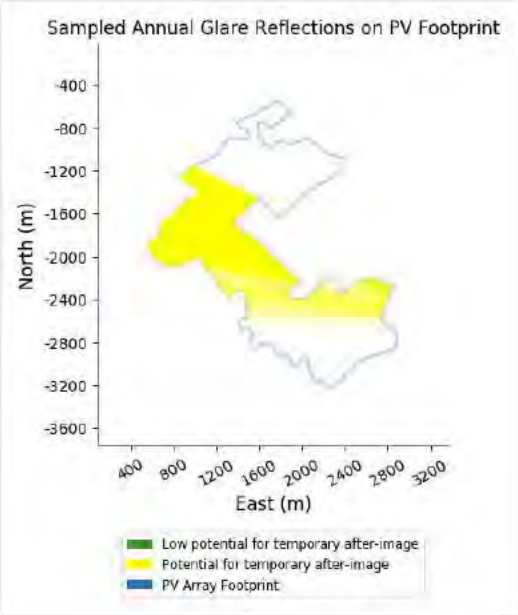


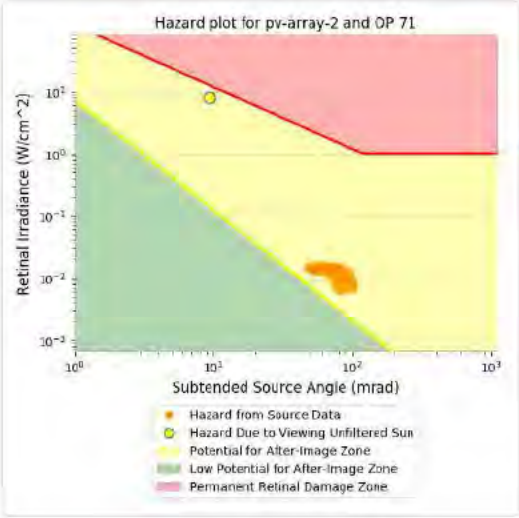
PV array 2 - OP Receptor (OP 71)

PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 2,388 minutes of "yellow" glare with potential to cause temporary after-image.



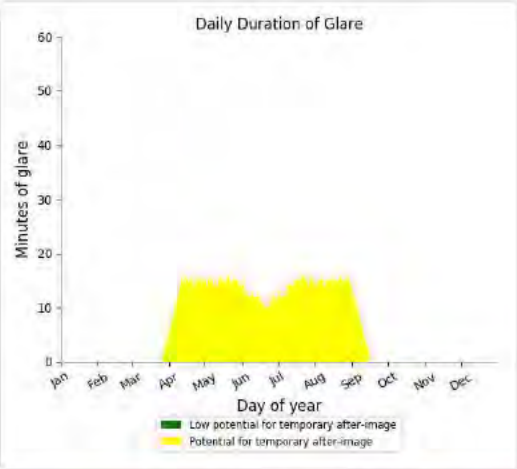


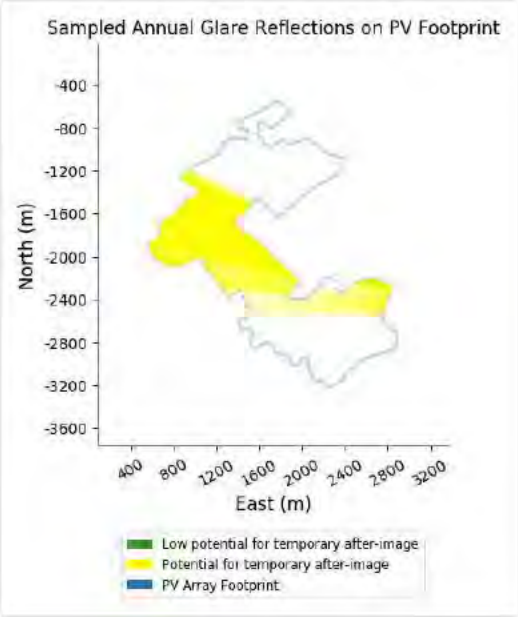


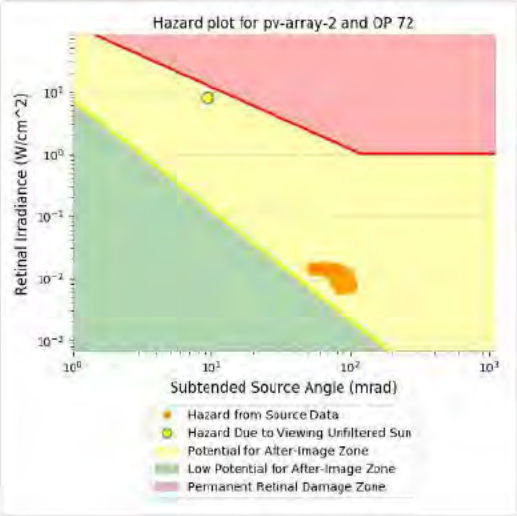
PV array 2 - OP Receptor (OP 72)

PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 2,234 minutes of "yellow" glare with potential to cause temporary after-image.



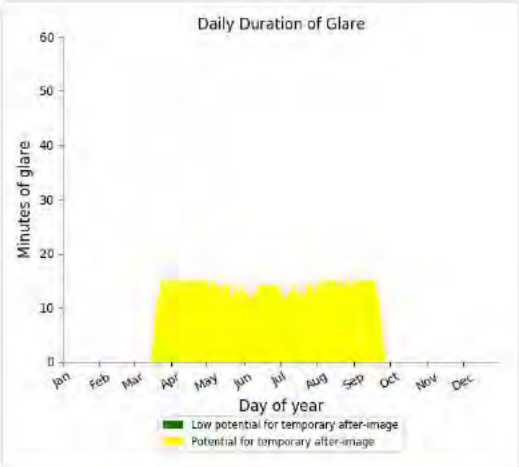


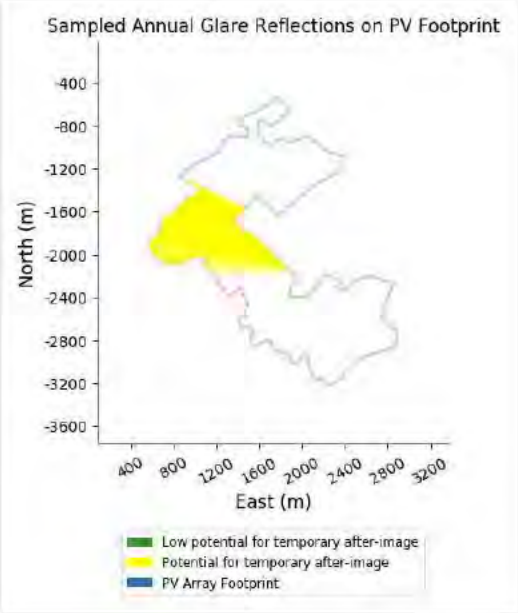


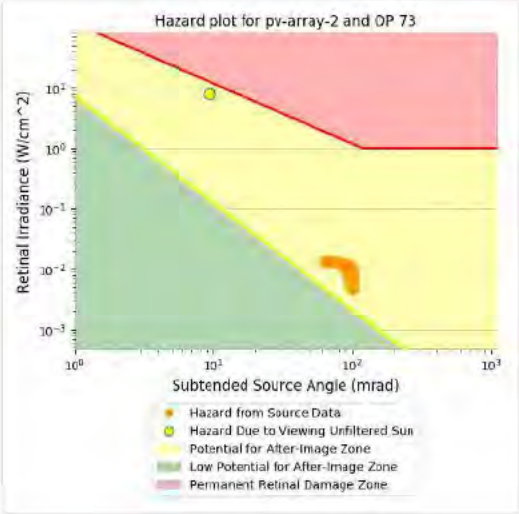
PV array 2 - OP Receptor (OP 73)

PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 2,651 minutes of "yellow" glare with potential to cause temporary after-image.



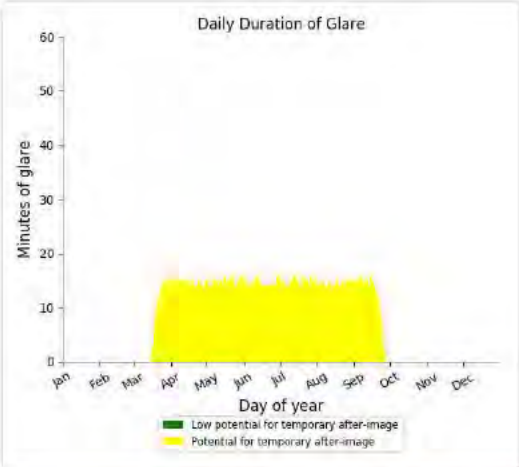


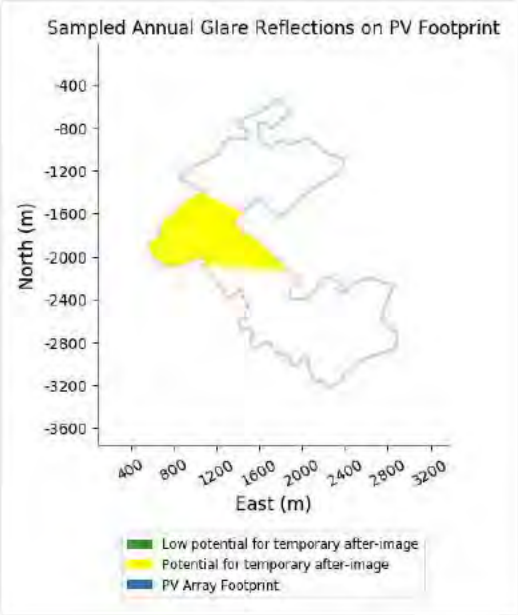


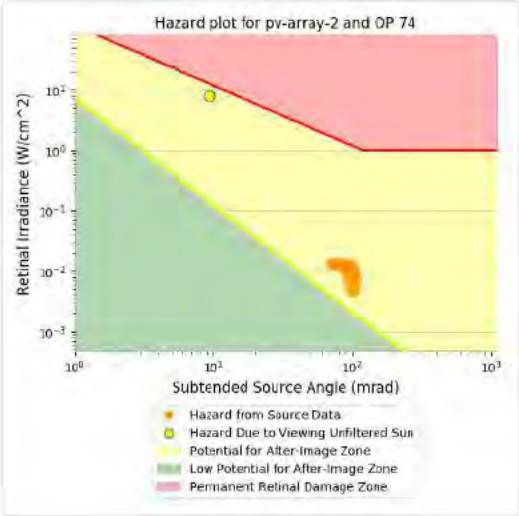
PV array 2 - OP Receptor (OP 74)

PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 2,766 minutes of "yellow" glare with potential to cause temporary after-image.



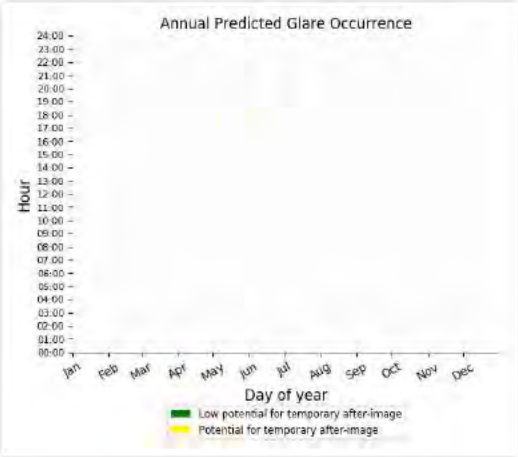


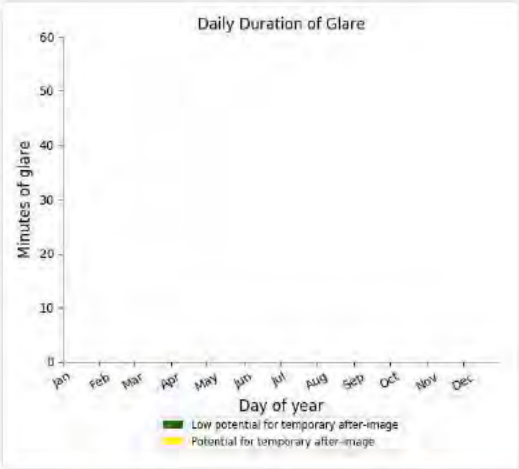


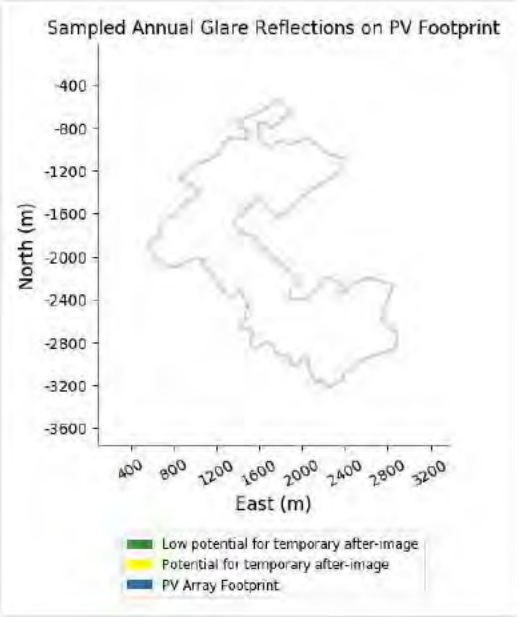
PV array 2 - OP Receptor (OP 75)

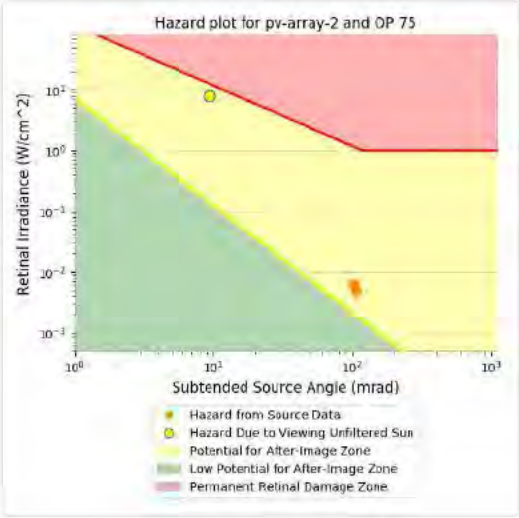
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 2 minutes of "yellow" glare with potential to cause temporary after-image.





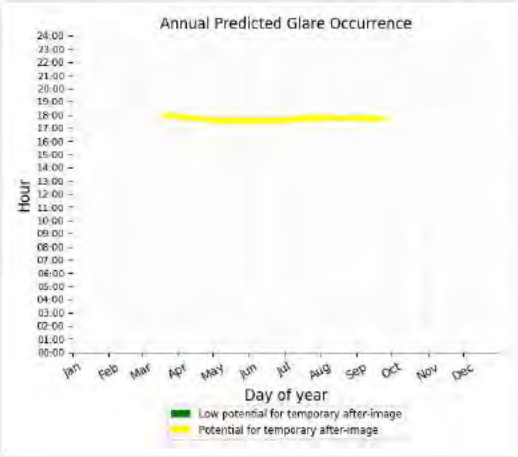


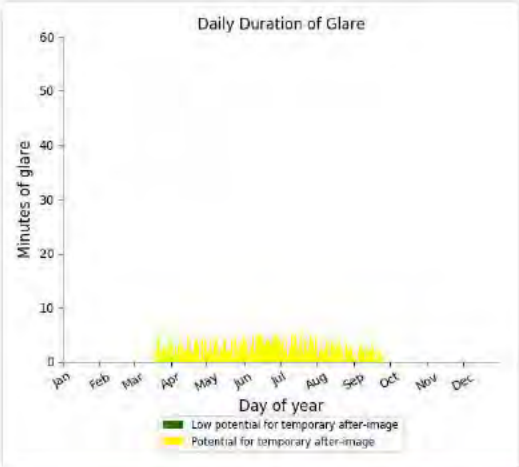


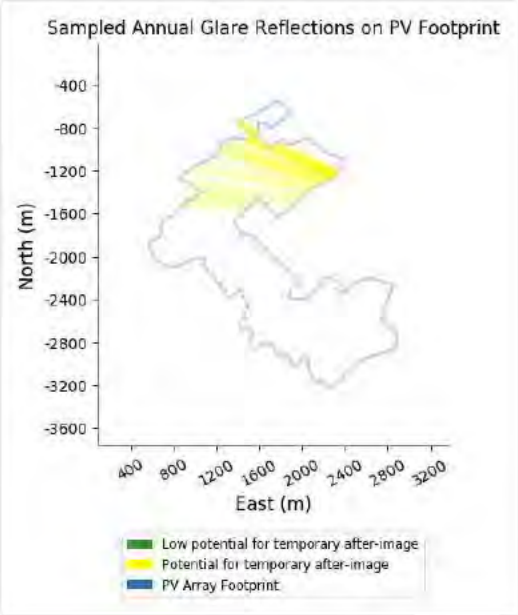
PV array 2 - OP Receptor (OP 76)

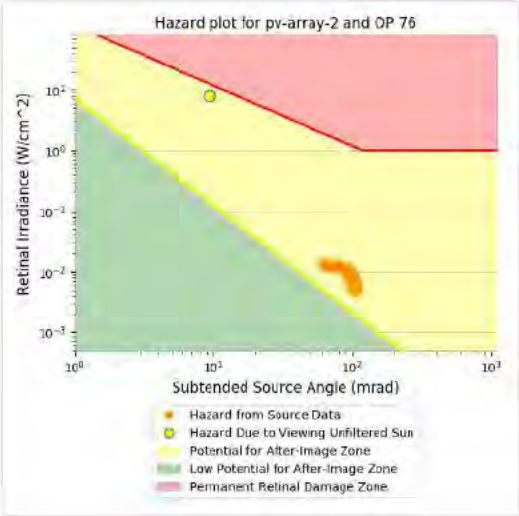
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 527 minutes of "yellow" glare with potential to cause temporary after-image.





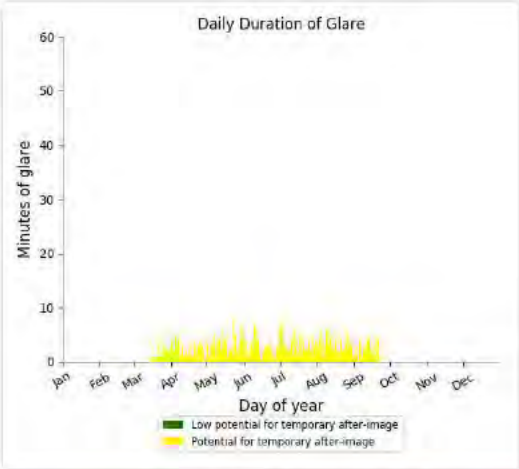


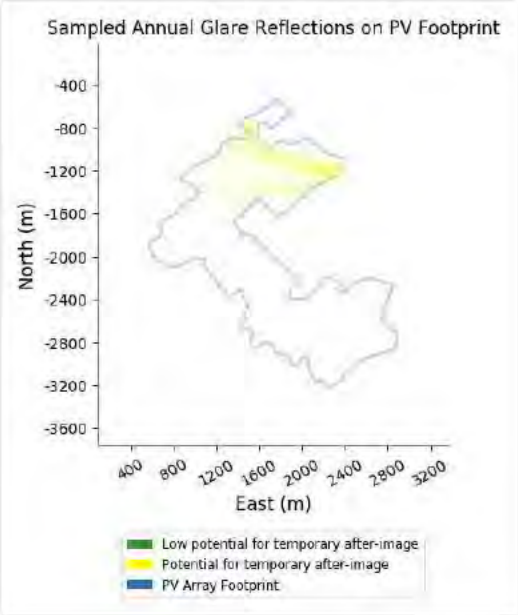


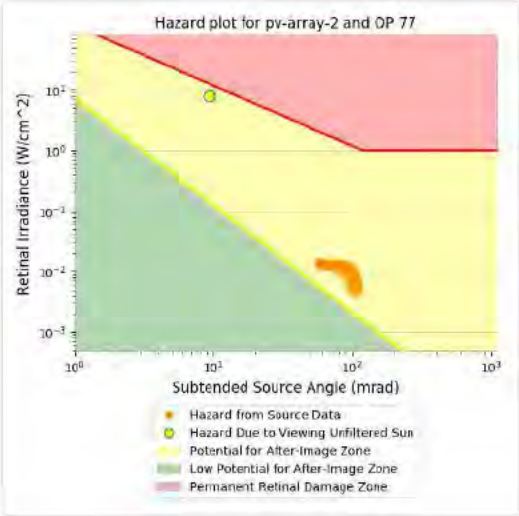
PV array 2 - OP Receptor (OP 77)

PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 515 minutes of "yellow" glare with potential to cause temporary after-image.



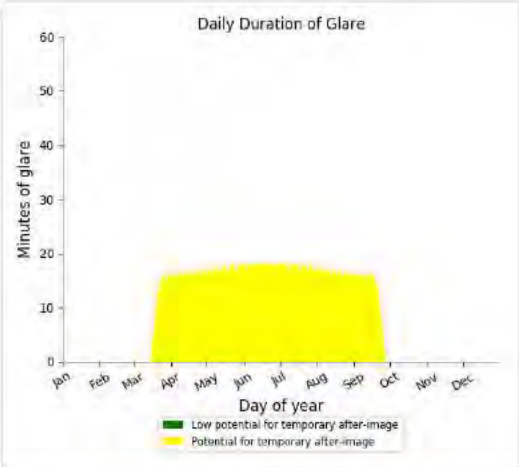


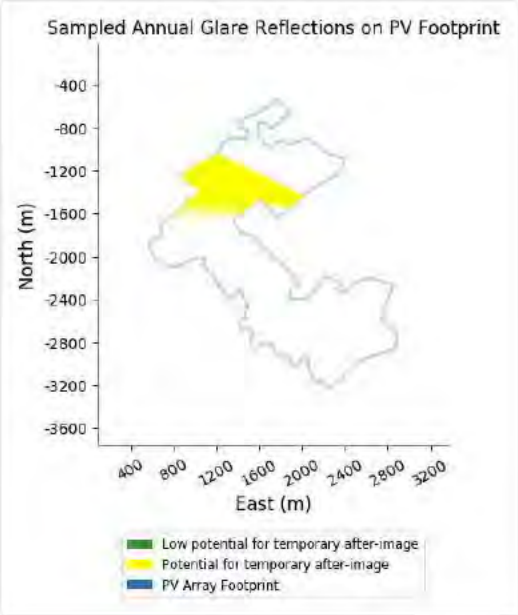


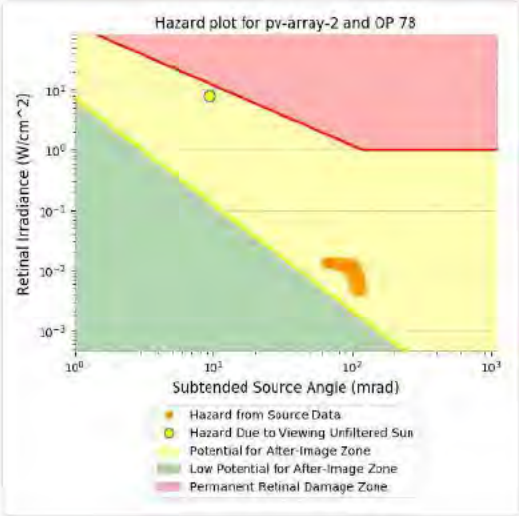
PV array 2 - OP Receptor (OP 78)

PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 3,177 minutes of "yellow" glare with potential to cause temporary after-image.



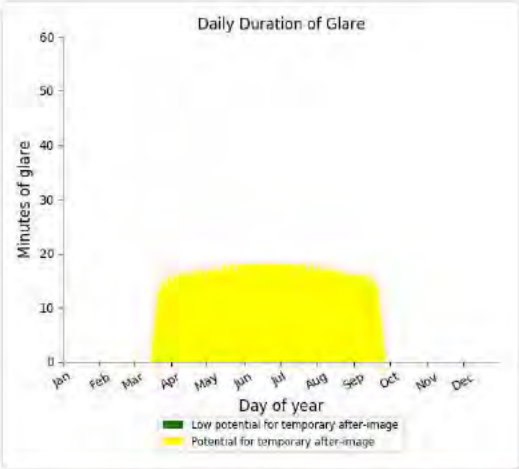


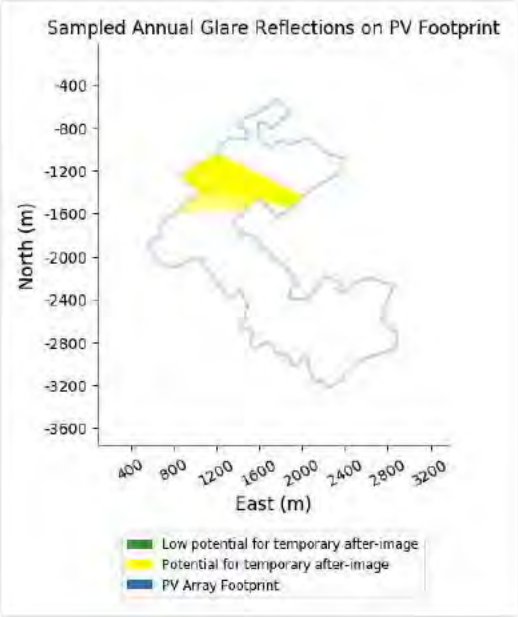


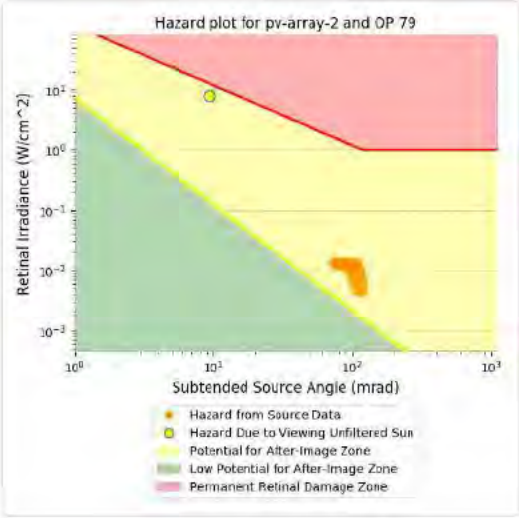
PV array 2 - OP Receptor (OP 79)

PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 3,185 minutes of "yellow" glare with potential to cause temporary after-image.



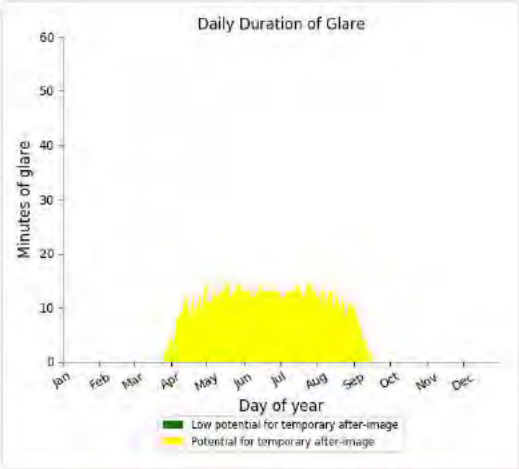


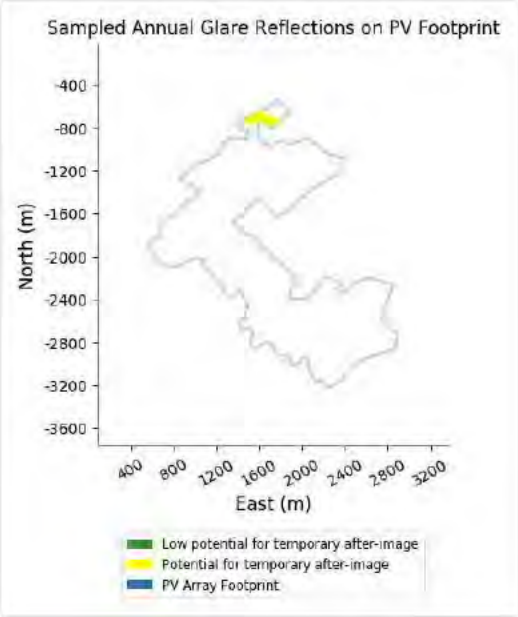


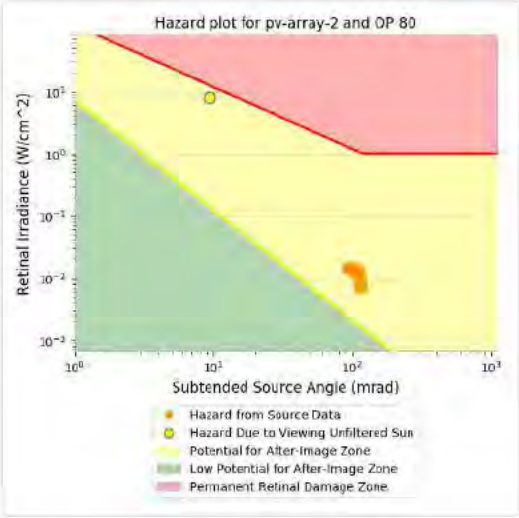
PV array 2 - OP Receptor (OP 80)

PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 1,925 minutes of "yellow" glare with potential to cause temporary after-image.



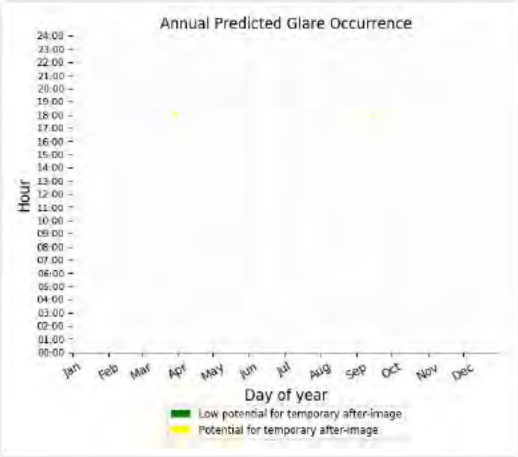


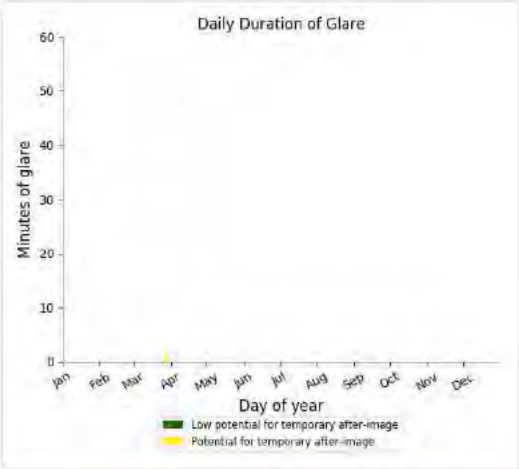


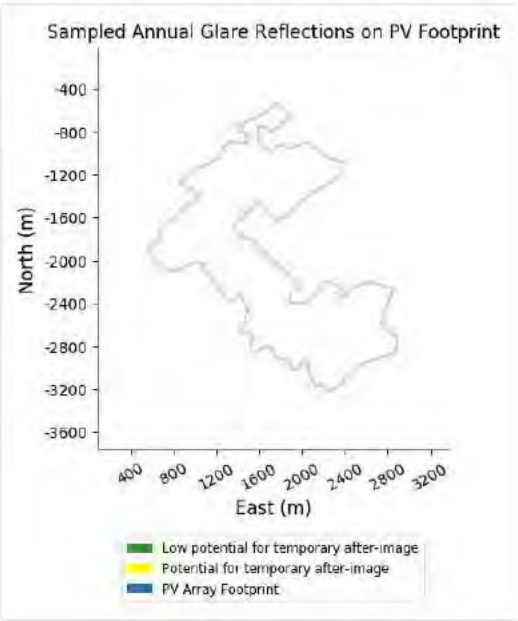
PV array 2 - OP Receptor (OP 81)

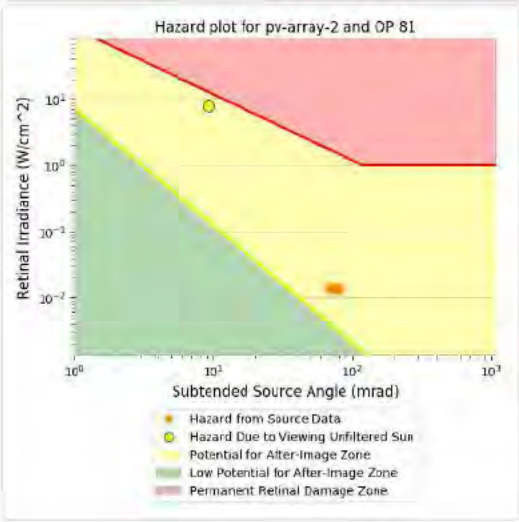
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 9 minutes of "yellow" glare with potential to cause temporary after-image.









PV array 2 - OP Receptor (OP 82)

No glare found

PV array 2 - OP Receptor (OP 83)

No glare found

PV array 2 - OP Receptor (OP 84)

No glare found

PV array 2 - OP Receptor (OP 85)

No glare found

PV array 2 - OP Receptor (OP 86)

No glare found

PV array 2 - OP Receptor (OP 87)

No glare found

PV array 2 - OP Receptor (OP 88)

No glare found

PV array 2 - OP Receptor (OP 89)

No glare found

PV array 2 - OP Receptor (OP 90)

No glare found

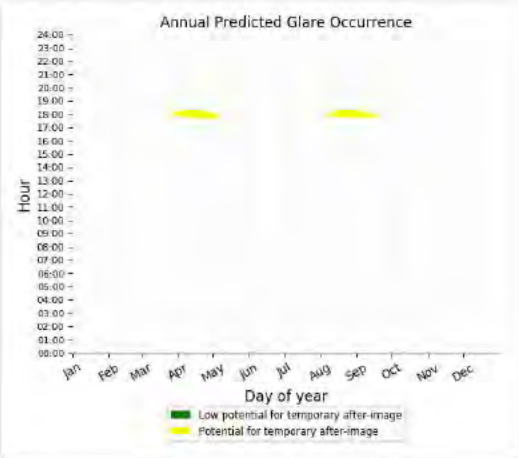
PV array 2 - OP Receptor (OP 91)

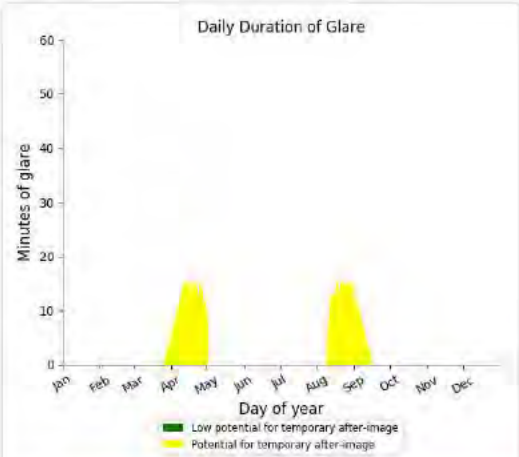
No glare found

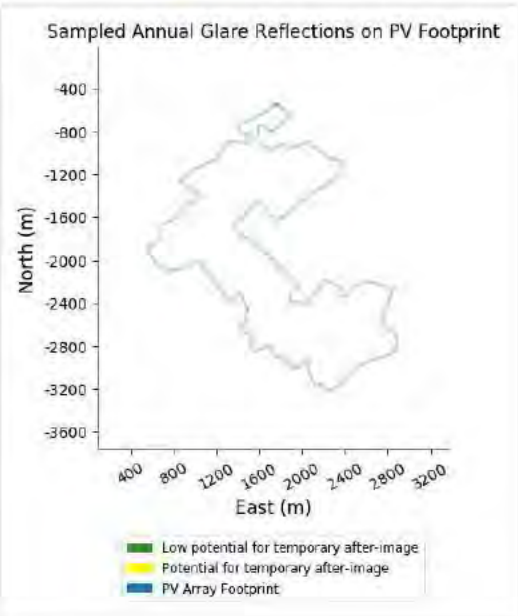
PV array 2 - OP Receptor (OP 92)

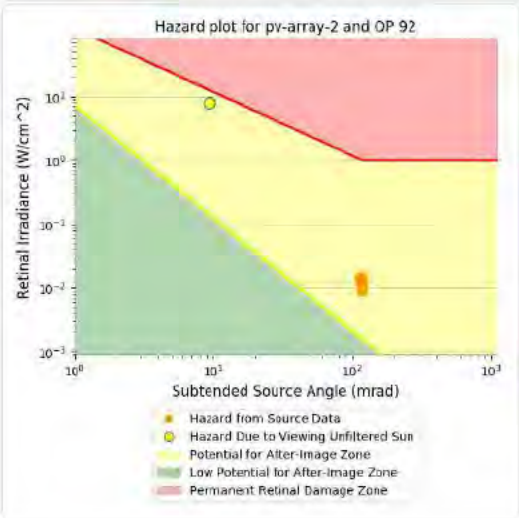
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 818 minutes of "yellow" glare with potential to cause temporary after-image.





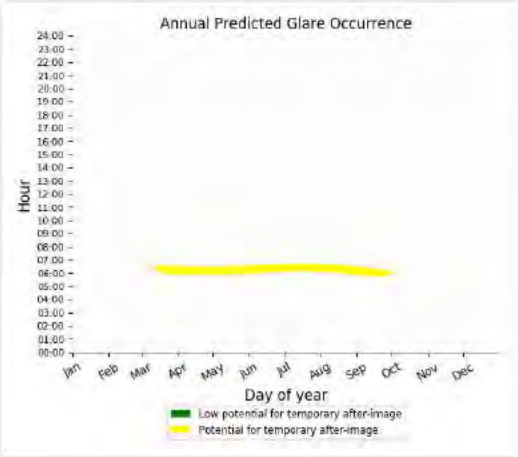


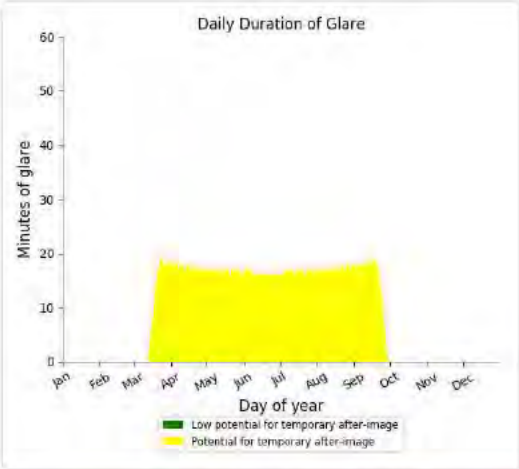


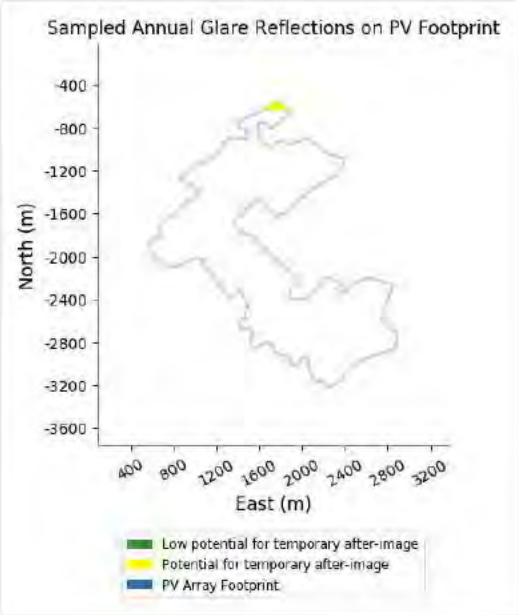
PV array 2 - OP Receptor (OP 93)

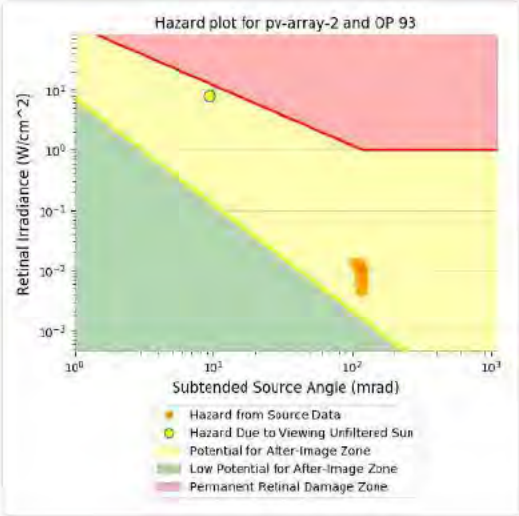
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 3,290 minutes of "yellow" glare with potential to cause temporary after-image.





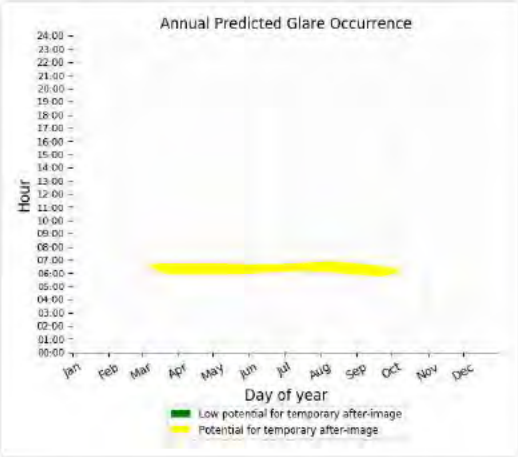


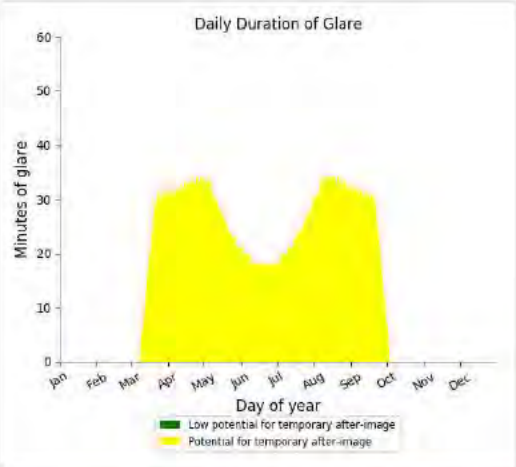


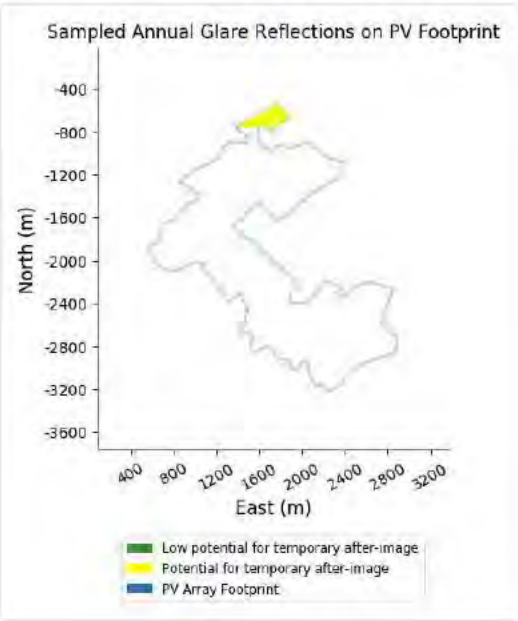
PV array 2 - OP Receptor (OP 94)

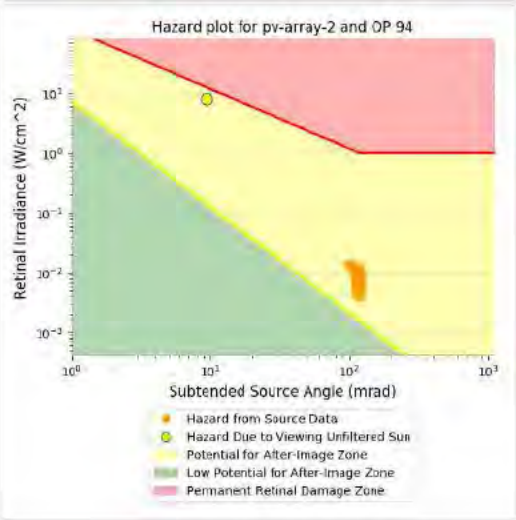
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 5,451 minutes of "yellow" glare with potential to cause temporary after-image.









PV array 2 OP Receptor (OP 95)

No glare found

PV array 2 - OP Receptor (OP 96)

No glare found

PV array 2 - OP Receptor (OP 97)

No glare found

PV array 2 - OP Receptor (OP 98)

No glare found

PV array 2 - OP Receptor (OP 99)

No glare found

Assumptions

- Times associated with glare are denoted in Standard time. For Daylight Savings, add one hour.
- Glare analyses do not account for physical obstructions between reflectors and receptors. This includes buildings, tree cover and geographic obstructions
- Detailed system geometry is not rigorously simulated.
- The glare hazard determination relies on several approximations including observer eye characteristics, angle of view, and typical blink response time. Actual values and results may vary.
- The system output calculation is a DNI-based approximation that assumes clear, sunny skies year-round. It should not be used in place of more rigorous modeling methods.
- Several V1 calculations utilize the PV array centroid, rather than the actual glare spot location, due to algorithm limitations. This may affect results for larg PV footprints. Additional analyses of array sub-sections can provide additional information on expected glare.
- The subtended source angle (glare spot size) is constrained by the PV array footprint size. Partitioning large arrays into smaller sections will reduce the maximum potential subtended angle, potentially impacting results if actual glare spots are larger than the sub-array size. Additional analyses of the combined area of adjacent sub-arrays can provide more information on potential glare hazards. (See previous point on related limitations.)
- Hazard zone boundaries shown in the Glare Hazard plot are an approximation and visual aid. Actual ocular impact outcomes encompass a continuous, nc discrete, spectrum.
- Glare locations displayed on receptor plots are approximate. Actual glare-spot locations may differ.
- Glare vector plots are simplified representations of analysis data. Actual glare emanations and results may differ.
- Refer to the **Help page** for detailed assumptions and limitations not listed here.

ForgeSolar

Longfield Solar Farm

Longfield Solar Farm Road 10 Deg

Created Aug. 13, 2021
Updated Aug. 17, 2021
Time-step 1 minute
Timezone offset UTC0
Site ID 57364.10147

Project type Advanced
Project status: active
Category 100 MW to 1 GW

Misc. Analysis Settings

DNI: **varies (1,000.0 W/m^2 peak)**
Ocular transmission coefficient: **0.5**
Pupil diameter: **0.002 m**
Eye focal length: **0.017 m**
Sun subtended angle: **9.3 mrad**

Analysis Methodologies:

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

Summary of Results Glare with potential for temporary after-image predicted

PV Name	Tilt	Orientation	"Green" Glare	"Yellow" Glare	Energy Produced
	deg	deg	min	min	kWh
PV array 1	10.0	180.0	0	120,811	-

Component Data

PV Array(s)

Total PV footprint area: 4,100,740 m^2

Name: PV array 1
Axis tracking: Fixed (no rotation)
Tilt: 10.0 deg
Orientation: 180.0 deg
Footprint area: 4,100,740 m^2
Rated power: -
Panel material: Light textured glass with AR coating
Vary reflectivity with sun position? Yes
Correlate slope error with surface type? Yes
Slope error: 9.16 mrad

Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	m	m	m
1	51.796401	0.524180	55.67	3.00	58.67
2	51.797383	0.522893	56.93	3.00	59.93
3	51.797489	0.522464	57.69	3.00	60.69
4	51.797277	0.522163	57.37	3.00	60.37
5	51.798683	0.521563	59.22	3.00	62.22
6	51.799957	0.521305	59.70	3.00	62.70
7	51.799771	0.520661	59.50	3.00	62.50
8	51.800408	0.520404	59.53	3.00	62.53
9	51.801098	0.520146	59.33	3.00	62.33
10	51.801337	0.520833	58.40	3.00	61.40
11	51.801656	0.521477	58.40	3.00	61.40
12	51.802319	0.521477	58.33	3.00	61.33
13	51.802770	0.521348	58.22	3.00	61.22
14	51.802929	0.522721	57.30	3.00	60.30
15	51.803195	0.522464	56.59	3.00	59.59
16	51.803341	0.520683	57.85	3.00	60.85
17	51.804814	0.520661	57.51	3.00	60.51
18	51.804814	0.521262	57.61	3.00	60.61
19	51.804336	0.524567	57.35	3.00	60.35
20	51.805066	0.524953	56.64	3.00	59.64
21	51.805517	0.524910	55.81	3.00	58.81
22	51.805902	0.525060	55.55	3.00	58.55
23	51.806154	0.524631	55.63	3.00	58.63
24	51.806791	0.524545	54.59	3.00	57.59
25	51.806976	0.524760	53.85	3.00	56.85
26	51.806817	0.525790	53.07	3.00	56.07
27	51.807374	0.525961	51.75	3.00	54.75
28	51.808131	0.526026	48.92	3.00	51.92
29	51.808635	0.526069	47.06	3.00	50.06
30	51.809378	0.526562	43.40	3.00	46.40
31	51.809232	0.527528	43.20	3.00	46.20
32	51.808383	0.528107	44.34	3.00	47.34
33	51.808356	0.528386	44.51	3.00	47.51
34	51.809510	0.528858	39.22	3.00	42.22
35	51.809470	0.531390	39.83	3.00	42.83
36	51.809139	0.532592	39.95	3.00	42.95
37	51.808781	0.533386	45.14	3.00	48.14
38	51.808157	0.534480	47.48	3.00	50.48
39	51.807976	0.535977	47.86	3.00	50.86
40	51.807856	0.536750	47.77	3.00	50.77
41	51.807498	0.537951	46.46	3.00	49.46
42	51.804619	0.535720	54.38	3.00	57.38
43	51.804234	0.537629	52.43	3.00	55.43
44	51.803836	0.538574	53.36	3.00	56.36
45	51.803345	0.539368	51.70	3.00	54.70
46	51.802284	0.540827	53.00	3.00	56.00
47	51.801810	0.541505	53.85	3.00	56.85
48	51.801544	0.541333	53.77	3.00	56.77
49	51.798625	0.542835	53.73	3.00	56.73
50	51.799050	0.544638	52.72	3.00	55.72
51	51.799899	0.546483	50.75	3.00	53.75
52	51.798824	0.548522	50.16	3.00	53.16
53	51.797471	0.545818	51.82	3.00	54.82
54	51.798055	0.544874	51.90	3.00	54.90
55	51.798121	0.543994	52.77	3.00	55.77
56	51.797351	0.544273	53.01	3.00	56.01
57	51.797165	0.543908	51.74	3.00	54.74
58	51.795952	0.545603	48.45	3.00	51.45
59	51.796768	0.547516	50.46	3.00	53.46
60	51.796145	0.548438	47.01	3.00	50.01
61	51.796808	0.550820	45.69	3.00	48.69

62	51.796078	0.552000	48.33	3.00	51.33
63	51.795335	0.553867	46.63	3.00	49.63
64	51.794977	0.555841	44.78	3.00	47.78
65	51.793955	0.555090	45.53	3.00	48.53
66	51.793053	0.552923	45.78	3.00	48.78
67	51.792562	0.551464	46.53	3.00	49.53
68	51.790020	0.546711	50.66	3.00	53.66
69	51.791755	0.544093	51.82	3.00	54.82
70	51.789618	0.540617	55.94	3.00	58.94
71	51.789220	0.541347	55.54	3.00	58.54
72	51.788861	0.541712	54.61	3.00	57.61
73	51.788569	0.542227	54.21	3.00	57.21
74	51.788822	0.542742	54.03	3.00	57.03
75	51.785406	0.548621	51.37	3.00	54.37
76	51.785220	0.549050	51.14	3.00	54.14
77	51.784835	0.549479	51.69	3.00	54.69
78	51.784012	0.548514	49.80	3.00	52.80
79	51.783295	0.549072	48.95	3.00	51.95
80	51.783269	0.550659	50.00	3.00	53.00
81	51.785247	0.553170	49.93	3.00	52.93
82	51.785233	0.553513	49.42	3.00	52.42
83	51.784556	0.555187	47.27	3.00	50.27
84	51.784530	0.556367	46.38	3.00	49.38
85	51.784995	0.559500	46.91	3.00	49.91
86	51.784437	0.562139	47.64	3.00	50.64
87	51.781636	0.560744	42.41	3.00	45.41
88	51.780202	0.563319	38.75	3.00	41.75
89	51.778623	0.562912	41.36	3.00	44.36
90	51.778038	0.558921	43.48	3.00	46.48
91	51.776963	0.555874	44.20	3.00	47.20
92	51.776246	0.554972	44.18	3.00	47.18
93	51.775702	0.553470	43.89	3.00	46.89
94	51.776432	0.552655	42.48	3.00	45.48
95	51.776472	0.552204	42.35	3.00	45.35
96	51.776153	0.552033	44.14	3.00	47.14
97	51.777560	0.550702	44.38	3.00	47.38
98	51.778636	0.550638	44.47	3.00	47.47
99	51.777760	0.548771	45.50	3.00	48.50
100	51.778662	0.547810	46.20	3.00	49.20
101	51.778384	0.547188	46.30	3.00	49.30
102	51.779711	0.545321	47.26	3.00	50.26
103	51.779379	0.544806	47.32	3.00	50.32
104	51.779260	0.543304	45.51	3.00	48.51
105	51.780455	0.543089	46.29	3.00	49.29
106	51.780707	0.542832	46.96	3.00	49.96
107	51.780840	0.542102	46.40	3.00	49.40
108	51.780853	0.541716	46.74	3.00	49.74
109	51.781357	0.541244	48.33	3.00	51.33
110	51.781742	0.542596	49.02	3.00	52.02
111	51.782338	0.542133	49.06	3.00	52.06
112	51.782511	0.542756	50.33	3.00	53.33
113	51.783746	0.541812	51.03	3.00	54.03
114	51.783918	0.540417	50.21	3.00	53.21
115	51.784131	0.540267	50.10	3.00	53.10
116	51.783971	0.539558	50.39	3.00	53.39
117	51.784675	0.538636	50.08	3.00	53.08
118	51.786082	0.536361	53.70	3.00	56.70
119	51.786493	0.536018	51.51	3.00	54.51
120	51.786334	0.534516	51.14	3.00	54.14
121	51.786002	0.533400	49.52	3.00	52.52
122	51.785896	0.532542	48.20	3.00	51.20
123	51.786268	0.531104	47.33	3.00	50.33
124	51.786719	0.530031	47.75	3.00	50.75
125	51.787794	0.529066	48.91	3.00	51.91
126	51.788615	0.530890	52.09	3.00	55.09

127	51.789810	0.531083	54.39	3.00	57.39
128	51.790327	0.532671	55.73	3.00	58.73
129	51.791602	0.534602	56.74	3.00	59.74
130	51.791602	0.535181	56.79	3.00	59.79
131	51.792172	0.536404	56.90	3.00	59.90
132	51.792771	0.534924	56.98	3.00	59.98
133	51.792864	0.534537	57.39	3.00	60.39
134	51.793222	0.534130	57.11	3.00	60.11
135	51.793448	0.533615	57.21	3.00	60.21
136	51.795094	0.531383	58.82	3.00	61.82
137	51.794656	0.530718	58.25	3.00	61.25
138	51.793873	0.530117	58.23	3.00	61.23
139	51.793501	0.529752	57.72	3.00	60.72
140	51.793302	0.529302	57.43	3.00	60.43
141	51.795346	0.527049	58.54	3.00	61.54
142	51.795717	0.527714	58.61	3.00	61.61
143	51.796408	0.528551	59.10	3.00	62.10
144	51.796633	0.529130	58.68	3.00	61.68
145	51.796461	0.529645	58.58	3.00	61.58
146	51.795996	0.530246	58.92	3.00	61.92
147	51.796567	0.531726	58.02	3.00	61.02
148	51.798584	0.529216	56.85	3.00	59.85
149	51.798531	0.527735	56.62	3.00	59.62
150	51.797602	0.526577	56.04	3.00	59.04
151	51.797018	0.525439	56.13	3.00	59.13

Discrete Observation Receptors

Number	Latitude	Longitude	Ground elevation	Height above ground	Total Elevation
	deg	deg	m	m	m
OP 1	51.811279	0.519287	45.14	1.50	46.64
OP 2	51.809528	0.518579	48.39	1.50	49.89
OP 3	51.807975	0.518515	51.82	1.50	53.32
OP 4	51.805866	0.518150	56.47	1.50	57.97
OP 5	51.804410	0.518407	58.10	1.50	59.60
OP 6	51.802897	0.519673	59.11	1.50	60.61
OP 7	51.801066	0.519802	59.28	1.50	60.78
OP 8	51.799222	0.520424	61.43	1.50	62.93
OP 9	51.797722	0.520682	58.74	1.50	60.24
OP 10	51.796024	0.521047	56.77	1.50	58.27
OP 11	51.794338	0.522184	56.48	1.50	57.98
OP 12	51.792520	0.523493	58.43	1.50	59.93
OP 13	51.790795	0.524566	56.08	1.50	57.58
OP 14	51.789560	0.526711	53.36	1.50	54.86
OP 15	51.788379	0.528428	51.58	1.50	53.08
OP 16	51.786720	0.529737	48.98	1.50	50.48
OP 17	51.785738	0.532527	48.45	1.50	49.95
OP 18	51.785711	0.535144	51.50	1.50	53.00
OP 19	51.784928	0.537676	50.03	1.50	51.53
OP 20	51.783640	0.539372	51.46	1.50	52.96
OP 21	51.782047	0.540573	48.99	1.50	50.49
OP 22	51.780481	0.541625	46.80	1.50	48.30
OP 23	51.778835	0.542912	45.93	1.50	47.43
OP 24	51.777401	0.544521	46.98	1.50	48.48
OP 25	51.776073	0.546882	44.11	1.50	45.61
OP 26	51.775463	0.548899	43.54	1.50	45.04
OP 27	51.770165	0.565013	40.07	1.50	41.57
OP 28	51.770975	0.568168	36.70	1.50	38.20
OP 29	51.774100	0.574790	32.65	1.50	34.15
OP 30	51.775694	0.574704	27.47	1.50	28.97
OP 31	51.777154	0.575970	29.08	1.50	30.58
OP 32	51.779053	0.576885	24.29	1.50	25.79
OP 33	51.781217	0.576306	27.90	1.50	29.40
OP 34	51.782557	0.576048	32.54	1.50	34.04
OP 35	51.790017	0.573108	35.03	1.50	36.53
OP 36	51.790561	0.570362	39.84	1.50	41.34
OP 37	51.790866	0.567916	42.48	1.50	43.98
OP 38	51.791583	0.565169	42.91	1.50	44.41
OP 39	51.792924	0.563753	45.48	1.50	46.98
OP 40	51.794092	0.561457	47.35	1.50	48.85
OP 41	51.795848	0.561214	47.88	1.50	49.38
OP 42	51.797387	0.560913	45.02	1.50	46.52
OP 43	51.799311	0.561600	41.87	1.50	43.37
OP 44	51.800731	0.561493	36.60	1.50	38.10
OP 45	51.801686	0.563360	33.35	1.50	34.85
OP 46	51.804657	0.516281	58.96	1.50	60.46
OP 47	51.803603	0.514838	61.09	1.50	62.59
OP 48	51.801891	0.513625	60.23	1.50	61.73
OP 49	51.800610	0.512048	60.37	1.50	61.87
OP 50	51.799131	0.509763	64.04	1.50	65.54
OP 51	51.797910	0.507435	66.86	1.50	68.36
OP 52	51.786255	0.527068	50.55	1.50	52.05
OP 53	51.786554	0.524407	50.90	1.50	52.40
OP 54	51.786733	0.521220	52.90	1.50	54.40
OP 55	51.786587	0.518710	55.90	1.50	57.40
OP 56	51.786693	0.515760	59.38	1.50	60.88

Summary of PV Glare Analysis

PV configuration and total predicted glare

PV Name	Tilt	Orientation	"Green" Glare	"Yellow" Glare	Energy Produced	Data File
	deg	deg	min	min	kWh	
PV array 1	10.0	180.0	0	120,811	-	-

Distinct glare per month

Excludes overlapping glare from PV array for multiple receptors at matching time(s)

PV	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
pv-array-1 (green)	0	0	0	0	0	0	0	0	0	0	0	0
pv-array-1 (yellow)	0	22	927	1835	2633	2904	2836	2191	1299	186	0	0

PV & Receptor Analysis Results

Results for each PV array and receptor

PV array 1 potential temporary after-image

Component	Green glare (min)	Yellow glare (min)
OP: OP 1	0	0
OP: OP 2	0	2
OP: OP 3	0	570
OP: OP 4	0	2140
OP: OP 5	0	1297
OP: OP 6	0	3471
OP: OP 7	0	4984
OP: OP 8	0	6118
OP: OP 9	0	3627
OP: OP 10	0	2493
OP: OP 11	0	1704
OP: OP 12	0	2214
OP: OP 13	0	1354
OP: OP 14	0	2260
OP: OP 15	0	2779
OP: OP 16	0	2814
OP: OP 17	0	3638
OP: OP 18	0	5252
OP: OP 19	0	4959
OP: OP 20	0	3643
OP: OP 21	0	2756
OP: OP 22	0	2810
OP: OP 23	0	2803
OP: OP 24	0	2687
OP: OP 25	0	2713

OP: OP 26	0	2785
OP: OP 27	0	0
OP: OP 28	0	1155
OP: OP 29	0	2166
OP: OP 30	0	2342
OP: OP 31	0	2288
OP: OP 32	0	2339
OP: OP 33	0	2026
OP: OP 34	0	1792
OP: OP 35	0	1936
OP: OP 36	0	1153
OP: OP 37	0	775
OP: OP 38	0	1444
OP: OP 39	0	1753
OP: OP 40	0	2672
OP: OP 41	0	2751
OP: OP 42	0	371
OP: OP 43	0	1310
OP: OP 44	0	1219
OP: OP 45	0	834
OP: OP 46	0	2
OP: OP 47	0	2709
OP: OP 48	0	0
OP: OP 49	0	2
OP: OP 50	0	3138
OP: OP 51	0	3217
OP: OP 52	0	2821
OP: OP 53	0	2609
OP: OP 54	0	2410
OP: OP 55	0	1704
OP: OP 56	0	0

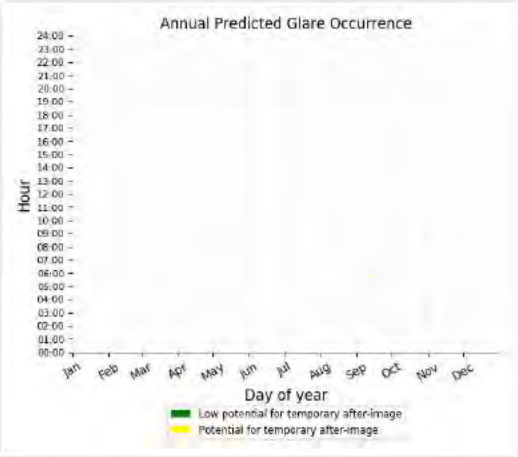
PV array 1 - OP Receptor (OP 1)

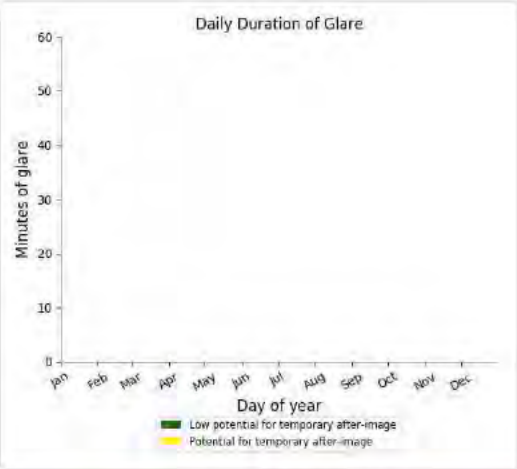
No glare found

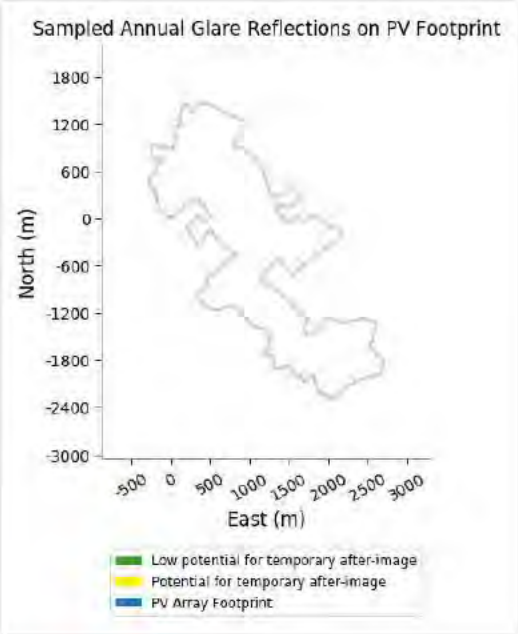
PV array 1 - OP Receptor (OP 2)

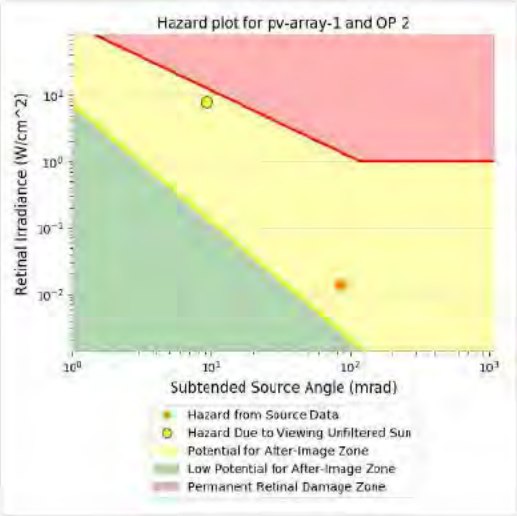
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 2 minutes of "yellow" glare with potential to cause temporary after-image.





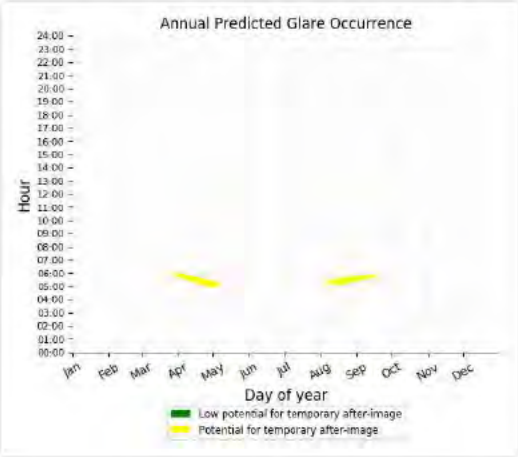


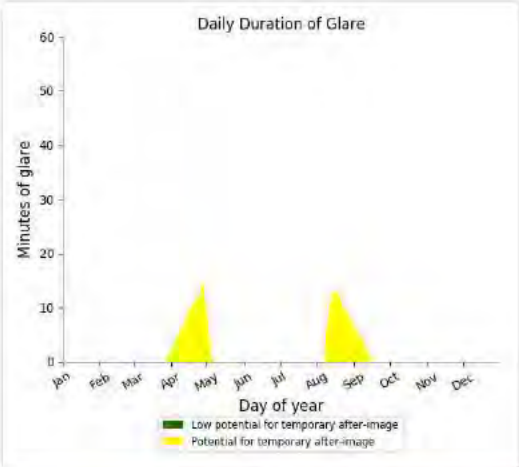


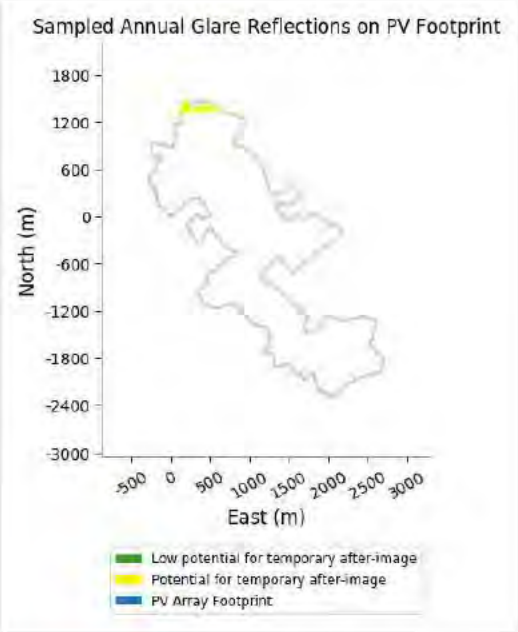
PV array 1 - OP Receptor (OP 3)

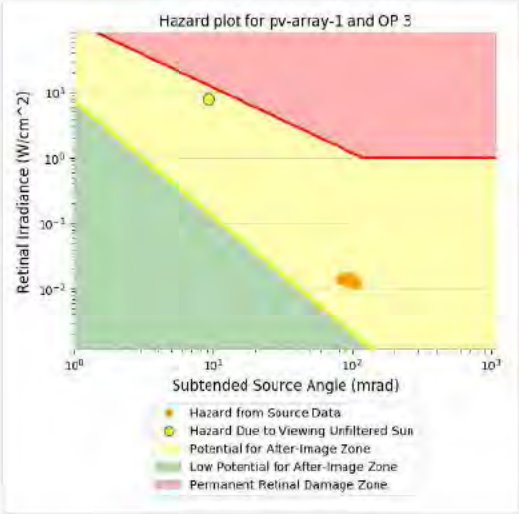
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 570 minutes of "yellow" glare with potential to cause temporary after-image.





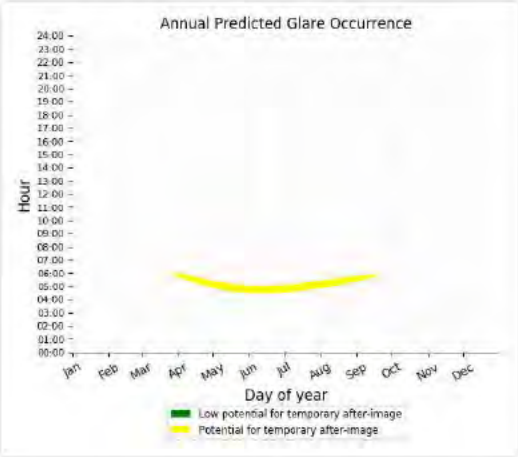


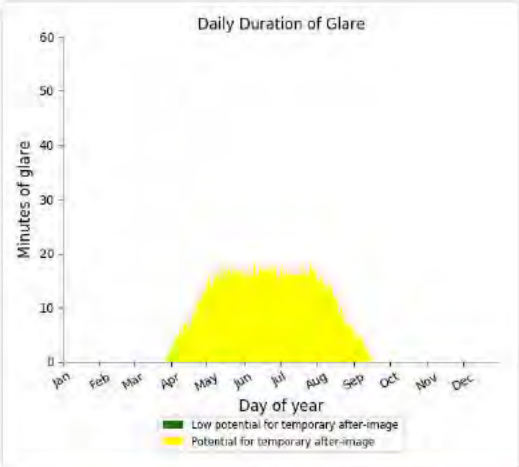


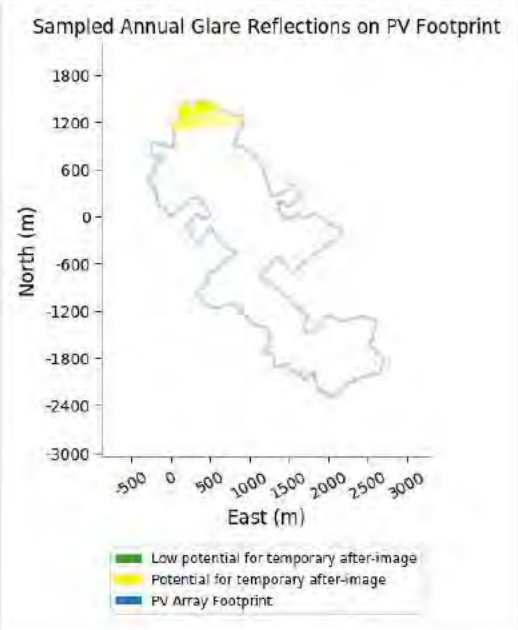
PV array 1 - OP Receptor (OP 4)

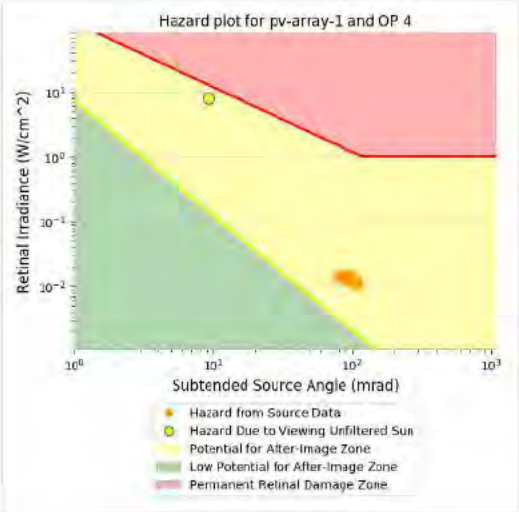
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 2,140 minutes of "yellow" glare with potential to cause temporary after-image.





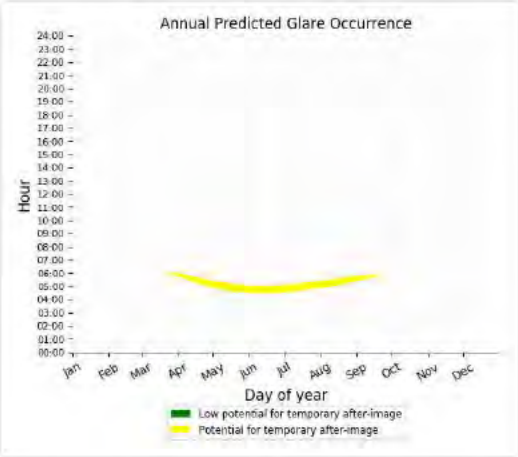


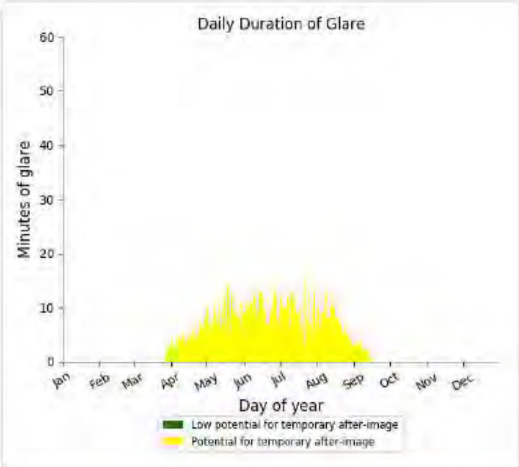


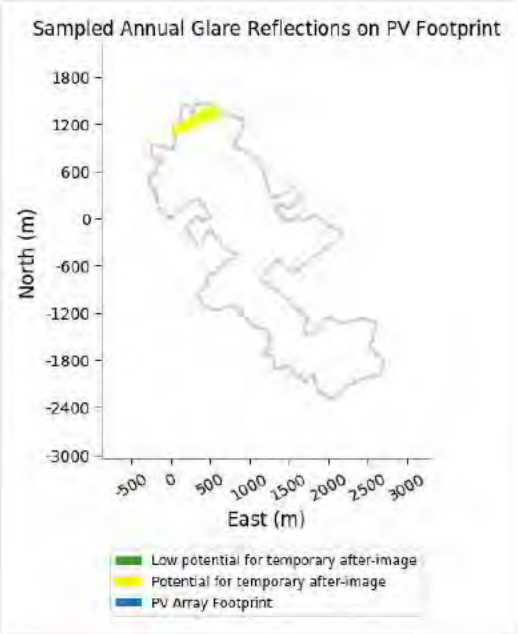
PV array 1 - OP Receptor (OP 5)

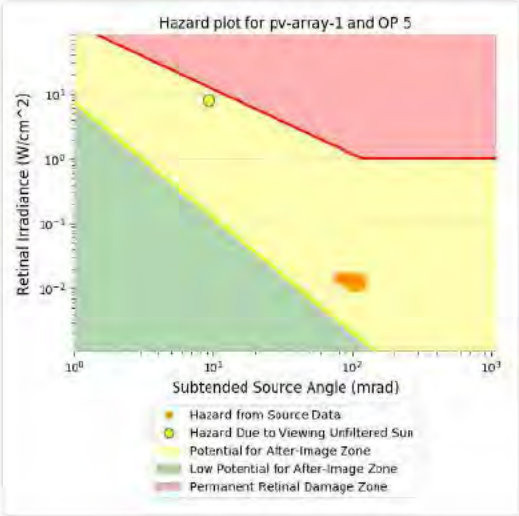
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 1,297 minutes of "yellow" glare with potential to cause temporary after-image.





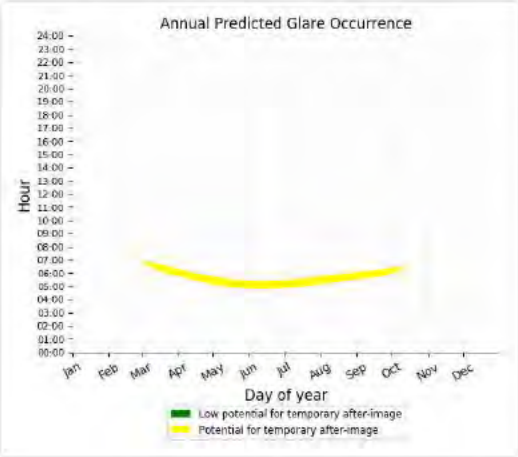


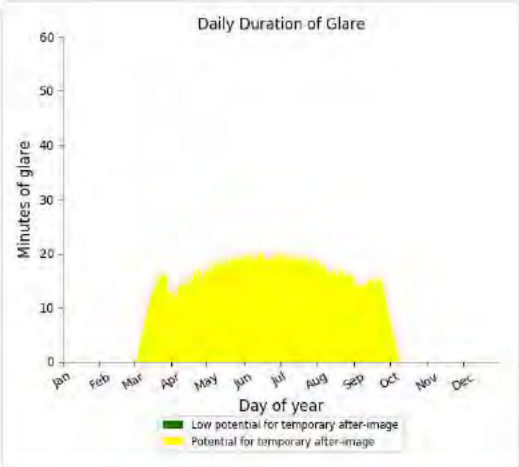


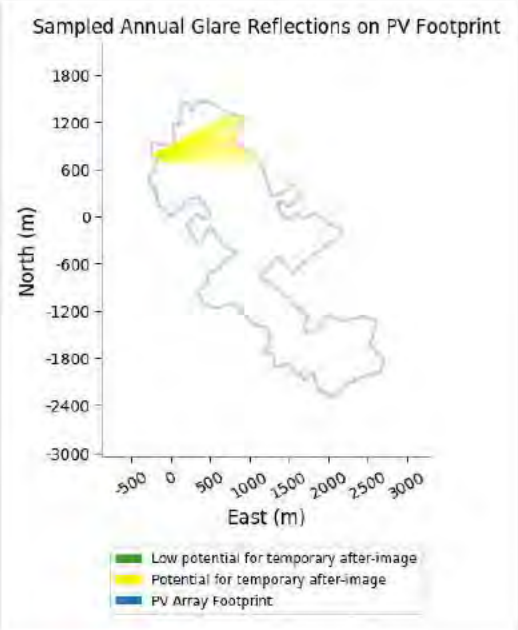
PV array 1 - OP Receptor (OP 6)

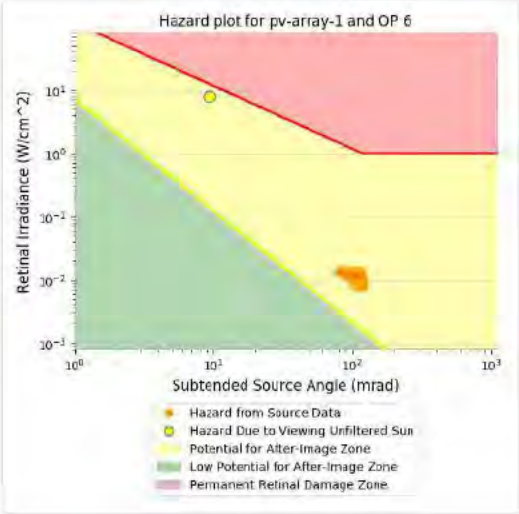
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 3,471 minutes of "yellow" glare with potential to cause temporary after-image.





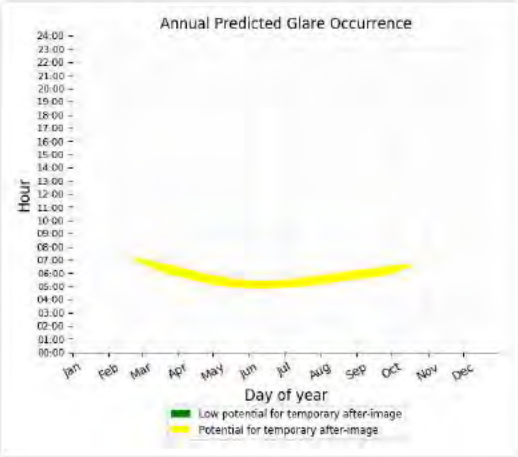


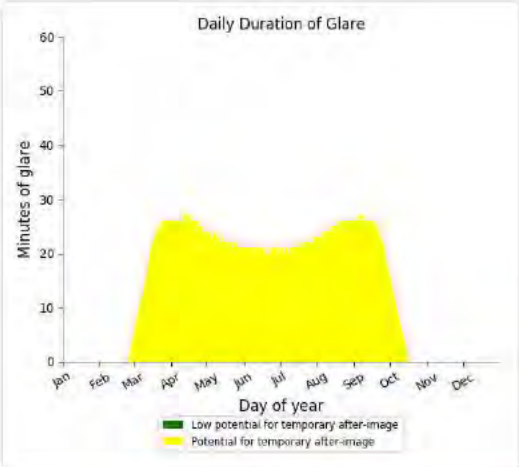


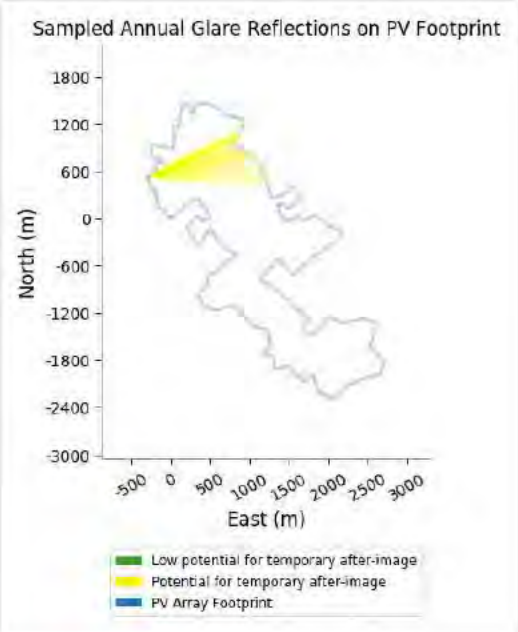
PV array 1 - OP Receptor (OP 7)

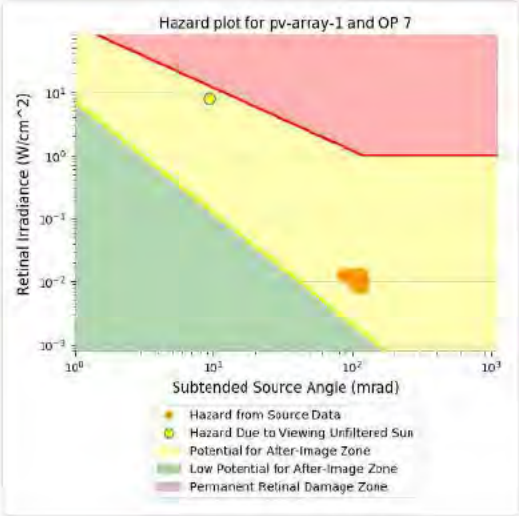
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 4,984 minutes of "yellow" glare with potential to cause temporary after-image.





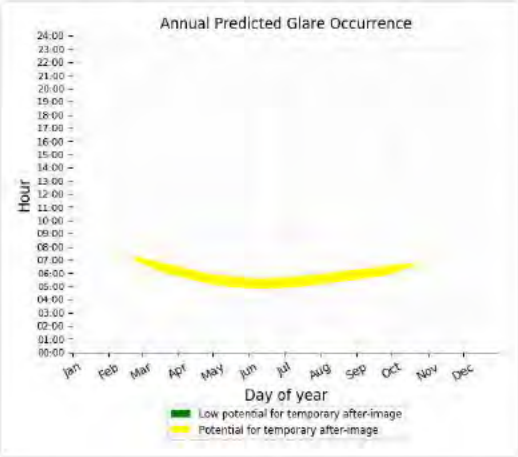


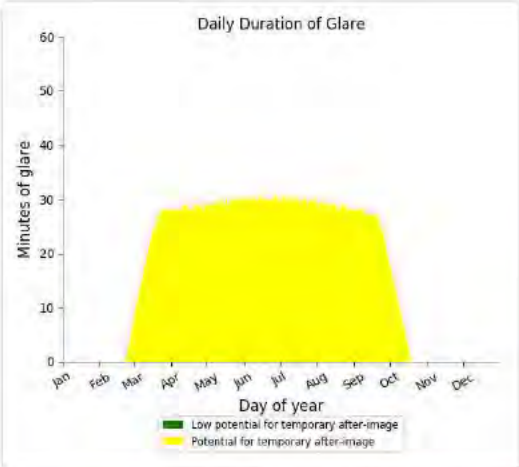


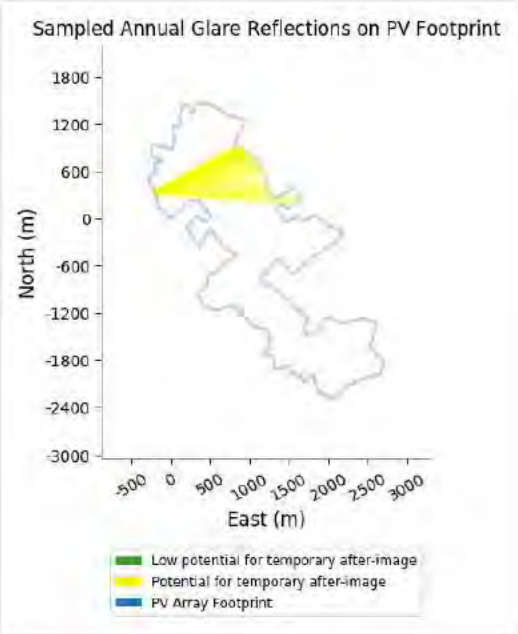
PV array 1 - OP Receptor (OP 8)

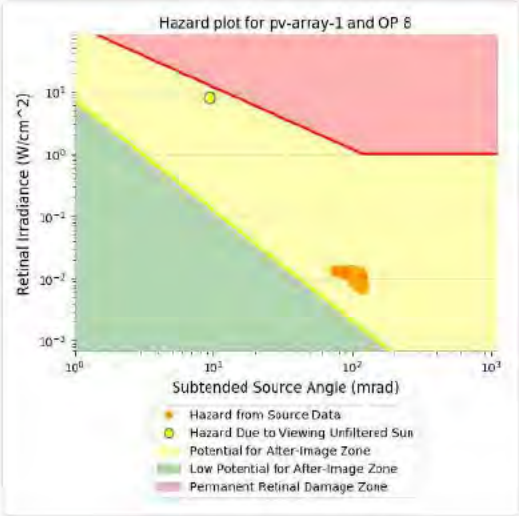
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 6,118 minutes of "yellow" glare with potential to cause temporary after-image.





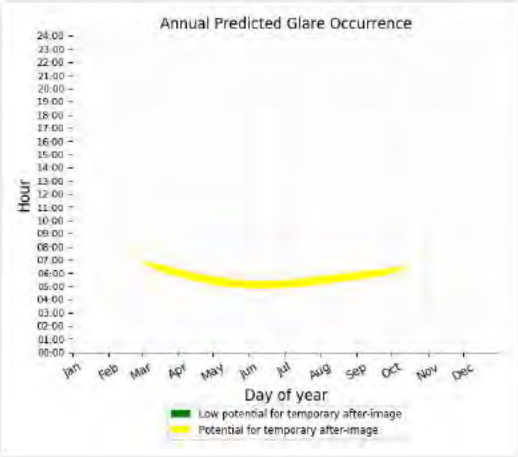


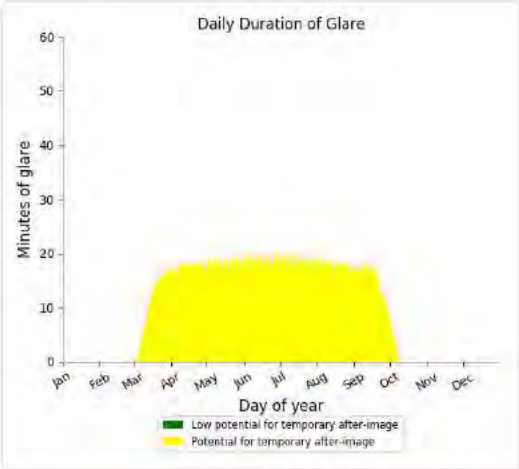


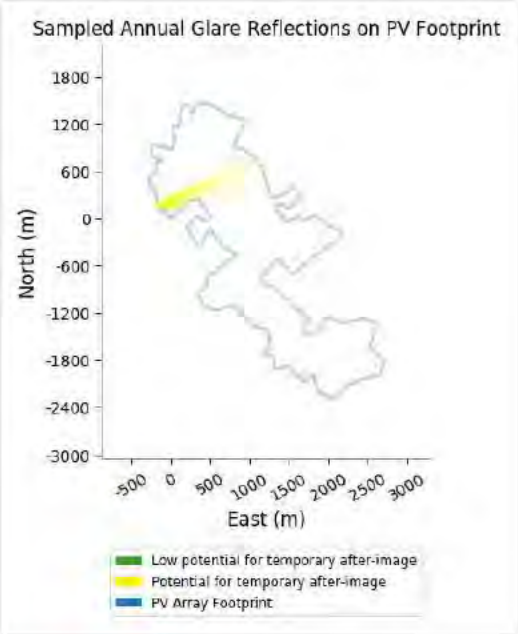
PV array 1 - OP Receptor (OP 9)

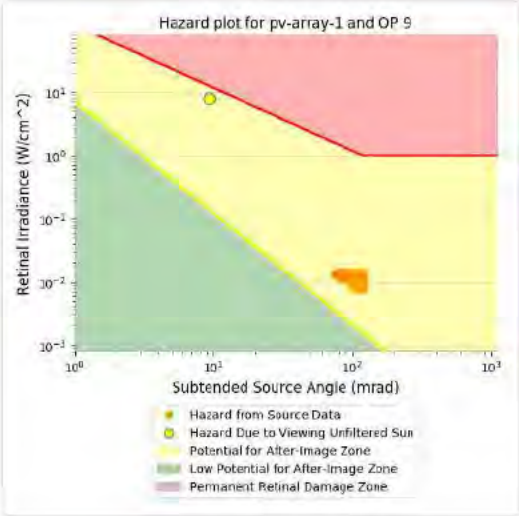
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 3,627 minutes of "yellow" glare with potential to cause temporary after-image.





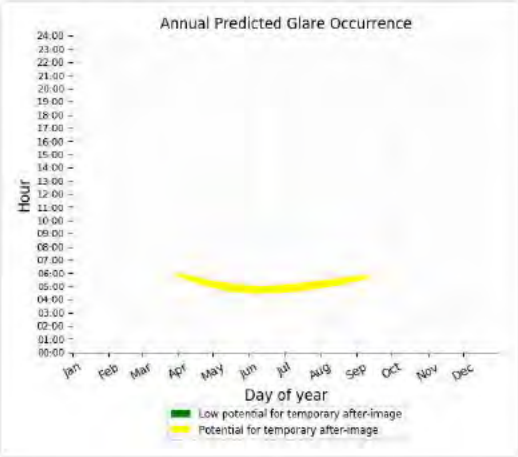


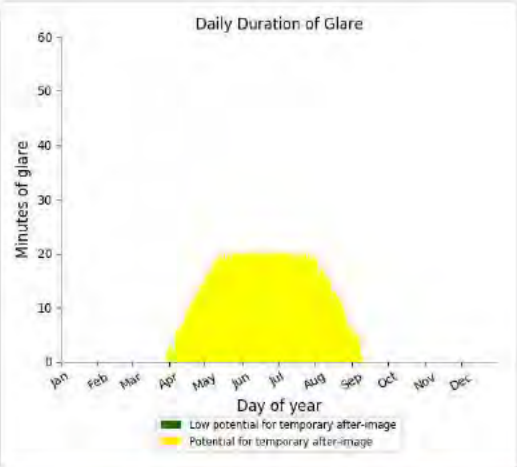


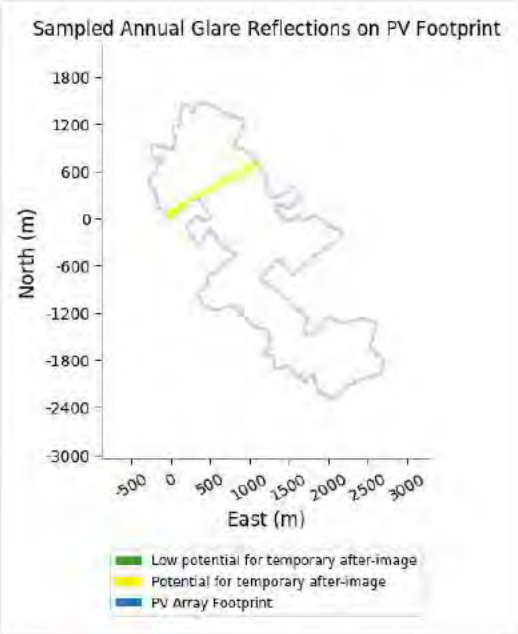
PV array 1 - OP Receptor (OP 10)

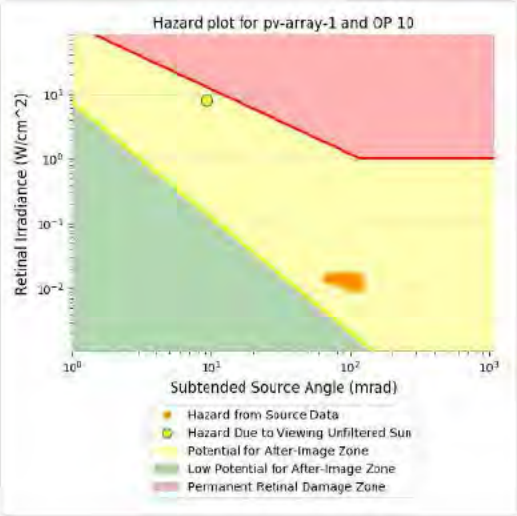
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 2,493 minutes of "yellow" glare with potential to cause temporary after-image.





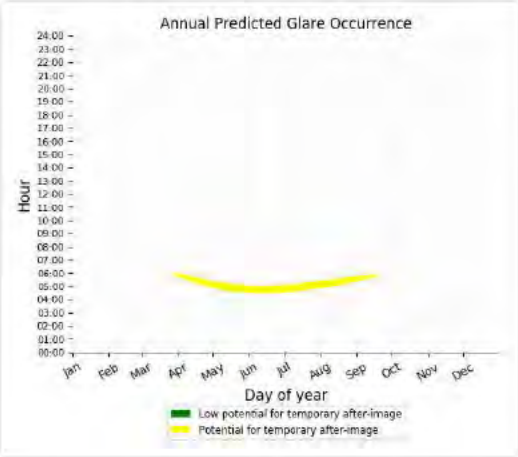


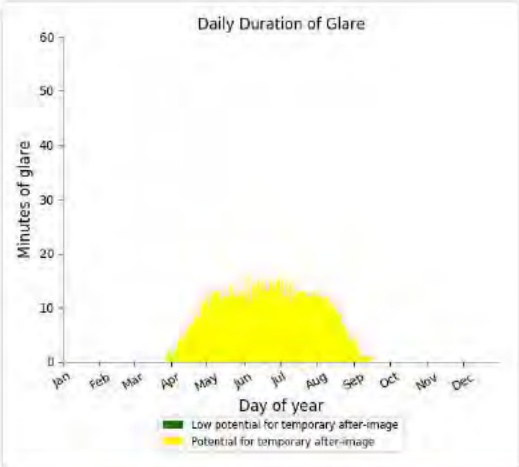


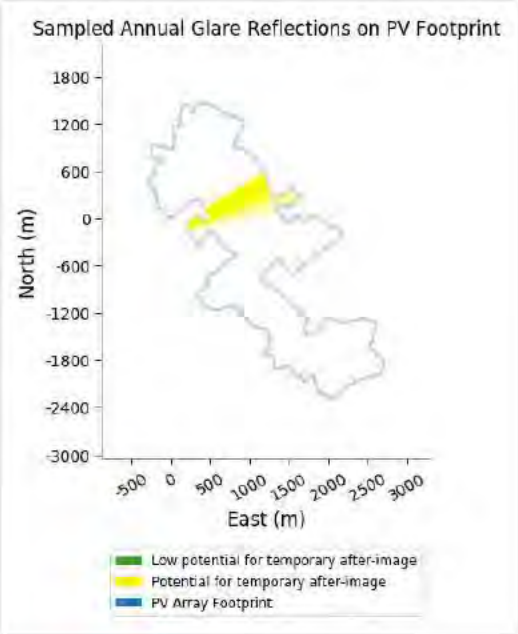
PV array 1 - OP Receptor (OP 11)

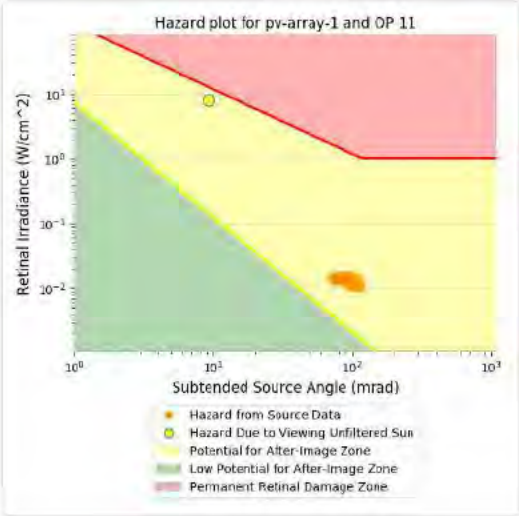
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 1,704 minutes of "yellow" glare with potential to cause temporary after-image.





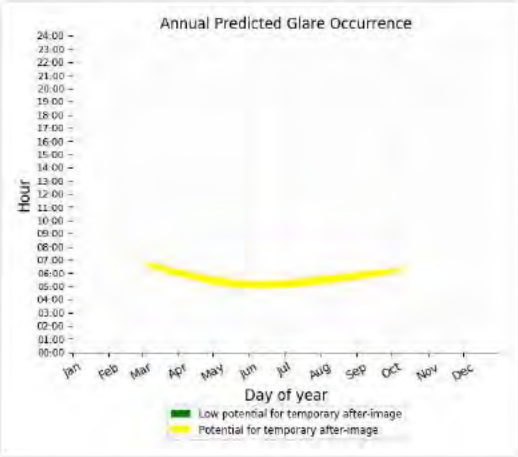


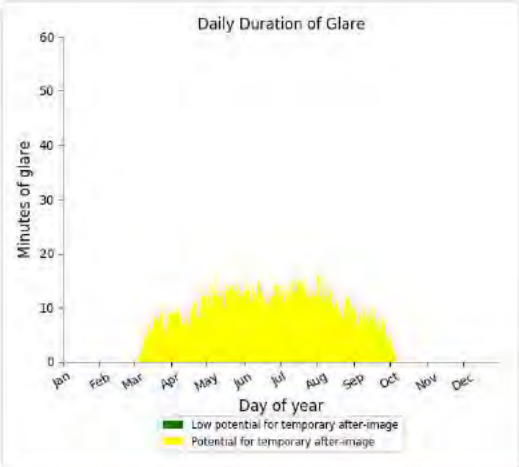


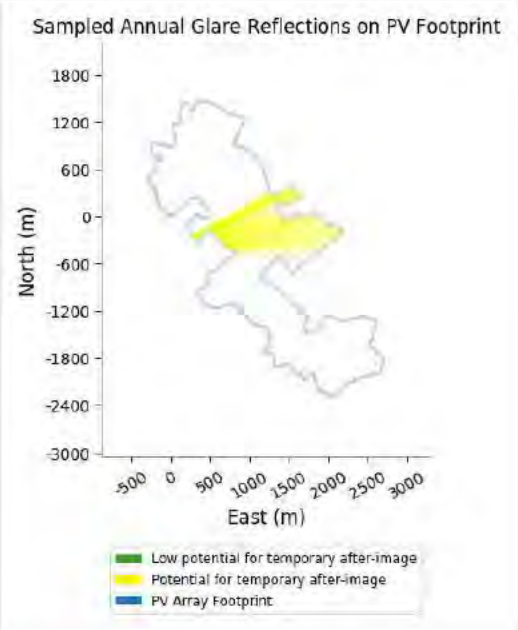
PV array 1 - OP Receptor (OP 12)

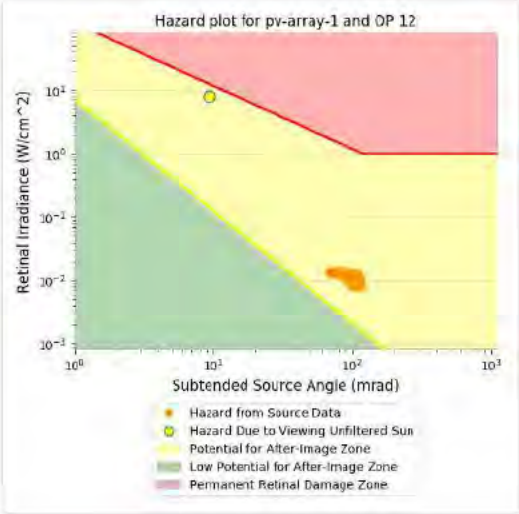
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 2,214 minutes of "yellow" glare with potential to cause temporary after-image.





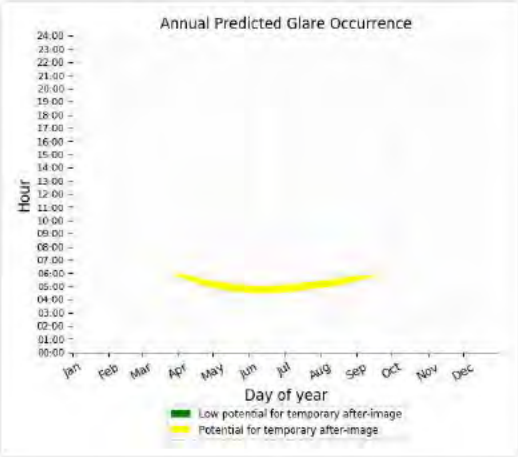


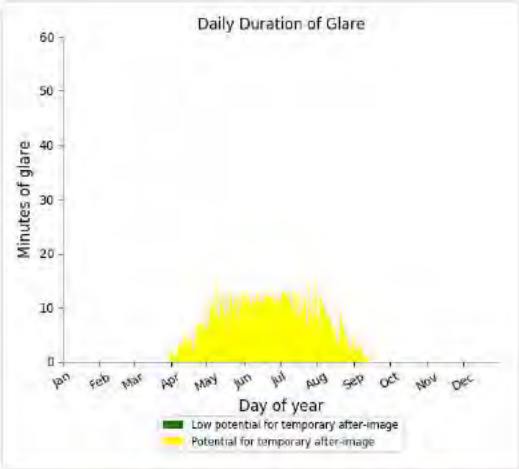


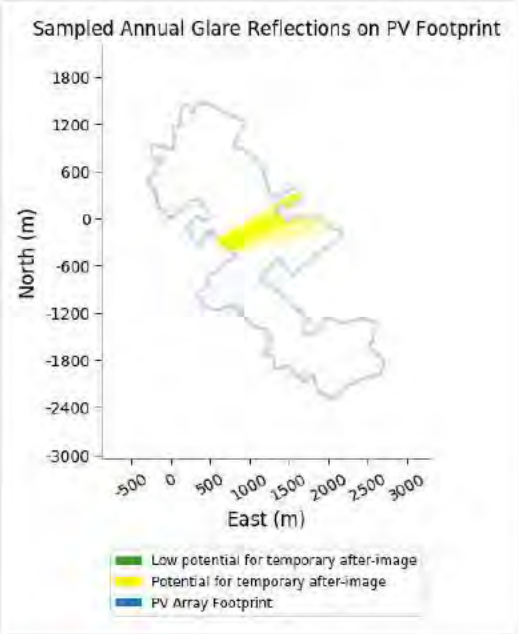
PV array 1 - OP Receptor (OP 13)

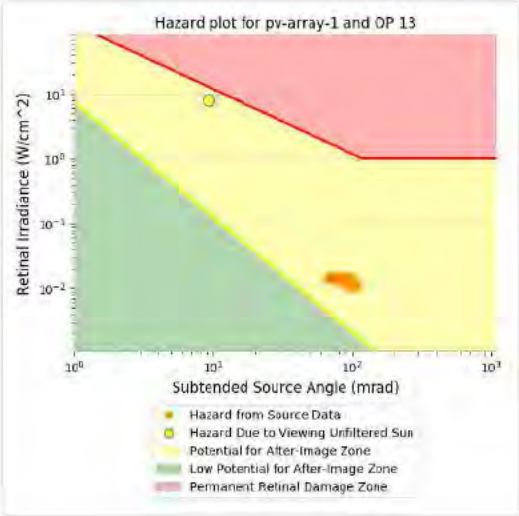
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 1,354 minutes of "yellow" glare with potential to cause temporary after-image.





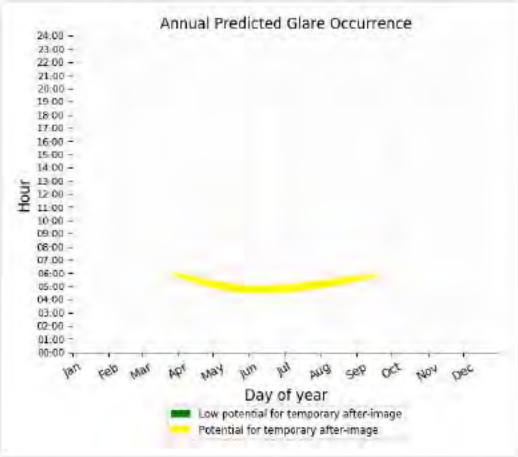


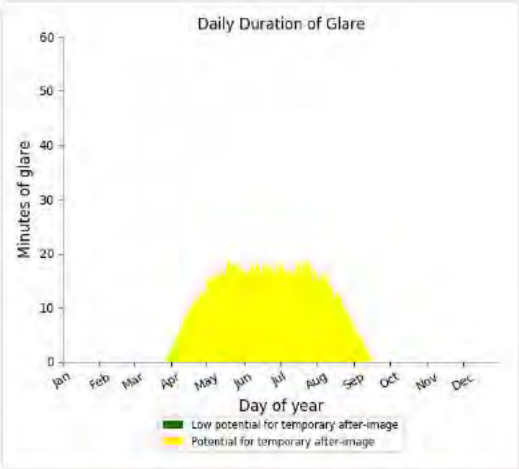


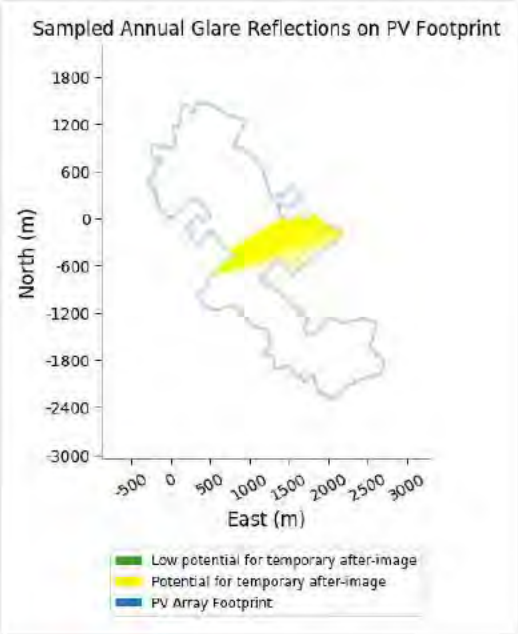
PV array 1 - OP Receptor (OP 14)

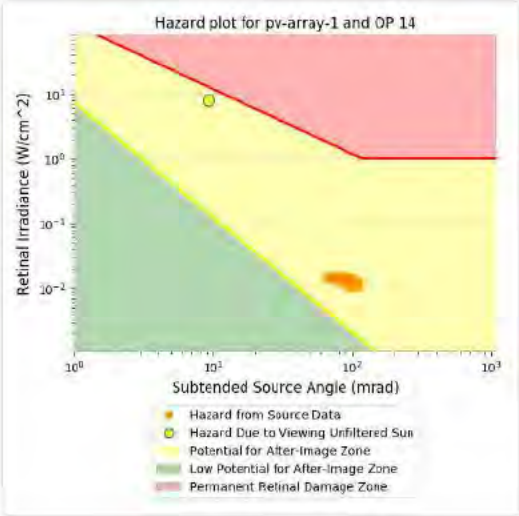
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 2,260 minutes of "yellow" glare with potential to cause temporary after-image.





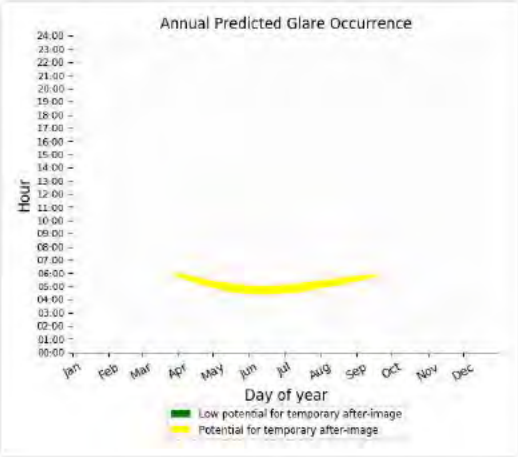


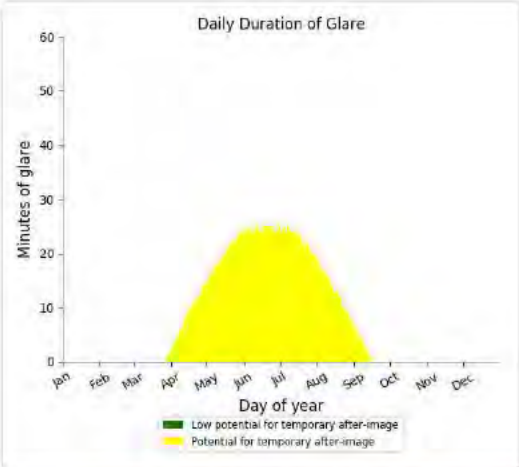


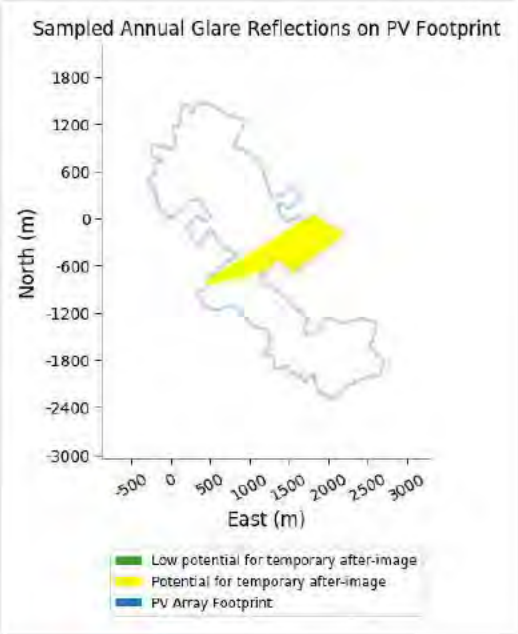
PV array 1 - OP Receptor (OP 15)

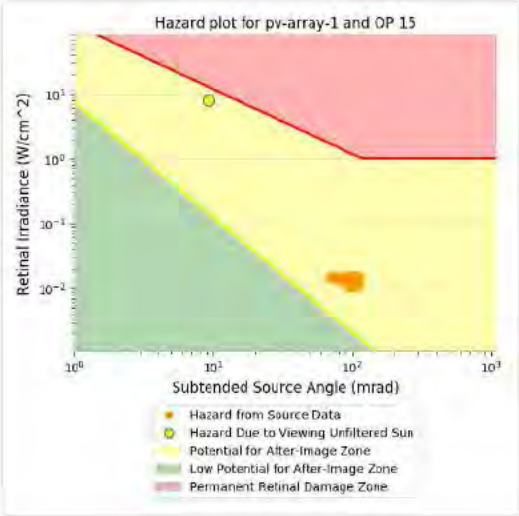
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 2,779 minutes of "yellow" glare with potential to cause temporary after-image.





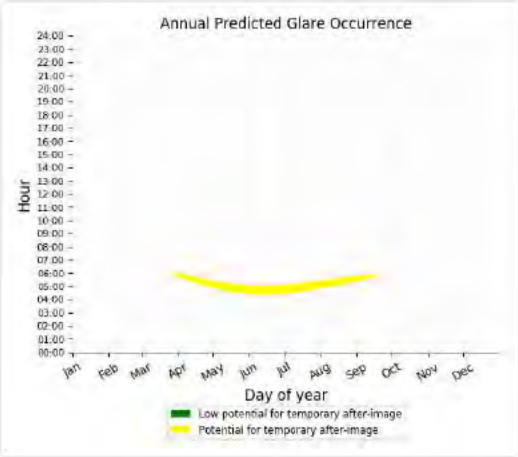


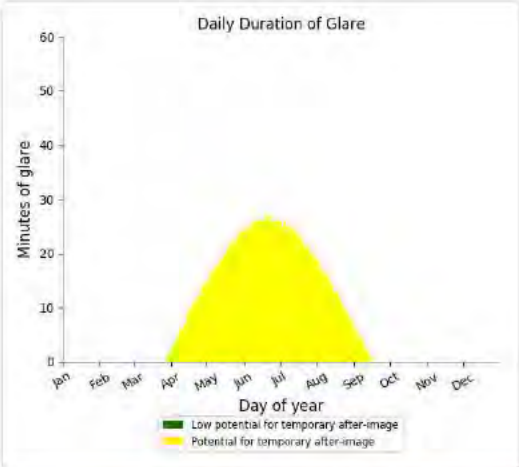


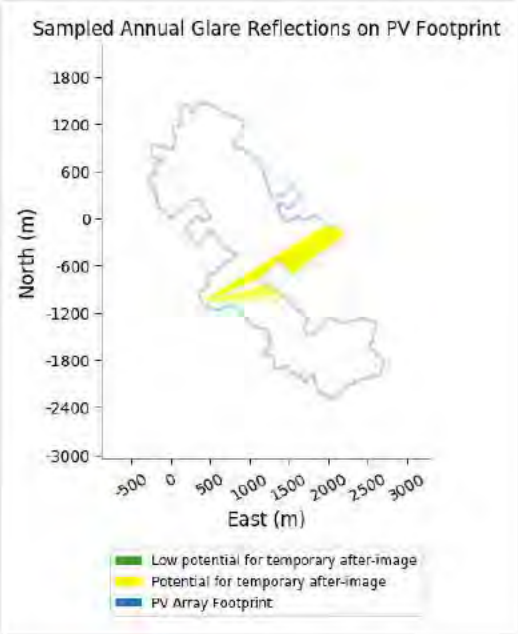
PV array 1 - OP Receptor (OP 16)

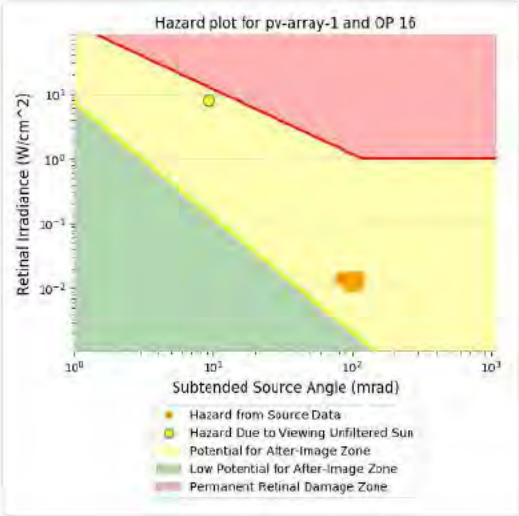
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 2,814 minutes of "yellow" glare with potential to cause temporary after-image.





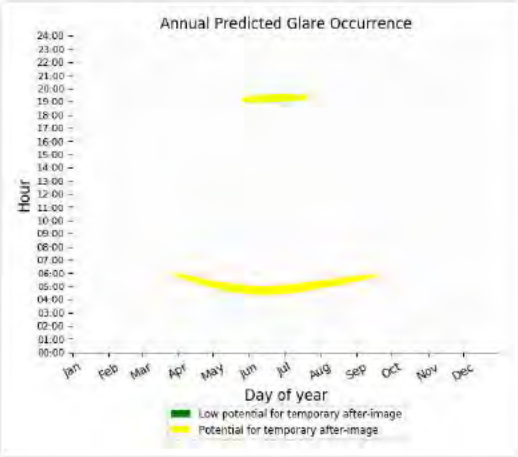


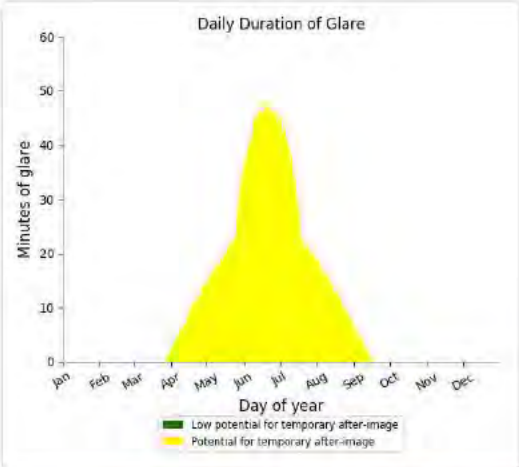


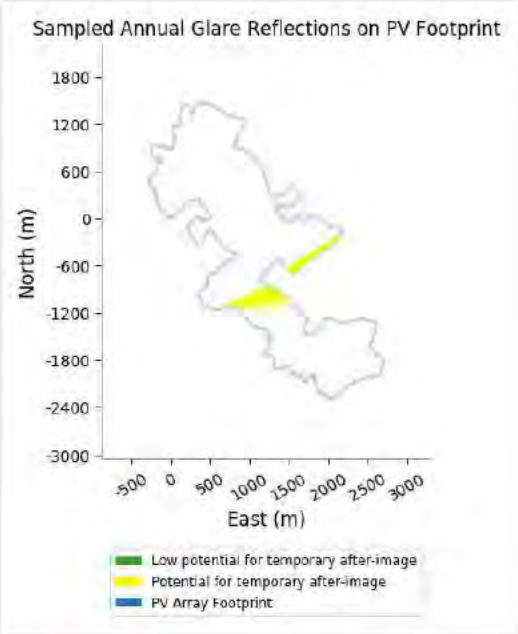
PV array 1 - OP Receptor (OP 17)

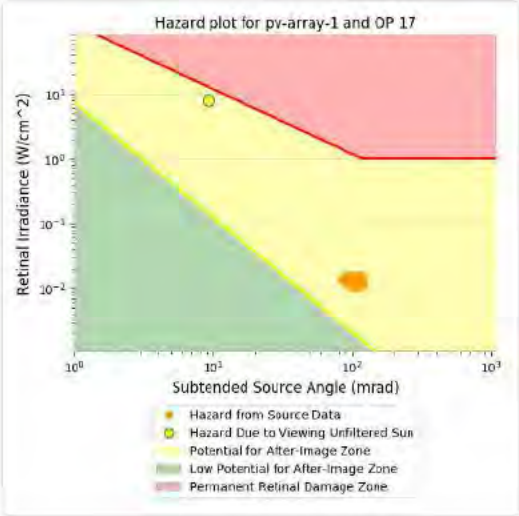
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 3,638 minutes of "yellow" glare with potential to cause temporary after-image.





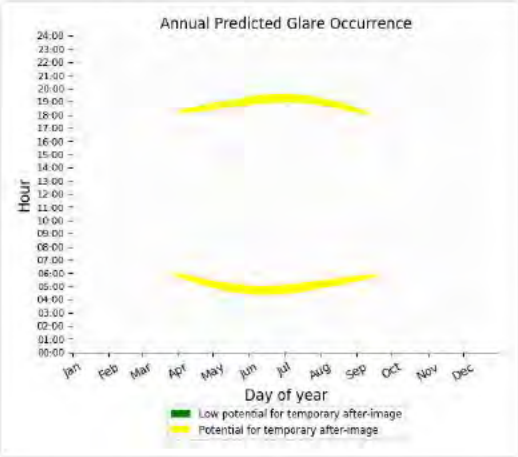


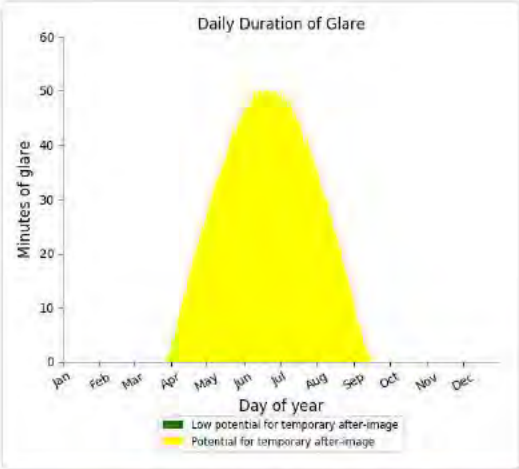


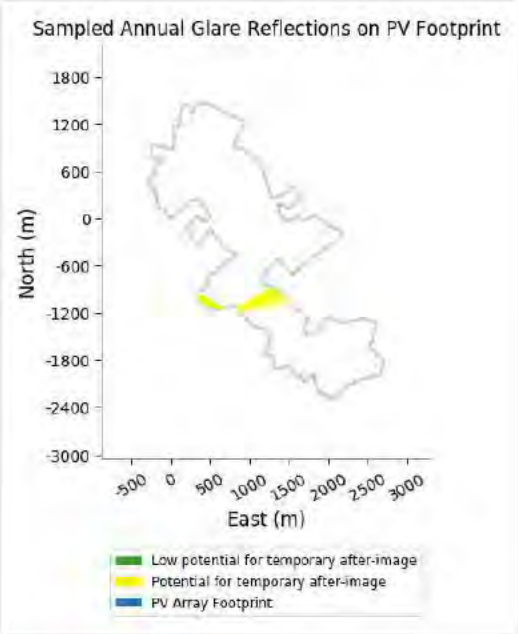
PV array 1 - OP Receptor (OP 18)

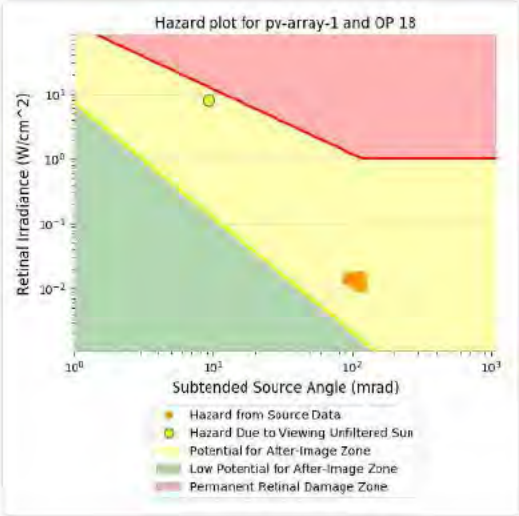
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 5,252 minutes of "yellow" glare with potential to cause temporary after-image.





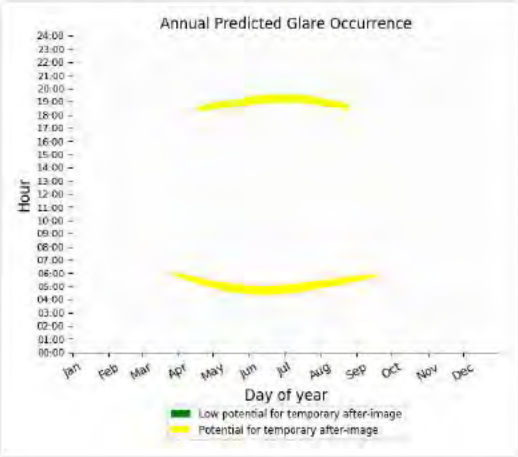


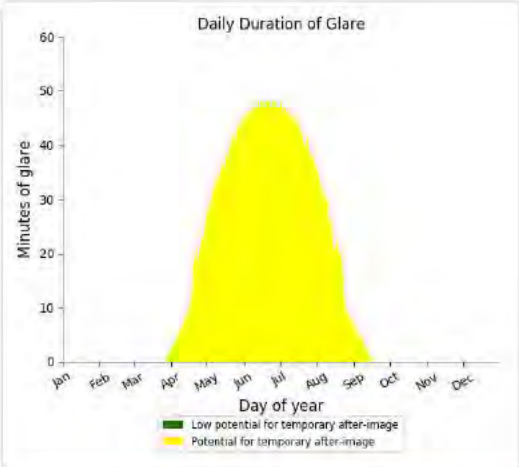


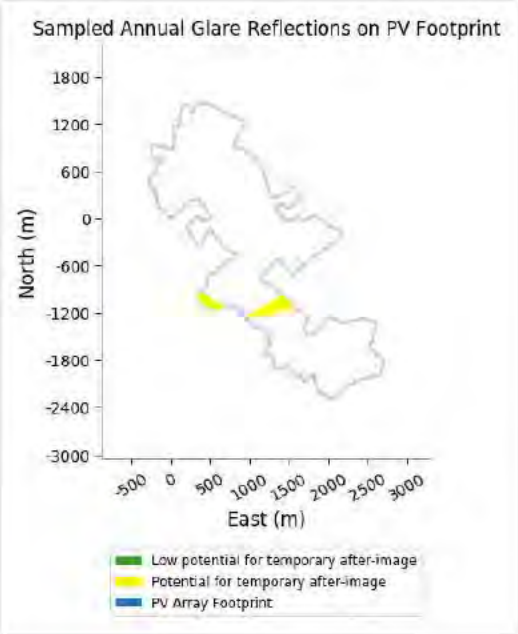
PV array 1 - OP Receptor (OP 19)

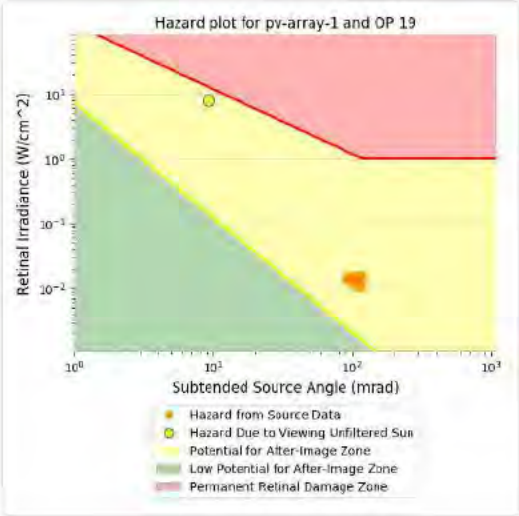
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 4,959 minutes of "yellow" glare with potential to cause temporary after-image.





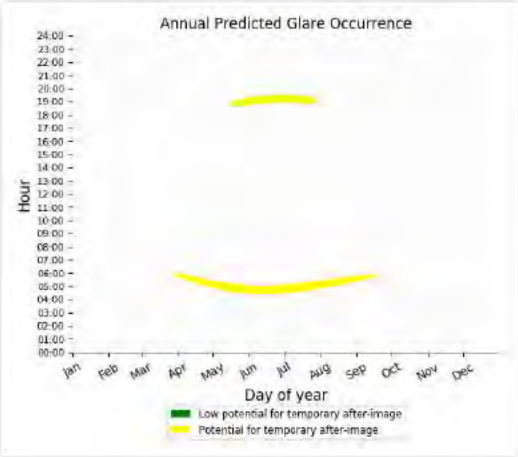


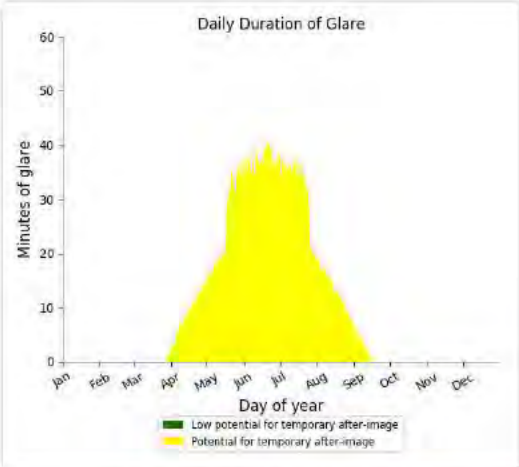


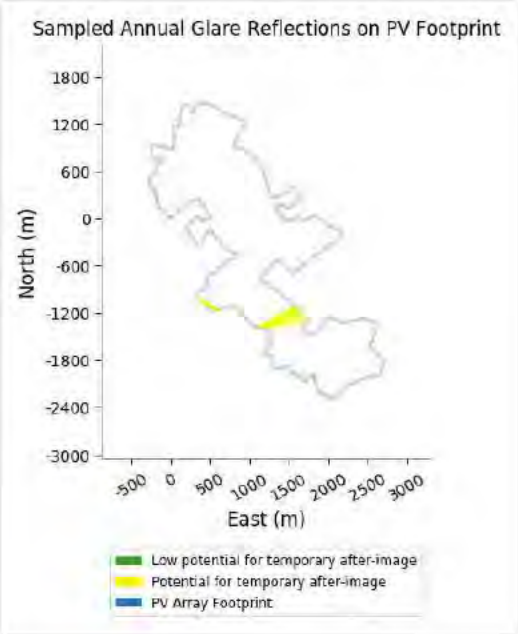
PV array 1 - OP Receptor (OP 20)

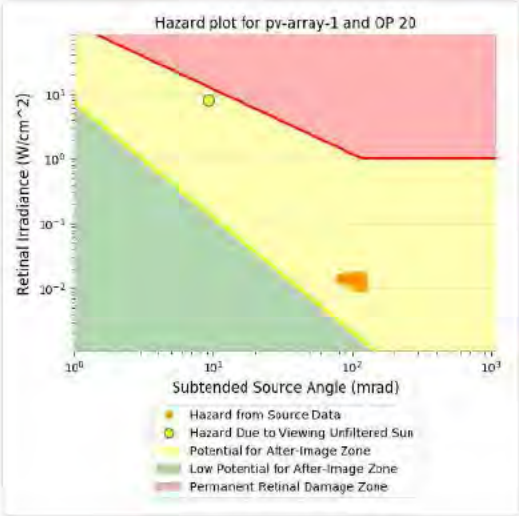
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 3,643 minutes of "yellow" glare with potential to cause temporary after-image.





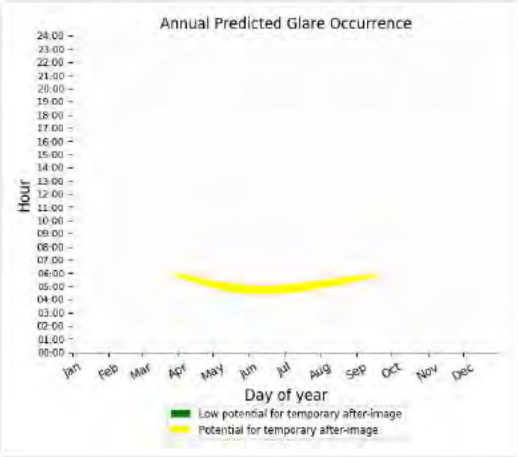


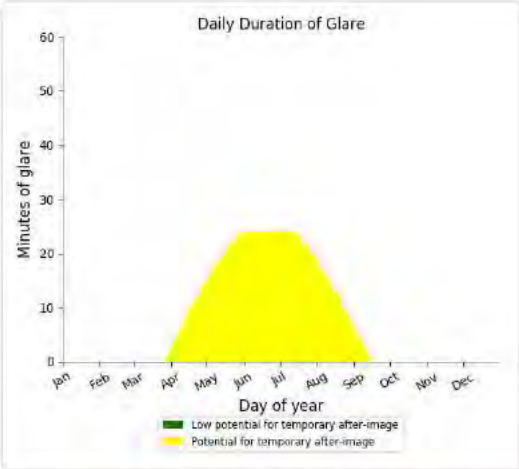


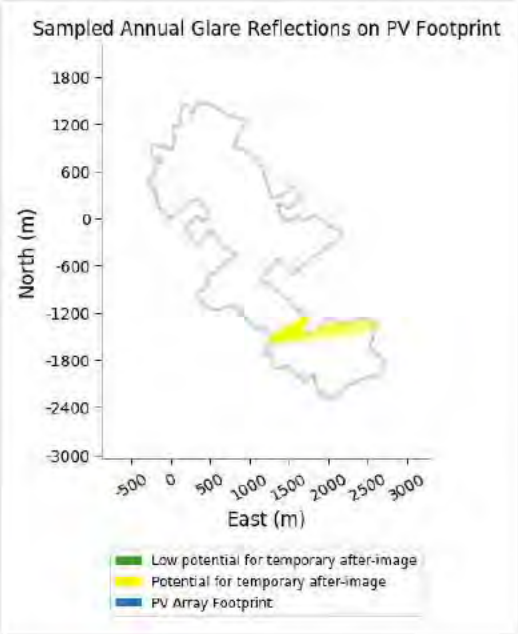
PV array 1 - OP Receptor (OP 21)

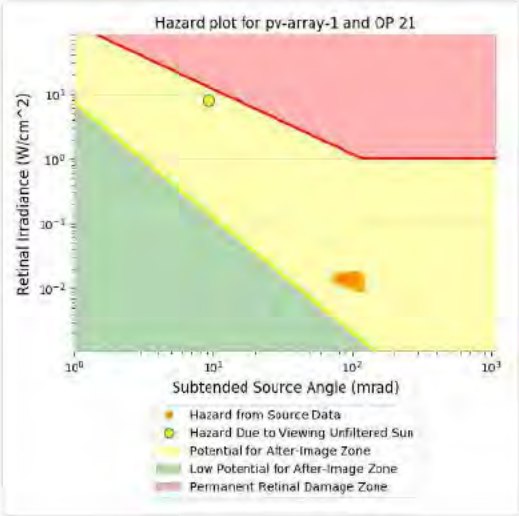
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 2,756 minutes of "yellow" glare with potential to cause temporary after-image.





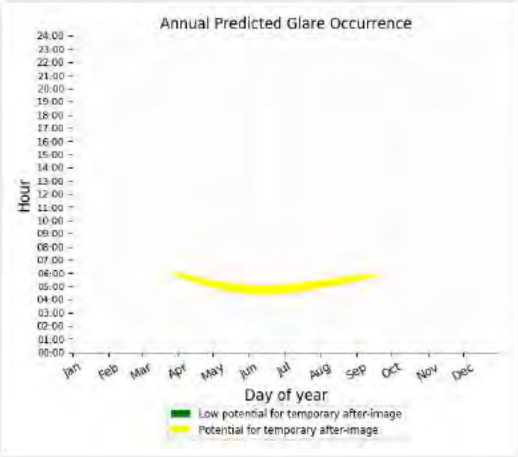


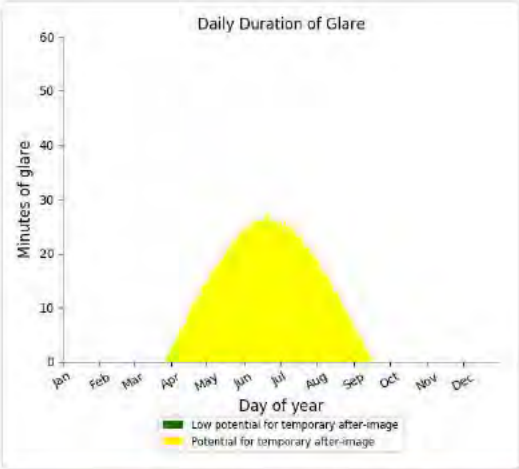


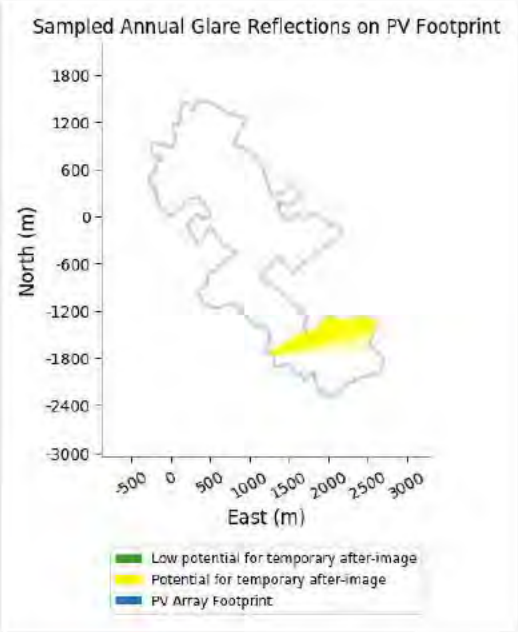
PV array 1 - OP Receptor (OP 22)

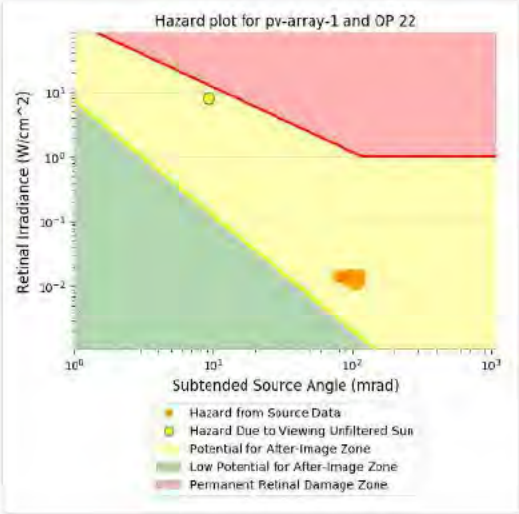
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 2,810 minutes of "yellow" glare with potential to cause temporary after-image.





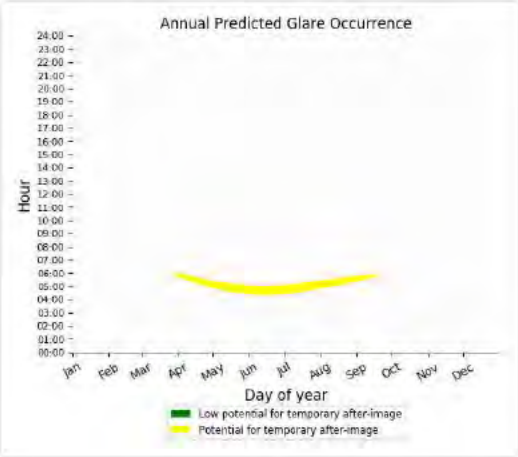


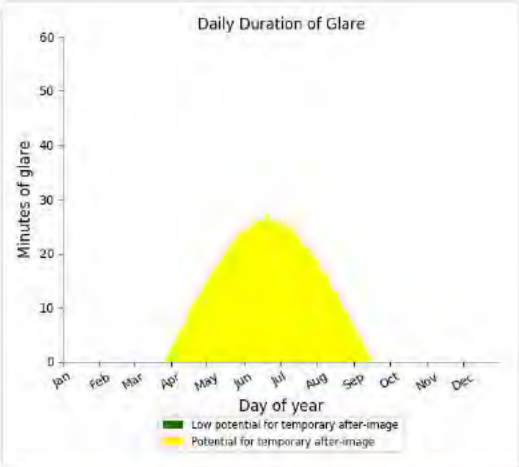


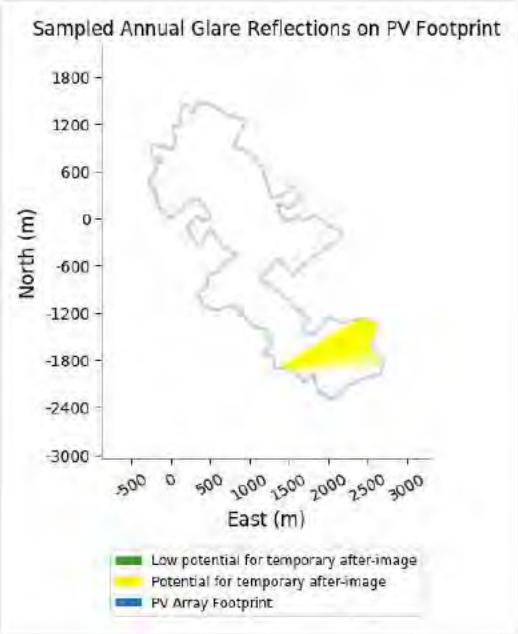
PV array 1 - OP Receptor (OP 23)

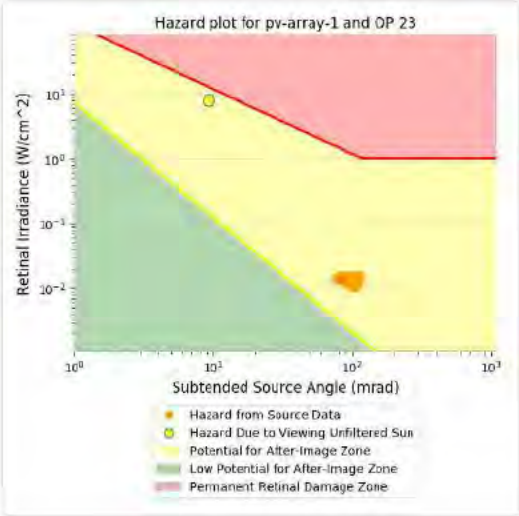
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 2,803 minutes of "yellow" glare with potential to cause temporary after-image.





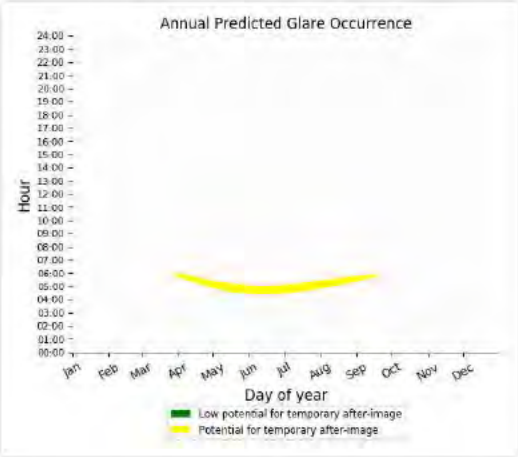


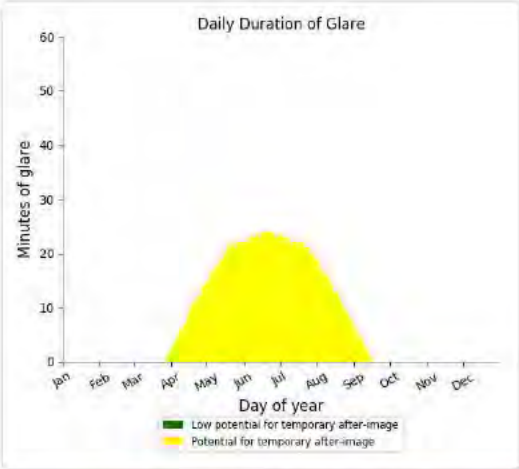


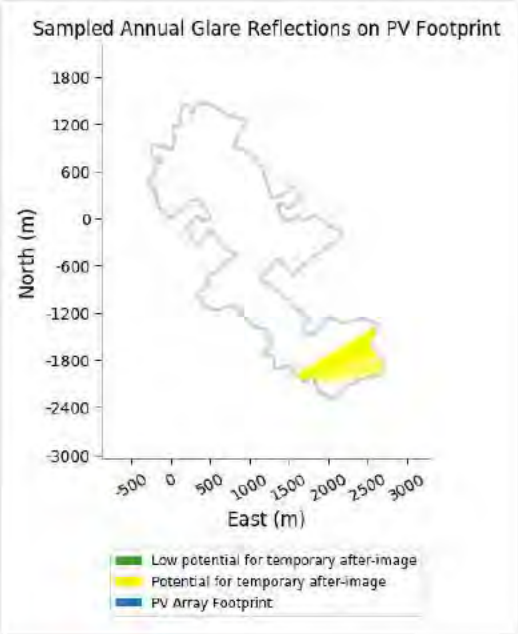
PV array 1 - OP Receptor (OP 24)

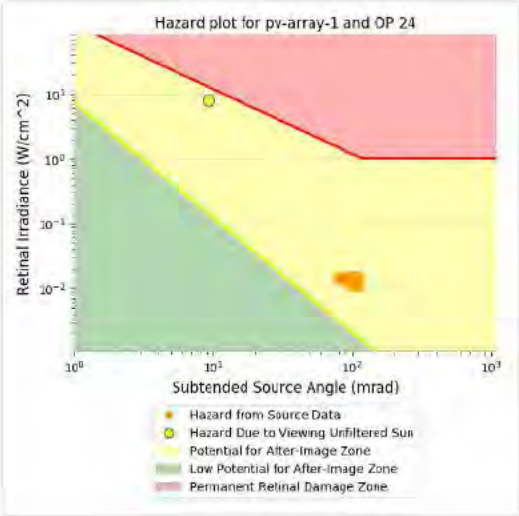
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 2,687 minutes of "yellow" glare with potential to cause temporary after-image.





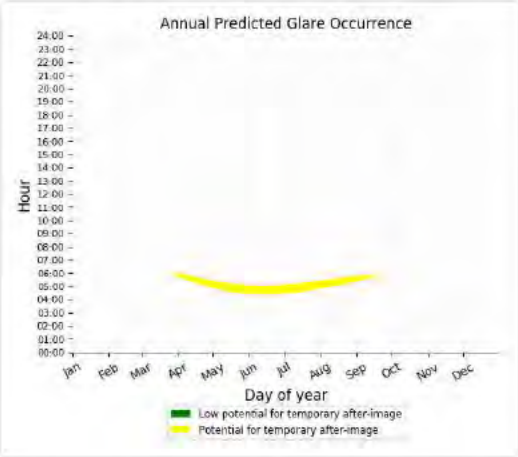


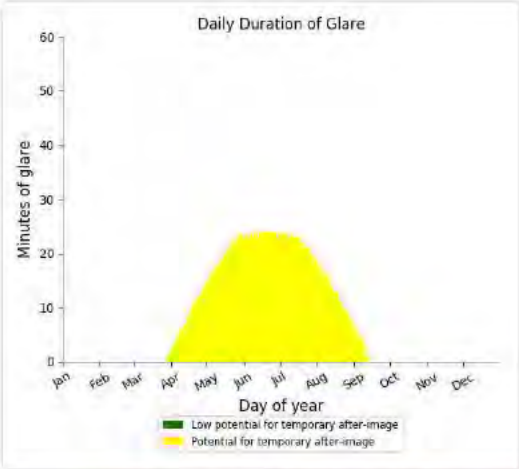


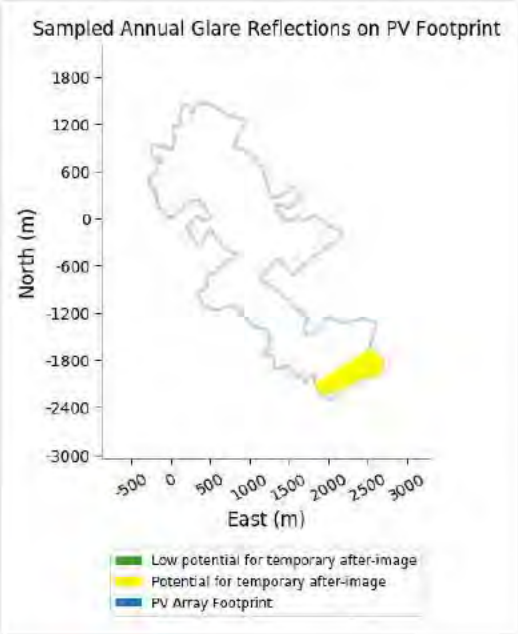
PV array 1 - OP Receptor (OP 25)

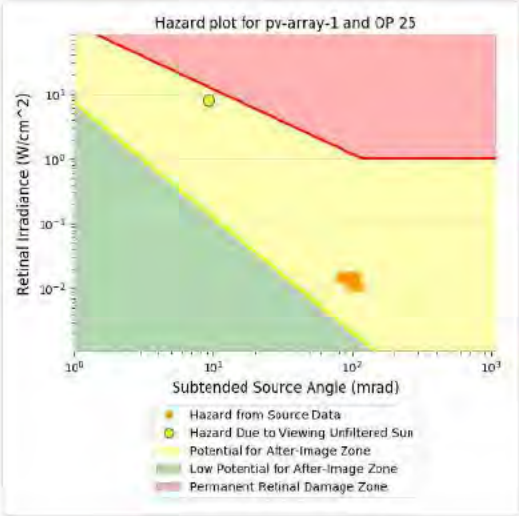
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 2,713 minutes of "yellow" glare with potential to cause temporary after-image.





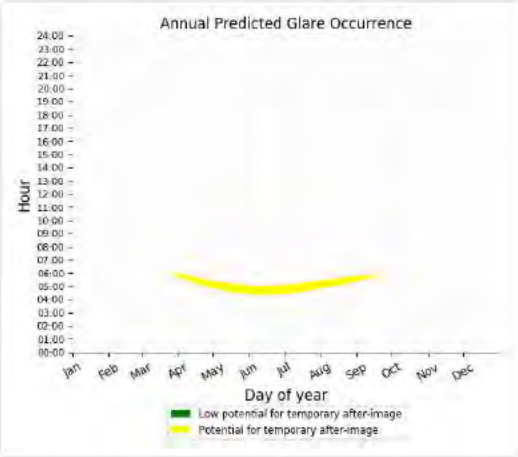


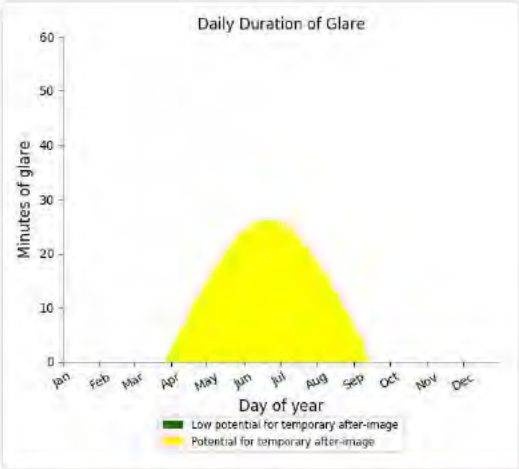


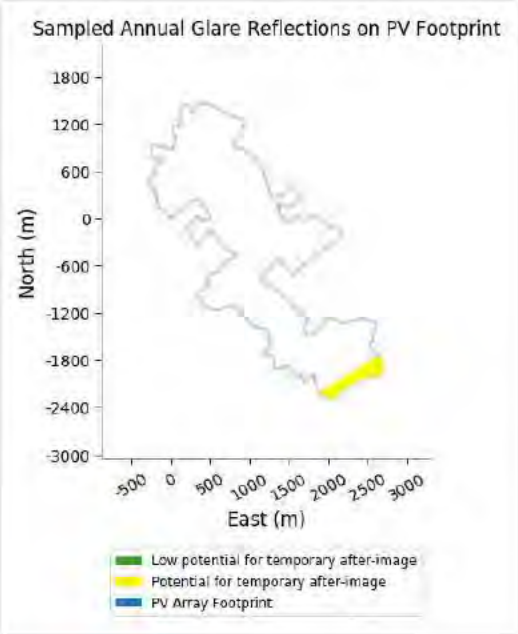
PV array 1 - OP Receptor (OP 26)

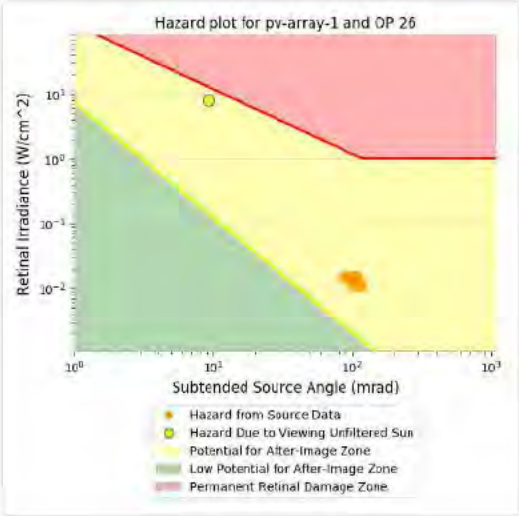
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 2,785 minutes of "yellow" glare with potential to cause temporary after-image.









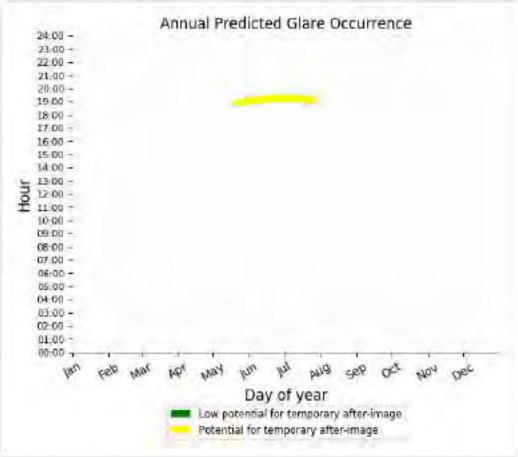
PV array 1 - OP Receptor (OP 27)

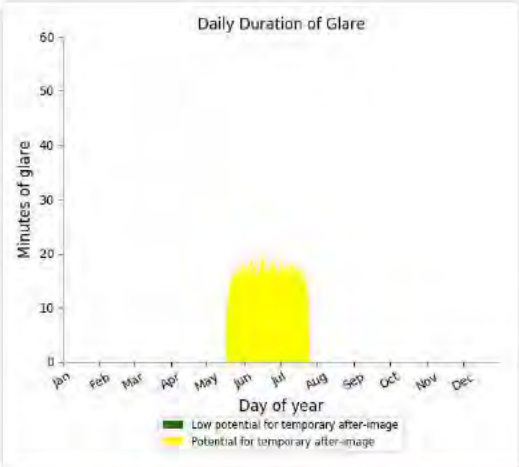
No glare found

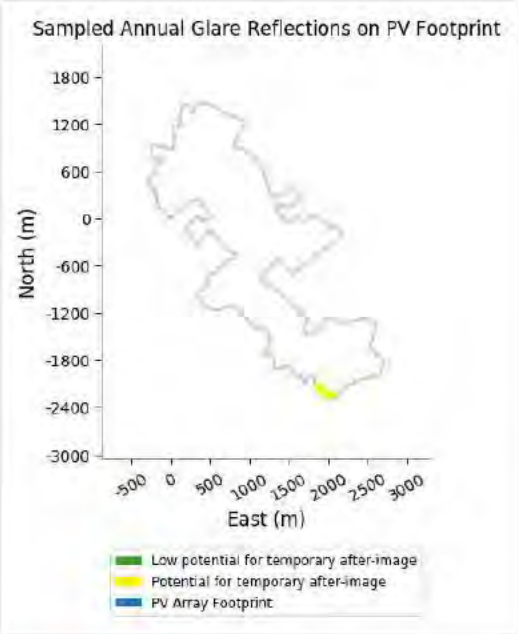
PV array 1 - OP Receptor (OP 28)

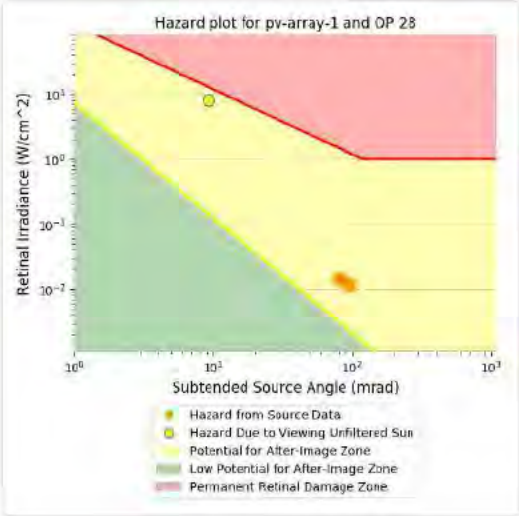
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 1,155 minutes of "yellow" glare with potential to cause temporary after-image.





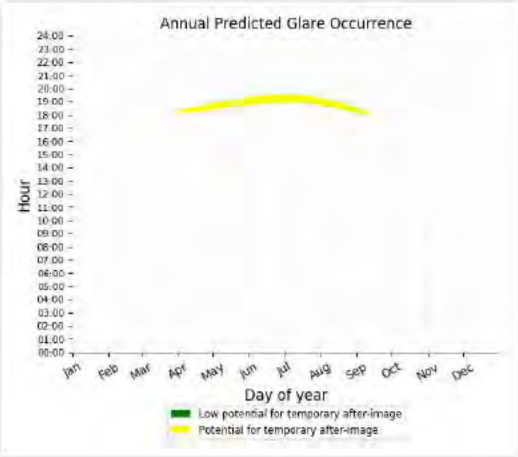


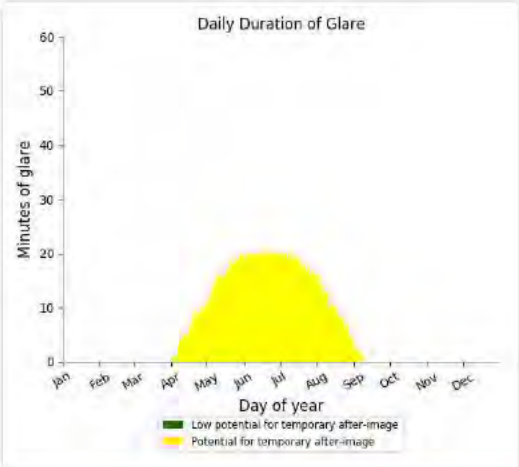


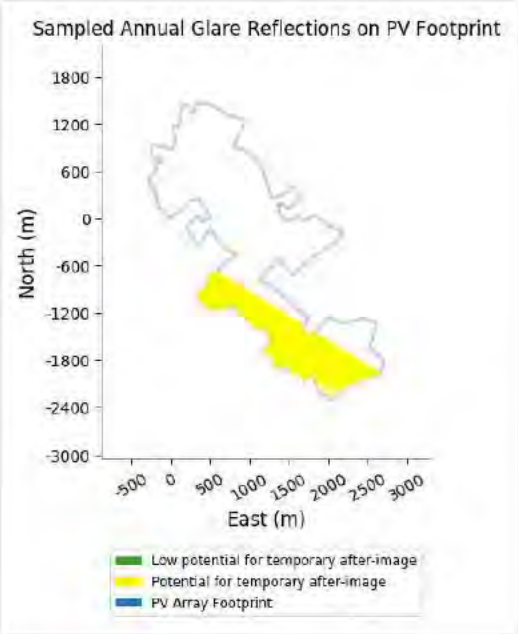
PV array 1 - OP Receptor (OP 29)

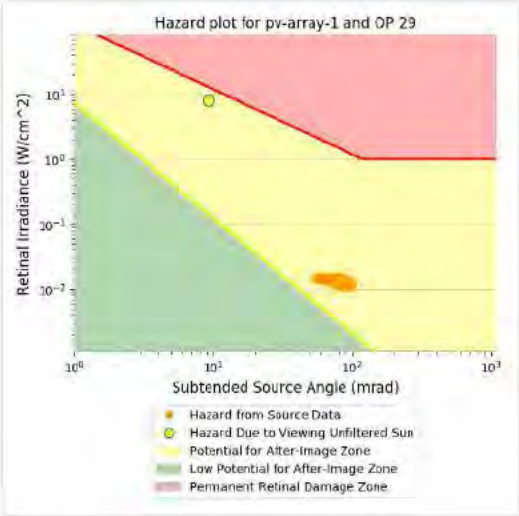
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 2,166 minutes of "yellow" glare with potential to cause temporary after-image.





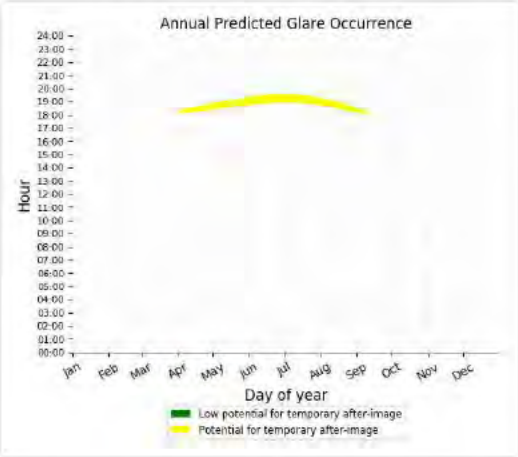


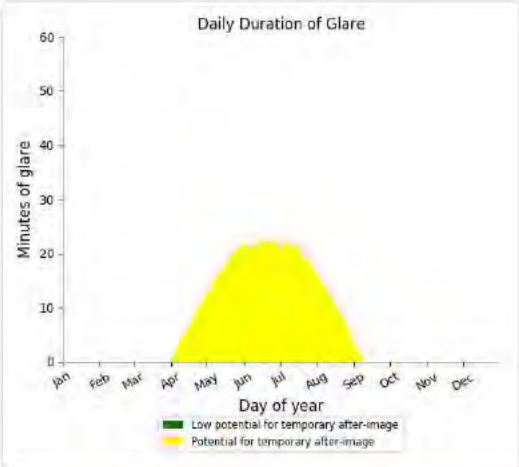


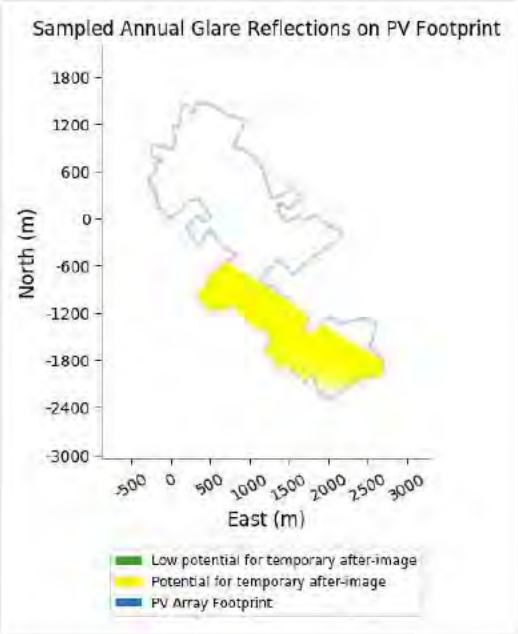
PV array 1 - OP Receptor (OP 30)

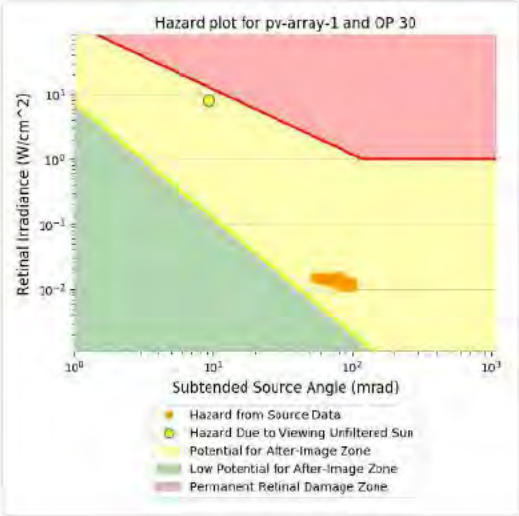
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 2,342 minutes of "yellow" glare with potential to cause temporary after-image.





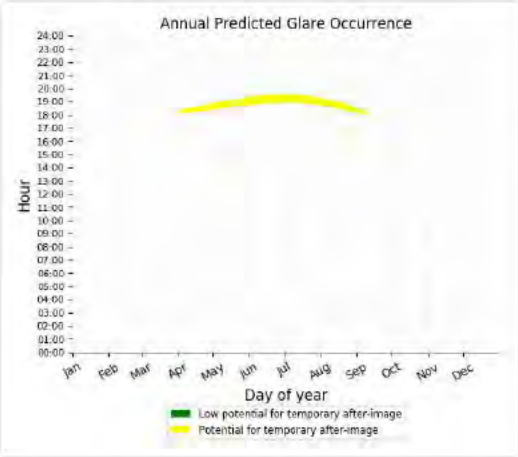


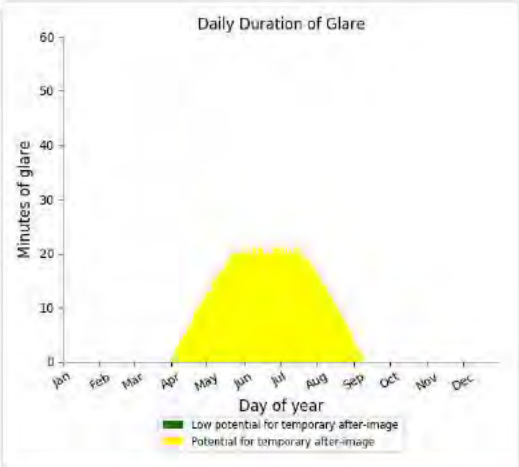


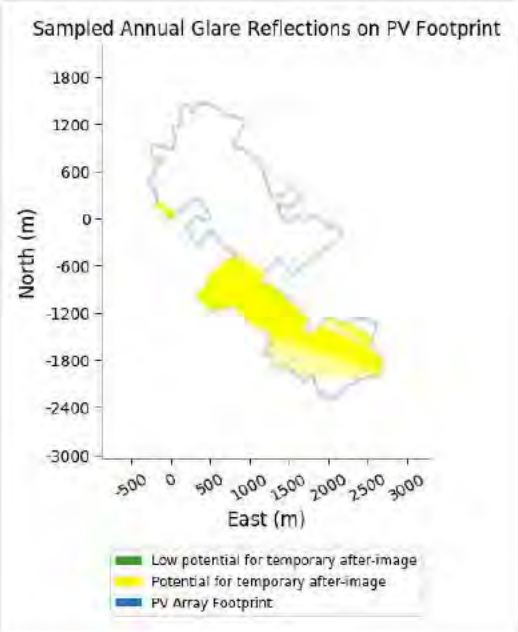
PV array 1 - OP Receptor (OP 31)

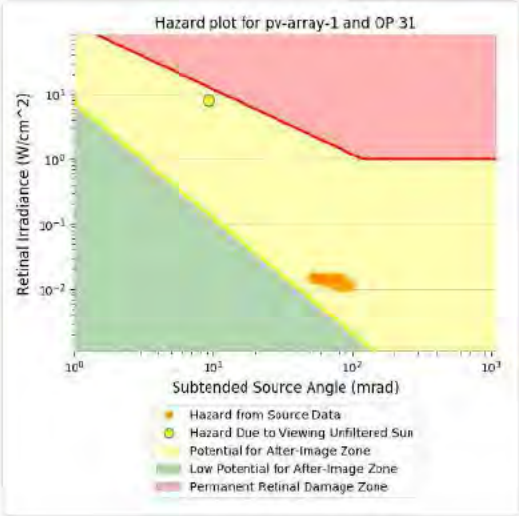
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 2,288 minutes of "yellow" glare with potential to cause temporary after-image.





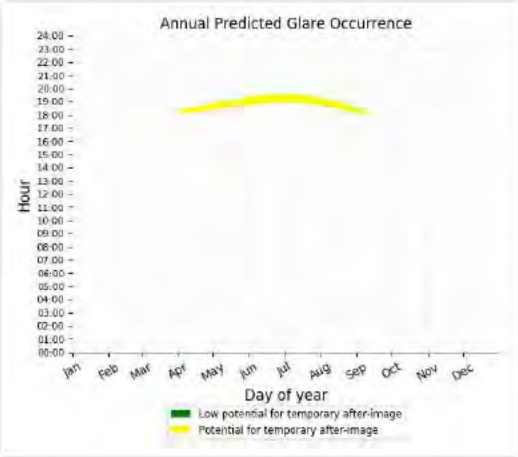


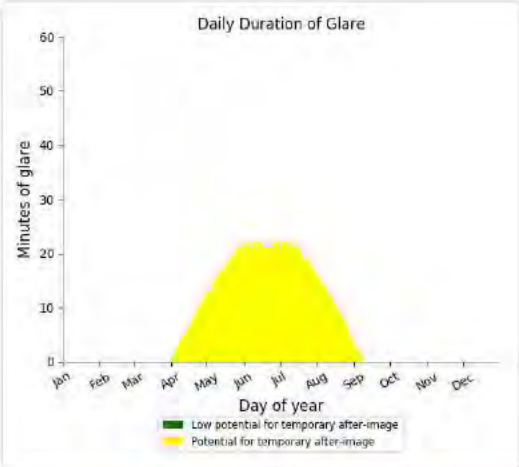


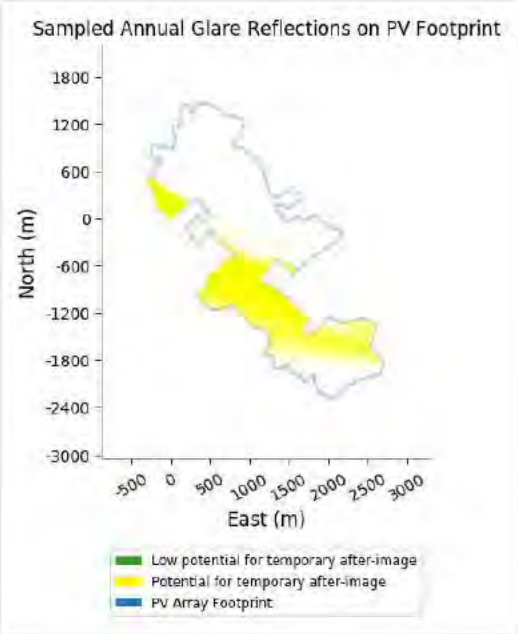
PV array 1 - OP Receptor (OP 32)

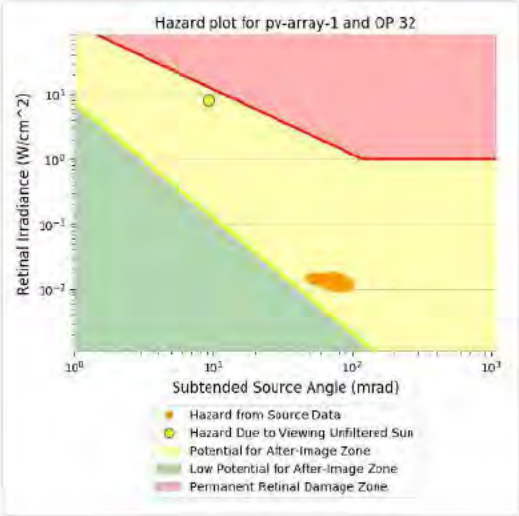
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 2,339 minutes of "yellow" glare with potential to cause temporary after-image.





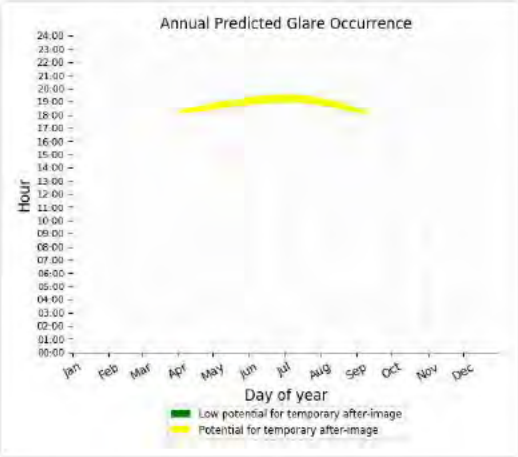


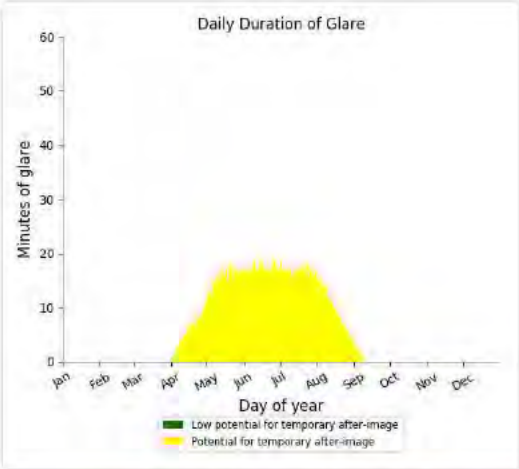


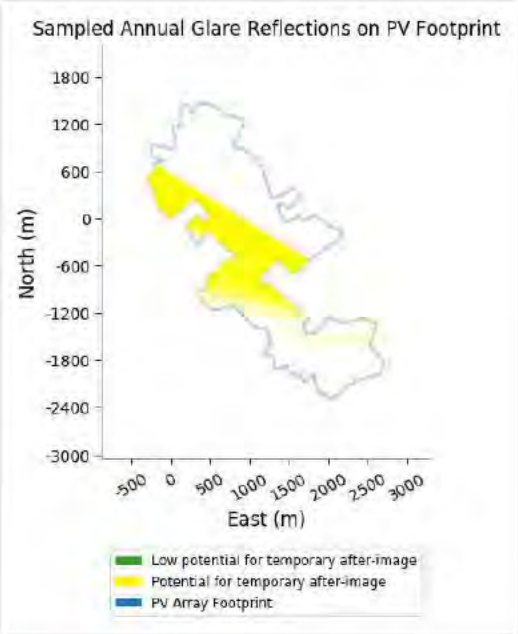
PV array 1 - OP Receptor (OP 33)

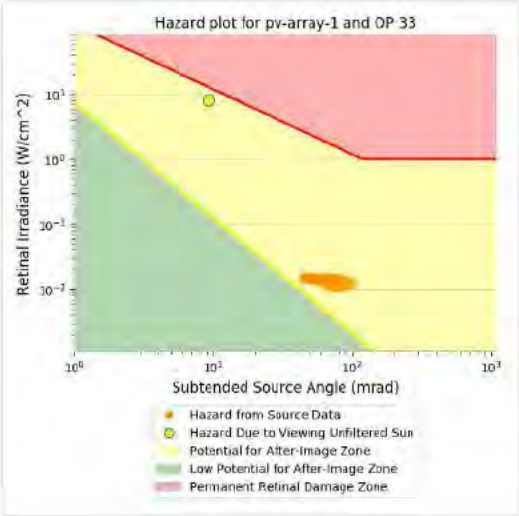
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 2,026 minutes of "yellow" glare with potential to cause temporary after-image.





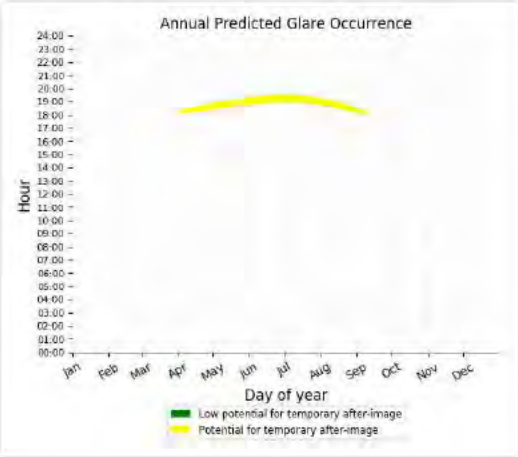


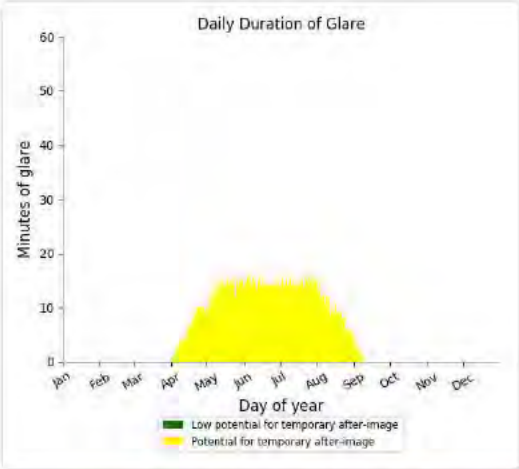


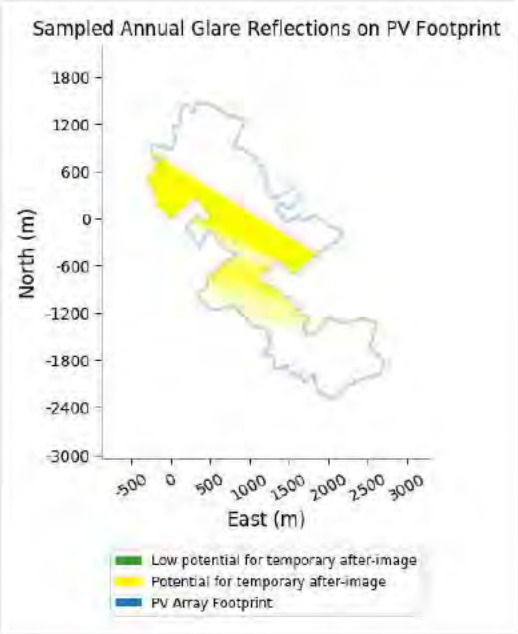
PV array 1 - OP Receptor (OP 34)

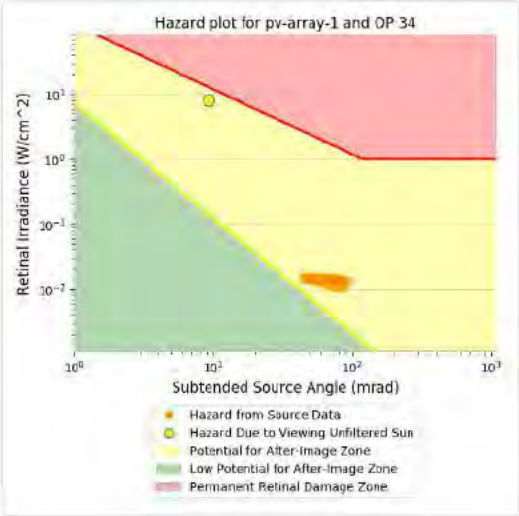
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 1,792 minutes of "yellow" glare with potential to cause temporary after-image.





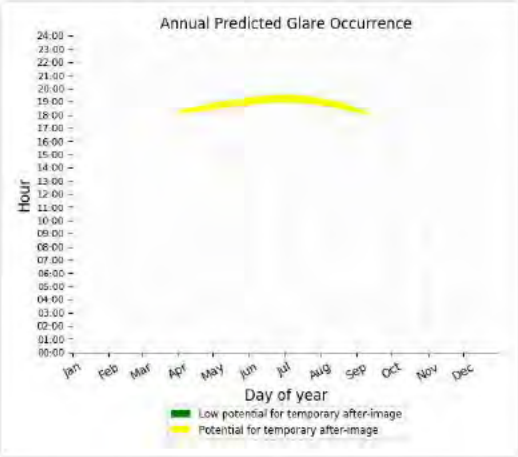


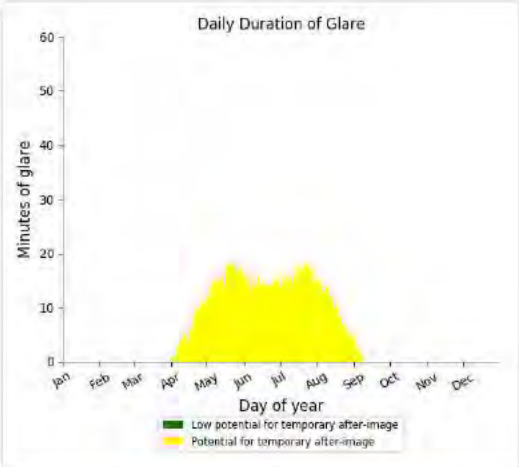


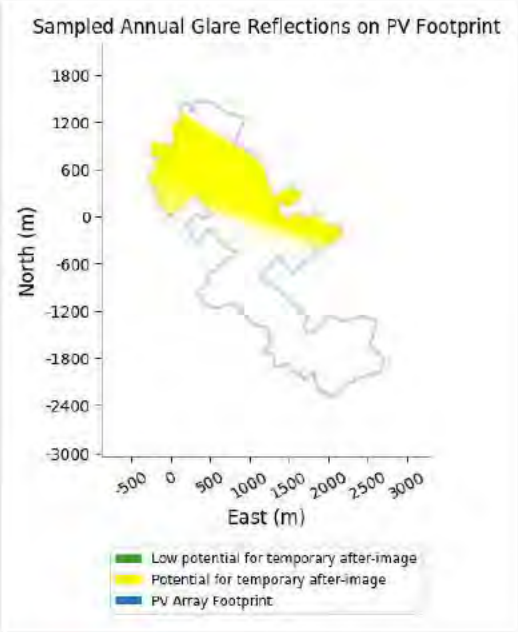
PV array 1 - OP Receptor (OP 35)

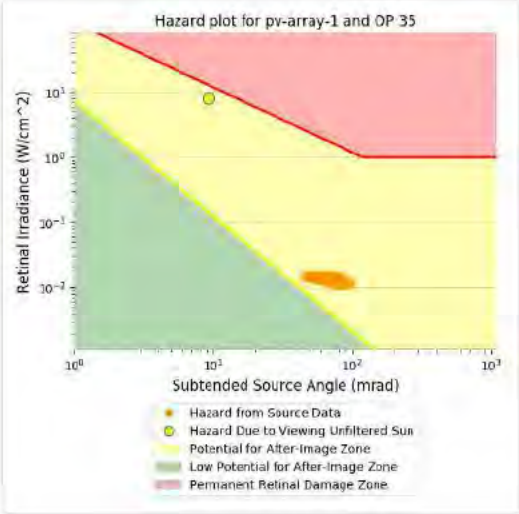
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 1,936 minutes of "yellow" glare with potential to cause temporary after-image.





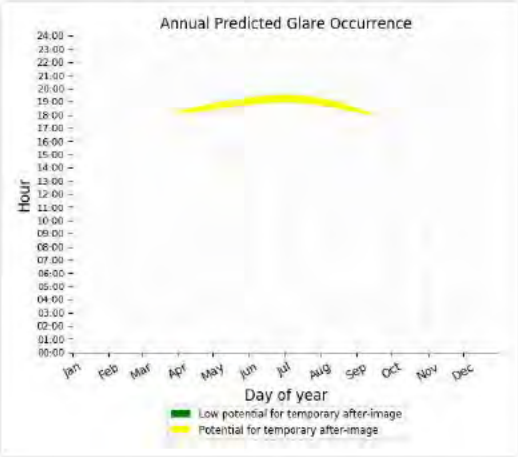


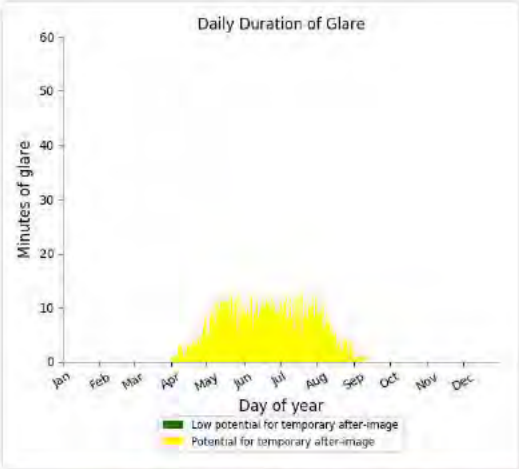


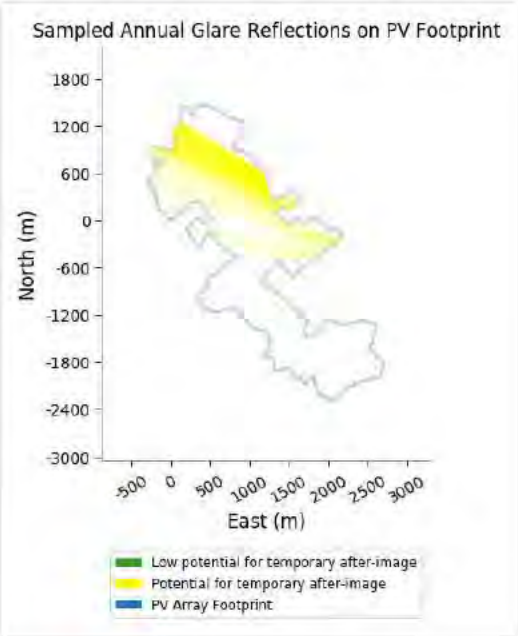
PV array 1 - OP Receptor (OP 36)

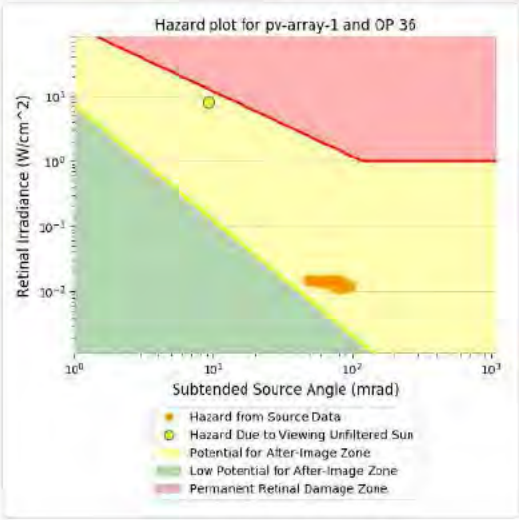
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 1,153 minutes of "yellow" glare with potential to cause temporary after-image.





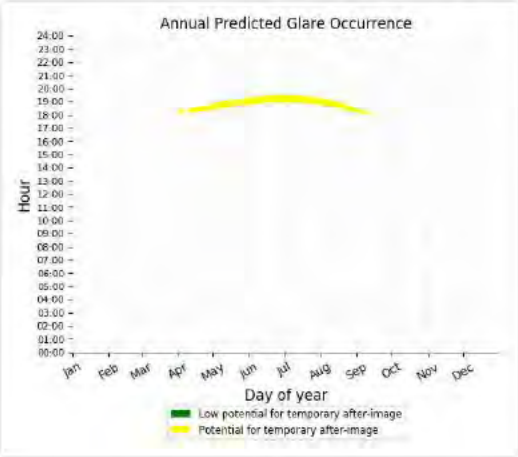


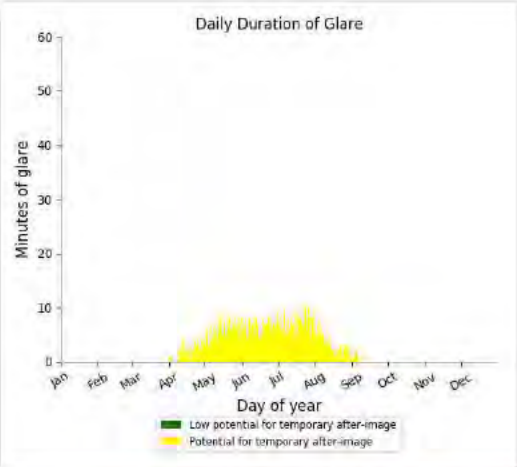


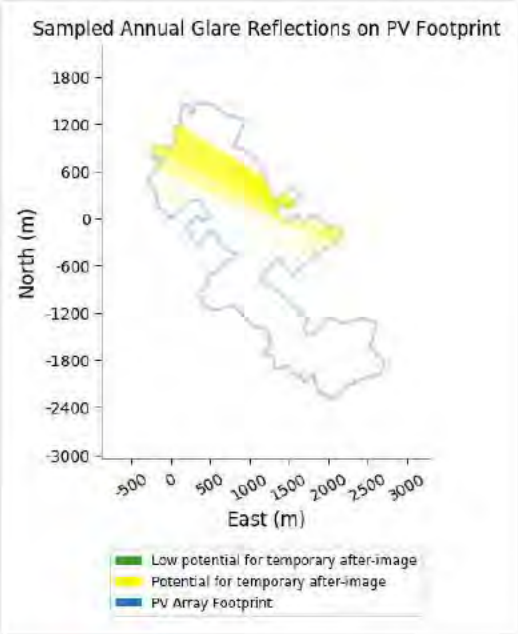
PV array 1 - OP Receptor (OP 37)

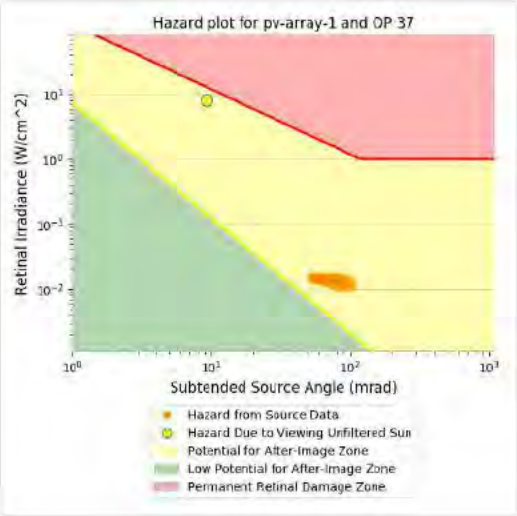
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 775 minutes of "yellow" glare with potential to cause temporary after-image.





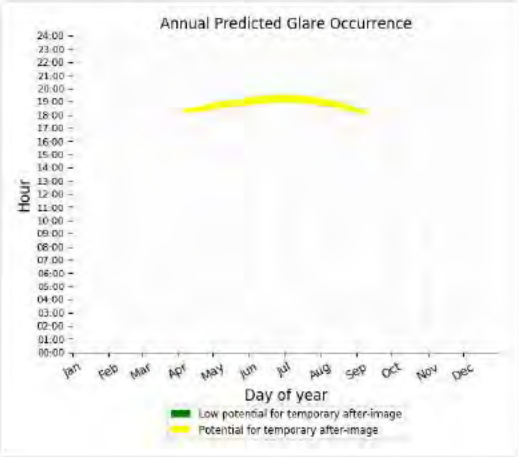


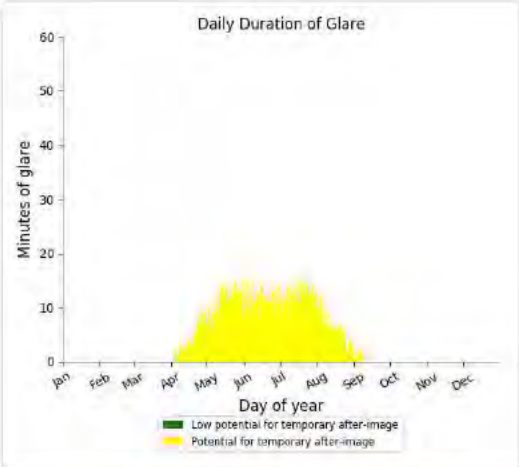


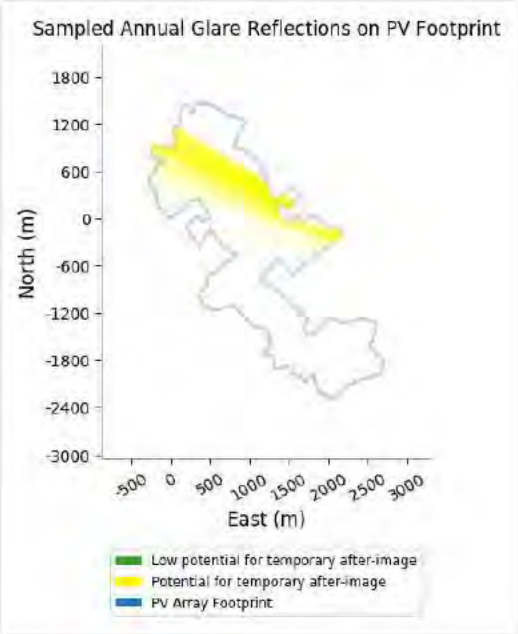
PV array 1 - OP Receptor (OP 38)

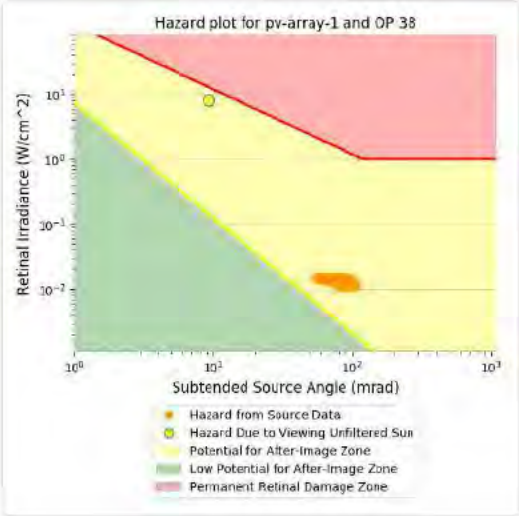
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 1,444 minutes of "yellow" glare with potential to cause temporary after-image.





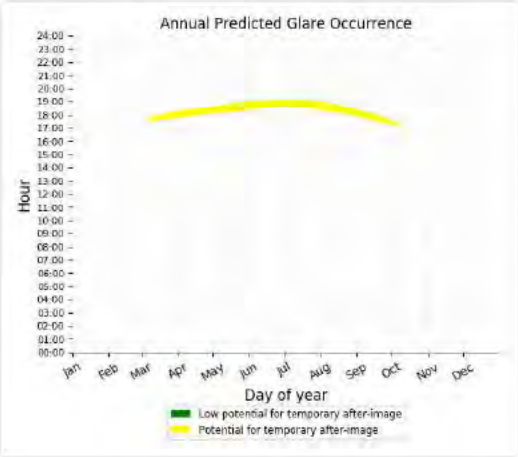


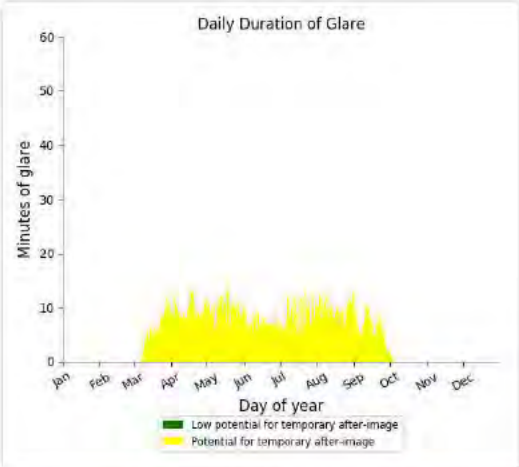


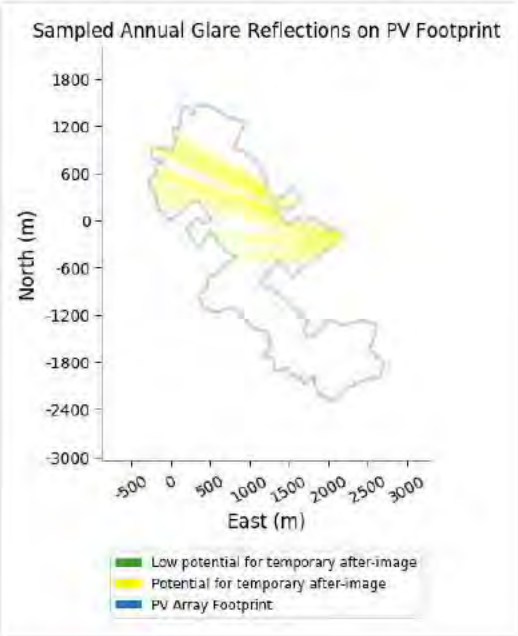
PV array 1 - OP Receptor (OP 39)

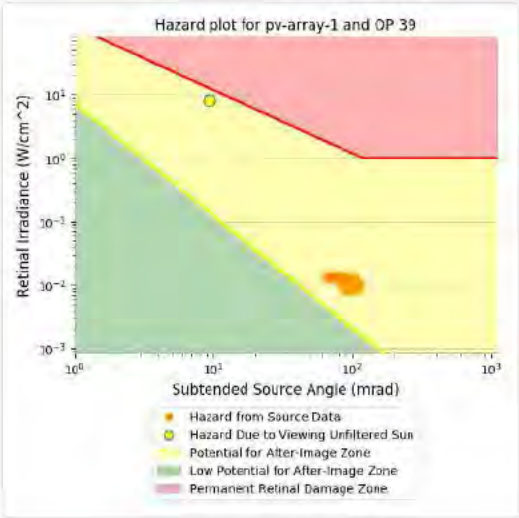
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 1,753 minutes of "yellow" glare with potential to cause temporary after-image.





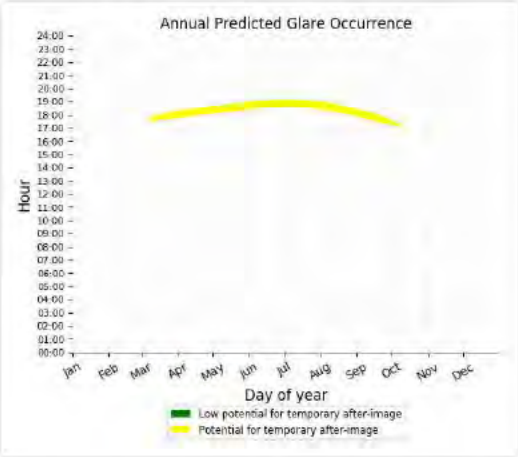


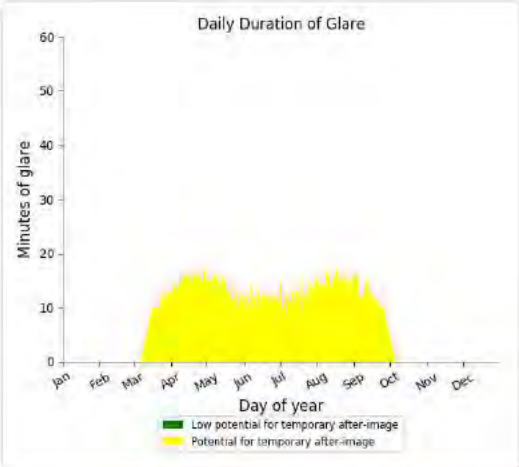


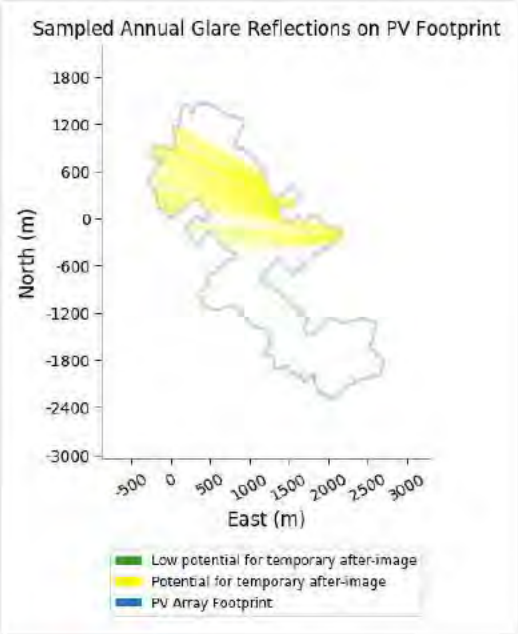
PV array 1 - OP Receptor (OP 40)

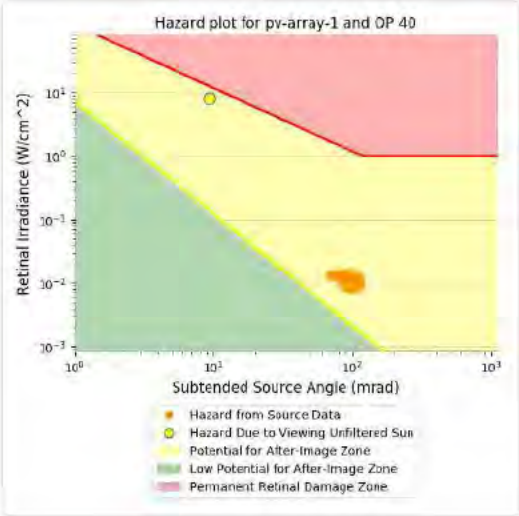
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 2,672 minutes of "yellow" glare with potential to cause temporary after-image.





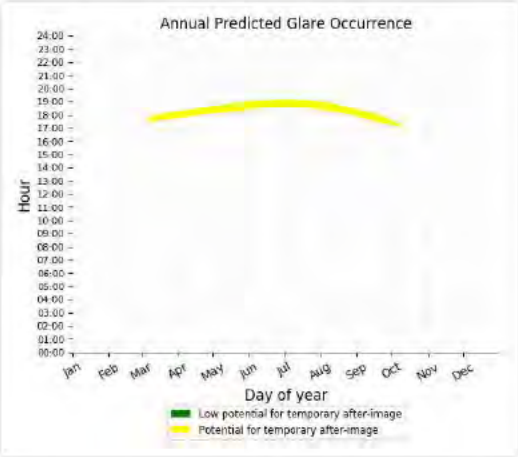


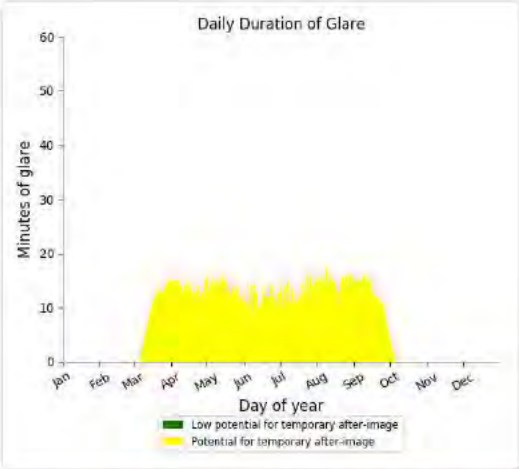


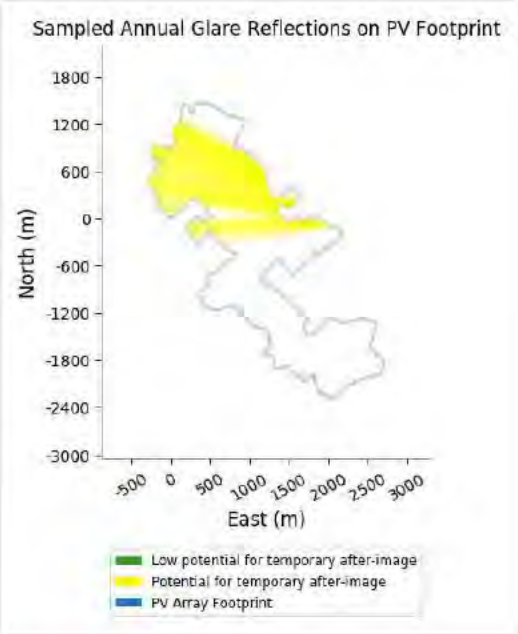
PV array 1 - OP Receptor (OP 41)

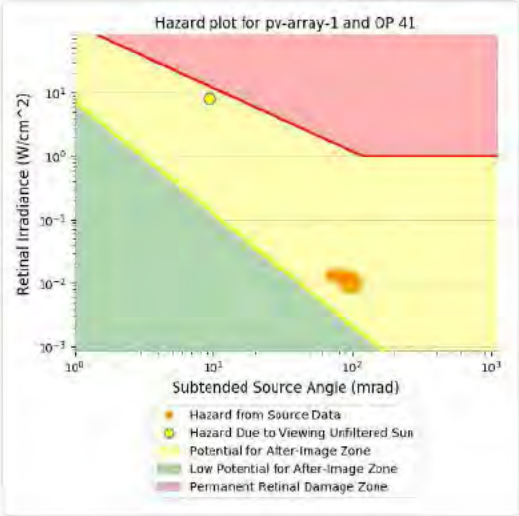
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 2,751 minutes of "yellow" glare with potential to cause temporary after-image.





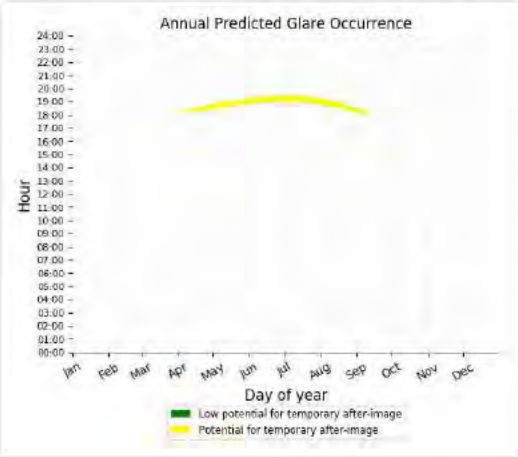


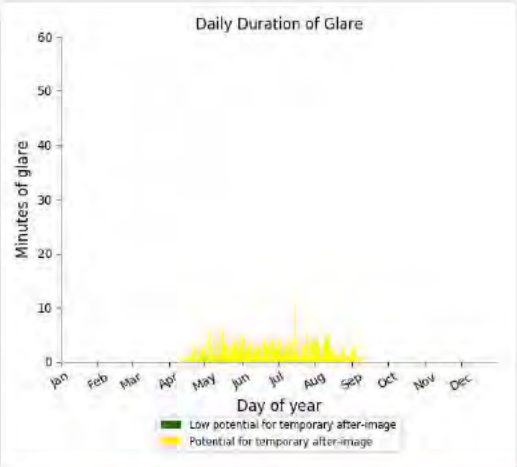


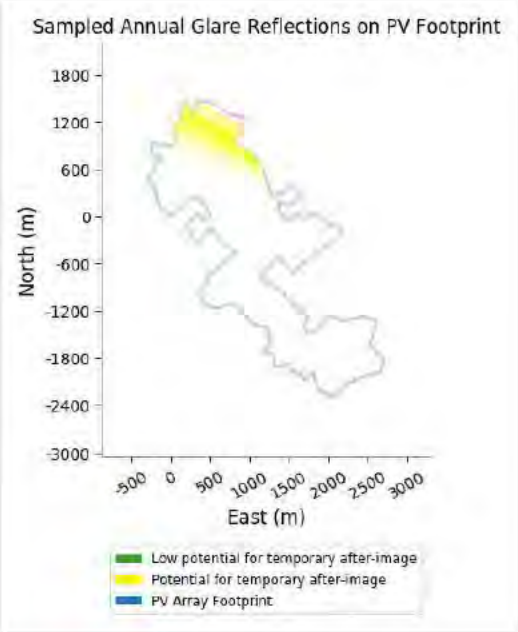
PV array 1 - OP Receptor (OP 42)

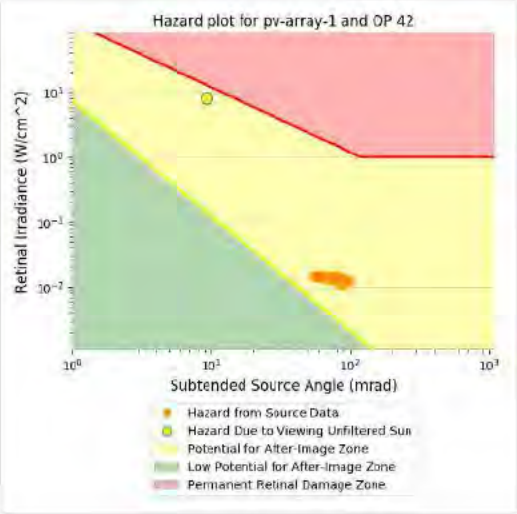
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 371 minutes of "yellow" glare with potential to cause temporary after-image.





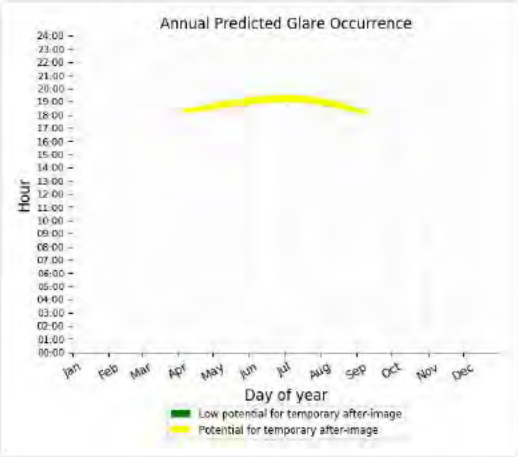


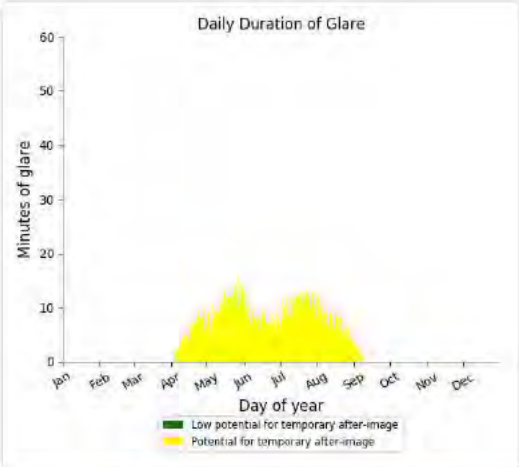


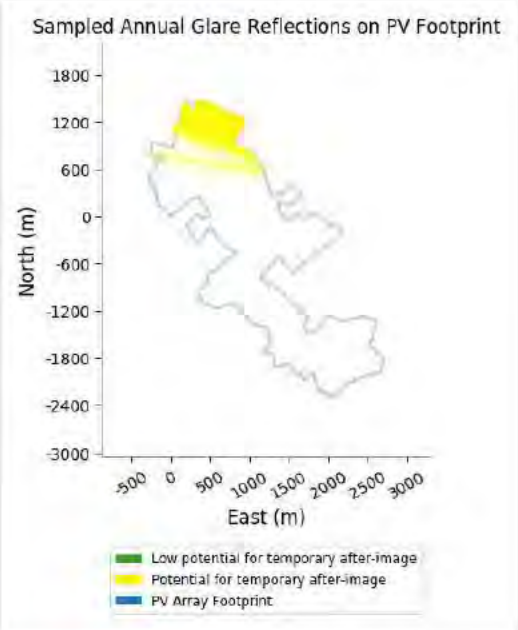
PV array 1 - OP Receptor (OP 43)

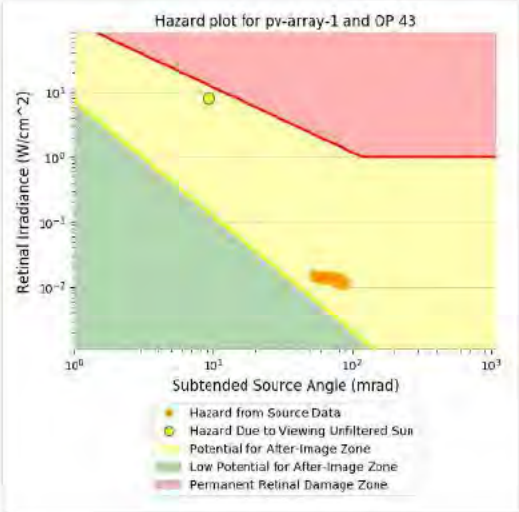
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 1,310 minutes of "yellow" glare with potential to cause temporary after-image.





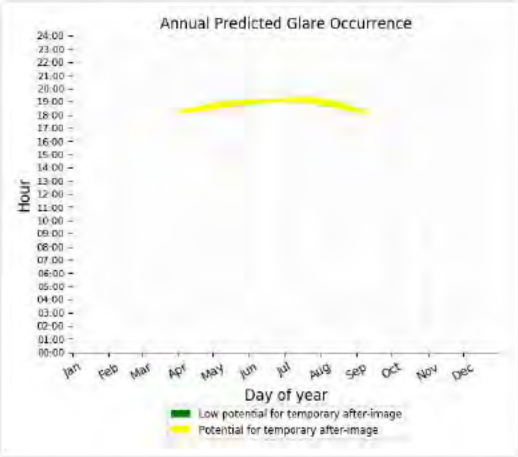


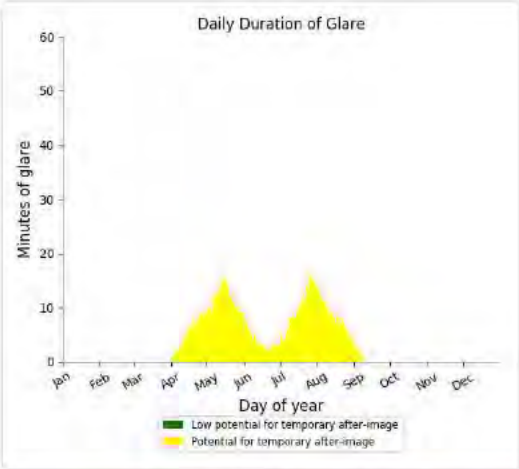


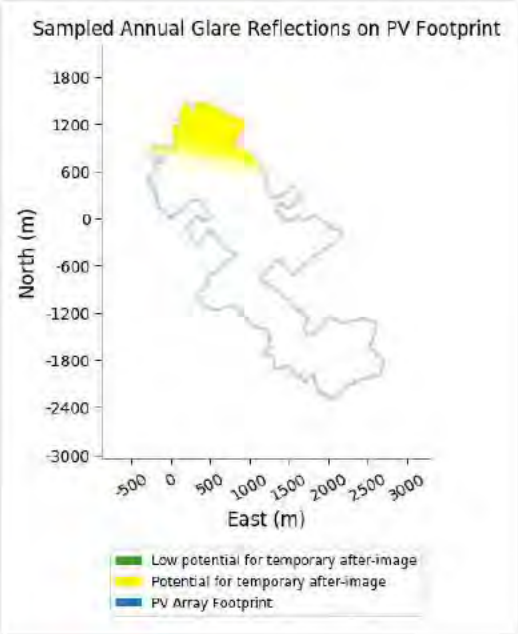
PV array 1 - OP Receptor (OP 44)

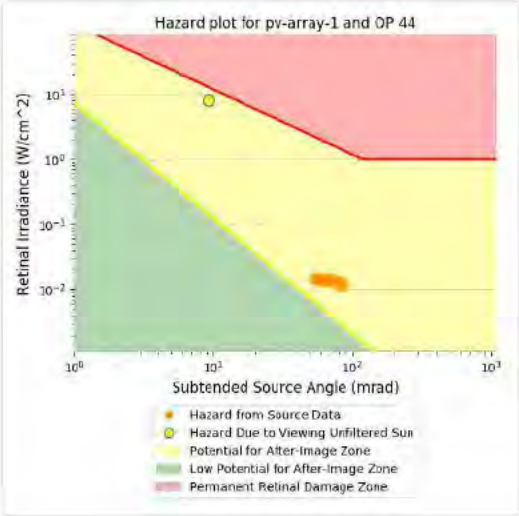
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 1,219 minutes of "yellow" glare with potential to cause temporary after-image.





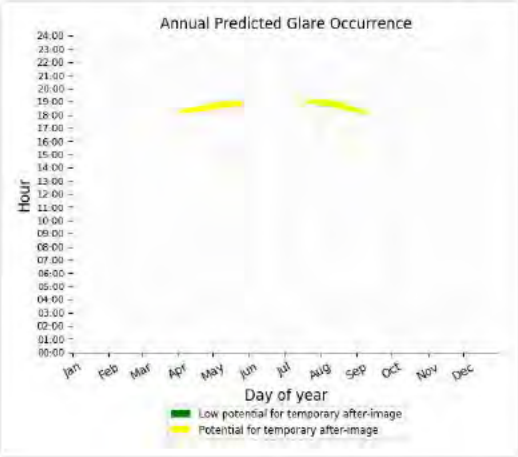


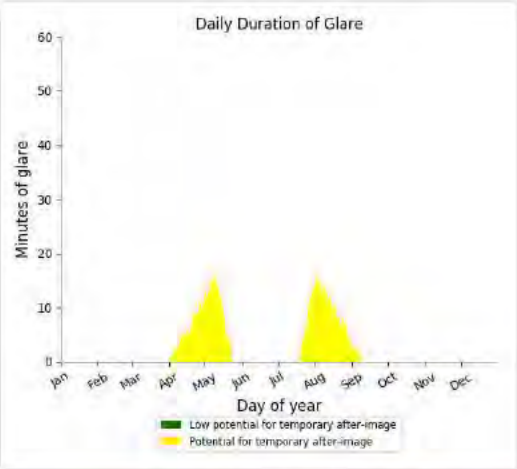


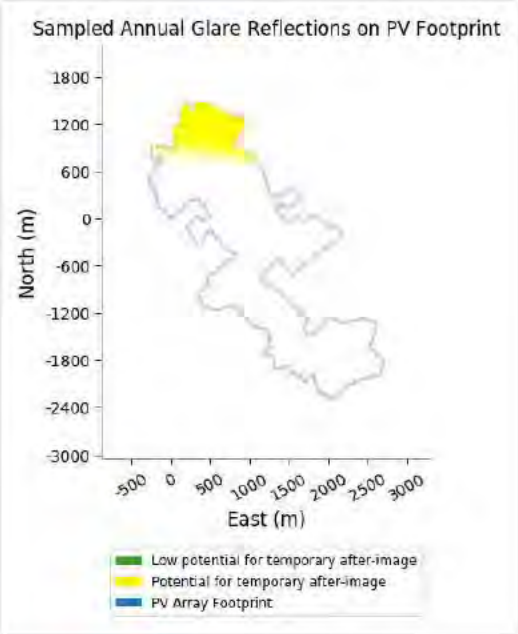
PV array 1 - OP Receptor (OP 45)

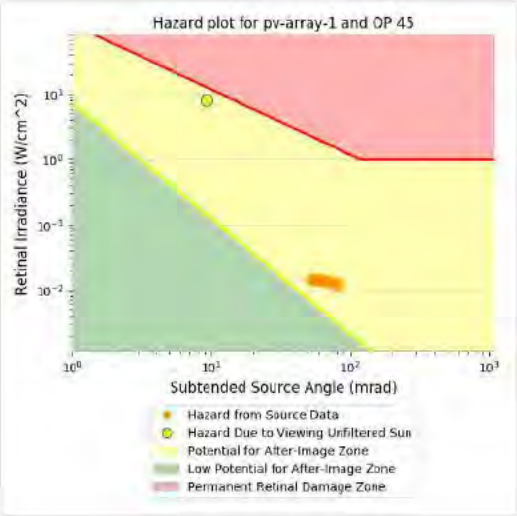
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 834 minutes of "yellow" glare with potential to cause temporary after-image.





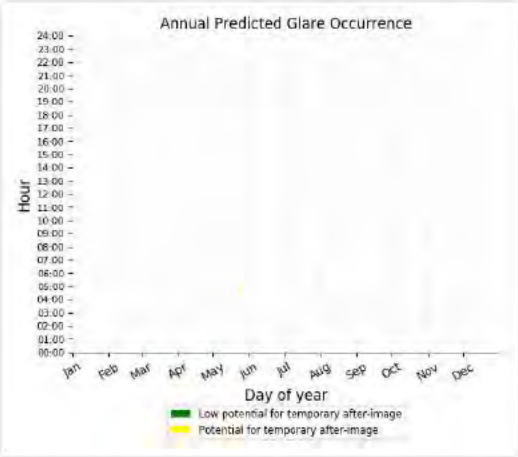


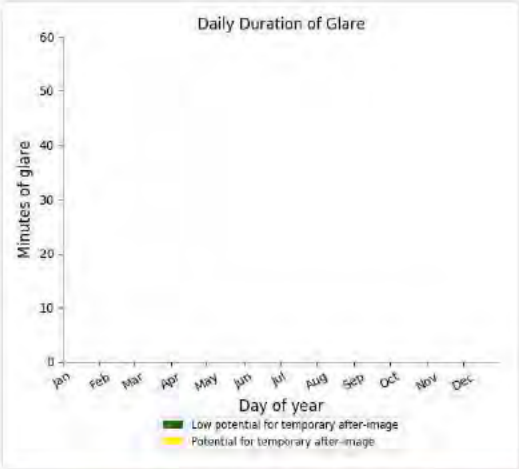


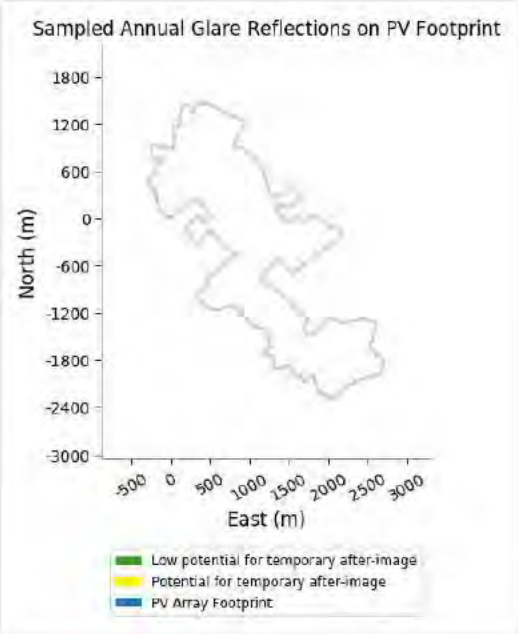
PV array 1 - OP Receptor (OP 46)

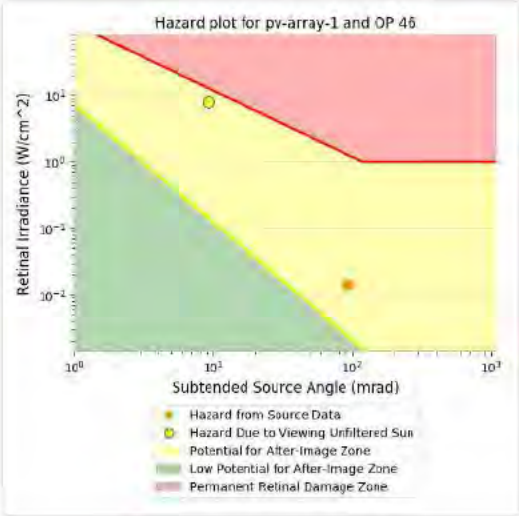
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 2 minutes of "yellow" glare with potential to cause temporary after-image.





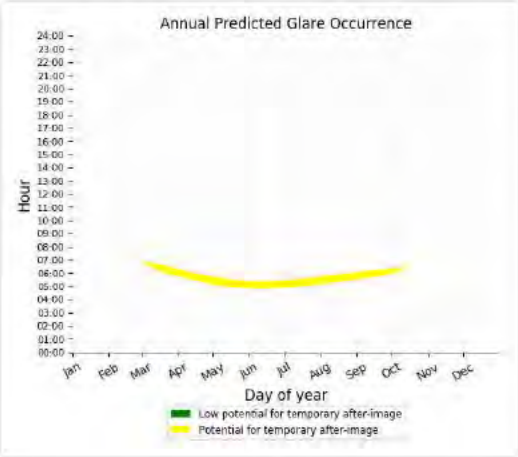


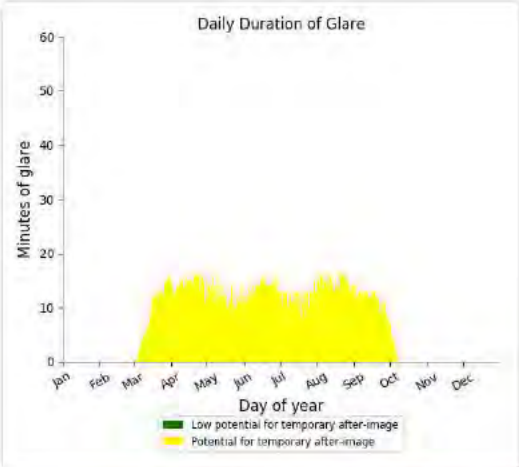


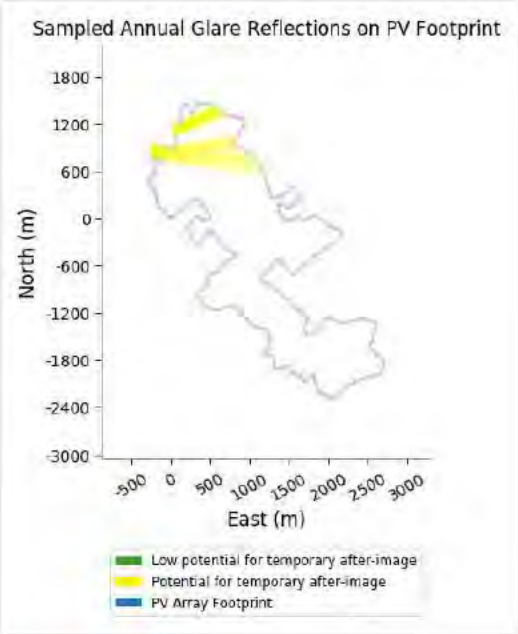
PV array 1 - OP Receptor (OP 47)

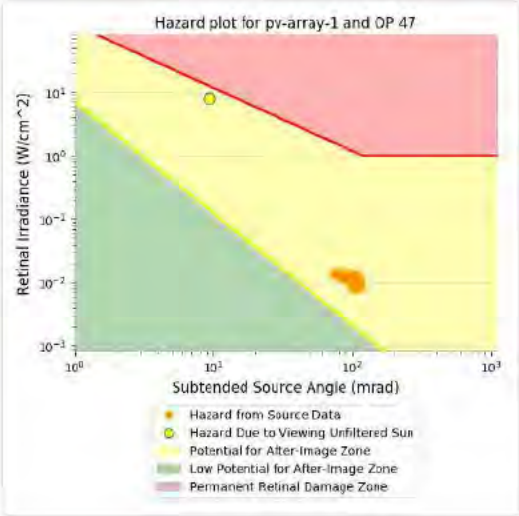
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 2,709 minutes of "yellow" glare with potential to cause temporary after-image.









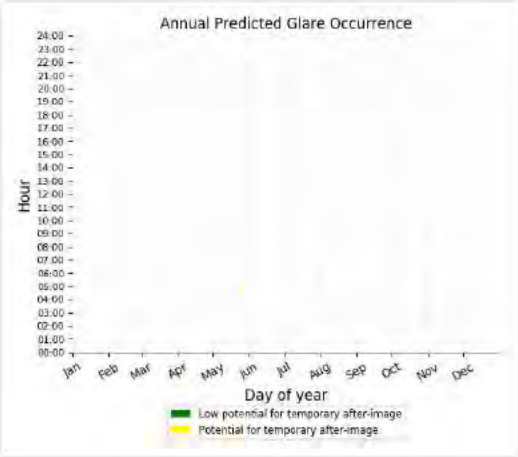
PV array 1 - OP Receptor (OP 48)

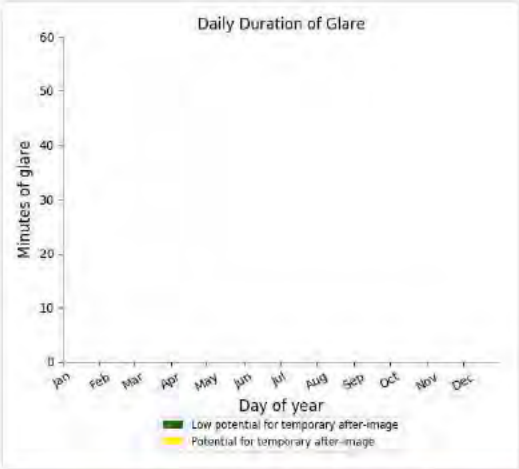
No glare found

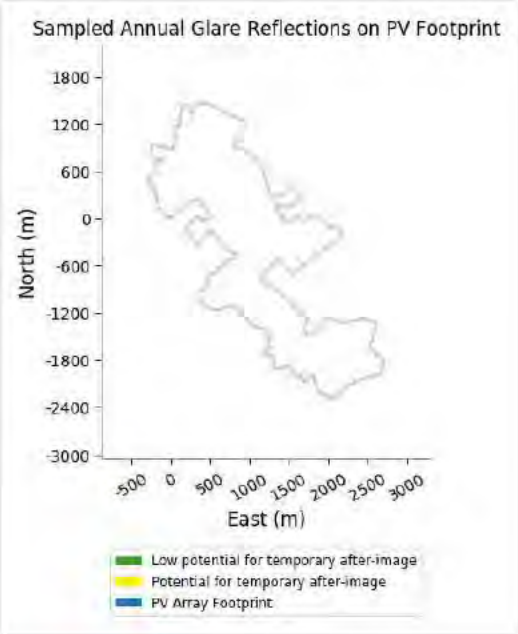
PV array 1 - OP Receptor (OP 49)

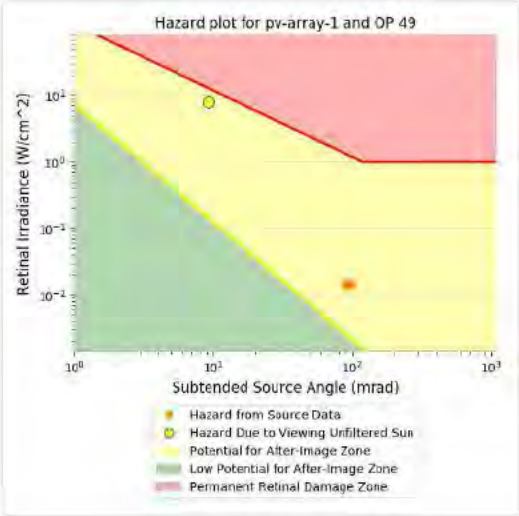
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 2 minutes of "yellow" glare with potential to cause temporary after-image.





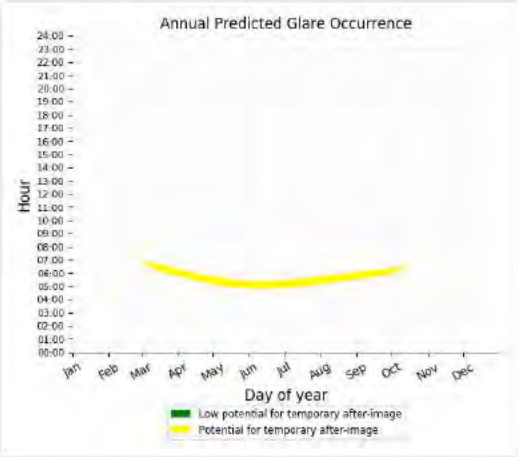


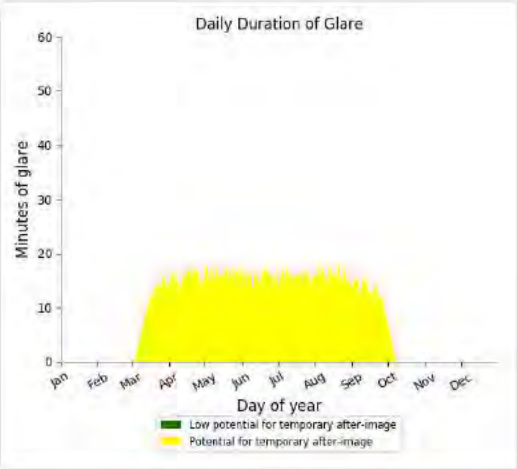


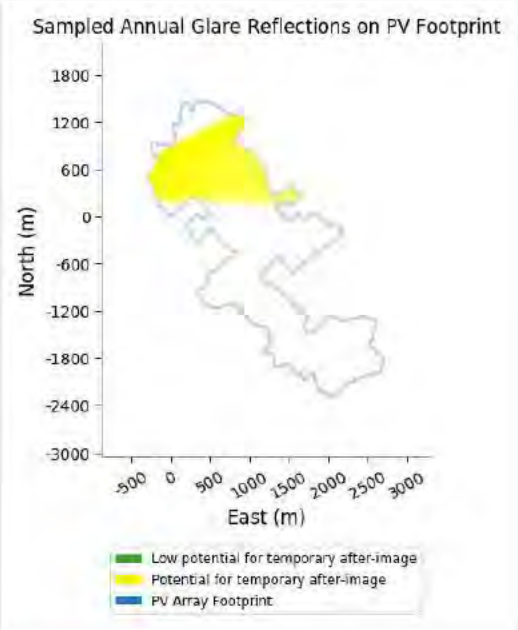
PV array 1 - OP Receptor (OP 50)

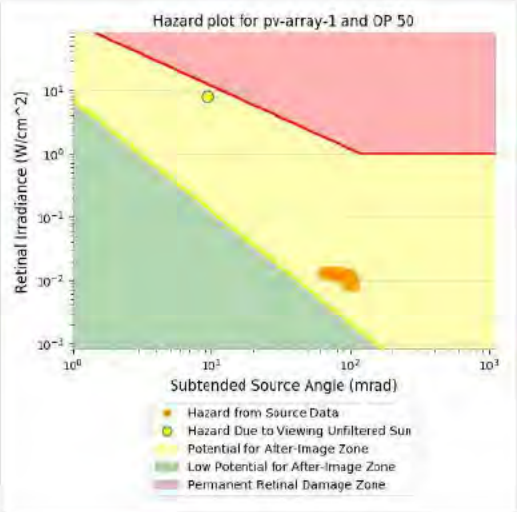
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 3,138 minutes of "yellow" glare with potential to cause temporary after-image.





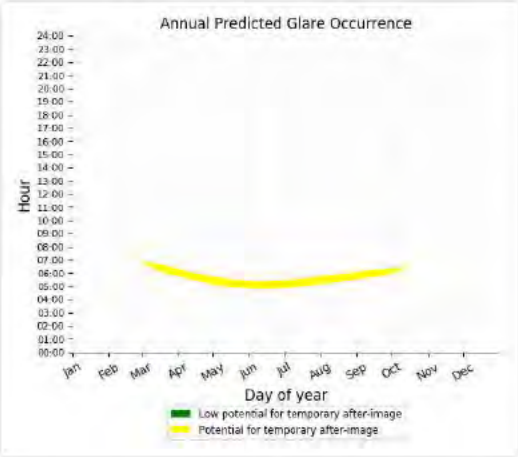


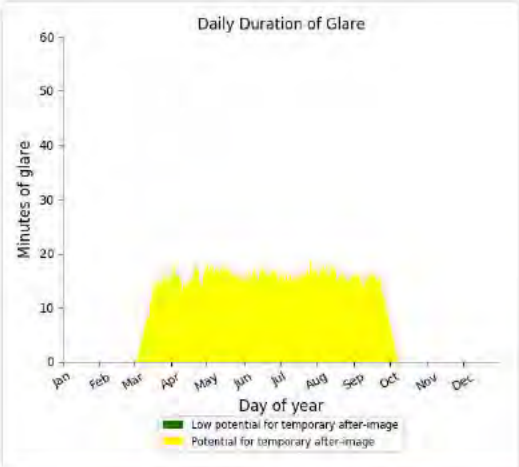


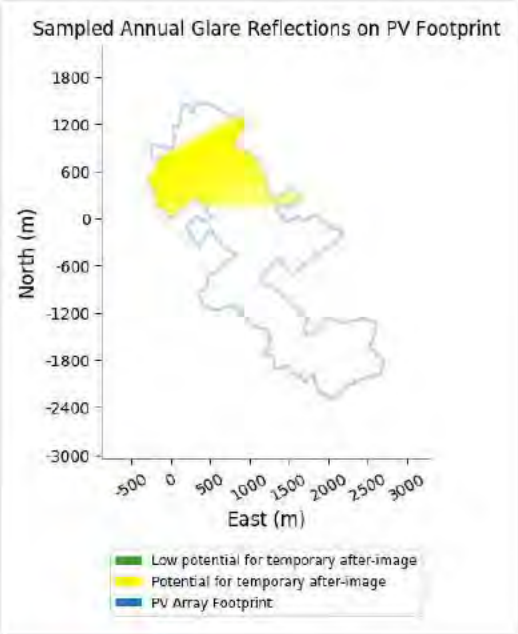
PV array 1 - OP Receptor (OP 51)

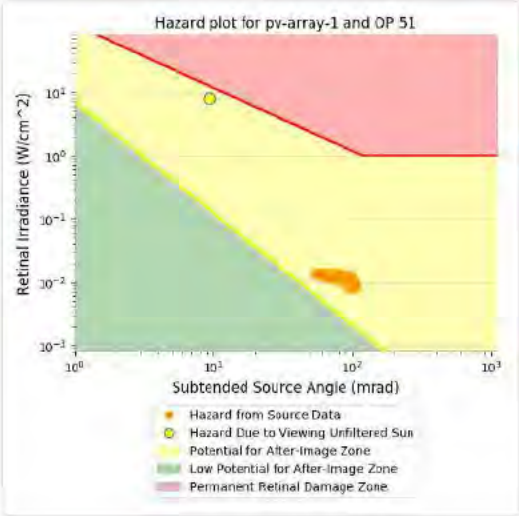
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 3,217 minutes of "yellow" glare with potential to cause temporary after-image.





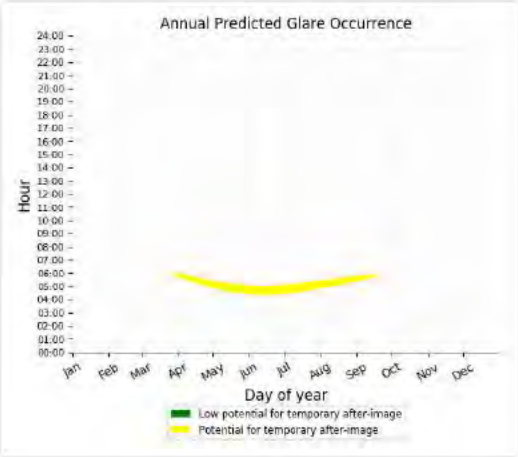


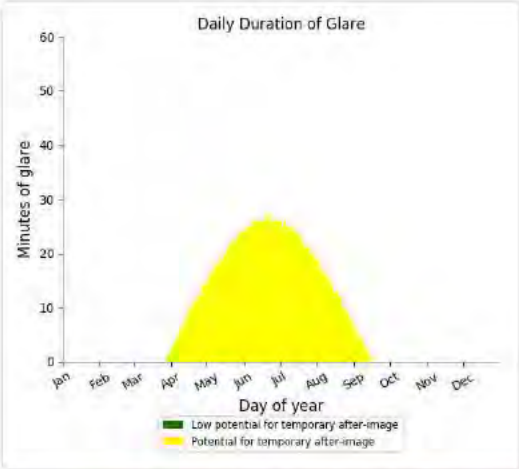


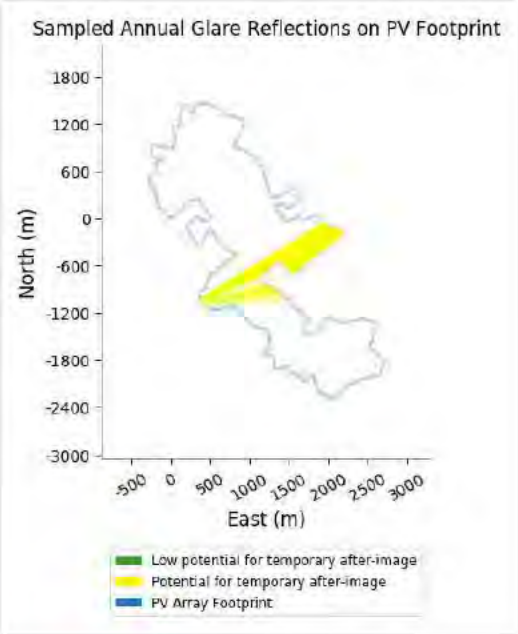
PV array 1 - OP Receptor (OP 52)

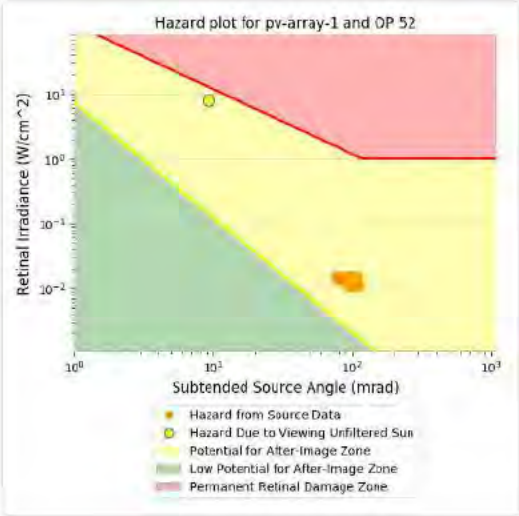
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 2,821 minutes of "yellow" glare with potential to cause temporary after-image.





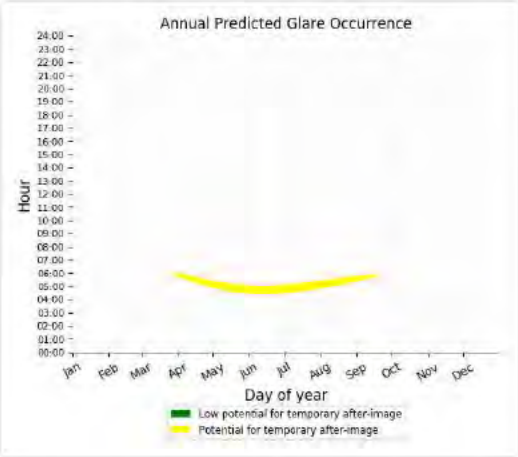


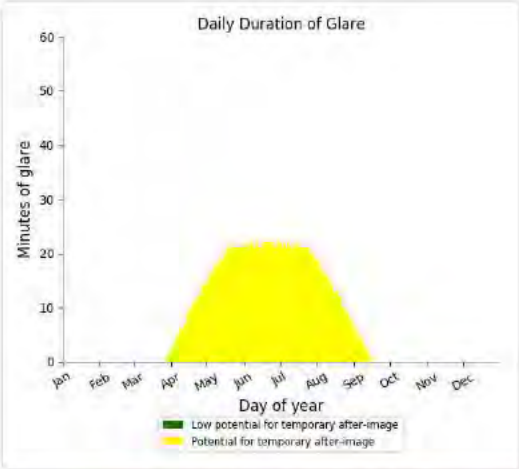


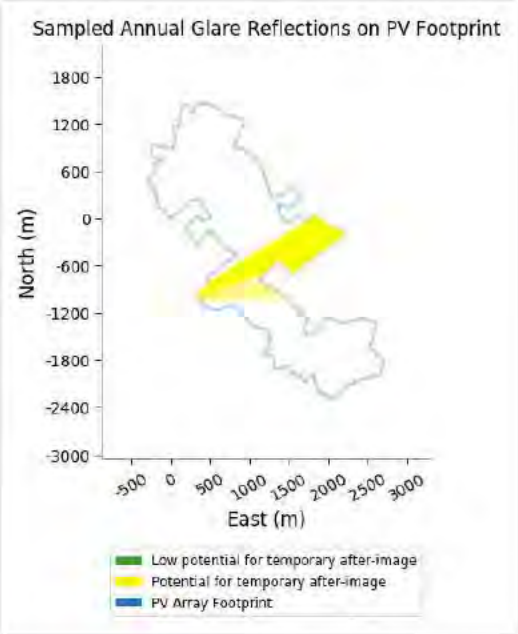
PV array 1 - OP Receptor (OP 53)

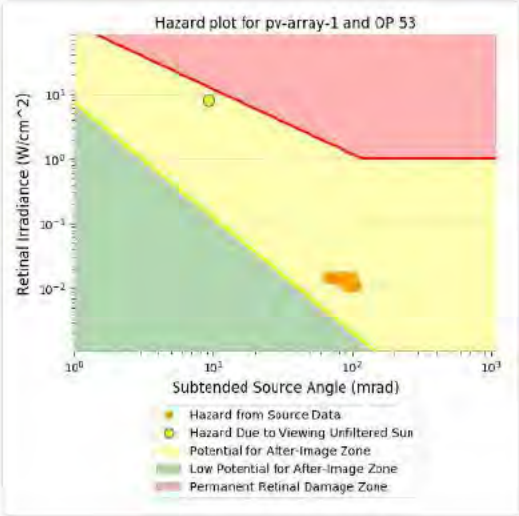
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 2,609 minutes of "yellow" glare with potential to cause temporary after-image.





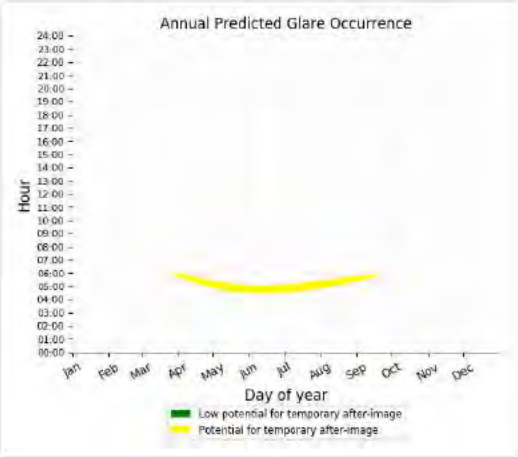


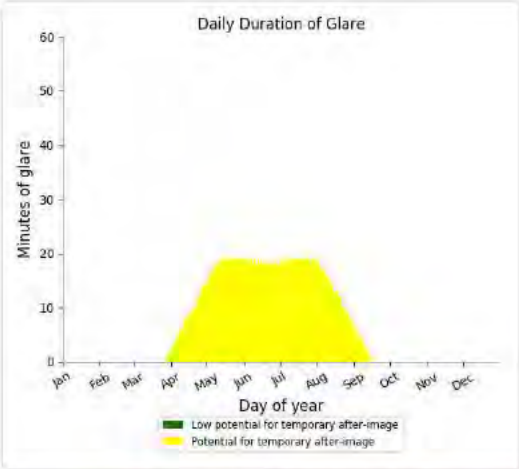


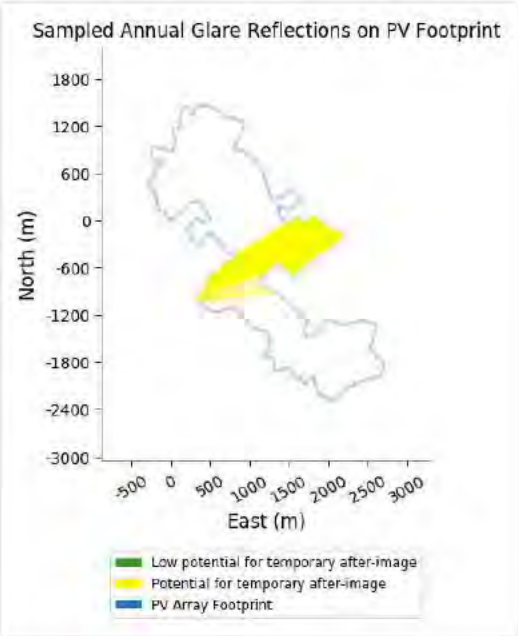
PV array 1 - OP Receptor (OP 54)

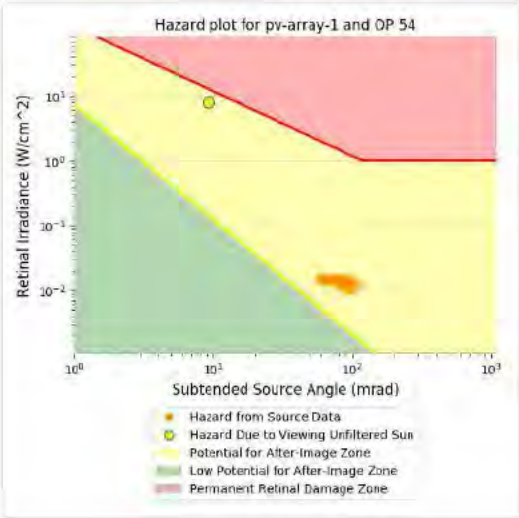
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 2,410 minutes of "yellow" glare with potential to cause temporary after-image.





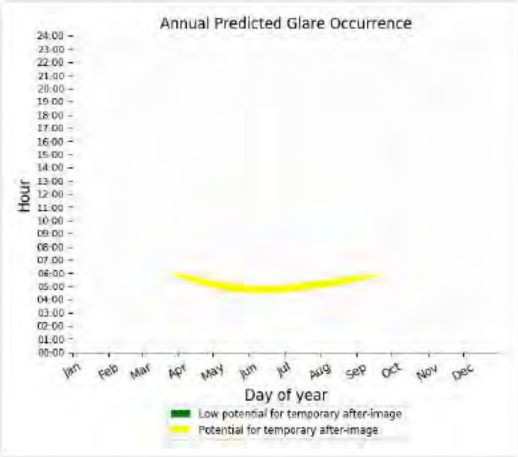


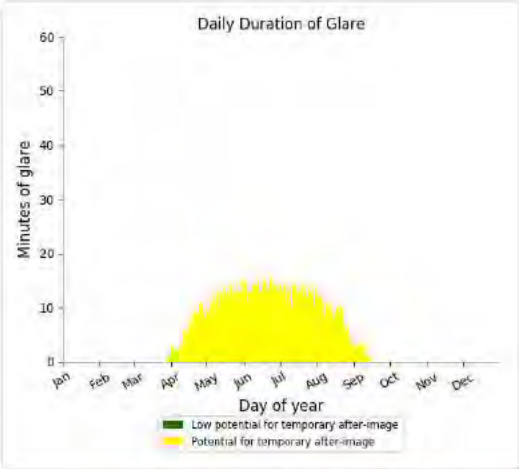


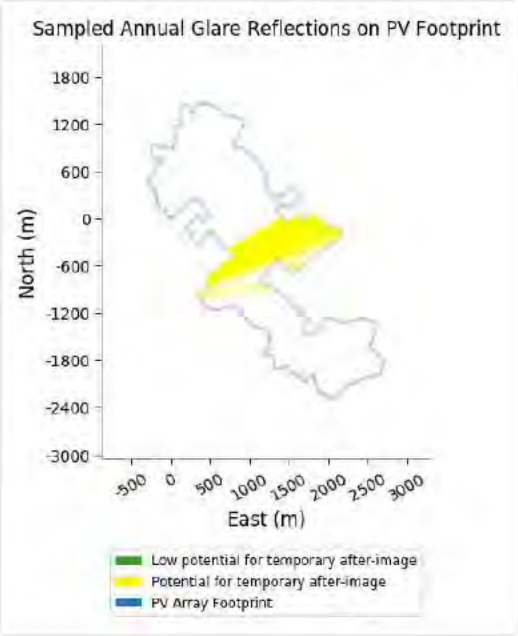
PV array 1 - OP Receptor (OP 55)

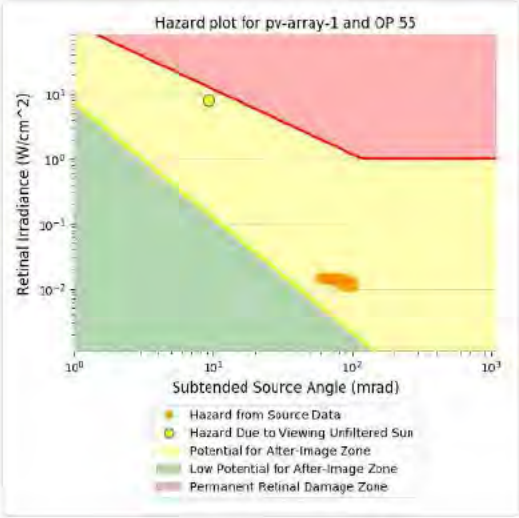
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 1,704 minutes of "yellow" glare with potential to cause temporary after-image.









PV array 1 - OP Receptor (OP 56)

No glare found

Assumptions

- Times associated with glare are denoted in Standard time. For Daylight Savings, add one hour.
- Glare analyses do not account for physical obstructions between reflectors and receptors. This includes buildings, tree cover and geographic obstructions
- Detailed system geometry is not rigorously simulated.
- The glare hazard determination relies on several approximations including observer eye characteristics, angle of view, and typical blink response time. Actual values and results may vary.
- The system output calculation is a DNI-based approximation that assumes clear, sunny skies year-round. It should not be used in place of more rigorous modeling methods.
- Several V1 calculations utilize the PV array centroid, rather than the actual glare spot location, due to algorithm limitations. This may affect results for larg PV footprints. Additional analyses of array sub-sections can provide additional information on expected glare.
- The subtended source angle (glare spot size) is constrained by the PV array footprint size. Partitioning large arrays into smaller sections will reduce the maximum potential subtended angle, potentially impacting results if actual glare spots are larger than the sub-array size. Additional analyses of the combined area of adjacent sub-arrays can provide more information on potential glare hazards. (See previous point on related limitations.)
- Hazard zone boundaries shown in the Glare Hazard plot are an approximation and visual aid. Actual ocular impact outcomes encompass a continuous, nc discrete, spectrum.
- Glare locations displayed on receptor plots are approximate. Actual glare-spot locations may differ.
- Glare vector plots are simplified representations of analysis data. Actual glare emanations and results may differ.

- Refer to the **Help page** for detailed assumptions and limitations not listed here.

ForgeSolar

Longfield Solar Farm

Longfield Solar Farm Road 30 Deg

Created Aug. 17, 2021
Updated Aug. 17, 2021
Time-step 1 minute
Timezone offset UTC0
Site ID 57491.10147

Project type Advanced
Project status: active
Category 100 MW to 1 GW

Misc. Analysis Settings

DNI: **varies (1,000.0 W/m^2 peak)**
Ocular transmission coefficient: **0.5**
Pupil diameter: **0.002 m**
Eye focal length: **0.017 m**
Sun subtended angle: **9.3 mrad**

Analysis Methodologies:

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

Summary of Results Glare with potential for temporary after-image predicted

PV Name	Tilt	Orientation	"Green" Glare	"Yellow" Glare	Energy Produced
	deg	deg	min	min	kWh
PV array 1	30.0	180.0	0	128,280	-

Component Data

PV Array(s)

Total PV footprint area: 4,100,740 m^2

Name: PV array 1
Axis tracking: Fixed (no rotation)
Tilt: 30.0 deg
Orientation: 180.0 deg
Footprint area: 4,100,740 m^2
Rated power: -
Panel material: Light textured glass with AR coating
Vary reflectivity with sun position? Yes
Correlate slope error with surface type? Yes
Slope error: 9.16 mrad

Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	m	m	m
1	51.796401	0.524180	55.67	3.00	58.67
2	51.797383	0.522893	56.93	3.00	59.93
3	51.797489	0.522464	57.69	3.00	60.69
4	51.797277	0.522163	57.37	3.00	60.37
5	51.798683	0.521563	59.22	3.00	62.22
6	51.799957	0.521305	59.70	3.00	62.70
7	51.799771	0.520661	59.50	3.00	62.50
8	51.800408	0.520404	59.53	3.00	62.53
9	51.801098	0.520146	59.33	3.00	62.33
10	51.801337	0.520833	58.40	3.00	61.40
11	51.801656	0.521477	58.40	3.00	61.40
12	51.802319	0.521477	58.33	3.00	61.33
13	51.802770	0.521348	58.22	3.00	61.22
14	51.802929	0.522721	57.30	3.00	60.30
15	51.803195	0.522464	56.59	3.00	59.59
16	51.803341	0.520683	57.85	3.00	60.85
17	51.804814	0.520661	57.51	3.00	60.51
18	51.804814	0.521262	57.61	3.00	60.61
19	51.804336	0.524567	57.35	3.00	60.35
20	51.805066	0.524953	56.64	3.00	59.64
21	51.805517	0.524910	55.81	3.00	58.81
22	51.805902	0.525060	55.55	3.00	58.55
23	51.806154	0.524631	55.63	3.00	58.63
24	51.806791	0.524545	54.59	3.00	57.59
25	51.806976	0.524760	53.85	3.00	56.85
26	51.806817	0.525790	53.07	3.00	56.07
27	51.807374	0.525961	51.75	3.00	54.75
28	51.808131	0.526026	48.92	3.00	51.92
29	51.808635	0.526069	47.06	3.00	50.06
30	51.809378	0.526562	43.40	3.00	46.40
31	51.809232	0.527528	43.20	3.00	46.20
32	51.808383	0.528107	44.34	3.00	47.34
33	51.808356	0.528386	44.51	3.00	47.51
34	51.809510	0.528858	39.22	3.00	42.22
35	51.809470	0.531390	39.83	3.00	42.83
36	51.809139	0.532592	39.95	3.00	42.95
37	51.808781	0.533386	45.14	3.00	48.14
38	51.808157	0.534480	47.48	3.00	50.48
39	51.807976	0.535977	47.86	3.00	50.86
40	51.807856	0.536750	47.77	3.00	50.77
41	51.807498	0.537951	46.46	3.00	49.46
42	51.804619	0.535720	54.38	3.00	57.38
43	51.804234	0.537629	52.43	3.00	55.43
44	51.803836	0.538574	53.36	3.00	56.36
45	51.803345	0.539368	51.70	3.00	54.70
46	51.802284	0.540827	53.00	3.00	56.00
47	51.801810	0.541505	53.85	3.00	56.85
48	51.801544	0.541333	53.77	3.00	56.77
49	51.798625	0.542835	53.73	3.00	56.73
50	51.799050	0.544638	52.72	3.00	55.72
51	51.799899	0.546483	50.75	3.00	53.75
52	51.798824	0.548522	50.16	3.00	53.16
53	51.797471	0.545818	51.82	3.00	54.82
54	51.798055	0.544874	51.90	3.00	54.90
55	51.798121	0.543994	52.77	3.00	55.77
56	51.797351	0.544273	53.01	3.00	56.01
57	51.797165	0.543908	51.74	3.00	54.74
58	51.795952	0.545603	48.45	3.00	51.45
59	51.796768	0.547516	50.46	3.00	53.46
60	51.796145	0.548438	47.01	3.00	50.01
61	51.796808	0.550820	45.69	3.00	48.69

62	51.796078	0.552000	48.33	3.00	51.33
63	51.795335	0.553867	46.63	3.00	49.63
64	51.794977	0.555841	44.78	3.00	47.78
65	51.793955	0.555090	45.53	3.00	48.53
66	51.793053	0.552923	45.78	3.00	48.78
67	51.792562	0.551464	46.53	3.00	49.53
68	51.790020	0.546711	50.66	3.00	53.66
69	51.791755	0.544093	51.82	3.00	54.82
70	51.789618	0.540617	55.94	3.00	58.94
71	51.789220	0.541347	55.54	3.00	58.54
72	51.788861	0.541712	54.61	3.00	57.61
73	51.788569	0.542227	54.21	3.00	57.21
74	51.788822	0.542742	54.03	3.00	57.03
75	51.785406	0.548621	51.37	3.00	54.37
76	51.785220	0.549050	51.14	3.00	54.14
77	51.784835	0.549479	51.69	3.00	54.69
78	51.784012	0.548514	49.80	3.00	52.80
79	51.783295	0.549072	48.95	3.00	51.95
80	51.783269	0.550659	50.00	3.00	53.00
81	51.785247	0.553170	49.93	3.00	52.93
82	51.785233	0.553513	49.42	3.00	52.42
83	51.784556	0.555187	47.27	3.00	50.27
84	51.784530	0.556367	46.38	3.00	49.38
85	51.784995	0.559500	46.91	3.00	49.91
86	51.784437	0.562139	47.64	3.00	50.64
87	51.781636	0.560744	42.41	3.00	45.41
88	51.780202	0.563319	38.75	3.00	41.75
89	51.778623	0.562912	41.36	3.00	44.36
90	51.778038	0.558921	43.48	3.00	46.48
91	51.776963	0.555874	44.20	3.00	47.20
92	51.776246	0.554972	44.18	3.00	47.18
93	51.775702	0.553470	43.89	3.00	46.89
94	51.776432	0.552655	42.48	3.00	45.48
95	51.776472	0.552204	42.35	3.00	45.35
96	51.776153	0.552033	44.14	3.00	47.14
97	51.777560	0.550702	44.38	3.00	47.38
98	51.778636	0.550638	44.47	3.00	47.47
99	51.777760	0.548771	45.50	3.00	48.50
100	51.778662	0.547810	46.20	3.00	49.20
101	51.778384	0.547188	46.30	3.00	49.30
102	51.779711	0.545321	47.26	3.00	50.26
103	51.779379	0.544806	47.32	3.00	50.32
104	51.779260	0.543304	45.51	3.00	48.51
105	51.780455	0.543089	46.29	3.00	49.29
106	51.780707	0.542832	46.96	3.00	49.96
107	51.780840	0.542102	46.40	3.00	49.40
108	51.780853	0.541716	46.74	3.00	49.74
109	51.781357	0.541244	48.33	3.00	51.33
110	51.781742	0.542596	49.02	3.00	52.02
111	51.782338	0.542133	49.06	3.00	52.06
112	51.782511	0.542756	50.33	3.00	53.33
113	51.783746	0.541812	51.03	3.00	54.03
114	51.783918	0.540417	50.21	3.00	53.21
115	51.784131	0.540267	50.10	3.00	53.10
116	51.783971	0.539558	50.39	3.00	53.39
117	51.784675	0.538636	50.08	3.00	53.08
118	51.786082	0.536361	53.70	3.00	56.70
119	51.786493	0.536018	51.51	3.00	54.51
120	51.786334	0.534516	51.14	3.00	54.14
121	51.786002	0.533400	49.52	3.00	52.52
122	51.785896	0.532542	48.20	3.00	51.20
123	51.786268	0.531104	47.33	3.00	50.33
124	51.786719	0.530031	47.75	3.00	50.75
125	51.787794	0.529066	48.91	3.00	51.91
126	51.788615	0.530890	52.09	3.00	55.09

127	51.789810	0.531083	54.39	3.00	57.39
128	51.790327	0.532671	55.73	3.00	58.73
129	51.791602	0.534602	56.74	3.00	59.74
130	51.791602	0.535181	56.79	3.00	59.79
131	51.792172	0.536404	56.90	3.00	59.90
132	51.792771	0.534924	56.98	3.00	59.98
133	51.792864	0.534537	57.39	3.00	60.39
134	51.793222	0.534130	57.11	3.00	60.11
135	51.793448	0.533615	57.21	3.00	60.21
136	51.795094	0.531383	58.82	3.00	61.82
137	51.794656	0.530718	58.25	3.00	61.25
138	51.793873	0.530117	58.23	3.00	61.23
139	51.793501	0.529752	57.72	3.00	60.72
140	51.793302	0.529302	57.43	3.00	60.43
141	51.795346	0.527049	58.54	3.00	61.54
142	51.795717	0.527714	58.61	3.00	61.61
143	51.796408	0.528551	59.10	3.00	62.10
144	51.796633	0.529130	58.68	3.00	61.68
145	51.796461	0.529645	58.58	3.00	61.58
146	51.795996	0.530246	58.92	3.00	61.92
147	51.796567	0.531726	58.02	3.00	61.02
148	51.798584	0.529216	56.85	3.00	59.85
149	51.798531	0.527735	56.62	3.00	59.62
150	51.797602	0.526577	56.04	3.00	59.04
151	51.797018	0.525439	56.13	3.00	59.13

Discrete Observation Receptors

Number	Latitude	Longitude	Ground elevation	Height above ground	Total Elevation
	deg	deg	m	m	m
OP 1	51.811279	0.519287	45.14	1.50	46.64
OP 2	51.809528	0.518579	48.39	1.50	49.89
OP 3	51.807975	0.518515	51.82	1.50	53.32
OP 4	51.805866	0.518150	56.47	1.50	57.97
OP 5	51.804410	0.518407	58.10	1.50	59.60
OP 6	51.802897	0.519673	59.11	1.50	60.61
OP 7	51.801066	0.519802	59.28	1.50	60.78
OP 8	51.799222	0.520424	61.43	1.50	62.93
OP 9	51.797722	0.520682	58.74	1.50	60.24
OP 10	51.796024	0.521047	56.77	1.50	58.27
OP 11	51.794338	0.522184	56.48	1.50	57.98
OP 12	51.792520	0.523493	58.43	1.50	59.93
OP 13	51.790795	0.524566	56.08	1.50	57.58
OP 14	51.789560	0.526711	53.36	1.50	54.86
OP 15	51.788379	0.528428	51.58	1.50	53.08
OP 16	51.786720	0.529737	48.98	1.50	50.48
OP 17	51.785738	0.532527	48.45	1.50	49.95
OP 18	51.785711	0.535144	51.50	1.50	53.00
OP 19	51.784928	0.537676	50.03	1.50	51.53
OP 20	51.783640	0.539372	51.46	1.50	52.96
OP 21	51.782047	0.540573	48.99	1.50	50.49
OP 22	51.780481	0.541625	46.80	1.50	48.30
OP 23	51.778835	0.542912	45.93	1.50	47.43
OP 24	51.777401	0.544521	46.98	1.50	48.48
OP 25	51.776073	0.546882	44.11	1.50	45.61
OP 26	51.775463	0.548899	43.54	1.50	45.04
OP 27	51.770165	0.565013	40.07	1.50	41.57
OP 28	51.770975	0.568168	36.70	1.50	38.20
OP 29	51.774100	0.574790	32.65	1.50	34.15
OP 30	51.775694	0.574704	27.47	1.50	28.97
OP 31	51.777154	0.575970	29.08	1.50	30.58
OP 32	51.779053	0.576885	24.29	1.50	25.79
OP 33	51.781217	0.576306	27.90	1.50	29.40
OP 34	51.782557	0.576048	32.54	1.50	34.04
OP 35	51.790017	0.573108	35.03	1.50	36.53
OP 36	51.790561	0.570362	39.84	1.50	41.34
OP 37	51.790866	0.567916	42.48	1.50	43.98
OP 38	51.791583	0.565169	42.91	1.50	44.41
OP 39	51.792924	0.563753	45.48	1.50	46.98
OP 40	51.794092	0.561457	47.35	1.50	48.85
OP 41	51.795848	0.561214	47.88	1.50	49.38
OP 42	51.797387	0.560913	45.02	1.50	46.52
OP 43	51.799311	0.561600	41.87	1.50	43.37
OP 44	51.800731	0.561493	36.60	1.50	38.10
OP 45	51.801686	0.563360	33.35	1.50	34.85
OP 46	51.804657	0.516281	58.96	1.50	60.46
OP 47	51.803603	0.514838	61.09	1.50	62.59
OP 48	51.801891	0.513625	60.23	1.50	61.73
OP 49	51.800610	0.512048	60.37	1.50	61.87
OP 50	51.799131	0.509763	64.04	1.50	65.54
OP 51	51.797910	0.507435	66.86	1.50	68.36
OP 52	51.786255	0.527068	50.55	1.50	52.05
OP 53	51.786554	0.524407	50.90	1.50	52.40
OP 54	51.786733	0.521220	52.90	1.50	54.40
OP 55	51.786587	0.518710	55.90	1.50	57.40
OP 56	51.786693	0.515760	59.38	1.50	60.88

Summary of PV Glare Analysis

PV configuration and total predicted glare

PV Name	Tilt	Orientation	"Green" Glare	"Yellow" Glare	Energy Produced	Data File
	deg	deg	min	min	kWh	
PV array 1	30.0	180.0	0	128,280	-	-

Distinct glare per month

Excludes overlapping glare from PV array for multiple receptors at matching time(s)

PV	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
pv-array-1 (green)	0	0	0	0	0	0	0	0	0	0	0	0
pv-array-1 (yellow)	0	0	577	2208	3129	3370	3324	2668	1206	1	0	0

PV & Receptor Analysis Results

Results for each PV array and receptor

PV array 1 potential temporary after-image

Component	Green glare (min)	Yellow glare (min)
OP: OP 1	0	0
OP: OP 2	0	35
OP: OP 3	0	1372
OP: OP 4	0	2218
OP: OP 5	0	1404
OP: OP 6	0	2746
OP: OP 7	0	3869
OP: OP 8	0	4818
OP: OP 9	0	2926
OP: OP 10	0	2462
OP: OP 11	0	1818
OP: OP 12	0	1846
OP: OP 13	0	1309
OP: OP 14	0	2428
OP: OP 15	0	3117
OP: OP 16	0	5861
OP: OP 17	0	3339
OP: OP 18	0	6050
OP: OP 19	0	6987
OP: OP 20	0	2769
OP: OP 21	0	3108
OP: OP 22	0	4255
OP: OP 23	0	3193
OP: OP 24	0	2771
OP: OP 25	0	2914

OP: OP 26	0	3058
OP: OP 27	0	0
OP: OP 28	0	0
OP: OP 29	0	2219
OP: OP 30	0	2674
OP: OP 31	0	2619
OP: OP 32	0	2690
OP: OP 33	0	2472
OP: OP 34	0	2173
OP: OP 35	0	2235
OP: OP 36	0	1374
OP: OP 37	0	878
OP: OP 38	0	1566
OP: OP 39	0	1528
OP: OP 40	0	2290
OP: OP 41	0	2294
OP: OP 42	0	543
OP: OP 43	0	1724
OP: OP 44	0	2138
OP: OP 45	0	2291
OP: OP 46	0	5
OP: OP 47	0	2141
OP: OP 48	0	0
OP: OP 49	0	4
OP: OP 50	0	2585
OP: OP 51	0	2632
OP: OP 52	0	3244
OP: OP 53	0	2909
OP: OP 54	0	2532
OP: OP 55	0	1844
OP: OP 56	0	3

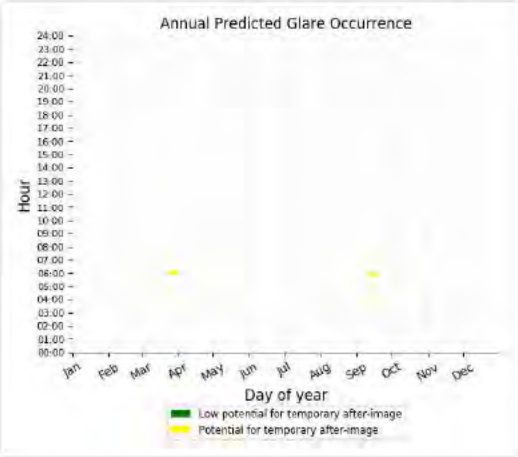
PV array 1 - OP Receptor (OP 1)

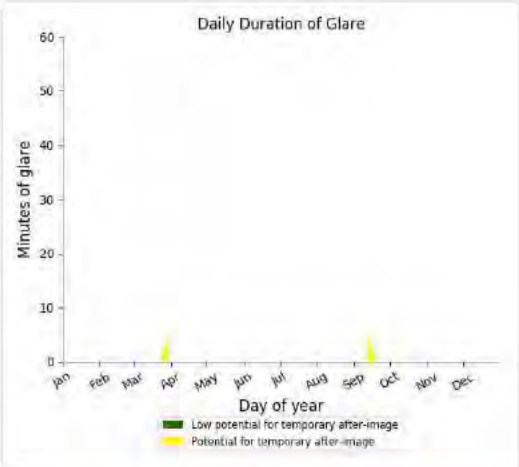
No glare found

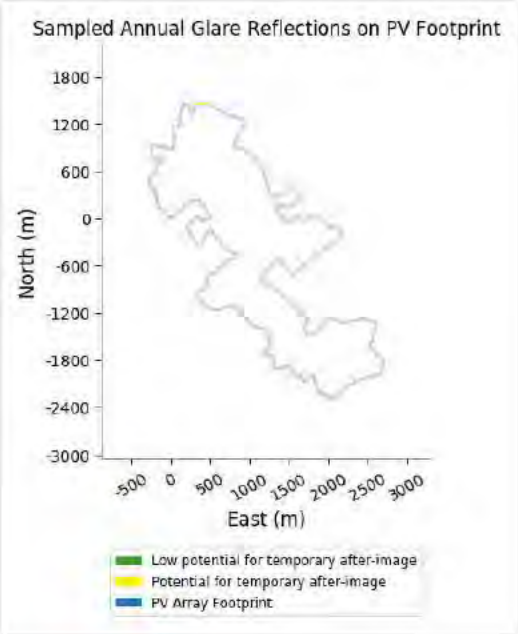
PV array 1 - OP Receptor (OP 2)

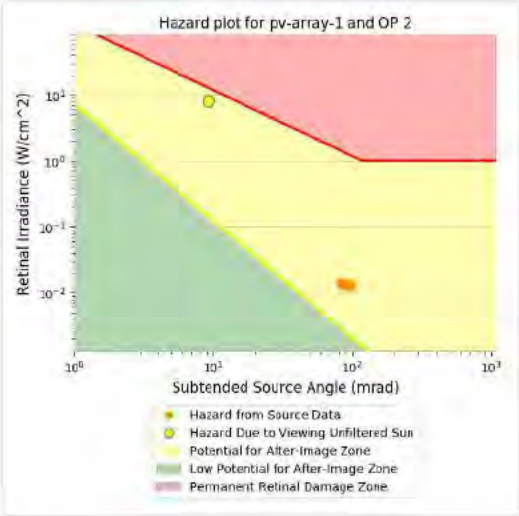
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 35 minutes of "yellow" glare with potential to cause temporary after-image.





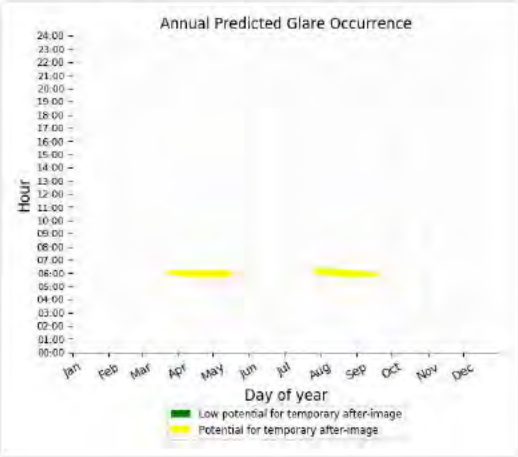


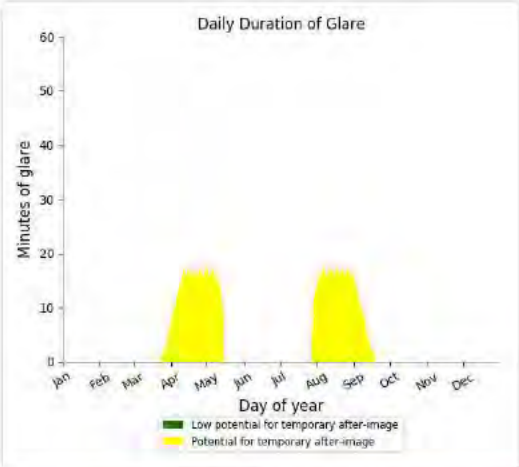


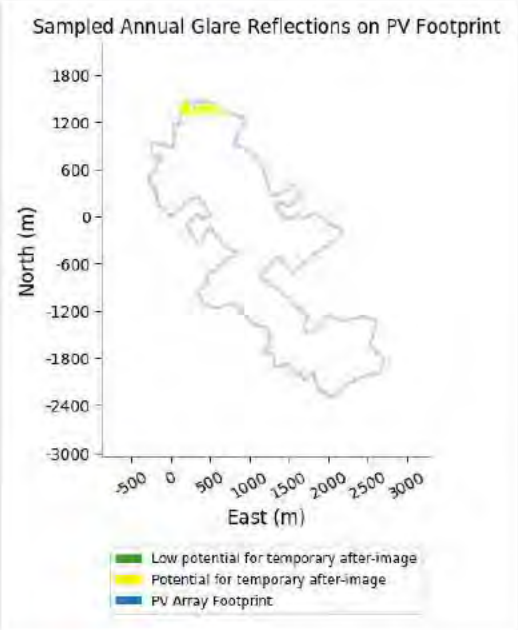
PV array 1 - OP Receptor (OP 3)

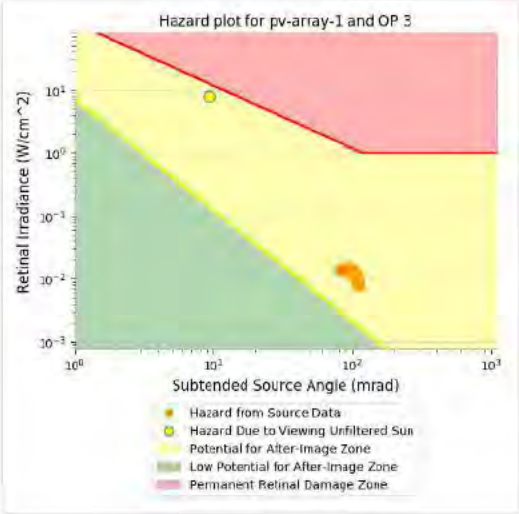
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 1,372 minutes of "yellow" glare with potential to cause temporary after-image.





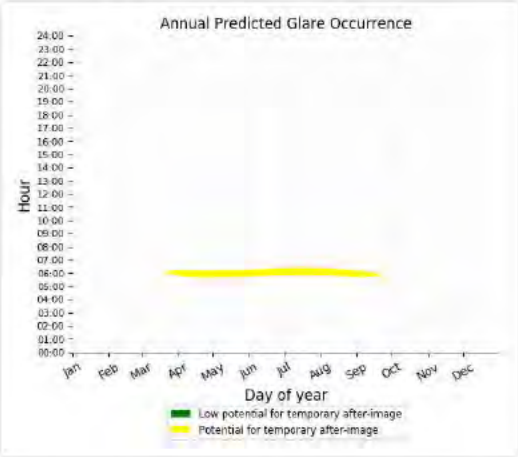


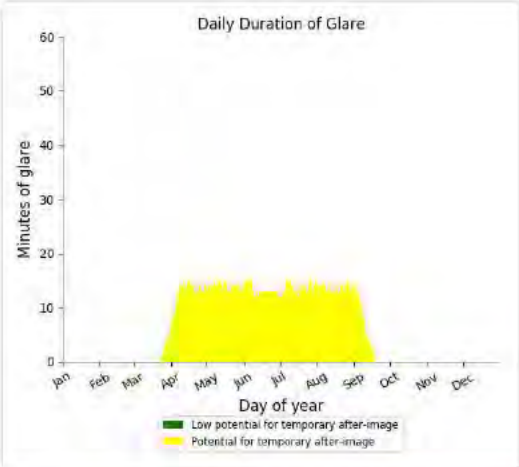


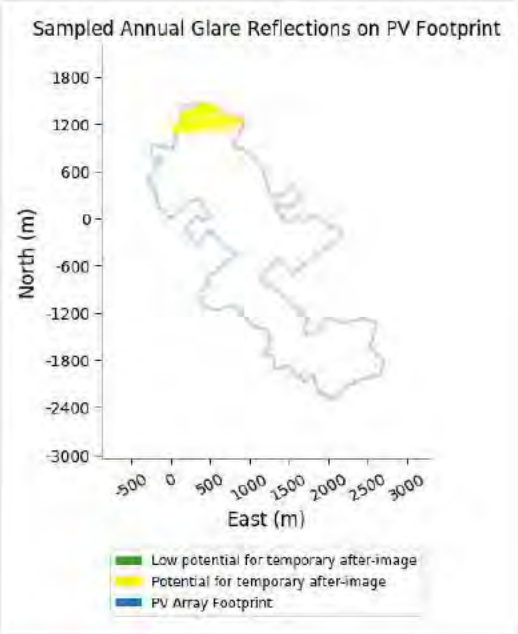
PV array 1 - OP Receptor (OP 4)

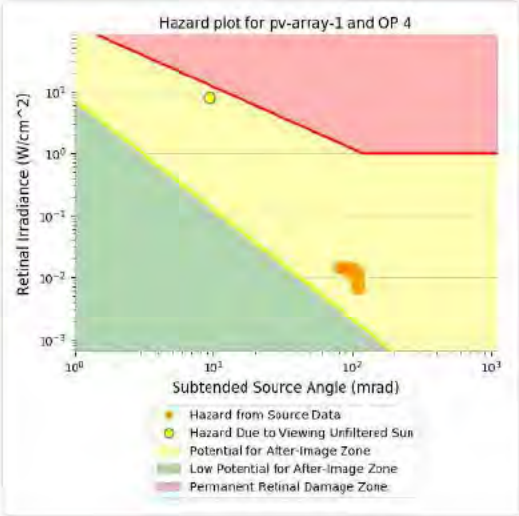
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 2,218 minutes of "yellow" glare with potential to cause temporary after-image.





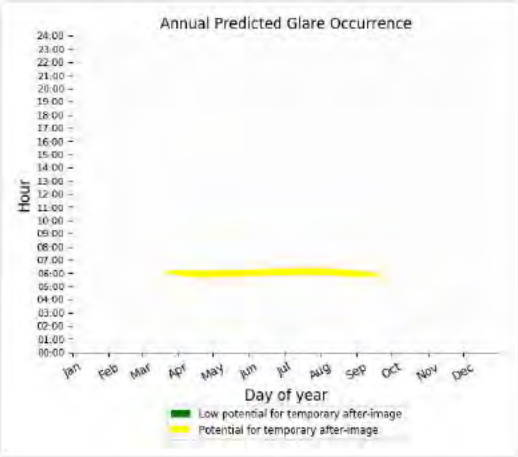


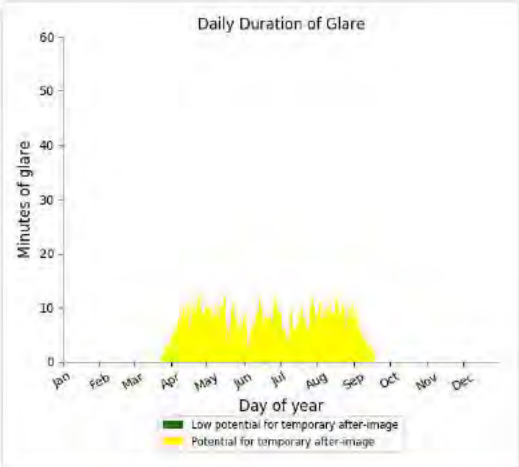


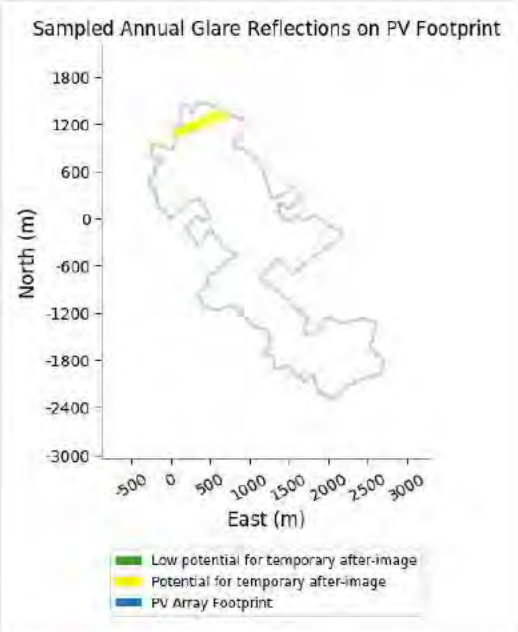
PV array 1 - OP Receptor (OP 5)

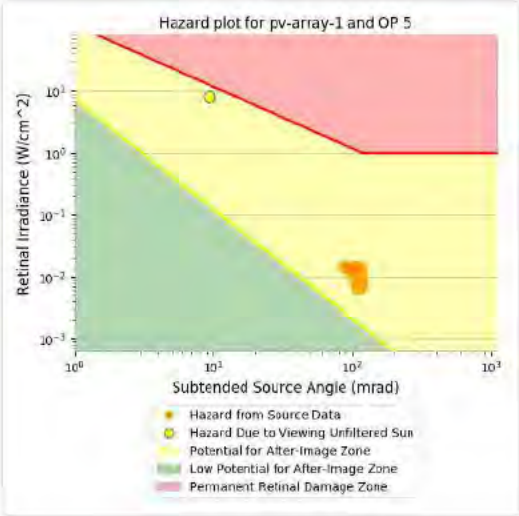
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 1,404 minutes of "yellow" glare with potential to cause temporary after-image.





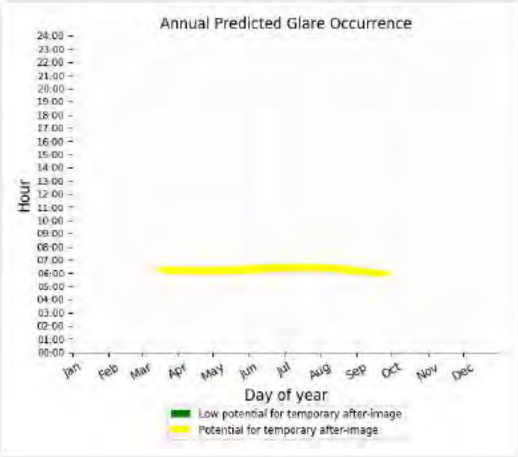


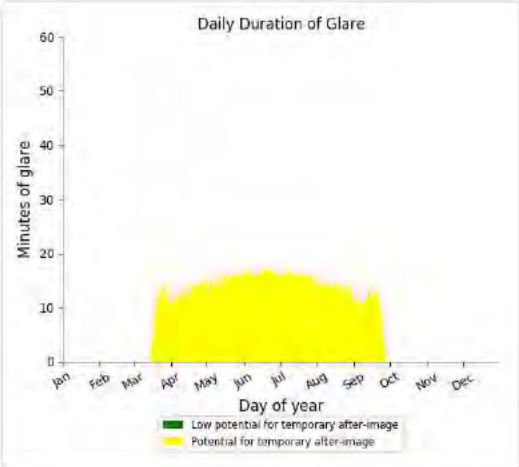


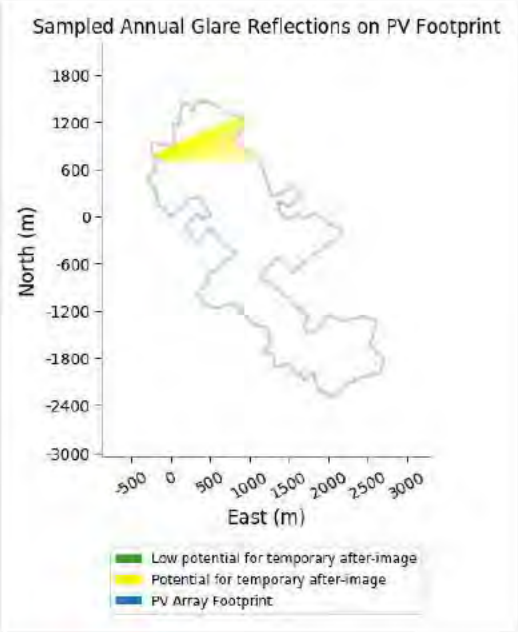
PV array 1 - OP Receptor (OP 6)

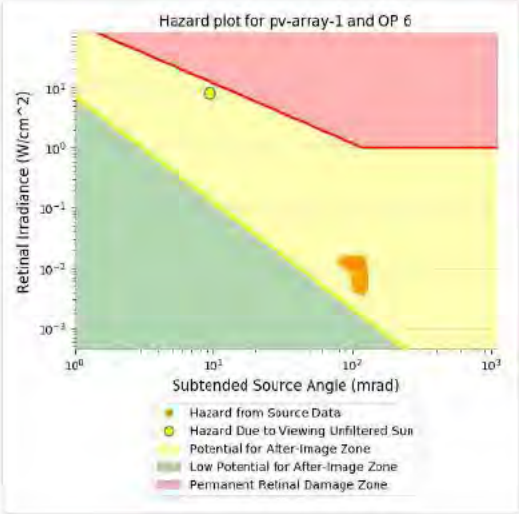
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 2,746 minutes of "yellow" glare with potential to cause temporary after-image.





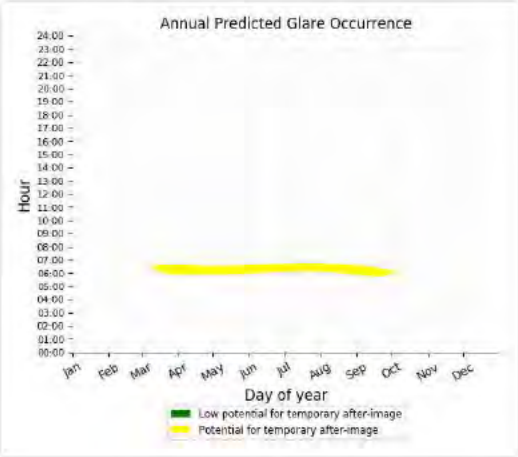


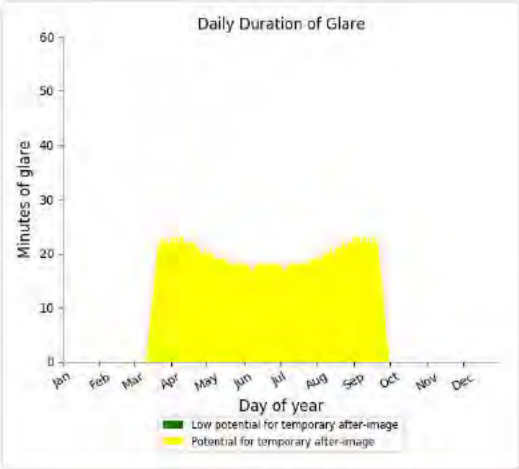


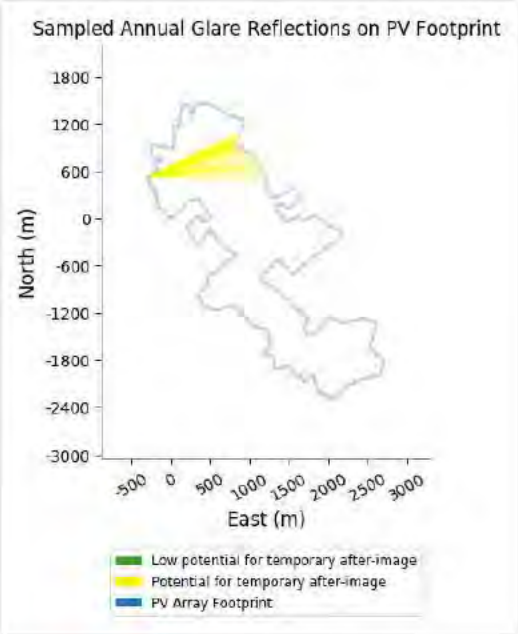
PV array 1 - OP Receptor (OP 7)

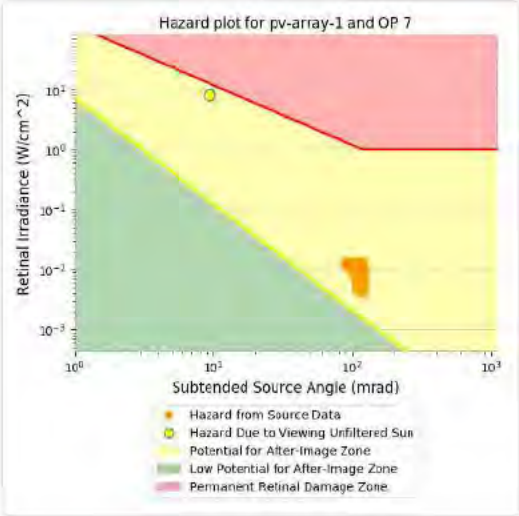
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 3,869 minutes of "yellow" glare with potential to cause temporary after-image.





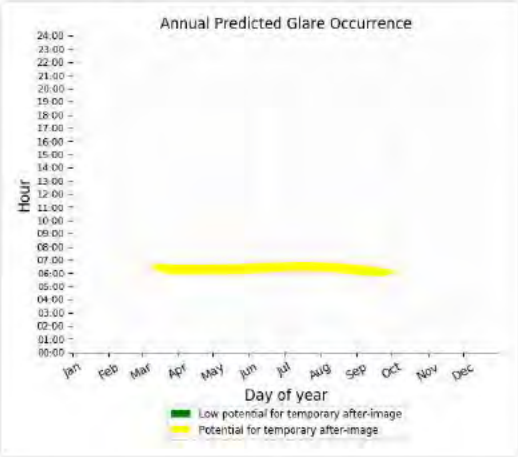


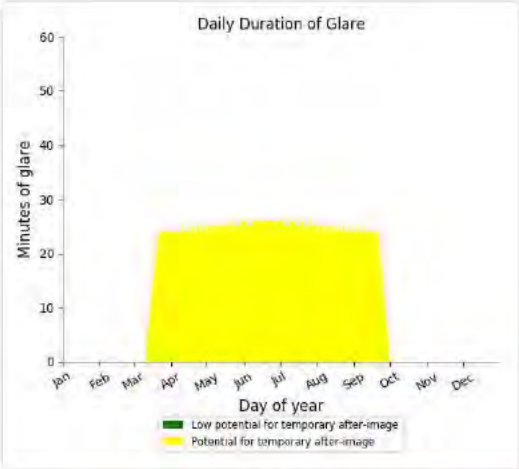


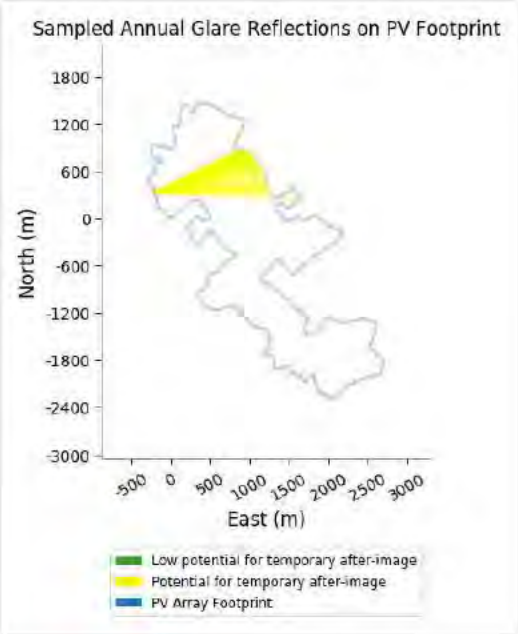
PV array 1 - OP Receptor (OP 8)

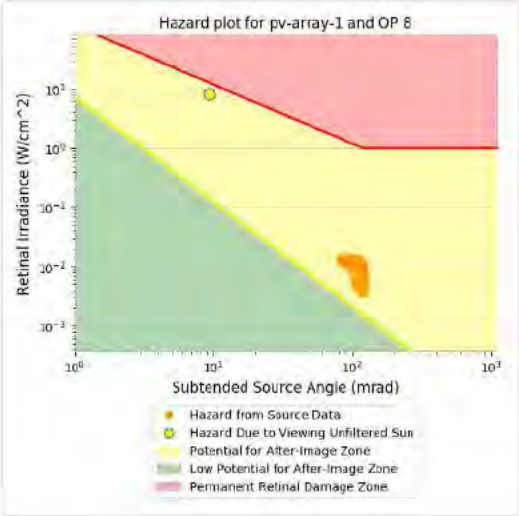
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 4,818 minutes of "yellow" glare with potential to cause temporary after-image.





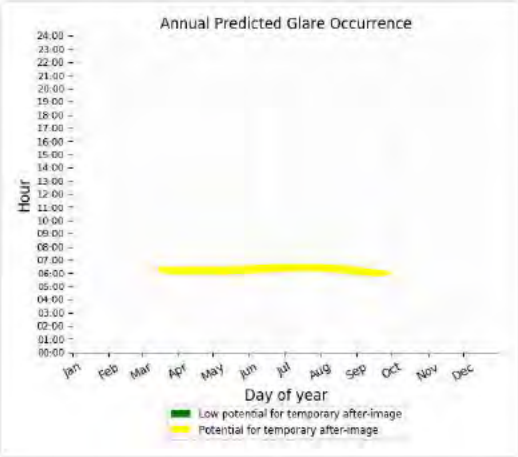


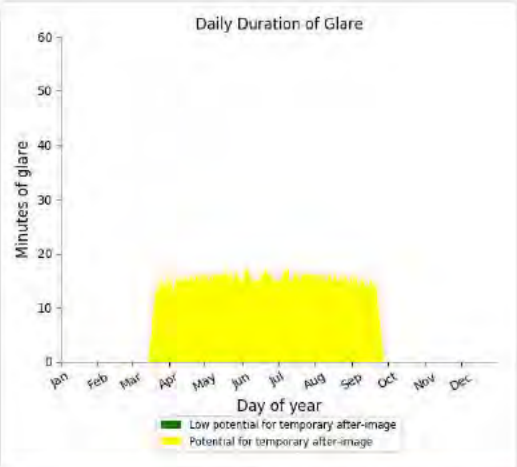


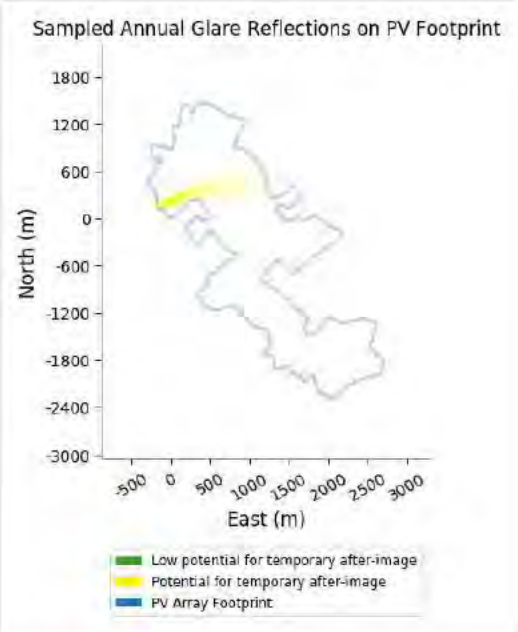
PV array 1 - OP Receptor (OP 9)

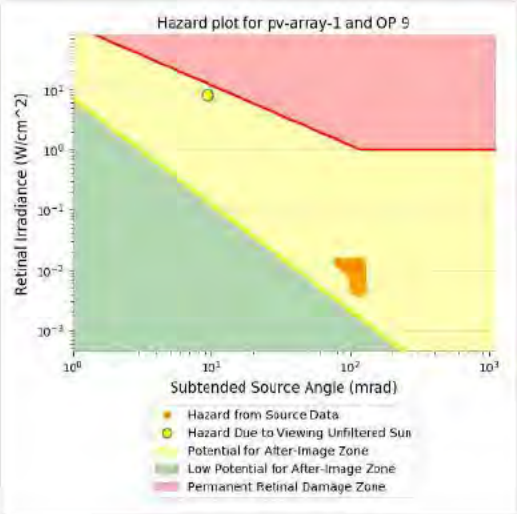
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 2,926 minutes of "yellow" glare with potential to cause temporary after-image.





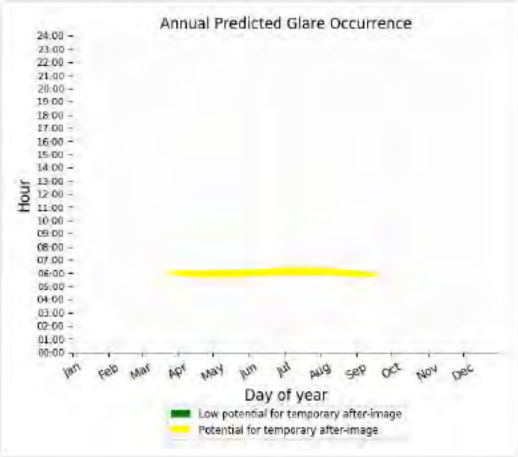


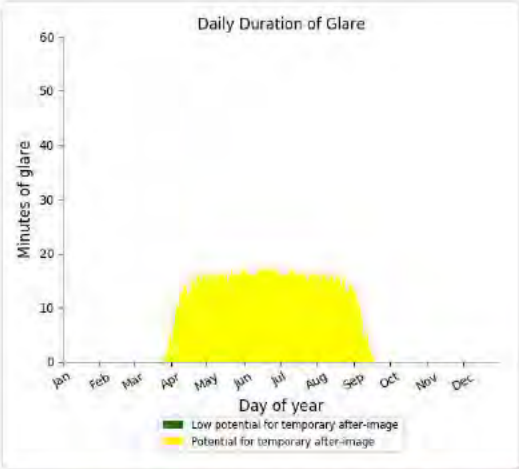


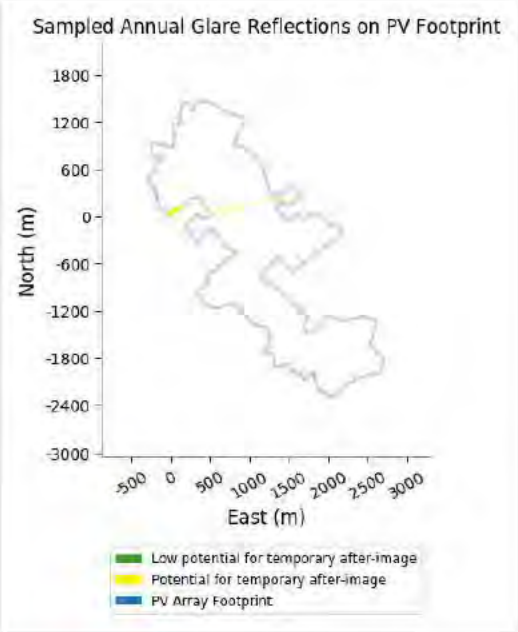
PV array 1 - OP Receptor (OP 10)

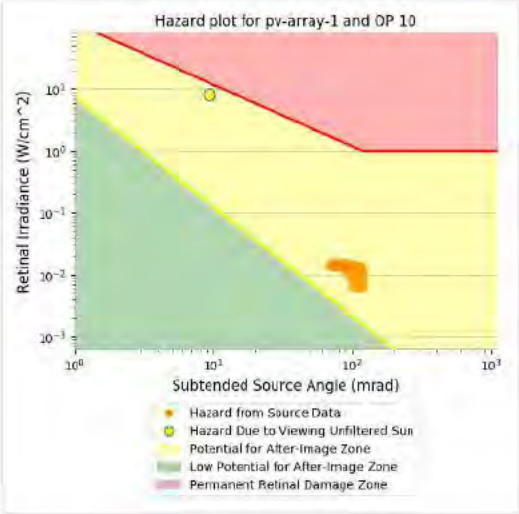
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 2,462 minutes of "yellow" glare with potential to cause temporary after-image.





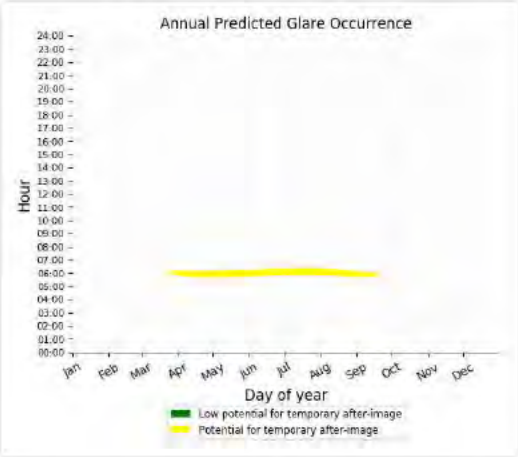


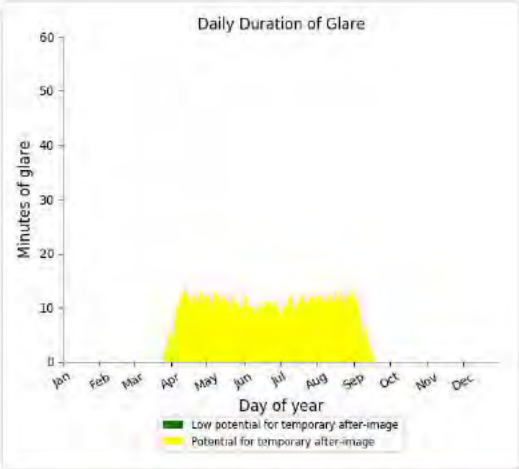


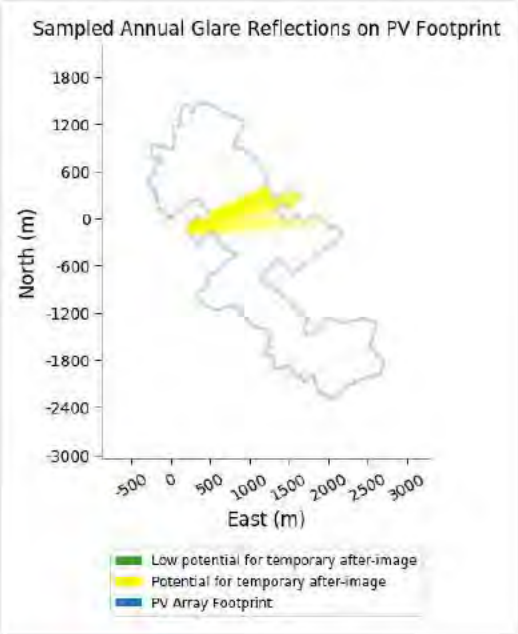
PV array 1 - OP Receptor (OP 11)

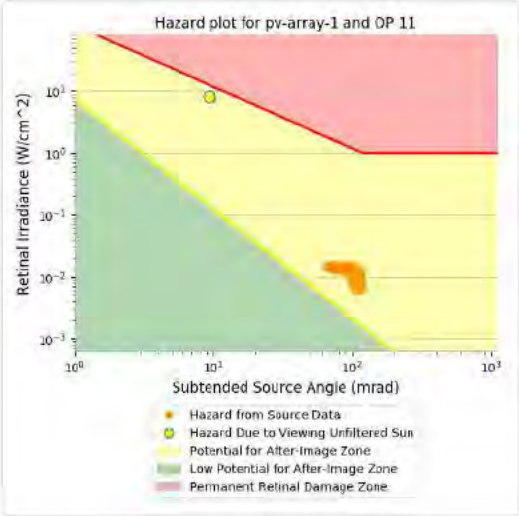
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 1,818 minutes of "yellow" glare with potential to cause temporary after-image.





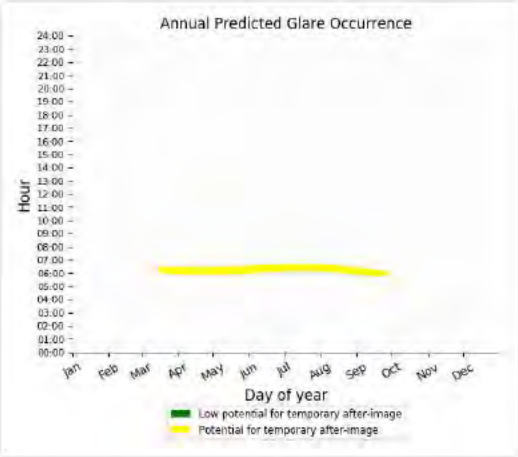


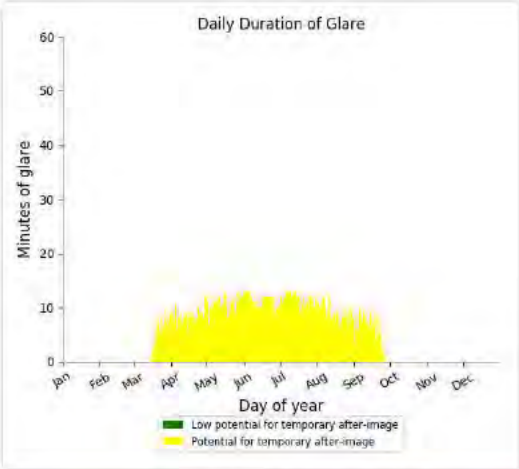


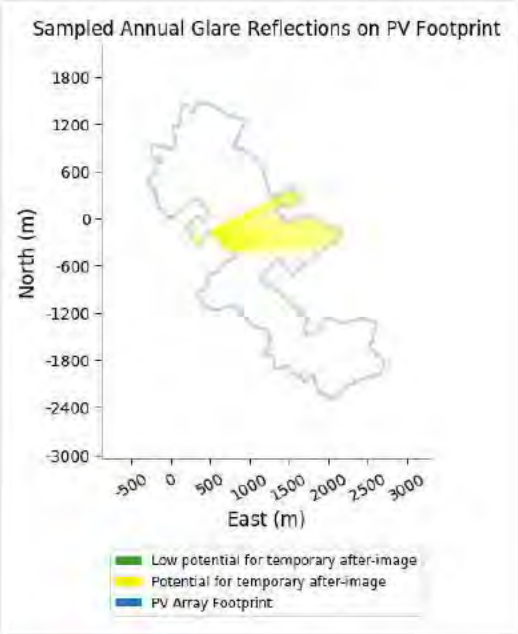
PV array 1 - OP Receptor (OP 12)

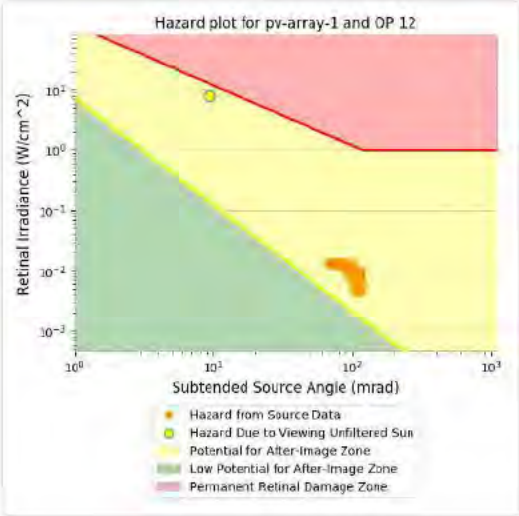
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 1,846 minutes of "yellow" glare with potential to cause temporary after-image.





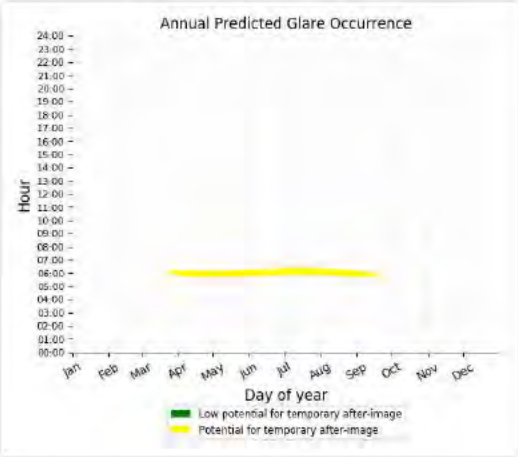


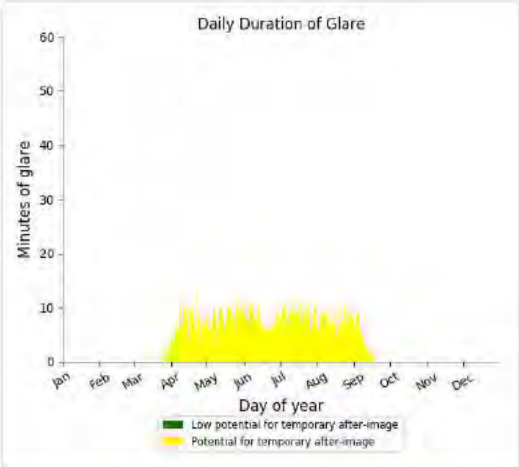


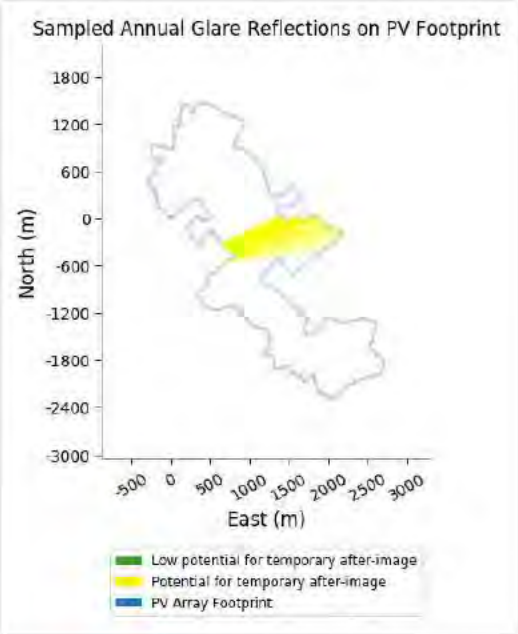
PV array 1 - OP Receptor (OP 13)

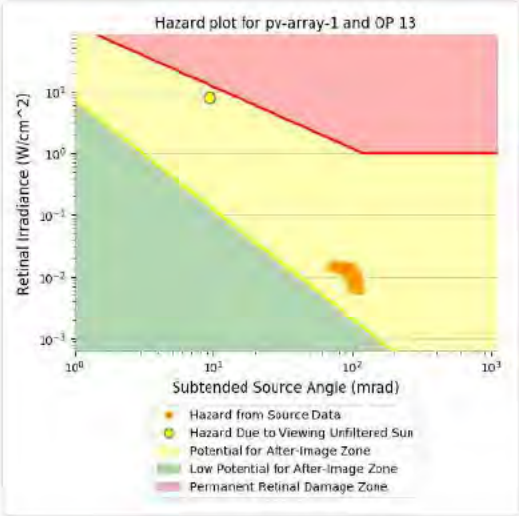
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 1,309 minutes of "yellow" glare with potential to cause temporary after-image.





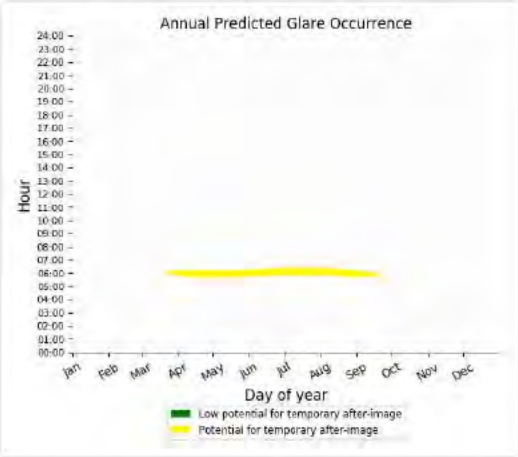


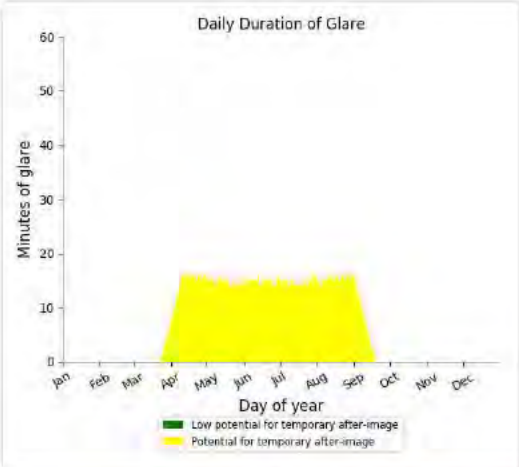


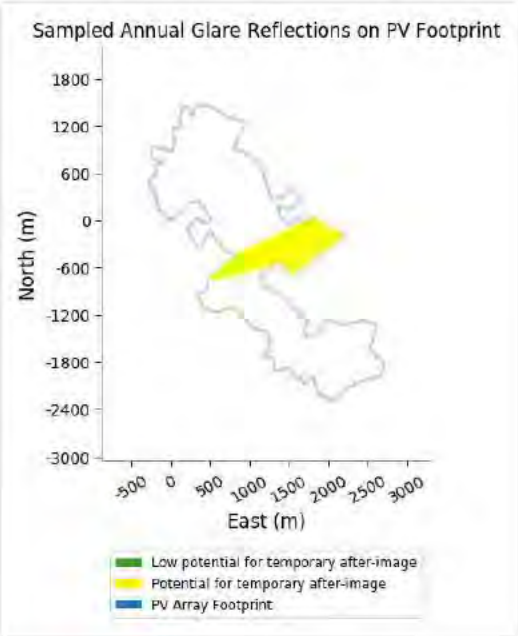
PV array 1 - OP Receptor (OP 14)

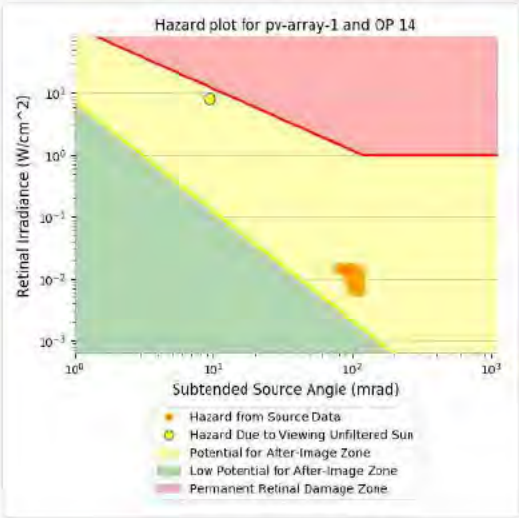
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 2,428 minutes of "yellow" glare with potential to cause temporary after-image.





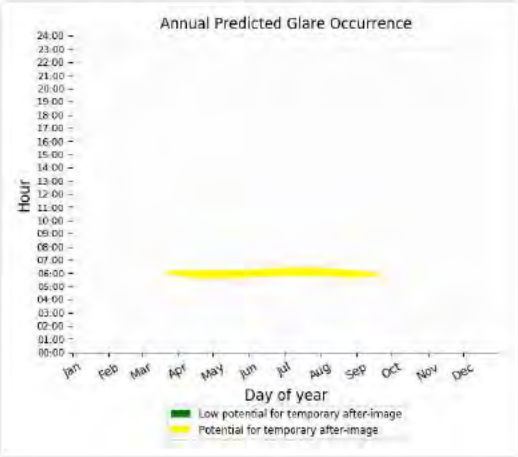


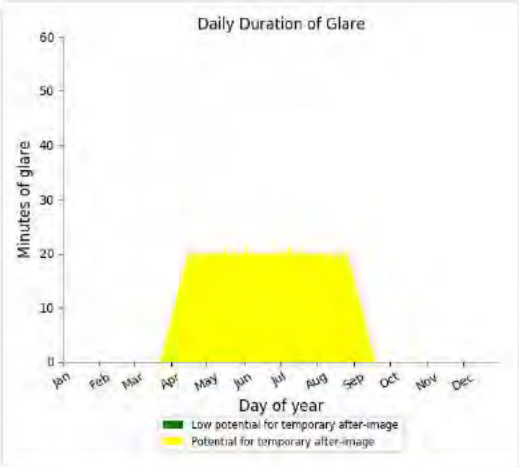


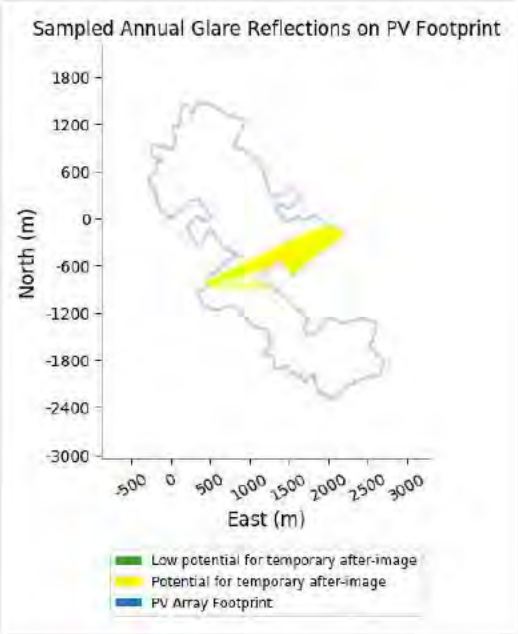
PV array 1 - OP Receptor (OP 15)

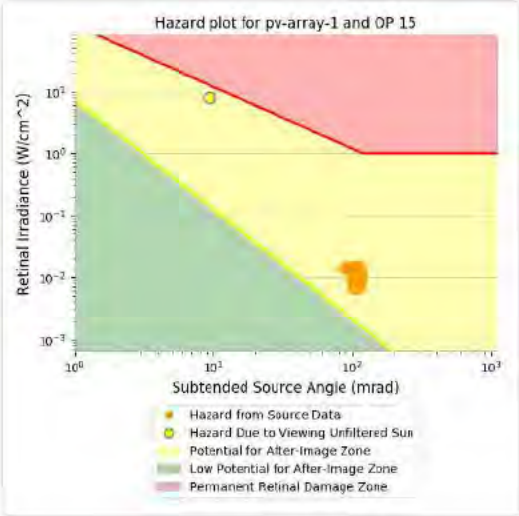
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 3,117 minutes of "yellow" glare with potential to cause temporary after-image.





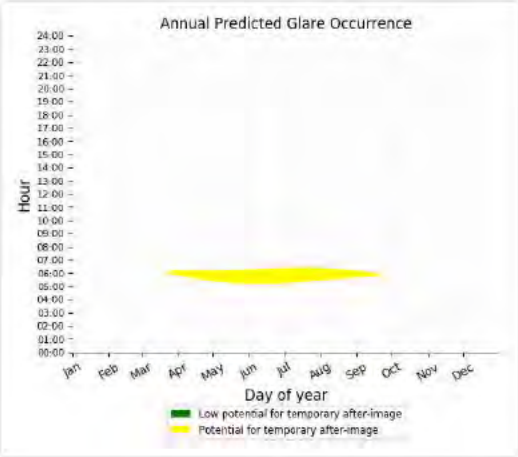


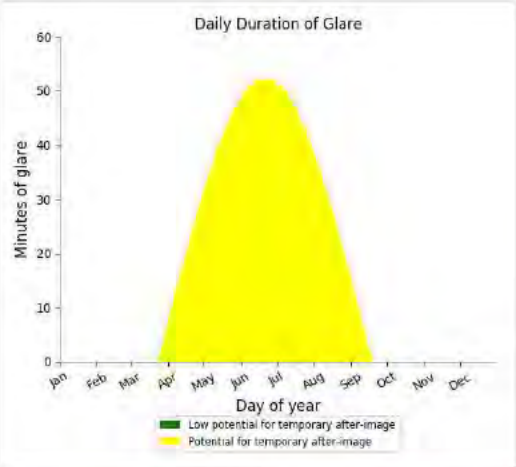


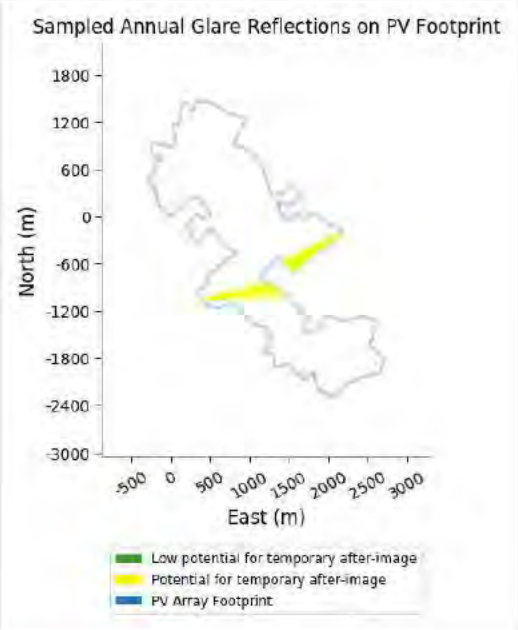
PV array 1 - OP Receptor (OP 16)

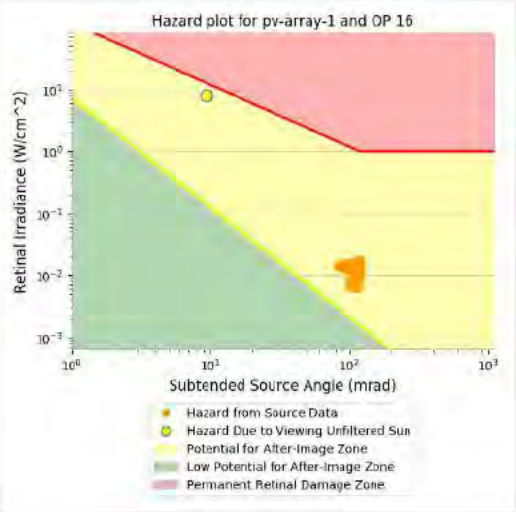
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 5,861 minutes of "yellow" glare with potential to cause temporary after-image.





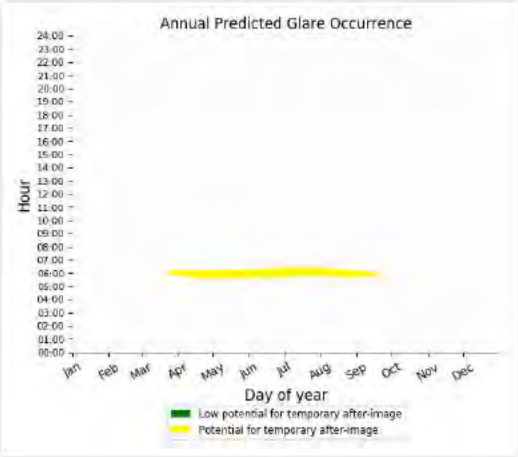


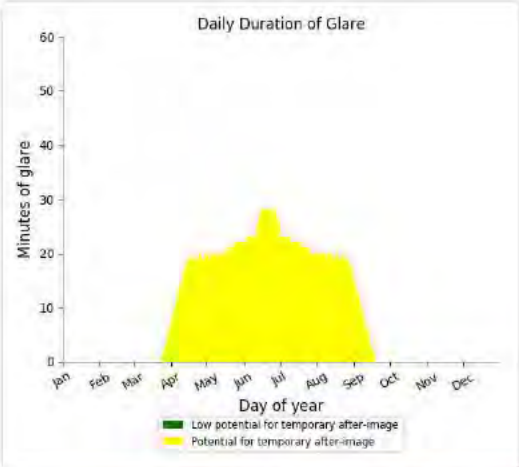


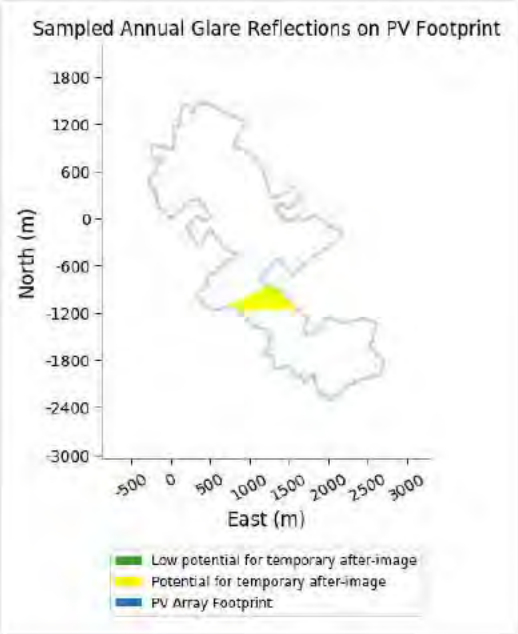
PV array 1 - OP Receptor (OP 17)

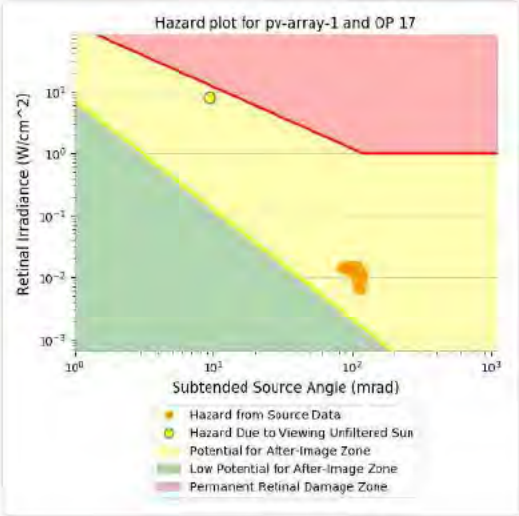
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 3,339 minutes of "yellow" glare with potential to cause temporary after-image.





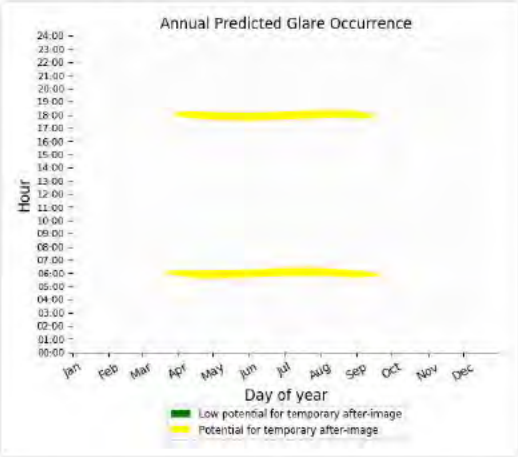


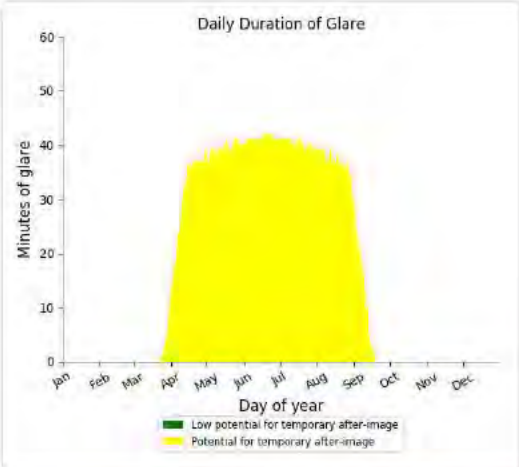


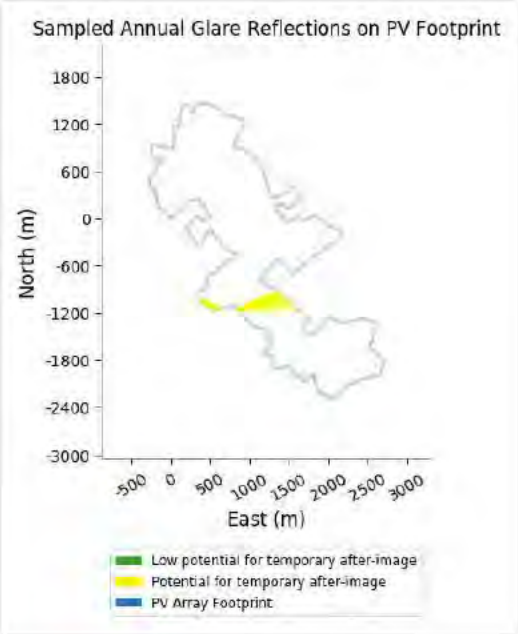
PV array 1 - OP Receptor (OP 18)

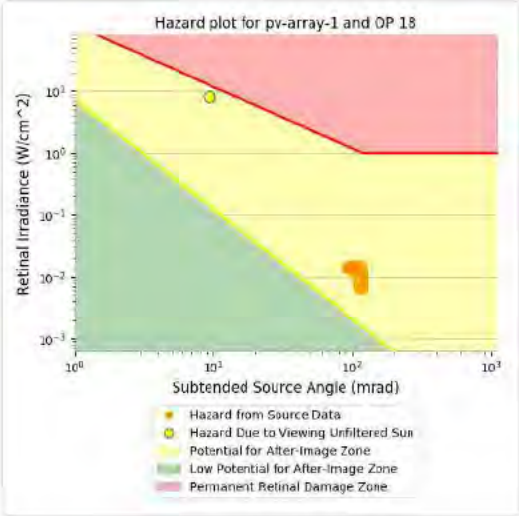
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 6,050 minutes of "yellow" glare with potential to cause temporary after-image.





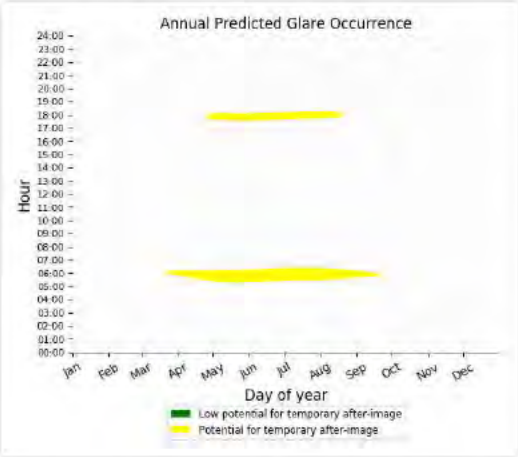


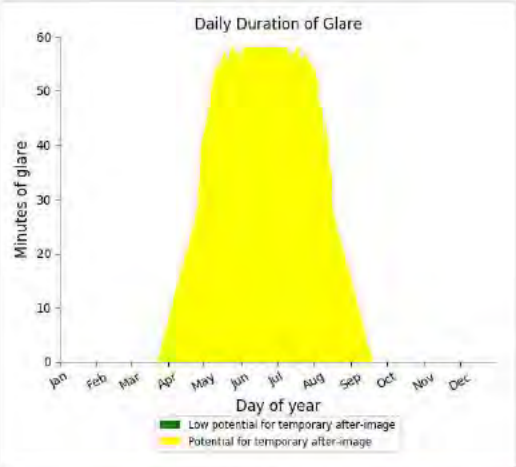


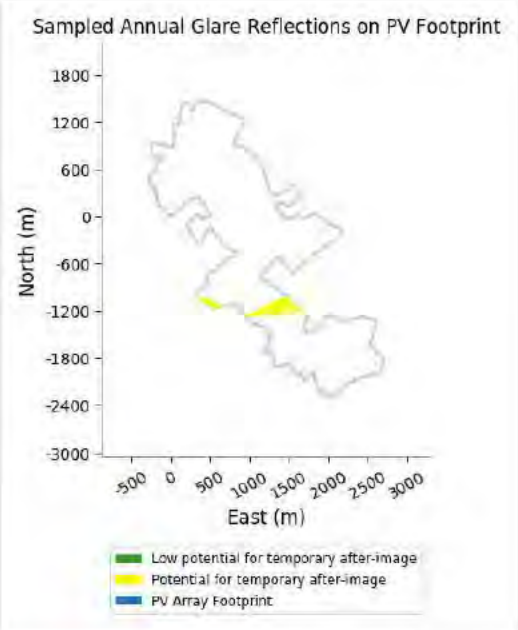
PV array 1 - OP Receptor (OP 19)

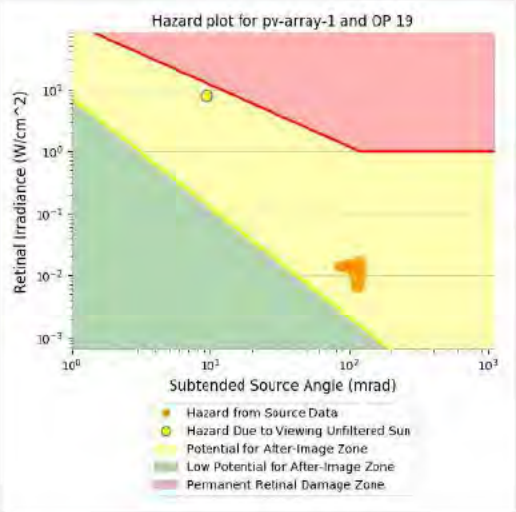
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 6,987 minutes of "yellow" glare with potential to cause temporary after-image.





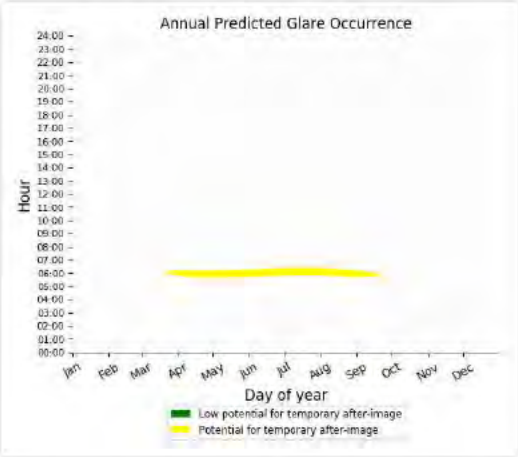


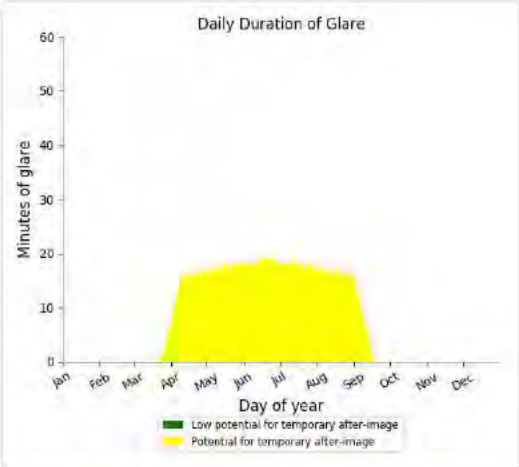


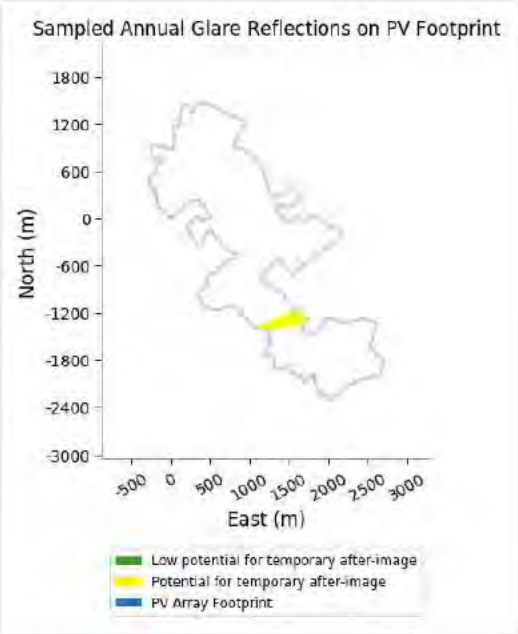
PV array 1 - OP Receptor (OP 20)

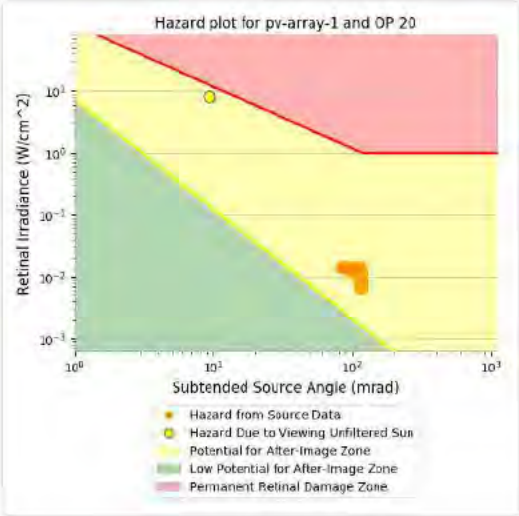
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 2,769 minutes of "yellow" glare with potential to cause temporary after-image.





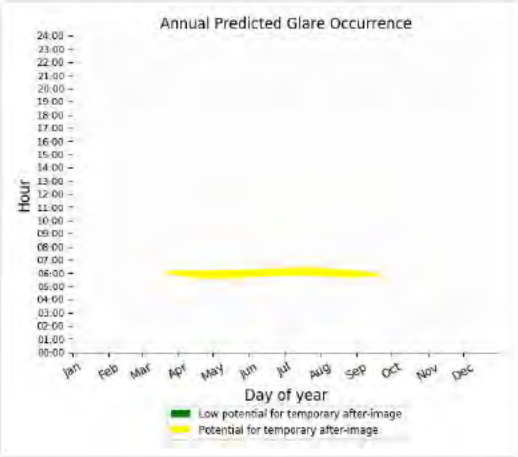


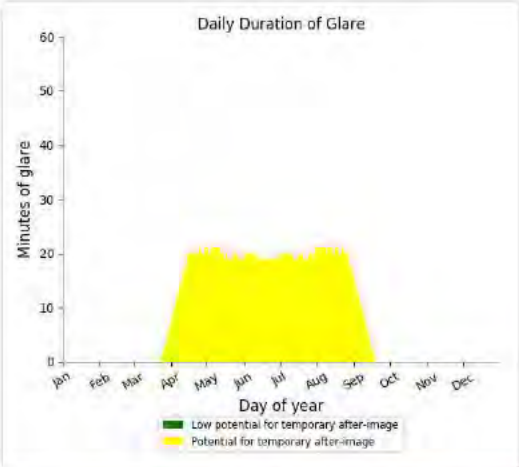


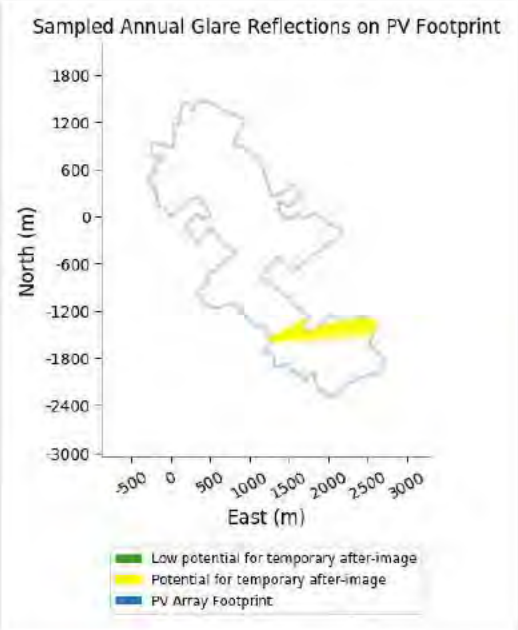
PV array 1 - OP Receptor (OP 21)

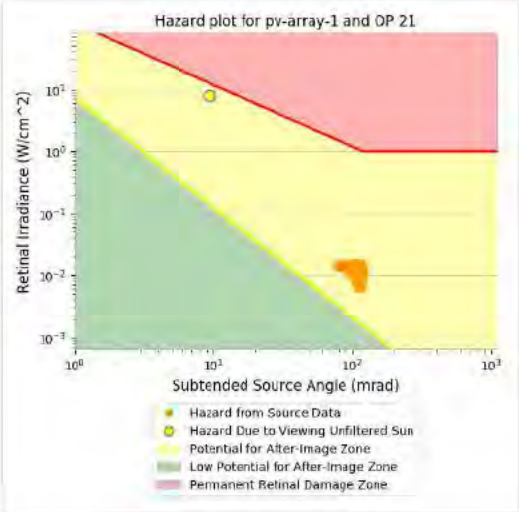
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 3,108 minutes of "yellow" glare with potential to cause temporary after-image.





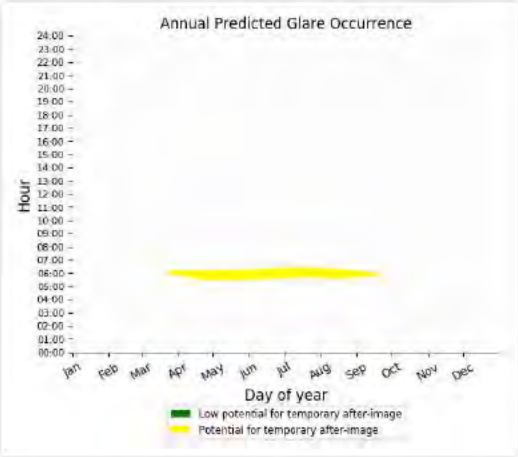


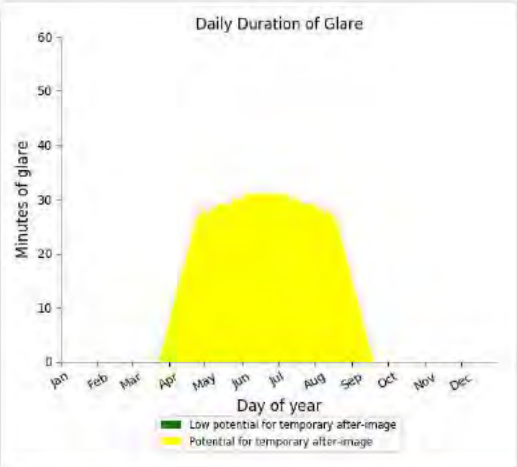


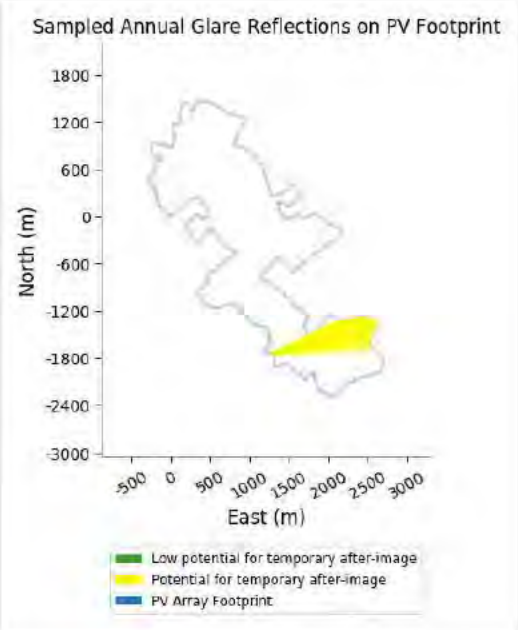
PV array 1 - OP Receptor (OP 22)

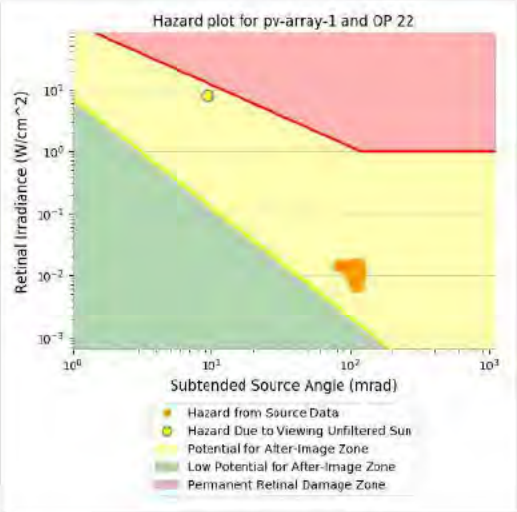
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 4,255 minutes of "yellow" glare with potential to cause temporary after-image.





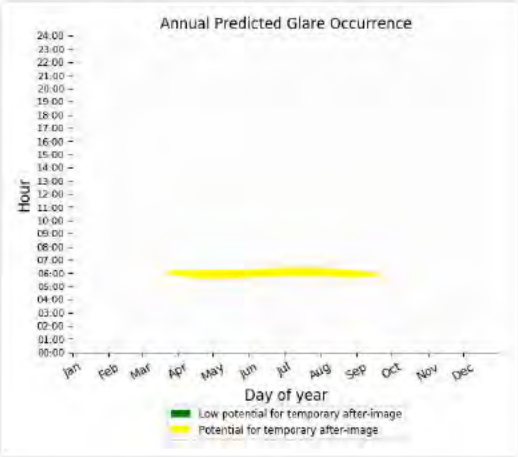


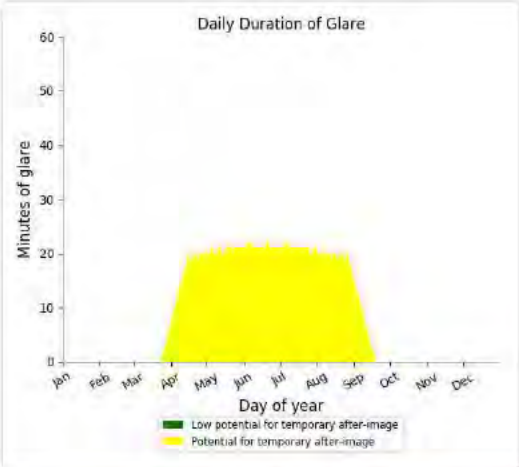


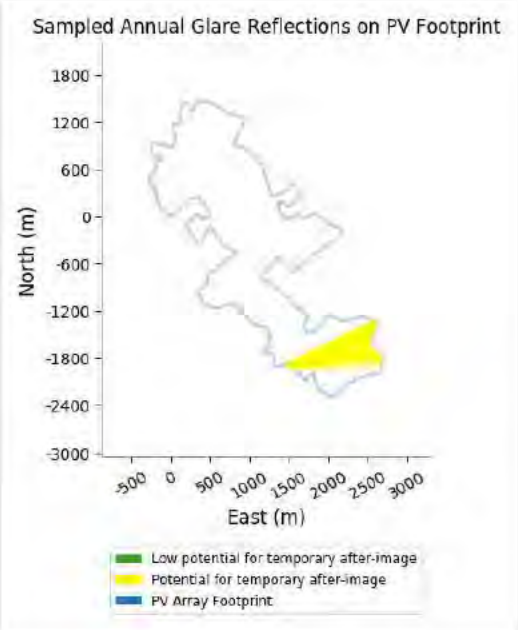
PV array 1 - OP Receptor (OP 23)

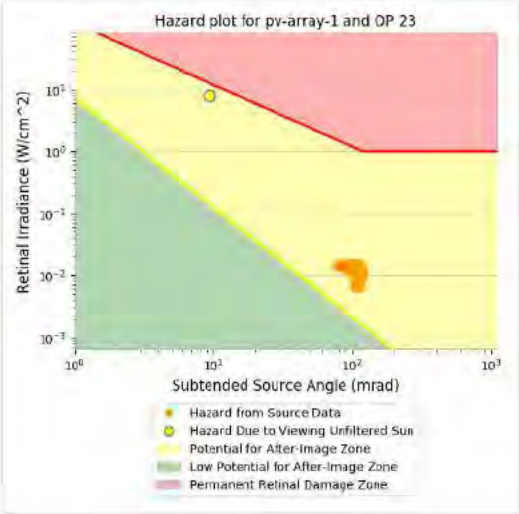
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 3,193 minutes of "yellow" glare with potential to cause temporary after-image.





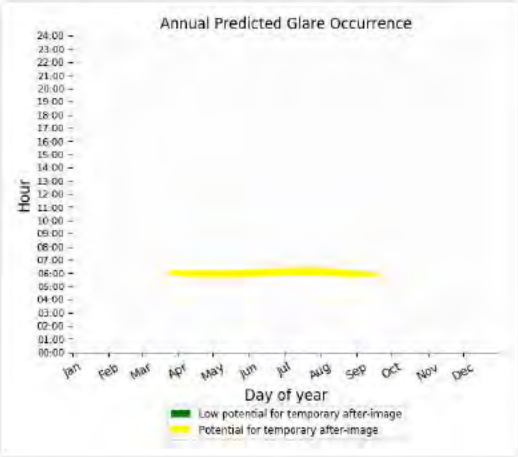


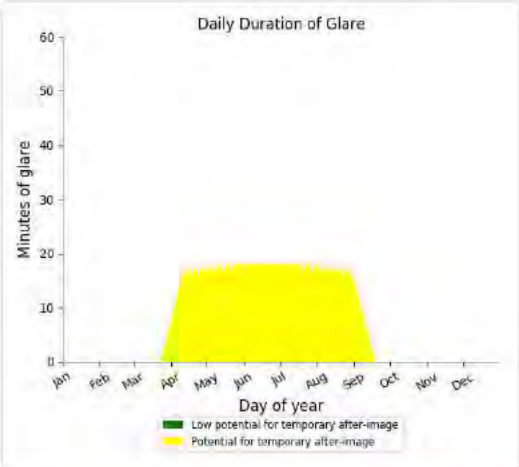


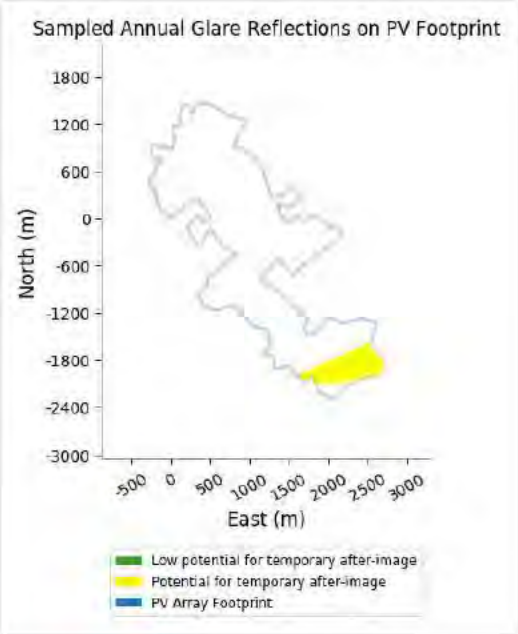
PV array 1 - OP Receptor (OP 24)

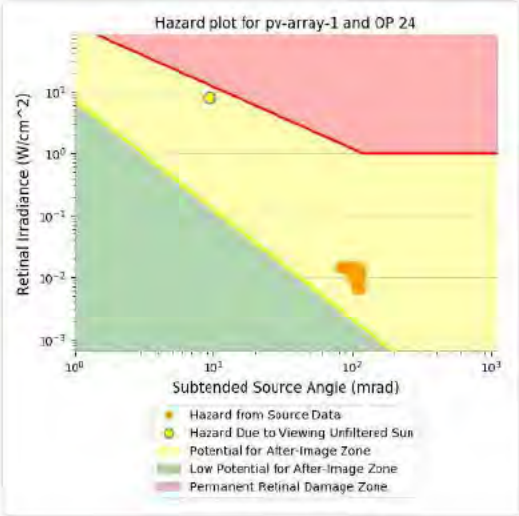
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 2,771 minutes of "yellow" glare with potential to cause temporary after-image.





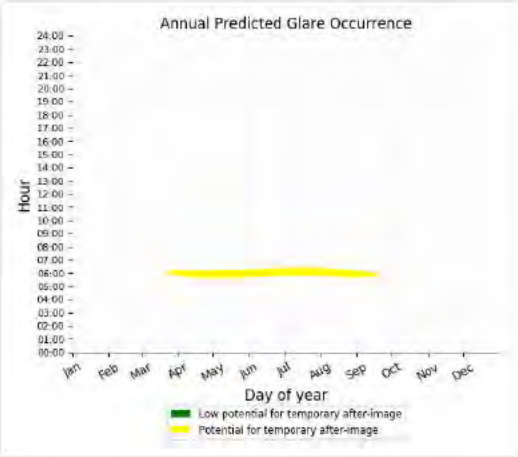


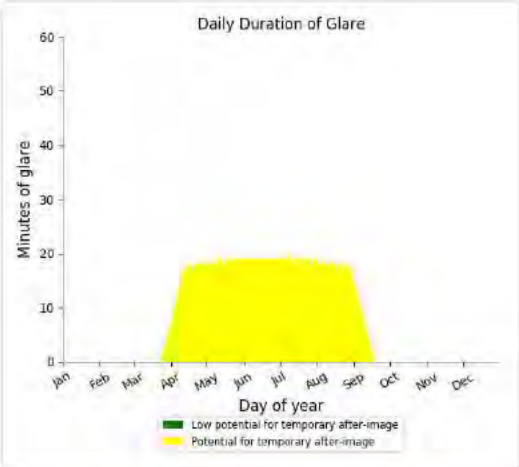


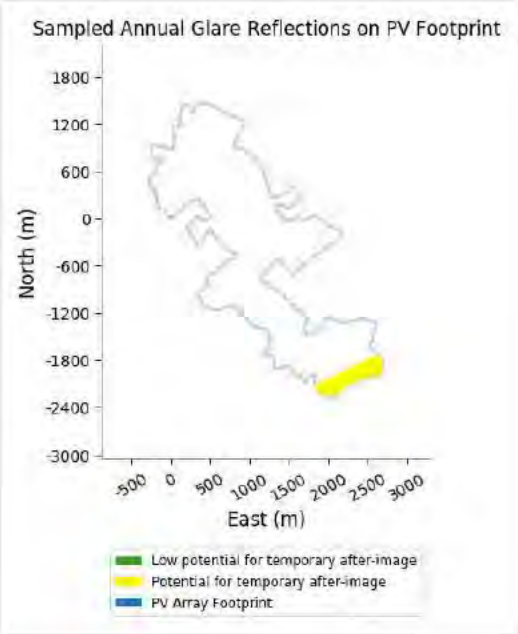
PV array 1 - OP Receptor (OP 25)

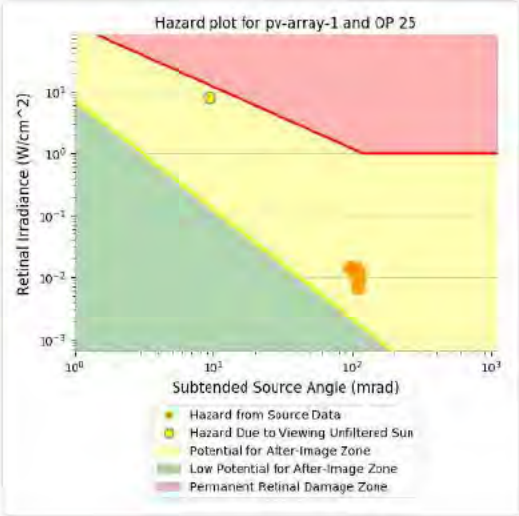
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 2,914 minutes of "yellow" glare with potential to cause temporary after-image.





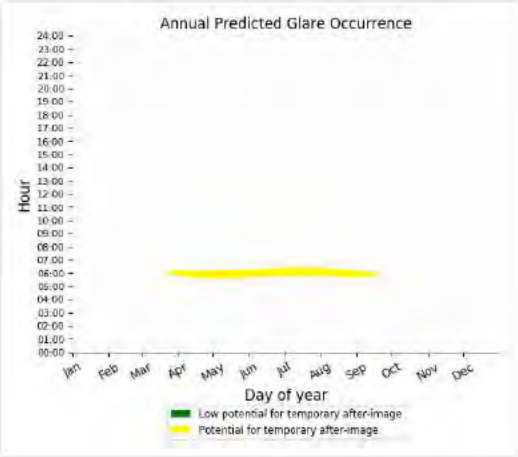


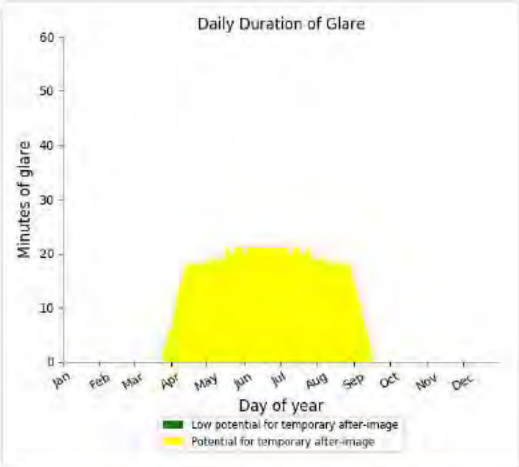


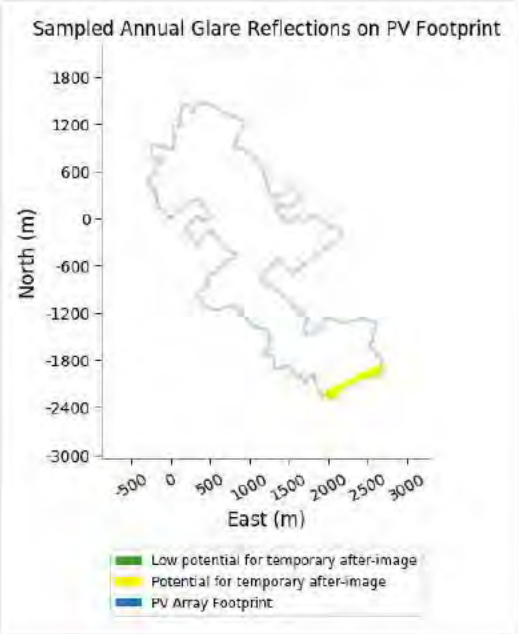
PV array 1 - OP Receptor (OP 26)

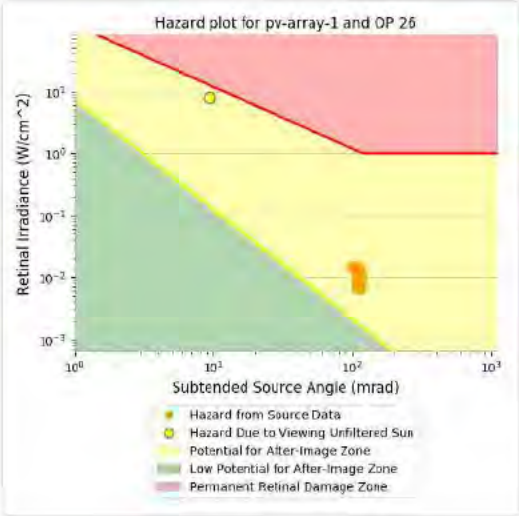
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 3,058 minutes of "yellow" glare with potential to cause temporary after-image.









PV array 1 - OP Receptor (OP 27)

No glare found

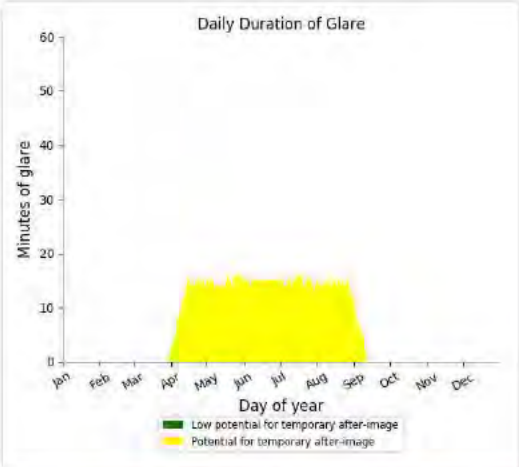
PV array 1 - OP Receptor (OP 28)

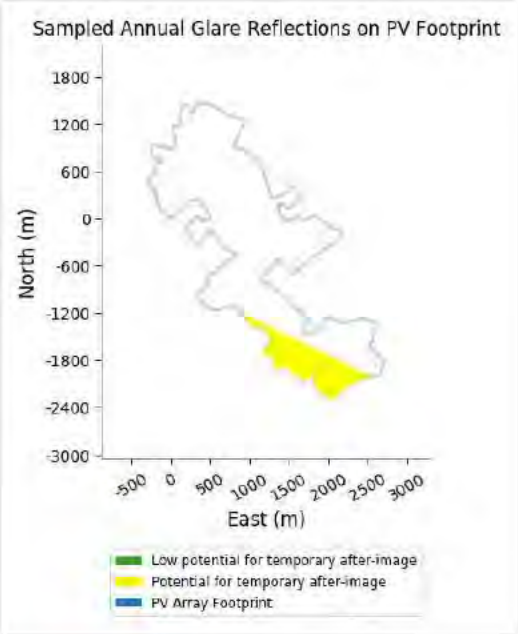
No glare found

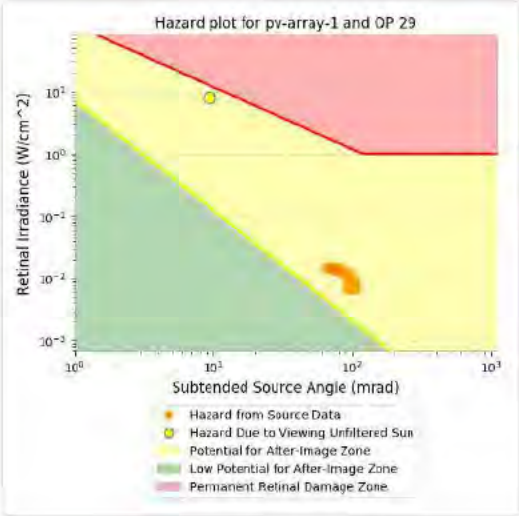
PV array 1 - OP Receptor (OP 29)

PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 2,219 minutes of "yellow" glare with potential to cause temporary after-image.



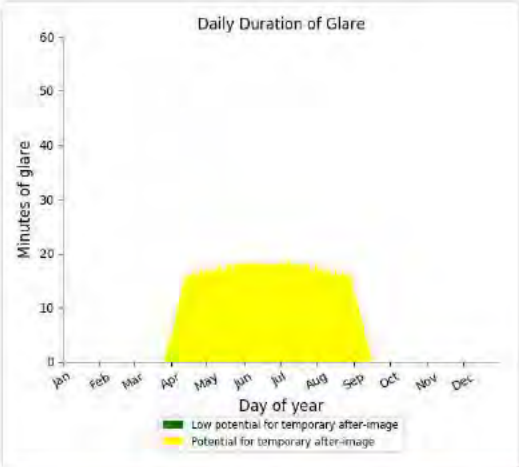


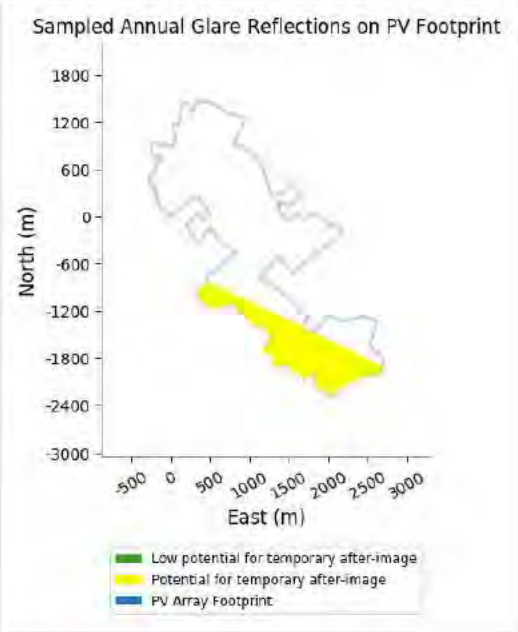


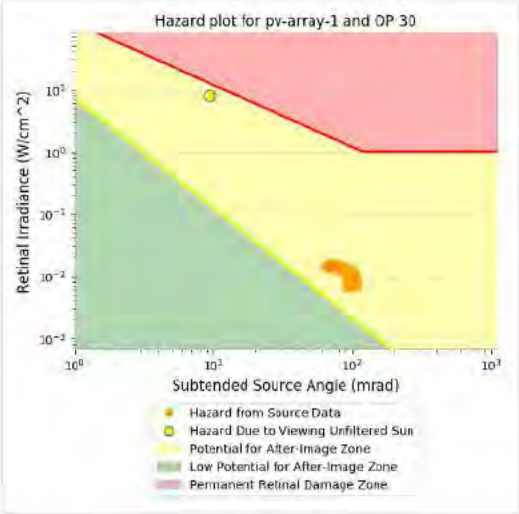
PV array 1 - OP Receptor (OP 30)

PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 2,674 minutes of "yellow" glare with potential to cause temporary after-image.



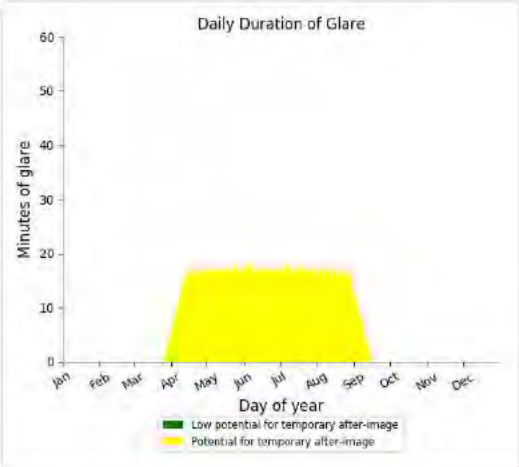


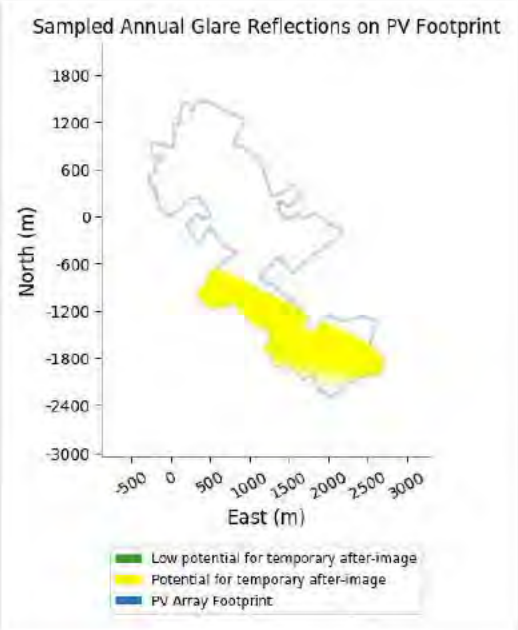


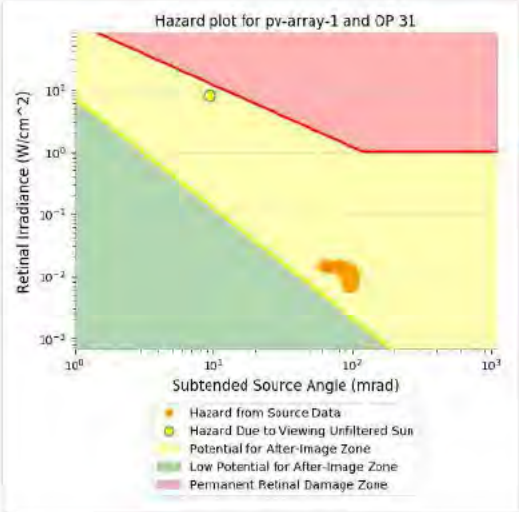
PV array 1 - OP Receptor (OP 31)

PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 2,619 minutes of "yellow" glare with potential to cause temporary after-image.



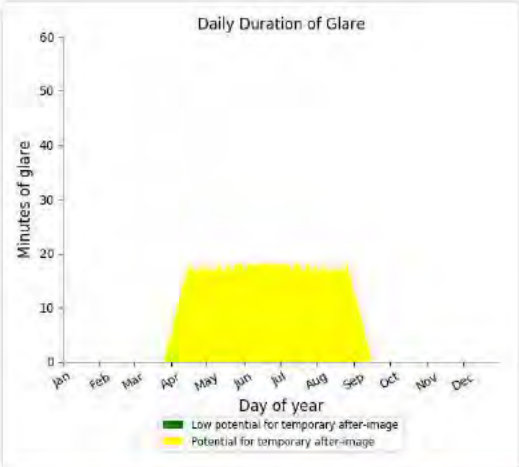


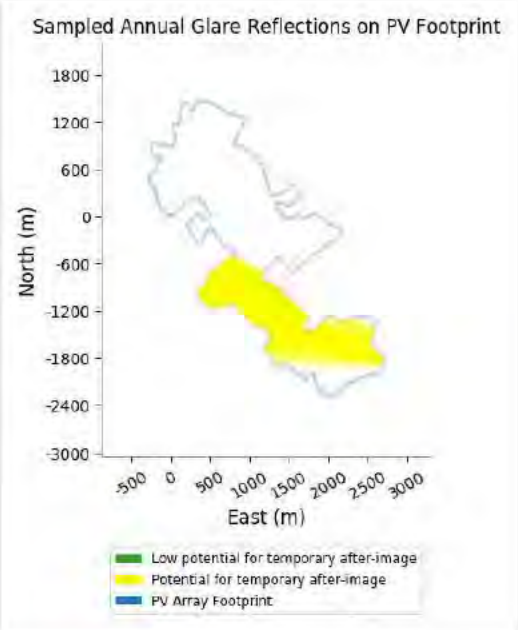


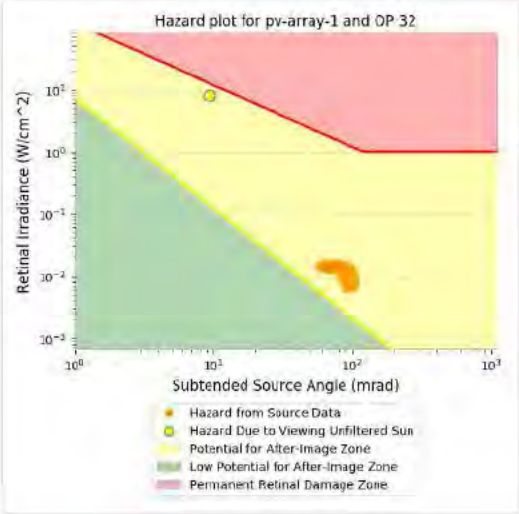
PV array 1 - OP Receptor (OP 32)

PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 2,690 minutes of "yellow" glare with potential to cause temporary after-image.



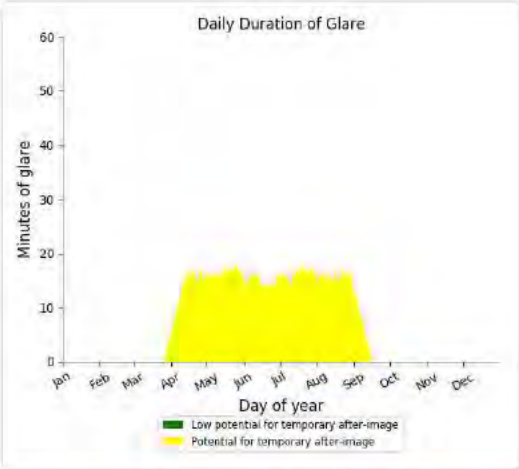


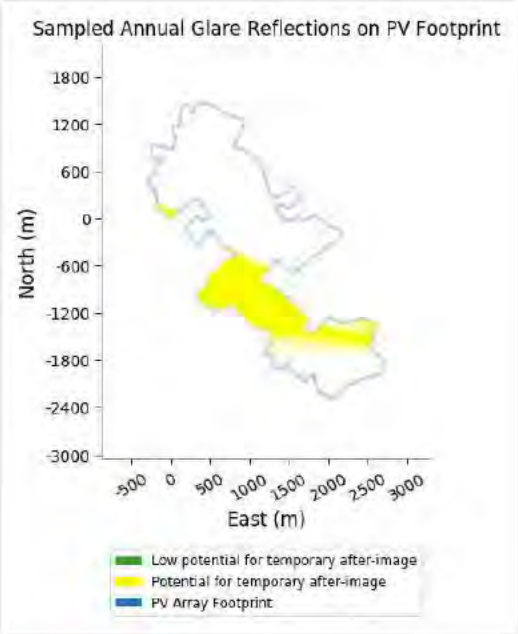


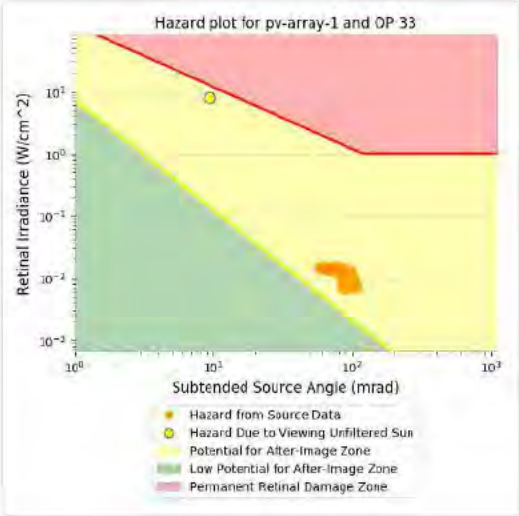
PV array 1 - OP Receptor (OP 33)

PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 2,472 minutes of "yellow" glare with potential to cause temporary after-image.



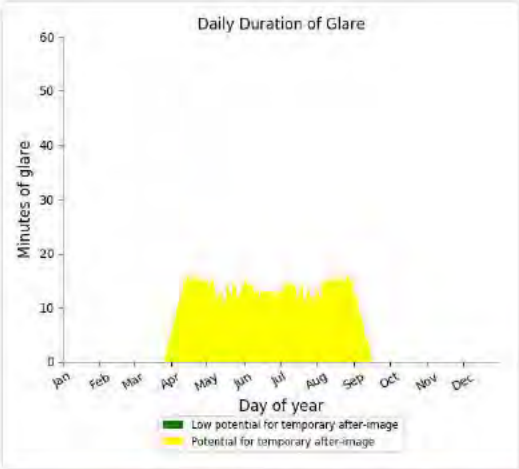


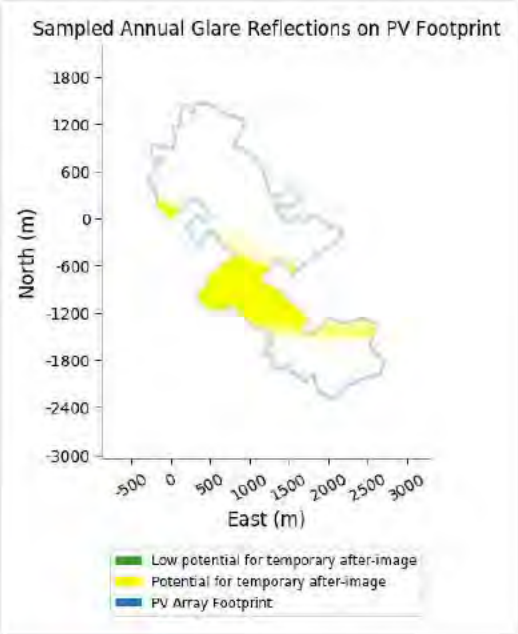


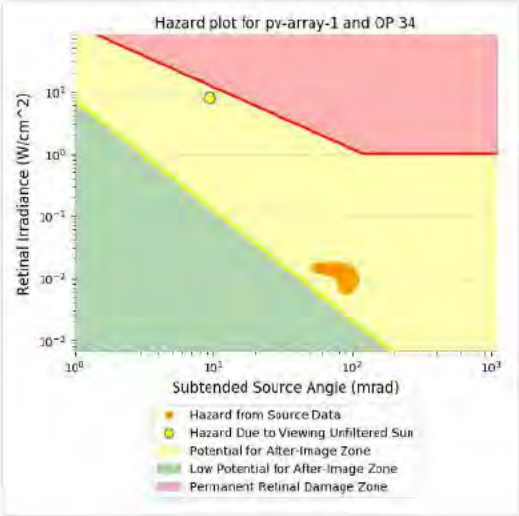
PV array 1 - OP Receptor (OP 34)

PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 2,173 minutes of "yellow" glare with potential to cause temporary after-image.



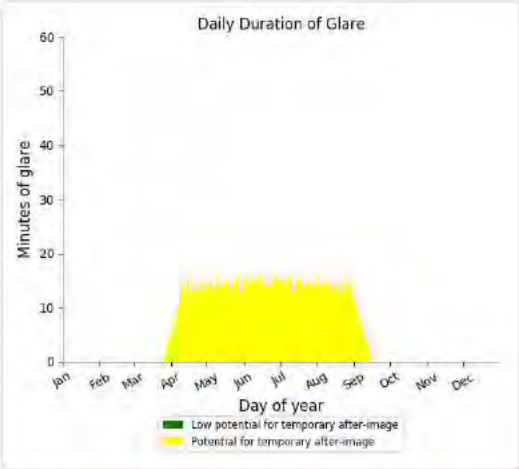


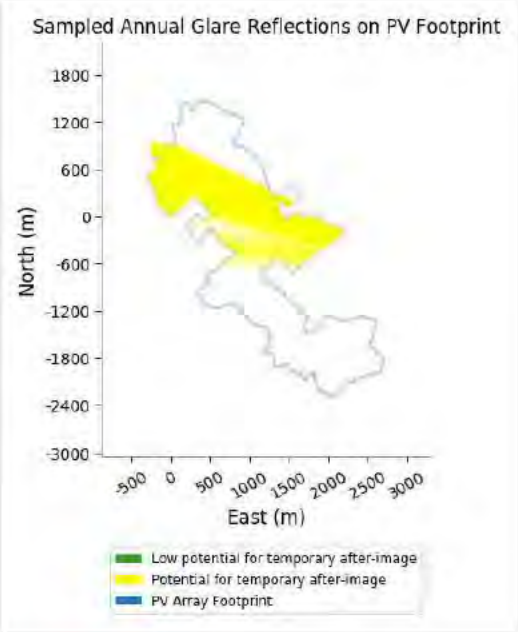


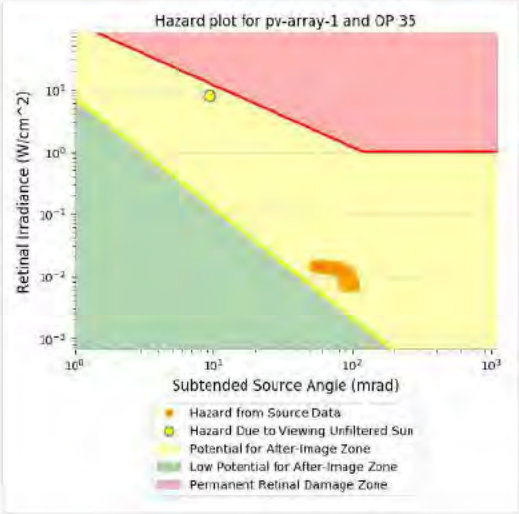
PV array 1 - OP Receptor (OP 35)

PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 2,235 minutes of "yellow" glare with potential to cause temporary after-image.



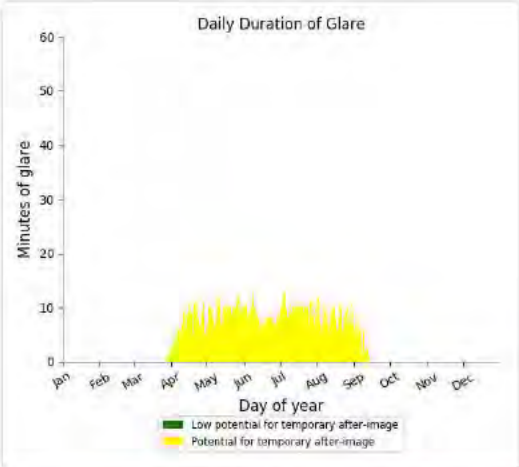


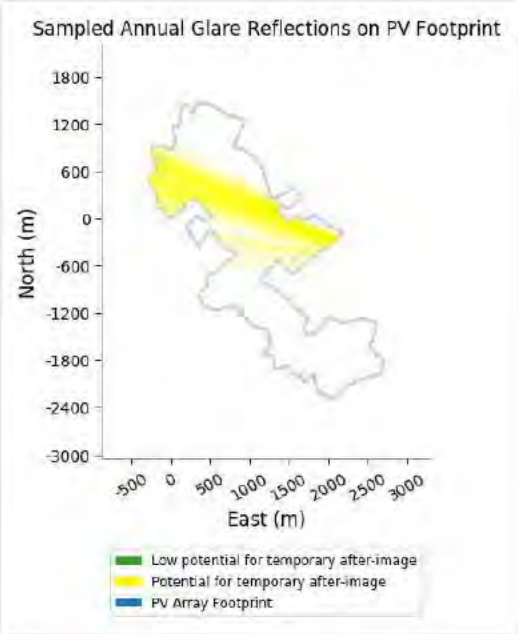


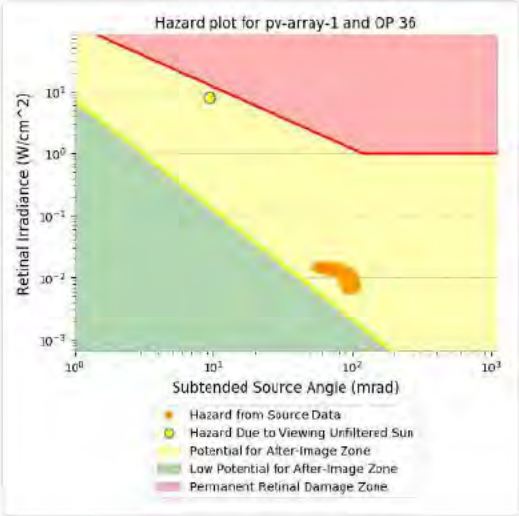
PV array 1 - OP Receptor (OP 36)

PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 1,374 minutes of "yellow" glare with potential to cause temporary after-image.



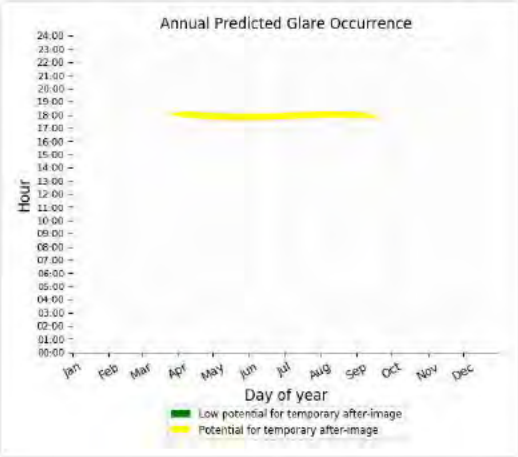


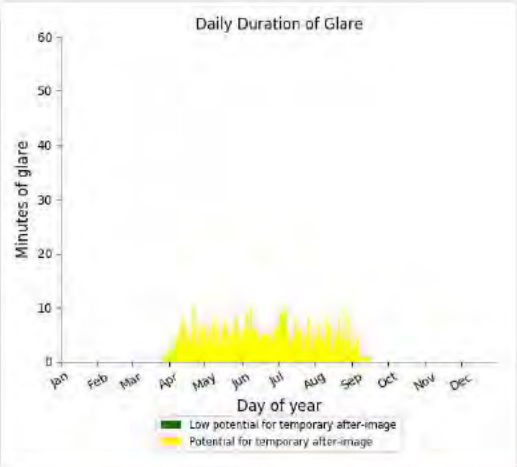


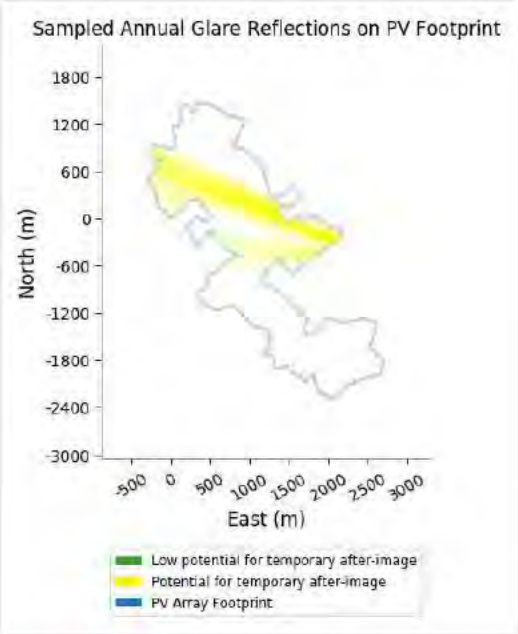
PV array 1 - OP Receptor (OP 37)

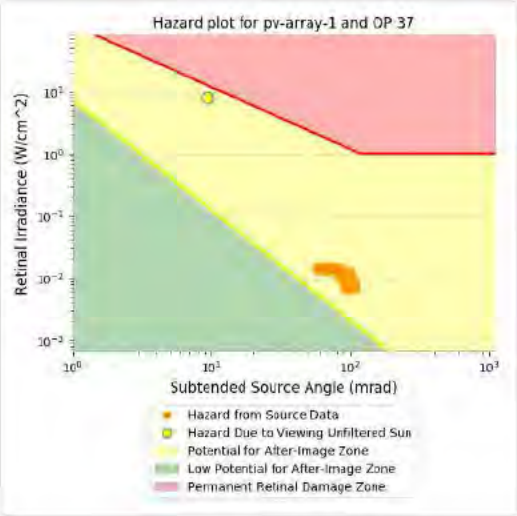
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 878 minutes of "yellow" glare with potential to cause temporary after-image.





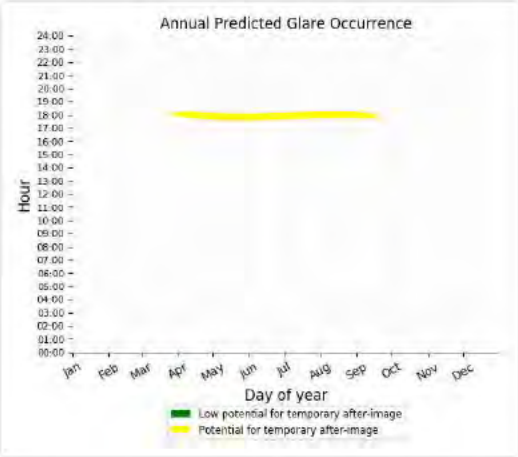


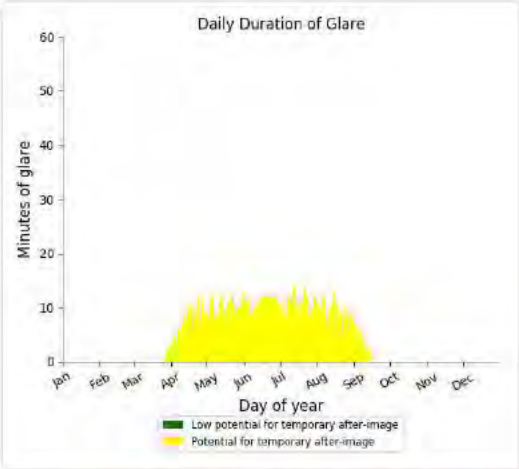


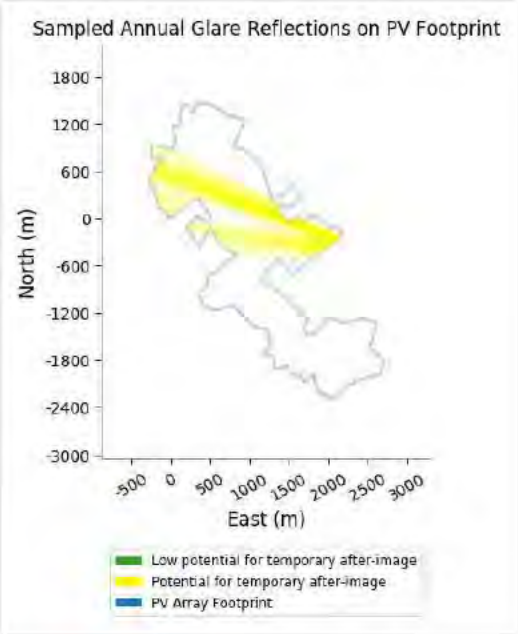
PV array 1 - OP Receptor (OP 38)

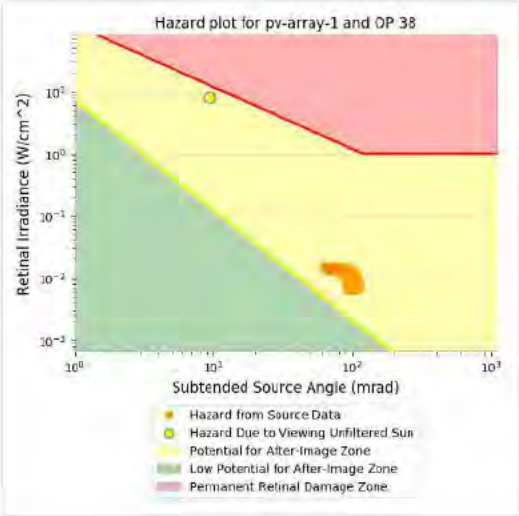
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 1,566 minutes of "yellow" glare with potential to cause temporary after-image.





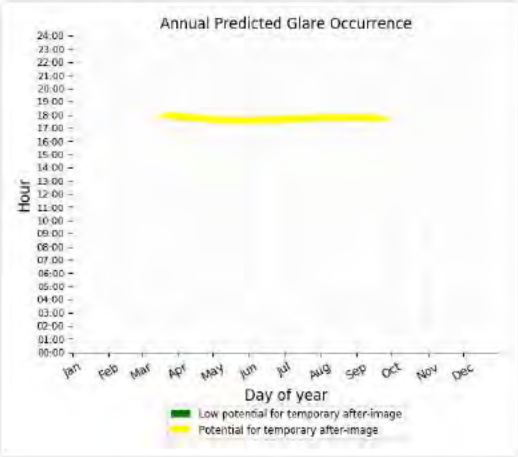


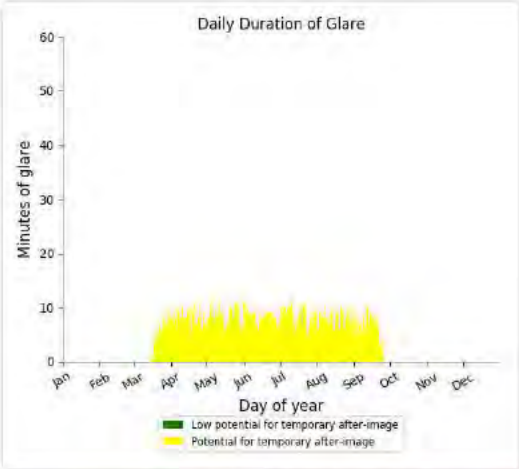


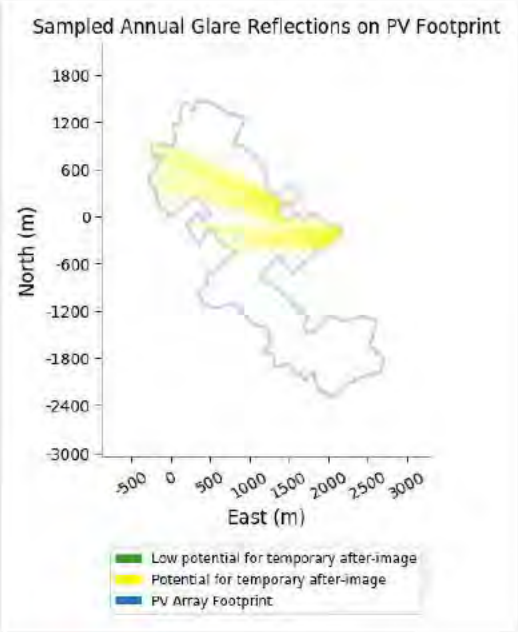
PV array 1 - OP Receptor (OP 39)

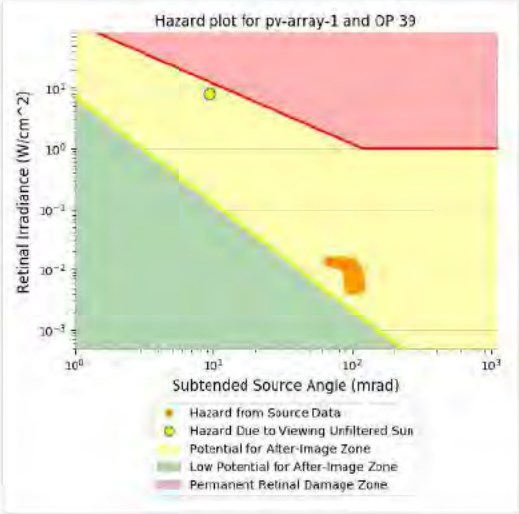
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 1,528 minutes of "yellow" glare with potential to cause temporary after-image.





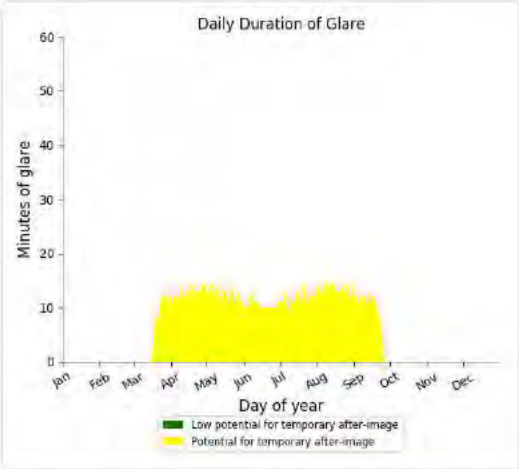


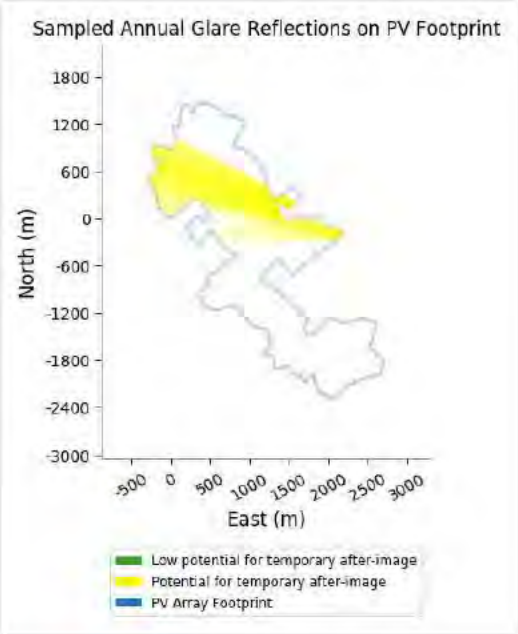


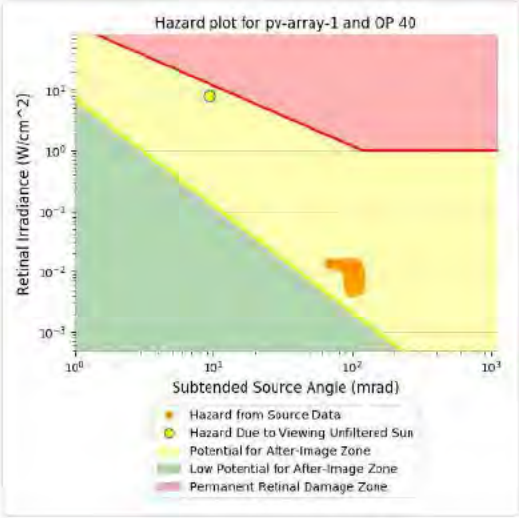
PV array 1 - OP Receptor (OP 40)

PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 2,290 minutes of "yellow" glare with potential to cause temporary after-image.



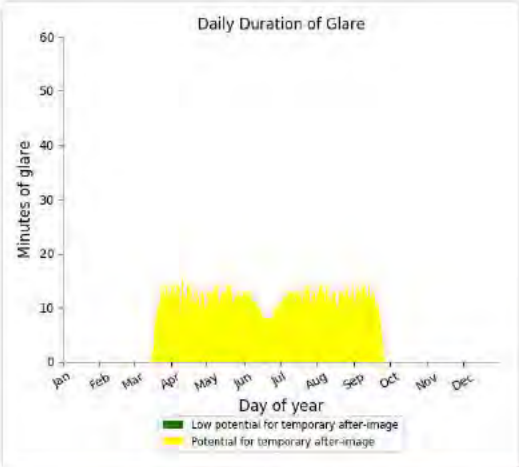


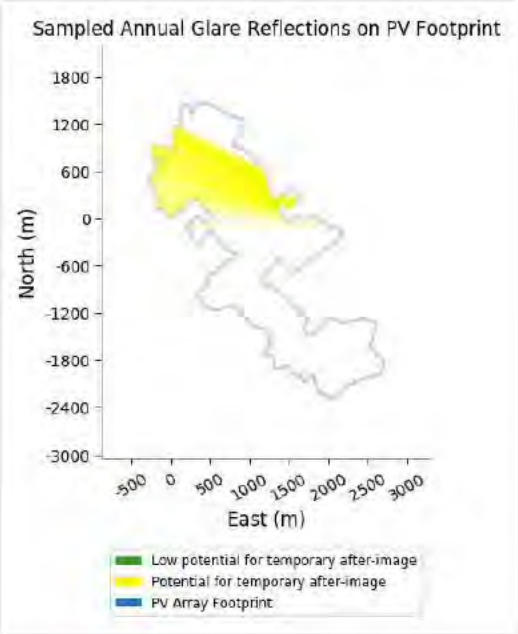


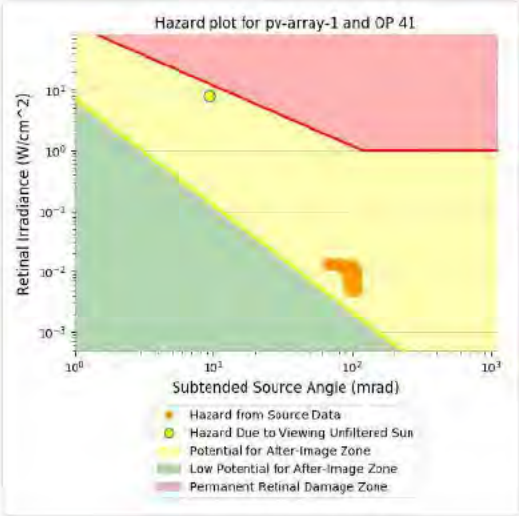
PV array 1 - OP Receptor (OP 41)

PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 2,294 minutes of "yellow" glare with potential to cause temporary after-image.



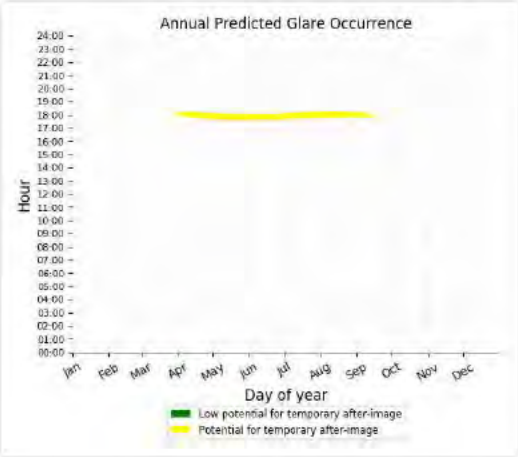


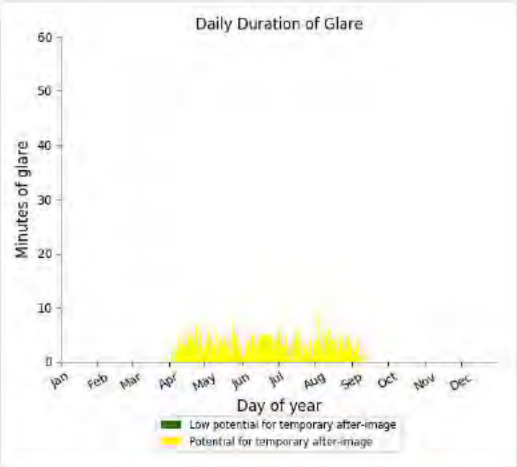


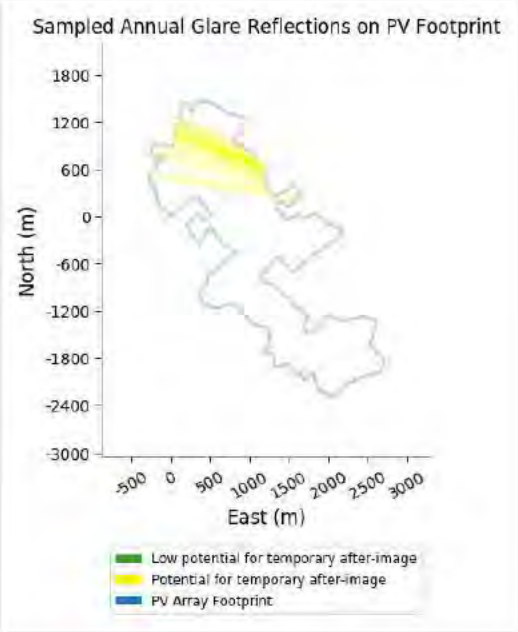
PV array 1 - OP Receptor (OP 42)

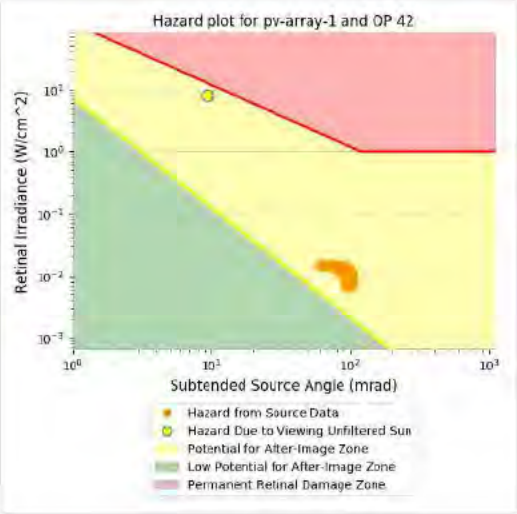
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 543 minutes of "yellow" glare with potential to cause temporary after-image.





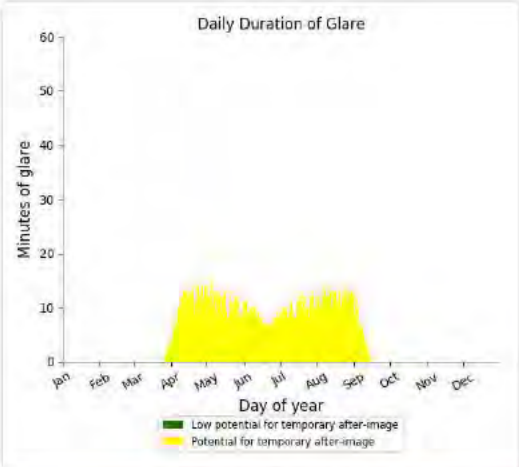


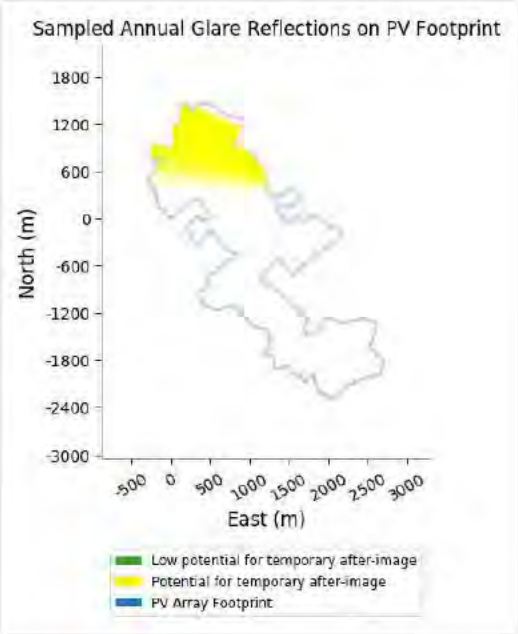


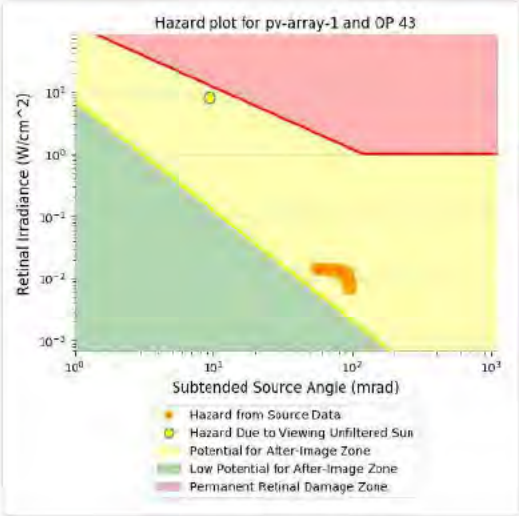
PV array 1 - OP Receptor (OP 43)

PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 1,724 minutes of "yellow" glare with potential to cause temporary after-image.



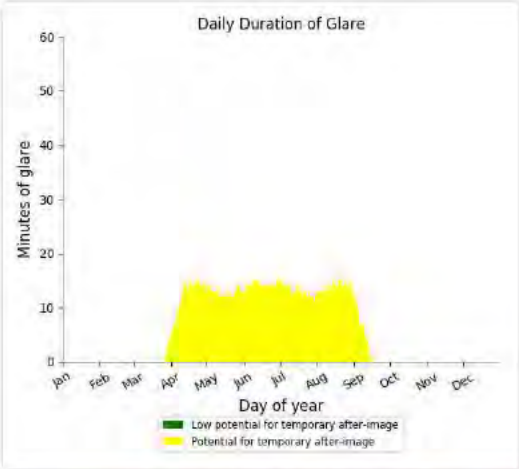


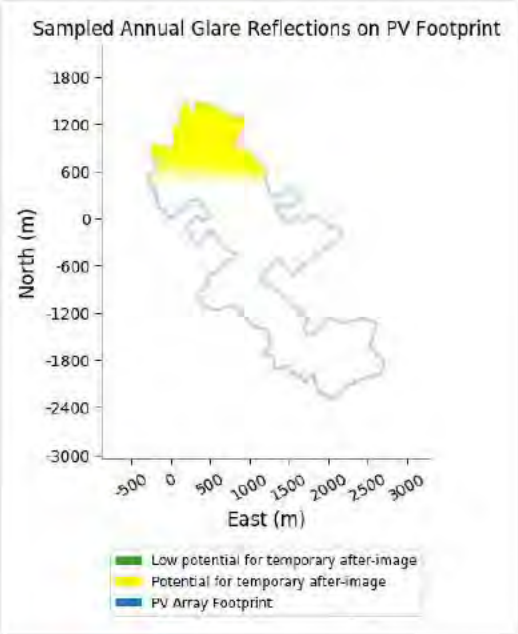


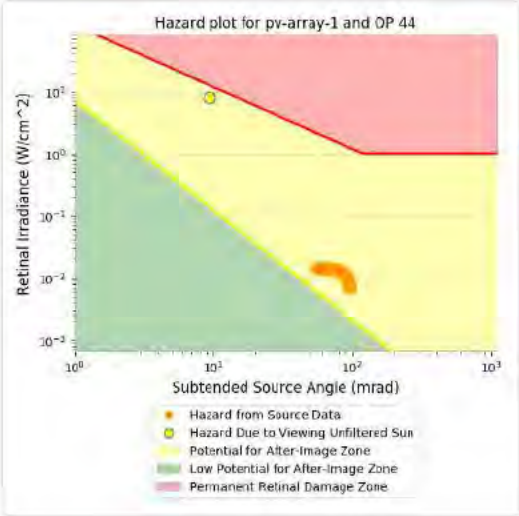
PV array 1 - OP Receptor (OP 44)

PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 2,138 minutes of "yellow" glare with potential to cause temporary after-image.



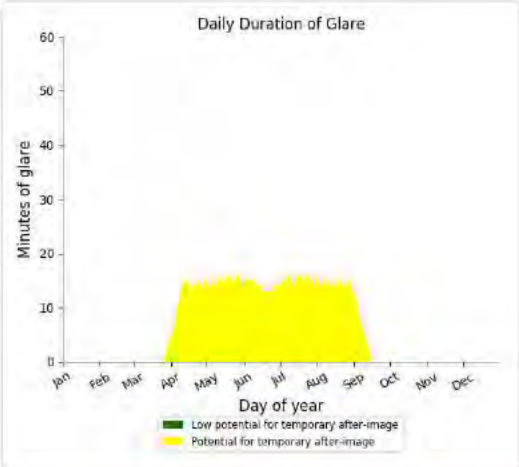


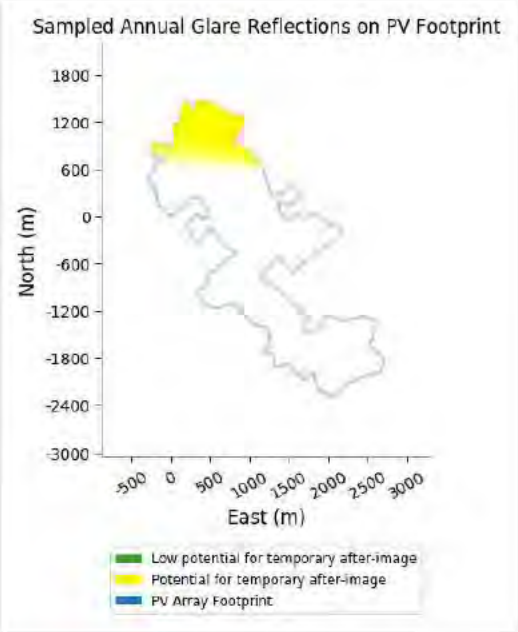


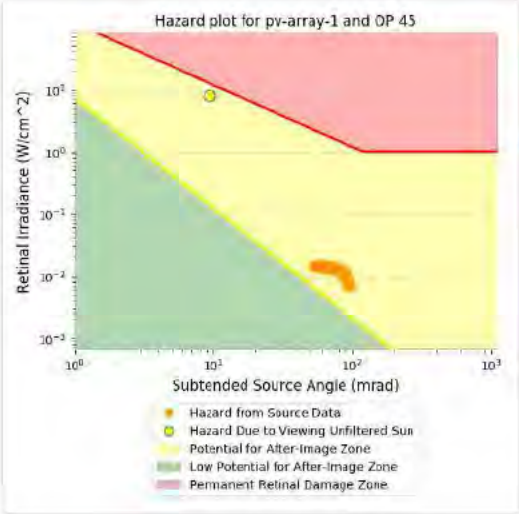
PV array 1 - OP Receptor (OP 45)

PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 2,291 minutes of "yellow" glare with potential to cause temporary after-image.



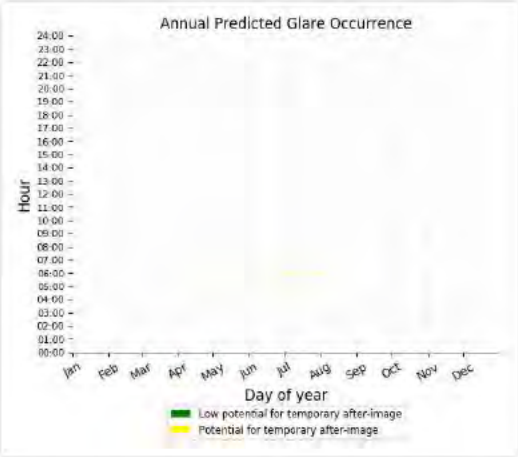


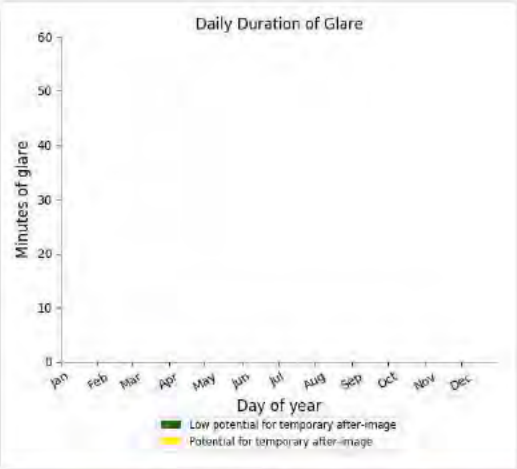


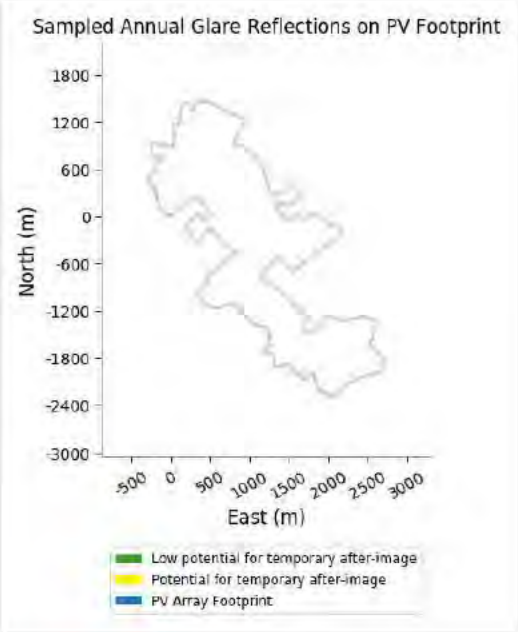
PV array 1 - OP Receptor (OP 46)

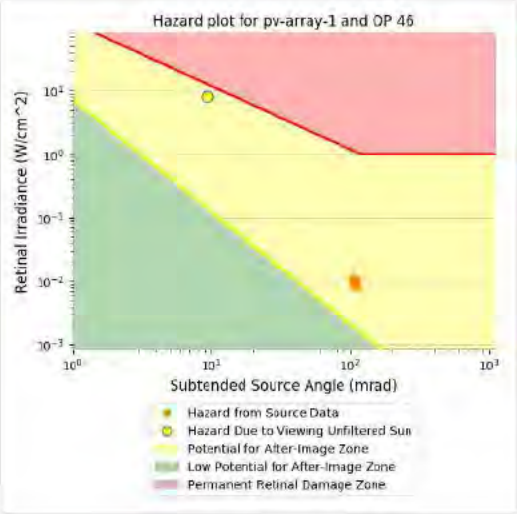
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 5 minutes of "yellow" glare with potential to cause temporary after-image.





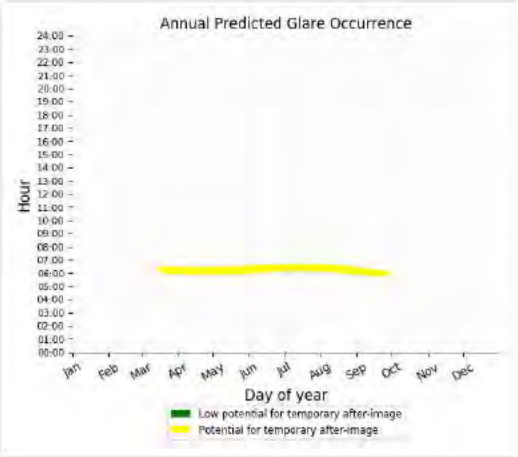


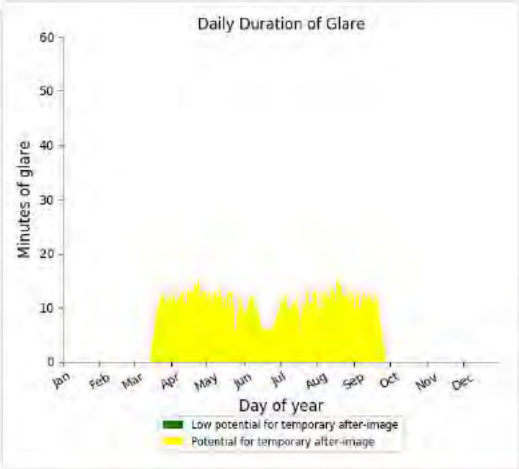


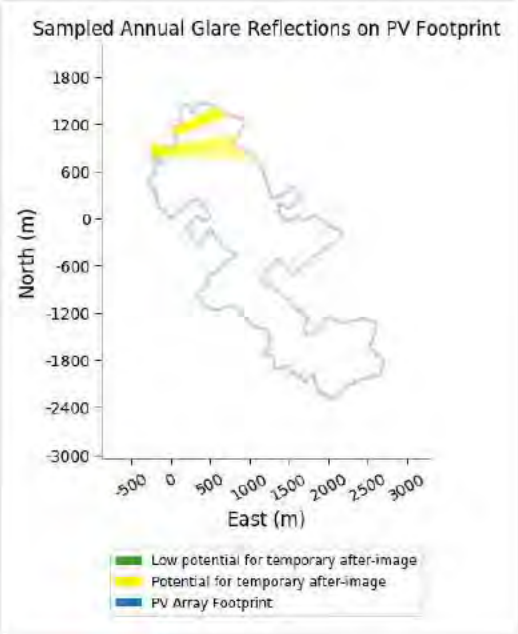
PV array 1 - OP Receptor (OP 47)

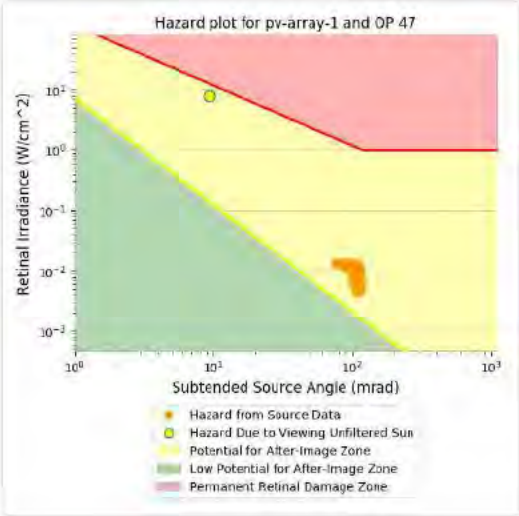
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 2,141 minutes of "yellow" glare with potential to cause temporary after-image.









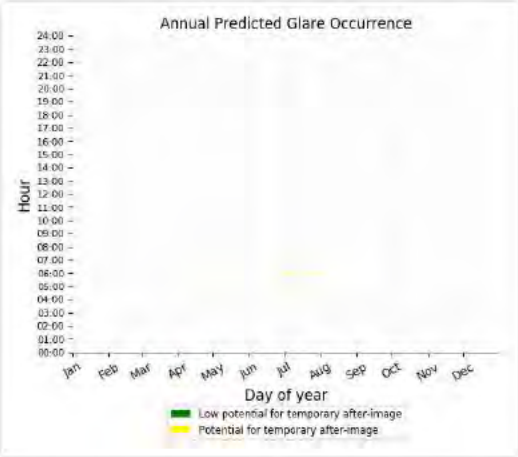
PV array 1 - OP Receptor (OP 48)

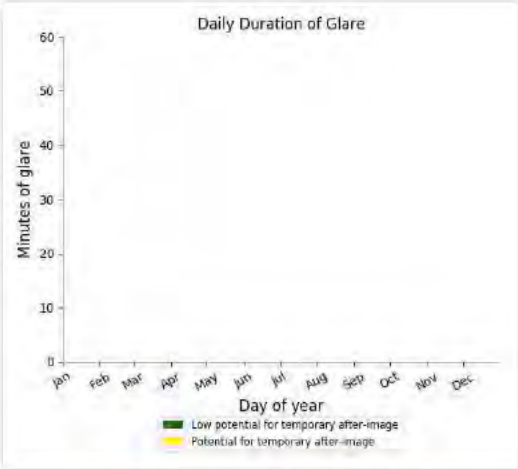
No glare found

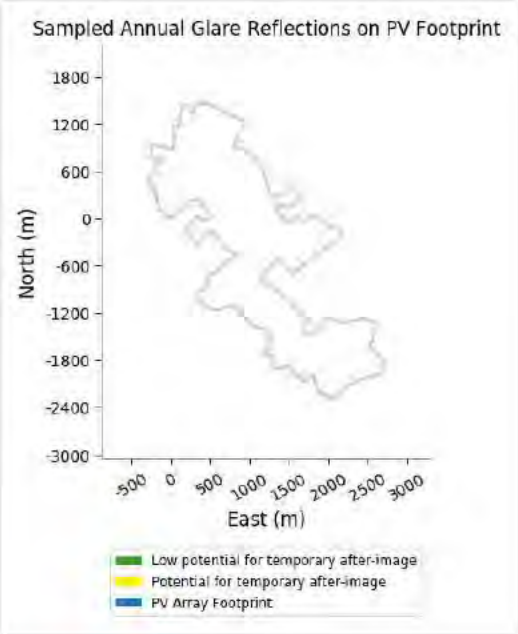
PV array 1 - OP Receptor (OP 49)

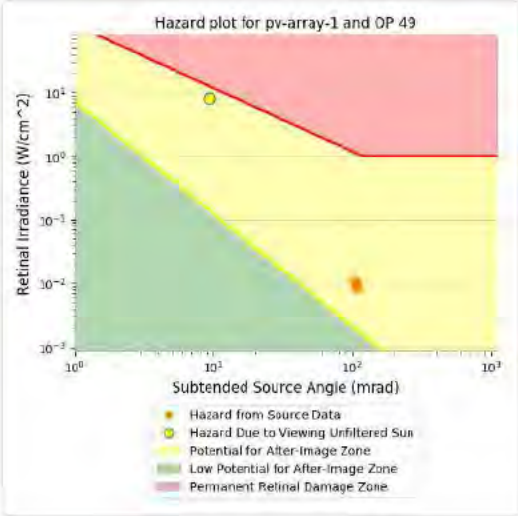
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 4 minutes of "yellow" glare with potential to cause temporary after-image.





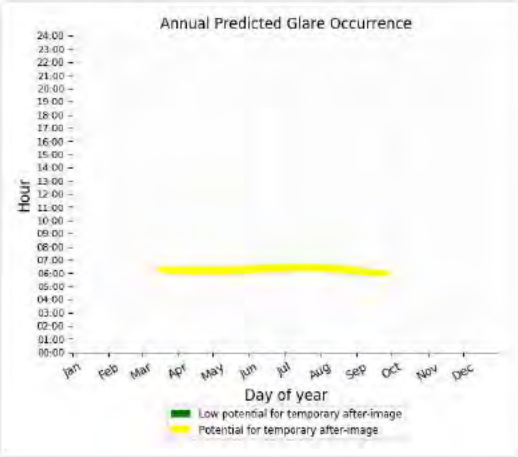


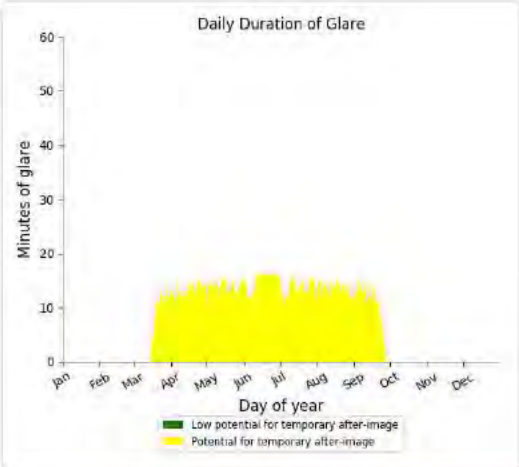


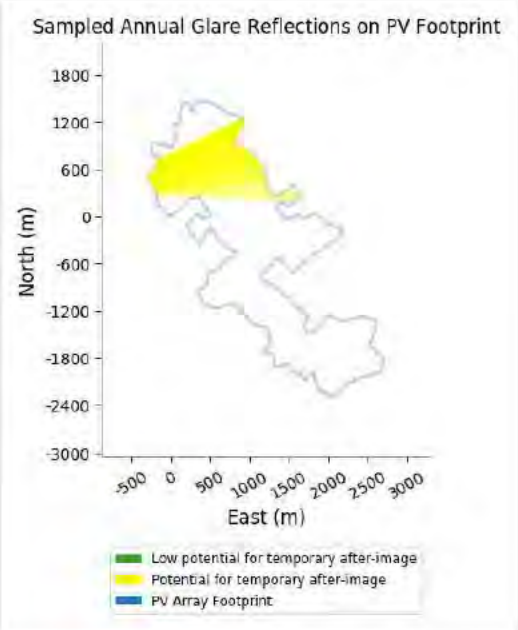
PV array 1 - OP Receptor (OP 50)

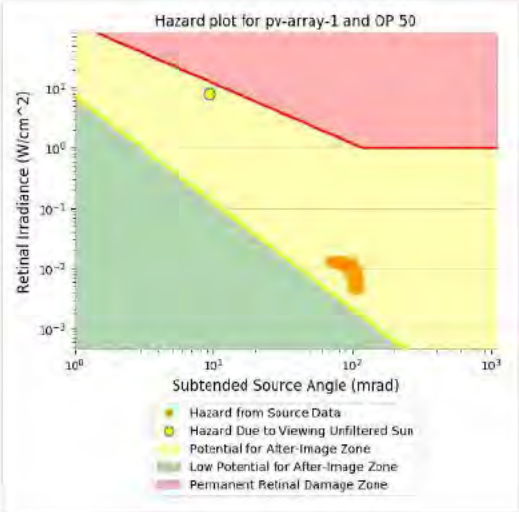
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 2,585 minutes of "yellow" glare with potential to cause temporary after-image.





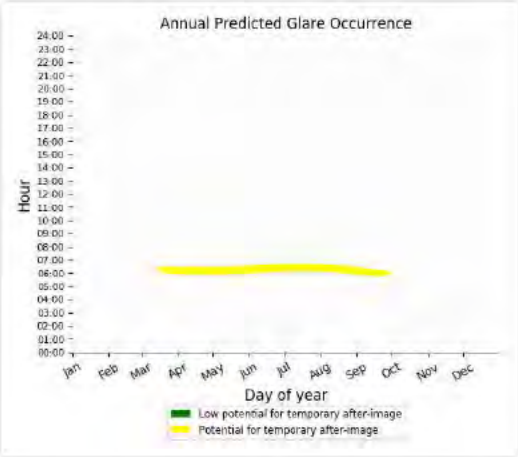


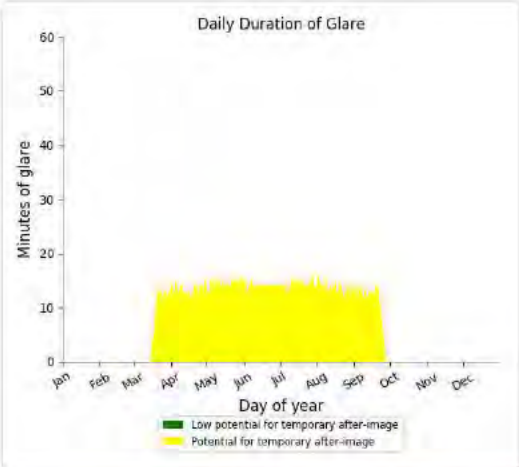


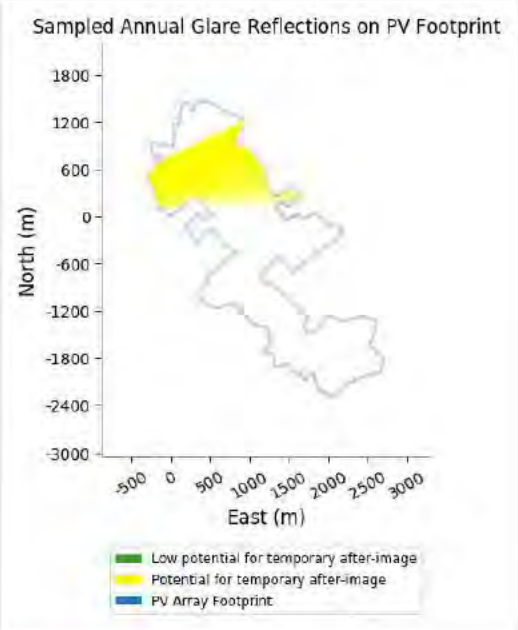
PV array 1 - OP Receptor (OP 51)

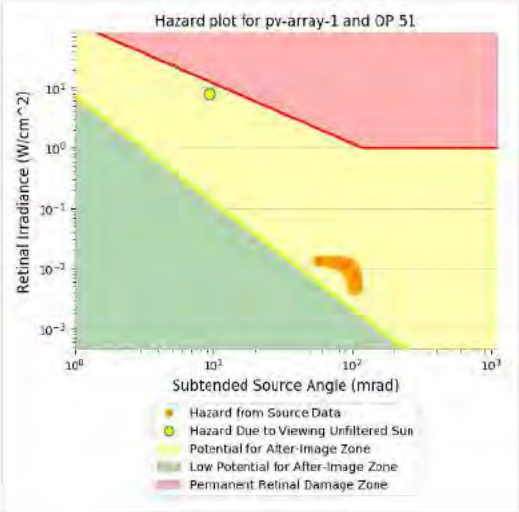
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 2,632 minutes of "yellow" glare with potential to cause temporary after-image.





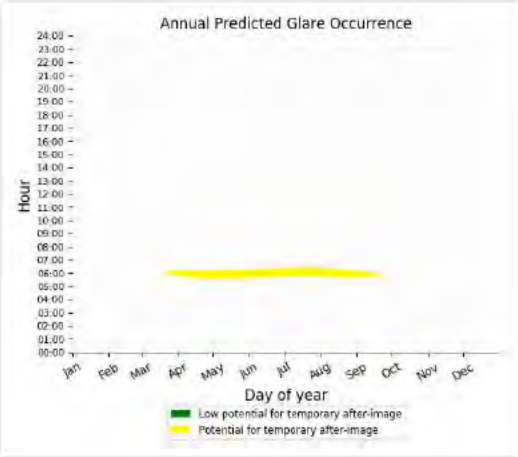


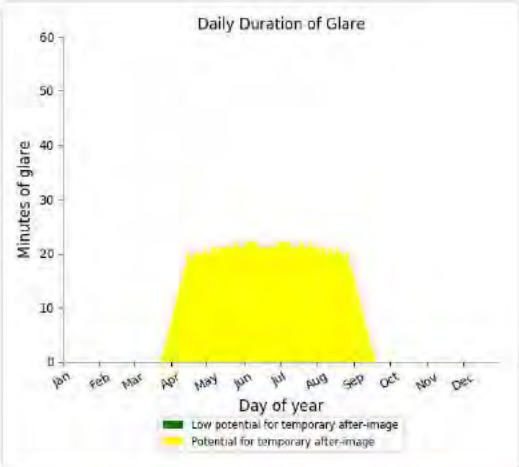


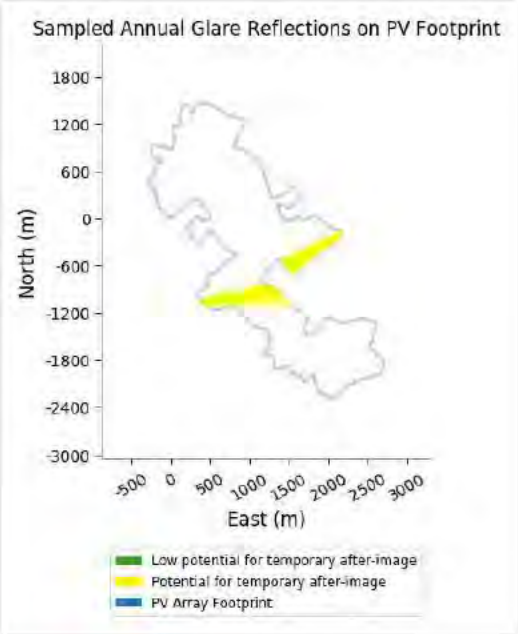
PV array 1 - OP Receptor (OP 52)

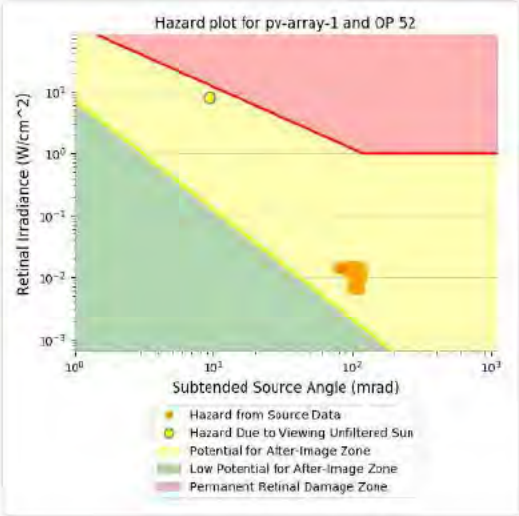
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 3,244 minutes of "yellow" glare with potential to cause temporary after-image.





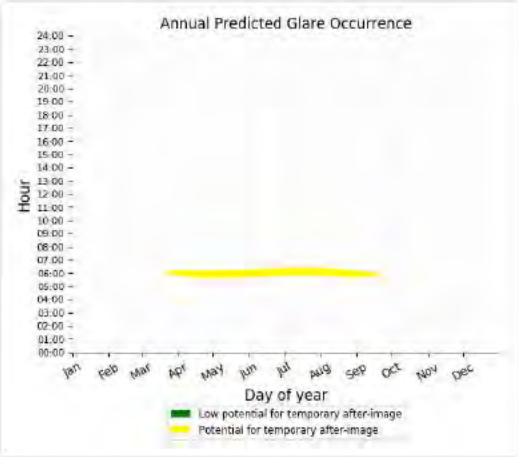


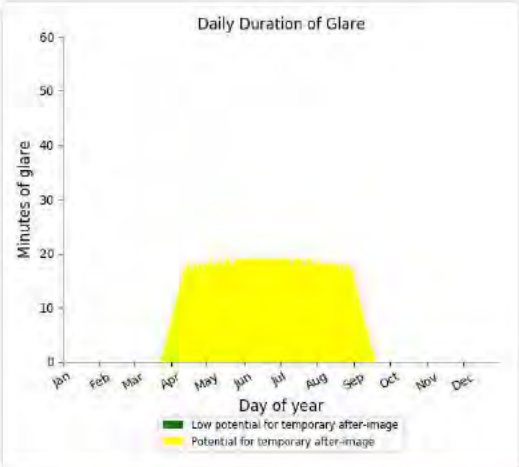


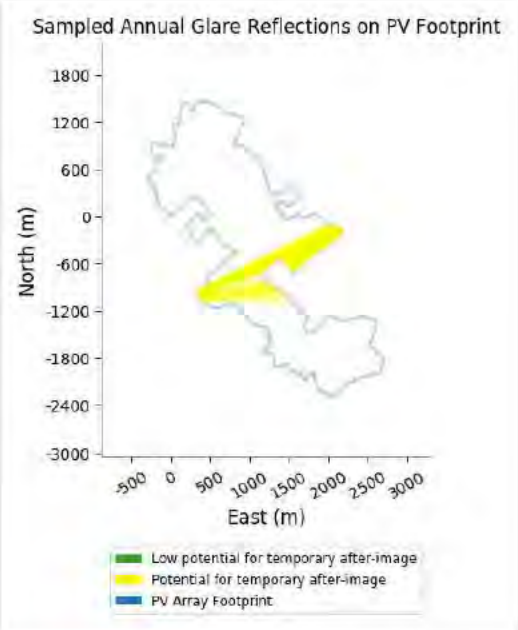
PV array 1 - OP Receptor (OP 53)

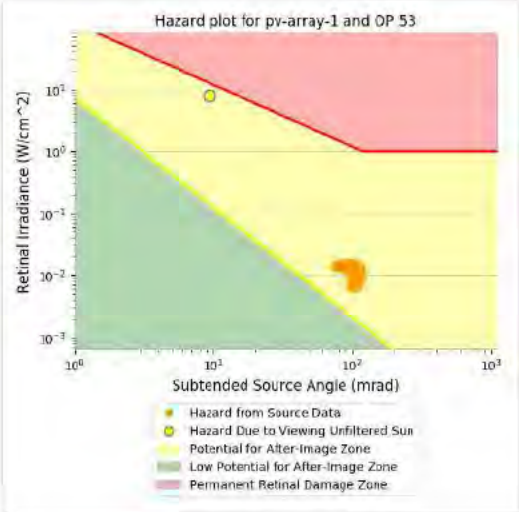
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 2,909 minutes of "yellow" glare with potential to cause temporary after-image.





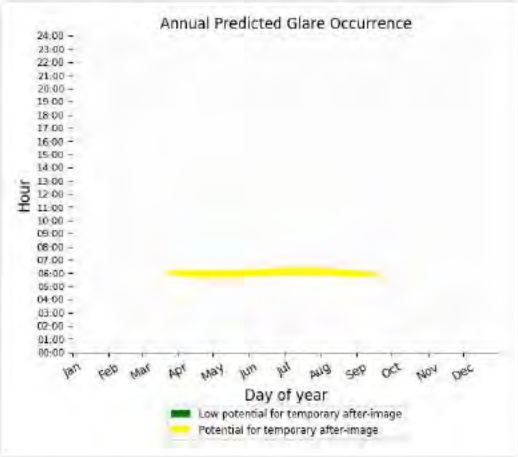


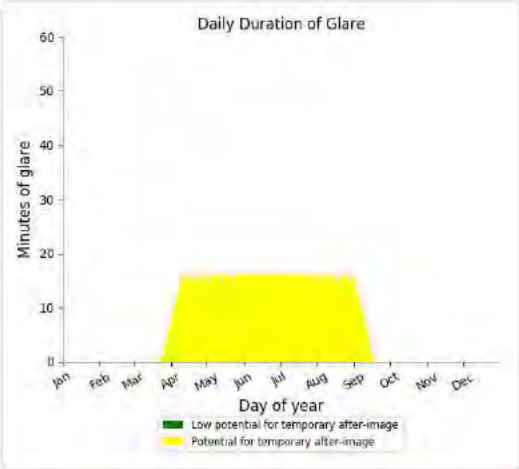


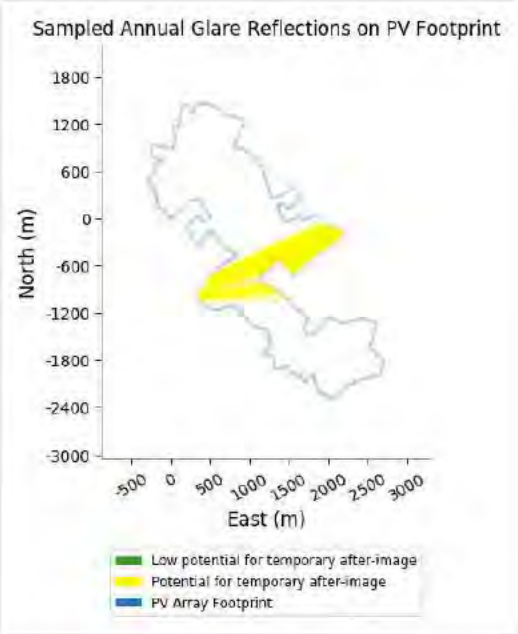
PV array 1 - OP Receptor (OP 54)

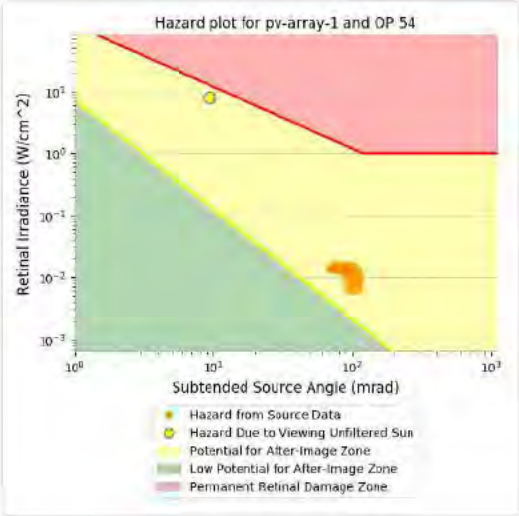
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 2,532 minutes of "yellow" glare with potential to cause temporary after-image.





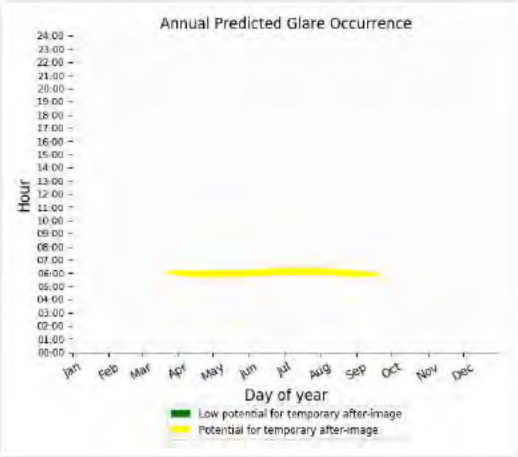


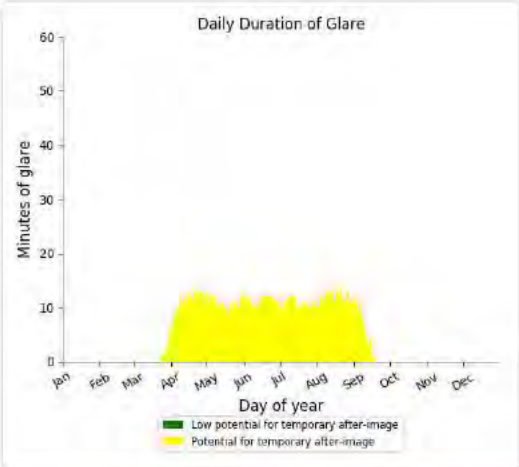


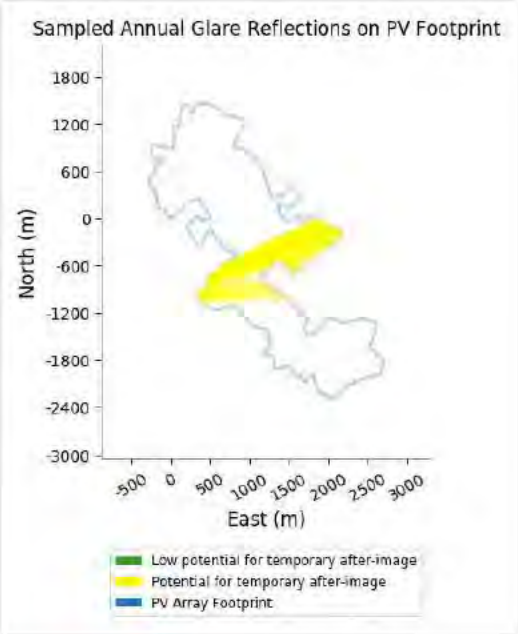
PV array 1 - OP Receptor (OP 55)

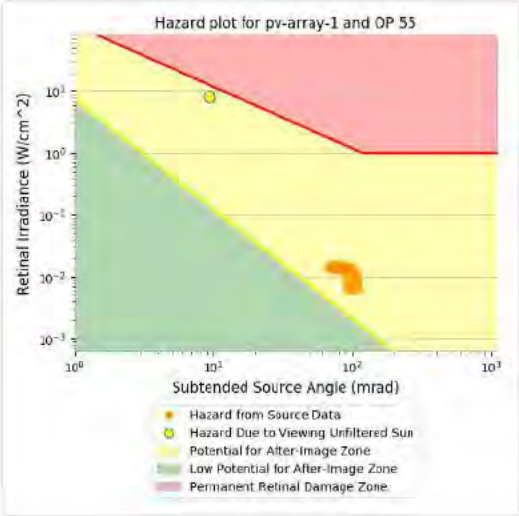
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 1,844 minutes of "yellow" glare with potential to cause temporary after-image.





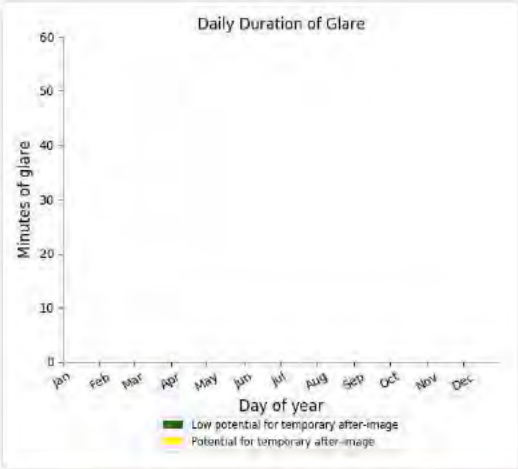


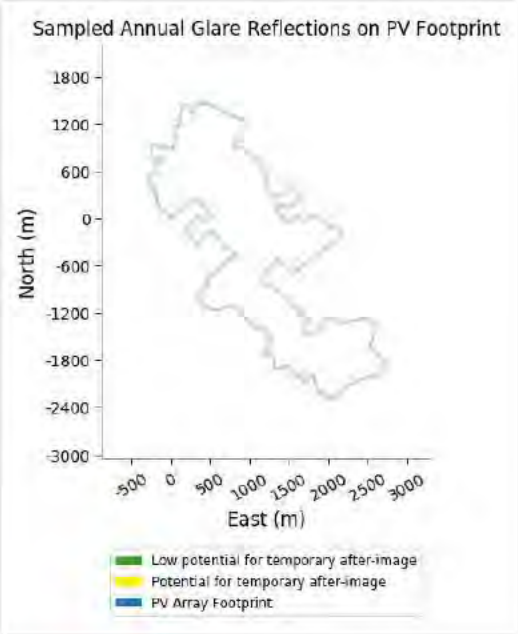


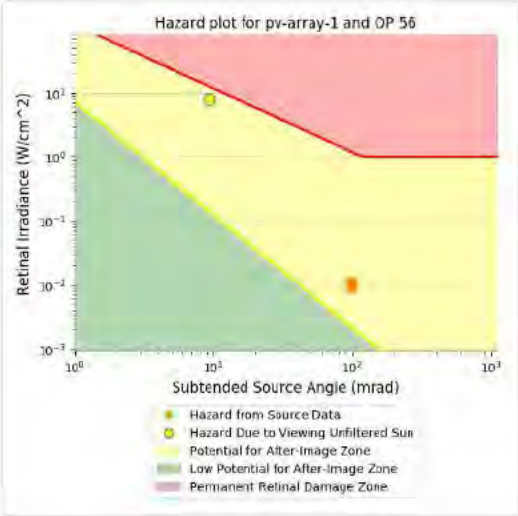
PV array 1 - OP Receptor (OP 56)

PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 3 minutes of "yellow" glare with potential to cause temporary after-image.







Assumptions

- Times associated with glare are denoted in Standard time. For Daylight Savings, add one hour.
- Glare analyses do not account for physical obstructions between reflectors and receptors. This includes buildings, tree cover and geographic obstructions
- Detailed system geometry is not rigorously simulated.
- The glare hazard determination relies on several approximations including observer eye characteristics, angle of view, and typical blink response time. Actual values and results may vary.
- The system output calculation is a DNI-based approximation that assumes clear, sunny skies year-round. It should not be used in place of more rigorous modeling methods.
- Several V1 calculations utilize the PV array centroid, rather than the actual glare spot location, due to algorithm limitations. This may affect results for larg PV footprints. Additional analyses of array sub-sections can provide additional information on expected glare.
- The subtended source angle (glare spot size) is constrained by the PV array footprint size. Partitioning large arrays into smaller sections will reduce the maximum potential subtended angle, potentially impacting results if actual glare spots are larger than the sub-array size. Additional analyses of the combined area of adjacent sub-arrays can provide more information on potential glare hazards. (See previous point on related limitations.)
- Hazard zone boundaries shown in the Glare Hazard plot are an approximation and visual aid. Actual ocular impact outcomes encompass a continuous, nc discrete, spectrum.
- Glare locations displayed on receptor plots are approximate. Actual glare-spot locations may differ.
- Glare vector plots are simplified representations of analysis data. Actual glare emanations and results may differ.
- Refer to the **Help page** for detailed assumptions and limitations not listed here.

ForgeSolar

Longfield Solar Farm

Longfield Solar Farm Rail 10 Deg

Created Aug. 17, 2021
Updated Aug. 17, 2021
Time-step 1 minute
Timezone offset UTC0
Site ID 57488.10147

Project type Advanced
Project status: active
Category 100 MW to 1 GW

Misc. Analysis Settings

DNI: **varies (1,000.0 W/m^2 peak)**
Ocular transmission coefficient: **0.5**
Pupil diameter: **0.002 m**
Eye focal length: **0.017 m**
Sun subtended angle: **9.3 mrad**

Analysis Methodologies:

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

Summary of Results Glare with potential for temporary after-image predicted

PV Name	Tilt	Orientation	"Green" Glare	"Yellow" Glare	Energy Produced
	deg	deg	min	min	kWh
PV array 1	10.0	180.0	0	2,240	-

Component Data

PV Array(s)

Total PV footprint area: 4,100,740 m^2

Name: PV array 1
Axis tracking: Fixed (no rotation)
Tilt: 10.0 deg
Orientation: 180.0 deg
Footprint area: 4,100,740 m^2
Rated power: -
Panel material: Light textured glass with AR coating
Vary reflectivity with sun position? Yes
Correlate slope error with surface type? Yes
Slope error: 9.16 mrad

Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	m	m	m
1	51.796401	0.524180	55.67	3.00	58.67
2	51.797383	0.522893	56.93	3.00	59.93
3	51.797489	0.522464	57.69	3.00	60.69
4	51.797277	0.522163	57.37	3.00	60.37
5	51.798683	0.521563	59.22	3.00	62.22
6	51.799957	0.521305	59.70	3.00	62.70
7	51.799771	0.520661	59.50	3.00	62.50
8	51.800408	0.520404	59.53	3.00	62.53
9	51.801098	0.520146	59.33	3.00	62.33
10	51.801337	0.520833	58.40	3.00	61.40
11	51.801656	0.521477	58.40	3.00	61.40
12	51.802319	0.521477	58.33	3.00	61.33
13	51.802770	0.521348	58.22	3.00	61.22
14	51.802929	0.522721	57.30	3.00	60.30
15	51.803195	0.522464	56.59	3.00	59.59
16	51.803341	0.520683	57.85	3.00	60.85
17	51.804814	0.520661	57.51	3.00	60.51
18	51.804814	0.521262	57.61	3.00	60.61
19	51.804336	0.524567	57.35	3.00	60.35
20	51.805066	0.524953	56.64	3.00	59.64
21	51.805517	0.524910	55.81	3.00	58.81
22	51.805902	0.525060	55.55	3.00	58.55
23	51.806154	0.524631	55.63	3.00	58.63
24	51.806791	0.524545	54.59	3.00	57.59
25	51.806976	0.524760	53.85	3.00	56.85
26	51.806817	0.525790	53.07	3.00	56.07
27	51.807374	0.525961	51.75	3.00	54.75
28	51.808131	0.526026	48.92	3.00	51.92
29	51.808635	0.526069	47.06	3.00	50.06
30	51.809378	0.526562	43.40	3.00	46.40
31	51.809232	0.527528	43.20	3.00	46.20
32	51.808383	0.528107	44.34	3.00	47.34
33	51.808356	0.528386	44.51	3.00	47.51
34	51.809510	0.528858	39.22	3.00	42.22
35	51.809470	0.531390	39.83	3.00	42.83
36	51.809139	0.532592	39.95	3.00	42.95
37	51.808781	0.533386	45.14	3.00	48.14
38	51.808157	0.534480	47.48	3.00	50.48
39	51.807976	0.535977	47.86	3.00	50.86
40	51.807856	0.536750	47.77	3.00	50.77
41	51.807498	0.537951	46.46	3.00	49.46
42	51.804619	0.535720	54.38	3.00	57.38
43	51.804234	0.537629	52.43	3.00	55.43
44	51.803836	0.538574	53.36	3.00	56.36
45	51.803345	0.539368	51.70	3.00	54.70
46	51.802284	0.540827	53.00	3.00	56.00
47	51.801810	0.541505	53.85	3.00	56.85
48	51.801544	0.541333	53.77	3.00	56.77
49	51.798625	0.542835	53.73	3.00	56.73
50	51.799050	0.544638	52.72	3.00	55.72
51	51.799899	0.546483	50.75	3.00	53.75
52	51.798824	0.548522	50.16	3.00	53.16
53	51.797471	0.545818	51.82	3.00	54.82
54	51.798055	0.544874	51.90	3.00	54.90
55	51.798121	0.543994	52.77	3.00	55.77
56	51.797351	0.544273	53.01	3.00	56.01
57	51.797165	0.543908	51.74	3.00	54.74
58	51.795952	0.545603	48.45	3.00	51.45
59	51.796768	0.547516	50.46	3.00	53.46
60	51.796145	0.548438	47.01	3.00	50.01
61	51.796808	0.550820	45.69	3.00	48.69

62	51.796078	0.552000	48.33	3.00	51.33
63	51.795335	0.553867	46.63	3.00	49.63
64	51.794977	0.555841	44.78	3.00	47.78
65	51.793955	0.555090	45.53	3.00	48.53
66	51.793053	0.552923	45.78	3.00	48.78
67	51.792562	0.551464	46.53	3.00	49.53
68	51.790020	0.546711	50.66	3.00	53.66
69	51.791755	0.544093	51.82	3.00	54.82
70	51.789618	0.540617	55.94	3.00	58.94
71	51.789220	0.541347	55.54	3.00	58.54
72	51.788861	0.541712	54.61	3.00	57.61
73	51.788569	0.542227	54.21	3.00	57.21
74	51.788822	0.542742	54.03	3.00	57.03
75	51.785406	0.548621	51.37	3.00	54.37
76	51.785220	0.549050	51.14	3.00	54.14
77	51.784835	0.549479	51.69	3.00	54.69
78	51.784012	0.548514	49.80	3.00	52.80
79	51.783295	0.549072	48.95	3.00	51.95
80	51.783269	0.550659	50.00	3.00	53.00
81	51.785247	0.553170	49.93	3.00	52.93
82	51.785233	0.553513	49.42	3.00	52.42
83	51.784556	0.555187	47.27	3.00	50.27
84	51.784530	0.556367	46.38	3.00	49.38
85	51.784995	0.559500	46.91	3.00	49.91
86	51.784437	0.562139	47.64	3.00	50.64
87	51.781636	0.560744	42.41	3.00	45.41
88	51.780202	0.563319	38.75	3.00	41.75
89	51.778623	0.562912	41.36	3.00	44.36
90	51.778038	0.558921	43.48	3.00	46.48
91	51.776963	0.555874	44.20	3.00	47.20
92	51.776246	0.554972	44.18	3.00	47.18
93	51.775702	0.553470	43.89	3.00	46.89
94	51.776432	0.552655	42.48	3.00	45.48
95	51.776472	0.552204	42.35	3.00	45.35
96	51.776153	0.552033	44.14	3.00	47.14
97	51.777560	0.550702	44.38	3.00	47.38
98	51.778636	0.550638	44.47	3.00	47.47
99	51.777760	0.548771	45.50	3.00	48.50
100	51.778662	0.547810	46.20	3.00	49.20
101	51.778384	0.547188	46.30	3.00	49.30
102	51.779711	0.545321	47.26	3.00	50.26
103	51.779379	0.544806	47.32	3.00	50.32
104	51.779260	0.543304	45.51	3.00	48.51
105	51.780455	0.543089	46.29	3.00	49.29
106	51.780707	0.542832	46.96	3.00	49.96
107	51.780840	0.542102	46.40	3.00	49.40
108	51.780853	0.541716	46.74	3.00	49.74
109	51.781357	0.541244	48.33	3.00	51.33
110	51.781742	0.542596	49.02	3.00	52.02
111	51.782338	0.542133	49.06	3.00	52.06
112	51.782511	0.542756	50.33	3.00	53.33
113	51.783746	0.541812	51.03	3.00	54.03
114	51.783918	0.540417	50.21	3.00	53.21
115	51.784131	0.540267	50.10	3.00	53.10
116	51.783971	0.539558	50.39	3.00	53.39
117	51.784675	0.538636	50.08	3.00	53.08
118	51.786082	0.536361	53.70	3.00	56.70
119	51.786493	0.536018	51.51	3.00	54.51
120	51.786334	0.534516	51.14	3.00	54.14
121	51.786002	0.533400	49.52	3.00	52.52
122	51.785896	0.532542	48.20	3.00	51.20
123	51.786268	0.531104	47.33	3.00	50.33
124	51.786719	0.530031	47.75	3.00	50.75
125	51.787794	0.529066	48.91	3.00	51.91
126	51.788615	0.530890	52.09	3.00	55.09

127	51.789810	0.531083	54.39	3.00	57.39
128	51.790327	0.532671	55.73	3.00	58.73
129	51.791602	0.534602	56.74	3.00	59.74
130	51.791602	0.535181	56.79	3.00	59.79
131	51.792172	0.536404	56.90	3.00	59.90
132	51.792771	0.534924	56.98	3.00	59.98
133	51.792864	0.534537	57.39	3.00	60.39
134	51.793222	0.534130	57.11	3.00	60.11
135	51.793448	0.533615	57.21	3.00	60.21
136	51.795094	0.531383	58.82	3.00	61.82
137	51.794656	0.530718	58.25	3.00	61.25
138	51.793873	0.530117	58.23	3.00	61.23
139	51.793501	0.529752	57.72	3.00	60.72
140	51.793302	0.529302	57.43	3.00	60.43
141	51.795346	0.527049	58.54	3.00	61.54
142	51.795717	0.527714	58.61	3.00	61.61
143	51.796408	0.528551	59.10	3.00	62.10
144	51.796633	0.529130	58.68	3.00	61.68
145	51.796461	0.529645	58.58	3.00	61.58
146	51.795996	0.530246	58.92	3.00	61.92
147	51.796567	0.531726	58.02	3.00	61.02
148	51.798584	0.529216	56.85	3.00	59.85
149	51.798531	0.527735	56.62	3.00	59.62
150	51.797602	0.526577	56.04	3.00	59.04
151	51.797018	0.525439	56.13	3.00	59.13

Discrete Observation Receptors

Number	Latitude	Longitude	Ground elevation	Height above ground	Total Elevation
	deg	deg	m	m	m
OP 1	51.770372	0.564468	38.25	2.75	41.00
OP 2	51.770976	0.567118	37.54	2.75	40.29
OP 3	51.771686	0.569660	36.49	2.75	39.24

Summary of PV Glare Analysis

PV configuration and total predicted glare

PV Name	Tilt	Orientation	"Green" Glare	"Yellow" Glare	Energy Produced	Data File
	deg	deg	min	min	kWh	
PV array 1	10.0	180.0	0	2,240	-	-

Distinct glare per month

Excludes overlapping glare from PV array for multiple receptors at matching time(s)

PV	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
pv-array-1 (green)	0	0	0	0	0	0	0	0	0	0	0	0
pv-array-1 (yellow)	0	0	0	0	378	554	487	94	0	0	0	0

PV & Receptor Analysis Results

Results for each PV array and receptor

PV array 1 potential temporary after-image

Component	Green glare (min)	Yellow glare (min)
OP: OP 1	0	0
OP: OP 2	0	796
OP: OP 3	0	1444

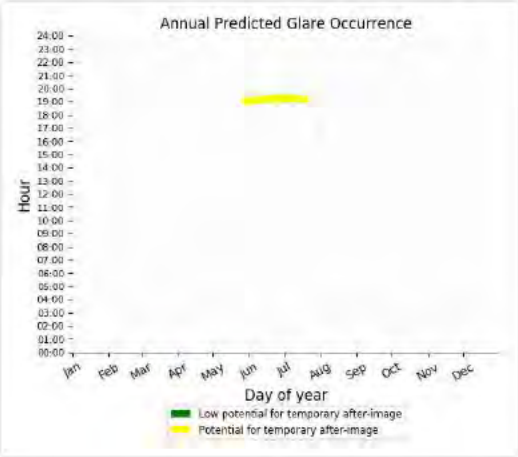
PV array 1 - OP Receptor (OP 1)

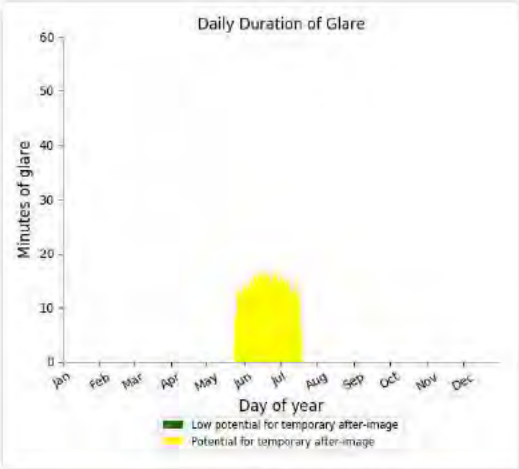
No glare found

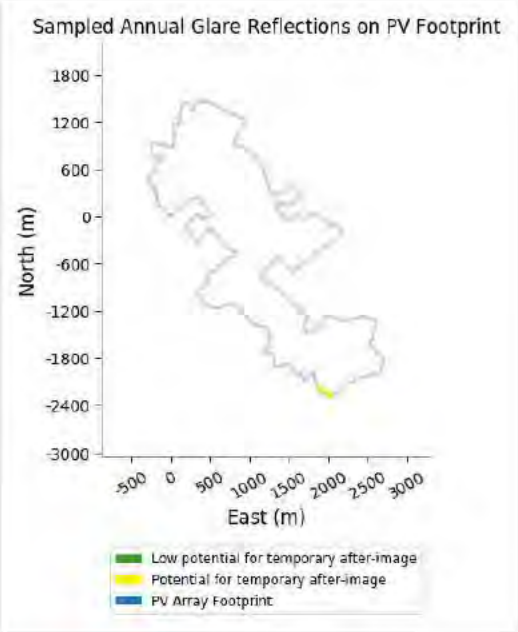
PV array 1 - OP Receptor (OP 2)

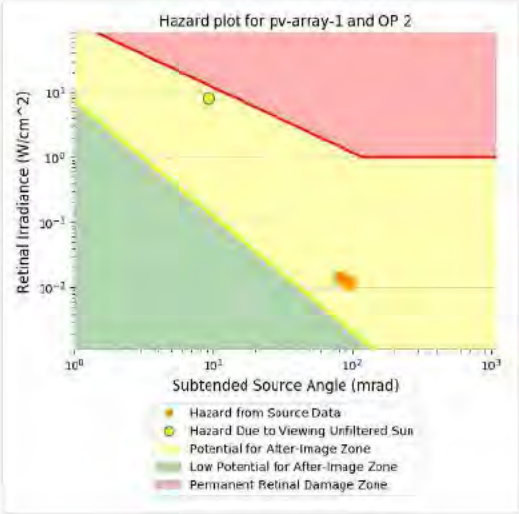
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 796 minutes of "yellow" glare with potential to cause temporary after-image.





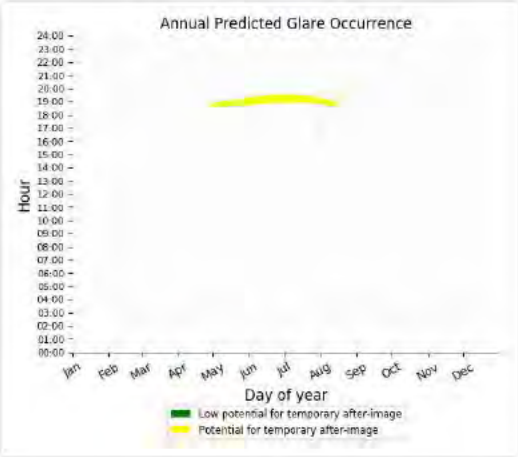


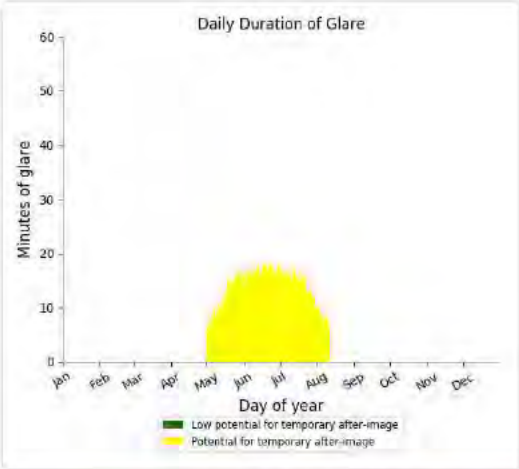


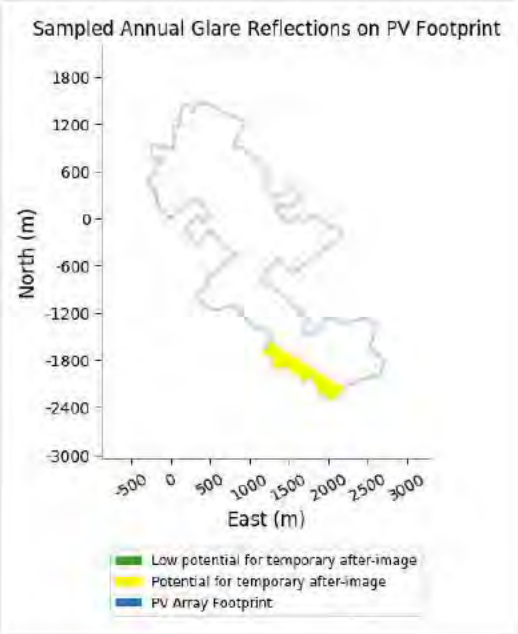
PV array 1 - OP Receptor (OP 3)

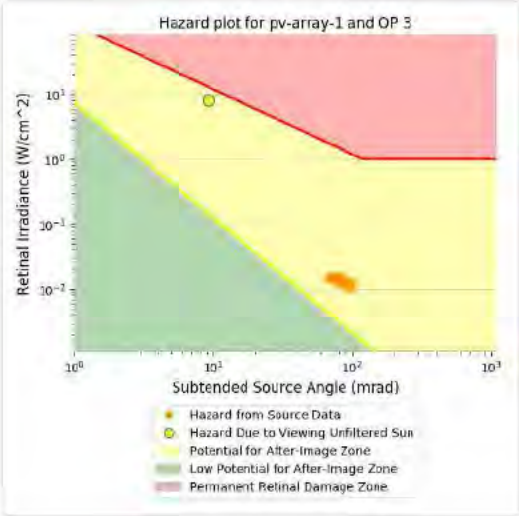
PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 1,444 minutes of "yellow" glare with potential to cause temporary after-image.









Assumptions

- Times associated with glare are denoted in Standard time. For Daylight Savings, add one hour.
- Glare analyses do not account for physical obstructions between reflectors and receptors. This includes buildings, tree cover and geographic obstructions
- Detailed system geometry is not rigorously simulated.
- The glare hazard determination relies on several approximations including observer eye characteristics, angle of view, and typical blink response time. Actual values and results may vary.
- The system output calculation is a DNI-based approximation that assumes clear, sunny skies year-round. It should not be used in place of more rigorous modeling methods.
- Several V1 calculations utilize the PV array centroid, rather than the actual glare spot location, due to algorithm limitations. This may affect results for larg PV footprints. Additional analyses of array sub-sections can provide additional information on expected glare.
- The subtended source angle (glare spot size) is constrained by the PV array footprint size. Partitioning large arrays into smaller sections will reduce the maximum potential subtended angle, potentially impacting results if actual glare spots are larger than the sub-array size. Additional analyses of the combined area of adjacent sub-arrays can provide more information on potential glare hazards. (See previous point on related limitations.)
- Hazard zone boundaries shown in the Glare Hazard plot are an approximation and visual aid. Actual ocular impact outcomes encompass a continuous, nc discrete, spectrum.
- Glare locations displayed on receptor plots are approximate. Actual glare-spot locations may differ.
- Glare vector plots are simplified representations of analysis data. Actual glare emanations and results may differ.
- Refer to the **Help page** for detailed assumptions and limitations not listed here.

ForgeSolar

Longfield Solar Farm

Longfield Solar Farm Rail 30 Deg

Created Aug. 17, 2021
Updated Aug. 17, 2021
Time-step 1 minute
Timezone offset UTC0
Site ID 57489.10147

Project type Advanced
Project status: active
Category 100 MW to 1 GW

Misc. Analysis Settings

DNI: **varies (1,000.0 W/m^2 peak)**
Ocular transmission coefficient: **0.5**
Pupil diameter: **0.002 m**
Eye focal length: **0.017 m**
Sun subtended angle: **9.3 mrad**

Analysis Methodologies:

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

Summary of Results Glare with potential for temporary after-image predicted

PV Name	Tilt	Orientation	"Green" Glare	"Yellow" Glare	Energy Produced
	deg	deg	min	min	kWh
PV array 1	30.0	180.0	0	685	-

Component Data

PV Array(s)

Total PV footprint area: 4,100,740 m^2

Name: PV array 1
Axis tracking: Fixed (no rotation)
Tilt: 30.0 deg
Orientation: 180.0 deg
Footprint area: 4,100,740 m^2
Rated power: -
Panel material: Light textured glass with AR coating
Vary reflectivity with sun position? Yes
Correlate slope error with surface type? Yes
Slope error: 9.16 mrad

Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	m	m	m
1	51.796401	0.524180	55.67	3.00	58.67
2	51.797383	0.522893	56.93	3.00	59.93
3	51.797489	0.522464	57.69	3.00	60.69
4	51.797277	0.522163	57.37	3.00	60.37
5	51.798683	0.521563	59.22	3.00	62.22
6	51.799957	0.521305	59.70	3.00	62.70
7	51.799771	0.520661	59.50	3.00	62.50
8	51.800408	0.520404	59.53	3.00	62.53
9	51.801098	0.520146	59.33	3.00	62.33
10	51.801337	0.520833	58.40	3.00	61.40
11	51.801656	0.521477	58.40	3.00	61.40
12	51.802319	0.521477	58.33	3.00	61.33
13	51.802770	0.521348	58.22	3.00	61.22
14	51.802929	0.522721	57.30	3.00	60.30
15	51.803195	0.522464	56.59	3.00	59.59
16	51.803341	0.520683	57.85	3.00	60.85
17	51.804814	0.520661	57.51	3.00	60.51
18	51.804814	0.521262	57.61	3.00	60.61
19	51.804336	0.524567	57.35	3.00	60.35
20	51.805066	0.524953	56.64	3.00	59.64
21	51.805517	0.524910	55.81	3.00	58.81
22	51.805902	0.525060	55.55	3.00	58.55
23	51.806154	0.524631	55.63	3.00	58.63
24	51.806791	0.524545	54.59	3.00	57.59
25	51.806976	0.524760	53.85	3.00	56.85
26	51.806817	0.525790	53.07	3.00	56.07
27	51.807374	0.525961	51.75	3.00	54.75
28	51.808131	0.526026	48.92	3.00	51.92
29	51.808635	0.526069	47.06	3.00	50.06
30	51.809378	0.526562	43.40	3.00	46.40
31	51.809232	0.527528	43.20	3.00	46.20
32	51.808383	0.528107	44.34	3.00	47.34
33	51.808356	0.528386	44.51	3.00	47.51
34	51.809510	0.528858	39.22	3.00	42.22
35	51.809470	0.531390	39.83	3.00	42.83
36	51.809139	0.532592	39.95	3.00	42.95
37	51.808781	0.533386	45.14	3.00	48.14
38	51.808157	0.534480	47.48	3.00	50.48
39	51.807976	0.535977	47.86	3.00	50.86
40	51.807856	0.536750	47.77	3.00	50.77
41	51.807498	0.537951	46.46	3.00	49.46
42	51.804619	0.535720	54.38	3.00	57.38
43	51.804234	0.537629	52.43	3.00	55.43
44	51.803836	0.538574	53.36	3.00	56.36
45	51.803345	0.539368	51.70	3.00	54.70
46	51.802284	0.540827	53.00	3.00	56.00
47	51.801810	0.541505	53.85	3.00	56.85
48	51.801544	0.541333	53.77	3.00	56.77
49	51.798625	0.542835	53.73	3.00	56.73
50	51.799050	0.544638	52.72	3.00	55.72
51	51.799899	0.546483	50.75	3.00	53.75
52	51.798824	0.548522	50.16	3.00	53.16
53	51.797471	0.545818	51.82	3.00	54.82
54	51.798055	0.544874	51.90	3.00	54.90
55	51.798121	0.543994	52.77	3.00	55.77
56	51.797351	0.544273	53.01	3.00	56.01
57	51.797165	0.543908	51.74	3.00	54.74
58	51.795952	0.545603	48.45	3.00	51.45
59	51.796768	0.547516	50.46	3.00	53.46
60	51.796145	0.548438	47.01	3.00	50.01
61	51.796808	0.550820	45.69	3.00	48.69

62	51.796078	0.552000	48.33	3.00	51.33
63	51.795335	0.553867	46.63	3.00	49.63
64	51.794977	0.555841	44.78	3.00	47.78
65	51.793955	0.555090	45.53	3.00	48.53
66	51.793053	0.552923	45.78	3.00	48.78
67	51.792562	0.551464	46.53	3.00	49.53
68	51.790020	0.546711	50.66	3.00	53.66
69	51.791755	0.544093	51.82	3.00	54.82
70	51.789618	0.540617	55.94	3.00	58.94
71	51.789220	0.541347	55.54	3.00	58.54
72	51.788861	0.541712	54.61	3.00	57.61
73	51.788569	0.542227	54.21	3.00	57.21
74	51.788822	0.542742	54.03	3.00	57.03
75	51.785406	0.548621	51.37	3.00	54.37
76	51.785220	0.549050	51.14	3.00	54.14
77	51.784835	0.549479	51.69	3.00	54.69
78	51.784012	0.548514	49.80	3.00	52.80
79	51.783295	0.549072	48.95	3.00	51.95
80	51.783269	0.550659	50.00	3.00	53.00
81	51.785247	0.553170	49.93	3.00	52.93
82	51.785233	0.553513	49.42	3.00	52.42
83	51.784556	0.555187	47.27	3.00	50.27
84	51.784530	0.556367	46.38	3.00	49.38
85	51.784995	0.559500	46.91	3.00	49.91
86	51.784437	0.562139	47.64	3.00	50.64
87	51.781636	0.560744	42.41	3.00	45.41
88	51.780202	0.563319	38.75	3.00	41.75
89	51.778623	0.562912	41.36	3.00	44.36
90	51.778038	0.558921	43.48	3.00	46.48
91	51.776963	0.555874	44.20	3.00	47.20
92	51.776246	0.554972	44.18	3.00	47.18
93	51.775702	0.553470	43.89	3.00	46.89
94	51.776432	0.552655	42.48	3.00	45.48
95	51.776472	0.552204	42.35	3.00	45.35
96	51.776153	0.552033	44.14	3.00	47.14
97	51.777560	0.550702	44.38	3.00	47.38
98	51.778636	0.550638	44.47	3.00	47.47
99	51.777760	0.548771	45.50	3.00	48.50
100	51.778662	0.547810	46.20	3.00	49.20
101	51.778384	0.547188	46.30	3.00	49.30
102	51.779711	0.545321	47.26	3.00	50.26
103	51.779379	0.544806	47.32	3.00	50.32
104	51.779260	0.543304	45.51	3.00	48.51
105	51.780455	0.543089	46.29	3.00	49.29
106	51.780707	0.542832	46.96	3.00	49.96
107	51.780840	0.542102	46.40	3.00	49.40
108	51.780853	0.541716	46.74	3.00	49.74
109	51.781357	0.541244	48.33	3.00	51.33
110	51.781742	0.542596	49.02	3.00	52.02
111	51.782338	0.542133	49.06	3.00	52.06
112	51.782511	0.542756	50.33	3.00	53.33
113	51.783746	0.541812	51.03	3.00	54.03
114	51.783918	0.540417	50.21	3.00	53.21
115	51.784131	0.540267	50.10	3.00	53.10
116	51.783971	0.539558	50.39	3.00	53.39
117	51.784675	0.538636	50.08	3.00	53.08
118	51.786082	0.536361	53.70	3.00	56.70
119	51.786493	0.536018	51.51	3.00	54.51
120	51.786334	0.534516	51.14	3.00	54.14
121	51.786002	0.533400	49.52	3.00	52.52
122	51.785896	0.532542	48.20	3.00	51.20
123	51.786268	0.531104	47.33	3.00	50.33
124	51.786719	0.530031	47.75	3.00	50.75
125	51.787794	0.529066	48.91	3.00	51.91
126	51.788615	0.530890	52.09	3.00	55.09

127	51.789810	0.531083	54.39	3.00	57.39
128	51.790327	0.532671	55.73	3.00	58.73
129	51.791602	0.534602	56.74	3.00	59.74
130	51.791602	0.535181	56.79	3.00	59.79
131	51.792172	0.536404	56.90	3.00	59.90
132	51.792771	0.534924	56.98	3.00	59.98
133	51.792864	0.534537	57.39	3.00	60.39
134	51.793222	0.534130	57.11	3.00	60.11
135	51.793448	0.533615	57.21	3.00	60.21
136	51.795094	0.531383	58.82	3.00	61.82
137	51.794656	0.530718	58.25	3.00	61.25
138	51.793873	0.530117	58.23	3.00	61.23
139	51.793501	0.529752	57.72	3.00	60.72
140	51.793302	0.529302	57.43	3.00	60.43
141	51.795346	0.527049	58.54	3.00	61.54
142	51.795717	0.527714	58.61	3.00	61.61
143	51.796408	0.528551	59.10	3.00	62.10
144	51.796633	0.529130	58.68	3.00	61.68
145	51.796461	0.529645	58.58	3.00	61.58
146	51.795996	0.530246	58.92	3.00	61.92
147	51.796567	0.531726	58.02	3.00	61.02
148	51.798584	0.529216	56.85	3.00	59.85
149	51.798531	0.527735	56.62	3.00	59.62
150	51.797602	0.526577	56.04	3.00	59.04
151	51.797018	0.525439	56.13	3.00	59.13

Discrete Observation Receptors

Number	Latitude	Longitude	Ground elevation	Height above ground	Total Elevation
	deg	deg	m	m	m
OP 1	51.770372	0.564468	38.25	2.75	41.00
OP 2	51.770976	0.567118	37.54	2.75	40.29
OP 3	51.771686	0.569660	36.49	2.75	39.24

Summary of PV Glare Analysis

PV configuration and total predicted glare

PV Name	Tilt	Orientation	"Green" Glare	"Yellow" Glare	Energy Produced	Data File
	deg	deg	min	min	kWh	
PV array 1	30.0	180.0	0	685	-	-

Distinct glare per month

Excludes overlapping glare from PV array for multiple receptors at matching time(s)

PV	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
pv-array-1 (green)	0	0	0	0	0	0	0	0	0	0	0	0
pv-array-1 (yellow)	0	0	0	0	131	307	247	0	0	0	0	0

PV & Receptor Analysis Results

Results for each PV array and receptor

PV array 1 potential temporary after-image

Component	Green glare (min)	Yellow glare (min)
OP: OP 1	0	0
OP: OP 2	0	0
OP: OP 3	0	685

PV array 1 - OP Receptor (OP 1)

No glare found

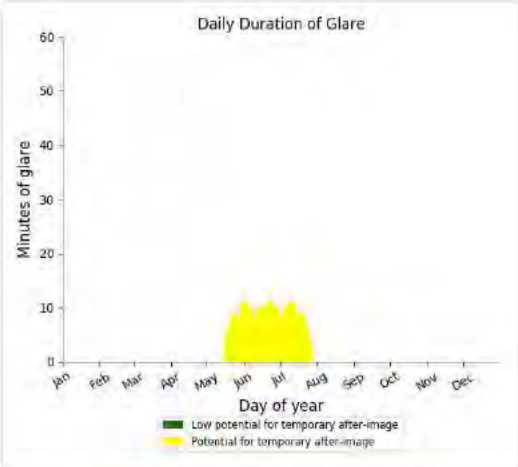
PV array 1 - OP Receptor (OP 2)

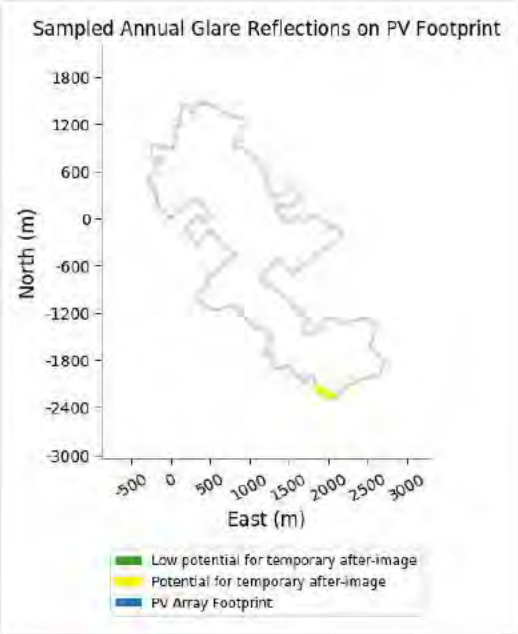
No glare found

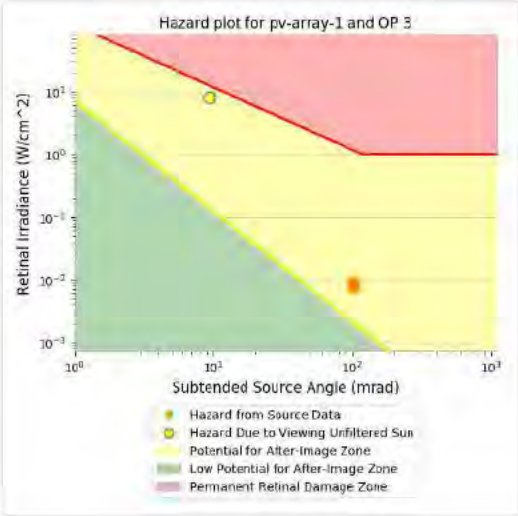
PV array 1 - OP Receptor (OP 3)

PV array is expected to produce the following glare for receptors at this location:

- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 685 minutes of "yellow" glare with potential to cause temporary after-image.







Assumptions

- Times associated with glare are denoted in Standard time. For Daylight Savings, add one hour.
- Glare analyses do not account for physical obstructions between reflectors and receptors. This includes buildings, tree cover and geographic obstructions
- Detailed system geometry is not rigorously simulated.
- The glare hazard determination relies on several approximations including observer eye characteristics, angle of view, and typical blink response time. Actual values and results may vary.
- The system output calculation is a DNI-based approximation that assumes clear, sunny skies year-round. It should not be used in place of more rigorous modeling methods.
- Several V1 calculations utilize the PV array centroid, rather than the actual glare spot location, due to algorithm limitations. This may affect results for larg PV footprints. Additional analyses of array sub-sections can provide additional information on expected glare.
- The subtended source angle (glare spot size) is constrained by the PV array footprint size. Partitioning large arrays into smaller sections will reduce the maximum potential subtended angle, potentially impacting results if actual glare spots are larger than the sub-array size. Additional analyses of the combined area of adjacent sub-arrays can provide more information on potential glare hazards. (See previous point on related limitations.)
- Hazard zone boundaries shown in the Glare Hazard plot are an approximation and visual aid. Actual ocular impact outcomes encompass a continuous, nc discrete, spectrum.
- Glare locations displayed on receptor plots are approximate. Actual glare-spot locations may differ.
- Glare vector plots are simplified representations of analysis data. Actual glare emanations and results may differ.
- Refer to the **Help page** for detailed assumptions and limitations not listed here.

ForgeSolar

Longfield Solar Farm

Longfield Solar Farm Aviation 10 Deg

Created Aug. 11, 2021
Updated Aug. 12, 2021
Time-step 1 minute
Timezone offset UTC0
Site ID 57214.10147

Project type Advanced
Project status: active
Category 100 MW to 1 GW

Misc. Analysis Settings

DNI: **varies (1,000.0 W/m^2 peak)**
Ocular transmission coefficient: **0.5**
Pupil diameter: **0.002 m**
Eye focal length: **0.017 m**
Sun subtended angle: **9.3 mrad**

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

Summary of Results No glare predicted!

PV Name	Tilt	Orientation	"Green" Glare	"Yellow" Glare	Energy Produced
	deg	deg	min	min	kWh
PV array 1	10.0	180.0	0	0	-

Component Data

PV Array(s)

Total PV footprint area: 4,100,740 m^2

Name: PV array 1
Axis tracking: Fixed (no rotation)
Tilt: 10.0 deg
Orientation: 180.0 deg
Footprint area: 4,100,740 m^2
Rated power: -
Panel material: Light textured glass with AR coating
Vary reflectivity with sun position? Yes
Correlate slope error with surface type? Yes
Slope error: 9.16 mrad

Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	m	m	m
1	51.796401	0.524180	55.67	3.00	58.67
2	51.797383	0.522893	56.93	3.00	59.93
3	51.797489	0.522464	57.69	3.00	60.69
4	51.797277	0.522163	57.37	3.00	60.37
5	51.798683	0.521563	59.22	3.00	62.22
6	51.799957	0.521305	59.70	3.00	62.70
7	51.799771	0.520661	59.50	3.00	62.50
8	51.800408	0.520404	59.53	3.00	62.53
9	51.801098	0.520146	59.33	3.00	62.33
10	51.801337	0.520833	58.40	3.00	61.40
11	51.801656	0.521477	58.40	3.00	61.40
12	51.802319	0.521477	58.33	3.00	61.33
13	51.802770	0.521348	58.22	3.00	61.22
14	51.802929	0.522721	57.30	3.00	60.30
15	51.803195	0.522464	56.59	3.00	59.59
16	51.803341	0.520683	57.85	3.00	60.85
17	51.804814	0.520661	57.51	3.00	60.51
18	51.804814	0.521262	57.61	3.00	60.61
19	51.804336	0.524567	57.35	3.00	60.35
20	51.805066	0.524953	56.64	3.00	59.64
21	51.805517	0.524910	55.81	3.00	58.81
22	51.805902	0.525060	55.55	3.00	58.55
23	51.806154	0.524631	55.63	3.00	58.63
24	51.806791	0.524545	54.59	3.00	57.59
25	51.806976	0.524760	53.85	3.00	56.85
26	51.806817	0.525790	53.07	3.00	56.07
27	51.807374	0.525961	51.75	3.00	54.75
28	51.808131	0.526026	48.92	3.00	51.92
29	51.808635	0.526069	47.06	3.00	50.06
30	51.809378	0.526562	43.40	3.00	46.40
31	51.809232	0.527528	43.20	3.00	46.20
32	51.808383	0.528107	44.34	3.00	47.34
33	51.808356	0.528386	44.51	3.00	47.51
34	51.809510	0.528858	39.22	3.00	42.22
35	51.809470	0.531390	39.83	3.00	42.83
36	51.809139	0.532592	39.95	3.00	42.95
37	51.808781	0.533386	45.14	3.00	48.14
38	51.808157	0.534480	47.48	3.00	50.48
39	51.807976	0.535977	47.86	3.00	50.86
40	51.807856	0.536750	47.77	3.00	50.77
41	51.807498	0.537951	46.46	3.00	49.46
42	51.804619	0.535720	54.38	3.00	57.38
43	51.804234	0.537629	52.43	3.00	55.43
44	51.803836	0.538574	53.36	3.00	56.36
45	51.803345	0.539368	51.70	3.00	54.70
46	51.802284	0.540827	53.00	3.00	56.00
47	51.801810	0.541505	53.85	3.00	56.85
48	51.801544	0.541333	53.77	3.00	56.77
49	51.798625	0.542835	53.73	3.00	56.73
50	51.799050	0.544638	52.72	3.00	55.72
51	51.799899	0.546483	50.75	3.00	53.75
52	51.798824	0.548522	50.16	3.00	53.16
53	51.797471	0.545818	51.82	3.00	54.82
54	51.798055	0.544874	51.90	3.00	54.90
55	51.798121	0.543994	52.77	3.00	55.77
56	51.797351	0.544273	53.01	3.00	56.01
57	51.797165	0.543908	51.74	3.00	54.74
58	51.795952	0.545603	48.45	3.00	51.45
59	51.796768	0.547516	50.46	3.00	53.46
60	51.796145	0.548438	47.01	3.00	50.01
61	51.796808	0.550820	45.69	3.00	48.69

62	51.796078	0.552000	48.33	3.00	51.33
63	51.795335	0.553867	46.63	3.00	49.63
64	51.794977	0.555841	44.78	3.00	47.78
65	51.793955	0.555090	45.53	3.00	48.53
66	51.793053	0.552923	45.78	3.00	48.78
67	51.792562	0.551464	46.53	3.00	49.53
68	51.790020	0.546711	50.66	3.00	53.66
69	51.791755	0.544093	51.82	3.00	54.82
70	51.789618	0.540617	55.94	3.00	58.94
71	51.789220	0.541347	55.54	3.00	58.54
72	51.788861	0.541712	54.61	3.00	57.61
73	51.788569	0.542227	54.21	3.00	57.21
74	51.788822	0.542742	54.03	3.00	57.03
75	51.785406	0.548621	51.37	3.00	54.37
76	51.785220	0.549050	51.14	3.00	54.14
77	51.784835	0.549479	51.69	3.00	54.69
78	51.784012	0.548514	49.80	3.00	52.80
79	51.783295	0.549072	48.95	3.00	51.95
80	51.783269	0.550659	50.00	3.00	53.00
81	51.785247	0.553170	49.93	3.00	52.93
82	51.785233	0.553513	49.42	3.00	52.42
83	51.784556	0.555187	47.27	3.00	50.27
84	51.784530	0.556367	46.38	3.00	49.38
85	51.784995	0.559500	46.91	3.00	49.91
86	51.784437	0.562139	47.64	3.00	50.64
87	51.781636	0.560744	42.41	3.00	45.41
88	51.780202	0.563319	38.75	3.00	41.75
89	51.778623	0.562912	41.36	3.00	44.36
90	51.778038	0.558921	43.48	3.00	46.48
91	51.776963	0.555874	44.20	3.00	47.20
92	51.776246	0.554972	44.18	3.00	47.18
93	51.775702	0.553470	43.89	3.00	46.89
94	51.776432	0.552655	42.48	3.00	45.48
95	51.776472	0.552204	42.35	3.00	45.35
96	51.776153	0.552033	44.14	3.00	47.14
97	51.777560	0.550702	44.38	3.00	47.38
98	51.778636	0.550638	44.47	3.00	47.47
99	51.777760	0.548771	45.50	3.00	48.50
100	51.778662	0.547810	46.20	3.00	49.20
101	51.778384	0.547188	46.30	3.00	49.30
102	51.779711	0.545321	47.26	3.00	50.26
103	51.779379	0.544806	47.32	3.00	50.32
104	51.779260	0.543304	45.51	3.00	48.51
105	51.780455	0.543089	46.29	3.00	49.29
106	51.780707	0.542832	46.96	3.00	49.96
107	51.780840	0.542102	46.40	3.00	49.40
108	51.780853	0.541716	46.74	3.00	49.74
109	51.781357	0.541244	48.33	3.00	51.33
110	51.781742	0.542596	49.02	3.00	52.02
111	51.782338	0.542133	49.06	3.00	52.06
112	51.782511	0.542756	50.33	3.00	53.33
113	51.783746	0.541812	51.03	3.00	54.03
114	51.783918	0.540417	50.21	3.00	53.21
115	51.784131	0.540267	50.10	3.00	53.10
116	51.783971	0.539558	50.39	3.00	53.39
117	51.784675	0.538636	50.08	3.00	53.08
118	51.786082	0.536361	53.70	3.00	56.70
119	51.786493	0.536018	51.51	3.00	54.51
120	51.786334	0.534516	51.14	3.00	54.14
121	51.786002	0.533400	49.52	3.00	52.52
122	51.785896	0.532542	48.20	3.00	51.20
123	51.786268	0.531104	47.33	3.00	50.33
124	51.786719	0.530031	47.75	3.00	50.75
125	51.787794	0.529066	48.91	3.00	51.91
126	51.788615	0.530890	52.09	3.00	55.09

127	51.789810	0.531083	54.39	3.00	57.39
128	51.790327	0.532671	55.73	3.00	58.73
129	51.791602	0.534602	56.74	3.00	59.74
130	51.791602	0.535181	56.79	3.00	59.79
131	51.792172	0.536404	56.90	3.00	59.90
132	51.792771	0.534924	56.98	3.00	59.98
133	51.792864	0.534537	57.39	3.00	60.39
134	51.793222	0.534130	57.11	3.00	60.11
135	51.793448	0.533615	57.21	3.00	60.21
136	51.795094	0.531383	58.82	3.00	61.82
137	51.794656	0.530718	58.25	3.00	61.25
138	51.793873	0.530117	58.23	3.00	61.23
139	51.793501	0.529752	57.72	3.00	60.72
140	51.793302	0.529302	57.43	3.00	60.43
141	51.795346	0.527049	58.54	3.00	61.54
142	51.795717	0.527714	58.61	3.00	61.61
143	51.796408	0.528551	59.10	3.00	62.10
144	51.796633	0.529130	58.68	3.00	61.68
145	51.796461	0.529645	58.58	3.00	61.58
146	51.795996	0.530246	58.92	3.00	61.92
147	51.796567	0.531726	58.02	3.00	61.02
148	51.798584	0.529216	56.85	3.00	59.85
149	51.798531	0.527735	56.62	3.00	59.62
150	51.797602	0.526577	56.04	3.00	59.04
151	51.797018	0.525439	56.13	3.00	59.13

2-Mile Flight Path Receptor(s)

Name: Runway 06 - Earls Colne
Description:
Threshold height : 15 m
Direction: 60.3 deg
Glide slope: 3.0 deg
Pilot view restricted? Yes
Vertical view restriction: 30.0 deg
Azimuthal view restriction: 50.0 deg

Point	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	m	m	m
Threshold	51.912692	0.677889	68.98	15.24	84.22
2-mile point	51.898367	0.637128	66.84	186.07	252.90

Name: Runway 09 - Andrewsfield Airfield
Description:
Threshold height : 15 m
Direction: 85.1 deg
Glide slope: 3.0 deg
Pilot view restricted? Yes
Vertical view restriction: 30.0 deg
Azimuthal view restriction: 50.0 deg

Point	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	m	m	m
Threshold	51.894757	0.445050	83.18	15.24	98.42
2-mile point	51.892292	0.398314	81.19	185.92	267.11

Name: Runway 24 - Earls Colne
Description:
Threshold height : 15 m
Direction: 240.3 deg
Glide slope: 3.0 deg
Pilot view restricted? Yes
Vertical view restriction: 30.0 deg
Azimuthal view restriction: 50.0 deg

Point	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	m	m	m
Threshold	51.916054	0.687471	68.04	15.24	83.28
2-mile point	51.930379	0.728235	50.80	201.16	251.97

Name: Runway 27 - Andrewsfield
Description:
Threshold height : 15 m
Direction: 265.1 deg
Glide slope: 3.0 deg
Pilot view restricted? Yes
Vertical view restriction: 30.0 deg
Azimuthal view restriction: 50.0 deg

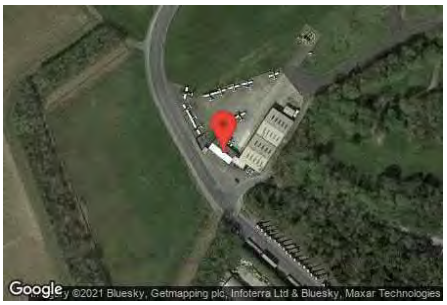
Point	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	m	m	m
Threshold	51.895287	0.455157	84.85	15.24	100.09
2-mile point	51.897756	0.501893	71.37	197.40	268.77

Discrete Observation Receptors

Number	Latitude	Longitude	Ground elevation	Height above ground	Total Elevation
	deg	deg	m	m	m
1-ATCT	51.895916	0.451670	88.97	5.00	93.97
2-ATCT	51.911113	0.675822	69.61	5.00	74.61

1-ATCT map image

2-ATCT map image



Summary of PV Glare Analysis

PV configuration and total predicted glare

PV Name	Tilt	Orientation	"Green" Glare	"Yellow" Glare	Energy Produced	Data File
	deg	deg	min	min	kWh	
PV array 1	10.0	180.0	0	0	-	

PV & Receptor Analysis Results

Results for each PV array and receptor

PV array 1 no glare found

Component	Green glare (min)	Yellow glare (min)
FP: Runway 06 - Earls Colne	0	0
FP: Runway 09 - Andrewsfield Airfield	0	0
FP: Runway 24 - Earls Colne	0	0
FP: Runway 27 - Andrewsfield	0	0
OP: 1-ATCT	0	0
OP: 2-ATCT	0	0

No glare found

Assumptions

- Times associated with glare are denoted in Standard time. For Daylight Savings, add one hour.
- Glare analyses do not account for physical obstructions between reflectors and receptors. This includes buildings, tree cover and geographic obstructions
- Detailed system geometry is not rigorously simulated.
- The glare hazard determination relies on several approximations including observer eye characteristics, angle of view, and typical blink response time. Actual values and results may vary.
- The system output calculation is a DNI-based approximation that assumes clear, sunny skies year-round. It should not be used in place of more rigorous modeling methods.
- Several V1 calculations utilize the PV array centroid, rather than the actual glare spot location, due to algorithm limitations. This may affect results for larg PV footprints. Additional analyses of array sub-sections can provide additional information on expected glare.
- The subtended source angle (glare spot size) is constrained by the PV array footprint size. Partitioning large arrays into smaller sections will reduce the maximum potential subtended angle, potentially impacting results if actual glare spots are larger than the sub-array size. Additional analyses of the combined area of adjacent sub-arrays can provide more information on potential glare hazards. (See previous point on related limitations.)
- Hazard zone boundaries shown in the Glare Hazard plot are an approximation and visual aid. Actual ocular impact outcomes encompass a continuous, nc discrete, spectrum.
- Glare locations displayed on receptor plots are approximate. Actual glare-spot locations may differ.
- Glare vector plots are simplified representations of analysis data. Actual glare emanations and results may differ.
- Refer to the **Help page** for detailed assumptions and limitations not listed here.

ForgeSolar

Longfield Solar Farm

Longfield Solar Farm Aviation 30 Deg

Created Aug. 12, 2021
Updated Aug. 12, 2021
Time-step 1 minute
Timezone offset UTC0
Site ID 57291.10147

Project type Advanced
Project status: active
Category 100 MW to 1 GW

Misc. Analysis Settings

DNI: **varies (1,000.0 W/m^2 peak)**
Ocular transmission coefficient: **0.5**
Pupil diameter: **0.002 m**
Eye focal length: **0.017 m**
Sun subtended angle: **9.3 mrad**

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

Summary of Results No glare predicted!

PV Name	Tilt	Orientation	"Green" Glare	"Yellow" Glare	Energy Produced
	deg	deg	min	min	kWh
PV array 1	30.0	180.0	0	0	-

Component Data

PV Array(s)

Total PV footprint area: 4,100,740 m^2

Name: PV array 1
Axis tracking: Fixed (no rotation)
Tilt: 30.0 deg
Orientation: 180.0 deg
Footprint area: 4,100,740 m^2
Rated power: -
Panel material: Light textured glass with AR coating
Vary reflectivity with sun position? Yes
Correlate slope error with surface type? Yes
Slope error: 9.16 mrad

Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	m	m	m
1	51.796401	0.524180	55.67	3.00	58.67
2	51.797383	0.522893	56.93	3.00	59.93
3	51.797489	0.522464	57.69	3.00	60.69
4	51.797277	0.522163	57.37	3.00	60.37
5	51.798683	0.521563	59.22	3.00	62.22
6	51.799957	0.521305	59.70	3.00	62.70
7	51.799771	0.520661	59.50	3.00	62.50
8	51.800408	0.520404	59.53	3.00	62.53
9	51.801098	0.520146	59.33	3.00	62.33
10	51.801337	0.520833	58.40	3.00	61.40
11	51.801656	0.521477	58.40	3.00	61.40
12	51.802319	0.521477	58.33	3.00	61.33
13	51.802770	0.521348	58.22	3.00	61.22
14	51.802929	0.522721	57.30	3.00	60.30
15	51.803195	0.522464	56.59	3.00	59.59
16	51.803341	0.520683	57.85	3.00	60.85
17	51.804814	0.520661	57.51	3.00	60.51
18	51.804814	0.521262	57.61	3.00	60.61
19	51.804336	0.524567	57.35	3.00	60.35
20	51.805066	0.524953	56.64	3.00	59.64
21	51.805517	0.524910	55.81	3.00	58.81
22	51.805902	0.525060	55.55	3.00	58.55
23	51.806154	0.524631	55.63	3.00	58.63
24	51.806791	0.524545	54.59	3.00	57.59
25	51.806976	0.524760	53.85	3.00	56.85
26	51.806817	0.525790	53.07	3.00	56.07
27	51.807374	0.525961	51.75	3.00	54.75
28	51.808131	0.526026	48.92	3.00	51.92
29	51.808635	0.526069	47.06	3.00	50.06
30	51.809378	0.526562	43.40	3.00	46.40
31	51.809232	0.527528	43.20	3.00	46.20
32	51.808383	0.528107	44.34	3.00	47.34
33	51.808356	0.528386	44.51	3.00	47.51
34	51.809510	0.528858	39.22	3.00	42.22
35	51.809470	0.531390	39.83	3.00	42.83
36	51.809139	0.532592	39.95	3.00	42.95
37	51.808781	0.533386	45.14	3.00	48.14
38	51.808157	0.534480	47.48	3.00	50.48
39	51.807976	0.535977	47.86	3.00	50.86
40	51.807856	0.536750	47.77	3.00	50.77
41	51.807498	0.537951	46.46	3.00	49.46
42	51.804619	0.535720	54.38	3.00	57.38
43	51.804234	0.537629	52.43	3.00	55.43
44	51.803836	0.538574	53.36	3.00	56.36
45	51.803345	0.539368	51.70	3.00	54.70
46	51.802284	0.540827	53.00	3.00	56.00
47	51.801810	0.541505	53.85	3.00	56.85
48	51.801544	0.541333	53.77	3.00	56.77
49	51.798625	0.542835	53.73	3.00	56.73
50	51.799050	0.544638	52.72	3.00	55.72
51	51.799899	0.546483	50.75	3.00	53.75
52	51.798824	0.548522	50.16	3.00	53.16
53	51.797471	0.545818	51.82	3.00	54.82
54	51.798055	0.544874	51.90	3.00	54.90
55	51.798121	0.543994	52.77	3.00	55.77
56	51.797351	0.544273	53.01	3.00	56.01
57	51.797165	0.543908	51.74	3.00	54.74
58	51.795952	0.545603	48.45	3.00	51.45
59	51.796768	0.547516	50.46	3.00	53.46
60	51.796145	0.548438	47.01	3.00	50.01
61	51.796808	0.550820	45.69	3.00	48.69

62	51.796078	0.552000	48.33	3.00	51.33
63	51.795335	0.553867	46.63	3.00	49.63
64	51.794977	0.555841	44.78	3.00	47.78
65	51.793955	0.555090	45.53	3.00	48.53
66	51.793053	0.552923	45.78	3.00	48.78
67	51.792562	0.551464	46.53	3.00	49.53
68	51.790020	0.546711	50.66	3.00	53.66
69	51.791755	0.544093	51.82	3.00	54.82
70	51.789618	0.540617	55.94	3.00	58.94
71	51.789220	0.541347	55.54	3.00	58.54
72	51.788861	0.541712	54.61	3.00	57.61
73	51.788569	0.542227	54.21	3.00	57.21
74	51.788822	0.542742	54.03	3.00	57.03
75	51.785406	0.548621	51.37	3.00	54.37
76	51.785220	0.549050	51.14	3.00	54.14
77	51.784835	0.549479	51.69	3.00	54.69
78	51.784012	0.548514	49.80	3.00	52.80
79	51.783295	0.549072	48.95	3.00	51.95
80	51.783269	0.550659	50.00	3.00	53.00
81	51.785247	0.553170	49.93	3.00	52.93
82	51.785233	0.553513	49.42	3.00	52.42
83	51.784556	0.555187	47.27	3.00	50.27
84	51.784530	0.556367	46.38	3.00	49.38
85	51.784995	0.559500	46.91	3.00	49.91
86	51.784437	0.562139	47.64	3.00	50.64
87	51.781636	0.560744	42.41	3.00	45.41
88	51.780202	0.563319	38.75	3.00	41.75
89	51.778623	0.562912	41.36	3.00	44.36
90	51.778038	0.558921	43.48	3.00	46.48
91	51.776963	0.555874	44.20	3.00	47.20
92	51.776246	0.554972	44.18	3.00	47.18
93	51.775702	0.553470	43.89	3.00	46.89
94	51.776432	0.552655	42.48	3.00	45.48
95	51.776472	0.552204	42.35	3.00	45.35
96	51.776153	0.552033	44.14	3.00	47.14
97	51.777560	0.550702	44.38	3.00	47.38
98	51.778636	0.550638	44.47	3.00	47.47
99	51.777760	0.548771	45.50	3.00	48.50
100	51.778662	0.547810	46.20	3.00	49.20
101	51.778384	0.547188	46.30	3.00	49.30
102	51.779711	0.545321	47.26	3.00	50.26
103	51.779379	0.544806	47.32	3.00	50.32
104	51.779260	0.543304	45.51	3.00	48.51
105	51.780455	0.543089	46.29	3.00	49.29
106	51.780707	0.542832	46.96	3.00	49.96
107	51.780840	0.542102	46.40	3.00	49.40
108	51.780853	0.541716	46.74	3.00	49.74
109	51.781357	0.541244	48.33	3.00	51.33
110	51.781742	0.542596	49.02	3.00	52.02
111	51.782338	0.542133	49.06	3.00	52.06
112	51.782511	0.542756	50.33	3.00	53.33
113	51.783746	0.541812	51.03	3.00	54.03
114	51.783918	0.540417	50.21	3.00	53.21
115	51.784131	0.540267	50.10	3.00	53.10
116	51.783971	0.539558	50.39	3.00	53.39
117	51.784675	0.538636	50.08	3.00	53.08
118	51.786082	0.536361	53.70	3.00	56.70
119	51.786493	0.536018	51.51	3.00	54.51
120	51.786334	0.534516	51.14	3.00	54.14
121	51.786002	0.533400	49.52	3.00	52.52
122	51.785896	0.532542	48.20	3.00	51.20
123	51.786268	0.531104	47.33	3.00	50.33
124	51.786719	0.530031	47.75	3.00	50.75
125	51.787794	0.529066	48.91	3.00	51.91
126	51.788615	0.530890	52.09	3.00	55.09

127	51.789810	0.531083	54.39	3.00	57.39
128	51.790327	0.532671	55.73	3.00	58.73
129	51.791602	0.534602	56.74	3.00	59.74
130	51.791602	0.535181	56.79	3.00	59.79
131	51.792172	0.536404	56.90	3.00	59.90
132	51.792771	0.534924	56.98	3.00	59.98
133	51.792864	0.534537	57.39	3.00	60.39
134	51.793222	0.534130	57.11	3.00	60.11
135	51.793448	0.533615	57.21	3.00	60.21
136	51.795094	0.531383	58.82	3.00	61.82
137	51.794656	0.530718	58.25	3.00	61.25
138	51.793873	0.530117	58.23	3.00	61.23
139	51.793501	0.529752	57.72	3.00	60.72
140	51.793302	0.529302	57.43	3.00	60.43
141	51.795346	0.527049	58.54	3.00	61.54
142	51.795717	0.527714	58.61	3.00	61.61
143	51.796408	0.528551	59.10	3.00	62.10
144	51.796633	0.529130	58.68	3.00	61.68
145	51.796461	0.529645	58.58	3.00	61.58
146	51.795996	0.530246	58.92	3.00	61.92
147	51.796567	0.531726	58.02	3.00	61.02
148	51.798584	0.529216	56.85	3.00	59.85
149	51.798531	0.527735	56.62	3.00	59.62
150	51.797602	0.526577	56.04	3.00	59.04
151	51.797018	0.525439	56.13	3.00	59.13

2-Mile Flight Path Receptor(s)

Name: Runway 06 - Earls Colne
Description:
Threshold height : 15 m
Direction: 60.3 deg
Glide slope: 3.0 deg
Pilot view restricted? Yes
Vertical view restriction: 30.0 deg
Azimuthal view restriction: 50.0 deg

Point	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	m	m	m
Threshold	51.912692	0.677889	68.98	15.24	84.22
2-mile point	51.898367	0.637128	66.84	186.07	252.90

Name: Runway 09 - Andrewsfield Airfield
Description:
Threshold height : 15 m
Direction: 85.1 deg
Glide slope: 3.0 deg
Pilot view restricted? Yes
Vertical view restriction: 30.0 deg
Azimuthal view restriction: 50.0 deg

Point	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	m	m	m
Threshold	51.894757	0.445050	83.18	15.24	98.42
2-mile point	51.892292	0.398314	81.19	185.92	267.11

Name: Runway 24 - Earls Colne
Description:
Threshold height : 15 m
Direction: 240.3 deg
Glide slope: 3.0 deg
Pilot view restricted? Yes
Vertical view restriction: 30.0 deg
Azimuthal view restriction: 50.0 deg

Point	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	m	m	m
Threshold	51.916054	0.687471	68.04	15.24	83.28
2-mile point	51.930379	0.728235	50.80	201.16	251.97

Name: Runway 27 - Andrewsfield
Description:
Threshold height : 15 m
Direction: 265.1 deg
Glide slope: 3.0 deg
Pilot view restricted? Yes
Vertical view restriction: 30.0 deg
Azimuthal view restriction: 50.0 deg

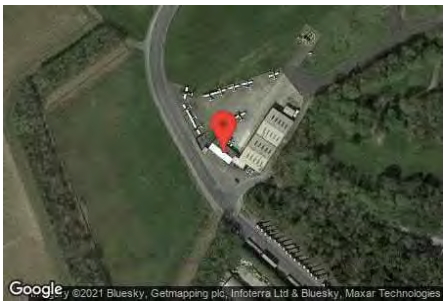
Point	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	m	m	m
Threshold	51.895287	0.455157	84.85	15.24	100.09
2-mile point	51.897756	0.501893	71.37	197.40	268.77

Discrete Observation Receptors

Number	Latitude	Longitude	Ground elevation	Height above ground	Total Elevation
	deg	deg	m	m	m
1-ATCT	51.895916	0.451670	88.97	5.00	93.97
2-ATCT	51.911113	0.675822	69.61	5.00	74.61

1-ATCT map image

2-ATCT map image



Summary of PV Glare Analysis

PV configuration and total predicted glare

PV Name	Tilt	Orientation	"Green" Glare	"Yellow" Glare	Energy Produced	Data File
	deg	deg	min	min	kWh	
PV array 1	30.0	180.0	0	0	-	

PV & Receptor Analysis Results

Results for each PV array and receptor

PV array 1 no glare found

Component	Green glare (min)	Yellow glare (min)
FP: Runway 06 - Earls Colne	0	0
FP: Runway 09 - Andrewsfield Airfield	0	0
FP: Runway 24 - Earls Colne	0	0
FP: Runway 27 - Andrewsfield	0	0
OP: 1-ATCT	0	0
OP: 2-ATCT	0	0

No glare found

Assumptions

- Times associated with glare are denoted in Standard time. For Daylight Savings, add one hour.
- Glare analyses do not account for physical obstructions between reflectors and receptors. This includes buildings, tree cover and geographic obstructions
- Detailed system geometry is not rigorously simulated.
- The glare hazard determination relies on several approximations including observer eye characteristics, angle of view, and typical blink response time. Actual values and results may vary.
- The system output calculation is a DNI-based approximation that assumes clear, sunny skies year-round. It should not be used in place of more rigorous modeling methods.
- Several V1 calculations utilize the PV array centroid, rather than the actual glare spot location, due to algorithm limitations. This may affect results for larg PV footprints. Additional analyses of array sub-sections can provide additional information on expected glare.
- The subtended source angle (glare spot size) is constrained by the PV array footprint size. Partitioning large arrays into smaller sections will reduce the maximum potential subtended angle, potentially impacting results if actual glare spots are larger than the sub-array size. Additional analyses of the combined area of adjacent sub-arrays can provide more information on potential glare hazards. (See previous point on related limitations.)
- Hazard zone boundaries shown in the Glare Hazard plot are an approximation and visual aid. Actual ocular impact outcomes encompass a continuous, nc discrete, spectrum.
- Glare locations displayed on receptor plots are approximate. Actual glare-spot locations may differ.
- Glare vector plots are simplified representations of analysis data. Actual glare emanations and results may differ.
- Refer to the **Help page** for detailed assumptions and limitations not listed here.

Appendix J: Visibility Assessment Evidence

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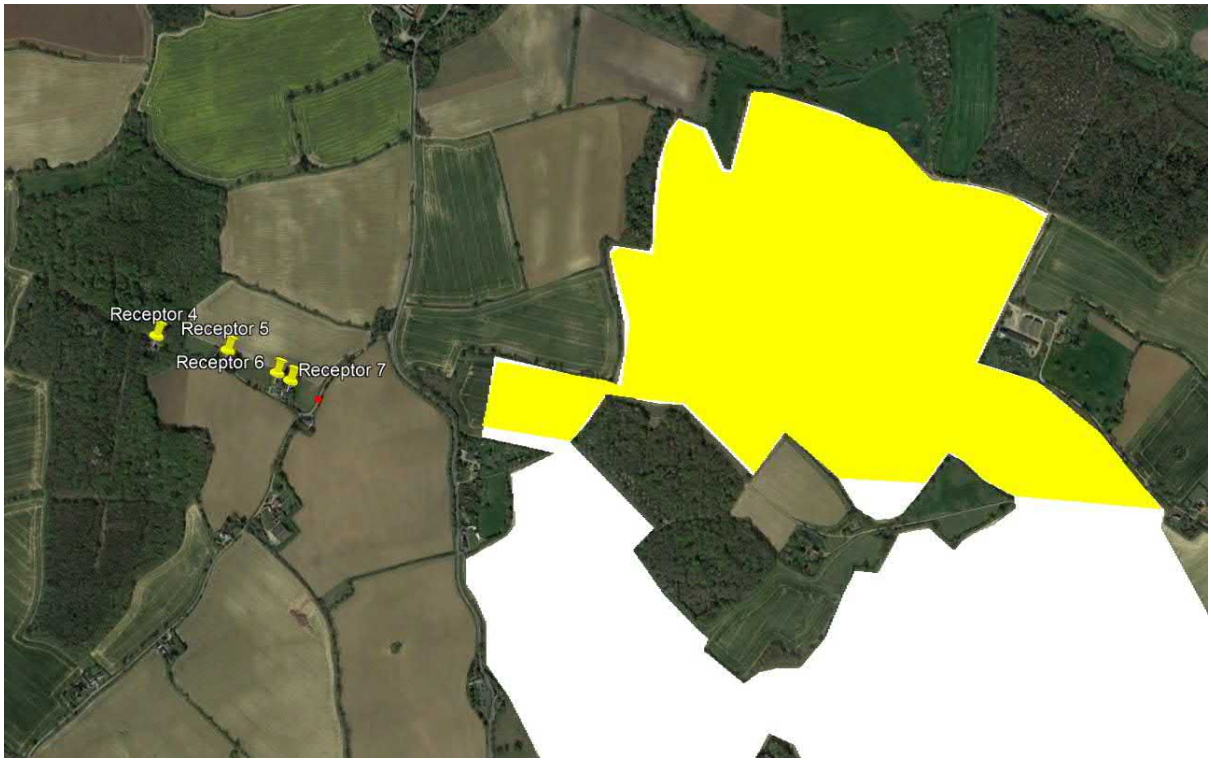
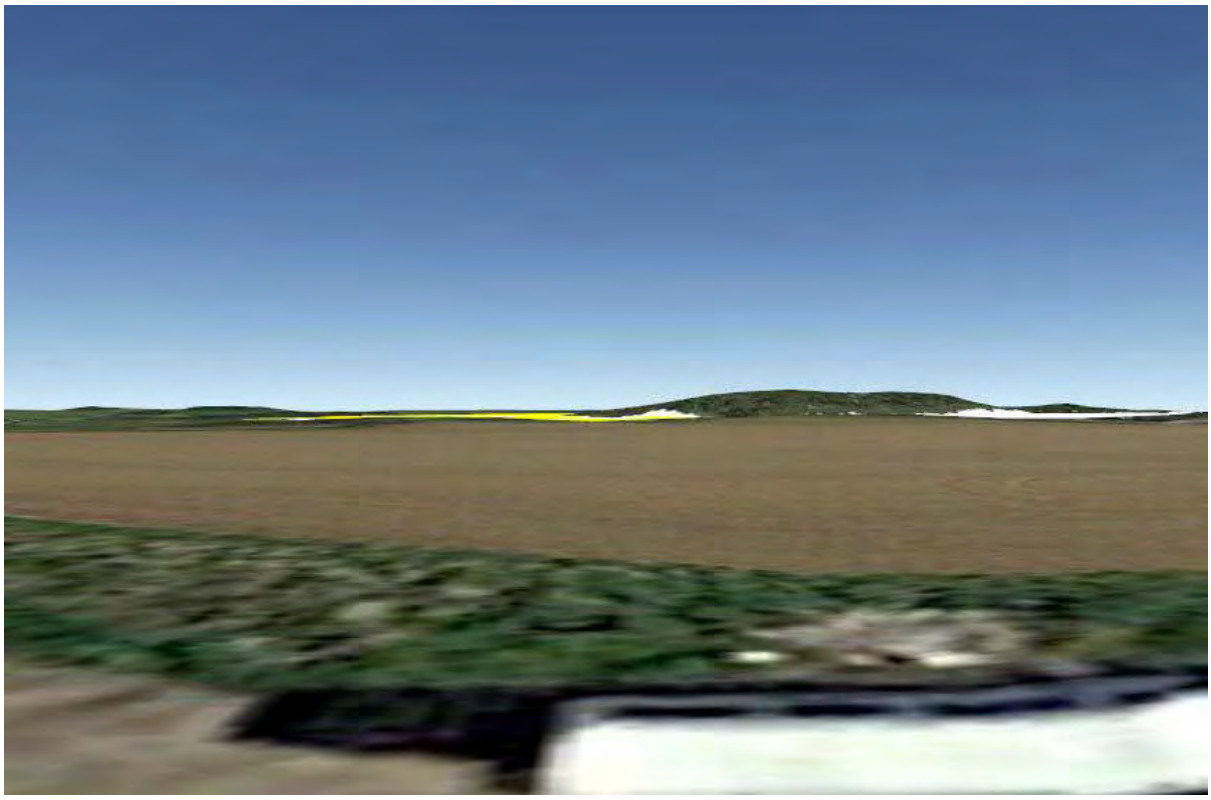
Residential Receptors

Receptors 4 – 7

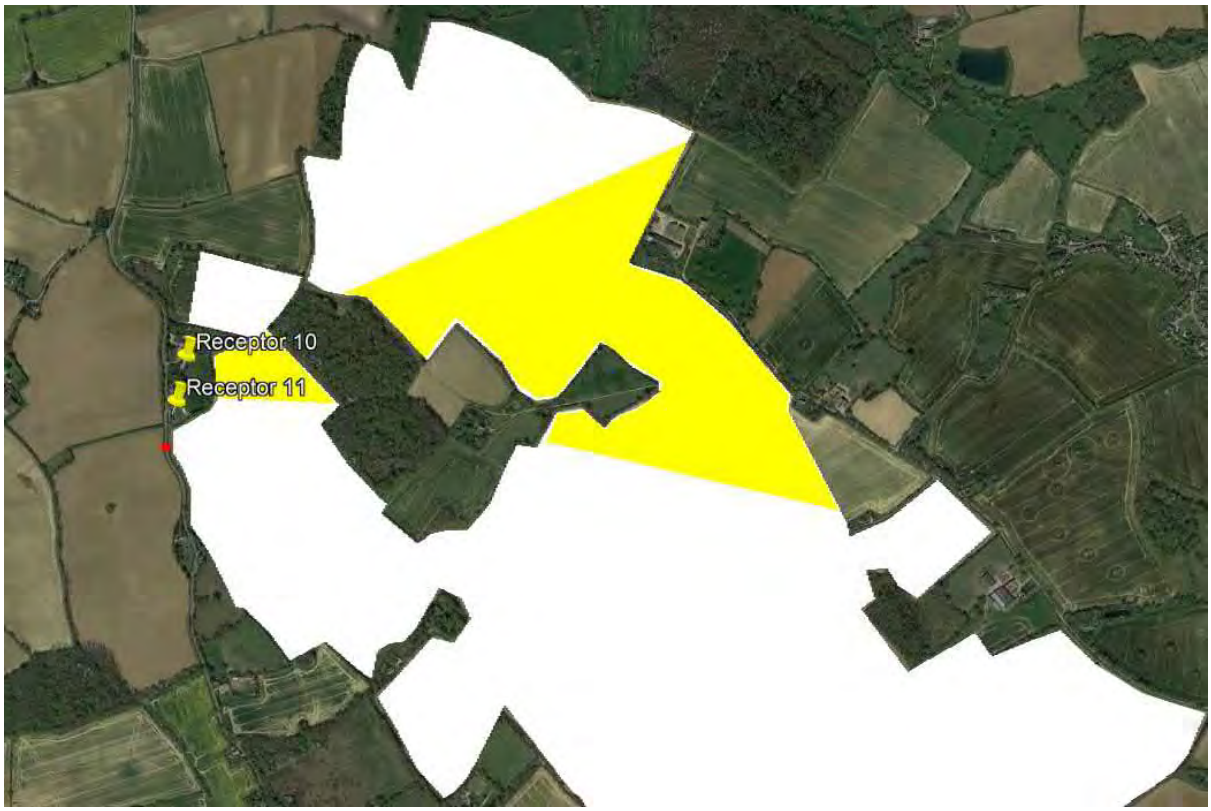


Receptor 8

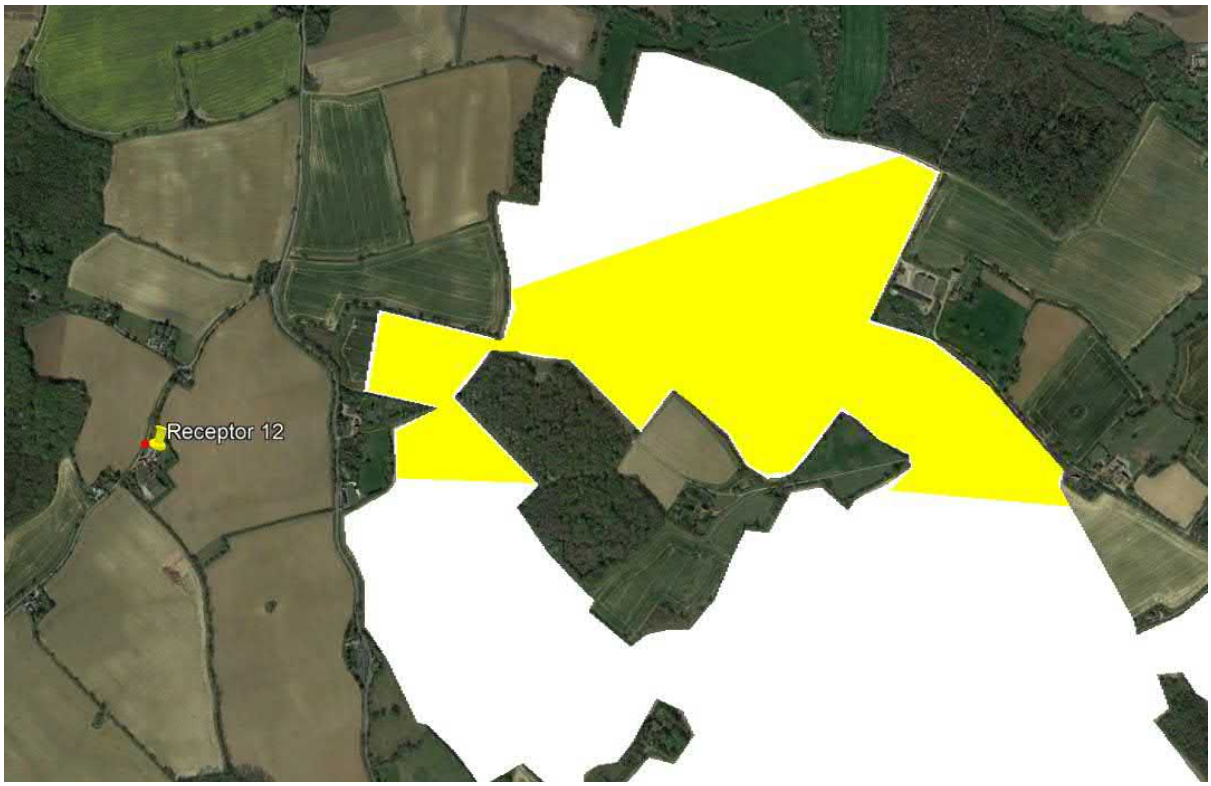


Receptor 9

Receptors 10 and 11



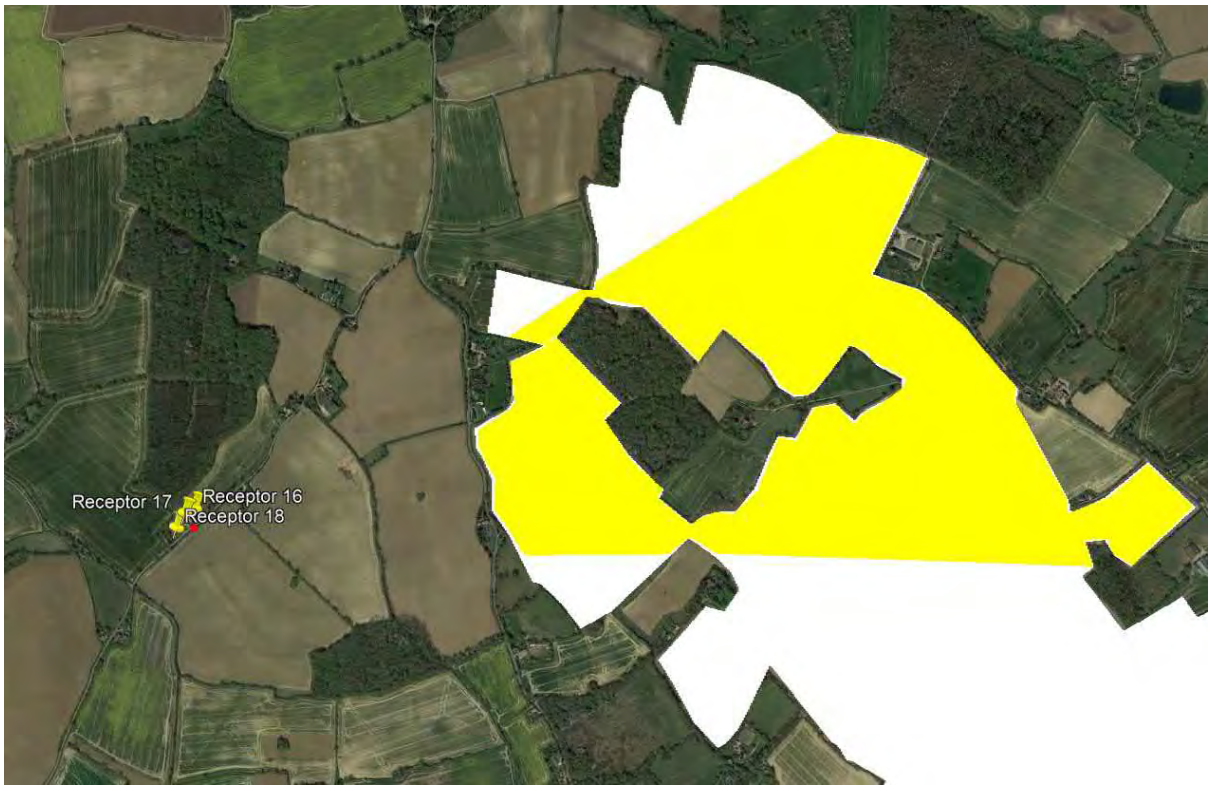
Receptor 12



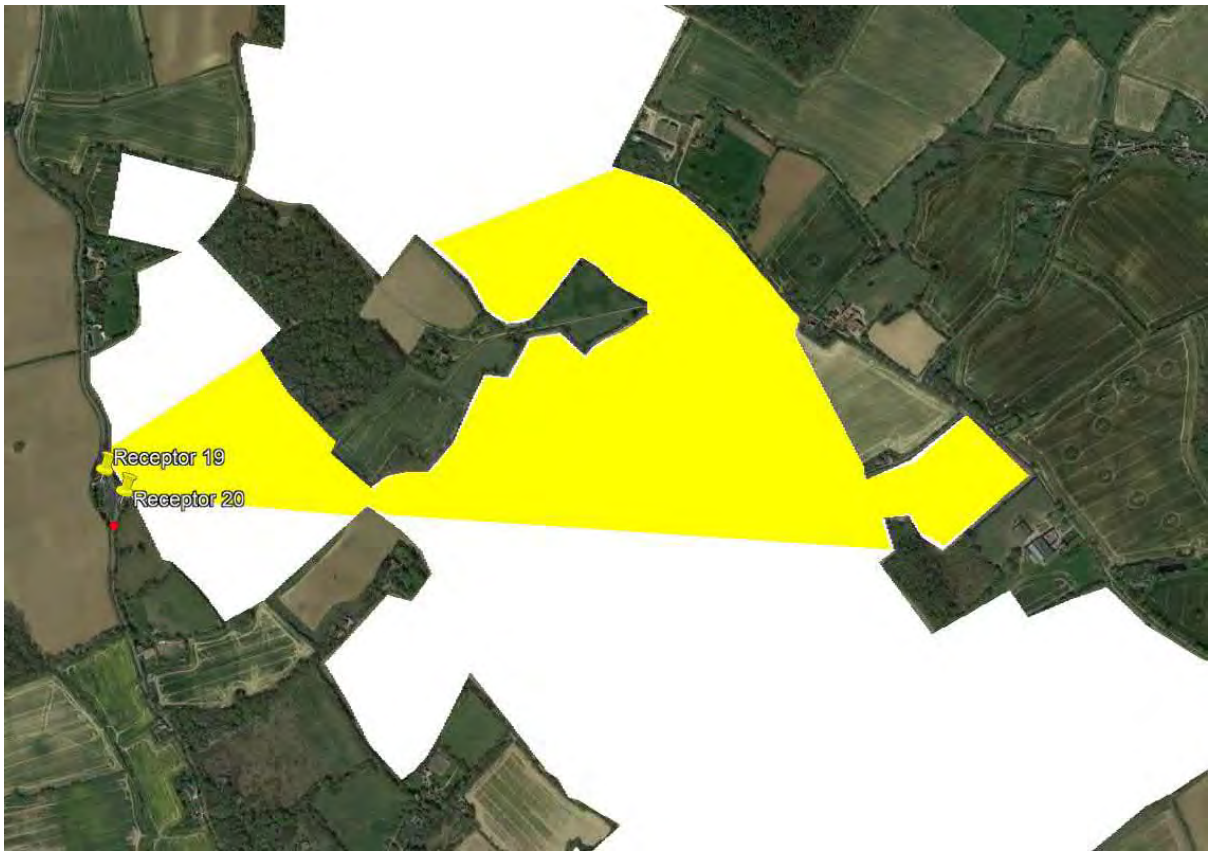
Receptors 13 and 14

Receptor 15

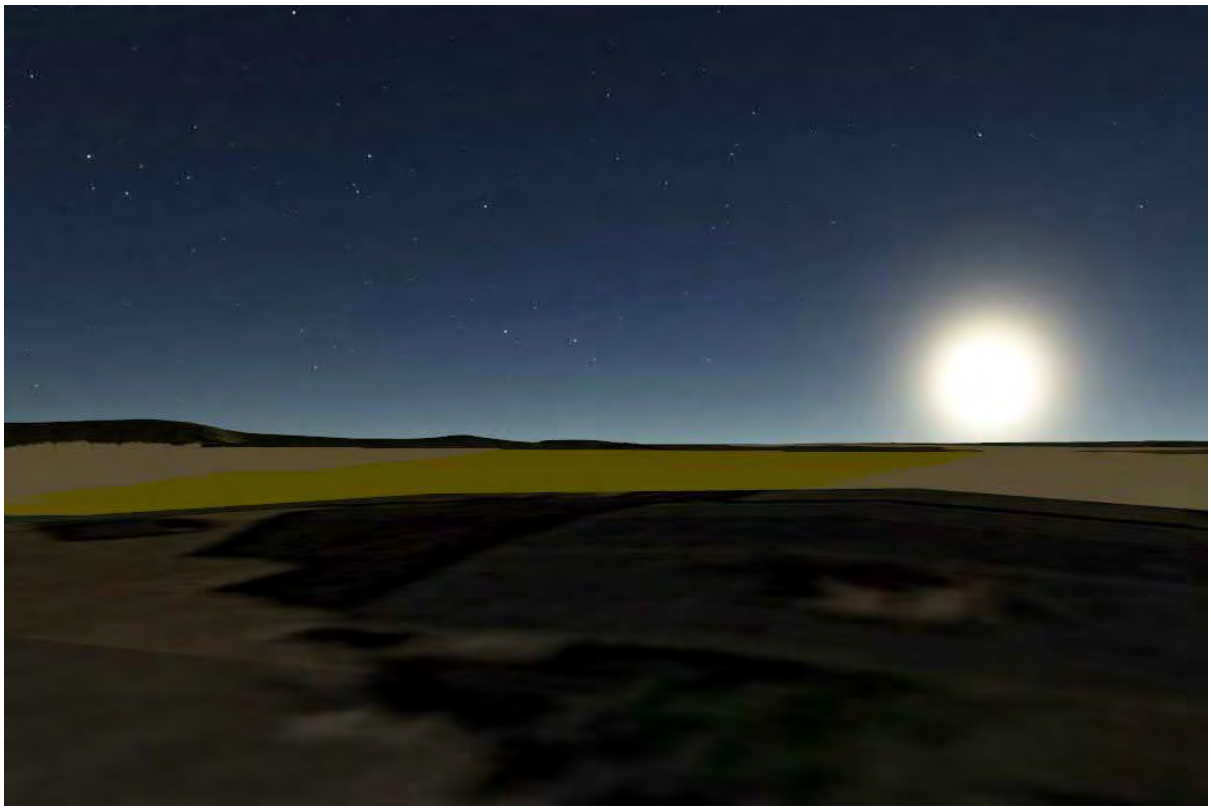
Receptors 16 - 18



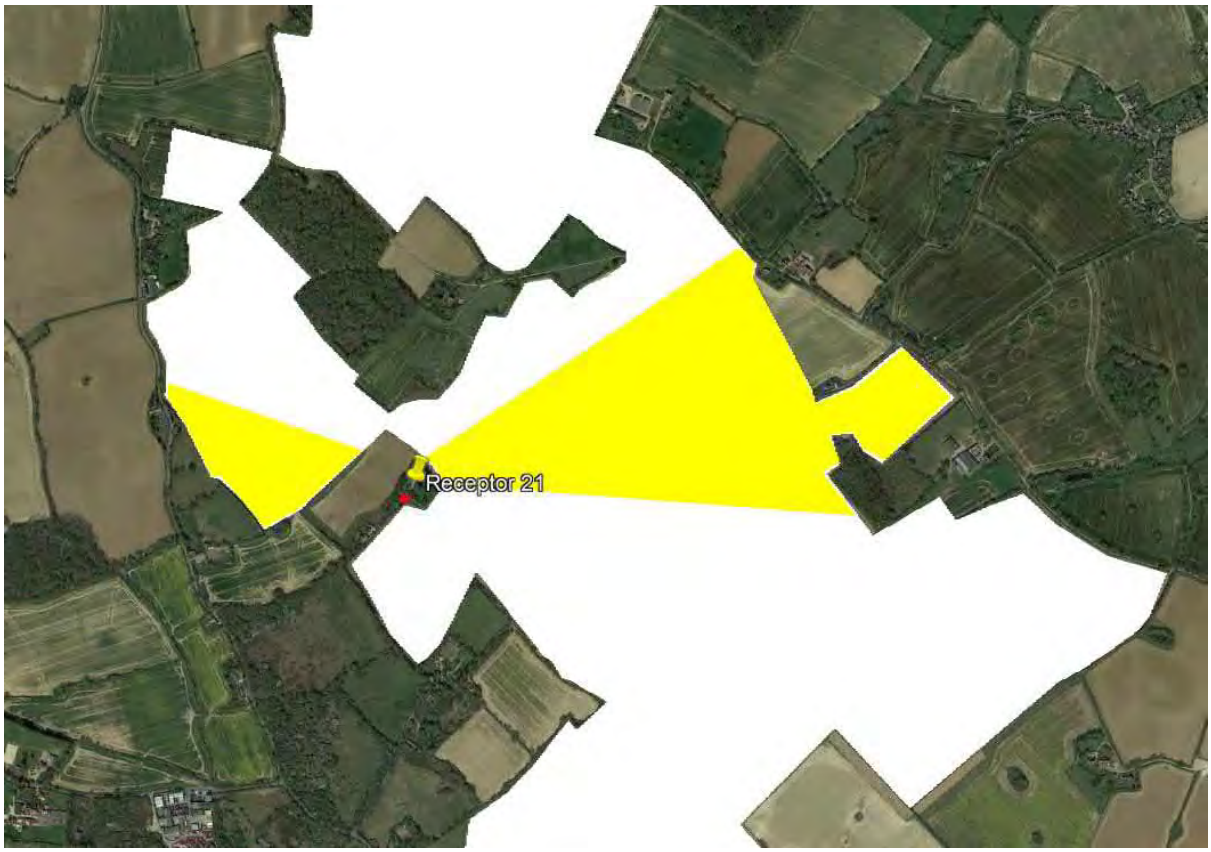
Receptors 19 – 20



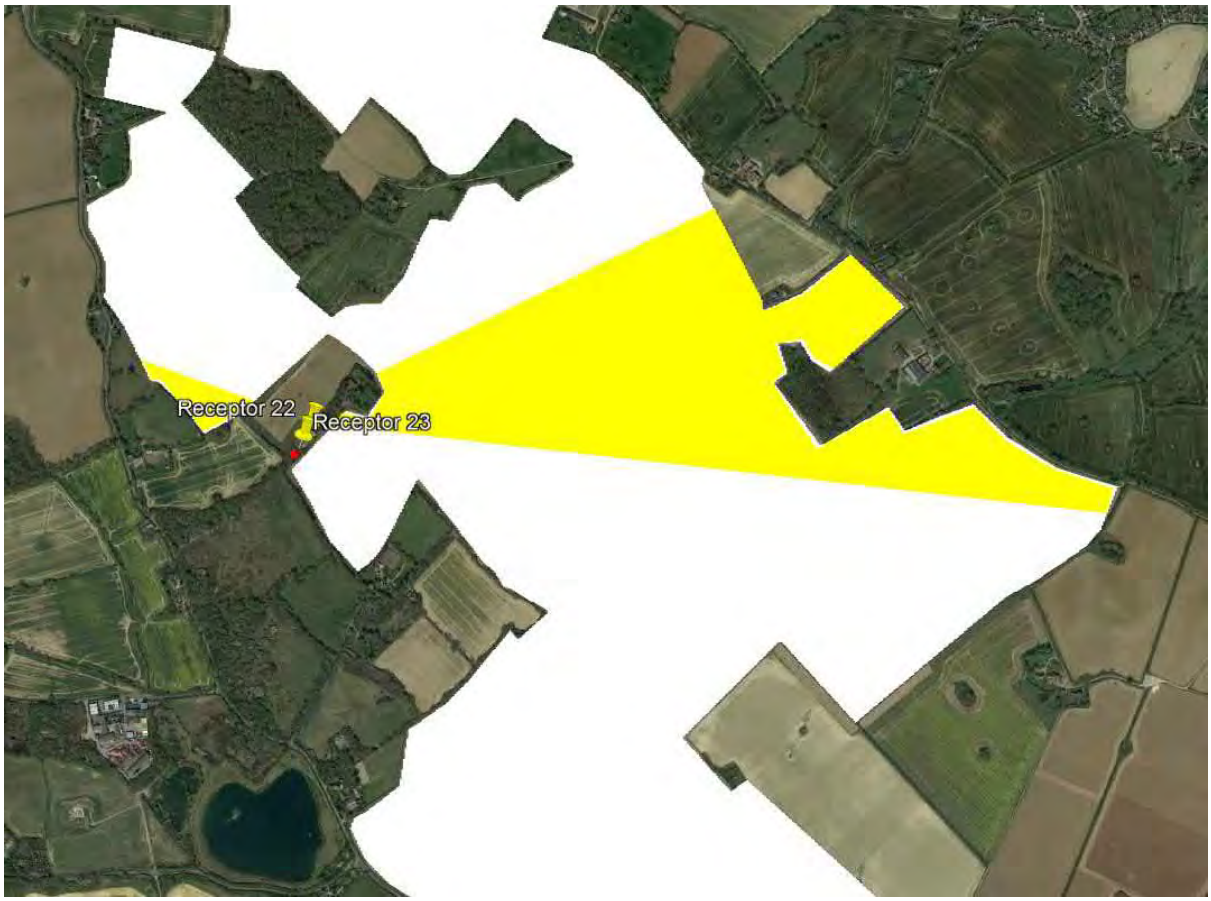
1st April 6:00am UTC



Receptor 21

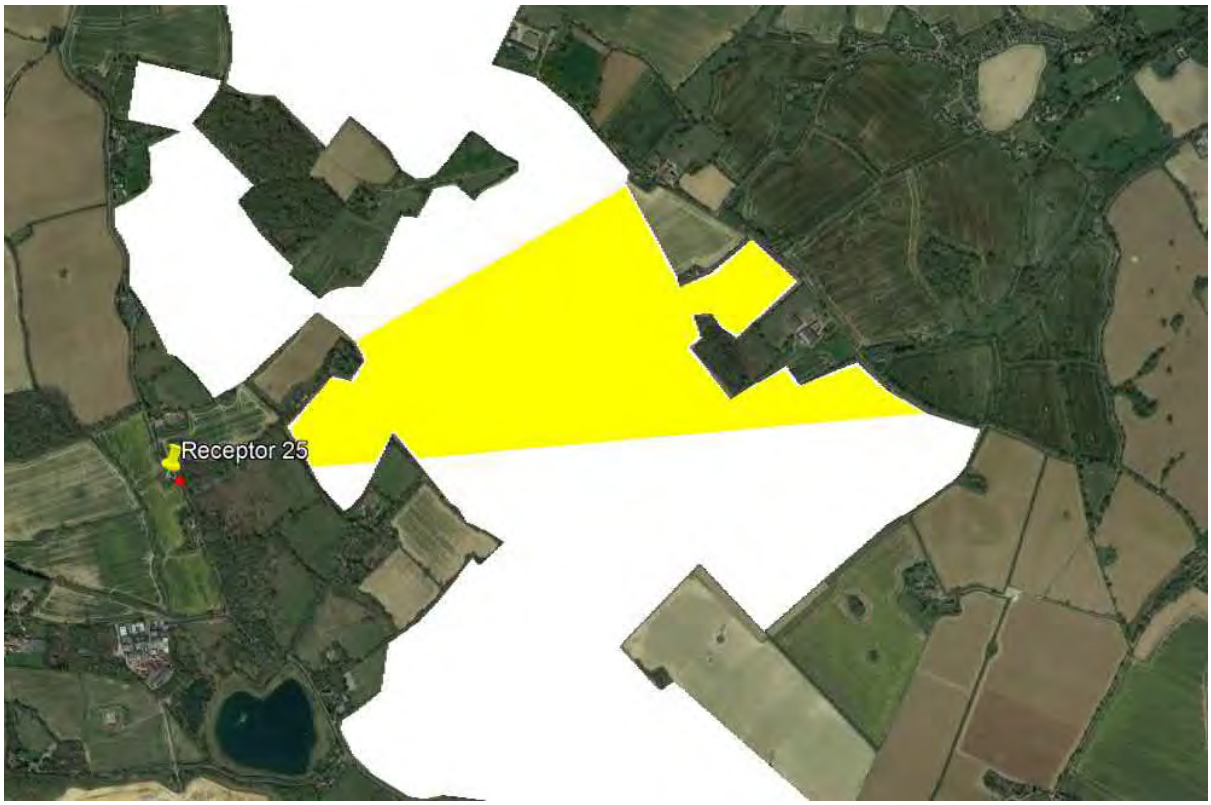


Receptors 22 - 23

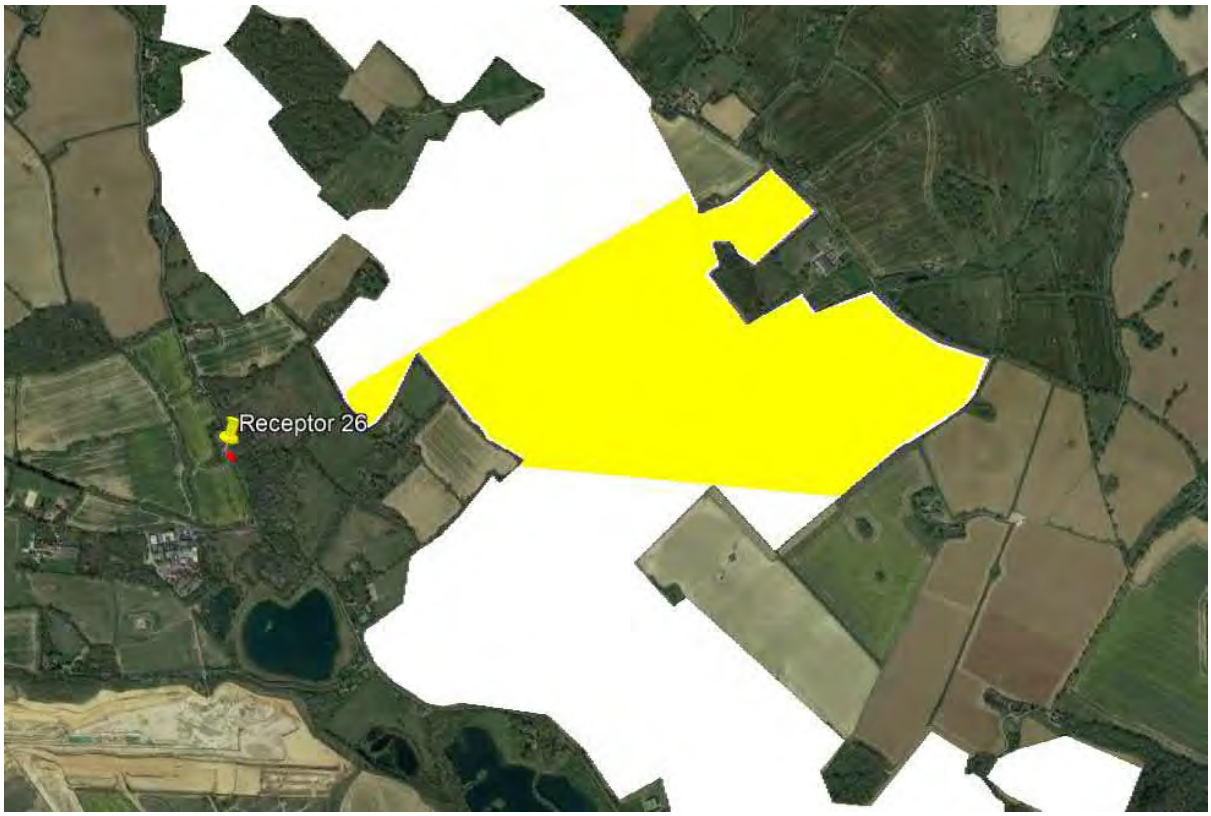


Receptor 24

Receptor 25

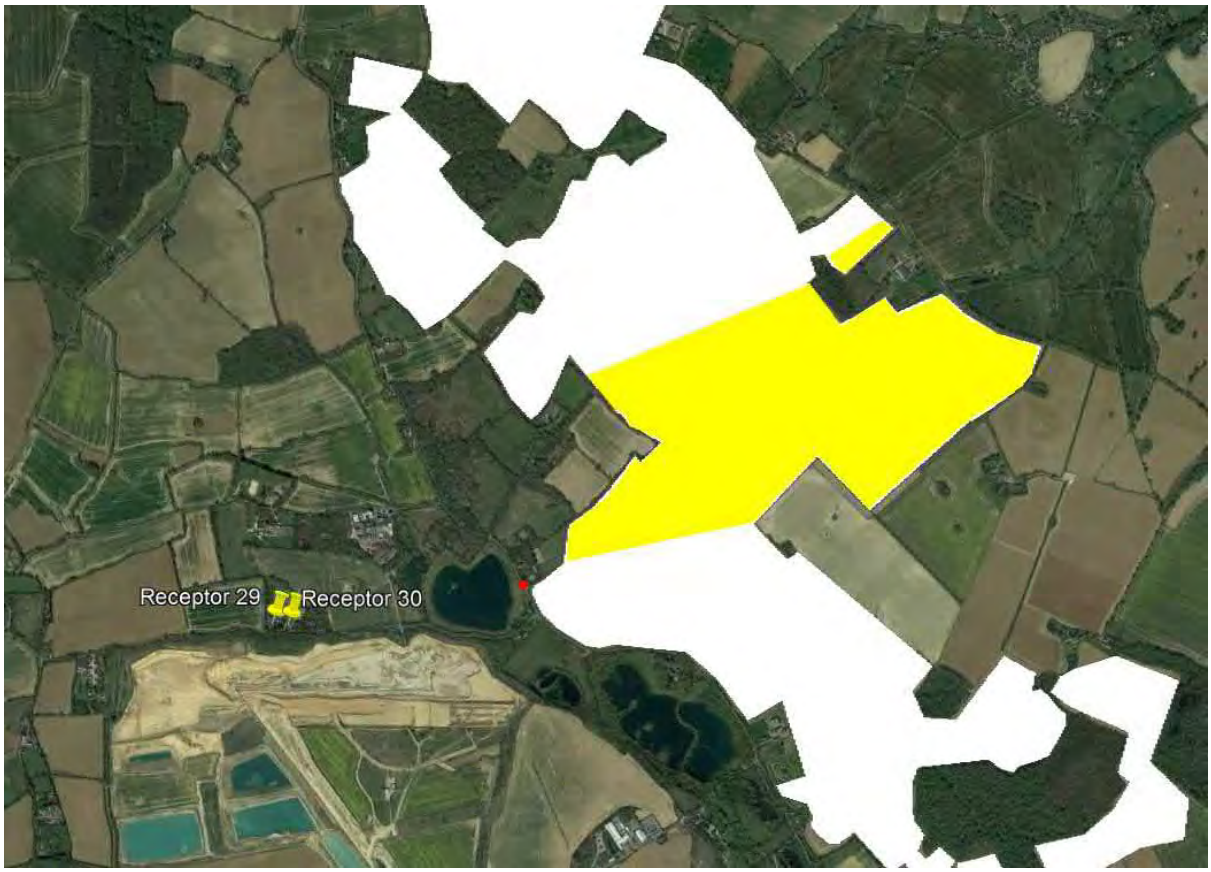


Receptor 26

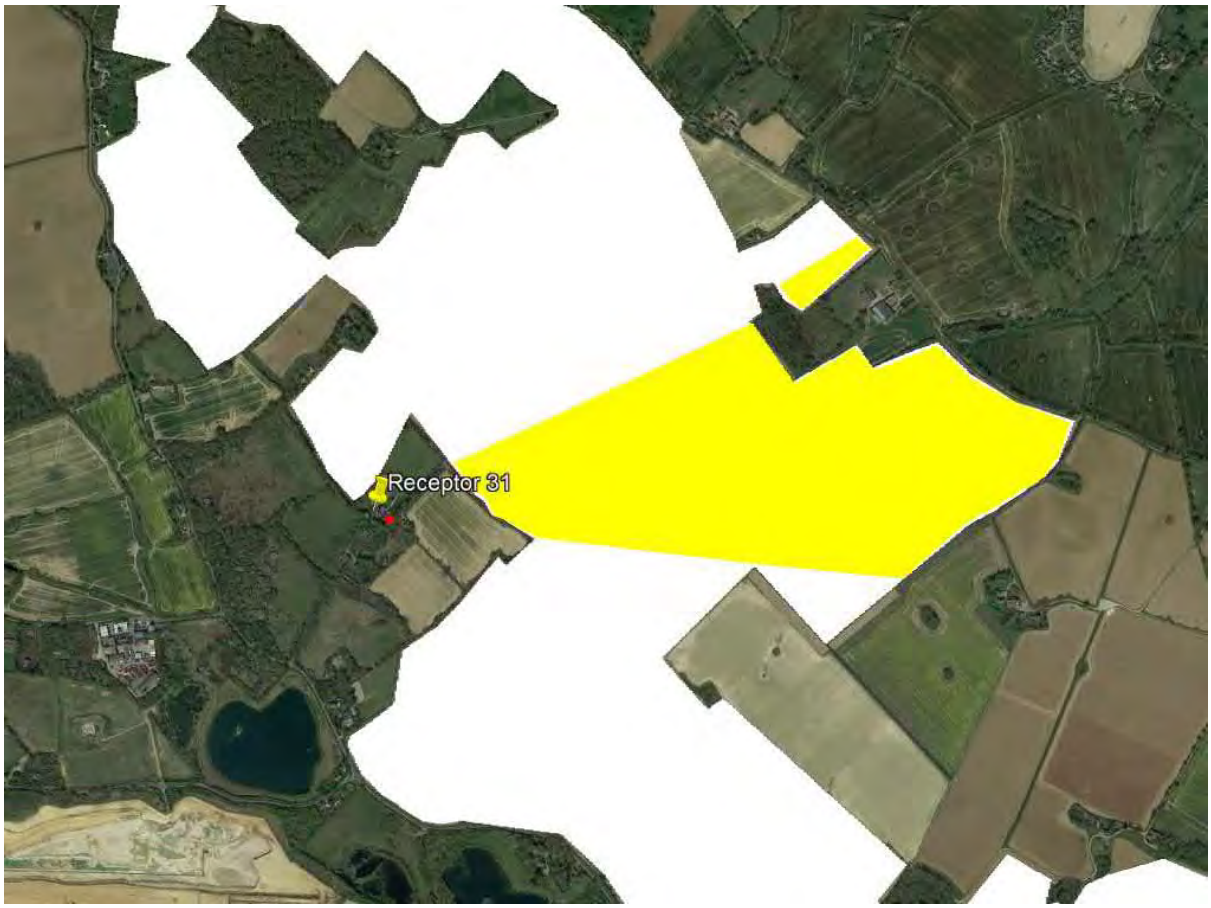


Receptors 27 and 28

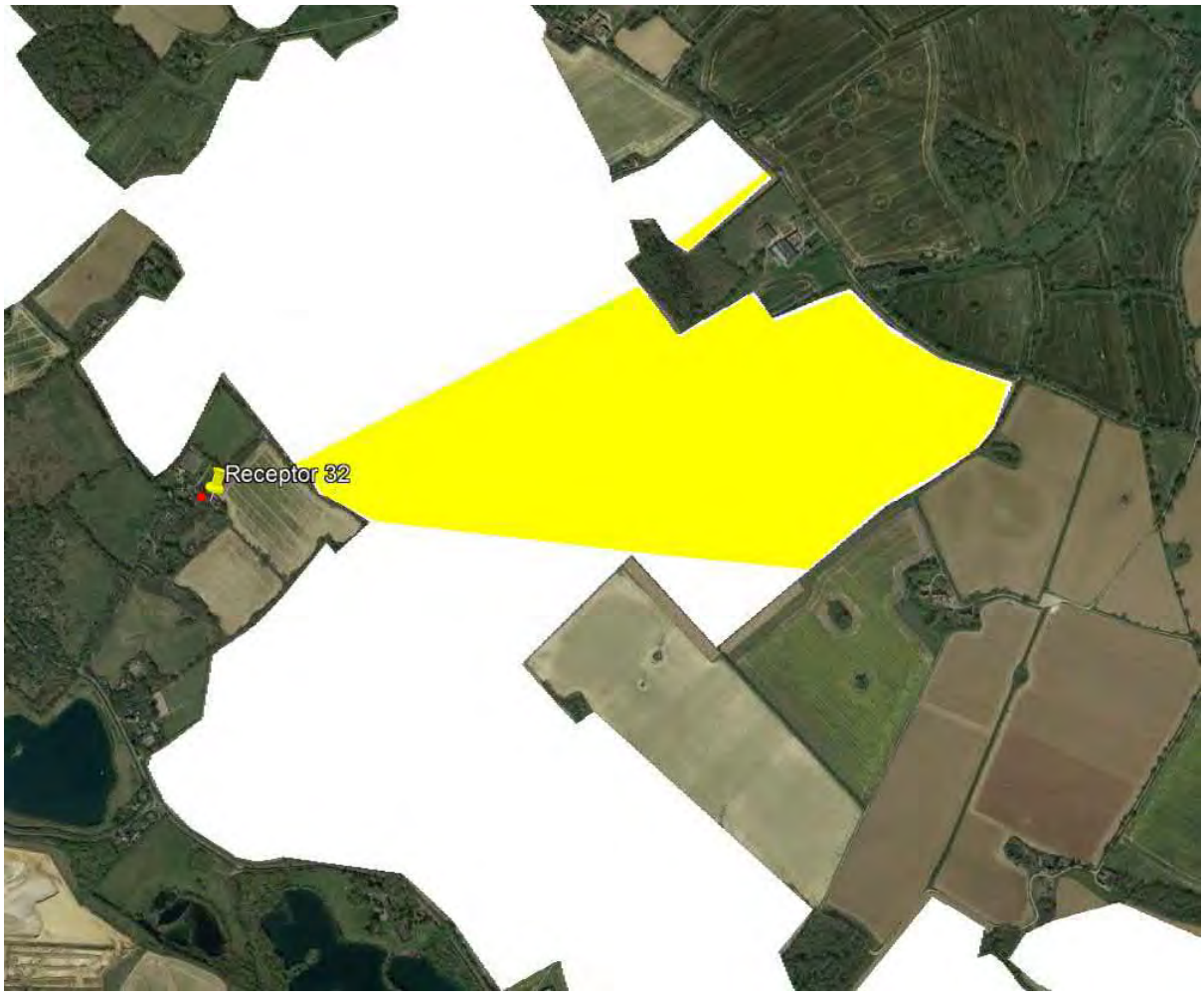
Receptors 29 - 30



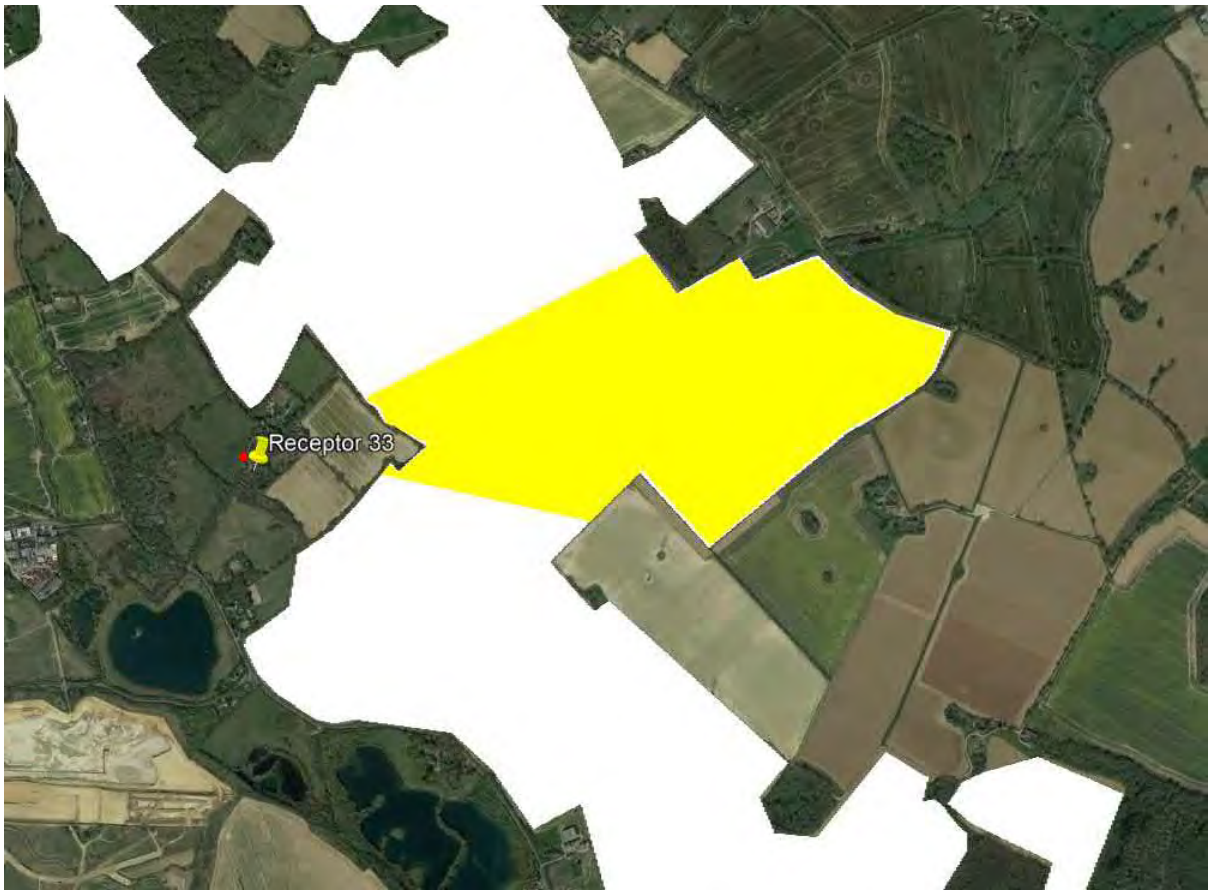
Receptor 31



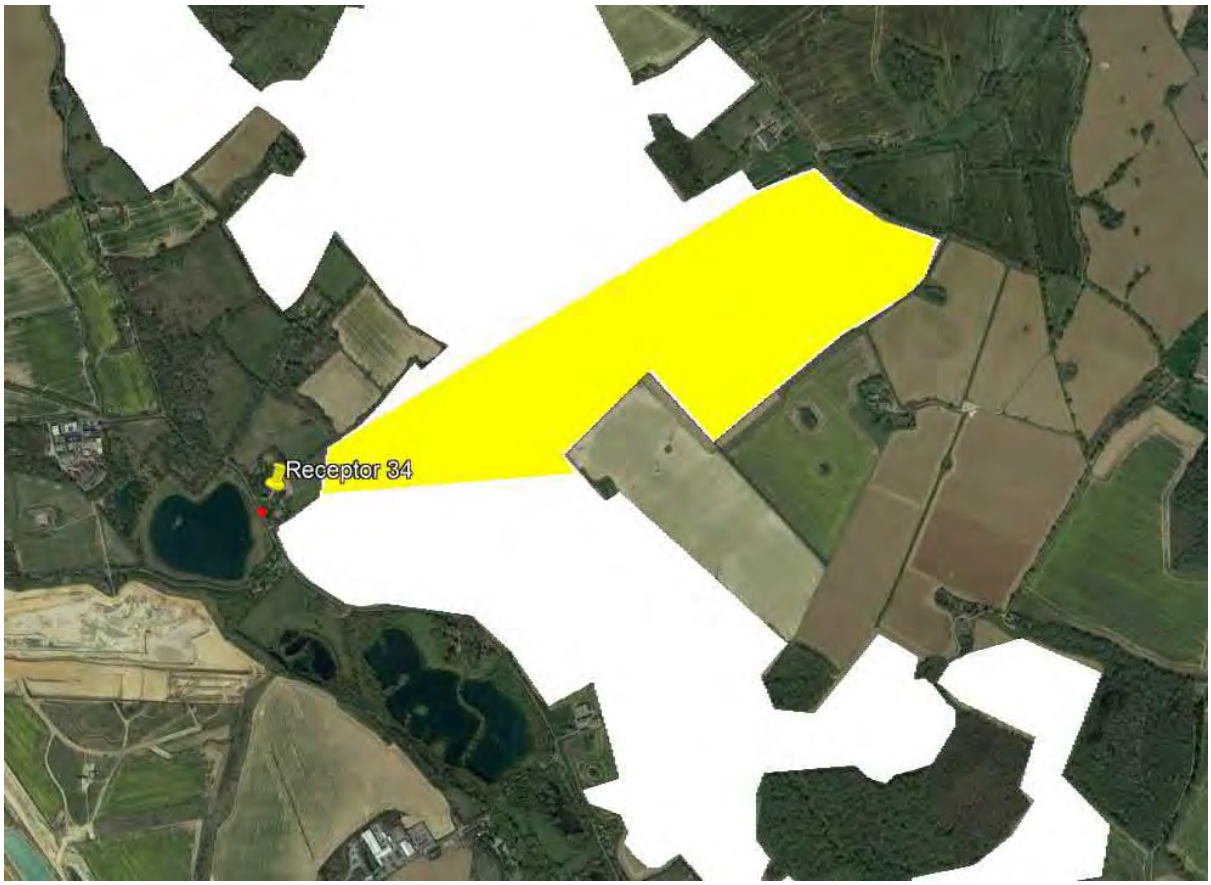
Receptor 32



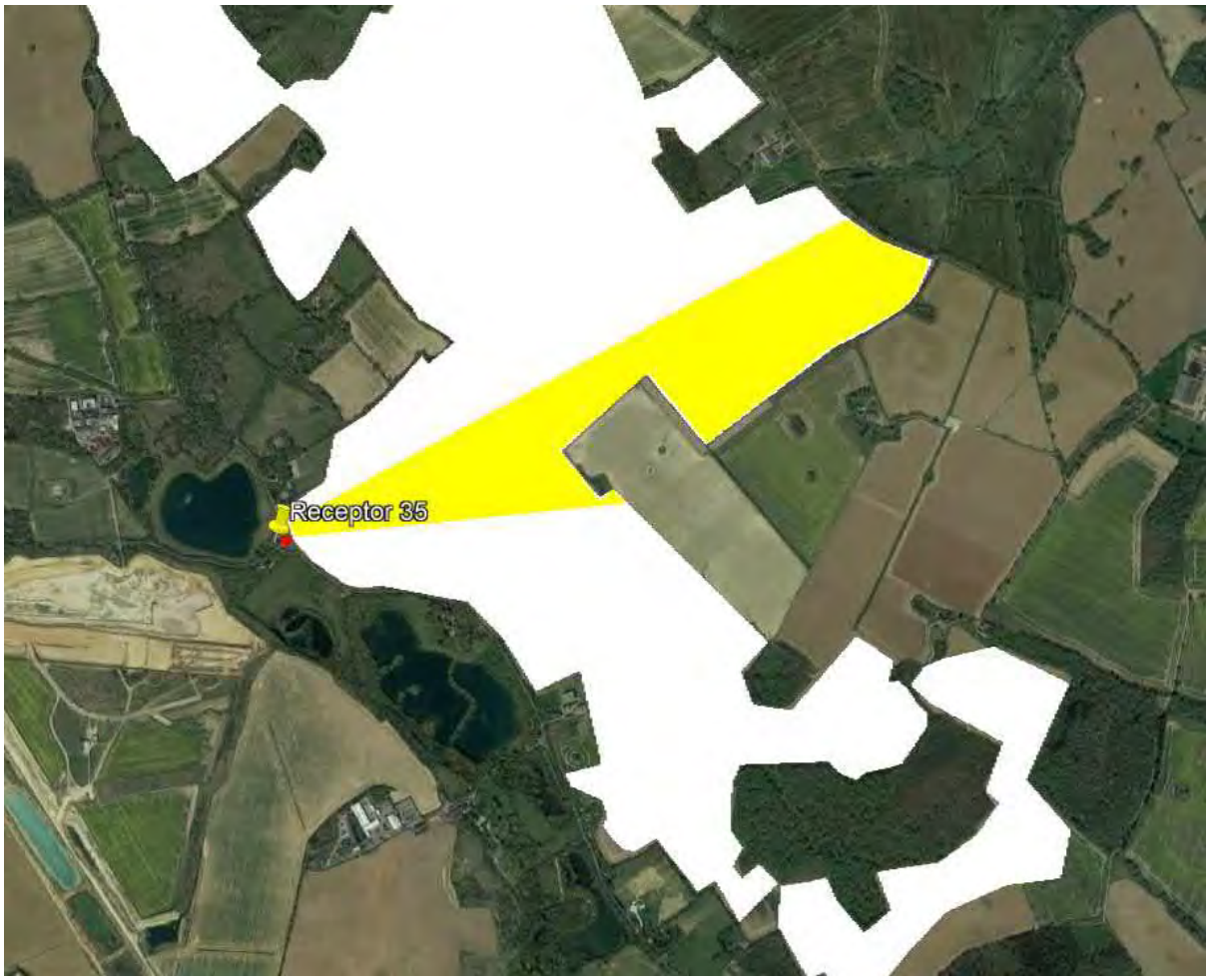
Receptor 33



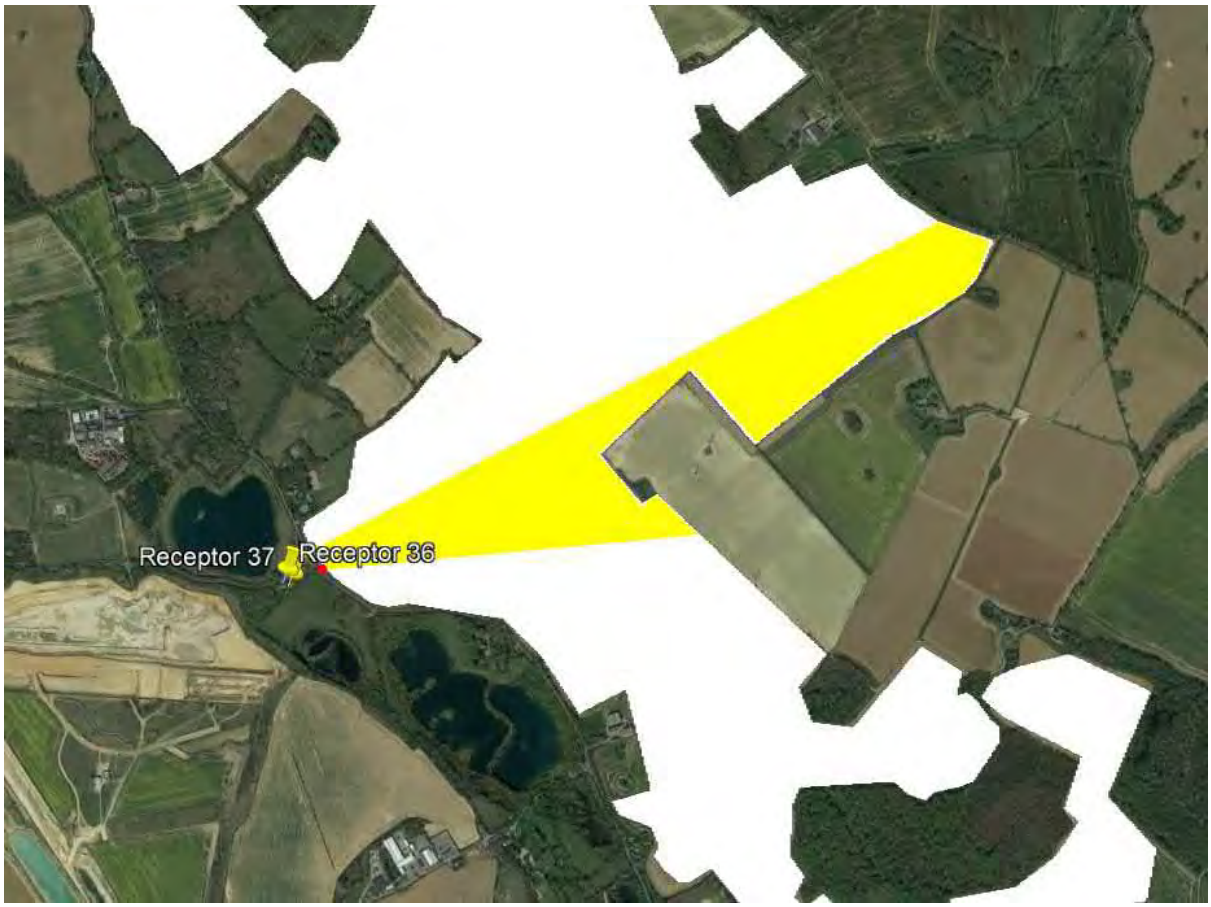
Receptor 34



Receptor 35



Receptors 36 - 37



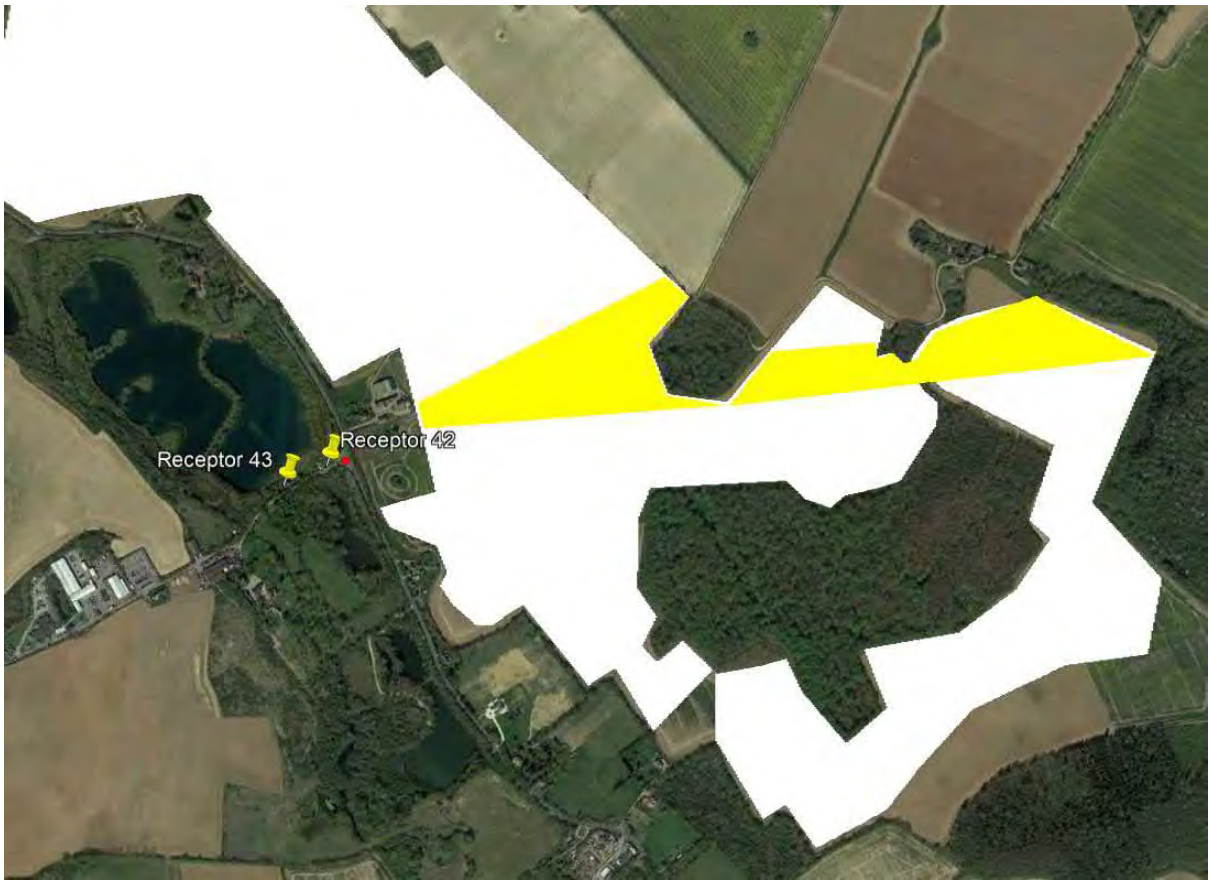
Receptor 38

Receptor 39

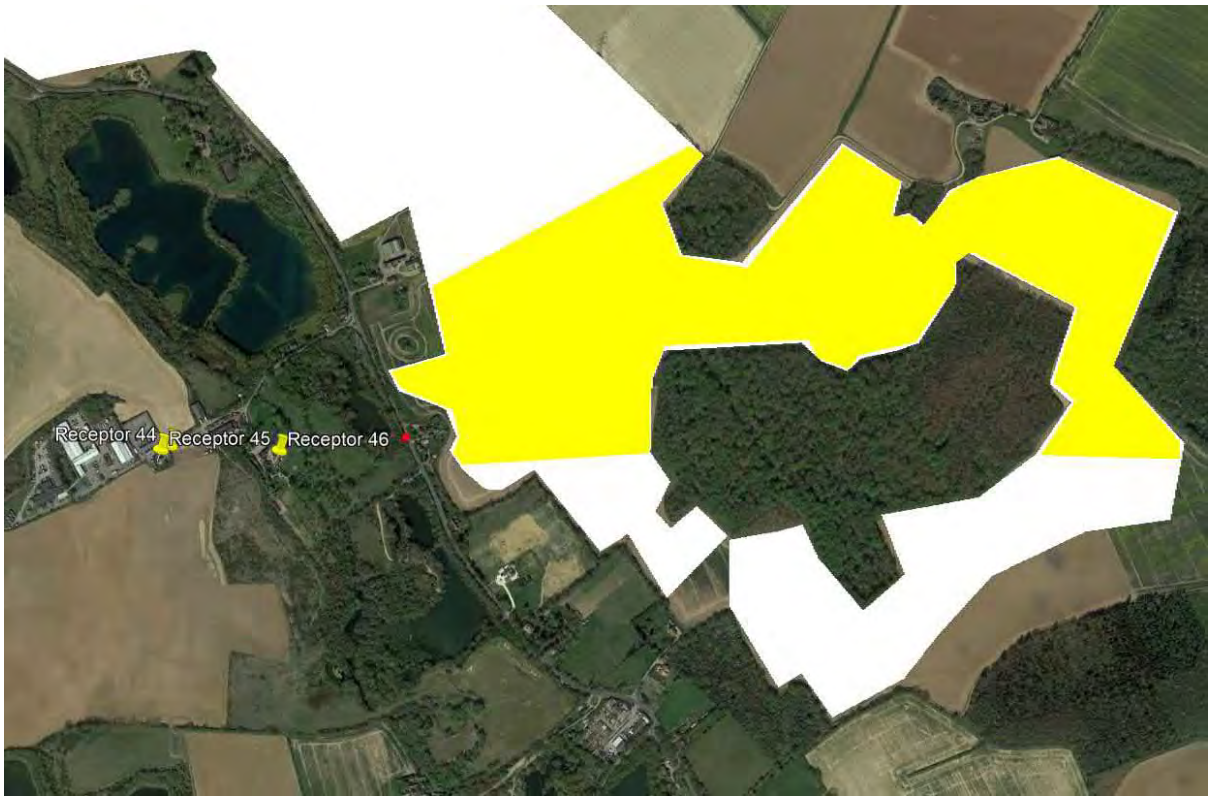
Receptor 40

Receptor 41

Receptors 42 and 43



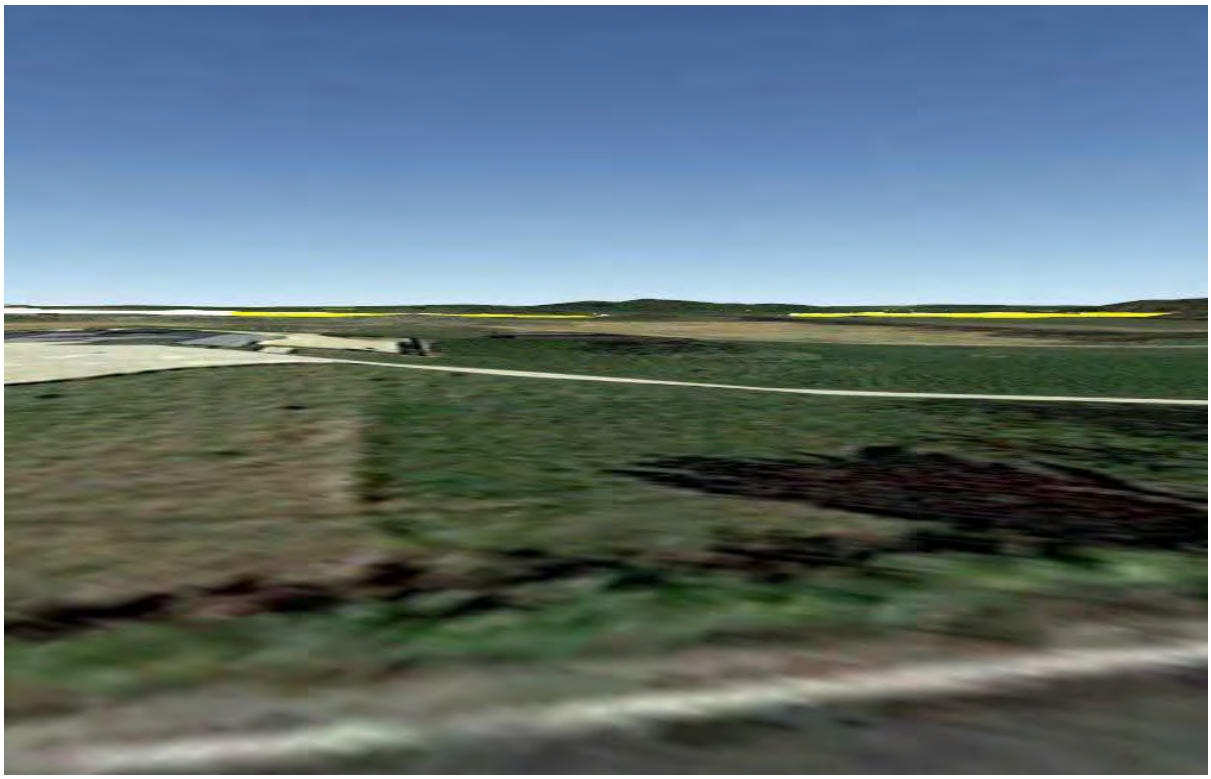
Receptors 44 - 46



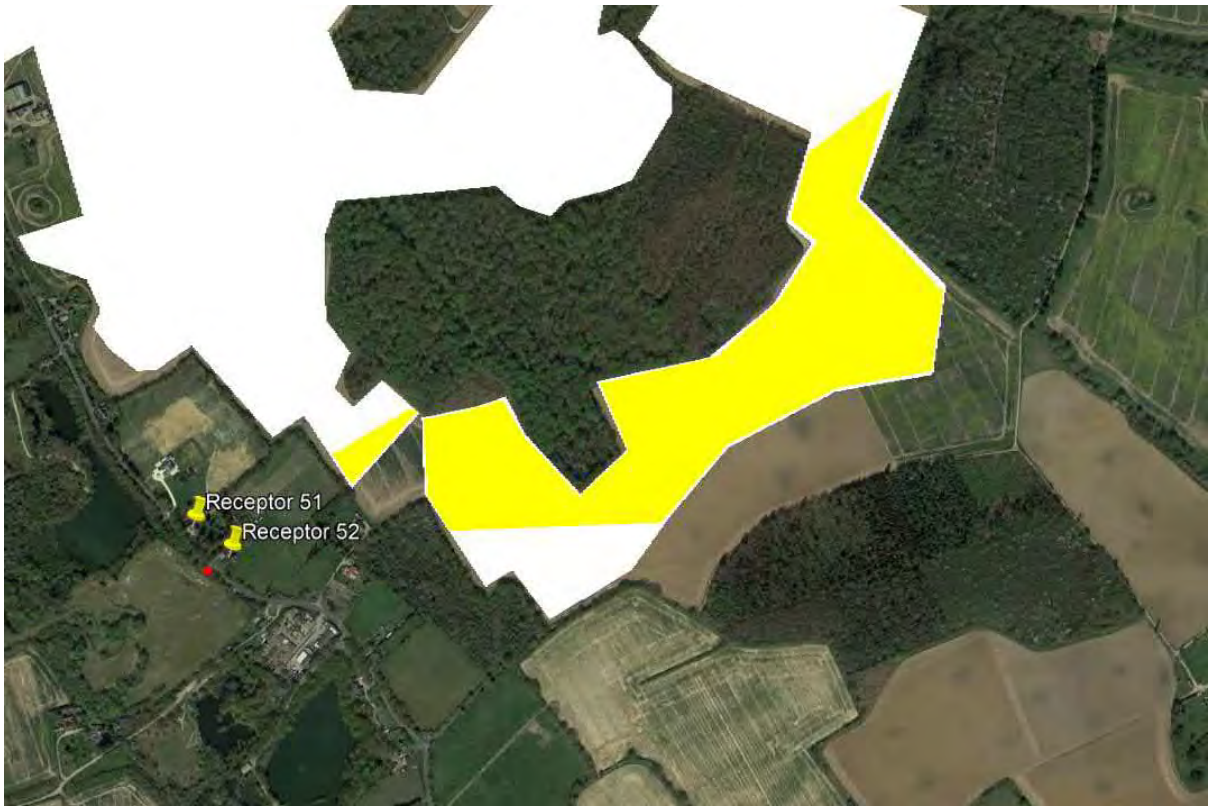
Receptor 47 and 48

Receptor 49

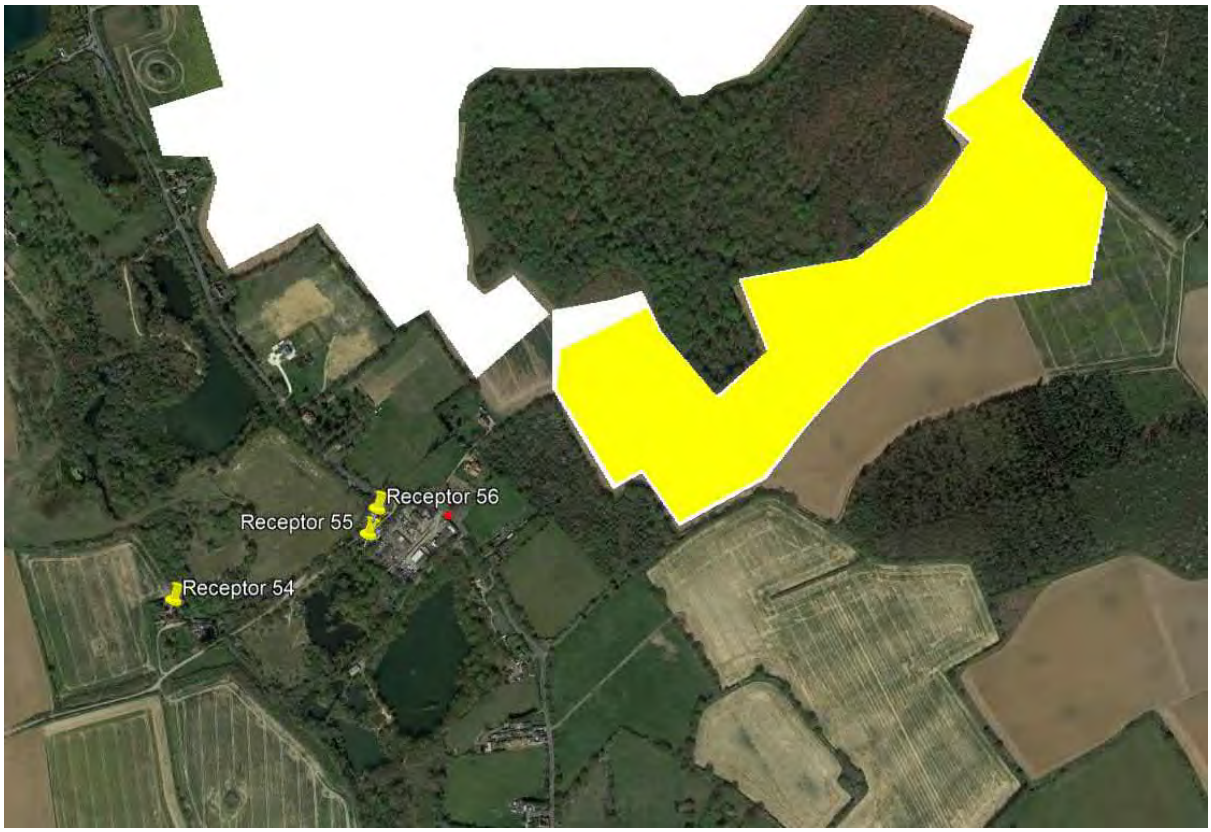
Receptor 50



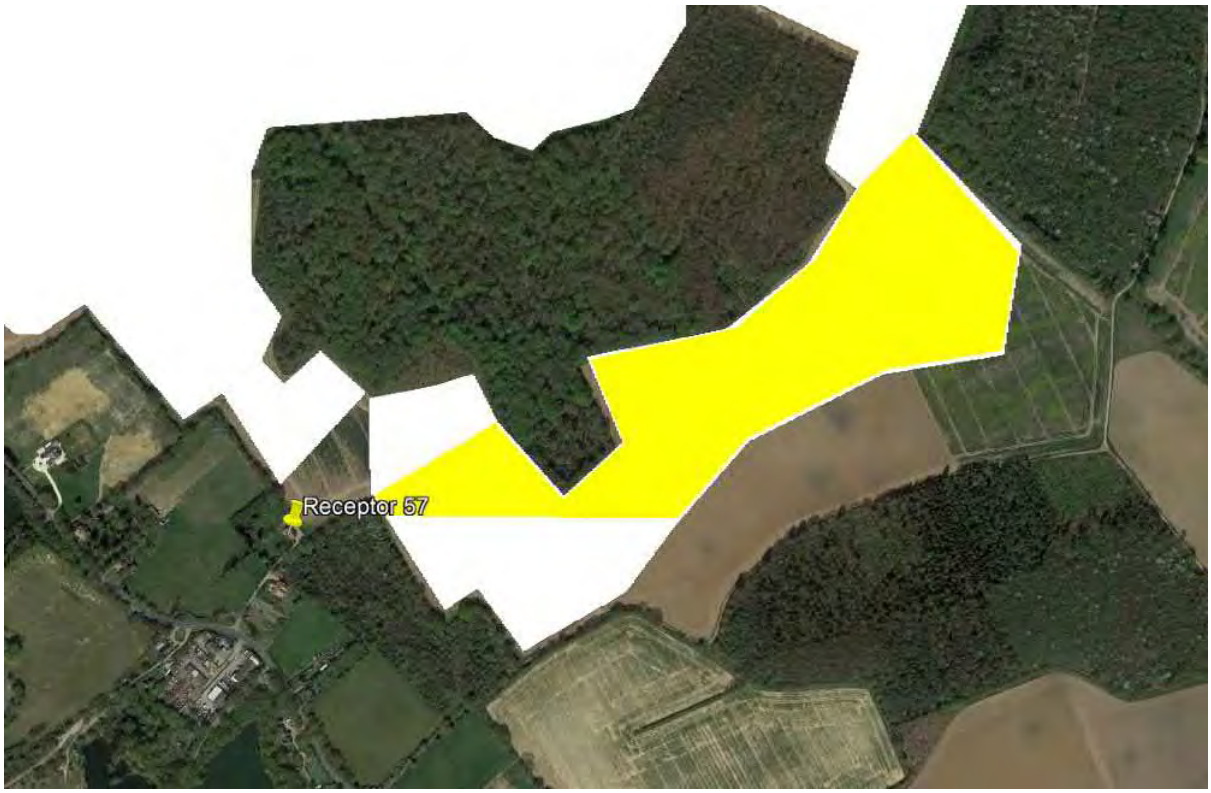
Receptors 51 and 52



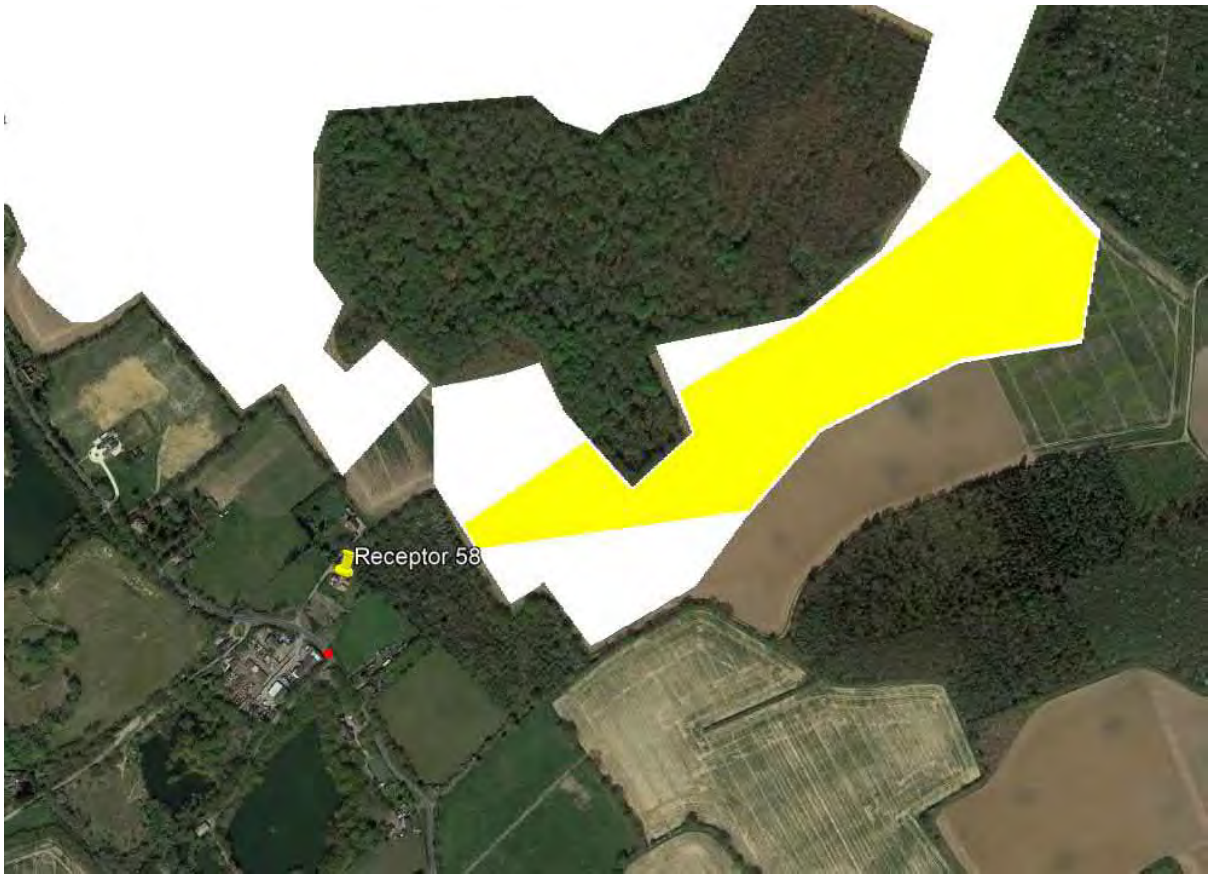
Receptors 54 – 56



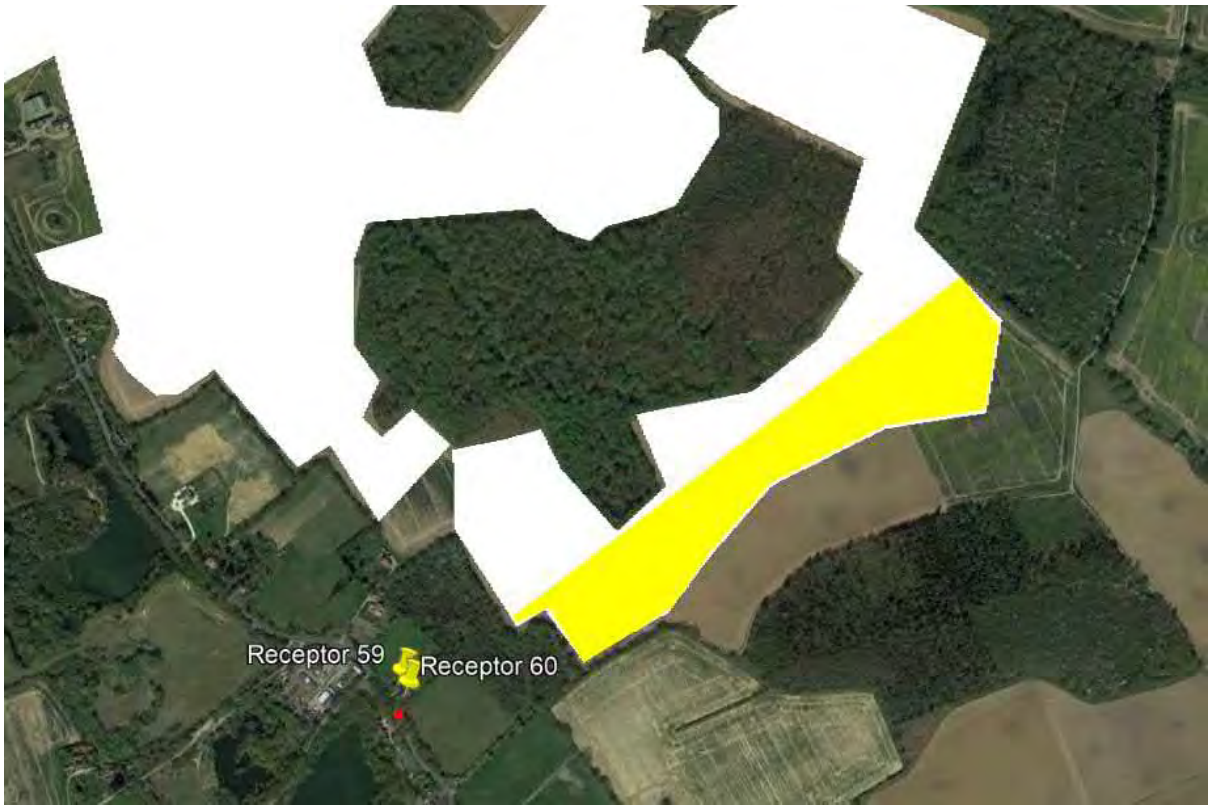
Receptor 57



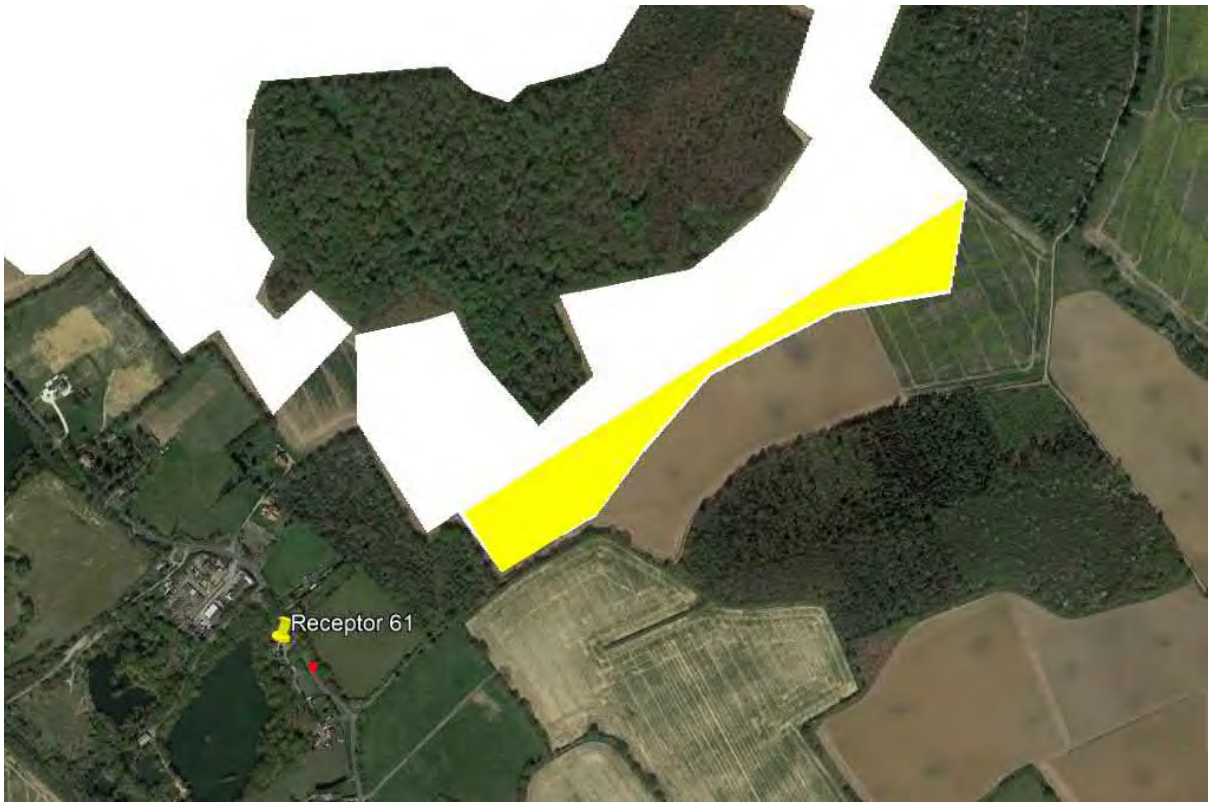
Receptor 58



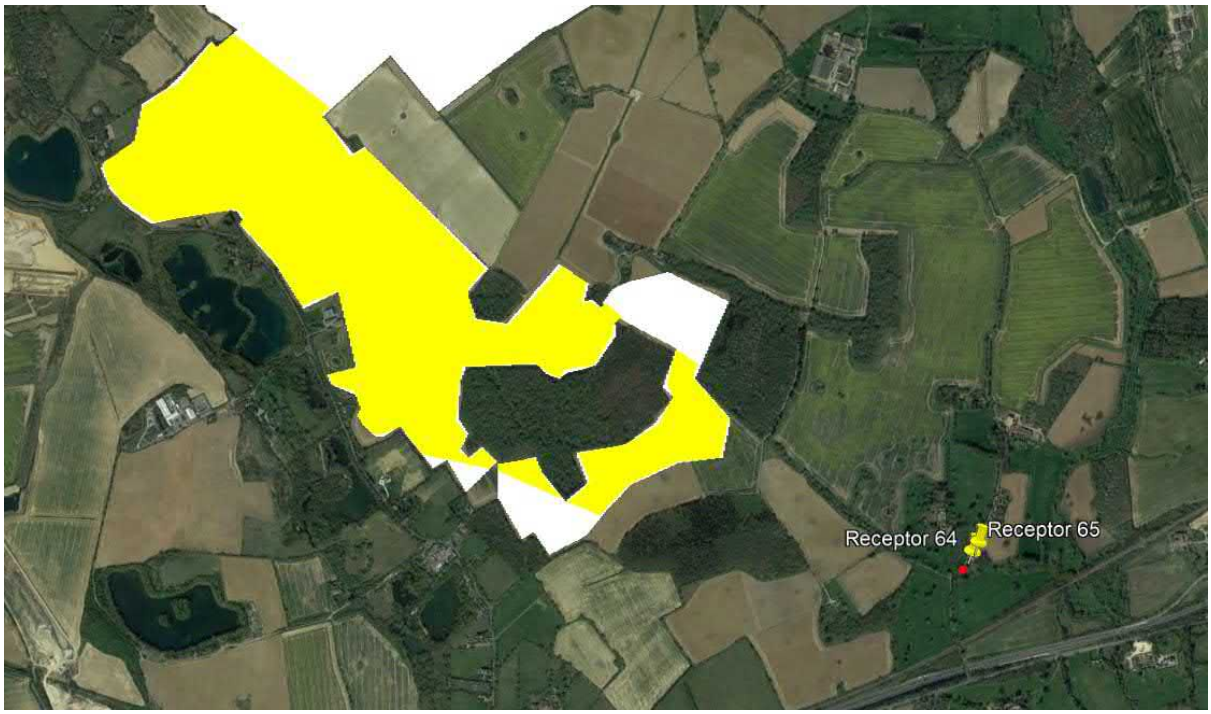
Receptors 59 and 60



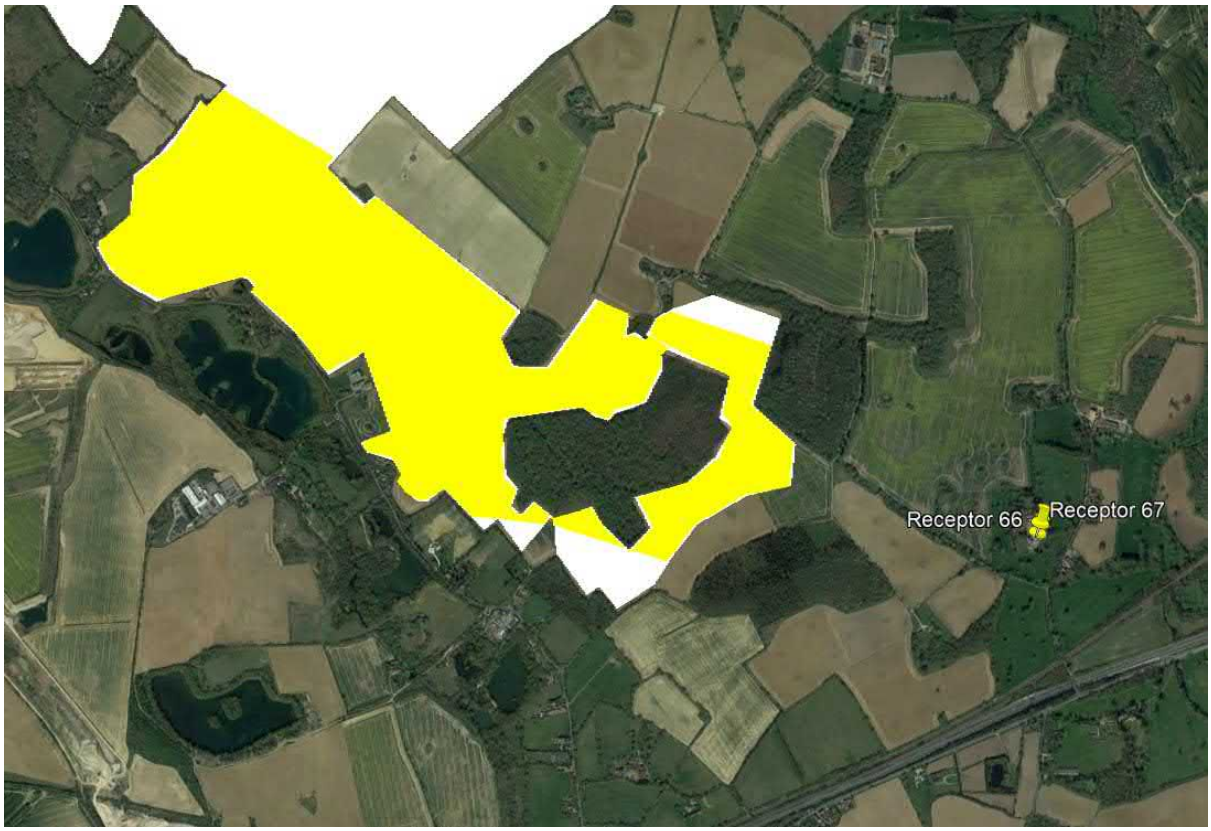
Receptor 61



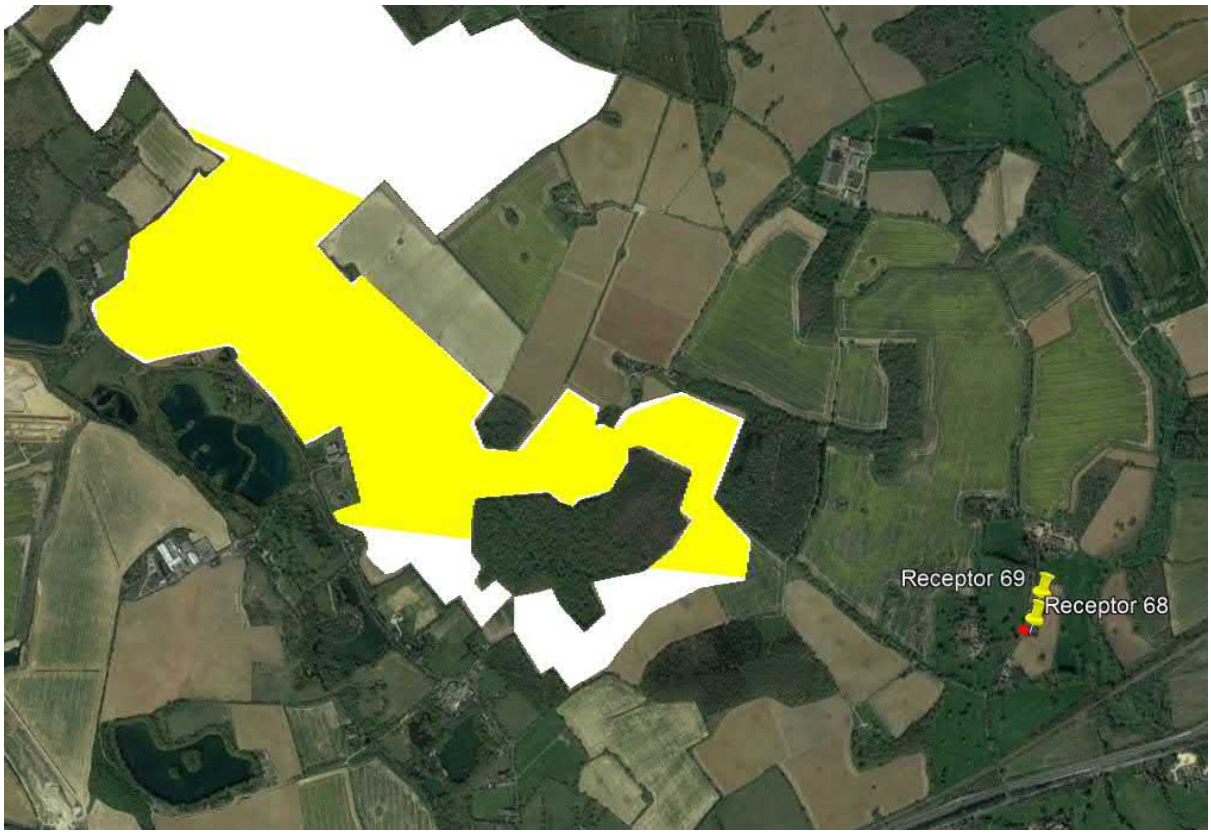
Receptors 64 and 65



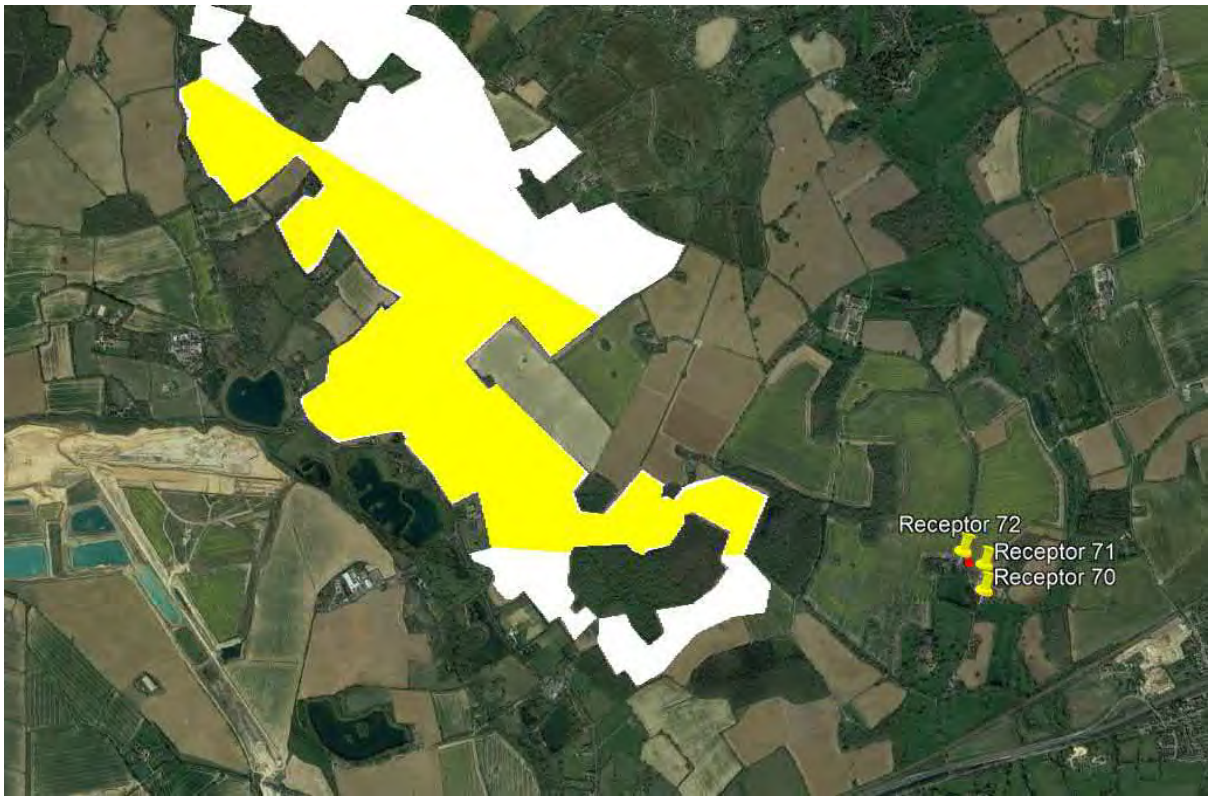
Receptors 66 - 67



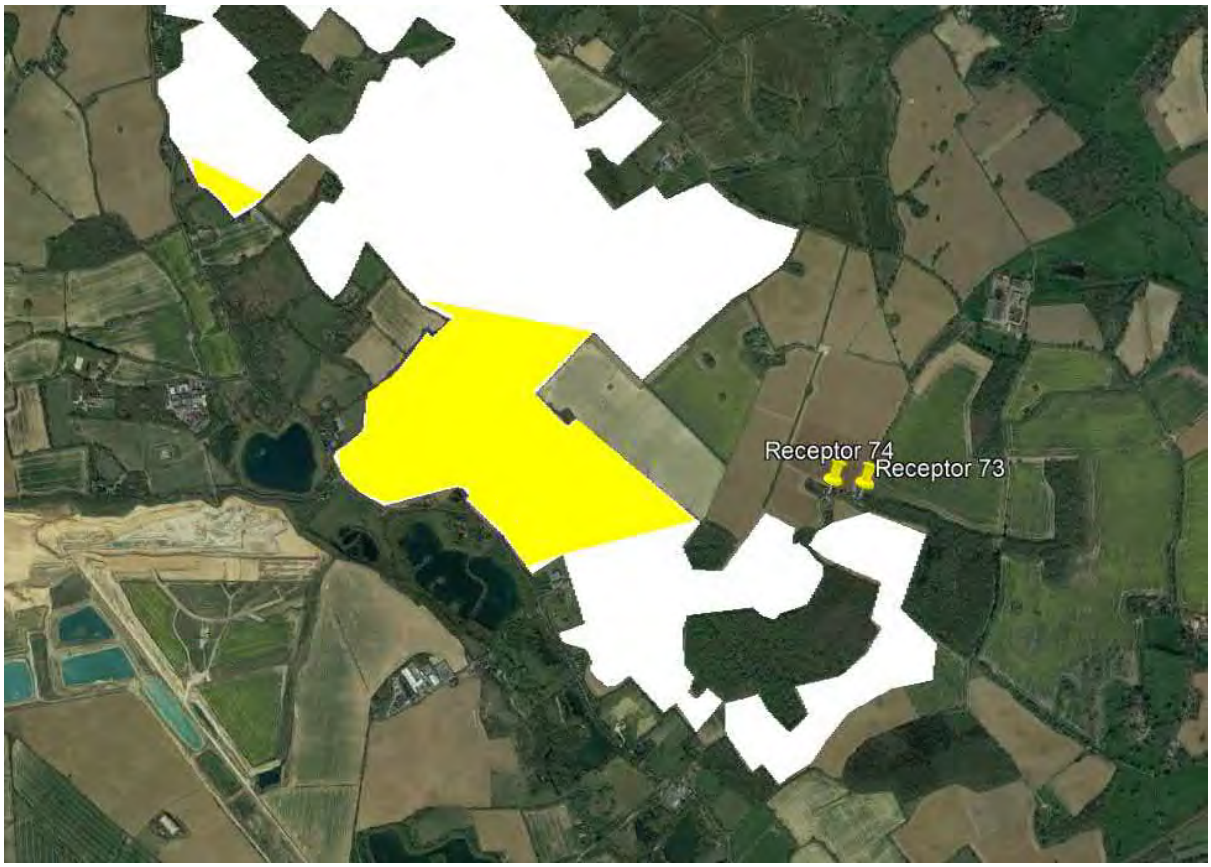
Receptors 68 and 69



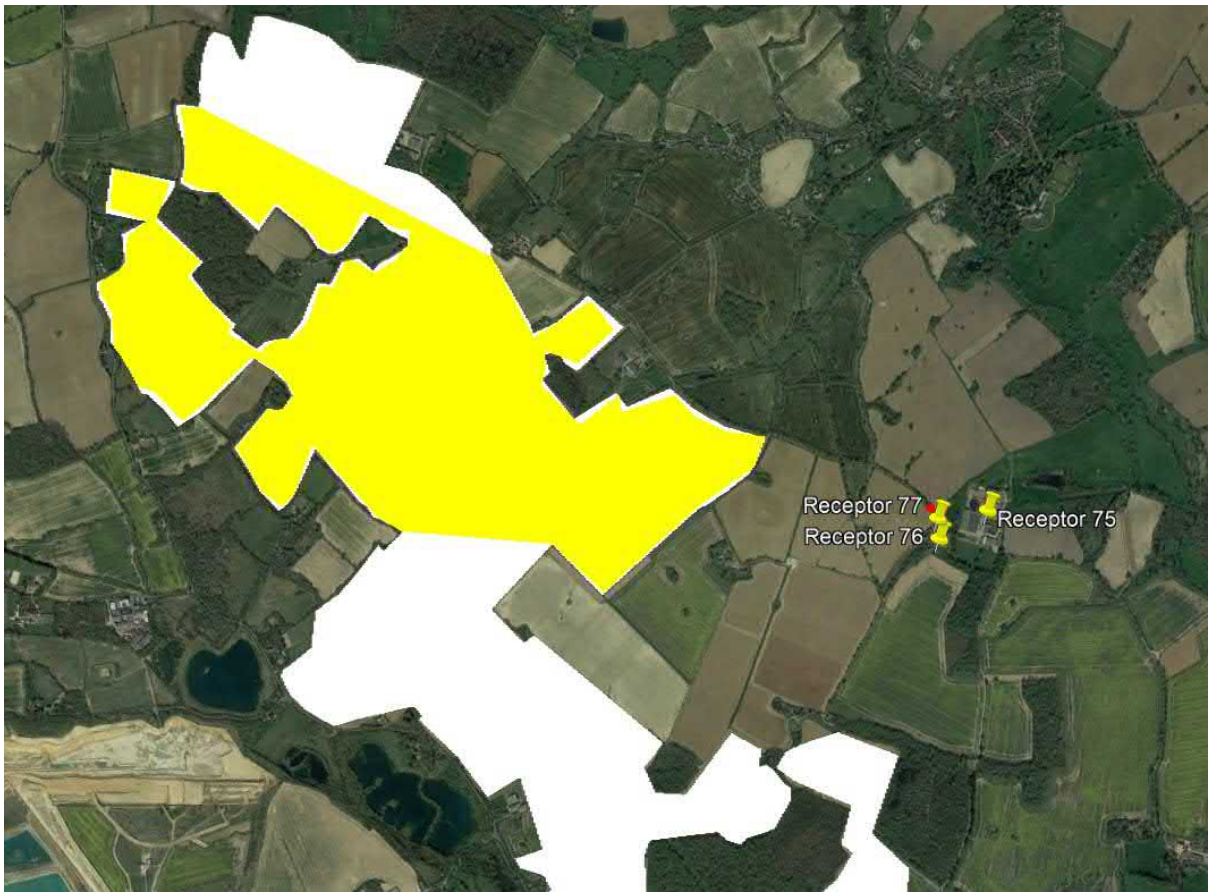
Receptors 70 – 72



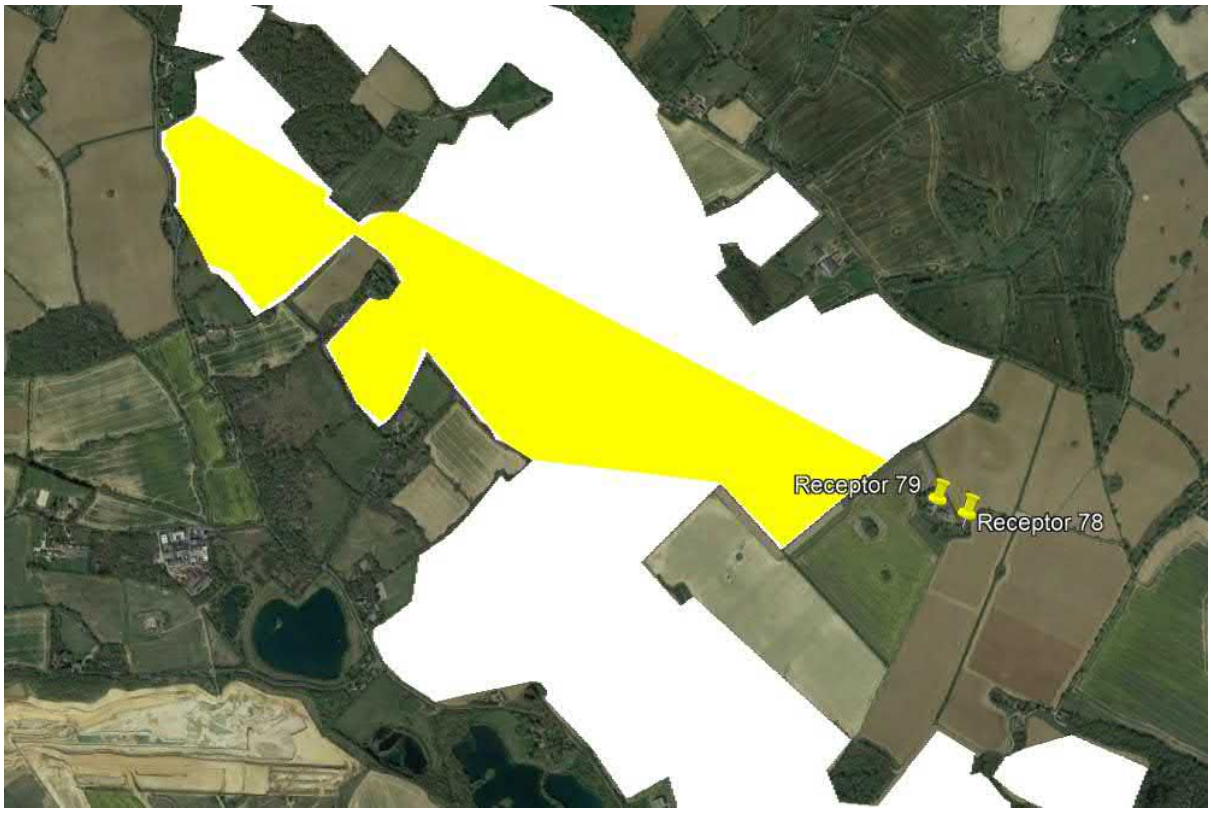
Receptor 73 and 74



Receptor 75 – 77

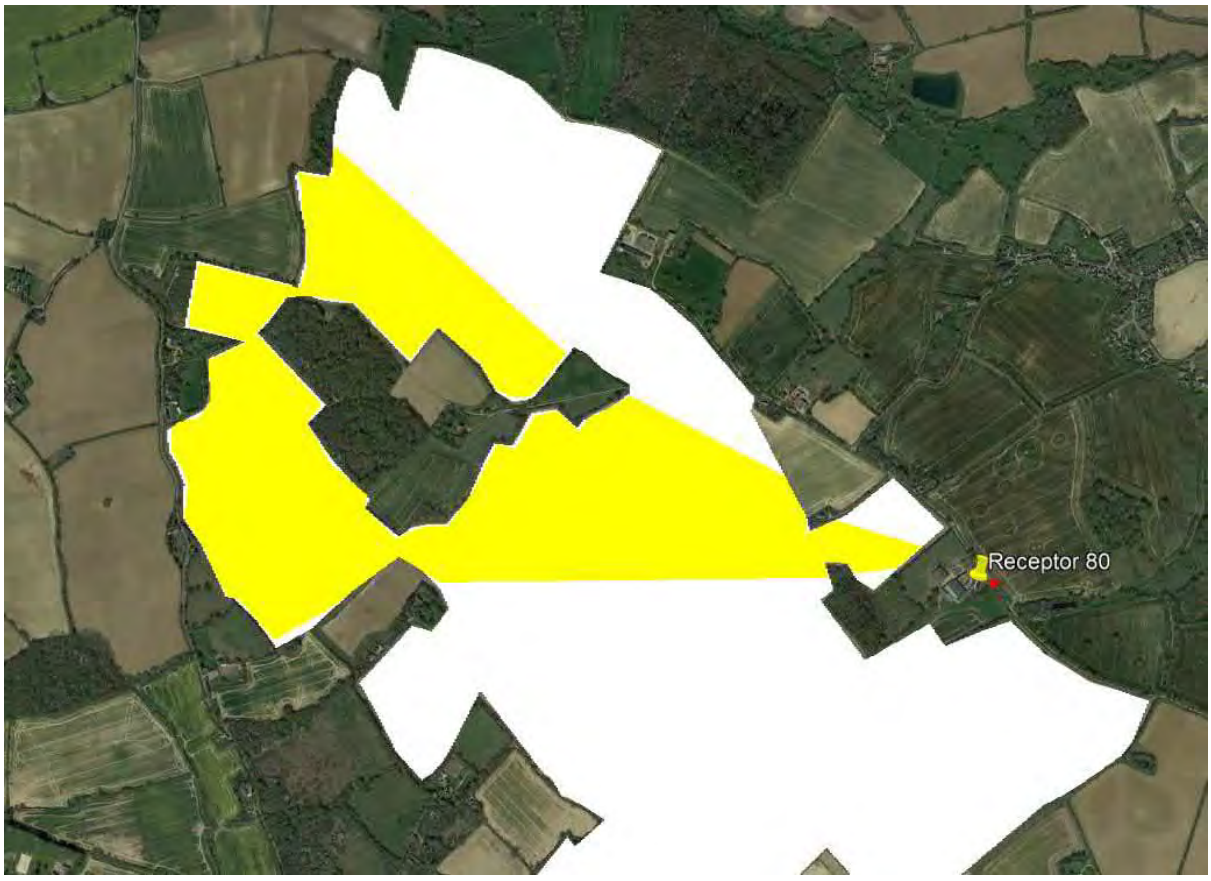


Receptors 78 and 79

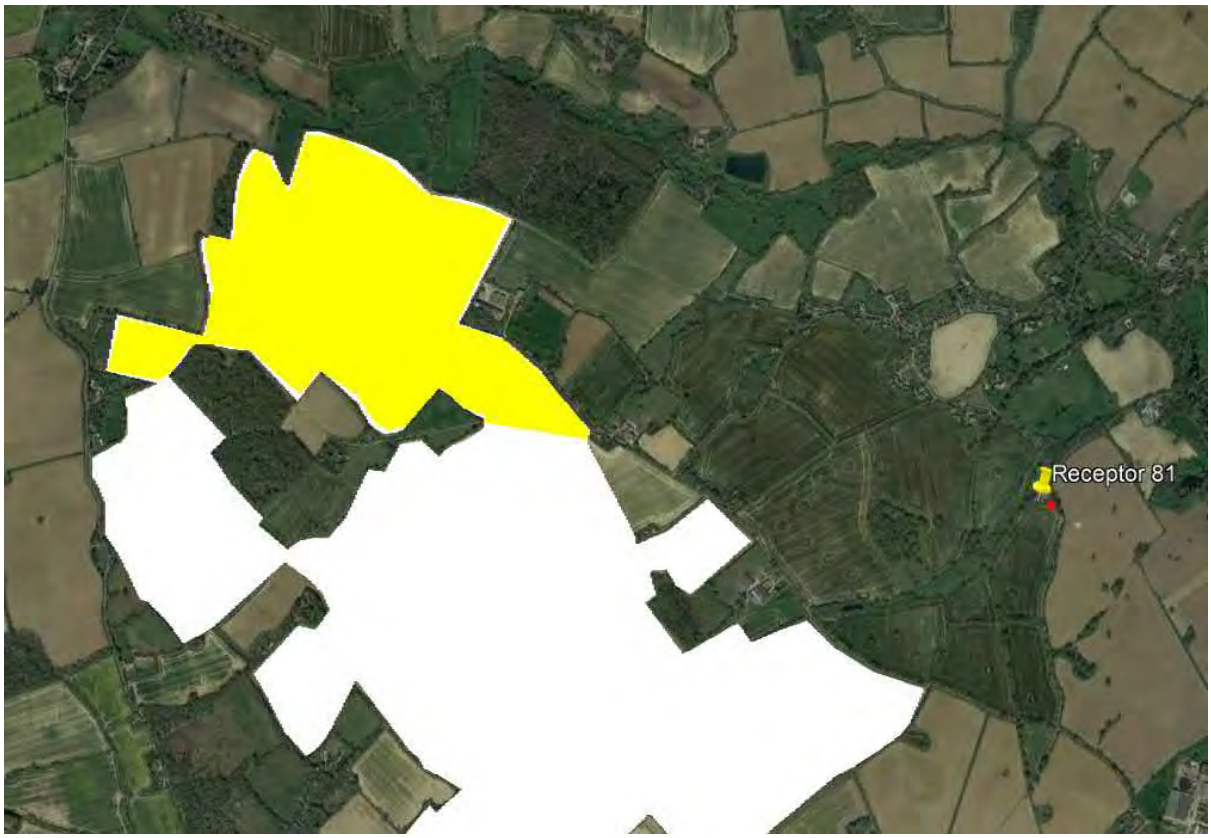


10th April 6:30pm UTC

Receptor 80



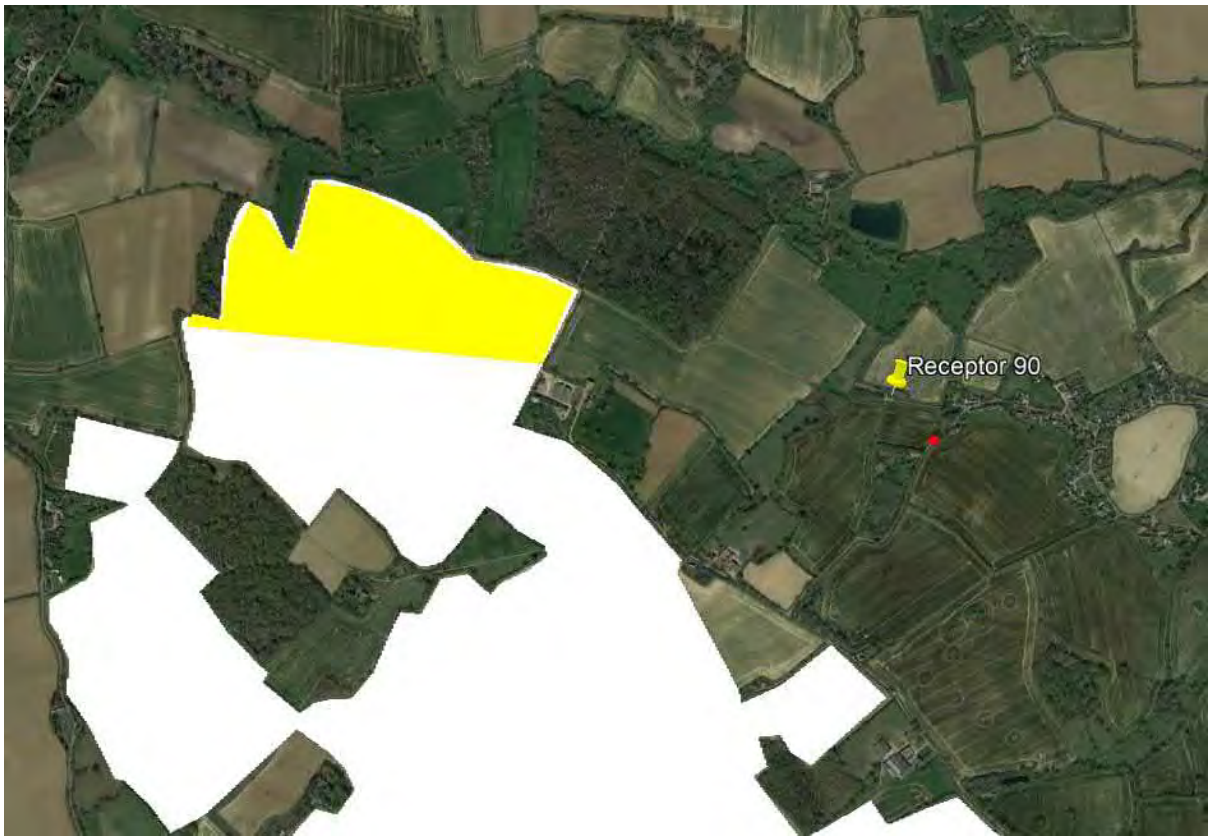
Receptor 81



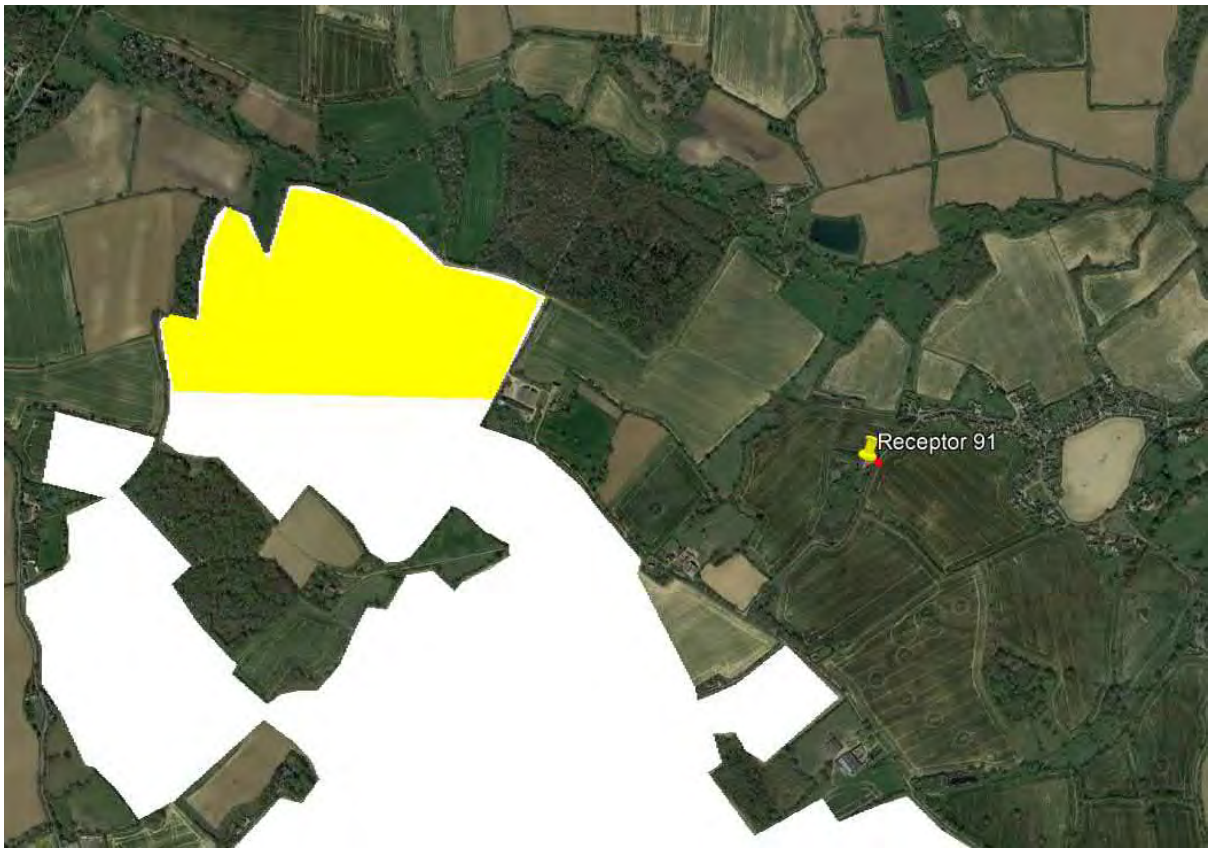
Receptor 82

Receptor 83 – 89

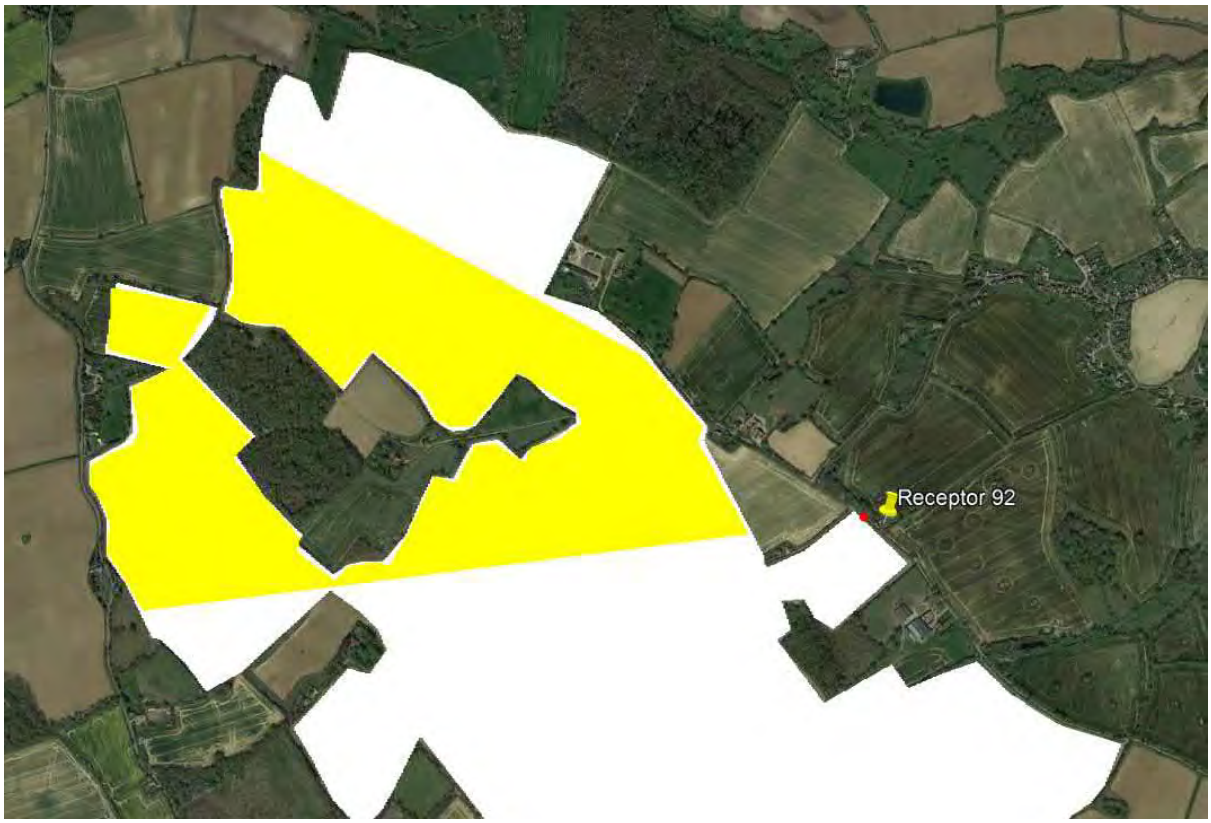
Receptor 90



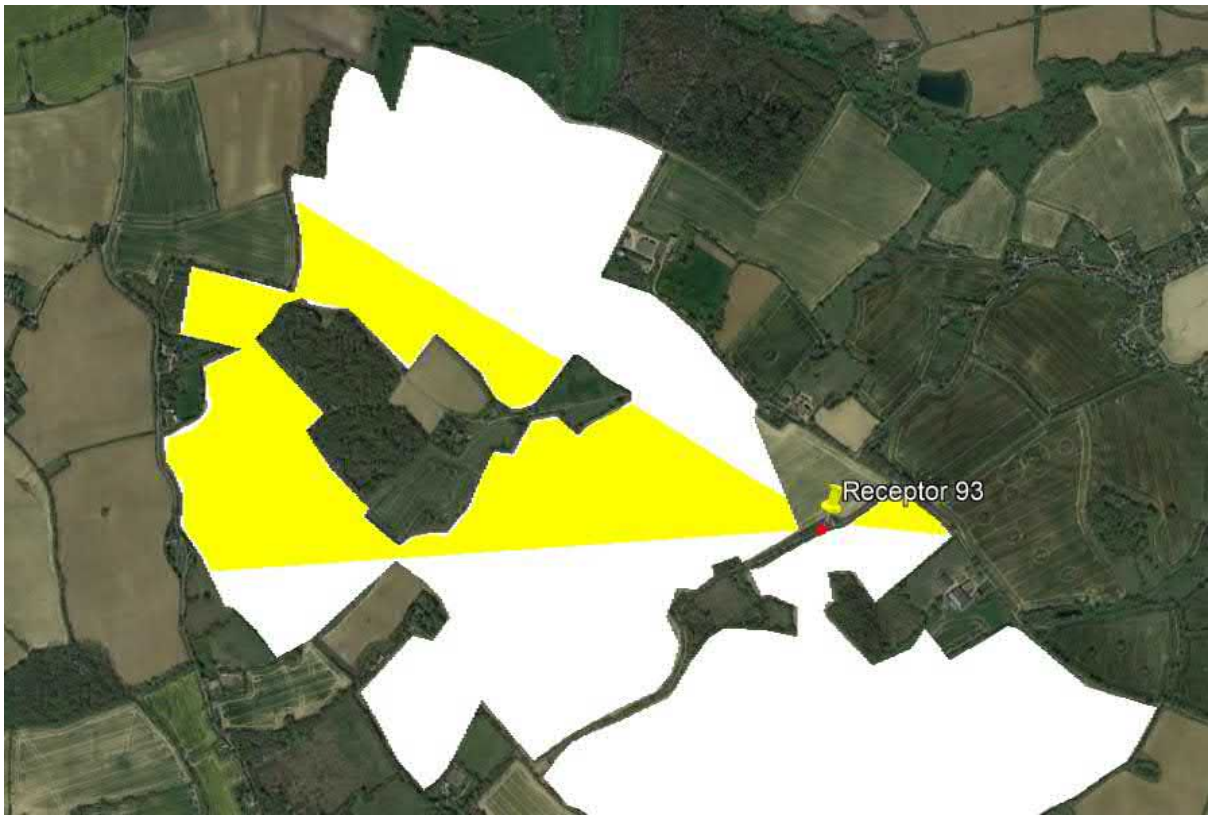
Receptor 91



Receptor 92



Receptor 93

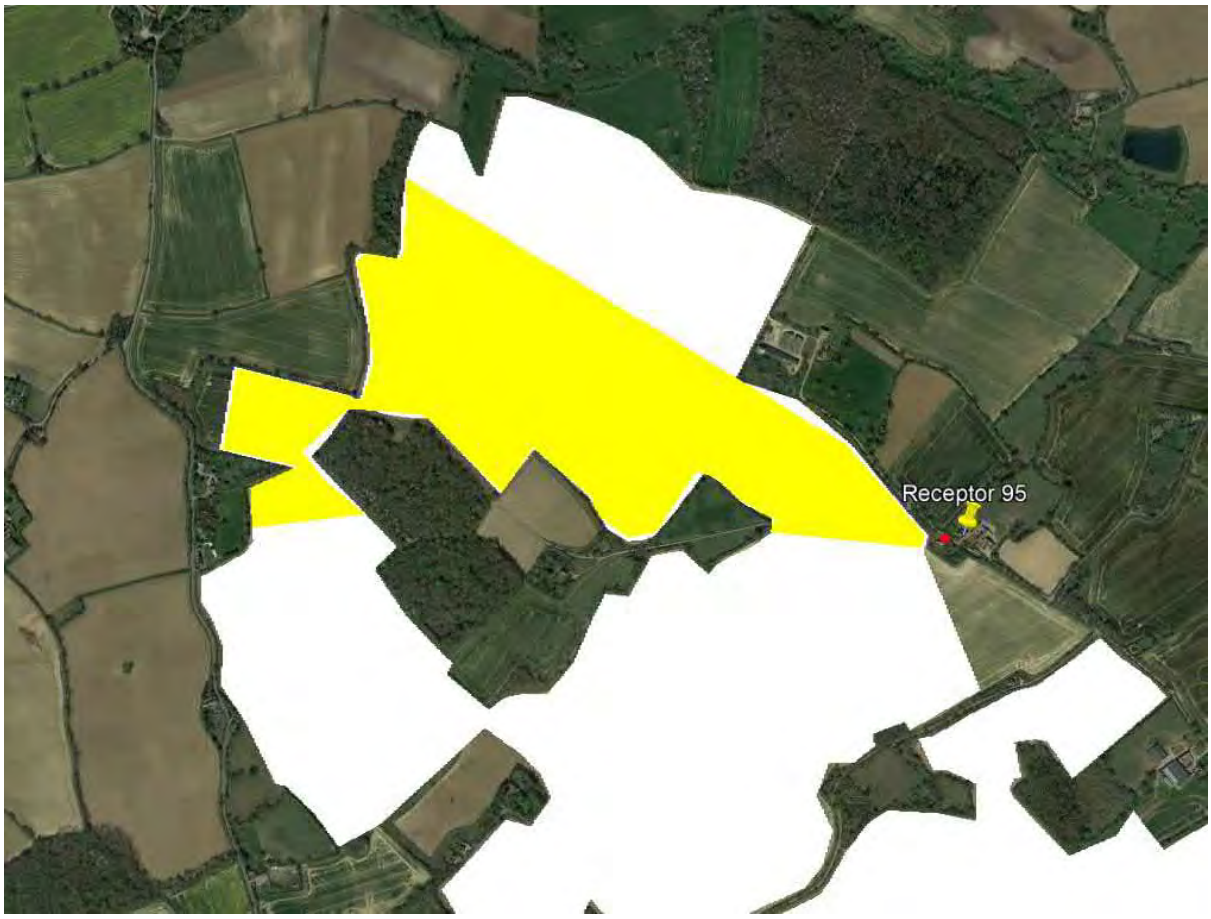


15th March 6:30am UTC – East Facing

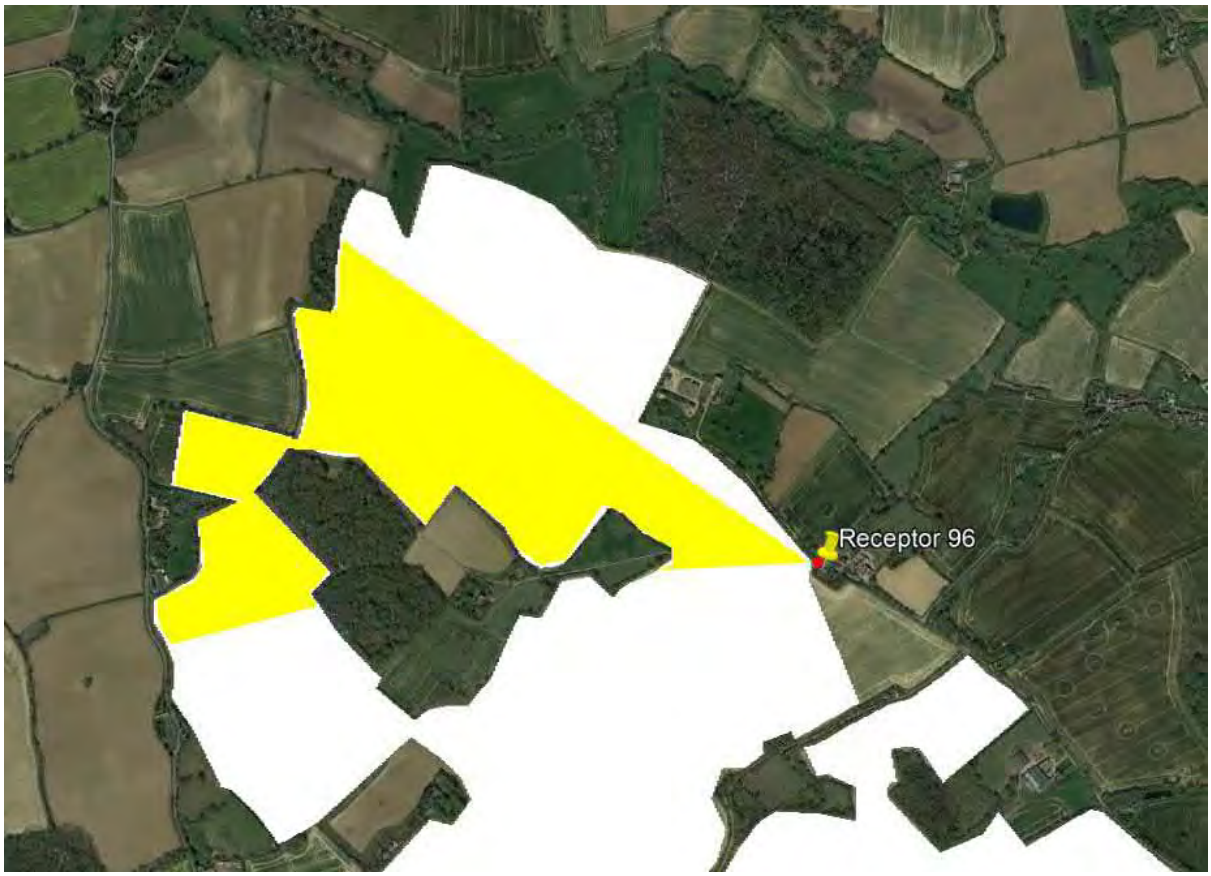
15th March 6:00pm UTC – West Facing

Receptor 94

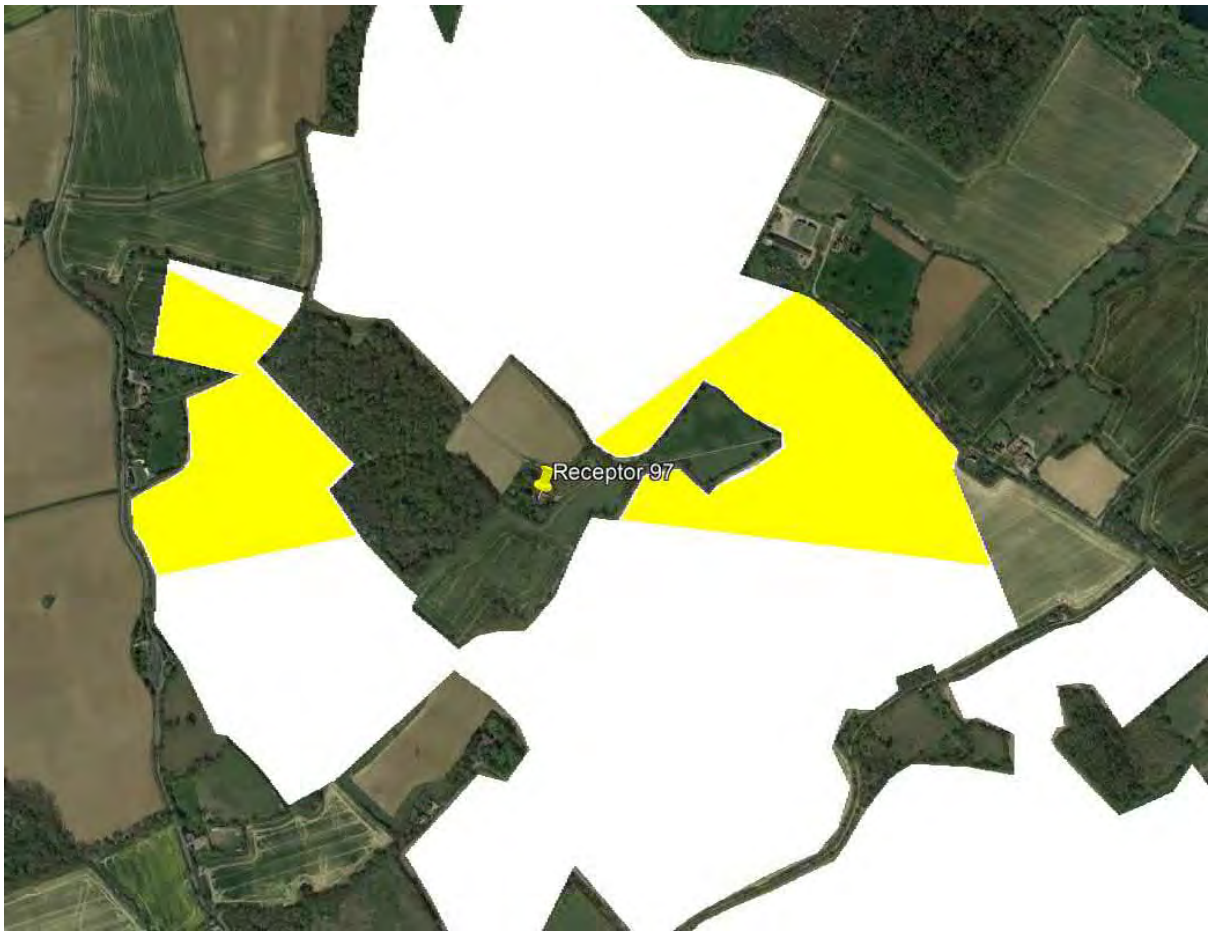
Receptor 95



Receptor 96

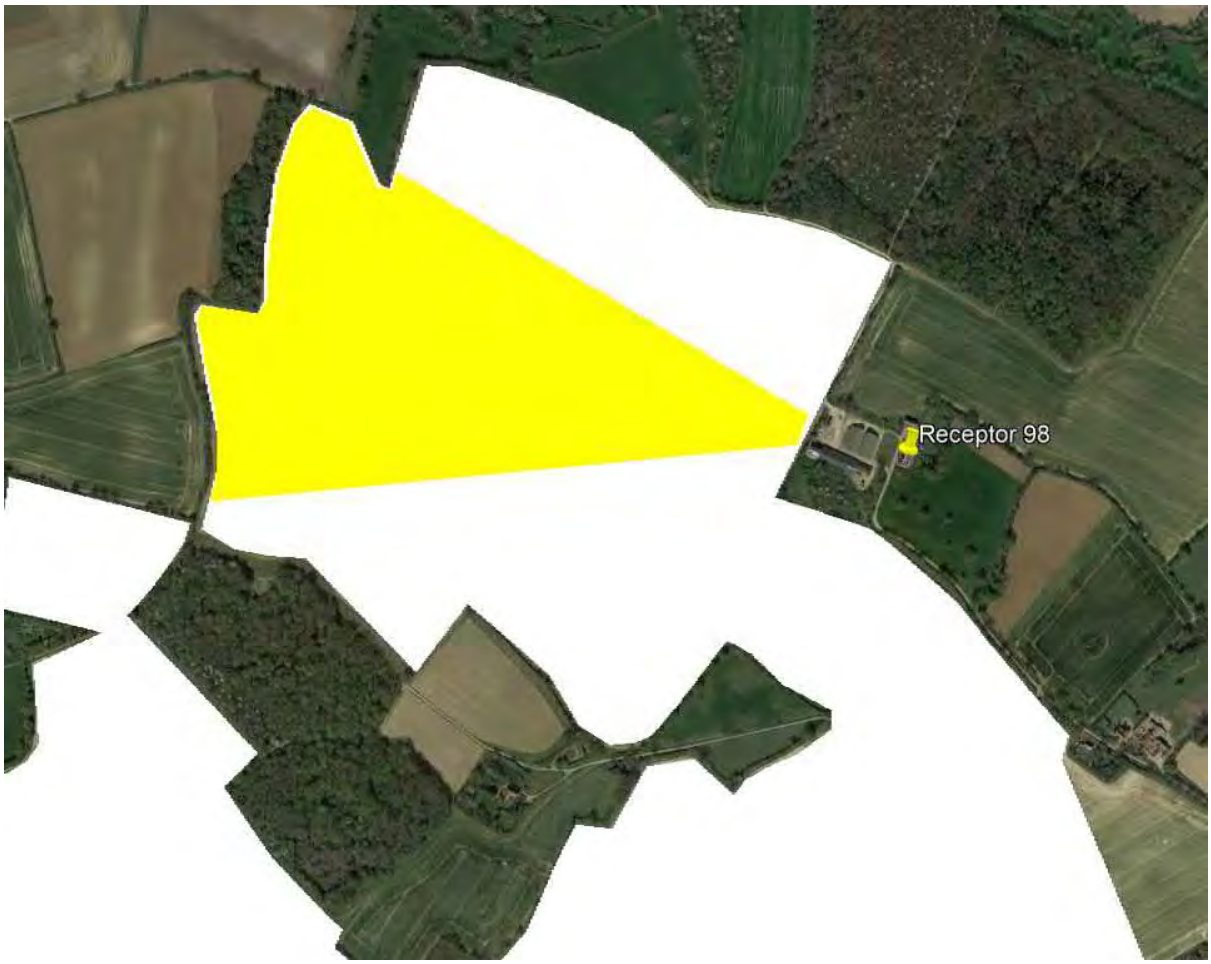


Receptor 97



1st March 7:00am UTC

Receptor 98

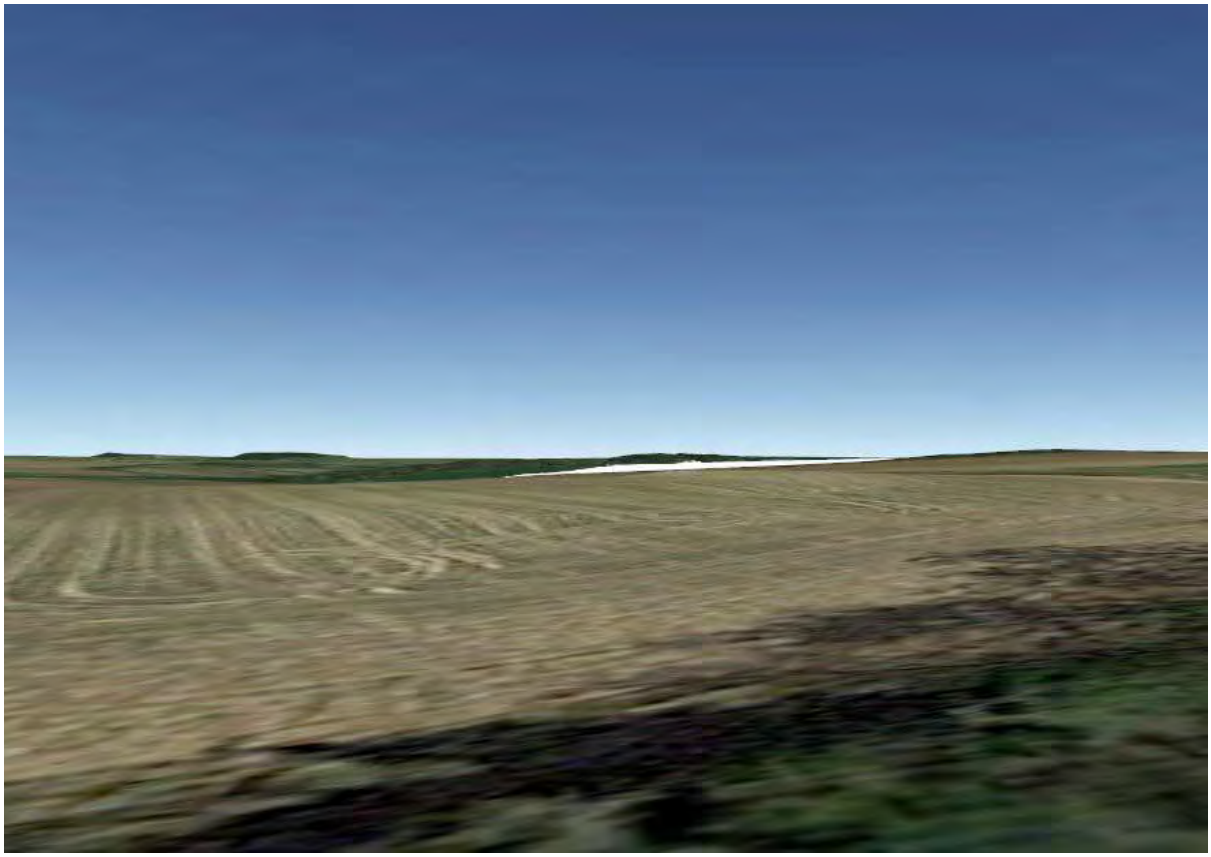


1st April 7:00am UTC

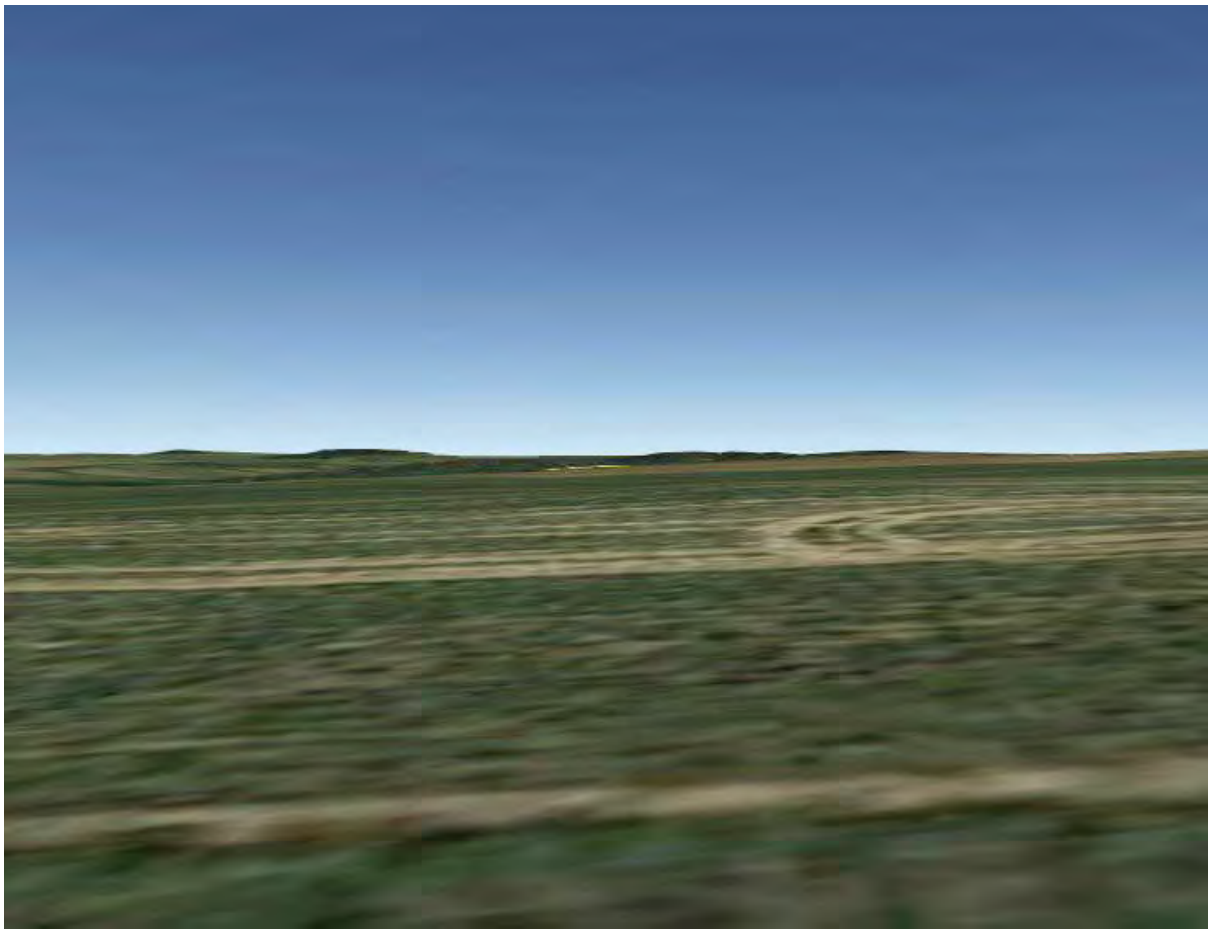
Receptor 99

Road Receptors

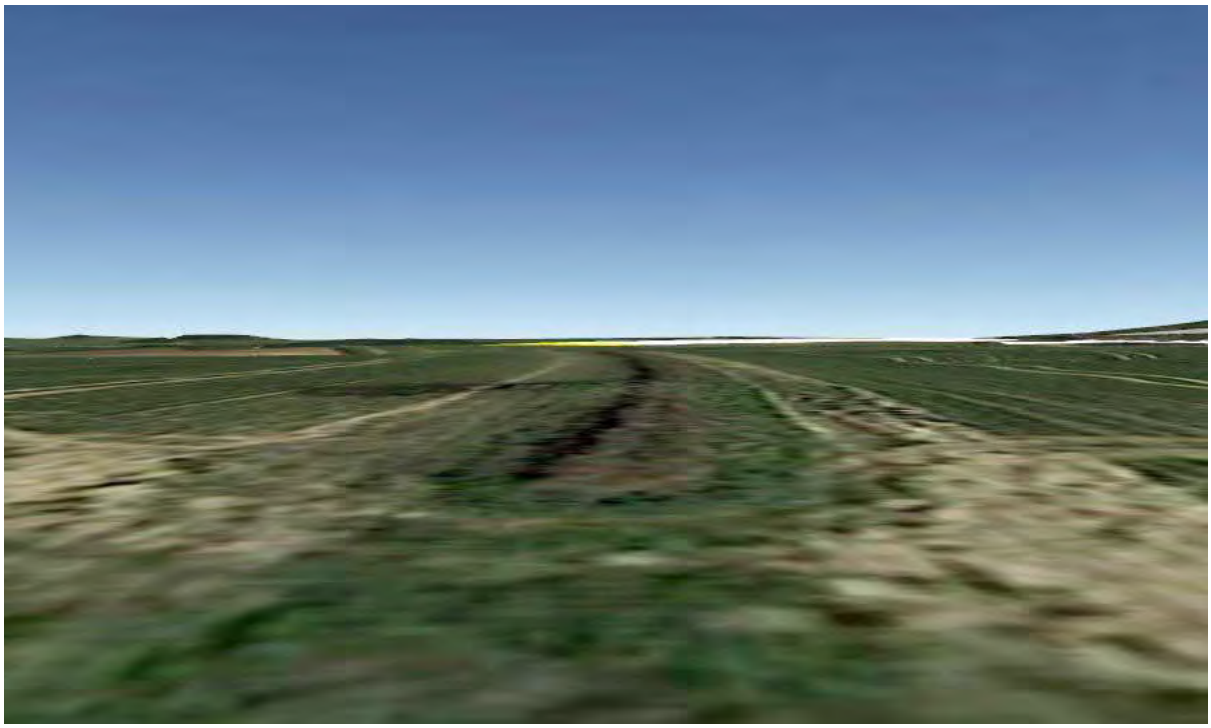
Receptor 2



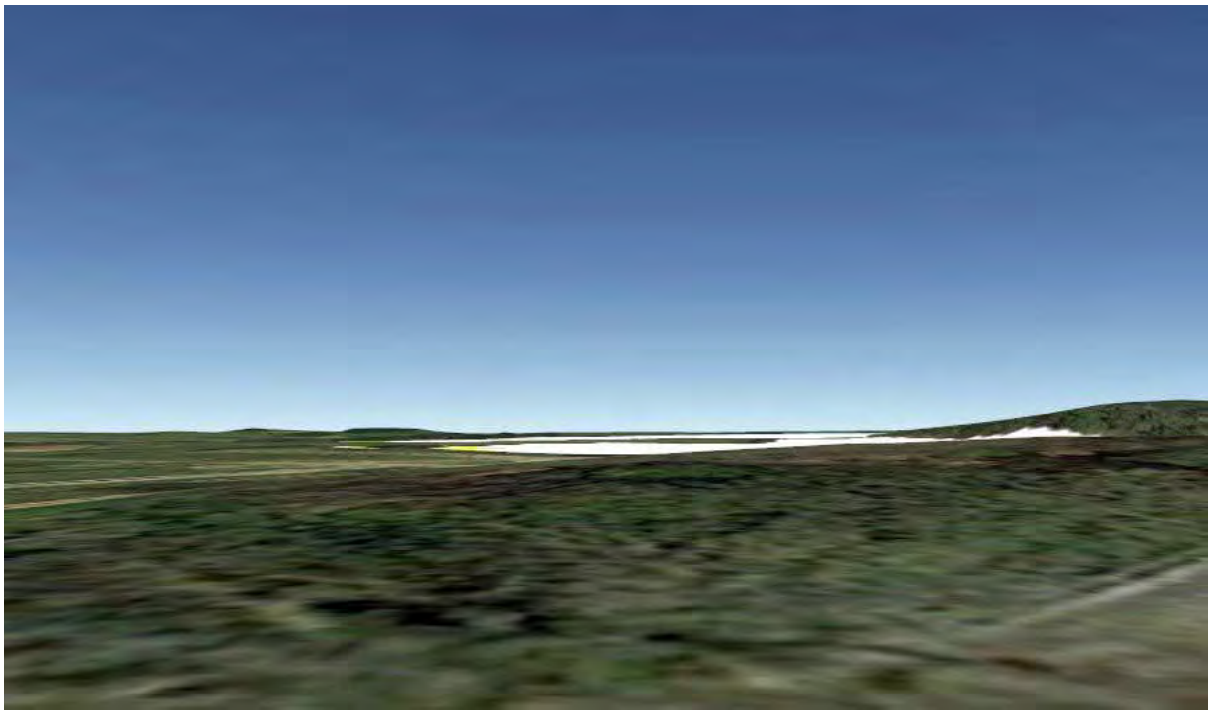
Receptor 3



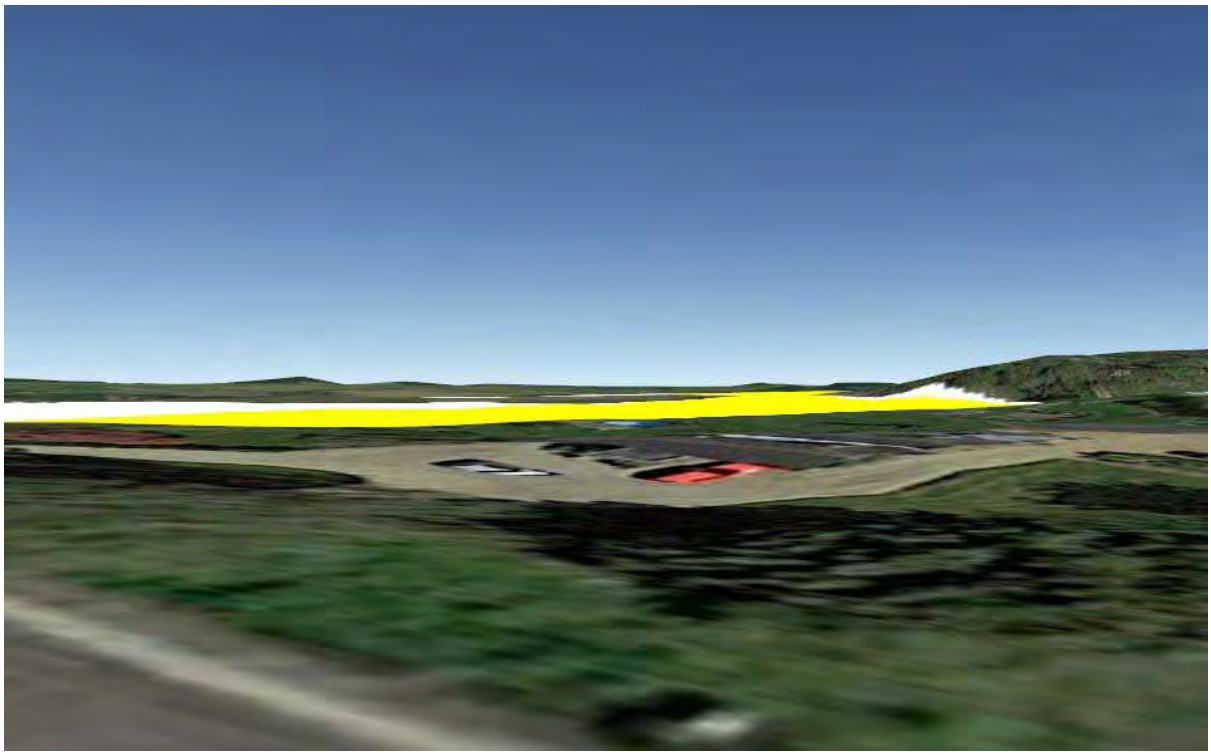
Receptor 4



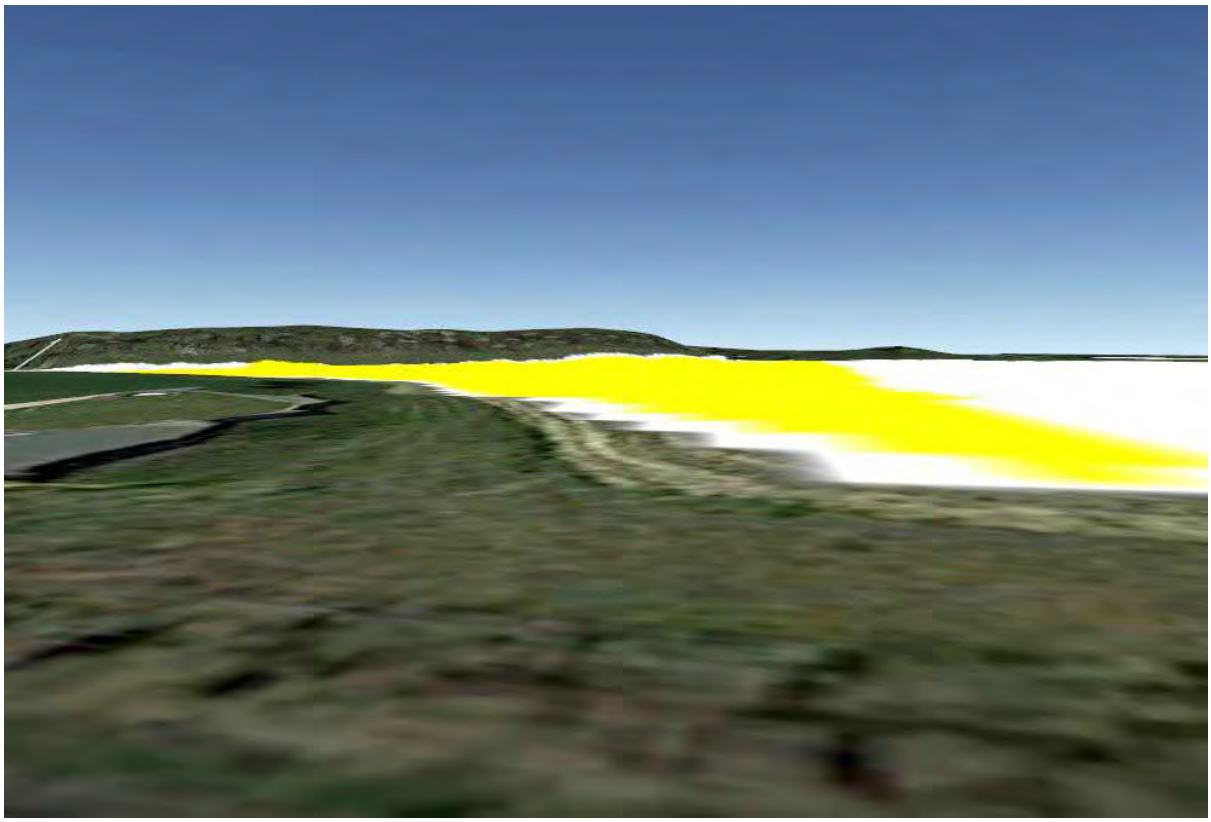
Receptor 5



Receptor 6

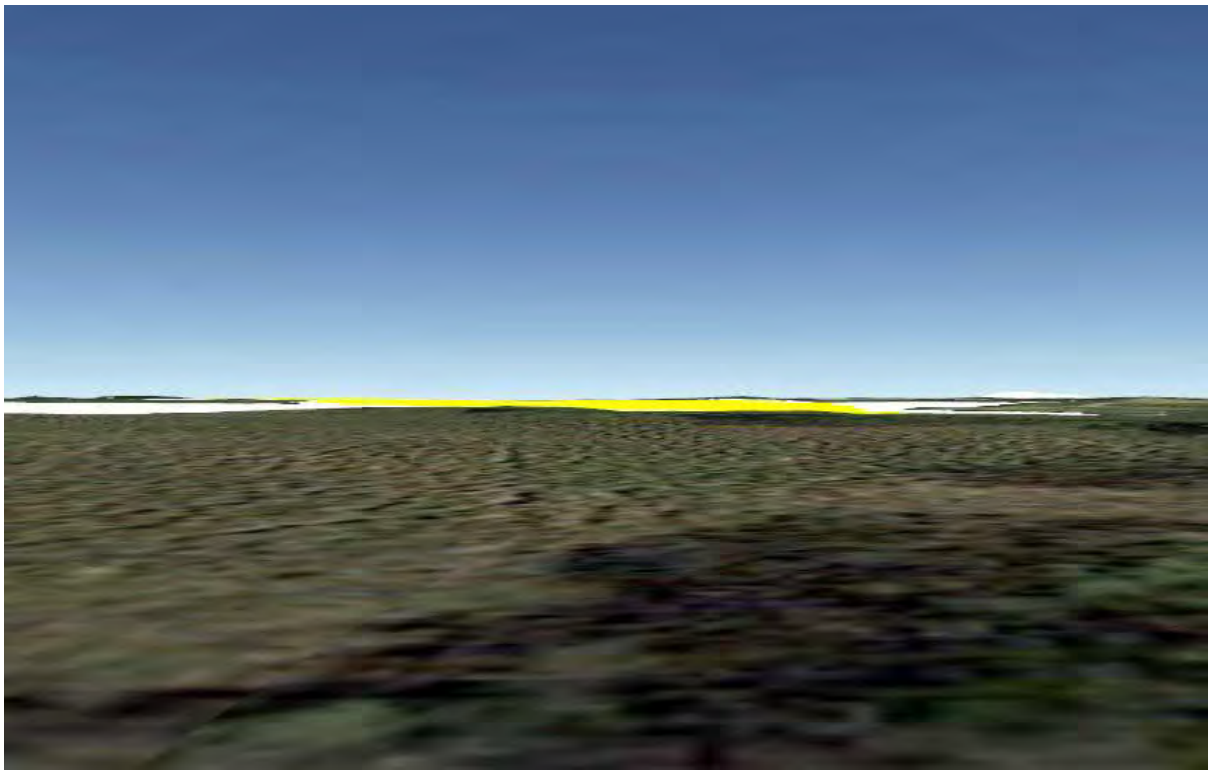


Receptor 7

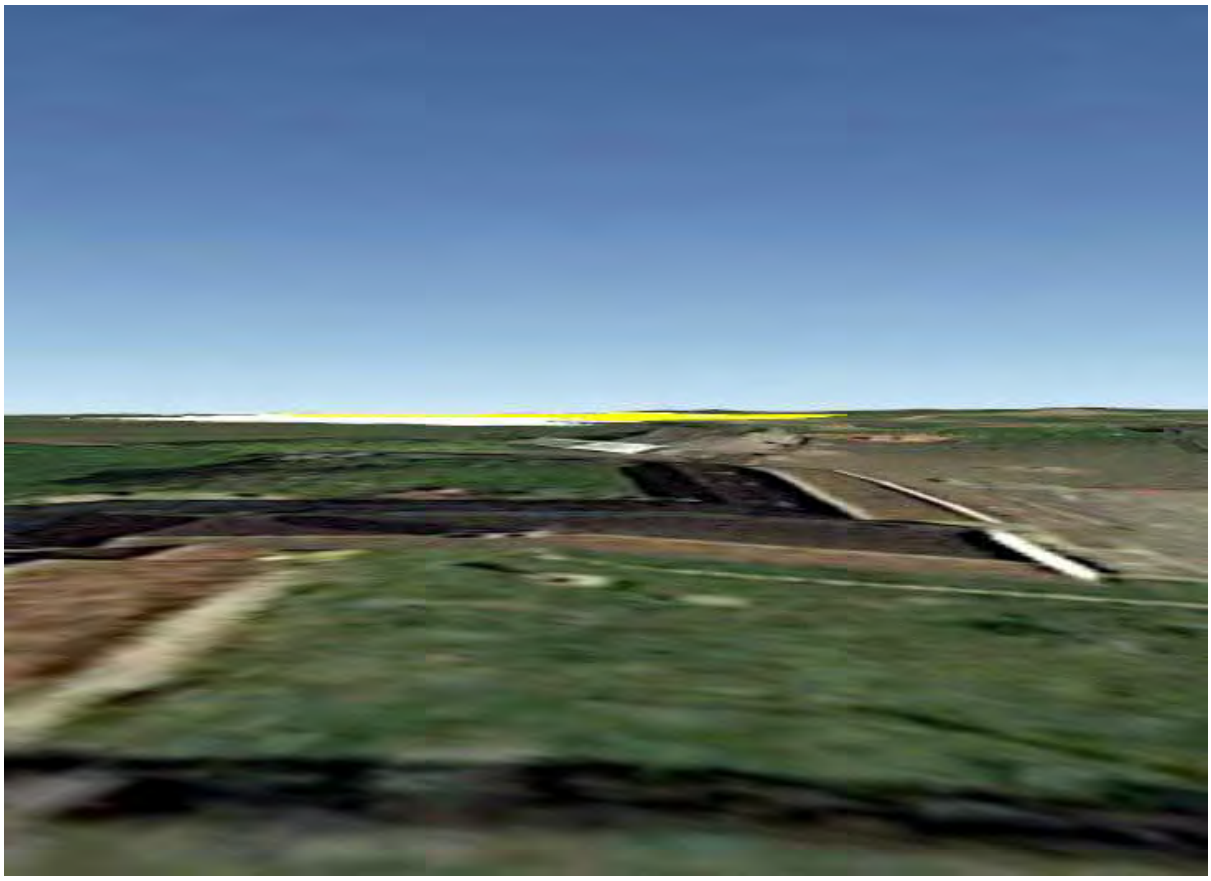


Receptor 8

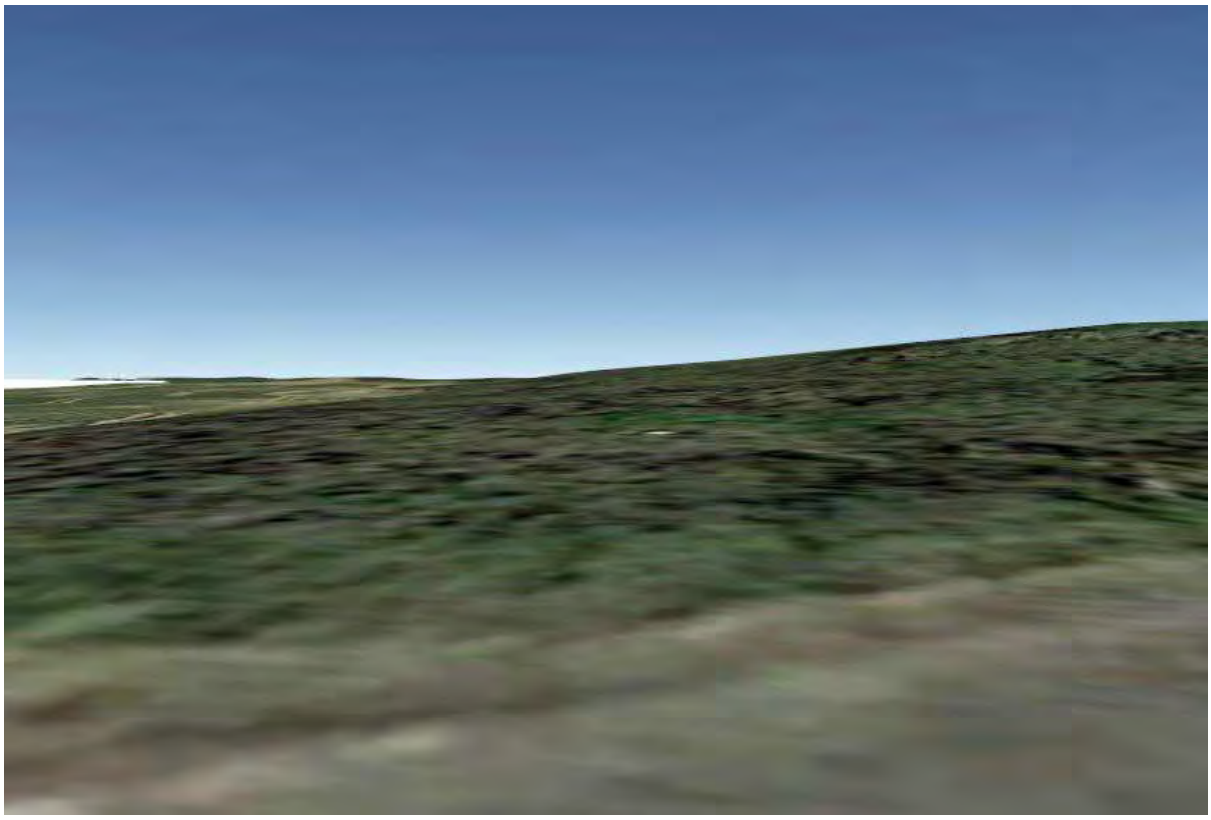
Receptor 9



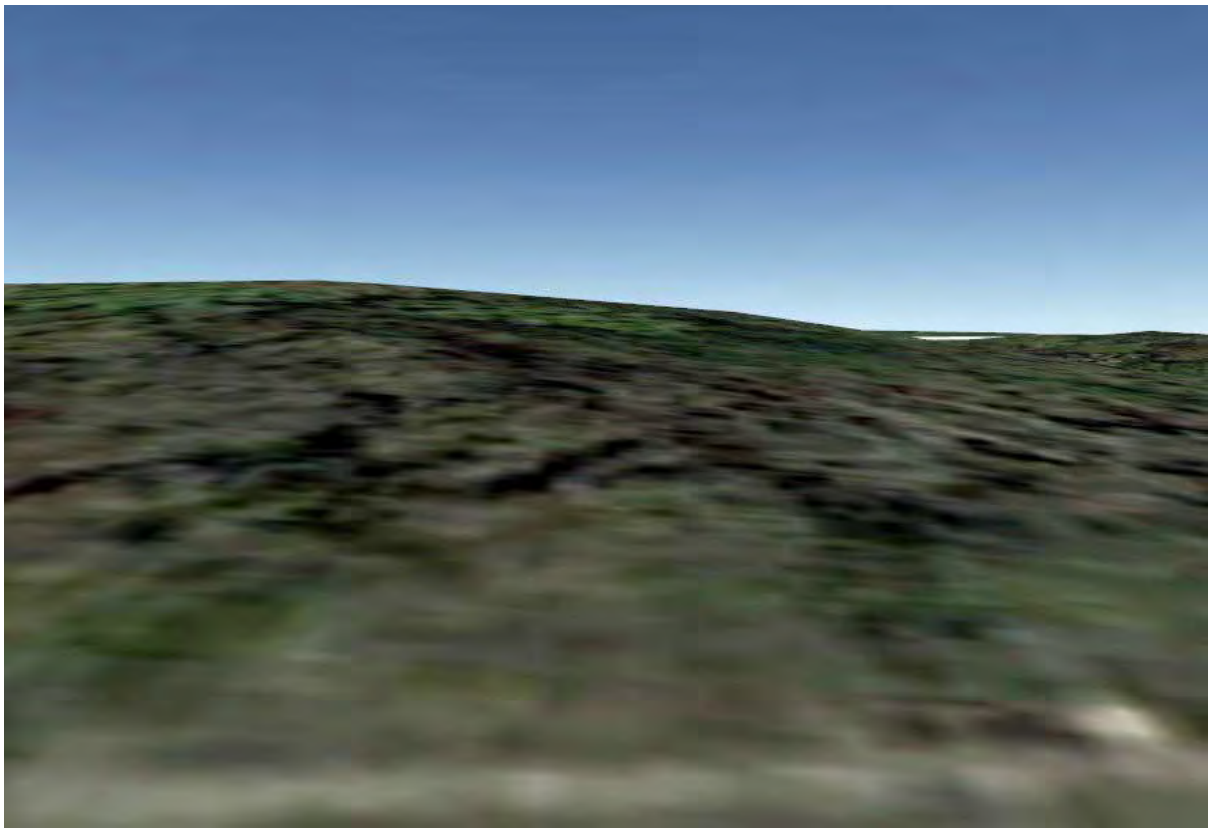
Receptor 10



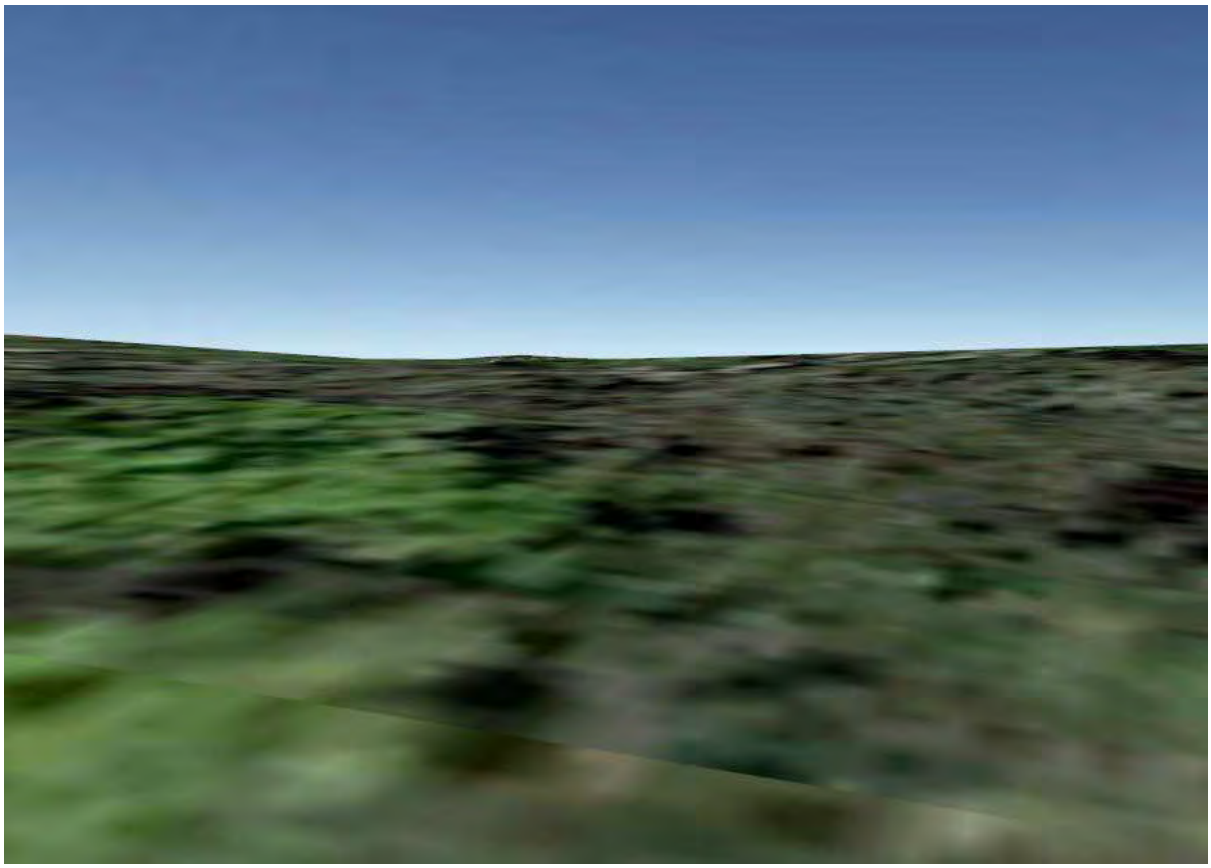
Receptor 11



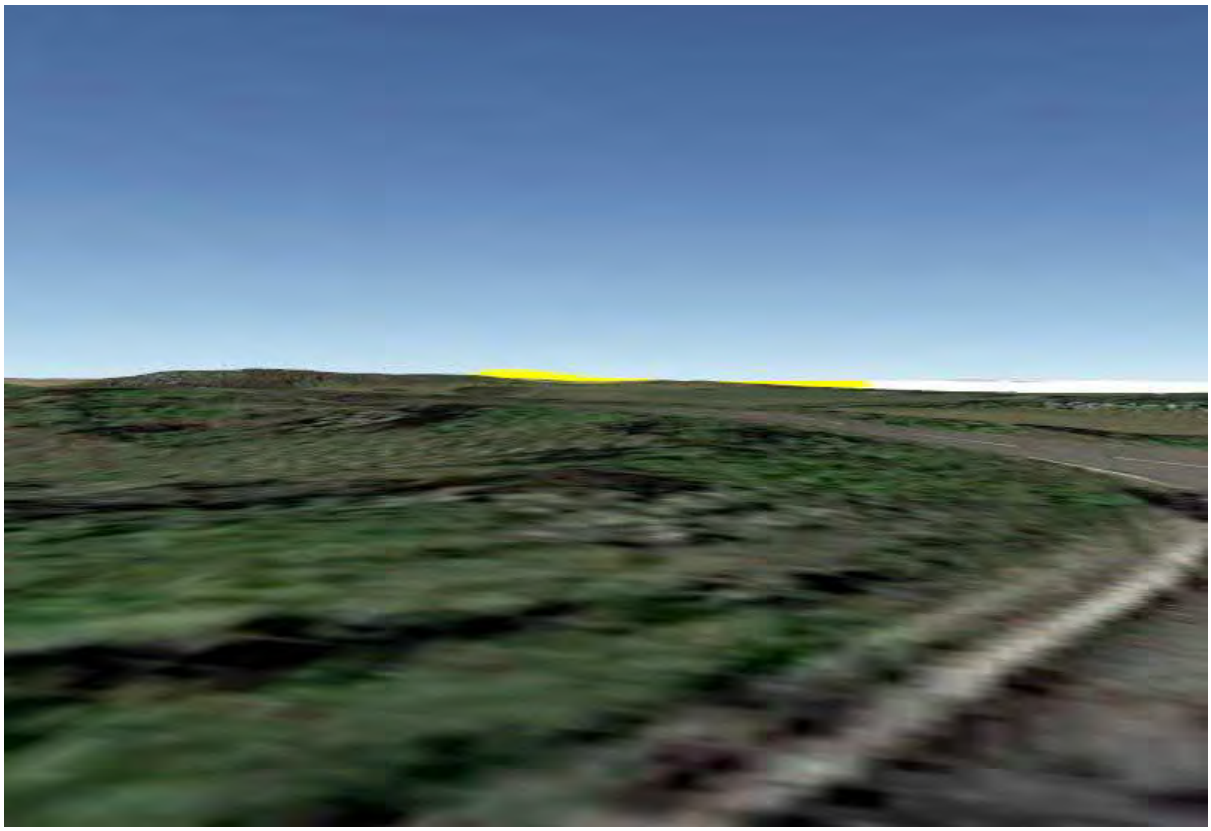
Receptor 12



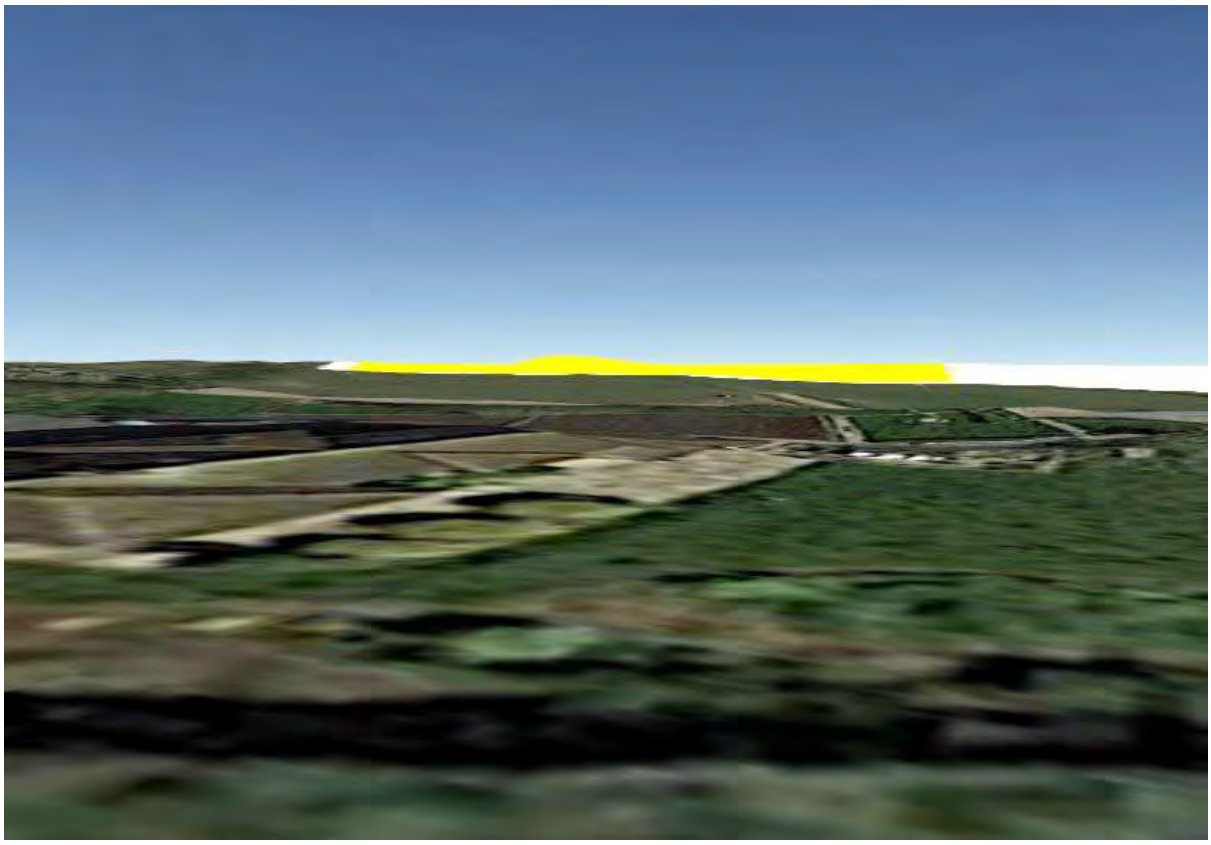
Receptor 13



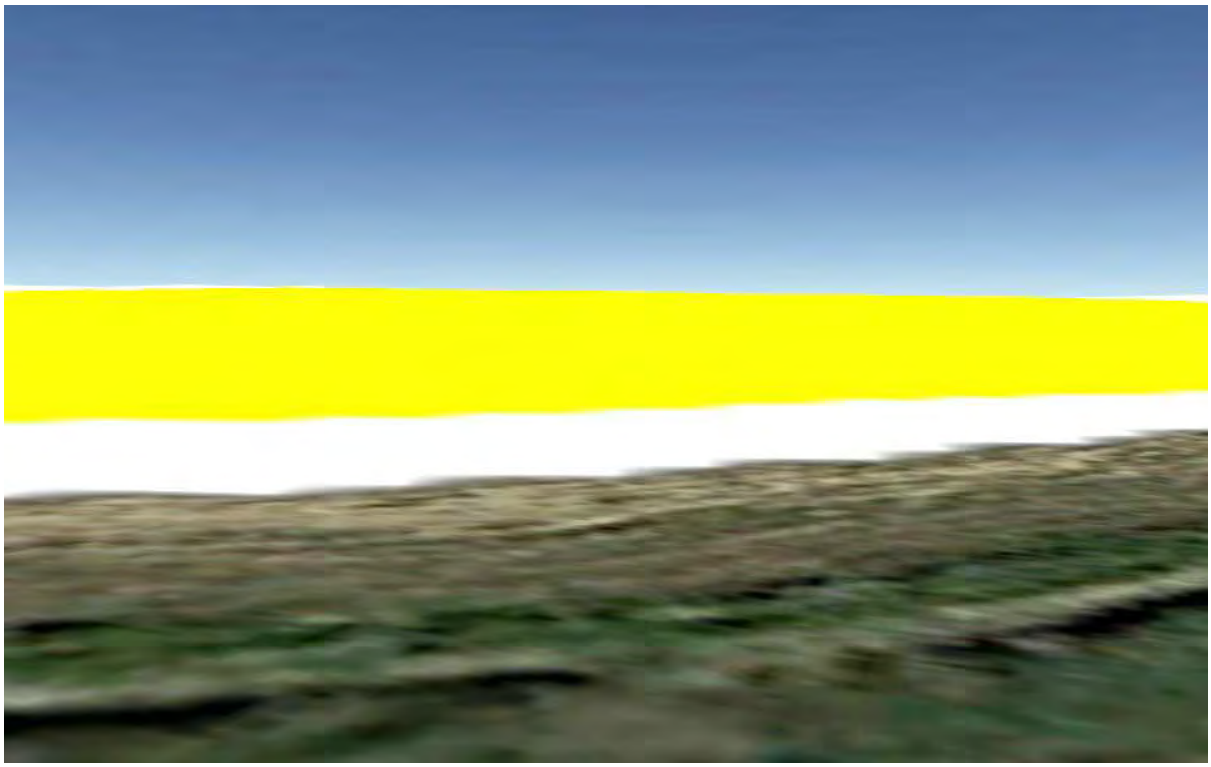
Receptor 14



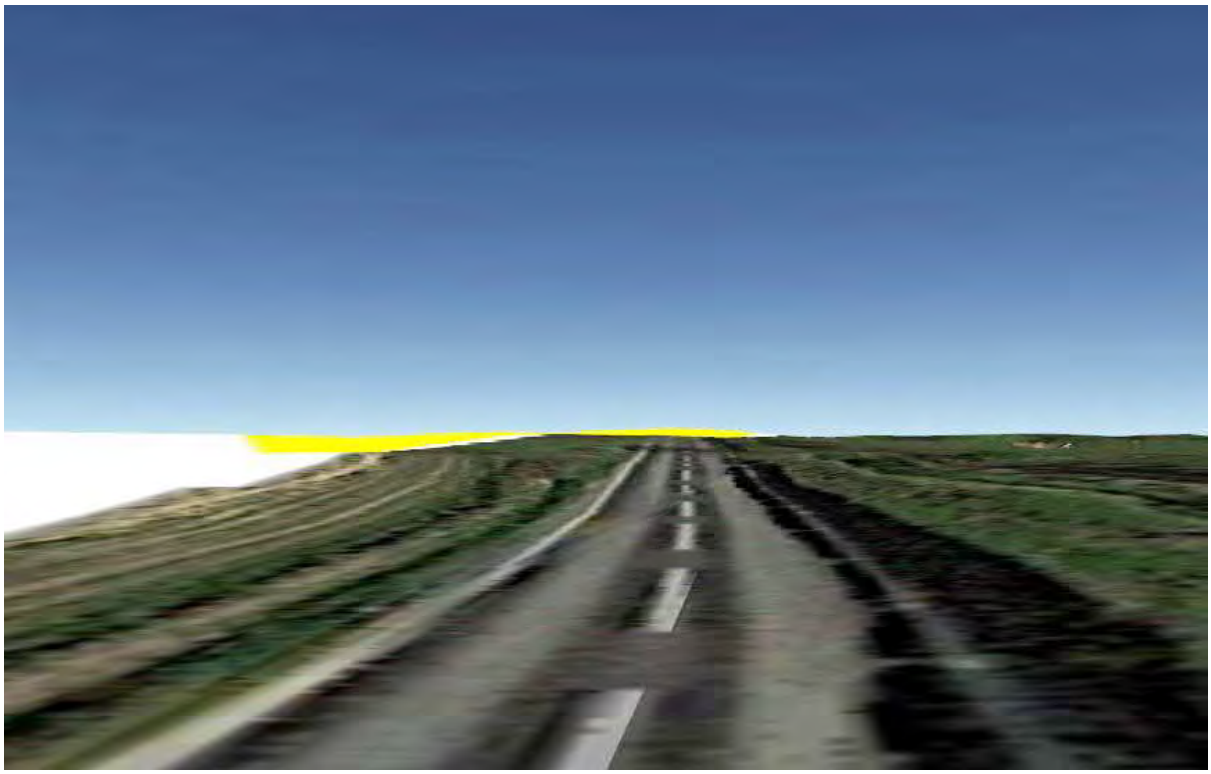
Receptor 15



Receptor 16

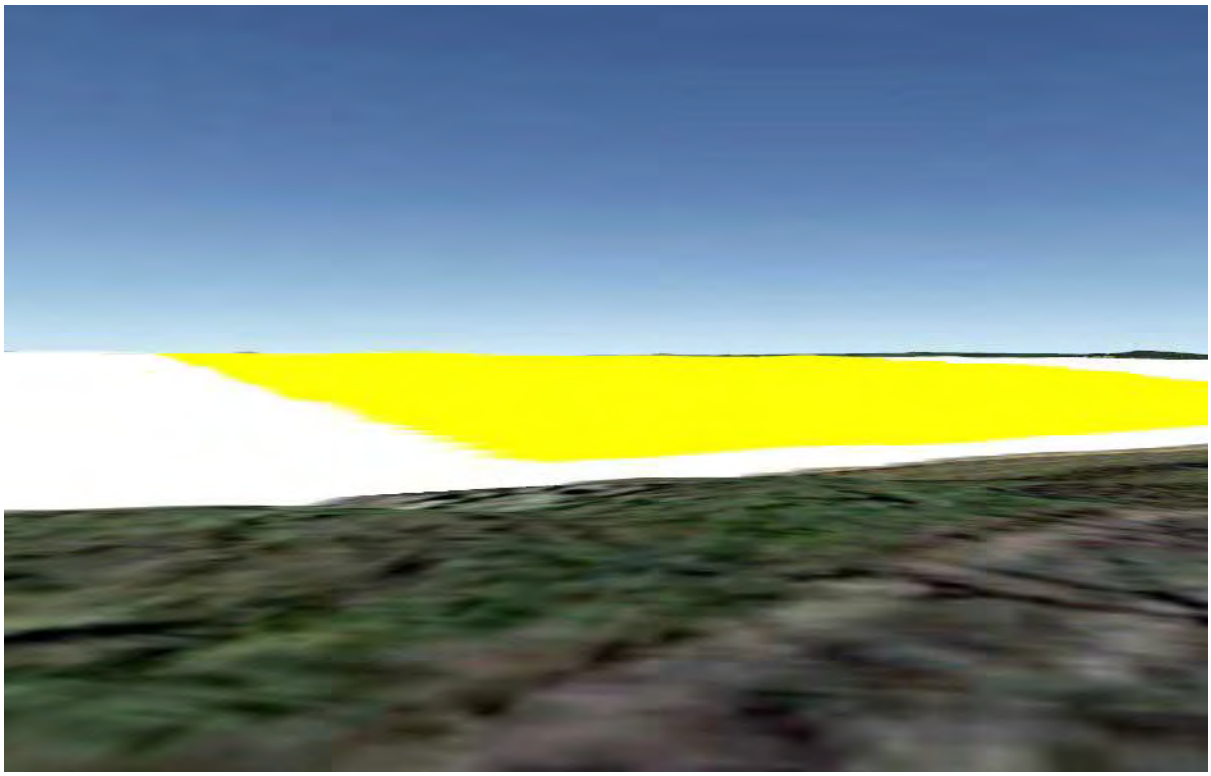


Receptor 17

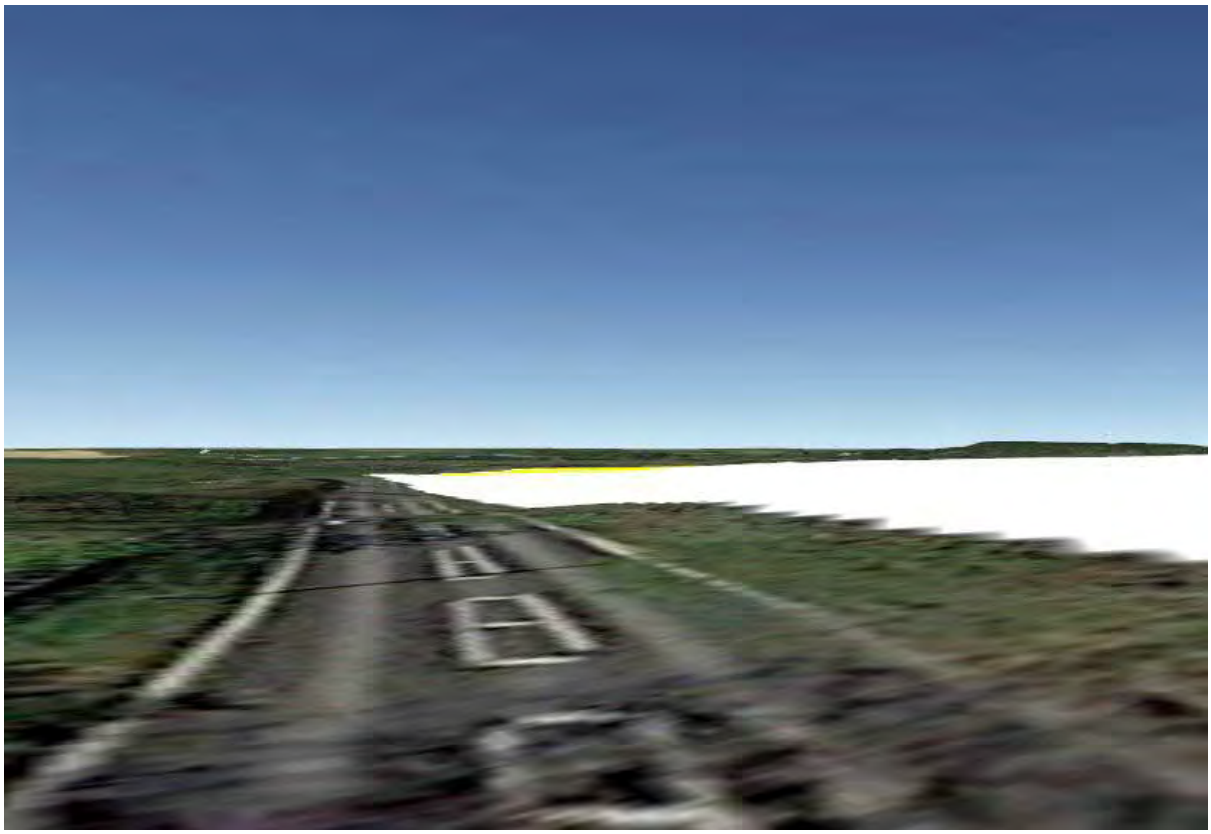


Receptor 18

East Facing

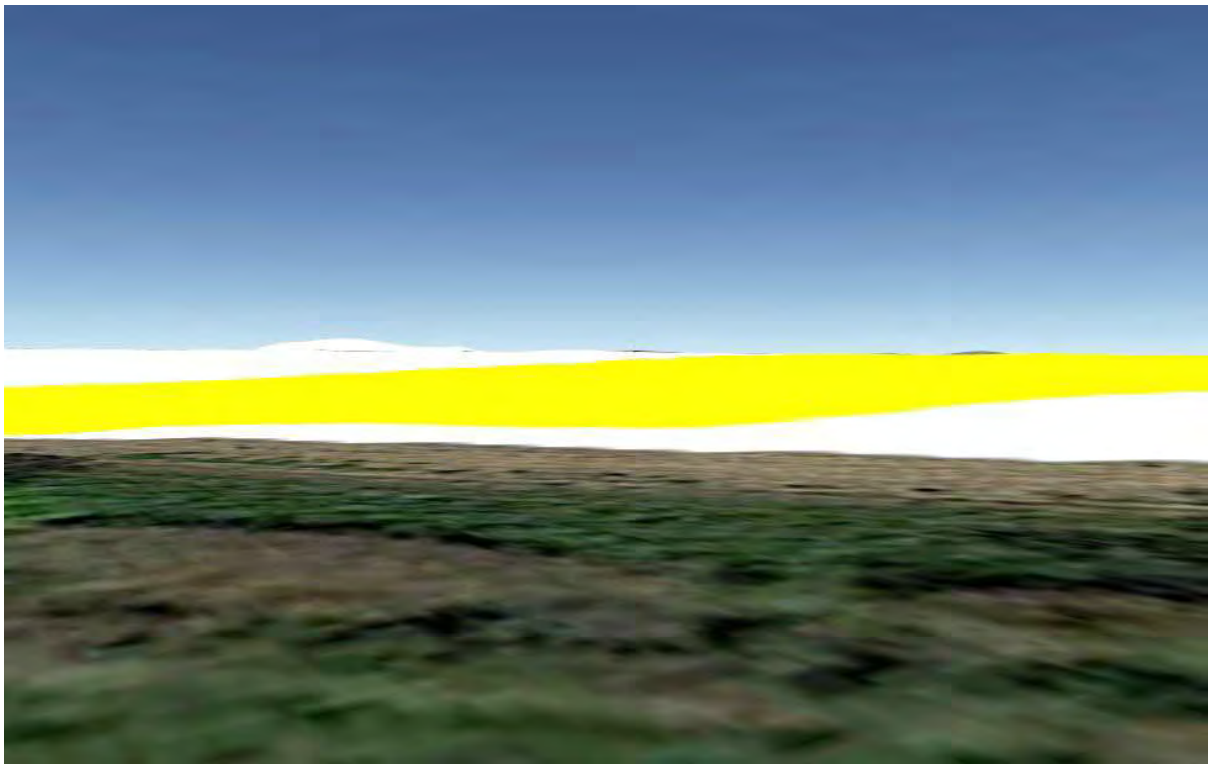


West Facing

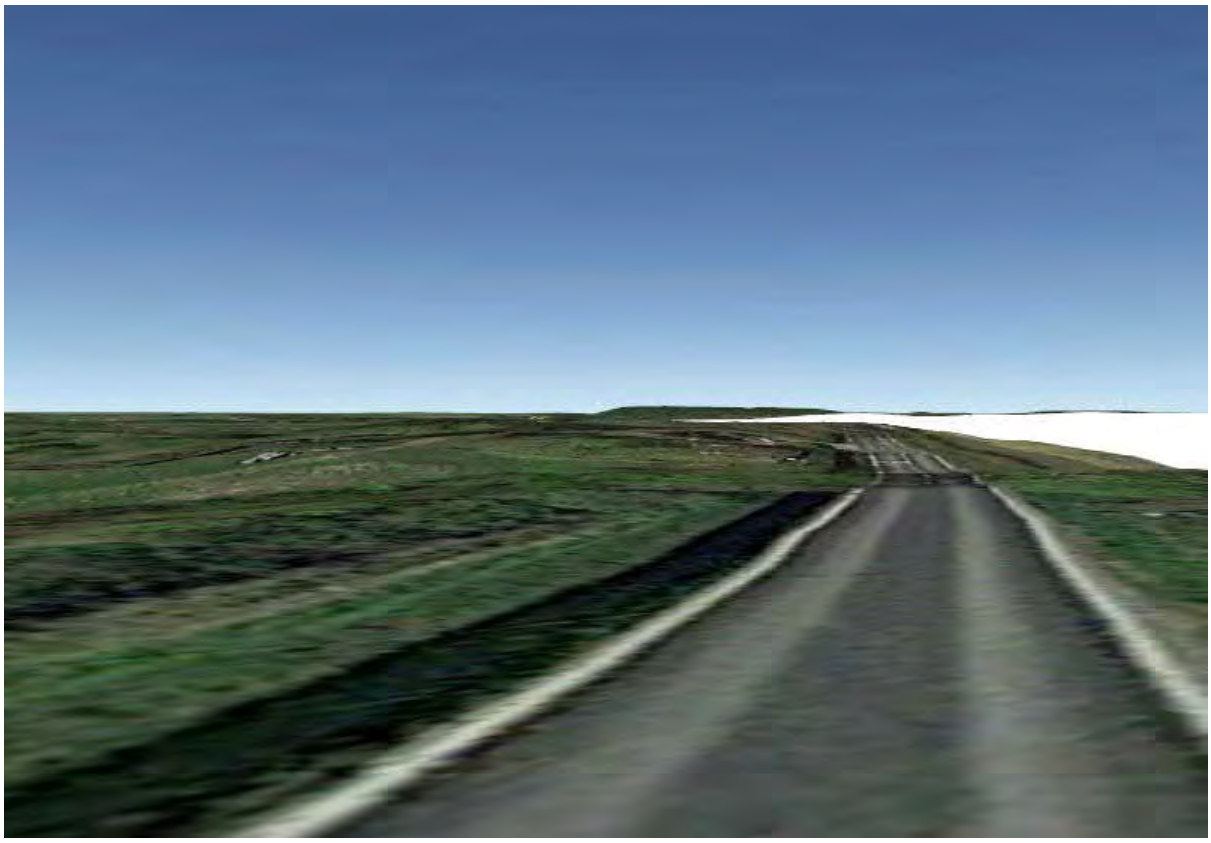


Receptor 19

East Facing

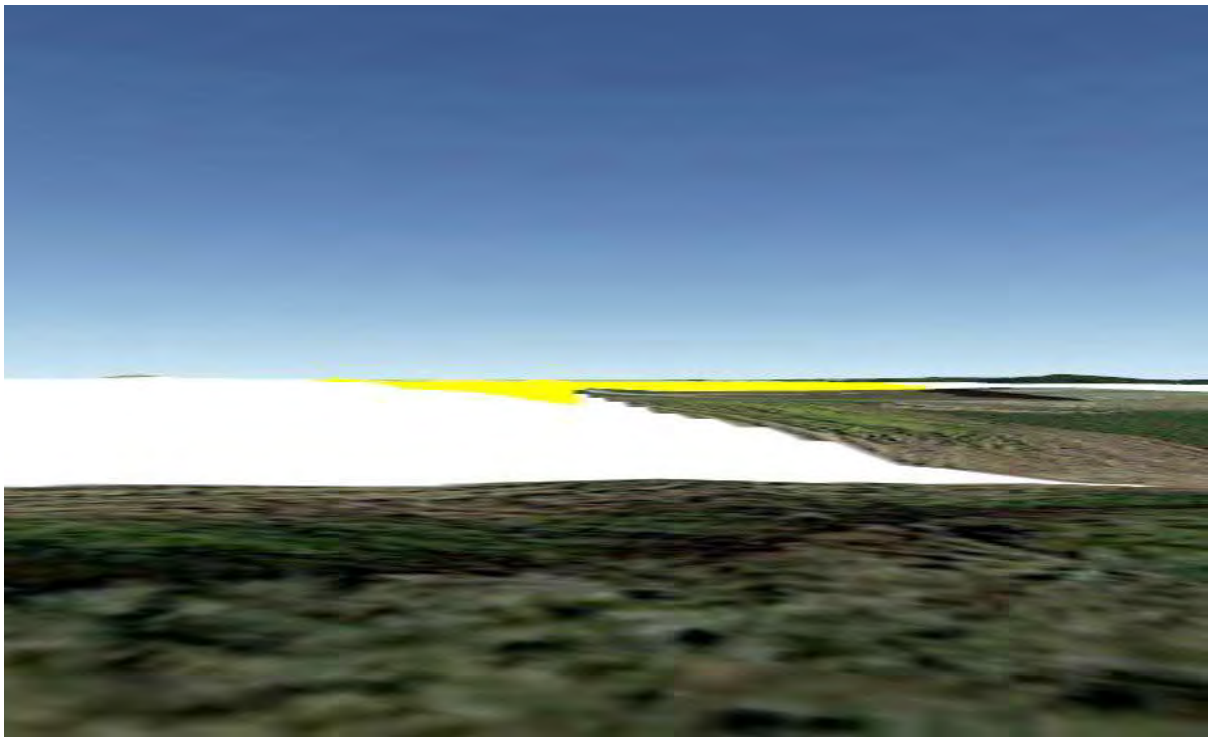


West Facing

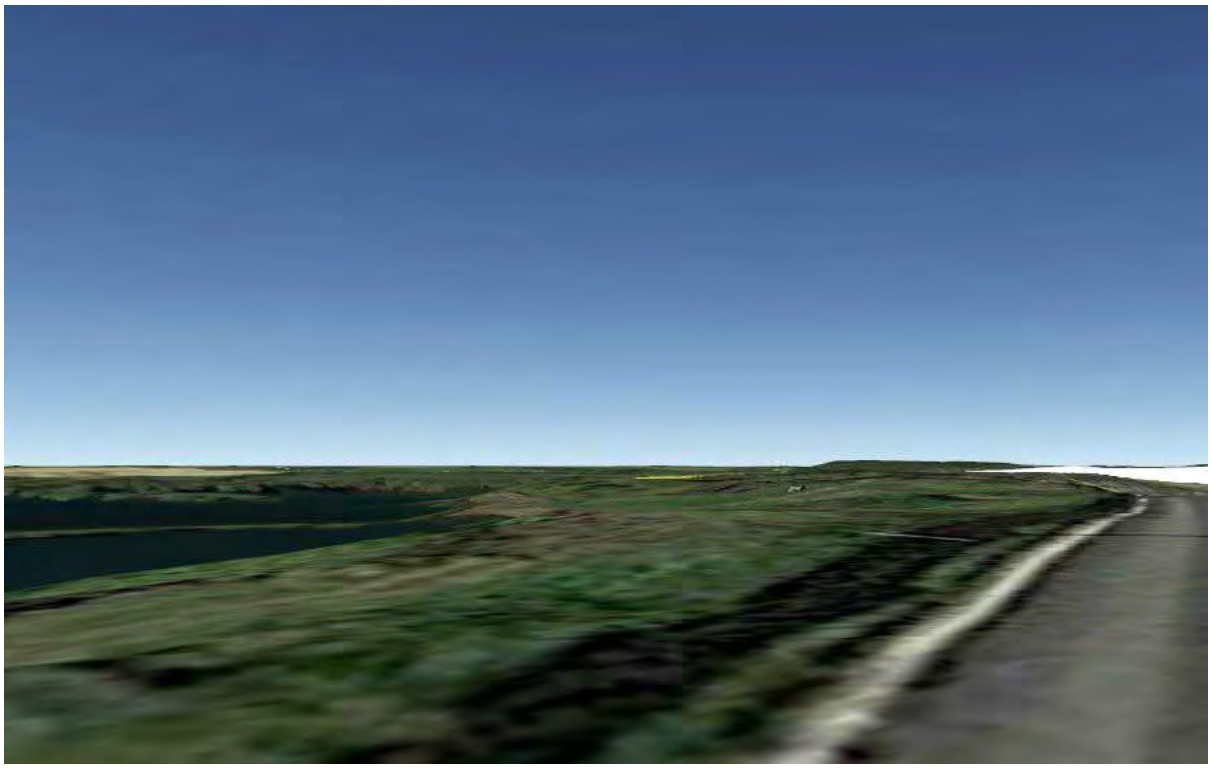


Receptor 20

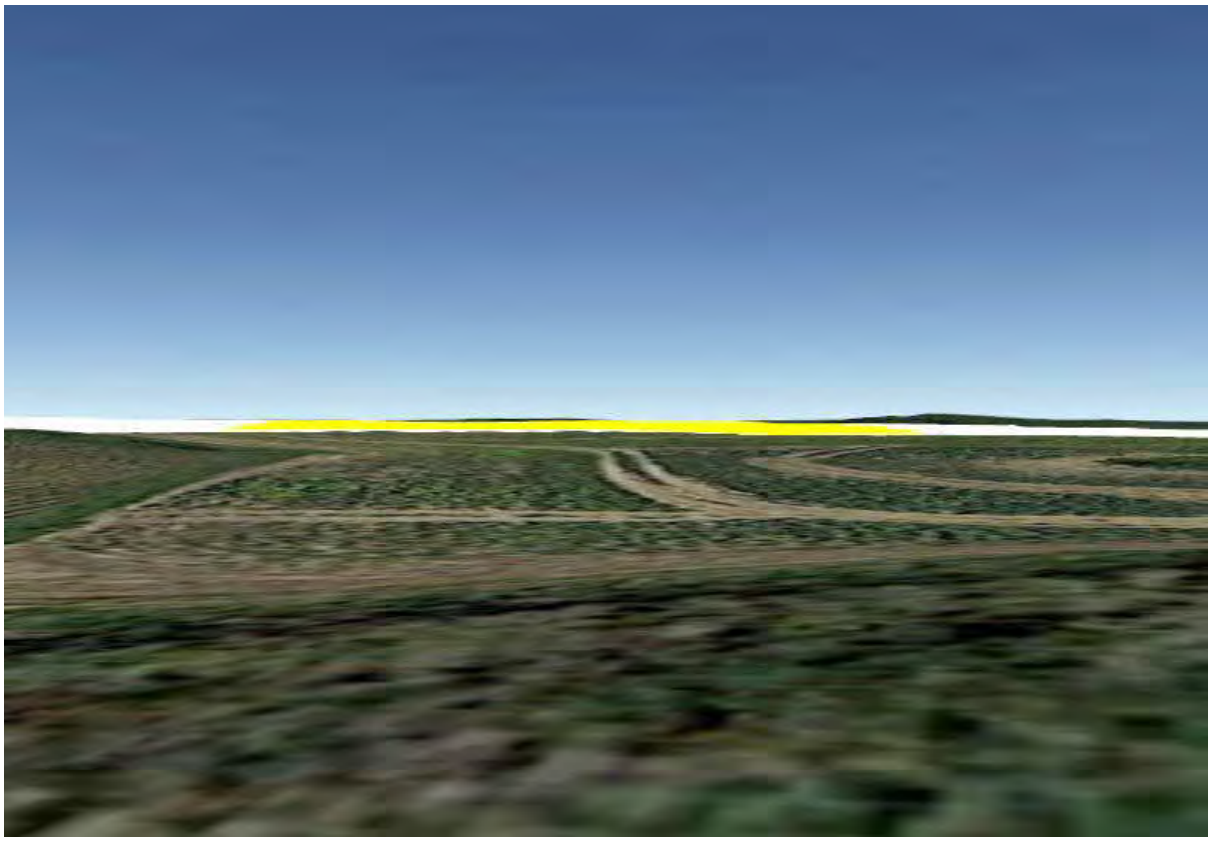
East Facing



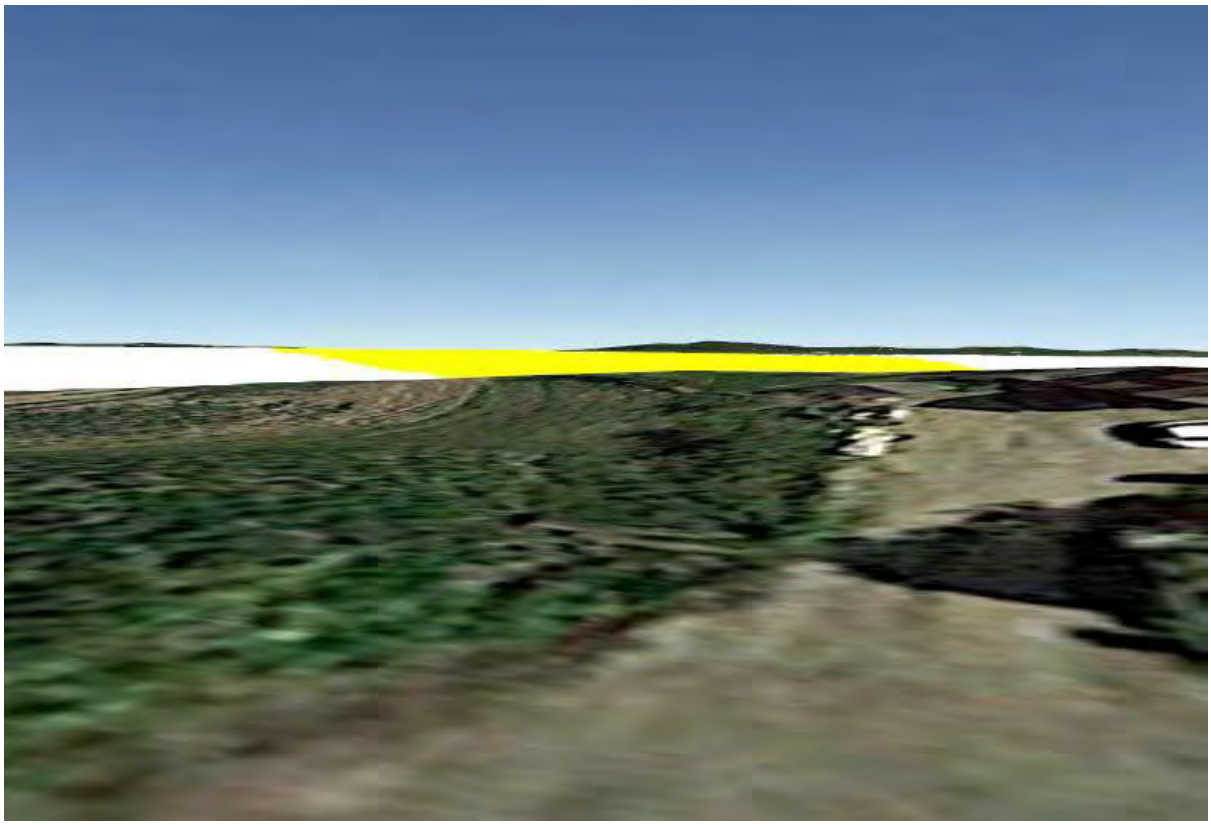
West Facing



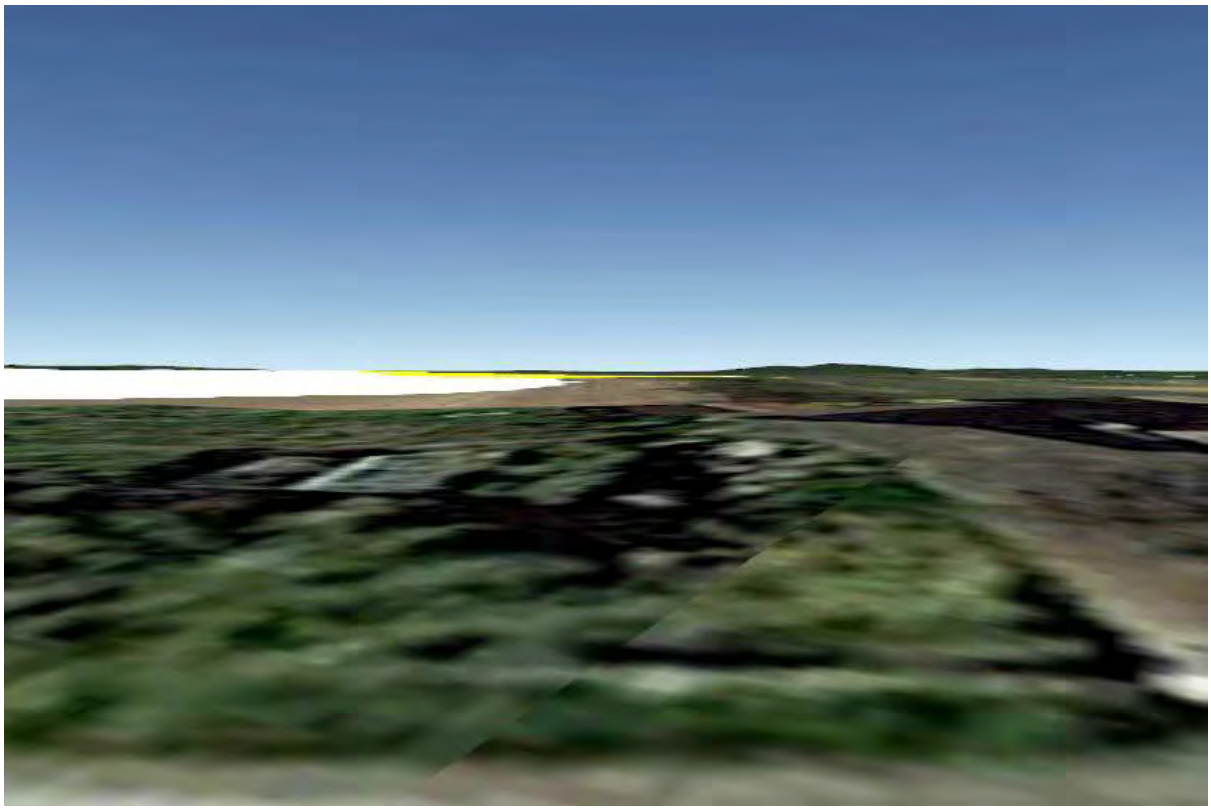
Receptor 21



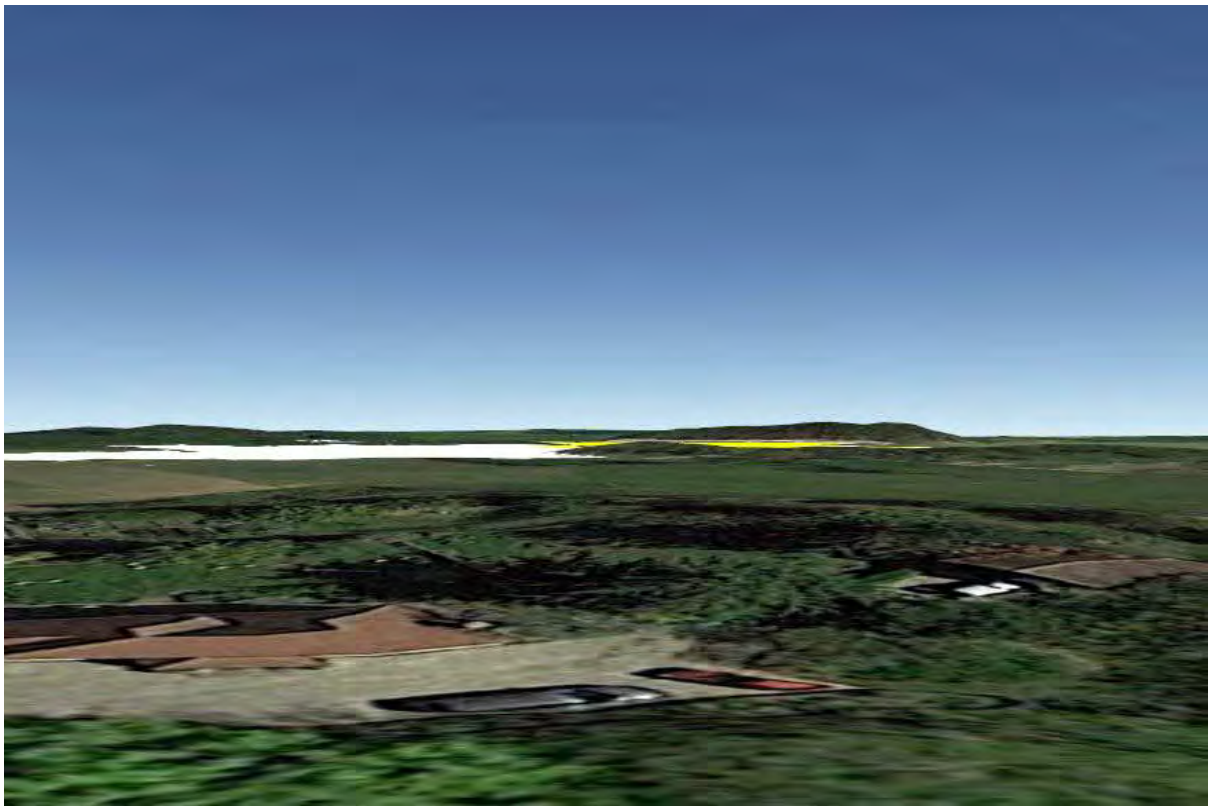
Receptor 22



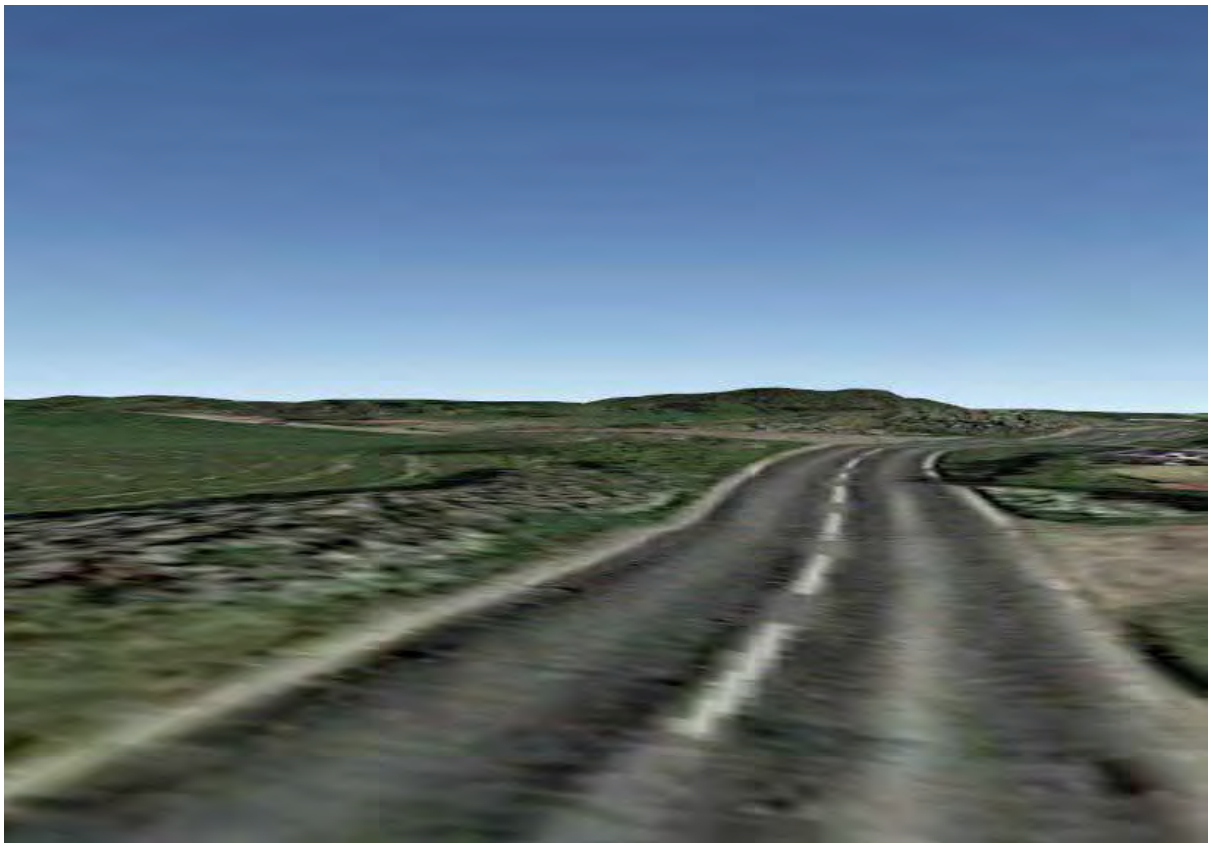
Receptor 23



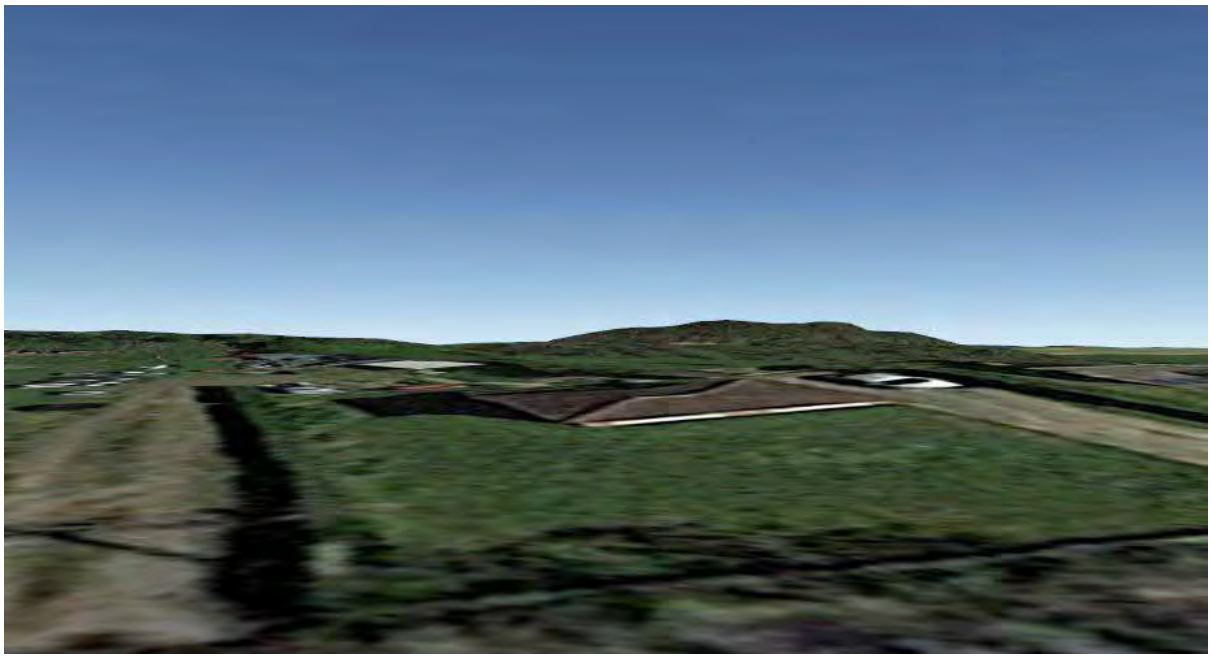
Receptor 24



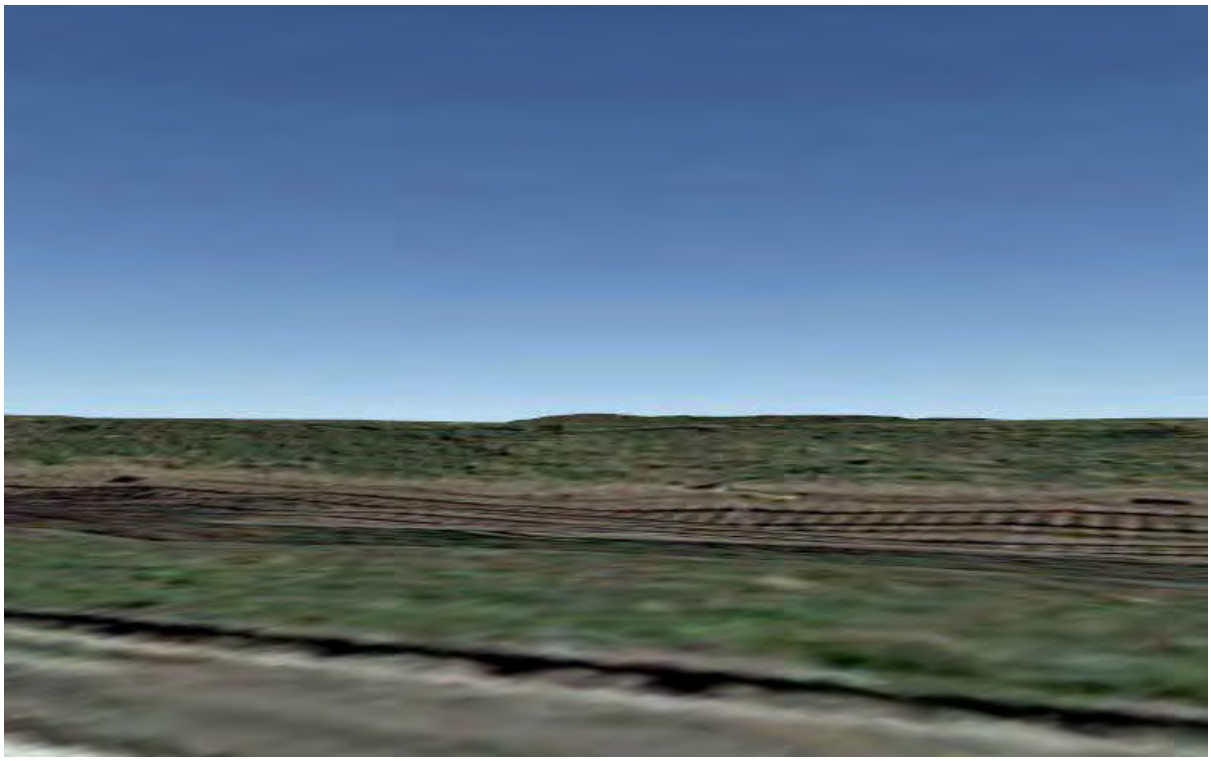
Receptor 25



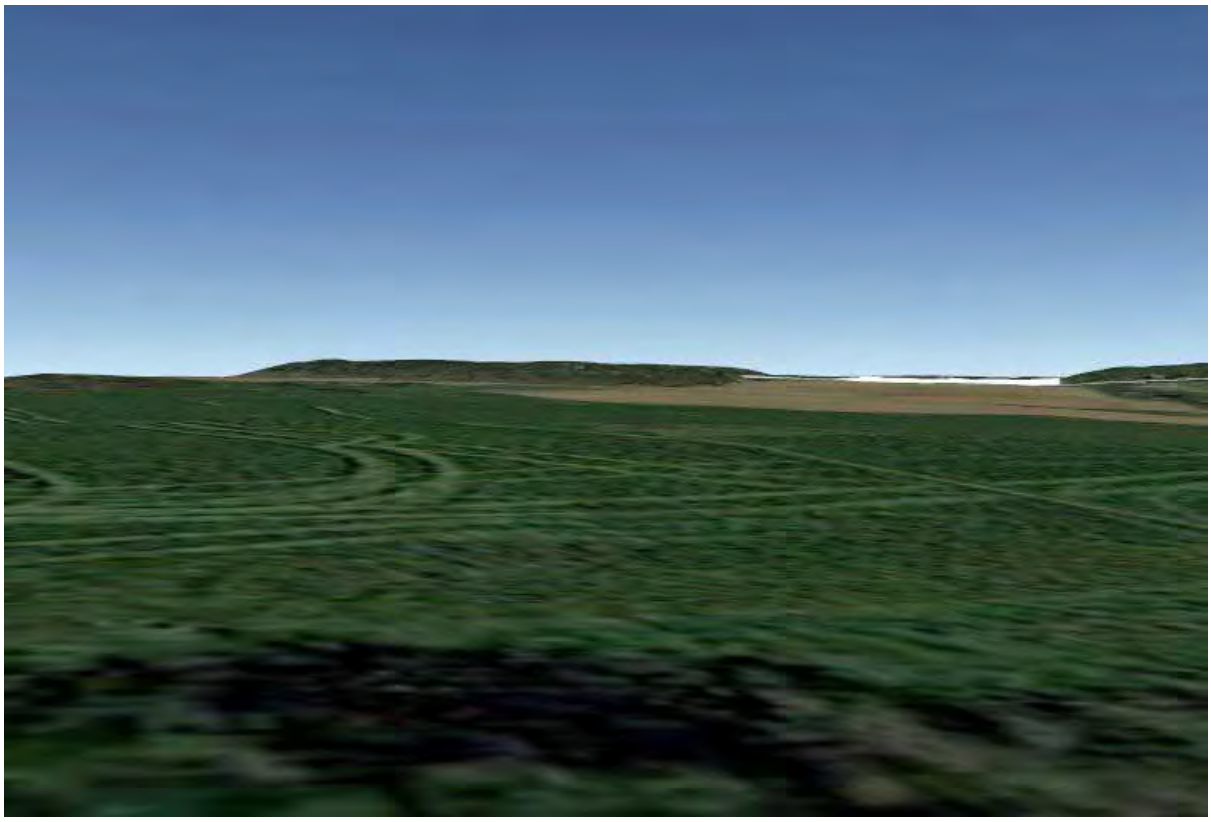
Receptor 26



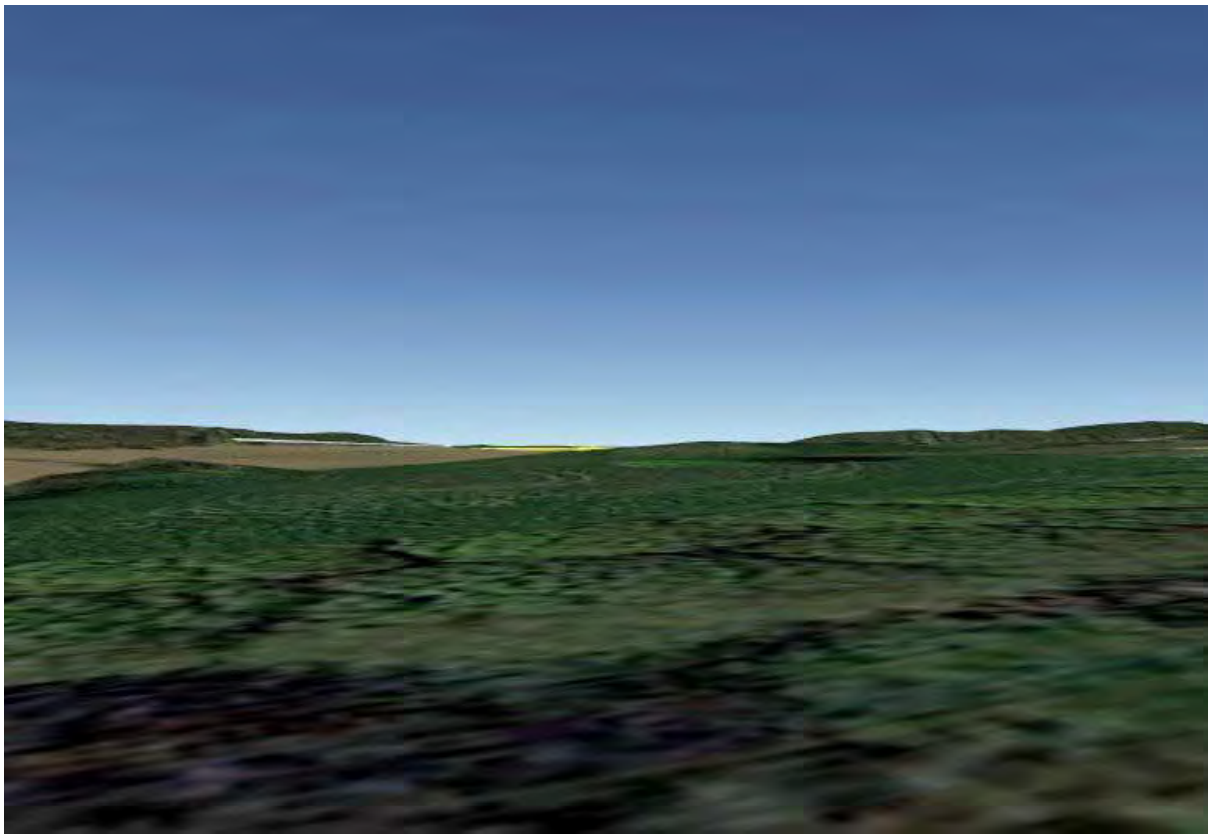
Receptor 28



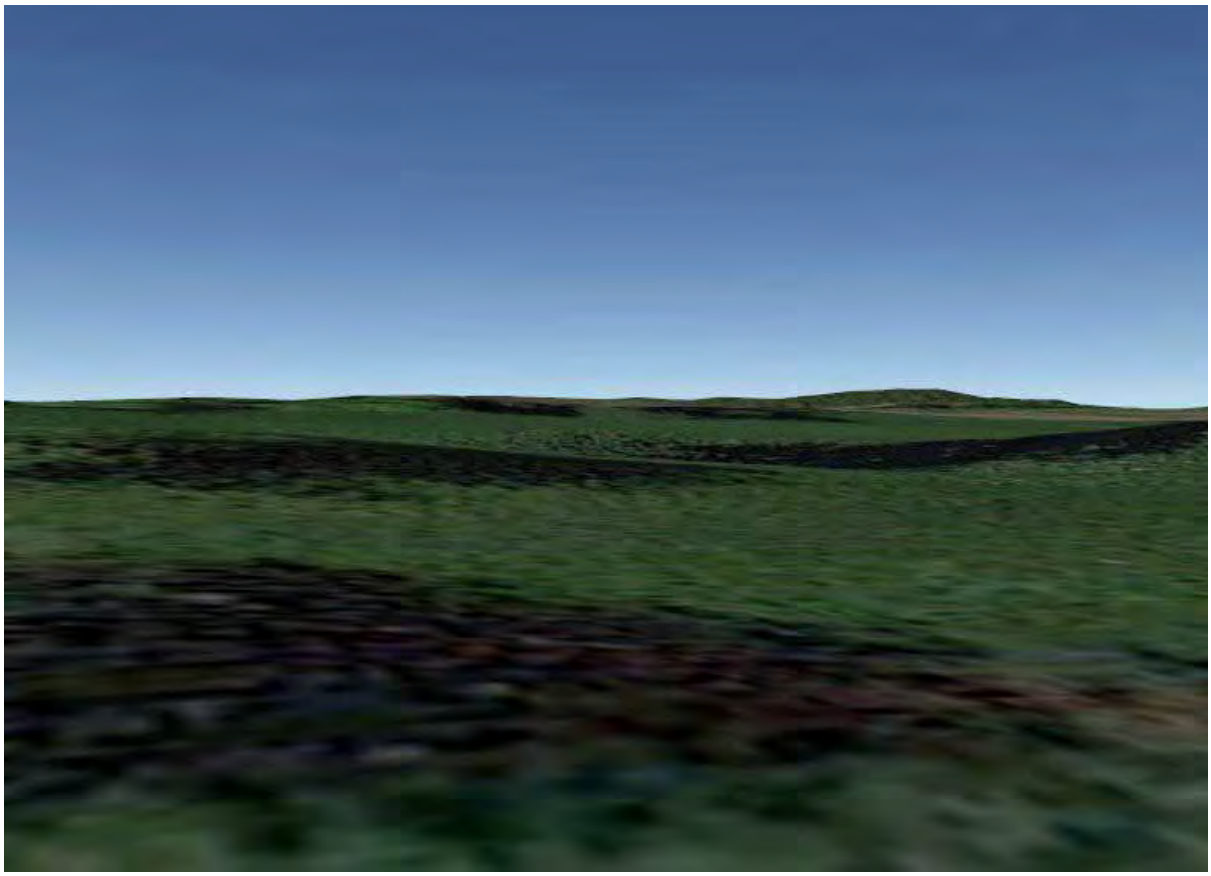
Receptor 29



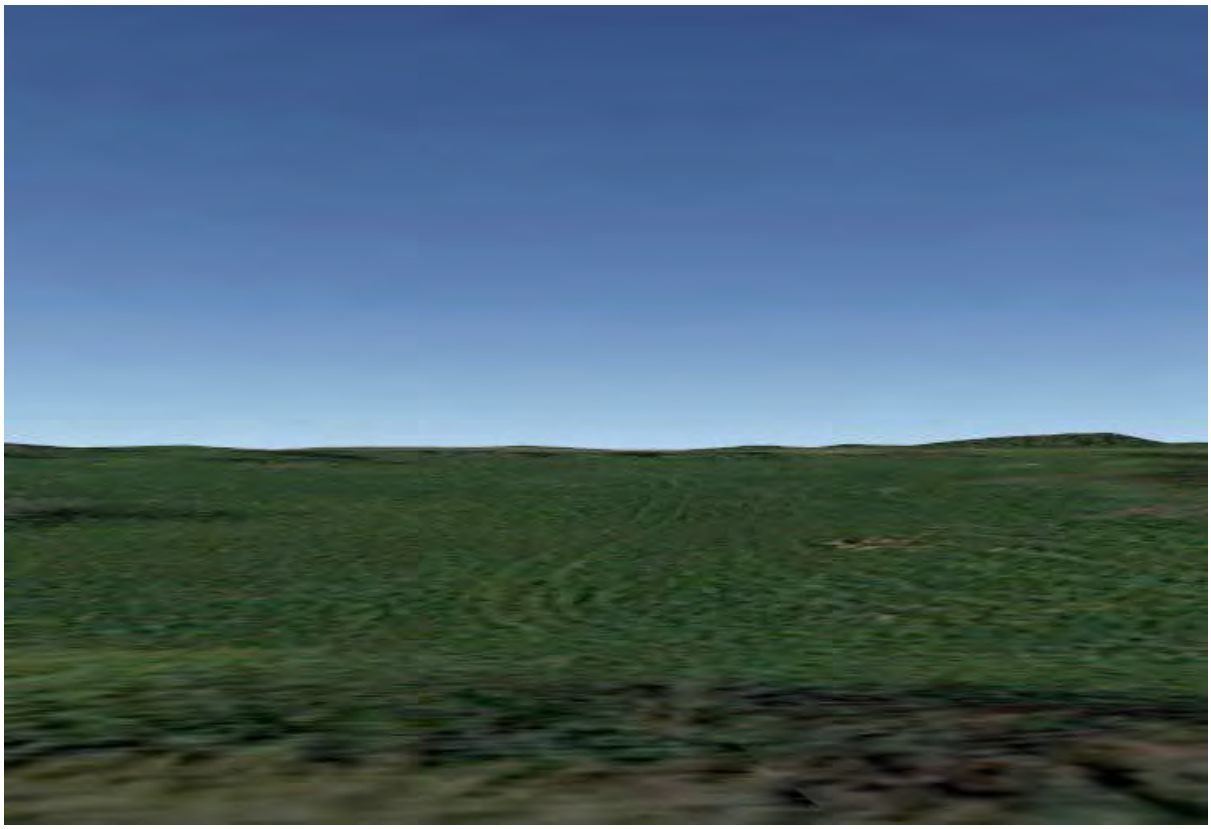
Receptor 30



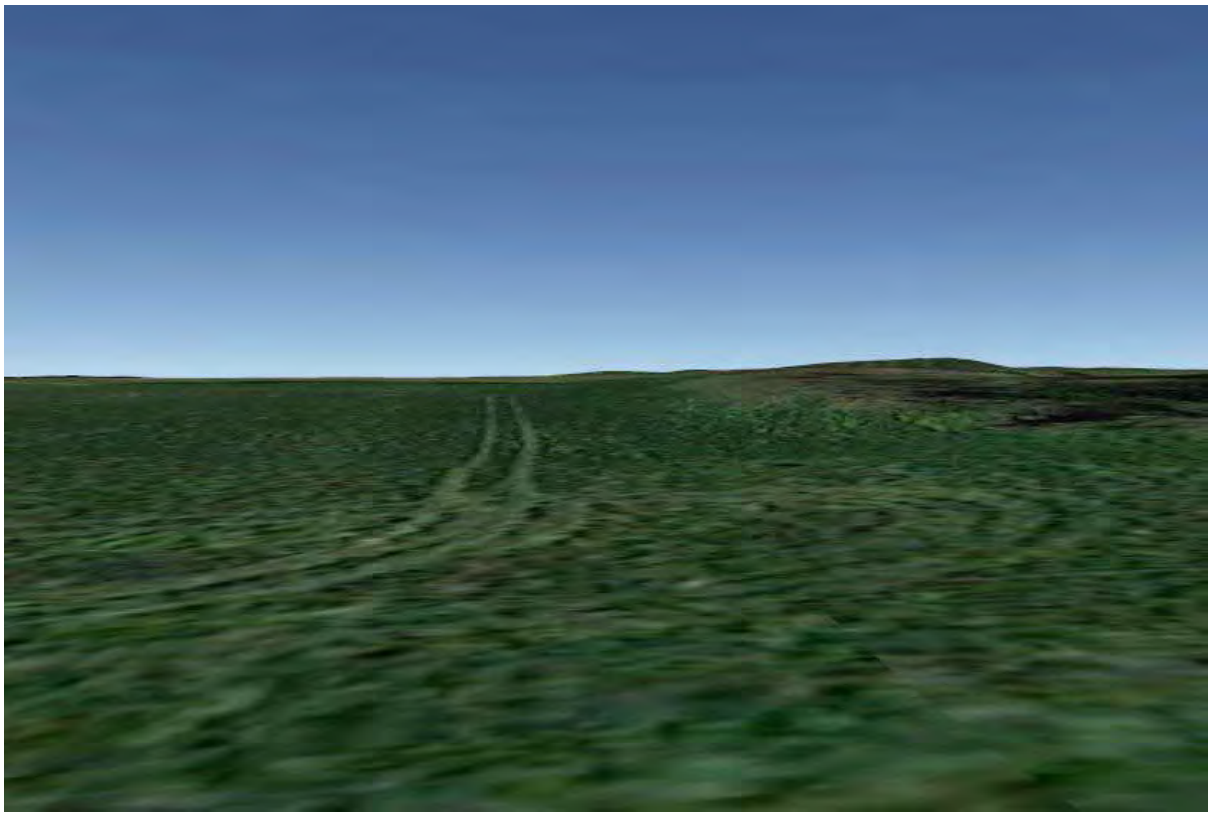
Receptor 31



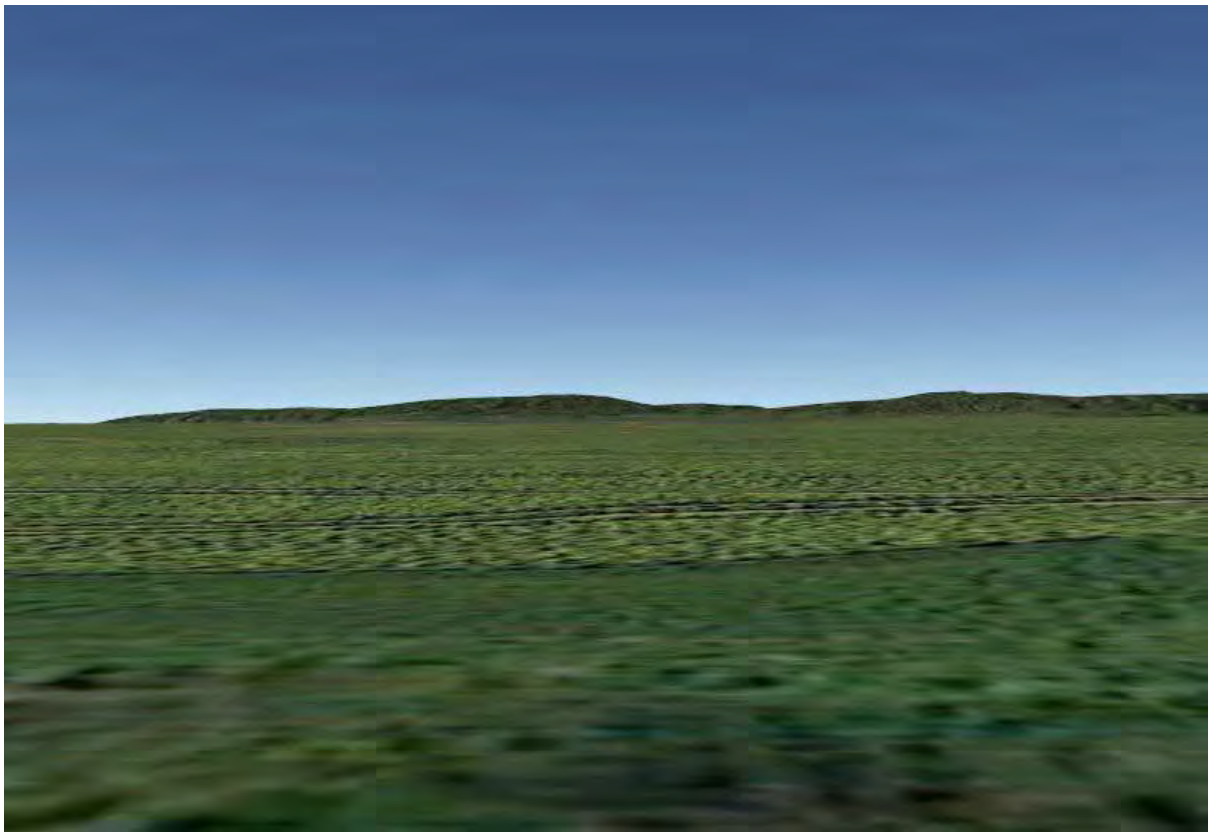
Receptor 32



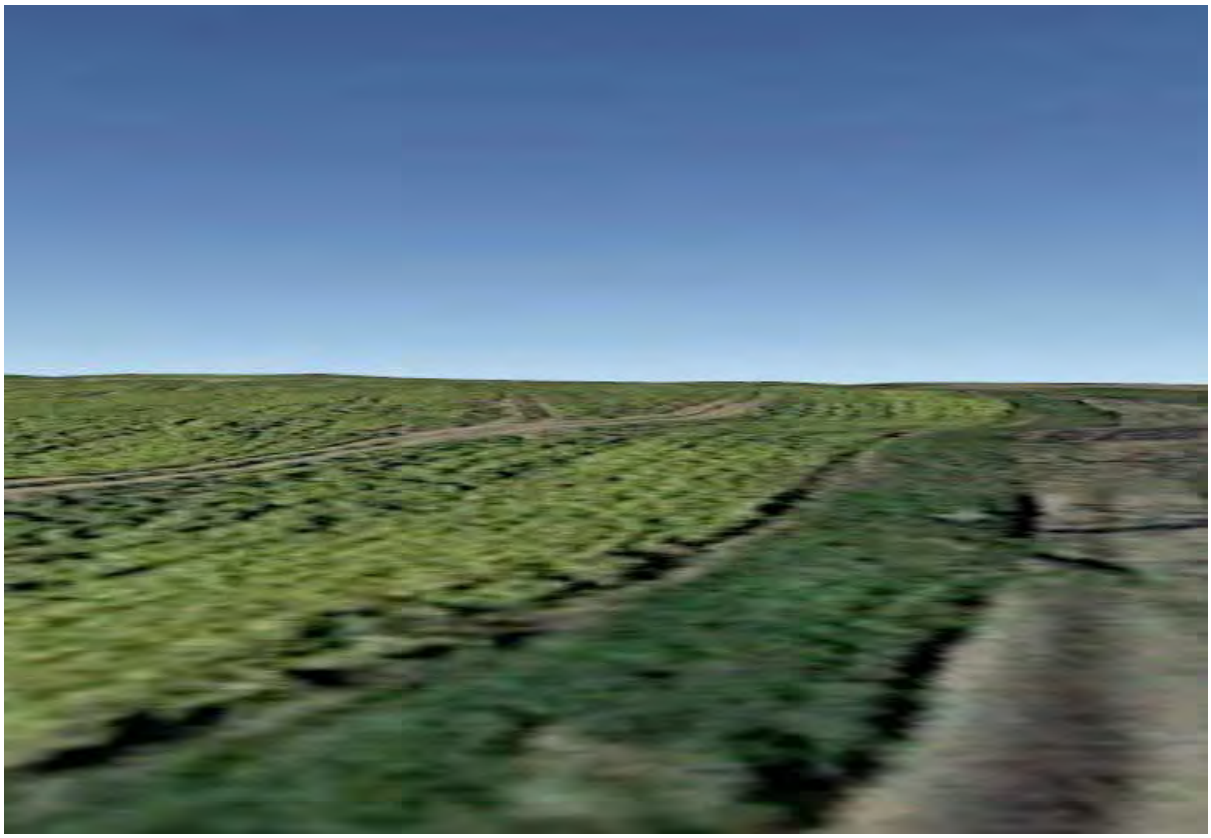
Receptor 33



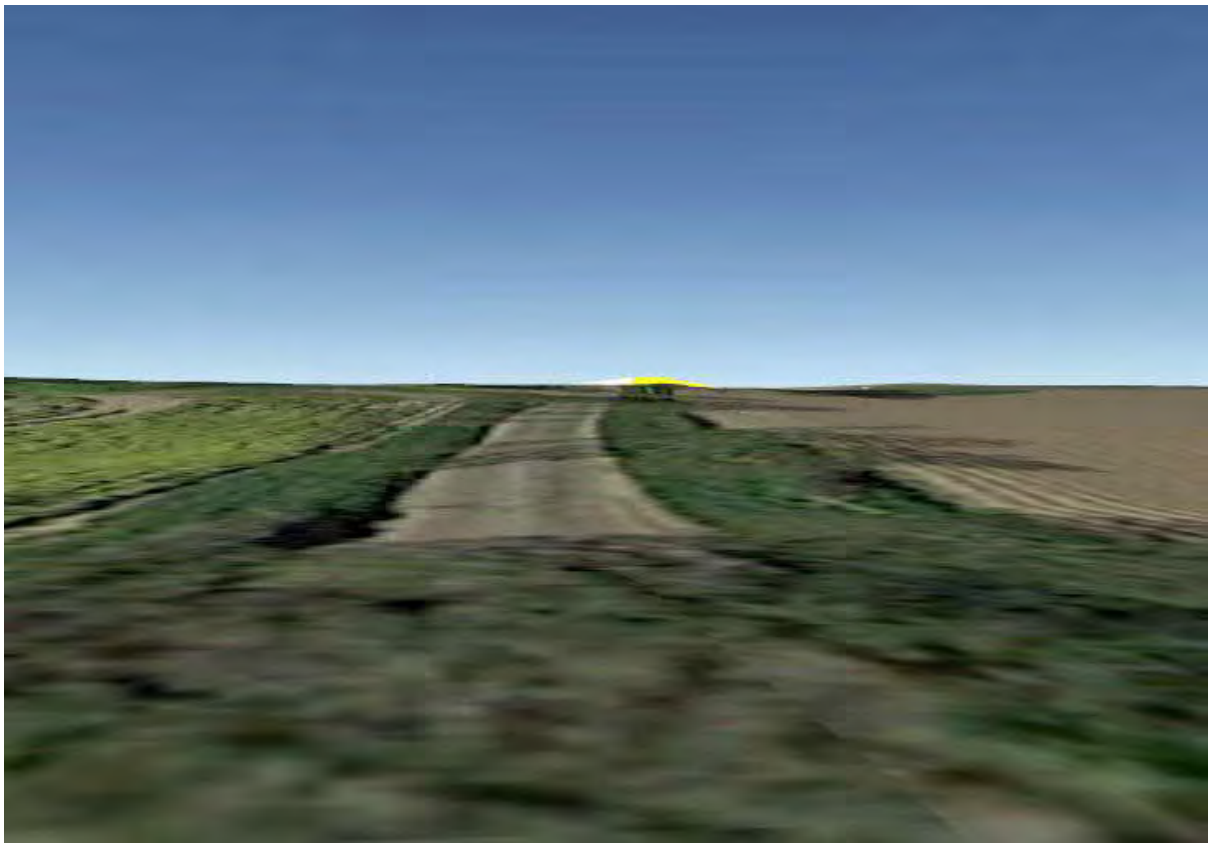
Receptor 34



Receptor 35



Receptor 36



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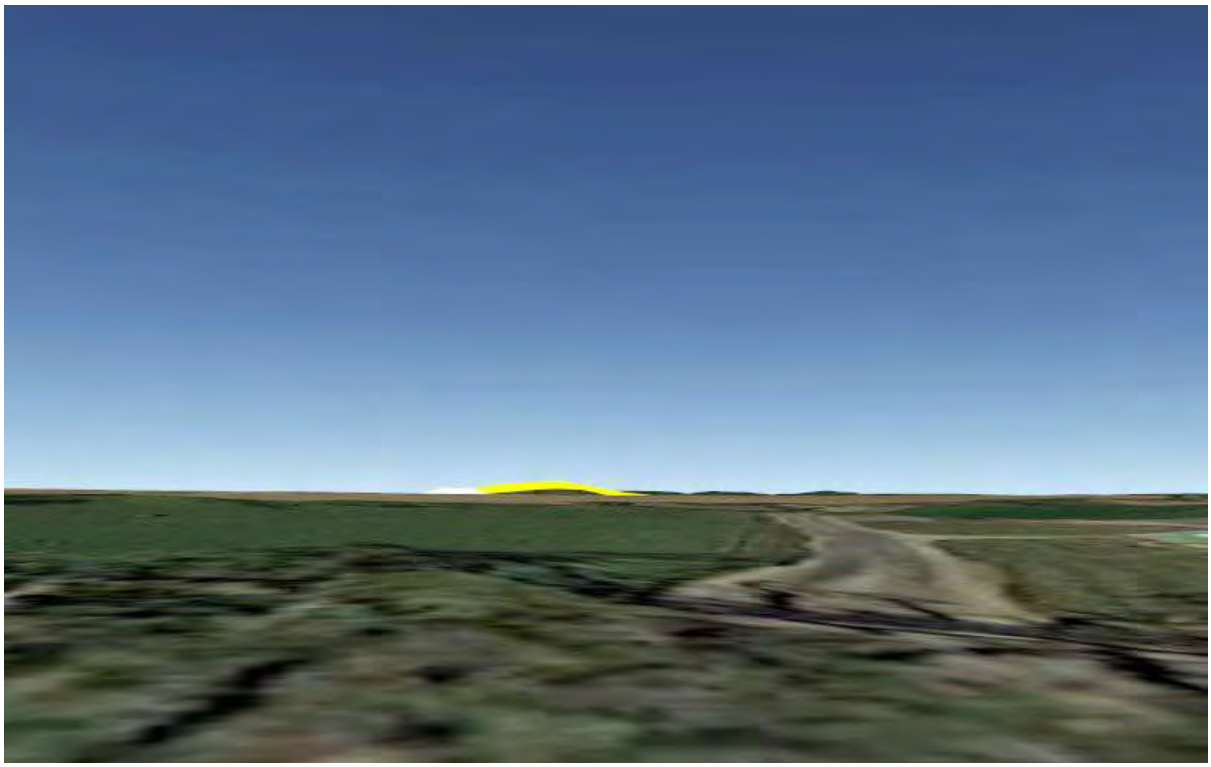

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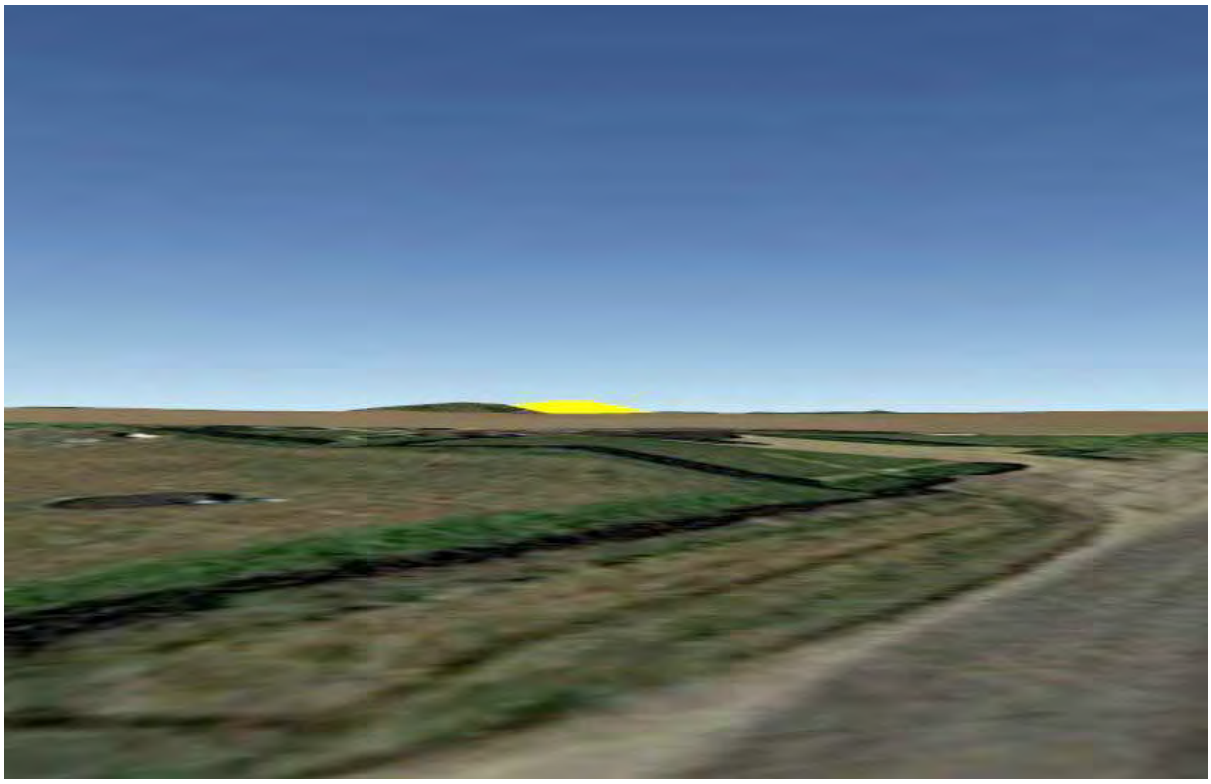

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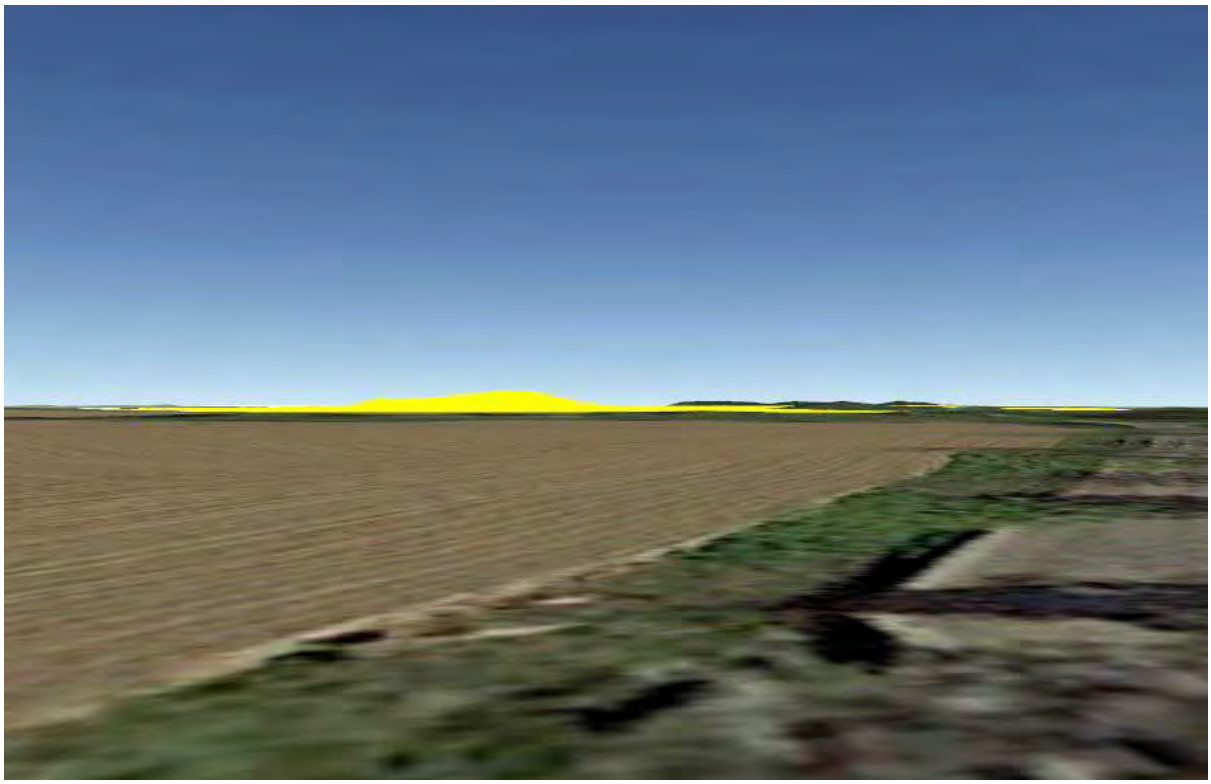

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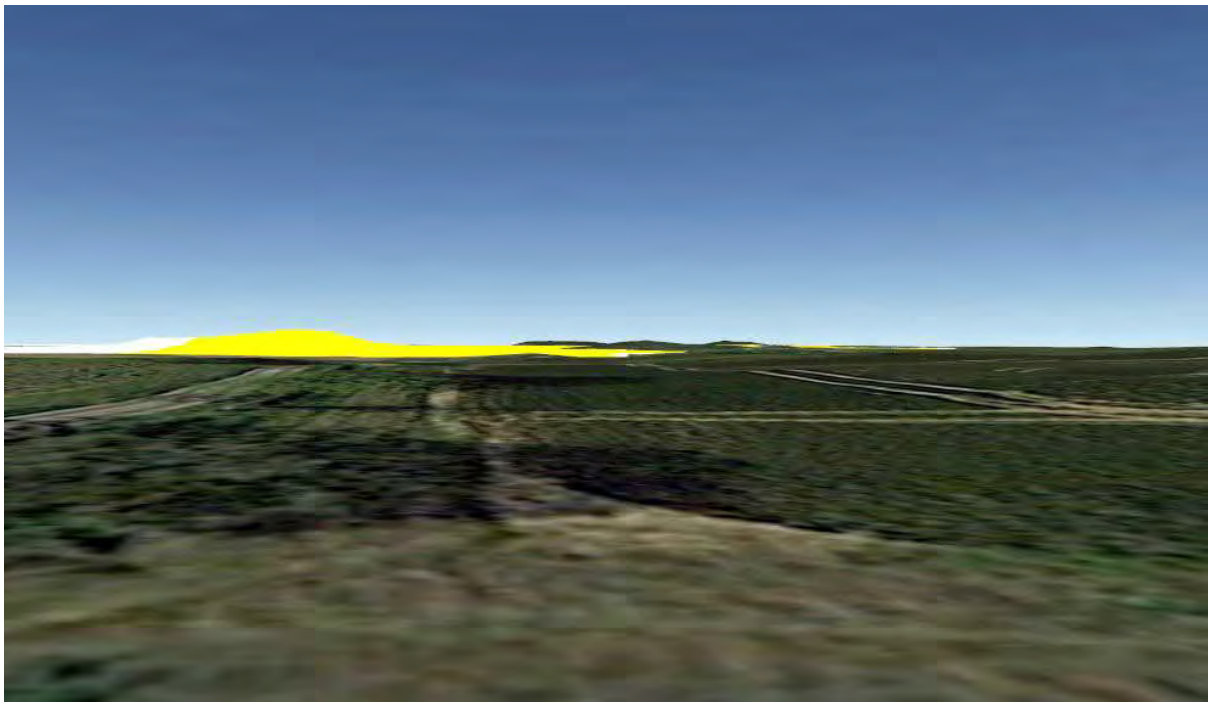

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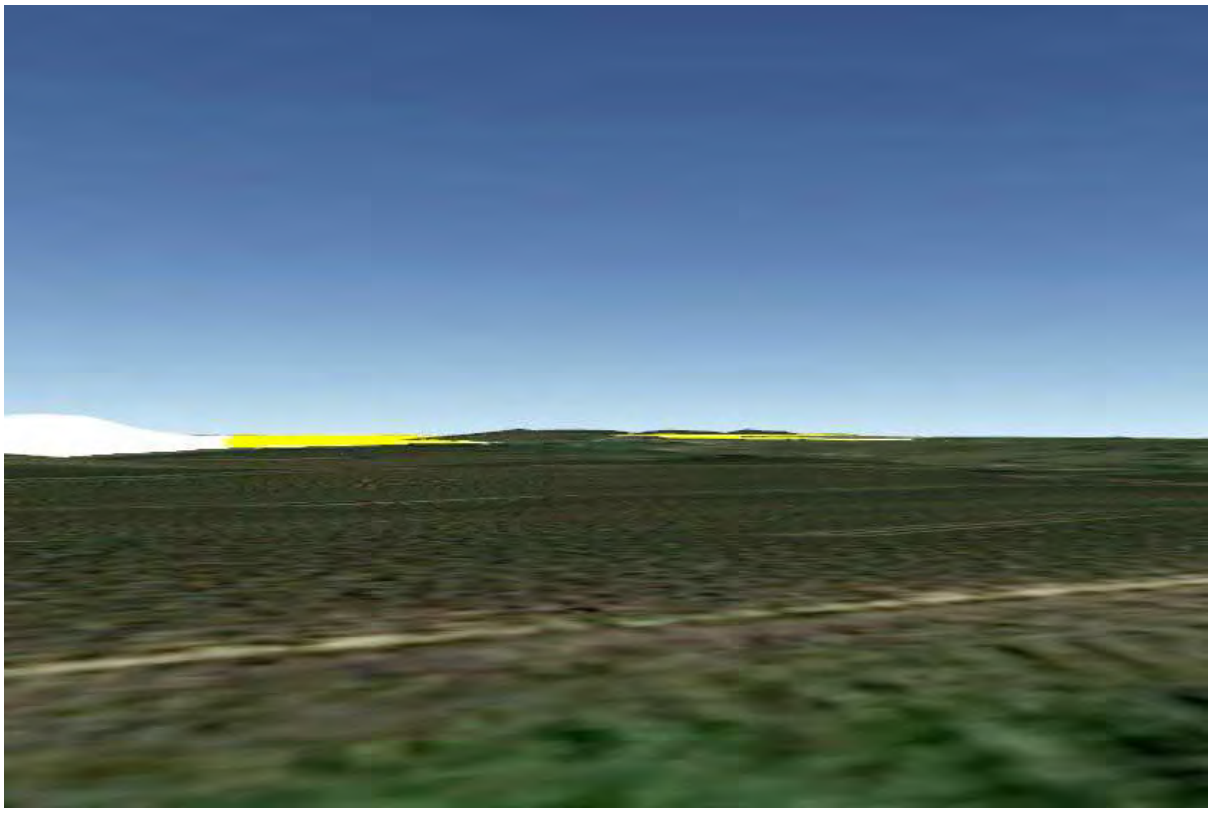

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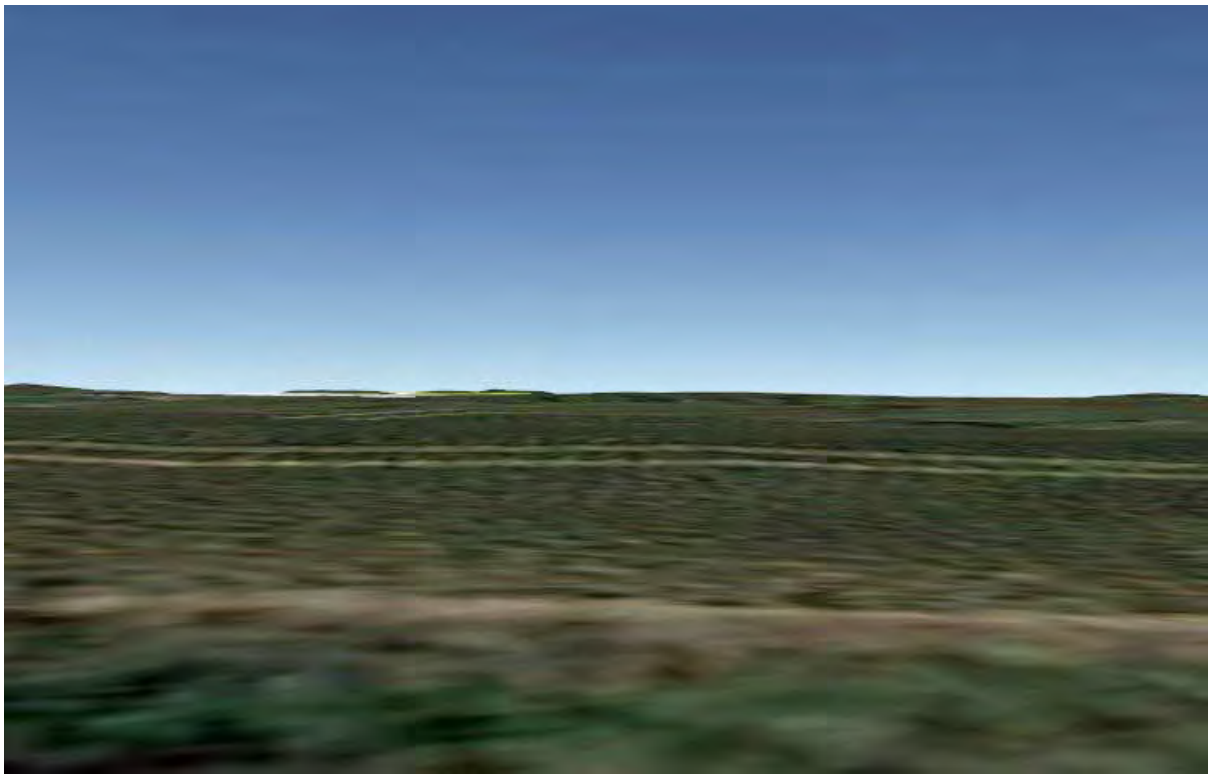

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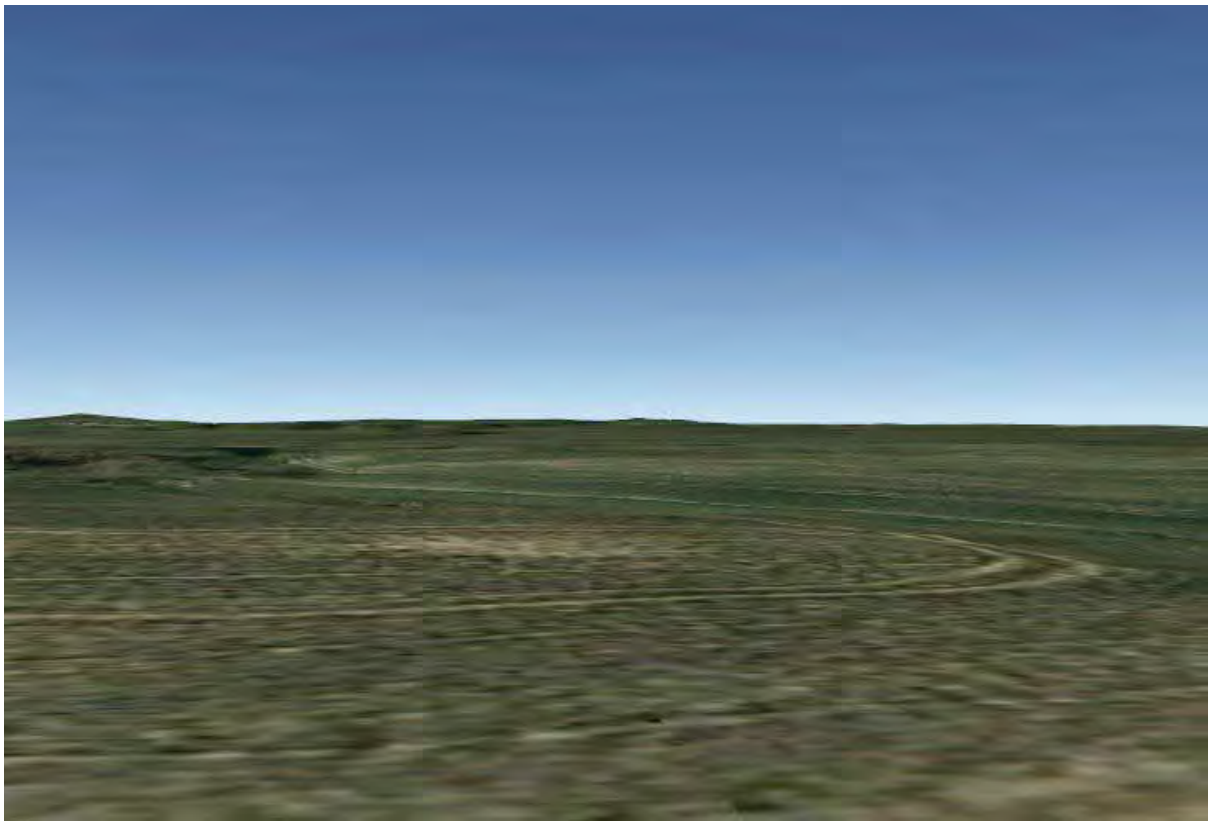

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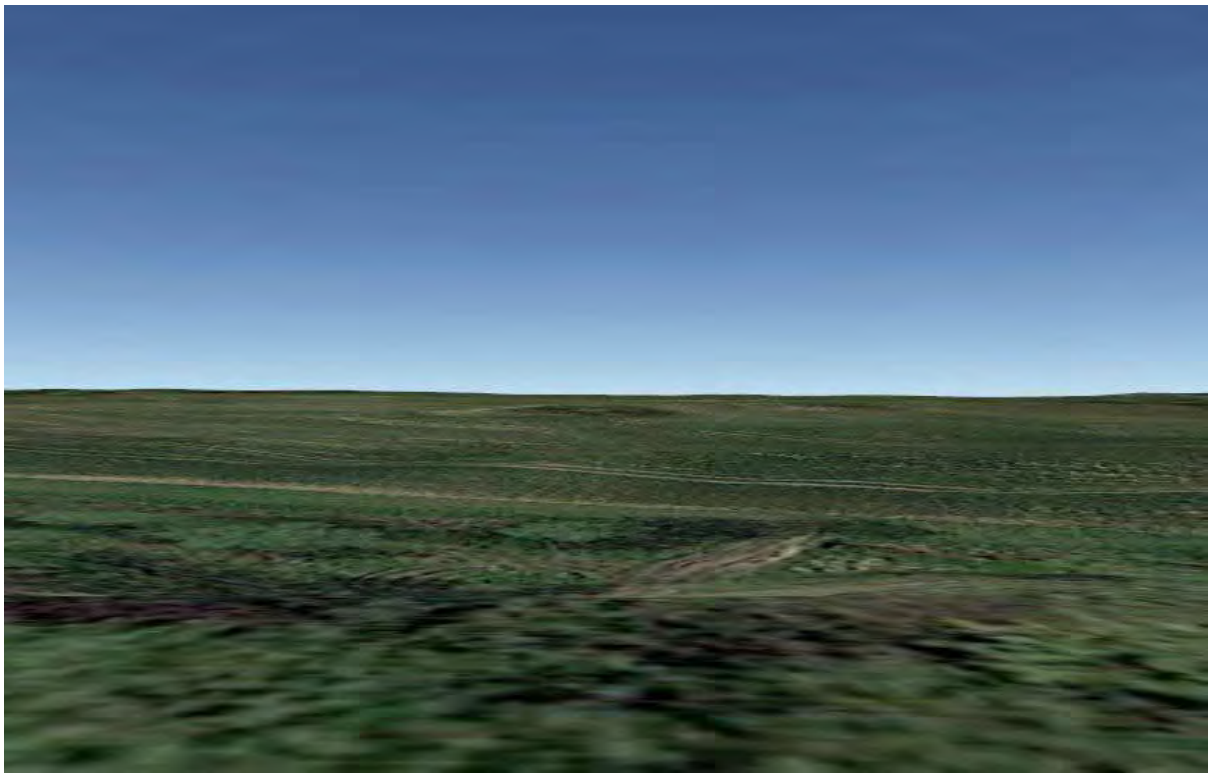

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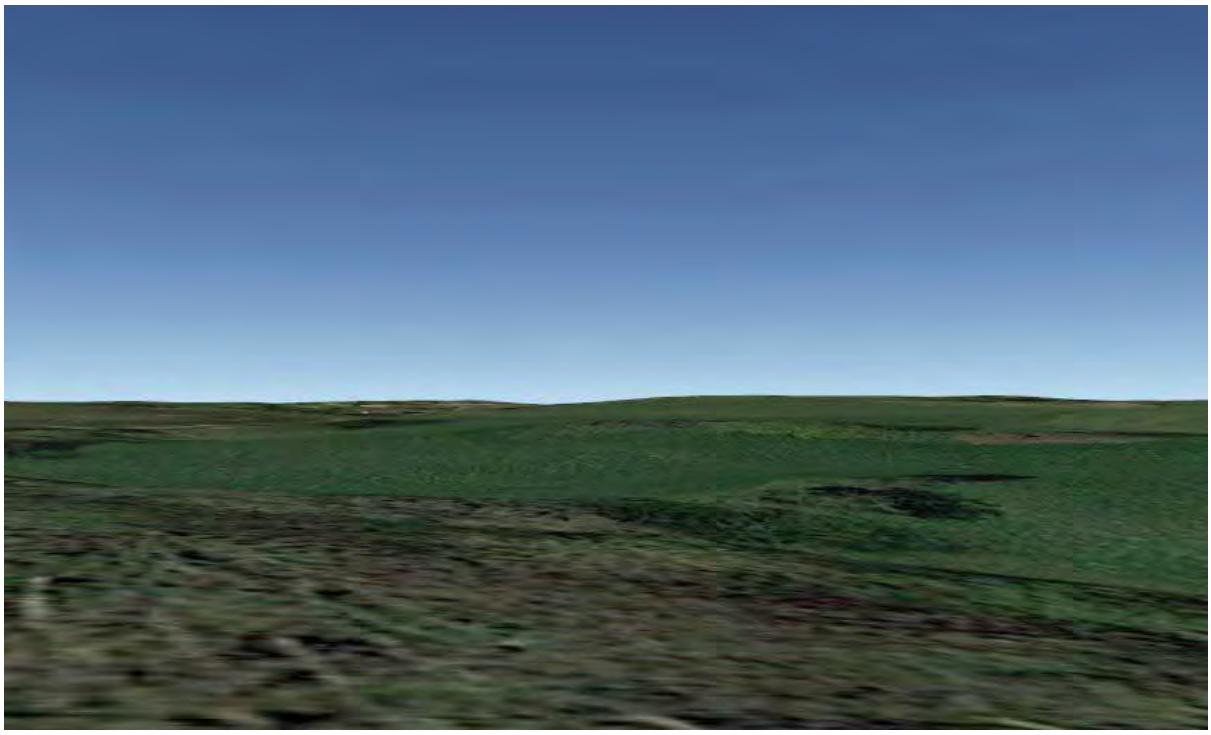

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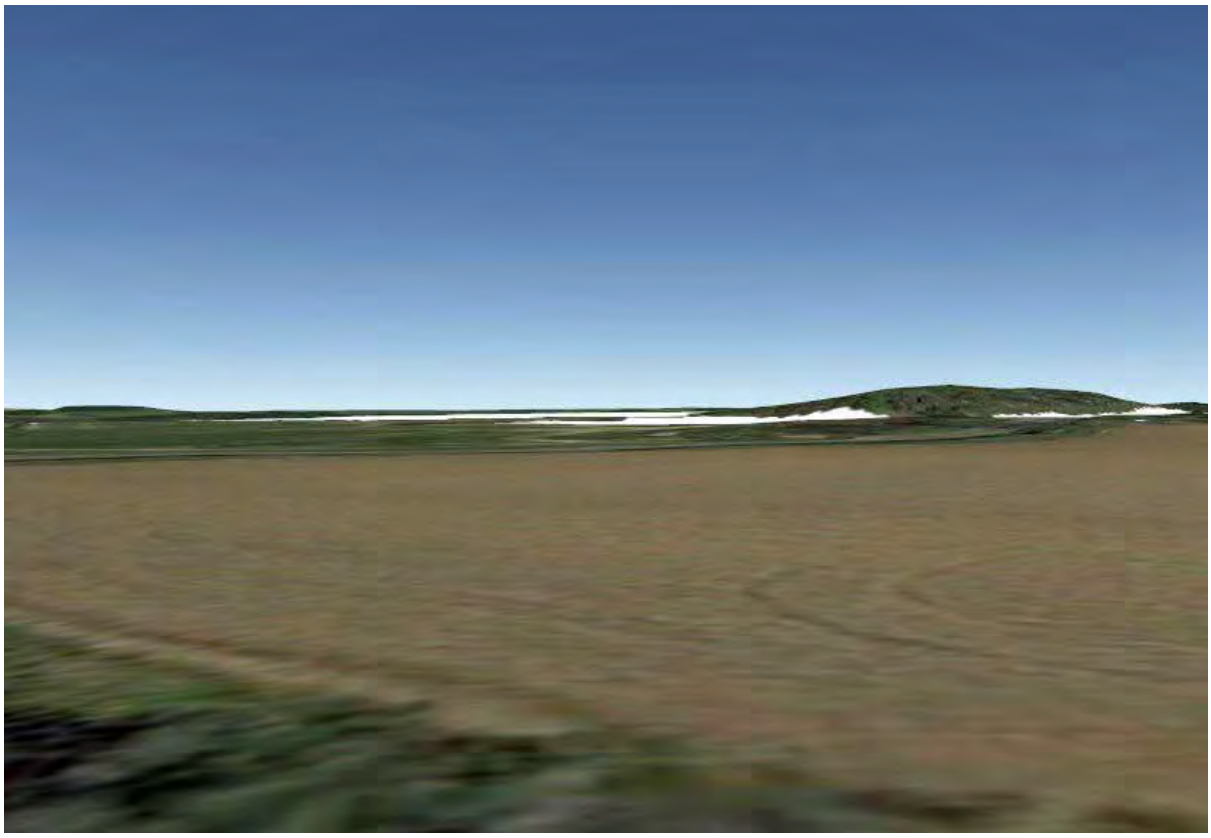

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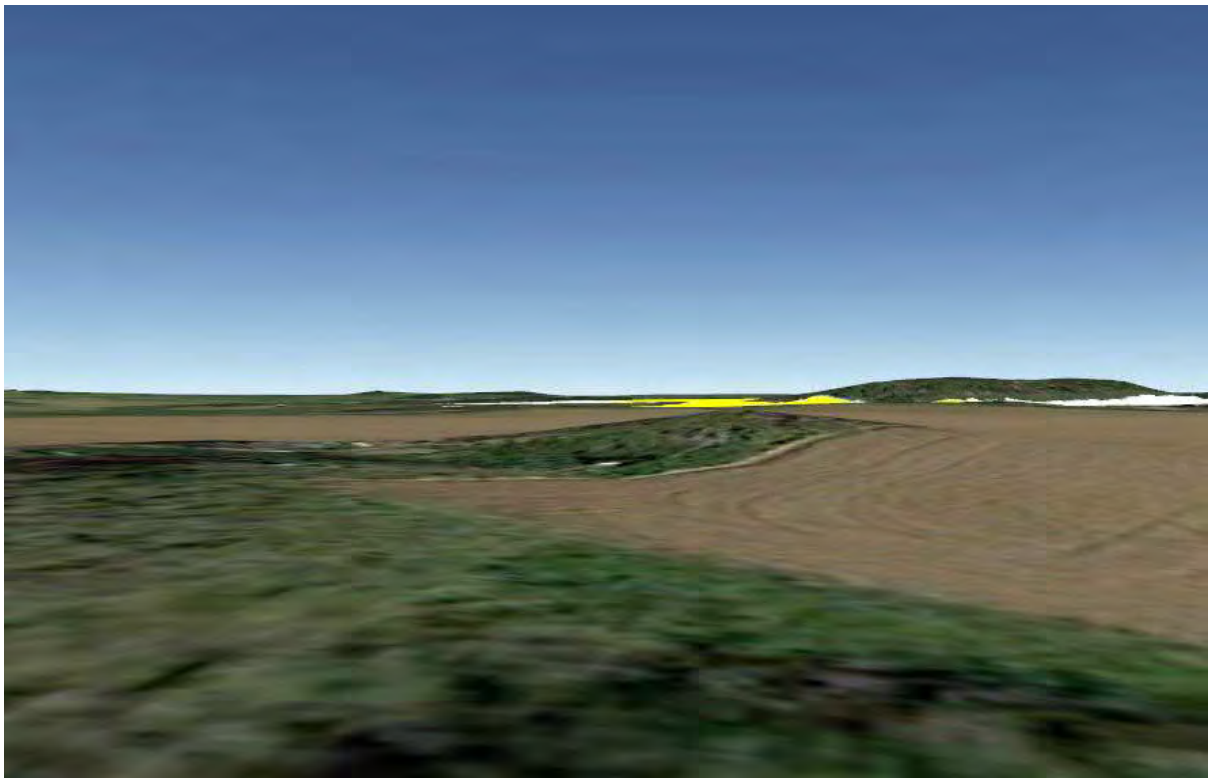

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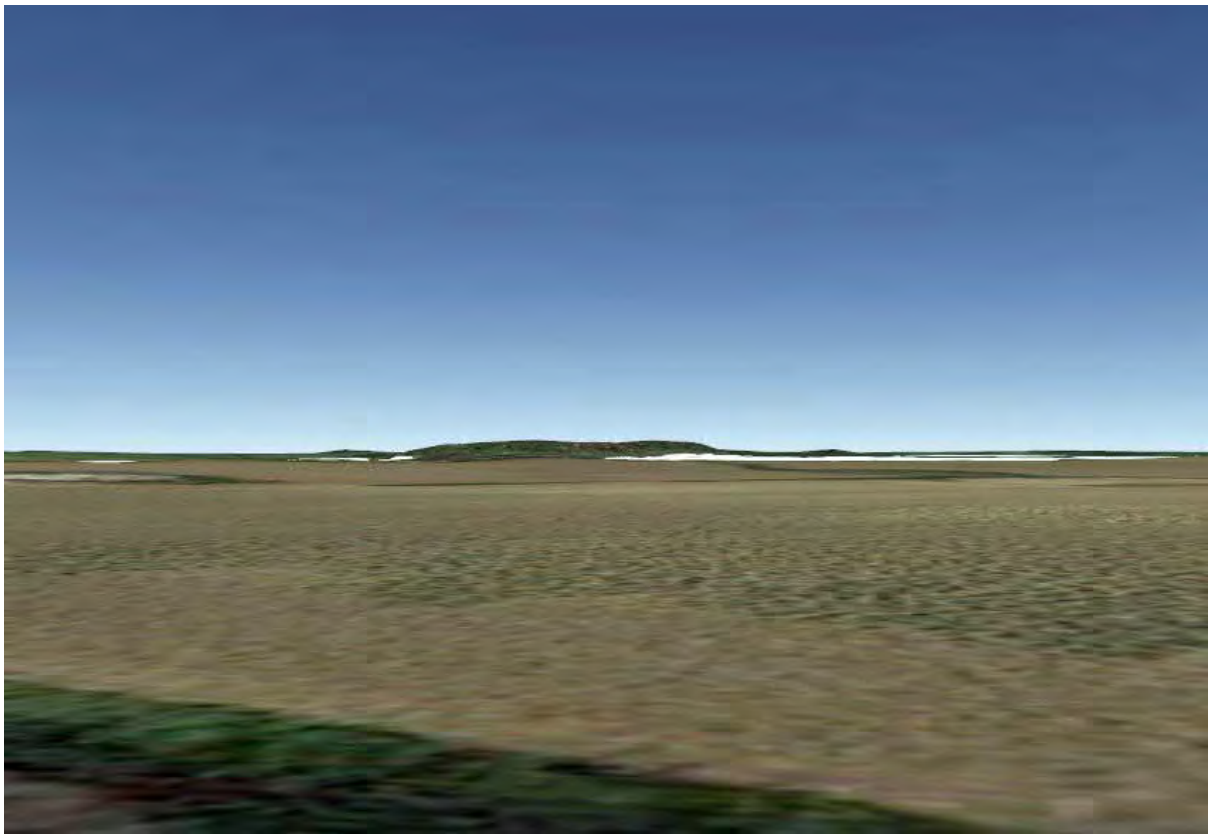

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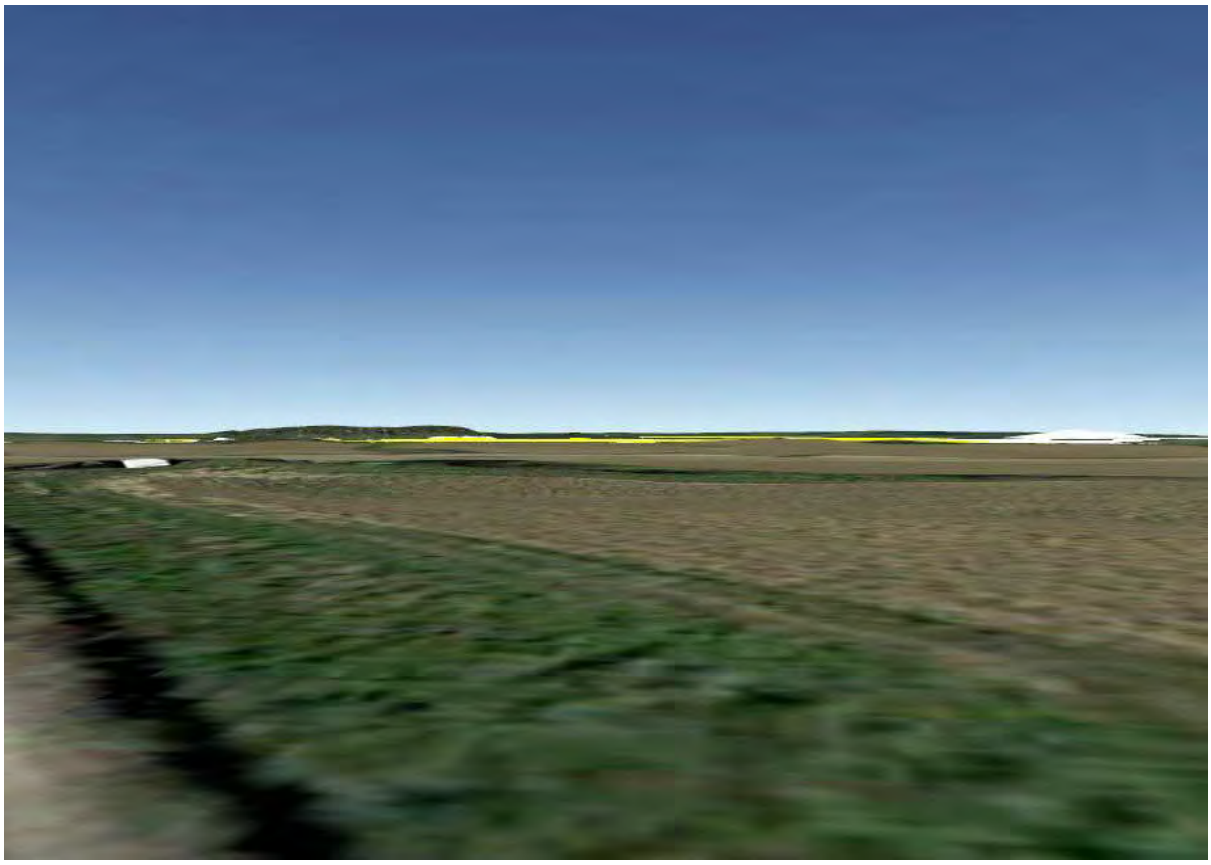

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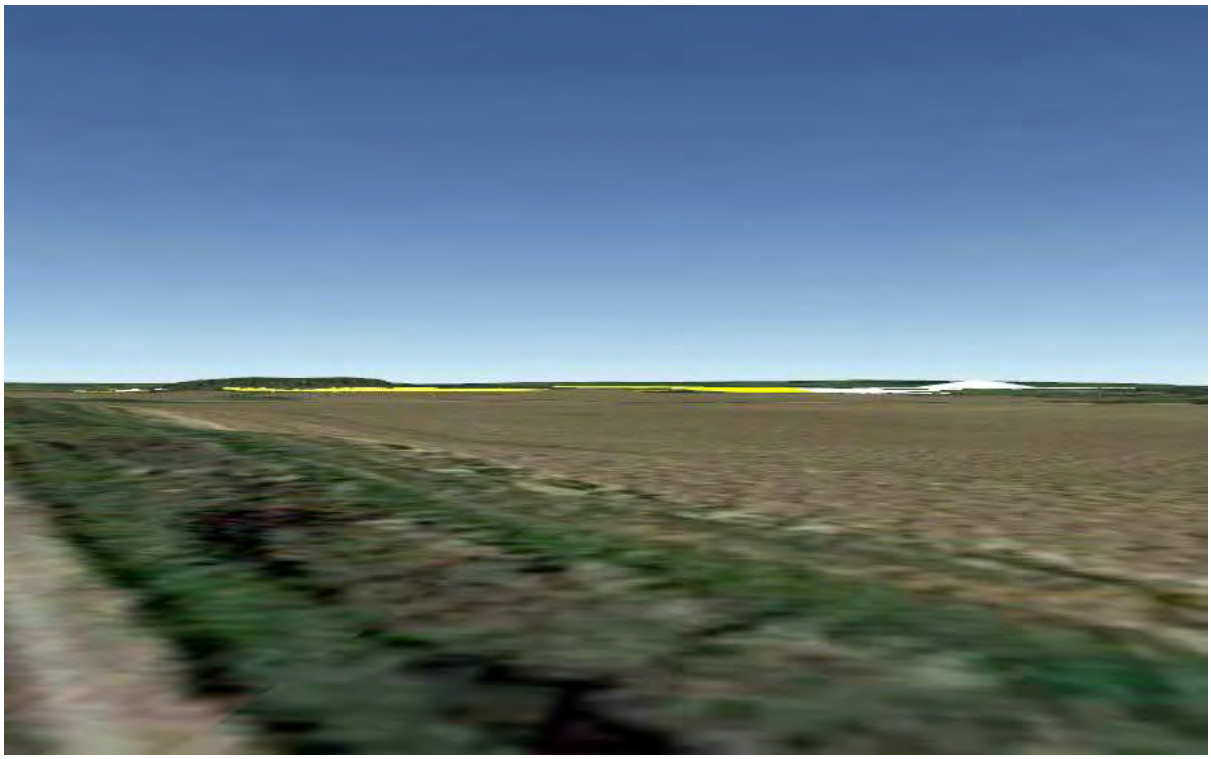

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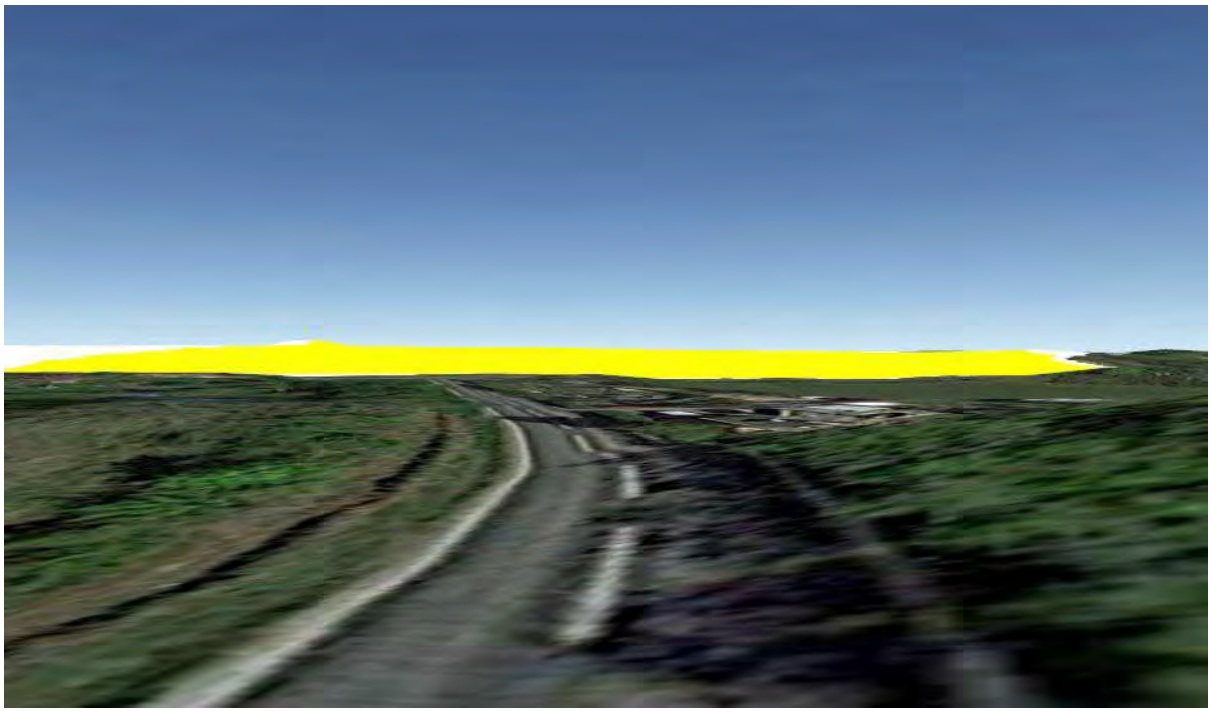

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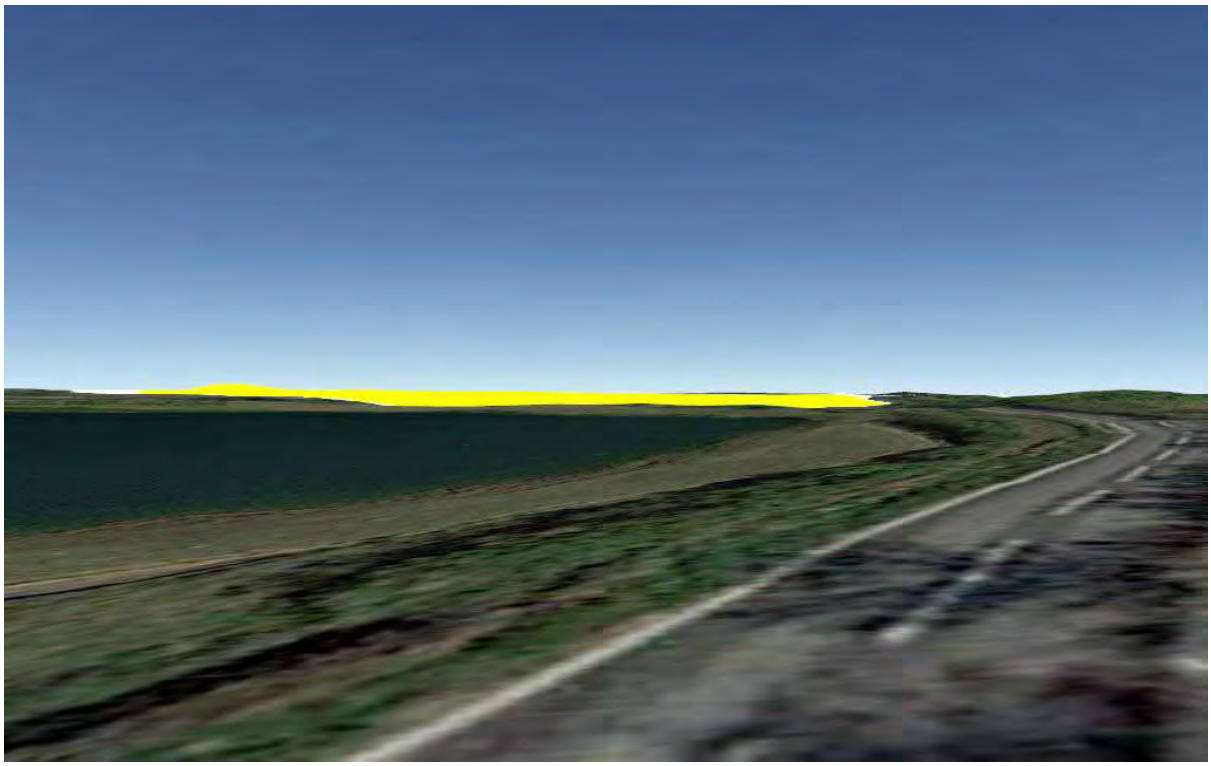

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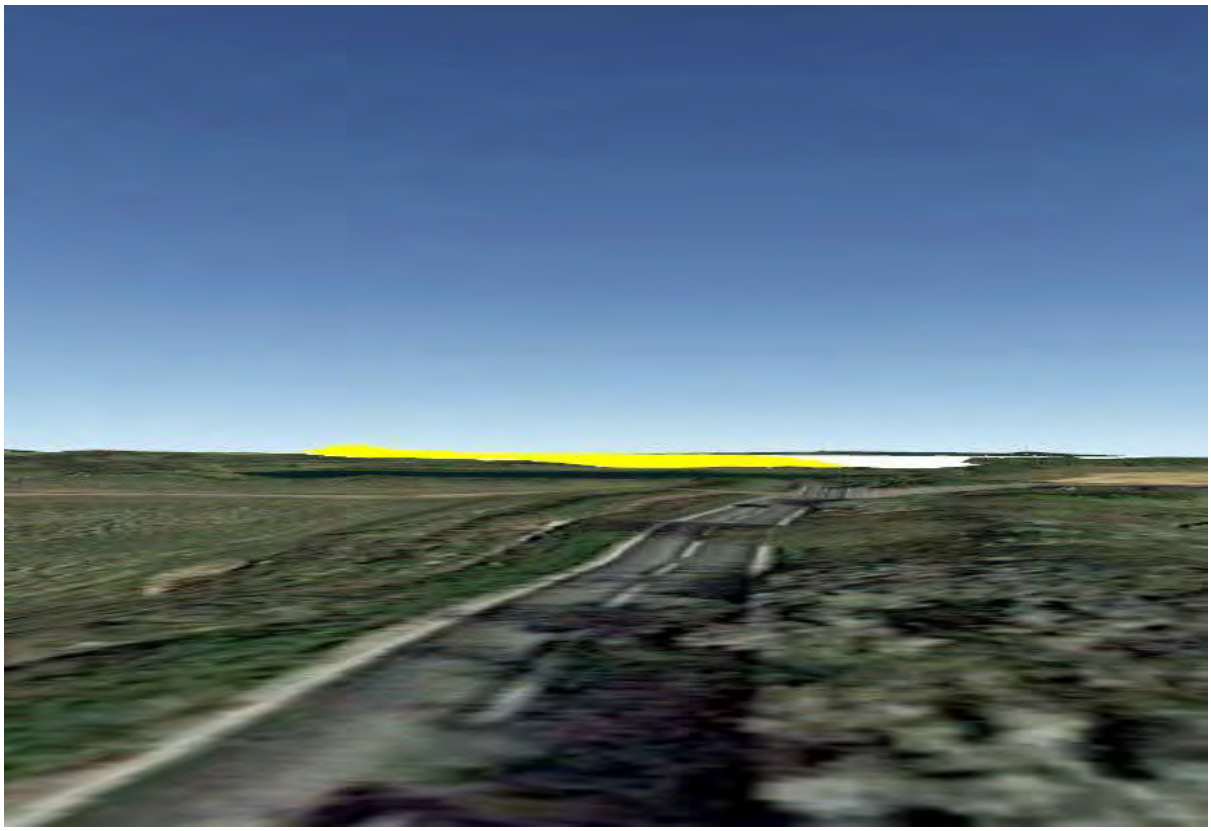

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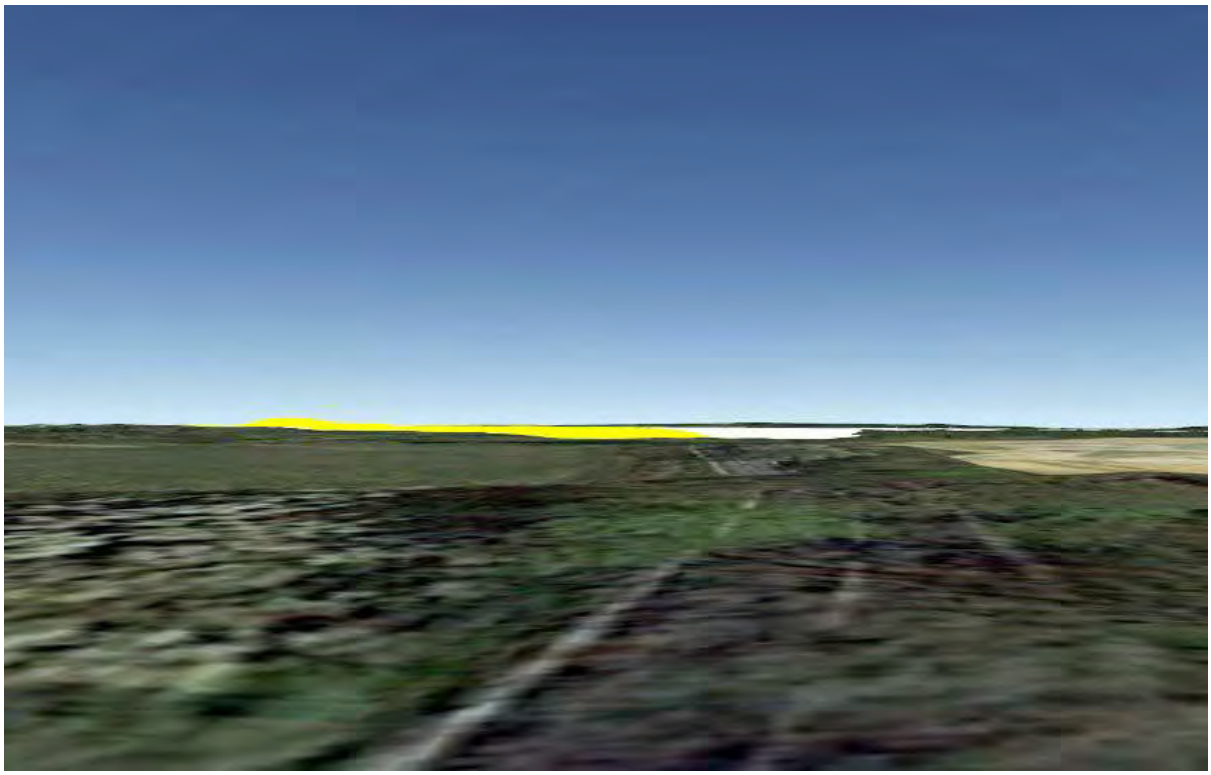

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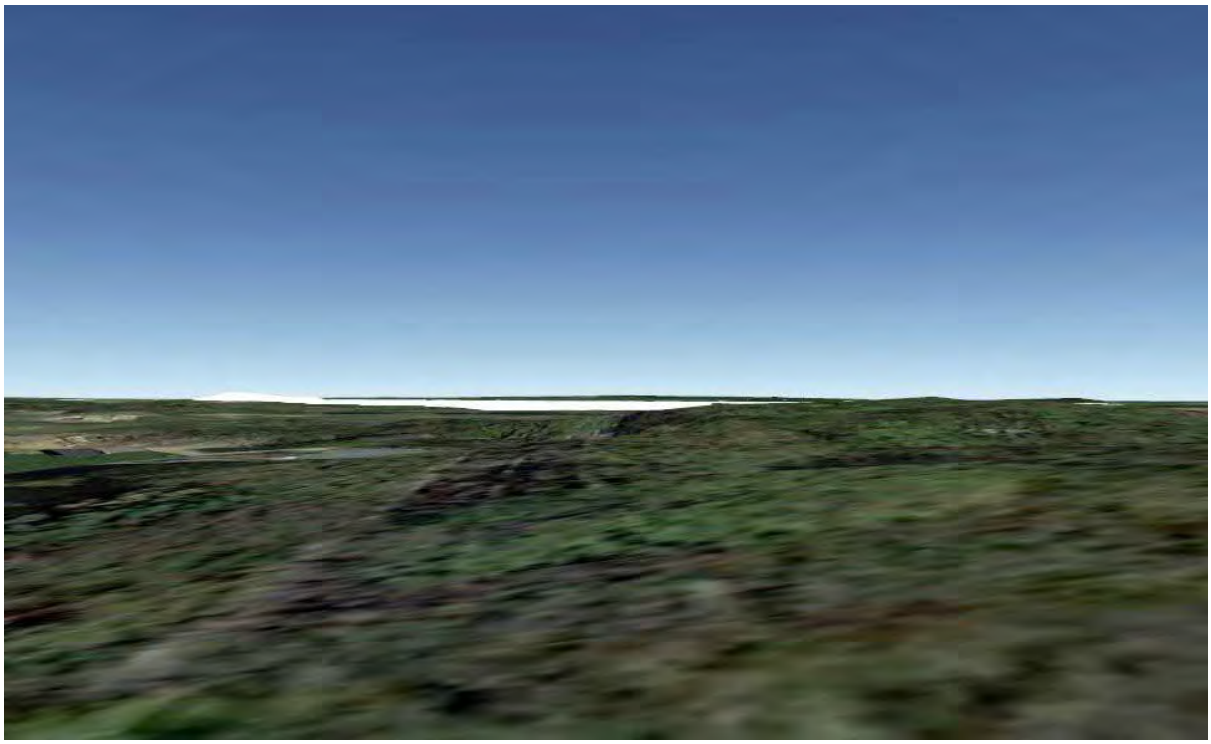
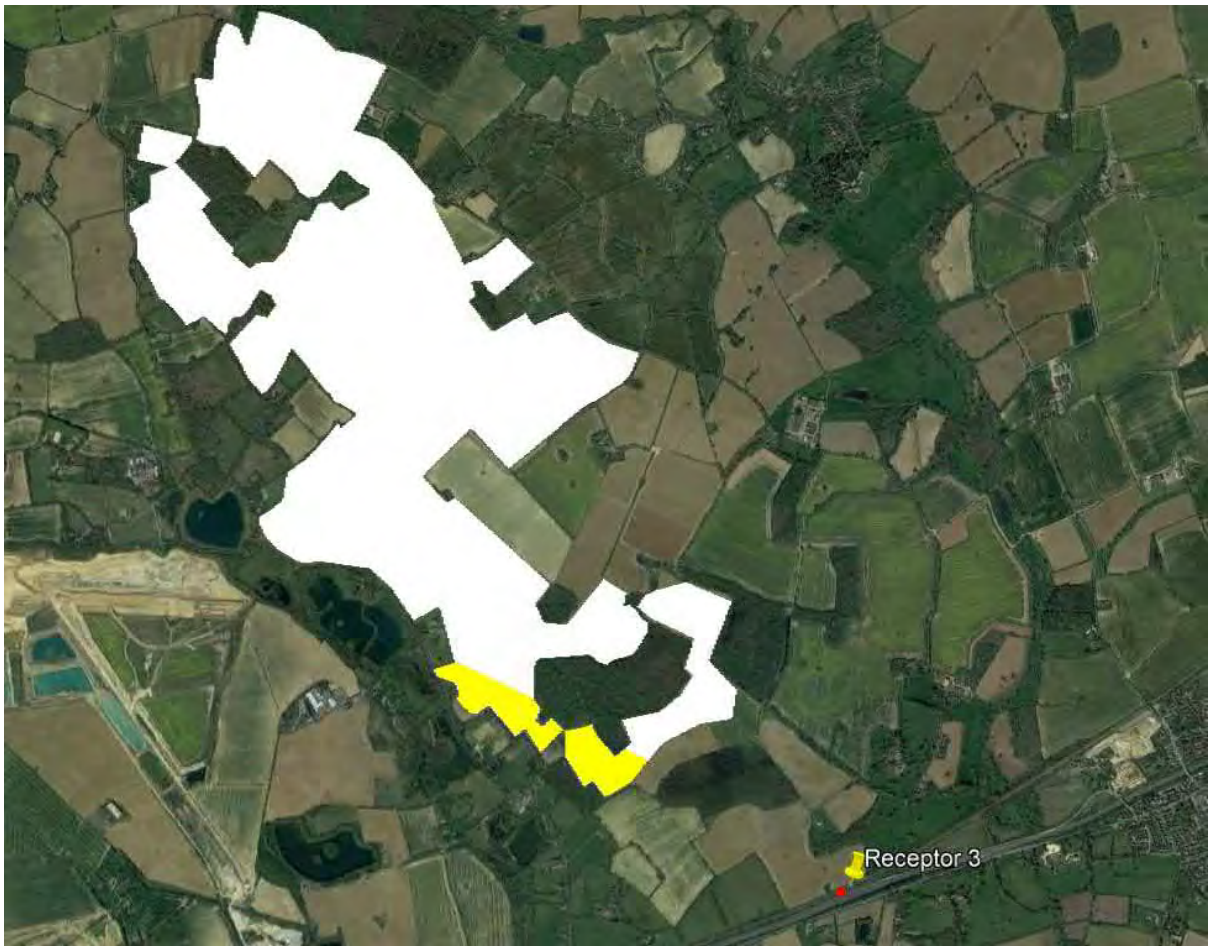


Rail Receptors

Receptor 2.

Receptor 3



Appendix 6E

Solar Module Glare and Reflectance Technical Memo

SUNPOWER®

Technical Notification

TITLE: SunPower Solar Module Glare and Reflectance
AUTHORS: Technical Support
APPLICATION: Residential/ Commercial
SCOPE: SunPower Modules

SUMMARY:

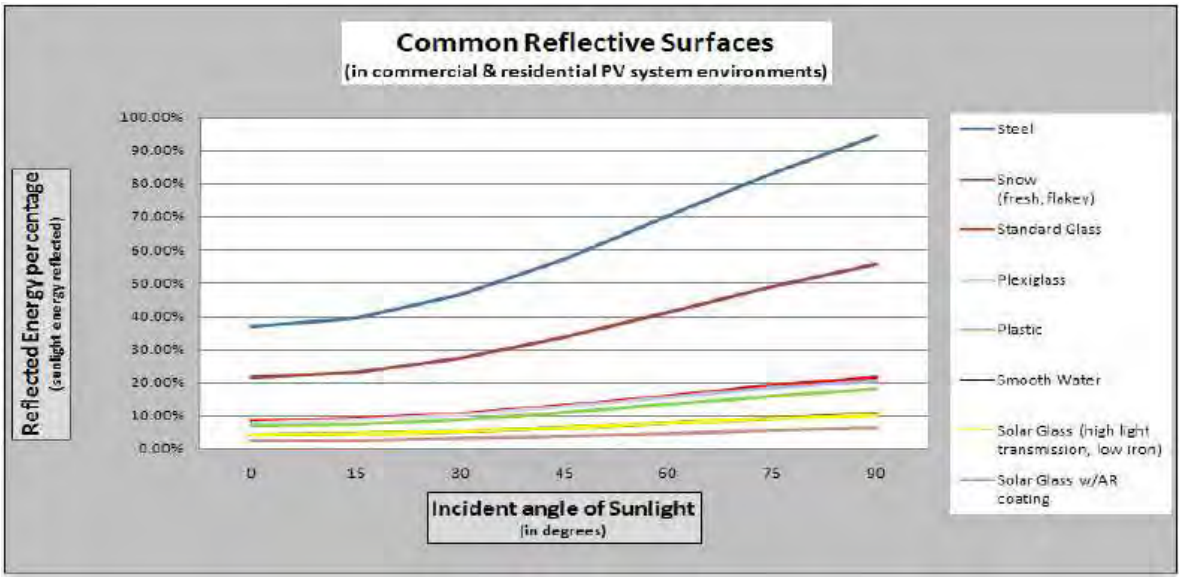
The objective of this document is to increase awareness concerning the possible glare and reflectance impact of PV Systems on their surrounding environment.

The glare and reflectance levels from a given PV system are decisively lower than the glare and reflectance generated by the standard glass and other common reflective surfaces in the environments surrounding the given PV system. Concerning random glare and reflectance observed from the air: SunPower has several large projects installed near airports or on air force bases. Each of these large projects has passed FAA or Air Force standards and all projects have been determined as "No Hazard to Air Navigation". Although the possible glare and reflectance from PV systems are at safe levels and are usually decisively lower than other standard residential and commercial reflective surfaces, SunPower suggests that customers and installers discuss any possible concerns with the neighbors/cohabitants near the planned PV system installation.

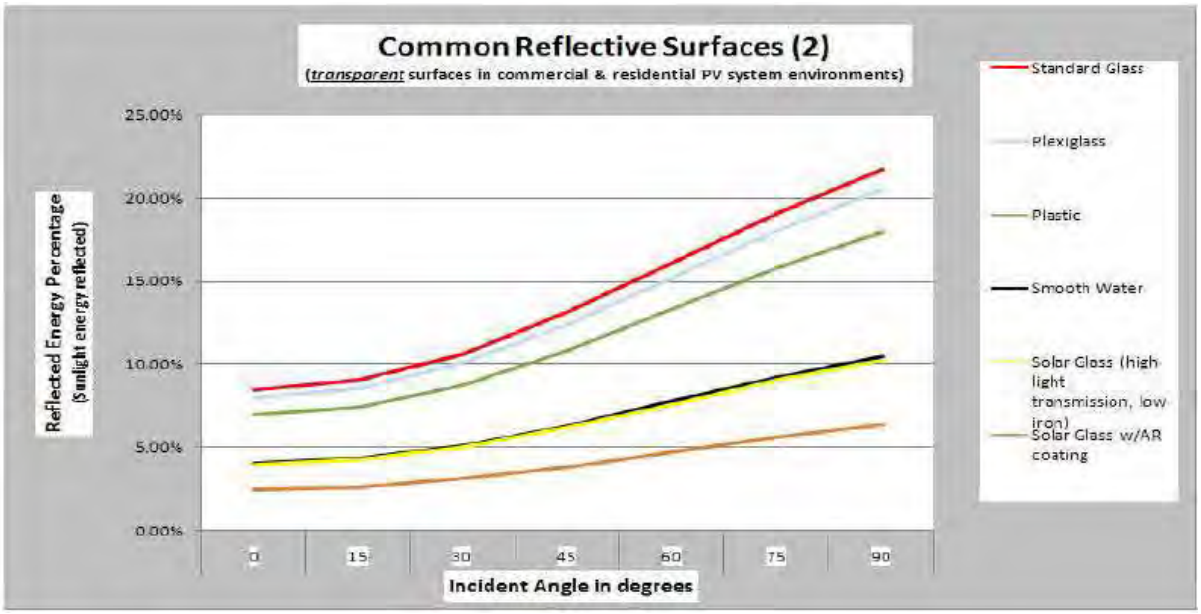
DETAILED EXPLANATION:

In general, since the whole concept of efficient solar power is to absorb as much light as possible while reflecting as little light as possible, standard solar module produces less glare and reflectance than standard window glass. This is pointed out very well in US Patent #6359212 which explains the differences in the refraction and reflection of solar module glass versus standard window glass. Solar modules use "high-transmission, low iron glass" which absorbs more light, producing small amounts of glare and reflectance than normal glass.

In the graph below, we show the reflected energy percentages of sunlight, of some common residential and commercial surfaces. The legend and the graph lists the items from top to bottom in order of the highest percentage of reflected energy.



It should be noted that the reflected energy percentage of Solar Glass is far below that of a standard glass and more on the level of smooth water. Also, below are the ratios of the common reflective surfaces:



Light beam physics resolves that the least amount of light is reflected when the beam is the normal, in other words, least light energy is reflected when the beam is at 0 degrees to the normal. The chart below is a result of light beam physics calculations:

Common Reflective Surfaces (in surrounding environments for PV systems)		Incident angle in degrees						
		0	15	30	45	60	75	90
Material Reflectivity (percent of incident light reflected)	Steel	36.73%	39.22%	46.34%	57.11%	70.02%	83.15%	94.40%
	Snow (fresh, flakey)	21.63%	23.09%	27.29%	33.63%	41.23%	48.96%	55.59%
	Standard Glass	8.44%	9.01%	10.65%	13.12%	16.09%	19.10%	21.69%
	Plexiglass	8.00%	8.54%	10.09%	12.44%	15.25%	18.11%	20.56%
	Plastic	6.99%	7.46%	8.82%	10.87%	13.33%	15.83%	17.97%
	Smooth Water	4.07%	4.35%	5.14%	6.33%	7.76%	9.22%	10.47%
	Solar Glass (high light transmission, low iron)	3.99%	4.26%	5.03%	6.20%	7.61%	9.03%	10.26%
	Solar Glass w/AR coating	2.47%	2.64%	3.12%	3.84%	4.71%	5.59%	6.35%

(Note: Index of refraction values may vary slightly depending on suppliers and reference documentation. The values for the above calculations are averages or single values obtained from the list of references for this document).

Important reference – "Stipples glass": In addition to the superior refractive/reflective properties of solar glass versus standard glass, SunPower uses stippled solar glass for our modules. Stippled glass is used with high powered telescopes and powerful beacons and lights. The basic concept behind stippling is for the surfaces of the glass to be textured with small types of indentations. As a result, stippling allows more light energy to be channeled/ transmitted through the glass while diffusing the reflected light energy. This concept is why the reflection of off a SunPower solar module will look hazy and less-defined than the reflection from standard glass, this occurs because the stippled SunPower glass is transmitting a larger percentage of light to the solar cell while breaking up the intensity of the reflected light energy.

SUMMARY / ACTION REQUIRED:

The studies, data and light beam physics behind the charts and graphs prove beyond a reasonable doubt that solar glass has less glare and reflectance than standard glass. The figures also make it clear that the difference is very decisive between solar glass and other common residential/commercial glasses. In addition, not to be lost in the standard light/glass equations and calculations, the SunPower solar glass is stippled and has a very photon-absorbent solar cell attached to the back side, contributing two additional factors which results in even less light energy being reflected.

REGIONAL CONTACTS:

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  - Germany: SunPower – Technischer Support: [redacted]
  - Italy: SunPower – Servizio Tecnico Italia: [redacted]
  - France: SunPower – Support Technique France: [redacted]

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