



October 17, 2025

Robert Love  
Director of Planning and Community Development  
Prince Edward County  
Conveyed Electronically: [rlove@co.prince-edward.va.us](mailto:rlove@co.prince-edward.va.us)

**Re: Tobacco Trail Solar, LLC, Special Use Permit Application for a Utility-Scale Solar Facility**

Dear Mr. Love,

Tobacco Trail Solar, LLC ("Tobacco Trail") is pleased to submit this updated application for a Special Use Permit ("SUP") for the purpose of constructing and operating a 150 MW utility-scale solar energy facility in Prince Edward County. In summary, these updates include incorporation of County recommendations, an updated site map and narrative to reflect appropriate zoning (from A2 to A1), the inclusion of a glint and glare study, inclusion of a vegetative management plan to address pollinator comments, and updated property owner forms.

Enclosed please find the following:

1. One (1) signed Special Use Permit Application
2. One (1) copy of the SUP Application and Associated Attachments

An electronic version of this application has been shared with you. Payment was previously sent to the County.

Tobacco Trail appreciates the opportunity to submit this application for a SUP and looks forward to future hearings and discussions to be held with the Planning Commission and the Board of Supervisors. If you have any questions or need any additional information during your review of the enclosed material, please do not hesitate to contact me or the Project's Senior Development Manager, Whitney St. Charles.

Thank you for your assistance and consideration during the application process.

Sincerely,

**Heather McAlister**  
**Manager, Permitting**  
Strata Clean Energy

CC. Douglas Stanley, County Administrator

# **TOBACCO TRAIL SOLAR**

## **SPECIAL USE PERMIT APPLICATION NARRATIVE**



**OCTOBER 17, 2025**

**Prepared by: Tobacco Trail Solar, LLC**  
800 Taylor Street  
Suite 200  
Durham, NC 27701



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<b>Attachment A –</b>	<b>Special Use Permit Application</b>
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<b>Attachment C–</b>	<b>Redacted Site Control Agreements</b>
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<b>Attachment G –</b>	<b>Property Impact Analysis</b>
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<b>Attachment J –</b>	<b>VAFWIS, DCR–NDHE, and Species List</b>
<b>Attachment K –</b>	<b>Solar Panel Specifications Sheet</b>
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<b>Attachment O –</b>	<b>Traffic Study</b>
<b>Attachment P –</b>	<b>Visual Renderings and Visual Heat Map</b>
<b>Attachment Q –</b>	<b>Virginia Tech (2024) USS BMP White Paper</b>
<b>Attachment R –</b>	<b>Solar PV Recycling Information</b>
<b>Attachment S –</b>	<b>Sheep Grazing</b>
<b>Attachment T –</b>	<b>Glare Study</b>
<b>Attachment U–</b>	<b>Vegetative Management Plan</b>

## Introduction

Tobacco Trail Solar, LLC (“Tobacco Trail” or the “Applicant”) is submitting an application for a special use permit (“SUP”) (**Attachment A**) to Prince Edward County (the “County”) to install a Utility-Scale Solar Energy Facility, along with the associated infrastructure necessary for the Tobacco Trail Solar Project (the “Project”). The Project will be capable of generating up to 150 megawatts (MW) of electricity, or 302 GWh annually, enough to meet approximately **68% to 93%** of Prince Edward County’s annual electricity needs with clean, local energy depending on actual consumption levels.

This SUP application outlines the Project’s conformance with Chapter 26 of the Prince Edward County’s Zoning Ordinance (“Zoning Ordinance”) and the 2045 Prince Edward County Comprehensive Plan (the “Comprehensive Plan”). Pursuant to Appendix B, Zoning Ordinance, Article II, District Regulations, Sec. 2-100.3. – A1 Agricultural Conservation District, Permitted uses (B)7. the Project falls under Utility services, major as an approved use within the A1 District. Tobacco Trail is located entirely on property zoned A1.

The Project will deliver a clean and reliable source of renewable energy while providing local jobs, increasing county revenues, and respecting the rural character of the community. With an existing vegetative buffer of pine timber, the Project will be effectively screened from view. Additional vegetative screening will be planted to supplement the existing vegetation where necessary. The Project has been sited and designed to be compatible and harmonious with the neighboring land uses, with the nearest residential structure over 400 feet away from the fence line and most adjacent residential structures over 1,000 feet from the fence line.

The Project will provide impactful revenue:

- i) for the County through Revenue Share.
- ii) for the County through an increase in real estate tax revenue.
- iii) for the County through a siting agreement.
- iv) for local businesses through material supply and service contracts (e.g., fuel, gravel, fencing, etc.) during construction.
- v) for the local community by providing construction and long-term operations jobs.
- vi) for property owners through purchase and/or lease payments.

The Project will not require County municipal resources or services, social services, additional health resources or facilities, or public safety officers. This Project can

provide a net benefit for the County while not increasing the demand for County services.

Tobacco Trail respectfully requests the Planning Commission and Board of Supervisors review and approve the Project as:

- i) in substantial accord with the requirements set forth in the Comprehensive Plan, and
- ii) compliant with the requirements set forth in Article II and Article VII of the Prince Edward County Zoning Ordinance.

## **Applicant Overview**

Tobacco Trail is a wholly owned subsidiary of Strata Solar Development, LLC ("Strata"). Strata is a family-owned and fully integrated solar and energy storage company with four primary business areas: i) project development; ii) engineering, procurement, and construction; iii) operations and maintenance services; and iv) power generation and supply. Strata is based in Durham, North Carolina, and employs over 400 full-time professional staff, which includes Virginia-based employees.

Strata partners with the local communities to ensure it serves as a positive long-term corporate steward. Our collaborative approach involves working with landowners, utility companies, and other stakeholders to develop, build, and operate safe and reliable clean energy projects. Strata strives to be a partner of choice with all stakeholders and has achieved success through adherence to our core values: Safety, Partnerships, Quality, Expertise, Transparency, Environmental Responsibility, and Accountability. For more information, please visit our website at <http://www.stratacleanenergy.com/>.

## Experience in Virginia

Since its founding in 2008, Strata has developed, constructed, and operates hundreds of utility-scale solar facilities across the United States. As a leading solar engineering and construction provider for Dominion Energy, Strata has extensive experience in siting, developing, and constructing utility-scale solar projects throughout the Commonwealth.

Strata has constructed 18 solar projects in Virginia, ranging from 15 MWac to 150 MWac, 821 MWac in total. See Table 1 for details.

**Table 1. Virginia Constructed Projects**

Project Name	Location	Size MWac	Operational Date
Gloucester	Gloucester	20	2019
Sappony	Sussex	20	2018
Buckingham	Cumberland	20	2018
Scott II	Powhatan	17	2018
Correctional	New Kent	20	2018
Remington	Fauquier	20	2017
Colonial Trail West	Surry	142	2019
Spring Grove I	Surry	97	2020
Greensville	Greensville	80	2020
Rochambeau	James City	20	2021
Ft. Powhatan	Suffolk	150	2021
Myrtle	Suffolk	15	2021
Norge Solar	Williamsburg	20	2022
Solidago Solar	Isle of Wright	20	2022
Sycamore Solar	Pittsylvania	42	2022
Winterberry Solar	Gloucester	20	2024
Camellia Solar	Gloucester	20	2024
Otter Creek Solar	Chase City	60	2024
	<b>Total:</b>	<b>821</b>	

Strata is currently constructing 7 solar projects ranging from 60 MWac to 149.9 MWac in Virginia. Please see Table 2 below for additional details.

**Table 2. Virginia Projects under Construction**

Project	Location	Size MWac
Bookers Mill Solar	Richmond	127
Fountain Creek Solar	Greensville	80
Southern Virginia Solar	Pittsylvania	125
Walnut Solar	King and Queen	149.9
Blue Ridge Solar	Pittsylvania	95
Cerulean Solar	Richmond	62
Moon Corner Solar	Richmond	60
	<b>Total:</b>	<b>698.9</b>

Strata serves as a third-party operator, providing operations and maintenance for 22 solar projects in the Commonwealth, totaling 1,224.8 MWac. See Table 3 for details.

**Table 3. Virginia Projects Currently Operated and Maintained**

Project	Location	Size MWac
Buckingham Solar	Cumberland	20
Butcher Creek Solar	Mecklenburg	103.8
Cherrydale Solar	Northampton	20
Clarke Solar	Clark	10
Colonial Trail West Solar	Surry	142
Correctional Solar	New Kent	20
Danville Solar	City of Danville	16
Desper Solar	Louisa	88
Sadler Solar	Greensville	100
Eastern Shore Solar	Accomack	80
Greensville Solar	Greensville	80
Myrtle Solar	Suffolk	15
Pocaty Solar	Chesapeake	70
Rochambeau Solar	James City	20
Scott I Solar	Powhatan	23.0
Scott II Solar	Powhatan	17
Southampton Solar	Southampton	140.8
Spring Grove Solar	Surry	97.0
Sussex Drive Solar	Sussex	20
Ward's Creek	Prince George	150
Whitehouse Solar	Louisa	20
Woodland Solar	Isle of Wight	19
<b>Total:</b>		<b>1,224.8</b>



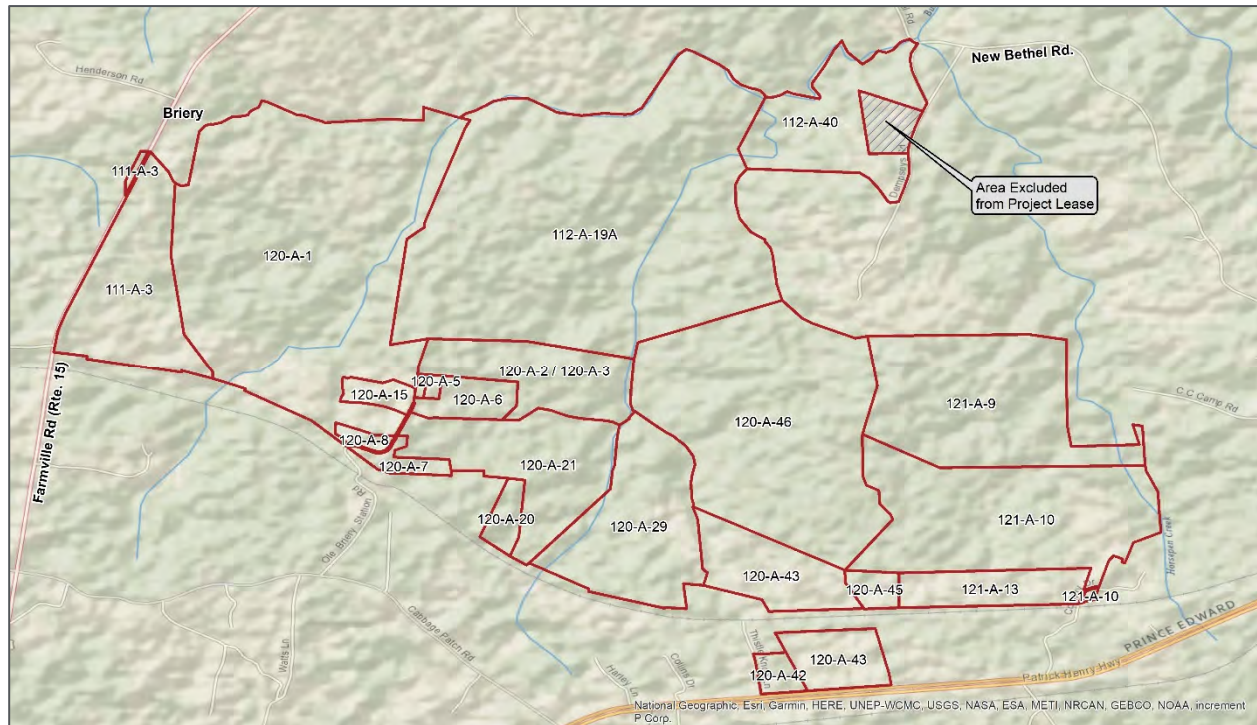
## Project Landowner Information

The Project landowners, consisting of only four families, have entered into long-term lease or purchase option agreements with the Applicant. The parcels, all zoned Agricultural Conservation District (A1), are detailed in Table 4, and shown in Figure 2. Redacted versions of the purchase and lease option agreements are provided in **Attachment C**.

**Table 4. Project Parcels**

Parcel GPIN	Zoning	Landowner Name	Agreement Type	Approximate Acreage
111-A-2B	A1	WILKERSON LEWIS E JR	Purchase	3.59
111-A-3	A1	WILKERSON LEWIS E & DAWN H	Purchase	122.62
112-A-19A	A1	WILKERSON LEWIS E JR	Purchase	486.72
112-A-40	A1	KEPLINGER WILLIAM & STACIE SHAFFER	Purchase	111.7
120-A-2	A1	WILKERSON LEWIS E JR	Purchase	55
120-A-3	A1	WILKERSON LEWIS E JR	Purchase	13
120-A-4	A1	WILKERSON LEWIS E JR	Purchase	1
120-A-7	A1	WILKERSON LEWIS E JR	Purchase	8.9
120-A-8	A1	WILKERSON LEWIS E JR	Purchase	4.4
120-A-15	A1	WILKERSON LEWIS E JR	Purchase	10.29
120-A-20	A1	WILKERSON LEWIS E JR	Purchase	11.91
120-A-21	A1	WILKERSON LEWIS E JR	Purchase	112.1
120-A-29	A1	WILKERSON LEWIS E JR	Purchase	115.69
121-A-9	A1	WILKERSON LEWIS E JR & DAWN H	Purchase	161.95
120-A-1	A1	WILKERSON LEWIS E	Purchase	396
120-A-46	A	WILKERSON LEWIS E	Purchase	275
120-A-5	A1	WILKERSON LEWIS E & DAWN H	Purchase	2
120-A-6	A1	WILKERSON LEWIS E JR & DAWN H	Purchase	19.49
120-A-42	A1	WILKERSON LEWIS E JR & DAWN H	Purchase	49.51
120-A-43	A1	HAMPTON MILSTEAD BREHM	Lease	144.78
121-A-10	A1	VAUGHAN JOHN W	Lease	146.75

Each parcel's property boundary is depicted in Figure 2 below.

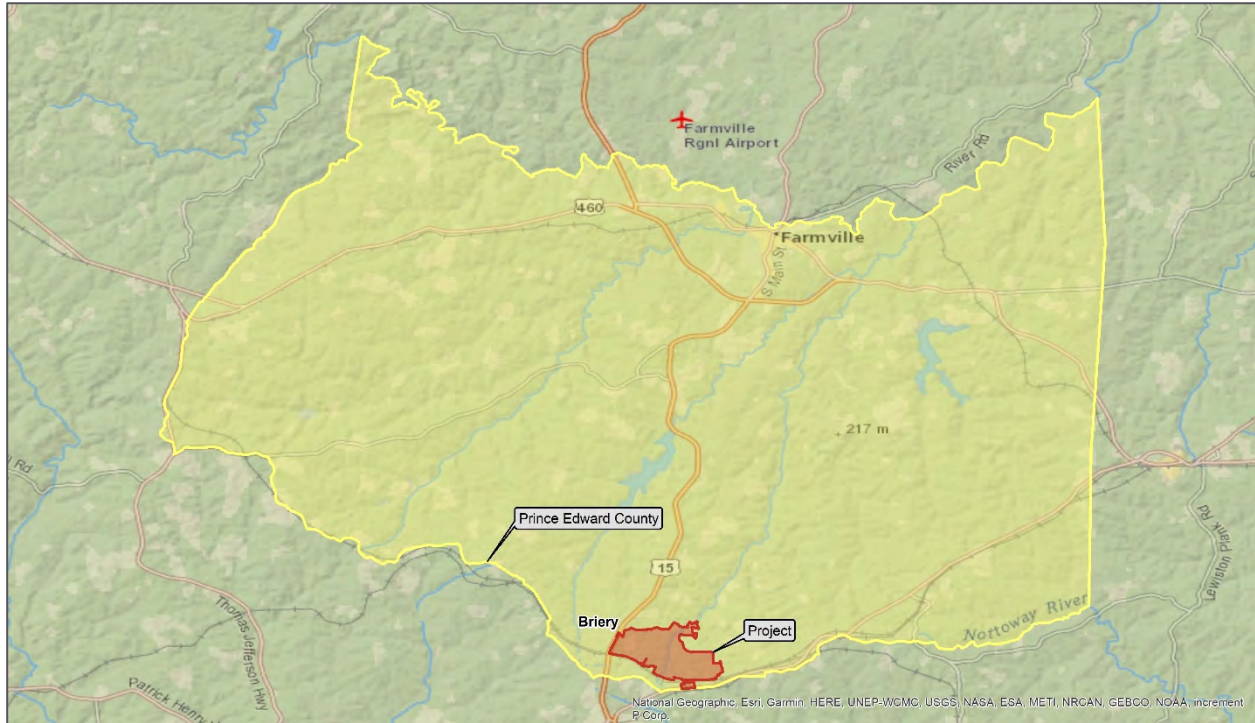


**Figure 2 – Parcel Boundaries Under Site Control**

## Project Overview

### Location and Description

The Project will be located near the Briery community of southern Prince Edward County. The site is situated just north of Patrick Henry Highway (State Route 360), east of Farmville Road (State Route 15), and just west of New Bethel Road and Virso Road. To the north, the Project is bordered primarily by a single landowner who has a large parcel currently in timber. The southern portion of the site is bordered by a Norfolk Southern rail line that parallels State Route 360 before bisecting Route 15 as it goes west. These features make the site incredibly secluded, bordered by large timber tracts on one side, a rail line with an accompanying berm on another, and Route 15. The Project has intentionally located solar panels away from the eastern border of the Project to provide several hundred feet of distance between the Project's infrastructure and the residential housing along CC Camp and New Bethel Roads.



**Figure 1 – Regional Project Location Map**

The Project will interconnect to an existing 230kV electric transmission line that crosses the eastern portion of the site in a north-south direction. The Project's point of interconnection will be located on-site with a new substation constructed within the site boundaries, over 300 feet from any adjacent property line and over 800 feet from the nearest residence. The electric transmission and distribution network in the area is serviced by Virginia Electric and Power Company, doing business as Dominion Energy Virginia.

The Project includes 610 acres within the fenced areas. The Project will generate approximately 150 MWac. Silicon photovoltaic panels will be utilized for the Project. The Project will **not** use any panels containing Cadmium Telluride (CdTe). The full detailed conceptual Site Plan for the Project is included in **Attachment B**.

## Comprehensive Plan Conformance

The Project presents a unique opportunity for Prince Edward County to align with the goals and vision outlined in the new 2045 Comprehensive Plan ("Comprehensive Plan"). The Project not only supports the County's commitment to sustainable development but also enhances economic growth, community well-being, and environmental stewardship without drawing on County infrastructure and services.

The key reasons why the Planning Commission should find the Tobacco Trail to be in substantial accord with the Comprehensive Plan are provided below.

The Comprehensive Plan emphasizes coordinated, harmonious development that promotes health, safety, and general welfare. The Project aligns with this vision by providing a clean, renewable energy source that supports environmental sustainability. The Project is a forward-thinking initiative that addresses present and future energy needs while promoting the overall well-being of the community.

**Chapter 3 Preservation of Natural and Historic Resources:** The Comprehensive Plan emphasizes the importance of protecting natural and historic resources.

- **Direct Development Away from Prime Farmland Soils (3.2.1):** The Project is located on land with degraded soil quality from previous timber operations. Land that has been used for timber harvesting often experiences:
  - Soil compaction from heavy machinery
  - Nutrient depletion due to the removal of biomass
  - Erosion if vegetation is not reestablished quickly.
  - Loss of topsoil and organic matter
  - Soil degradation, even if the soils are classified as prime farmlands.

Prime farmland designation is relatively static—it does not automatically update based on land degradation, contamination, or changes in land management. Therefore, a piece of land might still be labeled "prime" even if it is no longer suitable for high-yield agriculture without significant remediation.

Agrivoltaics practices, such as sheep grazing and the planting of pollinator-friendly plants, both of which are planned for the Project, will ensure that the land enhances its agricultural productivity.

- **Vegetated Buffers (3.2.5):** The Project preserves and enhances existing vegetated buffers along all property lines. The site plan meets or exceeds the mandated 50' buffer across all boundaries.
  - In areas adjacent to the railroad (south) and highway (west), the effective buffer, including ROWs and setbacks—often exceeds 150 feet, aligning with best practice recommendations preserving the rural character and providing environmental benefits.



- **Performance Standards for Solar Energy Systems (3.3.6):** The Project adheres to and exceeds any strengthened performance standards for ground-mounted solar energy systems, including limiting clear-cutting on undeveloped parcels (1,100 + acres will remain untouched), planting native grasses and pollinator friendly vegetation, and maintaining a minimum 50-foot natural vegetative buffer.
- **Noise Mitigation (3.2.8):** Construction activities will be limited to daylight hours, Monday through Saturday to mitigate construction noise. Once constructed, the Project will emit virtually no noise and includes perimeter setbacks and vegetated buffers which mitigate noise. Tobacco Trail will comply with the Prince Edward County Noise Ordinance Chapter 46, Article II during operation.
- **Outdoor Lighting Ordinance (3.2.9):** The Project will use design and performance standards for outdoor lighting that increase safety and protect dark skies, consistent with International Dark Sky Association recommendations. Tobacco Trail will comply with the Prince Edward County Noise Ordinance Chapter 46, Article II during operation.
- **Historic Sites Assessment (3.2.10):** Tobacco Trail has conducted cultural and historic resource desktop studies and will conduct a Cultural Resources Survey, collaborating with the Virginia Department of Historic Resources (DHR) to ensure protection of any significant sites.

**Chapter 4. Housing and Livable Communities:** The Comprehensive Plan underscores the need for diverse housing options and quality living environments. The Project promotes a healthier living environment by reducing reliance on fossil fuels and thus lowering greenhouse gas emissions, contributing to better air quality and overall community health.

**Chapter 5. Economic Growth and Development:** The Comprehensive Plan highlights the importance of a prosperous economy for a livable community. The Project contributes to economic growth by:

- **Grow Economic Base Industries (5.3):** The Project can attract businesses seeking renewable energy sources.
  - Investment in solar projects boosts local spending and infrastructure, benefiting other industries. Improved utility infrastructure can attract further business investments, driving regional development.

- Ample power is crucial for industry. Energy availability and cost are the top criteria in corporate site selection.
- **Provide Opportunities for Job Skills Training (5.4):** The construction and operation of the Project will create job opportunities and promote skills training in renewable energy technologies. Strata is a founding partner of the Solar Hands-on Industrial Network of Excellence (SHINE), a partnership between the solar industry and Southside Virginia Community College. This program is a fast-track training program for solar jobs in Virginia, enhances job skills training and creates a skills pipeline for employers.
- **Support Entrepreneurship: (5.5):** The use of sheep grazing, as planned for the Project, helps small farmers grow their herds and thus their small business.
- **Attract New Businesses and Industries (5.6):** Solar energy projects help attract businesses seeking renewable energy sources. Companies like Apple, Google, Amazon, Microsoft, and many others prioritize regions with access to renewable energy due to their sustainability commitments.
- **Support Agricultural and Farming Activities (5.7):** The Project provides landowners with passive income. This income can be used for enhancing or maintaining agricultural operations and to preserve agricultural viability. The solar lease or sale prevents subdivision or sale of land for incompatible development. Solar energy facilities are considered a temporary and reversible form of development. At the end of the Project's life, the land will be restored to its previous condition; this aspect of solar development acts as a preservation measure, protecting the land from more permanent forms of development and land use conversion. By co-locating sheep grazing and pollinator habitats on the Project Site, the land continues to support small-scale agricultural use and supports the goal of improving access to local food. The meat and honey produced can be sold to local farm stands and small local retailers within the County.

## Chapter 6. Transportation and Connectivity:

- **Enhancing the effectiveness of County Governance (6.1):** Revenue from the Project can be allocated at the County's discretion to cover the various needs for enhanced County governance noted in the Comprehensive Plan.
- **Investing in Infrastructure for the Future (6.2):** Revenues from the Project's siting agreement and increased tax revenues can be used at the County's

discretion for infrastructure projects. In addition, the Project is a significant investment in the regional electrical grid contributing to a diverse energy supply and enhancing grid resilience. While providing significant revenues, the Project will use virtually no county infrastructure or services; it will not use schools, solid waste collection, water, or sewer.

- **Achieving Academic Excellence (6.3):** The Project will generate tax revenues that could be directed to support the needs of the public school system. Beyond financial contributions, the Project is actively fostering educational partnerships and experiential learning opportunities. Tobacco Trail Solar is in ongoing discussions on collaboration with Longwood College's SEED Innovation Center to co-develop curriculum and facilitate student-led research in Agrivoltaics. These efforts aim to integrate real-world renewable energy applications into academic programming. STRATA, a founding partner and supporter of the SHINE (Solar Hands-on Instructional Network of Excellence) program, will collaborate with SHINE to connect local students and graduates with workforce opportunities tied to the Tobacco Trail. This includes the potential for SHINE graduates from Prince Edward County to participate in public forums and Project-related activities, reinforcing the link between local education and clean energy careers.
- 
- **Encouraging Local Retention of Graduates (The "Longwood Student Symposium"):** By offering hands-on training, career pathways, and community engagement opportunities, the Project helps create a compelling reason for students to remain in Prince Edward County after graduation. The availability of local, high-quality jobs in a growing sector like renewable energy—combined with the chance to contribute to meaningful, community-based projects—can reduce the out-migration of young talent.

The Project's collaboration with the South Central Virginia Business Alliance (SCVBA) further strengthens this retention strategy. Through events like business networking evening in partnership with the Farmville Area Chamber of Commerce held on June 12, 2025, students can be exposed to local entrepreneurial opportunities and see firsthand how solar development can benefit the regional economy. These interactions help students envision a future where they can thrive professionally without leaving their home community.



- **Enhancing Community Services (6.4):** Tobacco Trail is working closely with county representatives to provide funds directly to the Virso Community Center for its Improvements Master Plan. The Center, which is located near the project site, offers recreational programs and services to the local community. This collaboration allows the project to support local infrastructure and activities that benefit nearby residents.

## Chapter 8. Community Character and Development

- **Compliance with Best Management Practices for Emerging Land Uses (Table 8-2):** The Comprehensive Plan outlines specific best management practices for the siting of solar energy facilities to minimize their impact on the environment and community. The Project adheres to these practices in the following ways:
  - **Proximity to Transmission Line Corridors:** The Project is located within the specified 2-mile radius of existing transmission line corridors. In fact, the interconnecting transmission line runs through the Project, ensuring efficient energy distribution and minimizing the need for extensive infrastructure development.
  - **Distance from Sandy River Reservoir and Appomattox River:** The Project site is located over 9 miles away from the Sandy River Reservoir and over 13 miles away from the Appomattox River, adhering to the preferred siting guidelines.
  - **Screening from Major Corridors and Scenic Byways:** The Project is designed to be completely screened from the view of major corridors and scenic byways, ensuring that it does not detract from the scenic and rural character of the area.
  - **Protection of Natural, Cultural, and Historic Resources:** The Project site is carefully chosen to be away from or completely screened from the view of natural, cultural, and historic resources, preserving the integrity of these important assets.
  - **Preference for Brownfield Sites:** While not located on a brownfield site, the Project utilizes existing land with poor soil quality from historic timber operations, making it ideal for a solar energy facility. Planned sheep grazing will improve soil quality over time, aligning with goals of preserving the agricultural character of the community and promoting

sustainable development practices. This approach not only prevents further degradation but also enhances the land's condition, making it more viable for future agricultural use once the Project is decommissioned.

- **Distance from Densely Populated Residential Areas:** The Project is situated away from densely populated residential areas, ensuring minimal disruption to local communities.
- **Preservation of Scenic Viewsheds and Vistas:** The Project design includes large natural buffers and setbacks to preserve the rural aesthetic and scenic viewsheds, maintaining the recreational and economic value of these resources.
- **Located a minimum of 1 mile from Town Boundary.** The Project is located several miles from any Town boundary.
- **Avoid Development in areas identified as Class IV or V for agricultural Suitability:** Some parcels within the Project boundary are mapped as Prime Farmland. However, no active farming operations are being displaced. The Project's planned agrivoltaics practices such as sheep grazing and pollinator-friendly vegetation to maintain agricultural productivity.

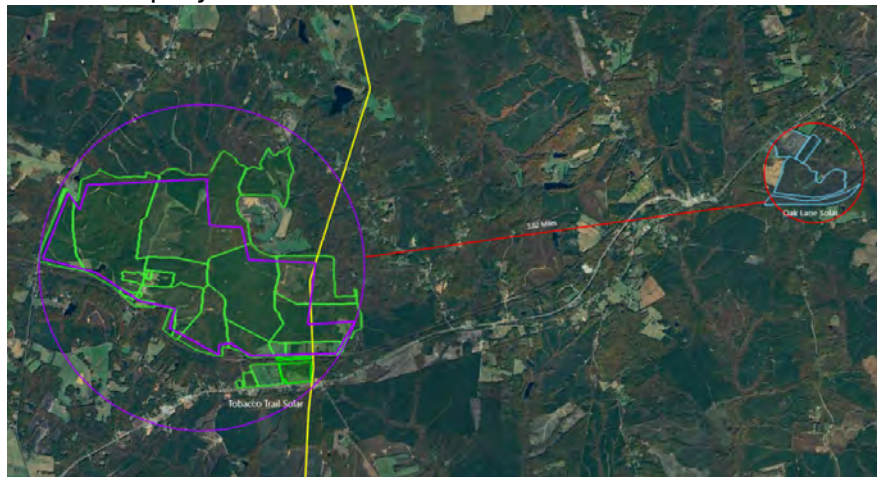
Prime Farmland designation may not always reflect current soil quality or productivity. The USDA defines it based on a combination of physical and chemical characteristics ideal for agriculture, which is based on historical soil surveys and may not account for recent land use or degradation. For the Project, previous timber harvesting led to soil compaction, nutrient depletion, erosion, and loss of topsoil, reducing actual agricultural productivity. Therefore, the Prime Farmland label should be cautiously considered, especially where land has been disturbed or degraded.

- **Avoid Development of Areas with Forest Conservation Values or Ecological Cores rated High or Outstanding:** The Project has been carefully sited to avoid areas with high forest conservation value and sensitive ecological cores.
  - Tobacco Trail fully avoids Class 1 and Class 2 ecological cores, which represents the most critical and sensitive habitat areas.

- Low-Impact Siting: Development is concentrated in previously logged upland areas, reducing the need for clearing intact forest or high-functioning habitat.
- Preservation of Key Features: Forested wetlands and riparian corridors are preserved and excluded from development.
- Wildlife Connectivity: The Project site plan incorporates wildlife corridors aligned with natural features and uses wildlife-friendly fencing to support species movement.
- Undisturbed Open Space: Over 1,100 acres will remain undeveloped, maintaining ecological connectivity and reducing fragmentation.

These measures reflect state agency guidance and align with the County's goals to protect biodiversity while supporting responsible renewable energy development.

- **Minimum Distance of 2 miles between Utility Scale Solar facilities of the same type:** The Project is located nearly 4 miles from the closest approved solar project, Oak Lane Solar.



- **Wildlife Corridors:** The Project design has incorporated wildlife corridors and preserved open space throughout the site to promote wildlife passage and habitat connectivity.
- **Solar panels included as part of the same facility should be required to be sited on contiguous parcels:** The Project arrays are located within a unified project boundary. This contiguous layout ensures cohesive design, efficient infrastructure deployment, and minimized landscape

fragmentation. By avoiding disjointed or scattered development, the Project supports orderly land use and aligns with the County's goals for responsible renewable energy siting.

- **Facilities should be significantly screened from the ground level view of adjacent properties and rights-of-way by a buffer zone at least 150 feet wide:** The Project's proposed Site Plan demonstrates full compliance with the Zoning Ordinance mandated 50-foot buffer requirement and, in many areas, exceeds the suggested best practice buffer of 150 feet due to the presence of surrounding features that enhance effective separation.
  - **Mandated 50' Buffer Compliance** - The Site Plan clearly delineates preserved vegetative buffers of at least 50 feet along all property boundaries. Where the County determines this buffer does not sufficiently block the view, a planted buffer will be added.
  - **Effective Buffers Beyond 150 feet**- In several areas, the effective buffer—defined as the total separation created by natural and built features—extends well beyond 150 feet:
    - **Southern Boundary:** The presence of the Norfolk Southern Railroad and its right-of-way (ROW) adds substantial distance between the solar infrastructure and neighboring properties. In some locations, the distance from the property line to the fenceline alone exceeds 50 feet, and when combined with the railroad ROW, the total buffer surpasses 150 feet.
    - **Western Boundary:** The Project abuts US Highway 360 (Patrick Henry Highway), which includes a wide public ROW. This ROW, combined with the internal setbacks and vegetative buffers, results in an effective buffer that significantly exceeds 150 feet.

These enhanced separations not only fulfill regulatory requirements but also align with best practices for visual screening, ecological preservation, and community compatibility.

- **Economic Benefits to the County:** During construction, the Project will create 52 direct jobs and generate over \$42 million in local wages,

economic output, and state and local tax revenue. The Project will generate an estimated \$13.2 million in cumulative county revenue over its anticipated 35-year year life through revenue share and increased real estate taxes. In addition, the Project will negotiate a siting agreement which can provide financial compensation to the locality to address capital needs in the capital improvement plan, current fiscal budget, or fiscal fund balance policy, or aid in development of broadband.

- **Education for Local Emergency Services:** To ensure preparedness and safety, The Project will provide dedicated training for local emergency response and fire personnel. This training will cover site-specific protocols, access procedures, and emergency shutdown operations, equipping first responders with the knowledge and tools necessary to respond to incidents safely and effectively at the facility. Coordination with local agencies will be ongoing to support readiness throughout the life of the Project.
- **Ensure that new development complements and enhances its surroundings through proper land use, design, landscaping, and transitional buffers (8.1.4):** The Project will use vegetative buffers and setbacks to minimize visual impacts and maintain the rural character of the area.
- **Explore changes to zoning and development provisions to encourage permeable paving and other materials that promote infiltration of stormwater. (8.1.3) and Low Impact Development practices and alternative wastewater systems in environmentally sensitive areas to ensure the preservation of water quality in the County (8.1.2):** Tobacco Trail will use native plantings which have deep root systems that promote stormwater infiltration. Limited impermeable materials will be used as pad sites for inverters. Access roads will be gravel. The Virginia Department of Environmental Quality (DEQ) has implemented stringent stormwater management policies for solar projects, considering solar panels as disconnected impervious surfaces. Because of the spacing between rows of panels and the frequent angle of orientation, rainwater is allowed to reach the maintained grasses between and below the panels. This results in stormwater management systems that are overengineered, providing even greater protection for local water bodies.

- **Ensure that alternative energy facilities utilize best practices for siting, design, regulation, and decommissioning and are not detrimental to surrounding land. (8.1.6):** The Project utilizes Best Management Practices for Emerging Land Uses shown in Table 8-2. Strata has developed, constructed, and operates hundreds of utility-scale solar facilities across the United States. As a leading solar engineering and construction provider, Strata has extensive experience in siting, developing, and constructing utility-scale solar projects throughout the Commonwealth. The Project has proposed SUP Conditions that include a comprehensive decommissioning plan including a decommissioning cost estimate (both performed by an outside Engineer). The condition includes that the Project will provide security in the amount of the estimated decommissioning cost. The cost estimate will be updated no more frequently than once every five years and no less frequently than once every ten years. This plan ensures that upon decommissioning of the Project the land can be repurposed for future use, often in better shape due to the passive land use of the solar Project, co-location of sheep grazing and pollinator habitats, and absence of intensive farming and timber management activities during the Project's duration.

**Conclusion:** The Project is a strategic initiative that aligns with the Comprehensive Plan's vision and goals. It promotes sustainable development, economic growth, and community character. By finding the Tobacco Trail Solar Project in substantial accord with the Comprehensive Plan, the Planning Commission will be supporting a project that benefits the community, the environment, and the economy. This Project represents a significant step towards a sustainable and prosperous future for Prince Edward County.

## **Zoning Ordinance Conformance Summary**

Article VII – Alternative Energy Facilities of the Prince Edward County Zoning Ordinance provides a detailed guide for obtaining a Special Use Permit (SUP) including all required elements. Below is a comprehensive assessment of the ordinance noting how Tobacco Trail not only meets but often exceeds these requirements.



Zoning Requirements	Project Conformance and Description
Site Plan	Tobacco Trail has provided a Site Plan ( <b>Attachment B</b> ) that meets or exceeds the County's requirements for a SUP. The Site Plan includes property lines, setbacks, buffers, existing and proposed buildings, entrances and roads, proposed locations of solar panels, substations, fencing, wetlands, and soils.
Documentation of right to use property for the proposed facility.	Redacted land use agreements are included in <b>Attachment C</b> of this application.
Decommissioning plan; security.	The Project will fully comply with the Decommissioning Requirements as outlined in the Ordinance. A detailed decommissioning plan including a decommissioning cost estimate is included in <b>Attachment E</b> . Per the proposed conditions ( <b>Attachment D</b> ), security in the amount of the estimated decommissioning cost will be provided to the County prior to operation begins.
Liability insurance	Adequate liability insurance to cover operations will be posted with the County before issuing a building permit.
Landscaping and screening plan	A landscape Buffer plan is included in Site Plan Drawing C02.009 ( <b>Attachment B</b> ) of this application. The plan includes a 50' Vegetative Buffer of existing vegetation. Where existing vegetation is inadequate, a vegetative buffer, consisting of a 15' evergreen buffer and a 35' pine buffer, will be planted. The plan also addresses the use of pollinator-friendly plantings.
Erosion and sediment control plan/Stormwater Management Plan	An erosion and sediment control plan will be submitted as part of the County Building permit approval process. The Stormwater, Erosion, and Sediment Control Features section of this document provides best practices to be used.
Virginia Cultural Resource Information System report	A report from the Virginia Department of Historic Resources Virginia Cultural Resource Information System is included in the Cultural Resources Review ( <b>Attachment I</b> )
Construction Plan/Schedule	Section III. Condition 3 of the Proposed Project Conditions ( <b>Attachment D</b> ) specifies the permitted construction hours. A construction schedule will be submitted as required to obtain a building permit
Identification of existing/known proposed utility scale energy facilities w/in 5-mile	<b>Attachment F</b> includes an exhibit showing the known solar facility, CEP Solar, and the recently approved solar project, Oak Lane Solar, which are within the 5-mile radius of the Project.



Impact on Adjacent Property Values	<b>Attachment G</b> includes a property impact analysis conducted by Christian P. Kaila & Associates. The analysis concludes, "It is my professional opinion that the proposed Tobacco Trail Solar Facility will not adversely affect the value of adjoining or abutting properties."
Economic Impact Analysis	An analysis from Mangum Economics is included in <b>Attachment H</b> . It finds that the Project would provide an estimated one-time pulse of economic activity to Prince Edward County during its construction phase. The Project would generate approximately \$13.2 million in cumulative county revenue over the facility's anticipated 35-year operational life, assuming revenues are generated from the reassessment of the real property and payments associated with the locally adopted revenue share ordinance. The Project Impact section provides further details.
Cultural Resources Review	Dutton + Associates conducted a cultural resources desktop review of the Project Area, as detailed in <b>Attachment I</b> . This review utilized data from the Virginia Department of Historic Resources (VDHR) Virginia Cultural Resource Information System (V-CRIS). The review found no previously recorded architectural resources or archaeological sites within the study area. However, three previously recorded architectural resources within one-half mile of the study area have either not been evaluated or have unknown eligibility for listing in the National Register of Historic Places (NRHP). Based on current studies, no cultural or archaeological resources listed or eligible for listing on the NRHP or the Virginia Landmark Register (VLR) are expected to be affected. The Project continues to coordinate with VDHR to ensure compliance with state and federal regulations by identifying, surveying, and protecting cultural and archaeological resources as the Project progresses.
Wildlife Impact Report	The Department of Wildlife Resources (DWR) Virginia Fish and Wildlife Information Services (VaFWIS) was accessed and reviewed on December 13, 2024. The VaFWIS report indicated there are no documented observations of threatened or endangered species on site or within 2 miles of the Project. The report also indicates there is no concern for bat hibernacula or colonies, no threatened or endangered waters, no bald eagle concentration areas or roosts, and no bald eagle nests near the Project. <b>Attachment J</b> provides the full report
Pollinator Impact	The Project will ensure that plant pollinator mixes will be installed in select locations throughout the site to support habits for native and critical species such as bees, butterflies, monarchs, and hummingbirds. Drawing C02 009 of the Site Plan ( <b>Attachment B</b> ) provides further details about planting and the native pollinator seeding mix. <b>Attachment U</b> details the Vegetative Management Plan.

Glint and Glare	A specification sheet for the solar panels to be used, along with an email from JA Solar confirming their anti-reflective coating, is included in <b>Attachment K</b> . Glare Study provided in <b>Attachment T</b> .
Community Meeting	The Project hosted an informal community meeting on Tuesday, December 10th at the Meherrin Volunteer Fire and Rescue Department's Bingo Hall. The Project held an official community meeting, as required by County ordinance, on Thursday, March 20, 2025, at the same location. The Project notified the zoning administrator and adjacent property owners in writing and with a public notice in the newspaper of record. A list of attendees and topics discussed are included in <b>Attachment L</b> . A third community meeting was held in October 2025.
Visual Impacts	The Project is strategically located in a remote area, far from most residential properties, and is further screened by mature vegetation, reducing its visual impact. <b>Attachment P</b> includes Visual Simulations of the four site access points, which are designed to conceal the site from view. A Visibility Heat Map indicates that only one adjacent parcel will have any visibility of the Project, and this will be limited to approximately 10% of a very small section of the parcel.
Signage	Section I, Condition 8. of the Proposed Project Conditions ( <b>Attachment D</b> ) specifies that no signage will be permitted on the site, except for signage containing notices, warnings, or other information as required by law, applicable codes, and standards, or deemed necessary by the County to ensure the safety and welfare of the community. Warning signage will identify the Project owner and include a 24-hour emergency contact number.
Noise	Solar panels do not produce noise, but the inverters and tracking equipment can produce a low level of sound that is generally not audible past the facility fences. as provided in the Proposed Conditions, Section III. Number 3, ( <b>Attachment D</b> ) the Applicant will comply with the Prince Edward County Noise Ordinance Chapter 46, Article II during operation. Solar projects are considered quiet neighbors.
Setbacks	The Project Area is setback at least 125' (75' required) from all public rights-of-way, over 400' from buildings on adjoining parcels (75' required) and at least 100' from adjacent property lines (50' required).
Height and Fencing	The facility will not exceed a height of 18' The limit shall not apply to utility poles and the interconnection to the overhead electric utility grid. The Project array areas will be enclosed by a 6-foot-high security fence topped with three strands of barbed wire. The Site Plan ( <b>Attachment B C02. 008</b> ) includes Project elevations and Drawing C02 009 provides fence detail.
Vegetative Buffer, and Pollinator Habitats	The plan includes a 50-foot vegetative buffer of existing vegetation. Where the existing vegetation is inadequate, a planted buffer will be added, consisting of a 15-foot evergreen buffer and a 35-foot pine planting. The plan also addresses the use of plants that support

	<p>pollinator habitats. The Site Plan Drawing (<b>Attachment B C02 009</b>) includes buffer details, planting notes, and pollinator seeding notes. Fencing will be installed around array areas on the interior side of the buffer.</p>
Lighting	<p>The Project will not produce light pollution that will be intrusive to neighbors or detract from the rural character of the County. The Project will not utilize permanent lighting. Lighting will be downward facing, motion activated security lighting located at the Project entrance gate or at the control panels near the equipment pad. Lighting of the substation and switchyard shall be limited to that minimally required for safety and operational purposes and shall be full cut-off type fixtures. (Proposed Conditions Section III Condition 9)</p>
Density, Location, size	<p>The Project is located more than one mile from any airport (~4.9 miles away from Abilene Airport). Additionally, the FAA Notice Criteria tool (<b>Attachment M</b>) confirms that the Project will not interfere with airport operations. <b>Attachment N</b> includes an exhibit showing a 5-mile radius around the known solar facility, CEP Solar, and the recently approved Oak Lane and Green Bay Solar projects. Oak Lane's radius covers both the proposed Tobacco Trail and Green Bay Solar projects, making it the most conservative for density calculations. The fenced area would comprise 1.8% (909 acres) of the land within this radius. Additionally, the disturbed acreage for all three projects is 3.2% (1,611 acres), remaining below required thresholds.</p>
Repair of Facility	<p>The Project will promptly repair panels and equipment, including the restoration of non-reflective finish. 24/7 monitoring notifies the operator in real time of any issues, often before visible damage occurs, allowing repairs to be initiated promptly to maintain the Project's peak efficiency and safe operating conditions.</p>
Utility Connection	<p>The Project will not be installed prior to obtaining a Generator Interconnection Agreement (GIA) from PJM.</p>
Preservation of County view sheds and resources and protection of health safety and welfare of the community	<p>The Project is intentionally sited in a remote, low-density area, well-buffered by mature vegetation and natural topography. With a minimum 400-foot setback from the nearest residence and a 50-foot preserved vegetative buffer, the Project minimizes visual impact and maintains the County's scenic view sheds. A third-party visual assessment (<b>Attachment G</b>) confirms that the Project is not visible from any scenic, historic, or culturally significant areas, and that its design leverages natural features to reduce visibility.</p> <p>The site, previously used for timber operations, includes areas mapped as Prime Farmland but does not displace any active agricultural use. No crop cultivation or livestock operations will be interrupted. Additionally, the Project will not require permanent on-site staffing, eliminating daily traffic and associated emissions.</p> <p>By preserving natural buffers, avoiding disruption to active farmland, and</p>

	eliminating operational traffic, the Project supports environmental quality and contributes to the health and welfare of nearby residents. It avoids noise, light, and air pollution, and poses no risk to public safety. In doing so, the Project aligns with the County's zoning goals to protect view sheds, conserve natural resources, and promote the health, safety, and welfare of the community.
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## Project Benefits

The Project is not just about solar panels—it is a strategic investment in economic development, energy resilience, and environmental responsibility. It provides a diverse revenue source, strengthens local energy independence, and positions Prince Edward as a forward-thinking, sustainability-driven community.

The Project is expected to provide over \$13.2 million of direct revenue to Prince Edward County throughout the Project's life through Revenue Share and increased land valuation. The Project will also generate direct and indirect positive impacts to the County's economic activity from the facility's construction and operation. Please see **Attachment H** for a detailed economic report on the economic and fiscal contributions the Project would bring to Prince Edward County, Virginia.

### Revenue Share

Prince Edward County has adopted a revenue share ordinance and, thus pursuant to Virginia Code § 58.1-2636, can annually assess the Project up to \$1,400 per megawatt of its nameplate capacity over the life of the Project. The revenue share payments are subject to 10% escalation every five years starting in 2026. (The payment amount will be \$1,540 in 2029 when the Project is expected to be in operation.) The code stipulates that capital investment associated with solar projects will be exempt from taxation once a revenue share ordinance is adopted.

Based on a total generation nameplate capacity of 150 MWac and an assumed commissioning date in 2029, annual payments will start at \$231,000 for the first two years of operation, increase to \$254,100 for the following five years, and continue escalating as scheduled. Over the Project's 35-year life, revenue share payments to the County will total of \$11,615,100.

### Siting Agreement

Per Chapter 22, Title 15.2, Article 7.3 of the Virginia Code, solar project applicants shall meet, discuss, and negotiate a siting agreement with the host locality. Revenue from

a siting agreement can provide financial compensation to the locality to address capital needs in the capital improvement plan, current fiscal budget, or fiscal fund balance policy, or aid in development of broadband. Tobacco Trail Solar, LLC looks forward to negotiating a siting agreement during the approval process as deemed appropriate by the County.

### *Land Valuation*

The Project will generate an increase in real estate tax revenue for the County as the land associated with the Project will be assessed at a significantly higher value. Over the expected 35-year operational life of the Project, this will bring substantial revenue to the County compared to the current real estate tax revenue payments. The county real estate tax revenue from the Project after reassessment is estimated to be approximately \$43,900 per year, for a cumulative total of approximately \$1.5 million over the Project's anticipated 35-year operational life. In contrast, the proposed site currently generates approximately \$5,800 per year in real estate tax revenue for the county, for a cumulative total of approximately \$0.2 million over 35 years.

### *Additional Economic Contributions*

In addition to generating new tax revenue, the Project will stimulate the local economy through job creation and increased demand for goods and services. The Project will prioritize sourcing labor, materials, services, and supplies locally while maintaining high safety and quality standards.

Strata currently employs 72 full-time staff in Virginia and is an active member of the South Central Virginia Business Alliance (SCVBA), which connects infrastructure projects with local businesses and labor in counties including Prince Edward County. The Project will leverage SCVBA, the Chamber of Commerce, the Prince Edward County Economic Development Authority, and other resources to identify local subcontractors and vendors. For roles that cannot be filled locally, Strata will house workers in local accommodations and provide per diem spending for meals and incidentals.

Additionally, land lease payments or proceeds from land sales associated with the Project are highly likely to be reinvested in the community, further boosting local economic activity through increased capital circulation and support for landowners and local businesses.

## Energy Benefits

The planned AVAIO Digital data center in the County will require up to 300 MW of power, doubling the county's electricity demand. Currently, Prince Edward County consumes an estimated 0.15–0.20 TWh annually, whereas the data center will use 2.63 TWh per year—more than 13 times the current usage. In a single day, the data center will consume what the county uses in 10–15 days.

The Project is designed to generate approximately 0.3029 TWh annually, enough to meet the county's current estimated electricity needs with clean, local energy or it could offset about 10% of the data center's demand, reducing grid pressure and avoiding costly fossil-fuel infrastructure upgrades.

## **Project Components**

This section describes the Project components, construction, and operation activities. The specific manufacturer and models of the equipment to be used for the Project will be determined later in the detailed engineering process which follows the approval of the SUP.

### Modules

The Project features PV modules (panels) that generate electricity by safely converting the energy of the sun's photons into direct current (DC) power. The modules are uniformly dark in color, non-reflective, and designed to be highly absorptive of all light that strikes their glass surfaces. The PV modules will be electrically connected to the facility's grounding system in compliance with all applicable industry standards, as well as local and state codes and regulations.

The Project will use JA Solar (JAM66D45 and JAM72D40) panels. A specification sheet for these panels, along with an email from JA Solar confirming their anti-reflective coating, is included in **Attachment K**. The spec sheet confirms that these PV modules meet all industry standard quality testing requirements.

Modules consist of silicon solar cells, a metal frame, a glass sheet, a wire, and bus wire. They are designed to withstand humidity, heat, rain, marine environments, wind, hailstorms, and packed snow. **The Applicant does not utilize modules that contain any Cadmium Telluride (CdTe).**

### Support Structures

The support structure to which the solar PV modules are affixed – referred to as racking – allows for the modules to be properly positioned for maximum capture of solar radiation. The PV module arrays (a row of PV modules) are supported by a foundation of posts consisting of galvanized rolled steel – referred to as piles – that are either driven, screwed, or drilled into the ground, depending on the subsurface conditions. Piles that are driven into the soil use a pile/vibratory/rotary driving technique, like what is used to install freeway guardrails. Driven pier foundations offer multiple benefits, including quick installation timelines and minimal site disturbance. Most foundations would be driven to approximate depths of six to nine feet deep, depending upon required embedment depth.

The Project anticipates it will use a single-axis tracker; however, specifics around final technology will be determined later during the detailed engineering phase. The maximum height of all equipment at the site will not exceed 18 feet. As discussed above, tracking solar arrays will tilt to track the sun from east to west throughout the day, which means the panels will only be at their maximum height in the morning and evening.

### Inverters and Transformers

Inverters convert the DC electricity generated by the PV module array into AC electricity which is compatible for use with the electric grid's transmission network. After the inverters convert the power from DC to AC, the medium-voltage transformers step up the voltage to match the overhead transmission line voltage.

The inverters, medium-voltage transformers, and other electrical equipment would be located throughout the Project site. Inverters are in lockable modular metal cabinets typically supported by steel piles with gravel backfill up to the base of the cabinet. All electrical equipment would be either outdoor-rated or mounted within enclosures designed specifically for outdoor installation. The proposed equipment poses no electrical shock risk and is safe to touch.

### Collector Substation and Switching Station

An existing Dominion Transmission Line traverses the site. The generation from the project is fed into a collector substation where the voltage is stepped up to 230 kV via Main Power Transformers (MPT). The electricity will then feed to an adjacent, Dominion Energy-owned and -operated switching station that connects to the overhead 230 kV transmission line. The Project's switching station will be on an up to 10-acre parcel



subdivided from Tax Map Number 121-A-9. This substation and switchyard will be constructed in an internal area of the site, not visible from nearby road frontage. The substation will be ~ 2,100 feet (over a quarter mile), from the nearest residence.

### *Stormwater, Erosion, and Sediment Control Features*

The Project will implement a comprehensive erosion and sediment control (E&S) strategy that meets or exceeds all local and state regulatory requirements. The project will obtain the following permits prior to land disturbance:

- Prince Edward County Stormwater Management Program (SWM) Permit for land disturbance greater than 1 acre.
- Virginia Department of Environmental Quality (VADEQ), Virginia Pollutant Discharge Elimination System (VPDES) Construction General Permit (CGP). Applications for coverage under the CGP include:
  - County-approved ESC Plan – An engineered plan designed to control erosion and maintain sediment on site during construction activities.
  - County-approved SWM Plan – An engineered plan designed to minimize flooding and protect water quality after construction activities are completed.
  - Pollution Prevention Plan – A plan designed to control pollutants by minimizing exposure to precipitation and stormwater and to identify spill and leak prevention and response procedures.

Some of the key E&S control measures utilized include:

- Sediment Basins: Constructed ponds for detaining runoff to allow for the settlement of suspended sediments. Sediment Basins are converted and maintained as permanent dry detention basins to provide long term channel and flood protection by reducing the peak stormwater flows.
- Diversion/Conveyance Channels: Designed to intercept and direct runoff to sediment basins without erosion, these often include check dams to manage flow velocity and capture suspended sediment.
- Silt Fence: A filter fabric filter with steel posts located around the perimeter of all disturbance limits. This provides filtering and promotes on-site settlement of sediment-laden runoff.
- Mulching: Application of plant residues such as straw or coir protects the surface from rainfall impact and fosters the establishment of vegetation.
- Stabilization: Temporary stabilization measures are applied within seven days of land disturbance using fast-growing annual vegetation to provide soil cover,

retain moisture, and inhibit erosion while construction is ongoing. Permanent stabilization is established and maintained after construction completion to areas that have reached final grade and become the basis for the Project sites' long-term vegetation.



**Figure 3– Diversion Channels and Stormwater Management Ponds**



**Figure 4– Temporary or permanent seeding applied to all denuded areas during all phases of construction**

The Project will implement erosion and sediment (E&S) controls that align with current best practices and evolving guidance for utility-scale solar (USS) development in Virginia. These practices are informed by the Virginia Tech 2024 White Paper – Soil Site Management Protocols & Best Management Practices for Utility Scale Solar (included in **Attachment Q**) which is recognized by the Virginia Department of Environmental Quality (DEQ) as a foundational reference for solar permitting and site management.

The project's E&S strategy will emphasize minimizing soil disturbance, promoting timely stabilization of exposed areas, and supporting long-term site resilience. Measures will be tailored to site-specific conditions and will reflect the science-

based principles outlined in the white paper, including considerations for soil structure, hydrology, and vegetation recovery. The approach will also incorporate planning for eventual site rehabilitation at decommissioning to support future land use opportunities.

The Project site will be stabilized using vegetative cover consisting of native grasses, clover, and pollinator seed mixes where appropriate. Vegetative cover not only protects the site against erosion but also provides nourishment to the soil. The land surface within the Project fence line is to be vegetated, except for the roads and inverter pads. An example of established vegetation at an operational solar facility constructed by the Strata in Virginia is shown in Figure 3 below. The Site Plan (**Attachment B**) goes into further detail about planting, including the use of pollinator- and wildlife-friendly native vegetation.



**Figure 5 – Established vegetative cover at an operational solar facility built by Strata in Virginia**

### *Visual Buffers*

The Project has the benefit of being located in an area with existing buffers in place to shield the Project from view. The Project is bordered on the west by Route 15 where there is existing vegetation on site. The plan would leave 50 feet of existing mature vegetation in place along Route 15, providing a dense buffer and preventing passing motorists from seeing the site. To the south, the Project is bordered by the Norfolk Southern Rail line which also features a natural berm. A 50-foot buffer of mature existing trees will also border the southern part of the Project, completely obscuring it from view. To the east, the Project borders a mix of occupied and unoccupied parcels. The Project will reserve a 50-foot buffer of trees internal to the Project parcels to buffer

the Project from residents. In addition, care has been given to pull paneling away from this part of the Project to increase the distance from neighboring properties. To the North, most of the Project shares a border with a single landowner who has his property in timber. Tobacco Trail has designed the site to locate panels away from the northeast where there are few residences. A 50-foot internal tree buffer will apply to this border as well.

**Attachment P** includes a cartographic heat map illustrating the percent visibility of the project's solar arrays from various vantage points of ground-based observers within 0.5 miles of the project boundary. The heat map was prepared using standard 3D and spatial analysis tools to determine whether the Project could be seen from adjacent properties.

To create this map, a detailed three-dimensional (3D) model of the visibility study area, 0.5-mile radius from the extent of the Project boundary, was developed. This model utilized digital elevation data to simulate the heights of existing terrain features as well as above-ground features such as tree canopies and structures, as well as details from the Project's Site Plan.

The heat map is shaded in different colors to indicate the percentage of the project that is visible from surrounding locations as defined in the map legend. The categories range from the lowest visibility of 1-10 percent shown in yellow to the highest visibility from 91 to 100 percent shown in red. The results of this analysis indicate that the Project will not be visible to the majority of the surrounding areas with the project only being visible along one small area of Dempsey Road on one adjoining parcel.

Digital photographs were taken at the four site access locations to document current site conditions where the Project has the highest potential to be seen from public rights-of-way. The AutoCAD drawing files (dwg) of the Site Plan were used to develop a three-dimensional (3D) model of the solar energy facility (e.g., perimeter fences and solar panels). The 3D model was then incorporated into digital renderings based on the five site photographs. The final product (**Attachment P**) provides a post-construction digital rendering of the Project from key viewpoints. Based on this analysis, the Project will be obscured from view from public rights-of-way.

## Security

The Project array areas will be enclosed with security fencing that meets NESC requirements and all other applicable local, state, and federal laws and regulations. Fencing would consist of a 6-foot-high chain-link perimeter fence with three strands

of barbed wire on top.

Signage for electrical safety would be placed along the perimeter of the Project site, warning the public of the high voltage and the need to keep out. Signage would also be placed within the Project site where appropriate. All signage will conform with the Prince Edward County sign ordinance.

Localized security-related lighting, on-site security personnel, and/or remotely monitored alarm systems may be required during construction and operation. Remote-monitored cameras, alarm systems, and perimeter and safety lighting will be installed as needed for emergencies, security breaches, or unscheduled maintenance and troubleshooting. All Lighting shall be limited to that minimally required for safety and operational purposes and shall be full cut-off type fixtures. (See **Attachment D** Proposed Conditions, Section III, Number 9)

### *Construction Entrance Locations*

The Project includes four proposed site entrances: one from Dempsey Road, two in the western area along Route 15, and one in the southwest from Ole Briery Station Road. Each entrance connects to a public right-of-way. The Project has requested written confirmation from the Virginia Department of Transportation (VDOT) verifying that all entrances comply with applicable VDOT requirements. The Project provided an initial submittal showing the entrances, and VDOT engineer Brian Lokker responded with review comments and guidance for a formal re-submittal. The Project is currently preparing a Site Plan for re-submittal to VDOT to address review comments and requirements. VDOT's approval will be shared upon receipt.

Additionally, an independent traffic study, included in **Attachment O**, has been conducted to ensure full compliance with all VDOT requirements and regulations. Visual renderings of the entrances after construction are provided in **Attachment P**.

### *Access Roads*

To provide access throughout the Project site, unpaved onsite access roads consisting of grassy driving aisles and/or aggregate material will be constructed. These roads will be utilized during operations for maintenance, repair, replacement of equipment, and to provide emergency response access.

## **Project Stages**

The four major life cycle stages of the Project include: (i) development; (ii) engineering, procurement, and construction ("EPC"); (iii) operations and maintenance ("O&M");



and (iv) decommissioning. Upon completion of construction, operations would commence. Decommissioning would occur once the Project fulfills its useful life.

### *Development*

The Project has secured leases and purchase options for the required land and will submit an interconnection request for the planned power generation capacity to the Regional Transmission Authority, PJM Interconnection. Due diligence activities, including title research, boundary surveys, and field studies (environmental, cultural, geotechnical, etc.), will be conducted to support detailed engineering, Site Plan approvals, and environmental permitting.

The Project will obtain all necessary permits for construction. These permits may include:

- Land disturbing and stormwater management permits from Prince Edward County and VADEQ as described above.
- Any Building Permits required by Prince Edward County.
- Clean Water Act Sections 404 and 401 permits issued by the U.S. Corps of Engineers and VADEQ.
- A Certificate of Public Convenience and Necessity (CPCN) is required in Virginia, for solar projects of 150 MW or more from the State Corporation Commission, demonstrating public benefit, environmental compliance, and grid compatibility.

Only after all the permitting work is complete will the Project begin construction.

### *Construction Activities and Methods*

The construction of the Project would consist of several stages, including site preparation (described below), development of staging areas and site access roads, solar array assembly and installation, and construction of electrical transmission facilities.

### *Site Preparation – Prior to Construction, Site Clearing, or Grading*

Surveyors delineate and identify the Project construction limits of disturbance by placing stakes and flagging. Stone construction entrances and area perimeter measures for erosion and sediment control (e.g., silt fence, diversion channels, and sediment basins and traps) are installed. Temporary and permanent stabilization measures (e.g., pre-seeding, hydroseeding, etc.) are applied.

### *Clearing and Grading*

Site preparation and grading activities of the Project would consist of clearing and grubbing of existing vegetation, continued installation of perimeter measures for erosion and sedimentation control (silt fence, sediment basins with associated diversion channels, erosion matting, etc.) to correspond with construction phasing, construction of access roads, cut and fill to adjust grades to meet tracker racking tolerances and ensure positive drainage, and grading of elevated pads for the substation, switchyard, and other electrical equipment such as inverters.

### *Collection System Trenching*

Shallow trenches are dug to accommodate below-ground medium-voltage cable which connects the solar array to the inverters. The topsoil from trench excavation would be set aside before the trench is backfilled and would ultimately comprise the uppermost layer of the trench. Excess material from the foundation and trench excavations would be used for site leveling.

### *PV System Construction Overview*

Project construction would include several phases occurring simultaneously with the construction of: (1) PV systems assembly consisting of pile driving of support racks to a depth of approximately six to nine feet and the placement of panels on support racks, (2) trenching and installation of the collection system, and (3) the grading of access roads.

### *Post-Construction and Close-Out*

Upon the major construction activities' conclusion, the Applicant would continue to work to achieve final and permanent stabilization of the Project site. As-built surveys would be performed, and final punch list items would be closed out. The Applicant would request a final inspection and close-out of the land disturbance permit.

### *Operational Activities and Methods*

The Project would operate seven days a week during daylight hours and is expected to operate for approximately 35 years. The Project will be an unmanned facility, monitored remotely. Appropriate levels of security lighting would be installed at the Project entrance. The site will be secured 24 hours per day by remote security services with motion-detection cameras.

Typical O&M duties include routine inspection of equipment, ensuring adequate store of spare parts, managing equipment repair or replacement as needed, vegetation



management, permit compliance, and maintaining close communication with the utility, among other requirements.

The solar panels, racking systems, inverters, transformers, and other electrical components will be inspected periodically. Electrical components will be tested routinely according to the manufacturer's recommendations. In the event that remote monitoring indicates a problem – such as low performance in a section of the solar field – a crew would investigate and correct the problem on an as-needed basis. As needed, the solar panels would be washed by a water truck with purified water. In addition, the on-site meteorological stations would be cleaned and adjusted regularly. The underground portion of the underground collection cable systems would also be inspected and repaired if problems occur.

### *Decommissioning Activities and Methods*

The Project is decommissioned when it reaches the end of its operational life. The process involves disconnecting the Project from the transmission grid, dismantling, and removing all equipment (foundations, modules, cable, etc.) and debris from the site, and recycling or disposing of materials in accordance with all applicable laws and environmental, health, and safety regulations in effect. Please see the Decommissioning Plan and Cost Estimate in **Attachment E**.

Decommissioning would first involve removing the panels for sale into a secondary solar PV panel market or recycling. Most of the components of the solar installation are made of materials that can be readily recycled. If the panels can no longer be used in a solar array, the aluminum can be resold, and the glass can be recycled. Other components of the solar installation, such as the racking structures and mechanical assemblies, can be recycled as they are made from galvanized steel. Equipment such as inverters, transformers, and switchgear can be either reused or have their components recycled. The equipment pads are made from concrete that can be crushed and recycled. Underground conduit and wire can be removed by uncovering trenches and backfilling when done. The electrical wiring is made from copper and/or aluminum and can be reused or recycled as well. **Attachment R** provides more information on recycling of solar components.

### *Community Engagement*

Tobacco Trail is committed to engaging with residents and ensuring that Site Plans are thoughtfully designed to incorporate citizen input wherever practical. Before submitting this application, the Project proactively hosted an informal community meeting on Tuesday, December 10<sup>th</sup> at the Meherrin Volunteer Fire and Rescue

Department to meet with residents and hear their concerns. The feedback received during that meeting has been incorporated into our plan, and a list of attendees and topics discussed are included in **Attachment L**. Tobacco Trail held an official community meeting, as required by County ordinance, on Thursday, March 20, 2025, at the same location. The Project notified the zoning administrator and adjacent property owners in writing and with a public notice in the newspaper of record. Citizen input has been addressed through appropriate revisions to the Site Plan where feasible and shared with the County in this application. Tobacco Trail will schedule an additional community meeting to be held in summer 2025. The Project will notify the zoning administrator and adjacent property owners in writing and provide a public notice in the newspaper of record.

## Natural Resources

Tobacco Trail obtained environmental and natural resources studies and designed the Project to avoid negative impacts to natural and historic resources. A desktop wetland study was completed to identify jurisdictional waters (i.e., streams and wetlands) so that the Project can be designed to avoid and minimize impacts to surface water resources. Identified wetlands and streams are shown on the Site Plan. In addition to avoiding wetlands and streams, a 50-foot non-disturbance buffer will be placed around wetlands or streams. The Project will not install PV equipment in areas containing jurisdictional waters or wetlands and will minimize impacts throughout the site. The Project will require some wetland and stream crossings for access roads and will use directional drilling to avoid impacts to wetlands and streams from cabling. Prior to construction of stream or wetland crossings, the Project will procure the necessary permit approvals from the US Army Corps of Engineers and Virginia Department of Environmental Quality to ensure the crossings will have minimal individual and cumulative adverse environmental effects and comply with applicable laws and regulations. The Project expects to qualify for Nationwide Permit coverage for the proposed road crossings because the impacts are minimal.

There will be no land disturbance within FEMA designated flood zones for the construction of PV components (solar panels, racking system, power inverters, and transformers).

Prior to initiating land disturbance activities at the site, all required federal, state, and local permits and approvals will be obtained. Stormwater management and erosion and sediment control measures will be installed to protect against stormwater runoff

and soil erosion resulting from land disturbing activities. To ensure environmental protection and minimize impacts on adjacent landowners, the Project will first install perimeter control measures and begin work from the edges of the disturbance area and then work inward.

Strata follows a strict quality control process utilizing regular site inspections to identify and address any deficiencies or vulnerabilities early. This proactive approach ensures that permanent control measures are effectively established allowing construction to proceed efficiently, land disturbance activities to stay on schedule, and the site to be fully stabilized with durable vegetation.

### *Conservation and Natural Heritage Resources*

The Project will preserve over 1,100 acres which maintains a balance between the Project's development and the preservation of rural character, natural landscapes, and wildlife habitats. The Project will maintain important wildlife habitat and will retain several wildlife corridors throughout the Project site, as shown on the Site Plan (**Attachment B**). Sections of wildlife friendly fencing will be used at strategic locations to align with wildlife corridors. These corridors allow for wildlife movement across the Project site, into other open space within the Project, across property lines and into adjacent habitats off-site. The wildlife corridors connect to the existing stream and wetland corridors throughout the Project area, planted and retained vegetative buffers, and undeveloped areas or conserved open spaces across the site. A substantial percentage of the total property under option to lease or purchase, over 1,100 acres, is planned to remain completely undisturbed.

The Project has procured studies on state and federal wildlife and natural resources to ensure the resources will be protected. Wildlife and natural resources were reviewed for species listed as threatened and endangered at the state and federal levels, within the Project boundary and at the appropriate search distances for each database. Six state and federal natural resource databases were searched to determine the potential for the Project to affect listed species.

### *Virginia Fish and Wildlife Information Services*

The Department of Wildlife Resources (DWR) Virginia Fish and Wildlife Information Services (VaFWIS) was accessed and reviewed on December 13, 2024. The VaFWIS report indicated there are no documented observations of threatened or endangered species on site or within 2 miles of the Project. The report also indicates there is no

concern for bat hibernacula or colonies, no threatened or endangered waters, no bald eagle concentration areas or roosts, and no bald eagle nests near the Project. The Project is not likely to have an adverse effect on threatened or endangered species based on the VaFWIS report.

### *Natural Heritage Data Explorer*

The Department of Conservation and Recreation's (DCR) Natural Heritage Data Explorer (NHDE) Web Service and DCR's Biotics Data System was accessed and reviewed on December 6, 2024. The Project avoids outstanding (C1), or very high (C2) Ecological Cores but may impact C3 (high), C4 (moderate) Ecological Cores identified in the Virginia Natural Landscape Assessment as documented in correspondence from the DCR dated December 6, 2024. However, this preliminary assessment by the DCR does not consider the Site Plan and assumes the entire Project boundary will be disturbed. Most of the Ecological Cores identified by the DCR within the Project boundary have been recently clearcut by the current landowners, significantly reducing the forest habitat's ecological functions. According to the current Site Plan provided, the Project will have minimal impact on the areas previously identified by the DCR as C3 (high), C4 (moderate) Ecological Cores. The Project prioritizes development in previously logged upland areas, avoids and preserves forested wetlands identified as Ecological Cores, and incorporates wildlife corridors that connect to existing stream and wetland corridors. Sections of wildlife friendly fencing will be used at strategic locations to align with wildlife corridors. Additionally, the Project includes planted and retained vegetated buffers, undeveloped areas, and conserved open spaces to further avoid and minimize impacts on sensitive ecological features.

### *Information for Planning and Consultation*

The U.S. Fish and Wildlife Service Information for Planning and Consultation (IPaC) digital project planning tool identified one species listed as threatened or endangered as likely to occur or having documented occurrences within or near the Project area: northern long-eared bat (*Myotis septentrionalis*, federally threatened, state threatened).

The Project will coordinate with the USFWS regarding the northern long-eared bat to ensure compliance with federal regulations for protecting species. A summer acoustic presence/absence survey is planned for the northern long-eared bat within the Project area by a USFWS-approved bat biologists. This survey will confirm whether the species is present or absent from the Project site and inform management decisions

moving forward.

### *Virginia Cultural Resources Information System*

A review of the Virginia Department of Historic Resources (DHR) Virginia Cultural Resources Information System (V-CRIS) was completed by Dutton + Associates, LLC, and summarized in a report dated December 3, 2024. Their review of the V-CRIS identified no (0) previously recorded architectural resources or archaeological sites within the study area's limits. There are, however, three (3) previously recorded architectural resources located within one-half mile of the study area limits that are listed in the NRHP or have not been formally evaluated and their eligibility for listing in the NRHP is currently unknown. The Briery Church (VDHR# 073-0038), a mid-eighteenth-century home and church, has been listed in the NRHP. The other two properties, a mid-eighteenth-century residence and mid-twentieth century drive-in movie theater, have not been formally evaluated by the VDHR. The resources are located south of the railroad tracks, which is characterized by a raised gravel roadbed that will contribute to blocking the Project from their view. Extensive forest vegetation also exists between the Project and the resources which will block the Project from view. All three architectural resources are located far enough away from the closest Project infrastructure and are obscured by both natural and manmade visual obstructions that the Project is not anticipated to have an adverse effect on any of the viewsheds.

### *Air Quality*

Solar energy provides a clean and sustainable way to produce electricity. By generating electricity from sunlight, solar panels produce no harmful emissions, such as carbon dioxide, sulfur dioxide, or nitrogen oxides. This reduction in pollutants helps decrease smog, respiratory issues, and other health problems associated with poor air quality.

### *Agrivoltaics*

The Project intends to implement agrivoltaics on-site where practical. Agrivoltaics involves the dual use of land for both solar energy production and agricultural activities. Common applications include livestock grazing, creating pollinator habitats, and growing crops. Tobacco Trail plans to use sheep grazing, where practical, to manage vegetation across the site and plant pollinator-friendly plants.

Solar grazing offers numerous benefits:

- It allows agricultural land to remain in productive use while supporting

renewable energy generation.

- It contributes to environmental conservation by eliminating the need for chemical herbicides and reducing greenhouse gas emissions from gasoline-powered mowing equipment.
- It significantly increases land-use efficiency by enabling the concurrent production of both food and energy.
- It naturally controls vegetation and enhances soil health. As sheep graze, their hooves aerate the soil, and their manure acts as a natural fertilizer, enriching the soil with nutrients.
- The diverse vegetation managed by sheep grazing under solar panels can create habitats for various wildlife species, including plants, insects, birds, and small mammals, fostering biodiversity within the solar farm ecosystem.

Overall, dual-use solar practices, such as agrivoltaics, provide a symbiotic solution that benefits the solar operator, the local community, and the environment.

**Attachment S** offers further details about sheep grazing and its advantages.

<b>Attachment A –</b>	<b>Special Use Permit Application</b>
<b>Attachment B –</b>	<b>Conceptual Site Plan</b>
<b>Attachment C–</b>	<b>Redacted Site Control Agreements</b>
<b>Attachment D –</b>	<b>Proposed Project Conditions</b>
<b>Attachment E –</b>	<b>Decommissioning Plan and Cost Estimate</b>
<b>Attachment F–</b>	<b>Solar Facilities within 5-Mile Radius</b>
<b>Attachment G –</b>	<b>Property Impact Analysis</b>
<b>Attachment H –</b>	<b>Economic Impact Analysis</b>
<b>Attachment I –</b>	<b>Cultural Resource Desk Top Memo</b>
<b>Attachment J –</b>	<b>VAFWIS, DCR-NDHE, and Species List</b>
<b>Attachment K –</b>	<b>Solar Panel Specifications Sheet</b>
<b>Attachment L –</b>	<b>Community Meeting Notes</b>
<b>Attachment M –</b>	<b>FAA Notice Criteria Tool</b>
<b>Attachment N –</b>	<b>5-Mile Density Calculations</b>
<b>Attachment O –</b>	<b>Traffic Study</b>
<b>Attachment P –</b>	<b>Visual Renderings and Visual Heat Map</b>
<b>Attachment Q –</b>	<b>Virginia Tech USS BMP White Paper</b>
<b>Attachment R –</b>	<b>Solar PV Recycling Information</b>
<b>Attachment S –</b>	<b>Sheep Grazing</b>
<b>Attachment T –</b>	<b>Glare Study</b>
<b>Attachment U –</b>	<b>Vegetative Management Plan</b>



# **Attachment A**

## **Special Use Permit Application**

## **ATTACHMENT A – SUP APPLICATION**

### **CONTENTS**

<b>SUP APPLICATION</b>	<b>2</b>
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<b>WILKERSON PROPERTY OWNER SIGNATURE &amp; PARCEL LIST</b>	<b>5</b>
<b>VAUGHAN PROPERTY OWNER SIGNATURE &amp; PARCEL LIST</b>	<b>7</b>
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COMMENTS: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

PERMIT/APPLICATION NO \_\_\_\_\_  
ZONING DISTRICT \_\_\_\_\_  
MAGISTERIAL DISTRICT \_\_\_\_\_  
DATE SUBMITTED \_\_\_\_\_

County of Prince Edward

PLEASE PRINT OR TYPE

PRINCE EDWARD COUNTY APPLICATION  
FOR SPECIAL USE PERMIT

TO: PRINCE EDWARD COUNTY PLANNING COMMISSION      SPECIAL EXCEPTION REQUESTED:  
VIA: ZONING ADMINISTRATOR

The undersigned owner of the following described property hereby applies for a Special Use permit as provided in Section 5-124 of Article V, Site Plan requirements are found in Section 4-100 of Article IV Development Standards of the Zoning Ordinance of Prince Edward County, Virginia.

Applicant’s Name: Tobacco Trail Solar, LLC  
Applicant’s Address: 800 Taylor St., Suite 200, Durham, NC 27701  
Applicant’s Telephone Number: (919) 960-6015

Present Land Use: Managed Timber

Legal Description of Property with Deed Book and Page No. or Instrument No. See Exhibit A

Tax Map # See Exhibit A      Acreage : +/- 2,324

Narrative statement evaluating effects on adjoining properties (noise, odor, dust, fumes, etc.): (Attach additional sheet if necessary.) See Application Narrative.

Statement of general compatibility with adjacent and other properties in the zoning district. (Attach additional sheet if necessary.) See Application Narrative.

Height of Principal Building (s): Feet 18' maximum      Stories N/A

APPLICANT’S STATEMENT: (if not owner(s) of property):

I hereby certify that I have the authority to make the foregoing application, that the information given is complete and correct to the best of my knowledge, and that development and/or construction will conform with the regulations as set forth in the Prince Edward County Zoning Ordinance as written and also with the description contained in this permit application.

Robert A. Schaffeld, III      10/16/2025  
Authorized Signatory for Strata Manager, LLC, the Manager of Tobacco Trail Solar, LLC  
Signature of Applicant (if not property owner)      Date

PROPERTY OWNER(S) STATEMENT:

I hereby certify that I/We own the above described property, that the information given is complete and correct to the best of my knowledge, and the above person(s), group, corporation, or agent has the full and complete permission of the undersigned owner(s) to make application for a Conditional Use permit as set forth in the Prince Edward County Zoning Ordinance as written.

Signature of Property Owner(s)      Date

Signature of Property Owner(s)      Date

Signature of Property Owner(s)      Date

NOTE: THIS PERMIT APPLICATION IS NOT VALID UNLESS ALL PROPERTY OWNER(S) SIGNATURES ARE AFFIXED AND DATED. ATTACH ADDITIONAL SHEETS IF NECESSARY.

Application Fee \$300.00      Fee Received by      Date

The above mentioned application charges are nonrefundable, regardless of whether the permit application is approved or denied once submitted.

All checks for payment should be made payable to: Treasurer, Prince Edward County, Virginia.

Mail to: Department of Planning &  
Community Development  
P. O. Box 382  
Farmville, VA 23901  
(434) 392-8837

# Electronic Record of Contracts

This document was generated as a record of certain contracts created, accepted and stored electronically.



## Summary of Contracts

This document contains the following contracts.

Title	ID
Permitting Document (Prince Edward County and Tobacco Trail Solar, LLC)	3de09279-2956-49df-b5a4-f6548c6dfb28

## Contract signed by:

Robert A. Schaffeld, III		Signer ID:	dfa0f1ce-4e87-4cfd-a601-80b2e9e756a2
		Email:	bob.schaffeld@stratacleanenergy.com
Date / Time:	Oct 16, 2025 at 4:20 PM UTC		
IP Address:	174.108.132.197		
User Agent:	Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/141.0.0.0 Safari/537.36 Edg/141.0.0.0		

SUP Application Exhibit A

Parcel GPIN	Zoning	Landowner Name	Legal Description	Deed/Book Number	Approximate Acreage
111-A-2B	A1	WILKERSON LEWIS E JR	POLLARD	1900 / 1352	3.59
111-A-3	A1	WILKERSON LEWIS E & DAWN H	MCGEHEE	2005 / 214	122.62
112-A-19A	A1	WILKERSON LEWIS E JR	BRIERY	2004 / 165	486.72
112-A-40	A1	KEPLINGER WILLIAM & STACIE SHAFFER	JONES	2021 / 601	111.7
120-A-2	A1	WILKERSON LEWIS E JR	JONES	2014 / 858	55
120-A-3	A1	WILKERSON LEWIS E JR	BRIERY	2014 / 858	13
120-A-4	A1	WILKERSON LEWIS E JR	LEATHERWOOD	2014 / 858	1
120-A-7	A1	WILKERSON LEWIS E JR	BRIERY	2011 / 1061	8.9
120-A-8	A1	WILKERSON LEWIS E JR	BRIERY	2011 / 1061	4.4
120-A-15	A1	WILKERSON LEWIS E JR	MCGEHEE	1600 / 2077	10.29
120-A-20	A1	WILKERSON LEWIS E JR	BOOKER	2005 / 2809	11.91
120-A-21	A1	WILKERSON LEWIS E JR	BRIERY	2005 / 1474	112.1
120-A-29	A1	WILKERSON LEWIS E JR	RUTLEDGE	2005 / 3312	115.69
121-A-9	A1	WILKERSON LEWIS E JR & DAWN H	JONES	2005 / 3312	161.95
120-A-1	A1	WILKERSON LEWIS E	BRIERY	2004 / 451	396
120-A-46	A1	WILKERSON LEWIS E	REDD TR 8	2011 / 642	275
120-A-5	A1	WILKERSON LEWIS E & DAWN H	BRIERY	2014 / 858	2
120-A-6	A1	WILKERSON LEWIS E JR & DAWN H	BRIERY	2013 / 1751	19.49
120-A-42	A1	WILKERSON LEWIS E JR & DAWN H	SIMPLICITY	1500 / 231	49.51
120-A-43	A1	HAMPTON MILSTEAD BREHM	SIMPLICITY BRITTON WEIDMAN	2003 / 2157	144.78
121-A-10	A1	VAUGHAN JOHN W	146.75 ACS	32 / 207	146.75

COMMENTS: \_\_\_\_\_

PERMIT/APPLICATION NO. \_\_\_\_\_

ZONING DISTRICT \_\_\_\_\_

MAGISTERIAL DISTRICT \_\_\_\_\_

DATE SUBMITTED \_\_\_\_\_

## County of Prince Edward

PLEASE PRINT OR TYPE

### PRINCE EDWARD COUNTY APPLICATION FOR SPECIAL USE PERMIT

TO: PRINCE EDWARD COUNTY PLANNING COMMISSION  
VIA: ZONING ADMINISTRATOR

SPECIAL EXCEPTION REQUESTED:

The undersigned owner of the following described property hereby applies for a Special Use permit as provided in Section 5-124 of Article V, Site Plan requirements are found in Section 4-100 of Article IV Development Standards of the Zoning Ordinance of Prince Edward County, Virginia.

Applicant's Name: \_\_\_\_\_

Applicant's Address: \_\_\_\_\_

Applicant's Telephone Number: (    ) \_\_\_\_\_

Present Land Use: \_\_\_\_\_

Legal Description of Property with Deed Book and Page No. or Instrument No. \_\_\_\_\_

Tax Map # \_\_\_\_\_ Acreage : \_\_\_\_\_

Narrative statement evaluating effects on adjoining properties (noise, odor, dust, fumes, etc.): (Attach additional sheet if necessary.) \_\_\_\_\_

Statement of general compatibility with adjacent and other properties in the zoning district. (Attach additional sheet if necessary.) \_\_\_\_\_

Height of Principal Building (s): Feet \_\_\_\_\_ Stories \_\_\_\_\_

APPLICANT'S STATEMENT: (if not owner(s) of property):

**I hereby certify that I have the authority to make the foregoing application, that the information given is complete and correct to the best of my knowledge, and that development and/or construction will conform with the regulations as set forth in the Prince Edward County Zoning Ordinance as written and also with the description contained in this permit application.**

Signature of Applicant (if not property owner) \_\_\_\_\_

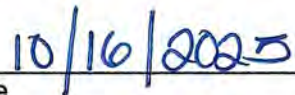
Date \_\_\_\_\_

PROPERTY OWNER(S) STATEMENT:

**I hereby certify that I/We own the above described property, that the information given is complete and correct to the best of my knowledge, and the above person(s), group, corporation, or agent has the full and complete permission of the undersigned owner(s) to make application for a Conditional Use permit as set forth in the Prince Edward County Zoning Ordinance as written.**



Signature of Property Owner(s)



Date

Signature of Property Owner(s)

Date



Parcel GPIN	Zoning	Landowner Name	Legal Description	Deed/Book Number	Approximate Acreage
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*County of Prince Edward*

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Narrative statement evaluating effects on adjoining properties (noise, odor, dust, fumes, etc.): (Attach additional sheet if necessary.) \_\_\_\_\_  
\_\_\_\_\_

Statement of general compatibility with adjacent and other properties in the zoning district. (Attach additional sheet if necessary.) \_\_\_\_\_  
\_\_\_\_\_

Height of Principal Building (s): Feet \_\_\_\_\_ Stories \_\_\_\_\_

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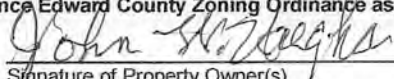
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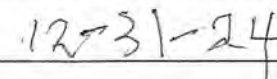
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Date

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Application Fee    **\$300.00**

Fee Received by \_\_\_\_\_ Date \_\_\_\_\_

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**All checks for payment should be made payable to: Treasurer, Prince Edward County, Virginia.**

Mail to: Department of Planning &  
Community Development  
P. O. Box 382  
Farmville, VA 23901  
(434) 392-8837

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COMMENTS: \_\_\_\_\_  
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\_\_\_\_\_

PERMIT/APPLICATION NO. \_\_\_\_\_  
ZONING DISTRICT \_\_\_\_\_  
MAGISTERIAL DISTRICT \_\_\_\_\_  
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*County of Prince Edward*

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Height of Principal Building (s): Feet \_\_\_\_\_ Stories \_\_\_\_\_

APPLICANT'S STATEMENT: (if not owner(s) of property):

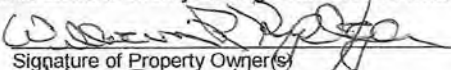
I hereby certify that I have the authority to make the foregoing application, that the information given is complete and correct to the best of my knowledge, and that development and/or construction will conform with the regulations as set forth in the Prince Edward County Zoning Ordinance as written and also with the description contained in this permit application.

Signature of Applicant (if not property owner) \_\_\_\_\_

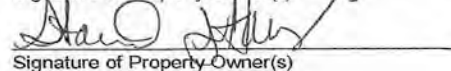
Date \_\_\_\_\_

PROPERTY OWNER(S) STATEMENT:

I hereby certify that I/We own the above described property, that the information given is complete and correct to the best of my knowledge, and the above person(s), group, corporation, or agent has the full and complete permission of the undersigned owner(s) to make application for a Conditional Use permit as set forth in the Prince Edward County Zoning Ordinance as written.

  
Signature of Property Owner(s)

12/31/24  
Date

  
Signature of Property Owner(s)

12/31/24  
Date

Signature of Property Owner(s)

Date

NOTE: THIS PERMIT APPLICATION IS NOT VALID UNLESS ALL PROPERTY OWNER(S) SIGNATURES ARE AFFIXED AND DATED. ATTACH ADDITIONAL SHEETS IF NECESSARY.

Application Fee    **\$300.00**

Fee Received by \_\_\_\_\_ Date \_\_\_\_\_

The above mentioned application charges are nonrefundable, regardless of whether the permit application is approved or denied once submitted.

**All checks for payment should be made payable to: Treasurer, Prince Edward County, Virginia.**

Mail to: Department of Planning &  
Community Development  
P. O. Box 382  
Farmville, VA 23901  
(434) 392-8837

Parcel GPIN	Zoning	Landowner Name	Legal Description	Deed/Book Number	Approximate Acreage
112-A-40	A1	KEPLINGER WILLIAM & STACIE SHAFFER	JONES	2021 / 601	111.7

COMMENTS: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

PERMIT/APPLICATION NO. \_\_\_\_\_  
ZONING DISTRICT \_\_\_\_\_  
MAGISTERIAL DISTRICT \_\_\_\_\_  
DATE SUBMITTED \_\_\_\_\_

## County of Prince Edward

PLEASE PRINT OR TYPE

### PRINCE EDWARD COUNTY APPLICATION FOR SPECIAL USE PERMIT

TO: PRINCE EDWARD COUNTY PLANNING COMMISSION      SPECIAL EXCEPTION REQUESTED:  
VIA: ZONING ADMINISTRATOR

The undersigned owner of the following described property hereby applies for a Special Use permit as provided in Section 5-124 of Article V, Site Plan requirements are found in Section 4-100 of Article IV Development Standards of the Zoning Ordinance of Prince Edward County, Virginia.

Applicant's Name: \_\_\_\_\_

Applicant's Address: \_\_\_\_\_

Applicant's Telephone Number: (    ) \_\_\_\_\_

Present Land Use: \_\_\_\_\_

Legal Description of Property with Deed Book and Page No. or Instrument No. \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Tax Map # \_\_\_\_\_ Acreage : \_\_\_\_\_

Narrative statement evaluating effects on adjoining properties (noise, odor, dust, fumes, etc.): (Attach additional sheet if necessary.) \_\_\_\_\_  
\_\_\_\_\_

Statement of general compatibility with adjacent and other properties in the zoning district. (Attach additional sheet if necessary.) \_\_\_\_\_  
\_\_\_\_\_

Height of Principal Building (s): Feet \_\_\_\_\_ Stories \_\_\_\_\_

APPLICANT'S STATEMENT: (if not owner(s) of property):

I hereby certify that I have the authority to make the foregoing application, that the information given is complete and correct to the best of my knowledge, and that development and/or construction will conform with the regulations as set forth in the Prince Edward County Zoning Ordinance as written and also with the description contained in this permit application.

Signature of Applicant (if not property owner) \_\_\_\_\_

Date \_\_\_\_\_

PROPERTY OWNER(S) STATEMENT:

I hereby certify that I/We own the above described property, that the information given is complete and correct to the best of my knowledge, and the above person(s), group, corporation, or agent has the full and complete permission of the undersigned owner(s) to make application for a Conditional Use permit as set forth in the Prince Edward County Zoning Ordinance as written.

Mildred B Hampton  
Signature of Property Owner(s)

12/31/2024  
Date

Signature of Property Owner(s) \_\_\_\_\_

Date \_\_\_\_\_

Signature of Property Owner(s) \_\_\_\_\_

Date \_\_\_\_\_

NOTE: THIS PERMIT APPLICATION IS NOT VALID UNLESS ALL PROPERTY OWNER(S) SIGNATURES ARE AFFIXED AND DATED. ATTACH ADDITIONAL SHEETS IF NECESSARY.

Application Fee    \$300.00

Fee Received by \_\_\_\_\_ Date \_\_\_\_\_

The above mentioned application charges are nonrefundable, regardless of whether the permit application is approved or denied once submitted.

All checks for payment should be made payable to: Treasurer, Prince Edward County, Virginia.

Mail to: Department of Planning &  
Community Development  
P. O. Box 382  
Farmville, VA 23901  
(434) 392-8837



COMMENTS: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

PERMIT/APPLICATION NO. \_\_\_\_\_  
ZONING DISTRICT \_\_\_\_\_  
MAGISTERIAL DISTRICT \_\_\_\_\_  
DATE SUBMITTED \_\_\_\_\_

## *County of Prince Edward*

PLEASE PRINT OR TYPE

### PRINCE EDWARD COUNTY APPLICATION FOR SPECIAL USE PERMIT

TO: PRINCE EDWARD COUNTY PLANNING COMMISSION  
VIA: ZONING ADMINISTRATOR

SPECIAL EXCEPTION REQUESTED:

The undersigned owner of the following described property hereby applies for a Special Use permit as provided in Section 5-124 of Article V, Site Plan requirements are found in Section 4-100 of Article IV Development Standards of the Zoning Ordinance of Prince Edward County, Virginia.

Applicant's Name: Tobacco Trail Solar, LLC  
Applicant's Address: 800 Taylor St., Suite 200, Durham, NC 27701  
Applicant's Telephone Number: (919) 960-6015

Present Land Use: Managed Timber

Legal Description of Property with Deed Book and Page No. or Instrument No. See Exhibit A

Tax Map # See Exhibit A Acreage : +/- 2,324

Narrative statement evaluating effects on adjoining properties (noise, odor, dust, fumes, etc.): (Attach additional sheet if necessary.) See Application Narrative.

Statement of general compatibility with adjacent and other properties in the zoning district. (Attach additional sheet if necessary.) See Application Narrative.

Height of Principal Building (s): Feet 18' maximum Stories N/A

APPLICANT'S STATEMENT: (if not owner(s) of property):

**I hereby certify that I have the authority to make the foregoing application, that the information given is complete and correct to the best of my knowledge, and that development and/or construction will conform with the regulations as set forth in the Prince Edward County Zoning Ordinance as written and also with the description contained in this permit application.**

Signature of Applicant (if not property owner)

Date

PROPERTY OWNER(S) STATEMENT:

**I hereby certify that I/We own the above described property, that the information given is complete and correct to the best of my knowledge, and the above person(s), group, corporation, or agent has the full and complete permission of the undersigned owner(s) to make application for a Conditional Use permit as set forth in the Prince Edward County Zoning Ordinance as written.**

Rosemary A. Hampton  
Signature of Property Owner(s)

10/17/2025  
Date

Signature of Property Owner(s)

Date

Parcel GPIN	Zoning	Landowner Name	Legal Description	Deed/Book Number	Approximate Acreage
120-A-43	A1	HAMPTON MILSTEAD BREHM	SIMPLICITY BRITTON WEIDMAN	2003 / 2157	144.78

# **Attachment B**

## **Conceptual Site Plan**













**STRATA<sup>®</sup>**  
**CLEAN ENERGY**

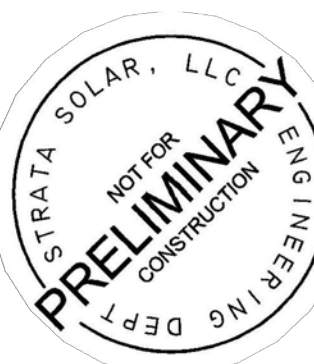
800 TAYLOR STREET  
SUITE 200  
DURHAM, NC 27701  
919-960-6015  
WWW.STRATACLEANENERGY.COM

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DO NOT SCALE DRAWINGS. USE DIMENSIONS ONLY.

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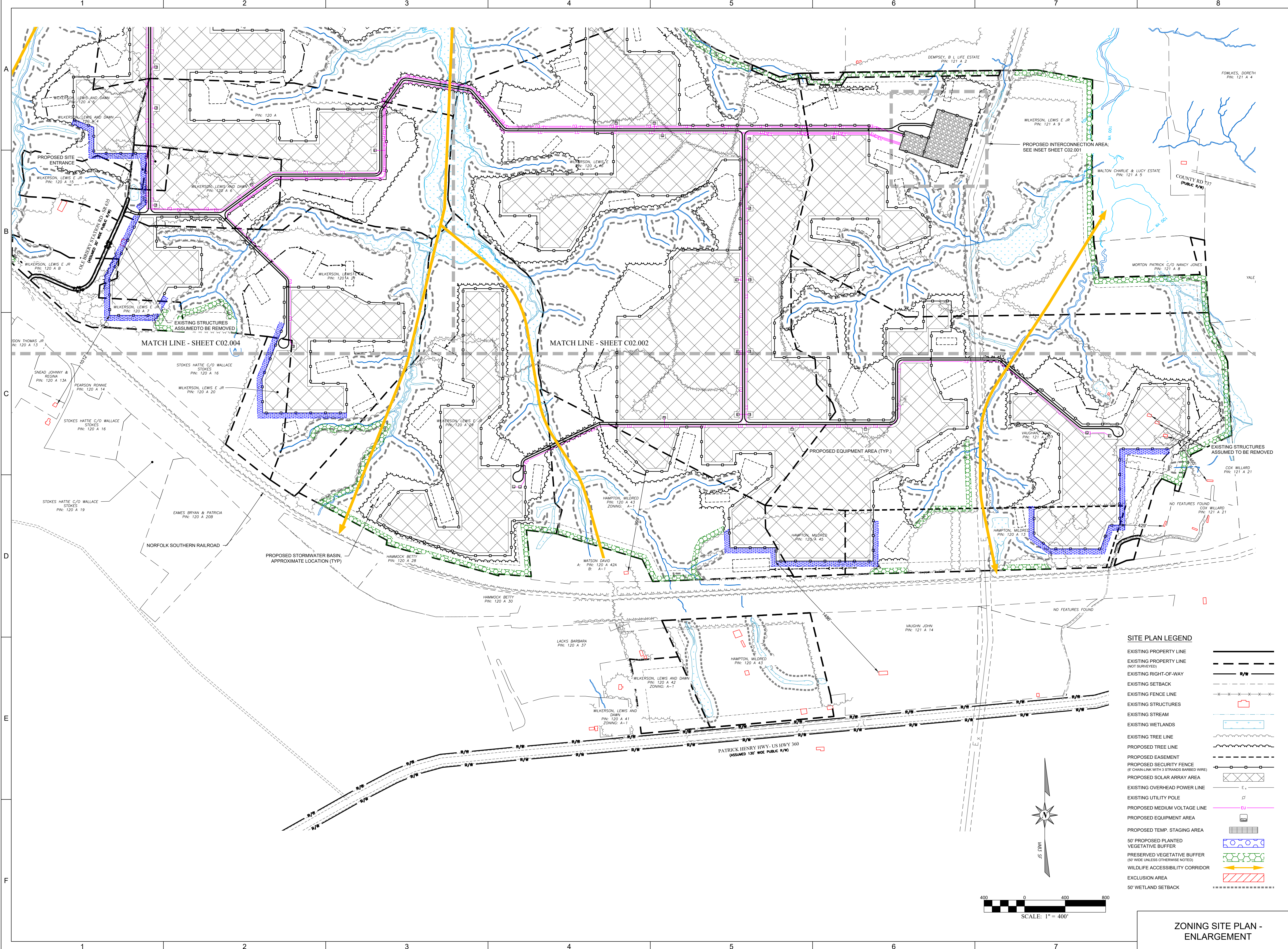
**TOBACCO TRAIL**  
PV ELECTRIC SUPPLY STATION  
OLE BRIERY STATION RD  
KEYSVILLE, VA 23947  
PRINCE EDWARD COUNTY



REV	DATE	REVISION DESCRIPTION	BY	APV
	02/05/25	INITIAL ISSUE	REL	KB

PROJ: 21-014-23  
SHEET: 24.0" x 36.0"  
SCALE: 1" = 400'

**C02.003**



**ZONING SITE PLAN -  
ENLARGEMENT**









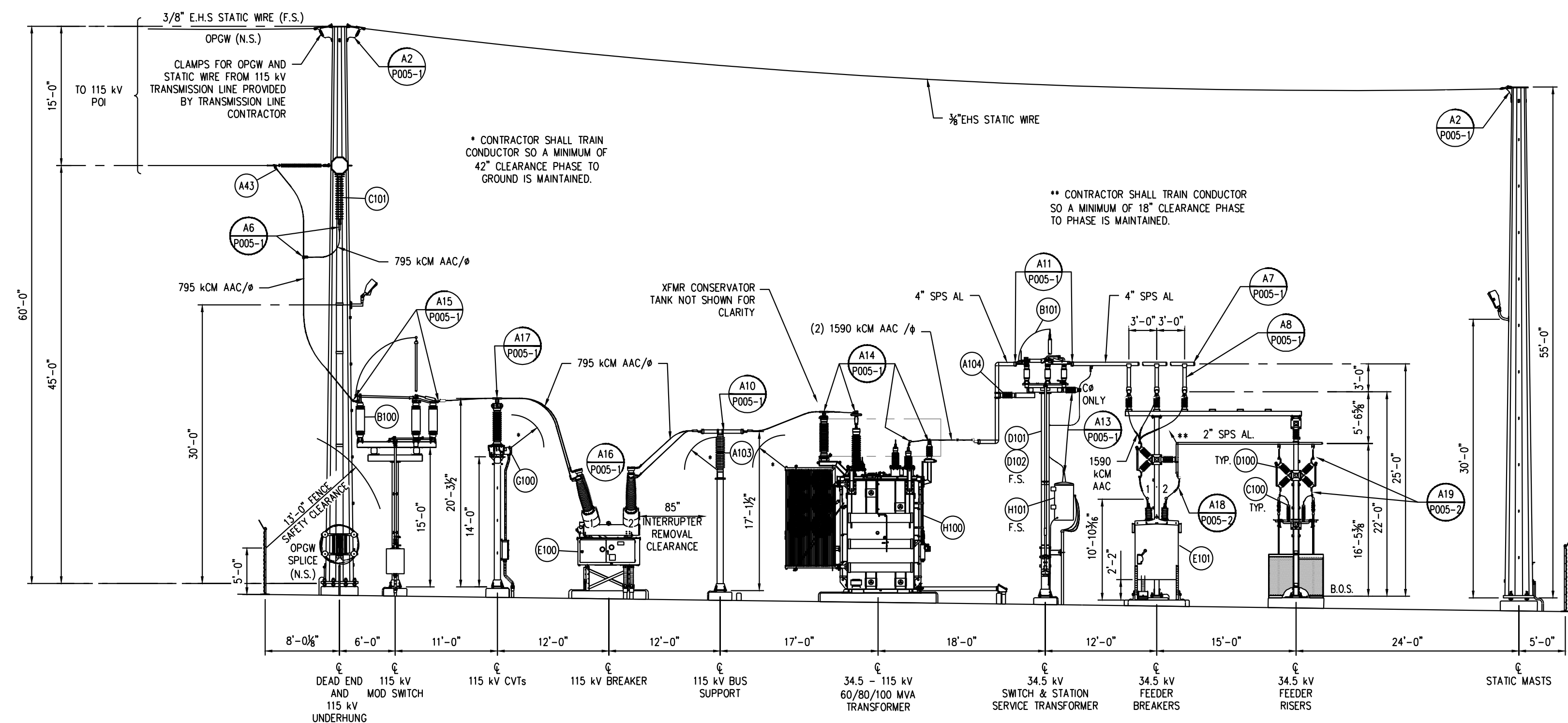
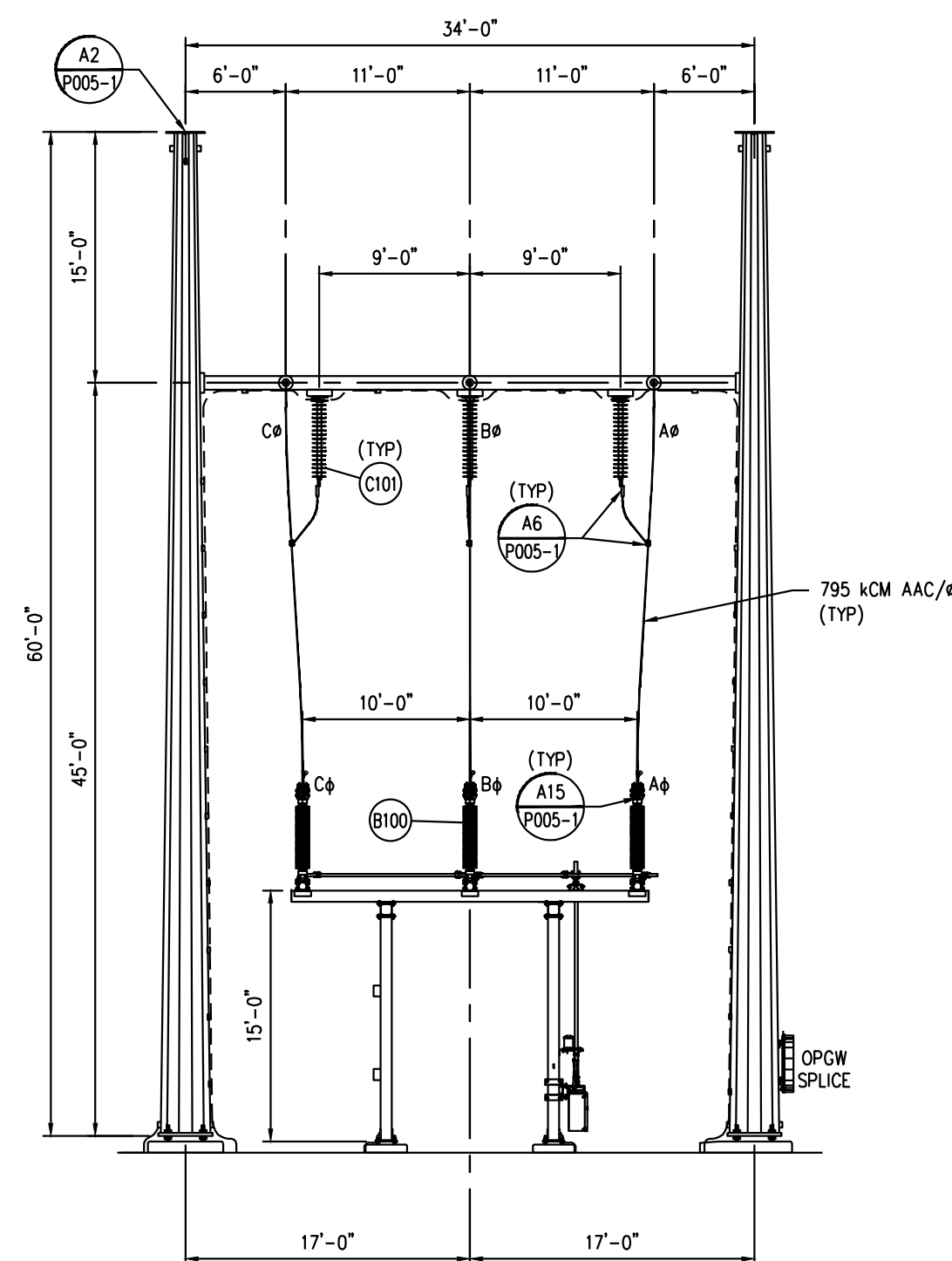
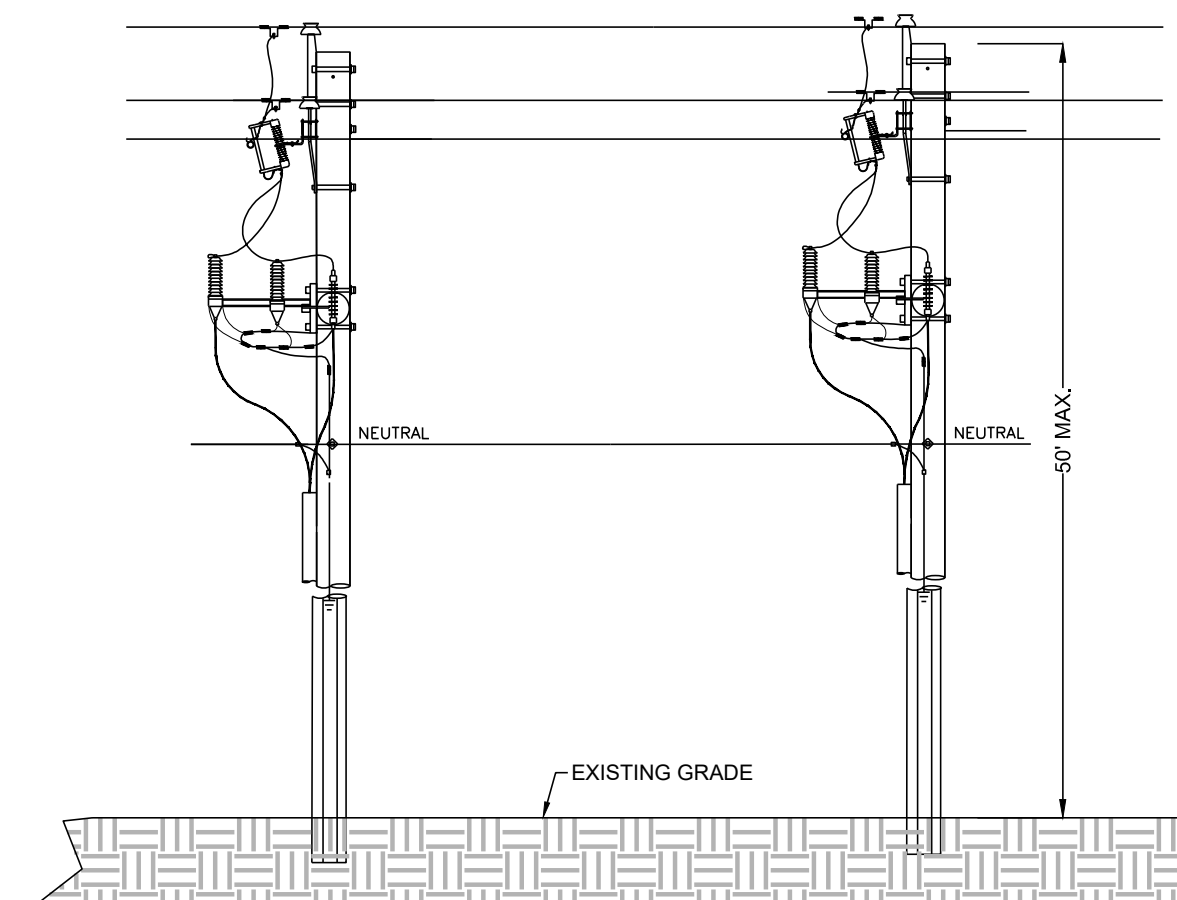
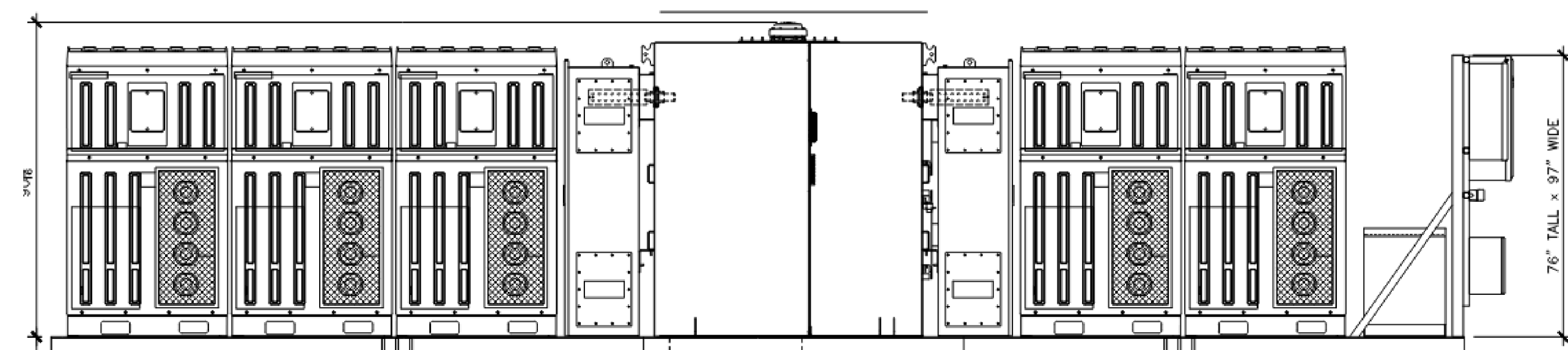
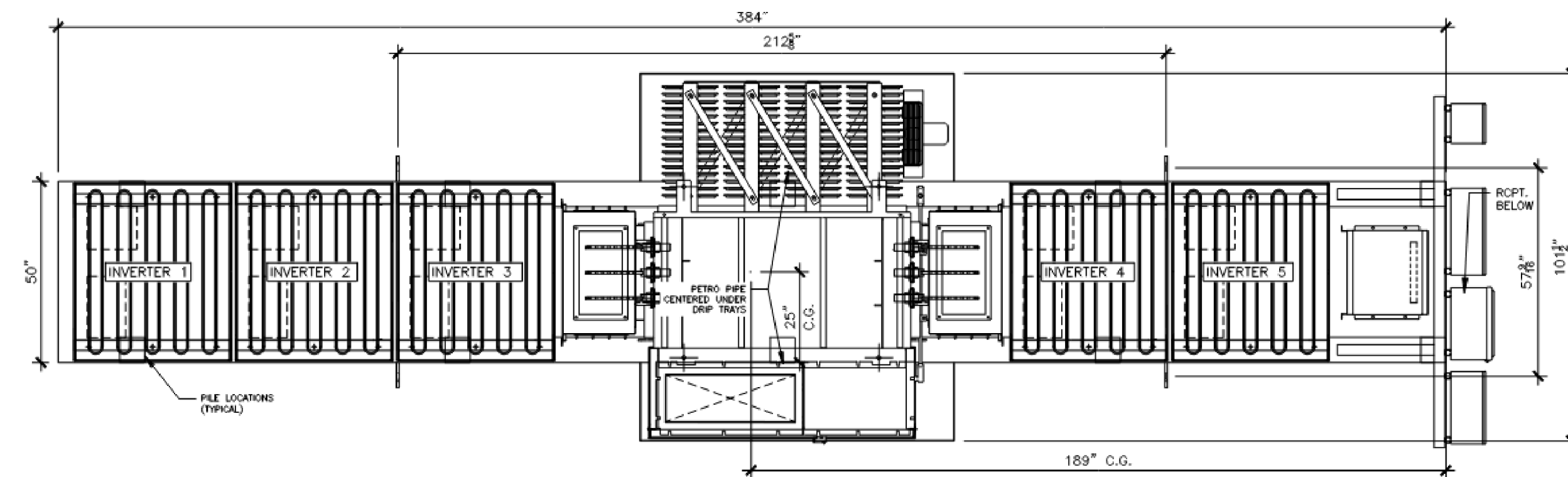
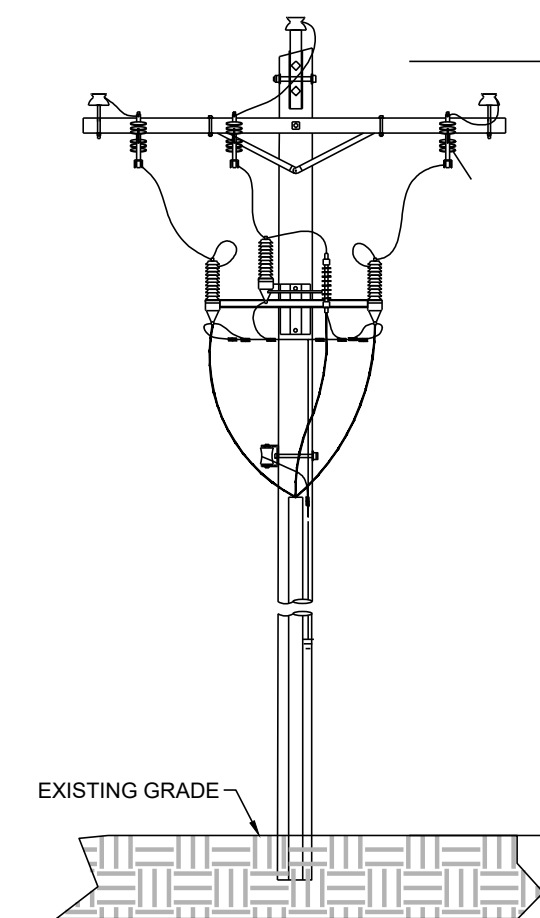
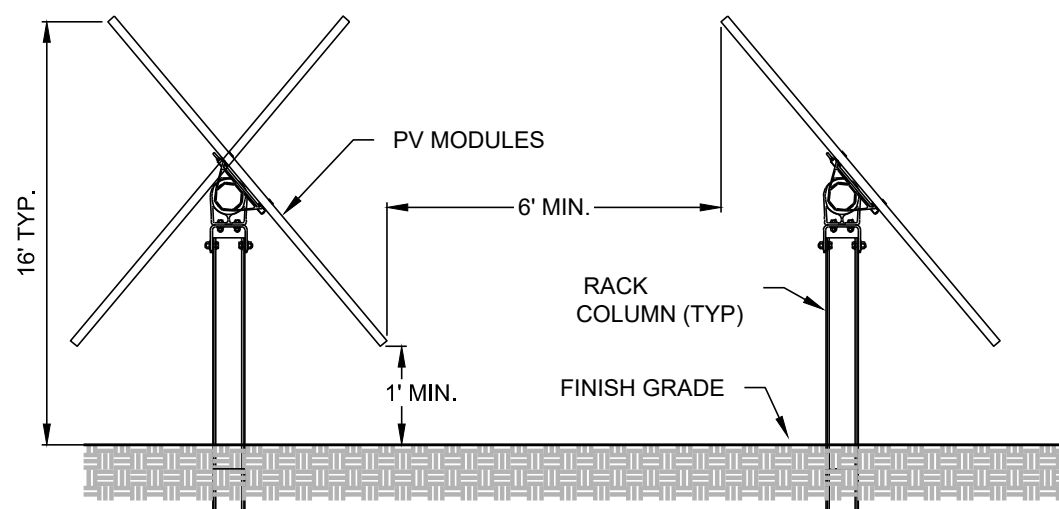
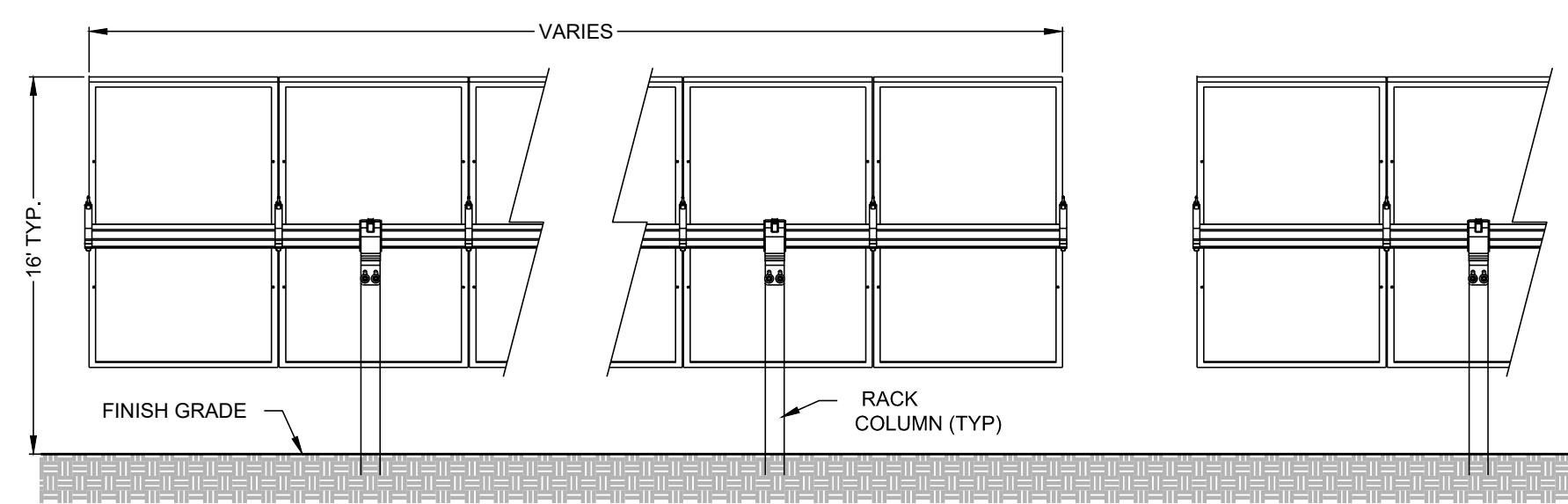






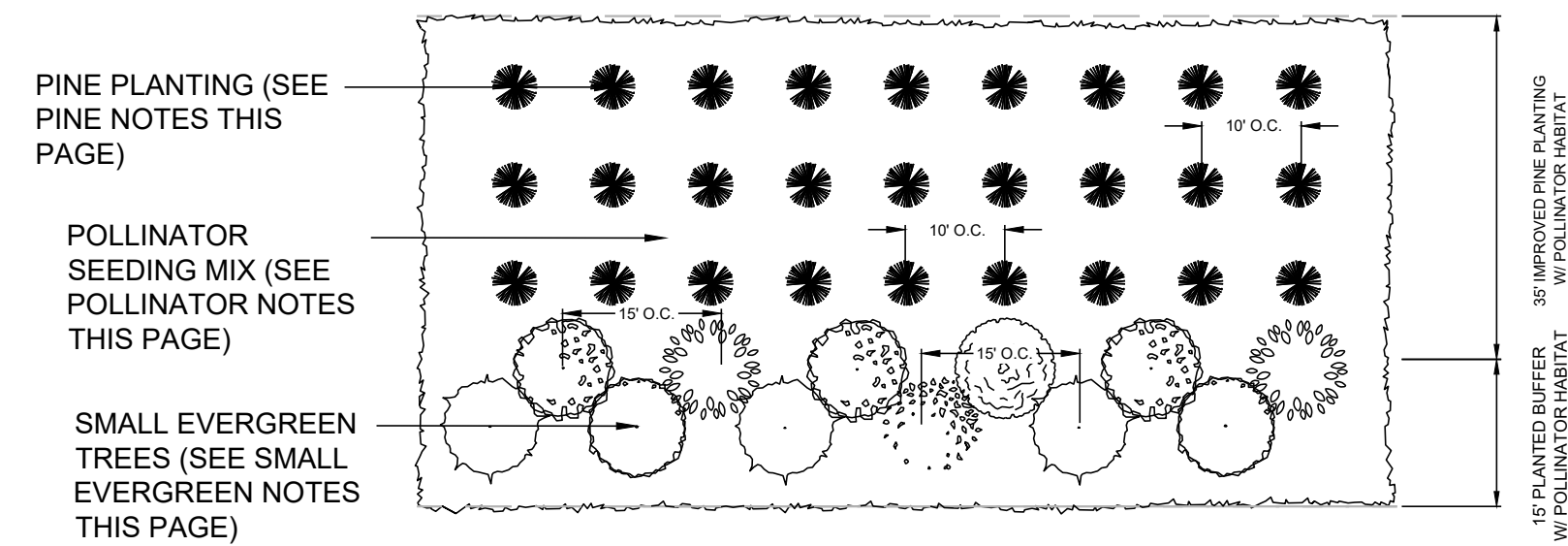




[illegible]



## TYPICAL PLANT LAYOUT



1. VEGETATIVE BUFFERING SHALL BE ACCOMPLISHED THROUGH THE PRESERVATION OF EXISTING VEGETATION. WHERE EXISTING VEGETATION IS INADEQUATE, A 50' VEGETATIVE BUFFER SHALL BE PLANTED.
2. 50' VEGETATIVE BUFFER AREA SHALL CONSIST OF A 15' PLANTED EVERGREEN BUFFER AND A 35' IMPROVED PINE PLANTING.
3. POLLINATOR FRIENDLY AND WILDLIFE FRIENDLY NATIVE AND NON-INVASIVE PLANTS, TREES, GRASSES, FORBS, AND WILDFLOWERS MUST BE USED.
4. AREAS IN AND AROUND THE 100' VEGETATIVE BUFFER SHALL BE PREPPED AND PLANTED WITH AN APPROVED SOUTHEASTERN NATIVE MEADOW SEED MIX. THIS NATIVE MIX WILL ASSIST IN STABILIZING SOIL AND WATER, BIOREMEDIATION, AND EROSION CONTROL.

1. PLANTING AREA WILL BE A MINIMUM OF 15' WIDE.
2. SMALL EVERGREEN TREES SHALL BE 3' IN HEIGHT AT TIME OF INSTALLATION AND EXPECTED TO GROW TO A MINIMUM HEIGHT OF EIGHT FEET WITHIN THREE YEARS
3. TREES SHALL BE PLANTED, AT A MINIMUM, ON FIFTEEN FOOT CENTERS, WITH ROWS OFFSET.
4. BUFFER SHALL BE SOWN WITH A NATIVE POLLINATOR SEEDING MIX. (SEE NATIVE POLLINATOR NOTES THIS SHEET).
5. NATIVE EVERGREEN TREES

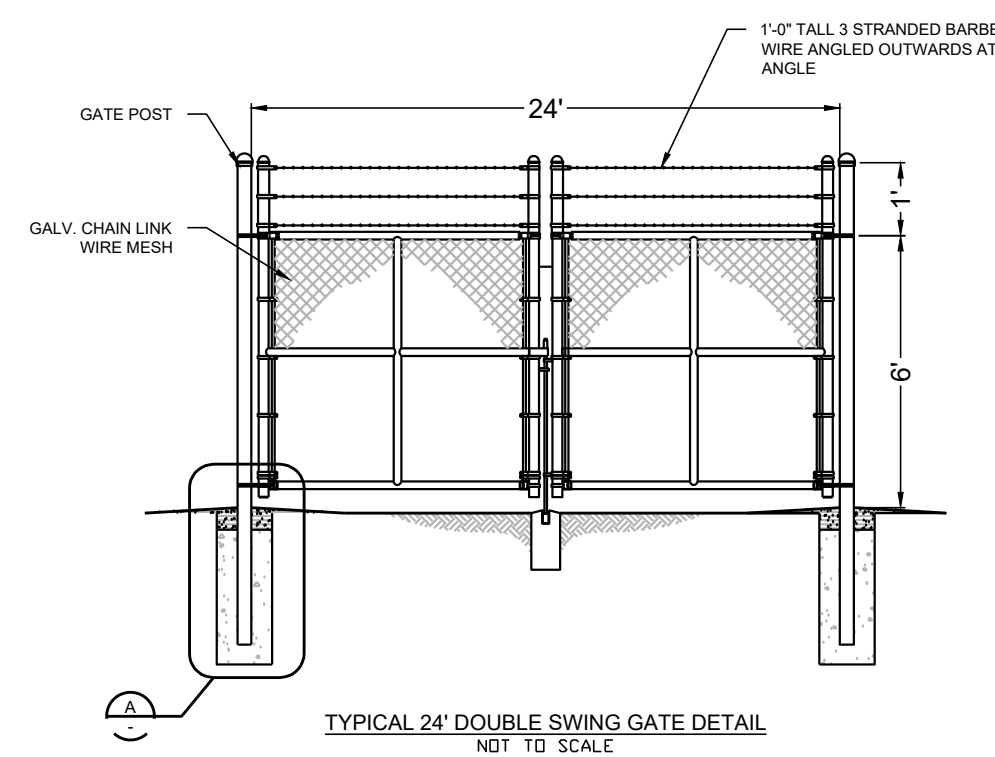
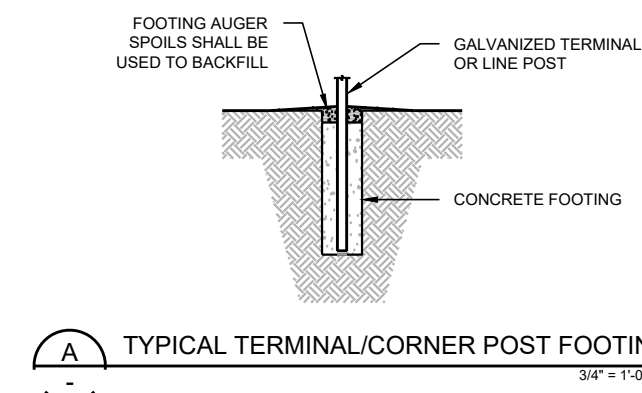
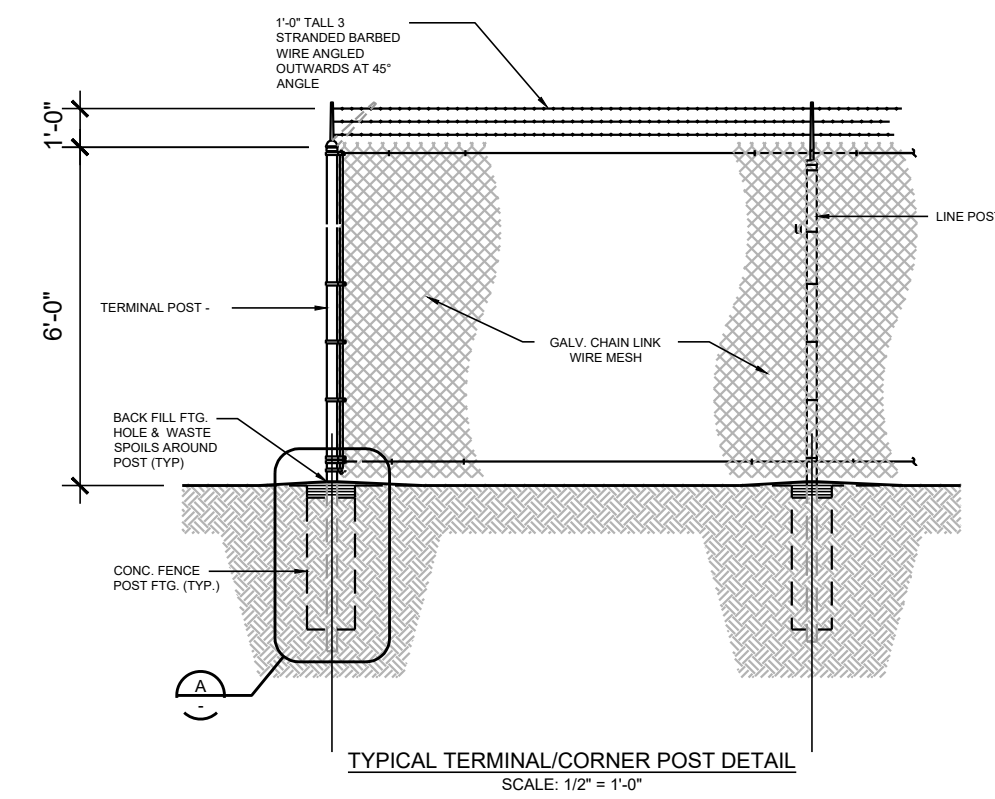
MAGNOLIA VIRGINIANA	(SWEET BAY MAGNOLIA)
MYRICA CERIFERA	(WAX MYRTLE)
ILEX OPACA	(AMERICAN HOLLY)
JUNIPERUS VIRGINIANA	(RED CEDAR)
ILEX VOMITORIA	(YAUPON HOLLY)
PINUS STROBUS	(EASTERN WHITE PINE)
MAGNOLIA GRANDIFLORA	(SOUTHERN MAGNOLIA)

1. PLANTING AREA WILL BE A MINIMUM OF 35' WIDE.
2. PINE PLANTING SHALL OCCUR AT A DENSITY OF 435 PLANTS PER ACRE, TO STAY IN HARMONY WITH SURROUNDING LANDSCAPE. PLANTS SHALL BE AT A SPACING OF APPROXIMATELY 10' ON CENTER
3. PINE PLANTS WILL BE APPROXIMATELY 1 YEAR IN AGE AT TIME OF INSTALLATION. 1 YEAR SEEDLINGS ARE AVAILABLE THROUGH THE VIRGINIA DEPARTMENT OF FORESTRY.
4. BUFFER SHALL BE SOWN WITH A NATIVE POLLINATOR SEEDING MIX. (SEE NATIVE POLLINATOR NOTES THIS SHEET).
5. EVERGREEN TREES
  - PINUS TAEDA (IMPROVED LOBLOLLY PINE)
  - PINUS ECHINATA (SHORTLEAF PINE)
  - PINUS STROBUS (EASTERN WHITE PINE)

1. SEEDING SHALL OCCUR IN FALL OR SPRING WITH ATTENTION TO TIMING OF AVAILABLE MOISTURE.

- |                          |                          |
|--------------------------|--------------------------|
| 2. NATIVE POLLINATOR MIX |                          |
| ELYMUS CANADENSIS        | (CANADA WILD RYE)        |
| ELYMUS VIRGINICUS        | (VIRGINIA WILDRYE)       |
| TRIPSACUM DACTYLOIDES    | (EASTERN GAMMAGRASS)     |
| SCHIZACHYRIUM SCOPARIUM  | (LITTLE BLUESTEM)        |
| SCORPASTRUM NUTANS       | (INDIAN GRASS)           |
| TRIDENS FLAVUS           | (PURPLE TOP)             |
| BIDENS ARISTATA          | (BEARDED BEGGERLICE)     |
| GAILLARDIA PULCHELLA     | (INDIAN BLANKET)         |
| ACHILLEA MILLEFOLIUM     | (COMMON YARROW)          |
| RUDBECKIA HIRTA          | (BLACK EYED SUSAN)       |
| SENNA HEBCARPA           | (WILD SENNA)             |
| HELIANTHUS ANGUSTIFOLIUS | (SWAMP SUNFLOWER)        |
| HELIANTHUS MAXIMILIANII  | (MAXMILLIAN'S SUNFLOWER) |
| VERBENA HASTATA          | (BLUE VERVAIN)           |
| ASCLEPIAS TUBEROSA       | (BUTTERFLY MILKWEED)     |
| CHAMAECRISTA FASCICULATA | (PARTRIDGE PEA)          |
| COREOPSIS LANCEOLATA     | (LANCE LEAF COREOPSIS)   |
| ECHINACEA PURPUREA       | (PURPLE CONEFLOWER)      |
| MONARDA PUNCTATA         | (SPOTTED BEEBALM)        |
| SYMPHYOTRICHUM PILOSUM   | (HEATHER ASTER)          |

GRAIN OATS	JAN 01 - APR 30
BROWN TOP MILLET	MAY 01 - SEPT 01
GRAIN RYE	SEPT 01 - DEC 31



NOTES:

- FENCE COMPONENTS SHALL BE INSTALLED IN ACCORDANCE WITH ASTM F567.

TYPICAL FENCE DETAIL  
NOT TO SCALE

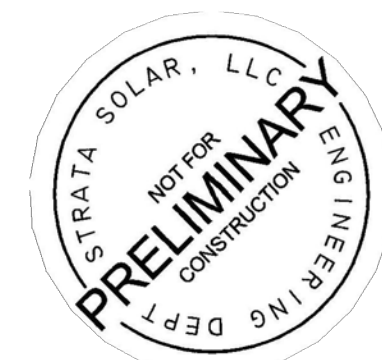
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PV ELECTRIC SUPPLY STATION  
OLE BRIERY STATION RD  
KEYSVILLE, VA 23947  
PRINCE EDWARD COUNTY

[illegible]

## LANDSCAPE BUFFER & FENCE DETAILS

C02.009



## GROUND LEASE AGREEMENT

THIS GROUND LEASE AGREEMENT (this "Lease") is made and entered into by and between MILDRED B. HAMPTON, aka MILDRED BREHM HAMPTON, unmarried Life Tenant, and ROSEMARY HAMPTON, Remainderman, (collectively, "Landlord") and TOBACCO TRAIL SOLAR, LLC, a North Carolina limited liability company ("Tenant"), effective as of the 22<sup>nd</sup> day of February, 2024 (such date, the "Effective Date"). Landlord and Tenant are sometimes referred to individually herein as a "Party" and, collectively as the "Parties".

### RECITALS:

WHEREAS, Landlord is the owner of certain real property commonly referred to as Map ID No. 120 A 43 consisting of approximately One Hundred Forty-Three and 78/100 (143.78) acres as more particularly described on Exhibit A attached hereto (the "Land").

WHEREAS, Tenant and/or its affiliates wish to develop, build and operate a solar photovoltaic power array, which may include an energy storage facility utilizing battery or other energy storage technology (the "System") for the Intended Use (defined below).

WHEREAS, Tenant desires to lease all of the Land (the foregoing, together with the Land, collectively, the "Premises") from Landlord for the Intended Use and for the purposes and on the terms set forth in this Lease.

NOW THEREFORE, in consideration of the amounts to be paid to Landlord by Tenant and the other promises and premises set forth herein, the receipt and sufficiency of which is hereby conclusively established, Landlord and Tenant hereby agree as follows:

### AGREEMENT

1. **Recitals.** The Recitals are incorporated in and made a part of this Lease as if fully set forth in this Lease.

2. **Leased Premises.** For good and valuable consideration, the receipt of which is hereby acknowledged by Landlord, Landlord hereby grants to Tenant: an exclusive lease of the Premises, together with all rights and benefits appurtenant thereto, and improvements thereon, and any water rights and subsurface/mineral rights pertaining thereto, upon the terms and subject to the conditions set forth in this Lease. Notwithstanding the foregoing, the Premises do not and shall not include Tenant's Property (defined in Section 7 below). Landlord acknowledges that the final size of the Premises to be leased by Tenant hereunder will be determined, in Tenant's sole discretion, following the Effective Date and will be dependent on the final System design and size as well as other System development requirements. Once Tenant has determined the final size of the Premises it desires to lease from Landlord, Tenant may obtain an ALTA survey of the Premises, which shall set forth and conclusively establish (1) the metes and bounds legal description of the Premises and (2) the final acreage of the Premises, net of any unusable rights of way (the "Acreage", and each such acre, an "Acre"). At Tenant's request, Landlord and Tenant shall promptly enter into an amendment to this Lease which shall (i) replace Exhibit A to this Lease with the final legal description of the Premises contained in such ALTA survey and (ii) provide that all references to the "Premises" in the Lease and all terms and calculations in this Lease based on the size of the Premises (including, without limitation, Rent and Tenant's Portion of Taxes (as each are defined below)) shall be amended to mean and refer to the Premises as re-defined in such amendment. Security interests in Tenant's personal property, including without limitation the solar panels, inverters, racks, cables and other equipment

comprising the System, shall be governed exclusively by Title 8.9A of the Virginia Commercial Code or any replacement or successor statute ("**Title 8.9A**"), notwithstanding the manner of attachment or installation of the System on the Land.

3. **Lease Term.** The term of this Lease (the "**Term**") shall include, as applicable, the Development Term, the Construction Term and the Operations Term (as each term is defined below).

(a) **Development Term.** The initial term of this Lease shall commence on the Effective Date and continue until the fifth anniversary of the Effective Date (the "**Development Term**") unless (i) Tenant elects to commence the Construction Term pursuant to Section 3(b) below, or (ii) this Lease is earlier terminated as provided herein.

(i) During the Development Term, Tenant (and its agents) shall be permitted access to the Premises at reasonable times and upon reasonable notice to Landlord, for purposes of conducting (at Tenant's expense) any and all investigations or testing of the Premises as Tenant may deem necessary, appropriate or convenient, including without limitation, the surveying or investigation of environmental, biological, cultural, historical, boundary or geotechnical matters. In the event Tenant's activities during the Development Term damage any crops then in commercial cultivation on the Premises and, as a result of such damage such crops are no longer commercially viable, Tenant shall pay to Landlord, or Landlord's tenant as applicable, a one-time payment equaling the then current fair market value of any crops damaged by Tenant, provided that such value must be in excess of [REDACTED]. For avoidance of doubt, Tenant shall not commence construction activities (including grading) on the Premises during the Development Term (provided that any work performed by or on behalf of the servicing utility company to upgrade or install electrical equipment in preparation for Tenant's construction of the System and any inspections and investigations performed during the Development Term shall not be deemed to be construction activities prohibited by this Section 3(a)(i)).

(ii) Landlord shall provide to Tenant any of the following in Landlord's possession or control, within five (5) days following the Effective Date: (1) copies of any deeds, leases, easements, licenses or other documents granting any third-party a right to possess or otherwise enter upon or use all or any portion of the Premises (including, without limitation, farm leases and documents governing mineral rights), (2) any notice of violation of any law or regulation, including zoning laws applicable to the Premises, (3) any "Phase I" and other environmental assessment reports regarding the Premises, (4) Landlord's most recent survey and title insurance policy relating to the Premises, (5) any governmental permits for the Premises, (5) any other surveys, physical condition reports, notices regarding zoning or government action with respect to the Premises.

(iii) At no out-of-pocket cost to Landlord, Landlord shall reasonably assist and cooperate with Tenant (including, if and when necessary or required, signing applications and related documentation for governmental approvals) in applying for, complying with or obtaining any governmental permits and approvals, exemptions, waivers, special exceptions, building permits, environmental reviews or any other approvals required for the financing, construction, installation, replacement, relocation, maintenance, operation and/or removal of the System, including without limitation signing necessary affidavits with regard to subdivision claims of exemption and agreeing to comply with the terms of applicable subdivision requirements for any future leases or conveyances.

(iv) Tenant may terminate the Lease for any reason or no reason during the Development Term, exercisable upon written notice from Tenant to Landlord of its election to terminate (the "**Initial Termination Notice**") delivered on or prior to the expiration of the Development Term. If Tenant does not deliver either the Initial Termination Notice or the Construction Notice (defined below) on

or prior to the expiration of the Development Term, this Lease shall automatically terminate sixty (60) days following the expiration of the Development Term.

(b) Construction Term. If Tenant notifies Landlord in writing (which notwithstanding Section 16 may be by electronic mail, facsimile, or commencement of payment of Rent as provided in Section 4(b) (the "**Construction Notice**") of Tenant's election to commence construction activities at the Premises and extend the Term of this Lease into the Construction Term (defined below), then without any further action by the Parties, the Term of this Lease shall be automatically extended for an additional period of twenty-four (24) months (the "**Construction Term**"). Tenant shall identify the date that the Construction Term commences in the Construction Notice (the "**Construction Commencement Date**"). If Tenant does not deliver the COD Notice (defined below) on or prior to the expiration of the Construction Term, this Lease shall automatically be extended into the Initial Operations Term as described in Section 3(c) below.

(c) Initial Operations Term. Upon Tenant's written notice to Landlord that the System has achieved "commercial operation" (as defined in the relevant agreement between Tenant and the ultimate purchaser of power generated by the System) (the "**COD Notice**"), or upon the expiration of the Construction Term in the event COD Notice is not provided, then without any further action by the Parties the Term of this Lease shall be automatically extended for a term of thirty (30) years (the "**Initial Operations Term**") expiring on the day preceding the thirty-first (31st) anniversary of the Operations Commencement Date (defined below), unless the Initial Operations Term is earlier terminated or further extended pursuant to the provisions of this Lease. The "**Operations Commencement Date**" means the date Tenant delivers the COD Notice to Landlord or expiration of the Construction Term, as applicable, in accordance with this Section 3(c).

(d) Extended Operations Term. Tenant shall have the option to extend the Initial Operations Term for two (2) additional successive five (5) year periods ("**Extended Operations Term**") upon written notice delivered to Landlord prior to the expiration of the Initial Operations Term or the then current Extended Operations Term, as applicable. The Initial Operations Term and the Extended Operations Term(s) are collectively referred to herein as the "**Operations Term**".

4. Rent. During each applicable portion of the Term of this Lease, Tenant shall pay to Landlord, as and when due, the following annual rent (collectively, "**Rent**") by ACH or wire transfer to a bank account provided to Tenant pursuant to Section 16. Landlord shall furnish Tenant with a signed, completed form ACH within ten (10) days following the Effective Date and thereafter within thirty (30) days of any event causing a change in any of the information set forth in the previously delivered ACH form, including any Transfer (defined below) of the Landlord's interest in the Lease. For convenience, a form ACH form is attached hereto as Exhibit E. Without limiting Tenant's obligation to pay Rent or other amounts due to Landlord hereunder, Tenant shall be entitled to delay making any such payments to Landlord until Landlord has provided such completed ACH form. For clarification only, if a payment is delayed in accordance with this Section 4, such delay shall not invalidate or affect an otherwise valid extension of the Term (including the Construction Term, Initial Operations Term or any Extended Operations Term) or cause Tenant to be in default under this Lease or cause interest to accrue.

Tenant shall have no obligation to investigate the accuracy of any information provided by Landlord with regard to direction or allocation of payments and shall be entitled to rely on Landlord's representations of such. Landlord shall indemnify and hold Tenant harmless for losses or other damages of any kind arising from Tenant's payment of Rent or other amounts as so directed.

- (a) Development Term. Rent for each year during the Development Term shall be as follows:



Rent during the Development Term shall be payable as follows: (i) during the first year of the Development Term, Rent shall be due on the date that is one hundred twenty (120) days following the Effective Date; and (ii) during the remainder of the Development Term, Rent shall be payable in advance in annual installments starting on the first (1<sup>st</sup>) anniversary of the Effective Date with subsequent payments of Rent due on the successive anniversaries of the Effective Date. Rent for the Development Term shall be non-refundable, except that if the Construction Term commences before the applicable Development Term year has elapsed, the pro rata portion of the Development Term Rent allocable to the unelapsed portion of the applicable Development Term year shall be applied to the Construction Term Rent described in Section 4(b) below. Any other provision of this Lease to the contrary notwithstanding, if Tenant terminates this Lease on or before the date which is one hundred twenty (120) days after the Effective Date, then no Rent shall be due or payable under this Lease.

- (b) Construction Term. Rent for each year during the Construction Term shall be

of Buildable Land and Setback Land (prorated for any fractional Acre, subject to escalation in accordance with Section 4(c)(iii) below). For purposes of this Lease, "Buildable Land" shall mean any portion of the Premises identified as built-upon land for equipment or environmental regulation controls on the final conditional use permit site plan and "Setback Land" shall mean any portion of the Premises identified as required of setback on the final conditional use permit site plan. For the avoidance of doubt, in the event the Acreage is reduced (a) in connection with Tenant's final determination of the size of the Premises pursuant to Section 2, or (b) due to a Taking pursuant to Section 13, Rent shall be recalculated accordingly.

- (c) Initial Operations Term.

(i) Rent during the Initial Operations Term (and Extended Operation Terms, if applicable) shall be per acre of Buildable Land (prorated for any fractional Acre, subject to escalation in accordance with Section 4(c)(iii) below). For the avoidance of doubt, in the event the Acreage is reduced (a) in connection with Tenant's final determination of the size of the Premises pursuant to Section 2, or (b) due to a Taking pursuant to Section 13, Rent shall be recalculated accordingly.

(ii) Starting on the fifth anniversary of the Operations Commencement Date and for each annual anniversary thereafter, the annual Rent shall otherwise then in effect.

(iii) For purposes of clarification only, Tenant and Landlord acknowledge and agree that Rent shall be determined in accordance with this Section 4 during the entire Term of the Lease, including any Extended Operations Term(s).

(d) Conditions to Tenant's Obligation to Pay Rent. Tenant's obligation to continue this Lease is at all times expressly subject to Tenant's (i) obtaining, and the ongoing effectiveness of, any agreement,



instrument, license, permit, approval or consent that is necessary for the lawful operation of the System and the distribution and sale of the electricity generated by it, including without limitation an interconnection agreement and power purchase agreement with the applicable utility company, and (ii) continued ability to operate the System in an economically feasible manner, both as determined by Tenant in its sole discretion. Notwithstanding anything to the contrary contained herein, Tenant shall have the absolute right to terminate this Lease at any time after the tenth (10<sup>th</sup>) anniversary of the Operations Commencement Date by delivering written notice to Landlord, upon which notice this Lease shall terminate effective immediately.

(e) W-9. Landlord shall furnish Tenant with a signed, completed form W-9 within ten (10) days following the Effective Date and thereafter within thirty (30) days of any event causing a change in any of the information set forth in the previously-delivered W-9, including any Transfer (defined below) of the Landlord's interest in the Lease. For convenience, a form W-9 is attached hereto as Exhibit C. Without limiting Tenant's obligation to pay Rent or other amounts due to Landlord hereunder, Tenant shall be entitled to delay making any such payments to Landlord until Landlord has provided such W-9. For clarification only, if a payment is delayed in accordance with this Section 4(e), such delay shall not invalidate or affect an otherwise valid extension of the Term (including the Construction Term, Initial Operations Term or any Extended Operations Term).

5. Utilities. During the Term, Tenant shall arrange and pay for all public utility services used on the Premises by Tenant.

6. Crops and Timber.

(a) Prior to the delivery by Tenant of the Construction Notice, Landlord may plant farm crops or enter into a lease for the planting of farm crops on the Premises and shall notify Tenant of the same along with a copy of such lease (provided that any such lease shall include a provision stating that such lease shall automatically terminate upon receipt of the Construction Notice from Tenant, subject to Tenant's obligations with respect to payment for the value of any planted crops as set forth in this Section 6). If Landlord or such tenant have planted crops before Tenant delivers the Construction Notice, Tenant may, in Tenant's sole discretion, elect to (i) delay the commencement of the Construction Term until the earlier of (a) the date that any crops actually planted on the Premises are harvested, or (b) one year following the date of such notice (even if such extension would result in the commencement of the Construction Term occurring after the expiration of the Development Term), or (ii) commence the Construction Term and pay the owner of any crops actually planted an amount equal to the fair market value of the portion of any crop that cannot reasonably be harvested and sold solely as a result of the anticipated construction of the System on the Premises. Notwithstanding anything herein to the contrary, if Tenant delivers the Construction Notice prior to April 1 of a calendar year, then Landlord shall not permit the planting of farm crops on the Premises from or after the date of the Construction Notice, and Tenant shall not owe Landlord any payment pursuant to this Section 6(a).

(b) From and after the Effective Date and for so long as this Lease is in effect, Landlord may not conduct any timbering operations on the Premises without the express written approval of Tenant. If Tenant, in Tenant's sole discretion, grants Landlord permission to conduct any timbering operations on the Premises, Landlord shall comply with all applicable federal, state and local laws and regulations, including Tenant's permits, applicable to the removal of timber from the Premises, and indemnify, defend and hold harmless Tenant from any losses, damages or claims of any nature asserted or imposed against Tenant as a result of Landlord's timber operations conducted on the Premises.

(c) Tenant may, but shall not be obligated to, cause timber to be removed from all or any portion of the Premises, and in such case Tenant shall be solely responsible for the cost of such timber removal and, provided that Tenant has fulfilled the requirements of Section 6(d) below, Tenant shall be

entitled to keep any proceeds from the sale of any such timber. Tenant shall also bear the costs of stump and debris removal and preparation of the Premises for installation of the System.

(d) Within thirty (30) days of the Effective Date, Landlord and Tenant shall mutually agree on a timber appraiser who is respected and knowledgeable about the value of timber in the geographic area of the Premises (the "Timber Appraiser"). Prior to Tenant beginning any timbering operations on the Premises, Tenant shall provide to the Timber Appraiser a map of the Premises showing the areas of timber that Tenant intends to clear (the "Subject Timber"). The Timber Appraiser shall then perform an appraisal and determine the appraised value of the Subject Timber (the "Appraised Value"). The Timber Appraiser shall also provide an estimate of the standard costs to clear and sell the Subject Timber (the "Logging Costs"). The Appraised Value minus the Logging Costs shall be the "Net Timber Value". Within thirty (30) days of Tenant completing timbering operations on the Premises, Tenant shall pay to Landlord the Net Timber Value, which Net Timber Value shall be prorated in the event Tenant does not harvest all of the Subject Timber. Tenant shall be responsible for timely payment of the Timber Appraiser's fee.

7. **Tenant's Property.** The System and its constituent parts, together with any and all improvements or other features constructed on, or personal property installed or placed on the Premises by or for Tenant, including without limitation, machinery, fixtures, trade fixtures, equipment, racking, inverters, cables, solar panels, batteries, the System and other personal property (collectively, "**Tenant's Property**") are personal property within the meaning of Title 8.9A of the Virginia Commercial Code or any replacement or successor statute ("**Title 8.9A**") regardless of the manner of attachment to the Premises. Tenant's Property is and shall at all times during the Term be deemed to be the property of Tenant (subject to any Transfer in accordance with Section 24(a)), to be removed at Tenant's expense upon the expiration or earlier termination of the Term. The creation, attachment and perfection of security interests in Tenant's Property shall be governed exclusively by Title 8.9A. For the avoidance of doubt and without limiting the foregoing, Landlord hereby waives all rights to distraint, possession or landlord's lien against Tenant's Property, if any, and shall not cause the creation of, or attachment to, Tenant's Property of any liens (including mechanics' and judgment liens) or other encumbrances. For the avoidance of doubt, Landlord is not responsible for payment of any Taxes assessed on Tenant's Property. Landlord further acknowledges that Tenant is the exclusive owner of all economic benefits generated by Tenant's Property, including, but not limited to, any real property tax rebates or abatements, any carbon credits, any production energy or investment tax credits, incentives, renewable energy credits or tradable renewable certificates, and any other federal, state, and/or local benefits effective now or in the future.

8. **Use and Occupancy.**

(a) **Intended Use.** Tenant shall use the Premises for the Intended Use (defined below), or any other lawful uses that are incidental to, or not inconsistent with, the Intended Use. For purposes of this Lease, the term "**Intended Use**" shall mean the exclusive right of Tenant to use the Premises for the following purposes with respect to the System (i) development (including, without limitation, performing such investigations, studies and other due diligence activities as may be necessary to determine the feasibility of developing the System on the Premises), (ii) construction (including, without limitation, grading, grubbing, seeding, removal of improvements and other obstructions, and installing the System and related utility lines and equipment), (iii) operation (including, without limitation, the unobstructed flow of sunlight to the System for the conversion of solar energy into electrical energy, and the collection, storage, transmission and sale of such electrical energy, including, without limitation, energy storage facilities utilizing battery or other energy storage technologies either stand-alone or in connection with a solar photovoltaic power array), and (iv) maintenance (including, without limitation, using, monitoring, repairing, replacing, relocating and removing, from time to time, the System and related utility lines, the measurement and analysis of the performance of the System, and performing periodic vegetative maintenance at the Premises).

(b) **Exclusive Possession.** Subject to Landlord's rights with respect to the Premises during the Development Term, Landlord shall deliver sole and exclusive physical possession of the Premises to Tenant and Tenant shall have the right to control and restrict access to the Premises in its sole discretion from and after the commencement of the Construction Term. Commencing with the Construction Term and continuing during the remaining Term, neither Landlord nor any agent of Landlord shall, without a Tenant representative, enter upon any portion of the Premises except as specifically permitted hereunder.

9. **Tenant's Alteration, Removal and Construction Rights.** Tenant may, at its expense and without the consent of Landlord, (i) use, remove, demolish and/or alter any existing improvements, structures, trees, shrubs, plants or other vegetation, or other impediment or obstructions on the Premises, or (ii) install or construct any fencing security devices, weather stations and/or signage that Tenant deems reasonably necessary for the Intended Use; provided, that such use, removal, demolition, alterations, additions, improvements and changes are made in compliance with applicable laws. Landlord shall sign and deliver all applications and other documents, and shall take all such other actions, as are reasonably requested by Tenant in connection with obtaining any re-zonings, waivers of setback requirements, variances or other approvals as Tenant shall deem necessary or desirable in connection with the operation of the Premises.

10. **End of Term Decommissioning.**

(a) Within three hundred sixty five (365) days following the expiration or earlier termination of the Term (the "**Decommissioning Period**"). Tenant shall decommission the System, remove Tenant's Property, vacate the Premises and restore the Premises to substantially the condition in which it existed as of the Construction Commencement Date, subject to any alterations that are unrelated to Tenant's use or occupancy of the Premises and any clearing (including tree removal) and grubbing of the Premises. The removal of Tenant's Property and restoration of the Premises shall be completed in a manner that does not unreasonably and adversely affect the suitability of the Premises for farming purposes. For avoidance of doubt, notwithstanding the termination or expiration of this Lease, Tenant shall continue to pay Rent (in the amount due at such time, prorated on a daily basis) to Landlord during the Decommissioning Period, provided, if Tenant fails to vacate the Premises prior to the expiration of the Decommissioning Period, Landlord shall be entitled to holdover rent in the amount equal to one hundred twenty-five percent (125%) of Rent for the final year of the Term, prorated on a daily basis, for each day that Tenant fails to so vacate the Premises following the expiration of the Decommissioning Period.

(b) Security to assure Tenant's performance of its decommissioning obligations pursuant to Section 10(a) may be included in the conditional use or other permits for the System. In the event no permit provides for such security, Tenant agrees to provide such security in favor of Landlord in the amount of one hundred twenty five percent (125%) of the Decommissioning Cost as described below in Section 10(c) (the "**Decommissioning Security**") and in the form of either (i) an escrow account into which Tenant will deposit one-fifth (1/5) of the required security amount each year beginning five (5) years before the scheduled expiration date of any applicable power purchase agreement and continuing until fully funded, and to which Landlord will have access if and to the extent Tenant fails to perform its decommissioning obligations; or (ii) a letter of credit or performance bond in favor of Landlord provided as of the date that is five (5) years before the scheduled expiration date of any applicable power purchase agreement entered into by Tenant, which can be used in the event and to the extent Tenant fails to perform its decommissioning obligations set forth above. Landlord may use such Decommissioning Security to reimburse itself for costs of decommissioning it incurs. Notwithstanding the foregoing, if a public utility company that has an investment grade credit rating with Moody's and/or Standard and Poor's acquires the System, the Decommissioning Security will no longer be required to be issued or maintained. If the System is subsequently sold or the utility company's credit rating is downgraded to below investment grade, the Decommissioning Security requirement will be reinstated.



(c) Tenant shall provide a cost estimate to decommission the System (the "**Decommissioning Cost**") prepared by a Virginia licensed engineer experienced with solar systems, which shall include the following: (1) the estimated cost to decommission the System as set forth in Section 10(a) above (the "**Gross Cost**"); and (2) the estimated resale and salvage values associated with Tenant's Property (the "**Salvage Value**"). The Decommissioning Cost formula is Gross Cost minus Salvage Value equals Decommissioning Cost. Tenant shall deliver the opinion of the Decommissioning Cost to Landlord on or before the date that is 180 days prior to the date that Tenant is required to first provide the letter of credit, bond or escrow account as set forth above. Tenant shall provide a revised and updated Decommissioning Cost estimate on every 5<sup>th</sup> anniversary of the date of the first Decommissioning Cost estimate, which shall account for inflation, cost and value changes, and advances in decommissioning technologies and approaches, and, if different than previously estimated, the amount of security provided by Tenant shall be adjusted to equal the new estimated Decommissioning Cost within sixty (60) days of the end of the applicable lease year.

## **II. Taxes.**

(a) **Development Term.** Tenant shall have no obligation to pay Taxes (defined below) during the Development Term.

(b) **Construction Term and Operations Term.** During the Construction Term and Operations Term, Tenant shall pay Tenant's Portion (calculated in accordance with this **Section 11(b)**) of the Tax Bill (defined below), applicable to each tax year or part thereof which falls within the Term. Landlord shall provide Tenant with copies of all invoices, bills and notices (collectively, "**Tax Bills**") regarding all real estate and ad valorem taxes and assessments imposed or levied on the Premises by any applicable government taxing authority (each, a "**Tax**", and collectively, "**Taxes**"), within five (5) days of Landlord's receipt of any such Tax Bill. Tenant shall remit payment directly to the taxing authority for any Tax Bill that Tenant receives; provided, that if the Premises are comprised of less than 100% of a larger tax parcel ("**Larger Parcel**"), Tenant shall pay the portion of the Tax Bill allocable to the Premises (such portion, "**Tenant's Portion**"), which portion shall bear the same relationship to the total Tax Bill as the Premises bears to the Larger Parcel. Tenant shall also pay the portion of the tax bill allocable to the Larger Parcel in the amount of and to the extent the tax on the Larger Parcel has increased solely due to Tenant's use of the Premises. The parties shall include and confirm Tenant's Portion in the amendment to Lease to be entered into pursuant to **Section 2** of this Lease. Without limiting the foregoing, if Landlord fails to pay the balance of any Tax Bill when due, Tenant shall have the right, but not the obligation, to pay the balance of such Tax Bill on Landlord's behalf and offset any amounts so paid from future payments of Rent. Tenant's obligations hereunder are subject to Tenant's right to contest pursuant to **Section 11(d)**. .

(c) **Rollback Taxes.** Without limiting **Section 11(b)**, if Tenant's use of the Premises results in the revocation of a classification of the Premises as "agricultural land", "forestry land" or similar classification, thereby triggering liability for "rollback" taxes, Tenant shall pay the rollback tax liability, together with any related interest or penalties, other than interest and/or penalties arising from Landlord's failure to timely provide Tenant with a copy of such Tax Bill.

(d) **Tax Bill Contests.** Tenant shall have the right, in its sole discretion, to contest by legal proceedings (which may be brought in the name(s) of Landlord and/or Tenant where appropriate or required), the validity or amount of any assessments or taxes for which Tenant is responsible hereunder. Upon Tenant's reasonable request, Landlord shall in all respects cooperate with Tenant in any such contest and take such reasonable actions and do such things as necessary or desirable to facilitate any action by Tenant to contest any Tax Bill or the assessed value of the property on which they are levied, or to otherwise seek the abatement of Taxes applicable to the Premises. Tenant shall have the right, but not the obligation, to pursue any such action.

12. **Fire or Other Casualty.** If during the Term, all or part of the Premises or Tenant's Property are damaged by fire, wind, flood, earthquake or other casualty, with the result that, in Tenant's sole discretion, it would not be commercially or economically reasonable or desirable to repair and restore the Premises and/or Tenant's Property, as applicable, then Tenant may terminate this Lease by providing Landlord with written notice of the same and vacating the Premises in compliance with Section 10 hereof. Tenant, or its successor in interest, shall be entitled to 100% of any proceeds from casualty insurance policies maintained by Tenant.

13. **Condemnation.**

(a) **Total Taking.** If during the Term, all or part of the Premises and/or Tenant's Property shall be subject to condemnation, the exercise of the power of eminent domain, or other governmental taking (the foregoing, collectively, a "Taking") with the result that, in Tenant's sole discretion, the unaffected portion of the Premises is insufficient or otherwise unsuitable for Tenant's continued use of the Premises and/or Tenant's Property for the Intended Use or such other use as existed at the time of the Taking (a "Total Taking"), then Tenant may terminate this Lease by providing Landlord with written notice of the Total Taking, the Lease shall terminate effective as of the date set forth in such notice, and Tenant shall vacate the Premises in accordance with Section 10.

(b) **Partial Taking.** If during the Term, all or part of the Premises and/or Tenant's Property shall be subject to a Taking that, in Tenant's sole determination, does not constitute a Total Taking (a "Partial Taking") then Tenant shall notify Landlord of the occurrence of the Partial Taking and (i) concurrently with such Taking this Lease shall terminate with respect to the affected portion of the Premises, which Tenant shall vacate in accordance with Section 10, (ii) this Lease shall continue in full force and effect with respect to the unaffected portion of the Premises and (iii) the Acreage shall be reduced for each Acre subject to the Taking. For purposes of clarification only, Tenant shall be entitled to remove Tenant's Property from any portion of the Premises that is subject to a Taking.

(c) **Tenant's Right to Participate in Proceedings.** Tenant, at Tenant's own expense, shall have the right but not the obligation to participate in any proceedings with respect to a Taking; in such event Landlord shall cooperate with Tenant to facilitate such participation. Neither Landlord nor Tenant shall enter voluntarily into any binding agreement or settlement related to a Total Taking or a Partial Taking without the prior written consent of the other party, which consent shall not be unreasonably withheld, conditioned or delayed.

(d) **Proceeds.** The proceeds of any Total Taking or Partial Taking shall be apportioned as between Landlord and Tenant as follows: First, to Landlord, an amount equal to the fair market value of the Land subject to the Taking and calculated with reference to the value of the Land for agricultural use. Second, to Tenant, such amounts as are necessary to compensate Tenant for the loss of use of the Premises so Taken, including consequential losses. If after giving effect to the foregoing there remain any apportioned proceeds, they will be equitably apportioned as between Landlord and Tenant.

14. **Default.** The failure by a Party hereto to perform its obligations under this Lease, if not remedied within thirty (30) calendar days of written notice of such failure from the other Party, or if such failure is not capable of being remedied within thirty (30) days, remedial action is not commenced and diligently pursued within such thirty (30) day period, shall constitute a default hereunder (a "Default"). Following an event of Default, the non-defaulting party may pursue any available remedies in law or in equity, subject to Section 25(d). Notwithstanding the foregoing, the non-defaulting party shall take commercially reasonable measures to mitigate damages resulting from such Default. Tenant may, in its sole discretion, elect to cure a Default on the part of Landlord, in which case Tenant shall be entitled to offset future

payments of Rent or other amounts due to Landlord hereunder with the reasonable and documented out of pocket expenses incurred by Tenant in pursuing to cure such Default. Notwithstanding the foregoing, Landlord expressly waives the right to terminate this Lease for any non-monetary Default by Tenant, and Landlord's only remedy in such case shall be a cause of action at law to seek damages.

15. **Indemnifications.** Landlord shall indemnify and hold Tenant harmless from any and all third-party damages or claims that Tenant may be compelled to pay or defend that are directly attributable to the actions or omissions of Landlord or any of Landlord's agents or employees, except to the extent caused by the gross negligence or willful misconduct of Tenant. Tenant agrees to indemnify and hold Landlord harmless from any and all third-party damages or claims that Landlord may be compelled to pay or defend in connection with this Lease or Tenant's use of the Premises, except to the extent caused by the gross negligence or willful misconduct of Landlord or any of Landlord's agents or employees.

16. **Notices.** All notices, elections, demands, requests, and other communications hereunder shall be in writing, signed by the party making the same and shall be sent by certified or registered United States mail, postage prepaid, or by national overnight courier service which provides tracking and acknowledgement of receipts, addressed to:

If to Landlord: Mildred B. Hampton  
551 Patrick Henry Highway  
Keysville, VA 23947  
(434) 736-8824  
Email: \_\_\_\_\_

If to Tenant: Tobacco Trail Solar, LLC  
c/o Strata Solar Services, LLC  
800 Taylor Street, Suite 200  
Durham, NC, 27701  
(919) 960-6015  
Attn: Asset Management Department  
Email: [assetmanagement@stratasolar.com](mailto:assetmanagement@stratasolar.com)

with a copy to Tobacco Trail Solar, LLC  
c/o Strata Solar Development, LLC  
800 Taylor Street, Suite 200  
Durham, NC, 27701  
(919) 960-6015  
Attn: General Counsel  
Email: [legal@stratasolar.com](mailto:legal@stratasolar.com)

or at such other address as may hereafter be designated in writing by either Party, or by any other method if actually received (including electronic communication at the e-mail addresses noted above). Such notices shall be deemed received when (a) actually received if delivered in person or via email, (b) within three (3) days after sent if delivered via certified mail, or (c) on the next business day after being sent, if delivered via overnight mail. Notwithstanding the foregoing, receipt shall be deemed to occur upon actual receipt or refusal, regardless of method of delivery.

17. **Easements.** Landlord hereby grants to Tenant the following easements for the benefit of Tenant and the Premises as Tenant or the utility to which the System is interconnected (the "Utility") reasonably requires to facilitate the construction, operation, and removal of the System: (i) an ingress and egress easement for access, ingress, and egress to and from the System and the Premises over, across, on, under, in, along and above the Land, including without limitation any existing roads on the Land and by other roads as Tenant may construct on the Land from time to time in locations reasonably agreed between Tenant and Landlord; (ii) the exclusive right to the unimpeded passage of sunlight and solar irradiation to and across the Premises, including without limitation, the ability to limit the height of trees, structures, or other impediments which may shade or otherwise interfere with sunlight reaching the Premises, including the right to trim any trees, brush or other vegetation on any of Landlord's property so long as Tenant provides Landlord notice thirty (30) days prior to such action; (iii) an easement over, under, below, across, on, and above the Premises and Land for the installation, maintenance, repair, and replacement of required utility poles or lines, including without limitation underground or overhead transmission lines and facilities, and underground or overhead communications lines and facilities; and (iv) any other easements over the Land and Premises as reasonably required by Tenant or the Utility in connection with Tenant's use of the Premises during the Term (collectively, the "Easements"). Should Tenant or the Utility require any of the Easements separately memorialized and/or recorded, then within twenty (20) days of such request Landlord shall execute a document appropriate for recording in the County clerk's office, which document shall run with the Lease, be co-terminous with the Lease, and inure to the benefit of Tenant or the Utility, as applicable, and its transferees, successors and assigns hereunder. Landlord's failure to execute any of the Easements delivered by Tenant or the Utility to Landlord in accordance with this Section 17 shall be deemed a Default under the Lease and Tenant shall have no obligation to make any payment of Rent until such executed Easement is received. Further, Landlord acknowledges that commercial operation of the System may require additional easements in favor of Tenants, the Utility, or third parties involved in the operation of the System on the Land, Premises and/or on any real property that is owned by Landlord and adjacent to the Land. Accordingly, Landlord shall grant such easements in such locations as such party may reasonably request upon reasonably agreed upon terms.

18. **Non-Disturbance Agreement.** Upon Tenant's request, Landlord shall execute, and take commercially reasonable efforts to cause any current beneficiaries of any mortgages, deeds of trust, deeds to secure debt or security deeds, or any other parties with an interest secured by Landlord's interest in the Land, to enter into an agreement with Tenant confirming that no such party will disturb or extinguish Tenant's interest in the Land and in this Lease. Such agreement shall be in form and substance reasonably agreeable to Tenant and any Additional Notice Party (defined in Section 25).

19. **Landlord's Representations and Warranties.**

(a) Landlord represents and warrants, that as of the Effective Date:

(i) Landlord is the sole owner of the fee interest in the Premises, and has all requisite right, power and authority to enter into this Lease, without the consent or joinder of any party not joining in the execution hereof. This Lease constitutes a valid and binding agreement enforceable against Landlord in accordance with its terms;

(ii) Landlord has not received any notice of any Taking, zoning change or legal noncompliance relating to the Premises;

(iii) the Premises are free from any recorded or unrecorded use or occupancy restrictions or declarations of restrictive covenants;

- (iv) there are no service or maintenance contracts affecting the Premises;
- (v) there are no delinquent or outstanding Taxes, liens or other impositions levied or assessed against the Premises or any larger parcel of property of which the Premises is a part;
- (vi) except for this Lease, there are no leases, options to purchase, license agreements or other third party rights to use or possess the Premises, whether written or oral, recorded or unrecorded, except as may be set forth on Exhibit D attached hereto and made a part hereof;
- (vii) Landlord is not in the hands of a receiver nor is an application for such a receiver pending, nor has Landlord made an assignment for the benefit of creditors, nor filed, or had filed against it, any petition in bankruptcy nor is Landlord a defendant in any ongoing or pending litigation proceedings;
- (viii) There are no recorded or unrecorded mortgages, deeds to secure debt, security deeds or other instruments securing debt affecting the Premises;
- (ix) if Landlord is a limited partnership, trust, limited liability company, corporation or other business entity, the undersigned representatives of Landlord have full power and authority to execute and deliver this Lease; and
- (x) if Landlord is one or more natural persons, except for the spouse identified on the signature page to this Lease, such natural persons are unmarried.

(b) The foregoing representations and warranties (and any other representations and warranties of Landlord under this Lease) shall be true and correct on the Operations Commencement Date. If requested by Tenant, Landlord shall deliver a certificate to such effect and/or such affidavits as may be requested by (i) any financing party or potential purchaser of the System, or (ii) any title company in connection with obtaining a title insurance policy on the Premises, relating to the same.

20. **Insurance.** During the Term, Tenant shall maintain, at Tenant's cost and expense, a policy or policies of insurance providing Commercial General Liability Insurance for Tenant's liability arising out of claims for bodily injury (including death) and property damage in an amount not less than [REDACTED] combined, single-limit liability coverage per occurrence, accident or incident, in each case having a deductible not in excess of [REDACTED]. Tenant may elect to satisfy the requirements of this Section 20 through a program of self-insurance.

21. **Landlord Covenants.** From and after the Effective Date until the expiration or earlier termination of the Term,

- (a) Landlord shall not, without the prior written consent of Tenant,
  - (i) institute or consent to any rezoning of the Premises;
  - (ii) lease any portion of the Premises to another party or further encumber or suffer to exist the further encumbrance or Transfer (defined below) of the Premises (except as caused by or on behalf of Tenant) except in accordance with Section 6 (pertaining to farm leases) or as otherwise permitted by Section 24 of this Lease; or
  - (iii) cause or permit any activities or conditions on the Premises or any adjacent property owned or controlled by Landlord that may, in Tenant's sole judgment, adversely impact Tenant's ability to utilize the Premises for the Intended Use (including, without limitation, by erecting or permitting



to be erected any cell towers, water towers, billboards, silos, trees or any other natural or man-made structures to be placed, constructed, or to otherwise exist that may diminish the quantity of sunlight that otherwise would reach the System or any portion thereof, or by grading adjacent or nearby land or any other activity that would cause damaging water runoff onto the Land).

(b) Landlord shall provide notice to Tenant within fifteen (15) days following the commencement of any proceedings in bankruptcy, insolvency or similar proceedings with respect to Landlord, and

(c) Landlord shall promptly give Tenant a copy of any notice of any kind received by Landlord regarding the Premises or any Taxes during the Term.

22. **Hazardous Materials.**

(a) **Tenant.** If Tenant places, disposes or releases any Hazardous Materials (defined below) in or onto the Premises and such placement, disposal or release results in the contamination of the Premises, then Tenant shall remediate such Hazardous Materials in accordance with any remediation order or requirements of any governmental authority with jurisdiction. Landlord acknowledges that Tenant has disclosed to Landlord that in connection with the ordinary course of construction, operation and maintenance of the System, Tenant will use limited quantities of Hazardous Materials, at all times in compliance with Environmental Laws (defined below). "**Hazardous Materials**" means asbestos, lead and any and all pollutants, dangerous substances, toxic substances, hazardous wastes, hazardous materials and hazardous substances as referenced or defined in, or regulated under, any federal, state, local or other applicable environmental law, statute, ordinance, rule, order, regulation or standard in effect on the date hereof including, without limitation, the Resource Conservation and Recovery Act (42 U.S.C. § 6901, et seq.), as amended ("**RCRA**"), the Federal Insecticide, Fungicide and Rodenticide Act (7 U.S.C. § 136, et seq.), as amended ("**FIFRA**"), the Comprehensive Environmental Response, Compensation and Liability Act (42 U.S.C. § 9601, et seq.), as amended ("**CERCLA**"), the Hazardous Materials Transportation Act (49 U.S.C. § 1801 et seq.), as amended ("**HMTA**"), and the Toxic Substances Control Act (15 U.S.C. § 2601 et seq.), as amended ("**TSCA**"), and any other federal, state or local law governing such substances, as such laws may be amended from time to time. "**Environmental Laws**" means any and all federal, state, and local laws relating to the generation, manufacture, production, use, storage, release or threatened release, discharge, disposal, transportation or presence of any Hazardous Materials. Environmental Laws includes, but is not limited to, CERCLA, RCRA, HMTA, TSCA, and the common law.

(b) **Landlord.** Except as otherwise disclosed in writing to Tenant prior to the Effective Date, Landlord has not contaminated the Premises with Hazardous Materials and there are no Hazardous Materials located on the Premises. Except as otherwise disclosed in writing to Tenant prior to the Effective Date: (A) there are no unplugged or abandoned wells, solid waste disposal sites or underground storage tanks located on the Premises; (B) the Premises are not in violation of any Environmental Law, and (C) the Premises are not subject to any judicial or administrative action, investigation or order under any Environmental Laws. Except as otherwise disclosed in writing to Tenant prior to the Effective Date, Landlord has not received any notice of any Hazardous Materials on the Premises or any notice of a violation of any Environmental Laws. Landlord will notify Tenant promptly upon becoming aware of any release of any Hazardous Materials on, under, about or near the Premises.

(c) **Indemnification.**

(i) **Tenant.** If a release of a Hazardous Material is caused or permitted by Tenant or its contractors, employees or agents that results in contamination of the Premises, then Tenant shall indemnify, defend, protect and hold Landlord harmless from and against any and all claims, actions, suits,

proceedings, losses, costs, damages, liabilities (including, without limitation, sums paid in settlement of claims), deficiencies, fines, penalties or expenses (including, without limitation, reasonable attorneys' fees and consultants' fees actually incurred, investigation and laboratory fees, court costs and litigation expenses) which arise during or after the term of this Lease as a result of such breach or contamination by Tenant.

(ii) Landlord. IF LANDLORD BREACHES ITS WARRANTIES, COVENANTS OR REPRESENTATIONS REGARDING HAZARDOUS MATERIALS, OR IF A RELEASE OF A HAZARDOUS MATERIAL IS CAUSED OR PERMITTED BY LANDLORD OR ITS AGENTS, EMPLOYEES, LESSEES (OTHER THAN TENANT) OR CONTRACTORS WHICH RESULTS IN CONTAMINATION OF THE PREMISES, THEN LANDLORD SHALL INDEMNIFY, DEFEND, PROTECT AND HOLD TENANT, AND TENANT'S EMPLOYEES, AGENTS, PARTNERS, LENDERS, MEMBERS, OFFICERS AND DIRECTORS HARMLESS FROM AND AGAINST ANY AND ALL CLAIMS, ACTIONS, SUITS, PROCEEDINGS, LOSSES, COSTS, DAMAGES, LIABILITIES (INCLUDING, WITHOUT LIMITATION, SUMS PAID IN SETTLEMENT OF CLAIMS), DEFICIENCIES, FINES, PENALTIES OR EXPENSES (INCLUDING, WITHOUT LIMITATION, REASONABLE ATTORNEYS' FEES AND CONSULTANTS' FEES ACTUALLY INCURRED, INVESTIGATION AND LABORATORY FEES, COURT COSTS AND LITIGATION EXPENSES) WHICH ARISE DURING OR AFTER THE TERM OF THIS LEASE AS A RESULT OF SUCH BREACH OR CONTAMINATION, EXCEPT TO THE EXTENT ANY SUCH CLAIMS, DAMAGES OR LIABILITIES RESULT FROM THE NEGLIGENCE OR WILLFUL MISCONDUCT OF TENANT, ITS EMPLOYEES, CONTRACTORS OR AGENTS. This indemnity includes, without limitation, and Landlord shall pay all costs and expenses relating to: (1) any claim, action, suit or proceeding for personal injury (including sickness, disease or death), property damage, nuisance, pollution, contamination, spill or other effect on the environment; (2) any investigation, monitoring, repair, clean-up, treatment or detoxification of the Premises; and (3) the preparation and implementation of any closure plan, remediation plan or other required action in connection with the Premises.

23. **Memorandum of Lease.** This Lease shall not be recorded; however, within ten (10) days following Tenant's request, Landlord and Tenant shall execute a memorandum of this Lease in recordable form set forth in Exhibit B to this Lease, setting forth the following provisions of this Lease, without limitation: (a) all information required by law, (b) restrictions on Transfers, (c) any unexercised options to extend the Term, (d) rights of first offer or of first refusal, if any, of Tenant with respect to the Premises and/or Land, and (e) such other provisions of this Lease as the Parties may mutually agree to incorporate therein. Tenant shall cause the memorandum of lease to be recorded in the Clerk's Office of the Circuit Court of the City or County where the Premises is situated.

24. **Assignments, Mortgages, Transfers.** This Lease shall be binding upon and inure to the benefit of the Parties and their legal representatives, successors and assigns.

(a) **Transfers by Tenant.** Tenant may pledge, sell, grant and/or assign, sublease, mortgage and otherwise transfer (each, a "**Transfer**") this Lease or Tenant's leasehold interest in the Premises, in whole or in part, without Landlord's prior consent; provided that Tenant shall notify Landlord of any such Transfer within thirty (30) days of such Transfer. In the event of a Transfer by Tenant (other than a collateral Transfer) to a person or entity that is not an affiliate of Tenant who assumes all of Tenant's rights and obligations under this Lease, Tenant shall be automatically released from all obligations accruing under the Lease as of the date of such Transfer.

(b) **Transfers by Landlord.** Landlord shall give Tenant at least thirty (30) days' prior notice of any Transfer by Landlord of its interest in the Land or in this Lease. In addition, any such Transfer shall



be expressly subject to this Lease. For example, but without limiting the foregoing, the Lease shall remain prior in interest to any mortgage, deed to secure debt or security deed entered into by Landlord after the Effective Date. For Transfers pursuant to the death or disability of Landlord, Landlord's executor or successor in interest shall provide notice of such Transfer (or proceedings that will result in such a Transfer) to Tenant as promptly as possible under the circumstances. Landlord shall notify Tenant of the closing of such Transfer, and if applicable, the name and contact information of the successor to Landlord's interest hereunder and payment instructions for future payments of Rent and other amounts due under the Lease; provided, that Landlord shall indemnify Tenant for losses arising from Tenant's payment of Rent or other amounts as so directed.

25. **Third Party Protections.** If Tenant shall notify Landlord in writing of the existence of, and contact information for, any third party with a security interest or similar interest in the Lease, the System, or the Premises whether via a Transfer or otherwise (any such third party, an "Additional Notice Party"), then the following provisions shall apply until such time as Landlord shall receive written confirmation that such Additional Notice Party's interests in this Lease, the System or the Premises are released:

(a) **Amendment, Assignment, Termination or Modification of Lease.** Without limiting Section 24, no assignment, amendment, termination or other modification of this Lease shall be effective unless approved by the Additional Notice Party in writing.

(b) **New Lease.** Upon the termination of this Lease pursuant to a Default by Tenant, provided any outstanding monetary defaults are cured, Landlord shall enter into a new lease with Additional Notice Party or its assignee/nominee on the same terms as set forth herein, and for a term equal to the then-unelapsed portion of this Lease, with an option to extend for any then-remaining Extended Operations Term(s). Such new lease shall be effective as of the date of termination of this Lease. For avoidance of doubt, the liability of such Additional Notice Party or its assignee/nominee under such new lease shall be limited to such Additional Notice Party's interest in the Premises and such Additional Notice Party or its assignee/nominee shall have no personal liability to Landlord for the performance of any obligations under such new lease or for any defaults of Tenant under the prior Lease (other than the cure of any monetary defaults).

(c) **Bankruptcy.** If this Lease is terminated pursuant to a rejection in bankruptcy or other similar proceeding with respect to Landlord, then Landlord, or its successor in interest to the Land, if any, shall enter into a new lease with Tenant on substantially the same terms as this Lease and for the then otherwise unexpired portion of the Term. Such new lease shall be effective as of the date of termination of this Lease.

(d) **Additional Notice and Cure Period.** If any event of Default by Tenant remains uncured following the applicable cure period under Section 14, Landlord shall send written notice of such uncured Default to each Additional Notice Party at the address provided therefor, whereupon the Additional Notice Party shall have an additional (i) thirty (30) days in the event of a payment Default, or (ii) sixty (60) days in the event of a non-payment Default (provided that so long as such Additional Notice Party has commenced diligent efforts to cure such non-payment default during such sixty (60) day period, such Additional Notice Party shall be given additional reasonable time in which to cure such Default) during which it may, in its sole discretion, cure such Default on Tenant's behalf. Landlord may not pursue any remedy for such Default unless it remains uncured following the expiration of such Additional Notice Party's cure period as set forth in the preceding sentence. No notice shall be effective against an Additional Notice Party unless and until actually received by such Additional Notice Party.

(e) **Additional Documents.** Landlord agrees to execute and deliver such documents and instruments, including estoppels, affidavits and amendments to this Lease, as may be reasonably requested

by an Additional Notice Party or in furtherance of a Transfer related to the financing or re-financing of the System, to allow such Additional Notice Party reasonable means to protect or preserve the System or its collateral interest in the Lease; provided, that Landlord shall not be required to amend this Lease in any way that would extend the Term, decrease the Rent or otherwise in any material respect adversely affect any rights of Landlord. Each party shall bear its own expenses, including legal expenses, in connection with any request for the execution and delivery of additional documents and instruments in accordance with this Section 25(e).

26. **Estoppel.** Upon the request of Tenant or an Additional Notice Party, Landlord shall deliver to the requesting party a certificate setting forth the material terms of the Lease, the existence of any Default under the Lease, the date through which Rent has been paid and any amounts on deposit with Landlord, the current Rent rate, and such other reasonable terms requested by the requesting party. The failure by Landlord to respond to such request within fifteen (15) days shall constitute an event of Default, and in addition, shall result in the deemed acceptance, approval and confirmation of the truth of the matters set forth in the certificate sent with the original request.

27. **Brokerage Commission.** Landlord and Tenant each warrant and represent to the other that, except for N/A whose commission will be the responsibility of N/A, there are no brokers' commissions, finders' fees or any other charges due to any broker, agent or other party in connection with the negotiation or execution of this Lease. EACH PARTY SHALL INDEMNIFY, DEFEND, PROTECT AND HOLD THE OTHER PARTY HARMLESS FROM AND AGAINST ALL DAMAGES, LOSSES, COSTS, EXPENSES (INCLUDING REASONABLE ATTORNEYS' FEES ACTUALLY INCURRED), LIABILITIES AND CLAIMS WITH RESPECT TO ANY CLAIMS MADE BY ANY BROKER OR FINDER BASED UPON SUCH BROKER'S OR FINDER'S REPRESENTATION OR ALLEGED REPRESENTATION OF SUCH INDEMNIFYING PARTY.

28. **Force Majeure.** If performance of this Lease or any obligation hereunder is prevented or substantially restricted or interfered with by reason of an event of Force Majeure (defined below), the affected Party, upon giving written notice to the other Party, shall be excused from such performance to the extent and for the duration of such prevention, restriction or interference. The affected Party shall use its reasonable efforts to avoid or remove such causes of nonperformance and shall continue performance as soon as such causes are removed. "Force Majeure" means fire, earthquake, flood, tornado or other acts of God and natural disasters, strikes or labor disputes; war, terrorist act, epidemic, pandemic, quarantine, civil strife or other violence; any law, order, proclamation, regulation, ordinance, action, demand or requirement of any government agency or utility; generalized lack of availability of raw materials or energy; or any other act or condition beyond the reasonable control of a Party. For avoidance of doubt, economic hardship shall not constitute Force Majeure for purposes of this Lease.

29. **Confidentiality.** This Lease, the terms and conditions hereof (including, without limitation, the financial terms of this Lease), Tenant's site design and product design, methods of operation, methods of construction and power production of the System; all studies, measurements, readings, data and any other information concerning or relating to the System that Tenant provides to or that is otherwise obtained by Landlord, whether written or oral, tangible or intangible, constitutes Tenant's proprietary and confidential intellectual property ("Confidential Information"). Landlord shall not use such Confidential Information for its own benefit, publish or otherwise disclose it or permit its use by others, except as expressly permitted in this Section 29 or as otherwise expressly agreed by Tenant in writing. Without limiting the foregoing, Landlord's obligation of confidentiality and non-disclosure with respect to the Confidential Information shall not apply to any information which (i) is in the public domain or can be proven to have been known to Landlord prior to disclosure by Tenant to Landlord; (ii) following disclosure, becomes generally known or available through no act or omission of Landlord; (iii) is independently developed by or on behalf of

Landlord without any use of the Confidential Information; or (iv) is known, or becomes known, to Landlord from a source other than Tenant or its representatives, provided that disclosure by such source is not in breach of an obligation of confidentiality to Tenant. Further, notwithstanding anything herein to the contrary, Landlord may, upon prior written notice to Tenant, provide copies of this Lease (but not any other Confidential Information) and disclose the terms thereof to Landlord's immediate family members who also have an interest in the Premises and Landlord's attorneys, accountants, financial advisors, agents employees and any existing or prospective mortgagee, lessee, or purchaser of the Land (each a "**Related Person**"), as necessary to fulfill Landlord's obligations hereunder or under its agreements or obligations to such parties, so long as they likewise agree to be subject to the same confidentiality provisions as Landlord under this Section 29. Landlord agrees with Tenant that any disclosure of Confidential Information by any other party, including without limitation a Related Person of Landlord or of another landlord within the Premises shall not relieve Landlord of Landlord's obligations under this Section 29. Tenant may require Landlord to have any person, including a Related Person, sign a reasonable non-disclosure agreement as a condition to Tenant's consent under this Section 29. The provisions of this Section 29 shall survive the expiration or earlier termination of this Lease.

30. **Legal Expenses.** If either Party brings any action or proceeding against the other (including any cross-complaint, counterclaim or third-party claim) to enforce or interpret this Lease, or otherwise arising out of this Lease, the prevailing Party in such action or proceeding shall be entitled to recover its costs and expenses of suit (including, without limitation, reasonable attorneys' fees actually incurred, accountants' fees, consulting fees, court costs and other legal expenses), and such amounts shall be payable whether or not such action or proceeding is prosecuted to judgment. For purposes hereof, the term "prevailing Party" includes a Party who dismisses an action for recovery in exchange for payment of the sums allegedly due, performance of covenants allegedly breached or consideration substantially equal to the relief sought in the action. Any provision of this Lease which entitles a Party to recover attorneys' fees shall for all purposes be deemed to mean and refer to reasonable attorneys' fees actually incurred, without regard to any statutory presumption or formula.

31. **Governing Law.** This Lease shall be construed and enforced in accordance with the laws of the State and any disputes arising from or relating to this Lease shall be construed, governed and interpreted and regulated under the laws of the State.

32. **Interpretation; Amendment.** The terms of this Lease shall not be amended, restated, changed or otherwise modified except in a writing signed by Landlord, Tenant and any Additional Notice Party. If any term or provision of this Lease shall to any extent be invalid or unenforceable, the remainder of this Lease shall not be affected thereby and each other term and provision of this Lease shall be valid and enforced to the fullest extent permitted by law.

33. **Integration; Anti-Merger.** This instrument, including the attached Exhibits, contains the complete agreement of the Parties regarding the subject matter of this Lease, and there are no oral or written conditions, terms, understandings or other agreements pertaining thereto which have not been incorporated herein. This instrument creates only the relationship of landlord and tenant between the Parties as to the Premises, and nothing in this Lease shall in any way be construed to impose upon either Party any obligations or restrictions not expressly set forth in this Lease. This Lease shall continue until the expiration or termination of the Lease and Term, and shall not be extinguished by operation of law pursuant to the acquisition by a single party of the interests in both Tenant and Landlord hereunder.

34. **Exclusive Control; Quiet Enjoyment.** Tenant shall have exclusive control, possession, occupancy, use and management of the Premises during the Construction Term and Operations Term(s), subject to any easements or security instruments existing and disclosed by Landlord to Tenant on the Effective Date, or as caused by Tenant. Landlord shall warrant and defend Tenant's right to quietly hold

and enjoy the Premises during the Construction Term, Development Term, and Operations Term against any person or party claiming to have an interest in the Premises.

35. **Waiver.** The waiver by any Party (or any Additional Notice Party) of any instance of a breach of any covenant or agreement herein shall not be deemed to constitute waiver of any subsequent breach of the same or any other covenant or agreement under this Lease.

36. **Nonrecourse.** The performance of this Lease by Landlord and Tenant (and its successors and assigns) shall be secured by their respective interests in the Premises. Except for such interests in the Premises, neither Landlord's, nor Tenant's (nor any of its successors' or assigns') property or assets (including without limitation Tenant's Property), shall be subject to levy, execution or any other enforcement procedure in connection with the satisfaction of liability under this Lease.

37. **Consents; Further Assurances.** Each party shall execute and deliver such further documents, and perform such other acts, as may be reasonably necessary to achieve the Parties' intent in entering into this Lease. The Parties further agree that, to the extent the consent or approval of either of them is required, requested or appropriate under this Lease, such consent or approval shall not be unreasonably or unduly withheld, delayed, or conditioned, and except as may otherwise be expressly provided for herein, each Party shall bear its own costs and expenses, including legal costs, in connection with such consent or approval.

38. **Counterparts.** This Lease may be executed in any number of counterparts, each of which shall be deemed an original once executed and delivered.

39. **Survival.** Upon the expiration or earlier termination of this Lease in accordance with its terms, this Lease shall cease to have force and effect, unless the context requires otherwise to achieve the Parties' intent with respect thereto.

40. **Compliance with Law.** In conducting its operations on the Premises, Tenant shall comply in all material respects with all laws (including Environmental Laws), inclusive of any obligations of Tenant to register the System, other related facilities or operations under RCRA due the presence of Hazardous Materials that are contained within, or are part of the construction of, the System; however, Tenant may contest the validity or applicability of any laws (including but not limited to Environmental Laws, and any property tax) related to the Premises, the Tenant, the System, the operations, or any other activity or property of Tenant, by appropriate legal proceedings brought in the name of Tenant or in the names of both Tenant and Landlord where appropriate or required; provided Landlord shall have the right to consent to being named in such proceedings. Any such contest or proceeding, including any initiated by Tenant and maintained in the name of Landlord, shall be at Tenant's expense and be controlled and directed by Tenant, but in consultation with Landlord and at no cost to Landlord, excepting proceedings which arise due to Landlord's violation of any laws (including Environmental Laws).

41. **Hunting Activities.** Subject to the provisions of this Section 41, after the Effective Date Landlord shall have the right to engage in hunting activities on the Premises until the Construction Term commences (the "**Hunting Period**"). Any such hunting activities shall be performed in accordance with applicable law. At any time during the Hunting Period, with at least twenty-four (24) hours advance notice, Tenant shall have the right to require Landlord to cease hunting activities on the Premises for a period of time specified by Tenant so that Tenant may conduct pre-construction activities as permitted in this Lease. Landlord shall not grant a hunting lease or a similar right to any third-party without the prior written approval of Tenant. For the avoidance of doubt, no hunting activities shall be permitted to occur after the expiration of the Hunting Period.

IN WITNESS WHEREOF, the parties hereto have duly executed this Lease as of the later of the dates indicated below.

**LANDLORD:**

  
MILDRED B. HAMPTON, aka MILDRED BREHM  
HAMPTON

Date: 2/22/24

  
ROSEMARY HAMPTON

Date: 2/22/2024

**TENANT:**

**TOBACCO TRAIL SOLAR, LLC,**  
a North Carolina limited liability company

By: **Strata Manager, LLC,**  
a North Carolina limited liability company,  
its Manager

By:   
Name: Markus Wilhelm

Title: Manager

Date: 2/28/24



**Exhibit A**  
**Description of the Land**

All that certain tract or parcel of land located in the Hampden Magisterial District, Prince Edward County, Virginia, containing approximately 143.78 acres, more or less, and commonly identified as Map ID Number 120 A 43, and being the same tract or parcel or land conveyed to Landlord by that certain Deed of Gift, dated August 3, 2023 and recorded in the Clerk's Office of the Prince Edward County Circuit Court on August 10, 2023, as Instrument Number 202301213, and being more particularly described therein as follows:

All that certain tract or parcel of land, situated in Hampden Magisterial District, Prince Edward County, Virginia, containing 145.98 acres, by estimate, this being a conveyance in gross and not by the acre, fronting on the northerly side of U.S. Highway No. 360 and being bounded on the West by Watson, on the North, lying on both sides of Norfolk-Southern Railway and bounded by Chesapeake Corporation, and on the East by other property of Charles T. Brehm, Jr.

LESS AND EXCEPT an off-conveyance of 1.09 and 0.11 acres as described in a deed to Rebecca Brehm Taylor dated June 25, 2003 and recorded in the Clerk's Office of the Circuit Court of Prince Edward County, Virginia as Instrument #200302157.

Being the same property conveyed unto Mildred Brehm Hampton by deed of gift from Charles T. Brehm, Jr. dated May 3, 1999 and recorded in the aforesaid Clerk's Office in Deed Book 332, page 674.

**End of Exhibit A**



**Exhibit B**  
**Form Memorandum of Lease**

Prepared by and mail to:  
Tobacco Trail Solar, LLC  
800 Taylor Street, Suite 200  
Durham, NC 27701  
Attn: Legal Department

**MEMORANDUM OF LEASE**

**THIS MEMORANDUM OF LEASE** (this "**Memorandum**") dated as of \_\_\_\_\_, 20\_\_\_\_, by and between \_\_\_\_\_, an [individual resident] [entity organized under the laws] of the State of \_\_\_\_\_ ("**Landlord**"), having a mailing address at \_\_\_\_\_ and **TOBACCO TRAIL SOLAR, LLC**, a North Carolina limited liability company ("**Tenant**"), having a mailing address at 800 Taylor Street, Suite 200, Durham, North Carolina 27701, recites and provides:

**RECITALS**

1. By that certain Ground Lease Agreement dated \_\_\_\_\_, 20\_\_\_\_, (the "**Lease**"). Landlord leased to Tenant and Tenant leased from Landlord, upon the terms and conditions and for the rent set forth in the Lease, certain real estate situated in \_\_\_\_\_ County, Virginia, (the "**County**"), and more particularly described on Exhibit A attached hereto as a part hereof and recorded herewith (the "**Premises**").

2. In lieu of the recording of the Lease in the Clerk's Office of the Circuit Court of the County (the "**Clerk's Office**"), Landlord and Tenant now desire to record this Memorandum in the Clerk's Office pursuant to Section 55.1-1601 of the Code of Virginia 1950, as amended (the "**Virginia Code**"), as a memorandum of lease.

**NOW, THEREFORE**, for and in consideration of the rent payable by Tenant to Landlord as required by the Lease and for other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, and in accordance with Section 55.1-1601 of the Virginia Code, Landlord and Tenant hereby set forth the following provisions of the Lease as a memorandum of lease.

1. The name of the lessor named in the Lease is \_\_\_\_\_, an [individual resident] [entity organized under the laws] of the State of \_\_\_\_\_.

2. The name of the lessee named in the Lease is **TOBACCO TRAIL SOLAR, LLC**, a North Carolina limited liability company.

3. By the Lease, Landlord demised and leased the Premises to Tenant, and Tenant leased and took the Premises from Landlord, upon the terms and conditions of the Lease.

4. As set forth in the Lease, the address of Landlord is as follows:

«Primary Landowner Name»  
«Full Address Mailing»

5. As set forth in the Lease, the address of Tenant is as follows:

c/o Strata Solar Services, LLC  
800 Taylor Street, Suite 200  
Durham, NC 27701  
Attn: Asset Management Department

6. The date of the Lease is \_\_\_\_\_, 20\_\_\_\_.

7. The Premises leased by the Lease is more particularly described in Exhibit A attached hereto.

8. The Lease is effective as of \_\_\_\_\_, 20\_\_\_. The Term of the Lease begins on the Effective Date and continues for a period of thirty (30) years from the Operations Commencement Date (as defined in the Lease), unless extended or earlier terminated as provided in the Lease. Tenant has the right to extend the Term for two (2) additional successive Extended Operations Terms of five (5) years each as set forth in the Lease.

9. The Parties agree to execute an amendment to this Memorandum which shall set forth the final metes and bounds legal description of the Premises.

10. Landlord has agreed (i) not to lease any portion of the Premises to another party or further encumber or suffer to exist the further encumbrance or Transfer (defined in the Lease) of the Premises except as caused by or on behalf of Tenant or as specifically allowed in the Lease; (ii) not to cause or permit any activities or conditions on the Premises or any adjacent property owned or controlled by Landlord that may, in Tenant's sole judgment, adversely impact Tenant's ability to utilize the Premises for the Intended Use as defined in the Lease, (including, without limitation, by erecting or permitting to be erected any cell towers, water towers, billboards, silos, trees or any other natural or man-made structures to be placed, constructed, or to otherwise exist that may diminish the quantity of sunlight that otherwise would reach the System or any portion thereof, or by grading adjacent or nearby land or any other activity that would cause damaging water runoff onto the Land), and (iii) to grant to Tenant at no additional cost such easements for the benefit of Tenant and the Premises as Tenant may reasonably request to facilitate the construction, operation, and removal of the System as described more fully in the Lease.

11. The provisions of the Lease are incorporated into this Memorandum as if set out in full. In the event of any conflict between the provisions of this Memorandum and those of the Lease, the provisions of the Lease shall control. All capitalized terms and terms of art used but not defined in this Memorandum will have the same respective meaning designated for such terms in the Lease. This Memorandum has been executed for the purpose of recordation in order to give notice of all of the terms, provisions and conditions of the Lease, and is not intended, and shall not be construed, to define, limit or modify the Lease. This Memorandum is not a complete summary of the Lease, nor shall any provisions of this Memorandum be used in interpreting the provisions of the Lease. Reference should be made to the Lease for a more detailed description of all matters contained in this Memorandum.

12. To facilitate execution, this Memorandum may be executed in as many counterparts as may be required. It shall not be necessary that the signature of, or on behalf of, each party, or that the signatures of all persons required to bind any party, appear on each counterpart. It shall be sufficient that the signature of, or on behalf of, each party, or that the signatures of the persons required to bind any party, appear on one or more such counterparts. All counterparts shall together constitute a single agreement.

13. On the request of Landlord following the expiration of the Lease (including all Renewal Terms), Tenant will promptly execute and deliver and appropriate release or cancellation instrument in recordable form acknowledging the expiration or termination of the Lease and releasing any and all right, title and interest of Tenant in and to the Premises under the Lease.

IN WITNESS WHEREOF, the undersigned have executed this Memorandum of Lease by authority duly given and effective as of the date first written above.

**(Not a Signable Copy.)**

**Exhibit C**

**Form W-9**

[see attached]

8

## Request for Taxpayer Identification Number and Certification

Give Form to the  
requester. Do not  
send to the IRS.

Print or type See Specific Instructions on page 2	Name (as shown on your income tax return)	
	Business name/disregarded entity name, if different from above	
	Check appropriate box for federal tax classification: <input type="checkbox"/> Individual/sole proprietor <input type="checkbox"/> C Corporation <input type="checkbox"/> S Corporation <input type="checkbox"/> Partnership <input type="checkbox"/> Trust/estate <input type="checkbox"/> Limited liability company. Enter the tax classification (C=C corporation, S=S corporation, P=partnership) ▶ <input type="checkbox"/> Other (see instructions) ▶	Exemptions (see instructions):  Exempt payee code (if any):  Exemption from FATCA reporting code (if any):
	Address (number, street, and apt. or suite no.)	Requester's name and address (optional)
	City, state, and ZIP code	
	List account number(s) here (optional)	

### Part I Taxpayer Identification Number (TIN)

Enter your TIN in the appropriate box. The TIN provided must match the name given on the "Name" line to avoid backup withholding. For individuals, this is your social security number (SSN). However, for a resident alien, sole proprietor, or disregarded entity, see the Part I instructions on page 3. For other entities, it is your employer identification number (EIN). If you do not have a number, see *How to get a TIN* on page 3.

**Note.** If the account is in more than one name, see the chart on page 4 for guidelines on whose number to enter.

Social security number	
<div></div>	<div></div>
Employer identification number	
<div></div>	<div></div>

### Part II Certification

Under penalties of perjury, I certify that:

- The number shown on this form is my correct taxpayer identification number (or I am waiting for a number to be issued to me), and
- I am not subject to backup withholding because: (a) I am exempt from backup withholding, or (b) I have not been notified by the Internal Revenue Service (IRS) that I am subject to backup withholding as a result of a failure to report all interest or dividends, or (c) the IRS has notified me that I am no longer subject to backup withholding, and
- I am a U.S. citizen or other U.S. person (defined below), and
- The FATCA code(s) entered on this form (if any) indicating that I am exempt from FATCA reporting is correct.

**Certification instructions.** You must cross out item 2 above if you have been notified by the IRS that you are currently subject to backup withholding because you have failed to report all interest and dividends on your tax return. For real estate transactions, item 2 does not apply. For mortgage interest paid, acquisition or abandonment of secured property, cancellation of debt, contributions to an individual retirement arrangement (IRA), and generally, payments other than interest and dividends, you are not required to sign the certification, but you must provide your correct TIN. See the instructions on page 3.

Sign Here	Signature of U.S. person ▶	Date ▶
-----------	----------------------------	--------

### General Instructions

Section references are to the Internal Revenue Code unless otherwise noted.

**Future developments.** The IRS has created a page on IRS.gov for information about Form W-9. Information about any future developments affecting Form W-9 (such as legislation enacted after we release it) will be posted on that page.

#### Purpose of Form

A person who is required to file an information return with the IRS must obtain your correct taxpayer identification number (TIN) to report, for example, income paid to you, payments made to you in settlement of payment card and third party network transactions, real estate transactions, mortgage interest you paid, acquisition or abandonment of secured property, cancellation of debt, or contributions you made to an IRA.

Use Form W-9 only if you are a U.S. person (including a resident alien) to provide your correct TIN to the person requesting it (the requester) and, when applicable, to:

- Certify that the TIN you are giving is correct (or you are waiting for a number to be issued).
- Certify that you are not subject to backup withholding, or
- Claim exemption from backup withholding if you are a U.S. exempt payee. If applicable, you are also certifying that as a U.S. person, your allocable share of any partnership income from a U.S. trade or business is not subject to the

withholding tax on foreign partners' share of effectively connected income, and

- Certify that FATCA code(s) entered on this form (if any) indicating that you are exempt from the FATCA reporting, is correct.

**Note.** If you are a U.S. person and a requester gives you a form other than Form W-9 to request your TIN, you must use the requester's form if it is substantially similar to this Form W-9.

**Definition of a U.S. person.** For federal tax purposes, you are considered a U.S. person if you are:

- An individual who is a U.S. citizen or U.S. resident alien
- A partnership, corporation, company, or association created or organized in the United States or under the laws of the United States
- An estate (other than a foreign estate), or
- A domestic trust (as defined in Regulations section 301.7701-7)

**Special rules for partnerships.** Partnerships that conduct a trade or business in the United States are generally required to pay a withholding tax under section 1446 on any foreign partners' share of effectively connected taxable income from such business. Further, in certain cases where a Form W-9 has not been received the rules under section 1446 require a partnership to presume that a partner is a foreign person and pay the section 1446 withholding tax. Therefore, if you are a U.S. person that is a partner in a partnership conducting a trade or business in the United States, provide Form W-9 to the partnership to establish your U.S. status and avoid section 1446 withholding on your share of partnership income.

**Exhibit D**  
**Other Leases, Options and Licenses**

[To be identified here, if any]



**Exhibit F**  
**ACH Authorization Form**



800 Taylor St, Suite 200  
Durham, NC 27701  
919-960-6015  
Accounts payable@stratacleanenergy.com

**ACH AUTHORIZATION FORM**

*\*e-mail a copy of voided check or bank letter for account verification*

Vendor Name \_\_\_\_\_

Vendor Address \_\_\_\_\_

Name of Financial Institution \_\_\_\_\_

Name on Account \_\_\_\_\_

ABA/Routing Number \_\_\_\_\_

Account Number \_\_\_\_\_ ☐ Checking ☐ Savings

I hereby authorize Strata Clean Energy LLC to initiate ACH direct deposits to my account at the financial institution named above.

This agreement will remain in effect until Strata Clean Energy LLC receives written notice of cancellation from me or my financial institution, or until I submit a new ACH authorization form.

Signature \_\_\_\_\_

Printed Name \_\_\_\_\_

Date \_\_\_\_\_

Updated 5/1/21

# VIRGINIA LAND RECORD COVER SHEET

Commonwealth of Virginia VA. CODE §§ 17.1-223, -227.1, -249

## FORM A – COVER SHEET CONTENT

Instrument Date: 2/22/2024

Instrument Type: AGL

Number of Parcels: 1 Number of Pages: 7

[ ] City [X] County PRINCE EDWARD COUNTY COURT  
CIRCUIT COURT

Tax Exempt? VIRGINIA/FEDERAL CODE SECTION

[ ] Grantor:

[ ] Grantee:

Business/Name

(Area Above Reserved For Deed Stamp Only)

1 Grantor: HAMPTON, MILDRED BREHM

2 Grantor: HAMPTON, ROSEMARY

1 Grantee: TOBACCO TRAIL SOLAR, LLC, TOBACCO TRAIL SOLAR, LLC

Grantee:

Grantee Address

Name: TOBACCO TRAIL SOLAR, LLC TOBACCO TRAIL SOLAR, LLC

Address: 800 TAYLOR STREET, SUITE 200

City: DURHAM State: NC Zip Code: 27701

Consideration: \$7,907.90 Existing Debt: \$0.00 Actual Value/Assumed: \$0.00

PRIOR INSTRUMENT UNDER § 58.1-803(D):

Original Principal: \$0.00 Fair Market Value Increase: \$0.00

Original Book No.: Original Page No.: Original Instrument No.:

Prior Recording At: [ ] City [X] County Percentage In This Jurisdiction: 100%

Book Number: Page Number: Instrument Number: 202301213

Parcel Identification Number/Tax Map Number: 120-A-43

Short Property Description:

Current Property Address: 551 PATRICK HENRY HWY

City: KEYSVILLE State: VA Zip Code: 23947

Instrument Prepared By: TOBACCO TRAIL SOLAR, LLC Recording Paid By: TOBACCO TRAIL SOLAR, LLC

Recording Returned To: TOBACCO TRAIL SOLAR, LLC

Address: 800 TAYLOR STREET, SUITE 200

City: DURHAM State: NC Zip Code: 27701



Prepared by and mail to:  
Tobacco Trail Solar, LLC  
800 Taylor Street, Suite 200  
Durham, NC 27701  
Attn: Legal Department  
Randy Herman, Esq.  
Map ID No: 120-A-43  
Consideration: \$7,907.90

## MEMORANDUM OF LEASE

**THIS MEMORANDUM OF LEASE** (this "**Memorandum**") dated as of February 22, 2024, by and between **MILDRED B. HAMPTON, aka MILDRED BREHM HAMPTON**, unmarried Life Tenant, and **ROSEMARY HAMPTON**, Remainderman, (collectively, "**Landlord**") having a mailing address at 551 Patrick Henry Highway, Keysville, Virginia 23947 and **TOBACCO TRAIL SOLAR, LLC**, a North Carolina limited liability company ("**Tenant**"), having a mailing address at 800 Taylor Street, Suite 200, Durham, North Carolina 27701, recites and provides:

## RECITALS

1. By that certain Ground Lease Agreement dated February 22, 2024, (the "**Lease**"), Landlord leased to Tenant and Tenant leased from Landlord, upon the terms and conditions and for the rent set forth in the Lease, certain real estate situated in Prince Edward County, Virginia, (the "**County**"), commonly referred to as **Map ID No. 120-A-43** and more particularly described on Exhibit A attached hereto as a part hereof and recorded herewith (the "**Premises**").

2. In lieu of the recording of the Lease in the Clerk's Office of the Circuit Court of the County (the "**Clerk's Office**"), Landlord and Tenant now desire to record this Memorandum in the Clerk's Office pursuant to Section 55.1-1601 of the Code of Virginia 1950, as amended (the "**Virginia Code**"), as a memorandum of lease.

**NOW, THEREFORE**, for and in consideration of the rent payable by Tenant to Landlord as required by the Lease and for other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, and in accordance with Section 55.1-1601 of the Virginia Code, Landlord and Tenant hereby set forth the following provisions of the Lease as a memorandum of lease.

1. The name of the lessor named in the Lease is **MILDRED B. HAMPTON, aka MILDRED BREHM HAMPTON**, unmarried Life Tenant, and **ROSEMARY HAMPTON**, Remainderman, individual residents of the State of Virginia.

2. The name of the lessee named in the Lease is **TOBACCO TRAIL SOLAR, LLC**, a North Carolina limited liability company.

3. By the Lease, Landlord demised and leased the Premises to Tenant, and Tenant leased and took the Premises from Landlord, upon the terms and conditions of the Lease.

4. As set forth in the Lease, the address of Landlord is as follows:

Mildred B. Hampton  
551 Patrick Henry Highway  
Keysville, VA 23947

5. As set forth in the Lease, the address of Tenant is as follows:

Tobacco Trail Solar, LLC  
c/o Strata Solar Services, LLC  
800 Taylor Street, Suite 200  
Durham, NC 27701  
Attn: Asset Management Department

6. The date of the Lease is Feb. 22, 2024.

7. The Premises leased by the Lease is more particularly described in Exhibit A attached hereto.

8. The Lease is effective as of Feb. 22, 2024. The Term of the Lease begins on the Effective Date and continues for a period of thirty (30) years from the Operations Commencement Date (as defined in the Lease), unless extended or earlier terminated as provided in the Lease. Tenant has the right to extend the Term for two (2) additional successive Extended Operations Terms of five (5) years each as set forth in the Lease.

9. The Parties agree to execute an amendment to this Memorandum which shall set forth the final metes and bounds legal description of the Premises.

10. Landlord has agreed (i) not to lease any portion of the Premises to another party or further encumber or suffer to exist the further encumbrance or Transfer (defined in the Lease) of the Premises except as caused by or on behalf of Tenant or as specifically allowed in the Lease; (ii) not to cause or permit any activities or conditions on the Premises or any adjacent property owned or controlled by Landlord that may, in Tenant's sole judgment, adversely impact Tenant's ability to utilize the Premises for the Intended Use as defined in the Lease, (including, without limitation, by erecting or permitting to be erected any cell towers, water towers, billboards, silos, trees or any other natural or man-made structures to be placed, constructed, or to otherwise exist that may diminish the quantity of sunlight that otherwise would reach the System or any portion thereof, or by grading adjacent or nearby land or any other activity that would cause damaging water runoff onto the Land), and (iii) to grant to Tenant at no additional cost such easements for the benefit of Tenant and the Premises as Tenant may reasonably request to facilitate the construction, operation, and removal of the System as described more fully in the Lease.

11. The provisions of the Lease are incorporated into this Memorandum as if set out in full. In the event of any conflict between the provisions of this Memorandum and those of the Lease, the provisions of the Lease shall control. All capitalized terms and terms of art used but not defined in this Memorandum will have the same respective meaning designated for such terms in the Lease. This Memorandum has been executed for the purpose of recordation in order to give notice of all of the terms, provisions and conditions of the Lease, and is not intended, and shall not be construed, to define, limit or modify the Lease. This Memorandum is not a complete summary of the Lease, nor shall any provisions of this Memorandum be used in interpreting the provisions of the Lease. Reference should be made to the Lease for a more detailed description of all matters contained in this Memorandum.

12. To facilitate execution, this Memorandum may be executed in as many counterparts as may be required. It shall not be necessary that the signature of, or on behalf of, each party, or that the signatures of all persons required to bind any party, appear on each counterpart. It shall be sufficient that the signature of, or on behalf of, each party, or that the signatures of the persons required to bind any party, appear on one or more such counterparts. All counterparts shall together constitute a single agreement.

13. On the request of Landlord following the expiration of the Lease (including all Renewal Terms), Tenant will promptly execute and deliver and appropriate release or cancellation instrument in recordable form acknowledging the expiration or termination of the Lease and releasing any and all right, title and interest of Tenant in and to the Premises under the Lease.

IN WITNESS WHEREOF, the undersigned have executed this Memorandum of Lease by authority duly given and effective as of the date first written above.

*(End of Text. Signature Pages Follow.)*

SEPARATE SIGNATURE PAGE TO MEMORANDUM OF LEASE

**LANDLORD:**

Mildred B. Hampton  
**MILDRED B. HAMPTON,**  
**aka MILDRED BREHM HAMPTON**

STATE OF VIRGINIA

COUNTY OF Prince Edward

The undersigned, a Notary Public in and for the County and State aforesaid, DOES HEREBY CERTIFY that **Mildred B. Hampton, aka Mildred Brehm Hampton**, personally known to me to be the same person whose name is subscribed to the foregoing instrument, appeared before me this day in person and acknowledged that she signed, sealed and delivered the same instrument as her own free and voluntary act for the uses and purposes therein set forth.

Given under my hand and Notarial Seal this 22<sup>nd</sup> day of February, 2024.

My Commission Expires:

12/31/2027

{AFFIX NOTARIAL SEAL}

ZM-M  
Notary Public





SEPARATE SIGNATURE PAGE TO MEMORANDUM OF LEASE

LANDLORD:

  
ROSEMARY HAMPTON

STATE OF VIRGINIA

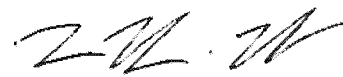
COUNTY OF Prince Edward

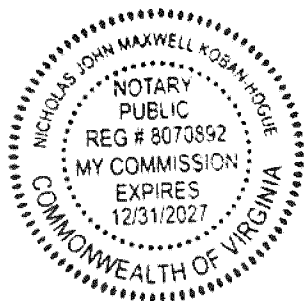
The undersigned, a Notary Public in and for the County and State aforesaid, DOES HEREBY CERTIFY that **Rosemary Hampton**, personally known to me to be the same person whose name is subscribed to the foregoing instrument, appeared before me this day in person and acknowledged that she signed, sealed and delivered the same instrument as her own free and voluntary act for the uses and purposes therein set forth.

Given under my hand and Notarial Seal this 22<sup>nd</sup> day of February, 2024.

My Commission Expires: 12/31/2027

{AFFIX NOTARIAL SEAL}

  
\_\_\_\_\_  
Notary Public

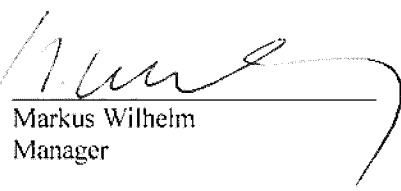


SEPARATE SIGNATURE PAGE TO MEMORANDUM OF LEASE

**TENANT:**

**TOBACCO TRAIL SOLAR, LLC,**  
a North Carolina limited liability company

By: Strata Manager, LLC,  
a North Carolina limited liability company,  
its Manager

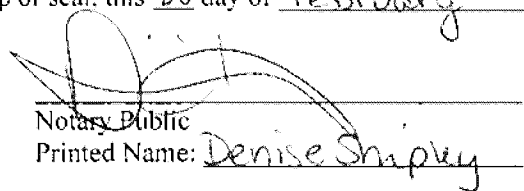
By:   
Name: Markus Wilhelm  
Title: Manager

STATE OF NORTH CAROLINA

COUNTY OF DURHAM

I certify that the following person personally appeared before me this day, acknowledging to me that he signed the foregoing instrument: Markus Wilhelm, Manager of Strata Manger, LLC the Manager of Tobacco Trail Solar, LLC.

WITNESS my hand and official stamp or seal, this 28 day of February, 2024.

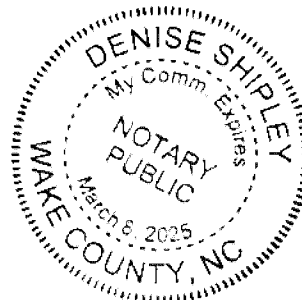
  
Notary Public

Printed Name: Denise Shipley

My Commission Expires:

3.8.2025

[AFFIX NOTARIAL STAMP OR SEAL]



**Exhibit A**  
**Description of the Land**

All that certain tract or parcel of land located in the Hampden Magisterial District, Prince Edward County, Virginia, containing approximately 143.78 acres, more or less, and commonly identified as **Map ID Number 120-A-43**, and being the same tract or parcel or land conveyed to Landlord by that certain Deed of Gift, dated August 3, 2023 and recorded in the Clerk's Office of the Prince Edward County Circuit Court on August 10, 2023, as Instrument Number 202301213, and being more particularly described therein as follows:

All that certain tract or parcel of land, situated in Hampden Magisterial District, Prince Edward County, Virginia, containing 145.98 acres, by estimate, this being a conveyance in gross and not by the acre, fronting on the northerly side of U.S. Highway No. 360 and being bounded on the West by Watson, on the North, lying on both sides of Norfolk-Southern Railway and bounded by Chesapeake Corporation, and on the East by other property of Charles T. Brehm, Jr.

LESS AND EXCEPT an off-conveyance of 1.09 and 0.11 acres as described in a deed to Rebecca Brehm Taylor dated June 25, 2003 and recorded in the Clerk's Office of the Circuit Court of Prince Edward County, Virginia as Instrument #200302157.

Being the same property conveyed unto Mildred Brehm Hampton by deed of gift from Charles T. Brehm, Jr. dated May 3, 1999 and recorded in the aforesaid Clerk's Office in Deed Book 332, page 674.

**End of Exhibit A**

INSTRUMENT 202400379  
RECORDED IN THE CLERK'S OFFICE OF  
PRINCE EDWARD COUNTY CIRCUIT COURT ON  
MARCH 14, 2024 AT 11:57 AM  
LYNNETTE COE, CLERK  
RECORDED BY: JBR

## PURCHASE OPTION AGREEMENT

THIS PURCHASE OPTION AGREEMENT (this "Agreement"), made and entered into this the 23 day of July, 2024 (the "Effective Date"), by and between WILLIAM KEPLINGER and STACIE SHAFFER HAVENS, joint tenants with the right of survivorship, (collectively "Seller"), and TOBACCO TRAIL SOLAR, LLC, a North Carolina limited liability company, or its designees, successors, and/or assigns ("Purchaser").

WITNESSETH:

THAT for and in consideration of [REDACTED] (the "Option Fee") and other good and valuable consideration paid to Seller by Purchaser, the receipt and sufficiency of which are acknowledged, and in further consideration of the mutual promises and conditions expressed below, Seller grants to Purchaser, its successors and permitted assigns, an option to purchase (the "Option"), at the price and subject to the terms, conditions and provisions set forth below, that certain tract or parcel of land, consisting of approximately One Hundred Eleven and 70/100 (111.70) acres commonly known as Tax Map ID No. 112 A 40, located in Prince Edward County, in the Commonwealth of Virginia as more particularly described on Exhibit A, together with all appurtenances, rights, interests, easements and privileges, and all other improvements located thereon (collectively, the "Property" and subject to Section 5 herein), LESS AND EXCEPT, approximately Sixteen and 00/100 (16.00) acres around the home as depicted on Exhibit A-1 (the "Reserved Lands").

NOW, THEREFORE, in consideration of the Option Fee and mutual covenants and provisions contained in this Option, and for other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the parties hereby agree as set forth below.

1. Option. Seller hereby grants the Option to Purchaser to purchase the Property. The purpose of this Option is to enable the Purchaser to develop, build and operate a solar photovoltaic power array, and/or an energy storage facility utilizing battery or other energy storage technology on the Property ("Proposed Development").

2. Purchase Price. The purchase price shall be [REDACTED] per Acre (defined below) (the "Purchase Price"). This price is a firm price, binding on the Seller. The Purchase Price SHALL NOT include the Option Money (defined below) paid to Seller by the Purchaser pursuant to Section 4 below in consideration of this Option. The exercise of the Option and purchase of the Property shall be subject to Purchaser's due diligence including approval by any financing parties for the Proposed Development. Notwithstanding the foregoing, Seller acknowledges that the Purchaser may obtain a survey of the Property, which shall set forth and conclusively establish (1) the metes and bounds legal description of the Property and (2) the final acreage of the Property, net of any unusable rights of way (the "Acreage", and each such acre, an "Acre"). At Purchaser's request, Seller and Purchaser shall promptly enter into an amendment to this Agreement which shall (i) replace Exhibit A to this Agreement with the final legal description of the Property contained in such ALTA survey and (ii) provide that all references to the "Property" in the Agreement and all terms and calculations in this Agreement based on the size of the Property (including, without limitation, the Purchase Price) shall be amended to mean and refer to the Property as re-defined in such amendment. Security interests in Purchaser's personal property, including without limitation the solar panels, inverters, racks, cables and other equipment comprising the Proposed Development, shall be governed exclusively by Title 8.9A of the Virginia

Commercial Code or any replacement or successor statute ("**Title 8.9A**"), notwithstanding the manner of attachment or installation of the Proposed Development on the Property.

3. **Inspections.** During the term of the Option and any extension hereof, Purchaser, or Purchaser's representative, shall have the right to enter said Property at any time, and shall have the right to make any required tests as to the adaptability of the Property for the Proposed Development (the "**Inspections**"). Purchaser may conduct or cause to be performed such studies, tests and inspections as Purchaser, in its sole discretion, deems necessary or appropriate to inform its decision whether or not to acquire the Property. Without limiting the foregoing, during the Option, Purchaser's consultants, contractors, agents and employees may access and enter the Property for purposes of preparing a survey and to conduct environmental and other physical inspections and testing, including by core sampling or other invasive methods; provided, that all such inspections, testing and surveying shall be performed in a good and workmanlike manner and Purchaser shall restore the Property to substantially the same condition in which it existed immediately prior to such inspections and testing. Purchaser assumes all responsibility for the acts of itself, its agents, representatives and contractors in exercising its rights under this Section and agrees to indemnify and hold Seller harmless from any damages resulting therefrom. This indemnification obligation of Purchaser shall survive the Closing (as defined herein) or earlier termination of this Agreement. Purchaser shall, at Purchaser's expense, promptly repair any damage to the Property caused by Purchaser's entry and on-site inspections. If, as a direct result of Purchaser's activities on the Property, timber or any portion of the timber growing on the Property are destroyed or unable to be harvested, Purchaser shall pay Seller damages in the amount equal to the fair market value of the timber which was destroyed or unable to be harvested. In the event the results of the Inspections are not satisfactory to Purchaser, in Purchaser's sole discretion, then Purchaser may terminate this Option by written notice to Seller and the parties shall have no further obligation to each other except for those obligations of the parties which expressly survive the termination of this Option.

4. **Term and Option Money.** The Option shall exist and continue for a period of five (5) years commencing on the Effective Date (the "**Option Period**"). Purchaser shall have ninety (90) days from the Effective Date during which time Purchaser shall have the exclusive right to conduct Purchaser's initial Inspections of the Property (the "**Initial Inspections Period**"). During the Initial Inspections Period, Purchaser shall have the right to terminate this Option at no cost to Purchaser except for the Option Fee provided for herein, which shall be retained by Seller in the event of such termination. Within ten (10) days of the expiration of the Initial Inspections Period, Purchaser shall pay to Seller [REDACTED] for year one of the Option Period (the "**Initial Option Money**"). Subsequent payments for year two through year five of the Option Period (the "**Additional Option Money**," and collectively with the Initial Option Money, the "**Option Money**") shall be paid according to the following schedule:



Each Additional Option Money payment shall be due and payable in annual installments on the respective anniversary of the Effective Date. The Option Money shall be non-refundable, and in the event the Option is exercised, the Option Money SHALL NOT be credited against the Purchase Price.

Purchaser shall pay to Seller, as and when due, the Option Money by ACH or wire transfer to a bank account provided to Seller pursuant to Section 12. Seller shall furnish Purchaser with a signed, completed ACH form within ten (10) days following the Effective Date and thereafter within thirty (30) days of any event causing a change in any of the information set forth in the previously delivered ACH

form, including any Transfer (defined below) of the Seller's interest in the Agreement. For convenience, a form ACH form is attached hereto as **Exhibit D**. Without limiting Purchaser's obligation to pay the Option Money or other amounts due to Seller hereunder, Purchaser shall be entitled to delay making any such payments to Seller until Seller has provided such completed ACH form.

Seller shall furnish Purchaser with a signed, completed form W-9 within ten (10) days following the Effective Date and thereafter within thirty (30) days of any event causing a change in any of the information set forth in the previously delivered W-9, including any Transfer (defined below) of the Seller's interest in the Agreement. Without limiting Purchaser's obligation to pay Option Fee or other amounts due to Seller hereunder, Purchaser shall be entitled to delay making any such payments to Seller until Seller has provided such W-9.

Additionally, Seller agrees to sign a Payment Authorization Agreement ("Authorization") in a format similar to the example attached hereto as **Exhibit E** stating their desired distribution of payments. The Authorization will supersede any other obligation to tender payments under this Agreement. Purchaser shall have no obligation to investigate the accuracy of any information provided by Seller with regard to direction or allocation of payments and shall be entitled to rely on Seller's representations of such. Seller shall indemnify and hold Purchaser harmless for losses or other damages of any kind arising from Purchaser's payment of Option Fees or other amounts as so directed.

For clarification only, if a payment is delayed in accordance with this **Section 4**, such delay shall not invalidate or affect an otherwise valid extension of the Option Term or cause Purchaser to be in default under this Agreement or cause interest to accrue.

5. **Property.**

(a) During the Option Term, Purchaser may purchase the Property for the Proposed Development (the "**Option Property**").

(b) **Timber.** Prior to the exercise of the Option, Seller and Purchaser shall mutually agree upon the net (after harvesting) fair market value of any harvestable and marketable timber Purchaser needs to remove to accommodate the Proposed Development (the "**Timber**"), which value shall be based on a written estimate from a Virginia licensed forester with substantial and verifiable experience in the field of timber appraisal and harvesting. Within thirty (30) days of exercise of the Option, Purchaser shall pay to Seller the agreed upon fair market value of the Timber.

6. **Title and Due Diligence Items.** Promptly following the Effective Date, and in no event later than the expiration of the Initial Inspections Period, Seller shall inform Purchaser of any and all known encumbrances affecting the Property, including but not limited to liens, easements, restrictions, covenants, leases (recorded or unrecorded), and any parties, other than Seller, in possession of any portion of the Property. Purchaser may obtain a title report regarding the Property and shall provide a copy of said title report to Seller within thirty (30) days of receipt thereof. Upon Purchaser's request, Seller shall cooperate with Purchaser in removing any encumbrances on the Property revealed by said title report that are objectionable to Purchaser.

(a) Within three (3) days of the Effective Date, Seller shall provide to Purchaser, at Purchaser's address set forth in **Section 12** hereof, copies of any permits, plans, specifications, approval, declarations, surveys, reports (including but not limited to any Phase I and Phase II environmental reports and zoning resolutions and ordinances), license agreements and/or title insurance policies, concerning the Property, in Seller's possession or reasonable control, and not previously provided to Purchaser.



(b) During the Option Period, Seller shall not further encumber the Property or any part thereof, or sell, convey, assign, lease, or otherwise transfer any interest therein (or suffer or permit the occurrence of any such actions) without Purchaser's prior written consent.

7. Rezoning and Land Use Change. In the event that the Property will require a different zoning classification, re-parceling in the tax records of the city or county where the Property is located, and/or land use change in order to permit the Proposed Development, Seller agrees to cooperate with Purchaser in acquiring any necessary approvals, consents, authorizations, and/or permits from the applicable governing unit. Purchaser shall be solely responsible for the cost of any such rezoning, re-parceling, and/or land use change.

8. Easements. Seller shall grant to Purchaser, at no additional cost, an access easement as may be needed for the Proposed Development over property owned or controlled by Seller adjacent to the Property (the "Adjacent Property"). The location(s) of any easement on the Adjacent Property shall be subject to Seller's consent, not to be unreasonably withheld. Any easements affecting the Property or the Adjacent Property shall be confirmed in writing and recorded in the land records of Prince Edward County.

9. Exercise Option and Closing.

(a) Purchaser may exercise the Option at any time during the Option Period by providing Seller with notice as provided in this Agreement.

(b) Upon exercise of the Option, the Parties shall execute the Purchase Contract in the form substantially similar to the form attached hereto as **Exhibit B**.

(c) The Parties shall close on the Option Property within sixty (60) days after the exercise of the Option or such other date as mutually agreed upon by the Parties.

(d) At the closing of the sale and purchase of the Property (the "Closing"), Seller shall deliver those items to Purchaser listed in Section 6.2 of the Purchase and Sale Agreement entered into by the parties for the purchase and sale of the Property.

(e) At Closing, Seller shall pay any and all deferred taxes, and any interest thereon, due as of the date of Closing.

10. Damage or Condemnation Prior to Closing. Seller agrees to give Purchaser prompt written notice of any fire or other casualty affecting the Property between the Effective Date and the date of Closing or of any actual or threatened taking or condemnation of all or any portion of the Property. If prior to the Closing there shall occur any fire, casualty, notice of taking or condemnation of all or any portion of the Property, then, in any such event, Purchaser, as its option, may terminate its obligations under this Agreement by written notice given to Seller within ten (10) days after Purchaser has received the notice referred to above or at the Closing, whichever is earlier, and neither party shall have any further right or obligation hereunder. If Purchaser does not so elect to terminate its obligations under this Agreement, then the Closing shall take place as provided herein and, at Purchaser's option, Seller either shall assign, transfer and set over to Purchaser all of Seller's right, title and interest in and to any insurance proceeds or awards that may be made for such casualty or taking (and Seller will pay any insurance deductible applicable to the casualty insurance), or Seller shall agree with Purchaser for a reduction in the Purchase Price based on the extent of the casualty or taking.

11. Termination. Purchaser may terminate the Option by providing written notice to Seller as provided in this Agreement no less than five (5) days before the effective date of such termination. Upon such termination, Seller shall retain any installments of the Option Money due and payable prior to the

effective date of the termination and the parties shall have no further obligation to each other except for the obligations of the parties which expressly survive the termination of the Option.

12. **Notices.** Any notice or other communications hereunder shall be in writing and shall be deemed to have been given (unless otherwise set forth herein), if delivered in person, deposited with an overnight express agency, fees prepaid, or mailed by United States express, certified or registered mail, postage prepaid, return receipt requested, to the parties at the following addresses, or to such other address as shall be later provided in writing by one party to the other:

(a) As to Seller:

William Keplinger and Stacie Shaffer Havens  
316 Dempseys Road  
Meherrin, VA 23954

(b) As to Purchaser:

Tobacco Trail Solar, LLC  
800 Taylor Street, Suite 200  
Durham, NC 27701  
(919) 960-6015  
Attn: Asset Management Department  
Email: assetmanagement@stratacleanenergy.com

As or at such other address as a party may designate in writing.

13. **Confidentiality.** Seller shall keep in strict confidence and shall not disclose to third parties, other than Seller's counsel: (i) its dealings with Purchaser and Purchaser's intentions and actions regarding the Proposed Development, (ii) the execution of this Agreement, or (iii) the commercial terms set forth in this Agreement, unless Purchaser consents in writing to such disclosure.

14. **Entire Agreement.** This Agreement and any exhibits contain the entire agreement of the parties and there are no representations, inducements or other provisions other than those expressed in writing. All changes, additions or deletions to this Agreement must be in writing and signed by each party. Any and all references to Seller or Purchaser shall be deemed to include their respective successors, heirs or assigns (and in the case of Purchaser, permitted assigns).

15. **Assignment.** The rights of Purchaser to the Option are fully assignable and shall be binding on Purchaser's successors and assigns. The rights and obligations of Seller hereunder shall inure to, and be binding on, Seller's successors and assigns.

16. **Authority.** Seller has full power and authority to enter into this Agreement and to perform all of its obligations hereunder, and that its acts hereunder and as contemplated have been duly authorized by all requisite action; that consummation of this transaction on the part of Seller will not conflict with, or breach, any condition or provision of, or constitute a default under, the terms of any contract, mortgage, lien, lease, agreement, instrument or judgment by which Seller is bound.

17. **Option of Record and Exclusivity.** This Agreement shall not be recorded; however, within ten (10) days following Purchaser's request, Purchaser and Seller shall execute a memorandum of this Agreement in recordable form and in the same form as set forth in Exhibit C attached to this Agreement. At Purchaser's option, Purchaser may record the memorandum of purchase option agreement in the Clerk's Office of the Circuit Court of the City or County where the Property is situated at Purchaser's sole cost and

expense. Seller shall not enter into any agreement with any other party during the Option Period whereby Seller agrees to sell, lease, or otherwise encumber the Property. Purchaser shall have the sole and exclusive right during the Option Period to purchase the Property.

18. Governing Law. This Agreement shall be governed by Virginia law.

19. Time is of the Essence. Time is of the essence in connection with every provision of this Agreement.

20. Failure to Close. Purchaser shall be entitled to specific performance of this Agreement in the event Seller wrongfully fails to perform its obligations hereunder. In the event Purchaser, following exercise of the Option, fails to close within the time required hereby, Purchaser acknowledges that Seller may retain the Option Money, which shall be Seller's sole and exclusive remedy for such failure to close by Purchaser.

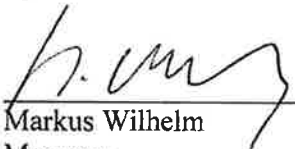
[END OF TEXT. SIGNATURE PAGES FOLLOW]

IN WITNESS WHEREOF, Seller and Purchaser have executed this Agreement on the date set for below and effective as of the Effective Date.

**PURCHASER:**


**TOBACCO TRAIL SOLAR, LLC,**  
a North Carolina limited liability company

By: Strata Manager, LLC,  
a North Carolina limited liability company,  
its Manager

By:   
Name: Markus Wilhelm  
Title: Manager  
Date: 7/23/24


**SELLER:**

**WILLIAM KEPLINGER**

  
Date: 6/25/24

**SELLER:**

**STACIE SHAFFER HAVENS**

  
Date: 6/25/24



**EXHIBIT A**

**LEGAL DESCRIPTION OF PROPERTY**

All that certain tract or parcel of land located in Prince Edward County, Virginia, containing approximately 111.70 acres, more or less, and commonly identified by the County Assessor as Tax Map ID No. 112 A 40, and being the same tract or parcel or land conveyed to Landlord by that certain Deed dated March 8, 2021, and recorded in the Clerk's Office of the Prince Edwards County Circuit Court on March 19, 2021 as Instrument Number 202100601, and being more particularly described therein as follows:

ALL THAT CERTAIN TRACT OR PARCEL OF LAND, lying and being in Hampden District, Prince Edward County, Virginia, containing 113.2 acres, less 1.5 acres included in right-of-way of Secondary Highways and being shown on plat of Ralph P. Hines, C.L.S., dated October 3, 1975, a copy of which is recorded in Plat. Book 3, Page 161 (now Plat Cabinet A, Slide A-68) in the Clerk's Office or the Circuit Court or Prince Edward County, Virginia.

LESS and EXCEPT that certain parcel of land conveyed to the Commonwealth or Virginia in Deed Book 265, at page 1-13, and being bounded generally, now or formerly, on the South by property of William Dempsey, on the West by property of U. S. Gypsum, on the North by Bush River and Secondary Highway 634 and on the East by Secondary Highway 721.

BEING the same property conveyed to Lewis E Wilkerson Jr. by deed from Prince Edward Investors, LLC, dated December 21, 2010 and recorded December 27, 2010 in the Clerk's Office of the Circuit Court, Prince Edward County, Virginia as Instrument. 201002203.

LESS AND EXCEPT approximately 16.00 acres surrounding the home as depicted below on Exhibit A-1.

**END OF EXHIBIT A**

**EXHIBIT A-1**

**DEPICTION OF THE RESERVED LANDS**



**END OF EXHIBIT A-1**

**EXHIBIT B**

**FORM OF PURCHASE AND SALE AGREEMENT**

**PURCHASE AND SALE AGREEMENT**

THIS PURCHASE AND SALE AGREEMENT (this "**Agreement**") is made and entered into this \_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_, by and between \_\_\_\_\_ ("**Seller**"), and TOBACCO TRAIL SOLAR, LLC, a North Carolina limited liability company ("**Purchaser**").

**WITNESSETH:**

WHEREAS, Purchaser desires to purchase certain real property from Seller, and Seller has agreed to sell such property to Purchaser; and

WHEREAS, the parties desire to provide for said purchase and sale on the terms and conditions hereinafter set forth.

NOW, THEREFORE, for and in consideration of the foregoing premises, the mutual covenants and agreements set forth herein and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the parties hereto do hereby agree as follows:

1. **DEFINITIONS AND MEANINGS.** In addition to any other terms whose definitions are fixed and defined by this Agreement, each of the following defined terms, when used in this Agreement with an initial capital letter, shall have the meaning ascribed thereto by this Section:

"**Agreement**" means this Purchase and Sale Agreement, together with all exhibits attached hereto.

"**Closing**" means the consummation of the purchase and sale contemplated by this Agreement by the deliveries required under **Section 6** hereof.

"**Closing Date**" means the time and date, established under **Section 6.1** hereof, when the purchase and sale contemplated by this Agreement is to be consummated, as such date may be extended by mutual agreement of the parties or pursuant to the provisions of this Agreement.

"**Effective Date**" means the date on which this Agreement is duly executed by Purchaser and Seller; such date shall be inserted in the preamble on the first page of this Agreement.

"**Intended Use**" means the development, construction, and operation of a solar photovoltaic power array, which may include an energy storage facility utilizing battery or other energy storage technology, either stand-alone or in connection with a photovoltaic power array, on the Real Property.

"**Real Property**" means those certain tracts or parcels of real property generally shown on **Exhibit A** attached hereto and incorporated herein by this reference, to be more specifically shown on a survey, and expressly including any easements benefitting such real property, and any and all other rights and appurtenances pertaining to such real property.

"**Purchase Price**" means the amount which Purchaser shall pay to consummate the purchase and sale of the Real Property as provided in **Section 3** hereof.

“**Title Matter**” and “**Title Matters**” mean any mortgages, liens, financing statements, security interests, easements, leases, restrictive covenants, agreements, options, claims, clouds, encroachments, rights, taxes, assessments, mechanics’ or materialmans’ liens (inchoate or perfected), liens for federal or state income, estate or inheritance taxes and other encumbrances of any nature whatsoever, whether existing of record or otherwise, together with any and all matters of any kind or description, including, without limitation, matters of survey and any litigation or other proceedings affecting the Real Property or Seller and which affect title to the Real Property, or the ability, right, power and authority of Seller to convey to Purchaser fee simple, good and marketable and insurable title to the Real Property, in accordance with the terms of this Agreement.

2. **SALE AND PURCHASE.** Seller agrees to sell the Real Property to Purchaser on the terms and conditions contained in this Agreement, and Purchaser agrees to purchase the Real Property from Seller on the terms and conditions contained in this Agreement.

3. **PURCHASE PRICE.** The Purchase Price for the Real Property shall be \_\_\_\_\_ Thousand and no/100 Dollars (\$\_\_\_\_\_,000.00). The Purchase Price includes the sum of \_\_\_\_\_ Dollars (\$\_\_\_\_\_) paid by Purchaser to Seller pursuant to that certain Option Agreement dated \_\_\_\_\_, 20\_\_ (the “**Option Money**”). The Purchase Price less the Option Money shall be paid by Purchaser to Seller not later than 5:00 p.m. eastern time on the Closing Date by wire transfer of immediately available federal funds, subject to prorations, adjustments, and credits as otherwise specified in this Agreement.

4. **TITLE.**

4.1 **Satisfaction of Monetary Liens.** Notwithstanding anything herein to the contrary, Seller shall be obligated to remove or discharge any mortgage or other monetary lien affecting the Real Property; provided however, that Seller may, at its option, remove or discharge any such liens from the proceeds to be paid to Seller at the Closing of this transaction.

4.2 **No Additional Encumbrances.** Seller will not create or allow any additional encumbrances on the Real Property after the Effective Date.

5. **SELLER’S REPRESENTATIONS AND WARRANTIES.**

5.1 **Seller’s Representations and Warranties.** Seller represents and warrants to Purchaser, as follows:

5.1.1 Seller is a valid Virginia limited liability company or individual and has the right, power and authority to enter into this Agreement, and the right, power and authority to convey the Real Property in accordance with the terms and conditions of this Agreement.

5.1.2 Seller has no knowledge of, and has received no written notice of, any pending action by any governmental authority or agency having the power of eminent domain, which might result in any part of the Real Property being taken by condemnation or conveyed in lieu thereof. Seller shall, promptly upon receiving any such notice, give Purchaser written notice thereof.

5.1.3 Seller has no knowledge of, and has received no written notice of, any action, suit or proceeding pending or threatened in writing against, by or affecting Seller’s right to transfer the Real Property or the title of the Real Property.



5.1.4 Neither the entry into nor the performance of, or compliance with, this Agreement (i) has resulted in, or will result in, any violation of, or (ii) is or will be in conflict with, or (iii) has resulted in, or will result in, the creation of any mortgage, lien, encumbrance or other charge upon the Real Property pursuant to, or (iv) constitutes or will constitute a default under any permit, judgment, decree, order, statute, rule or regulation applicable to the Seller or to the Real Property.

5.1.5 There are no rights of first refusal, options, or any other purchase rights in favor of any entity or person(s) other than Purchaser which are in force with respect to the Real Property.

5.1.6 There are no unwritten or unrecorded leases, easements, licenses, or agreements of any kind or nature, including but not limited to service agreements, management agreements or brokerage agreements made by Seller, which affect or encumber title to the Real Property.

5.1.7 Seller has no knowledge of and has received no written notice of any special improvement assessments for sidewalk, paving, water, sewer or other public improvements on the Real Property.

5.1.8 All bills for labor, services, materials and utilities and taxes which are in any way connected with or arising from the ownership of the Real Property by Seller, or any portion thereof, are current, except that rollback taxes have not been assessed and therefore are not paid at this date.

5.1.9 There are no current or pending tax appeals with respect to any portion of the Real Property.

5.1.10 All licenses and permits issued to Seller affecting the Real Property are expressly disclosed on the attached **Exhibit B**.

5.1.11 There is no pending or, to Seller's knowledge, threatened litigation, arbitration, administrative hearing or governmental proceeding that could reasonably be expected to adversely affect the Real Property or the transactions contemplated by this Agreement.

5.1.12 No hazardous materials have been located, released, stored, treated, generated, transported to or from, disposed of, or allowed to escape on the Real Property, including, without limitation, the surface and subsurface waters of the Real Property by Seller. Seller has never received written notice or other communication and has no knowledge concerning: (a) any current outstanding governmental investigation of the Real Property; (b) any alleged violation of any governmental requirement, environmental law, regulation or ordinance relating to the Real Property; or (c) any alleged liability (including claims, suits, investigations or inquiries) associated with the presence or suspected presence of any toxic or hazardous material on the Real Property in violation of applicable law.

5.1.13 To Seller's knowledge, the Real Property is in full compliance with all applicable zoning and use requirements and there is no proceeding pending or, to Seller's knowledge, threatened to change the zoning status of the Real Property, unless approved by or pursued by Purchaser.

5.2 Purchaser's Representations and Warranties. Purchaser represents and warrants that:

5.2.1 Purchaser (i) is a limited liability company duly organized and validly existing under the laws of the State of North Carolina, and is duly authorized and qualified to do all things required of it under this Agreement; (ii) has authority and power to enter into this Agreement and consummate the transaction contemplated herein; and (iii) has the authority to execute and deliver this

Agreement and all documents in connection with the purchase and sale of the Real Property as contemplated herein.

5.2.2 The execution and entry into this Agreement, the execution and delivery of the documents and instruments to be executed and delivered by Purchaser on the Closing Date and the performance by Purchaser of Purchaser's duties and obligations under this Agreement and of all other acts necessary and appropriate for the full consummation of the purchase and sale of the Real Property as contemplated herein, are consistent with and not in violation of, and will not create any default or adverse condition under, any contract, agreement or other instrument to which Purchaser is a party, or any judicial order or judgment of any nature by which Purchaser is bound. On the Closing Date, all necessary and appropriate action will have been taken by Purchaser authorizing and approving the execution of and entry into this Agreement, the execution and delivery by Purchaser of the documents and instruments to be executed by Purchaser on the Closing Date and the performance by Purchaser of Purchaser's duties and obligations under this Agreement and of all other acts necessary and appropriate for the consummation of the purchase and sale of the Real Property as contemplated herein.

## 6. THE CLOSING.

6.1 Closing Date. Closing shall occur on or before \_\_\_\_\_, 20\_\_\_. Purchaser and Seller may extend the Closing Date to such a date upon which they may mutually agree.

6.2 Deliveries At Closing. On the Closing Date, the Closing shall occur as follows, subject to satisfaction of all of the terms and conditions of this Agreement:

6.2.1 Seller shall convey the Real Property to Purchaser free and clear of liens, claims and encumbrances other than any Title Matters consented to by Purchaser, by general warranty deed, duly executed, witnessed and notarized and in recordable form (together with any required transfer tax affidavit therefor).

6.2.2 Seller shall execute and deliver to Purchaser a certificate of nonforeign status.

6.2.3 Seller shall execute and deliver to Purchaser a Virginia Department of Taxation Form R-5 or R-5E, as applicable.

6.2.4 Seller shall deliver satisfactory evidence of Seller's organization and formation, existence, good standing, if applicable, and authority to execute and deliver the deed.

6.2.5 Seller shall deliver possession of the Real Property to Purchaser immediately on the Closing Date, free and clear of all uses and occupancies, except for any Title Matters consented to by Purchaser.

6.2.6 Seller shall execute and deliver to Purchaser a bill of sale with customary warranties conveying good title to that portion of the Real Property that constitutes personal property, if any.

6.2.7 Seller shall deliver to Purchaser a closing statement duly executed by Seller setting forth the proration and adjustments required by this Agreement or otherwise agreed to by Purchaser and Seller.

6.2.8 Seller shall deliver to Purchaser any and all other documents necessary to transfer or assign to Purchaser any approvals, permits, or other development rights with respect to the Real Property, if any.

6.2.9 Seller shall deliver to Purchaser such lien waivers or other appropriate documentation (certified to Purchaser and to Purchaser's title insurance company) as are necessary for Purchaser to obtain a title insurance policy insuring the Real Property, subject only to any Title Matters consented to by Purchaser.

6.2.10 Seller shall execute and deliver to Purchaser a Seller's Affidavit stating there are no persons having the right to be in possession other than the Seller, and that there have been no improvements or repairs made to the Real Property by Seller for which full payment has not been made, containing such other matters as set forth in the title company's standard form owner's affidavit(s), and being otherwise in form reasonably satisfactory to Purchaser or Purchaser's Title Company.

6.2.11 In addition to all documents, instruments and Agreements expressly provided for herein, Purchaser and Seller shall execute and/or provide such other documents as may be reasonably required by the title insurance company or by counsel for either party to effectuate the purposes of this Agreement and for Purchaser to receive a title insurance policy to it subject only to the Permitted Exceptions.

6.3 Closing Costs. At the Closing, Seller and Purchaser shall respectively pay the following costs and expenses:

6.3.1 Seller shall pay (i) the fees and expenses of Seller's attorneys; (ii) the fees, expenses, and commissions of any brokers which may be payable as a consequence of the sale and purchase of the Real Property, (iii) deed stamps and excise tax, and any and all deferred taxes, and any interest thereon, due as of the date of Closing.

6.3.2 Purchaser shall pay all costs and expenses associated with the purchase and sale of the Real Property except for those fees which Seller has expressly agreed to pay pursuant to Section 6.3.1 including, but not limited to, (i) all costs and expenses associated with Purchaser's financing of the Real Property, including without limitation any recording and filing fees necessary for the recordation of a mortgage or other security instrument at Closing to secure Purchaser's obligation to pay all or a part of the Purchase Price for the Real Property; (ii) recording and filing fees for all recordable instruments to be executed and delivered by Seller at Closing; (iii) any inspection costs incurred by Purchaser (including, but not limited to, the cost of any title search, title commitment, and/or survey obtained by Purchaser in connection with this transaction, including any fees, costs, premiums, and other expenses therefor); (iv) the cost of any environmental assessments or reports obtained by Purchaser; and (v) the fees and expenses of Purchaser's attorneys.

6.4 Prorations.

6.4.1 All state, city and/or county ad valorem taxes due with respect to the Real Property for the calendar year of the Closing and other customarily pro-ratable items shall be prorated between Purchaser and Seller as of the Closing Date. If the actual amount of such taxes is not known as of such date, either because bills for the period in question have not been issued or because such bills cover real property in addition to the Real Property, the proration at the Closing will be based on the most current and accurate billing information available. Should such proration not be based on the actual amount of the ad valorem taxes or utility charges for the period in question and should such proration prove to be inaccurate with a discrepancy exceeding Five Hundred and 00/100 Dollars (\$500.00) upon receipt of the

actual bills for the Real Property, then either Seller or Purchaser may demand at any time within thirty (30) days after receipt of the actual invoice for such item, a payment from the other party correcting such mal-apportionment.

6.4.2 Purchaser shall be responsible for any rollback taxes assessed against the Real Property, and related interest and penalties, as a result of: i) any actions taken in accordance with the Option Agreement by Purchaser or Seller or ii) any action taken by Purchaser after the Closing. Purchaser agrees to indemnify Seller for such taxes and related interest and penalties. The provisions of this Section 6.4.2 shall survive the Closing or early termination of this Agreement.

6.4.3 Seller is responsible for and shall pay all management and/or operating expenses of Seller and all other expenses and charges in respect of Seller's ownership of the Real Property for all time periods through the day prior to Closing.

6.4.4 If any clerical mistakes in any adjustments or prorations or if any omissions in respect thereto resulting in a loss to either Purchaser or Seller exceeding Five Hundred and 00/100 Dollars (\$500.00) are discovered subsequent to the date of Closing, Purchaser and Seller agree to adjust such items between themselves. Such prorations and payments shall be determined and made by Seller and Purchaser, in good faith, as soon as practicable after Closing.

7. EASEMENTS. Any easements affecting the Real Property or the Seller Property shall be confirmed in writing and recorded in the land records of Prince Edward County.

8. DAMAGE OR CONDEMNATION PRIOR TO CLOSING.

8.1 Seller agrees to give Purchaser prompt written notice of any fire or other casualty affecting the Real Property between the Effective Date and the Closing Date or of any actual or threatened taking or condemnation of all or any portion of the Real Property. If prior to the Closing there shall occur any fire, casualty, notice of taking or condemnation of all or any portion of the Real Property; then, in any such event, Purchaser, at its option, may terminate its obligations under this Agreement by written notice given to Seller within ten (10) days after Purchaser has received the notice referred to above or at the Closing, whichever is earlier, and neither party shall have any further right or obligation hereunder. If Purchaser does not so elect to terminate its obligations under this Agreement, then the Closing shall take place as provided herein, and, at Purchaser's option, the Seller either shall assign, transfer and set over to Purchaser all of the Seller's right, title and interest in and to any insurance proceeds or awards that may be made for such casualty or taking (and Seller will pay any insurance deductible applicable to the casualty insurance), or Seller shall agree with Purchaser for a reduction in the Purchase Price based on the extent of the casualty or taking.

9. NO BROKERS. Seller and Purchaser warrant and represent that there are and will be no broker's or intermediaries' commissions or fees payable as a consequence of the sale and purchase of the Real Property, and do hereby indemnify, defend and hold harmless each of the other from and against the claims, demands, actions and judgments (including, without limitation, attorneys' fees and expenses incurred in defending any claims or in enforcing this indemnity) of any and all brokers, agents and other intermediaries alleging a commission, fee or other payment to be owing by reason of any dealings, negotiations or communications with the indemnifying party in connection with this Agreement or the sale and purchase of the Real Property. The provisions of this Section 9 shall survive the Closing.



10. ACCESS TO AND EXAMINATION OF THE PROPERTY.

10.1 Real Property Inspection. From and after the Effective Date, upon reasonable notice to Seller and at reasonable times, Purchaser, through agents, employees or contractors, may go upon the Real Property during normal business hours to make surveys and to conduct such soil, engineering, environmental and all other tests, investigations, inspections and analyses of the Real Property that Purchaser shall deem advisable. Purchaser shall pay all costs incurred in making such surveys, tests, inspections, analyses and investigations. Purchaser hereby agrees to indemnify and hold Seller harmless from and against any and all loss, cost or damage to the Real Property incurred by Seller arising out of actions taken by Purchaser or its agents, engineers or consultants. Purchaser shall promptly repair all damage to the Real Property arising from any such inspections or tests and shall restore the Real Property to the same condition existing immediately prior to such inspections and tests.

11. DEFAULT.

11.1 Seller's Default. In the event of Seller's default, failure, or refusal to perform hereunder, Purchaser may elect, at its option, (i) to obtain Seller's specific performance of this Agreement; or (ii) to terminate this Agreement by giving written notice of termination to Seller, after which Seller shall (i) return the Option Money to Purchaser and (ii) reimburse Purchaser for any actual costs or expenses incurred in connection with its examination of the Real Property, including reasonable attorney's fees. Purchaser, at its option, may elect to waive the performance of any condition, contingency or provision in Purchaser's favor set forth in this Agreement.

11.2 Purchaser's Default. In the event of Purchaser's default, failure, or refusal to perform hereunder, Seller may elect to terminate this Agreement by giving written notice of termination to Buyer, after which Seller shall be entitled to retain the Option Money and this Agreement shall be deemed null and void and of no further force or effect, and no party hereto shall have any further rights, obligations or liabilities hereunder. Seller hereby agrees that in the event of Purchaser's default, retention of the Option Money is Seller's sole remedy and Seller shall not be entitled to any additional penalty or to liquidated damages. Seller, at its option, may elect to waive the performance of any condition, contingency or provision in Seller's favor set forth in this Agreement.

12. CONDITIONS PRECEDENT.

12.1 Purchaser's Conditions.

12.1.1 Purchaser's obligations under this Agreement are subject only to and conditioned upon the satisfaction (or waiver by Purchaser) of the following conditions precedent:

(a) Purchaser's determination, in Purchaser's sole discretion prior to the Closing Date, that the Real Property is physically and economically acceptable to Purchaser. In the event that the Purchaser determines in its sole discretion, that the Real Property is not acceptable to the Purchaser for any reason or for no reason, then the Purchaser shall so notify the Seller before the Closing Date, and this Agreement shall be terminated and the parties shall have no further liability to one another.

(b) The representations and warranties of Seller set forth in **Section 5** of this Agreement will be materially true on and as of the Closing with the same effect as though made at such time.

(c) Seller's performance of its obligations set forth in this Agreement.

(d) Purchaser shall have obtained any rezoning, re-parceling, permitting, and/or land use changes necessary to permit the Intended Use on the Real Property. Seller agrees to cooperate with Purchaser in acquiring any such rezoning, re-parceling, permitting, and/or land use changes.

(e) Purchaser shall have caused the Real Property to be subdivided from the Seller Property. Seller agrees to cooperate with Purchaser in acquiring any necessary approvals, consents, authorizations, and/or permits from the applicable governing unit and obtaining such subdivision.

12.1.2 If any of the conditions precedent in Section 12.1.1 are not satisfied or waived by Purchaser on or prior to the Closing Date, then Purchaser may terminate this Agreement by written notice to Seller given on or prior to the Closing Date for the conditions precedent set forth in 12.1.1, in which event Seller shall retain the Option Money and the parties shall have no further obligation to each other except for those obligations that expressly survive the termination of this Agreement

12.2 **Seller's Conditions.** Seller's obligations under this Agreement are subject to and conditioned upon the satisfaction (or waiver by Seller) of the following conditions precedent:

(a) The representations and warranties of Purchaser set forth in **Section 5** of this Agreement will be materially true on and as of the Closing with the same effect as though made at such time, and Purchaser must have materially performed all obligations and complied with all covenants required in this Agreement to be performed or complied with by it prior to or at Closing.

(b) Purchaser's performance of its obligations set forth in this Agreement.

13. **GOVERNING LAW.** This Agreement shall be construed, interpreted and enforced in accordance with the internal laws of the Commonwealth of Virginia.

14. **NOTICES.** Any notices, requests or other communications required or permitted to be given hereunder shall be in writing and shall be delivered by hand, confirmed facsimile, nationally recognized courier (such as Federal Express) which maintains a record or receipt of delivery, or mailed by United States registered or certified mail, return receipt requested, postage prepaid and addressed to each party at its address as set forth below:

To Seller:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

To Buyer:

Tobacco Trail Solar, LLC  
800 Taylor Street, Suite 200  
Durham, NC 27701  
(919) 960-6015  
Attn: Asset Management Department  
Email: [assetmanagement@stratacleanenergy.com](mailto:assetmanagement@stratacleanenergy.com)

Any such notice, request or other communication shall be considered given or delivered, as the case may be, on the date of hand, overnight delivery, courier or email. Rejection or other refusal to accept or inability to deliver because of changed address of which no notice was given shall be deemed to be receipt of the notice, request or other communication. By giving at least five (5) days prior written notice thereof, any party may from time to time at any time change its mailing address hereunder.

15. ENTIRE AGREEMENT; MODIFICATION. This Agreement supersedes all prior discussions and agreements between Seller and Purchaser with respect to the Real Property and contains the sole and entire understanding between Seller and Purchaser with respect to the Real Property. All promises, inducements, offers, letters of intent, solicitations, agreements, commitments, representations and warranties heretofore made between such parties are merged into this Agreement. This Agreement cannot be modified or amended in any respect except by a written instrument executed by or on behalf of each of the parties to this Agreement.

16. CAPTIONS. All captions, headings, and any section or subsection numbers and letters, and other reference numbers or letters are solely for the purpose of facilitating reference to this Agreement and shall not supplement, limit or otherwise vary in any respect to the text of this Agreement.

17. SURVIVAL. Except as otherwise specifically provided herein, the representations, warranties and covenants made herein shall not survive Closing.

18. EXHIBITS. Each and every exhibit referred to or otherwise mentioned in this Agreement shall be made a part of this Agreement in the same manner and with the same effect as if each such exhibit were set forth in full and at length every time it is referred to or otherwise mentioned herein.

19. COUNTERPARTS. This Agreement may be executed in several counterparts, each of which shall constitute an original and all of which together shall constitute one and the same instrument.

20. REFERENCES. All references to Sections or Subsections will be deemed to refer to the appropriate Section or Subsection of this Agreement. Unless otherwise specified in this Agreement, the terms "herein," "hereof," "hereunder" and other terms of like or similar import, will be deemed to refer to this Agreement as a whole, and not to any particular Section or Subsection hereof. Words of any gender used in this Agreement will be held and construed to include any other gender, and words of a singular number shall be held to include the plural, and vice versa, unless the context requires otherwise.

21. WAIVER. Any condition or right of termination, cancellation or rescission granted by this Agreement to Purchaser or Seller may be waived by such party.

22. RIGHTS CUMULATIVE. Except as expressly limited by the terms of this Agreement, all rights, powers and privileges conferred hereunder are cumulative and not restrictive of those given by law.

23. ASSIGNMENT. This Agreement and the rights, duties, interests, and obligations of Purchaser hereunder may be assigned by Purchaser upon written notice to Seller. This Agreement and the rights, duties, interests and obligations of Seller hereunder may not be assigned by Seller without written consent of Purchaser, not to be unreasonably withheld.

24. SUCCESSORS AND ASSIGNS. Subject to the provisions of Section 24, this Agreement shall be binding upon and inure to the benefit of the parties hereto and their respective heirs, successors and permitted assigns.

25. FURTHER ASSURANCES. The parties hereto agree that they will each take such steps and execute such documents as may be reasonably required by the other party or parties to carry out the intents and purposes of this Agreement, including with respect to Seller's cooperation with any and all reasonable requirements of Purchaser's lender, as applicable.

26. CONFIDENTIALITY. Seller shall keep in strict confidence and shall not disclose to third parties, other than Seller's counsel: (i) its dealing with Purchaser and Purchaser's intentions and actions regarding the Proposed Development, (ii) the execution of this Agreement, or (iii) the commercial terms set forth in this Agreement, unless Purchaser consents in writing to such disclosure.

27. SEVERABILITY. In the event any provision or portion of this Agreement is held by any court of competent jurisdiction to be invalid or unenforceable, such holding will not affect the remainder hereof, and the remaining provisions shall continue in full force and effect at the same extent as would have been the case had such invalid or unenforceable provision or portion never been a part hereof.

*[Not an executable copy.]*



**EXHIBIT C**

**FORM OF MEMORANDUM OF PURCHASE OPTION AGREEMENT**

Recording requested by and  
when recorded mail to:

Tobacco Trail Solar, LLC 800  
Taylor Street, Suite 200 Durham,  
NC 27701  
Attn: General Counsel

Tax Map Number: \_\_\_\_\_  
Consideration paid for this Agreement: \$0.00\*

\*NOTE TO CLERK: Option Agreements are exempt from Recording Tax beyond actual consideration within the meaning of §58.1-807, by virtue of Tax Commissioner Ruling 84-178, Reg. 630-14-807 (Jan 1, 1984)

**MEMORANDUM OF PURCHASE OPTION AGREEMENT**

THIS MEMORANDUM OF PURCHASE OPTION AGREEMENT (this "Memorandum") is made, dated as of the dates below, to be effective as of [DATE OF POA] (the "Effective Date"), between [SELLER] a [entity type or marital status] ("Seller"), and **TOBACCO TRAIL SOLAR, LLC**, a North Carolina limited liability company ("Purchaser"), in light of the following facts and circumstances:

RECITALS:

WHEREAS, Seller and Purchaser, entered into a Purchase Option Agreement dated as of the Effective Date with respect to property more specifically described herein (as heretofore or hereinafter amended, restated, or supplemented from time to time, the "Option Agreement"); and

WHEREAS, Seller and Purchaser desire to set forth certain terms and conditions of the Option Agreement in a manner suitable for recording in the Clerk's Office, Circuit Court, \_\_\_\_\_ County, Virginia in order to provide record notice of the Option Agreement and Purchaser's rights in and to the land subject to the Option Agreement, as provided herein.

NOW, THEREFORE, in consideration of the mutual covenants contained in the Option Agreement, and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the parties hereto agree and stipulate as follows:

1. Description of Property. The land subject to the Option Agreement is described on Exhibit A attached hereto, and by this reference made a part hereof (the "Property").
2. Grant of Option. Pursuant to the terms of the Option Agreement, Seller has granted to Purchaser an option (the "Option") to purchase the Property on the terms and conditions set forth in the Option Agreement. The entire Option Agreement is hereby incorporated into this Memorandum by reference. Notwithstanding anything to the contrary contained herein, the provisions of this Memorandum do not in any way alter, amend, supplement, change, or affect the terms, covenants, or conditions of the Option Agreement, all of which terms, covenants, and conditions shall remain in full force and effect in accordance therewith. In the event of any conflict between the terms of this

Memorandum and the Option Agreement, the terms of the Option Agreement shall prevail.

3. Term of Option Agreement. Unless earlier terminated, as provided in the Option Agreement, the term of the Option is for a period of ( ) years beginning on the Effective Date. Closing of the transaction contemplated by the Option Agreement shall occur within ( ) days following Purchaser's exercise of the Option, in accordance with the Option Agreement, or as the parties may otherwise mutually agree. Upon expiration of said term, the Option and all rights of Purchaser to purchase the Property shall terminate and cease without any further action on the part of the parties.

4. Names and Addresses of Parties. The names and addresses of the parties to the Option Agreement are as follows:

Seller:

[NAME]

[ADDRESS]

[ADDRESS]

Purchaser:

Tobacco Trail Solar, LLC

c/o Solar Development

Holdings, LLC

800 Taylor Street, Suite 200

Durham, NC 27701

5. Successors and Assigns. The terms of this Memorandum and the Option Agreement are covenants running with the land and inure to the benefit of, and are binding upon, the parties and their respective successors and assigns, including all subsequent owners of all or any portion of the Property. References to Seller and Purchaser include their respective successors and assigns. References to the Option Agreement include any amendments thereto.

6. Miscellaneous. This Memorandum is executed for the purpose of recording in the Clerk's Office, Circuit Court, County, Virginia, in order to provide public record notice of the Option Agreement and Purchaser's rights in and to the land subject to the Option Agreement. All persons are hereby put on notice of and shall have a duty to inquire regarding the Option Agreement and all of the provisions thereof and the rights, title, interests, and claims of Purchaser in and to the Property during the term thereof. Any right, estate, claim, or interest in the Property first attaching to the Property and recorded from and after the Effective Date shall be subordinate to the terms of the Option Agreement. If Purchaser acquires fee simple title to any portion of the Property, Purchaser shall have the right, at Purchaser's option, to terminate any such subordinate right, estate, claim, or interest, at no cost or liability to Purchaser, or to accept title subject thereto. This instrument may for convenience be executed in any number of original counterparts, each of which shall be an original and all of which taken together shall constitute one instrument.

*[Not an executable copy.]*

**EXHIBIT A TO MEMORANDUM OF PURCHASE OPTION AGREEMENT**

**LEGAL DESCRIPTION OF PROPERTY**

EXHIBIT D

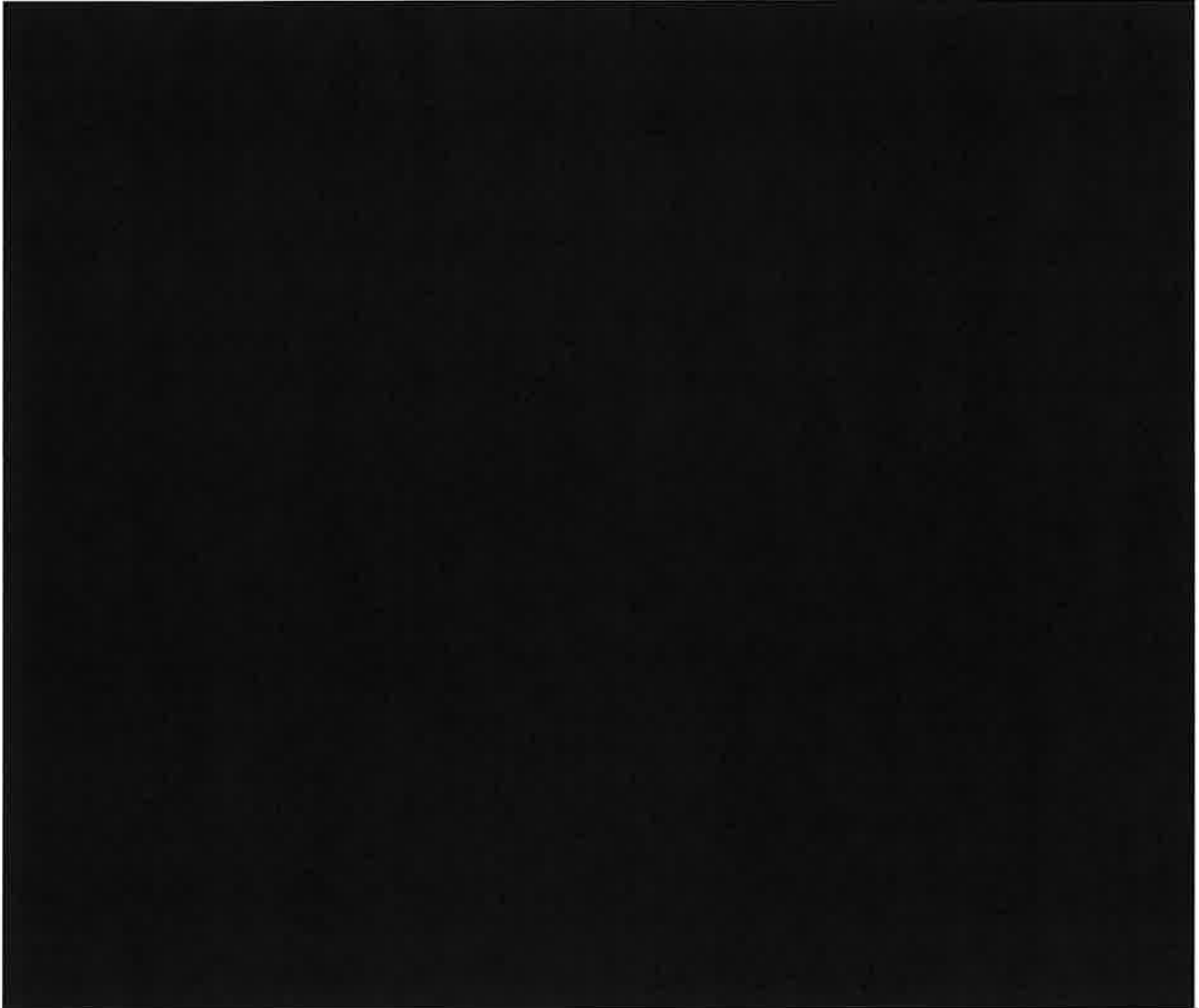
ACH AUTHORIZATION FORM





**EXHIBIT E**

**PAYMENT AUTHORIZATION AGREEMENT**



**Request for Taxpayer  
Identification Number and Certification**

► Go to [www.irs.gov/FormW9](http://www.irs.gov/FormW9) for instructions and the latest information.

Give Form to the  
requester. Do not  
send to the IRS.

A large black rectangular area covering the majority of the page, representing a redacted form. This area obscures all content that would typically be present in the main body of a W-9 form, including the taxpayer's name, address, and identification number.

**Request for Taxpayer  
Identification Number and Certification**

► Go to [www.irs.gov/FormW9](http://www.irs.gov/FormW9) for instructions and the latest information.

Give Form to the  
requester. Do not  
send to the IRS.

# VIRGINIA LAND RECORD COVER SHEET

Commonwealth of Virginia VA. CODE §§ 17.1-223, -227.1, -249

## FORM A – COVER SHEET CONTENT

Instrument Date: 7/23/2024

Instrument Type: OP

Number of Parcels: 1 Number of Pages: 8

[ ] City [X] County PRINCE EDWARD  
CIRCUIT COURT

Tax Exempt? VIRGINIA/FEDERAL CODE SECTION

[X] Grantor: §58.1-807

[X] Grantee: §58.1-807

Business/Name

(Area Above Reserved For Deed Stamp Only)

1 Grantor: KEPLINGER, WILLIAM

2 Grantor: HAVENS, STACIE SHAFFER

1 Grantee: TOBACCO TRAIL SOLAR, LLC, TOBACCO TRAIL SOLAR, LLC

Grantee:

Grantee Address

Name: TOBACCO TRAIL SOLAR, LLC TOBACCO TRAIL SOLAR, LLC

Address: 800 TAYLOR STREET, SUITE 200

City: DURHAM State: NC Zip Code: 27701

Consideration: \$0.00 Existing Debt: \$0.00 Actual Value/Assumed: \$0.00

PRIOR INSTRUMENT UNDER § 58.1-803(D):

Original Principal: \$0.00 Fair Market Value Increase: \$0.00

Original Book No.: Original Page No.: Original Instrument No.:

Prior Recording At: [ ] City [X] County Percentage In This Jurisdiction: 100%

Book Number: 2021 Page Number: 601 Instrument Number: 202100601

Parcel Identification Number/Tax Map Number: 112-A-40

Short Property Description:

Current Property Address: 316 DEMPSEYS ROAD

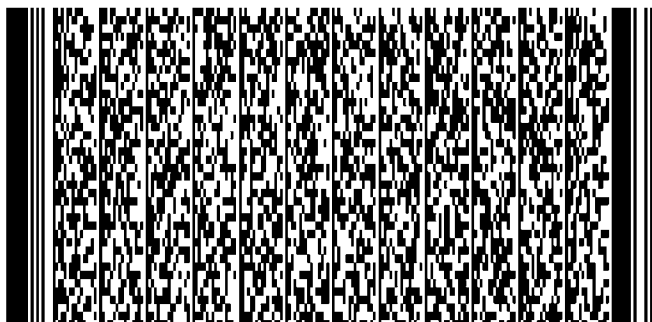
City: MEHERRIN State: VA Zip Code: 23954

Instrument Prepared By: TOBACCO TRAIL SOLAR, LLC Recording Paid By: TOBACCO TRAIL SOLAR, LLC

Recording Returned To: TOBACCO TRAIL SOLAR, LLC

Address: 800 TAYLOR STREET, SUITE 200

City: DURHAM State: NC Zip Code: 27701





Recording requested by and  
when recorded mail to:

Tobacco Trail Solar, LLC  
800 Taylor Street, Suite 200  
Durham, NC 27701  
Attn: General Counsel

Tax Map Number: 112 A-40

Consideration paid for this Agreement: \$0.00\*

\*NOTE TO CLERK: Option Agreements are exempt from Recording Tax beyond actual consideration within the meaning of §58.1-807, by virtue of Tax Commissioner Ruling 84-178, Reg. 630-14-807 (Jan 1, 1984)

### **MEMORANDUM OF PURCHASE OPTION AGREEMENT**

THIS MEMORANDUM OF PURCHASE OPTION AGREEMENT (this "Memorandum") is made, dated as of the dates below, to be effective as of July 23, 2024 (the "Effective Date"), between **WILLIAM KEPLINGER** and **STACIE SHAFFER HAVENS**, joint tenants with the right of survivorship, (collectively, "Seller"), and **TOBACCO TRAIL SOLAR, LLC**, a North Carolina limited liability company ("Purchaser"), in light of the following facts and circumstances:

#### **RECITALS:**

WHEREAS, Seller and Purchaser, entered into a Purchase Option Agreement dated as of the Effective Date with respect to property more specifically described herein (as heretofore or hereinafter amended, restated, or supplemented from time to time, the "Option Agreement"); and

WHEREAS, Seller and Purchaser desire to set forth certain terms and conditions of the Option Agreement in a manner suitable for recording in the Clerk's Office, Circuit Court, Prince Edward County, Virginia in order to provide record notice of the Option Agreement and Purchaser's rights in and to the land subject to the Option Agreement, as provided herein.

NOW, THEREFORE, in consideration of the mutual covenants contained in the Option

Agreement, and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the parties hereto agree and stipulate as follows:

1. Description of Property. The land subject to the Option Agreement contains approximately One Hundred Eleven and 70/100 (111.70) acres and is described on Exhibit A attached hereto, and by this reference made a part hereof (the "Property"), LESS AND EXCEPT, approximately Sixteen and 00/100 (16.00) acres around the home as depicted on Exhibit A-1 (the "**Reserved Lands**").

2. Grant of Option. Pursuant to the terms of the Option Agreement, Seller has granted to Purchaser an option (the "Option") to purchase the Property on the terms and conditions set forth in the Option Agreement. The entire Option Agreement is hereby incorporated into this Memorandum by reference. Notwithstanding anything to the contrary contained herein, the provisions of this Memorandum do not in any way alter, amend, supplement, change, or affect the terms, covenants, or conditions of the Option Agreement, all of which terms, covenants, and conditions shall remain in full force and effect in accordance therewith. In the event of any conflict between the terms of this Memorandum and the Option Agreement, the terms of the Option Agreement shall prevail.

3. Term of Option Agreement. Unless earlier terminated, as provided in the Option Agreement, the term of the Option is for a period of five (5) years beginning on the Effective Date. Closing of the transaction contemplated by the Option Agreement shall occur within sixty (60) days following Purchaser's exercise of the Option, in accordance with the Option Agreement, or as the parties may otherwise mutually agree. Upon expiration of said term, the Option and all rights of Purchaser to purchase the Property shall terminate and cease without any further action on the part of the parties.

4. Names and Addresses of Parties. The names and addresses of the parties to the Option Agreement are as follows:

Seller:

William Keplinger  
Stacie Shaffer Havens  
316 Dempseys Road  
Meherrin, VA 23954

Purchaser:

Tobacco Trail Solar, LLC  
c/o Solar Development Holdings, LLC  
800 Taylor Street, Suite 200  
Durham, NC 27701

5. Successors and Assigns. The terms of this Memorandum and the Option Agreement are covenants running with the land and inure to the benefit of, and are binding upon, the parties and their respective successors and assigns, including all subsequent owners of all or any portion of the Property. References to Seller and Purchaser include their respective successors and assigns. References to the Option Agreement include any amendments thereto.

6. Miscellaneous. This Memorandum is executed for the purpose of recording in the Clerk's Office, Circuit Court, Prince Edward County, Virginia, in order to provide public record notice of the Option Agreement and Purchaser's rights in and to the land subject to the Option Agreement. All persons are hereby put on notice of and shall have a duty to inquire regarding the Option Agreement and all of the provisions thereof and the rights, title, interests, and claims of Purchaser in and to the Property during the term thereof. Any right, estate, claim, or interest in the Property first attaching to the Property and recorded from and after the Effective Date

shall be subordinate to the terms of the Option Agreement. If Purchaser acquires fee simple title to any portion of the Property, Purchaser shall have the right, at Purchaser's option, to terminate any such subordinate right, estate, claim, or interest, at no cost or liability to Purchaser, or to accept title subject thereto. This instrument may for convenience be executed in any number of original counterparts, each of which shall be an original and all of which taken together shall constitute one instrument.

*[End of text. Signature pages follow.]*

IN WITNESS WHEREOF, Seller and Purchaser have executed this Memorandum on the date set forth below and effective as of the Effective Date.

**SELLER:**

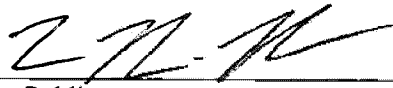
  
**WILLIAM KEPLINGER**

STATE OF VIRGINIA

COUNTY OF Prince Edward

The undersigned, a Notary Public in and for the County and State aforesaid, DOES HEREBY CERTIFY that **William Keplinger**, personally known to me to be the same person whose name is subscribed to the foregoing instrument, appeared before me this day in person and acknowledged that he signed, sealed and delivered the same instrument as his own free and voluntary act for the uses and purposes therein set forth.

WITNESS my hand and official stamp or seal, this 25<sup>th</sup> day of June, 2024.

  
Notary Public  
Printed Name: Nicholas Koban-Hogue

My Commission Expires: 12/31/2027

[AFFIX NOTARIAL STAMP OR SEAL]





**SEPARATE SIGNATURE PAGE TO MEMORANDUM OF PURCHASE OPTION  
AGREEMENT**

**SELLER:**

  
**STACIE SHAFFER HAVENS**

STATE OF VIRGINIA

COUNTY OF Prince Edward

The undersigned, a Notary Public in and for the County and State aforesaid, DOES HEREBY CERTIFY that **Stacie Shaffer Havens**, personally known to me to be the same person whose name is subscribed to the foregoing instrument, appeared before me this day in person and acknowledged that she signed, sealed and delivered the same instrument as her own free and voluntary act for the uses and purposes therein set forth.

WITNESS my hand and official stamp or seal, this 25<sup>th</sup> day of June, 2024.

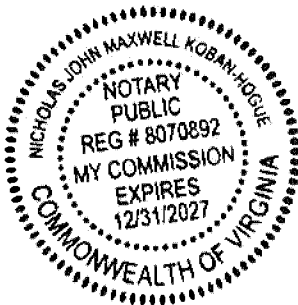


Notary Public

Printed Name: Nicholas Koban-Hogue

My Commission Expires: 12/31/2027

[AFFIX NOTARIAL STAMP OR SEAL]

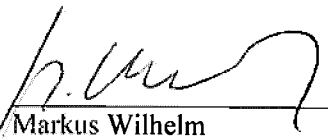


**SEPARATE SIGNATURE PAGE TO MEMORANDUM OF PURCHASE OPTION  
AGREEMENT**

**PURCHASER:**

**TOBACCO TRAIL SOLAR, LLC,**  
a North Carolina limited liability company

By: Strata Manager, LLC,  
a North Carolina limited liability company,  
its Manager

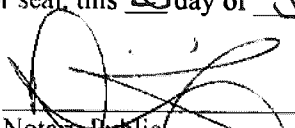
By:   
Name: Markus Wilhelm  
Title: Manager

STATE OF NORTH CAROLINA

COUNTY OF DURHAM

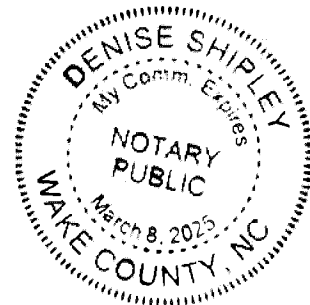
I certify that the following person personally appeared before me this day, acknowledging to me that he signed the foregoing instrument: Markus Wilhelm, Manager of Strata Manager, LLC the Manager of **Tobacco Trail Solar, LLC**.

WITNESS my hand and official stamp or seal, this 23 day of July, 2024.

  
Notary Public  
Printed Name: Denise Shipley

My Commission Expires: 3.8.2025

[AFFIX NOTARIAL STAMP OR SEAL]



**EXHIBIT A**

**LEGAL DESCRIPTION OF PROPERTY**

All that certain tract or parcel of land located in Prince Edward County, Virginia, containing approximately 111.70 acres, more or less, and commonly identified by the County Assessor as Tax Map ID No. 112 A 40, and being the same tract or parcel or land conveyed to Landlord by that certain Deed dated March 8, 2021, and recorded in the Clerk's Office of the Prince Edwards County Circuit Court on March 19, 2021, as Instrument Number 202100601, and being more particularly described therein as follows:

ALL THAT CERTAIN TRACT OR PARCEL OF LAND, lying and being in Hampden District, Prince Edward County, Virginia, containing 113.2 acres, less 1.5 acres included in right-of-way of Secondary Highways and being shown on plat of Ralph P. Hines, C.L.S., dated October 3, 1975, a copy of which is recorded in Plat. Book 3, Page 161 (now Plat Cabinet A, Slide A-68) in the Clerk's Office or the Circuit Court or Prince Edward County, Virginia.

LESS and EXCEPT that certain parcel of land conveyed to the Commonwealth or Virginia in Deed Book 265, at page 1-13, and being bounded generally, now or formerly, on the South by property of William Dempsey, on the West by property of U. S. Gypsum, on the North by Bush River and Secondary Highway 634 and on the East by Secondary Highway 721.

BEING the same property conveyed to Lewis E Wilkerson Jr. by deed from Prince Edward Investors, LLC, dated December 21, 2010 and recorded December 27, 2010 in the Clerk's Office of the Circuit Court, Prince Edward County, Virginia as Instrument. 201002203.

LESS AND EXCEPT approximately 16.00 acres surrounding the home as depicted below on Exhibit A-1.

**END OF EXHIBIT A**

**EXHIBIT A-1**

**DEPICTION OF THE RESERVED LANDS**



**END OF EXHIBIT A-1**

INSTRUMENT 202401211  
RECORDED IN THE CLERK'S OFFICE OF  
PRINCE EDWARD COUNTY CIRCUIT COURT ON  
AUGUST 1, 2024 AT 03:15 PM  
LYNNETTE COE, CLERK  
RECORDED BY: JBR



## GROUND LEASE AGREEMENT

**THIS GROUND LEASE AGREEMENT** (this “**Lease**”) is made and entered into by and between **JOHN WILLIAM VAUGHAN**, only child of Freya Anne Goetz Vaughan, deceased, an unmarried individual, (“**Landlord**”) and **TOBACCO TRAIL SOLAR, LLC**, a North Carolina limited liability company (“**Tenant**”), effective as of the 7th day of March, 2024 (such date, the “**Effective Date**”). Landlord and Tenant are sometimes referred to individually herein as a “**Party**” and, collectively as the “**Parties**”.

### RECITALS:

WHEREAS, Landlord is the owner of certain real property being a portion of the real property inherited by John W. Vaughan upon the death of Freya Ann Goetz Vaughan in Prince Edward County (the “**County**”), Commonwealth of Virginia (the “**State**”), consisting of approximately One Hundred Forty-Six and 75/100 (146.75) acres as more particularly described on Exhibit A attached hereto (the “**Land**”).

WHEREAS, Tenant and/or its affiliates wish to develop, build and operate a solar photovoltaic power array, which may include an energy storage facility utilizing battery or other energy storage technology (the “**System**”) for the Intended Use (defined below).

WHEREAS, Tenant desires to lease all of the Land (the foregoing, together with the Land, collectively, the “**Premises**”) from Landlord for the Intended Use and for the purposes and on the terms set forth in this Lease.

NOW THEREFORE, in consideration of the amounts to be paid to Landlord by Tenant and the other promises and premises set forth herein, the receipt and sufficiency of which is hereby conclusively established, Landlord and Tenant hereby agree as follows:

### AGREEMENT

1. **Recitals.** The Recitals are incorporated in and made a part of this Lease as if fully set forth in this Lease.

2. **Leased Premises.** For good and valuable consideration, the receipt of which is hereby acknowledged by Landlord, Landlord hereby grants to Tenant: an exclusive lease of the Premises, together with all rights and benefits appurtenant thereto, and improvements thereon, and any water rights and subsurface/mineral rights pertaining thereto, upon the terms and subject to the conditions set forth in this Lease. Notwithstanding the foregoing, the Premises do not and shall not include Tenant’s Property (defined in Section 7 below). Landlord acknowledges that the final size of the Premises to be leased by Tenant hereunder will be determined, in Tenant’s sole discretion, following the Effective Date and will be dependent on the final System design and size as well as other System development requirements. Once Tenant has determined the final size of the Premises it desires to lease from Landlord, Tenant may obtain an ALTA survey of the Premises, which shall set forth and conclusively establish (1) the metes and bounds legal description of the Premises and (2) the final acreage of the Premises, net of any unusable rights of way (the “**Acreage**”, and each such acre, an “**Acre**”). At Tenant’s request, Landlord and Tenant shall promptly enter into an amendment to this Lease which shall (i) replace Exhibit A to this Lease with the final legal description of the Premises contained in such ALTA survey and (ii) provide that all references to the “**Premises**” in the Lease and all terms and calculations in this Lease based on the size of the Premises (including, without limitation, Rent and Tenant’s Portion of Taxes (as each are defined below)) shall be amended to mean and refer to the Premises as re-defined in such amendment. Security interests in Tenant’s

personal property, including without limitation the solar panels, inverters, racks, cables and other equipment comprising the System, shall be governed exclusively by Title 8.9A of the Virginia Commercial Code or any replacement or successor statute ("**Title 8.9A**"). notwithstanding the manner of attachment or installation of the System on the Land.

3. **Lease Term.** The term of this Lease (the "**Term**") shall include, as applicable, the Development Term, the Construction Term and the Operations Term (as each term is defined below).

(a) **Development Term.** The initial term of this Lease shall commence on the Effective Date and continue until the fifth anniversary of the Effective Date (the "**Development Term**") unless (i) Tenant elects to commence the Construction Term pursuant to Section 3(b) below, or (ii) this Lease is earlier terminated as provided herein.

(i) During the Development Term, Tenant (and its agents) shall be permitted access to the Premises at reasonable times and upon reasonable notice to Landlord, for purposes of conducting (at Tenant's expense) any and all investigations or testing of the Premises as Tenant may deem necessary, appropriate or convenient, including without limitation, the surveying or investigation of environmental, biological, cultural, historical, boundary or geotechnical matters. In the event Tenant's activities during the Development Term damage any crops then in commercial cultivation on the Premises and, as a result of such damage such crops are no longer commercially viable, Tenant shall pay to Landlord, or Landlord's tenant as applicable, a one-time payment equaling the then current fair market value of any crops damaged by Tenant, provided that such value must be in excess of One Thousand Dollars (\$1,000.00). For avoidance of doubt, Tenant shall not commence construction activities (including grading) on the Premises during the Development Term (provided that any work performed by or on behalf of the servicing utility company to upgrade or install electrical equipment in preparation for Tenant's construction of the System and any inspections and investigations performed during the Development Term shall not be deemed to be construction activities prohibited by this Section 3(a)(i)).

(ii) Landlord shall provide to Tenant any of the following in Landlord's possession or control, within five (5) days following the Effective Date: (1) copies of any deeds, leases, easements, licenses or other documents granting any third-party a right to possess or otherwise enter upon or use all or any portion of the Premises (including, without limitation, farm leases and documents governing mineral rights), (2) any notice of violation of any law or regulation, including zoning laws applicable to the Premises, (3) any "Phase I" and other environmental assessment reports regarding the Premises, (4) Landlord's most recent survey and title insurance policy relating to the Premises, (5) any governmental permits for the Premises, (5) any other surveys, physical condition reports, notices regarding zoning or government action with respect to the Premises.

(iii) At no out-of-pocket cost to Landlord, Landlord shall reasonably assist and cooperate with Tenant (including, if and when necessary or required, signing applications and related documentation for governmental approvals) in applying for, complying with or obtaining any governmental permits and approvals, exemptions, waivers, special exceptions, building permits, environmental reviews or any other approvals required for the financing, construction, installation, replacement, relocation, maintenance, operation and/or removal of the System, including without limitation signing necessary affidavits with regard to subdivision claims of exemption and agreeing to comply with the terms of applicable subdivision requirements for any future leases or conveyances.

(iv) Tenant may terminate the Lease for any reason or no reason during the Development Term, exercisable upon written notice from Tenant to Landlord of its election to terminate (the "**Initial Termination Notice**") delivered on or prior to the expiration of the Development Term. If Tenant does not deliver either the Initial Termination Notice or the Construction Notice (defined below) on

or prior to the expiration of the Development Term, this Lease shall automatically terminate sixty (60) days following the expiration of the Development Term.

(b) **Construction Term.** If Tenant notifies Landlord in writing (which notwithstanding Section 16 may be by electronic mail, facsimile, or commencement of payment of Rent as provided in Section 4(b) (the **Construction Notice**) of Tenant's election to commence construction activities at the Premises and extend the Term of this Lease into the Construction Term (defined below), then without any further action by the Parties, the Term of this lease shall be automatically extended for an additional period of twenty-four (24) months (the **"Construction Term"**). Tenant shall identify the date that the Construction Term commences in the Construction Notice (the **"Construction Commencement Date"**). If Tenant does not deliver the COD Notice (defined below) on or prior to the expiration of the Construction Term, this Lease shall automatically be extended into the Initial Operations Term as described in Section 3(c) below.

(c) **Initial Operations Term.** Upon Tenant's written notice to Landlord that the System has achieved "commercial operation" (as defined in the relevant agreement between Tenant and the ultimate purchaser of power generated by the System) (the **"COD Notice"**), or upon the expiration of the Construction Term in the event COD Notice is not provided, then without any further action by the Parties the Term of this Lease shall be automatically extended for a term of thirty (30) years (the **"Initial Operations Term"**) expiring on the day preceding the thirty-first (31 st) anniversary of the Operations Commencement Date (defined below), unless the Initial Operations Term is earlier terminated or further extended pursuant to the provisions of this Lease. The **"Operations Commencement Date"** means the date Tenant delivers the COD Notice to Landlord or expiration of the Construction Term, as applicable, in accordance with this Section 3(c).

(d) **Extended Operations Term.** Tenant shall have the option to extend the Initial Operations Term for one (1) additional ten (10) year period (**"Extended Operations Term"**) upon written notice delivered to Landlord prior to the expiration of the Initial Operations Term or the then current Extended Operations Term, as applicable. The Initial Operations Term and the Extended Operations Term(s) are collectively referred to herein as the **"Operations Term"**.

4. **Rent.** During each applicable portion of the Term of this Lease, Tenant shall pay to Landlord, as and when due, the following annual rent (collectively, "Rent") by ACH or wire transfer to a bank account provided to Tenant pursuant to Section 16. Landlord shall furnish Tenant with a signed, completed form ACH within ten (10) days following the Effective Date and thereafter within thirty (30) days of any event causing a change in any of the information set forth in the previously delivered ACH form, including any Transfer (defined below) of the Landlord's interest in the Lease. For convenience, a form ACH form is attached hereto as Exhibit F. Without limiting Tenant's obligation to pay Rent or other amounts due to Landlord hereunder, Tenant shall be entitled to delay making any such payments to Landlord until Landlord has provided such completed ACH form. For clarification only, if a payment is delayed in accordance with this Section 4, such delay shall not invalidate or affect an otherwise valid extension of the Term (including the Construction Term, Initial Operations Term or any Extended Operations Term) or cause Tenant to be in default under this Lease or cause interest to accrue.

(a) **Development Term.** Rent for each year during the Development Term shall be as follows:

DEVELOPMENT TERM YEAR	RENT
1	\$ [REDACTED]
2	\$ [REDACTED]
	\$ [REDACTED]
4	\$ [REDACTED]
5	\$ [REDACTED]

Rent during the Development Term shall be payable as follows: (i) during the first year of the Development Term, Rent shall be due on the date that is one hundred twenty (120) days following the Effective Date; and (ii) during the remainder of the Development Term, Rent shall be payable in advance in annual installments starting on the first (1<sup>st</sup>) anniversary of the Effective Date with subsequent payments of Rent due on the successive anniversaries of the Effective Date. Rent for the Development Term shall be non-refundable, except that if the Construction Term commences before the applicable Development Term year has elapsed, the pro rata portion of the Development Term Rent allocable to the unelapsed portion of the applicable Development Term year shall be applied to the Construction Term Rent described in Section below. Any other provision of this Lease to the contrary notwithstanding, if Tenant terminates this Lease on or before the date which is one hundred twenty (120) days after the Effective Date, then no Rent shall be due or payable under this Lease.

(b) Construction Term. Rent for each year during the Construction Term shall be [REDACTED] Dollars (\$[REDACTED]) per acre of Buildable Land and \$[REDACTED] per acre of Setback Land (prorated for any fractional Acre, subject to escalation in accordance with Section 4(c)(ii) below), payable in advance in quarterly installments with the first payment of Rent due on the Construction Commencement Date and subsequent payments of Rent due every three (3) months thereafter during the Construction Term, provided that any installment of Construction Term Rent for a period less than three (3) months shall be prorated on a daily basis. For purposes of this Lease, Buildable Land shall mean any portion of the Premises identified as built-upon land for equipment or environmental regulation controls on the final conditional use permit site plan and Setback Land shall mean any portion of the Premises identified as required of setback on the final conditional use permit site plan. For the avoidance of doubt, in the event the Acreage is reduced (a) in connection with Tenant's final determination of the size of the Premises pursuant to Section 2, or (b) due to a Taking pursuant to Section 13, Rent shall be recalculated accordingly.

(c) Initial Operations Term.

(i) Rent during the Initial Operations Term (and Extended Operation Terms, if applicable) shall be [REDACTED] Dollars (\$[REDACTED]) per acre of Buildable Land and \$[REDACTED] per acre of Setback Land (prorated for any fractional Acre, subject to escalation in accordance with Section 4(c)(ii) below), payable in advance in semi-annual installments with the first payment of Rent for the Initial Operations Term due on the Operations Commencement Date and subsequent payments of Rent due every six (6) months thereafter during the Initial Operations Term (or Extended Operations Term, if applicable); provided, that any installment of Rent for a period of less than six (6) months shall be prorated on a daily basis. For the avoidance of doubt, in the event the Acreage is reduced (a) in connection with Tenant's final determination of the size of the Premises pursuant to Section 2, or (b) due to a Taking pursuant to Section 13, Rent shall be recalculated accordingly.

(ii) Starting on the fifth anniversary of the Operations Commencement Date and for each annual anniversary thereafter, the annual Rent shall be increased by [REDACTED] (%) over the Rent otherwise then in effect.

(iii) For purposes of clarification only, Tenant and Landlord acknowledge and agree that Rent shall be determined in accordance with this Section 4 during the entire Term of the Lease, including any Extended Operations Term(s).

(d) Conditions to Tenant's Obligation to Pay Rent. Tenant's obligation to continue this Lease is at all times expressly subject to Tenant's (i) obtaining, and the ongoing effectiveness of, any agreement, instrument, license, permit, approval or consent that is necessary for the lawful operation of the System and the distribution and sale of the electricity generated by it, including without limitation an interconnection agreement and power purchase agreement with the applicable utility company, and (ii) continued ability to



operate the System in an economically feasible manner, both as determined by Tenant in its sole discretion. Notwithstanding anything to the contrary contained herein, Tenant shall have the absolute right to terminate this Lease at any time after the tenth (10<sup>th</sup>) anniversary of the Operations Commencement Date by delivering written notice to Landlord, upon which notice this Lease shall terminate effective immediately.

(e) W-9. Landlord shall furnish Tenant with a signed, completed form W-9 within ten (10) days following the Effective Date and thereafter within thirty (30) days of any event causing a change in any of the information set forth in the previously-delivered W-9, including any Transfer (defined below) of the Landlord's interest in the Lease. For convenience, a form W-9 is attached hereto as Exhibit C. Without limiting Tenant's obligation to pay Rent or other amounts due to Landlord hereunder, Tenant shall be entitled to delay making any such payments to Landlord until Landlord has provided such W-9. For clarification only, if a payment is delayed in accordance with this Section 4(e), such delay shall not invalidate or affect an otherwise valid extension of the Term (including the Construction Term, Initial Operations Term or any Extended Operations Term).

5. Utilities. During the Term, Tenant shall arrange and pay for all public utility services used on the Premises by Tenant.

6. Crops and Timber.

(a) Prior to the delivery by Tenant of the Construction Notice, Landlord may plant farm crops or enter into a lease for the planting of farm crops on the Premises and shall notify Tenant of the same along with a copy of such lease (provided that any such lease shall include a provision stating that such lease shall automatically terminate upon receipt of the Construction Notice from Tenant, subject to Tenant's obligations with respect to payment for the value of any planted crops as set forth in this Section 6). If Landlord or such tenant have planted crops before Tenant delivers the Construction Notice, Tenant may, in Tenant's sole discretion, elect to (i) delay the commencement of the Construction Term until the earlier of (a) the date that any crops actually planted on the Premises are harvested, or (b) one year following the date of such notice (even if such extension would result in the commencement of the Construction Term occurring after the expiration of the Development Term), or (ii) commence the Construction Term and pay the owner of any crops actually planted an amount equal to the fair market value of the portion of any crop that cannot reasonably be harvested and sold solely as a result of the anticipated construction of the System on the Premises. Notwithstanding anything herein to the contrary, if Tenant delivers the Construction Notice prior to April 1 of a calendar year, then Landlord shall not permit the planting of farm crops on the Premises from or after the date of the Construction Notice, and Tenant shall not owe Landlord any payment pursuant to this Section 6(a).

(b) From and after the Effective Date and for so long as this Lease is in effect, Landlord may not conduct any timbering operations on the Premises without the express written approval of Tenant. If Tenant, in Tenant's sole discretion, grants Landlord permission to conduct any timbering operations on the Premises, Landlord shall comply with all applicable federal, state and local laws and regulations, including Tenant's permits, applicable to the removal of timber from the Premises, and indemnify, defend and hold harmless Tenant from any losses, damages or claims of any nature asserted or imposed against Tenant as a result of Landlord's timber operations conducted on the Premises.

(c) Tenant may, but shall not be obligated to, cause timber to be removed from all or any portion of the Premises, and in such case Tenant shall be solely responsible for the cost of such timber removal and, provided that Tenant has fulfilled the requirements of Section 6(d) below, Tenant shall be entitled to keep any proceeds from the sale of any such timber. Tenant shall also bear the costs of stump and debris removal and preparation of the Premises for installation of the System.

(d) Within thirty (30) days of the Effective Date, Landlord and Tenant shall mutually agree on a timber appraiser who is respected and knowledgeable about the value of timber in the geographic area of the Premises (the "Timber Appraiser"). Prior to Tenant beginning any timbering operations on the Premises, Tenant shall provide to the Timber Appraiser a map of the Premises showing the areas of timber that Tenant intends to clear (the "Subject Timber"). The Timber Appraiser shall then perform an appraisal and determine the appraised value of the Subject Timber (the "Appraised Value"). The Timber Appraiser shall also provide an estimate of the standard costs to clear and sell the Subject Timber (the "Logging Costs"). The Appraised Value minus the Logging Costs shall be the "Net Timber Value". Within thirty (30) days of Tenant completing timbering operations on the Premises, Tenant shall pay to Landlord the Net Timber Value, which Net Timber Value shall be prorated in the event Tenant does not harvest all of the Subject Timber. Tenant shall be responsible for timely payment of the Timber Appraiser's fee.

7. **Tenant's Property.** The System and its constituent parts, together with any and all improvements or other features constructed on, or personal property installed or placed on the Premises by or for Tenant, including without limitation, machinery, fixtures, trade fixtures, equipment, racking, inverters, cables, solar panels, batteries, the System and other personal property (collectively, "**Tenant's Property**") are personal property within the meaning of Title 8.9A of the Virginia Commercial Code or any replacement or successor statute ("**Title 8.9A**") regardless of the manner of attachment to the Premises. Tenant's Property is and shall at all times during the Term be deemed to be the property of Tenant (subject to any Transfer in accordance with Section 24(a)), to be removed at Tenant's expense upon the expiration or earlier termination of the Term. The creation, attachment and perfection of security interests in Tenant's Property shall be governed exclusively by Title 8.9A. For the avoidance of doubt and without limiting the foregoing, Landlord hereby waives all rights to distraint, possession or landlord's lien against Tenant's Property, if any, and shall not cause the creation of, or attachment to, Tenant's Property of any liens (including mechanics' and judgment liens) or other encumbrances. For the avoidance of doubt, Landlord is not responsible for payment of any Taxes assessed on Tenant's Property. Landlord further acknowledges that Tenant is the exclusive owner of all economic benefits generated by Tenant's Property, including, but not limited to, any real property tax rebates or abatements, any carbon credits, any production energy or investment tax credits, incentives, renewable energy credits or tradable renewable certificates, and any other federal, state, and/or local benefits effective now or in the future.

8. **Use and Occupancy.**

(a) **Intended Use.** Tenant shall use the Premises for the Intended Use (defined below), or any other lawful uses that are incidental to, or not inconsistent with, the Intended Use. For purposes of this Lease, the term "**Intended Use**" shall mean the exclusive right of Tenant to use the Premises for the following purposes with respect to the System (i) development (including, without limitation, performing such investigations, studies and other due diligence activities as may be necessary to determine the feasibility of developing the System on the Premises), (ii) construction (including, without limitation, grading, grubbing, seeding, removal of improvements and other obstructions, and installing the System and related utility lines and equipment), (iii) operation (including, without limitation, the unobstructed flow of sunlight to the System for the conversion of solar energy into electrical energy, and the collection, storage, transmission and sale of such electrical energy, including, without limitation, energy storage facilities utilizing battery or other energy storage technologies either stand-alone or in connection with a solar photovoltaic power array), and (iv) maintenance (including, without limitation, using, monitoring, repairing, replacing, relocating and removing, from time to time, the System and related utility lines, the measurement and analysis of the performance of the System, and performing periodic vegetative maintenance at the Premises).

(b) **Exclusive Possession.** Subject to Landlord's rights with respect to the Premises during the Development Term, Landlord shall deliver sole and exclusive physical possession of the Premises to Tenant

and Tenant shall have the right to control and restrict access to the Premises in its sole discretion from and after the commencement of the Construction Term. Commencing with the Construction Term and continuing during the remaining Term, neither Landlord nor any agent of Landlord shall, without a Tenant representative, enter upon any portion of the Premises except as specifically permitted hereunder.

9. **Tenant's Alteration, Removal and Construction Rights.** Tenant may, at its expense and without the consent of Landlord, (i) use, remove, demolish and/or alter any existing improvements, structures, trees, shrubs, plants or other vegetation, or other impediment or obstructions on the Premises, or (ii) install or construct any fencing security devices, weather stations and/or signage that Tenant deems reasonably necessary for the Intended Use; provided, that such use, removal, demolition, alterations, additions, improvements and changes are made in compliance with applicable laws. Landlord shall sign and deliver all applications and other documents, and shall take all such other actions, as are reasonably requested by Tenant in connection with obtaining any re-zonings, waivers of setback requirements, variances or other approvals as Tenant shall deem necessary or desirable in connection with the operation of the Premises.

10. **End of Term Decommissioning.**

(a) Within three hundred sixty five (365) days following the expiration or earlier termination of the Term (the "**Decommissioning Period**"). Tenant shall decommission the System, remove Tenant's Property, vacate the Premises and restore the Premises to substantially the condition in which it existed as of the Construction Commencement Date, subject to any alterations that are unrelated to Tenant's use or occupancy of the Premises and any clearing (including tree removal) and grubbing of the Premises. The removal of Tenant's Property and restoration of the Premises shall be completed in a manner that does not unreasonably and adversely affect the suitability of the Premises for farming purposes. For avoidance of doubt, notwithstanding the termination or expiration of this Lease, Tenant shall continue to pay Rent (in the amount due at such time, prorated on a daily basis) to Landlord during the Decommissioning Period, provided, if Tenant fails to vacate the Premises prior to the expiration of the Decommissioning Period, Landlord shall be entitled to holdover rent in the amount equal to one hundred twenty-five percent (125%) of Rent for the final year of the Term, prorated on a daily basis, for each day that Tenant fails to so vacate the Premises following the expiration of the Decommissioning Period.

(b) Security to assure Tenant's performance of its decommissioning obligations pursuant to Section 10(a) may be included in the conditional use or other permits for the System. In the event no permit provides for such security, Tenant agrees to provide such security in favor of Landlord in the amount of one hundred twenty five percent (125%) of the Decommissioning Cost as described below in Section 10(c) (the "**Decommissioning Security**") and in the form of either (i) an escrow account into which Tenant will deposit one-fifth (1/5) of the required security amount each year beginning five (5) years before the scheduled expiration date of any applicable power purchase agreement and continuing until fully funded, and to which Landlord will have access if and to the extent Tenant fails to perform its decommissioning obligations; or (ii) a letter of credit or performance bond in favor of Landlord provided as of the date that is five (5) years before the scheduled expiration date of any applicable power purchase agreement entered into by Tenant, which can be used in the event and to the extent Tenant fails to perform its decommissioning obligations set forth above. Landlord may use such Decommissioning Security to reimburse itself for costs of decommissioning it incurs. Notwithstanding the foregoing, if a public utility company that has an investment grade credit rating with Moody's and/or Standard and Poor's acquires the System, the Decommissioning Security will no longer be required to be issued or maintained. If the System is subsequently sold or the utility company's credit rating is downgraded to below investment grade, the Decommissioning Security requirement will be reinstated.



(c) Tenant shall provide a cost estimate to decommission the System (the "**Decommissioning Cost**") prepared by a Virginia licensed engineer experienced with solar systems, which shall include the following: (1) the estimated cost to decommission the System as set forth in Section 10(a) above (the "**Gross Cost**"); and (2) the estimated resale and salvage values associated with Tenant's Property (the "**Salvage Value**"). The Decommissioning Cost formula is Gross Cost minus Salvage Value equals Decommissioning Cost. Tenant shall deliver the opinion of the Decommissioning Cost to Landlord on or before the date that is 180 days prior to the date that Tenant is required to first provide the letter of credit, bond or escrow account as set forth above. Tenant shall provide a revised and updated Decommissioning Cost estimate on every 5<sup>th</sup> anniversary of the date of the first Decommissioning Cost estimate, which shall account for inflation, cost and value changes, and advances in decommissioning technologies and approaches, and, if different than previously estimated, the amount of security provided by Tenant shall be adjusted to equal the new estimated Decommissioning Cost within sixty (60) days of the end of the applicable lease year.

11. **Taxes.**

(a) Development Term. Tenant shall have no obligation to pay Taxes (defined below) during the Development Term.

(b) Construction Term and Operations Term. During the Construction Term and Operations Term, Tenant shall pay Tenant's Portion (calculated in accordance with this Section 11(b)) of the Tax Bill (defined below), applicable to each tax year or part thereof which falls within the Term. Landlord shall provide Tenant with copies of all invoices, bills and notices (collectively, "**Tax Bills**") regarding all real estate and ad valorem taxes and assessments imposed or levied on the Premises by any applicable government taxing authority (each, a "**Tax**", and collectively, "**Taxes**"), within five (5) days of Landlord's receipt of any such Tax Bill. Tenant shall remit payment directly to the taxing authority for any Tax Bill that Tenant receives; provided, that if the Premises are comprised of less than 100% of a larger tax parcel ("**Larger Parcel**"), Tenant shall pay the portion of the Tax Bill allocable to the Premises (such portion, "**Tenant's Portion**"), which portion shall bear the same relationship to the total Tax Bill as the Premises bears to the Larger Parcel. Tenant shall also pay the portion of the tax bill allocable to the Larger Parcel in the amount of and to the extent the tax on the Larger Parcel has increased solely due to Tenant's use of the Premises. The parties shall include and confirm Tenant's Portion in the amendment to Lease to be entered into pursuant to Section 2 of this Lease. Without limiting the foregoing, if Landlord fails to pay the balance of any Tax Bill when due, Tenant shall have the right, but not the obligation, to pay the balance of such Tax Bill on Landlord's behalf and offset any amounts so paid from future payments of Rent. Tenant's obligations hereunder are subject to Tenant's right to contest pursuant to Section 11(d).

(c) Rollback Taxes. Without limiting Section 11(b), if Tenant's use of the Premises results in the revocation of a classification of the Premises as "agricultural land", "forestry land" or similar classification, thereby triggering liability for "rollback" taxes, Tenant shall pay the rollback tax liability, together with any related interest or penalties, other than interest and/or penalties arising from Landlord's failure to timely provide Tenant with a copy of such Tax Bill.

(d) Tax Bill Contests. Tenant shall have the right, in its sole discretion, to contest by legal proceedings (which may be brought in the name(s) of Landlord and/or Tenant where appropriate or required), the validity or amount of any assessments or taxes for which Tenant is responsible hereunder. Upon Tenant's reasonable request, Landlord shall in all respects cooperate with Tenant in any such contest and take such reasonable actions and do such things as necessary or desirable to facilitate any action by Tenant to contest any Tax Bill or the assessed value of the property on which they are levied, or to otherwise seek the abatement of Taxes applicable to the Premises. Tenant shall have the right, but not the obligation, to pursue any such action.



12. **Fire or Other Casualty.** If during the Term, all or part of the Premises or Tenant's Property are damaged by fire, wind, flood, earthquake or other casualty, with the result that, in Tenant's sole discretion, it would not be commercially or economically reasonable or desirable to repair and restore the Premises and/or Tenant's Property, as applicable, then Tenant may terminate this Lease by providing Landlord with written notice of the same and vacating the Premises in compliance with Section 10 hereof. Tenant, or its successor in interest, shall be entitled to 100% of any proceeds from casualty insurance policies maintained by Tenant.

13. **Condemnation.**

(a) **Total Taking.** If during the Term, all or part of the Premises and/or Tenant's Property shall be subject to condemnation, the exercise of the power of eminent domain, or other governmental taking (the foregoing, collectively, a "**Taking**") with the result that, in Tenant's sole discretion, the unaffected portion of the Premises is insufficient or otherwise unsuitable for Tenant's continued use of the Premises and/or Tenant's Property for the Intended Use or such other use as existed at the time of the Taking (a "**Total Taking**"), then Tenant may terminate this Lease by providing Landlord with written notice of the Total Taking, the Lease shall terminate effective as of the date set forth in such notice, and Tenant shall vacate the Premises in accordance with Section 10.

(b) **Partial Taking.** If during the Term, all or part of the Premises and/or Tenant's Property shall be subject to a Taking that, in Tenant's sole determination, does not constitute a Total Taking (a "**Partial Taking**") then Tenant shall notify Landlord of the occurrence of the Partial Taking and (i) concurrently with such Taking this Lease shall terminate with respect to the affected portion of the Premises, which Tenant shall vacate in accordance with Section 10, (ii) this Lease shall continue in full force and effect with respect to the unaffected portion of the Premises and (iii) the Acreage shall be reduced for each Acre subject to the Taking. For purposes of clarification only, Tenant shall be entitled to remove Tenant's Property from any portion of the Premises that is subject to a Taking.

(c) **Tenant's Right to Participate in Proceedings.** Tenant, at Tenant's own expense, shall have the right but not the obligation to participate in any proceedings with respect to a Taking; in such event Landlord shall cooperate with Tenant to facilitate such participation. Neither Landlord nor Tenant shall enter voluntarily into any binding agreement or settlement related to a Total Taking or a Partial Taking without the prior written consent of the other party, which consent shall not be unreasonably withheld, conditioned or delayed.

(d) **Proceeds.** The proceeds of any Total Taking or Partial Taking shall be apportioned as between Landlord and Tenant as follows: First, to Landlord, an amount equal to the fair market value of the Land subject to the Taking and calculated with reference to the value of the Land for agricultural use. Second, to Tenant, such amounts as are necessary to compensate Tenant for the loss of use of the Premises so Taken, including consequential losses. If after giving effect to the foregoing there remain any apportioned proceeds, they will be equitably apportioned as between Landlord and Tenant.

14. **Default.** The failure by a Party hereto to perform its obligations under this Lease, if not remedied within thirty (30) calendar days of written notice of such failure from the other Party, or if such failure is not capable of being remedied within thirty (30) days, remedial action is not commenced and diligently pursued within such thirty (30) day period, shall constitute a default hereunder (a "**Default**"). Following an event of Default, the non-defaulting party may pursue any available remedies in law or in equity, subject to Section 25(d). Notwithstanding the foregoing, the non-defaulting party shall take commercially reasonable measures to mitigate damages resulting from such Default. Tenant may, in its sole discretion, elect to cure a Default on the part of Landlord, in which case Tenant shall be entitled to offset future

payments of Rent or other amounts due to Landlord hereunder with the reasonable and documented out of pocket expenses incurred by Tenant in pursuing to cure such Default. Notwithstanding the foregoing, Landlord expressly waives the right to terminate this Lease for any non-monetary Default by Tenant, and Landlord's only remedy in such case shall be a cause of action at law to seek damages.

15. **Indemnifications.** Landlord shall indemnify and hold Tenant harmless from any and all third-party damages or claims that Tenant may be compelled to pay or defend that are directly attributable to the actions or omissions of Landlord or any of Landlord's agents or employees, except to the extent caused by the gross negligence or willful misconduct of Tenant. Tenant agrees to indemnify and hold Landlord harmless from any and all third-party damages or claims that Landlord may be compelled to pay or defend in connection with this Lease or Tenant's use of the Premises, except to the extent caused by the gross negligence or willful misconduct of Landlord or any of Landlord's agents or employees.

16. **Notices.** All notices, elections, demands, requests, and other communications hereunder shall be in writing, signed by the party making the same and shall be sent by certified or registered United States mail, postage prepaid, or by national overnight courier service which provides tracking and acknowledgement of receipts, addressed to:

If to Landlord: John W. Vaughan  
673 West Patrick Henry Highway  
Keysville, VA 23947  
(434) 736-8433  
Email: \_\_\_\_\_

If to Tenant: Tobacco Trail Solar, LLC  
c/o Strata Solar Services, LLC  
800 Taylor Street, Suite 200  
Durham, NC, 27701  
(919) 960-6015  
Attn: Asset Management Department  
Email: [assetmanagement@tobaccoenergys.com](mailto:assetmanagement@tobaccoenergys.com)

with a copy to Tobacco Trail Solar, LLC  
c/o Strata Solar Development, LLC  
800 Taylor Street, Suite 200  
Durham, NC, 27701  
(919) 960-6015  
Attn: General Counsel  
Email: [legal@stratacleanenergy.com](mailto:legal@stratacleanenergy.com)

or at such other address as may hereafter be designated in writing by either Party, or by any other method if actually received (including electronic communication at the e-mail addresses noted above). Such notices shall be deemed received when (a) actually received if delivered in person or via email, (b) within three (3) days after sent if delivered via certified mail, or (c) on the next business day after being sent, if delivered via overnight mail. Notwithstanding the foregoing, receipt shall be deemed to occur upon actual receipt or refusal, regardless of method of delivery.

17. **Easements.** Landlord hereby grants to Tenant the following easements for the benefit of Tenant and the Premises as Tenant or the utility to which the System is interconnected (the “Utility”) reasonably requires to facilitate the construction, operation, and removal of the System: (i) an ingress and egress easement for access, ingress, and egress to and from the System and the Premises over, across, on, under, in, along and above the Land, including without limitation any existing roads on the Land and by other roads as Tenant may construct on the Land from time to time in locations reasonably agreed between Tenant and Landlord; (ii) the exclusive right to the unimpeded passage of sunlight and solar irradiation to and across the Premises, including without limitation, the ability to limit the height of trees, structures, or other impediments which may shade or otherwise interfere with sunlight reaching the Premises, including the right to trim any trees, brush or other vegetation on any of Landlord’s property so long as Tenant provides Landlord notice thirty (30) days prior to such action; (iii) an easement over, under, below, across, on, and above the Premises and Land for the installation, maintenance, repair, and replacement of required utility poles or lines, including without limitation underground or overhead transmission lines and facilities, and underground or overhead communications lines and facilities; and (iv) any other easements over the Land and Premises as reasonably required by Tenant or the Utility in connection with Tenant’s use of the Premises during the Term (collectively, the “Easements”). Should Tenant or the Utility require any of the Easements separately memorialized and/or recorded, then within twenty (20) days of such request Landlord shall execute a document appropriate for recording in the County clerk’s office, which document shall run with the Lease, be co-terminous with the Lease, and inure to the benefit of Tenant or the Utility, as applicable, and its transferees, successors and assigns hereunder. Landlord’s failure to execute any of the Easements delivered by Tenant or the Utility to Landlord in accordance with this Section 17 shall be deemed a Default under the Lease and Tenant shall have no obligation to make any payment of Rent until such executed Easement is received. Further, Landlord acknowledges that commercial operation of the System may require additional easements in favor of Tenants, the Utility, or third parties involved in the operation of the System on the Land, Premises and/or on any real property that is owned by Landlord and adjacent to the Land. Accordingly, Landlord shall grant such easements in such locations as such party may reasonably request upon reasonably agreed upon terms.

18. **Non-Disturbance Agreement.** Upon Tenant’s request, Landlord shall execute, and take commercially reasonable efforts to cause any current beneficiaries of any mortgages, deeds of trust, deeds to secure debt or security deeds, or any other parties with an interest secured by Landlord’s interest in the Land, to enter into an agreement with Tenant confirming that no such party will disturb or extinguish Tenant’s interest in the Land and in this Lease. Such agreement shall be in form and substance reasonably agreeable to Tenant and any Additional Notice Party (defined in Section 25).

19. **Landlord’s Representations and Warranties.**

(a) Landlord represents and warrants, that as of the Effective Date:

(i) Landlord is the sole owner of the fee interest in the Premises, and has all requisite right, power and authority to enter into this Lease, without the consent or joinder of any party not joining in the execution hereof. This Lease constitutes a valid and binding agreement enforceable against Landlord in accordance with its terms;

(ii) Landlord has not received any notice of any Taking, zoning change or legal noncompliance relating to the Premises;

(iii) the Premises are free from any recorded or unrecorded use or occupancy restrictions or declarations of restrictive covenants;



- (iv) there are no service or maintenance contracts affecting the Premises;
- (v) there are no delinquent or outstanding Taxes, liens or other impositions levied or assessed against the Premises or any larger parcel of property of which the Premises is a part;
- (vi) except for this Lease, there are no leases, options to purchase, license agreements or other third party rights to use or possess the Premises, whether written or oral, recorded or unrecorded, except as may be set forth on Exhibit D attached hereto and made a part hereof;
- (vii) Landlord is not in the hands of a receiver nor is an application for such a receiver pending, nor has Landlord made an assignment for the benefit of creditors, nor filed, or had filed against it, any petition in bankruptcy nor is Landlord a defendant in any ongoing or pending litigation proceedings;
- (viii) There are no recorded or unrecorded mortgages, deeds to secure debt, security deeds or other instruments securing debt affecting the Premises;
- (ix) if Landlord is a limited partnership, trust, limited liability company, corporation or other business entity, the undersigned representatives of Landlord have full power and authority to execute and deliver this Lease; and
- (x) if Landlord is one or more natural persons, except for the spouse identified on the signature page to this Lease, such natural persons are unmarried.

(b) The foregoing representations and warranties (and any other representations and warranties of Landlord under this Lease) shall be true and correct on the Operations Commencement Date. If requested by Tenant, Landlord shall deliver a certificate to such effect and/or such affidavits as may be requested by (i) any financing party or potential purchaser of the System, or (ii) any title company in connection with obtaining a title insurance policy on the Premises, relating to the same.

20. **Insurance.** During the Term, Tenant shall maintain, at Tenant's cost and expense, a policy or policies of insurance providing Commercial General Liability Insurance for Tenant's liability arising out of claims for bodily injury (including death) and property damage in an amount not less than \$1 million of combined, single-limit liability coverage per occurrence, accident or incident, in each case having a deductible not in excess of \$50,000. Tenant may elect to satisfy the requirements of this Section 20 through a program of self-insurance.

21. **Landlord Covenants.** From and after the Effective Date until the expiration or earlier termination of the Term,

- (a) Landlord shall not, without the prior written consent of Tenant,
  - (i) institute or consent to any rezoning of the Premises;
  - (ii) lease any portion of the Premises to another party or further encumber or suffer to exist the further encumbrance or Transfer (defined below) of the Premises (except as caused by or on behalf of Tenant) except in accordance with Section 6 (pertaining to farm leases) or as otherwise permitted by Section 24 of this Lease; or
  - (iii) cause or permit any activities or conditions on the Premises or any adjacent property owned or controlled by Landlord that may, in Tenant's sole judgment, adversely impact Tenant's ability to utilize the Premises for the Intended Use (including, without limitation, by erecting or permitting



to be erected any cell towers, water towers, billboards, silos, trees or any other natural or man-made structures to be placed, constructed, or to otherwise exist that may diminish the quantity of sunlight that otherwise would reach the System or any portion thereof, or by grading adjacent or nearby land or any other activity that would cause damaging water runoff onto the Land).

(b) Landlord shall provide notice to Tenant within fifteen (15) days following the commencement of any proceedings in bankruptcy, insolvency or similar proceedings with respect to Landlord, and

(c) Landlord shall promptly give Tenant a copy of any notice of any kind received by Landlord regarding the Premises or any Taxes during the Term.

## 22. Hazardous Materials.

(a) Tenant. If Tenant places, disposes or releases any Hazardous Materials (defined below) in or onto the Premises and such placement, disposal or release results in the contamination of the Premises, then Tenant shall remediate such Hazardous Materials in accordance with any remediation order or requirements of any governmental authority with jurisdiction. Landlord acknowledges that Tenant has disclosed to Landlord that in connection with the ordinary course of construction, operation and maintenance of the System, Tenant will use limited quantities of Hazardous Materials, at all times in compliance with Environmental Laws (defined below). "**Hazardous Materials**" means asbestos, lead and any and all pollutants, dangerous substances, toxic substances, hazardous wastes, hazardous materials and hazardous substances as referenced or defined in, or regulated under, any federal, state, local or other applicable environmental law, statute, ordinance, rule, order, regulation or standard in effect on the date hereof including, without limitation, the Resource Conservation and Recovery Act (42 U.S.C. § 6901, et seq.), as amended ("**RCRA**"), the Federal Insecticide, Fungicide and Rodenticide Act (7 U.S.C. § 136, et seq.), as amended ("**FIFRA**"), the Comprehensive Environmental Response, Compensation and Liability Act (42 U.S.C. § 9601, et seq.), as amended ("**CERCLA**"), the Hazardous Materials Transportation Act (49 U.S.C. § 1801 et seq.), as amended ("**HMTA**"), and the Toxic Substances Control Act (15 U.S.C. § 2601 et seq.), as amended ("**TSCA**"), and any other federal, state or local law governing such substances, as such laws may be amended from time to time. "**Environmental Laws**" means any and all federal, state, and local laws relating to the generation, manufacture, production, use, storage, release or threatened release, discharge, disposal, transportation or presence of any Hazardous Materials. Environmental Laws includes, but is not limited to, CERCLA, RCRA, HMTA, TSCA, and the common law.

(b) Landlord. Except as otherwise disclosed in writing to Tenant prior to the Effective Date, Landlord has not contaminated the Premises with Hazardous Materials and there are no Hazardous Materials located on the Premises. Except as otherwise disclosed in writing to Tenant prior to the Effective Date: (A) there are no unplugged or abandoned wells, solid waste disposal sites or underground storage tanks located on the Premises; (B) the Premises are not in violation of any Environmental Law, and (C) the Premises are not subject to any judicial or administrative action, investigation or order under any Environmental Laws. Except as otherwise disclosed in writing to Tenant prior to the Effective Date, Landlord has not received any notice of any Hazardous Materials on the Premises or any notice of a violation of any Environmental Laws. Landlord will notify Tenant promptly upon becoming aware of any release of any Hazardous Materials on, under, about or near the Premises.

### (c) Indemnification.

(i) Tenant. If a release of a Hazardous Material is caused or permitted by Tenant or its contractors, employees or agents that results in contamination of the Premises, then Tenant shall indemnify, defend, protect and hold Landlord harmless from and against any and all claims, actions, suits,

proceedings, losses, costs, damages, liabilities (including, without limitation, sums paid in settlement of claims), deficiencies, fines, penalties or expenses (including, without limitation, reasonable attorneys' fees and consultants' fees actually incurred, investigation and laboratory fees, court costs and litigation expenses) which arise during or after the term of this Lease as a result of such breach or contamination by Tenant.

(ii) Landlord. IF LANDLORD BREACHES ITS WARRANTIES, COVENANTS OR REPRESENTATIONS REGARDING HAZARDOUS MATERIALS, OR IF A RELEASE OF A HAZARDOUS MATERIAL IS CAUSED OR PERMITTED BY LANDLORD OR ITS AGENTS, EMPLOYEES, LESSEES (OTHER THAN TENANT) OR CONTRACTORS WHICH RESULTS IN CONTAMINATION OF THE PREMISES, THEN LANDLORD SHALL INDEMNIFY, DEFEND, PROTECT AND HOLD TENANT, AND TENANT'S EMPLOYEES, AGENTS, PARTNERS, LENDERS, MEMBERS, OFFICERS AND DIRECTORS HARMLESS FROM AND AGAINST ANY AND ALL CLAIMS, ACTIONS, SUITS, PROCEEDINGS, LOSSES, COSTS, DAMAGES, LIABILITIES (INCLUDING, WITHOUT LIMITATION, SUMS PAID IN SETTLEMENT OF CLAIMS), DEFICIENCIES, FINES, PENALTIES OR EXPENSES (INCLUDING, WITHOUT LIMITATION, REASONABLE ATTORNEYS' FEES AND CONSULTANTS' FEES ACTUALLY INCURRED, INVESTIGATION AND LABORATORY FEES, COURT COSTS AND LITIGATION EXPENSES) WHICH ARISE DURING OR AFTER THE TERM OF THIS LEASE AS A RESULT OF SUCH BREACH OR CONTAMINATION, EXCEPT TO THE EXTENT ANY SUCH CLAIMS, DAMAGES OR LIABILITIES RESULT FROM THE NEGLIGENCE OR WILLFUL MISCONDUCT OF TENANT, ITS EMPLOYEES, CONTRACTORS OR AGENTS. This indemnity includes, without limitation, and Landlord shall pay all costs and expenses relating to: (1) any claim, action, suit or proceeding for personal injury (including sickness, disease or death), property damage, nuisance, pollution, contamination, spill or other effect on the environment; (2) any investigation, monitoring, repair, clean-up, treatment or detoxification of the Premises; and (3) the preparation and implementation of any closure plan, remediation plan or other required action in connection with the Premises.

23. **Memorandum of Lease.** This Lease shall not be recorded; however, within ten (10) days following Tenant's request, Landlord and Tenant shall execute a memorandum of this Lease in recordable form set forth in Exhibit B to this Lease, setting forth the following provisions of this Lease, without limitation: (a) all information required by law, (b) restrictions on Transfers, (c) any unexercised options to extend the Term, (d) rights of first offer or of first refusal, if any, of Tenant with respect to the Premises and/or Land, and (e) such other provisions of this Lease as the Parties may mutually agree to incorporate therein. Tenant shall cause the memorandum of lease to be recorded in the Clerk's Office of the Circuit Court of the City or County where the Premises is situated.

24. **Assignments, Mortgages, Transfers.** This Lease shall be binding upon and inure to the benefit of the Parties and their legal representatives, successors and assigns.

(a) **Transfers by Tenant.** Tenant may pledge, sell, grant and/or assign, sublease, mortgage and otherwise transfer (each, a "**Transfer**") this Lease or Tenant's leasehold interest in the Premises, in whole or in part, without Landlord's prior consent; provided that Tenant shall notify Landlord of any such Transfer within thirty (30) days of such Transfer. In the event of a Transfer by Tenant (other than a collateral Transfer) to a person or entity that is not an affiliate of Tenant who assumes all of Tenant's rights and obligations under this Lease, Tenant shall be automatically released from all obligations accruing under the Lease as of the date of such Transfer.

(b) **Transfers by Landlord.** Landlord shall give Tenant at least thirty (30) days' prior notice of any Transfer by Landlord of its interest in the Land or in this Lease. In addition, any such Transfer shall

be expressly subject to this Lease. For example, but without limiting the foregoing, the Lease shall remain prior in interest to any mortgage, deed to secure debt or security deed entered into by Landlord after the Effective Date. For Transfers pursuant to the death or disability of Landlord, Landlord's executor or successor in interest shall provide notice of such Transfer (or proceedings that will result in such a Transfer) to Tenant as promptly as possible under the circumstances. Landlord shall notify Tenant of the closing of such Transfer, and if applicable, the name and contact information of the successor to Landlord's interest hereunder and payment instructions for future payments of Rent and other amounts due under the Lease; provided, that Landlord shall indemnify Tenant for losses arising from Tenant's payment of Rent or other amounts as so directed.

25. **Third Party Protections.** If Tenant shall notify Landlord in writing of the existence of, and contact information for, any third party with a security interest or similar interest in the Lease, the System, or the Premises whether via a Transfer or otherwise (any such third party, an "**Additional Notice Party**"), then the following provisions shall apply until such time as Landlord shall receive written confirmation that such Additional Notice Party's interests in this Lease, the System or the Premises are released:

(a) **Amendment, Assignment, Termination or Modification of Lease.** Without limiting Section 24, no assignment, amendment, termination or other modification of this Lease shall be effective unless approved by the Additional Notice Party in writing.

(b) **New Lease.** Upon the termination of this Lease pursuant to a Default by Tenant, provided any outstanding monetary defaults are cured, Landlord shall enter into a new lease with Additional Notice Party or its assignee/nominee on the same terms as set forth herein, and for a term equal to the then-unelapsed portion of this Lease, with an option to extend for any then-remaining Extended Operations Term(s). Such new lease shall be effective as of the date of termination of this Lease. For avoidance of doubt, the liability of such Additional Notice Party or its assignee/nominee under such new lease shall be limited to such Additional Notice Party's interest in the Premises and such Additional Notice Party or its assignee/nominee shall have no personal liability to Landlord for the performance of any obligations under such new lease or for any defaults of Tenant under the prior Lease (other than the cure of any monetary defaults).

(c) **Bankruptcy.** If this Lease is terminated pursuant to a rejection in bankruptcy or other similar proceeding with respect to Landlord, then Landlord, or its successor in interest to the Land, if any, shall enter into a new lease with Tenant on substantially the same terms as this Lease and for the then otherwise unexpired portion of the Term. Such new lease shall be effective as of the date of termination of this Lease.

(d) **Additional Notice and Cure Period.** If any event of Default by Tenant remains uncured following the applicable cure period under Section 14, Landlord shall send written notice of such uncured Default to each Additional Notice Party at the address provided therefor, whereupon the Additional Notice Party shall have an additional (i) thirty (30) days in the event of a payment Default, or (ii) sixty (60) days in the event of a non-payment Default (provided that so long as such Additional Notice Party has commenced diligent efforts to cure such non-payment default during such sixty (60) day period, such Additional Notice Party shall be given additional reasonable time in which to cure such Default) during which it may, in its sole discretion, cure such Default on Tenant's behalf. Landlord may not pursue any remedy for such Default unless it remains uncured following the expiration of such Additional Notice Party's cure period as set forth in the preceding sentence. No notice shall be effective against an Additional Notice Party unless and until actually received by such Additional Notice Party.

(e) **Additional Documents.** Landlord agrees to execute and deliver such documents and instruments, including estoppels, affidavits and amendments to this Lease, as may be reasonably requested



by an Additional Notice Party or in furtherance of a Transfer related to the financing or re-financing of the System, to allow such Additional Notice Party reasonable means to protect or preserve the System or its collateral interest in the Lease; provided, that Landlord shall not be required to amend this Lease in any way that would extend the Term, decrease the Rent or otherwise in any material respect adversely affect any rights of Landlord. Each party shall bear its own expenses, including legal expenses, in connection with any request for the execution and delivery of additional documents and instruments in accordance with this Section 25(e).

26. **Estoppel.** Upon the request of Tenant or an Additional Notice Party, Landlord shall deliver to the requesting party a certificate setting forth the material terms of the Lease, the existence of any Default under the Lease, the date through which Rent has been paid and any amounts on deposit with Landlord, the current Rent rate, and such other reasonable terms requested by the requesting party. The failure by Landlord to respond to such request within fifteen (15) days shall constitute an event of Default, and in addition, shall result in the deemed acceptance, approval and confirmation of the truth of the matters set forth in the certificate sent with the original request.

27. **Brokerage Commission.** Landlord and Tenant each warrant and represent to the other that, except for N/A whose commission will be the responsibility of N/A, there are no brokers' commissions, finders' fees or any other charges due to any broker, agent or other party in connection with the negotiation or execution of this Lease. EACH PARTY SHALL INDEMNIFY, DEFEND, PROTECT AND HOLD THE OTHER PARTY HARMLESS FROM AND AGAINST ALL DAMAGES, LOSSES, COSTS, EXPENSES (INCLUDING REASONABLE ATTORNEYS' FEES ACTUALLY INCURRED), LIABILITIES AND CLAIMS WITH RESPECT TO ANY CLAIMS MADE BY ANY BROKER OR FINDER BASED UPON SUCH BROKER'S OR FINDER'S REPRESENTATION OR ALLEGED REPRESENTATION OF SUCH INDEMNIFYING PARTY.

28. **Force Majeure.** If performance of this Lease or any obligation hereunder is prevented or substantially restricted or interfered with by reason of an event of Force Majeure (defined below), the affected Party, upon giving written notice to the other Party, shall be excused from such performance to the extent and for the duration of such prevention, restriction or interference. The affected Party shall use its reasonable efforts to avoid or remove such causes of nonperformance and shall continue performance as soon as such causes are removed. "Force Majeure" means fire, earthquake, flood, tornado or other acts of God and natural disasters, strikes or labor disputes; war, terrorist act, epidemic, pandemic, quarantine, civil strife or other violence; any law, order, proclamation, regulation, ordinance, action, demand or requirement of any government agency or utility; generalized lack of availability of raw materials or energy; or any other act or condition beyond the reasonable control of a Party. For avoidance of doubt, economic hardship shall not constitute Force Majeure for purposes of this Lease.

29. **Confidentiality.** This Lease, the terms and conditions hereof (including, without limitation, the financial terms of this Lease), Tenant's site design and product design, methods of operation, methods of construction and power production of the System; all studies, measurements, readings, data and any other information concerning or relating to the System that Tenant provides to or that is otherwise obtained by Landlord, whether written or oral, tangible or intangible, constitutes Tenant's proprietary and confidential intellectual property ("**Confidential Information**"). Landlord shall not use such Confidential Information for its own benefit, publish or otherwise disclose it or permit its use by others, except as expressly permitted in this Section 29 or as otherwise expressly agreed by Tenant in writing. Without limiting the foregoing, Landlord's obligation of confidentiality and non-disclosure with respect to the Confidential Information shall not apply to any information which (i) is in the public domain or can be proven to have been known to Landlord prior to disclosure by Tenant to Landlord; (ii) following disclosure, becomes generally known or available through no act or omission of Landlord; (iii) is independently developed by or on behalf of



Landlord without any use of the Confidential Information; or (iv) is known, or becomes known, to Landlord from a source other than Tenant or its representatives, provided that disclosure by such source is not in breach of an obligation of confidentiality to Tenant. Further, notwithstanding anything herein to the contrary, Landlord may, upon prior written notice to Tenant, provide copies of this Lease (but not any other Confidential Information) and disclose the terms thereof to Landlord's immediate family members who also have an interest in the Premises and Landlord's attorneys, accountants, financial advisors, agents employees and any existing or prospective mortgagee, lessee, or purchaser of the Land (each a "**Related Person**"), as necessary to fulfill Landlord's obligations hereunder or under its agreements or obligations to such parties, so long as they likewise agree to be subject to the same confidentiality provisions as Landlord under this Section 29. Landlord agrees with Tenant that any disclosure of Confidential Information by any other party, including without limitation a Related Person of Landlord or of another landlord within the Premises shall not relieve Landlord of Landlord's obligations under this Section 29. Tenant may require Landlord to have any person, including a Related Person, sign a reasonable non-disclosure agreement as a condition to Tenant's consent under this Section 29. The provisions of this Section 29 shall survive the expiration or earlier termination of this Lease.

30. **Legal Expenses.** If either Party brings any action or proceeding against the other (including any cross-complaint, counterclaim or third-party claim) to enforce or interpret this Lease, or otherwise arising out of this Lease, the prevailing Party in such action or proceeding shall be entitled to recover its costs and expenses of suit (including, without limitation, reasonable attorneys' fees actually incurred, accountants' fees, consulting fees, court costs and other legal expenses), and such amounts shall be payable whether or not such action or proceeding is prosecuted to judgment. For purposes hereof, the term "prevailing Party" includes a Party who dismisses an action for recovery in exchange for payment of the sums allegedly due, performance of covenants allegedly breached or consideration substantially equal to the relief sought in the action. Any provision of this Lease which entitles a Party to recover attorneys' fees shall for all purposes be deemed to mean and refer to reasonable attorneys' fees actually incurred, without regard to any statutory presumption or formula.

31. **Governing Law.** This Lease shall be construed and enforced in accordance with the laws of the State and any disputes arising from or relating to this Lease shall be construed, governed and interpreted and regulated under the laws of the State.

32. **Interpretation; Amendment.** The terms of this Lease shall not be amended, restated, changed or otherwise modified except in a writing signed by Landlord, Tenant and any Additional Notice Party. If any term or provision of this Lease shall to any extent be invalid or unenforceable, the remainder of this Lease shall not be affected thereby and each other term and provision of this Lease shall be valid and enforced to the fullest extent permitted by law.

33. **Integration; Anti-Merger.** This instrument, including the attached Exhibits, contains the complete agreement of the Parties regarding the subject matter of this Lease, and there are no oral or written conditions, terms, understandings or other agreements pertaining thereto which have not been incorporated herein. This instrument creates only the relationship of landlord and tenant between the Parties as to the Premises, and nothing in this Lease shall in any way be construed to impose upon either Party any obligations or restrictions not expressly set forth in this Lease. This Lease shall continue until the expiration or termination of the Lease and Term, and shall not be extinguished by operation of law pursuant to the acquisition by a single party of the interests in both Tenant and Landlord hereunder.

34. **Exclusive Control; Quiet Enjoyment.** Tenant shall have exclusive control, possession, occupancy, use and management of the Premises during the Construction Term and Operations Term(s), subject to any easements or security instruments existing and disclosed by Landlord to Tenant on the Effective Date, or as caused by Tenant. Landlord shall warrant and defend Tenant's right to quietly hold

and enjoy the Premises during the Construction Term, Development Term, and Operations Term against any person or party claiming to have an interest in the Premises.

35. **Waiver.** The waiver by any Party (or any Additional Notice Party) of any instance of a breach of any covenant or agreement herein shall not be deemed to constitute waiver of any subsequent breach of the same or any other covenant or agreement under this Lease.

36. **Nonrecourse.** The performance of this Lease by Landlord and Tenant (and its successors and assigns) shall be secured by their respective interests in the Premises. Except for such interests in the Premises, neither Landlord's, nor Tenant's (nor any of its successors' or assigns') property or assets (including without limitation Tenant's Property), shall be subject to levy, execution or any other enforcement procedure in connection with the satisfaction of liability under this Lease.

37. **Consents; Further Assurances.** Each party shall execute and deliver such further documents, and perform such other acts, as may be reasonably necessary to achieve the Parties' intent in entering into this Lease. The Parties further agree that, to the extent the consent or approval of either of them is required, requested or appropriate under this Lease, such consent or approval shall not be unreasonably or unduly withheld, delayed, or conditioned, and except as may otherwise be expressly provided for herein, each Party shall bear its own costs and expenses, including legal costs, in connection with such consent or approval.

38. **Counterparts.** This Lease may be executed in any number of counterparts, each of which shall be deemed an original once executed and delivered.

39. **Survival.** Upon the expiration or earlier termination of this Lease in accordance with its terms, this Lease shall cease to have force and effect, unless the context requires otherwise to achieve the Parties' intent with respect thereto.

40. **Compliance with Law.** In conducting its operations on the Premises, Tenant shall comply in all material respects with all laws (including Environmental Laws), inclusive of any obligations of Tenant to register the System, other related facilities or operations under RCRA due the presence of Hazardous Materials that are contained within, or are part of the construction of, the System; however, Tenant may contest the validity or applicability of any laws (including but not limited to Environmental Laws, and any property tax) related to the Premises, the Tenant, the System, the operations, or any other activity or property of Tenant, by appropriate legal proceedings brought in the name of Tenant or in the names of both Tenant and Landlord where appropriate or required; provided Landlord shall have the right to consent to being named in such proceedings. Any such contest or proceeding, including any initiated by Tenant and maintained in the name of Landlord, shall be at Tenant's expense and be controlled and directed by Tenant, but in consultation with Landlord and at no cost to Landlord, excepting proceedings which arise due to Landlord's violation of any laws (including Environmental Laws).

41. **Hunting Activities.** Subject to the provisions of this Section 41, after the Effective Date Landlord shall have the right to engage in hunting activities on the Premises until the Construction Term commences (the "**Hunting Period**"). Any such hunting activities shall be performed in accordance with applicable law. At any time during the Hunting Period, with at least twenty-four (24) hours advance notice, Tenant shall have the right to require Landlord to cease hunting activities on the Premises for a period of time specified by Tenant so that Tenant may conduct pre-construction activities as permitted in this Lease. Landlord shall not grant a hunting lease or a similar right to any third-party without the prior written approval of Tenant. For the avoidance of doubt, no hunting activities shall be permitted to occur after the expiration of the Hunting Period.

[END OF TEXT. SIGNATURE PAGE FOLLOWS.]

IN WITNESS WHEREOF, the parties hereto have duly executed this Lease as of the later of the dates indicated below.

LANDLORD:

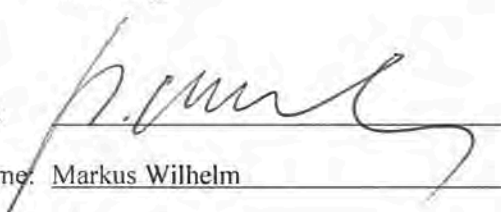
  
JOHN WILLIAM VAUGHAN

Date: 3/1/24

TENANT:

**TOBACCO TRAIL SOLAR, LLC,**  
a North Carolina limited liability company

By: **Strata Manager, LLC,**  
a North Carolina limited liability company,  
its Manager

By: 

Name: Markus Wilhelm

Title: Manager

Date: 3/7/24

**Exhibit A**  
**Description of the Land**

All that certain tract or parcel of land located in Prince Edward County, Virginia, containing approximately 146.75 acres, more or less, and commonly identified as Parcel Record Number 121-A-10, and being the same tract or parcel or land devised to Landlord by that certain Last Will and Testament of Freya Anne Goetz Vaughan, dated November 24, 1971 and recorded in the Clerk's Office of the Prince Edward County Circuit Court at Book 32, Pages 207-210, and all of the real property included in Parcel Record Number 121-A-10 inherited by John W. Vaughan upon the death of Freya Ann Goetz Vaughan.

**Less and except** from all of the property described above, all portions of the above-described property not currently owned by the Landlord as reflected in all outsales, reservations, testamentary gifts or other conveyances appearing in the chain of title and of record in the Clerk's Office of the Prince Edward County Circuit Court.

**End of Exhibit A**



**Exhibit B**  
**Example Form Memorandum of Lease**

Prepared by and mail to:  
Tobacco Trail Solar, LLC  
800 Taylor Street, Suite 200  
Durham, NC 27701  
Attn: Legal Department

**MEMORANDUM OF LEASE**

**THIS MEMORANDUM OF LEASE** (this “**Memorandum**”) dated as of \_\_\_\_\_, 20\_\_\_\_, by and between \_\_\_\_\_, an [individual resident] [entity organized under the laws] of the State of \_\_\_\_\_ (“**Landlord**”), having a mailing address at \_\_\_\_\_ and **TOBACCO TRAIL SOLAR, LLC**, a North Carolina limited liability company (“**Tenant**”), having a mailing address at 800 Taylor Street, Suite 200, Durham, North Carolina 27701, recites and provides:

**RECITALS**

1. By that certain Ground Lease Agreement dated \_\_\_\_\_, 20\_\_\_\_, (the “**Lease**”), Landlord leased to Tenant and Tenant leased from Landlord, upon the terms and conditions and for the rent set forth in the Lease, certain real estate situated in \_\_\_\_\_ County, Virginia, (the “**County**”), and more particularly described on Exhibit A attached hereto as a part hereof and recorded herewith (the “**Premises**”).

2. In lieu of the recording of the Lease in the Clerk’s Office of the Circuit Court of the County (the “**Clerk’s Office**”), Landlord and Tenant now desire to record this Memorandum in the Clerk’s Office pursuant to Section 55.1-1601 of the Code of Virginia 1950, as amended (the “**Virginia Code**”), as a memorandum of lease.

**NOW, THEREFORE**, for and in consideration of the rent payable by Tenant to Landlord as required by the Lease and for other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, and in accordance with Section 55.1-1601 of the Virginia Code, Landlord and Tenant hereby set forth the following provisions of the Lease as a memorandum of lease.

1. The name of the lessor named in the Lease is \_\_\_\_\_, an [individual resident] [entity organized under the laws] of the State of \_\_\_\_\_.

2. The name of the lessee named in the Lease is **TOBACCO TRAIL SOLAR, LLC**, a North Carolina limited liability company.

3. By the Lease, Landlord demised and leased the Premises to Tenant, and Tenant leased and took the Premises from Landlord, upon the terms and conditions of the Lease.

4. As set forth in the Lease, the address of Landlord is as follows:

«Primary Landowner Name»

«Full Address Mailing»

5. As set forth in the Lease, the address of Tenant is as follows:

c/o Strata Solar Services, LLC  
800 Taylor Street, Suite 200  
Durham, NC 27701  
Attn: Asset Management Department

6. The date of the Lease is \_\_\_\_\_, 20\_\_\_\_.

7. The Premises leased by the Lease is more particularly described in Exhibit A attached hereto.

8. The Lease is effective as of \_\_\_\_\_, 20\_\_\_\_. The Term of the Lease begins on the Effective Date and continues for a period of thirty (30) years from the Operations Commencement Date (as defined in the Lease), unless extended or earlier terminated as provided in the Lease. Tenant has the right to extend the Term for two (2) additional successive Extended Operations Terms of five (5) years each as set forth in the Lease.

9. The Parties agree to execute an amendment to this Memorandum which shall set forth the final metes and bounds legal description of the Premises.

10. Landlord has agreed (i) not to lease any portion of the Premises to another party or further encumber or suffer to exist the further encumbrance or Transfer (defined in the Lease) of the Premises except as caused by or on behalf of Tenant or as specifically allowed in the Lease; (ii) not to cause or permit any activities or conditions on the Premises or any adjacent property owned or controlled by Landlord that may, in Tenant's sole judgment, adversely impact Tenant's ability to utilize the Premises for the Intended Use as defined in the Lease, (including, without limitation, by erecting or permitting to be erected any cell towers, water towers, billboards, silos, trees or any other natural or man-made structures to be placed, constructed, or to otherwise exist that may diminish the quantity of sunlight that otherwise would reach the System or any portion thereof, or by grading adjacent or nearby land or any other activity that would cause damaging water runoff onto the Land), and (iii) to grant to Tenant at no additional cost such easements for the benefit of Tenant and the Premises as Tenant may reasonably request to facilitate the construction, operation, and removal of the System as described more fully in the Lease.

11. The provisions of the Lease are incorporated into this Memorandum as if set out in full. In the event of any conflict between the provisions of this Memorandum and those of the Lease, the provisions of the Lease shall control. All capitalized terms and terms of art used but not defined in this Memorandum will have the same respective meaning designated for such terms in the Lease. This Memorandum has been executed for the purpose of recordation in order to give notice of all of the terms, provisions and conditions of the Lease, and is not intended, and shall not be construed, to define, limit or modify the Lease. This Memorandum is not a complete summary of the Lease, nor shall any provisions of this Memorandum be used in interpreting the provisions of the Lease. Reference should be made to the Lease for a more detailed description of all matters contained in this Memorandum.

12. To facilitate execution, this Memorandum may be executed in as many counterparts as may be required. It shall not be necessary that the signature of, or on behalf of, each party, or that the signatures of all persons required to bind any party, appear on each counterpart. It shall be sufficient that the signature of, or on behalf of, each party, or that the signatures of the persons required to bind any party, appear on one or more such counterparts. All counterparts shall together constitute a single agreement.

13. On the request of Landlord following the expiration of the Lease (including all Renewal Terms), Tenant will promptly execute and deliver and appropriate release or cancellation instrument in recordable form acknowledging the expiration or termination of the Lease and releasing any and all right, title and interest of Tenant in and to the Premises under the Lease.

IN WITNESS WHEREOF, the undersigned have executed this Memorandum of Lease by authority duly given and effective as of the date first written above.

**(Not a Signable Copy.)**

**Exhibit C**

**Form W-9**

[see attached]



**Request for Taxpayer  
Identification Number and Certification**

**Give Form to the  
requester. Do not  
send to the IRS.**

Print or type See Specific Instructions on page 2.	Name (as shown on your income tax return)	
	Business name/disregarded entity name, if different from above	
	Check appropriate box for federal tax classification: <input type="checkbox"/> Individual/sole proprietor <input type="checkbox"/> C Corporation <input type="checkbox"/> S Corporation <input type="checkbox"/> Partnership <input type="checkbox"/> Trust/estate  <input type="checkbox"/> Limited liability company. Enter the tax classification (C=C corporation, S=S corporation, P=partnership) ▶ _____  <input type="checkbox"/> Other (see instructions) ▶ _____	Exemptions (see instructions):  Exempt payee code (if any) _____ Exemption from FATCA reporting code (if any) _____
	Address (number, street, and apt. or suite no.)	Requester's name and address (optional)
	City, state, and ZIP code	
List account number(s) here (optional)		

**Part I Taxpayer Identification Number (TIN)**

Enter your TIN in the appropriate box. The TIN provided must match the name given on the "Name" line to avoid backup withholding. For individuals, this is your social security number (SSN). However, for a resident alien, sole proprietor, or disregarded entity, see the Part I instructions on page 3. For other entities, it is your employer identification number (EIN). If you do not have a number, see *How to get a TIN* on page 3.

**Note.** If the account is in more than one name, see the chart on page 4 for guidelines on whose number to enter.

Social security number								
				-				
Employer identification number								
				-				

**Part II Certification**

Under penalties of perjury, I certify that:

1. The number shown on this form is my correct taxpayer identification number (or I am waiting for a number to be issued to me), and
2. I am not subject to backup withholding because: (a) I am exempt from backup withholding, or (b) I have not been notified by the Internal Revenue Service (IRS) that I am subject to backup withholding as a result of a failure to report all interest or dividends, or (c) the IRS has notified me that I am no longer subject to backup withholding, and
3. I am a U.S. citizen or other U.S. person (defined below), and
4. The FATCA code(s) entered on this form (if any) indicating that I am exempt from FATCA reporting is correct.

**Certification instructions.** You must cross out item 2 above if you have been notified by the IRS that you are currently subject to backup withholding because you have failed to report all interest and dividends on your tax return. For real estate transactions, item 2 does not apply. For mortgage interest paid, acquisition or abandonment of secured property, cancellation of debt, contributions to an individual retirement arrangement (IRA), and generally, payments other than interest and dividends, you are not required to sign the certification, but you must provide your correct TIN. See the instructions on page 3.

<b>Sign Here</b>	Signature of U.S. person ▶	Date ▶

**General Instructions**

Section references are to the Internal Revenue Code unless otherwise noted.

**Future developments.** The IRS has created a page on [www.irs.gov/w9](http://www.irs.gov/w9) for information about Form W-9, at [www.irs.gov/w9](http://www.irs.gov/w9). Information about any future developments affecting Form W-9 (such as legislation enacted after we release it) will be posted on that page.

**Purpose of Form**

A person who is required to file an information return with the IRS must obtain your correct taxpayer identification number (TIN) to report, for example, income paid to you, payments made to you in settlement of payment card and third party network transactions, real estate transactions, mortgage interest you paid, acquisition or abandonment of secured property, cancellation of debt, or contributions you made to an IRA.

Use Form W-9 only if you are a U.S. person (including a resident alien), to provide your correct TIN to the person requesting it (the requester) and, when applicable, to:

1. Certify that the TIN you are giving is correct (or you are waiting for a number to be issued),
2. Certify that you are not subject to backup withholding, or
3. Claim exemption from backup withholding if you are a U.S. exempt payee. If applicable, you are also certifying that as a U.S. person, your allocable share of any partnership income from a U.S. trade or business is not subject to the

withholding tax on foreign partners' share of effectively connected income, and

4. Certify that FATCA code(s) entered on this form (if any) indicating that you are exempt from the FATCA reporting, is correct.

**Note.** If you are a U.S. person and a requester gives you a form other than Form W-9 to request your TIN, you must use the requester's form if it is substantially similar to this Form W-9.

**Definition of a U.S. person.** For federal tax purposes, you are considered a U.S. person if you are:

- An individual who is a U.S. citizen or U.S. resident alien,
- A partnership, corporation, company, or association created or organized in the United States or under the laws of the United States,
- An estate (other than a foreign estate), or
- A domestic trust (as defined in Regulations section 301.7701-7).

**Special rules for partnerships.** Partnerships that conduct a trade or business in the United States are generally required to pay a withholding tax under section 1446 on any foreign partners' share of effectively connected taxable income from such business. Further, in certain cases where a Form W-9 has not been received, the rules under section 1446 require a partnership to presume that a partner is a foreign person, and pay the section 1446 withholding tax. Therefore, if you are a U.S. person that is a partner in a partnership conducting a trade or business in the United States, provide Form W-9 to the partnership to establish your U.S. status and avoid section 1446 withholding on your share of partnership income.

**Exhibit D**  
**Other Leases, Options and Licenses**

[To be identified here, if any]

# VIRGINIA LAND RECORD COVER SHEET

Commonwealth of Virginia VA. CODE §§ 17.1-223, -227.1, -249

## FORM A – COVER SHEET CONTENT

Instrument Date: 3/7/2024

Instrument Type: AGL

Number of Parcels: 1 Number of Pages: 6

[ ] City [X] County PRINCE EDWARD COUNTY COUR  
CIRCUIT COURT

Tax Exempt? VIRGINIA/FEDERAL CODE SECTION

[ ] Grantor:

[ ] Grantee:

Business/Name

(Area Above Reserved For Deed Stamp Only)

1 Grantor: VAUGHAN, JOHN WILLIAM

Grantor:

1 Grantee: TOBACCO TRAIL SOLAR, LLC, TOBACCO TRAIL SOLAR, LLC

Grantee:

Grantee Address

Name: TOBACCO TRAIL SOLAR, LLC TOBACCO TRAIL SOLAR, LLC

Address: 800 TAYLOR STREET, SUITE 200

City: DURHAM State: VA Zip Code: 27701

Consideration: \$8,071.25 Existing Debt: \$0.00 Actual Value/Assumed: \$0.00

PRIOR INSTRUMENT UNDER § 58.1-803(D):

Original Principal: \$0.00 Fair Market Value Increase: \$0.00

Original Book No.: Original Page No.: Original Instrument No.:

Prior Recording At: [ ] City [X] County Percentage In This Jurisdiction: 100%

Book Number: 32 Page Number: 207 Instrument Number:

Parcel Identification Number/Tax Map Number: 121-A-10

Short Property Description:

Current Property Address: 349 COUNTRY LANE

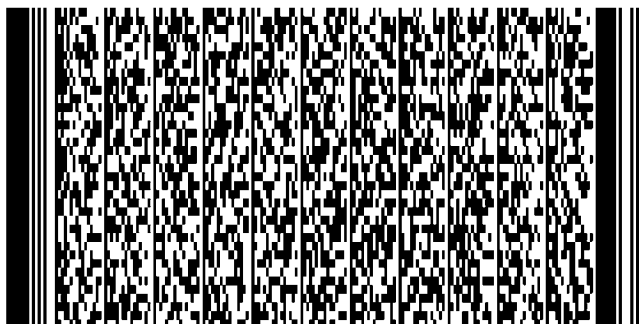
City: KEYSVILLE State: VA Zip Code: 23947

Instrument Prepared By: TOBACCO TRAIL SOLAR, LLC Recording Paid By: TOBACCO TRAIL SOLAR, LLC

Recording Returned To: TOBACCO TRAIL SOLAR, LLC

Address: 800 TAYLOR STREET, SUITE 200

City: DURHAM State: NC Zip Code: 27701



Prepared by and mail to:  
Tobacco Trail Solar, LLC  
800 Taylor Street, Suite 200  
Durham, NC 27701  
Attn: Legal Department  
Randy Herman, Esq.  
Map ID No: 121-A-10  
Consideration: \$8,071.25

## MEMORANDUM OF LEASE

**THIS MEMORANDUM OF LEASE** (this “**Memorandum**”) dated as of March 7, 2024, by and between **JOHN WILLIAM VAUGHAN**, an unmarried individual resident of the State of Virginia (“Landlord”), having a mailing address at 673 West Patrick Henry Highway, Keysville, VA 23947, and **TOBACCO TRAIL SOLAR, LLC**, a North Carolina limited liability company (“Tenant”), having a mailing address at 800 Taylor Street, Suite 200, Durham, North Carolina 27701, recites and provides:

## RECITALS

1. By that certain Ground Lease Agreement dated March 7, 2024, (the “**Lease**”), Landlord leased to Tenant and Tenant leased from Landlord, upon the terms and conditions and for the rent set forth in the Lease, certain real estate situated in Prince Edward County, Virginia, (the “**County**”), and more particularly described on Exhibit A attached hereto as a part hereof and recorded herewith (the “**Premises**”).

2. In lieu of the recording of the Lease in the Clerk’s Office of the Circuit Court of the County (the “**Clerk’s Office**”), Landlord and Tenant now desire to record this Memorandum in the Clerk’s Office pursuant to Section 55.1-1601 of the Code of Virginia 1950, as amended (the “**Virginia Code**”), as a memorandum of lease.



**NOW, THEREFORE**, for and in consideration of the rent payable by Tenant to Landlord as required by the Lease and for other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, and in accordance with Section 55.1-1601 of the Virginia Code, Landlord and Tenant hereby set forth the following provisions of the Lease as a memorandum of lease.

1. The name of the lessor named in the Lease is **JOHN WILLIAM VAUGHAN**, an unmarried individual resident of the State of Virginia.

2. The name of the lessee named in the Lease is **TOBACCO TRAIL SOLAR, LLC**, a North Carolina limited liability company.

3. By the Lease, Landlord demised and leased the Premises to Tenant, and Tenant leased and took the Premises from Landlord, upon the terms and conditions of the Lease.

4. As set forth in the Lease, the address of Landlord is as follows:

John William Vaughan  
673 West Patrick Henry Highway  
Keysville, VA 23947

5. As set forth in the Lease, the address of Tenant is as follows:

Tobacco Trail Solar, LLC  
c/o Strata Solar Services, LLC  
800 Taylor Street, Suite 200  
Durham, NC 27701  
Attn: Asset Management Department

6. The date of the Lease is March 7, 2024.

7. The Premises leased by the Lease is more particularly described in Exhibit A attached hereto.

8. The Lease is effective as of March 7, 2024. The Term of the Lease begins on the Effective Date and continues for a period of thirty (30) years from the Operations Commencement Date (as defined in the Lease), unless extended or earlier terminated as provided in the Lease. Tenant has the right to extend the Term for one (1) additional Extended Operations Terms of ten (10) years as set forth in the Lease.

9. The Parties agree to execute an amendment to this Memorandum which shall set forth the final metes and bounds legal description of the Premises.

10. Landlord has agreed (i) not to lease any portion of the Premises to another party or further encumber or suffer to exist the further encumbrance or Transfer (defined in the Lease) of

the Premises except as caused by or on behalf of Tenant or as specifically allowed in the Lease; (ii) not to cause or permit any activities or conditions on the Premises or any adjacent property owned or controlled by Landlord that may, in Tenant's sole judgment, adversely impact Tenant's ability to utilize the Premises for the Intended Use as defined in the Lease, (including, without limitation, by erecting or permitting to be erected any cell towers, water towers, billboards, silos, trees or any other natural or man-made structures to be placed, constructed, or to otherwise exist that may diminish the quantity of sunlight that otherwise would reach the System or any portion thereof, or by grading adjacent or nearby land or any other activity that would cause damaging water runoff onto the Land), and (iii) to grant to Tenant at no additional cost such easements for the benefit of Tenant and the Premises as Tenant may reasonably request to facilitate the construction, operation, and removal of the System as described more fully in the Lease.

11. The provisions of the Lease are incorporated into this Memorandum as if set out in full. In the event of any conflict between the provisions of this Memorandum and those of the Lease, the provisions of the Lease shall control. All capitalized terms and terms of art used but not defined in this Memorandum will have the same respective meaning designated for such terms in the Lease. This Memorandum has been executed for the purpose of recordation in order to give notice of all of the terms, provisions and conditions of the Lease, and is not intended, and shall not be construed, to define, limit or modify the Lease. This Memorandum is not a complete summary of the Lease, nor shall any provisions of this Memorandum be used in interpreting the provisions of the Lease. Reference should be made to the Lease for a more detailed description of all matters contained in this Memorandum.

12. To facilitate execution, this Memorandum may be executed in as many counterparts as may be required. It shall not be necessary that the signature of, or on behalf of, each party, or that the signatures of all persons required to bind any party, appear on each counterpart. It shall be sufficient that the signature of, or on behalf of, each party, or that the signatures of the persons required to bind any party, appear on one or more such counterparts. All counterparts shall together constitute a single agreement.

13. On the request of Landlord following the expiration of the Lease (including all Renewal Terms), Tenant will promptly execute and deliver and appropriate release or cancellation instrument in recordable form acknowledging the expiration or termination of the Lease and releasing any and all right, title and interest of Tenant in and to the Premises under the Lease.

IN WITNESS WHEREOF, the undersigned have executed this Memorandum of Lease by authority duly given and effective as of the date first written above.

**[The remainder of this page is intentionally left blank.]**

IN WITNESS WHEREOF, Seller and Purchaser, acting through their duly authorized representatives, have made and entered into this Memorandum to be effective as of the Effective Date.

**LANDLORD:**

**JOHN WILLIAM VAUGHAN**

*x John W. Vaughan*

STATE OF VIRGINIA

COUNTY OF Prince Edward

The undersigned, a Notary Public in and for the County and State aforesaid, DOES HEREBY CERTIFY that **John William Vaughan**, personally known to me to be the same person whose name is subscribed to the foregoing instrument, appeared before me this day in person and acknowledged that he signed, sealed and delivered the same instrument as his own free and voluntary act for the uses and purposes therein set forth.

Given under my hand and Notarial Seal this 1<sup>st</sup> day of March, 2024.

My Commission Expires: 12/31/2027

{AFFIX NOTARIAL SEAL}

*ZK-H*

\_\_\_\_\_  
Notary Public

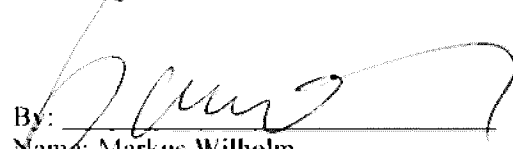


IN WITNESS WHEREOF, Seller and Purchaser, acting through their duly authorized representatives, have made and entered into this Memorandum to be effective as of the Effective Date.

**TENANT:**

**TOBACCO TRAIL SOLAR, LLC,**  
a North Carolina limited liability company

By: Strata Manager, LLC,  
A North Carolina limited liability company,  
its Manager

By:   
Name: Markus Wilhelm  
Title: Manager

STATE OF NORTH CAROLINA

COUNTY OF DURHAM

I certify that the following person personally appeared before me this day, acknowledging to me that he signed the foregoing instrument: Markus Wilhelm, Manager of Strata Manger, LLC the Manager of **Tobacco Trail Solar, LLC**.

WITNESS my hand and official stamp or seal, this 7 day of March, 2024.

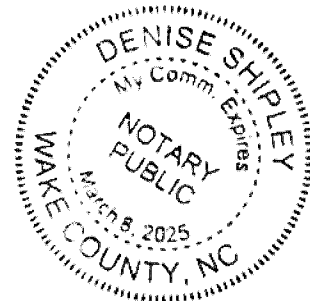
  
Notary Public

Printed Name: Denise Shipley

My Commission Expires:

3.8.2025

[AFFIX NOTARIAL STAMP OR SEAL]





**Exhibit A**  
**Description of the Land**

All that certain tract or parcel of land located in the Hampden Magisterial District, Prince Edward County, Virginia, containing approximately 146.75 acres, more or less, and commonly identified as Parcel Record Number 121-A-10, and being the same tract or parcel or land devised to Landlord by that certain Last Will and Testament of Freya Anne Goetz Vaughan, dated November 24, 1971 and recorded in the Clerk's Office of the Prince Edward County Circuit Court at Book 32, Pages 207-210, and all of the real property included in Parcel Record Number 121-A-10 inherited by John W. Vaughan upon the death of Freya Ann Goetz Vaughan.

Less and except from all of the property described above, all portions of the above-described property not currently owned by the Landlord as reflected in all outsales, reservations, testamentary gifts or other conveyances appearing in the chain of title and of record in the Clerk's Office of the Prince Edward County Circuit Court.

**End of Exhibit A**

INSTRUMENT 202400494  
RECORDED IN THE CLERK'S OFFICE OF  
PRINCE EDWARD COUNTY CIRCUIT COURT ON  
APRIL 3, 2024 AT 11:39 AM  
LYNNETTE COE, CLERK  
RECORDED BY: JBR

## PURCHASE OPTION AGREEMENT

THIS PURCHASE OPTION AGREEMENT (this "Agreement"), made and entered into this the 20<sup>th</sup> day of November, 2023 (the "Effective Date"), LEWIS WILKERSON, JR., aka LEWIS E. WILKERSON, aka LEWIS E. WILKERSON, JR. and, DAWN H. WILKERSON, husband and wife ("Seller"), and SOLAR DEVELOPMENT HOLDINGS, LLC, a North Carolina limited liability company, or its designees, successors, and/or assigns ("Purchaser").

### WITNESSETH:

THAT for and in consideration of [REDACTED] (the "Option Fee") and other good and valuable consideration paid to Seller by Purchaser, the receipt and sufficiency of which are acknowledged, and in further consideration of the mutual promises and conditions expressed below, Seller grants to Purchaser, its successors and permitted assigns, an exclusive option to purchase (the "Option"), at the price and subject to the terms, conditions and provisions set forth below, that certain tract or parcel of land containing One Thousand Seven Hundred Eighty-Nine and 875/1000 (1,789.875) acres, more or less, located in Prince Edward County, Virginia as described on **Exhibit A**, the surrounding grounds and all appurtenances, rights, interests, easements and privileges, and all other improvements located thereon (collectively, the "Property" and subject to Section 5 herein).

NOW, THEREFORE, in consideration of the Option Fee and mutual covenants and provisions contained in this Option, and for other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the parties hereby agree as set forth below.

1. Option. Seller hereby grants the Option to Purchaser to purchase the Property. The purpose of this Option is to enable the Purchaser to develop, build and operate a solar photovoltaic power array, and/or an energy storage facility utilizing battery or other energy storage technology on the Property ("Proposed Development").

2. Purchase Price. The purchase price shall be [REDACTED] for the entire Property (the "Purchase Price"). This price is a firm price, binding on the Seller and shall include all sums paid to Seller by the Purchaser in consideration of this Option. The exercise of the Option and purchase of the Property shall be subject to Purchaser's due diligence including approval by any financing parties for the Proposed Development.

3. Inspections. During the term of the Option and any extension hereof, Purchaser, or Purchaser's representative, shall have the right to enter said Property at any time, and shall have the right to make any required tests as to the adaptability of the Property for the Proposed Development (the "Inspections"). Purchaser may conduct or cause to be performed such studies, tests and inspections as Purchaser, in its sole discretion, deems necessary or appropriate to inform its decision whether or not to acquire the Property. Without limiting the foregoing, during the Option, Purchaser's consultants, contractors, agents and employees may access and enter the Property for purposes of preparing a survey and to conduct environmental and other physical inspections and testing, including by core sampling or other invasive methods; provided, that all such inspections, testing and surveying shall be performed in a good and workmanlike manner and Purchaser shall restore the Property to substantially the same condition in which it existed immediately prior to such inspections and testing. Purchaser assumes all responsibility for the acts of itself, its agents, representatives and contractors in exercising its rights under this Section and agrees to indemnify and hold Seller harmless from any damages resulting therefrom. This indemnification obligation of Purchaser shall survive the Closing (as defined herein) or earlier termination of this Agreement. Purchaser shall, at Purchaser's expense, promptly repair any damage to the Property caused by Purchaser's entry and on-site inspections. If, as a direct result of Purchaser's activities on the Property, timber or any portion of the timber growing on the Property are destroyed or unable to be

harvested, Purchaser shall pay Seller damages in the amount equal to the fair market value of the timber which was destroyed or unable to be harvested. In the event the results of the Inspections are not satisfactory to Purchaser, in Purchaser's sole discretion, then Purchaser may terminate this Option by written notice to Seller and the parties shall have no further obligation to each other except for those obligations of the parties which expressly survive the termination of this Option.

4. Term and Option Money. The Option shall exist and continue for a period of five (5) years commencing on the Effective Date (the "**Option Period**"). Purchaser shall have forty-five (45) days from the Effective Date during which time Purchaser shall have the exclusive right to conduct Purchaser's initial Inspections of the Property (the "**Initial Inspections Period**"). During the Initial Inspections Period, Purchaser shall have the right to terminate this Option at no cost to Purchaser except for the Option Fee provided for herein, which shall be retained by Seller in the event of such termination. Within ten days (10) of the expiration of the Initial Inspections Period, Purchaser shall pay to Seller [REDACTED] for year one of the Option Period (the "**Initial Option Money**"). Subsequent payments for year two through year five of the Option Period (the "**Additional Option Money**") and collectively with the Initial Option Money, the "**Option Money**") shall be paid according to the following schedule:



Each Additional Option Money payment shall be due and payable in annual installments on the respective anniversary of the Effective Date. The Option Money shall be non-refundable, but in the event the Option is exercised, the Option Money shall be credited against the Purchase Price.

5. Property.

(a) During the Option Term, Purchaser may purchase the Property for the Proposed Development (the "**Option Property**").

(b) Timber. Prior to the exercise of the Option, Seller and Purchaser shall mutually agree upon the net (after harvesting) fair market value of any harvestable and marketable timber Purchaser needs to remove to accommodate the Proposed Development (the "**Timber**"), which value shall be based on a written estimate from a Virginia licensed forester with substantial and verifiable experience in the field of timber appraisal and harvesting. Within thirty (30) days of exercise of the Option, Purchaser shall pay to Seller the agreed upon fair market value of the Timber.

6. Title and Due Diligence Items. Promptly following the Effective Date, and in no event later than the expiration of the Initial Inspections Period, Seller shall inform Purchaser of any and all known encumbrances affecting the Property, including but not limited to liens, easements, restrictions, covenants, leases (recorded or unrecorded), and any parties, other than Seller, in possession of any portion of the Property. Purchaser may obtain a title report regarding the Property and shall provide a copy of said title report to Seller within thirty (30) days of receipt thereof. Upon Purchaser's request, Seller shall cooperate with Purchaser in removing any encumbrances on the Property revealed by said title report that are objectionable to Purchaser.

(a) Within three (3) days of the Effective Date, Seller shall provide to Purchaser, at Purchaser's address set forth in Section 12 hereof, copies of any permits, plans, specifications, approval, declarations, surveys, reports (including but not limited to any Phase I and Phase II environmental reports

and zoning resolutions and ordinances), license agreements and/or title insurance policies, concerning the Property, in Seller's possession or reasonable control, and not previously provided to Purchaser.

(b) During the Option Period, Seller shall not further encumber the Property or any part thereof, or sell, convey, assign, lease, or otherwise transfer any interest therein (or suffer or permit the occurrence of any such actions) without Purchaser's prior written consent.

7. Rezoning and Land Use Change. In the event that the Property will require a different zoning classification, re-parceling in the tax records of the city or county where the Property is located, and/or land use change in order to permit the Proposed Development, Seller agrees to cooperate with Purchaser in acquiring any necessary approvals, consents, authorizations, and/or permits from the applicable governing unit. Purchaser shall be solely responsible for the cost of any such rezoning, re-parceling, and/or land use change.

8. Easements. Seller shall grant to Purchaser, at no additional cost, an access easement as may be needed for the Proposed Development over property owned or controlled by Seller adjacent to the Property (the "**Adjacent Property**"). The location(s) of any easement on the Adjacent Property shall be subject to Seller's consent, not to be unreasonably withheld. Any easements affecting the Property or the Adjacent Property shall be confirmed in writing and recorded in the land records of Prince Edward County.

9. Exercise Option and Closing.

(a) Purchaser may exercise the Option at any time during the Option Period by providing Seller with notice as provided in this Agreement.

(b) Upon exercise of the Option, the Parties shall execute the Purchase Contract in the form substantially similar to the form attached hereto as **Exhibit B**.

(c) The Parties shall close on the Option Property within sixty (60) days after the exercise of the Option or such other date as mutually agreed upon by the Parties.

(d) At the closing of the sale and purchase of the Property (the "**Closing**"), Seller shall deliver those items to Purchaser listed in Section 6.2 of the Purchase and Sale Agreement entered into by the parties for the purchase and sale of the Property.

(e) At Closing, Seller shall pay any and all deferred taxes, and any interest thereon, due as of the date of Closing.

10. Damage or Condemnation Prior to Closing. Seller agrees to give Purchaser prompt written notice of any fire or other casualty affecting the Property between the Effective Date and the date of Closing or of any actual or threatened taking or condemnation of all or any portion of the Property. If prior to the Closing there shall occur any fire, casualty, notice of taking or condemnation of all or any portion of the Property, then, in any such event, Purchaser, as its option, may terminate its obligations under this Agreement by written notice given to Seller within ten (10) days after Purchaser has received the notice referred to above or at the Closing, whichever is earlier, and neither party shall have any further right or obligation hereunder. If Purchaser does not so elect to terminate its obligations under this Agreement, then the Closing shall take place as provided herein and, at Purchaser's option, Seller either shall assign, transfer and set over to Purchaser all of Seller's right, title and interest in and to any insurance proceeds or awards that may be made for such casualty or taking (and Seller will pay any insurance deductible applicable to the casualty insurance), or Seller shall agree with Purchaser for a reduction in the Purchase Price based on the extent of the casualty or taking.



11. Termination. Purchaser may terminate the Option by providing written notice to Seller as provided in this Agreement no less than five (5) days before the effective date of such termination. Upon such termination, Seller shall retain any installments of the Option Money due and payable prior to the effective date of the termination and the parties shall have no further obligation to each other except for the obligations of the parties which expressly survive the termination of the Option.

12. Notices. Any notice or other communications hereunder shall be in writing and shall be deemed to have been given (unless otherwise set forth herein), if delivered in person, deposited with an overnight express agency, fees prepaid, or mailed by United States express, certified or registered mail, postage prepaid, return receipt requested, to the parties at the following addresses, or to such other address as shall be later provided in writing by one party to the other:

(a) As to Seller:  
Lewis Wilkerson, Jr. and Dawn H. Wilkerson  
719 Ole Briery Station Road P.O. Box 270 *DEW*  
Keysville, VA 23947  
(434) 390-6484  
Email: lewisewilkersonjr@gmail.com

(b) As to Purchaser:  
Solar Development Holdings, LLC  
800 Taylor Street, Suite 200  
Durham, NC 27701  
(919) 960-6015  
Attn: Asset Management Department  
Email: assetmanagement@stratacleanenergy.com

As or at such other address as a party may designate in writing.

13. Confidentiality. Seller shall keep in strict confidence and shall not disclose to third parties, other than Seller's counsel: (i) its dealings with Purchaser and Purchaser's intentions and actions regarding the Proposed Development, (ii) the execution of this Agreement, or (iii) the commercial terms set forth in this Agreement, unless Purchaser consents in writing to such disclosure.

14. Entire Agreement. This Agreement and any exhibits contain the entire agreement of the parties and there are no representations, inducements or other provisions other than those expressed in writing. All changes, additions or deletions to this Agreement must be in writing and signed by each party. Any and all references to Seller or Purchaser shall be deemed to include their respective successors, heirs or assigns (and in the case of Purchaser, permitted assigns).

15. Assignment. The rights of Purchaser to the Option are fully assignable and shall be binding on Purchaser's successors and assigns. The rights and obligations of Seller hereunder shall inure to, and be binding on, Seller's successors and assigns. In the event Purchaser consents, as described in Paragraph 17 below, and Seller sells the Property during the Option Period to a third-party ("Conveyance"), then (1) the deed related to Conveyance shall identify this Agreement, including a reference to the recorded memorandum, and provide that the Conveyance is specifically subject to this Agreement; (2) the new owner of the Property shall execute a ratification of this Agreement in a form acceptable to Purchaser; (3) Seller shall provide Purchaser with written notice of the completed Conveyance and provide a copy of the recorded deed and executed ratification related to the Conveyance; and (4) all payments of Option Money due under this agreement after the date of the Conveyance shall be made to the new owner of the Property.

16. Authority. Seller has full power and authority to enter into this Agreement and to perform all of its obligations hereunder, and that its acts hereunder and as contemplated have been duly authorized by all requisite action; that consummation of this transaction on the part of Seller will not conflict with, or breach, any condition or provision of, or constitute a default under, the terms of any contract, mortgage, lien, lease, agreement, instrument or judgment by which Seller is bound.

17. Option of Record, Exclusivity and Purchaser's Consent to Sell. This Agreement shall not be recorded; however, within ten (10) days following Purchaser's request, Purchaser and Seller shall execute a memorandum of this Agreement in recordable form and in the same form as set forth in **Exhibit C** attached to this Agreement. At Purchaser's option, Purchaser may record the memorandum of purchase option agreement in the Clerk's Office of the Circuit Court of the City or County where the Property is situated at Purchaser's sole cost and expense. Seller and Purchaser agree that Purchaser has the sole and exclusive right to purchase the Property during the Option Period. However, upon Seller's request, Purchaser may provide Seller with written permission to sell the Property to an identified third-party during the Option Period which permission shall not be unreasonably withheld, conditioned or delayed and shall be deemed granted if Purchaser does not respond to Seller within thirty (30) days of Seller's request. Any such consent by Purchaser and subsequent sale shall not extinguish Purchaser's exclusive rights in the Option to Purchase the Property during the Option Period. In the event Seller requests Purchaser's consent for Seller to sell the Property to a third-party during the Option Period, Seller, Purchaser and such third-party must first agree in writing to the terms in Paragraph 15 above relating to such Conveyance before Purchaser will consider such request; otherwise, Seller shall not enter into any agreement with any other party during the Option Period whereby Seller agrees to sell, lease, or otherwise encumber the Property. Purchaser shall have the sole and exclusive right during the Option Period to purchase the Property.

18. Governing Law. This Agreement shall be governed by Virginia law.

19. Time is of the Essence. Time is of the essence in connection with every provision of this Agreement.

20. Failure to Close. Purchaser shall be entitled to specific performance of this Agreement in the event Seller wrongfully fails to perform its obligations hereunder. In the event Purchaser, following exercise of the Option, fails to close within the time required hereby, Purchaser acknowledges that Seller may retain the Option Money, which shall be Seller's sole and exclusive remedy for such failure to close by Purchaser.

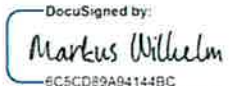
[END OF TEXT. SIGNATURE PAGES FOLLOW]

IN WITNESS WHEREOF, Seller and Purchaser have executed this Agreement on the date set for below and effective as of the Effective Date.

**PURCHASER:**

**SOLAR DEVELOPMENT HOLDINGS, LLC**

By: Strata Manager, LLC, its Manager

By:   
6C5CD89A94144BC

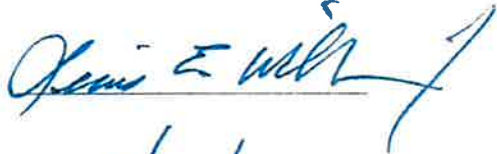
Name: Markus Wilhelm

Title: Manager

Date: 12/5/2023 | 8:40 AM EST

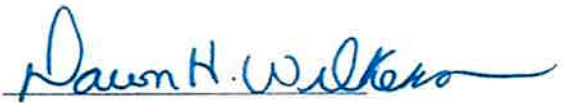
**SELLER:**

**LEWIS WILKERSON, JR., aka, LEWIS E. WILKERSON, aka LEWIS E. WILKERSON, JR.**

  
Date: 11/30/23

**SELLER:**

**DAWN H. WILKERSON**

  
Date: 11/30/23

## **EXHIBIT A**

### **LEGAL DESCRIPTION OF THE PROPERTY**

All those certain tracts or parcels of land located in Hampden Magisterial District, Prince Edward County, Virginia, containing approximately 1,789.875 acres, more or less, and being the same tracts or parcels of land conveyed to Seller by the following conveyances: (1) that certain Deed of Gift dated August 2<sup>nd</sup> 2019 and recorded in the Clerk's Office of the Prince Edward County Circuit Court on August 5, 2019 as Instrument Number 190001352; (2) that certain Deed of Gift dated January 12, 2005 and recorded in the Clerk's Office of the Prince Edward County Circuit Court on January 24, 2005 as Instrument Number 200500214; (3) that certain Deed dated January 4, 2004 and recorded in the Clerk's Office of the Prince Edward County Circuit Court on January 21, 2004 as Instrument Number 200400165; (4) that certain Deed and Deed of Assumption dated February 24, 2004 and recorded in the Clerk's Office of the Prince Edward County Circuit Court on February 24, 2004 as Instrument Number 200400451; (5) that certain Deed dated June 4, 2014 and recorded in the Clerk's Office of the Prince Edward County Circuit Court on June 13, 2014 as Instrument Number 201400858; (6) that certain Deed dated September 18, 2013 and recorded in the Clerk's Office of the prince Edward County Circuit Court on September 27, 2013 as Instrument Number 201301751; (7) that certain Deed dated July 1, 2011 and recorded in the Clerk's Office of the prince Edward County Circuit Court on July 1, 2011 as Instrument Number 201101061; (8) that certain Deed of Gift dated January 12, 2005, and recorded in the Clerk's Office of the Prince Edward County Circuit Court on January 24, 2005 as Instrument Number 200500214 as further described in that Certificate of Confirmation by Owner and Plat dated December 1, 2016, and recorded in the Clerk's Office of the Prince Edward County Circuit Court on December 2, 2016 as Instrument Number 160002077; (9) that certain Deed dated October 18, 2005 and recorded in the Clerk's Office of the Prince Edward County Circuit Court on October 20, 2005 as Instrument Number 200502809; (10) ) that certain Special Warranty Deed dated May 11, 2005 and recorded in the Clerk's Office of the Prince Edward County Circuit Court on June 6, 2005 as Instrument Number 200501474; (11) that certain Deed of Bargain and Sale dated December 12, 2005 and recorded in the Clerk's Office of the Prince Edward County Circuit Court on December 14, 2005 as Instrument Number 200503312 and further described in that certain Affidavit dated May 15, 2019 and recorded in the Clerk's Office of the Prince Edward County Circuit Court on May 15, 2019 as Instrument Number 190000790; (12) that certain Deed of Bargain and Sale dated December 12, 2005 and recorded in the Clerk's Office of the Prince Edward County Circuit Court on December 14, 2005 as Instrument Number 200503312 and further described in that certain Affidavit dated May 15, 2019 and recorded in the Clerk's Office of the Prince Edward County Circuit Court on May 15, 2019 as Instrument Number 190000790; (13) that certain Deed dated December 11, 2006 and recorded in the Clerk's Office of the Prince Edward County Circuit Court on December 14, 2006 as Instrument Number 200603511 and further described in that certain Affidavit dated May 21, 2019 and recorded in the Clerk's Office of the Prince Edward County Circuit Court on May 23, 2019 as Instrument Number 190000845; (14) that certain Deed of Bargain and Sale dated December 5, 2005 and recorded in the Clerk's Office of the Prince Edward County Circuit Court on December 14, 2005 as Instrument Number 200503312; (15) that certain Special Warranty Deed dated April 7, 2011 and recorded in the Clerk's Office of the Prince Edward County Circuit Court on April 14, 2011 as Instrument Number 201100642, and being more particularly described therein as follows:

**Tract 1-Tax Map #111-A-2B as described in Instrument Number 190001352:**

ALL that certain lot, tract or parcel of land with improvements thereon and appurtenances thereunto belonging, lying and being in Hampden Magisterial District of Prince Edward County, Virginia, and containing 3.59 acres, more or less, located on VSR #15, and referred to as "The Henderson Tract", according to plat of survey by William R. Reeves, Jr., dated May 18, 2007, revised August 31, 2011 and recorded in the Clerk's Office of the Circuit Court of Prince Edward County, Virginia as Instrument #190000883 (also see Slide B39#2), reference to which is made for a more detailed description of the property herein conveyed.

Being the same property conveyed to Lewis W. Wilkerson, Jr., by deed from Wallace W. Wright, Rachelle P. Wright and Bruce C. Wright, dated August 22, 2011 and recorded in the Clerk's Office of the Circuit Court of Prince Edward County, Virginia, on August 24, 2011, bearing Instrument #201101352.

**Tract 2 - Tax Map #111-A-3 as described in Instrument Number 200500214:**

ALL THAT CERTAIN TRACT, piece or parcel of land, with the buildings and improvements thereon, situate, lying and being in Hampden Magisterial District, Prince Edward County, Virginia, about 1/4 mile Northwest of Briery Station, containing 134 acres, more or less, and bounded and described as follows:

BEGINNING at the intersection of the North right of way line of the Norfolk and Western Rwy. and center line of the Keysville and Farmville public road; thence along said public road, North 10 deg. 30 min. East 4.60 chains; North 41 deg. 45 min. East 8.40 chains; North 26 deg. 45 min. East 5.00 chains to a small white oak tree on the East side of the road, thence a new line, South 69 deg. East 77.00 chains to a stake on the Booker Road; thence along same, South 10 deg. 30 min. West 9.80 chains; South 36 deg. 30 min. West 1.80 chains; South 14 deg. 30 min. West 5.47 chains to the corner of the "Lyman School" Lot; thence along school lot, North 83 deg. West 6.60 chains to a stake four feet West of a small dogwood tree; thence along the line of C. S. Barnes, North 63 deg. West 9.20 chains to a stake between two cedar trees; thence South 3 deg. West 3.10 chains to the right of way line of the N. & W. Rwy.; thence along said right of way parallel to the center line of the main tract and 90 feet therefrom, in a Westerly direction 370.00 ft.; thence in a Southerly direction and at right angles to the main line 30 feet; thence in a Westerly direction parallel to and 60 feet from the centerline, 1,115 feet; thence in a Northerly direction, and at right angles to the center line, 45 feet; thence in a Westerly direction, parallel to and 105 feet from the centerline, 920 feet; thence in a Southerly direction, at right angles to the centerline, 30 feet; thence in a Westerly direction, parallel to and 75 feet from the centerline, 1,009 feet; thence in a Northerly direction and at right angles to the center line, 40 feet; thence in a Westerly direction, parallel to and 115 feet from the center line, 603 feet to the point of beginning; LESS HOWEVER, that certain 1.08 acre parcel heretofore conveyed to the Commonwealth of Virginia by deed dated July 11, 1945, and recorded in the Clerk's Office of the Circuit Court of Prince Edward County, Virginia, in Deed Book 103 at page 457.

BEING the same real estate conveyed to Lewis E. Wilkerson, Jr. and Dawn H. Wilkerson and Roland J. Wilkerson and Stacey Y. Wilkerson, by deed from Lewis E. Wilkerson, Jr. and Roland J. Wilkerson dated August 5, 1999 and recorded August 18, 1999 in the Clerk's Office, Circuit Court, Prince Edward County, Virginia in Deed Book 336 page 276.



**Tract 3 – Tax Map #112-A-19A as described in Instrument Number 200400165:**

All of that certain tract or parcel of real estate, with all improvements thereon and privileges and appurtenances thereunto appertaining, situate, lying and being in the Hampden Magisterial District of Prince Edward County, Virginia, containing 485.98 acres, adjoining the lands of the Grantee herein on the East, as more particularly shown and described on a plat of survey made by William W. Dickerson, Jr., L.L. S., dated September 25, 2003, Divided December 9, 2003, of which plat is recorded in the Clerk's Office of the Circuit Court of Prince Edward County, together with a Plat Affidavit as Instrument #200400019, and said plat being recorded in Slide A-303. #1. Reference is hereby made to said affidavit and plat for a more accurate and complete description of the real estate herein conveyed.

Being a portion of the real estate that was conveyed unto Clayton C. Bryant, Jr. and Malcolm J. Coleman, Jr. by deed from Chang Ho Lie and Sun Ja Lie, husband and wife, dated December 10, 2002, and recorded in Prince Edward County Circuit Court Clerk's Office as Instrument Number 200203272.

**Tract 4 – Tax Map #120-A-1 as described in Instrument Number 200400451:**

All that certain tract or parcel of land, with all buildings and improvements thereon and the privileges and appurtenances thereunto belonging, lying, and being in the Hampden Magisterial District of Prince Edward County, Virginia, containing 396.57 acres, more or less, and being the identical tract of land as that which consisted of 399 acres conveyed by Elizabeth B. Lyman, unmarried, by a metes and bounds description, to George O. Pettus and R.E. Pettus, Jr., by deed bearing date on January 12, 1920, and recorded in the Clerk's Office of Prince Edward County, Virginia, in Deed Book 68, at page 521. **SAVE AND EXCEPT:** however 1.06 acres conveyed by George O. and R.E. Pettus, Jr., joined by their respective wives, to the Commonwealth of Virginia by deed dated March 5, 1926, and recorded in the aforesaid Clerk's Office in Deed Book 77, at page 385; and another similar conveyance to the Commonwealth of Virginia by R.S. McCall and Lula R. McCall consisting of 1.37 acres by deed bearing date of 1951 and recorded in the aforesaid Clerk's Office in Deed Book 117, at page 370; and to all three of these deeds references is hereby expressly made for a more adequate description of the real property hereby conveyed.

**LESS AND EXCEPT:** 0.87 acres fronting on U.S. Highway 15 and shown as Parcel 2 on that plat of survey prepared by Charlotte Land Surveying, dated February 9, 2004, which said plat is attached hereto and recorded herewith for a more complete and accurate description of the property hereby conveyed.

This being a portion of the same identical real estate conveyed unto the parties of the first part by deed dated October 29, 2003 and recorded in the Circuit Court Clerk's Office of Prince Edward County, Virginia as Instrument # 200303287.

Tract 5 – Tax Map #120-A-2, #120-A-3, #120-A-4, and #120-A-5 as described in Instrument Number 201400858:

THAT said 55 acres of land, lying and being in the County of Prince Edward, of which G. C. Womack died, seized and possessed, and being a portion of the land derived by the said G. C. Womack from Hatchett and J. B. Freyling respectively.

BEING the same real property conveyed to E. L. Bailey by deed from Robt. K. Brock, Special Commissioner, in a suit in the Circuit Court of the County of Prince Edward styled "Matina G. Womack, Gdn. v. Emily Sue Womack et als" dated December 8, 1911, recorded December 13, 1911, in the Clerk's Office of the Circuit Court of Prince Edward County, Virginia, in Deed Book 58, page 145.

AND ALL THAT certain tract or parcel of land located in Hampden District, Prince Edward County, Virginia about one-half mile northeast of Briery Station, being a part of that tract known as the Lyon place and bounded as follows:

BEGINNING at the southeast corner of John Foster's land; thence N-79 degrees, 30 minutes, 7.44 chains to an old poplar tree; thence S-67 degrees, 30 minutes-E 18.00 chains to the center of Horsepen Creek; thence down said creek, the center being the line, N-46 degrees 30 min-E 1.48 chains; N-24 degrees 45 minutes-E 4.65 chains to Hatchett's ford; thence along the Hatchett road S-55 degrees 15 minutes-W 2.14 chains; N-78 degrees 45 minutes 9.93 chains; N-46 degrees 10-minutes-W 3.04 chains; N-24 degrees 15 minutes-W 7.14 chains; N-56 degrees-W 0.94 chains; N-79 degrees 15 minutes-W 6.40 chains to Foster's corner on the road; thence along his line S-15 degrees-W 10.80 chains to the place of beginning and containing thirteen (13.00) acres.

and

ALL of that certain tract or parcel of land containing 1.11 acres, situated on the east side of a forest fire trail, about 1/4 mile northeast of Briery Station, in Hampden District, Prince Edward County, Virginia and described by metes and bounds as follows:

Beginning at an iron stob near the intersection of the Bailey road and running S. 81 degrees 15 minutes E. 132 feet; thence S. 12 degrees, 30 minutes W. 400 feet to an iron stob; thence N. 81 degrees, 30 minutes W. 111 feet to an iron stob; thence N. 9 degrees 30 minutes, E. along the forest fire trail 400 feet to the point of beginning and being more particularly described on a plat of K.J. Crouch, Surveyor, dated April 24, 1956; it being the identical property conveyed by Deed recorded in Deed Book 141, page 550.

and

All that certain tract or parcel of land situated in Hampden Magisterial District of Prince Edward County, Virginia, about 1/4 mile northeast of Old Briery Station, containing two acres, more or less, and bounded as follows:

Beginning at a stob at the northeast corner of the 1.11 acre tract belonging to James E. Bailey, and running S. 81 degrees 15 minutes E. 220 feet to a stob; thence S. 9 degrees 30 minutes W. 400 feet to a stob; thence N. 81 degrees 30 minutes W. 241 feet to a stob; thence along Bailey's line N. 12 degrees 30 minutes E. 400 feet to the point of beginning.

BEING the same parcels of land conveyed to Charles E. Bailey, Mabel B. Carr, Nancy B. Sanderson and James R. Bailey by deed from Charles E. Bailey et al dated March 30, 1995, recorded April 28, 1995 in the Clerk's Office of the Circuit Court of Prince Edward County, Virginia in Deed Book 294, page 504.

Tract 6 – Tax Map #120-A-6 as described in Instrument Number 201301751:

TRACT I: All of that certain tract or parcel of land lying and being in Hampden District of Prince Edward County, Virginia, about 1/4 mile northeast of Briery Station and bounded as follows: Beginning at the fork of the Booker and Hatchett roads; thence along the center line of the Hatchett road as it was located in 1919, S. 80 deg. 30' E. 5.54 chains; thence S. 76 deg. 45' E. 3.38 chains; thence along the lines of S. L. Lyon S. 11 deg. 15' W. 11.10 chains to a cedar stake; thence N. 80 deg. W. 8.90 chains to the Booker Road; thence along the same N. 10 deg. 45' E. 11.26 chains to the place of beginning, thus forming a tract of land containing 10 acres, more or less.

TRACT II: All of that certain tract or parcel of land lying and being in Hampden Magisterial District of Prince Edward County, Virginia, about 1/4 mile North of Briery Station and bounded as follows: Beginning at a cedar post on the southeast corner of the above described tract of land, thence new lines S. 81 deg. E. 11.64 chains to a cedar stake and 0.64 chains east of branch; thence N. 15 deg. E. 10.80 chains to the Hatchett road; thence along said road N. 81 deg. 30' W. 12.43 chains to an iron stake; thence along the line of the tract of land described in (1) above S. 11 deg. 15" W. 11.10 chains to the place of beginning, thus forming a piece of land containing 12.6 acres, more or less.

LESS, HOWEVER, an off-conveyance of 1.11 acres to Clyde Foster by deed dated September 6, 1959 and recorded in the aforesaid Clerk's Office in Deed Book 141, page 550.

SAVE AND EXCEPT an off-conveyance of 2 acres to James E. Bailey, Mabel C. Bailey, Gus Brice and Rosa M. Brice by deed dated August 9, 1972 and recorded in the aforesaid Clerk's Office in Deed Book 182 at page 54.

Being the identical property conveyed unto Margaret H. Richards and Steven A. Richards by deed of gift from Lillian L. Hanmer, dated April 14, 1987 of record in the aforesaid Clerk's Office in Deed Book 239, at page 223.

**Tract 7 – Tax Map #120-A-7 and #120-A-8 as described on Instrument Number 201101061:**

Tract 1:

All that certain lot or parcel of land, lying and being Hampden Magisterial District, Prince Edward County, Virginia, adjacent to or near Briery Station on the Virginia Railway and containing **6.1 acres**, more or less.

Tract 2:

All of that certain tract or parcel of land, lying and being in the Hampden Magisterial District, Prince Edward County, Virginia, near Briery Station, containing **5 acres**, more or less, and being bounded as follows: Beginning at a stake on the North right of way line of the Norfolk and Western Railway Company; thence along said right of way line and the lands of John Eggleston, S. 83 Deg. 15 Min. E. 3.79 chains to a stake; thence N. 84 Deg. 45 Min. W. 13.65 chains to a stake; thence N. 84 Deg. 45 Min. W. 13.65 chains to Booker Road; thence along the same (omitted bearing) should be S. 21 Deg. 30 Min. W. 2.07 chains to Norfolk and Western Railroad; thence along said railroad, S. 36 Deg. E. 1.92 chains to point of beginning, and that certain parcel of land in Hampden District containing **72/100 acres** and described as follows: Beginning at a White Oak on the Hatchett Road; thence along D.J. Thompson line S. 86 Deg. 30 Min. E. 11.90 chains to a Pine tree; thence N. 79 Deg. 30 Min. W. 11.76 chains to Triple Pine on Hatchett Road; thence along said road, S. 27 Deg. 30 Min. W. 1.20 chains to point of beginning.

**BOTH TRACTS BEING** the same property conveyed unto Ethel G. Biggers by deed dated August 17, 1979 and recorded in the Clerk's Office of the Circuit Court of Prince Edward County, Virginia in Deed Book 212 at page 850.

**THE REMAINDER OF THIS PAGE LEFT INTENTIONALLY BLANK**

**Tract 8 – Tax Map #120-A-15 as described in Instrument Numbers 200500214 and 160002077:**

**Parcel 3**

ALL that certain parcel or tract of land situated in Walton Magisterial District, Charlotte County, Virginia, lying, along Secondary road No. 653, as shown on plat of survey by Warren A. Trent, PLAT No. 1390 that is attached to and made a part of the deed recorded in Deed Book 264 page 775. This being Parcel "A" consisting of 29.17 that was part of an entire tract consisting of 57.81 acres by plat of survey dated May 12, 1989 and recorded in Plat book No. 7 page 111 in the Clerk's Office of Charlotte County, Virginia and adjoining the lands, of Elsie A. Edmunds and Caroline H. Freeman and R. H. Pettus.

LESS AND EXCEPT that piece or parcel of land containing 5.50 acres of land conveyed to Lewis E. Wilkerson, Sr. by deed dated May 23, 1996 and recorded May 24, 1996 in the aforesaid Clerk's Office in Deed Book 284 page 327.

BEING a part of the same real estate conveyed to Lewis E. Wilkerson, Jr. And Dawn H. Wilkerson, husband and wife and Roland J. Wilkerson and Stacy U. Wilkerson, husband and wife, by deed from Lewis E. Wilkerson, Jr. And Roland J. Wilkerson, dated August 5, 1999 and recorded August 11, 1999 in the Clerk's Office, Circuit Court, Charlotte County, Virginia in Deed Book 306 page 841.

**Tract 9 – Tax Map #120-A-20 as described in Instrument Number 200502809:**

**All that certain tract or parcel of land situated in Hampden District, Prince Edward County, Virginia, containing 11.91 acres according to plat of survey of Charlotte Land Surveying dated October 6, 2005, a copy of which plat is attached hereto and made a part of this Deed by reference for a more detailed description of the property herein conveyed.**

**This being a portion of that property conveyed unto Old Virginia Properties, LLC, a Virginia Limited Liability Company, by deed of Kirk Douglas Garnett, Married, dated June 6, 2005, and recorded in the Clerk's Office of the Circuit Court of Prince Edward County, Virginia as Instrument No. 200501922.**



Tract 10 – Tax Map #120-A-21 as described in Instrument Number 200501474:

**TAX MAP NO. 120-A-21**

**DEED: 127, page 103**

**BALDWIN TRACT #3209**

ALL that certain lot or parcel of land lying and being in Hampden Magisterial District, Prince Edward County, Virginia, containing 112.1 acres, more or less. For a more accurate and particular description of the property hereby conveyed, reference is made to a Plat of survey prepared by K. J. Crouch, Surveyor, dated November 1953, attached to, recorded with and made a part of the Deed conveying the subject property to The Chesapeake Corporation of Virginia, recorded in the Clerk's Office of the Circuit Court of Prince Edward County, Virginia in Deed Book 127, at Page 103.

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BEING a portion of the property conveyed to ForesTree GM LLC, a Delaware limited liability company, from John Hancock Life Insurance Company, a Massachusetts corporation, by deed recorded in the Clerk's Office of the Circuit Court of Prince Edward County, Virginia as Instrument No. 200402998.

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**Tract 11 – Tax Map #120-A-29 as described in Instrument Numbers 200503312 and 190000790:**

ALL those certain tracts of land containing, in the aggregate, Two Hundred Twenty-five and 20/100 (225.20) acres, more or less, in Hampden District, Prince Edward County, Virginia, and being the identical tracts of land conveyed to Georgia-Pacific Corporation from Spaulding by deed dated the 5<sup>th</sup> of October, 1965, recorded in the Clerk's Office, Circuit Court, Prince Edward County, Virginia in Deed Book 159, page 424, and identified therein as Tract 4. Said tracts of land were acquired by Spaulding from S. E. Spaulding, et al., by Deed dated the 1<sup>st</sup> day of December, 1950, recorded in the aforesaid Clerk's Office in Deed Book 117 page 165.

LESS AND EXCEPT that portion of the property within Tract PE-025 G-P Joyner PE-4 (549-135).

LESS AND EXCEPT 9.86 acres conveyed in that certain Boundary Line Agreement dated March 10, 1988 by and between KMI Continental Powhatan, Inc., and B. L. Dempsey and Freida L. Dempsey, recorded in Deed Book 243, page 571.

The portion of the above described property which comprises Tract PE-027 is shown on that certain survey for Continental Can Company, Inc., - Rutledge Tract, prepared by John R. Nunnally, Jr., dated December 29, 1971, a copy of which survey is recorded in Deed Book 358 page 283.

BEING a part of the same real estate conveyed to Alpha Forest Associates, Inc., by deed from Citibank, FSB, as Trustee for Account #308262, dated December 28, 2000 and recorded in the Clerk's Office, Circuit Court, Prince Edward County, Virginia in Deed Book 358 page 266.

**Tract 12 – Tax Map #120-A-29 as described in Instrument Numbers 200603511 and 190000845:**

ALL that certain lot, tract or parcel of land with improvements thereon and appurtenances thereunto belonging, lying and being in Hampden Magisterial District of Prince Edward County, Virginia, and containing two and one-half (2.5) acres, but this is a sale in gross and not by the acre, and located on VSR #360 approximately four miles north of Keysville. Said lands are more particularly described as to metes and bounds on a plat of survey by F. Richard Quible, C.L.S., dated October 1, 1959 and found recorded in the Office of the Clerk of the Circuit Court of Prince Edward County in Deed Book 142 at Page 62. Being the identical property conveyed unto Calvin M. Chidester, Jr. and Denise A. Chidester, husband and wife, Grantors herein, by that certain Deed dated May 4, 1999 from Marvin E. Whirley, et als, duly recorded in the Clerk's Office of the Circuit Court of Prince Edward County, Virginia in Deed Book 333 at page 468.

**Tract 13 – Tax Map #120-A-42**

**HAMPDEN DISTRICT**

ALL OF THAT CERTAIN TRACT or parcel of land situated in Prince Edward County, Virginia containing 71.10 acres, more or less, and bounded as follows: On the South by State Highway Route No. 360 lying between Prince Edward and Lunenburg Counties; on the West by the lands owned by or formerly owned by Clifford Shackleton; on the North and East by the lands owned by or formerly owned by Conrad Brehm.

LESS AND EXCEPT the following off-conveyances: 10 acres by deed dated March 9 1987, recorded in the Clerk's Office of the Circuit Court of Prince Edward County, Virginia in Deed Book 238, page 714; 2.00 acres by deed dated January 13, 1995, recorded in Deed Book 297 page 314 THEN corrected by Deed of Correction dated June 7, 1996 recorded in Deed Book 303 page 39, correcting the acreage of 3.00 acres, and 3.005 acres by deed dated February 9, 1998, recorded in Deed Book 317, page 845.

LEAVING an aggregate of 55.09 acres, more or less.

IT BEING THE same property conveyed unto Bayview Loan Servicing, LLC by deed dated September 10, 2014 from Wittstadt Title & Escrow Company, LLC and recorded October 20, 2014 in the Clerk's Office of the Circuit Court of Prince Edward County, Virginia as Instrument 201401602.

**LESS AND EXCEPT THE FOLLOWING TRACTS OR PARCELS:**

ALL of those certain lots, lying and being in the Hampden District of Prince Edward County, Virginia, known and designated as 25.05 Acres and 4.55 Acres on plat of survey entitled "Plat Showing Boundary Survey of that Portion of The old Joseph T. Fowlkes Property Lying in Hampden District, Prince Edward County, VA," made by Southeast Survey Group, LTD, dated February 16, 2015, and recorded May 23, 2019 in the Clerk's Office of the Circuit Court of Prince Edward County, Virginia, at Instrument No. 190000844, Slide B38 #4, reference to which plat is hereby made for a more particular description of the properties herein conveyed.

Being a part of the same property conveyed to LEWIS E. WILKERSON, JR AND DAWN H. WILKERSON, HUSBAND AND WIFE by Special Warranty Deed from BAYVIEW LOAN SERVICING, LLC., dated February 20, 2015 and recorded February 23, 2015, of record in Instrument No. 150000231, among the land records of Prince Edward, Virginia.

**Tract 14 – Tax Map # 120-A-46**

ALL of that certain tract or parcel of land lying and being in Hampden Magisterial District, Prince Edward County, Virginia, containing 274.93 acres, more or less. For more accurate and particular description as to the property hereby conveyed, reference is made to a Plat of Correction, dated September 15, 1986, by R. B. Cartwright, C.L.S., recorded in the Clerk's Office, Circuit Court, Prince Edward County, Virginia, in Plat Book 5, Page 207.

**Tract 15 - Tax Map # 121-A-9**

ALL those certain tracts of land containing, in the aggregate, Two Hundred Twenty-five and 20/100 (225.20) acres, more or less, in Hampden District, Prince Edward County, Virginia, and being the identical tracts of land conveyed to Georgia-Pacific Corporation from Spaulding by Deed dated the 5<sup>th</sup> day of October, 1965, recorded in the Clerk's Office, Circuit Court, Prince Edward County, Virginia in Deed Book 159 page 424, and identified therein as Tract 4. Said tracts of land were acquired by Spaulding from S. E. Spaulding, et al., by Deed dated the 1<sup>st</sup> day of December, 1950, recorded in the aforesaid Clerk's Office in Deed Book 117 page 165.

TOGETHER with a non-exclusive easement 15' in width over and across a portion of the property of Julius Walton and Zena Walton to State Route No. 737 as more particularly described in that Deed of Easement by and between Julius Walton, et us, and Continental Hopewell Woodlands, Inc., dated March 28, 1984, recorded January 7, 1985 in the Clerk's Office, Circuit Court, Prince Edward County, Va., in Deed Book 229 page 380, and

TOGETHER with a non-exclusive easement 30' in width over and across the properties of James L. Walton, et als, to State Route No. 737 as more particularly described in that certain Deed of Easement by and between James L. Walton, et als, and Continental Hopewell Woodlands, Inc., dated March 28, 1984, recorded January 7, 1985 in the Clerk's Office, Circuit Court, Prince Edward County, Va. in Deed Book 229 page 382.

LESS AND EXCEPT 9.86 acres conveyed in that certain Boundary Line Agreement dated March 10, 1988 by and between KMI Continental Powhatan, Inc., and B. L. Dempsey and Freida L. Dempsey, recorded in Deed Book 243, page 571.

LESS AND EXCEPT that portion of the property within Tract PE-027 G-P Rutledge PE-6 (549-135).

The portion of the above described property which comprises Tract PE-025 is shown on that certain survey for Continental Can Company, Inc. - Joyner Tract, dated December 1970, a copy of which survey is recorded in aforesaid Clerk's Office in Deed Book 358 page 281.

BEING a part of the same real estate conveyed to Alpha Forest Associates, Inc., by deed form Citibank, FSB, as Trustee for Account #308262, dated December 28, 2000 and recorded in the Clerk's Office, Circuit Court, Prince Edward County, Virginia in Deed Book 358 page 266.

ALL those certain tracts of land containing, in the aggregate, Two Hundred Twenty-five and 20/100 (225.20) acres, more or less, in Hampden District, Prince Edward County, Virginia, and being the identical tracts of land conveyed to Georgia-Pacific Corporation from Spaulding by deed dated the 5<sup>th</sup> of October, 1965, recorded in the Clerk's Office, Circuit Court, Prince Edward County, Virginia in Deed Book 159, page 424, and identified therein as Tract 4. Said tracts of land were acquired by Spaulding from S. E. Spaulding, et al., by Deed dated the 1<sup>st</sup> day of December, 1950, recorded in the aforesaid Clerk's Office in Deed Book 117 page 165.

LESS AND EXCEPT that portion of the property within Tract PE-025 G-P Joyner PE-4 (549-135).

LESS AND EXCEPT 9.86 acres conveyed in that certain Boundary Line Agreement dated March 10, 1988 by and between KMI Continental Powhatan, Inc., and B. L. Dempsey and Freida L. Dempsey, recorded in Deed Book 243, page 571.

The portion of the above described property which comprises Tract PE-027 is shown on that certain survey for Continental Can Company, Inc., - Rutledge Tract, prepared by John R. Nunnally, Jr., dated December 29, 1971, a copy of which survey is recorded in Deed Book 358 page 283.

BEING a part of the same real estate conveyed to Alpha Forest Associates, Inc., by deed form Citibank, FSB, as Trustee for Account #308262, dated December 28, 2000 and recorded in the Clerk's Office, Circuit Court, Prince Edward County, Virginia in Deed Book 358 page 266.

**Less and except from all of the property described above, all portions of the above-described property not currently owned by the Seller as reflected in all outsales, reservations, testamentary gifts or other conveyances appearing in the chain of title and of record in the Clerk's Office of the Prince Edward County Circuit Court.**

**It is the intent of the parties that all of the real property owned by the Seller in the Tax Map Parcel #s 111-A-2B, 111-A-3, 112-A-19, 120-A-1, 120-A-2, 120-A-3, 120-A-4, 120-A-5, 120-A-6, 120-A-7, 120-A-8, 120-A-15, 120-A-20, 120-A-21, 120-A-29, 120-A-41, 120-A-42, 120-A-46, 121-A-9 are subject to this Option Agreement and part of the Property described herein regardless of any errors or omissions in the Legal Description.**

**END OF EXHIBIT A**



**EXHIBIT B**

**FORM OF PURCHASE AND SALE AGREEMENT**

**PURCHASE AND SALE AGREEMENT**

THIS PURCHASE AND SALE AGREEMENT (this "**Agreement**") is made and entered into this \_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_, by and between \_\_\_\_\_ ("**Seller**"), and **SOLAR DEVELOPMENT HOLDINGS, LLC**, a North Carolina limited liability company ("**Purchaser**").

**WITNESSETH:**

WHEREAS, Purchaser desires to purchase certain real property from Seller, and Seller has agreed to sell such property to Purchaser; and

WHEREAS, the parties desire to provide for said purchase and sale on the terms and conditions hereinafter set forth.

NOW, THEREFORE, for and in consideration of the foregoing premises, the mutual covenants and agreements set forth herein and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the parties hereto do hereby agree as follows:

1. **DEFINITIONS AND MEANINGS.** In addition to any other terms whose definitions are fixed and defined by this Agreement, each of the following defined terms, when used in this Agreement with an initial capital letter, shall have the meaning ascribed thereto by this Section:

"**Agreement**" means this Purchase and Sale Agreement, together with all exhibits attached hereto.

"**Closing**" means the consummation of the purchase and sale contemplated by this Agreement by the deliveries required under **Section 6** hereof.

"**Closing Date**" means the time and date, established under **Section 6.1** hereof, when the purchase and sale contemplated by this Agreement is to be consummated, as such date may be extended by mutual agreement of the parties or pursuant to the provisions of this Agreement.

"**Effective Date**" means the date on which this Agreement is duly executed by Purchaser and Seller; such date shall be inserted in the preamble on the first page of this Agreement.

"**Intended Use**" means the development, construction, and operation of a solar photovoltaic power array, which may include an energy storage facility utilizing battery or other energy storage technology, either stand-alone or in connection with a photovoltaic power array, on the Real Property.

"**Real Property**" means those certain tracts or parcels of real property generally shown on **Exhibit A** attached hereto and incorporated herein by this reference, to be more specifically shown on a survey, and expressly including any easements benefitting such real property, and any and all other rights and appurtenances pertaining to such real property.

"**Purchase Price**" means the amount which Purchaser shall pay to consummate the purchase and sale of the Real Property as provided in **Section 3** hereof.

"Title Matter" and "Title Matters" mean any mortgages, liens, financing statements, security interests, easements, leases, restrictive covenants, agreements, options, claims, clouds, encroachments, rights, taxes, assessments, mechanics' or materialmans' liens (inchoate or perfected), liens for federal or state income, estate or inheritance taxes and other encumbrances of any nature whatsoever, whether existing of record or otherwise, together with any and all matters of any kind or description, including, without limitation, matters of survey and any litigation or other proceedings affecting the Real Property or Seller and which affect title to the Real Property, or the ability, right, power and authority of Seller to convey to Purchaser fee simple, good and marketable and insurable title to the Real Property, in accordance with the terms of this Agreement.

2. SALE AND PURCHASE. Seller agrees to sell the Real Property to Purchaser on the terms and conditions contained in this Agreement, and Purchaser agrees to purchase the Real Property from Seller on the terms and conditions contained in this Agreement.

3. PURCHASE PRICE. The Purchase Price for the Real Property shall be \_\_\_\_\_ Thousand and no/100 Dollars (\$\_\_\_\_\_.000.00). The Purchase Price includes the sum of \_\_\_\_\_ Dollars (\$\_\_\_\_\_) paid by Purchaser to Seller pursuant to that certain Option Agreement dated \_\_\_\_\_, 20\_\_ (the "Option Money"). The Purchase Price less the Option Money shall be paid by Purchaser to Seller not later than 5:00 p.m. eastern time on the Closing Date by wire transfer of immediately available federal funds, subject to prorations, adjustments, and credits as otherwise specified in this Agreement.

4. TITLE.

4.1 Satisfaction of Monetary Liens. Notwithstanding anything herein to the contrary, Seller shall be obligated to remove or discharge any mortgage or other monetary lien affecting the Real Property; provided however, that Seller may, at its option, remove or discharge any such liens from the proceeds to be paid to Seller at the Closing of this transaction.

4.2 No Additional Encumbrances. Seller will not create or allow any additional encumbrances on the Real Property after the Effective Date.

5. SELLER'S REPRESENTATIONS AND WARRANTIES.

5.1 Seller's Representations and Warranties. Seller represents and warrants to Purchaser, as follows:

5.1.1 Seller is a valid Virginia limited liability company or individual and has the right, power and authority to enter into this Agreement, and the right, power and authority to convey the Real Property in accordance with the terms and conditions of this Agreement.

5.1.2 Seller has no knowledge of, and has received no written notice of, any pending action by any governmental authority or agency having the power of eminent domain, which might result in any part of the Real Property being taken by condemnation or conveyed in lieu thereof. Seller shall, promptly upon receiving any such notice, give Purchaser written notice thereof.

5.1.3 Seller has no knowledge of, and has received no written notice of, any action, suit or proceeding pending or threatened in writing against, by or affecting Seller's right to transfer the Real Property or the title of the Real Property.

5.1.4 Neither the entry into nor the performance of, or compliance with, this Agreement (i) has resulted in, or will result in, any violation of, or (ii) is or will be in conflict with, or (iii) has resulted in, or will result in, the creation of any mortgage, lien, encumbrance or other charge upon the Real Property pursuant to, or (iv) constitutes or will constitute a default under any permit, judgment, decree, order, statute, rule or regulation applicable to the Seller or to the Real Property.

5.1.5 There are no rights of first refusal, options, or any other purchase rights in favor of any entity or person(s) other than Purchaser which are in force with respect to the Real Property.

5.1.6 There are no unwritten or unrecorded leases, easements, licenses, or agreements of any kind or nature, including but not limited to service agreements, management agreements or brokerage agreements made by Seller, which affect or encumber title to the Real Property.

5.1.7 Seller has no knowledge of and has received no written notice of any special improvement assessments for sidewalk, paving, water, sewer or other public improvements on the Real Property.

5.1.8 All bills for labor, services, materials and utilities and taxes which are in any way connected with or arising from the ownership of the Real Property by Seller, or any portion thereof, are current, except that rollback taxes have not been assessed and therefore are not paid at this date.

5.1.9 There are no current or pending tax appeals with respect to any portion of the Real Property.

5.1.10 All licenses and permits issued to Seller affecting the Real Property are expressly disclosed on the attached **Exhibit B**.

5.1.11 There is no pending or, to Seller's knowledge, threatened litigation, arbitration, administrative hearing or governmental proceeding that could reasonably be expected to adversely affect the Real Property or the transactions contemplated by this Agreement.

5.1.12 No hazardous materials have been located, released, stored, treated, generated, transported to or from, disposed of, or allowed to escape on the Real Property, including, without limitation, the surface and subsurface waters of the Real Property by Seller. Seller has never received written notice or other communication and has no knowledge concerning: (a) any current outstanding governmental investigation of the Real Property; (b) any alleged violation of any governmental requirement, environmental law, regulation or ordinance relating to the Real Property; or (c) any alleged liability (including claims, suits, investigations or inquiries) associated with the presence or suspected presence of any toxic or hazardous material on the Real Property in violation of applicable law.

5.1.13 To Seller's knowledge, the Real Property is in full compliance with all applicable zoning and use requirements and there is no proceeding pending or, to Seller's knowledge, threatened to change the zoning status of the Real Property, unless approved by or pursued by Purchaser.

5.2 Purchaser's Representations and Warranties. Purchaser represents and warrants that:

5.2.1 Purchaser (i) is a limited liability company duly organized and validly existing under the laws of the State of North Carolina, and is duly authorized and qualified to do all things required of it under this Agreement; (ii) has authority and power to enter into this Agreement and consummate the transaction contemplated herein; and (iii) has the authority to execute and deliver this

Agreement and all documents in connection with the purchase and sale of the Real Property as contemplated herein.

5.2.2 The execution and entry into this Agreement, the execution and delivery of the documents and instruments to be executed and delivered by Purchaser on the Closing Date and the performance by Purchaser of Purchaser's duties and obligations under this Agreement and of all other acts necessary and appropriate for the full consummation of the purchase and sale of the Real Property as contemplated herein, are consistent with and not in violation of, and will not create any default or adverse condition under, any contract, agreement or other instrument to which Purchaser is a party, or any judicial order or judgment of any nature by which Purchaser is bound. On the Closing Date, all necessary and appropriate action will have been taken by Purchaser authorizing and approving the execution of and entry into this Agreement, the execution and delivery by Purchaser of the documents and instruments to be executed by Purchaser on the Closing Date and the performance by Purchaser of Purchaser's duties and obligations under this Agreement and of all other acts necessary and appropriate for the consummation of the purchase and sale of the Real Property as contemplated herein.

6. THE CLOSING.

6.1 Closing Date. Closing shall occur on or before                     , 20    . Purchaser and Seller may extend the Closing Date to such a date upon which they may mutually agree.

6.2 Deliveries At Closing. On the Closing Date, the Closing shall occur as follows, subject to satisfaction of all of the terms and conditions of this Agreement:

6.2.1 Seller shall convey the Real Property to Purchaser free and clear of liens, claims and encumbrances other than any Title Matters consented to by Purchaser, by general warranty deed, duly executed, witnessed and notarized and in recordable form (together with any required transfer tax affidavit therefor).

6.2.2 Seller shall execute and deliver to Purchaser a certificate of nonforeign status.

6.2.3 Seller shall execute and deliver to Purchaser a Virginia Department of Taxation Form R-5 or R-5E, as applicable.

6.2.4 Seller shall deliver satisfactory evidence of Seller's organization and formation, existence, good standing, if applicable, and authority to execute and deliver the deed.

6.2.5 Seller shall deliver possession of the Real Property to Purchaser immediately on the Closing Date, free and clear of all uses and occupancies, except for any Title Matters consented to by Purchaser.

6.2.6 Seller shall execute and deliver to Purchaser a bill of sale with customary warranties conveying good title to that portion of the Real Property that constitutes personal property, if any.

6.2.7 Seller shall deliver to Purchaser a closing statement duly executed by Seller setting forth the proration and adjustments required by this Agreement or otherwise agreed to by Purchaser and Seller.

6.2.8 Seller shall deliver to Purchaser any and all other documents necessary to transfer or assign to Purchaser any approvals, permits, or other development rights with respect to the Real Property, if any.

6.2.9 Seller shall deliver to Purchaser such lien waivers or other appropriate documentation (certified to Purchaser and to Purchaser's title insurance company) as are necessary for Purchaser to obtain a title insurance policy insuring the Real Property, subject only to any Title Matters consented to by Purchaser.

6.2.10 Seller shall execute and deliver to Purchaser a Seller's Affidavit stating there are no persons having the right to be in possession other than the Seller, and that there have been no improvements or repairs made to the Real Property by Seller for which full payment has not been made, containing such other matters as set forth in the title company's standard form owner's affidavit(s), and being otherwise in form reasonably satisfactory to Purchaser or Purchaser's Title Company.

6.2.11 In addition to all documents, instruments and Agreements expressly provided for herein, Purchaser and Seller shall execute and/or provide such other documents as may be reasonably required by the title insurance company or by counsel for either party to effectuate the purposes of this Agreement and for Purchaser to receive a title insurance policy to it subject only to the Permitted Exceptions.

6.3 Closing Costs. At the Closing, Seller and Purchaser shall respectively pay the following costs and expenses:

6.3.1 Seller shall pay (i) the fees and expenses of Seller's attorneys; (ii) the fees, expenses, and commissions of any brokers which may be payable as a consequence of the sale and purchase of the Real Property; (iii) deed stamps and excise tax, and any and all deferred taxes, and any interest thereon, due as of the date of Closing.

6.3.2 Purchaser shall pay all costs and expenses associated with the purchase and sale of the Real Property except for those fees which Seller has expressly agreed to pay pursuant to Section 6.3.1 including, but not limited to, (i) all costs and expenses associated with Purchaser's financing of the Real Property, including without limitation any recording and filing fees necessary for the recordation of a mortgage or other security instrument at Closing to secure Purchaser's obligation to pay all or a part of the Purchase Price for the Real Property; (ii) recording and filing fees for all recordable instruments to be executed and delivered by Seller at Closing; (iii) any inspection costs incurred by Purchaser (including, but not limited to, the cost of any title search, title commitment, and/or survey obtained by Purchaser in connection with this transaction, including any fees, costs, premiums, and other expenses therefor); (iv) the cost of any environmental assessments or reports obtained by Purchaser; and (v) the fees and expenses of Purchaser's attorneys.

6.4 Prorations.

6.4.1 All state, city and/or county ad valorem taxes due with respect to the Real Property for the calendar year of the Closing and other customarily pro-ratable items shall be prorated between Purchaser and Seller as of the Closing Date. If the actual amount of such taxes is not known as of such date, either because bills for the period in question have not been issued or because such bills cover real property in addition to the Real Property, the proration at the Closing will be based on the most current and accurate billing information available. Should such proration not be based on the actual amount of the ad valorem taxes or utility charges for the period in question and should such proration prove to be inaccurate with a discrepancy exceeding Five Hundred and 00/100 Dollars (\$500.00) upon receipt of the



actual bills for the Real Property, then either Seller or Purchaser may demand at any time within thirty (30) days after receipt of the actual invoice for such item, a payment from the other party correcting such mal-apportionment.

6.4.2 Purchaser shall be responsible for any rollback taxes assessed against the Real Property, and related interest and penalties, as a result of: i) any actions taken in accordance with the Option Agreement by Purchaser or Seller or ii) any action taken by Purchaser after the Closing. Purchaser agrees to indemnify Seller for such taxes and related interest and penalties. The provisions of this Section 6.4.2 shall survive the Closing or early termination of this Agreement.

6.4.3 Seller is responsible for and shall pay all management and/or operating expenses of Seller and all other expenses and charges in respect of Seller's ownership of the Real Property for all time periods through the day prior to Closing.

6.4.4 If any clerical mistakes in any adjustments or prorations or if any omissions in respect thereto resulting in a loss to either Purchaser or Seller exceeding Five Hundred and 00/100 Dollars (\$500.00) are discovered subsequent to the date of Closing, Purchaser and Seller agree to adjust such items between themselves. Such prorations and payments shall be determined and made by Seller and Purchaser, in good faith, as soon as practicable after Closing.

7. EASEMENTS. Any easements affecting the Real Property or the Seller Property shall be confirmed in writing and recorded in the land records of [REDACTED] County.

8. DAMAGE OR CONDEMNATION PRIOR TO CLOSING.

8.1 Seller agrees to give Purchaser prompt written notice of any fire or other casualty affecting the Real Property between the Effective Date and the Closing Date or of any actual or threatened taking or condemnation of all or any portion of the Real Property. If prior to the Closing there shall occur any fire, casualty, notice of taking or condemnation of all or any portion of the Real Property; then, in any such event, Purchaser, at its option, may terminate its obligations under this Agreement by written notice given to Seller within ten (10) days after Purchaser has received the notice referred to above or at the Closing, whichever is earlier, and neither party shall have any further right or obligation hereunder. If Purchaser does not so elect to terminate its obligations under this Agreement, then the Closing shall take place as provided herein, and, at Purchaser's option, the Seller either shall assign, transfer and set over to Purchaser all of the Seller's right, title and interest in and to any insurance proceeds or awards that may be made for such casualty or taking (and Seller will pay any insurance deductible applicable to the casualty insurance), or Seller shall agree with Purchaser for a reduction in the Purchase Price based on the extent of the casualty or taking.

9. NO BROKERS. Seller and Purchaser warrant and represent that there are and will be no broker's or intermediaries' commissions or fees payable as a consequence of the sale and purchase of the Real Property, and do hereby indemnify, defend and hold harmless each of the other from and against the claims, demands, actions and judgments (including, without limitation, attorneys' fees and expenses incurred in defending any claims or in enforcing this indemnity) of any and all brokers, agents and other intermediaries alleging a commission, fee or other payment to be owing by reason of any dealings, negotiations or communications with the indemnifying party in connection with this Agreement or the sale and purchase of the Real Property. The provisions of this Section 9 shall survive the Closing.

10. ACCESS TO AND EXAMINATION OF THE PROPERTY.

10.1 Real Property Inspection. From and after the Effective Date, upon reasonable notice to Seller and at reasonable times, Purchaser, through agents, employees or contractors, may go upon the Real Property during normal business hours to make surveys and to conduct such soil, engineering, environmental and all other tests, investigations, inspections and analyses of the Real Property that Purchaser shall deem advisable. Purchaser shall pay all costs incurred in making such surveys, tests, inspections, analyses and investigations. Purchaser hereby agrees to indemnify and hold Seller harmless from and against any and all loss, cost or damage to the Real Property incurred by Seller arising out of actions taken by Purchaser or its agents, engineers or consultants. Purchaser shall promptly repair all damage to the Real Property arising from any such inspections or tests and shall restore the Real Property to the same condition existing immediately prior to such inspections and tests.

11. DEFAULT.

11.1 Seller's Default. In the event of Seller's default, failure, or refusal to perform hereunder, Purchaser may elect, at its option, (i) to obtain Seller's specific performance of this Agreement; or (ii) to terminate this Agreement by giving written notice of termination to Seller, after which Seller shall (i) return the Option Money to Purchaser and (ii) reimburse Purchaser for any actual costs or expenses incurred in connection with its examination of the Real Property, including reasonable attorney's fees. Purchaser, at its option, may elect to waive the performance of any condition, contingency or provision in Purchaser's favor set forth in this Agreement.

11.2 Purchaser's Default. In the event of Purchaser's default, failure, or refusal to perform hereunder, Seller may elect to terminate this Agreement by giving written notice of termination to Buyer, after which Seller shall be entitled to retain the Option Money and this Agreement shall be deemed null and void and of no further force or effect, and no party hereto shall have any further rights, obligations or liabilities hereunder. Seller hereby agrees that in the event of Purchaser's default, retention of the Option Money is Seller's sole remedy and Seller shall not be entitled to any additional penalty or to liquidated damages. Seller, at its option, may elect to waive the performance of any condition, contingency or provision in Seller's favor set forth in this Agreement.

12. CONDITIONS PRECEDENT.

12.1 Purchaser's Conditions.

12.1.1 Purchaser's obligations under this Agreement are subject only to and conditioned upon the satisfaction (or waiver by Purchaser) of the following conditions precedent:

(a) Purchaser's determination, in Purchaser's sole discretion prior to the Closing Date, that the Real Property is physically and economically acceptable to Purchaser. In the event that the Purchaser determines in its sole discretion, that the Real Property is not acceptable to the Purchaser for any reason or for no reason, then the Purchaser shall so notify the Seller before the Closing Date, and this Agreement shall be terminated and the parties shall have no further liability to one another.

(b) The representations and warranties of Seller set forth in Section 5 of this Agreement will be materially true on and as of the Closing with the same effect as though made at such time.

(c) Seller's performance of its obligations set forth in this Agreement.

(d) Purchaser shall have obtained any rezoning, re-parceling, permitting, and/or land use changes necessary to permit the Intended Use on the Real Property. Seller agrees to cooperate with Purchaser in acquiring any such rezoning, re-parceling, permitting, and/or land use changes.

(e) Purchaser shall have caused the Real Property to be subdivided from the Seller Property. Seller agrees to cooperate with Purchaser in acquiring any necessary approvals, consents, authorizations, and/or permits from the applicable governing unit and obtaining such subdivision.

12.1.2 If any of the conditions precedent in Section 12.1.1 are not satisfied or waived by Purchaser on or prior to the Closing Date, then Purchaser may terminate this Agreement by written notice to Seller given on or prior to the Closing Date for the conditions precedent set forth in 12.1.1. In which event Seller shall retain the Option Money and the parties shall have no further obligation to each other except for those obligations that expressly survive the termination of this Agreement.

12.2 Seller's Conditions. Seller's obligations under this Agreement are subject to and conditioned upon the satisfaction (or waiver by Seller) of the following conditions precedent:

(a) The representations and warranties of Purchaser set forth in Section 5 of this Agreement will be materially true on and as of the Closing with the same effect as though made at such time, and Purchaser must have materially performed all obligations and complied with all covenants required in this Agreement to be performed or complied with by it prior to or at Closing.

(b) Purchaser's performance of its obligations set forth in this Agreement.

13. GOVERNING LAW. This Agreement shall be construed, interpreted and enforced in accordance with the internal laws of the Commonwealth of Virginia.

14. NOTICES. Any notices, requests or other communications required or permitted to be given hereunder shall be in writing and shall be delivered by hand, confirmed facsimile, nationally recognized courier (such as Federal Express) which maintains a record or receipt of delivery, or mailed by United States registered or certified mail, return receipt requested, postage prepaid and addressed to each party at its address as set forth below:

To Seller:

[Redacted Address]

To Buyer:

Solar Development Holdings, LLC  
800 Taylor Street, Suite 200  
Durham, NC 27701  
(919) 960-6015  
Attn: Asset Management Department  
Email: [assetmanagement@stratacleanenergy.com](mailto:assetmanagement@stratacleanenergy.com)

Any such notice, request or other communication shall be considered given or delivered, as the case may be, on the date of hand, overnight delivery, courier or email. Rejection or other refusal to accept or inability to deliver because of changed address of which no notice was given shall be deemed to be receipt of the notice, request or other communication. By giving at least five (5) days prior written notice thereof, any party may from time to time at any time change its mailing address hereunder.

15. ENTIRE AGREEMENT; MODIFICATION. This Agreement supersedes all prior discussions and agreements between Seller and Purchaser with respect to the Real Property and contains the sole and entire understanding between Seller and Purchaser with respect to the Real Property. All promises, inducements, offers, letters of intent, solicitations, agreements, commitments, representations and warranties heretofore made between such parties are merged into this Agreement. This Agreement cannot be modified or amended in any respect except by a written instrument executed by or on behalf of each of the parties to this Agreement.

16. CAPTIONS. All captions, headings, and any section or subsection numbers and letters, and other reference numbers or letters are solely for the purpose of facilitating reference to this Agreement and shall not supplement, limit or otherwise vary in any respect to the text of this Agreement.

17. SURVIVAL. Except as otherwise specifically provided herein, the representations, warranties and covenants made herein shall not survive Closing.

18. EXHIBITS. Each and every exhibit referred to or otherwise mentioned in this Agreement shall be made a part of this Agreement in the same manner and with the same effect as if each such exhibit were set forth in full and at length every time it is referred to or otherwise mentioned herein.

19. COUNTERPARTS. This Agreement may be executed in several counterparts, each of which shall constitute an original and all of which together shall constitute one and the same instrument.

20. REFERENCES. All references to Sections or Subsections will be deemed to refer to the appropriate Section or Subsection of this Agreement. Unless otherwise specified in this Agreement, the terms "herein," "hereof," "hereunder" and other terms of like or similar import, will be deemed to refer to this Agreement as a whole, and not to any particular Section or Subsection hereof. Words of any gender used in this Agreement will be held and construed to include any other gender, and words of a singular number shall be held to include the plural, and vice versa, unless the context requires otherwise.

21. WAIVER. Any condition or right of termination, cancellation or rescission granted by this Agreement to Purchaser or Seller may be waived by such party.

22. RIGHTS CUMULATIVE. Except as expressly limited by the terms of this Agreement, all rights, powers and privileges conferred hereunder are cumulative and not restrictive of those given by law.

23. ASSIGNMENT. This Agreement and the rights, duties, interests, and obligations of Purchaser hereunder may be assigned by Purchaser upon written notice to Seller. This Agreement and the rights, duties, interests and obligations of Seller hereunder may not be assigned by Seller without written consent of Purchaser, not to be unreasonably withheld.

24. SUCCESSORS AND ASSIGNS. Subject to the provisions of Section 24, this Agreement shall be binding upon and inure to the benefit of the parties hereto and their respective heirs, successors and permitted assigns.

25. FURTHER ASSURANCES. The parties hereto agree that they will each take such steps and execute such documents as may be reasonably required by the other party or parties to carry out the intents and purposes of this Agreement, including with respect to Seller's cooperation with any and all reasonable requirements of Purchaser's lender, as applicable.

26. CONFIDENTIALITY. Seller shall keep in strict confidence and shall not disclose to third parties, other than Seller's counsel: (i) its dealing with Purchaser and Purchaser's intentions and actions regarding the Proposed Development, (ii) the execution of this Agreement, or (iii) the commercial terms set forth in this Agreement, unless Purchaser consents in writing to such disclosure.

27. SEVERABILITY. In the event any provision or portion of this Agreement is held by any court of competent jurisdiction to be invalid or unenforceable, such holding will not affect the remainder hereof, and the remaining provisions shall continue in full force and effect at the same extent as would have been the case had such invalid or unenforceable provision or portion never been a part hereof.

*[Signature page follows]*



**IN WITNESS WHEREOF**, Purchaser and Seller have executed this Agreement as of the date and year first above written.

**SELLER:**

LANDOWNER NAME

**PURCHASER:**

**SOLAR DEVELOPMENT HOLDINGS, LLC**, a  
North Carolina limited liability company

By: Strata Manager, LLC, its Manager

By: \_\_\_\_\_  
Name: Markus Wilhelm  
Title: Manager

**EXHIBIT A TO PURCHASE AND SALE AGREEMENT**

**LEGAL DESCRIPTION OF PROPERTY**

**EXHIBIT B TO PURCHASE AND SALE AGREEMENT**

Licenses and Permits

**EXHIBIT C**

**FORM OF MEMORANDUM OF PURCHASE OPTION AGREEMENT**

(SEE ATTACHED)



Recording requested by and when recorded  
mail to:

Solar Development Holdings, LLC 800 Taylor  
Street, Suite 200 Durham, NC 27701  
Attn: General Counsel

Tax Map Number: \_\_\_\_\_  
Consideration paid for this Agreement: \$0.00\*

\*NOTE TO CLERK: Option Agreements are exempt from Recording Tax beyond actual consideration within the meaning of §58.1-807, by virtue of Tax Commissioner Ruling 84-178, Reg. 630-14-807 (Jan 1, 1984)

### **MEMORANDUM OF PURCHASE OPTION AGREEMENT**

THIS MEMORANDUM OF PURCHASE OPTION AGREEMENT (this "Memorandum") is made, dated as of the dates below, to be effective as of [DATE OF POA] (the "Effective Date"), between [SELLER] a [entity type or marital status] ("Seller"), and **SOLAR DEVELOPMENT HOLDINGS, LLC**, a North Carolina limited liability company ("Purchaser"), in light of the following facts and circumstances:

#### **RECITALS:**

WHEREAS, Seller and Purchaser, entered into a Purchase Option Agreement dated as of the Effective Date with respect to property more specifically described herein (as heretofore or hereinafter amended, restated, or supplemented from time to time, the "Option Agreement"); and

WHEREAS, Seller and Purchaser desire to set forth certain terms and conditions of the Option Agreement in a manner suitable for recording in the Clerk's Office, Circuit Court, \_\_\_\_\_ County, Virginia in order to provide record notice of the Option Agreement and Purchaser's rights in and to the land subject to the Option Agreement, as provided herein.

NOW, THEREFORE, in consideration of the mutual covenants contained in the Option Agreement, and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the parties hereto agree and stipulate as follows:

1. Description of Property. The land subject to the Option Agreement is described on Exhibit A attached hereto, and by this reference made a part hereof (the "Property").
2. Grant of Option. Pursuant to the terms of the Option Agreement, Seller has granted to Purchaser an option (the "Option") to purchase the Property on the terms and conditions set forth in the Option Agreement. The

entire Option Agreement is hereby incorporated into this Memorandum by reference. Notwithstanding anything to the contrary contained herein, the provisions of this Memorandum do not in any way alter, amend, supplement, change, or affect the terms, covenants, or conditions of the Option Agreement, all of which terms, covenants, and conditions shall remain in full force and effect in accordance therewith. In the event of any conflict between the terms of this Memorandum and the Option Agreement, the terms of the Option Agreement shall prevail.

3. Term of Option Agreement. Unless earlier terminated, as provided in the Option Agreement, the term of the Option is for a period of \_\_\_\_\_ (\_\_\_\_\_) years beginning on the Effective Date. Closing of the transaction contemplated by the Option Agreement shall occur within \_\_\_\_\_ (\_\_\_\_\_) days following Purchaser's exercise of the Option, in accordance with the Option Agreement, or as the parties may otherwise mutually agree. Upon expiration of said term, the Option and all rights of Purchaser to purchase the Property shall terminate and cease without any further action on the part of the parties.

4. Names and Addresses of Parties. The names and addresses of the parties to the Option Agreement are as follows:

Seller:

[NAME]

[ADDRESS]

[ADDRESS]

Purchaser:

Solar Development Holdings, LLC

800 Taylor Street, Suite 200

Durham, NC 27701

5. Successors and Assigns. The terms of this Memorandum and the Option Agreement are covenants running with the land and inure to the benefit of, and are binding upon, the parties and their respective successors and assigns, including all subsequent owners of all or any portion of the Property. References to Seller and Purchaser include their respective successors and assigns. References to the Option Agreement include any amendments thereto.
6. Miscellaneous. This Memorandum is executed for the purpose of recording in the Clerk's Office, Circuit Court, \_\_\_\_\_ County, Virginia, in order to provide public record notice of the Option Agreement and Purchaser's rights in and to the land subject to the Option Agreement. All persons are hereby put on notice of and shall have a duty to inquire regarding the Option Agreement and all of the provisions thereof and the rights, title, interests, and claims of Purchaser in and to the Property during the term thereof. Any right, estate, claim, or interest in the Property first attaching to the Property and recorded from and after the Effective Date shall be subordinate to the terms of the Option Agreement. If Purchaser acquires fee simple title to any portion of the Property, Purchaser shall have the right, at Purchaser's option, to terminate any such subordinate right, estate, claim, or interest, at no cost or liability to Purchaser, or to accept title subject thereto. This instrument may for convenience be executed in any number of original counterparts, each of which shall be an original and all of which taken together shall constitute one instrument.

[The remainder of this page is intentionally left blank.]

IN WITNESS WHEREOF, Seller and Purchaser, acting through their duly authorized representatives, have made and entered into this Memorandum to be effective as of the Effective Date.

**SELLER:**

**[SELLER NAME]**

By: \_\_\_\_\_  
Name: \_\_\_\_\_  
Title: \_\_\_\_\_

STATE OF \_\_\_\_\_  
\_\_\_\_\_ OF \_\_\_\_\_, to wit:

The foregoing instrument was acknowledged before me in the \_\_\_\_\_ of \_\_\_\_\_,  
Virginia, this \_\_\_\_ day of \_\_\_\_\_, 20\_\_, by \_\_\_\_\_, as  
\_\_\_\_\_ of \_\_\_\_\_, a \_\_\_\_\_ on behalf of the  
\_\_\_\_\_.

My commission expires: \_\_\_\_\_

\_\_\_\_\_  
Notary Public

[AFFIX NOTARIAL SEAL]

**SOLAR DEVELOPMENT HOLDINGS, LLC,**  
a North Carolina limited liability company

By: Strata Manager, LLC, its manager

By: \_\_\_\_\_  
Name: Markus Wilhelm  
Title: Manager

STATE OF NORTH CAROLINA

COUNTY OF \_\_\_\_\_

I certify that the following person personally appeared before me this day, acknowledging to me that he/she signed the foregoing instrument: \_\_\_\_\_.

WITNESS my hand and official stamp or seal, this \_\_\_\_ day of \_\_\_\_\_, 20\_\_.

\_\_\_\_\_  
Notary Public  
Printed Name: \_\_\_\_\_

My Commission Expires:

\_\_\_\_\_

[AFFIX NOTARIAL STAMP OR SEAL]

**EXHIBIT A TO MEMORANDUM OF PURCHASE OPTION AGREEMENT**

**LEGAL DESCRIPTION OF PROPERTY**



# VIRGINIA LAND RECORD COVER SHEET

Commonwealth of Virginia VA. CODE §§ 17.1-223, -227.1, -249

## FORM A – COVER SHEET CONTENT

Instrument Date: 11/30/2023

Instrument Type: OP

Number of Parcels: 19 Number of Pages: 16

[ ] City [X] County PRINCE EDWARD COUNTY COURI  
CIRCUIT COURT

Tax Exempt? VIRGINIA/FEDERAL CODE SECTION

[ ] Grantor:

[ ] Grantee:

Business/Name

(Area Above Reserved For Deed Stamp Only)

1 Grantor: WILKERSON, LEWIS JR.

2 Grantor: WILKERSON, DAWN H.

1 Grantee: SOLAR DEVELOPMENT HOLDINGS, LLC

Grantee:

Grantee Address

Name: SOLAR DEVELOPMENT HOLDINGS, LLC

Address: 800 TAYLOR STREET, SUITE 200

City: DURHAM State: VA Zip Code: 27701

Consideration: \$0.00 Existing Debt: \$0.00 Actual Value/Assumed: \$0.00

PRIOR INSTRUMENT UNDER § 58.1-803(D):

Original Principal: \$0.00 Fair Market Value Increase: \$0.00

Original Book No.: Original Page No.: Original Instrument No.:

Prior Recording At: [ ] City [X] County Percentage In This Jurisdiction: 100%

Book Number: 1900 Page Number: 1352 Instrument Number: 190001352

Parcel Identification Number/Tax Map Number: 111-A-2B

Short Property Description: SEE EXHIBIT A OF DOCUMENT

Current Property Address:

City: HAMPDEN MAGISTERIAL DIST State: VA Zip Code: 23947

Instrument Prepared By: AMANDA CLARK Recording Paid By: SOLAR DEVELOPMENT HOLDINGS

Recording Returned To: SOLAR DEVELOPMENT HOLDINGS, LLC

Address: 800 TAYLOR STREET, SUITE 200

City: DURHAM State: NC Zip Code: 27701



# VIRGINIA LAND RECORD COVER SHEET

Commonwealth of Virginia VA. CODE §§ 17.1-223, -227.1, -249

## FORM C – ADDITIONAL PARCELS

Instrument Date: 12/13/2023

Instrument Type: OP

Number of Parcels: 19 Number of Pages: 16

[ ] City [X] County PRINCE EDWARD COUNTY COURT  
CIRCUIT COURT

### Parcels Identification/Tax Map

Prior Recording At:

[ ] City [X] County

Percentage In This Jurisdiction: 100%

Book Number: 2005 Page Number: 214

Instrument Number: 200500214

Parcel Identification Number (PIN)/Tax Map Number: 111-A-3

Short Property Description: SEE EXHIBIT A OF DOCUMENT

Current Property Address:

City: HAMPDEN MAGISTERIAL DIST State: VA Zip Code: 23947

Prior Recording At:

[ ] City [X] County Percentage In This Jurisdiction: 100%

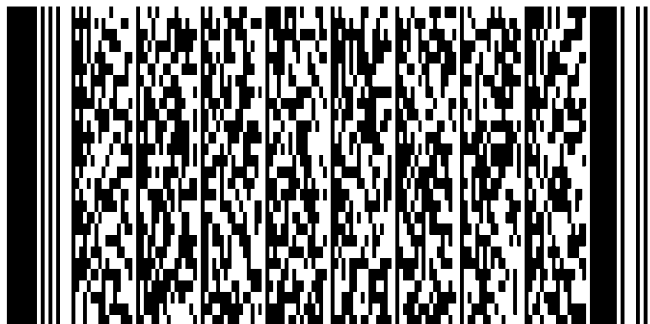
Book Number: 2004 Page Number: 165 Instrument Number: 200400165

Parcel Identification Number/Tax Map Number: 112-A-19A

Short Property Description: SEE EXHIBIT A OF DOCUMENT

Current Property Address:

City: HAMPDEN MAGISTERIAL DIST State: VA Zip Code: 23947



(Area Above Reserved For Deed Stamp Only)

# VIRGINIA LAND RECORD COVER SHEET

Commonwealth of Virginia VA. CODE §§ 17.1-223, -227.1, -249

## FORM C – ADDITIONAL PARCELS

Instrument Date: 12/13/2023

Instrument Type: OP

Number of Parcels: 19 Number of Pages: 16

[ ] City [X] County PRINCE EDWARD COUNTY COURT  
CIRCUIT COURT

### Parcels Identification/Tax Map

Prior Recording At:

[ ] City [X] County

Percentage In This Jurisdiction: 100%

Book Number: 2004 Page Number: 451

Instrument Number: 200400451

Parcel Identification Number (PIN)/Tax Map Number: 120-A-1

Short Property Description: SEE EXHIBIT A OF DOCUMENT

Current Property Address:

City: HAMPDEN MAGISTERIAL DIST State: VA Zip Code: 23947

Prior Recording At:

[ ] City [X] County Percentage In This Jurisdiction: 100%

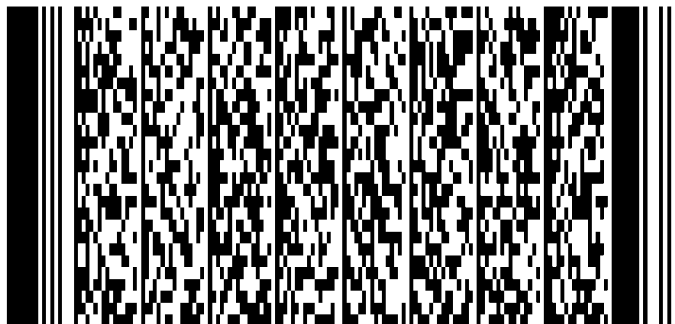
Book Number: 2014 Page Number: 858 Instrument Number: 201400858

Parcel Identification Number/Tax Map Number: 120-A-2

Short Property Description: SEE EXHIBIT A OF DOCUMENT

Current Property Address:

City: HAMPDEN MAGISTERIAL DIST State: VA Zip Code: 23947



(Area Above Reserved For Deed Stamp Only)

# VIRGINIA LAND RECORD COVER SHEET

Commonwealth of Virginia VA. CODE §§ 17.1-223, -227.1, -249

## FORM C – ADDITIONAL PARCELS

Instrument Date: 12/13/2023

Instrument Type: OP

Number of Parcels: 19 Number of Pages: 16

[ ] City [X] County PRINCE EDWARD COUNTY COURT  
CIRCUIT COURT

### Parcels Identification/Tax Map

Prior Recording At:

[ ] City [X] County

Percentage In This Jurisdiction: 100%

Book Number: 2014 Page Number: 858

Instrument Number: 201400858

Parcel Identification Number (PIN)/Tax Map Number: 120-A-3

Short Property Description: SEE EXHIBIT A OF DOCUMENT

Current Property Address:

City: HAMPDEN MAGISTERIAL DIST State: VA Zip Code: 23947

Prior Recording At:

[ ] City [X] County Percentage In This Jurisdiction: 100%

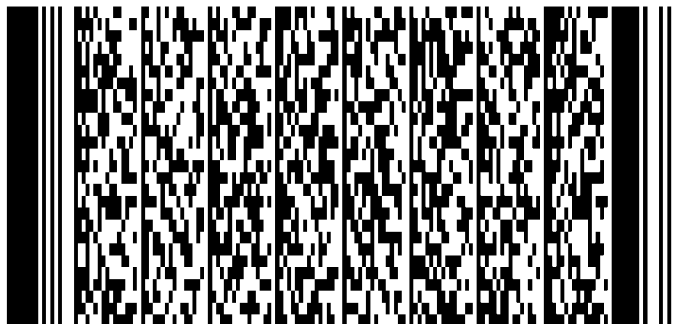
Book Number: 2014 Page Number: 858 Instrument Number: 201400858

Parcel Identification Number/Tax Map Number: 120-A-4

Short Property Description: SEE EXHIBIT A OF DOCUMENT

Current Property Address:

City: HAMPDEN MAGISTERIAL DIST State: VA Zip Code: 23947



(Area Above Reserved For Deed Stamp Only)

# VIRGINIA LAND RECORD COVER SHEET

Commonwealth of Virginia VA. CODE §§ 17.1-223, -227.1, -249

## FORM C – ADDITIONAL PARCELS

Instrument Date: 12/13/2023

Instrument Type: OP

Number of Parcels: 19 Number of Pages: 16

[ ] City [X] County PRINCE EDWARD COUNTY COURT  
CIRCUIT COURT

### Parcels Identification/Tax Map

Prior Recording At:

[ ] City [X] County

Percentage In This Jurisdiction: 100%

Book Number: 2014 Page Number: 858

Instrument Number: 201400858

Parcel Identification Number (PIN)/Tax Map Number: 120-A-5

Short Property Description: SEE EXHIBIT A OF DOCUMENT

Current Property Address:

City: HAMPDEN MAGISTERIAL DIST State: VA Zip Code: 23947

Prior Recording At:

[ ] City [X] County Percentage In This Jurisdiction: 100%

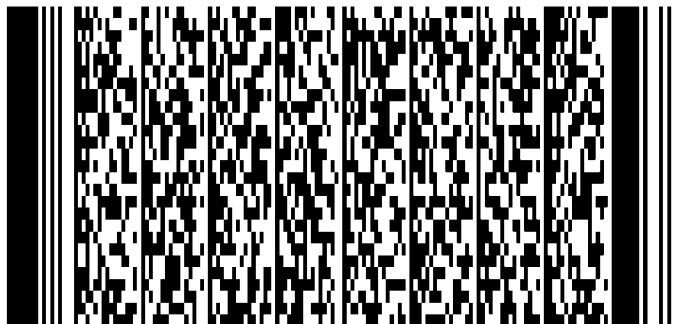
Book Number: 2013 Page Number: 1751 Instrument Number: 201301751

Parcel Identification Number/Tax Map Number: 120-A-6

Short Property Description: SEE EXHIBIT A OF DOCUMENT

Current Property Address:

City: HAMPDEN MAGISTERIAL DIST State: VA Zip Code: 23947



(Area Above Reserved For Deed Stamp Only)



# VIRGINIA LAND RECORD COVER SHEET

Commonwealth of Virginia VA. CODE §§ 17.1-223, -227.1, -249

## FORM C – ADDITIONAL PARCELS

Instrument Date: 12/13/2023

Instrument Type: OP

Number of Parcels: 19 Number of Pages: 16

[ ] City [X] County PRINCE EDWARD COUNTY COURT  
CIRCUIT COURT

### Parcels Identification/Tax Map

Prior Recording At:

[ ] City [X] County

Percentage In This Jurisdiction: 100%

Book Number: 2011 Page Number: 1061

Instrument Number: 201101061

Parcel Identification Number (PIN)/Tax Map Number: 120-A-7

Short Property Description: SEE EXHIBIT A OF DOCUMENT

Current Property Address:

City: HAMPDEN MAGISTERIAL DIST State: VA Zip Code: 23947

Prior Recording At:

[ ] City [X] County Percentage In This Jurisdiction: 100%

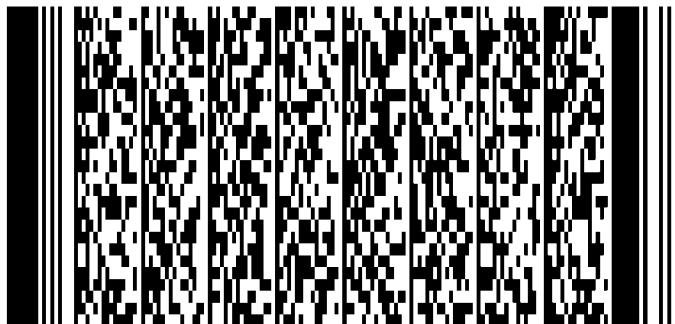
Book Number: 2011 Page Number: 1061 Instrument Number: 201101061

Parcel Identification Number/Tax Map Number: 120-A-8

Short Property Description: SEE EXHIBIT A OF DOCUMENT

Current Property Address:

City: HAMPDEN MAGISTERIAL DIST State: VA Zip Code: 23947



(Area Above Reserved For Deed Stamp Only)

# VIRGINIA LAND RECORD COVER SHEET

Commonwealth of Virginia VA. CODE §§ 17.1-223, -227.1, -249

## FORM C – ADDITIONAL PARCELS

Instrument Date: 12/13/2023

Instrument Type: OP

Number of Parcels: 19 Number of Pages: 16

[ ] City [X] County PRINCE EDWARD COUNTY COURT  
CIRCUIT COURT

### Parcels Identification/Tax Map

Prior Recording At:

[ ] City [X] County

Percentage In This Jurisdiction: 100%

Book Number: 1600 Page Number: 2077

Instrument Number: 200500214

Parcel Identification Number (PIN)/Tax Map Number: 120-A-15

Short Property Description: SEE EXHIBIT A OF DOCUMENT

Current Property Address:

City: HAMPDEN MAGISTERIAL DIST State: VA Zip Code: 23947

Prior Recording At:

[ ] City [X] County Percentage In This Jurisdiction: 100%

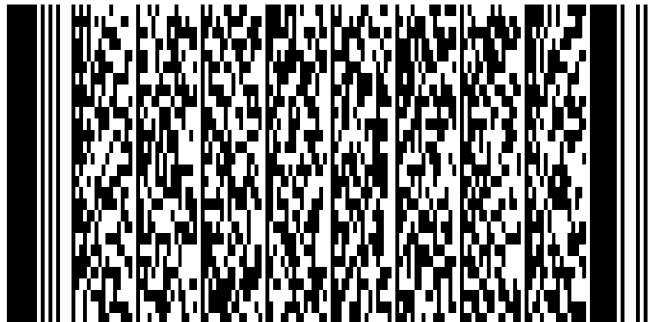
Book Number: 2005 Page Number: 2809 Instrument Number: 200502809

Parcel Identification Number/Tax Map Number: 120-A-20

Short Property Description: SEE EXHIBIT A OF DOCUMENT

Current Property Address:

City: HAMPDEN MAGISTERIAL DIST State: VA Zip Code: 23947



(Area Above Reserved For Deed Stamp Only)

# VIRGINIA LAND RECORD COVER SHEET

Commonwealth of Virginia VA. CODE §§ 17.1-223, -227.1, -249

## FORM C – ADDITIONAL PARCELS

Instrument Date: 12/13/2023

Instrument Type: OP

Number of Parcels: 19 Number of Pages: 16

[ ] City [X] County PRINCE EDWARD COUNTY COURT  
CIRCUIT COURT

### Parcels Identification/Tax Map

Prior Recording At:

[ ] City [X] County

Percentage In This Jurisdiction: 100%

Book Number: 2005 Page Number: 1474

Instrument Number: 200501474

Parcel Identification Number (PIN)/Tax Map Number: 120-A-21

Short Property Description: SEE EXHIBIT A OF DOCUMENT

Current Property Address:

City: HAMPDEN MAGISTERIAL DIST State: VA Zip Code: 23947

Prior Recording At:

[ ] City [X] County Percentage In This Jurisdiction: 100%

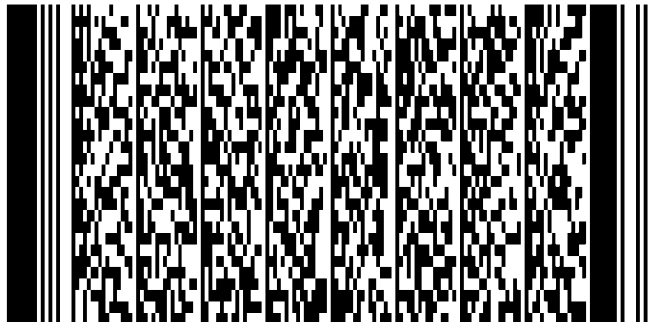
Book Number: 2005 Page Number: 3312 Instrument Number: 200503312

Parcel Identification Number/Tax Map Number: 120-A-29

Short Property Description: SEE EXHIBIT A OF DOCUMENT

Current Property Address:

City: HAMPDEN MAGISTERIAL DIST State: VA Zip Code: 23947



(Area Above Reserved For Deed Stamp Only)

# VIRGINIA LAND RECORD COVER SHEET

Commonwealth of Virginia VA. CODE §§ 17.1-223, -227.1, -249

## FORM C – ADDITIONAL PARCELS

Instrument Date: 12/13/2023

Instrument Type: OP

Number of Parcels: 19 Number of Pages: 16

[ ] City [X] County PRINCE EDWARD COUNTY COURT  
CIRCUIT COURT

### Parcels Identification/Tax Map

Prior Recording At:

[ ] City [X] County

Percentage In This Jurisdiction: 100%

Book Number: 2006 Page Number: 3511

Instrument Number: 200603511

Parcel Identification Number (PIN)/Tax Map Number: 120-A-41

Short Property Description: SEE EXHIBIT A OF DOCUMENT

Current Property Address:

City: HAMPDEN MAGISTERIAL DIST State: VA Zip Code: 23947

Prior Recording At:

[ ] City [X] County Percentage In This Jurisdiction: 100%

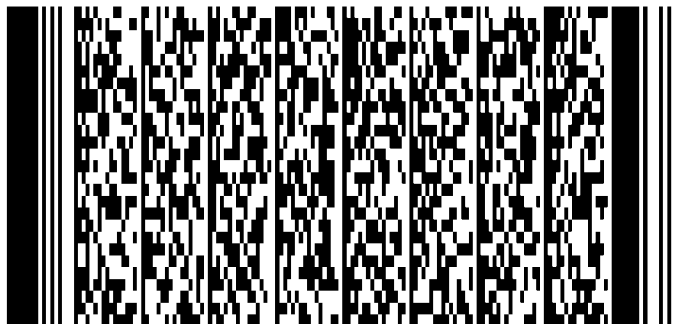
Book Number: 1500 Page Number: 231 Instrument Number:

Parcel Identification Number/Tax Map Number: 120-A-42

Short Property Description: SEE EXHIBIT A OF DOCUMENT

Current Property Address:

City: HAMPDEN MAGISTERIAL DIST State: VA Zip Code: 23947



(Area Above Reserved For Deed Stamp Only)

# VIRGINIA LAND RECORD COVER SHEET

Commonwealth of Virginia VA. CODE §§ 17.1-223, -227.1, -249

## FORM C – ADDITIONAL PARCELS

Instrument Date: 12/13/2023

Instrument Type: OP

Number of Parcels: 19 Number of Pages: 16

[ ] City [X] County PRINCE EDWARD COUNTY COURT  
CIRCUIT COURT

### Parcels Identification/Tax Map

Prior Recording At:

[ ] City [X] County

Percentage In This Jurisdiction: 100%

Book Number: 2011 Page Number: 642

Instrument Number:

Parcel Identification Number (PIN)/Tax Map Number: 120-A-46

Short Property Description: SEE EXHIBIT A OF DOCUMENT

Current Property Address:

City: HAMPDEN MAGISTERIAL DIST State: VA Zip Code: 23947

Prior Recording At:

[ ] City [X] County Percentage In This Jurisdiction: 100%

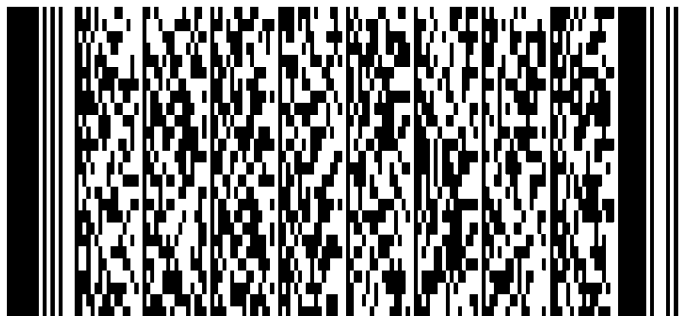
Book Number: 2005 Page Number: 3312 Instrument Number:

Parcel Identification Number/Tax Map Number: 121-A-9

Short Property Description: SEE EXHIBIT A OF DOCUMENT

Current Property Address:

City: HAMPDEN MAGISTERIAL DIST State: VA Zip Code: 23947



(Area Above Reserved For Deed Stamp Only)



Prepared by Amanda Clark,  
recording requested by and  
when recorded mail to:

Solar Development Holdings, LLC  
800 Taylor Street, Suite 200  
Durham, NC 27701  
Attn: General Counsel

Tax Map Numbers: 111-A-2B, 111-A-3, 112-A-19A, 120-A-1, 120-A-2, 120-A-3, 120-A-4, 120-A-5, 120-A-6, 120-A-7, 120-A-8, 120-A-15, 120-A-20, 120-A-21, 120-A-29, 120-A-41, 120-A-42, 120-A-46, 121-A-9

Consideration paid for this Agreement: \$0.00\*

\*NOTE TO CLERK: Option Agreements are exempt from Recording Tax beyond actual consideration within the meaning of §58.1-807, by virtue of Tax Commissioner Ruling 84-178. Reg. 630-14-807 (Jan 1, 1984)

### **MEMORANDUM OF PURCHASE OPTION AGREEMENT**

THIS MEMORANDUM OF PURCHASE OPTION AGREEMENT (this "Memorandum") is made, dated as of the dates below, to be effective as of November 30<sup>th</sup>, 2023 (the "Effective Date"), between **LEWIS WILKERSON, JR., aka LEWIS E. WILKERSON, and his wife, DAWN H. WILKERSON** ("Seller"), and **SOLAR DEVELOPMENT HOLDINGS, LLC**, a North Carolina limited liability company ("Purchaser"), in light of the following facts and circumstances:

#### **RECITALS:**

WHEREAS, Seller and Purchaser, entered into a Purchase Option Agreement dated as of the Effective Date with respect to property more specifically described herein (as heretofore or hereinafter amended, restated, or supplemented from time to time, the "Option Agreement"); and

WHEREAS, Seller and Purchaser desire to set forth certain terms and conditions of the Option Agreement in a manner suitable for recording in the Clerk's Office, Circuit Court, Prince Edward County, Virginia in order to provide record notice of the Option Agreement and Purchaser's rights in and to the land subject to the Option Agreement, as provided herein.

NOW, THEREFORE, in consideration of the mutual covenants contained in the Option Agreement, and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the parties hereto agree and stipulate as follows:

1. Description of Property. The land subject to the Option Agreement is described on Exhibit A attached hereto, and by this reference made a part hereof (the "Property").

2. Grant of Option. Pursuant to the terms of the Option Agreement, Seller has granted to Purchaser an option (the "Option") to purchase the Property on the terms and conditions set forth in the Option Agreement. The entire Option Agreement is hereby incorporated into this Memorandum by reference. Notwithstanding anything to the contrary contained herein, the provisions of this Memorandum do not in any way alter, amend, supplement, change, or affect the terms, covenants, or conditions of the Option Agreement, all of which terms, covenants, and conditions shall remain in full force and effect in accordance therewith. In the event of any conflict between the terms of this Memorandum and the Option Agreement, the terms of the Option Agreement shall prevail.

3. Term of Option Agreement. Unless earlier terminated, as provided in the Option Agreement, the term of the Option is for a period of FIVE (5) years beginning on the Effective Date. Closing of the transaction contemplated by the Option Agreement shall occur within sixty (60) days following Purchaser's exercise of the Option, in accordance with the Option Agreement, or as the parties may otherwise mutually agree. Upon expiration of said term, the Option and all rights of Purchaser to purchase the Property shall terminate and cease without any further action on the part of the parties.

4. Names and Addresses of Parties. The names and addresses of the parties to the Option Agreement are as follows:

Seller:  
LEWIS WILKERSON, JR. and DAWN  
H. WILKERSON  
719 Ole Briery Station Road  
Keysville, VA 23947

Purchaser:  
SOLAR DEVELOPMENT HOLDINGS, LLC  
c/o Solar Development Holdings, LLC  
800 Taylor Street, Suite 200  
Durham, NC 27701

5. Successors and Assigns. The terms of this Memorandum and the Option Agreement are covenants running with the land and inure to the benefit of, and are binding upon, the parties and their respective successors and assigns, including all subsequent owners of all or any portion of the Property. References to Seller and Purchaser include their respective successors and assigns. References to the Option Agreement include any amendments thereto.

6. Miscellaneous. This Memorandum is executed for the purpose of recording in the Clerk's Office, Circuit Court, Prince Edward County, Virginia, in order to provide public record notice of the Option Agreement and Purchaser's rights in and to the land subject to the Option Agreement. All persons are hereby put on notice of and shall have a duty to inquire regarding the Option Agreement and all of the provisions thereof and the rights, title, interests, and claims of Purchaser in and to the Property during the term thereof. Any right, estate, claim, or interest in the Property first attaching to the Property and recorded from and after the Effective Date shall be subordinate to the terms of the Option Agreement. If Purchaser acquires fee simple title to any portion of the Property, Purchaser shall have the right, at Purchaser's option, to terminate any such subordinate right, estate, claim, or interest, at no cost or liability to Purchaser, or to accept title subject thereto. This instrument may for convenience be executed in any number of original counterparts, each of which shall be an original and all of which taken together shall constitute one instrument.

**[The remainder of this page is intentionally left blank.]**

IN WITNESS WHEREOF, Seller and Purchaser, acting through their duly authorized representatives, have made and entered into this Memorandum to be effective as of the Effective Date.

**SELLER:**

**LEWIS WILKERSON, JR., aka LEWIS E.  
WILKERSON, JR., aka LEWIS E.  
WILKERSON**

*Lewis E. Wilkerson*

**SELLER:**

**DAWN H. WILKERSON**

*Dawn H. Wilkerson*

STATE OF VIRGINIA  
COUNTY/~~CITY~~ OF Prince Edward, to wit:

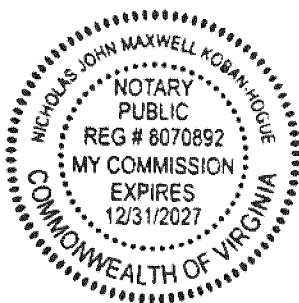
The foregoing instrument was acknowledged before me in the county/city of Prince Edward Virginia, this 6<sup>th</sup> day of December, 2023, by **Lewis Wilkerson, Jr., aka Lewis E. Wilkerson, aka Lewis E. Wilkerson, Jr., and Dawn H. Wilkerson.**

My commission expires: 12/31/2027

*N. H. Wilkerson*

Notary Public

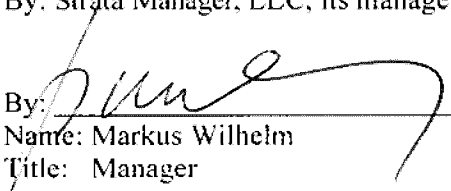
[AFFIX NOTARIAL SEAL]



**PURCHASER:**

**SOLAR DEVELOPMENT HOLDINGS, LLC,**  
a North Carolina limited liability company

By: Strata Manager, LLC, its manager

By:   
Name: Markus Wilhelm  
Title: Manager

STATE OF NORTH CAROLINA

COUNTY OF DURHAM

I certify that the following person personally appeared before me this day, acknowledging to me that he/she signed the foregoing instrument: Markus Wilhelm as the Manager of **Strata Manager, LLC the Manager of Solar Development Holdings, LLC.**

WITNESS my hand and official stamp or seal, this 13 day of December, 2023.

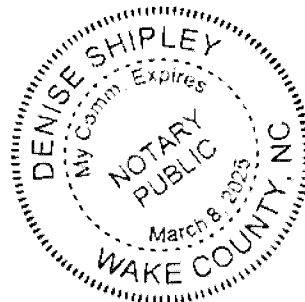
  
Notary Public

Printed Name: Denise Shipley

My Commission Expires:

3.8.2025

[AFFIX NOTARIAL STAMP OR SEAL]



## **EXHIBIT A**

### **LEGAL DESCRIPTION OF THE PROPERTY**

All those certain tracts or parcels of land located in Hampden Magisterial District, Prince Edward County, Virginia, containing approximately 1,789.875 acres, more or less, and being the same tracts or parcels of land conveyed to Seller by the following conveyances: (1) that certain Deed of Gift dated August 2<sup>nd</sup> 2019 and recorded in the Clerk's Office of the Prince Edward County Circuit Court on August 5, 2019 as Instrument Number 190001352; (2) that certain Deed of Gift dated January 12, 2005 and recorded in the Clerk's Office of the Prince Edward County Circuit Court on January 24, 2005 as Instrument Number 200500214; (3) that certain Deed dated January 4, 2004 and recorded in the Clerk's Office of the Prince Edward County Circuit Court on January 21, 2004 as Instrument Number 200400165; (4) that certain Deed and Deed of Assumption dated February 24, 2004 and recorded in the Clerk's Office of the Prince Edward County Circuit Court on February 24, 2004 as Instrument Number 200400451; (5) that certain Deed dated June 4, 2014 and recorded in the Clerk's Office of the Prince Edward County Circuit Court on June 13, 2014 as Instrument Number 201400858; (6) that certain Deed dated September 18, 2013 and recorded in the Clerk's Office of the Prince Edward County Circuit Court on September 27, 2013 as Instrument Number 201301751; (7) that certain Deed dated July 1, 2011 and recorded in the Clerk's Office of the Prince Edward County Circuit Court on July 1, 2011 as Instrument Number 201101061; (8) that certain Deed of Gift dated January 12, 2005, and recorded in the Clerk's Office of the Prince Edward County Circuit Court on January 24, 2005 as Instrument Number 200500214 as further described in that Certificate of Confirmation by Owner and Plat dated December 1, 2016, and recorded in the Clerk's Office of the Prince Edward County Circuit Court on December 2, 2016 as Instrument Number 160002077; (9) that certain Deed dated October 18, 2005 and recorded in the Clerk's Office of the Prince Edward County Circuit Court on October 20, 2005 as Instrument Number 200502809; (10) that certain Special Warranty Deed dated May 11, 2005 and recorded in the Clerk's Office of the Prince Edward County Circuit Court on June 6, 2005 as Instrument Number 200501474; (11) that certain Deed of Bargain and Sale dated December 12, 2005 and recorded in the Clerk's Office of the Prince Edward County Circuit Court on December 14, 2005 as Instrument Number 200503312 and further described in that certain Affidavit dated May 15, 2019 and recorded in the Clerk's Office of the Prince Edward County Circuit Court on May 15, 2019 as Instrument Number 190000790; (12) that certain Deed of Bargain and Sale dated December 12, 2005 and recorded in the Clerk's Office of the Prince Edward County Circuit Court on December 14, 2005 as Instrument Number 200503312 and further described in that certain Affidavit dated May 15, 2019 and recorded in the Clerk's Office of the Prince Edward County Circuit Court on May 15, 2019 as Instrument Number 190000790; (13) that certain Deed dated December 11, 2006 and recorded in the Clerk's Office of the Prince Edward County Circuit Court on December 14, 2006 as Instrument Number 200603511 and further described in that certain Affidavit dated May 21, 2019 and recorded in the Clerk's Office of the Prince Edward County Circuit Court on May 23, 2019 as Instrument Number 190000845; (14) that certain Deed of Bargain and Sale dated December 5, 2005 and recorded in the Clerk's Office of the Prince Edward County Circuit Court on December 14, 2005 as Instrument Number 200503312; (15) that certain Special Warranty Deed dated April 7, 2011 and recorded in the Clerk's Office of the Prince Edward County Circuit Court on April 14, 2011 as Instrument Number 201100642, and being more particularly described therein as follows:

#### **Tract 1-Tax Map #111-A-2B as described in Instrument Number 190001352:**

ALL that certain lot, tract or parcel of land with improvements thereon and appurtenances thereunto belonging, lying and being in Hampden Magisterial District of Prince Edward County, Virginia, and **containing 3.59 acres, more or less**, located on VSR #15, and referred to as "The Henderson Tract", according to plat of survey by William R. Reeves, Jr., dated May 18, 2007, revised August 31, 2011 and recorded in the Clerk's Office of the Circuit Court of Prince Edward County, Virginia as Instrument #190000883 (also see Slide B39#2), reference to which is made for a more detailed description of the property herein conveyed.

Being the same property conveyed to Lewis W. Wilkerson, Jr., by deed from Wallace W. Wright, Rachelle P. Wright and Bruce C. Wright, dated August 22, 2011 and recorded in the Clerk's Office of the Circuit Court of Prince Edward County, Virginia, on August 24, 2011, bearing Instrument #201101352.



**Tract 2 - Tax Map #111-A-3 as described in Instrument Number 200500214:**

ALL THAT CERTAIN TRACT, piece or parcel of land, with the buildings and improvements thereon, situate, lying and being in Hampden Magisterial District, Prince Edward County, Virginia, about 1/4 mile Northwest of Briery Station, containing 134 acres, more or less, and bounded and described as follows:

BEGINNING at the intersection of the North right of way line of the Norfolk and Western Rwy. and center line of the Keysville and Farmville public road; thence along said public road, North 10 deg. 30 min. East 4.60 chains; North 41 deg. 45 min. East 8.40 chains; North 26 deg. 45 min. East 5.00 chains to a small white oak tree on the East side of the road, thence a new line, South 69 deg. East 77.00 chains to a stake on the Booker Road; thence along same, South 10 deg. 30 min. West 9.80 chains; South 36 deg. 30 min. West 1.80 chains; South 14 deg. 30 min. West 5.47 chains to the corner of the "Lyman School" Lot; thence along school lot, North 83 deg. West 6.60 chains to a stake four feet West of a small dogwood tree; thence along the line of C. S. Barnes, North 63 deg. West 9.20 chains to a stake between two cedar trees; thence South 3 deg. West 3.10 chains to the right of way line of the N. & W. Rwy.; thence along said right of way parallel to the center line of the main tract and 90 feet therefrom, in a Westerly direction 370.00 ft.; thence in a Southerly direction and at right angles to the main line 30 feet; thence in a Westerly direction parallel to and 60 feet from the centerline, 1,115 feet; thence in a Northerly direction, and at right angles to the center line, 45 feet; thence in a Westerly direction, parallel to and 105 feet from the centerline, 920 feet; thence in a Southerly direction, at right angles to the centerline, 30 feet; thence in a Westerly direction, parallel to and 75 feet from the centerline, 1,009 feet; thence in a Northerly direction and at right angles to the center line, 40 feet; thence in a Westerly direction, parallel to and 115 feet from the center line, 603 feet to the point of beginning; LESS HOWEVER, that certain 1.08 acre parcel heretofore conveyed to the Commonwealth of Virginia by deed dated July 11, 1945, and recorded in the Clerk's Office of the Circuit Court of Prince Edward County, Virginia, in Deed Book 103 at page 457.

BEING the same real estate conveyed to Lewis E. Wilkerson, Jr. and Dawn H. Wilkerson and Roland J. Wilkerson and Stacey Y. Wilkerson, by deed from Lewis E. Wilkerson, Jr. and Roland J. Wilkerson dated August 5, 1999 and recorded August 18, 1999 in the Clerk's Office, Circuit Court, Prince Edward County, Virginia in Deed Book 336 page 276.

**Tract 3 – Tax Map #112-A-19A as described in Instrument Number 200400165:**

All of that certain tract or parcel of real estate, with all improvements thereon and privileges and appurtenances thereunto appertaining, situate, lying and being in the Hampden Magisterial District of Prince Edward County, Virginia, containing 485.98 acres, adjoining the lands of the Grantee herein on the East, as more particularly shown and described on a plat of survey made by William W. Dickerson, Jr., L.L. S., dated September 25, 2003, Divided December 9, 2003, of which plat is recorded in the Clerk's Office of the Circuit Court of Prince Edward County, together with a Plat Affidavit as Instrument #200400019, and said plat being recorded in Slide A-303. #1. Reference is hereby made to said affidavit and plat for a more accurate and complete description of the real estate herein conveyed.

Being a portion of the real estate that was conveyed unto Clayton C. Bryant, Jr. and Malcolm J. Coleman, Jr. by deed from Chang Ho Lie and Sun Ja Lie, husband and wife, dated December 10, 2002, and recorded in Prince Edward County Circuit Court Clerk's Office as Instrument Number 200203272.

**Tract 4 – Tax Map #120-A-1 as described in Instrument Number 200400451:**

All that certain tract or parcel of land, with all buildings and improvements thereon and the privileges and appurtenances thereunto belonging, lying, and being in the Hampden Magisterial District of Prince Edward County, Virginia, containing 396.57 acres, more or less, and being the identical tract of land as that which consisted of 399 acres conveyed by Elizabeth B. Lyman, unmarried, by a metes and bounds description, to George O. Pettus and R.E. Pettus, Jr., by deed bearing date on January 12, 1920, and recorded in the Clerk's Office of Prince Edward County, Virginia, in Deed Book 68, at page 521. **SAVE AND EXCEPT:** however 1.06 acres conveyed by George O. and R.E. Pettus, Jr., joined by their respective wives, to the Commonwealth of Virginia by deed dated March 5, 1926, and recorded in the aforesaid Clerk's Office in Deed Book 77, at page 385; and another similar conveyance to the Commonwealth of Virginia by R.S. McCall and Lula R. McCall consisting of 1.37 acres by deed bearing date of 1951 and recorded in the aforesaid Clerk's Office in Deed Book 117, at page 370; and to all three of these deeds references is hereby expressly made for a more adequate description of the real property hereby conveyed.

**LESS AND EXCEPT:** 0.87 acres fronting on U.S. Highway 15 and shown as Parcel 2 on that plat of survey prepared by Charlotte Land Surveying, dated February 9, 2004, which said plat is attached hereto and recorded herewith for a more complete and accurate description of the property hereby conveyed.

This being a portion of the same identical real estate conveyed unto the parties of the first part by deed dated October 29, 2003 and recorded in the Circuit Court Clerk's Office of Prince Edward County, Virginia as Instrument # 200303287.

THAT said 55 acres of land, lying and being in the County of Prince Edward, of which G. C. Womack died, seized and possessed, and being a portion of the land derived by the said G. C. Womack from Hatchett and J. B. Freyling respectively.

BEING the same real property conveyed to E. L. Bailey by deed from Robt. K. Brock, Special Commissioner, in a suit in the Circuit Court of the County of Prince Edward styled "Matina G. Womack, Gdn. v. Emily Sue Womack et als" dated December 8, 1911, recorded December 13, 1911, in the Clerk's Office of the Circuit Court of Prince Edward County, Virginia, in Deed Book 58, page 145.

AND ALL THAT certain tract or parcel of land located in Hampden District, Prince Edward County, Virginia about one- half mile northeast of Briery Station, being a part of that tract known as the Lyon place and bounded as follows:

BEGINNING at the southeast corner of John Foster's land; thence N-79 degrees, 30 minutes, 7.44 chains to an old poplar tree; thence S-67 degrees, 30 minutes-E 18.00 chains to the center of Horsepen Creek; thence down said creek, the center being the line, N-46 degrees 30 min-E 1.48 chains; N-24 degrees 45 minutes-E 4.65 chains to Hatchett's ford; thence along the Hatchett road S-55 degrees 15 minutes-W 2.14 chains; N-78 degrees 45 minutes 9.93 chains; N-46 degrees 10-minutes-W 3.04 chains; N-24 degrees 15 minutes-W 7.14 chains; N-56 degrees-W 0.94 chains; N-79 degrees 15 minutes-W 6.40 chains to Foster's corner on the road; thence along his line S-15 degrees-W 10.80 chains to the place of beginning and containing thirteen (13.00) acres.

and

ALL of that certain tract or parcel of land containing 1.11 acres, situated on the east side of a forest fire trail, about 1/4 mile northeast of Briery Station, in Hampden District, Prince Edward County, Virginia and described by metes and bounds as follows:

Beginning at an iron stob near the intersection of the Bailey road and running S. 81 degrees 15 minutes E. 132 feet; thence S. 12 degrees, 30 minutes W. 400 feet to an iron stob; thence N. 81 degrees, 30 minutes W. 111 feet to an iron stob; thence N. 9 degrees 30 minutes, E. along the forest fire trail 400 feet to the point of beginning and being more particularly described on a plat of K.J. Crouch, Surveyor, dated April 24, 1956; it being the identical property conveyed by Deed recorded in Deed Book 141, page 550.

and

All that certain tract or parcel of land situated in Hampden Magisterial District of Prince Edward County, Virginia, about 1/4 mile northeast of Old Briery Station, containing two acres, more or less, and bounded as follows:

Beginning at a stob at the northeast corner of the 1.11 acre tract belonging to James E. Bailey, and running S. 81 degrees 15 minutes E. 220 feet to a stob; thence S. 9 degrees 30 minutes W. 400 feet to a stob; thence N. 81 degrees 30 minutes W. 241 feet to a stob; thence along Bailey's line N. 12 degrees 30 minutes E. 400 feet to the point of beginning.

BEING the same parcels of land conveyed to Charles E. Bailey, Mabel B. Carr, Nancy B. Sanderson and James R. Bailey by deed from Charles E. Bailey et al dated March 30, 1995, recorded April 28, 1995 in the Clerk's Office of the Circuit Court of Prince Edward County, Virginia in Deed Book 294, page 504.

Tract 6 – Tax Map #120-A-6 as described in Instrument Number 201301751:

TRACT I: All of that certain tract or parcel of land lying and being in Hampden District of Prince Edward County, Virginia, about 1/4 mile northeast of Briery Station and bounded as follows: Beginning at the fork of the Booker and Hatchett roads; thence along the center line of the Hatchett road as it was located in 1919, S. 80 deg. 30' E. 5.54 chains; thence S. 76 deg. 45' E. 3.38 chains; thence along the lines of S. L. Lyon S. 11 deg. 15' W. 11.10 chains to a cedar stake; thence N. 80 deg. W. 8.90 chains to the Booker Road; thence along the same N. 10 deg. 45' E. 11.26 chains to the place of beginning, thus forming a tract of land containing 10 acres, more or less.

TRACT II: All of that certain tract or parcel of land lying and being in Hampden Magisterial District of Prince Edward County, Virginia, about 1/4 mile North of Briery Station and bounded as follows: Beginning at a cedar post on the southeast corner of the above described tract of land, thence new lines S. 81 deg. E. 11.64 chains to a cedar stake and 0.64 chains east of branch; thence N. 15 deg. E. 10.80 chains to the Hatchett road; thence along said road N. 81 deg. 30' W. 12.43 chains to an iron stake; thence along the line of the tract of land described in (1) above S. 11 deg. 15" W. 11.10 chains to the place of beginning, thus forming a piece of land containing 12.6 acres, more or less.

LESS, HOWEVER, an off-conveyance of 1.11 acres to Clyde Foster by deed dated September 6, 1959 and recorded in the aforesaid Clerk's Office in Deed Book 141, page 550.

SAVE AND EXCEPT an off-conveyance of 2 acres to James E. Bailey, Mabel C. Bailey, Gus Brice and Rosa M. Brice by deed dated August 9, 1972 and recorded in the aforesaid Clerk's Office in Deed Book 182 at page 54.

Being the identical property conveyed unto Margaret H. Richards and Steven A. Richards by deed of gift from Lillian L. Hanmer, dated April 14, 1987 of record in the aforesaid Clerk's Office in Deed Book 239, at page 223.

**Tract 7 – Tax Map #120-A-7 and #120-A-8 as described on Instrument Number 201101061:**

Tract 1:

All that certain lot or parcel of land, lying and being Hampden Magisterial District, Prince Edward County, Virginia, adjacent to or near Briery Station on the Virginia Railway and containing 6.1 acres, more or less.

Tract 2:

All of that certain tract or parcel of land, lying and being in the Hampden Magisterial District, Prince Edward County, Virginia, near Briery Station, containing 5 acres, more or less, and being bounded as follows: Beginning at a stake on the North right of way line of the Norfolk and Western Railway Company; thence along said right of way line and the and the lands of John Eggleston, S. 83 Deg. 15 Min. E. 3.79 chains to a stake; thence N. 84 Deg. 45 Min. W. 13.65 chains to a stake; thence N. 84 Deg. 45 Min. W. 13.65 chains to Booker Road; thence along the same (omitted bearing) should be S. 21 Deg. 30 Min. W. 2.07 chains to Norfolk and Western Railroad; thence along said railroad, S. 36 Deg. E. 1.92 chains to point of beginning, and that certain parcel of land in Hampden District containing 72/100 acres and described as follows: Beginning at a White Oak on the Hatchett Road; thence along D.J. Thompson line S. 86 Deg. 30 Min. E. 11.90 chains to a Pine tree; thence N. 79 Deg. 30 Min. W. 11.76 chains to Triple Pine on Hatchett Road; thence along said road, S. 27 Deg. 30 Min. W. 1.20 chains to point of beginning.

BOTH TRACTS BEING the same property conveyed unto Ethel G. Biggers by deed dated August 17, 1979 and recorded in the Clerk's Office of the Circuit Court of Prince Edward County, Virginia in Deed Book 212 at page 850.

**THE REMAINDER OF THIS PAGE LEFT INTENTIONALLY BLANK**



Tract 8 – Tax Map #120-A-15 as described in Instrument Numbers 200500214 and 160002077:

Parcel 3

ALL that certain parcel or tract of land situated in Walton Magisterial District, Charlotte County, Virginia, lying, along Secondary road No. 653, as shown on plat of survey by Warren A. Trent, PLAT No. 1390 that is attached to and made a part of the deed recorded in Deed Book 264 page 775. This being Parcel "A" consisting of 29.17 that was part of an entire tract consisting of 57.81 acres by plat of survey dated May 12, 1989 and recorded in Plat book No. 7 page 111 in the Clerk's Office of Charlotte County, Virginia and adjoining the lands, of Elsie A. Edmunds and Caroline H. Freeman and R. H. Pettus.

LESS AND EXCEPT that piece or parcel of land containing 5.50 acres of land conveyed to Lewis E. Wilkerson, Sr. by deed dated May 23, 1996 and recorded May 24, 1996 in the aforesaid Clerk's Office in Deed Book 284 page 327.

BEING a part of the same real estate conveyed to Lewis E. Wilkerson, Jr. And Dawn H. Wilkerson, husband and wife and Roland J. Wilkerson and Stacy U. Wilkerson, husband and wife, by deed from Lewis E. Wilkerson, Jr. And Roland J. Wilkerson, dated August 5, 1999 and recorded August 11, 1999 in the Clerk's Office, Circuit Court, Charlotte County, Virginia in Deed Book 306 page 841.

Tract 9 – Tax Map #120-A-20 as described in Instrument Number 200502809:

All that certain tract or parcel of land situated in Hampden District, Prince Edward County, Virginia, containing 11.91 acres according to plat of survey of Charlotte Land Surveying dated October 6, 2005, a copy of which plat is attached hereto and made a part of this Deed by reference for a more detailed description of the property herein conveyed.

This being a portion of that property conveyed unto Old Virginia Properties, LLC, a Virginia Limited Liability Company, by deed of Kirk Douglas Garnett, Married, dated June 6, 2005, and recorded in the Clerk's Office of the Circuit Court of Prince Edward County, Virginia as Instrument No. 200501922.

TAX MAP NO. 120-A-21

DEED: 127, page 103

BALDWIN TRACT #3209

ALL that certain lot or parcel of land lying and being in Hampden Magisterial District, Prince Edward County, Virginia, containing 112.1 acres, more or less. For a more accurate and particular description of the property hereby conveyed, reference is made to a Plat of survey prepared by K. J. Crouch, Surveyor, dated November 1953, attached to, recorded with and made a part of the Deed conveying the subject property to The Chesapeake Corporation of Virginia, recorded in the Clerk's Office of the Circuit Court of Prince Edward County, Virginia in Deed Book 127, at Page 103.

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BEING a portion of the property conveyed to ForesTree GM LLC, a Delaware limited liability company, from John Hancock Life Insurance Company, a Massachusetts corporation, by deed recorded in the Clerk's Office of the Circuit Court of Prince Edward County, Virginia as Instrument No. 200402998.

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**Tract 11 – Tax Map #120-A-29 as described in Instrument Numbers 200503312 and 190000790:**

ALL those certain tracts of land containing, in the aggregate, Two Hundred Twenty-five and 20/100 (225.20) acres, more or less, in Hampden District, Prince Edward County, Virginia, and being the identical tracts of land conveyed to Georgia-Pacific Corporation from Spaulding by deed dated the 5<sup>th</sup> of October, 1965, recorded in the Clerk's Office, Circuit Court, Prince Edward County, Virginia in Deed Book 159, page 424, and identified therein as Tract 4. Said tracts of land were acquired by Spaulding from S. E. Spaulding, et al., by Deed dated the 1<sup>st</sup> day of December, 1950, recorded in the aforesaid Clerk's Office in Deed Book 117 page 165.

LESS AND EXCEPT that portion of the property within Tract PE-025 G-P Joyner PE-4 (549-135).

LESS AND EXCEPT 9.86 acres conveyed in that certain Boundary Line Agreement dated March 10, 1988 by and between KMI Continental Powhatan, Inc., and B. L. Dempsey and Freida L. Dempsey, recorded in Deed Book 243, page 571.

The portion of the above described property which comprises Tract PE-027 is shown on that certain survey for Continental Can Company, Inc., - Rutledge Tract, prepared by John R. Nunnally, Jr., dated December 29, 1971, a copy of which survey is recorded in Deed Book 358 page 283.

BEING a part of the same real estate conveyed to Alpha Forest Associates, Inc., by deed from Citibank, FSB, as Trustee for Account #308262, dated December 28, 2000 and recorded in the Clerk's Office, Circuit Court, Prince Edward County, Virginia in Deed Book 358 page 266.

**Tract 12 – Tax Map #120-A- 41 as described in Instrument Numbers 200603511 and 190000845:**

ALL that certain lot, tract or parcel of land with improvements thereon and appurtenances thereunto belonging, lying and being in Hampden Magisterial District of Prince Edward County, Virginia, and containing two and one-half (2.5) acres, but this is a sale in gross and not by the acre, and located on VSR #360 approximately four miles north of Keysville. Said lands are more particularly described as to metes and bounds on a plat of survey by F. Richard Quible, C.L.S., dated October 1, 1959 and found recorded in the Office of the Clerk of the Circuit Court of Prince Edward County in Deed Book 142 at Page 62. Being the identical property conveyed unto Calvin M. Chidester, Jr. and Denise A. Chidester, husband and wife, Grantors herein, by that certain Deed dated May 4, 1999 from Marvin E. Whirley, et als, duly recorded in the Clerk's Office of the Circuit Court of Prince Edward County, Virginia in Deed Book 333 at page 468.

**Tract 13 – Tax Map #120-A-42**

**HAMPDEN DISTRICT**

ALL OF THAT CERTAIN TRACT or apceel of land situated in Prince Edward County, Virginia containing 71.10 acres, more or less, and bounded as follows: On the South by State Highway Route No. 360 lying between Prince Edward and Lunenburg Counties; on the West by the lands owned by or formerly owned by Clifford Shackleton; on the North and East by the lands owned by or formerly owned by Conrad Brehm.

LESS AND EXCEPT the following off-conveyances: 10 acres by deed dated March 9 1987, recorded in the Clerk's Office of the Circuit Court of Prince Edward County, Virginia in Deed Book 238, page 714; 2.00 acres by deed dated January 13, 1995, recorded in Deed Book 297 page 314 THEN corrected by Deed of Correction dated June 7, 1996 recorded in Deed Book 303 page 39, correcting the acreage of 3.00 acres, and 3.005 acres by deed dated February 9, 1998, recorded in Deed Book 317, page 845.

LEAVING an aggregate of **55.09 acres**, more or less.

IT BEING THE same property conveyed unto Bayview Loan Servicing, LLC by deed dated September 10, 2014 from Wittstadt Title & Escrow Company, LLC and recorded October 20, 2014 in the Clerk's Office of the Circuit Court of Prince Edward County, Virginia as Instrument 201401602.

**LESS AND EXCEPT THE FOLLOWING TRACTS OR PARCELS:**

ALL of those certain lots, lying and being in the Hampden District of Prince Edward County, Virginia, known and designated as 25.05 Acres and 4.55 Acres on plat of survey entitled "Plat Showing Boundary Survey of that Portion of The old Joseph T. Fowlkes Property Lying in Hampden District, Prince Edward County, VA," made by Southeast Survey Group, LTD, dated February 16, 2015, and recorded May 23, 2019 in the Clerk's Office of the Circuit Court of Prince Edward County, Virginia, at Instrument No. 190000844, Slide B38 #4, reference to which plat is hereby made for a more particular description of the properties herein conveyed.

Being a part of the same property conveyed to LEWIS E. WILKERSON, JR AND DAWN H. WILKERSON, HUSBAND AND WIFE by Special Warranty Deed from BAYVIEW LOAN SERVICING, LLC., dated February 20, 2015 and recorded February 23, 2015, of record in Instrument No. 150000231, among the land records of Prince Edward, Virginia.

**Tract 14 – Tax Map # 120-A-46**

ALL of that certain tract or parcel of land lying and being in Hampden Magisterial District, Prince Edward County, Virginia, containing 274.93 acres, more or less. For more accurate and particular description as to the property hereby conveyed, reference is made to a Plat of Correction, dated September 15, 1986, by R. B. Cartwright, C.L.S., recorded in the Clerk's Office, Circuit Court, Prince Edward County, Virginia, in Plat Book 5, Page 207.

**Tract 15 - Tax Map # 121-A-9**

ALL those certain tracts of land containing, in the aggregate, Two Hundred Twenty-five and 20/100 (225.20) acres, more or less, in Hampden District, Prince Edward County, Virginia, and being the identical tracts of land conveyed to Georgia-Pacific Corporation from Spaulding by Deed dated the 5<sup>th</sup> day of October, 1965, recorded in the Clerk's Office, Circuit Court, Prince Edward County, Virginia in Deed Book 159 page 424, and identified therein as Tract 4. Said tracts of land were acquired by Spaulding from S. E. Spaulding, et al., by Deed dated the 1<sup>st</sup> day of December, 1950, recorded in the aforesaid Clerk's Office in Deed Book 117 page 165.

TOGETHER with a non-exclusive easement 15' in width over and across a portion of the property of Julius Walton and Zena Walton to State Route No. 737 as more particularly described in that Deed of Easement by and between Julius Walton, et us, and Continental Hopewell Woodlands, Inc., dated March 28, 1984, recorded January 7, 1985 in the Clerk's Office, Circuit Court, Prince Edward County, Va., in Deed Book 229 page 380, and

TOGETHER with a non-exclusive easement 30' in width over and across the properties of James L. Walton, et als, to State Route No. 737 as more particularly described in that certain Deed of Easement by and between James L. Walton, et als, and Continental Hopewell Woodlands, Inc., dated March 28, 1984, recorded January 7, 1985 in the Clerk's Office, Circuit Court, Prince Edward County, Va. in Deed Book 229 page 382.

LESS AND EXCEPT 9.86 acres conveyed in that certain Boundary Line Agreement dated March 10, 1988 by and between KMI Continental Powhatan, Inc., and B. L. Dempsey and Freida L. Dempsey, recorded in Deed Book 243, page 571.

LESS AND EXCEPT that portion of the property within Tract PE-027 G-P Rutledge PE-6 (549-135).

The portion of the above described property which comprises Tract PE-025 is shown on that certain survey for Continental Can Company, Inc. - Joyner Tract, dated December 1970, a copy of which survey is recorded in aforesaid Clerk's Office in Deed Book 358 page 281.

BEING a part of the same real estate conveyed to Alpha Forest Associates, Inc., by deed form Citibank, FSB, as Trustee for Account #308262, dated December 28, 2000 and recorded in the Clerk's Office, Circuit Court, Prince Edward County, Virginia in Deed Book 358 page 266.

ALL those certain tracts of land containing, in the aggregate, Two Hundred Twenty-five and 20/100 (225.20) acres, more or less, in Hampden District, Prince Edward County, Virginia, and being the identical tracts of land conveyed to Georgia-Pacific Corporation from Spaulding by deed dated the 5<sup>th</sup> of October, 1965, recorded in the Clerk's Office, Circuit Court, Prince Edward County, Virginia in Deed Book 159, page 424, and identified therein as Tract 4. Said tracts of land were acquired by Spaulding from S. E. Spaulding, et al., by Deed dated the 1<sup>st</sup> day of December, 1950, recorded in the aforesaid Clerk's Office in Deed Book 117 page 165.

LESS AND EXCEPT that portion of the property within Tract PE-025 G-P Joyner PE-4 (549-135).

LESS AND EXCEPT 9.86 acres conveyed in that certain Boundary Line Agreement dated March 10, 1988 by and between KMI Continental Powhatan, Inc., and B. L. Dempsey and Freida L. Dempsey, recorded in Deed Book 243, page 571.

The portion of the above described property which comprises Tract PE-027 is shown on that certain survey for Continental Can Company, Inc., - Rutledge Tract, prepared by John R. Nunnally, Jr., dated December 29, 1971, a copy of which survey is recorded in Deed Book 358 page 283.

BEING a part of the same real estate conveyed to Alpha Forest Associates, Inc., by deed form Citibank, FSB, as Trustee for Account #308262, dated December 28, 2000 and recorded in the Clerk's Office, Circuit Court, Prince Edward County, Virginia in Deed Book 358 page 266.



Less and except from all of the property described above, all portions of the above-described property not currently owned by the Seller as reflected in all outsales, reservations, testamentary gifts or other conveyances appearing in the chain of title and of record in the Clerk's Office of the Prince Edward County Circuit Court.

It is the intent of the parties that all of the real property owned by the Seller in the Tax Map Parcel #s 111-A-2B, 111-A-3, 112-A-19, 120-A-1, 120-A-2, 120-A-3, 120-A-4, 120-A-5, 120-A-6, 120-A-7, 120-A-8, 120-A-15, 120-A-20, 120-A-21, 120-A-29, 120-A-41, 120-A-42, 120-A-46, 121-A-9 are subject to this Option Agreement and part of the Property described herein regardless of any errors or omissions in the Legal Description.

**END OF EXHIBIT A**

INSTRUMENT 202400121  
RECORDED IN THE CLERK'S OFFICE OF  
PRINCE EDWARD COUNTY CIRCUIT COURT ON  
JANUARY 25, 2024 AT 10:54 AM  
LYNNETTE COE, CLERK  
RECORDED BY: TDW

## ASSIGNMENT OF PURCHASE OPTION AGREEMENT

This ASSIGNMENT OF PURCHASE OPTION AGREEMENT (this “**Assignment**”) is entered into and effective as of November \_\_, 2024, (the “**Effective Date**”) by and between **SOLAR DEVELOPMENT HOLDINGS, LLC**, a North Carolina limited liability company, (“**Assignor**”) and **TOBACCO TRAIL SOLAR, LLC**, a North Carolina limited liability company (“**Assignee**”).

### RECITALS

WHEREAS, Assignor, as Purchaser, entered into that certain Purchase Option Agreement dated November 30, 2023, as evidenced by that certain Memorandum of Purchase Option Agreement dated November 30, 2023, recorded as Instrument No. 202400121 on January 25, 2024 in the Clerk’s Office of the Circuit Court of Prince Edward County, with **LEWIS WILKERSON JR. and DAWN H. WILKERSON**, (“**Wilkerson**”) whereby Wilkerson granted to Assignor the right to purchase that certain real property consisting of approximately One Thousand Seven Hundred Eighty-Nine and 875/1000 (1,789.875) acres located in Prince Edward County, Virginia being more particularly described on Exhibit “A” attached hereto and made a part hereof (the “**Property**”), (collectively, the “**Agreement**”).

WHEREAS, Assignor wishes to assign all of its rights and obligations under the Agreement to Assignee and Assignee wishes to accept and assume all of Assignor’s rights and obligations in and under the Agreement.

WHEREAS, in accordance with Section 15 of the Agreement, Assignor may freely assign its rights without the consent of Wilkerson.

NOW, THEREFORE, in consideration of the foregoing promises and premises, the receipt and sufficiency of which are hereby established and agreed, the parties agree as follows:

1. Assignor hereby assigns to Assignee all of Assignor’s rights, title, and interests in and to the Agreement.
2. Assignee hereby accepts from Assignor and assumes all of Assignor’s rights, duties, liabilities, and obligations under the Agreement.
3. Capitalized terms not defined herein shall have the meaning ascribed to them in the Agreement.


IN WITNESS WHEREOF, this Assignment is executed by the parties as of the day and year first written above.

*(End of Text. Signature Page Follows.)*

**ASSIGNOR:**

**SOLAR DEVELOPMENT HOLDINGS, LLC,**  
a North Carolina limited liability company

By: Strata Manager, LLC,  
a North Carolina limited liability company,  
its Manager

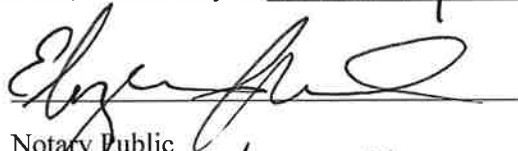
By:  (SEAL)  
Name: Markus Wilhelm  
Title: Manager

STATE OF NORTH CAROLINA

COUNTY OF DURHAM

I certify that the following person personally appeared before me this day, acknowledging to me that he signed the foregoing instrument: Markus Wilhelm, Manager of Strata Manager, LLC the Manager of **Solar Development Holdings, LLC.**

WITNESS my hand and official stamp or seal, this 8 day of January, 2025



Notary Public

Printed Name: Elizabeth Irizarry

My Commission Expires:

September 9, 2029

[AFFIX NOTARIAL STAMP OR SEAL]



**ASSIGNEE:**

**TOBACCO TRAIL SOLAR, LLC,**  
a North Carolina limited liability company

By: Strata Manager, LLC,  
a North Carolina limited liability company,  
its Manager

By: [Signature] (SEAL)  
Name: Markus Wilhelm  
Title: Manager

STATE OF NORTH CAROLINA

COUNTY OF DURHAM

I certify that the following person personally appeared before me this day, acknowledging to me that he signed the foregoing instrument: Markus Wilhelm, Manager of Strata Manager, LLC the Manager of Tobacco Trail Solar, LLC.

WITNESS my hand and official stamp or seal, this 8 day of January, 2025

[Signature]  
Notary Public  
Printed Name: Elizabeth Irizarry

My Commission Expires:

September 9, 2029

[AFFIX NOTARIAL STAMP OR SEAL]



## EXHIBIT A

### **LEGAL DESCRIPTION OF THE PROPERTY**

All those certain tracts or parcels of land located in Hampden Magisterial District, Prince Edward County, Virginia, containing approximately 1,789.875 acres, more or less, and being the same tracts or parcels of land conveyed to Seller by the following conveyances: (1) that certain Deed of Gift dated August 2<sup>nd</sup> 2019 and recorded in the Clerk's Office of the Prince Edward County Circuit Court on August 5, 2019 as Instrument Number 190001352; (2) that certain Deed of Gift dated January 12, 2005 and recorded in the Clerk's Office of the Prince Edward County Circuit Court on January 24, 2005 as Instrument Number 200500214; (3) that certain Deed dated January 4, 2004 and recorded in the Clerk's Office of the Prince Edward County Circuit Court on January 21, 2004 as Instrument Number 200400165; (4) that certain Deed and Deed of Assumption dated February 24, 2004 and recorded in the Clerk's Office of the Prince Edward County Circuit Court on February 24, 2004 as Instrument Number 200400451; (5) that certain Deed dated June 4, 2014 and recorded in the Clerk's Office of the Prince Edward County Circuit Court on June 13, 2014 as Instrument Number 201400858; (6) that certain Deed dated September 18, 2013 and recorded in the Clerk's Office of the Prince Edward County Circuit Court on September 27, 2013 as Instrument Number 201301751; (7) that certain Deed dated July 1, 2011 and recorded in the Clerk's Office of the Prince Edward County Circuit Court on July 1, 2011 as Instrument Number 201101061; (8) that certain Deed of Gift dated January 12, 2005, and recorded in the Clerk's Office of the Prince Edward County Circuit Court on January 24, 2005 as Instrument Number 200500214 as further described in that Certificate of Confirmation by Owner and Plat dated December 1, 2016, and recorded in the Clerk's Office of the Prince Edward County Circuit Court on December 2, 2016 as Instrument Number 160002077; (9) that certain Deed dated October 18, 2005 and recorded in the Clerk's Office of the Prince Edward County Circuit Court on October 20, 2005 as Instrument Number 200502809; (10) that certain Special Warranty Deed dated May 11, 2005 and recorded in the Clerk's Office of the Prince Edward County Circuit Court on June 6, 2005 as Instrument Number 200501474; (11) that certain Deed of Bargain and Sale dated December 12, 2005 and recorded in the Clerk's Office of the Prince Edward County Circuit Court on December 14, 2005 as Instrument Number 200503312 and further described in that certain Affidavit dated May 15, 2019 and recorded in the Clerk's Office of the Prince Edward County Circuit Court on May 15, 2019 as Instrument Number 190000790; (12) that certain Deed of Bargain and Sale dated December 12, 2005 and recorded in the Clerk's Office of the Prince Edward County Circuit Court on December 14, 2005 as Instrument Number 200503312 and further described in that certain Affidavit dated May 15, 2019 and recorded in the Clerk's Office of the Prince Edward County Circuit Court on May 15, 2019 as Instrument Number 190000790; (13) that certain Deed dated December 11, 2006 and recorded in the Clerk's Office of the Prince Edward County Circuit Court on December 14, 2006 as Instrument Number 200603511 and further described in that certain Affidavit dated May 21, 2019 and recorded in the Clerk's Office of the Prince Edward County Circuit Court on May 23, 2019 as Instrument Number 190000845; (14) that certain Deed of Bargain and Sale dated December 5, 2005 and recorded in the Clerk's Office of the Prince Edward County Circuit Court on December 14, 2005 as Instrument Number 200503312; (15) that certain Special Warranty Deed dated April 7, 2011 and recorded in the Clerk's Office of the Prince Edward County Circuit Court on April 14, 2011 as Instrument Number 201100642, and being more particularly described therein as follows:

#### **Tract 1-Tax Map #111-A-2B as described in Instrument Number 190001352:**

ALL that certain lot, tract or parcel of land with improvements thereon and appurtenances thereunto belonging, lying and being in Hampden Magisterial District of Prince Edward County, Virginia, and **containing 3.59 acres, more or less**, located on VSR #15, and referred to as "The Henderson Tract", according to plat of survey by William R. Reeves, Jr., dated May 18, 2007, revised August 31, 2011 and recorded in the Clerk's Office of the Circuit Court of Prince Edward County, Virginia as Instrument #190000883 (also see Slide B39#2), reference to which is made for a more detailed description of the property herein conveyed.

Being the same property conveyed to Lewis W. Wilkerson, Jr., by deed from Wallace W. Wright, Rachelle P. Wright and Bruce C. Wright, dated August 22, 2011 and recorded in the Clerk's Office of the Circuit Court of Prince Edward County, Virginia, on August 24, 2011, bearing Instrument #201101352.



**Tract 2 - Tax Map #111-A-3 as described in Instrument Number 200500214:**

ALL THAT CERTAIN TRACT, piece or parcel of land, with the buildings and improvements thereon, situate, lying and being in Hampden Magisterial District, Prince Edward County, Virginia, about 1/4 mile Northwest of Briery Station, containing 134 acres, more or less, and bounded and described as follows:

BEGINNING at the intersection of the North right of way line of the Norfolk and Western Rwy. and center line of the Keysville and Farmville public road; thence along said public road, North 10 deg. 30 min. East 4.60 chains; North 41 deg. 45 min. East 8.40 chains; North 26 deg. 45 min. East 5.00 chains to a small white oak tree on the East side of the road, thence a new line, South 69 deg. East 77.00 chains to a stake on the Booker Road; thence along same, South 10 deg. 30 min. West 9.80 chains; South 36 deg. 30 min. West 1.80 chains; South 14 deg. 30 min. West 5.47 chains to the corner of the "Lyman School" Lot; thence along school lot, North 83 deg. West 6.60 chains to a stake four feet West of a small dogwood tree; thence along the line of C. S. Barnes, North 63 deg. West 9.20 chains to a stake between two cedar trees; thence South 3 deg. West 3.10 chains to the right of way line of the N. & W. Rwy.; thence along said right of way parallel to the center line of the main tract and 90 feet therefrom, in a Westerly direction 370.00 ft.; thence in a Southerly direction and at right angles to the main line 30 feet; thence in a Westerly direction parallel to and 60 feet from the centerline, 1,115 feet; thence in a Northerly direction, and at right angles to the center line, 45 feet; thence in a Westerly direction, parallel to and 105 feet from the centerline, 920 feet; thence in a Southerly direction, at right angles to the centerline, 30 feet; thence in a Westerly direction, parallel to and 75 feet from the centerline, 1,009 feet; thence in a Northerly direction and at right angles to the center line, 40 feet; thence in a Westerly direction, parallel to and 115 feet from the center line, 603 feet to the point of beginning; LESS HOWEVER, that certain 1.08 acre parcel heretofore conveyed to the Commonwealth of Virginia by deed dated July 11, 1945, and recorded in the Clerk's Office of the Circuit Court of Prince Edward County, Virginia, in Deed Book 103 at page 457.

BEING the same real estate conveyed to Lewis E. Wilkerson, Jr. and Dawn H. Wilkerson and Roland J. Wilkerson and Stacey Y. Wilkerson, by deed from Lewis E. Wilkerson, Jr. and Roland J. Wilkerson dated August 5, 1999 and recorded August 18, 1999 in the Clerk's Office, Circuit Court, Prince Edward County, Virginia in Deed Book 336 page 276.

**Tract 3 – Tax Map #112-A-19A as described in Instrument Number 200400165:**

All of that certain tract or parcel of real estate, with all improvements thereon and privileges and appurtenances thereunto appertaining, situate, lying and being in the Hampden Magisterial District of Prince Edward County, Virginia, containing 485.98 acres, adjoining the lands of the Grantee herein on the East, as more particularly shown and described on a plat of survey made by William W. Dickerson, Jr., L.L. S., dated September 25, 2003, Divided December 9, 2003, of which plat is recorded in the Clerk's Office of the Circuit Court of Prince Edward County, together with a Plat Affidavit as Instrument #200400019, and said plat being recorded in Slide A-303. #1. Reference is hereby made to said affidavit and plat for a more accurate and complete description of the real estate herein conveyed.

Being a portion of the real estate that was conveyed unto Clayton C. Bryant, Jr. and Malcolm J. Coleman, Jr. by deed from Chang Ho Lie and Sun Ja Lie, husband and wife, dated December 10, 2002, and recorded in Prince Edward County Circuit Court Clerk's Office as Instrument Number 200203272.

**Tract 4 – Tax Map #120-A-1 as described in Instrument Number 200400451:**

All that certain tract or parcel of land, with all buildings and improvements thereon and the privileges and appurtenances thereunto belonging, lying, and being in the Hampden Magisterial District of Prince Edward County, Virginia, containing 396.57 acres, more or less, and being the identical tract of land as that which consisted of 399 acres conveyed by Elizabeth B. Lyman, unmarried, by a metes and bounds description, to George O. Pettus and R.E. Pettus, Jr., by deed bearing date on January 12, 1920, and recorded in the Clerk's Office of Prince Edward County, Virginia, in Deed Book 68, at page 521. **SAVE AND EXCEPT:** however 1.06 acres conveyed by George O. and R.E. Pettus, Jr., joined by their respective wives, to the Commonwealth of Virginia by deed dated March 5, 1926, and recorded in the aforesaid Clerk's Office in Deed Book 77, at page 385; and another similar conveyance to the Commonwealth of Virginia by R.S. McCall and Lula R. McCall consisting of 1.37 acres by deed bearing date of 1951 and recorded in the aforesaid Clerk's Office in Deed Book 117, at page 370; and to all three of these deeds references is hereby expressly made for a more adequate description of the real property hereby conveyed.

**LESS AND EXCEPT:** 0.87 acres fronting on U.S. Highway 15 and shown as Parcel 2 on that plat of survey prepared by Charlotte Land Surveying, dated February 9, 2004, which said plat is attached hereto and recorded herewith for a more complete and accurate description of the property hereby conveyed.

This being a portion of the same identical real estate conveyed unto the parties of the first part by deed dated October 29, 2003 and recorded in the Circuit Court Clerk's Office of Prince Edward County, Virginia as Instrument # 200303287.

THAT said 55 acres of land, lying and being in the County of Prince Edward, of which G. C. Womack died, seized and possessed, and being a portion of the land derived by the said G. C. Womack from Hatchett and J. B. Freyling respectively.

BEING the same real property conveyed to E. L. Bailey by deed from Robt. K. Brock, Special Commissioner, in a suit in the Circuit Court of the County of Prince Edward styled "Matina G. Womack, Gdn. v. Emily Sue Womack et als" dated December 8, 1911, recorded December 13, 1911, in the Clerk's Office of the Circuit Court of Prince Edward County, Virginia, in Deed Book 58, page 145.

AND ALL THAT certain tract or parcel of land located in Hampden District, Prince Edward County, Virginia about one- half mile northeast of Briery Station, being a part of that tract known as the Lyon place and bounded as follows:

BEGINNING at the southeast corner of John Foster's land; thence N-79 degrees, 30 minutes, 7.44 chains to an old poplar tree; thence S-67 degrees, 30 minutes-E 18.00 chains to the center of Horsepen Creek; thence down said creek, the center being the line, N-46 degrees 30 min-E 1.48 chains; N-24 degrees 45 minutes-E 4.65 chains to Hatchett's ford; thence along the Hatchett road S-55 degrees 15 minutes-W 2.14 chains; N-78 degrees 45 minutes 9.93 chains; N-46 degrees 10-minutes-W 3.04 chains; N-24 degrees 15 minutes-W 7.14 chains; N-56 degrees-W 0.94 chains; N-79 degrees 15 minutes-W 6.40 chains to Foster's corner on the road; thence along his line S-15 degrees-W 10.80 chains to the place of beginning and containing thirteen (13.00) acres.

and

ALL of that certain tract or parcel of land containing 1.11 acres, situated on the east side of a forest fire trail, about 1/4 mile northeast of Briery Station, in Hampden District, Prince Edward County, Virginia and described by metes and bounds as follows:

Beginning at an iron stob near the intersection of the Bailey road and running S. 81 degrees 15 minutes E. 132 feet; thence S. 12 degrees, 30 minutes W. 400 feet to an iron stob; thence N. 81 degrees, 30 minutes W. 111 feet to an iron stob; thence N. 9 degrees 30 minutes, E. along the forest fire trail 400 feet to the point of beginning and being more particularly described on a plat of K.J. Crouch, Surveyor, dated April 24, 1956; it being the identical property conveyed by Deed recorded in Deed Book 141, page 550.

and

All that certain tract or parcel of land situated in Hampden Magisterial District of Prince Edward County, Virginia, about 1/4 mile northeast of Old Briery Station, containing two acres, more or less, and bounded as follows:

Beginning at a stob at the northeast corner of the 1.11 acre tract belonging to James E. Bailey, and running S. 81 degrees 15 minutes E. 220 feet to a stob; thence S. 9 degrees 30 minutes W. 400 feet to a stob; thence N. 81 degrees 30 minutes W. 241 feet to a stob; thence along Bailey's line N. 12 degrees 30 minutes E. 400 feet to the point of beginning.

BEING the same parcels of land conveyed to Charles E. Bailey, Mabel B. Carr, Nancy B. Sanderson and James R. Bailey by deed from Charles E. Bailey et al dated March 30, 1995, recorded April 28, 1995 in the Clerk's Office of the Circuit Court of Prince Edward County, Virginia in Deed Book 294, page 504.

Tract 6 – Tax Map #120-A-6 as described in Instrument Number 201301751:

TRACT I: All of that certain tract or parcel of land lying and being in Hampden District of Prince Edward County, Virginia, about 1/4 mile northeast of Briery Station and bounded as follows: Beginning at the fork of the Booker and Hatchett roads; thence along the center line of the Hatchett road as it was located in 1919, S. 80 deg. 30' E. 5.54 chains; thence S. 76 deg. 45' E. 3.38 chains; thence along the lines of S. L. Lyon S. 11 deg. 15' W. 11.10 chains to a cedar stake; thence N. 80 deg. W. 8.90 chains to the Booker Road; thence along the same N. 10 deg. 45' E. 11.26 chains to the place of beginning, thus forming a tract of land containing 10 acres, more or less.

TRACT II: All of that certain tract or parcel of land lying and being in Hampden Magisterial District of Prince Edward County, Virginia, about 1/4 mile North of Briery Station and bounded as follows: Beginning at a cedar post on the southeast corner of the above described tract of land, thence new lines S. 81 deg. E. 11.64 chains to a cedar stake and 0.64 chains east of branch; thence N. 15 deg. E. 10.80 chains to the Hatchett road; thence along said road N. 81 deg. 30' W. 12.43 chains to an iron stake; thence along the line of the tract of land described in (1) above S. 11 deg. 15" W. 11.10 chains to the place of beginning, thus forming a piece of land containing 12.6 acres, more or less.

**LESS, HOWEVER, an off-conveyance of 1.11 acres to Clyde Foster by deed dated September 6, 1959 and recorded in the aforesaid Clerk's Office in Deed Book 141, page 550.**

**SAVE AND EXCEPT an off-conveyance of 2 acres to James E. Bailey, Mabel C. Bailey, Gus Brice and Rosa M. Brice by deed dated August 9, 1972 and recorded in the aforesaid Clerk's Office in Deed Book 182 at page 54.**

**Being the identical property conveyed unto Margaret H. Richards and Steven A. Richards by deed of gift from Lillian L. Hammer, dated April 14, 1987 of record in the aforesaid Clerk's Office in Deed Book 239, at page 223.**

**Tract 7 – Tax Map #120-A-7 and #120-A-8 as described on Instrument Number 201101061:**

**Tract 1:**

**All that certain lot or parcel of land, lying and being Hampden Magisterial District, Prince Edward County, Virginia, adjacent to or near Briery Station on the Virginia Railway and containing 6.1 acres, more or less.**

**Tract 2:**

**All of that certain tract or parcel of land, lying and being in the Hampden Magisterial District, Prince Edward County, Virginia, near Briery Station, containing 5 acres, more or less, and being bounded as follows: Beginning at a stake on the North right of way line of the Norfolk and Western Railway Company; thence along said right of way line and the and the lands of John Eggleston, S. 83 Deg. 15 Min. E. 3.79 chains to a stake; thence N. 84 Deg. 45 Min. W. 13.65 chains to a stake; thence N. 84 Deg. 45 Min. W. 13.65 chains to Booker Road; thence along the same (omitted bearing) should be S. 21 Deg. 30 Min. W. 2.07 chains to Norfolk and Western Railroad; thence along said railroad, S. 36 Deg. E. 1.92 chains to point of beginning, and that certain parcel of land in Hampden District containing 72/100 acres and described as follows: Beginning at a White Oak on the Hatchett Road; thence along D.J. Thompson line S. 86 Deg. 30 Min. E. 11.90 chains to a Pine tree; thence N. 79 Deg. 30 Min. W. 11.76 chains to Triple Pine on Hatchett Road; thence along said road, S. 27 Deg. 30 Min. W. 1.20 chains to point of beginning.**

**BOTH TRACTS BEING the same property conveyed unto Ethel G. Biggers by deed dated August 17, 1979 and recorded in the Clerk's Office of the Circuit Court of Prince Edward County, Virginia in Deed Book 212 at page 850.**

**THE REMAINDER OF THIS PAGE LEFT INTENTIONALLY BLANK**



Tract 8 – Tax Map #120-A-15 as described in Instrument Numbers 200500214 and 160002077:

Parcel 3

ALL that certain parcel or tract of land situated in Walton Magisterial District, Charlotte County, Virginia, lying, along Secondary road No. 653, as shown on plat of survey by Warren A. Trent, PLAT No. 1390 that is attached to and made a part of the deed recorded in Deed Book 264 page 775. This being Parcel "A" consisting of 29.17 that was part of an entire tract consisting of 57.81 acres by plat of survey dated May 12, 1989 and recorded in Plat book No. 7 page 111 in the Clerk's Office of Charlotte County, Virginia and adjoining the lands, of Elsie A. Edmunds and Caroline H. Freeman and R. H. Pettus.

LESS AND EXCEPT that piece or parcel of land containing 5.50 acres of land conveyed to Lewis E. Wilkerson, Sr. by deed dated May 23, 1996 and recorded May 24, 1996 in the aforesaid Clerk's Office in Deed Book 284 page 327.

BEING a part of the same real estate conveyed to Lewis E. Wilkerson, Jr. And Dawn H. Wilkerson, husband and wife and Roland J. Wilkerson and Stacy U. Wilkerson, husband and wife, by deed from Lewis E. Wilkerson, Jr. And Roland J. Wilkerson, dated August 5, 1999 and recorded August 11, 1999 in the Clerk's Office, Circuit Court, Charlotte County, Virginia in Deed Book 306 page 841.

Tract 9 – Tax Map #120-A-20 as described in Instrument Number 200502809:

**All that certain tract or parcel of land situated in Hampden District, Prince Edward County, Virginia, containing 11.91 acres according to plat of survey of Charlotte Land Surveying dated October 6, 2005, a copy of which plat is attached hereto and made a part of this Deed by reference for a more detailed description of the property herein conveyed.**

**This being a portion of that property conveyed unto Old Virginia Properties, LLC, a Virginia Limited Liability Company, by deed of Kirk Douglas Garnett, Married, dated June 6, 2005, and recorded in the Clerk's Office of the Circuit Court of Prince Edward County, Virginia as Instrument No. 200501922.**

**TAX MAP NO. 120-A-21**

**DEED: 127, page 103**

**BALDWIN TRACT #3209**

**ALL that certain lot or parcel of land lying and being in Hampden Magisterial District, Prince Edward County, Virginia, containing 112.1 acres, more or less. For a more accurate and particular description of the property hereby conveyed, reference is made to a Plat of survey prepared by K. J. Crouch, Surveyor, dated November 1953, attached to, recorded with and made a part of the Deed conveying the subject property to The Chesapeake Corporation of Virginia, recorded in the Clerk's Office of the Circuit Court of Prince Edward County, Virginia in Deed Book 127, at Page 103.**

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**BEING a portion of the property conveyed to ForesTree GM LLC, a Delaware limited liability company, from John Hancock Life Insurance Company, a Massachusetts corporation, by deed recorded in the Clerk's Office of the Circuit Court of Prince Edward County, Virginia as Instrument No. 200402998.**

**THE REMAINDER OF THIS PAGE LEFT INTENTIONALLY BLANK**

**Tract 11 – Tax Map #120-A-29 as described in Instrument Numbers 200503312 and 190000790:**

ALL those certain tracts of land containing, in the aggregate, Two Hundred Twenty-five and 20/100 (225.20) acres, more or less, in Hampden District, Prince Edward County, Virginia, and being the identical tracts of land conveyed to Georgia-Pacific Corporation from Spaulding by deed dated the 5<sup>th</sup> of October, 1965, recorded in the Clerk's Office, Circuit Court, Prince Edward County, Virginia in Deed Book 159, page 424, and identified therein as Tract 4. Said tracts of land were acquired by Spaulding from S. E. Spaulding, et al., by Deed dated the 1<sup>st</sup> day of December, 1950, recorded in the aforesaid Clerk's Office in Deed Book 117 page 165.

LESS AND EXCEPT that portion of the property within Tract PE-025 G-P Joyner PE-4 (549-135).

LESS AND EXCEPT 9.86 acres conveyed in that certain Boundary Line Agreement dated March 10, 1988 by and between KMI Continental Powhatan, Inc., and B. L. Dempsey and Freida L. Dempsey, recorded in Deed Book 243, page 571.

The portion of the above described property which comprises Tract PE-027 is shown on that certain survey for Continental Can Company, Inc., - Rutledge Tract, prepared by John R. Nunnally, Jr., dated December 29, 1971, a copy of which survey is recorded in Deed Book 358 page 283.

BEING a part of the same real estate conveyed to Alpha Forest Associates, Inc., by deed form Citibank, FSB, as Trustee for Account #308262, dated December 28, 2000 and recorded in the Clerk's Office, Circuit Court, Prince Edward County, Virginia in Deed Book 358 page 266.

**Tract 12 – Tax Map #120-A-29 as described in Instrument Numbers 200603511 and 190000845:**

ALL that certain lot, tract or parcel of land with improvements thereon and appurtenances thereunto belonging, lying and being in Hampden Magisterial District of Prince Edward County, Virginia, and containing two and one-half (2.5) acres, but this is a sale in gross and not by the acre, and located on VSR #360 approximately four miles north of Keysville. Said lands are more particularly described as to metes and bounds on a plat of survey by F. Richard Quible, C.L.S., dated October 1, 1959 and found recorded in the Office of the Clerk of the Circuit Court of Prince Edward County in Deed Book 142 at Page 62. Being the identical property conveyed unto Calvin M. Chidester, Jr. and Denise A. Chidester, husband and wife, Grantors herein, by that certain Deed dated May 4, 1999 from Marvin E. Whirley, et als, duly recorded in the Clerk's Office of the Circuit Court of Prince Edward County, Virginia in Deed Book 333 at page 468.

**Tract 13 – Tax Map #120-A-42**

**HAMPDEN DISTRICT**

ALL OF THAT CERTAIN TRACT or apceel of land situated in Prince Edward County, Virginia containing 71.10 acres, more or less, and bounded as follows: On the South by State Highway Route No. 360 lying between Prince Edward and Lunenburg Counties; on the West by the lands owned by or formerly owned by Clifford Shackleton; on the North and East by the lands owned by or formerly owned by Conrad Brehm.

LESS AND EXCEPT the following off-conveyances: 10 acres by deed dated March 9 1987, recorded in the Clerk's Office of the Circuit Court of Prince Edward County, Virginia in Deed Book 238, page 714; 2.00 acres by deed dated January 13, 1995, recorded in Deed Book 297 page 314 THEN corrected by Deed of Correction dated June 7, 1996 recorded in Deed Book 303 page 39, correcting the acreage of 3.00 acres, and 3.005 acres by deed dated February 9, 1998, recorded in Deed Book 317, page 845.

LEAVING an aggregate of 55.09 acres, more or less.

IT BEING THE same property conveyed unto Bayview Loan Servicing, LLC by deed dated September 10, 2014 from Wittstadt Title & Escrow Company, LLC and recorded October 20, 2014 in the Clerk's Office of the Circuit Court of Prince Edward County, Virginia as Instrument 201401602.

**LESS AND EXCEPT THE FOLLOWING TRACTS OR PARCELS:**

ALL of those certain lots, lying and being in the Hampden District of Prince Edward County, Virginia, known and designated as 25.05 Acres and 4.55 Acres on plat of survey entitled "Plat Showing Boundary Survey of that Portion of The old Joseph T. Fowlkes Property Lying in Hampden District, Prince Edward County, VA," made by Southeast Survey Group, LTD, dated February 16, 2015, and recorded May 23, 2019 in the Clerk's Office of the Circuit Court of Prince Edward County, Virginia, at Instrument No. 190000844, Slide B38 #4, reference to which plat is hereby made for a more particular description of the properties herein conveyed.

Being a part of the same property conveyed to LEWIS E. WILKERSON, JR AND DAWN H. WILKERSON, HUSBAND AND WIFE by Special Warranty Deed from BAYVIEW LOAN SERVICING, LLC., dated February 20, 2015 and recorded February 23, 2015, of record in Instrument No. 150000231, among the land records of Prince Edward, Virginia.

**Tract 14 – Tax Map # 120-A-46**

ALL of that certain tract or parcel of land lying and being in Hampden Magisterial District, Prince Edward County, Virginia, containing 274.93 acres, more or less. For more accurate and particular description as to the property hereby conveyed, reference is made to a Plat of Correction, dated September 15, 1986, by R. B. Cartwright, C.L.S., recorded in the Clerk's Office, Circuit Court, Prince Edward County, Virginia, in Plat Book 5, Page 207.

**Tract 15 - Tax Map # 121-A-9**

ALL those certain tracts of land containing, in the aggregate, Two Hundred Twenty-five and 20/100 (225.20) acres, more or less, in Hampden District, Prince Edward County, Virginia, and being the identical tracts of land conveyed to Georgia-Pacific Corporation from Spaulding by Deed dated the 5<sup>th</sup> day of October, 1965, recorded in the Clerk's Office, Circuit Court, Prince Edward County, Virginia in Deed Book 159 page 424, and identified therein as Tract 4. Said tracts of land were acquired by Spaulding from S. E. Spaulding, et al., by Deed dated the 1<sup>st</sup> day of December, 1950, recorded in the aforesaid Clerk's Office in Deed Book 117 page 165.

TOGETHER with a non-exclusive easement 15' in width over and across a portion of the property of Julius Walton and Zena Walton to State Route No. 737 as more particularly described in that Deed of Easement by and between Julius Walton, et us, and Continental Hopewell Woodlands, Inc., dated March 28, 1984, recorded January 7, 1985 in the Clerk's Office, Circuit Court, Prince Edward County, Va., in Deed Book 229 page 380, and

TOGETHER with a non-exclusive easement 30' in width over and across the properties of James L. Walton, et als, to State Route No. 737 as more particularly described in that certain Deed of Easement by and between James L. Walton, et als, and Continental Hopewell Woodlands, Inc., dated March 28, 1984, recorded January 7, 1985 in the Clerk's Office, Circuit Court, Prince Edward County, Va. in Deed Book 229 page 382.

LESS AND EXCEPT 9.86 acres conveyed in that certain Boundary Line Agreement dated March 10, 1988 by and between KMI Continental Powhatan, Inc., and B. L. Dempsey and Freida L. Dempsey, recorded in Deed Book 243, page 571.

LESS AND EXCEPT that portion of the property within Tract PE-027 G-P Rutledge PE-6 (549-135).

The portion of the above described property which comprises Tract PE-025 is shown on that certain survey for Continental Can Company, Inc. - Joyner Tract, dated December 1970, a copy of which survey is recorded in aforesaid Clerk's Office in Deed Book 358 page 281.

BEING a part of the same real estate conveyed to Alpha Forest Associates, Inc., by deed form Citibank, FSB, as Trustee for Account #308262, dated December 28, 2000 and recorded in the Clerk's Office, Circuit Court, Prince Edward County, Virginia in Deed Book 358 page 266.

ALL those certain tracts of land containing, in the aggregate, Two Hundred Twenty-five and 20/100 (225.20) acres, more or less, in Hampden District, Prince Edward County, Virginia, and being the identical tracts of land conveyed to Georgia-Pacific Corporation from Spaulding by deed dated the 5<sup>th</sup> of October, 1965, recorded in the Clerk's Office, Circuit Court, Prince Edward County, Virginia in Deed Book 159, page 424, and identified therein as Tract 4. Said tracts of land were acquired by Spaulding from S. E. Spaulding, et al., by Deed dated the 1<sup>st</sup> day of December, 1950, recorded in the aforesaid Clerk's Office in Deed Book 117 page 165.

LESS AND EXCEPT that portion of the property within Tract PE-025 G-P Joyner PE-4 (549-135).

LESS AND EXCEPT 9.86 acres conveyed in that certain Boundary Line Agreement dated March 10, 1988 by and between KMI Continental Powhatan, Inc., and B. L. Dempsey and Freida L. Dempsey, recorded in Deed Book 243, page 571.

The portion of the above described property which comprises Tract PE-027 is shown on that certain survey for Continental Can Company, Inc. - Rutledge Tract, prepared by John R. Nunnally, Jr., dated December 29, 1971, a copy of which survey is recorded in Deed Book 358 page 283.

BEING a part of the same real estate conveyed to Alpha Forest Associates, Inc., by deed form Citibank, FSB, as Trustee for Account #308262, dated December 28, 2000 and recorded in the Clerk's Office, Circuit Court, Prince Edward County, Virginia in Deed Book 358 page 266.



Less and except from all of the property described above, all portions of the above-described property not currently owned by the Seller as reflected in all outsales, reservations, testamentary gifts or other conveyances appearing in the chain of title and of record in the Clerk's Office of the Prince Edward County Circuit Court.

It is the intent of the parties that all of the real property owned by the Seller in the Tax Map Parcel #s 111-A-2B, 111-A-3, 112-A-19, 120-A-1, 120-A-2, 120-A-3, 120-A-4, 120-A-5, 120-A-6, 120-A-7, 120-A-8, 120-A-15, 120-A-20, 120-A-21, 120-A-29, 120-A-41, 120-A-42, 120-A-46, 121-A-9 are subject to this Option Agreement and part of the Property described herein regardless of any errors or omissions in the Legal Description.

**END OF EXHIBIT A**

# VIRGINIA LAND RECORD COVER SHEET

Commonwealth of Virginia VA. CODE §§ 17.1-223, -227.1, -249

## FORM A – COVER SHEET CONTENT

Instrument Date: 1/8/2025

Instrument Type: ASGMT

Number of Parcels: 19 Number of Pages: 16

[ ] City [X] County PRINCE EDWARD COUNTY COURI  
CIRCUIT COURT

Tax Exempt? VIRGINIA/FEDERAL CODE SECTION

[ ] Grantor:

[ ] Grantee:

Business/Name

(Area Above Reserved For Deed Stamp Only)

1 X Grantor: SOLAR DEVELOPMENT HOLDINGS, LLC

2 Grantor: WILKERSON, LEWIS JR

1 X Grantee: TOBACCO TRAIL SOLAR, LLC

Grantee:

Grantee Address

Name: TOBACCO TRAIL SOLAR, LLC

Address: 800 TAYLOR ST, STE 200

City: DURHAM State: NC Zip Code: 27701

Consideration: \$0.00 Existing Debt: \$0.00 Actual Value/Assumed: \$0.00

PRIOR INSTRUMENT UNDER § 58.1-803(D):

Original Principal: \$0.00 Fair Market Value Increase: \$0.00

Original Book No.: Original Page No.: Original Instrument No.: 202400121

Prior Recording At: [ ] City [X] County PRINCE EDWARD Percentage In This Jurisdiction: 100%

Book Number: Page Number: Instrument Number: 190001352

Parcel Identification Number/Tax Map Number: 111-A-2B

Short Property Description: 3.59 ACRES

Current Property Address:

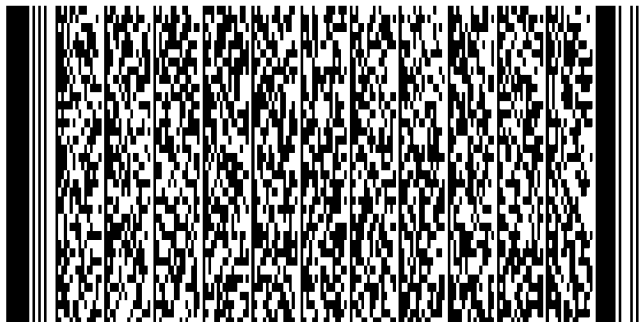
City: MEHERRIN State: VA Zip Code: 23954

Instrument Prepared By: TOBACCO TRAIL SOLAR, LLC Recording Paid By: TOBACCO TRAIL SOLAR, LLC

Recording Returned To: TOBACCO TRAIL SOLAR, LLC

Address: 800 TAYLOR ST, STE 200

City: DURHAM State: NC Zip Code: 27701



# VIRGINIA LAND RECORD COVER SHEET

Commonwealth of Virginia VA. CODE §§ 17.1-223, -227.1, -249

## FORM B – ADDITIONAL GRANTORS/GRANTEES

Instrument Date: 1/8/2025

Instrument Type: ASGMT

Number of Parcels: 19 Number of Pages: 16

[ ] City [X] County PRINCE EDWARD COUNTY COURT  
CIRCUIT COURT

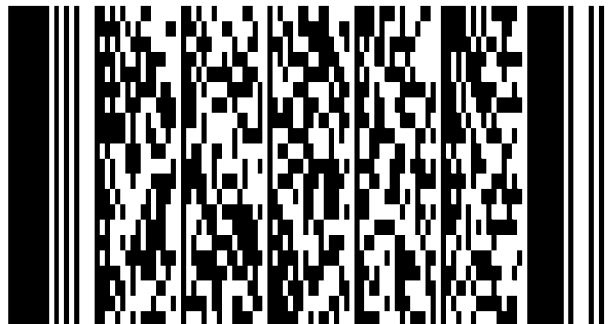
### Grantor Business/Name

(Area Above Reserved For Deed Stamp Only)

3 Grantor: WILKERSON, DAWN H  
Grantor:  
Grantor:  
Grantor:  
Grantor:  
Grantor:  
Grantor:  
Grantor:

### Grantee Business/Name

Grantee:  
Grantee:  
Grantee:  
Grantee:  
Grantee:  
Grantee:  
Grantee:



# VIRGINIA LAND RECORD COVER SHEET

Commonwealth of Virginia VA. CODE §§ 17.1-223, -227.1, -249

## FORM C – ADDITIONAL PARCELS

Instrument Date: 1/8/2025

Instrument Type: ASGMT

Number of Parcels: 19 Number of Pages: 16

[ ] City [X] County PRINCE EDWARD COUNTY COURT  
CIRCUIT COURT

### Parcels Identification/Tax Map

Prior Recording At:

[ ] City [X] County PRINCE EDWARD

Percentage In This Jurisdiction: 100%

Book Number: Page Number:

Instrument Number: 200500214

Parcel Identification Number (PIN)/Tax Map Number: 111-A-3

Short Property Description: 134 ACRES

Current Property Address:

City: MEHERRIN State: VA Zip Code: 23954

Prior Recording At:

[ ] City [X] County PRINCE EDWARD Percentage In This Jurisdiction: 100%

Book Number: Page Number: Instrument Number: 200400165

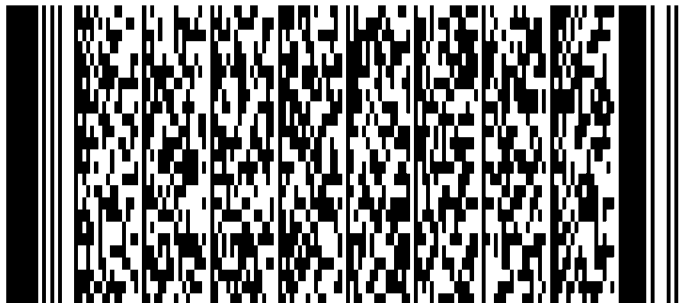
Parcel Identification Number/Tax Map Number: 112-A-19A

Short Property Description: 485.98 ACRES

SLIDE A-303

Current Property Address:

City: MEHERRIN State: VA Zip Code: 23954



(Area Above Reserved For Deed Stamp Only)

# VIRGINIA LAND RECORD COVER SHEET

Commonwealth of Virginia VA. CODE §§ 17.1-223, -227.1, -249

## FORM C – ADDITIONAL PARCELS

Instrument Date: 1/8/2025

Instrument Type: ASGMT

Number of Parcels: 19 Number of Pages: 16

[ ] City [X] County PRINCE EDWARD COUNTY COURT  
CIRCUIT COURT

### Parcels Identification/Tax Map

Prior Recording At:

[ ] City [X] County PRINCE EDWARD

Percentage In This Jurisdiction: 100%

Book Number: Page Number:

Instrument Number: 200400451

Parcel Identification Number (PIN)/Tax Map Number: 120-A-1

Short Property Description: 396.57 ACRES

Current Property Address:

City: MEHERRIN State: VA Zip Code: 23954

Prior Recording At:

[ ] City [ ] County PRINCE EDWARD Percentage In This Jurisdiction: 100%

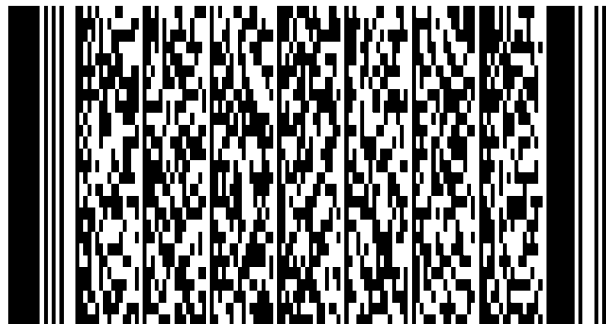
Book Number: Page Number: Instrument Number: 201400858

Parcel Identification Number/Tax Map Number: 120-A-2

Short Property Description:

Current Property Address:

City: MEHERRIN State: VA Zip Code: 23954



(Area Above Reserved For Deed Stamp Only)



# VIRGINIA LAND RECORD COVER SHEET

Commonwealth of Virginia VA. CODE §§ 17.1-223, -227.1, -249

## FORM C – ADDITIONAL PARCELS

Instrument Date: 1/8/2025

Instrument Type: ASGMT

Number of Parcels: 19 Number of Pages: 16

[ ] City [X] County PRINCE EDWARD COUNTY COURT  
CIRCUIT COURT

### Parcels Identification/Tax Map

Prior Recording At:

[ ] City [ ] County PRINCE EDWARD

Percentage In This Jurisdiction: 100%

Book Number: Page Number:

Instrument Number: 201400858

Parcel Identification Number (PIN)/Tax Map Number: 120-A-3

Short Property Description:

Current Property Address:

City: MEHERRIN State: VA Zip Code: 23954

Prior Recording At:

[ ] City [ ] County PRINCE EDWARD Percentage In This Jurisdiction: 100%

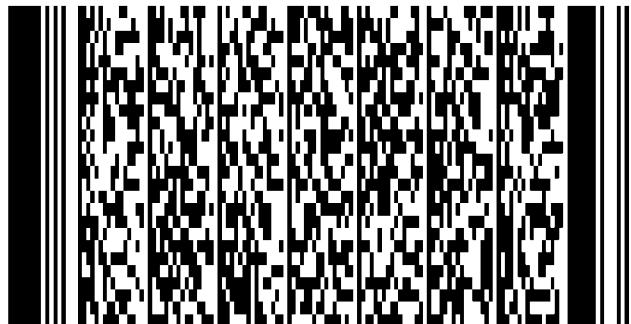
Book Number: Page Number: Instrument Number: 201400858

Parcel Identification Number/Tax Map Number: 120-A-4

Short Property Description:

Current Property Address:

City: MEHERRIN State: VA Zip Code: 23954



(Area Above Reserved For Deed Stamp Only)

# VIRGINIA LAND RECORD COVER SHEET

Commonwealth of Virginia VA. CODE §§ 17.1-223, -227.1, -249

## FORM C – ADDITIONAL PARCELS

Instrument Date: 1/8/2025

Instrument Type: ASGMT

Number of Parcels: 19 Number of Pages: 16

[ ] City [X] County PRINCE EDWARD COUNTY COURT  
CIRCUIT COURT

### Parcels Identification/Tax Map

Prior Recording At:

[ ] City [ ] County PRINCE EDWARD

Percentage In This Jurisdiction: 100%

Book Number: Page Number:

Instrument Number: 201400858

Parcel Identification Number (PIN)/Tax Map Number: 120-A-5

Short Property Description:

Current Property Address:

City: MEHERRIN State: VA Zip Code: 23954

Prior Recording At:

[ ] City [X] County PRINCE EDWARD Percentage In This Jurisdiction: 100%

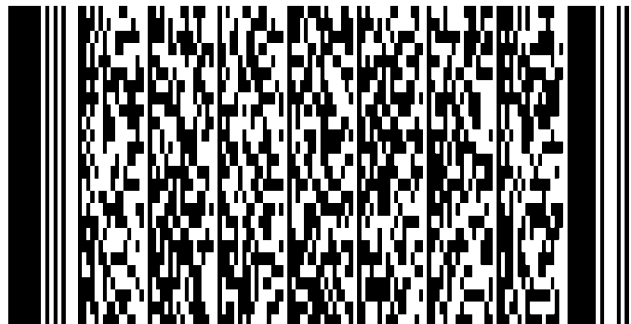
Book Number: Page Number: Instrument Number: 201301751

Parcel Identification Number/Tax Map Number: 120-A-6

Short Property Description:

Current Property Address:

City: MEHERRIN State: VA Zip Code: 23954



(Area Above Reserved For Deed Stamp Only)

# VIRGINIA LAND RECORD COVER SHEET

Commonwealth of Virginia VA. CODE §§ 17.1-223, -227.1, -249

## FORM C – ADDITIONAL PARCELS

Instrument Date: 1/8/2025

Instrument Type: ASGMT

Number of Parcels: 19 Number of Pages: 16

[ ] City [X] County PRINCE EDWARD COUNTY COURT  
CIRCUIT COURT

### Parcels Identification/Tax Map

Prior Recording At:

[ ] City [X] County PRINCE EDWARD

Percentage In This Jurisdiction: 100%

Book Number: Page Number:

Instrument Number: 201101061

Parcel Identification Number (PIN)/Tax Map Number: 120-A-7

Short Property Description: 6.1 ACRES

Current Property Address:

City: MEHERRIN State: VA Zip Code: 23954

Prior Recording At:

[ ] City [X] County PRINCE EDWARD Percentage In This Jurisdiction: 100%

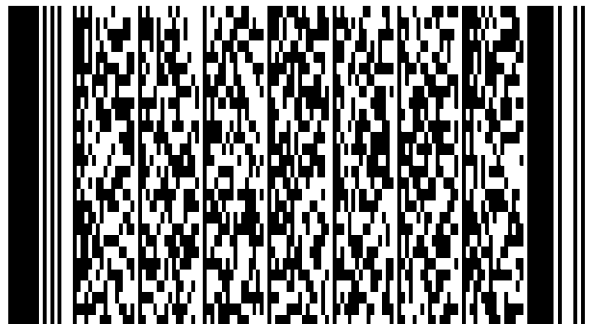
Book Number: Page Number: Instrument Number: 201101061

Parcel Identification Number/Tax Map Number: 120-A-8

Short Property Description: 5 ACRES

Current Property Address:

City: MEHERRIN State: VA Zip Code: 23954



(Area Above Reserved For Deed Stamp Only)

# VIRGINIA LAND RECORD COVER SHEET

Commonwealth of Virginia VA. CODE §§ 17.1-223, -227.1, -249

## FORM C – ADDITIONAL PARCELS

Instrument Date: 1/8/2025

Instrument Type: ASGMT

Number of Parcels: 19 Number of Pages: 16

[ ] City [X] County PRINCE EDWARD COUNTY COURT  
CIRCUIT COURT

### Parcels Identification/Tax Map

Prior Recording At:

[ ] City [X] County PRINCE EDWARD

Percentage In This Jurisdiction: 100%

Book Number: Page Number:

Instrument Number: 200500214

Parcel Identification Number (PIN)/Tax Map Number: 120-A-15

Short Property Description: 29.17 ACRES

Current Property Address:

City: MEHERRIN State: VA Zip Code: 23954

Prior Recording At:

[ ] City [X] County PRINCE EDWARD Percentage In This Jurisdiction: 100%

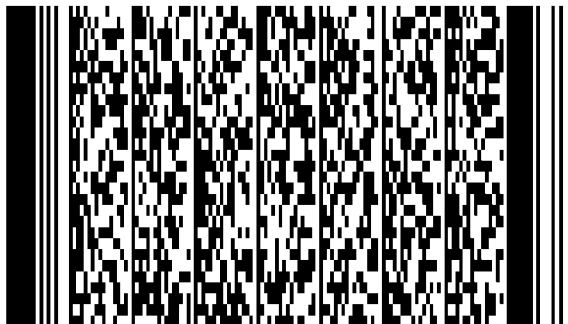
Book Number: Page Number: Instrument Number: 200502809

Parcel Identification Number/Tax Map Number: 120-A-20

Short Property Description: 11.91 ACRES

Current Property Address:

City: MEHERRIN State: VA Zip Code: 23954



(Area Above Reserved For Deed Stamp Only)

# VIRGINIA LAND RECORD COVER SHEET

Commonwealth of Virginia VA. CODE §§ 17.1-223, -227.1, -249

## FORM C – ADDITIONAL PARCELS

Instrument Date: 1/8/2025

Instrument Type: ASGMT

Number of Parcels: 19 Number of Pages: 16

[ ] City [X] County PRINCE EDWARD COUNTY COURT  
CIRCUIT COURT

### Parcels Identification/Tax Map

Prior Recording At:

[ ] City [X] County PRINCE EDWARD

Percentage In This Jurisdiction: 100%

Book Number: Page Number:

Instrument Number: 200501474

Parcel Identification Number (PIN)/Tax Map Number: 120-A-21

Short Property Description: 112.1 ACRES  
BALDWIN TRACT 3209

Current Property Address:

City: MEHERRIN State: VA Zip Code: 23954

Prior Recording At:

[ ] City [X] County PRINCE EDWARD Percentage In This Jurisdiction: 100%

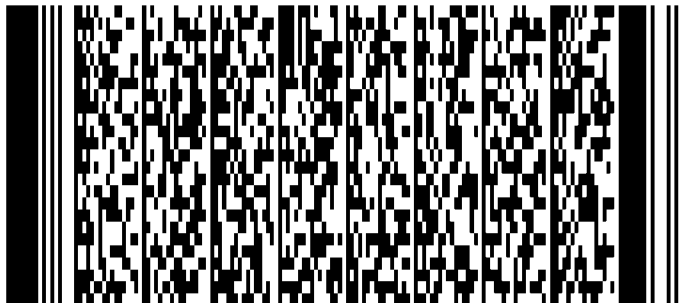
Book Number: Page Number: Instrument Number: 200503312

Parcel Identification Number/Tax Map Number: 120-A-29

Short Property Description: 225.2 ACRES

Current Property Address:

City: MEHERRIN State: VA Zip Code: 23954



(Area Above Reserved For Deed Stamp Only)



# VIRGINIA LAND RECORD COVER SHEET

Commonwealth of Virginia VA. CODE §§ 17.1-223, -227.1, -249

## FORM C – ADDITIONAL PARCELS

Instrument Date: 1/8/2025

Instrument Type: ASGMT

Number of Parcels: 19 Number of Pages: 16

[ ] City [X] County PRINCE EDWARD COUNTY COURT  
CIRCUIT COURT

### Parcels Identification/Tax Map

Prior Recording At:

[ ] City [X] County PRINCE EDWARD

Percentage In This Jurisdiction: 100%

Book Number: Page Number:

Instrument Number: 200603511

Parcel Identification Number (PIN)/Tax Map Number: 120-A-29

Short Property Description: 2.5 ACRES  
142/62

Current Property Address:

City: MEHERRIN State: VA Zip Code: 23954

Prior Recording At:

[ ] City [X] County PRINCE EDWARD Percentage In This Jurisdiction: 100%

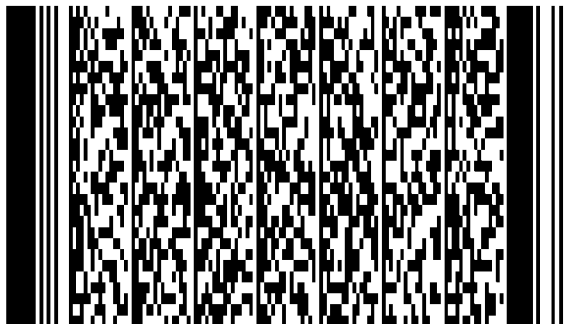
Book Number: Page Number: Instrument Number: 201401602

Parcel Identification Number/Tax Map Number: 120-A-42

Short Property Description: 55.09 ACRES

Current Property Address:

City: MEHERRIN State: VA Zip Code: 23954



(Area Above Reserved For Deed Stamp Only)

# VIRGINIA LAND RECORD COVER SHEET

Commonwealth of Virginia VA. CODE §§ 17.1-223, -227.1, -249

## FORM C – ADDITIONAL PARCELS

Instrument Date: 1/8/2025

Instrument Type: ASGMT

Number of Parcels: 19 Number of Pages: 16

[ ] City [X] County PRINCE EDWARD COUNTY COURT  
CIRCUIT COURT

### Parcels Identification/Tax Map

Prior Recording At:

[ ] City [X] County PRINCE EDWARD

Percentage In This Jurisdiction: 100%

Book Number: Page Number:

Instrument Number:

Parcel Identification Number (PIN)/Tax Map Number: 120-A-46

Short Property Description: 274.93 ACRES  
PB5/207

Current Property Address:

City: MEHERRIN State: VA Zip Code: 23954

Prior Recording At:

[ ] City [X] County PRINCE EDWARD Percentage In This Jurisdiction: 100%

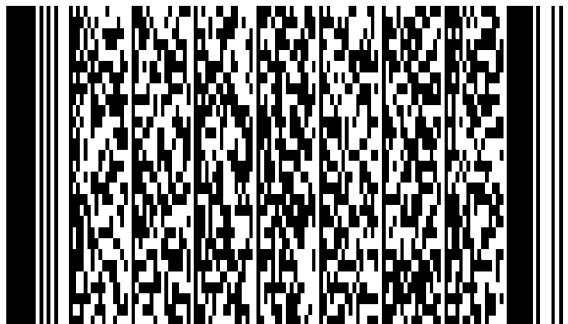
Book Number: 358 Page Number: 281 Instrument Number:

Parcel Identification Number/Tax Map Number: 121-A-9

Short Property Description: 225.2 ACRES  
358/281

Current Property Address:

City: MEHERRIN State: VA Zip Code: 23954



(Area Above Reserved For Deed Stamp Only)

Prepared by and mail to:  
Tobacco Trail Solar, LLC  
800 Taylor Street, Suite 200  
Durham, NC 27701  
Attn: Legal Department  
Randy H. Herman, Esq.

Tax Map Numbers: 111-A-2B, 111-A-3, 112-A-19, 120-A-1, 120-A-2, 120-A-3, 120-A-4, 120-A-5, 120-A-6, 120-A-7, 120-A-8, 120-A-15, 120-A-20, 120-A-21, 120-A-29, 120-A-41, 120-A-42, 120-A-46, 121-A-9

#### **MEMORANDUM OF ASSIGNMENT OF PURCHASE OPTION AGREEMENT**

This MEMORANDUM OF ASSIGNMENT OF PURCHASE OPTION AGREEMENT (this “**Memorandum**”) is effective as of January 8, 2025, (the “**Effective Date**”) by and between **SOLAR DEVELOPMENT HOLDINGS, LLC**, a North Carolina limited liability company, (“**Assignor**”) and **TOBACCO TRAIL SOLAR, LLC**, a North Carolina limited liability company (“**Assignee**”).

#### **RECITALS**

WHEREAS, Assignor, as Purchaser, entered into that certain Purchase Option Agreement dated November 30, 2023, as evidenced by that certain Memorandum of Purchase Option Agreement dated November 30, 2023, recorded as Instrument No. 202400121 on January 25, 2024 in the Clerk’s Office of the Circuit Court of Prince Edward County, with **LEWIS WILKERSON JR. and DAWN H. WILKERSON**, (“**Wilkerson**”) whereby Wilkerson granted to Assignor the right to purchase that certain real property consisting of approximately One Thousand Seven Hundred Eighty-Nine and 875/1000 (1,789.875) acres located in Prince Edward County, Virginia being more particularly described on Exhibit “A” attached hereto and made a part hereof (the “**Property**”), (collectively, the “**Agreement**”).

WHEREAS, Assignor wishes to assign all of its rights and obligations under the Agreement to Assignee and Assignee wishes to accept and assume all of Assignor’s rights and obligations in and under the Agreement.

WHEREAS, in accordance with Section 15 of the Agreement, Assignor may freely assign its rights without the consent of Wilkerson.

WHEREAS, Assignor and Assignee now wish to record this Memorandum of Assignment of Purchase Option Agreement in order to memorialize such assignment.

NOW, THEREFORE, in consideration of the foregoing promises and premises, the receipt and sufficiency of which are hereby established and agreed, the parties agree as follows:

1. Assignor hereby assigns to Assignee all of Assignor's rights, title, and interests in and to the Agreement.
2. Assignee hereby accepts from Assignor and assumes all of Assignor's rights, duties, liabilities, and obligations under the Agreement.
3. Capitalized terms not defined herein shall have the meaning ascribed to them in the Agreement.

IN WITNESS WHEREOF, this Memorandum is executed by the parties as of the day and year first written above.

*(End of Text. Signature Page Follows.)*

**ASSIGNOR:**

**SOLAR DEVELOPMENT HOLDINGS, LLC,**  
a North Carolina limited liability company

By: Strata Manager, LLC,  
a North Carolina limited liability company,  
its Manager

By: [Signature] (SEAL)  
Name: Markus Wilhelm  
Title: Manager

STATE OF NORTH CAROLINA

COUNTY OF DURHAM

I certify that the following person personally appeared before me this day, acknowledging to me that he signed the foregoing instrument: Markus Wilhelm, Manager of Strata Manager, LLC the Manager of **Solar Development Holdings, LLC.**

WITNESS my hand and official stamp or seal, this 8 day of January, 2025

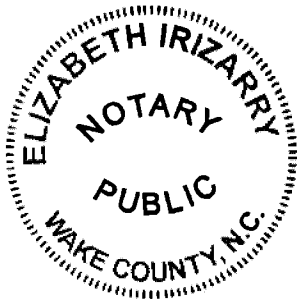
[Signature]  
Notary Public

Printed Name: Elizabeth Irizarry

My Commission Expires:

September 9, 2029

[AFFIX NOTARIAL STAMP OR SEAL]

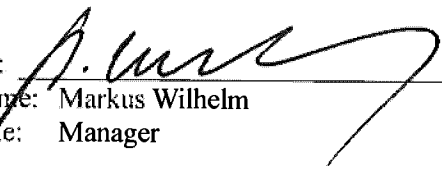




**ASSIGNEE:**

**TOBACCO TRAIL SOLAR, LLC,**  
a North Carolina limited liability company

By: Strata Manager, LLC,  
a North Carolina limited liability company,  
its Manager

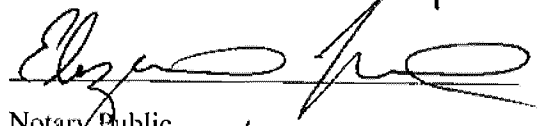
By:  (SEAL)  
Name: Markus Wilhelm  
Title: Manager

STATE OF NORTH CAROLINA

COUNTY OF DURHAM

I certify that the following person personally appeared before me this day, acknowledging to me that he signed the foregoing instrument: Markus Wilhelm, Manager of Strata Manager, LLC the Manager of **Tobacco Trail Solar, LLC**.

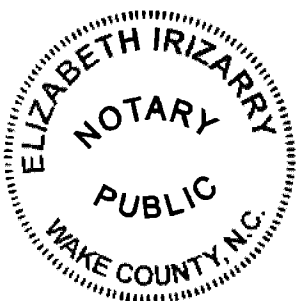
WITNESS my hand and official stamp or seal, this 8 day of January, 2025

  
Notary Public  
Printed Name: Elizabeth Irizarry

My Commission Expires:

September 9, 2029

[AFFIX NOTARIAL STAMP OR SEAL]



## EXHIBIT A

### **LEGAL DESCRIPTION OF THE PROPERTY**

All those certain tracts or parcels of land located in Hampden Magisterial District, Prince Edward County, Virginia, containing approximately 1,789.875 acres, more or less, and being the same tracts or parcels of land conveyed to Seller by the following conveyances: (1) that certain Deed of Gift dated August 2<sup>nd</sup> 2019 and recorded in the Clerk's Office of the Prince Edward County Circuit Court on August 5, 2019 as Instrument Number 190001352; (2) that certain Deed of Gift dated January 12, 2005 and recorded in the Clerk's Office of the Prince Edward County Circuit Court on January 24, 2005 as Instrument Number 200500214; (3) that certain Deed dated January 4, 2004 and recorded in the Clerk's Office of the Prince Edward County Circuit Court on January 21, 2004 as Instrument Number 200400165; (4) that certain Deed and Deed of Assumption dated February 24, 2004 and recorded in the Clerk's Office of the Prince Edward County Circuit Court on February 24, 2004 as Instrument Number 200400451; (5) that certain Deed dated June 4, 2014 and recorded in the Clerk's Office of the Prince Edward County Circuit Court on June 13, 2014 as Instrument Number 201400858; (6) that certain Deed dated September 18, 2013 and recorded in the Clerk's Office of the prince Edward County Circuit Court on September 27, 2013 as Instrument Number 201301751; (7) that certain Deed dated July 1, 2011 and recorded in the Clerk's Office of the prince Edward County Circuit Court on July 1, 2011 as Instrument Number 201101061; (8) that certain Deed of Gift dated January 12, 2005, and recorded in the Clerk's Office of the Prince Edward County Circuit Court on January 24, 2005 as Instrument Number 200500214 as further described in that Certificate of Confirmation by Owner and Plat dated December 1, 2016, and recorded in the Clerk's Office of the Prince Edward County Circuit Court on December 2, 2016 as Instrument Number 160002077; (9) that certain Deed dated October 18, 2005 and recorded in the Clerk's Office of the Prince Edward County Circuit Court on October 20, 2005 as Instrument Number 200502809; (10) ) that certain Special Warranty Deed dated May 11, 2005 and recorded in the Clerk's Office of the Prince Edward County Circuit Court on June 6, 2005 as Instrument Number 200501474; (11) that certain Deed of Bargain and Sale dated December 12, 2005 and recorded in the Clerk's Office of the Prince Edward County Circuit Court on December 14, 2005 as Instrument Number 200503312 and further described in that certain Affidavit dated May 15, 2019 and recorded in the Clerk's Office of the Prince Edward County Circuit Court on May 15, 2019 as Instrument Number 190000790; (12) that certain Deed of Bargain and Sale dated December 12, 2005 and recorded in the Clerk's Office of the Prince Edward County Circuit Court on December 14, 2005 as Instrument Number 200503312 and further described in that certain Affidavit dated May 15, 2019 and recorded in the Clerk's Office of the Prince Edward County Circuit Court on May 15, 2019 as Instrument Number 190000790; (13) that certain Deed dated December 11, 2006 and recorded in the Clerk's Office of the Prince Edward County Circuit Court on December 14, 2006 as Instrument Number 200603511 and further described in that certain Affidavit dated May 21, 2019 and recorded in the Clerk's Office of the Prince Edward County Circuit Court on May 23, 2019 as Instrument Number 190000845; (14) that certain Deed of Bargain and Sale dated December 5, 2005 and recorded in the Clerk's Office of the Prince Edward County Circuit Court on December 14, 2005 as Instrument Number 200503312; (15) that certain Special Warranty Deed dated April 7, 2011 and recorded in the Clerk's Office of the Prince Edward County Circuit Court on April 14, 2011 as Instrument Number 201100642, and being more particularly described therein as follows:

#### **Tract 1-Tax Map #111-A-2B as described in Instrument Number 190001352:**

ALL that certain lot, tract or parcel of land with improvements thereon and appurtenances thereunto belonging, lying and being in Hampden Magisterial District of Prince Edward County, Virginia, and **containing 3.59 acres, more or less**, located on VSR #15, and referred to as "The Henderson Tract", according to plat of survey by William R. Reeves, Jr., dated May 18, 2007, revised August 31, 2011 and recorded in the Clerk's Office of the Circuit Court of Prince Edward County, Virginia as Instrument #190000883 (also see Slide B39#2), reference to which is made for a more detailed description of the property herein conveyed.

Being the same property conveyed to Lewis W. Wilkerson, Jr., by deed from Wallace W. Wright, Rachelle P. Wright and Bruce C. Wright, dated August 22, 2011 and recorded in the Clerk's Office of the Circuit Court of Prince Edward County, Virginia, on August 24, 2011, bearing Instrument #201101352.

**Tract 2 - Tax Map #111-A-3 as described in Instrument Number 200500214:**

ALL THAT CERTAIN TRACT, piece or parcel of land, with the buildings and improvements thereon, situate, lying and being in Hampden Magisterial District, Prince Edward County, Virginia, about 1/4 mile Northwest of Briery Station, containing 134 acres, more or less, and bounded and described as follows:

BEGINNING at the intersection of the North right of way line of the Norfolk and Western Rwy. and center line of the Keysville and Farmville public road; thence along said public road, North 10 deg. 30 min. East 4.60 chains; North 41 deg. 45 min. East 8.40 chains; North 26 deg. 45 min. East 5.00 chains to a small white oak tree on the East side of the road, thence a new line, South 69 deg. East 77.00 chains to a stake on the Booker Road; thence along same, South 10 deg. 30 min. West 9.80 chains; South 36 deg. 30 min. West 1.80 chains; South 14 deg. 30 min. West 5.47 chains to the corner of the "Lyman School" Lot; thence along school lot, North 83 deg. West 6.60 chains to a stake four feet West of a small dogwood tree; thence along the line of C. S. Barnes, North 63 deg. West 9.20 chains to a stake between two cedar trees; thence South 3 deg. West 3.10 chains to the right of way line of the N. & W. Rwy.; thence along said right of way parallel to the center line of the main tract and 90 feet therefrom, in a Westerly direction 370.00 ft.; thence in a Southerly direction and at right angles to the main line 30 feet; thence in a Westerly direction parallel to and 60 feet from the centerline, 1,115 feet; thence in a Northerly direction, and at right angles to the center line, 45 feet; thence in a Westerly direction, parallel to and 105 feet from the centerline, 920 feet; thence in a Southerly direction, at right angles to the centerline, 30 feet; thence in a Westerly direction, parallel to and 75 feet from the centerline, 1,009 feet; thence in a Northerly direction and at right angles to the center line, 40 feet; thence in a Westerly direction, parallel to and 115 feet from the center line, 603 feet to the point of beginning; LESS HOWEVER, that certain 1.08 acre parcel heretofore conveyed to the Commonwealth of Virginia by deed dated July 11, 1945, and recorded in the Clerk's Office of the Circuit Court of Prince Edward County, Virginia, in Deed Book 103 at page 457.

BEING the same real estate conveyed to Lewis E. Wilkerson, Jr. and Dawn H. Wilkerson and Roland J. Wilkerson and Stacey Y. Wilkerson, by deed from Lewis E. Wilkerson, Jr. and Roland J. Wilkerson dated August 5, 1999 and recorded August 18, 1999 in the Clerk's Office, Circuit Court, Prince Edward County, Virginia in Deed Book 336 page 276.

**Tract 3 – Tax Map #112-A-19A as described in Instrument Number 200400165:**

All of that certain tract or parcel of real estate, with all improvements thereon and privileges and appurtenances thereunto appertaining, situate, lying and being in the Hampden Magisterial District of Prince Edward County, Virginia, containing 485.98 acres, adjoining the lands of the Grantee herein on the East, as more particularly shown and described on a plat of survey made by William W. Dickerson, Jr., L.L. S., dated September 25, 2003, Divided December 9, 2003, of which plat is recorded in the Clerk's Office of the Circuit Court of Prince Edward County, together with a Plat Affidavit as Instrument #200400019, and said plat being recorded in Slide A-303. #1. Reference is hereby made to said affidavit and plat for a more accurate and complete description of the real estate herein conveyed.

Being a portion of the real estate that was conveyed unto Clayton C. Bryant, Jr. and Malcolm J. Coleman, Jr. by deed from Chang Ho Lie and Sun Ja Lie, husband and wife, dated December 10, 2002, and recorded in Prince Edward County Circuit Court Clerk's Office as Instrument Number 200203272.

**Tract 4 – Tax Map #120-A-1 as described in Instrument Number 200400451:**

All that certain tract or parcel of land, with all buildings and improvements thereon and the privileges and appurtenances thereunto belonging, lying, and being in the Hampden Magisterial District of Prince Edward County, Virginia, containing 396.57 acres, more or less, and being the identical tract of land as that which consisted of 399 acres conveyed by Elizabeth B. Lyman, unmarried, by a metes and bounds description, to George O. Pettus and R.E. Pettus, Jr., by deed bearing date on January 12, 1920, and recorded in the Clerk's Office of Prince Edward County, Virginia, in Deed Book 68, at page 521. SAVE AND EXCEPT: however 1.06 acres conveyed by George O. and R.E. Pettus, Jr., joined by their respective wives, to the Commonwealth of Virginia by deed dated March 5, 1926, and recorded in the aforesaid Clerk's Office in Deed Book 77, at page 385; and another similar conveyance to the Commonwealth of Virginia by R.S. McCall and Lula R. McCall consisting of 1.37 acres by deed bearing date of 1951 and recorded in the aforesaid Clerk's Office in Deed Book 117, at page 370; and to all three of these deeds references is hereby expressly made for a more adequate description of the real property hereby conveyed.

**LESS AND EXCEPT:** 0.87 acres fronting on U.S. Highway 15 and shown as Parcel 2 on that plat of survey prepared by Charlotte Land Surveying, dated February 9, 2004, which said plat is attached hereto and recorded herewith for a more complete and accurate description of the property hereby conveyed.

This being a portion of the same identical real estate conveyed unto the parties of the first part by deed dated October 29, 2003 and recorded in the Circuit Court Clerk's Office of Prince Edward County, Virginia as Instrument # 200303287.

Tract 5 - Tax Map #120-A-2, #120-A-3, #120-A-4, and #120-A-5 as described in Instrument Number 201400858;

THAT said 55 acres of land, lying and being in the County of Prince Edward, of which G. C. Womack died, seized and possessed, and being a portion of the land derived by the said G. C. Womack from Hatchett and J. B. Freyling respectively.

BEING the same real property conveyed to E. L. Bailey by deed from Robt. K. Brock, Special Commissioner, in a suit in the Circuit Court of the County of Prince Edward styled "Matina G. Womack, Gdn. v. Emily Sue Womack et als" dated December 8, 1911, recorded December 13, 1911, in the Clerk's Office of the Circuit Court of Prince Edward County, Virginia, in Deed Book 58, page 145.

AND ALL THAT certain tract or parcel of land located in Hampden District, Prince Edward County, Virginia about one-half mile northeast of Briery Station, being a part of that tract known as the Lyon place and bounded as follows:

BEGINNING at the southeast corner of John Foster's land; thence N-79 degrees, 30 minutes, 7.44 chains to an old poplar tree; thence S-67 degrees, 30 minutes-E 18.00 chains to the center of Horsepen Creek; thence down said creek, the center being the line, N-46 degrees 30 min-E 1.48 chains; N-24 degrees 45 minutes-E 4.65 chains to Hatchett's ford; thence along the Hatchett road S-55 degrees 15 minutes-W 2.14 chains; N-78 degrees 45 minutes 9.93 chains; N-46 degrees 10-minutes-W 3.04 chains; N-24 degrees 15 minutes-W 7.14 chains; N-56 degrees-W 0.94 chains; N-79 degrees 15 minutes-W 6.40 chains to Foster's corner on the road; thence along his line S-15 degrees-W 10.80 chains to the place of beginning and containing thirteen (13.00) acres.

and

ALL of that certain tract or parcel of land containing 1.11 acres, situated on the east side of a forest fire trail, about 1/4 mile northeast of Briery Station, in Hampden District, Prince Edward County, Virginia and described by metes and bounds as follows:

Beginning at an iron stob near the intersection of the Bailey road and running S. 81 degrees 15 minutes E. 132 feet; thence S. 12 degrees, 30 minutes W. 400 feet to an iron stob; thence N. 81 degrees, 30 minutes W. 111 feet to an iron stob; thence N. 9 degrees 30 minutes, E. along the forest fire trail 400 feet to the point of beginning and being more particularly described on a plat of K.J. Crouch, Surveyor, dated April 24, 1956; it being the identical property conveyed by Deed recorded in Deed Book 141, page 550.

and

All that certain tract or parcel of land situated in Hampden Magisterial District of Prince Edward County, Virginia, about 1/4 mile northeast of Old Briery Station, containing two acres, more or less, and bounded as follows:

Beginning at a stob at the northeast corner of the 1.11 acre tract belonging to James E. Bailey, and running S. 81 degrees 15 minutes E. 220 feet to a stob; thence S. 9 degrees 30 minutes W. 400 feet to a stob; thence N. 81 degrees 30 minutes W. 241 feet to a stob; thence along Bailey's line N. 12 degrees 30 minutes E. 400 feet to the point of beginning.

BEING the same parcels of land conveyed to Charles E. Bailey, Mabel B. Carr, Nancy B. Sanderson and James R. Bailey by deed from Charles E. Bailey et al dated March 30, 1995, recorded April 28, 1995 in the Clerk's Office of the Circuit Court of Prince Edward County, Virginia in Deed Book 294, page 504.

Tract 6 – Tax Map #120-A-6 as described in Instrument Number 201301751:

TRACT I: All of that certain tract or parcel of land lying and being in Hampden District of Prince Edward County, Virginia, about 1/4 mile northeast of Briery Station and bounded as follows: Beginning at the fork of the Booker and Hatchett roads; thence along the center line of the Hatchett road as it was located in 1919, S. 80 deg. 30' E. 5.54 chains; thence S. 76 deg. 45' E. 3.38 chains; thence along the lines of S. L. Lyon S. 11 deg. 15' W. 11.10 chains to a cedar stake; thence N. 80 deg. W. 8.90 chains to the Booker Road; thence along the same N. 10 deg. 45' E. 11.26 chains to the place of beginning, thus forming a tract of land containing 10 acres, more or less.

TRACT II: All of that certain tract or parcel of land lying and being in Hampden Magisterial District of Prince Edward County, Virginia, about 1/4 mile North of Briery Station and bounded as follows: Beginning at a cedar post on the southeast corner of the above described tract of land, thence new lines S. 81 deg. E. 11.64 chains to a cedar stake and 0.64 chains east of branch; thence N. 15 deg. E. 10.80 chains to the Hatchett road; thence along said road N. 81 deg. 30' W. 12.43 chains to an iron stake; thence along the line of the tract of land described in (1) above S. 11 deg. 15" W. 11.10 chains to the place of beginning, thus forming a piece of land containing 12.6 acres, more or less.



LESS, HOWEVER, an off-conveyance of 1.11 acres to Clyde Foster by deed dated September 6, 1959 and recorded in the aforesaid Clerk's Office in Deed Book 141, page 550.

SAVE AND EXCEPT an off-conveyance of 2 acres to James E. Bailey, Mabel C. Bailey, Gus Brice and Rosa M. Brice by deed dated August 9, 1972 and recorded in the aforesaid Clerk's Office in Deed Book 182 at page 54.

Being the identical property conveyed unto Margaret H. Richards and Steven A. Richards by deed of gift from Lillian L. Hammer, dated April 14, 1987 of record in the aforesaid Clerk's Office in Deed Book 239, at page 223.

Tract 7 - Tax Map #120-A-7 and #120-A-8 as described on Instrument Number 201101061:

Tract 1:

All that certain lot or parcel of land, lying and being Hampden Magisterial District, Prince Edward County, Virginia, adjacent to or near Briery Station on the Virginia Railway and containing 6.1 acres, more or less.

Tract 2:

All of that certain tract or parcel of land, lying and being in the Hampden Magisterial District, Prince Edward County, Virginia, near Briery Station, containing 5 acres, more or less, and being bounded as follows: Beginning at a stake on the North right of way line of the Norfolk and Western Railway Company; thence along said right of way line and the and the lands of John Eggleston, S. 83 Deg. 15 Min. E. 3.79 chains to a stake; thence N. 84 Deg. 45 Min. W. 13.65 chains to a stake; thence N. 84 Deg. 45 Min. W. 13.65 chains to Booker Road; thence along the same (omitted bearing) should be S. 21 Deg. 30 Min. W. 2.07 chains to Norfolk and Western Railroad; thence along said railroad, S. 36 Deg. E. 1.92 chains to point of beginning, and that certain parcel of land in Hampden District containing 72/100 acres and described as follows: Beginning at a White Oak on the Hatchett Road; thence along D.J. Thompson line S. 86 Deg. 30 Min. E. 11.90 chains to a Pine tree; thence N. 79 Deg. 30 Min. W. 11.76 chains to Triple Pine on Hatchett Road; thence along said road, S. 27 Deg. 30 Min. W. 1.20 chains to point of beginning.

BOTH TRACTS BEING the same property conveyed unto Ethel G. Biggers by deed dated August 17, 1979 and recorded in the Clerk's Office of the Circuit Court of Prince Edward County, Virginia in Deed Book 212 at page 850.

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**Tract 8 – Tax Map #120-A-15 as described in Instrument Numbers 200500214 and 160002077:**

**Parcel 3**

ALL that certain parcel or tract of land situated in Walton Magisterial District, Charlotte County, Virginia, lying, along Secondary road No. 653, as shown on plat of survey by Warren A. Trent, PLAT No. 1390 that is attached to and made a part of the deed recorded in Deed Book 264 page 775. This being Parcel "A" consisting of 29.17 that was part of an entire tract consisting of 57.81 acres by plat of survey dated May 12, 1989 and recorded in Plat book No. 7 page 111 in the Clerk's Office of Charlotte County, Virginia and adjoining the lands, of Elsie A. Edmunds and Caroline H. Freeman and R. H. Pettus.

LESS AND EXCEPT that piece or parcel of land containing 5.50 acres of land conveyed to Lewis E. Wilkerson, Sr. by deed dated May 23, 1996 and recorded May 24, 1996 in the aforesaid Clerk's Office in Deed Book 284 page 327.

BEING a part of the same real estate conveyed to Lewis E. Wilkerson, Jr. And Dawn H. Wilkerson, husband and wife and Roland J. Wilkerson and Stacy U. Wilkerson, husband and wife, by deed from Lewis E. Wilkerson, Jr. And Roland J. Wilkerson, dated August 5, 1999 and recorded August 11, 1999 in the Clerk's Office, Circuit Court, Charlotte County, Virginia in Deed Book 306 page 841.

**Tract 9 – Tax Map #120-A-20 as described in Instrument Number 200502809:**

**All that certain tract or parcel of land situated in Hampden District, Prince Edward County, Virginia, containing 11.91 acres according to plat of survey of Charlotte Land Surveying dated October 6, 2005, a copy of which plat is attached hereto and made a part of this Deed by reference for a more detailed description of the property herein conveyed.**

**This being a portion of that property conveyed unto Old Virginia Properties, LLC, a Virginia Limited Liability Company, by deed of Kirk Douglas Garnett, Married, dated June 6, 2005, and recorded in the Clerk's Office of the Circuit Court of Prince Edward County, Virginia as Instrument No. 200501922.**

**TAX MAP NO. 120-A-21**

**DEED: 127, page 103**

**BALDWIN TRACT #3209**

ALL that certain lot or parcel of land lying and being in Hampden Magisterial District, Prince Edward County, Virginia, containing 112.1 acres, more or less. For a more accurate and particular description of the property hereby conveyed, reference is made to a Plat of survey prepared by K. J. Crouch, Surveyor, dated November 1953, attached to, recorded with and made a part of the Deed conveying the subject property to The Chesapeake Corporation of Virginia, recorded in the Clerk's Office of the Circuit Court of Prince Edward County, Virginia in Deed Book 127, at Page 103.

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BEING a portion of the property conveyed to ForesTree GM LLC, a Delaware limited liability company, from John Hancock Life Insurance Company, a Massachusetts corporation, by deed recorded in the Clerk's Office of the Circuit Court of Prince Edward County, Virginia as Instrument No. 200402998.

THE REMAINDER OF THIS PAGE LEFT INTENTIONALLY BLANK

**Tract 11 – Tax Map #120-A-29 as described in Instrument Numbers 200503312 and 190000790:**

ALL those certain tracts of land containing, in the aggregate, Two Hundred Twenty-five and 20/100 (225.20) acres, more or less, in Hampden District, Prince Edward County, Virginia, and being the identical tracts of land conveyed to Georgia-Pacific Corporation from Spaulding by deed dated the 5<sup>th</sup> of October, 1965, recorded in the Clerk's Office, Circuit Court, Prince Edward County, Virginia in Deed Book 159, page 424, and identified therein as Tract 4. Said tracts of land were acquired by Spaulding from S. E. Spaulding, et al., by Deed dated the 1<sup>st</sup> day of December, 1950, recorded in the aforesaid Clerk's Office in Deed Book 117 page 165.

LESS AND EXCEPT that portion of the property within Tract PE-025 G-P Joyner PE-4 (549-135).

LESS AND EXCEPT 9.86 acres conveyed in that certain Boundary Line Agreement dated March 10, 1988 by and between KMI Continental Powhatan, Inc., and B. L. Dempsey and Freida L. Dempsey, recorded in Deed Book 243, page 571.

The portion of the above described property which comprises Tract PE-027 is shown on that certain survey for Continental Can Company, Inc., - Rutledge Tract, prepared by John R. Nunnally, Jr., dated December 29, 1971, a copy of which survey is recorded in Deed Book 358 page 283.

BEING a part of the same real estate conveyed to Alpha Forest Associates, Inc., by deed form Citibank, FSB, as Trustee for Account #308262, dated December 28, 2000 and recorded in the Clerk's Office, Circuit Court, Prince Edward County, Virginia in Deed Book 358 page 266.

**Tract 12 – Tax Map #120-A-29 as described in Instrument Numbers 200603511 and 190000845:**

ALL that certain lot, tract or parcel of land with improvements thereon and appurtenances thereunto belonging, lying and being in Hampden Magisterial District of Prince Edward County, Virginia, and containing two and one-half (2.5) acres, but this is a sale in gross and not by the acre, and located on VSR #360 approximately four miles north of Keysville. Said lands are more particularly described as to metes and bounds on a plat of survey by F. Richard Quible, C.L.S., dated October 1, 1959 and found recorded in the Office of the Clerk of the Circuit Court of Prince Edward County in Deed Book 142 at Page 62. Being the identical property conveyed unto Calvin M. Chidester, Jr. and Denise A. Chidester, husband and wife, Grantors herein, by that certain Deed dated May 4, 1999 from Marvin E. Whirley, et als, duly recorded in the Clerk's Office of the Circuit Court of Prince Edward County, Virginia in Deed Book 333 at page 468.

Tract 13 – Tax Map #120-A-42

**HAMPDEN DISTRICT**

ALL OF THAT CERTAIN TRACT or apceel of land situated in Prince Edward County, Virginia containing 71.10 acres, more or less, and bounded as follows: On the South by State Highway Route No. 360 lying between Prince Edward and Lunenburg Counties; on the West by the lands owned by or formerly owned by Clifford Shackleton; on the North and East by the lands owned by or formerly owned by Conrad Brehm.

LESS AND EXCEPT the following off-conveyances: 10 acres by deed dated March 9 1987, recorded in the Clerk's Office of the Circuit Court of Prince Edward County, Virginia in Deed Book 238, page 714; 2.00 acres by deed dated January 13, 1995, recorded in Deed Book 297 page 314 THEN corrected by Deed of Correction dated June 7, 1996 recorded in Deed Book 303 page 39, correcting the acreage of 3.00 acres, and 3.005 acres by deed dated February 9, 1998, recorded in Deed Book 317, page 845.

LEAVING an aggregate of 55.09 acres, more or less.

IT BEING THE same property conveyed unto Bayview Loan Servicing, LLC by deed dated September 10, 2014 from Wittstadt Title & Escrow Company, LLC and recorded October 20, 2014 in the Clerk's Office of the Circuit Court of Prince Edward County, Virginia as Instrument 201401602.

LESS AND EXCEPT THE FOLLOWING TRACTS OR PARCELS:

ALL of those certain lots, lying and being in the Hampden District of Prince Edward County, Virginia, known and designated as 25.05 Acres and 4.55 Acres on plat of survey entitled "Plat Showing Boundary Survey of that Portion of The old Joseph T. Fowlkes Property Lying in Hampden District, Prince Edward County, VA," made by Southeast Survey Group, LTD, dated February 16, 2015, and recorded May 23, 2019 in the Clerk's Office of the Circuit Court of Prince Edward County, Virginia, at Instrument No. 190000844, Slide B38 #4, reference to which plat is hereby made for a more particular description of the properties herein conveyed.

Being a part of the same property conveyed to LEWIS E. WILKERSON, JR AND DAWN H. WILKERSON, HUSBAND AND WIFE by Special Warranty Deed from BAYVIEW LOAN SERVICING, LLC., dated February 20, 2015 and recorded February 23, 2015, of record in Instrument No. 150000231, among the land records of Prince Edward, Virginia.

Tract 14 – Tax Map # 120-A-46

ALL of that certain tract or parcel of land lying and being in Hampden Magisterial District, Prince Edward County, Virginia, containing 274.93 acres, more or less. For more accurate and particular description as to the property hereby conveyed, reference is made to a Plat of Correction, dated September 15, 1986, by R. B. Cartwright, C.L.S., recorded in the Clerk's Office, Circuit Court, Prince Edward County, Virginia, in Plat Book 5, Page 207.

Tract 15 - Tax Map # 121-A-9

ALL those certain tracts of land containing, in the aggregate, Two Hundred Twenty-five and 20/100 (225.20) acres, more or less, in Hampden District, Prince Edward County, Virginia, and being the identical tracts of land conveyed to Georgia-Pacific Corporation from Spaulding by Deed dated the 5<sup>th</sup> day of October, 1965, recorded in the Clerk's Office, Circuit Court, Prince Edward County, Virginia in Deed Book 159 page 424, and identified therein as Tract 4. Said tracts of land were acquired by Spaulding from S. E. Spaulding, et al., by Deed dated the 1<sup>st</sup> day of December, 1950, recorded in the aforesaid Clerk's Office in Deed Book 117 page 165.

TOGETHER with a non-exclusive easement 15' in width over and across a portion of the property of Julius Walton and Zena Walton to State Route No. 737 as more particularly described in that Deed of Easement by and between Julius Walton, et us, and Continental Hopewell Woodlands, Inc., dated March 28, 1984, recorded January 7, 1985 in the Clerk's Office, Circuit Court, Prince Edward County, Va., in Deed Book 229 page 380, and

TOGETHER with a non-exclusive easement 30' in width over and across the properties of James L. Walton, et als, to State Route No. 737 as more particularly described in that certain Deed of Easement by and between James L. Walton, et als, and Continental Hopewell Woodlands, Inc., dated March 28, 1984, recorded January 7, 1985 in the Clerk's Office, Circuit Court, Prince Edward County, Va. in Deed Book 229 page 382.

LESS AND EXCEPT 9.86 acres conveyed in that certain Boundary Line Agreement dated March 10, 1988 by and between KMI Continental Powhatan, Inc., and B. L. Dempsey and Freida L. Dempsey, recorded in Deed Book 243, page 571.

LESS AND EXCEPT that portion of the property within Tract PE-027 G-P Rutledge PE-6 (549-135)

The portion of the above described property which comprises Tract PE-025 is shown on that certain survey for Continental Can Company, Inc. - Joyner Tract, dated December 1970, a copy of which survey is recorded in aforesaid Clerk's Office in Deed Book 358 page 281.

BEING a part of the same real estate conveyed to Alpha Forest Associates, Inc., by deed from Citibank, FSB, as Trustee for Account #308262, dated December 28, 2000 and recorded in the Clerk's Office, Circuit Court, Prince Edward County, Virginia in Deed Book 358 page 266.

ALL those certain tracts of land containing, in the aggregate, Two Hundred Twenty-five and 20/100 (225.20) acres, more or less, in Hampden District, Prince Edward County, Virginia, and being the identical tracts of land conveyed to Georgia-Pacific Corporation from Spaulding by deed dated the 5<sup>th</sup> of October, 1965, recorded in the Clerk's Office, Circuit Court, Prince Edward County, Virginia in Deed Book 159, page 424, and identified therein as Tract 4. Said tracts of land were acquired by Spaulding from S. E. Spaulding, et al., by Deed dated the 1<sup>st</sup> day of December, 1950, recorded in the aforesaid Clerk's Office in Deed Book 117 page 165.

LESS AND EXCEPT that portion of the property within Tract PE-025 G-P Joyner PE-4 (549-135).

LESS AND EXCEPT 9.86 acres conveyed in that certain Boundary Line Agreement dated March 10, 1988 by and between KMI Continental Powhatan, Inc., and B. L. Dempsey and Freida L. Dempsey, recorded in Deed Book 243, page 571.

The portion of the above described property which comprises Tract PE-027 is shown on that certain survey for Continental Can Company, Inc. - Rutledge Tract, prepared by John R. Nunnally, Jr., dated December 29, 1971, a copy of which survey is recorded in Deed Book 358 page 283.

BEING a part of the same real estate conveyed to Alpha Forest Associates, Inc., by deed from Citibank, FSB, as Trustee for Account #308262, dated December 28, 2000 and recorded in the Clerk's Office, Circuit Court, Prince Edward County, Virginia in Deed Book 358 page 266.



Less and except from all of the property described above, all portions of the above-described property not currently owned by the Seller as reflected in all outsales, reservations, testamentary gifts or other conveyances appearing in the chain of title and of record in the Clerk's Office of the Prince Edward County Circuit Court.

It is the intent of the parties that all of the real property owned by the Seller in the Tax Map Parcel #s 111-A-2B, 111-A-3, 112-A-19, 120-A-1, 120-A-2, 120-A-3, 120-A-4, 120-A-5, 120-A-6, 120-A-7, 120-A-8, 120-A-15, 120-A-20, 120-A-21, 120-A-29, 120-A-41, 120-A-42, 120-A-46, 121-A-9 are subject to this Option Agreement and part of the Property described herein regardless of any errors or omissions in the Legal Description.

**END OF EXHIBIT A**

INSTRUMENT 202500026  
RECORDED IN THE CLERK'S OFFICE OF  
PRINCE EDWARD COUNTY CIRCUIT COURT ON  
JANUARY 8, 2025 AT 02:51 PM  
LYNNETTE COE, CLERK  
RECORDED BY: JBR

**CERTIFICATE/LETTER OF QUALIFICATION**

COMMONWEALTH OF VIRGINIA

VA. CODE §§ 6.2-893, 6.2-1171, 6.2-1365, 6.2-1367, 6.4.2-2011, 6.4.2-506, 6.4.2-607

Court File No. 202500037

**Prince Edward County** Circuit Court

I, the duly qualified clerk/deputy clerk of this Court, **CERTIFY** that on **March 17, 2025**

DATE

**Dawn H. Wilkerson**

NAME(S) OF PERSON(S) QUALIFYING

duly qualified in this court, under applicable provisions of law, as **Administrator** of the estate of

**Lewis Edward Wilkerson Jr**

☒ DECEASED ☐ MINOR ☐ INCAPACITATED

The powers of the fiduciary(ies) named above continue in full force and effect.

**\$1,000.00** bond has been posted.

Given under my hand and the seal of this Court on

**March 17, 2025**

DATE

**Lynnette Coe**, Clerk

by

Melinda P. Jones, Deputy Clerk

# **Attachment D**

## **Proposed Project Conditions**

Tobacco Trail Solar, LLC  
PRINCE EDWARD COUNTY, VIRGINIA

Special Use Permit Conditions

SECTION I. GENERAL PROVISIONS

1. This Special Use Permit applies to the following properties for which a special use permit application was submitted: Tax Map Parcel Identification Numbers: 111-A-2B, 111-A-3, 112-A-19A, 112-A-40, 120-A-1, 120-A-15, 120-A-2, 120-A-20, 120-A-21, 120-A-29, 120-A-3, 120-A-4, 120-A-42, 120-A-43, 120-A-46, 120-A-5, 120-A-6, 120-A-7, 120-A-8, 121-A-9, 121-A-10.

The Special Use Permit application was submitted on 10/17/2025 by Tobacco Trail Solar, LLC on behalf of the owners of the said properties, and compliance with these conditions is the express duty of, and these conditions shall bind, the Applicant and any assignee of the Applicant who operates the Solar Facility The Site shall be developed, constructed, operated, and decommissioned in compliance with all of the following:

- a. All applicable federal, state, and local laws, statutes, ordinances, and regulations.
- b. All written agreements entered into between the Applicant and the County, expressly including, but not limited to, a Solar Facility Siting Agreement.
- c. The Site Plan approved by Prince Edward County.
- d. The Decommissioning Plan approved by Prince Edward County.
- e. The Emergency Response Plan approved by Prince Edward County.
- f. The Construction Traffic Management Plan approved by Prince Edward County.
- g. The Erosion and Sediment Control Plan approved by Prince Edward County.
- h. The Stormwater Management Plan approved by Prince Edward County and/or DEQ.

Violation by the Applicant or by any one or more of Applicant's agents, employees

or contractors of any terms, conditions, or provisions of any of the foregoing shall constitute a violation of this Special Use Permit if Applicant has failed to begin and diligently pursue (or has failed to cause its agents, employees or contractors, as applicable, to begin and diligently pursue) correction of the violation within thirty (30) days after written notice by the County to Applicant.

2. The following terms shall have the following meanings if or when used in these Conditions:
- a. **"Abandoned"** means the discontinuation of power generation by the Solar Facility for a period of at least 180 consecutive days, except in the event of a force majeure event requiring reconstruction.
  - b. **"Applicant"** means Tobacco Trail Solar, LLC.
  - c. **"Approved Site Plan"** means the detailed drawing showing all equipment, excavation, landscaping, and other changes or improvements to be made to the real property or properties for the development of the Project following approval of the Special Use Permit Application by the Prince Edward County Planning Commission, and the Prince Edward County Board of Supervisors and administrative review and approval by Prince Edward County staff.
  - d. **"Board"** means the Board of Supervisors of Prince Edward County, Virginia.
  - e. **"Commercial Operation"** means the period beginning on the date that the sale of electricity generated from the Solar Facilities to a third party through the Grid commences pursuant to a Power Purchase Agreement or offtake by an investor-owned utility or Independent Power Producer and terminating contemporaneously with the commencement of Decommissioning.
  - f. **"County"** means Prince Edward County, Virginia.
  - g. **"County Administrator"** means the county administrator of Prince Edward County, Virginia.
  - h. **"Decommission" or "Decommissioning" or "Decommissioning Activities"** means the work on the Solar Facility to remove improvements on the real property and to otherwise comply with the Decommissioning Plan.
  - i. **"Decommissioning Commencement Date"** means the earliest date on

which Decommissioning is required to begin under the terms set forth in these Special Use Permit Conditions.

- j. **"Decommissioning Plan"** means the plan for Decommissioning Activities submitted by Tobacco Trail Solar, LLC and approved by the County.
- k. **"Grid"** means the interconnected network for delivering electricity from producers to consumers (consisting of generating stations, electrical substations, high voltage transmission lines, and distribution lines that connect individual customers) to which the Project is connected and provides power.
- l. **"Investor-Owned Utility Company"** means an electric utility as defined in Section 56-576 of the Code of Virginia.
- o. **"Operator"** means any party which undertakes the management, maintenance, and operation of the Solar Facility, including, but not limited to, as assignee of the Applicant.
- p. **"Power Purchase Agreement"** means the written agreement pursuant to which electricity generated from the Solar Facilities is sold to a third party.
- q. **"Project"** means the Solar Facility on the parcel, including the following: (i) the development, design, procurement, construction, installation, commissioning, testing, interconnection, and start-up of the Solar Facility on the Site; (ii) the operation, repair, replacement, and maintenance of the Solar Facility on the Site; and (iii) the decommissioning and removal of the Solar Facility from the Site.
- r. **"Related Entity" or "Related Entities"** means any two or more entities described in I.R.C. § 267(b).
- s. **"Site" or "Solar Facility Site"** means all properties to be leased or purchased by the Applicant or any Related Entity for development in connection with the Project, identified as follows: Prince Edward County Tax Map Identification Number 043-A-34.
- t. **"Site Plan"** means the detailed drawing showing all equipment, landscaping, roads, retention facilities, fencing, buffers, and other changes or improvements to be made to the real property or properties for the development of the Project.
- u. **"Solar Facility" or "Solar Facilities"** means the Site together with all



equipment, apparatus, or other items of personal property used for the construction, operation, or decommissioning of the Project.

- v. **“Surety Review Date”** means the date by which the Applicant will update the cost estimate in the Decommissioning Plan every five (5) years and reimburse the County for the actual and reasonable, out-of-pocket costs of each such independent review and analysis by a licensed engineer of each decommissioning cost estimate revision.
3. The Site shall be developed in general conformance with the information and exhibits submitted with the Special Use Permit application (the “SUP” Application), except as modified by associated conditions, the Approved Site Plan, and as required by the land development ordinances of Prince Edward County. The Site shall employ the practice of agrivoltaics where practical on site.
4. This Special Use Permit (SUP) is issued to the owners of the properties for which the special use permit application was submitted (the Properties) and shall run with the land unless and until this SUP is revoked, expires, or is voided.
5. An Approved Site Plan shall be required for this use.
6. Prior to the issuance of construction permits, the Applicant shall record in the Circuit Court Clerk's Office of Prince Edward County, Virginia a plat of survey delineating the property boundary and total acreage.
7. The Applicant shall submit an Emergency Response Plan (the “ER Plan”) with the submission of the Site Plan. The ER Plan shall include fire suppression methods that can be deployed during both the construction and operation of the project. The ER Plan shall also include a program of education and training to be provided for County emergency response staff covering onsite emergency response.
8. Unless approved in writing by the County, no signage shall be permitted on the Site; except that signage containing notices, warnings, or other information, if required by law or by applicable codes and standards, or deemed by the County to be in the interest of the safety and welfare of the community, shall be required.
9. Tobacco Trail Solar, LLC will reimburse, or cause to be reimbursed, to the County all reasonable, out-of-pocket costs and fees incurred for professional services engaged for purposes of assisting the County during the application process and during construction, including, but not limited to, legal fees and consulting fees; however legal fees shall not be assessed to Tobacco Trail, LLC after construction is completed. The purpose of the reimbursement payments is

to defray the costs and expenses incurred by the County in connection with (i) the zoning and permitting processes related to the approval of the Solar Facility, (ii) the permitting process with federal and state agencies, as applicable, and (iii) the construction of the Solar Facility. Should the special use permit application submitted by Tobacco Trail Solar, LLC for the Project not be approved by the County, no reimbursement under this paragraph will be owed by Tobacco Trail Solar, LLC to the County.

10. The Project owner or operator will, in coordination with Prince Edward County Emergency Management, provide education and training on how to respond in the event of a fire or other emergency on the premises. “Knox Boxes” or coded padlocks will be added at access gate locations, so that emergency services resources can gain access inside the security fence during the construction phase of the project.

## **SECTION II. BUFFERS, HEIGHTS, AND SETBACKS**

1. Buffers throughout the Site shall include the following:
  - a. All setbacks shall be no less than those shown on the site plan approved by Prince Edward County. There shall be a minimum 25’ setback from the inundation limits and flood pool elevations.
  - b. The Site Plan will identify the maximum extent of the Project area, outside of which solar panels or other equipment will not be located. The solar panels other equipment of the Solar Facility will not be located within the standard setbacks established by Article VII, Section 7-110 (D) of the County Ordinance.
  - c. The Site Plan will include a vegetative buffering plan (the “Vegetative Buffer Plan”) that will limit the visibility of the Solar Facility from the public rights-of-way adjacent to the Site. For purposes of this Condition, “Solar Facility” does not include the perimeter security fencing, gravel access road, or interconnection equipment. Also, the “Solar Facility” is not an objectionable feature, within the meaning of County Ordinance Article VII, Section 7-110.
  - d. All vegetative buffering areas, as shown on the Vegetative Buffer Plan, shall enable insolation of the Solar Facility and may be both natural and planted, shall be a part of the approved Project, and should be protected from harvest so long as the Site is operated as a solar facility.
  - e. Vegetative buffering areas shall be installed and, as necessary, managed to

ensure health and preservation of the vegetation. Any vegetative buffering that is dead during the operating period shall be removed and replaced in conformance with the approved site plan, within a six (6) month time period during a typical planting period. The type and height of replacement vegetation shall be similar to that of which was originally planted during construction. In the event that the vegetative buffering is severely damaged due to an unusual weather occurrence or natural catastrophe, the Project shall have one year or one growing season, whichever is sooner, to replace or replant.

- f. A 15' screening buffer shall be maintained with any bordering standing timber harvested after construction of the solar facility.
- g. Electrical lines leaving the solar facility shall be underground until the point of reaching the first pole outside of the facility as to not impact the screening plan unless: (a) otherwise approved by the County in the final site plan; (b) otherwise approved by the County in connection with building permit approvals, including electrical permits; (c) underground lines conflict with other applicable permitting standards, including environmental permits; or (d) underground lines are not reasonably practical given site constraints.
- h. Historical resources noted in the Virginia Department of Historic Resources Map that are listed or eligible for listing in the National Register of Historic Places must be identified, marked, and preserved at a setback approved by the Virginia Department of Historic Resources, as reflected on the Site Plan.
- i. The maximum height of ground mounted systems, equipment, and structures, as measured from the grade or base of the improvements to the highest point, shall not exceed eighteen (18) feet in height. Excluded from this height requirement are overhead electric distribution and transmission lines and poles, project substation, and utility switchyard.

### **SECTION III. CONSTRUCTION, TRAFFIC, and ROAD REPAIRS**

- 1. Subject to compliance with applicable site safety requirements and upon reasonable prior notice, the County Administrator, building official, zoning administrator, or environmental codes and compliance officer, or any party or parties designated by any one or more of those county officials, including other federal, state, or local government officials, shall be allowed to enter the Site at any time during construction. Once the facility has commenced Commercial Operation, subject to compliance with applicable Site safety requirements, County officials may enter the Site upon at least one week's advance notice to the

Solar Facility liaison.

2. All construction entrances for the Site shall be in general conformance with the information and exhibits submitted with this Special Use Permit application and must be authorized and approved by the Virginia Department of Transportation (VDOT).
3. All construction activity shall be conducted during daylight hours Monday-Saturday. Activities allowed on Sundays include only the following: onsite planning, walking, and riding the Site by passenger vehicle (not heavy construction trucks or equipment), office work, and other activities that do not produce large quantities of traffic on the surrounding roads or loud construction noises within the Site. The Applicant shall comply with the Prince Edward County Noise Ordinance Chapter 46, Article II during operation but shall not be required to do so during construction.
4. All heavy construction traffic, including, but not limited to, dump trucks, tractors and trailers, supplier vehicles, and trucks hauling equipment shall enter the site at the designated private driveway entrances.
5. The Applicant shall submit a Construction Traffic Management Plan ("CTMP") as part of the Site Plan. The CTMP shall address traffic control measures, an evaluation of the condition of the public roads along the Delivery Routes prior to construction, and a description and an estimate of any anticipated repairs to public roads that may arise due to damages attributable to construction of the Solar Facilities. The CTMP must be reviewed by a third-party selected by the County and paid by, and at the sole cost of, the Applicant.
6. Dust containment measures shall be utilized at all times, as necessary, to contain dust from constituting a nuisance to nearby residents.
7. No burning of stumps and/or debris will be allowed onsite at the subject solar facility.
8. The Solar Facilities shall be enclosed within chain link security fencing not less than six (6) feet in height.
9. The Project will not utilize permanent lighting. If installed at a later date, lighting will be downward facing, motion activated security lighting located at the Project entrance gate or at the control panels near the equipment pad. Lighting of the substation and switchyard shall be limited to that minimally required for safety and operational purposes and shall be full cut-off type fixtures.

10. Prior to commencement of construction, the Applicant shall provide the County a bond equal to 100% of the cost of the anticipated repairs to be made to the public road along the Delivery Routes, as defined in paragraph 11 below, including the entire public right of way along the Delivery Route. The bond may be in the form of a letter of credit, a surety bond, or a cash bond given to the County, to be held by the County without interest, but the form of any surety bond must be approved by the County Administrator. The County will release, return, and terminate the roadway surety upon completion of construction and Commercial Operation of the Project.
11. Subject to the CTMP, Delivery Routes to the site will include a portion of U.S. Route 15 (Farmville Road), a portion of US Route 360 (Patrick Henry Hwy), Cabbage Patch Road, and Ole Briery Station Road, to the proposed four (4) entrances as shown in Attachment B – Conceptual Site Plan of the SUP application.
12. The Solar Facilities shall have received Final Site Plan approval from the County within four (4) years of approval. The Board of Supervisors may approve one extension of up to one (1) year each upon written request from the Applicant detailing the need for an extension.
13. Solar panels will be constructed, maintained, and operated in accordance with national industry standards and regulations including the National Electrical Code, International Fire Code of the International Code Council, and the National Fire Protection Association Fire Code, as provided in Va. Code 15.2-2286. In the event of a conflict between the national industry standards and these Conditions, the national industry standards shall control so that as technology advances, updated technology may be used by the Applicant. Notwithstanding any of the foregoing, the use of any of the following materials at any time, whether in construction, maintenance, or operation of the facility, is expressly prohibited: cadmium telluride, cadmium, tellurium, GEN X, field-applied Teflon<sup>®</sup> coating, or any other materials prohibited by federal or state agencies.
14. No panels, inverters, pyranometers, substations, or any other component of the Solar Facility, except fencing, shall be located in a FEMA Special Flood Hazard Area.
15. Upon completion of the construction of the Solar Facilities, the Applicant shall submit a post-construction evaluation of the condition of the roads along the Delivery Routes to the County Administrator for approval. The post-construction evaluation shall include a plan for repairing any damage caused to the public roads along the Delivery Route directly attributable to the Applicant. The Applicant shall be responsible for causing such repairs to be completed to the

satisfaction of the VDOT and shall be responsible for coordination of repairs with VDOT. All roadway repairs along the Delivery Routes shall be made at the sole expense of the Applicant. Once repairs are completed, the performance bond shall be released.

#### **SECTION IV. ENVIRONMENTAL**

1. The Applicant shall submit a Stormwater Management Plan and an Erosion and Sediment Control Plan as part of the Site Plan. The Applicant shall reimburse, or cause to be reimbursed to, the County all reasonable, out-of-pocket costs incurred by the County related to retaining such third-party inspectors, plan reviewers, and advisors as reasonably necessary for project review and inspections. All such payments shall be remitted to the County within thirty (30) days of invoicing. The County shall retain the right to inspect the Site to verify the findings of the third-party inspectors upon reasonable, prior notice and subject to compliance with Site safety requirements. The phasing of land disturbance shall be detailed in the Erosion and Sediment Control plan and accompanying project narrative.
2. Stabilization of the Site shall be maintained at all times in compliance with Virginia Department of Environmental Quality (DEQ) standards, rules, requirements, and regulations. The Applicant and the Operator, or either one of them, shall notify the County within twenty-four (24) hours of receiving any DEQ notice of less than full compliance by the Project and shall, within forty-eight (48) hours of receipt, provide the County with a copy of the notice. Thereafter, the Applicant and the Operator, or either one of them, shall provide to the County within forty-eight (48) hours of transmission or receipt copies of all correspondence with DEQ regarding Project noncompliance issue until such time as the matter is fully resolved to the satisfaction of DEQ. In order to ensure orderly development of the Solar Facility and to protect the stabilization and environmental integrity and quality of the Site, no more than fifty percent (50%) of the total site development area shown on the Approved Site Plan may be disturbed at any point in time. For purposes of this condition an area for which one or more of the following is true is not considered to be disturbed: the area has established ground cover, the County has determined that the area is not disturbed, an area where temporary stabilization measures have been implemented, gravel driveways, or laydown areas.
3. Soil testing shall be conducted on the Site as follows:
  - a. Testing shall be conducted in no less than ten (10) locations on the Site, at least one location being within proximity to panels of each different type or manufacturer. Samples will be collected from a depth of six inches below ground surface.



- b. Testing shall be conducted prior to the issuance of a land disturbance permit and annually thereafter. Testing also shall be conducted immediately prior to Decommissioning and immediately following the termination of Decommissioning.
  - c. Samples shall be analyzed for Priority Pollutant 13 Metals (arsenic, antimony, beryllium, cadmium, chromium, copper, lead, mercury, nickel, selenium, silver, thallium, and zinc) in accordance with EPA methods SW 6020, SW 6020A, SW1312, and 200.8.
  - d. Testing shall be performed by a service provider retained by the Operator but approved by the County.
  - e. A test report for each testing event, including an executive summary, shall be provided to the Prince Edward County zoning administrator within ten (10) days of the completion of such report.
  - f. No costs shall be incurred by Prince Edward County for soil testing or reports of soil testing provided to Prince Edward County.
4. Any damaged solar components or portions thereof shall be collected by the facility operator and removed from the site or stored on site in a location protected from weather and wildlife and from any contact with ground or water until removal from the site can be arranged; storage shall not exceed sixty (60) days. If not returned to the manufacturer, damaged components shall be transferred directly to an approved recycling facility or disposal site in accordance with local, state, and federal laws.

## **SECTION V. DECOMMISSIONING**

- 1. Decommissioning shall be conducted in accordance with the Decommissioning Plan approved by Prince Edward County.
- 2. The Applicant or the Operator shall provide a Notice of Decommission to the County Administrator of Prince Edward County within thirty days (30) of a determination to cease Operation of the Solar Facility.
- 3. Prior to the commencement of construction, the Applicant shall submit to the County and receive County approval of a Decommissioning Plan. The Applicant shall comply with all terms and conditions of the Decommissioning Plan as approved by the County. The Decommissioning Plan at a minimum shall include provisions regarding the following:

- a. Specifications for the removal of all solar equipment, buildings, cabling, electrical components, pads or foundations, pilings, and fencing.
  - b. A requirement that all Site real property must be restored to the condition of the property as of the date Construction commences (reasonable wear and tear excepted).
  - c. A requirement that the property must be stabilized so as to adequately control, prevent, and minimize any and all erosion or sediment runoff, consistent with the approved Erosion and Sediment Control Plan.
4. Decommissioning shall begin immediately after the Facility has, for a period of six (6) consecutive months, ceased operating as a solar energy facility distributing energy to the electrical grid and shall be diligently pursued, as determined by the County in its sole discretion, and completed within eighteen (18) months from the Decommissioning Commencement Date. Prior to its expiration, the County may extend this Decommissioning period by six (6) months if the County finds that the Operator commenced Decommissioning the Solar Facility diligently and continuously worked to Decommission the Facility throughout the Decommissioning period, and is reasonably expected to complete the Decommissioning within the additional six-month period.
5. Periods during which the Facility is not operational for maintenance, repair, repowering, or due to a catastrophic event beyond the control of Tobacco Trail Solar, LLC during which time Tobacco Trail Solar, LLC works diligently to return the Facility to full Commercial Operation, shall not constitute the cessation of operations requiring the initiation of Decommissioning requirements herein. Tobacco Trail Solar, LLC must provide written notice and evidence of the Solar Facility status and repair efforts to the County Administrator during the period in which the Solar Facility is not fully operational. Such notice shall identify the last day on which the Facility was fully operational. Regardless of the efforts of Tobacco Trail Solar, LLC to return the Solar Facility to full Commercial Operation, if the Solar Facility does not operate as a solar energy facility distributing energy to the electrical grid after the catastrophic event for a period of eighteen (18) months, the Project shall be deemed Abandoned and Tobacco Trail Solar LLC shall commence Decommissioning no later than the 548th day after the catastrophic event unless the County Administrator finds that Tobacco Trail Solar, LLC is diligently proceeding with repairs to return the facility to operation.
6. Any change of party responsible for Decommissioning of the facility, or change in any part of the contact information, shall be reported to the County Administrator within sixty (60) days of the change(s).

7. If Decommissioning Activities are not completed within the allotted time, or if the Project is Abandoned, the County may complete or have completed at its expense the Decommissioning Activities required under the terms of the Decommissioning Plan and may recover all costs of completing those Decommissioning Activities from the surety provided as set forth herein.
8. To secure the costs of Decommissioning, Tobacco Trail Solar, LLC, or its successor shall at all times, beginning at commencement of construction and until the termination of Decommissioning, provide financial surety in a form and in an amount approved by the County. If the Solar Facility is transferred to a public utility or an Investor or Member Owned Utility Company (e.g.: Dominion Energy, Old Dominion Electric Cooperative or its successor entity), the surety required of the Applicant may be cancelled at the time of the transfer and no further surety will be required.
9. The amount of the surety required shall be 100% of the estimated Decommissioning costs estimated at each Surety Review Date, less the scrap or repurposing value of the Solar Facility. The estimated costs and surety to meet the above requirements shall be reviewed by the County Administrator on each Surety Review Date, at which time the County Administrator shall determine if the estimates adequately reflect the Decommissioning costs and any scrap or repurposing value and that the surety will guarantee performance. Should the County Administrator determine that estimated costs and surety are insufficient, the County Administrator and Tobacco Trail Solar, LLC shall mutually agree to determine the correct surety amount; and Tobacco Trail Solar, LLC shall then provide the agreed, adequate surety within one hundred eighty (180) days following the Surety Review Date or, if later, within thirty (30) days after the County Administrator and Tobacco Trail Solar, LLC agree on the adequate surety amount.
10. Surety must be provided in the form of a cash bond deposited with the County; by an irrevocable letter of credit provided for the County's benefit; or by a surety bond listing the County as the obligee, a hypothecated account, an escrow account, or a guaranty issued by a credit-worthy entity, or as otherwise provided in Section 15.2- 2241.2 of the Code of Virginia.
  - a. A cash bond shall be in the form of a cashier's check or certified check deposited with the County which has cleared all issuing institutions. Any interest accruing on such funds shall be added to the total amount and retained by the County for Decommissioning. The deposit shall be accompanied by a letter agreement, acceptable to, and issued by, the County Administrator, confirming that the cash deposit is to be held by the County to guarantee the performance of the Decommissioning work required

herein, and should the Solar Facility be Abandoned or should the Decommissioning work not be diligently undertaken or performed according to the requirements herein, or should the Special Use Permit be revoked, lapse, expire, or be voided due to violation thereof, the County may expend the deposited funds to undertake the Decommissioning work required herein, without more, after providing written notice to the person identified as owner of the property in the land records of Prince Edward County as of the date of the notice. Within six (6) months of the completion of the Decommissioning work required herein by a person or entity other than the County or a contractor engaged by the County, as confirmed by the County Administrator, the cash bond and accrued interest, less any amounts expended by the County as allowed herein, shall be released and paid to Tobacco Trail Solar, LLC or, if the Project has been Abandoned, to the person identified as owner of the property in land records of Prince Edward County as of the date of the completed Decommissioning or as otherwise directed by that owner of the property.

- b. An irrevocable letter of credit shall mean an instrument provided by a lending institution guaranteeing payment to the County within seventy-two (72) hours of the County's written notice to the institution that the Solar Facility has been Abandoned or the Decommissioning Activities have not been diligently undertaken or performed according to the requirements herein and demand to the institution for the funds, without more. The letter of credit shall have no expiration date or required renewal and shall remain in effect for the benefit of the County and shall under no circumstances be withdrawn before the Decommissioning Activities required herein are completed or the amount guaranteed has been fully drawn by the County. The letter of credit shall require that the County be notified thirty (30) days prior to any cancellation or alteration of the letter of credit. Should the County receive notice that the letter of credit will be cancelled or otherwise become unavailable or decrease, or should this Special Use Permit be revoked, lapse, expire or be voided due to violation thereof by Tobacco Trail Solar, LLC, the County may, immediately draw down the entirety of the letter of credit and convert the surety to a cash bond to be deposited with the County and subject to the terms herein; this shall be specifically reflected in the language of the irrevocable letter of credit. The County may expend the guaranteed funds, without more, to undertake the Decommissioning Activities required herein and required pursuant to the terms of the Decommissioning Plan after providing written notice to Tobacco Trail Solar, LLC or, if the Project is Abandoned, to the person identified as the owner of the Property in the land records of Prince Edward County as of the date of the notice. Within six (6) months following the completion of the Decommissioning Activities required herein and required

pursuant to the terms of the Decommissioning Plan by a person or entity other than the County or a contractor engaged by the County, as confirmed by the County Administrator, the letter of credit shall be released by the County and any amounts drawn on the letter of credit, less any amounts expended by the County as allowed herein, shall be released and paid to Tobacco Trail Solar, LLC or, if the Project has been Abandoned, to the person identified as owner of the property in land records of Prince Edward County as of the date of the completed Decommissioning or as otherwise directed by that owner of the property.

- c. A surety bond shall mean a bond issued by a company with an AM Best rating of A++, that is treasury listed, and that is licensed to do business in the Commonwealth of Virginia. The surety bond shall list the County as an obligee and shall remain in effect for the benefit of the County and shall under no circumstances be withdrawn or cancelled before the Decommissioning Activities required herein and required by the terms of the Decommissioning Plan are completed or the amount guaranteed has been fully paid to the County. The surety bond shall require that the County be notified thirty (30) days prior to any cancellation or alteration of the bond. Should the County receive notice that the surety bond will be cancelled or otherwise become unavailable or decrease below the limits required herein, or should the Special Use Permit be revoked, lapse, expire or be voided due to violation thereof by Tobacco Trail Solar, LLC, the County may, immediately file a claim, for the entirety of the amount of the bond, the guarantor shall pay the amounts guaranteed and the County shall convert the surety to a cash bond to be deposited with the County and subject to the terms herein; this shall be specifically reflected in the language of the surety bond. The County may expend the guaranteed funds, without more, to undertake the Decommissioning Activities required herein and required pursuant to the terms of the Decommissioning Plan, after providing written notice to Tobacco Trail Solar, LLC, or, if the Project is Abandoned, to the person identified as the owner of the Property in the land records of Prince Edward County as of the date of the notice. Within six (6) months following the completion of the Decommissioning Activities required herein by a person or entity other than the County or a contractor engaged by the County, as confirmed by the County Administrator, the surety bond shall be released by the County, and the bond funds paid to the County less any amounts expended by the County as allowed herein, shall be released and paid to Tobacco Trail Solar, LLC or, if the Project has been Abandoned, to the person identified as owner of the property in land records of Prince Edward County as of the date of the completed Decommissioning or as otherwise directed by that owner of the property.

11. Should this Special Use Permit be revoked, lapse, expire, or be voided due to violation thereof, the County may immediately draw down all of the surety funds and convert them into a cash bond for purposes of Decommissioning as set forth hereunder and as set forth in the Decommissioning Plan. In such case, no contractual agreement shall be required for the cash bond. This shall be reflected in the surety provided.
12. Should the funds guaranteed for the Decommissioning Activities for any reason not be sufficient for the County to complete the Decommissioning Activities as allowed for herein and as set forth in the Decommissioning Plan, Tobacco Trail Solar, LLC or its successor, shall be and shall remain liable to the County for the difference between the guaranteed funds and the amounts required to Decommission the Solar Facility and shall pay the difference to the County upon demand. The County shall not be liable to any party in any way for the funds drawn pursuant to the conditions set out herein and expended in relation to Decommissioning.
13. Should the Facility be Abandoned, or should the Special Use Permit be revoked, lapse, expire, or be voided due to violation thereof, or should the Decommissioning Activities not be diligently undertaken or performed, and should the County draw down the funds for the purpose of performing the Decommissioning Activities and mobilize its contractors to perform the Decommissioning Activities or otherwise incur liability to its contractors for the performance of the Decommissioning Activities, Tobacco Trail Solar, LLC, its successor or agent, shall have no right to perform the Decommissioning Activities unless specifically authorized by the County in writing that confirms that the County has incurred no liability to any contractors to perform the Activities or that any such liability is transferrable as deemed acceptable to the County. The Applicant or the Operator shall immediately, upon written demand by the County or any person or entity authorized to act on behalf of the County, without more, grant or release to the County, or any person or entity authorized to act on behalf of the County, under terms deemed acceptable by the County, all necessary real property rights, personal property rights, either or both, as determined solely by the County, other than fee simple ownership or a leasehold interest of the real property, so that the County or any person or entity authorized to act on behalf of the County may undertake any required Decommissioning Activities that have not otherwise been performed as required. This shall include, but may not be limited to, releasing any interest in the personal property, facilities, fixtures, and structures which are to be removed and recycled, disposed of, or otherwise demolished.



# **Attachment E**

## **Decommissioning Plan and Cost Estimate**

Date: 12/16/2024



This cost estimate was not based on detailed construction drawings but is typical for a project of this size and type. The listed equipment quantities are subject to change based on the actual installed facilities. An updated decommissioning plan and decommissioning cost estimate will be provided prior to start of construction.

**Prepared For:**

Tobacco Trail Solar, LLC

Tobacco Trail Solar, LLC  
Decommissioning Plan

CLIENT NAME	Tobacco Trail Solar, LLC
PROJECT NAME	Tobacco Trail Solar
LOCATION	TBD Prince Edward County, VA
PROJECT	Solar PV Electric Generating Facility

Rev.	Date	Description	Prepared	Checked	Approved
0	12/16/2024	Released for Client Use	NBF	KJ	AC

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## 1 Introduction

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The Tobacco Trail Solar Project (Project) is a 150-Megawatt (MW) photovoltaic (PV) solar project located in Prince Edward County, Virginia. The Project is anticipated to operate for 40 years.

At the end of the anticipated operational life of the Project, a decision would be made to extend the life of the Project or to decommission it. If the Project is to be decommissioned, Tobacco Trail Solar or its successor in interest, will be responsible for the removal, recycling, and disposal of all solar arrays, inverters, transformers, and other structures on the Project site, depending upon the proposed future use of the Project site. Tobacco Trail Solar anticipates using the best available recycling measures at the time of decommissioning.

The PV facility spans approximately: (total area 1,200 acres)/(600 fenced acres) and will interconnect to 230 kV Utility electrical system. Within 12 months of initiating the decommissioning, the Project Owner will safely have the relevant components removed from the land and will then restore the site as described below.

This Plan lays out the procedures for restoring the site to its original use, based on the recent historical land use of the property or other economical land uses as desired by the relevant landowner, at the end of the Facility's operational life. The Plan describes procedures for the removal of Facility components. The components of the Facility are shown in the Appendix A (to be provided when it becomes available).

This Decommissioning Plan was developed in accordance with the decommissioning provisions of the Prince Edward County Ordinance. The Decommissioning Plan ensures that when the Project is decommissioned, the site restoration will be accomplished in a way that is environmentally sound, safe, and protects the public health and safety. Decommissioning is a general term used to describe a formal process to remove something from active status whereas restoration objectives aspire to return the land to its former state.

Future conditions that could affect decommissioning are largely unknown at this time; however, the best available technologies and management practices will be deployed to ensure successful project decommissioning and site restoration.

## 2 Project Components

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Appendix A provides detailed information regarding the anticipated location and description of the Facility components. The Facility generally consists of the equipment and infrastructure listed below:

- Steel Piers and Racking
- PV Panels
- Inverters

- Step Up Transformers
- Electrical Collection Lines (Underground, and Overhead)
- Grounding System
- Access Roads
- Gen-tie Transmission Line
- Collector Substation
- Data Acquisition System (DAS)
- Fencing, Gating, and Safety Features
- Operations and Maintenance (O&M) Building (TBD)
- Weather Stations

### 3 Regulatory Compliance

Prior to the commencement of decommissioning, Tobacco Trail Solar will perform the appropriate due diligence requirements and obtain the necessary Prince Edward County, state, and federal approvals to complete decommissioning activities. To mitigate any environmental impact from decommissioning, Tobacco Trail Solar will assess the necessary permits and approvals in the future regulatory environment to maintain regulatory compliance. Anticipated types of evaluations may include the following:

- Review of on-site jurisdictional status and potential impacts to wetlands and waterbodies to comply with the Clean Water Act.
- Consultation with the United States Fish and Wildlife Service to evaluate compliance with the Endangered Species Act, Migratory Bird Treaty Act, Bald and Golden Eagle Protection Act, and any other relevant regulations at the time of decommissioning.
- Consultation with the Virginia Department of Environmental Quality for compliance with any pertinent state regulatory requirements.
- Completion of a Phase I Environmental Site Assessment in support of Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) protection.
- Development and implementation of a Stormwater Pollution Prevention Plan (SWPPP).
- Prince Edward County building, road, discharge, or erosion control permits (as necessary).
- Special state or local hauling permits (as necessary).

### 4 Decommissioning

The Project will be decommissioned at the end of its useful life. The Project is presumed to be at the end of its useful life if the facility generates no electricity for a continuous period of 12 months. Tobacco Trail Solar will notify the Zoning Administrator by certified mail of the proposed date of discontinued operations and plans for removal. The following general decommissioning activities will occur.

Once the solar facility has been removed, it is expected that the site will be returned to as close to its original condition as possible. Some minor grading may be required; topsoil (if removed) will be reapplied to allow for reseeding and growth. Site restoration will occur no more than twelve (12) months after notification of decommissioning.



The following general decommissioning activities will occur:

Decommissioning Sequence:

1. Obtain required site permits from Authority Having Jurisdiction (AHJ)
2. Disconnect all utility grid power
3. Move all disconnects to the off position
4. Disconnect all above ground wirings, cables, and electrical connections
5. Remove all PV Modules
6. Remove Inverters, mounting equipment, and posts
7. Remove all electrical equipment, and their foundations
8. Remove DAS equipment, feeders, and conduit
9. Remove all above ground mounting equipment components and posts
10. Excavate and remove Underground feeders and conduit
11. Remove all MV feeders and MV poles
12. Removal of Collector Substation
13. Removal of Gen-tie Transmission line
14. Remove access road
15. Remove all fencing
16. Fill/Grade/Seed as needed

Some components may be left in place under certain circumstances. Electrical lines that will not impact future use of the Project Area or Substation foundation (at least 3 feet in depth) may be left in place per renewable industry practices. Steel piles, where full removal is unattainable, may be cut and left in place at a depth of 3 feet or greater below the ground surface. Additionally, landowners may desire that private access roads remain in place for their use. Tobacco Trail Solar will obtain a written request from the landowner for a road or structure (such as the stormwater features or fencing) to remain in place.

## 5 Materials, Recycling, and Disposal

Many components of the Facility, such as racking, wiring, piles, and panels, retain value over time. Panels, while slightly less efficient, may be reused elsewhere, or components may be broken down and recycled. Recycling of solar panels and equipment is rapidly evolving and can be handled through a combination of sources such as certain manufacturers, PV Cycle (an international waste program founded by and for the PV industry), or waste management companies. More than 90 percent of the semiconductor material and glass can be reused in new modules and products. Other waste materials that hold no value will be recycled or disposed of via a licensed solid waste disposal facility. If recycling of solar panels is not feasible, disposal will be accomplished in accordance with AHJ requirements, and the salvage value will be adjusted.

## 6 Site Restoration

Following the completion of decommissioning activities, it is anticipated that the site will primarily be converted back to the pre-construction land uses. Decommissioning of the Facility, including the removal of materials followed by site restoration, should be completed in approximately 12 months.

## 7 Decommissioning Cost Estimate

### 7.1 OPINION OF PROBABLE DECOMMISSIONING COST

Detailed Project Description: Tobacco Trail Solar is a 150 MWac in Prince Edward County, Virginia. At: (Long -78.435552, Lat 37.103505)

Table 7-1: Estimated Decommissioning Cost:

PV Module Removal	QUANTITY	UNITS	Unit Cost	Total	Comment
# Solar Panels: 610 Watts/panel	349,131	EA	\$8.0	\$2,793,048	Disassembly, Haul Off-site
SUBTOTAL				\$2,793,048	
Foundations Structural Removal	QUANTITY	UNITS	Unit Cost	Total	Comment
# Panel Support Steel Piles	48,200	EA	\$15	\$2,793,048	Disassembly, Haul Off-site
Tracker: multi string tables	4,310	EA	\$400	\$1,724,000	Disassembly, Haul Off-site
SUBTOTAL				\$4,517,048	
Electrical Equipment Removal	QUANTITY	UNITS	Unit Cost	Total	Comment
Inverters: 4,4 MW	40	EA	\$3,500	\$140,000	Disassembly, Haul Off-site
MV Transformers, (4.750 kVA)	40	EA	\$7,500	\$300,000	Disassembly, Haul Off-site
Tracker Motor	4,300	EA	\$15	\$64,500	Disassembly, Haul Off-site
SUBTOTAL				\$504,500	
Collector Substation Removal	QUANTITY	UNITS	Unit Cost	Total	Comment
Circuit Breakers 34.5 kV	4	EA	\$9,500	\$38,000	Disassembly, Haul Off-site
HV Circuit Breakers 230 kV	1	EA	\$12,500	\$12,500	Disassembly, Haul Off-site
Substation Steel	1	LOT	\$320,000	\$320,000	Disassembly, Haul Off-site
Foundation/Fence	1	LOT	\$225,000	\$225,000	Disassembly, Haul Off-site
Main Power Transformers 230 - 34.5 kV 99/132/165 MVA	1	EA	\$95,000	\$95,000	Disassembly, Haul Off-site
Substation Control House	1	EA	\$55,000	\$55,000	Disassembly, Haul Off-site
Capacitor Bank (final TBD)	N/A	EA		\$0	Disassembly, Haul Off-site
SUBTOTAL				\$745,500	

Electrical Wires/cales 10% Removal for underground -100% above ground	QUANTITY	UNITS	Avg Unit Cost	Total	Comment
MV Cables Conductors	316,590	FT	\$15	\$474,885	Removal, Excavation
DC/LC Conductor - underground	1,207,000	FT	\$5	\$603,500	Removal, Excavation
DC/LC Conductor - above underground	4,653,000	FT	\$0.5	\$2,326,500	Removal - No Excavation
SUBTOTAL				\$3,404,885	
Fence/land, Removal/Restoration	QUANTITY	UNITS	Unit Cost	Total	Comment
Fence Perimeter	95,720	FT	\$1	\$95,720	Disassembly, Haul Off-site
Site Remediation (disturbed area)	600	Acre	\$6,000	\$3,600,000	Decompaction/Seeding
Storm Water Management Ponds	155	EA	\$3,000	\$465,000	Minimal Restoration
Engineering & Permitting				\$425,000	Budgeted
SUBTOTAL				\$4,585,720	

Summary of Estimate	
PV Module Removal	\$2,793,048
Foundations Structural Removal	\$4,517,048
Electrical Equipment Removal	\$504,500
Collector Substation	\$745,500
Electrical Wires Removal	\$3,404,885
Fence/land, Removal/Restoration	\$4,585,720
<b>ESTIMATED GRAND TOTAL</b>	<b>\$16,550,701</b>

Data Sources:

1. Material List and Quantities: Based on schematic design.
2. Unit Price Values: Based on R.S. Means and typical quantities for various components.

**7.2 OPINION OF PROBABLE SALVAGE VALUE COST**

There should be opportunity to reclaim metal scrap value from electrical equipment. Switching equipment and collector system contain a significant amount of conductive material such as copper and aluminum. Steel structures contain a significant amount of steel. Rubble from the foundation demolition and all other materials would be sent to landfill at cost. The scrap value of the Project is presented in Table 7-2.

Table 7-2 Estimated Salvage Value:

PV Module @\$.33 per W	QUANTITY	UNITS	Estimated New Cost/Unit	Estimated New Total Cost	Estimated Salvage Value 10% of New Cost
# Solar Panels: 610 Watts/panel	349,131	LOT	\$200	\$69,826,200	\$6,982,620
Foundations Structural	QUANTITY	UNITS	Estimated Weight LB/Avg	Estimated Salvage Value	Estimated Salvage Value
# Panel Support Steel Piles	48,200	EA	240	\$0.28	\$3,239,040.00
Tracker: multi string tables	4,310		1,200	\$0.28	\$1,448,160.00
SUBTOTAL					\$4,687,200.00
Electrical Equipment	QUANTITY	UNITS	Estimated New Cost/Unit	Estimated New Total Cost	Estimated Salvage Value 20% of New Cost
MV Transformers, (4.750 MVA)	40	EA	\$175,000	\$7,000,000	\$1,400,000
SUBTOTAL					\$1,400,000
Electrical Collector Substation	QUANTITY	UNITS	Estimated New Cost/Unit	Estimated New Total Cost	Estimated Salvage Value 20% of New Cost
Circuit Breakers 34.5 kV	4	EA	\$65,000	\$260,000	\$52,000
HV Circuit Breakers 230 kV	1	EA	\$245,000	\$245,000	\$49,000
Substation Steel	1	LOT	\$1,650,000	\$1,650,000	\$330,000
Foundation/Trench/Conduit/Cable*	1	LOT	\$350,000	\$350,000	\$70,000
Main Power Transformers 230 - 34.5 kV 99/132/165 MVA	1	EA	\$2,600,000	\$2,600,000	\$520,000
Substation Control House	1	EA	\$750,000	\$750,000	\$150,000
Capacitor Bank (final TBD)	0	EA	\$150,000	\$0	\$0
SUBTOTAL					\$1,171,000
Electrical Wires/cales 10% Removal for underground -100% above ground	QUANTITY	UNITS	Estimated New Cost/Unit	Estimated New Total Cost	Estimated Salvage Value 20% of New Cost
MV Cales Conductors	316,590	FT	\$20	\$1,266,360	\$253,272
DC/LC Conductor - underground	1,207,000	FT	\$10	\$2,414,000	\$482,800
DC/LC Conductor - above underground	4,653,000	FT	\$2	\$9,306,000	\$1,861,200
SUBTOTAL					\$2,597,272
Fence	QUANTITY	UNITS	Estimated Weight LB.	Estimated Salvage Value	Estimated Salvage Value
Fence Perimeter (1.3 lb. per square ft, 8ft height)	95,720	FT	746,616	\$0.28	\$209,052.48
Fence Post every 10 ft (9 ft length, 2.3 lb/Ft)	9,572	FT	198,140	\$0.28	\$55,479.31
SUBTOTAL					\$264,531.79

Summary of Salvage Values Estimate	
PV Module	\$6,982,620
Foundations Structural	\$4,687,200
Electrical Equipment	\$1,400,000
Collector Substation	\$1,171,000
Electrical Wires	\$2,597,272
Fence	\$264,532
<b>ESTIMATED GRAND TOTAL</b>	<b>\$17,102,624</b>

### 7.3 NET DECOMMISSIONING COST

The net decommissioning cost for the Project is calculated by subtracting the salvage value from the total of the disassembly and removal costs. As noted in Table 7-1 the total estimated decommissioning costs will be **\$16,550,701** and Table 7-2 the total estimated salvage value of Project components will be **\$17,102,624**. The estimated net decommissioning cost will be a **(\$551,923)** positive return. These final costs have all been adjusted for inflation.

Summary of Estimate	
Estimated Decommissioning Cost	\$16,550,701
Estimated Salvage Value	\$17,102,624
<b>ESTIMATED NET COST</b>	<b>(\$551,923)</b>

Note: Negative values, in parenthesis, are positive returns to the Project.

**It will be up to Prince Edward County's Ordinance, if the Estimated Salvage Value will be credited toward calculating the appropriate escrow, surety, or security for the cost of the decommissioning and reclamation of the project.**

### 7.4 DECOMMISSIONING ASSUMPTIONS

To develop a cost estimate for the decommissioning of the Tobacco Trail Solar Project, Timmons Group made the following assumptions and costs were estimated based on current pricing, technology, and regulatory requirements. The assumptions are listed in order from top to bottom of the estimate spreadsheet. We developed time and materials-based estimates considering composition of work crews. When materials have a salvage value at the end of the project life, the construction activity costs, and the hauling/freight cost are separated from the disposal costs or salvage value to make revisions to salvage values more transparent.

1. Decommissioning year is based on a 5-year initial period for financial security. The projected life of the project is 35 years.
2. This Cost Estimate is based on design information provided to the Timmons Group by Tobacco Trail Solar and their EPC contractor in August 2024.
3. Common labor will be used for the majority of the tasks except for heavy equipment operation. Pricing is based on local Southeast US labor rates.

4. Permit applications required include the preparation of a Stormwater Pollution Protection Plan (SWPPP) and a Spill Prevention Control and Countermeasure (SPCC) Plan.
5. Road gravel removal was estimated on a time and material basis using a 16-foot width and an 8-inch thickness for the access roads. Substation aggregate is included in the substation quantities. Since the material will not remain on site, a hauling cost is added to the removal cost. Road aggregate can often be disposed of by giving to landowners for use on driveways and parking areas. Many landfills will accept clean aggregate for use as “daily cover” and do not charge for the disposal.
6. Grade Road Corridor reflects the cost of mobilizing and operating light equipment to spread and smooth the topsoil stockpiled on site to replace the aggregate removed from the road.
7. Erosion and sediment control along road reflects the cost of silt fence on the downhill side of the road and surrounding all on-site wetlands.
8. Topsoil is required to be stockpiled on site during construction, therefore this topsoil is available on site to replace the road aggregate, once removed. Cost to decompact roadway areas is estimated as \$1,000 per acre (based on previous bid prices), and revegetation on removed road area, which includes seed, fertilizer, lime, and care until vegetation is established is \$4,500 per acre. The majority of the project area is “over-seeded” since the decommissioning activities are not expected to eliminate the existing grasses and vegetation under the arrays or heavily compact the soils. Over-seeding does not include fertilizer and lime, which is estimated at \$6,000 per acre.
9. Fence removal includes loading, hauling, and recycling or disposal. Fences and posts weigh approximately 2.3 pounds per foot.
10. Array support posts are generally lightweight “I” beam sections installed with a piece of specialized tracked equipment. Crew productivity is approximately 240 posts per day, and the same crew and equipment should have a similar productivity removing the posts, resulting in a per post cost of approximately \$15.00. We assume a cost of \$15.00 per post to include hauling fees and contingencies.
11. A metal recycling facility (FOSS Recycling) is located in Virginia and is relatively close to the project site. Steel scrap pricing was acquired from [www.scrapmonster.com](http://www.scrapmonster.com).
12. The solar panels used are assumed to be 610 Watts. Panels can easily be disconnected, removed, and packed by a three-person crew at a rate we estimate of 12 panels per hour.
13. No topsoil is planned to be removed from the site during decommissioning and most of the site will not have been compacted by heavy truck or equipment traffic, so the site turf establishment cost is based on RS Means unit prices for applying lime, fertilizer, and seed at the price of per acre plus an allowance for some areas to be decompact.
14. There is an active market for reselling and recycling electrical transformers and inverters with several national companies specializing in recycling. We have assumed a 20% recovery of these units based on field experience with used transformers as opposed to trying to break them down into raw material components.
15. The underground collection lines are assumed to be aluminum conductor.
16. Care to prevent damage and breakage of equipment, PV modules, inverters, capacitors, and SCADA will be exercised, but removal assumes unskilled common labor under supervision.



17. The estimated salvage values are derived from years of experience decommissioning and uprating electric substations, overhead transmission and distribution hardware and underground distribution hardware that would include but not be limited to substation and pad mounted transformers, overhead and underground conductors, poles, fencing, ground grid conductors, control housings, circuit breakers (high and medium voltage), protective relaying, and other hardware items. These individual items have high salvage value either as stand-alone components to be reused or recycled and sold as used items. These items also have a relatively high salvage value as pure scrap for steel, copper and other commodities.
18. For all medium voltage transformers, breakers and other items, Southeastern Transformer Company in Dunn, NC provides complete repair, upgrading and recycling and resale for all items mentioned above. Their website is: <https://www.setransformer.com>. They have a national presence.
19. For any and all recycling and upgrading, Solomon Corporation offers the same set of services for transformer repair and recycling and complete substation decommissioning services. With seven different locations, Solomon is one of several vendors that can decommission and recycle the components as noted above. Their website is: <https://www.solomoncorp.com/>. Solomon Corporation is only one of many transmissions, and distribution recycle and decommissioning shops that do this mainly to harvest the components.
20. For recycling conductor, General Cable and Southwire both utilize extensive scrap procurement programs to reuse copper and aluminum conductor harvested from projects such as this one to supplement and reduce their raw material costs.
21. Here is the link to the General Cable program which only increases the salvage values found in this Plan: General Cable Recycling <https://es.generalcable.com/na/us-can/socialresponsibility/sustainability/recycling>
22. As for solar panels, they are in demand as salvageable items either in whole or for their raw material. According to the International Renewable Energy Agency (IRENA), more than 90% of all the materials are high grade silicon, aluminum and glass and are typically harvested to produce new panels. This is far less expensive than buying unprocessed raw materials for production.
23. The base industry assumption is that since solar panels are expected to retain about 75% of their production capability after 40 years of use, a salvage value of 10% of original cost is a low estimate of their expected value and as we note in assumption. This considers possible technology improvements and undervalues the anticipated salvage value of the panel's raw materials. The Solar Energy Industries Association (SEIA) has an approved set of PV recycling vendors that specialize in doing this today and they can be found at: <https://www.seia.org/initiatives/seia-national-pv-recycling-program>.
24. First Solar, which has been active in the solar industry since its inception, takes solar modules and recycles 90% of the semiconductor material which is then reused in new modules. 90% of the glass product can be reused as new glass products, including panels and fiber optic cable. We can conclude that realistically the estimated 20% salvage value is low and reflects a conservative figure. Information about First Solar's recycling program is at: <http://www.firstsolar.com/en/Modules/Recycling>.

## 8 Financial Assurance

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The full decommissioning cost, without salvage value, will be guaranteed by escrow at a federally insured financial institution, irrevocable letter of credit, or surety bond before a building permit is issued to the project. The decommissioning cost guarantee will remain valid until the solar energy system has been fully decommissioned. If the Project Owner fails to remove the installation in accordance with the requirements of the Conditional Use Permit or within the proposed date of decommissioning, the County may collect the bond or other surety and the County or hired third-party may enter the property to physically remove the installation. Based on industry trends, the projected and actual costs of decommissioning are expected to go down over time based on improvements both to best practices in calculating these costs and the decommissioning process itself. Project Owner will reevaluate decommissioning costs with a qualified engineering consultant every five years during the life of the Project. If the recalculated estimate exceeds the original estimated decommissioning cost by 10 percent or more, the Project Owner will increase the guarantee to meet the new cost estimate. If the recalculated estimate is less than 90 percent of the original estimated cost of decommissioning, the County may approve reducing the guarantee.

## **Appendix A – Site Plan**







# **Attachment F**

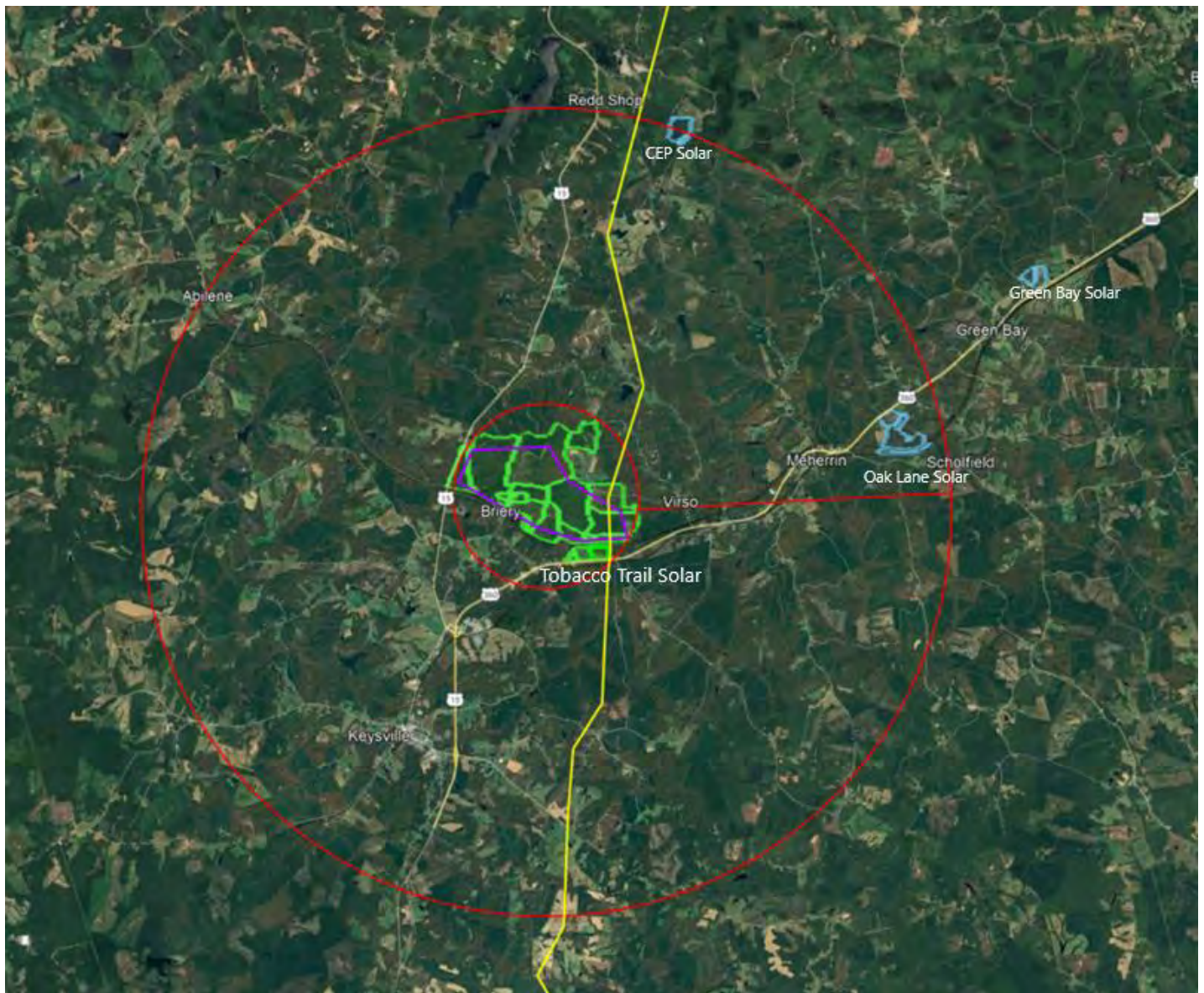
## **Solar Facilities within 5-Mile Radius**

## Attachment F – Solar Facilities within a five-mile radius

### ARTICLE VII. ALTERNATIVE ENERGY FACILITIES

#### Sec. 7-108. J.2

Existing/approved/known proposed large or utility scale energy facilities within a five-mile radius of the proposed Tobacco Trail Solar Project site include the recently approved Oak Lane Solar and the existing CEP Solar.

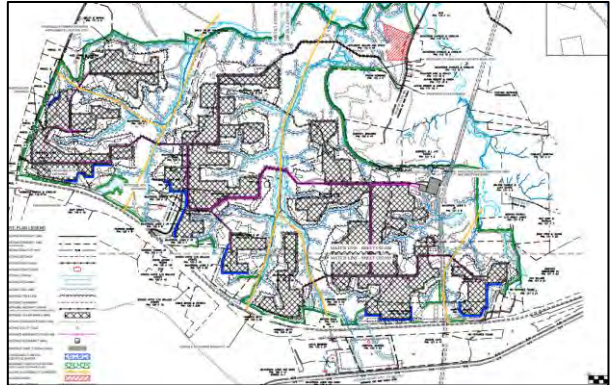




# **Attachment G**

## **Property Impact Analysis**

## PROPERTY IMPACT ANALYSIS



### **Proposed Tobacco Trail Solar** (County Rd. 737, Keysville VA-Prince Edward Co.)

PIN	OWNER	ZONING	PARCEL ACREAGE
111-A-2B	WILKERSON LEWIS E JR	A2	4
111-A-3	WILKERSON LEWIS E JR AND DAWN H	A2	123
112-A-19A	WILKERSON LEWIS E JR	A2	487
120-A	WILKERSON LEWIS E JR	A2	71
120-A-1	WILKERSON LEWIS E JR AND DAWN H	A2	396
120-A-15	WILKERSON LEWIS E JR	A2	10
120-A-2	WILKERSON LEWIS E JR	A2	55
120-A-20	WILKERSON LEWIS E JR AND DAWN H	A2	12
120-A-21	WILKERSON LEWIS E JR	A2	112
120-A-29	WILKERSON LEWIS E JR AND DAWN H	A2	116
120-A-3	WILKERSON LEWIS E JR	A2	13
120-A-4	WILKERSON LEWIS E JR	A2	1
120-A-42	WILKERSON LEWIS E	A2	50
120-A-46	WILKERSON LEWIS E	A2	275
120-A-5	WILKERSON LEWIS E	A2	2
120-A-6	WILKERSON LEWIS E	A2	19
120-A-7	WILKERSON LEWIS E	A2	9
120-A-8	WILKERSON LEWIS E	A2	4
121-A-9	WILKERSON LEWIS E	A2	162
121-A-10	VAUGHAN JOHN W	A2	147
112-A-40	KEPLINGER WILLIAM & STACIE SHAFER	A2	112
120-A-43	HAMPTON MILDRED BREHM	A2	144
	TOTAL		2324

**PREPARED FOR**  
Kevin Seaford, Permitting Manager  
[kseaford@stratacleanenergy.com](mailto:kseaford@stratacleanenergy.com)  
Tobacco Trail Solar, LLC

**DATE OF ANALYSIS**  
December 9, 2024

**BY**  
Christian P. Kaila & Associates  
6320 Five Mile Center Park, Suite 322  
Fredericksburg, Virginia 22407

Christian P. Kaila & Associates  
Real Estate Consultants  
6320 Five Mile Centre Park, Suite 322  
Fredericksburg, Virginia 22407  
Phone: (540) 786-2198 Fax: (540) 786-9652  
Email: [kaila@bestappraisal.com](mailto:kaila@bestappraisal.com)

January 17, 2025

Kevin Seaford, Permitting Manager  
[kseaford@stratacleanenergy.com](mailto:kseaford@stratacleanenergy.com)  
Tobacco Trail Solar, LLC

**RE: Impact Study of Proposed Tobacco Trail Solar (150 MW) and Associated Substation:** (22) Parcels (2,324-total Acres), with approximately 610 Acres Fenced/Screened; **Project Location:** County Road 737, Keysville VA (Prince Edward County).

At your request, I have considered the impact of the Tobacco Trail Solar Facility to be constructed on approximately 610 acres within a 2,324-acre area (22 parcels combined). The purpose of the report is to provide my professional opinion on whether the proposed solar farm will have any impact on adjoining property values and whether “the location and character of the use, if developed according to the plan as submitted and approved, will be in harmony with the area in which it is to be located.”

To form an opinion on these issues I have researched and visited the subject site area of the proposed Tobacco Trail Solar and have analyzed the locations of the surrounding land owners’ properties in relation to the location of the proposed Tobacco Trail Solar Facility. The proposed project will be fully screened from public view, from roads and residential homes.

I have researched articles and other published studies and interviewed real estate professionals, and county assessors who are active in the market where solar farms are located to gain an understanding of market perceptions. I have not been asked to assign any value to any specific property. Based on my analysis of the neighborhood and properties surrounding the proposed solar site, and my analysis of other existing solar farms in similar locations, **it is my professional opinion that the proposed Tobacco Trail Solar Facility will not adversely affect the value of adjoining or abutting properties.**

It is also my professional opinion that the location and character of the solar facility, if developed according to the plan as proposed, will be in harmony with the area in which it is to be located.

My client is Tobacco Trail Solar, LLC., represented to me by Kevin Seaford, Permitting Manager. My findings support the SUP (Special Use Permit) application. The effective date of this consultation is December 9, 2024.

Respectfully submitted,

A handwritten signature in black ink that reads "Christian P. Kaila". The signature is written in a cursive, flowing style.

Christian P. Kaila, MAI, SRA  
Appraiser  
Certified General Real Estate Appraiser  
Number 4001 000099

**Standards and Methodology:** As a licensed appraiser, I must adhere to certain professional standards so that any statement on property value must be substantiated with support or evidence so that no conclusion or statement made by me, when speaking on property values, is misleading or false. As stated in my certification, the statements made in this report are true and correct to the best of my knowledge. I can cite specific reports or resources where I have obtained supporting evidence. Unlike real estate agents who are not licensed as appraisers, I must not make statements based on unsupported claims, bias, or emotions.

In addition to the issues cited above, USPAP also requires the appraiser to be competent in the area, property type, or in the consultant topic (Reference: Competency Rule, USPAP, page 11). I have satisfied this requirement because I have performed many similar studies on the impact of property values, not only on solar farms, but also on other factors that may affect property values.

My research is both from primary and secondary sources. Primary sources are my firsthand accounts of actual studies or interviews I have conducted. Secondary sources are studies from other appraisers or those knowledgeable on the subject of solar farms and property values. I conducted this analysis using the standards and practices established by the Appraisal Institute, and that conform to the Uniform Standards of Professional Appraisal Practice (USPAP). The analyses and methodologies contained in this report are accepted by all major lending institutions, and they are used in Virginia and across the country as the industry standard by certified appraisers conducting appraisals, market analyses, or impact studies and are considered adequate to form an opinion of the impact of a land use on neighboring properties.

**Determining what is an External Obsolescence:** The Dictionary of Real Estate Appraisal, 7<sup>th</sup> Edition defines external obsolescence as a type of depreciation; a diminution in value caused by negative external influences and generally incurable on the part of the owner, landlord, or tenant. The external influence may be either temporary or permanent.

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

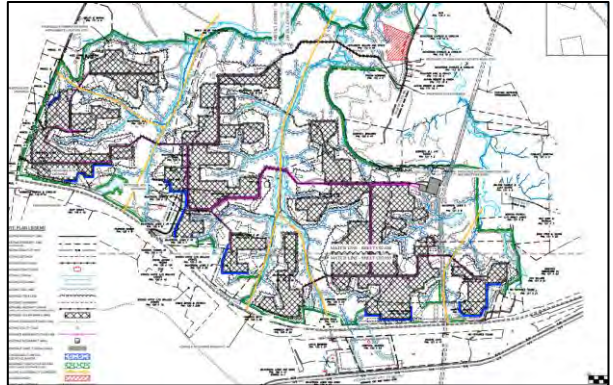
External obsolescence is evaluated by appraisers based on several factors. These factors include but are not limited to:

External Obsolescence Type & Examples	Solar Farm
<p style="text-align: center;"><b><u>TRAFFIC</u></b></p> <p>This is a very common example of external obsolescence because we can see it in virtually every community to some extent. Homes on busy corners, on main streets or near freeways suffer from extra noise and traffic, both of which are not friendly to higher values.</p>	Solar Farms do not generate traffic
<p style="text-align: center;"><b><u>ODOR</u></b></p> <p>Such as construction of a landfill next to a neighborhood: This can impact the entire neighborhood (not just one house) due to the smell.</p>	Solar farms do not produce odor
<p style="text-align: center;"><b><u>NOISE</u></b></p> <p>Setting up commercial properties in a residential area also contributes to declining property values. Commercial buildings may accommodate different types of businesses, such as restaurants, casinos, night clubs, etc. The establishments expose residents to high noise levels, which force most tenants to vacate the neighborhoods.</p>	Solar farms generate no noise concerns and are silent at night.
<p style="text-align: center;"><b><u>ENVIRONMENTAL</u></b></p> <p>Toxic materials and conditions, such as chemical spills, mine tailings, nuclear waste, and a host of industrial substances harmful to life and health.</p>	Solar farms do not produce toxic or hazardous waste or contain hazardous materials or substances.
<p style="text-align: center;"><b><u>LIGHT</u></b></p> <p>The inappropriate or excessive use of artificial light known as light pollution can have serious environmental consequences for humans, wildlife, and our climate. Components of light pollution include:</p> <p><b><u>Glare:</u></b> Excessive brightness that causes visual discomfort. <b><u>Skyglow:</u></b> Brightening of the night sky over inhabited areas. <b><u>Light Trespass:</u></b> Light falling where it is not intended or needed. <b><u>Clutter:</u></b> Bright, confusing and excessive groupings of light sources.</p>	Solar farms are completely dark at night.

**Other factors.** Based upon the appraiser's research there are no features of solar farms that prevent or impede neighbors from fully using their homes, farms or forestland for the use intended.



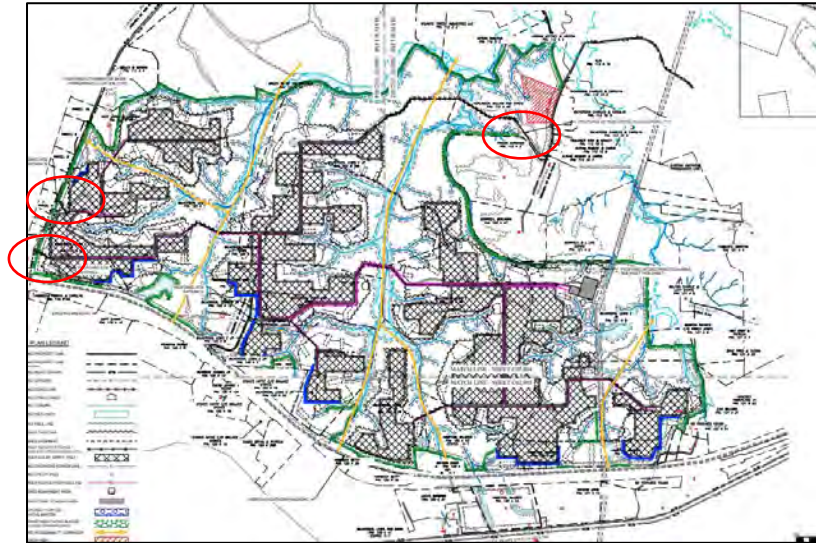
**Proposed Use Description:** Proposed request for a 150-MW Solar facility (with associated substation) within approximately 610-acres of fence enclosed site within a larger 2,324-acre area (22 parcels combined).



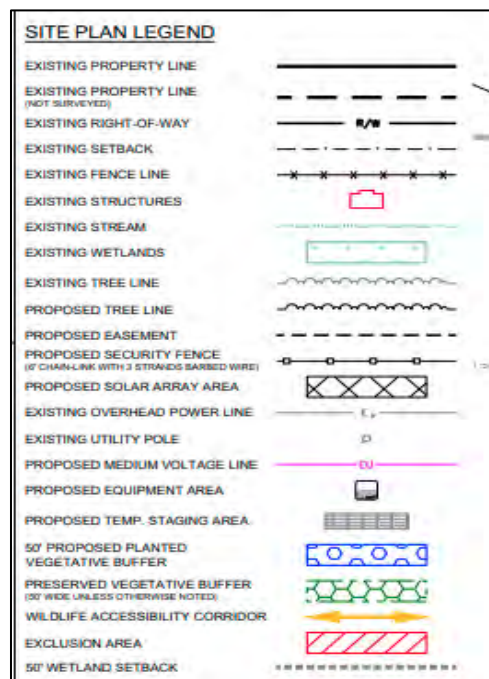
**Proposed Tobacco Trail Solar**  
**(County Rd. 737, Keysville VA-Prince Edward Co.)**

PIN	OWNER	ZONING	PARCEL ACREAGE
111-A-2B	WILKERSON LEWIS E JR	A2	4
111-A-3	WILKERSON LEWIS E JR AND DAWN H	A2	123
112-A-19A	WILKERSON LEWIS E JR	A2	487
120-A	WILKERSON LEWIS E JR	A2	71
120-A-1	WILKERSON LEWIS E JR AND DAWN H	A2	396
120-A-15	WILKERSON LEWIS E JR	A2	10
120-A-2	WILKERSON LEWIS E JR	A2	55
120-A-20	WILKERSON LEWIS E JR AND DAWN H	A2	12
120-A-21	WILKERSON LEWIS E JR	A2	112
120-A-29	WILKERSON LEWIS E JR AND DAWN H	A2	116
120-A-3	WILKERSON LEWIS E JR	A2	13
120-A-4	WILKERSON LEWIS E JR	A2	1
120-A-42	WILKERSON LEWIS E	A2	50
120-A-46	WILKERSON LEWIS E	A2	275
120-A-5	WILKERSON LEWIS E	A2	2
120-A-6	WILKERSON LEWIS E	A2	19
120-A-7	WILKERSON LEWIS E	A2	9
120-A-8	WILKERSON LEWIS E	A2	4
121-A-9	WILKERSON LEWIS E	A2	162
121-A-10	VAUGHAN JOHN W	A2	147
112-A-40	KEPLINGER WILLIAM & STACIE SHAFER	A2	112
120-A-43	HAMPTON MILDRED BREHM	A2	144
	TOTAL		2324

**Access:** Access to the site is from (3) proposed 20' wide gravel roadways. Access to the facility will be gravel access roads wide enough to accommodate emergency vehicles designed in compliance with the county standards within the facility designed to International Fire Code specifications to accommodate maintenance and emergency vehicles.

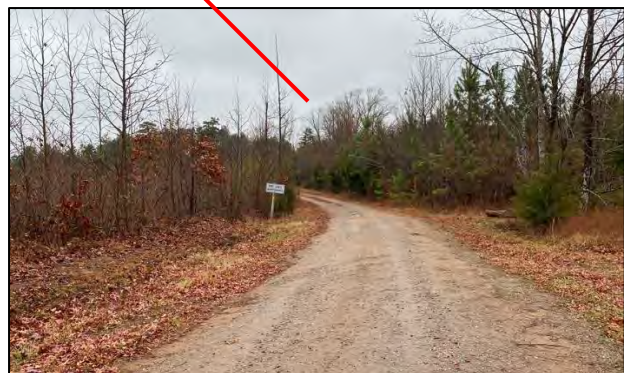
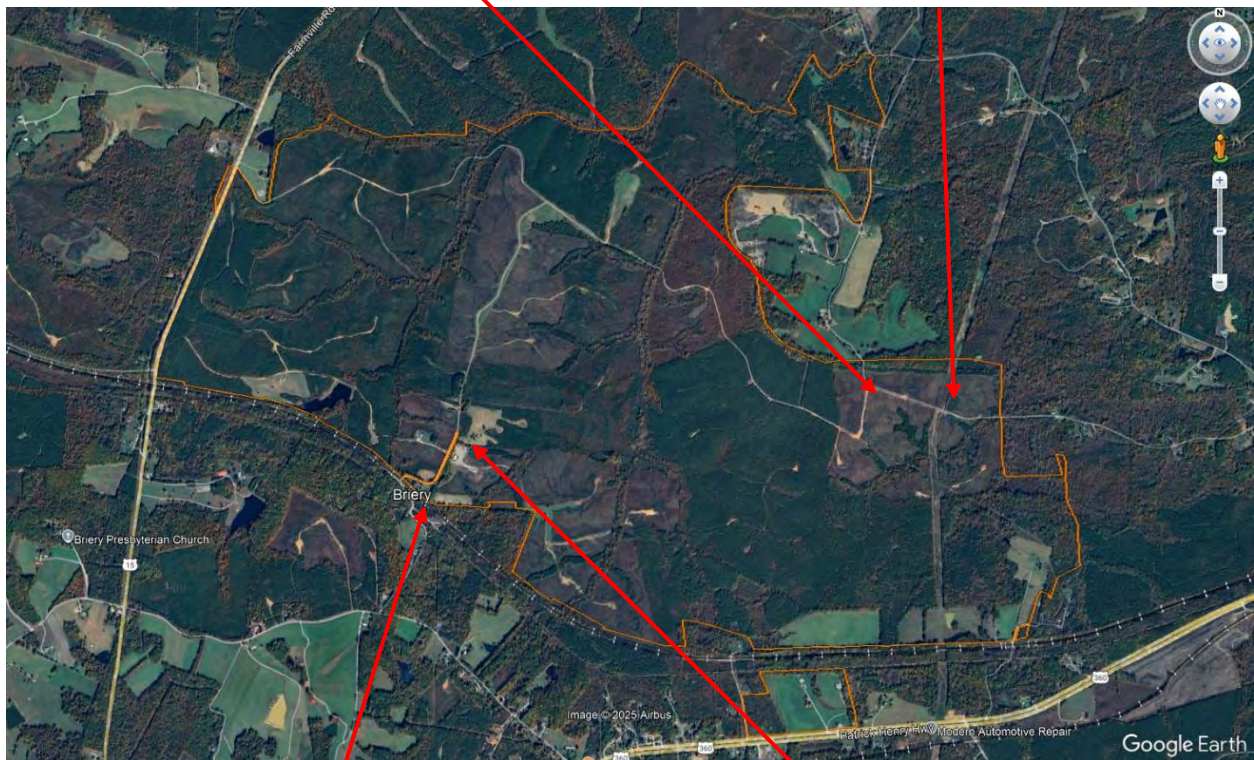


610 ACRES FENCED AND SCREENED WITH PRESERVED VEGETATIVE BUFFER. ADDITIONAL SCREENING IS ACCOMPLISHED THROUGH EXISTING TOPOGRAPHY AND LAND COVER WITHIN THE 2,324 ACRE SITE (22 PARCELS COMBINED).





**INSPECTION PHOTOGRAPHS TAKEN ON DECEMBER 9, 2024**







**Adjoining Properties:** The local area is very rural in nature. The adjoining land parcels are a mix of wooded and open land, and single-family residential uses. The residential uses are on individual parcels and are not part of any HOA.

<b>Tax Map &amp; Acreage</b>	<b>Owner/Parcel Address</b>	<b>Comments</b>
<b>120-A-42C</b> (3.005 Ac.)	Josh A. Dyer & Angela Z. Sharpe 146 Thistle Knob Lane	Mobile Home. Open and wooded
<b>120-A-42A</b> (10.00 Ac.)	David L. Watson 286 Thistle Knob Lane	SFH. Open and wooded land
<b>120-A-37</b> (18.39 Ac.)	Barbara C. Lacks No address	(2) parts. Vacant wooded land
<b>120-A-40</b> (1.00 Ac.)	Daniel Crowley 227 Patrick Henry Hwy.	SFH. Mostly open land
<b>120-A-42B</b> (3.00 Ac.)	Lonnie Clarence & Robbie Bowen 99 Thistle Knob Lane	Mobile Home. Mostly open land
<b>120-A-44</b> (0.68Ac.)	591-649 Patrick Henry, LLC No address	Vacant open and wooded land
<b>121-A-14</b> (33.92 Ac.)	John W. Vaughan 673 Patrick Henry Highway	SFH. Open and wooded
<b>121-A-18</b> (12.301 Ac.)	John W. Vaughan 437 Country Drive	Vacant wooded land
<b>121-A-20</b> (7.00 Ac.)	Jake & Grace Gee 492 Country Drive	Mobile Home. Mostly wooded
<b>121-A-53</b> (152 Ac.)	Hancock Timberland XII Inc. No address	Vacant wooded land
<b>121-A-22</b> (10.00 Ac.)	Fred N. & Susan A. Bane No address	Vacant wooded land
<b>121-A-7</b> (47.58 Ac.)	Gray Lee & Patricia L. Yale 651 C.C. Camp Road	3 SFH's. Mostly wooded
<b>121-A-8</b> (8.00 Ac.)	Patricia Morton c/o Nancy A. Jones No address	Vacant wooded land
<b>121-A-5</b> (20.40 Ac.)	Charlie & Lucy Walton Estate No address	Vacant wooded land
<b>121-A-5 A &amp; B</b> (2.43 Ac.)	Sylvia D. Cheatham 737 C.C. Camp Road	SFH. Mostly wooded land
<b>121-A-6</b> (2.10 Ac.)	Kelvin L & Betty R. Walton Trust 746 C.C. Camp Road	SFH. Open and wooded land
<b>121-A-28C</b> (5.38 Ac.)	Gary Allen Kerns Jr. 432 C.C. Camp Road	SFH. Mostly wooded land
<b>121-A-4</b> (112.50 Ac.)	Doretha P. Fowlkes 551 New Bethel Road	SFH. Mostly wooded land
<b>121-2-5</b> (7.89 Ac.)	Harold W. & Ruth C. Rumpfelt No address	Vacant wooded & open land
<b>121-2-6</b> (7.01 Ac.)	Harold W. & Ruth C. Rumpfelt No address	Vacant wooded land
<b>121-2-7</b> (6.27 Ac.)	Harold W. & Ruth C. Rumpfelt No address	Vacant wooded land



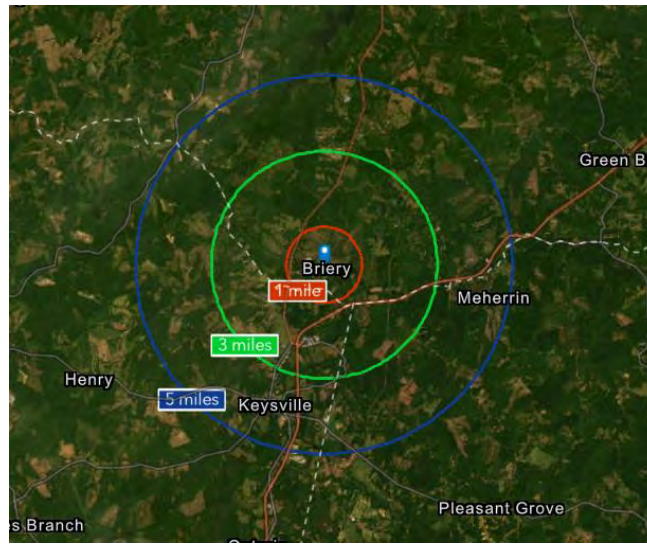
<b>121-A-4A</b> (10 Ac.)	Doretha P. Fowlkes No address	Vacant wooded land
<b>121-A-4B</b> (13.75 Ac.)	Wayne S. Pride & Rebecca Ann Yale 593 New Bethel Road	Mobile Home. Open & wooded land

<b>113-10-7</b> (1.77 Ac.)	Robert G. & Karen G. Alphin No address	Vacant wooded land
<b>113-10-6</b> (1.80 Ac.)	Robert G. & Karen G. Alphin No address	Vacant wooded land
<b>113-10-5</b> (2.08 Ac.)	Kirk B. & Ashley M. Faulkner 493 Dempseys Road	Mobile Home. Mostly wooded land
<b>113-10-4</b> (19.96 Ac.)	Charles D. Sr. & Carolyn R. Dickerson 453 Dempseys Road	Mobile Home. Mostly wooded land
<b>113-10-2</b> (17.75 Ac.)	Charles D. Sr. & Carolyn R. Dickerson 455 Dempseys Road	SFH. Mostly Wooded
<b>113-A-1</b> (5.31 Ac.)	Augustin Dee IV & Jody Marie Hobgood No address	Vacant wooded land
<b>112-5-4</b> (10.00 Ac.)	Jeffery D. & Kristin M. Jordon 1995 New Bethel Road	SFH. Wooded & Open

<b>112-5-3</b> (58.07 Ac.)	Vanessa A. Upson 2075 New Bethel Road	SFH. Mostly wooded land
<b>112-A-2</b> (65.82 Ac.)	Normand Frigon 920 Dempseys Road	SFH. Open and wooded land
<b>120-A-47</b> (44.30 Ac.)	Benjamin Dempseys 916-918 Dempseys Road	Mobile Home. Wooded & open land
<b>112-2-2</b> (25.00 Ac.)	Atlantic Foresk Industries, LLC No address	Vacant wooded land
<b>112-A-19</b> (537.11 Ac.)	Malcolm L. Bailey Trust No address	Vacant wooded land
<b>111-A-4</b> (22.16 Ac.)	M.C. & Marion C. Bailey No address	Vacant Wooded Land
<b>111-A-4A</b> (11.07 Ac.)	Larry S. & Lorraine B. Agee 15763 Farmville Road	SFH. Wooded & open Land
<b>111-A-3A</b> (5.00 Ac.)	Wallace W. & Rachelle P. Wright No address	Vacant wooded & open land
<b>111-A-3B</b> (5.44 Ac.)	Wallace W. & Rachelle P. Wright No address	Vacant wooded & open land
<b>119-A-20</b> (0.87 Ac.)	Wallace W. & Rachelle P. Wright No address	Vacant wooded & open land
<b>119-A-18</b> (5.00 Ac.)	Keith D. & Mary M. Whitlock 16176 Farmville Road	SFH. Mostly wooded land
<b>119-A-17</b> (4.00 Ac.)	Keith D. & Mary M. Whitlock No address	Vacant wooded land
<b>119-A-16</b> (2.00 Ac.)	Danny Ray & Rebecca Carol McClung 16460 Farmville Road	SFH. Open and wooded land
<b>119-A-15</b> (15.46 Ac.)	Wallace W. & Rachelle P. Wright No address	Vacant wooded & open land
<b>120-A-16</b> (28.00 Ac.)	Hattie E. Stokes c/o Wallace Ray Stokes No address	Vacant wooded land



**Demographics:** Prince Edward County’s overall population increased 0.9% between April 1, 2020 to July 1, 2022. The appraiser analyzed areas within a one-mile, three-mile and five-mile radius from the approximate center of the proposed solar farm and shows that the annual growth rate is expected to decrease at an average of 1.47% over the next 5 years (2024-2029).



(Source: Site to do Business)

### **1 Mile Radius**

2024 Population	2029 Population	Decrease
80	79	-1.27%

### **3 Mile Radius**

2024 Population	2029 Population	Decrease
939	925	-1.51%

### **5 Mile Radius**

2024 Population	2029 Population	Decrease
3,524	3,467	-1.64%

**Market Analysis of the Impact on Value from Solar Farms:** It is my opinion, based on my extensive research and past experience as an expert in property valuation, that there is no consistent negative impact to adjacent property that is attributed to proximity to an adjacent solar farm. There is no evidence that there is any negative impact on neighboring property values, despite unsupported claims to the contrary. The studies that have been done on this issue, that I find to be credible, also conclude and agree that there is no negative impact on property value resulting from proximity to solar farms. The following are resources for my conclusions:

1. **Department of Energy:** An article by Megan Day, with National Renewable Energy Laboratory (NREL), which is part of the U.S. Department of Energy dated February 3, 2016, entitled “Top Five Large-Scale Solar Myths”. Myth #4 was about property values. The article concluded that while there are no in-depth studies on impacts of a solar farm on neighboring property values, numerous studies found the impact from wind energy generation on neighboring properties values to be negligible. Because these facilities have turbines which cast shadows and cause light flicker, the impacts from solar farms are anticipated to be less than the impact from wind farms. Communities have opted for mitigation measures to reduce visual impacts of solar farms through the use of vegetative screening, berms, etc. and that solar panels are usually mounted less than 7 feet high. I find this source credible because it is from a Governmental Agency and not commissioned by a solar company. Also, I am personally familiar with wind turbine affects from my own appraisals, and that solar panels are less offensive, but even the wind turbines were not a cause for a significant negative affect.
2. **Patricia McGarr, MAI Studies:** I have read different studies by Patricia McGarr, MAI dated May, August & December of 2018, May 2020 & May 2021 which concluded no consistent negative impact has occurred to adjacent property that could be attributed to proximity to the adjacent solar farm. I found the McGarr reports to be credible and specific. The following are some excerpts from her reports:
  - *In total, we analyzed 15 adjoining property sales in Test Areas and 63 comparable sales in Control Areas, collectively, for the Grand Ridge Solar Farm, Portage Solar Farm, Dominion Indy III Solar Farm, IMPA Frankton Solar Farm, and the Valparaiso Solar Farms over the past six years. We note that proximity to the solar farms has not deterred sales of nearby agricultural land and residential single-family homes, nor has it impacted the development of new homes.*

- *May 2020 report: In total, we analyzed 30 adjoining property sales in Test Areas and 159 comparable sales in Control Areas, collectively, for the Waihonu Solar Farm, Sunset Solar Farm, Shoreham Solar Farm, S-Power Shoreham Solar Farm, Dominion Indy Solar Farm III, and the North Star Solar Farms over the past three years. We note that proximity to the solar farms has not deterred sales of nearby agricultural land and residential single-family homes, nor has deterred the development of new single-family homes on adjacent land.*
- *May 2021 report: In total, we analyzed 38 adjoining property sales in Test Areas and 243 comparable sales in Control Areas, collectively, for 10 Solar Farms that occurred over the past seven years. We note that proximity to the solar farms has not deterred sales of nearby agricultural land and residential single-family homes, nor has deterred the development of new single-family homes on adjacent land.*
- *No empirical evidence evolved that indicated a more favorable real estate impact on the Control Area Sales as compared to the adjoining Test Area Sales with regard to such market elements as:*
  1. *Range of sale prices*
  2. *Differences in unit sale prices*
  3. *Conditions of sale*
  4. *Overall marketability*

*We have also reviewed published methodology for measuring impact on property values as well as published studies that specifically analyzed the impact of solar farms on nearby property values. We have also interviewed market participants, including Assessors, to give us additional insight as to how the market evaluates farmland and single-family homes with views of the solar farm. These studies found little to no measurable and consistent difference in value between the eTest Area Sales and the Control Area Sales attributed to the proximity to solar farms and are generally considered a compatible use.*

*Considering all of this information, we can conclude that since the Adjoining Property Sales (Test Area Sales) for the existing solar farms analyzed were not adversely affected by their proximity to solar farms, that properties surrounding other solar farms operating in compliance with all regulatory standards with similarly not be adversely affected, in either the short- or long-term periods.*

3. **Richard Kirkland, MAI Study:** In the past few years Culpeper County considered proposals for three solar farms. Impact analyses on all three proposed solar farms were done by Richard Kirkland, MAI. First was a March 2018 report for a 465-acre project located near Teleios Lane. The second was a March 2018 report for a 1,000-acre project located south of Stevensburg, known as the Greenwood Solar Project. The third was an October 2018 report for a 1,335-acre project located along Algonquin Trail known as the Cricket Solar project. All three Kirkland studies concluded there would be no impact to home values due to the proposed adjacent solar projects as well as no impacts to adjacent residential or agricultural land.

The project along Teleios Land was rejected by the Culpeper Board of Supervisors because it was deemed to be too near to historically significant sites.

The Greenwood Solar Project was approved by the Board of Supervisors in October 2018 by a 3-2 vote.

The proposed Cricket Solar Project plan was withdrawn by the solar company in August 2019.

4. **Richard Kirkland, MAI (Orange Road Solar 5 MW Impact Study Analysis, January 2024):** Richard Kirkland, MAI performed the Impact Study Analysis for a proposed 5 MW solar farm to be constructed on a portion of a 70.85-acre assemblage of land in close proximity to the Town of Orange, in Orange County Virginia. Excerpts from the impact study is as follows:

- **Relative Solar Farm Sizes:** *Solar farms have been increasing in size in recent years. Much of the data collected is from existing, older solar farms of smaller size, but there are numerous examples of sales adjoining 75 to 80 MW facilities that show a similar trend as the smaller solar farms. This is understandable given that the primary concern relative to a solar farm is the appearance or view of the solar farm, which is typically addressed through setbacks and landscaping buffers. The relevance of data from smaller solar farms to larger solar farms is due to the primary question being on of appearance. If the solar farm is properly screened, then little of the solar farm would be seen from adjoining property regardless of how many acres are involved. Once a landscaping screen is in place, the primary view is effectively the same whether adjoining a 5 MW, 20 MW, or 100 MW facility.*

- Summary of National Data on Solar Farms: *I have worked in 24 states related to solar farms and I have been tracking matched pairs in most of those states. On the following pages I provide a brief summary of those findings showing 36 solar farms over 5 MW studied with each one providing matched pair data supporting the findings of this report.*

The solar farms summary is shown below with a summary of the matched pair data shown on the following page.

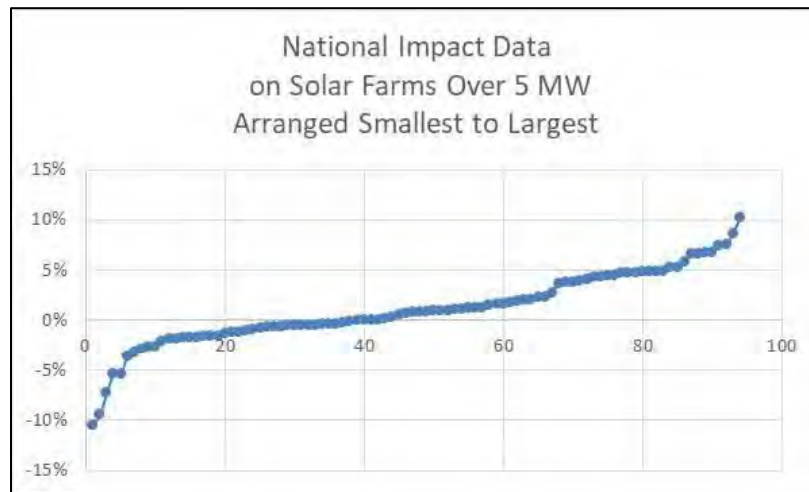
Matched Pair Summary						Adj. Uses By Acreage					1 mile Radius (2020 Data)		
	Name	City	State	Acres	MW	Topo Shift	Res	Ag	Ag/Res	Com/Ind	Population	Med. Income	Avg. Housing Unit
1	AM Best	Goldsboro	NC	38	5.00	2	38%	0%	23%	39%	1,523	\$37,358	\$148,375
2	Mulberry	Selmer	TN	160	5.00	60	13%	73%	10%	3%	467	\$40,936	\$171,746
3	Leonard	Hughesville	MD	47	5.00	20	18%	75%	0%	6%	525	\$106,550	\$350,000
4	Gastonia SC	Gastonia	NC	35	5.00	48	33%	0%	23%	44%	4,689	\$35,057	\$126,562
5	Summit	Moyock	NC	2,034	80.00	4	4%	0%	94%	2%	382	\$79,114	\$281,731
6	Tracy	Bailey	NC	50	5.00	10	29%	0%	71%	0%	312	\$43,940	\$99,219
7	Manatee	Parrish	FL	1,180	75.00	20	2%	97%	1%	0%	48	\$75,000	\$291,667
8	McBride	Midland	NC	627	75.00	140	12%	10%	78%	0%	398	\$63,678	\$256,306
9	Grand Ridge	Streator	IL	160	20.00	1	8%	87%	5%	0%	96	\$70,158	\$187,037
10	Dominion	Indianapolis	IN	134	8.60	20	3%	97%	0%	0%	3,774	\$61,115	\$167,515
11	Mariposa	Stanley	NC	36	5.00	96	48%	0%	52%	0%	1,716	\$36,439	\$137,884
12	Clarke Cnty	White Post	VA	234	20.00	70	14%	39%	46%	1%	578	\$81,022	\$374,453
13	Flemington	Flemington	NJ	120	9.36	N/A	13%	50%	28%	8%	3,477	\$105,714	\$444,696
14	Frenchtown	Frenchtown	NJ	139	7.90	N/A	37%	35%	29%	0%	457	\$111,562	\$515,399
15	McGraw	East Windsor	NJ	95	14.00	N/A	27%	44%	0%	29%	7,684	\$78,417	\$362,428
16	Tinton Falls	Tinton Falls	NJ	100	16.00	N/A	98%	0%	0%	2%	4,667	\$92,346	\$343,492
17	Simon	Social Circle	GA	237	30.00	71	1%	63%	36%	0%	203	\$76,155	\$269,922
18	Candace	Princeton	NC	54	5.00	22	76%	24%	0%	0%	448	\$51,002	\$107,171
19	Walker	Barhamsville	VA	485	20.00	N/A	12%	68%	20%	0%	203	\$80,773	\$320,076
20	Innov 46	Hope Mills	NC	532	78.50	0	17%	83%	0%	0%	2,247	\$58,688	\$183,435
21	Innov 42	Fayetteville	NC	414	71.00	0	41%	59%	0%	0%	568	\$60,037	\$276,347
22	Demille	Lapeer	MI	160	28.40	10	10%	68%	0%	22%	2,010	\$47,208	\$187,214
23	Turrill	Lapeer	MI	230	19.60	10	75%	59%	0%	25%	2,390	\$46,839	\$110,361
24	Sunfish	Willow Spring	NC	50	6.40	30	35%	35%	30%	0%	1,515	\$63,652	\$253,138
25	Picture Rocks	Tucson	AZ	182	20.00	N/A	6%	88%	6%	0%	102	\$81,081	\$280,172
26	Avra Valley	Tucson	AZ	246	25.00	N/A	3%	94%	3%	0%	85	\$80,997	\$292,308
27	Sappony	Stony Crk	VA	322	20.00	N/A	2%	98%	0%	0%	74	\$51,410	\$155,208
28	Camden Dam	Camden	NC	50	5.00	0	17%	72%	11%	0%	403	\$84,426	\$230,288
29	Grandy	Grandy	NC	121	20.00	10	55%	24%	0%	21%	949	\$50,355	\$231,408
30	Champion	Pelion	SC	100	10.00	N/A	4%	70%	8%	18%	1,336	\$46,867	\$171,939
31	Eddy II	Eddy	TX	93	10.00	N/A	15%	25%	58%	2%	551	\$59,627	\$139,088
32	Somerset	Somerset	TX	128	10.60	N/A	5%	95%	0%	0%	1,293	\$41,574	\$135,490
33	DG Amp Piqua	Piqua	OH	86	12.60	2	26%	16%	58%	0%	6,735	\$38,919	\$96,555
34	Barefoot Bay	Barefoot Bay	FL	504	74.50	0	11%	87%	0%	3%	2,446	\$36,737	\$143,320
35	Miami-Dade	Miami	FL	347	74.50	0	26%	74%	0%	0%	127	\$90,909	\$403,571
36	Spotylvania	Paytes	VA	3,500	500.00	160	37%	52%	11%	0%	74	\$120,861	\$483,333
	Average			362	38.80	32	24%	52%	19%	6%	1,515	\$66,292	\$242,468
	Median			150	17.80	10	16%	59%	7%	0%	560	\$62,384	\$230,848
	High			3,500	500.00	160	98%	98%	94%	44%	7,684	\$120,861	\$515,399
	Low			35	5.00	0	1%	0%	0%	0%	48	\$35,057	\$96,555



- From these 36 solar farms, I have derived 94 matched pairs. The matched pairs show no negative impact at distances as close as 105 feet between a solar panel and the nearest point on a home. The range of impacts is -10% to +10% with an average and median of +1%.

	MW	Avg. Distance		Indicated Impact
<b>Average</b>	44.80	569	<b>Average</b>	1%
<b>Median</b>	14.00	400	<b>Median</b>	1%
<b>High</b>	617.00	1,950	<b>High</b>	10%
<b>Low</b>	5.00	145	<b>Low</b>	-10%

While the range is broad, the chart below shows the data points in range from lowest to highest. There are only 3 data points out of 94 that show a negative impact (-6% or more). The rest support either a finding of no impact or 9 of the data points suggest a positive impact (+6% or more) due to adjacency to a solar farm. As discussed earlier in this report, findings between +/-5% is typical market variation/imperfection and is not indicative of a positive or negative impact. If I were to consider impacts within that range as indicative of market impacts, then the majority of the impacts would suggest a positive impact on property value as indicated by the +1% average impact and +1% median impact. However, based on the Market Imperfection discussion earlier in this report, I consider this data to strongly support a finding of no impact on value as most of the findings are within typical market variation and even within that, most are mildly positive findings.





**Note:** I found both the McGarr and Kirkland research to be very credible due to the number of matched pairs of control sales and target sales adjacent to existing solar farms. The match sales methodology is the primary method to determine potential impact on adjoining property values. Paired Data Analysis is outlined in the “The Appraisal of Real Estate” published by the Appraisal Institute. This method is more greatly defined into sub-methods in “Real Estate Damages” by Randall Bell, PhD, MAI, also published by the Appraisal Institute.

**Department of Environmental and Natural Resource Economics, University of Rhode Island, September 29, 2020 (report by Vasundhara Gaur and Corey Lang).** The study, “Property Value Impacts of Commercial-Scale Solar Energy in Massachusetts and Rhode Island” is based on a study of 284 existing solar installations in 2 of the 3 highest density states and the study defined rural based on an average population density of 850 people or less per square mile (pg. 10 of the report). *Rural and non-rural properties demonstrated no impact after 1-mile.* **The following are some of the findings in the study:**

- On page 35, in the Appendix discussing (Table A3), he explains that when he studied the population densities, that populations up to 2000 people per square mile also reflect rural trends, and stated “given that we find that negative property value impacts of solar are strongest in non-rural (suburban) areas, as these places are increasingly classified as rural” that his results in his proximate test area (Treated) x Post construction of a solar facility x rural (his conclusions of the -1.7% for proximate properties) “is a mixture of **the zero impacts in rural areas** and the negative impacts in non-rural areas”. The general math in the overall study of -1.7% within one mile of a solar facility, is a weighted value conclusion based on 60% rural at 0% impact and 40% non-rural at up to -7% impact within 0.1 miles of the solar facility. On page 12 (2<sup>nd</sup> to last paragraph) as stated, “results indicate large, negative impacts for houses with 0.1 mile, **but with large standard errors**”. Large standard errors reflect large ranges in the data results which impacts the reliability of those results of -7% within 0.1 miles.
- While he classified “rural” as populations of less than 850 people per square mile, he identifies that no impacts were identified in areas where the population density was up to 2,000 per square mile.
- A conclusion on page 17 (2<sup>nd</sup> full paragraph) stated; “Taken together, these results suggest that the treatment effect (test Area Effect) in rural areas is **effectively zero** (a statistically insignificant 0.1% or 0.001).

- Another important conclusion in the report studies the impact on the size of a solar facility. On Page 36 (appendix, 1<sup>st</sup> paragraph) stated “We find no evidence of heterogeneity by installation size. The coefficient is small and statistically insignificant, implying no additional disamenities from solar development larger than 2 MW. The authors suggest that there is no additional impact of size because it is difficult or even impossible to see beyond five acres from ground level, and the authors determined that solar facilities require 5 acres per MW. In the 2<sup>nd</sup> paragraph he noted that his study indicated that the conclusions did not change based on the number of years that passed after the construction of the solar farm. So, the data that sold within 3 years after the solar farm was built was the same as the sales data 5 years after construction.

**Richard Kirkland, MAI (2021 interview):** Mr. Kirkland’s **responses** to the previous study by **Vasundhara Gaur and Corey Lang.**

- *The simple answer is that the study shows no impact on property values in rural areas but did find impacts in high population density suburban areas. They defined “rural” as 2,000 people per square mile or less. They also noted that their study showing impacts in high population areas may not be applicable to other areas as those areas have minimal greenspace and the loss of greenspace for any reason may be what they are measuring.*
- *I normally cite that in support of my findings, and I test for population density in the County Subdivision/Township to compare to that threshold. It’s important to note that they did not find that at 2,001 people per square mile they found negative impact. They stopped testing at that threshold. So somewhere between that 2,000 and the higher population densities (some over 30,000 per square mile) is where they would assign an impact.*

A study, dated March 3, 2020, was conducted for a proposed solar farm in Louisa County, Virginia. It was for the Belcher III Solar Farm near Waldrop Church Road. The findings of this study also concluded that there is no impact to home values due to the adjacent solar project. This study did include matched pair analysis from two completed solar farms in Virginia plus an analysis of the sale of a historic home adjacent to a solar farm. In all the cases it was determined that there was no impact on property values from being adjacent to a solar farm.

- The first matched pair from Clarke County Solar in Clarke County VA indicated that there was a positive value for being adjacent to a solar farm.

- The second matched pair from Walker-Correctional Solar, Barham Road, Barhamsville VA indicated no difference in value. Additionally, the buyer indicated that the privacy from being next to a solar farm was viewed as a positive. Note: the property closed for more than the asking price.
  - There was an analysis of the sale of an historical home adjoining the Walker-Correctional Solar. The listing agent for the property was interviewed. It was stated that solar farm was not visible from the house and the solar farm had no impact on the marketing of the property.
5. **University of Texas at Austin:** This is a May 2018 study titled “An Exploration of Property-Value Impacts Near Utility-Scale Solar Installations. The study surveyed residential assessors across the United States. It encompassed a total of 22 states, including one in Virginia. The results indicate that the majority of respondents believe that proximity to a solar installation has either no impact or a positive impact on home values. The study also found that the assessors who responded to the survey believe that some features of solar facilities may be associated with positive impacts. I also find this source credible because it is from an academic institution with no ties to either side of the debate.
  6. **Real Estate Assessors’ Data:** There were many real estate assessment offices consulted and interviewed concerning this issue of solar farm impact on values. Not one of them reported a negative impact. For Prince Edward County, assessments are carried out by a 3<sup>rd</sup> party mass appraisal company and not local government assessors. Therefore, the appraiser was unable to collect any changes in market data from the real estate department of Prince Edward County.

In **Prince Edward County, VA**, Robert Love (Prince Edward County Planner) was interviewed concerning existing, under construction, proposed, under review or denied solar projects in the county. Mr. Love only provided a list of approved sites plus (1) 80 MW site slated for public hearing on December 17, 2024:

CEP Solar LLC	211 used for solar field	304.6	25MWac
Impact Power Solutions LLC	25.3 used for solar field	33.6	5MWac
Prince Edward CSG LLC	20.2 used for solar field	85.63	4MWac
Holocene Clean Energy	15 used for solar field	18	3MWac
Elam Road Solar LLC	33 used for solar field	45	3MWac
CEP Solar LLC - Miller Lake Site	20.2 used for solar field	81.2	5MWac
CEP Solar LLC - Piney Grove Site	20.2 used for solar field	85.63	8MWac
North Branch Solar LLC	40 used for solar field	147.5	3MWac

In Hanover County, VA, Planner Applicant Liaison, Jessica Crews, was interviewed concerning existing, under construction, proposed, under review or denied solar projects in the county. The following information provided by Jessica Crews is as follows:

### UNDER REVIEW

**CUP2021-00005** (Springfield Farm Solar, LLC) is still an active case under review. Project at 7768-38-9853 et al.

### ZONING ACTION

**CUP2024-00007** Strata Clean Energy: (North Anna River Solar) Request for Conditional Use Permit for 72 MW Utility-Scale Solar with associated substation.

**CUP2022-00009** at 8810-46-3320 was denied by the Board of Supervisors 3/27/2024.

**CUP2022-00020** (Spring Run Solar, LLC) at 8756-17-5098 for 169.93 acres (CUP area limited to 59.35 acres) small scale solar facility was approved on December 13, 2022.

**CUP2022-00011** (Chaberton Solar) at 8743-79-7331 was approved on 12/13/2022 by the Board of Supervisors. It was for a small-scale solar project on approx. 40 acres.

**CUP2021-00015** (Peppertown Road Solar) Conditional Use permit was approved on August 24, 2022, on a 32.2-acre parcel (CUP area limited to 22.67 acres). Project Currently under construction.

**CUP2020-00017** Conditional Use Permit application to permit a 4.99 MW alternating current solar facility on a 45.24 acres site at 7830-34-1258. The application was heard by the Planning Commission on 2-18-2021 with minutes attached and was deferred by the applicant, but later withdrew the application in June 2021.

**CUP2020-00006** Conditional Use Permit Amendment to permit accessory solar panels to rear of existing school to provide electricity for school at 8707-42-2766. Approved by the Board of Supervisors on 10-28-2020.

**CUP2020-00007** Conditional Use Permit Amendment to permit accessory solar panels between two existing school facilities at GPINS 8707-46-1121, 8707-47-3113, 8707-47-3460, and 8707-47-6789. Approved by the Board of Supervisors on 9-22-2020.

**CUP-15-18** One Energy Development LLC. Conditional Use Permit application was withdrawn on May 10, 2019, for a 145.48-acre 20MW solar power facility on 8757-62-1191 and 8765-49-8757.

**CUP-5-16** (Mechanicsville Solar LLC) Conditional Use Permit approved for a 20MW solar power facility on 2-22-17 for a 222-acre solar on 8767-11-3067 (part) and 8756-97-8477. Project is completed and operational.

In Augusta County, VA, the Director of Community Development, Doug Wolfe was interviewed (February 2024 & July 2024) concerning existing solar farms, and the status of other SUP Applications for Solar Farms, and the County Assessor, Zack Mundy was interviewed concerning property impact values. The County Assessor stated the following:

*Property assessments are performed every 6 years with new assessments almost complete for 2024. I am not aware of the number of proposed solar projects or projects existing and am not aware of significant changes in property values.*

The following information provided from Doug Wolfe; Director of Community Development is as follows:

### SOLAR ENERGY FACILITIES IN AUGUSTA COUNTY, VA

PROJECT NAME	PROJECT SIZE	ENERGY PRODUCTION AC- Alternating Current	MAGISTERIAL DISTRICT	DATE COMPLETE APP. RECEIVED	STATUS	PLANNING COMMISSION RECOMMENDATION	BOARD OF ZONING APPEALS/BOARD OF SUPERVISORS DECISION
Augusta Solar	1000+ acres	125 MW AC	South River	August 2018	DENIED	In substantial accord with Comp. Plan	BOS – DENIED
Round Hill Solar	880 acres	83 MW AC	Riverheads	July 2020	WITHDRAWN	Not in substantial accord with Comp. Plan	Applicant withdrew prior to BOS public hearing
Waynesboro Bridge Solar	40 acres Fenced In	5 MW AC	Wayne	February 2021	ISSUED, (Under Construction/Near Completion)	In substantial accord with Comp. Plan	BZA – APPROVED 8.5.21
Augusta CSG	12 acres Fenced In	3.88 MW	Wayne	March 2021	ISSUED, (Under Construction/Near Completion)	In substantial accord with Comp. Plan	BZA – APPROVED 8.5.21
Buffalo Branch Solar	50 acres Fenced In	3 MW	Pastures	March 2021	WITHDRAWN	Applicant withdrew prior to public hearing	Applicant withdrew prior to public hearing
Wayne Avenue Solar I	23.3 acres Fenced In	3 MW AC	South River	April 2021	APPROVED, not yet constructed (site plan stage)	In substantial accord with Comp. Plan	BZA – APPROVED 11.4.21
Wayne Avenue Solar II	23 acres	3 MW AC	South River	April 2021	WITHDRAWN	Applicant withdrew prior to public hearing	Applicant withdrew prior to public hearing
Shared Solar HaldCo	10 acres Fenced In	1 MW AC	Beverley Manor	July 2021	APPROVED, not yet constructed (site plan stage)	In substantial accord with Comp. Plan	BZA – APPROVED 10.7.21



PROJECT NAME	PROJECT SIZE	ENERGY PRODUCTION AC: Alternating Current	MAGISTERIAL DISTRICT	DATE COMPLETE APP. RECEIVED	STATUS	PLANNING COMMISSION RECOMMENDATION	BOARD OF ZONING APPEALS/BOARD OF SUPERVISORS DECISION
Elm Spring Solar I*	25 acres Fenced In	3 MW AC	Wayne	October 2022	APPROVED, not yet constructed (site plan stage)	In substantial accord with Comp. Plan	BZA – APPROVED 7.6.23
Shenvalee Solar*	26 acres Fenced In	3 MW AC	Riverheads	October 2022	DENIED	Not in substantial accord with Comp. Plan	BZA – DENIED 10.5.23
Fishersville Road Solar Farm	10 acres Fenced In	2 MW AC	Wayne	January 2023	DENIED	Not in substantial accord with Comp. Plan	BZA – DENIED 10.5.23
Augusta Solar/AES Solar	470 acres Fenced In	90 MW AC	South River	March 2023	BOS Public Hearing	Not in substantial accord with Comp. Plan	Public hearing is scheduled for 7.24.24
Wayne Ave (West)/Wayne Ave Solar 2, LLC*	23 acres Fenced In	3 MW AC	South River	June 2023	APPROVED, not yet constructed	No recommendation	BZA – APPROVED 12.7.23
Waynesboro B Solar	23.5 acres Fenced In	3 MW AC	Wayne	November 2023	APPROVED, not yet constructed; pre-conditions stage	In substantial accord with Comp. Plan	BZA- APPROVED 5.2.24
Grottoes A Solar	16 acres Fenced In	3 MW AC	Middle River	November 2023	WITHDRAWN	Applicant withdrew prior to public hearing	Applicant withdrew prior to public hearing
Fishersville A Solar	22 acres Fenced In	3 MW AC	Beverley Manor	November 2023	First draft report sent to applicant	Not yet scheduled	Not yet scheduled
Elm Spring II Solar	23 acres Fenced In	3 MW AC	Wayne	November 2023	Final report sent to applicant	Public Hearing Scheduled for June 11 <sup>th</sup>	Not yet scheduled
Weyers Cave A Solar	23 acres Fenced In	3 MW AC	Middle River	Not Complete as of 5.16.24	Completeness Review Stage	Not yet scheduled	Not yet scheduled

Findings from Sam McLearen, CZA, CTM, CFM, Director of Planning and Zoning in Culpeper, and their County Assessor, Jason Kilby who concluded there was not enough data available from comparable sales to conclude an impact. Five (5) other assessors were also contacted by Mr. Kilby, who was asked by the Culpeper BOS to conduct their own private study. There was no conclusive evidence.

The appraiser spoke with Tom Egland, and Andy Wade with the Louisa County Community Development Department and Richard Gasper, the Louisa County Assessor was contacted. Louisa County has an existing solar farm, one that is presently under construction and applications for three others. Richard Gasper indicated that there has been no evidence to indicate any impact on property values.

Two other solar farms with similar locational characteristics were identified; one in Essex County and one in Westmoreland County.

The Essex County, VA Assessor, Thomas M. Blackwell, was interviewed. According to the Mr. Blackwell there is no data available to support any impact on neighboring parcels. Mr. Blackwell attributed this to the rural nature of the surrounding area where there are generally few sales. Mr. Blackwell said that Essex County will soon be undergoing a reassessment, and because of the lack of sales, he expects that there will be no effect on the reassessment values. Mr. Blackwell also said that, when considering approval for the solar farm, the County **had received no objections from the general population.**



In Westmoreland County, VA, the Commissioner of Revenue, Carol Gawen, and the solar farm's property owner, Gary Sisson, were interviewed. Ms. Gawen indicated that the majority of the land surrounding the solar farm is family owned and for that reason she does not think that there will be any sales to support an impact to property values. Ms. Gawen did say that, after the solar farm was constructed, the land was taken out of land-use and is now being taxed at its full assessed value.

Gary Sisson, the landowner for the Westmoreland County solar farm was contacted. He said that there was no objection from neighbors to the solar farm (he also owns much of the adjoining land and had no objection to a solar farm being next to his other properties). There were no complaints from any other neighbors and there have been no issues since the solar farm became operational. Mr. Sisson also stated that he had no issue in getting a special use permit approved.

In Halifax County, VA, the County Assessor, Timothy Spainhour was interviewed March 2024 concerning any negative impacts on improved and unimproved sales. His response, as follows: *I haven't seen any effect yet. People don't move very much around here.*

I.T Davis, former BOS Chairman for Halifax County was also interviewed concerning his experience with any negative feedback concerning proposed Solar Farms. His response, as follows:

*For the most part, concerned citizens that are against solar is mostly because they do not have a full understanding of how solar works and the benefits of clean energy in addition to the economic impact of revenue over the anticipated operational life of a solar facility versus the current use.*

Detrick J. Easley, Planning and Zoning Administrator for Halifax County was interviewed concerning existing or planned solar facilities in the County. Mr. Easley provided the following information; however, it does not show denied projects. According to Mr. Easley, he believes only 2 proposed projects have been denied. The information provided is as follows:

Halifax County Solar Projects Overview			
Total acres in solar projects:	10,320.00		
Total acres under panel:	5,794.30		
Total megawatts:	843.13		
Name	Megawatts	Total Acres	Acres Under Panel
1 Crystal Hill Solar (ED4)	65.00	629.00	300.00
2 Alton Post Office (ED6)	80.00	808.00	225.00
3 Sunnybrook (ED2)	51.00	337.00	245.80
4 Powells Creek (ED6)	70.00	610.00	544.00
5 Waterstrider (ED1)	80.00	1,042.00	900.00
6 Foxhound (ED2)	83.00	1,141.50	502.00
7 Mill Road (ED2)	4.00	43.00	20.00
8 Piney Creek (ED2)	80.00	778.51	502.00
9 Tanyard Branch (ED2)	5.00	198.00	60.00
10 N. Tanyard Branch (ED2)	5.00	171.83	50.00
11 Route 360 Solar (ED2)	5.00	110.00	40.00
12 Halifax CSG (ED6)	3.13	42.94	21.50
13 Knollwood (ED6)	5.00	131.41	35.00
14 Martin Trail (ED2)	5.00	43.83	39.00
15 Watlington (ED7)	20.00	244.00	138.00
16 Staunton Solar (ED5)	47.00	583.50	355.00
17 Clover Creek (ED2)	90.00	1,533.00	841.00
18 Sedge Hill (ED4)	80.00	1,061.40	550.00
19 Hillandale (ED1)	60.00	737.00	386.00
20 South Boston G Solar (ED3)	5.00	74.08	40.00
<b>TOTALS</b>	<b>843.13</b>	<b>10,320.00</b>	<b>5,794.30</b>
Percentage of Halifax County total acreage(531,200 acres)		1.943%	1.0908%

Producing Power:	Megawatts:
Waterstrider (ED1)	80
Watlington (ED7)	20
Sunnybrook (ED2)	51
Piney Creek (ED2)	80
Powells Creek (ED6)	70
Crystal Hill (ED4)	65
<b>Currently under construction: (array)</b>	
Crystal Hill (ED4)	65
Foxhound (ED2)	83
Halifax CSG (ED6)	3.13
Powells Creek (ED6)	70
Alton Post Office(ED6)	80
Knollwood(ED6)	5
Sunnybrook (ED2)	51
Watlington (ED7)	20
Piney Creek (ED2)	80

<b>Upcoming:</b>	
Blue Wave Solar (Guill town Road) ED2	5
Blue Wave Solar (Guill town Road) ED2	3.13
Perrin Creek Solar ( Hunter Lane) ED7	3

In [Spotsylvania County, VA](#), the County Assessor, Eddie Tolley was interviewed November 2022 concerning any negative impacts on property values in Fawn Lake that is in close proximity to the Spotsylvania County Solar Farm since its construction. The Spotsylvania Solar Farm is a 617 MW facility encompassing 6,350 acres, albeit 2,000 acres are preserved land. His response, as follows:

*I've confirmed your request with Lindsay, who appraises Fawn Lake and the surrounding area for us. As you would expect, we have let the market dictate whether any adjustments are needed. To this point, no adjustments have been or are being applied, as a result of the Solar Farm.*

In [Orange County, VA](#), a County Planner, Eric Bittner was interviewed January 2024 concerning any negative impacts on property values concerning the existing Madison Solar Farm (62.5 MW facility) and also any citizen concerns about property values for the subject proposed Solar Farm and (2) additional proposed solar projects. His response: *Property value concerns have not been front and center of discussions as far as I have seen.*

**Interviewed** Melissa Bernard, Deputy Clerk with the **Orange County** Commissioner of Revenues Office, January 2024 concerning any negative impacts on property values. Her response, as follows:

*Property assessments are performed every 4 to 6 years with the last assessment being 2019 for the year 2020. We have not seen any significant changes concerning assessment values in relation to location near a Solar Farm.*

In **Chesterfield County, VA**, the Deputy County Administrator for Community Development, Jesse Smith was interviewed (February 2024) concerning existing solar farms, and the status of other SUP Applications for Solar Farms. Information provided as follows:

Project Name	Case #	Energy Production	Status
Nexamp, Inc.	21SN0655	5 MW	Approved 4/22
360 Solar Center, LLC	21SN0691	52 MW	Approved 7/22
Hickory Road Solar	22SN0015	2.5 MW	Approved 12/22
Old Bermuda Hundred Road Solar	22SN0073	2.25 MW	Pending
Hermon West Solar, LLC	22SN0128	5 MW	Pending

7. **Negative Impact Studies:** I have researched long and hard to find a study that concluded that there was a negative impact from solar farms on property values, especially in light of comments from this opposition to the Spotsylvania sPower Project. Alfred King, who wrote one of several negative editorials in The Free Lance-Star stated, “all the evidence points to a diminution of property values in areas contiguous to planned facilities”. I interviewed Mr. King who directed me to the webpage of Concerned Citizens of Spotsylvania County, where the most vocal opposition to the Spotsylvania solar farm comes from. Although I did not find the evidence, I was emailed a study from Kathleen Haden and Mr. King that was written by Fred Beck, MAI, CCIM. His report on a solar farm proposed in Lincoln County, North Carolina was written in 2013.

Mr. Beck concluded that a contract fell through because of the announcement of a solar farm and that his research showed property values of higher priced homes were negatively affected. He also concluded that assessments in a nearby county were reduced 30%. I read the report and concluded that the Beck Report was outdated, weak, and showed no credible evidence to support his conclusions. In fact, Mr. Beck concluded no effect on moderate priced homes values, and only a 5% change in his limited research of higher priced homes. His one sale that fell through is hardly a reliable sample.

It also was misleading on Mr. Beck's part to report the lower re-assessments since the primary cause of the re-assessments were based on the County Official, who lived adjacent to the solar farm, appeal to the assessor for reductions with his own home. Therefore, it appears the only evidence provided by those opposed to solar farms because of claims of lower property values are unsupported and lack real evidence.

8. **Personal Interviews:** In addition to the individuals interviewed about the Essex County & Westmoreland County solar farms, we interviewed Richard Kirkland, MAI, Patricia McGarr, MAI and Sam McLearen, Culpeper Planner.

**Mr. Kirkland** stated to me that he had studied the impact of solar farms on neighboring property values for over 10 years and had collected a large database of paired sales which indicates no measurable impact on property value. Mr. Kirkland was also very familiar with the Beck Study which was the only study which suggested a negative influence. Mr. Kirkland cited several flaws and lack of evidence in the Beck Study.

**Patricia McGarr, MAI**, who has specialized in valuation impact studies for over 30 years was interviewed by the appraiser. Ms. McGarr has performed numerous studies on solar farms, as well as valuation impacts from sanitary landfills, wind turbines, and other possible contaminated or stigmatized properties. Ms. McGarr stated solar farms are what most localities are seeking in clean industry because they generate tax revenue without putting demands on services that residential developments place on localities. Ms. McGarr said good schools increase property values, and revenue from solar farms can help fund better schools. Her studies on solar farms were, like Mr. Kirkland's, supported by matched pair sales "before" and "after" the solar farms were built.

**Mr. McLearen**, Culpeper Planner, stated that other uses permitted by zoning and the comprehensive plans of most counties in Virginia would be more intrusive to land use and cause more of a financial strain on the county budget, such as residential subdivisions. The appraiser, Chris Kaila, as a former Chairman of the Spotsylvania Economic Development Authority for Spotsylvania County, agrees with Mr. McLearen that the solar project by sPower was an economic benefit to Spotsylvania County and that the real estate taxes could go down instead of up.

I also interviewed **Fred Beck, MAI** (previous page-negative impact studies) who wrote the only resource stating a negative effect. Mr. Beck cited the one contract and buyer who backed out and would not buy because of the farm. This was his primary evidence. Mr. Beck explained the homes were higher priced homes and had full view of the solar farm. I explained the project that I was analyzing in Spotsylvania County was being designed with screening so that the solar farm would not be in full view to adjoining property owners. Mr. Beck said in that case, he would not see any drop in property value.

9. **Real Estate Agent Opinions:** As both an appraiser and a real estate agent/broker, I am aware of the difference in their opinion on property values. Appraisers must be careful to site their opinion under penalty of losing their license for lack of support of their professional opinions. Licensed appraisers are recognized by the courts as experts of property values. As I stated previously, I have qualified as an expert on property values in many jurisdictions in the state of Virginia.

Real estate agents, on the other hand, are not qualified by the courts as experts on value. Agents can attest to marketability and certain selling features; however, an appraiser is better at values. Statements made on this issue concerning lost contracts and other negative results from sales contracts falling out offer no evidence on how property values may be affected.

In fact, I believe that it is certainly possible that the lost contracts may have resulted by the agents own negative statements and the negative claims that are not supported that actually cause potential buyers to change their mind about purchasing a property adjacent to a solar farm. These decisions are based on allegations and not actual knowledge of credible studies.

The appraiser discussed the sale of a house located in Fawn Lake, Spotsylvania County VA with the selling agent, Ed Duggan. The property is a home near to the solar farm that was under construction by S-Power. The house, located at 10905 Cobble Run, sold on January 7, 2020 for \$540,000. According to Mr. Duggan, his clients were aware of the solar farm that is being built and it was not an issue. It also did not figure into any of the negotiations. It had been originally listed on 7/22/2019 with an asking price of \$590,000 and was put under contract on 11/5/2019 & sold for \$540,000. The property was assessed at \$536,200. The previous sale, in 2014, was \$486,150, which the 2020 sale reflects an 11% increase in value (2.01%/year).

Real Estate Professional Mark Doherty was interviewed **November 2022** concerning any updated negative impacts on property values around Fawn Lake which is in close proximity to the 617 MW Spotsylvania County Solar Farm. His statements as follows:

- *From my observations, there doesn't seem to be a direct correlation between the installation of solar farms and a decline in property values. On the contrary, in areas like Spotsylvania County, property prices have risen post-installation. This increase, however, appears to be more influenced by broader market demand and general economic conditions rather than the presence of the solar farms themselves.*
- *Looking at the long-term effects, I believe solar farms could potentially bolster property values. They create a substantial income stream and enhance county tax revenues, which in turn can be used to improve local services, such as education and emergency response. This improvement in public services often correlates with an enhanced quality of life, which can be a positive driver for property values.*
- *In conclusion, while the direct impact of solar farms on property values might be minimal or variable, their long-term benefits to the community and the economy at large could be quite significant.*

Real Estate Professional Donna Waugh-Robinson was interviewed **January 2024** concerning any negative impacts on property values around an existing 62.5 MW Madison Solar Farm in Orange County. Her statement: *I have not seen any negative property impacts.*

There has been substantial analysis by appraisers concerning property value impact from solar facilities. Most of the discussion and analysis were in response to a review by Mary McClinton Clay, MAI, of a site assessment report prepared by Cohn Reznick, LLP, which is an Advisory Firm who does considerable work for the renewable energy space industry. Ms. Clay was hired by Wells Engineering, who was hired by the Kentucky State Siting Board. The Siting Board has the mission to review applications and grant certificates for the construction of electric generating facilities. The Siting Board review focuses on environmental matters, economic impact, noise, visual impacts, and other impacts such as property values.

Ms. Clay reviewed several of the impact studies that were used in my research, including studies by Richard Kirkland, MAI, and a list of other sources which all have concluded that there is no significant impact of property values as a result of being located adjacent to a solar facility.



Ms. Clay went into detail how these studies were “insufficient” to be used as a determination that proposed solar plants will not adversely affect proximate property values, and the content of the reports lack substance; and the data and analysis are incomplete, inadequate, inaccurate, misleading, and non-credible.

Ms. Clay’s conclusion has been thoroughly criticized and refuted by Cohn Reznich’s in-house Principal for Valuation Advisory Services, Andrew Lines, MAI; Richard Kirkland, MAI, and myself. Mr. Lines, MAI, specifically outlined some of the inconsistencies in the Clay review in a 10-page letter dated December 3, 2021, which is part of the Kentucky Siting Case #2021-00072, which is retained in the appraiser’s file. I was personally referenced in the letter because of research and interviews I have conducted that refute Ms. Clay, MAI’s conclusions.

In addition, Ms. Clay used sales from Spotsylvania County where my business is located. These were lot sales adjacent to the Spotsylvania Solar Facility in Fawn Lake where Ms. Clay, MAI, demonstrated a -30% drop in values. However, I examined these sales and found her conclusion not only bogus, but also demonstrates a significant increase in lot values, using her same lot sales that have subsequently sold after the solar facility was constructed (or in its process of construction). Ms. Clay, MAI, also used (2) reports of negative impact by appraisers who have been impeached by their own testimony or lack of experience.

Other Opinions by Ms. Clay, MAI concerning high voltage transmission lines (HVTL’s), which have a similar situation as being located adjacent to a solar farm.

The Clay review (as stated by **Andrew R. Lines, MAI**) operates on the assumption that only properties in areas that “expect” a scenic view should be studied; however, this assumes that all relative views from any home are scenic and that the corresponding contributory value to the overall value is significant. For properties that might have views of public lands (mountains, lakes, monuments, etc.), this makes a lot of sense and there are a number of studies to support this. However, for property that adjoins other private property, no one should acquire a home based on the premise that the pre-existing view over someone else’s property would remain in perpetuity.

Further, most homebuyers have other major considerations that come into play: school district, proximity to family, size and number of bedrooms, interior finishes, age of mechanicals, etc. The point is that while viewshed may be something a buyer considers, it may be well down the list of priorities that are needed to agree to buy a property.

In fact, when correcting the Heckman Impact Study on measuring viewshed as an amenity, the actual price differential between homes with and without a “view” was zero percent. This is why the perception of some residents with regards to **solar facilities** may appear to be more negative than the actual sales data indicates. The concept of perception and its impact on real estate transactions is important to understand.

As indicated in previous excerpts from HVTL’s, while “fear” (whether reasonable or not) is admissible as an explanation of why diminution in property value has occurred. It is not a measure of the diminution in the market value. This is why appraisers must perform detailed analysis in the form of multiple paired sales analyses, sale/resale analyses, and regression studies to prove whether these perceptions translate into lower sales prices.

**Richard Kirkland, MAI (November 2022 interview):** Mr. Kirkland’s **responses** to the concept of perception and its impact on real estate transactions.

- *Mostly for folks who are trying to sell a property during the project approval/construction as there have been property listings where the potential buyers have heard all the hype and decided not to buy. That gets cited as "proof" of a negative impact, but all it shows me is that either that buyer was scared off (likely by the same hype from the neighbors), or just fear of the unknown. Once the projects are built and it is no longer unknown, there is no sign of longer marketing periods, or impacts on sales prices.*
- *But during that unknown period in between there could be impacts for some buyers. But the actions of one buyer is not the market and if there were any other new large development getting ready to happen nearby, you would see the same type of hesitation of the "unknown". It's not the solar farm, it's the fact that people are afraid of change. We do impact analysis on lots of different uses. I see as much if not more fear at hearings over new subdivisions coming in as I do for solar farms.*
- *In my view, if you give people a forum to vote on what the neighbor gets to do with their property, then they will generally vote "No change." Heck, if they got to vote for it, most folks would want you to tear down what you have there and turn it back into permanent wild lands.*

**Richard Kirkland, MAI (March 2022 interview):** Mr. Kirkland's **responses** to the previously mentioned studies by **Mary Clay, MAI** and her lack of adequate research.

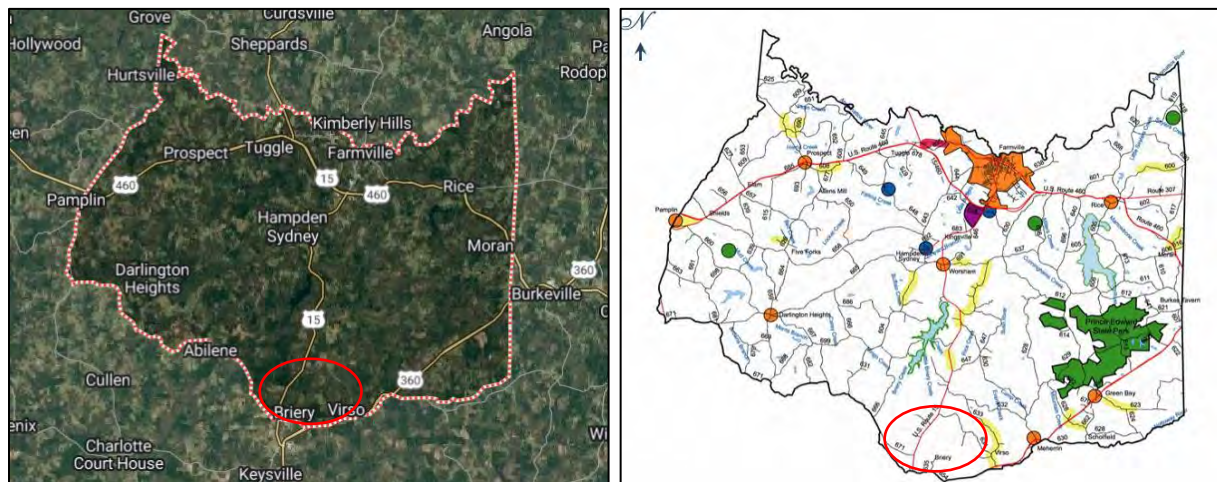
- *Mary Clay's reports keep showing up, but she never does. She isn't getting paid for her reports as they are just being reused without her permission. I think she has gotten very frustrated over that, but she hasn't showed up personally in some time. She was originally hired indirectly by the State of Kentucky to do her research, but her findings were rejected every single time by the engineering firms that directly hired her as well as by the State Siting Board that indirectly hired her (the Siting Board hired the engineering firms-mostly Wells Engineering). Mary has admitted under oath that the State of Kentucky has never accepted her findings. Most of her information is clearly biased and she avoids showing sales that run counter to her arguments.*

**Richard Kirkland, MAI (March/November 2022 interview):** Mr. Kirkland's **responses** to a recent negative impact study by Berkley that shows a 1.5% negative impact on property values within a 1-mile radius.

- *It suggests negative impacts of 1.5% based on 6 states within a ½ mile or so. In my opinion it is just within the typical market imperfection I would expect. They didn't account for landscaping screening or views, and they most certainly did not account for other factors in the area that may have been impacting property value. Notably, look at the aerial photos they included in their analysis, and you can see a lot of homes near a solar farm that are also near large highways and high rise office buildings.*
- *Still look at the examples in the study that show where they are looking. Both solar farm examples are surrounded by industrial, and office uses that are between the solar farms and the nearby homes. The study specifically doesn't consider those items in their analysis and doesn't consider the setbacks from the solar farms and doesn't consider landscaping screens.*
- *The McHenry one you can see that just a mile to the west is a country club community - so in that study they studied homes within a mile radius to homes greater than that (2 to 3 miles out). So, they are capturing the activity in say an industrial mixed area and comparing it to high end residential. I think the studies problems are significant - and even so it only comes out to 1.5% negative impact. I consider that to be within typical market imperfection/deviation. Statistically Berkeley would say they have accounted for that, but from an appraisal standpoint, I don't see any appraiser being so good that they can say \$300,000 is the right number, but \$295,000 is too low and \$305,000 is too high.*

*They have done nothing in the analysis to account for other factors. Furthermore, they indicate that the impacts are most pronounced where a solar farm is removing "green" land which they describe as woods or natural areas, but they don't address whether or not removing that "green" land for a subdivision would have a similar impact. In other words, they haven't really established a causal relationship but have inferred one. Even at that, it's still a minor impact within market imperfection and since they haven't addressed those other issues: landscaping, other negative influences in the area, or alternative development, then even that may be overstating the impact they actually measured. I don't know how much opposition is likely to reference that study as it torpedoes their argument of huge negatives, but I expect it to show up at least some.*

**Development Patterns:** The proposed solar farm is located in the far southern part of Prince Edward County in an exceedingly rural area bordered southwest by Charlotte County VA, and southeast by Lunenburg County, VA. The project area is zoned A-1 Agricultural. Adjoining and neighboring parcels are agricultural. The appraiser estimates that there are approximately 22 +/- residential or mobile home developed parcels adjacent to the proposed solar facility. The project location site is within a 2,324-acre area of 22 parcels and provides setbacks from the residential parcels that meet or exceed county requirements. There are no subdivision developments around the proposed solar farm, subject to any HOA.



The location of the proposed Solar Farm is a predominantly rural area. It is the appraiser's opinion that there is insufficient local sales information to determine any effect on property values around the proposed solar farm.

### **Specific Factors on Being in Harmony with the Area:**

In addition to determining the impact on adjoining property values, the appraiser was also asked to determine whether “the location and character of the use, if developed according to the plan as submitted and approved, will be in harmony with the area in which it is to be located.” Studies have indicated that the most common areas for impact on adjoining values are those shown in the following table. Each of these categories and how they relate to a solar farm will be discussed.

#	Category
1	Hazardous Materials
2	Odor
3	Noise
4	Traffic
5	Stigma
6	Appearance

1. **Hazardous Material:** PV modules are constructed with the solar cells laminated into polymers and the minute amounts of heavy metals used in some panels cannot mix with water or vaporize into the air. Even in the case of module breakage, there is little to no risk of chemicals releasing into the environment. The most common type of PV panel is made of tempered glass, which is quite strong. They pass hail tests and are regularly installed in Arctic & Antarctic conditions. Only in the event of a sufficiently hot fire is there a slight chance that chemicals could be released. Most residential fires are not hot enough to melt PV components.<sup>1</sup>
2. **Odor:** Numerous articles researched for this report indicate that solar farms do not create any odors or output any chemicals.
3. **Noise:** Temporary elevated noise levels can be expected during the construction phase of a solar farm from truck and vehicle traffic, earth-moving equipment, and other construction equipment or infrastructure. The duration of the construction phase is dependent upon the generating capacity of the solar farm and generally ranges from 6 months to one year. During this period, the site is an active construction zone, and noise can result and emanate off the site, particularly from the driving of posts into the ground for panel mounting. Once operational, ground mounted solar PV array inverters and transformers make a humming noise during daytime, when the array generates electricity. At 50 to 150 feet from the boundary of the arrays, any sound from the inverters is inaudible.<sup>2</sup> Whether discussing passive fixed solar panels, or single-axis trackers, there is no negative impact.

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<sup>1</sup> “Clean Energy Results, Questions and Answers, Ground Mounted Solar Photovoltaic Systems.” Energy Center, June 2015. <http://www.mass.gov/eca/docs/doer/renewables/solar/solar-pv-guide.pdf>

<sup>2</sup> Ibid



The appraiser visited solar farms in Spotsylvania, Hanover, Halifax, Louisa, Westmoreland, Essex & Orange Counties and stood along the side of the roads. No noise from the solar farms could be heard. The appraiser also visited a solar farm under construction off of Waldrup Church Road in Louisa County. The construction activity was far enough from the road such that no noise could be discerned, however, there were intermittent trucks entering & leaving the site. It was the appraiser's impression that this had no impact on the neighboring properties.

4. **Traffic:** The proposed solar farm will be accessed via (1) ingress/egress from Ben Gayle Road & Ancient Acres Road (graveled road). During the inspection, around midday there was no traffic along these roadways. The completed solar farm will have no onsite staff. There will be scheduled maintenance planned in advance and aimed at fault prevention and unscheduled maintenance carried out in response to failures. It is the appraiser's opinion that the traffic due to maintenance activity will be insignificant. Ben Gayle Road & Ancient Acres Road are paved state-maintained roads in a predominately rural agricultural area.
5. **Stigma:** The Dictionary of Real Estate Appraisal, 7<sup>th</sup> Edition define stigma as: An adverse public perception regarding a property, commonly the identification of a property with a condition such as environmental contamination or other detrimental condition, such as a violent crime, that penalizes the marketability of the property and may also result in a diminution in value. While homeowners adjacent to proposed solar farms may voice concerns about the effect of a solar farm may have on their property's marketability & value, the research the appraisers have studied show that solar farms do not adversely impact neighboring properties. Therefore, there is no basis for an impact from stigma due to a solar farm.
6. **Appearance:** For the visual impact of the proposed solar farm, the specific location was designed to minimize visibility and maximize the setbacks. Setbacks from adjacent property lines are at least 100'. There will be buffers of existing vegetation, and the project will not be visible from public roads or houses. Where existing vegetation is insufficient for buffering, supplemental plantings will be installed.



7. Residents and community officials often cite glare or blinding from solar facilities as a primary concern. Most solar farms use PV modules to generate electricity. PV modules use non-reflective glass and are designed to absorb rather than reflect the light that hits the panels in order to convert solar energy into electricity. Photovoltaic panels actually cause less glare than standard home window glass.

Research has shown that they reflect less light than snow, white concrete, and energy-efficient white rooftops. Solar modules are coated with anti-reflective materials that maximize light absorption. Plus, the panel glass is often stippled, or textured with tiny indentations, to lessen the amount of sunlight that is reflected. Some solar panels are also designed with additional light-trapping properties that help boost energy production while reducing glare.

Solar farms are a passive use of the land, and with a special use permit, it is considered in keeping with the purpose and intent of the surrounding agricultural zoning. Additionally, solar farms are most comparable to greenhouses. The visual impact of the solar panels will be similar in height to a typical greenhouse.

**Removal & Disposal:** PV panels last a very long time, but they do not last forever. Their output declines slightly each year, but panels rarely fail in less than 40 years. The expected economic life of PV panels is 25-40 years. When the PV panels at the North Anna River Solar project are decommissioned, they will likely still produce more than 80% of their original output and have another decade of productive life, making them viable to be reused in countries that cannot afford new panels. Any panels that are not reused as working panels could be recycled. Large recycling facilities built specifically to recycle PV panels can recycle 100% of each panel, including the valuable silver and refined silicon they contain.

The U.S. Department of Energy (DOE) announced the Action Plan for Photovoltaic Systems End-Of-life Management in March of 2022, which is designed to reduce the cost of module recycling by more than half by 2030. Since the *vast* majority of solar panels in use have been installed during the last 10 years, these efforts will ensure appropriate end-of-life processes exist by the time most solar panels start to reach their end of useful life. Most of the other equipment in a solar facility can also be recycled. The steel fencing, steel posts and racking, copper and aluminum wires, transformers and inverters are all easily recyclable in the existing metal recycling infrastructure.

When it comes time to decommission the facility and return the land to its pre-development condition, it is assured that in a worst case of abandonment, adequate funds will be available to complete the decommissioning due to the county's requirement for each facility to keep an updated decommissioning plan and decommissioning performance bond (or other similar financial surety).

**Other Concerns:** In addition to the previous categories, the appraiser's research has also identified two additional categories that are often raised as areas that should be discussed when considering if a plan is "in harmony with the area in which it is to be located". These are:

- Erosion caused by the clearing and grading.
- Proximity to historical sites.

Concerns are raised about the erosion caused by the clearing and grading. The project will have extensive erosion and sediment control/stormwater perimeter measures required by the land disturbance permit that will be obtained from the county and a stormwater permit will be obtained from Virginia DEQ. During construction the project will be regularly inspected to ensure compliance with the permits.

Virginia is rich in history. It has been the center of many of our nation's most historic moments; from the founding of the Jamestown Colony to the Colonial Era & the Revolutionary War, and the Civil War. Concerns are often raised about development in proximity to historical sites and the worry that such development will detract from the solemnity of the site or lessen the experience of the visitors. These concerns are not restricted to solar farms but involve any form of commercial scale development. As was mentioned earlier, a solar project in Culpeper was rejected by the Board of Supervisors because it was deemed to be too close to a historically significant area. Several years ago, plans for a Walmart in Orange County Virginia were changed because the original location was viewed as being too close to the Wilderness Battlefield. Pressure was such that Walmart eventually ended up moving to a site approximately four miles west.

There are no historic sites identified near the site in the GIS website, however, according to information provided by Dutton & Associates dated November 27, 2024, concerning cultural and historical resources, excerpts are stated as follows:



**Dutton + Associates**  
CULTURAL RESOURCE SURVEY, PLANNING, AND MANAGEMENT  
*a Timmons Group company*

1115 Crowder Dr  
Midlothian, VA 23113

[www.dutton-associates.com](http://www.dutton-associates.com)  
Phone: 804.897.1960

November 27, 2024

Kevin Seaford  
Permitting Manager  
Strata Clean Energy

RE: Tobacco Trail Solar Project - Desktop Review of Cultural Resources

Dear Mr. Seaford:

Dutton + Associates, LLC (D+A) is pleased to provide Tobacco Trail Solar, LLC with the following desktop review for the Tobacco Trail Solar Project located in Prince Edward County, Virginia ("the study area"). The project involves the development of a solar energy production site in the Briery vicinity of Prince Edward County, on the north side of Patrick Henry (US 360) east of Farmville Road (US-15) (Figure 1).

This desktop review is intended to be used as planning tool and provides a summary of known cultural resources within the vicinity. For the purposes of this assessment, cultural resources include the following: buildings, structures, sites, historic districts, landscapes, battlefield, and cemeteries, which may be considered potentially eligible for listing in the National Register of Historic Places (NRHP). All data assembled for this desktop review is derived from the Virginia Department of Historic Resources (VDHR) Virginia Cultural Resource Information System (VCRIS), and no fieldwork or site visits were conducted. All investigators meet the Secretary of the Interior's Professional Qualification Standards (48 FR 44716) for archaeology, history, architecture, architectural history, or historic architecture.



## ARCHIVES SEARCH

A review of the Virginia Department of Historic Resources (VDHR) Virginia Cultural Resource Information System (V-CRIS) revealed that only a small portion of the project area has been subject to prior Phase I cultural resource survey. This survey (PE-007), was conducted in 1976 related to a proposed SCS impoundment (Table 1). As a result of the lack of survey within the study area, there are no (0) previously recorded architectural resources or archaeological sites located within the limits of the study area. There are, however, four (4) previously recorded architectural resources located within one-half mile of the study area limits. These include a mid- eighteenth-century home and church, early-twentieth century school, and mid-twentieth century drive-in movie theater. Of these, the Briery Church (VDHR# 073-0038) has been listed in the NRHP, the Old Virso School (VDHR# 073-5063) has been determined not eligible for listing, and the other two properties have not been formally evaluated by the VDHR (Table 2).

A map of the previously conducted surveys and recorded resources in relation to the study area and half-mile buffer is depicted in Figure 2.

**Table 1: Previously conducted cultural resource surveys that include portions of the study area. Source: VDHR.**

VDHR Survey #	Title	Author	Date
PE-007	An Initial Archaeological Assessment of the Bush River Watershed Plan, Prince Edward County, Virginia	Virginia State Library	1976

**Table 2: Previously recorded architectural resources within 0.5 mile of the study area. Bold font denotes resource is listed in or considered eligible for listing in the NRHP. Source: VCRIS**

VDHR #	Name/ Address	Year Built	Resource Type	NRHP Status
055-5058	Simplicity Drive-In Theater (Historic), Route 360	c.1945	Theater	Not Evaluated
073-0027	Mount Vernon (Historic), Route 15 And Route 634, 2.8 Mi. South Of	c.1740	Single Dwelling	Not Evaluated
<b>073-0038</b>	<b>Briery Church (Historic), Route 747</b>	<b>c.1760</b>	<b>Church/ Chapel</b>	<b>NRHP Listing, VLR Listing (1969)</b>
073-5063	Old Virso School (Historic), School, Virso Road (Function/Location), Intersection of Routes 633 and 634, Virso Road	c.1930	School	DHR Staff: Not Eligible (2007)





**Figure 2: Previously recorded cultural resource inventory data. Source: VDHR VCRIS 2024**

If you have any questions or wish to discuss the results of this desktop review, do not hesitate to contact me at [taylor@dutton-associates.com](mailto:taylor@dutton-associates.com) or at 804-897-1960.

Sincerely,

DUTTON + ASSOCIATES, LLC

*Robert J. Taylor, Jr.*

Robert J. Taylor, Jr., M.A.

Principal Investigator

As was mentioned earlier, any plans for solar farms include buffers and landscaping that will visually obscure the solar farm from adjacent properties and in the appraisers, opinion would be more visually appealing than an area that has been clear-cut of timber.

On the basis of the factors described, it is my professional opinion that the proposed solar farm will be in harmony with the area in which it is to be developed.

**Conclusion:** This analysis shows no impact on home values due to abutting or adjoining a solar farm as well as no impact to abutting or adjacent vacant residential or agricultural land. The criteria that typically correlates with downward adjustments on property values such as noise, odor, and traffic all indicate that a solar farm is a compatible use for rural areas and that it would function in a harmonious manner with this area.

Research of similar solar farms in similar areas have been found not to have a substantial injury to abutting or adjoining properties. Similar solar farms have been approved adjoining agricultural uses, schools, churches, and residential developments. Industrial uses rarely absorb negative impacts from adjoining uses.

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

Some of the positive implications of a solar farm that have been expressed by people living next to solar farms include protection from future development of residential developments or other more intrusive uses, reduced dust, odor and chemicals from former farming operations, protection from light pollution at night, it is quiet, and there is no traffic.



## **ASSUMPTIONS AND LIMITING CONDITIONS:**

1. The basic limitation of this and any appraisal is that the appraisal is an opinion of value, and is, therefore, not a guarantee that the property would sell at exactly the appraised value. The market price may differ from the market value, depending upon the motivation and knowledge of the buyer and/or seller, and may, therefore, be higher or lower than the market value. The market value, as defined herein, is an opinion of the probable price that is obtainable in a market free of abnormal influences.
2. No responsibility is assumed for legal or title considerations. Title to the property is assumed to be good and marketable unless otherwise stated in this report.
3. The property is appraised free and clear of any or all liens and encumbrances unless otherwise stated in this report.
4. Responsible ownership and competent property management are assumed unless otherwise stated in this report.
5. The information furnished by others is believed to be reliable. However, no warranty is given for its accuracy.
6. All engineering is assumed to be correct. Any plot plans and illustrative material in this report are included only to assist the reader in visualizing the property.
7. It is assumed that there are no hidden conditions of the property, subsoil, or structures that render its valuation more or less. No responsibility is assumed for such conditions or for arranging for engineering studies that may be required to discover them.
8. It is assumed that there is full compliance with all applicable federal, state, and local environmental regulations and laws unless otherwise stated in this report.
9. It is assumed that all applicable zoning and use regulations and restrictions have been complied with, unless a nonconformity has been stated, defined, and considered in this appraisal report.
10. It is assumed that all required licenses, certificates of occupancy or other legislative or administrative authority from any local, state, or national governmental or private entity or organization have been or can be obtained or renewed for any use on which the value estimates contained in this report are based.
11. Any sketch in this report may show approximate dimensions and is included to assist the reader in visualizing the property. Maps and exhibits found in this report are provided for the reader's reference purposes only. No guarantee as to accuracy is expressed or implied unless otherwise stated in this report. No survey has been made for the purpose of this report.

12. It is assumed that the utilization of the land and improvements is within the boundaries or property lines of the property described and that there is no encroachment or trespass unless otherwise stated in this report.
13. The appraiser is not qualified to detect hazardous waste and/or toxic materials. Any such comment by the appraiser that might suggest the possibility of the presence of such substances should not be taken as confirmation of the presence of hazardous waste and/or toxic materials. Such a determination would require investigation by a qualified expert in the field of environmental assessment. The presence of substances such as asbestos, urea-formaldehyde foam insulation or other potentially hazardous materials may affect the value of the property. The appraiser's value estimate is predicated on the assumption that there is no such material on or in the property that would cause a loss in value unless otherwise stated in this report. No responsibility is assumed for any environmental conditions, or for any expertise or engineering knowledge required to discover them. The appraiser's descriptions and resulting comments are the result of the routine observations made during the appraisal process.
14. Unless otherwise stated in this report, the subject property is appraised without a specific compliance survey having been conducted to determine if the property is or is not in conformance with the requirements of the Americans with Disabilities Act. The presence of architectural and communications barriers that are structural in nature that would restrict access by disabled individuals may adversely affect the property's value, marketability, or utility.
15. Any proposed improvements are assumed to be completed in good workmanlike manner in accordance with the submitted plans and specifications.
16. The distribution, if any, of the total valuation in this report between land and improvements applies only under the stated program of utilization. The separate allocations for land and buildings must not be used in conjunction with any other appraisal and are invalid if so used.
17. Possession of this report, or a copy thereof, does not carry with it the right of publication. It may not be used for any purpose by any person other than the party to whom it is addressed without the written consent of the appraiser, and in any event, only with proper written qualification and only in its entirety.
18. Neither all nor any part of the contents of this report (especially any conclusions as to value, the identity of the appraiser, or the firm with which the appraiser is connected) shall be disseminated to the public through advertising, public relations, news sales, or other media without prior written consent and approval of the appraiser.

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

1. The statements of fact contained in this report are true and correct.
2. The reported analyses, opinions, and conclusions are limited only by the reported assumptions and limiting conditions, and is our personal, unbiased professional analyses, opinions, and conclusions.
3. I have no present or prospective interest in the property that is the subject of this report, and we have no personal interest or bias with respect to the parties involved.
4. I have not previously performed an Impact Study Analysis for the proposed project. No other services have been performed, as an appraiser, or in any other capacity, regarding the property that is the subject of this report within the three-year period immediately preceding the acceptance of this assignment.
5. I have no bias with respect to the property that is the subject of this report or to the parties involved with this assignment.
6. My compensation is not contingent upon the reporting of a predetermined value or direction in value that favors the cause of the client, the amount of the value estimate, the attainment of a stipulated result, or the occurrence of a subsequent event.
7. This appraisal was not based on a required minimum valuation, a specific valuation, or the approval of a loan.
8. My analyses, opinions, and conclusions were developed, and this report has been prepared in conformity with the Uniform Standards of Professional Appraisal Practice.
9. I have made a personal inspection of the property that is the subject of this report. Phyllis A. Vest, Staff Associate, provided professional assistance concerning the typing of this report.
10. The reported analyses, opinions, and conclusions were developed, and this report has been prepared in conformity with the requirements of the Code of Professional Ethics and the Standards of Professional Appraisal Practice of the Appraisal Institute.
11. The use of this report is subject to the requirements of the Appraisal Institute relating to review by its duly authorized representatives.
12. As of the date of this report, Christian P. Kaila has completed the requirements of the continuing education program of the Appraisal Institute.

Respectfully submitted,

*Christian P. Kaila*

Christian P. Kaila, MAI, SRA  
President  
Certified General Real Estate Appraiser  
License Number 4001 000099

# ADDENDA

**QUALIFICATIONS OF THE PRESIDENT**  
**CHRISTIAN P. KAILA, MAI, SRA**  
**CERTIFIED GENERAL REAL ESTATE APPRAISER**  
**STATE OF VIRGINIA LICENSE NO. 4001-000099**

***FIRM***

Appraisal Group of Fredericksburg & Northern Virginia  
Christian P. Kaila & Associates  
Real Estate Appraisers & Consultants  
6320 Five Mile Centre Park, Suite 323, Fredericksburg, Virginia 22407 (540) 785-2198

***EDUCATION***

Graduate of Gar-Field High School, Woodbridge, Virginia - 1970  
Graduate of U.S. Military Academy, West Point, New York, Bachelor of Science Degree - 1974  
Graduate of Virginia Commonwealth University, Richmond, Virginia, Masters Degree in Business with  
Concentration on Real Estate and Urban Development - 1984

***Real Estate Appraisal and Related Courses Successfully Completed:***

Real Estate Law (1980)	Appraising Convenience Stores (2005)
Real Estate Finance (1980)	Self Storage Economics and Appraisal (2005)
Real Estate Appraisal (1981)	Scope of Work and New USPAP (2006)
Advanced Real Estate Appraisal (1981)	2006 National USPAP Update (2006)
Capitalization Theory & Technique Part "A" (1981)	Virginia Law Update and Ethics (2007)
Real Estate Feasibility Analysis (1983)	Information Technology (2007)
Historic Preservation in Planning (1983)	Contract and Agency Law (2007)
Urban Land Planning (1983)	Rates, Ratio's - GIM's, OAR's and DCF (2008)
Residential Valuation (1985)	Appraisal Process for Agents & Brokers (2008)
Valuation Analysis & Report Writing (1987)	VA Legal Update and Ethics (2008)
Capitalization Theory & Technique Part "B" (1987)	Brokerage and Sales Continuing Education (2008)
Valuation and Evaluation of Proposed Projects (1988)	Business Practice and Ethics (2008)
Standards of Professional Practice (1988)	Condemnation Appraising: Principles & Applications (2009)
Case Studies in Real Estate Valuation (1991)	Litigation Appraising: Specialized Topic (2009)
Argus Training (1992)	Virginia Real Estate Law (2010)
Non-Residential Demonstration Report Seminar (1992)	The Appraiser as an Expert Witness (2010)
Standards of Professional Practice Part "B" (1993)	Litigation Certificate Program, Appraisal Institute (2010)
F.I.R.E.A. Seminar (1993)	7-Hour USPAP Update (2011)
Limited Appraisal Seminar (1994)	Real Forestry for Real Estate (2012)
HUD/FHA Appraisal Course (1994)	Conservation Easements (2012)
Non-Residential Demonstration Report Seminar (1995)	7-Hour USPAP Update (2013)
Standards of Professional Practice Part "A" (1997)	Business Practice and Ethics (2013)
Standards of Professional Practice Part "B" (1997)	VDOT Appraisal Workshop (2015)
Valuation of Partial Interests-Divided (1999)	7-Hour USPAP Update (2015)
FHA and the Appraisal Process (1999)	Review Theory - General (2016)
Appraisal of Non-Conforming Uses (2000)	Eminent Domain - CLE 2-Day (2018)
Recent Developments in Real Estate Appraisal Law (2001)	Commercial Leasing (2018)
Land Valuation Assignments (2003)	7-Hour USPAP Update (2019)
Review Appraisals (2003)	7-Hour USPAP Update (2021)
Limited Appraisals & Scope of Work (2003)	Eminent Domain and Condemnation (2024)
Appraising for the Secondary Market (2003)	Excel Applications for Valuation (2024)
Business Practices & Ethics (2003)	7-Hour USPAP Update (2024)
On-Line Internet Search Strategies for Appraisers (2004)	Appraising Floodplains and Wetlands (2024)

***EXPERIENCE***

Veterans Administration (VA) Appraiser 1985-1986  
Federal Housing Administration (FHA) Appraiser - Since 1987  
Residential and Commercial Real Estate Sales and Brokerage - Since 1978  
Owner of Battlefield Real Estate, Inc. - Since 1981  
Owner of Christian P. Kaila & Associates - Since 1985  
Owner of Appraisal Group of Fredericksburg & Northern Virginia - Since 1990  
Associate Broker/Co-Owner of Exit Premier Realty, Inc. -2006-2008  
Associate Broker of Exit Professional Real Estate - Since 2008



### **COURT EXPERIENCE**

Expert Witness in Fredericksburg Chancery Court  
Expert Witness in Caroline County Circuit Court  
Expert Witness in Stafford County Court in Virginia Department of Highway Transportation Cases  
Expert Witness in Stafford Airport Condemnation Cases  
Expert Witness in Bankruptcy Court, Richmond, Charlottesville and Alexandria, Virginia  
Expert Witness in Spotsylvania County - Courtroom

### **PROFESSIONAL ORGANIZATIONS AND PROFESSIONAL DESIGNATIONS HELD**

MAI - Appraisal Institute (No. 11464)  
Senior Residential Appraiser (SRA) - Appraisal Institute (RM No. 2556)  
General Accredited Appraiser (GAA) - National Association of Realtors (No. 285) - 2000-2018  
National Association of Realtors - Since 1979  
Virginia Association of Realtors - Since 1979  
Fredericksburg Area Association of Realtors - Since 1979  
Industrial Development Authority - Spotsylvania County - 1992-2000; 2004-2009  
Fredericksburg-Stafford-Spotsylvania Chamber of Commerce - Vice President/Director - 1993-1998

### **AWARDS**

Exit Elite Realty - Top Producer 2018-2020  
Icon Award - Fredericksburg Area Association of Realtors  
REALTOR Emeritus - 40 Years - National Association of Realtors  
Fredericksburg Area Association of Realtors (FAAR) - President - 2002  
FAAR Realtor of the Year - 2002  
Gar-Field Senior High School Hall of Fame (Student-Athlete) - Inducted 2018

### **REFERENCES - APPROVED LENDERS (Partial List)**

Atlantic Union Bank  
Pete Humes (540-322-5626)  
Fredericksburg, Virginia

Community Bank of the Chesapeake  
Jeff Gagnon (240-427-1053)  
Waldorf, Maryland

Carter Bank & Trust  
Mark Loncar (540-834-3661)  
Fredericksburg, Virginia

C&F Mortgage Corporation  
Mike Yuhasz (540-371-6889)  
Fredericksburg, Virginia

Truist Bank  
Rena Jones or Tiffany Rowe (252-296-0419)  
Wilson, North Carolina

Virginia Partners Bank  
Wallace Kling, Robin Huddle (540-899-2236)  
Fredericksburg, Virginia

### **OTHER REFERENCES**

Dr. James H. Boykin, MAI (804-257-1721)  
Virginia Commonwealth University  
Richmond, Virginia

Jennifer Halligan, Litigation Specialist (804-548-4429)  
Taxing Authority Consulting Services, P.C.  
Henrico, Virginia

Adam Cherry, Attorney (804-592-4184)  
Randolph, Boyd, Cherry & Vaughan  
Richmond, Virginia

Scott Powell (540-370-2422)  
Department of Utilities, County of Stafford  
Stafford, Virginia

Karen Zink/John Robey (540-376-2952)  
Commonwealth Gas of Virginia, Inc.  
Leesburg, Virginia

Ronnie Baker (540-507-7375)  
Department of Utilities, Spotsylvania County  
Spotsylvania, Virginia





# **Attachment H**

## **Economic Impact Analysis**

# TOBACCO TRAIL SOLAR

## ECONOMIC & FISCAL CONTRIBUTION TO PRINCE EDWARD COUNTY, VIRGINIA



Prepared for  
Tobacco Trail Solar, LLC



4510 COX ROAD, SUITE 202  
GLEN ALLEN, VIRGINIA 23060  
804-322-7777

MAY 2025

MANGUMECONOMICS.COM

## About Mangum Economics, LLC

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Mangum Economics was founded in 2003 and since then, we have become known as a leader in industry analysis, economic impact assessment, policy and program evaluation, and economic and workforce strategy development. The Mangum Team specializes in producing objective and actionable quantitative economic research that our clients use for strategic decision making in a variety of industries and environments. We know that our clients are unique, and that one size does not fit all. As a result, we have a well-earned reputation for tailoring our analyses to meet the specific needs of specific clients, with a specific audience.

Most of our research falls into four general categories:

- **Energy:** The Mangum Team has produced analyses of the economic and fiscal impact of over 40 GW of proposed solar, wind, battery energy storage, and hydro projects spanning more than thirty states ranging from 1 MW to over 800 MW in capacity, including small-scale distributed facilities. Among those projects was Dominion's 2.6 GW Coastal Virginia Offshore Wind project off of Virginia Beach. In addition, the Mangum Team has also performed economic and fiscal impact analyses for the natural gas, nuclear, oil, and pipeline industries.
- **Economic Development and Special Projects:** The Mangum Team has performed hundreds of analyses of proposed economic development projects and existing entities including museums and tourist attractions, hospital systems, industrial development and mixed-use projects, and economic development regions. The Mangum Team has also authored multiple economic development plans and assessed the impacts of international trade and an overseas trade office.
- **Advanced Applied Technology:** The Mangum Team specializes in analyzing how advanced technology developments (like data centers, fiber networks, and advanced manufacturing plants) contribute to the state and local economies. We have worked with local governments, trade associations, developers, and operating firms across the country to show how investments in advanced critical infrastructure transform local economies across the country.
- **Policy Analysis:** The Mangum Team also has extensive experience in identifying and quantifying the intended and unintended economic consequences of proposed legislative and regulatory initiatives.

### The Project Team

Martina Arel, M.B.A.

*Director – Economic Development & Energy Research*

Kai Amado

*Research Analyst*

A. Fletcher Mangum, Ph.D.

*Founder and CEO*

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## Executive Summary

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**This report assesses the economic and fiscal contribution that the proposed Tobacco Trail Solar project would make to Prince Edward County, Virginia.**

**Tobacco Trail Solar is a proposed 150-megawatt (MW) alternating current (AC) solar photovoltaic power generating facility that would be located north of Norfolk Southern Railroad and east of Farmville Road (Route 15) in Prince Edward County, Virginia. The total acreage to be leased and purchased would encompass approximately 2,253 acres of woodland. The actively used, fenced-in portion of the solar site would be approximately 610 acres, while the total limits of disturbance would span approximately 1,125 acres.**

**The primary findings from the assessment are as follows:**

**1) The proposed Tobacco Trail Solar project would make an economic contribution to Prince Edward County:**

- The proposed Tobacco Trail Solar project would provide an estimated one-time pulse of economic activity to Prince Edward County during its construction phase supporting approximately:<sup>1,2</sup>
  - 52 direct and 36 indirect and induced local job years.
  - \$5.4 million in associated local wages and benefits.
  - \$35.7 million in local economic output.
  - \$1.2 million in state and local tax revenue.
- The proposed Tobacco Trail Solar project would on average provide an estimated annual economic impact to Prince Edward County during its ongoing operational phase supporting approximately:
  - 4 direct and 5 indirect and induced local jobs.
  - \$0.4 million in associated local wages and benefits.
  - \$1.4 million in local economic output.

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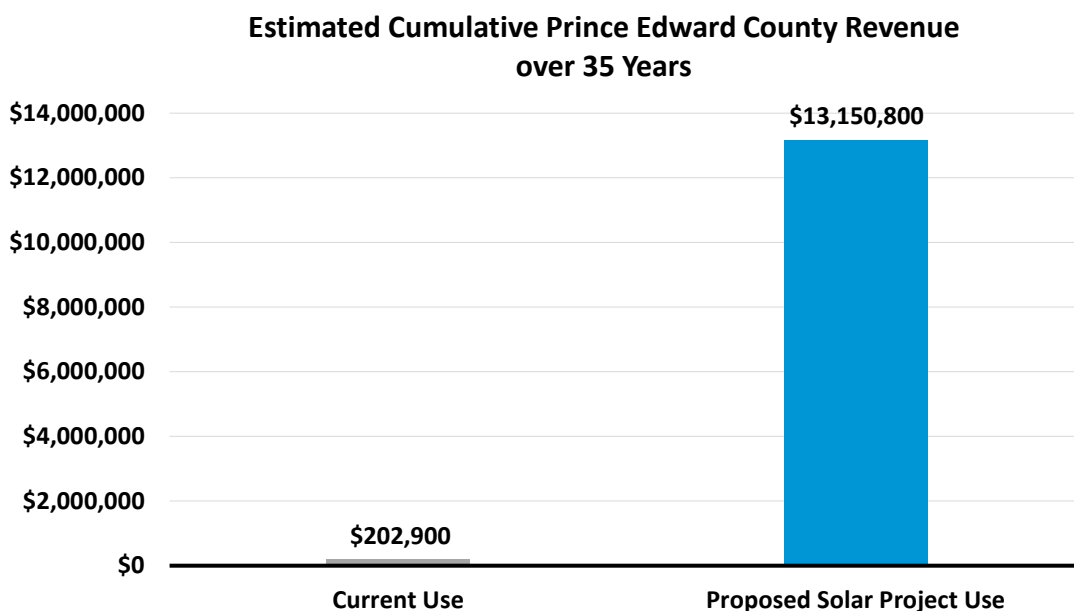
<sup>1</sup> A construction sector job, also referred to as a job year, is equal to one job over one year. It is used to denote employment on construction projects to account for the fact that actual on-site employment may vary over the period.

<sup>2</sup> It is important to note that construction sector jobs are not necessarily new jobs, but the investments made can also support a job during the construction of the project. Please note it is not possible to know with certainty what proportion of jobs would go to county construction contractors or be filled by county residents.



**2) The proposed Tobacco Trail Solar project would have a significantly greater fiscal impact on Prince Edward County than the property generates in its current use:**

- The proposed Tobacco Trail Solar project would generate approximately \$13.2 million in cumulative county revenue over the facility's anticipated 35-year operational life assuming revenues are generated from the reassessment of the real property and payments associated with the locally adopted revenue share ordinance, as compared to approximately \$0.2 million in cumulative county revenue in the property's current use – this constitutes a 65-fold increase over current revenues.



**3) The proposed Tobacco Trail Solar project would provide a boost to Prince Edward County's construction sector:**

- At 510 jobs, construction is Prince Edward County's fourth largest major industry sector, paying average weekly wages (\$1,313 per week) that are 55 percent above the countywide average (\$845 per week).<sup>3</sup>
- Additionally, the construction sector experienced a gain of approximately 24 jobs between 2022 and 2023.<sup>4</sup>
- The proposed Tobacco Trail Solar project would directly support approximately 52 jobs and \$3.7 million in wages and benefits in Prince Edward County's construction sector.

<sup>3</sup> Data Source: U.S. Bureau of Labor Statistics.

<sup>4</sup> Data Source: U.S. Bureau of Labor Statistics.

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*The estimates provided in this report are based on the best information available and all reasonable care has been taken in assessing the quality of that information. However, because these estimates attempt to foresee the consequences of circumstances that have not yet occurred, it is not possible to be certain that they will be representative of actual events. These estimates are intended to provide a good indication of likely future outcomes and should not be construed to represent a precise measure of those outcomes.*

## Introduction

This report assesses the economic and fiscal contribution that the proposed Tobacco Trail Solar project would make to Prince Edward County, Virginia. This report was commissioned by Tobacco Trail Solar, LLC and produced by Mangum Economics.

## The Project

Tobacco Trail Solar is a proposed 150-megawatt (MW) alternating current (AC) solar photovoltaic power generating facility that would be located north of Norfolk Southern Railroad and east of Farmville Road (Route 15) in Prince Edward County, Virginia. The total acreage to be leased and purchased would encompass approximately 2,253 acres of woodland. The actively used, fenced-in portion of the solar site would be approximately 610 acres, while the total limits of disturbance would span approximately 1,125 acres.

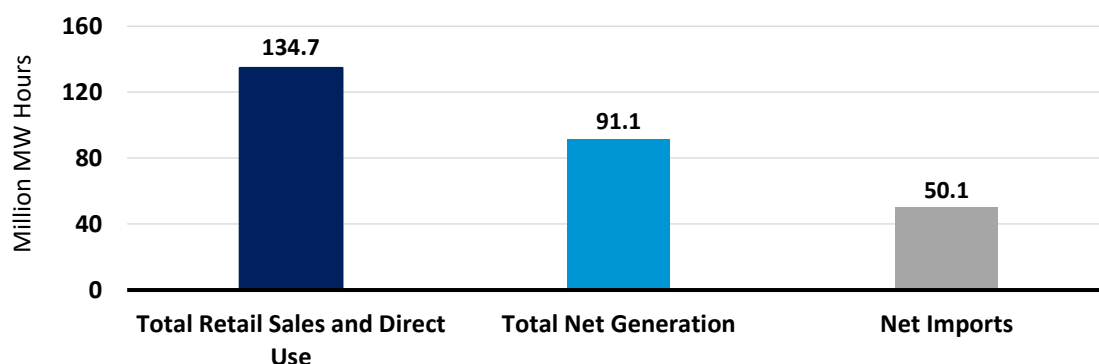
## Electricity Production in Virginia

This section provides a backdrop for the proposed Tobacco Trail Solar project by profiling Virginia's electricity production sector and the role that solar energy could play in that sector.

### Overall Market

As shown in Figure 1, in 2023 electricity sales and direct use in Virginia totaled 134.7 million megawatt hours. However, only 68 percent of that demand was met by in-state utilities, independent producers, and other sources. As a result, Virginia had to import the remaining electricity it consumed from producers in other states. As with all imports, this means that the jobs, wages, and economic output created by that production went to localities in those states, not to localities in Virginia.

Figure 1: Demand and Supply of Electricity in Virginia in 2023 (in millions of megawatt-hours)<sup>5</sup>



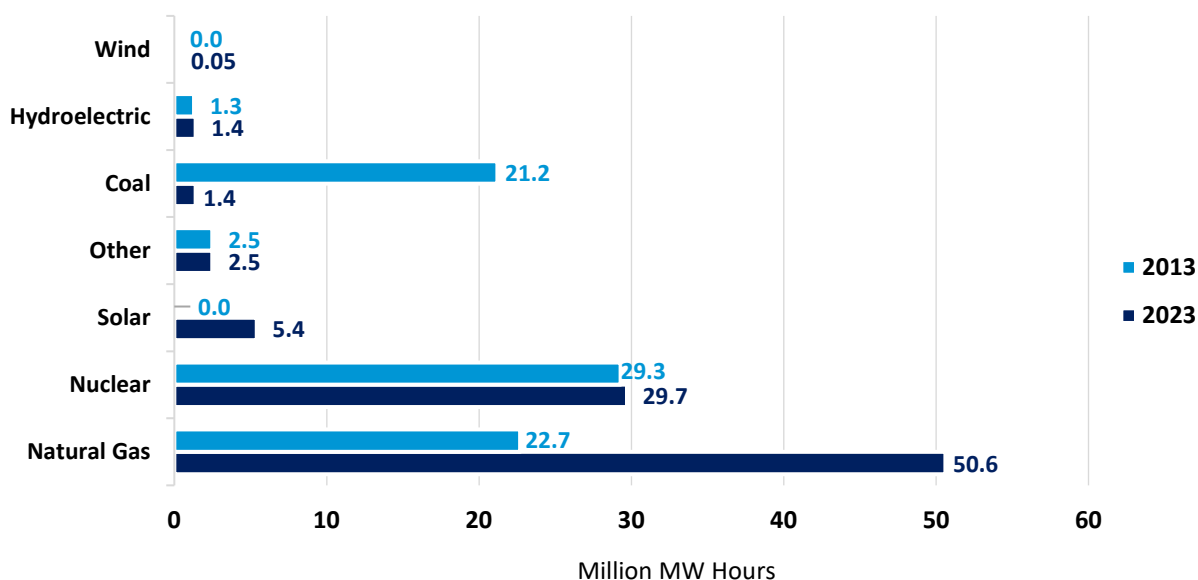
<sup>5</sup> Data Source: U.S. Energy Information Administration. In this chart, "Net Imports" also takes into account losses during transmission. As a result, it does not directly equal the residual of "Total Net Generation" minus "Total Retail Sales and Direct Use."

## Sources of Production

Between 2013 and 2023, the total amount of electricity produced in Virginia increased from 76.9 to 91.1 million megawatt hours, while retail and direct consumption of electricity increased from 113.0 to 134.7 million megawatt hours. Consequently, imports of electricity increased by 6.5 million megawatt hours (or 15 percent) during this time.<sup>6</sup> Figure 2 provides a comparison of the energy sources that were used to produce electricity in Virginia in each of those years. As these data show, the most significant change between 2013 and 2023 was a decrease in the use of coal and an increase in the use of natural gas. Where coal was the state's third largest source of electricity in 2013, accounting for 21.2 million megawatt hours (or 28 percent) of production, by 2023 production had fallen by 19.8 million megawatt hours, making coal a fifth-place source of electricity with only 2 percent of production.

In contrast, the share of electricity produced using cleaner-burning low-emissions energy sources increased over the period. Where natural gas accounted for 22.7 million megawatt hours (or 30 percent) of Virginia's electricity production in 2013, by 2023 that proportion had more than doubled to 50.6 million megawatt hours (or 56 percent of production), making natural gas the state's largest source of electricity. In addition, solar, which entered the Virginia electricity production market in 2016, increased its share to 5.4 million megawatt hours in 2023.

**Figure 2: Electricity Generation in Virginia by Energy Source in 2013 and 2023**  
(in millions of megawatt-hours)<sup>7</sup>

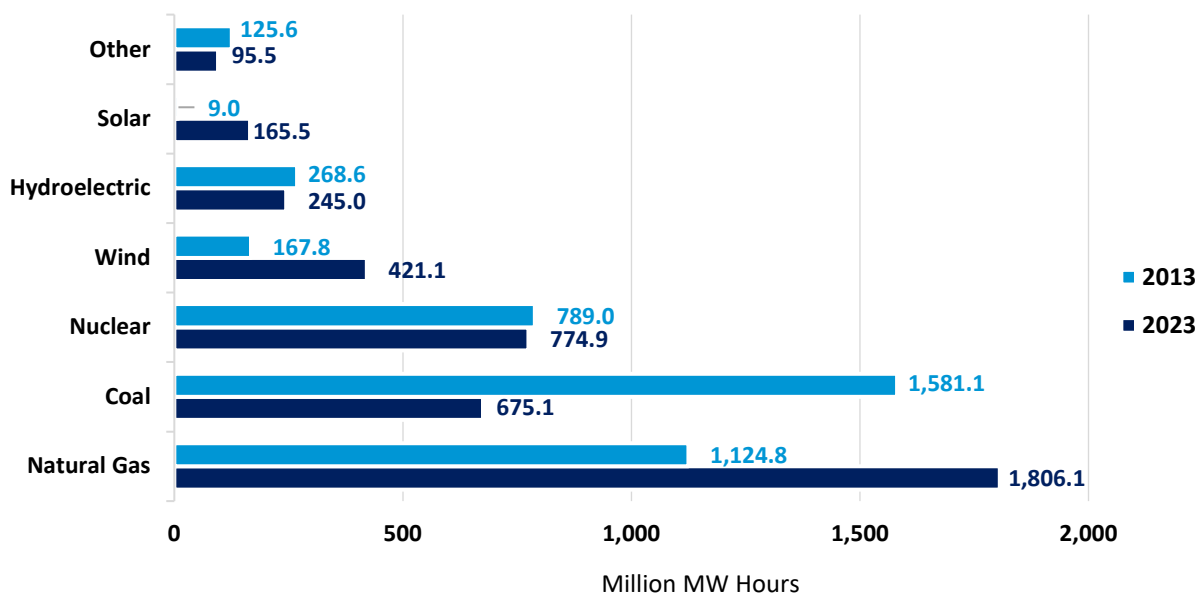


<sup>6</sup> Imports also takes into account losses during transmission. As a result, totals do not equal sum of components.

<sup>7</sup> Data Source: U.S. Energy Information Administration. The "Other" category includes battery, wood, petroleum, other biomass, "other", and pumped storage.

Figure 3 provides similar data for the U.S. as a whole. A quick comparison of Figures 2 and 3 shows that although the degree of reliance on specific energy sources for electricity production is quite different between the U.S. and Virginia, the trend toward lower-emissions energy sources is the same. Nationally, between 2013 and 2023 the amount of electricity produced using coal declined by 906.0 million megawatt hours from 39 to 16 percent of production, while in contrast the amount of electricity produced using natural gas increased by 681.3 million megawatt hours from 28 to 43 percent of production. Nationwide, as in Virginia, the reliance on renewable energy sources such as solar increased during this time but at a slower pace than in Virginia. Between 2013 and 2023, the amount of electricity produced using solar increased by 156.5 million megawatt hours to 4 percent of total electricity production in the nation compared to 6 percent of total electricity production in Virginia.

**Figure 3: Electricity Generation in the United States by Energy Source in 2013 and 2023**  
(in millions of megawatt-hours)<sup>8</sup>

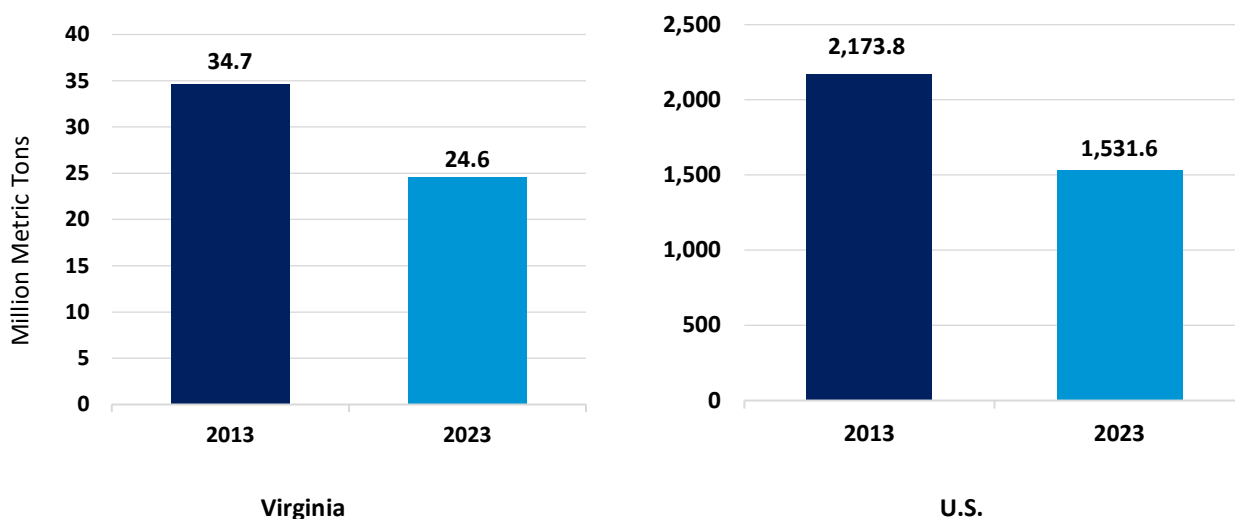


## Impact on the Environment

In discussing the impact of these trends on the environment, it is important to realize that electricity production is one of the U.S.'s largest sources of greenhouse gas emissions. Figure 4 depicts carbon dioxide emissions from electricity production in 2013 and 2023 for both Virginia and the U.S. As these data indicate, between 2013 and 2023, as the share of electricity produced in Virginia by coal fell from 28 to 2 percent, carbon dioxide emissions from electricity production fell from 34.7 to 24.6 million metric tons (a 29 percent decrease). Where at the national level, as the share of electricity produced by coal fell from 39 to 16 percent, carbon dioxide emissions from electricity production fell from 2,173.8 to 1,531.6 million metric tons (a 30 percent decrease).

<sup>8</sup> Data Source: U.S. Energy Information Administration. "Other" includes battery, geothermal, other, other biomass, other gas, petroleum, pumped storage, and wood.

Figure 4: Carbon Dioxide Emissions from Electricity Production (millions of metric tons)<sup>9</sup>

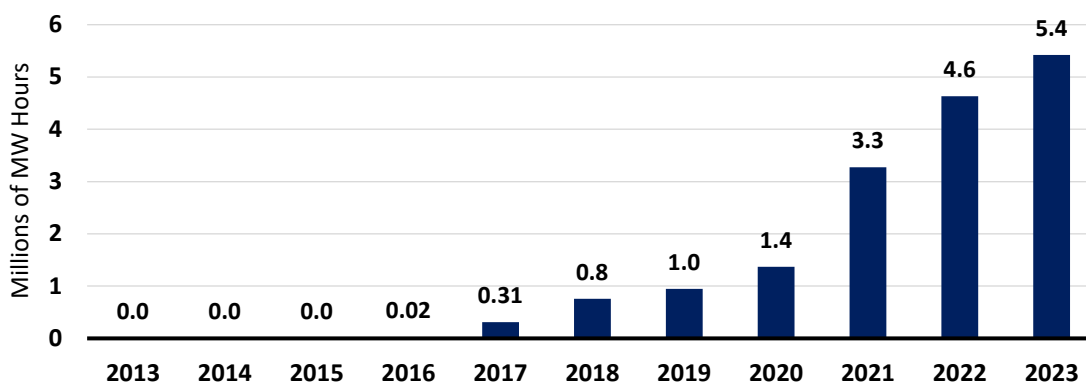


## Virginia Solar Industry Trends

Virginia ranks 9<sup>th</sup> in the nation in terms of proposed solar capacity. With a total of 57 projects in the pipeline totaling a combined 3,101 megawatts of capacity, these proposed projects would add a significant amount of renewable energy to the state's grid.<sup>10</sup> Total investment into the solar industry in Virginia as of the third quarter of 2024 amounts to \$7.2 billion.<sup>11</sup>

Figure 5 depicts the progression of solar energy generation in Virginia from 2013 to 2023 expressed in millions of megawatt-hours. Solar entered the electricity market in Virginia in 2016 with 0.02 million megawatt hours. Generation has continued to grow throughout the period, reaching its peak, so far, in 2023, with solar generation totaling 5.4 million megawatt-hours.

Figure 5: Solar Generation in Virginia (in millions of megawatt-hours) – 2013 to 2023<sup>12</sup>



<sup>9</sup> Data Source: U.S. Energy Information Administration.

<sup>10</sup> Data Source: U.S. Energy Information Administration.

<sup>11</sup> Data Source: Solar Energy Industries Association. Includes residential, community, commercial, and utility solar.

<sup>12</sup> Data Source: U.S. Energy Information Administration.



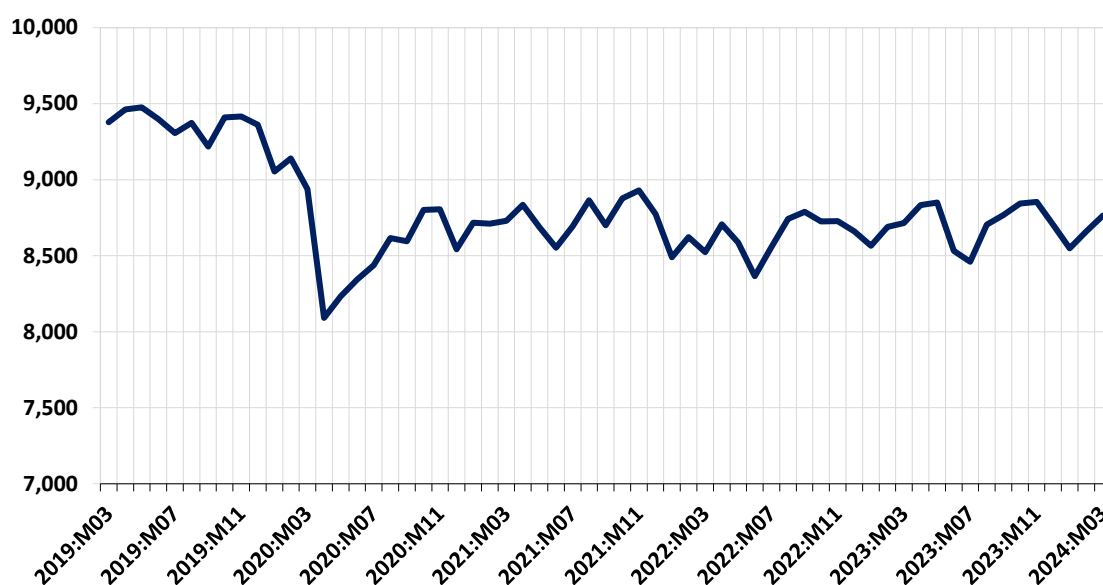
## Local Economic Profile

This section provides context for the economic and fiscal impact assessments to follow by profiling the local economy of Prince Edward County.

### Total Employment

Figure 6 depicts the trend in total employment in Prince Edward County during the five-year period from March 2019 through March 2024. Employment in the county generally decreased with a significant decline in April 2020 in response to a decrease in economic activity associated with the COVID-19 pandemic. Total employment has since rebounded but has not yet recovered to pre-pandemic levels. As of March 2024, total employment in the county stood at 8,763 jobs, which represents an overall decrease in employment of 6.6 percent (or 616 jobs) over the five-year period. To put this number in perspective, over this same period, total statewide employment in Virginia increased by 4.4 percent.<sup>13</sup>

Figure 6: Total Employment in Prince Edward County – March 2019 to March 2024<sup>14</sup>

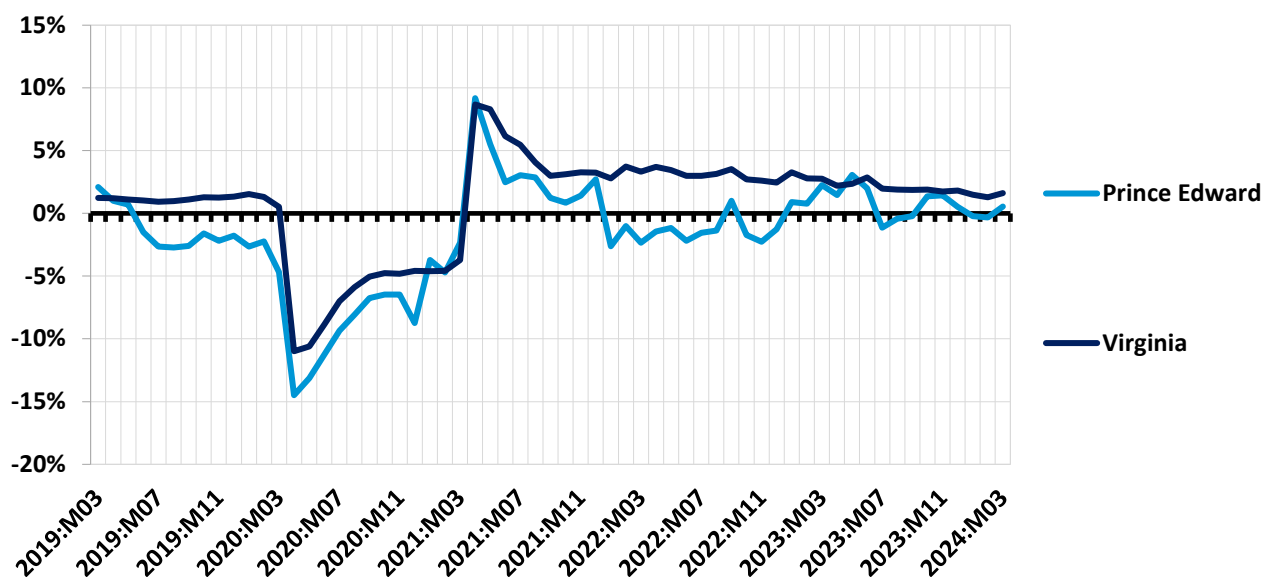


To control for seasonality and provide a point of reference, Figure 7 compares the year-over-year change in total employment in Prince Edward County to that of the state of Virginia over the same five-year period. Any point above the zero line in this graph indicates an increase in employment, while any point below the zero line indicates a decline in employment. As these data show, Prince Edward County tracked below the statewide average for most of the period. As of March 2024, the year-over-year change in total employment in Prince Edward County was 0.5 percent as compared to 1.6 percent statewide in Virginia.

<sup>13</sup> Data Source: U.S. Bureau of Labor Statistics.

<sup>14</sup> Data Source: U.S. Bureau of Labor Statistics.

Figure 7: Year-Over-Year Change in Total Employment – March 2019 to March 2024<sup>15</sup>



## Employment and Wages by Industry Supersector

To provide a better understanding of the underlying factors motivating the total employment trends depicted in Figures 6 and 7, Figures 8 through 10 provide data on private employment and wages in Prince Edward County by industry supersector.<sup>16</sup>

Figure 8 provides an indication of the distribution of private sector employment across industry supersectors in Prince Edward County in 2023. As these data indicate, the county's largest industry sectors that year were Education and Health Services (2,285 jobs), followed by Trade, Transportation and Utilities (1,602 jobs), and Leisure and Hospitality (1,123 jobs).

Figure 9 provides a similar ranking for average private sector weekly wages by industry supersector in Prince Edward County in 2023. As these data show, the highest paying industry sectors that year were Construction (\$1,313 per week), Financial Activities (\$1,108 per week), and Natural Resources and Mining (\$1,043 per week). To provide a point of reference, the average private sector weekly wage across all industry sectors in Prince Edward County that year was \$845 per week.

<sup>15</sup> Data Source: U.S. Bureau of Labor Statistics.

<sup>16</sup> A "supersector" is the highest level of aggregation in the coding system that the Bureau of Labor Statistics uses to classify industries.

Figure 8: Private Employment by Industry Supersector in Prince Edward County – 2023<sup>17</sup>

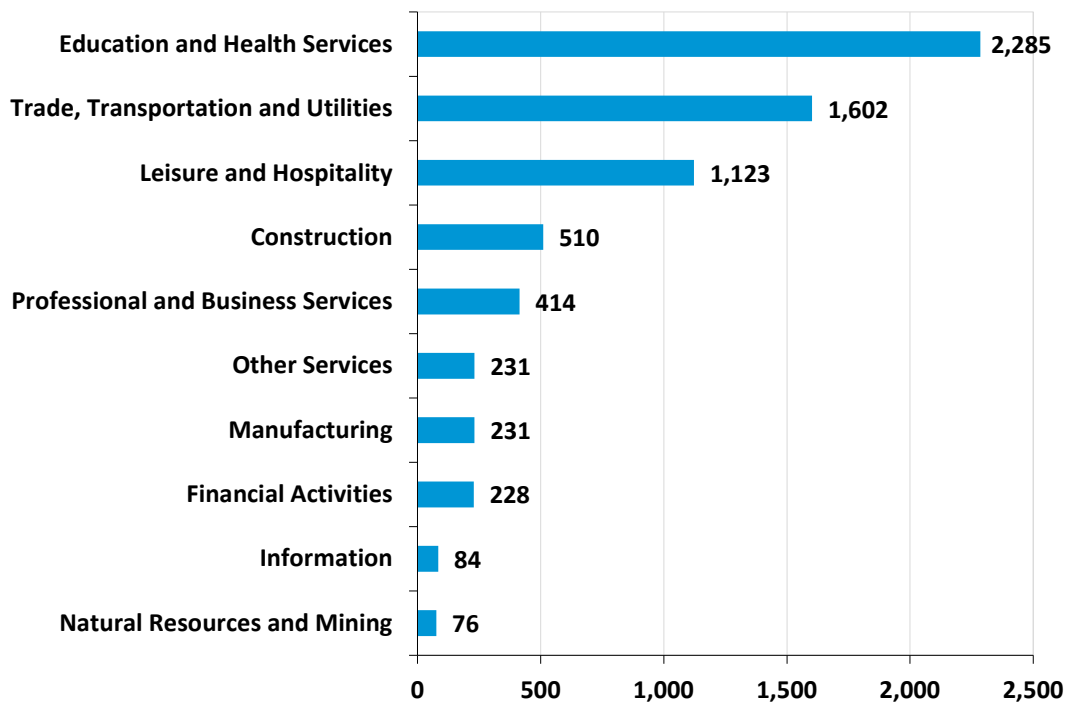
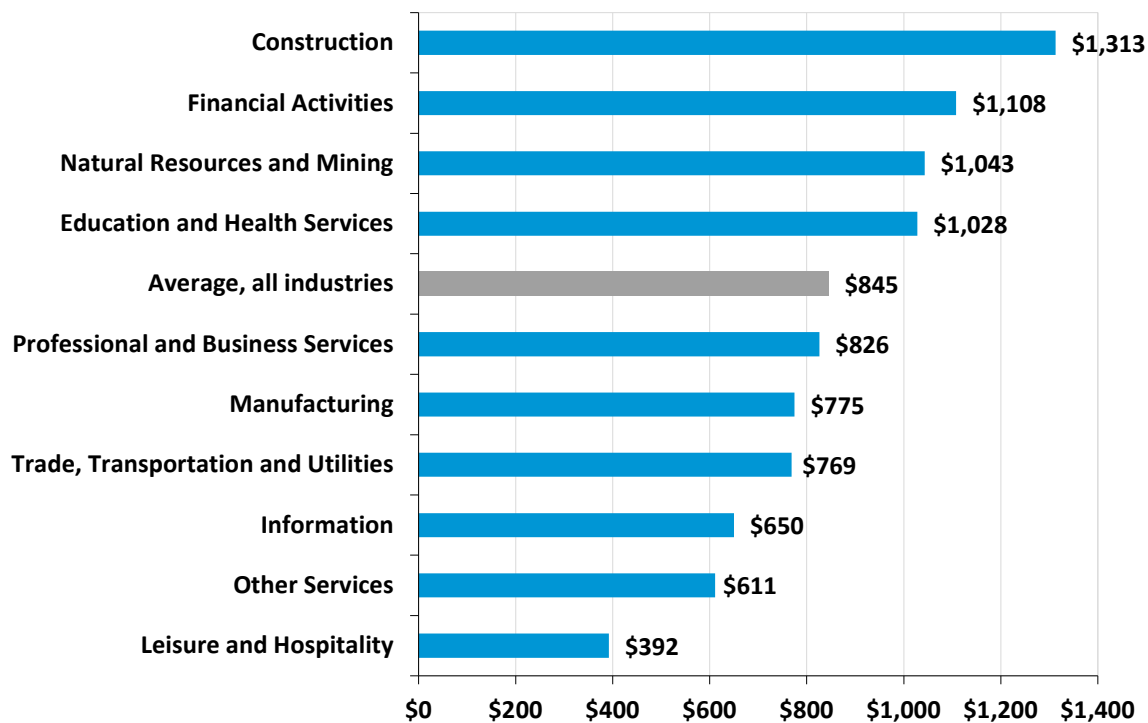


Figure 9: Average Private Weekly Wages by Industry Supersector in Prince Edward County – 2023<sup>18</sup>

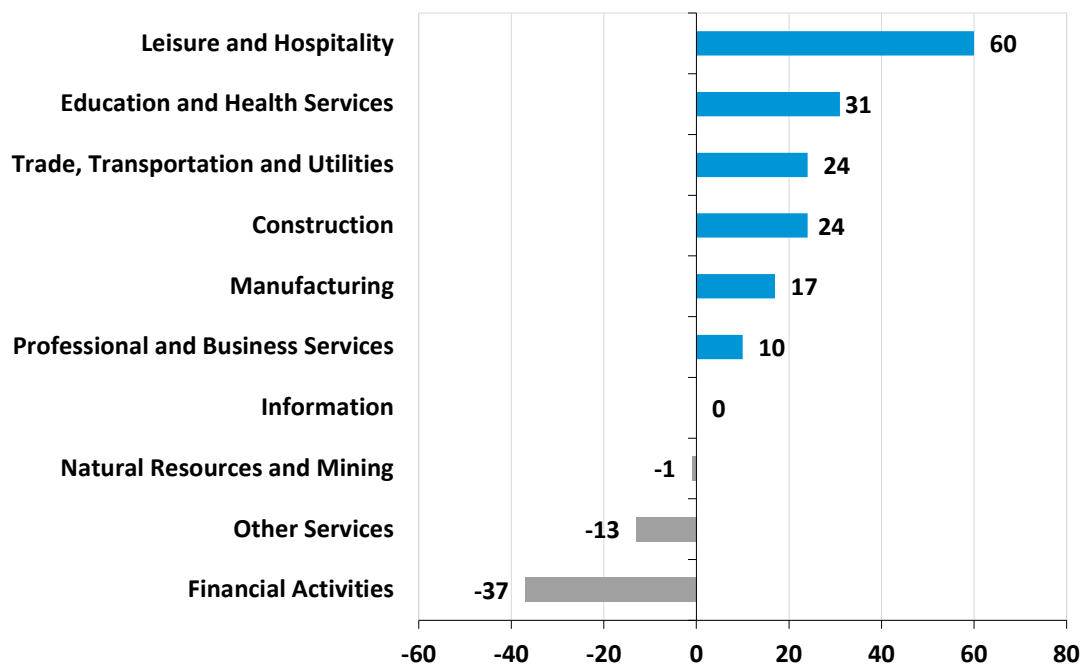


<sup>17</sup> Data Source: U.S. Bureau of Labor Statistics.

<sup>18</sup> Data Source: U.S. Bureau of Labor Statistics.

Figure 10 details the year-over-year change in private sector employment from 2022 to 2023 in Prince Edward County by industry supersector. Over this period, the largest employment gains occurred in the Leisure and Hospitality (up 60 jobs), Education and Health Services (up 31 jobs), and Trade, Transportation and Utilities (up 24 jobs) sectors. The only employment losses occurred in the Financial Activities (down 37 jobs), Other Services (down 13 jobs), and Natural Resources and Mining (down 1 jobs) sectors.

**Figure 10: Change in Private Employment by Industry Supersector in Prince Edward County from 2022 to 2023<sup>19</sup>**

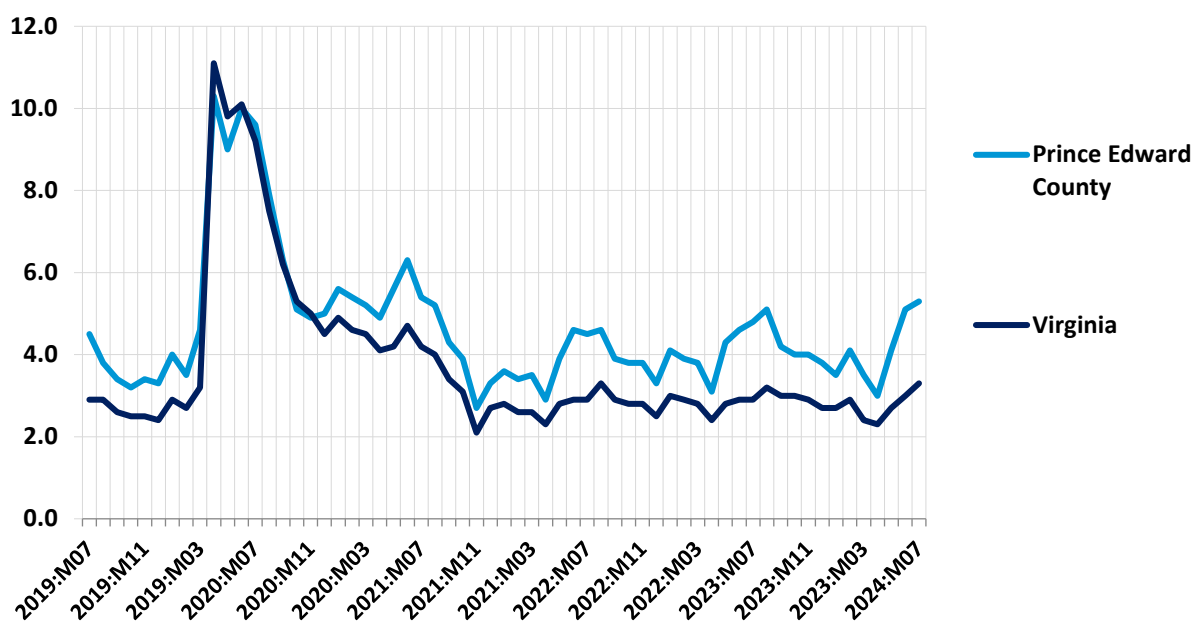


## Unemployment

Figure 11 illustrates the trend in Prince Edward County's unemployment rate over the five-year period from July 2019 through July 2024 and benchmarks those data against the statewide trend for Virginia. As these data show, unemployment rates in Prince Edward County tracked above the statewide trend for most of the period. In April 2020 unemployment in the county and state significantly rose as a result of the labor dislocations caused by the COVID-19 pandemic. As of July 2024, unemployment stood at 5.3 percent in Prince Edward County and at 3.3 percent in Virginia.

<sup>19</sup> Data Source: U.S. Bureau of Labor Statistics.

Figure 11: Unemployment Rate – July 2019 to July 2024<sup>20</sup>



<sup>20</sup> Data Source: U.S. Bureau of Labor Statistics.

## Economic Impact

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The analysis provided in this section quantifies the economic and fiscal contribution that the proposed Tobacco Trail Solar project would make to Prince Edward County. The analysis separately evaluates the one-time pulse of economic activity that would occur during the construction phase of the project, as well as the annual economic activity that the project would generate during its ongoing operations phase.

### Method

To empirically evaluate the likely local economic impact attributable to the proposed Tobacco Trail Solar project, the analysis employs a regional economic impact model called IMPLAN.<sup>21</sup> The IMPLAN model is one of the most commonly used economic impact simulation models in the U.S. and in Virginia is used by UVA's Weldon Cooper Center, the Virginia Department of Planning and Budget, the Virginia Employment Commission, and other state agencies and research institutes. Like all economic impact models, the IMPLAN model uses economic multipliers to quantify economic impact.

Economic multipliers measure the ripple effects that an expenditure generates as it makes its way through the economy. For example, as when the Tobacco Trail Solar project purchases goods and services – or when contractors hired by the facility use their salaries and wages to make household purchases – thereby generating income for someone else, which is in turn spent, thereby becoming income for yet someone else, and so on, and so on. Through this process, one dollar in expenditures generates multiple dollars of income. The mathematical relationship between the initial expenditure and the total income generated is the economic multiplier.

One of the primary advantages of the IMPLAN model is that it uses regional and national production and trade flow data to construct region-specific and industry-specific economic multipliers, which are then further adjusted to reflect anticipated actual spending patterns within the specific geographic study area that is being evaluated. As a result, the economic impact estimates produced by IMPLAN are not generic. They reflect as precisely as possible the economic realities of the specific industry, and the specific study area, being evaluated.

In the analysis that follows, these impact estimates are divided into three categories. First round direct impact measures the direct economic contribution of the entity being evaluated (e.g., own employment, wages paid, goods and services purchased by the Tobacco Trail Solar project). Second round indirect and induced impact measures the economic ripple effects of this direct impact in terms of business to business, and household (employee) to business, transactions. Total impact is simply the sum of the preceding two. These categories of impact are then further defined in terms of employment (the jobs that are created), labor income (the wages and benefits associated with those jobs), and economic output (the total amount of economic activity that is created in the economy).

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<sup>21</sup> IMPLAN is produced by IMPLAN Group, LLC.



## Construction Phase

This portion of the section assesses the economic and fiscal contribution that the one-time pulse of activity associated with construction of the proposed Tobacco Trail Solar project would provide to Prince Edward County.

### *Economic Impact Assumptions*

The analysis is based on the following assumptions:

- Total capitalized investment associated with the Tobacco Trail Solar project is estimated to be approximately \$317.0 million.<sup>22</sup>
- Of that total:
  - Architecture, engineering, site preparation, and other construction and development costs are estimated to be approximately \$187.1 million.<sup>23</sup>
  - Capital equipment costs are estimated to be approximately \$129.9 million.
- For ease of explanation, all construction expenditures are assumed to take place during a representative 12-month period.

### *Economic Impact*

Applying these assumptions in the IMPLAN model results in the following estimates of one-time economic and fiscal impact on Prince Edward County. As shown in Table 1, construction of the proposed Tobacco Trail Solar project would directly provide a one-time pulse supporting approximately: 1) 52 job years, 2) \$3.7 million in wages and benefits, and 3) \$28.9 million in economic output to Prince Edward County.

Taking into account the economic ripple effects that direct investment would generate, the total estimated one-time impact on Prince Edward County would support approximately: 1) 88 job years, 2) \$5.4 million in wages and benefits, and 3) \$35.7 million in economic output, and 4) \$1.2 million in state and local tax revenue.

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<sup>22</sup> Data Source: Tobacco Trail Solar, LLC. Investment estimate is subject to change based on final design and vendor contracts.

<sup>23</sup> Data Source: Tobacco Trail Solar, LLC. Subject to change based on final design and vendor contracts.

Table 1: Estimated One-Time Economic and Fiscal Impact on Prince Edward County from Construction of the Tobacco Trail Solar Project<sup>24,25</sup>

Economic Impact	Employment – Job Years	Wages and Benefits	Output
<b>1<sup>st</sup> Round Direct Economic Activity</b>	52	\$3,713,900	\$28,945,400
<b>2<sup>nd</sup> Round Indirect and Induced Economic Activity</b>	36	\$1,732,400	\$6,730,500
<b>Total Economic Activity</b>	<b>88</b>	<b>\$5,446,300</b>	<b>\$35,675,900</b>
<b>Fiscal Impact</b>			
<b>State and Local Tax Revenue</b>			<b>\$1,224,300</b>

*\*Totals may not sum due to rounding.*

## Ongoing Operations Phase

This portion of the section assesses the annual economic impact that the proposed Tobacco Trail Solar project would have on Prince Edward County during its anticipated 35-year operational phase.

### Economic Impact Assumptions

The analysis is based on the following assumptions:

- Tobacco Trail Solar would employ approximately four full-time equivalent on-site employees and would source locally available services and materials for maintenance of the facility.<sup>26</sup>
- Tobacco Trail Solar would enter into a sheep grazing agreement for a portion of the solar site.<sup>27</sup>
- Tobacco Trail Solar would make confidential lease payments to local landowners.<sup>28</sup>

### Economic Impact

Applying these assumptions in the IMPLAN model results in the following estimates of annual economic impact. As shown in Table 2, annual operation of the proposed Tobacco Trail Solar project would on average directly support approximately: 1) 4 jobs, 2) \$0.3 million in wages and benefits, and 3) \$0.9 million in economic output to Prince Edward County.

<sup>24</sup> It is important to note that construction sector jobs are not necessarily new jobs, but the investments made can also support a job during the construction of the project.

<sup>25</sup> A job year is equal to one job over one year. It is used to denote employment on construction projects where the construction schedule extends beyond one year and to account for the fact that actual on-site employment may vary over the period.

<sup>26</sup> Data Source: Tobacco Trail Solar, LLC. A full-time equivalent employee may consist of multiple individuals spending a portion of their time on site.

<sup>27</sup> Data Source: Tobacco Trail Solar, LLC. Expenditure estimate is subject to change based on final design and vendor contracts.

<sup>28</sup> Data Source: Tobacco Trail Solar, LLC.

Taking into account the economic ripple effects that direct impact would generate, the total estimated annually supported impact on Prince Edward County would be approximately: 1) 9 jobs, 2) \$0.4 million in wages and benefits, and 3) \$1.4 million in economic output.

**Table 2: Estimated Annual Economic Impact on Prince Edward County from the Ongoing Operation of the Tobacco Trail Solar**

Economic Impact	Employment	Wages and Benefits	Output
<b>1<sup>st</sup> Round Direct Economic Activity</b>	4	\$274,200	\$920,000
<b>2<sup>nd</sup> Round Indirect and Induced Economic Activity</b>	5	\$131,700	\$488,500
<b>Total Economic Activity</b>	<b>9</b>	<b>\$405,900</b>	<b>\$1,408,500</b>

*\*Totals may not sum due to rounding.*

## Fiscal Impact

This section quantifies the direct fiscal contribution that the proposed Tobacco Trail Solar project would make to Prince Edward County. The analysis considers two sources of revenue. The first source is the additional revenue that the Tobacco Trail Solar project would generate for Prince Edward County over a 35-year period from the increased property assessments associated with reassessing the site as solar use property. The second source is the additional revenue to Prince Edward County associated with the locally adopted revenue share ordinance, which is based on the project's total generation capacity.

### Fiscal Impact Assumptions

The analysis is based on the following assumptions:

- Tobacco Trail Solar would be situated on approximately 610 actively used, fenced-in acres, while the total limits of disturbance would span approximately 1,125 acres, all located in Prince Edward County.<sup>29</sup>
- The total limits of disturbance acreage would be reassessed at a solar use assessment value of \$10,000 per acre.<sup>30</sup>
- Tax rates are assumed to remain constant throughout the analysis.
- Tobacco Trail Solar's total generation capacity would be 150 MW AC.<sup>31</sup>
- Tobacco Trail Solar would become operational in 2029.<sup>32</sup>

<sup>29</sup> Data Source: Tobacco Trail Solar, LLC.

<sup>30</sup> Data Source: Tobacco Trail Solar, LLC. Includes the disturbed acreage outside the actively, fenced-in portion of the solar site. Estimated potential future assessment value based on informal discussion with the Prince Edward County Commissioner of Revenue's Office. Actual future assessment value and acreage reassessed at solar use value may vary.

<sup>31</sup> Data Source: Tobacco Trail Solar, LLC.

<sup>32</sup> Data Source: Tobacco Trail Solar, LLC.

- Tobacco Trail Solar would have an operational life of 35 years.<sup>33</sup>

## Reassessment of Property

Table 3 details the increased tax revenue associated with reassessing the 1,125-acre fenced-in site as solar use property. The county real estate tax revenue from the project after reassessment is estimated to be approximately \$43,900 per year, for a cumulative total of approximately \$1.5 million over the project's anticipated 35-year operational life. In contrast, the proposed site currently generates approximately \$5,800 per year in real estate tax revenue for the county, for a cumulative total of approximately \$0.2 million over 35 years.<sup>34</sup>

**Table 3: Estimated County Revenue Generated by the Proposed Tobacco Trail Solar Project over 35 Years from Real Estate Taxes**

Estimated Increased Appraised Value of Property under Solar Use	\$11,250,000
Prince Edward County Real Estate Tax Rate (per \$100) <sup>35</sup>	\$0.39
Annual County Real Estate Tax – Solar Use	\$43,900
<b>Cumulative Revenue over 35 Years</b>	<b>\$1,535,600</b>

*\*Totals may not sum due to rounding.*

## Revenue Share Ordinance

The following section describes the additional annual revenue that the proposed Tobacco Trail Solar project would generate for Prince Edward County under the locally adopted energy revenue share ordinance. The Virginia Code §58.1-2636 currently stipulates that a locality may assess an annual revenue share of up to \$1,400 per megawatt (MW) alternating current (AC) generation capacity of a solar facility. However, legislation that was passed in the 2021 General Assembly (SB 1201/HB 2006) and went into effect July 1, 2021, allows a 10 percent escalator to be applied to the \$1,400 per MW revenue share every five years, beginning in July 2026. The code further stipulates that capital investment associated with the solar project will be exempt from taxation once a revenue share ordinance is adopted.

Table 4 details the revenue generated from a revenue share ordinance between Tobacco Trail Solar and Prince Edward County including the 10 percent escalator. Based on a total generation capacity of 150 MW AC and an assumed commissioning date in 2029, a revenue share ordinance would generate approximately \$11.6 million over the anticipated 35-year operational life of the project.

<sup>33</sup> Data Source: Tobacco Trail Solar, LLC.

<sup>34</sup> Derived from Prince Edward County's property card database.

<sup>35</sup> Data Source: Prince Edward County's Board of Supervisors Meeting Minutes. Tax Levies for Calendar Year 2025.

Table 4: Estimated County Revenue Generated from a Revenue Share Ordinance over 35 Years

Year	MW	Revenue Share per MW with Escalator	Annual County Revenue
1	150	\$1,540	\$231,000
2	150	\$1,540	\$231,000
3	150	\$1,694	\$254,100
4	150	\$1,694	\$254,100
5	150	\$1,694	\$254,100
6	150	\$1,694	\$254,100
7	150	\$1,694	\$254,100
8	150	\$1,863	\$279,500
9	150	\$1,863	\$279,500
10	150	\$1,863	\$279,500
11	150	\$1,863	\$279,500
12	150	\$1,863	\$279,500
13	150	\$2,050	\$307,500
14	150	\$2,050	\$307,500
15	150	\$2,050	\$307,500
16	150	\$2,050	\$307,500
17	150	\$2,050	\$307,500
18	150	\$2,255	\$338,200
19	150	\$2,255	\$338,200
20	150	\$2,255	\$338,200
21	150	\$2,255	\$338,200
22	150	\$2,255	\$338,200
23	150	\$2,480	\$372,000
24	150	\$2,480	\$372,000
25	150	\$2,480	\$372,000
26	150	\$2,480	\$372,000
27	150	\$2,480	\$372,000
28	150	\$2,728	\$409,200
29	150	\$2,728	\$409,200
30	150	\$2,728	\$409,200
31	150	\$2,728	\$409,200
32	150	\$2,728	\$409,200
33	150	\$3,001	\$450,200
34	150	\$3,001	\$450,200
35	150	\$3,001	\$450,200
<b>Cumulative Total</b>			<b>\$11,615,100</b>

\*Totals may not sum due to rounding.

## Total Fiscal Impact

Table 5 combines the results from the calculations depicted in Tables 3 and 4 to provide an estimate of the cumulative fiscal contribution that the proposed Tobacco Trail Solar project would make to Prince Edward County over its 35-year anticipated operational life. As these data indicate that cumulative total is approximately \$13.2 million.

**Table 5: Estimated Cumulative County Revenue from the Proposed Tobacco Trail Solar Project over 35 Years**

County Real Estate Tax	\$1,535,600
County Revenue from Revenue Share Ordinance	\$11,615,100
<b>Total Cumulative Revenue over 35 Years</b>	<b><u>\$13,150,800</u></b>

*\*Totals may not sum due to rounding.*

## Siting Agreement

Siting agreements add significant value to the overall fiscal impact of solar projects to their host localities. The Code of Virginia §15.2-2316.7 stipulates that a solar project is required to request a meeting with its potential host locality to discuss a voluntary siting agreement. The terms and conditions of a siting agreement vary by locality and project and can include the mitigation of any impact of the solar facility, payments for capital improvements, payments to address fiscal needs, and assistance with the local deployment of broadband.

Since a siting agreement has not yet been negotiated at the time of this report, it does not include potential values for the siting agreement for Tobacco Trail Solar.



## Current Use

This section provides a benchmark for the previous estimates of the economic and fiscal contribution that the proposed Tobacco Trail Solar project would make to Prince Edward County by estimating the economic and fiscal contribution that the site makes to the county in its current use.

### Economic Impact

The proposed Tobacco Trail Solar project would be situated on approximately 1,125 acres of woodland.<sup>36</sup> Therefore the site does not currently provide an economic benefit to Prince Edward County.

### Fiscal Impact Assumptions

The analysis is based on the following assumptions:

- The current use assessment value of the affected acreage is approximately \$1.5 million.<sup>37</sup>

### Fiscal Impact

Table 6 details the estimated tax revenue that the proposed Tobacco Trail Solar site generates for Prince Edward County in its current use. As the data in Table 6 indicate, the current county real estate tax revenue from the project site is estimated to be approximately \$5,800 per year, for a cumulative total of approximately \$0.2 million over 35 years.

**Table 6: Estimated County Revenue Generated by the Proposed Tobacco Trail Solar Project Site over 35 Years from Real Estate Taxes – Current Use**

Estimated Assessed Value of Property – Current Use	\$1,486,200
Prince Edward County Current Real Estate Tax Rate (per \$100)	\$0.39
Estimated Annual County Real Estate Tax – Current Use	\$5,800
<b>Total Cumulative Revenue over 35 Years</b>	<b><u>\$202,900</u></b>

*\*Totals may not sum due to rounding.*

*The estimates provided in this report are based on the best information available and all reasonable care has been taken in assessing the quality of that information. However, because these estimates attempt to foresee the consequences of circumstances that have not yet occurred, it is not possible to be certain that they will be representative of actual events. These estimates are intended to provide a good indication of likely future outcomes and should not be construed to represent a precise measure of those outcomes.*

<sup>36</sup> Data Source: Tobacco Trail Solar, LLC.

<sup>37</sup> Data Source: Derived from Prince Edward County's property card database.

# **Attachment I**

## **Cultural Resource Desk Top Memo**



**Dutton + Associates**  
CULTURAL RESOURCE SURVEY, PLANNING, AND MANAGEMENT  
*a Timmons Group company*

1115 Crowder Dr  
Midlothian, VA 23113

[www.dutton-associates.com](http://www.dutton-associates.com)  
Phone: 804.897.1960

January 17, 2025

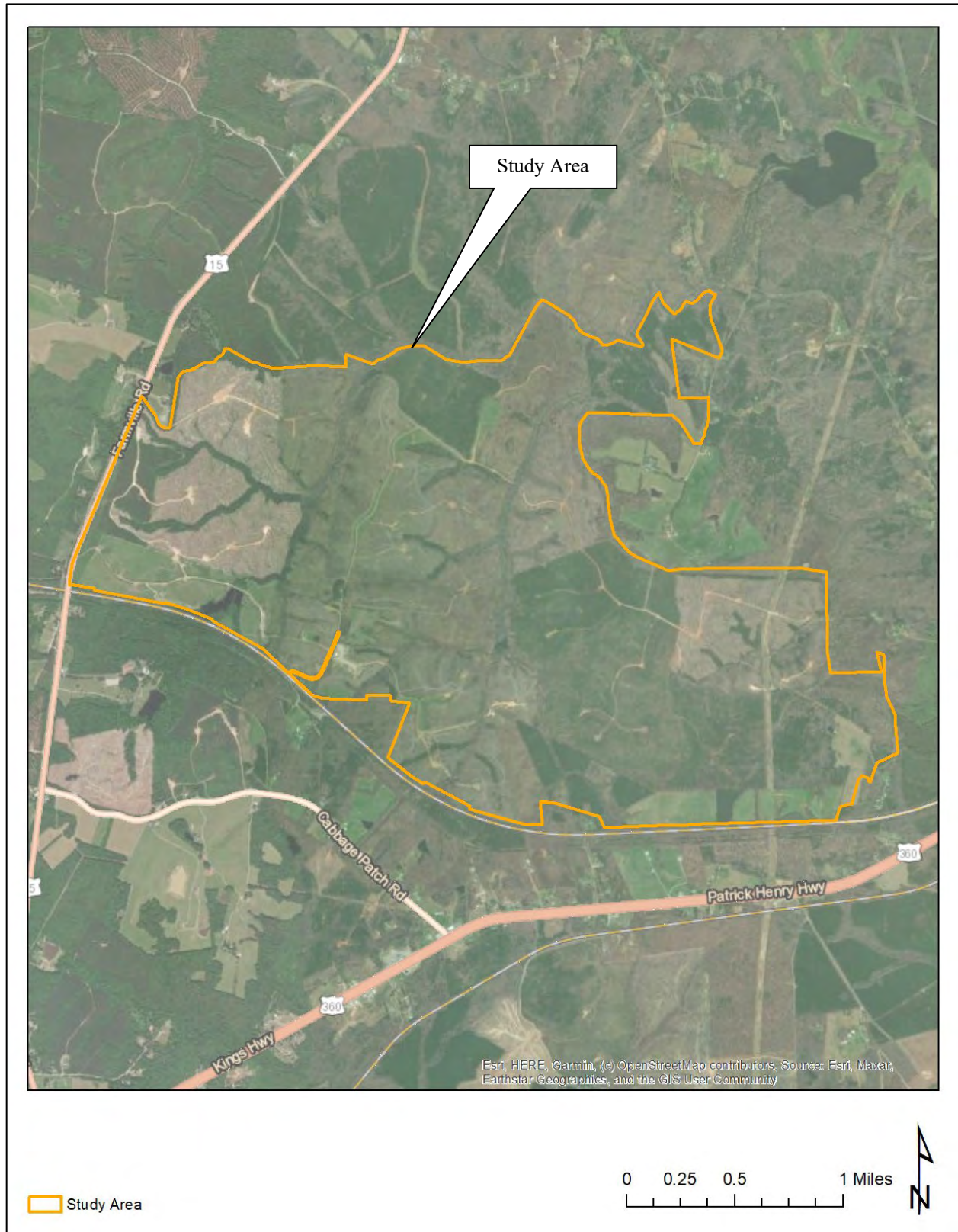
Kevin Seaford  
Permitting Manager  
Strata Clean Energy

RE: Tobacco Trail Solar Project - Desktop Review of Cultural Resources

Dear Mr. Seaford:

Dutton + Associates, a Timmons Group Company (D+A) is pleased to provide Tobacco Trail Solar, LLC with the following desktop review for the Tobacco Trail Solar Project located in Prince Edward County, Virginia ("the study area"). The project involves the development of a solar energy production site in the Briery vicinity of Prince Edward County, on the north side of Patrick Henry (US 360) east of Farmville Road (US-15) (Figure 1).

This desktop review is intended to be used as planning tool and provides a summary of known cultural resources within the vicinity. For the purposes of this assessment, cultural resources include the following: buildings, structures, sites, historic districts, landscapes, battlefield, and cemeteries, which may be considered potentially eligible for listing in the National Register of Historic Places (NRHP). All data assembled for this desktop review is derived from the Virginia Department of Historic Resources (VDHR) Virginia Cultural Resource Information System (VCRIS), and no fieldwork or site visits were conducted. All investigators meet the Secretary of the Interior's Professional Qualification Standards (48 FR 44716) for archaeology, history, architecture, architectural history, or historic architecture.



**Figure 1: Aerial view of the study area. Source: Google Earth**



## ARCHIVES SEARCH

A review of the Virginia Department of Historic Resources (VDHR) Virginia Cultural Resource Information System (V-CRIS) revealed that only a small portion of the project area has been subject to prior Phase I cultural resource survey. This survey (PE-007), was conducted in 1976 related to a proposed SCS impoundment (Table 1). As a result of the lack of survey within the study area, there are no (0) previously recorded architectural resources or archaeological sites located within the limits of the study area. There are, however, four (4) previously recorded architectural resources located within one-half mile of the study area limits. These include a mid- eighteenth-century home and church, early-twentieth century school, and mid-twentieth century drive-in movie theater. Of these, the Briery Church (VDHR# 073-0038) has been listed in the NRHP, the Old Virso School (VDHR# 073-5063) has been determined not eligible for listing, and the other two properties have not been formally evaluated by the VDHR (Table 2).

A map of the previously conducted surveys and recorded resources in relation to the study area and half-mile buffer is depicted in Figure 2.

**Table 1: Previously conducted cultural resource surveys that include portions of the study area. Source: VDHR.**

VDHR Survey #	Title	Author	Date
PE-007	An Initial Archaeological Assessment of the Bush River Watershed Plan, Prince Edward County, Virginia	Virginia State Library	1976

**Table 2: Previously recorded architectural resources within 0.5 mile of the study area. Bold font denotes resource is listed in or considered eligible for listing in the NRHP. Source: VCRIS**

VDHR #	Name/ Address	Year Built	Resource Type	NRHP Status
055-5058	Simplicity Drive-In Theater (Historic), Route 360	c.1945	Theater	Not Evaluated
073-0027	Mount Vernon (Historic), Route 15 And Route 634, 2.8 Mi. South Of	c.1740	Single Dwelling	Not Evaluated
<b>073-0038</b>	<b>Briery Church (Historic), Route 747</b>	<b>c.1760</b>	<b>Church/ Chapel</b>	<b>NRHP Listing, VLR Listing (1969)</b>
073-5063	Old Virso School (Historic), School, Virso Road (Function/Location), Intersection of Routes 633 and 634, Virso Road	c.1930	School	DHR Staff: Not Eligible (2007)



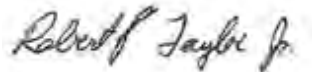


**Figure 2: Previously recorded cultural resource inventory data. Source: VDHR VCRIS 2025**

If you have any questions or wish to discuss the results of this desktop review, do not hesitate to contact me at [rtaylor@dutton-associates.com](mailto:rtaylor@dutton-associates.com) or at 804-897-1960.

Sincerely,

DUTTON + ASSOCIATES, LLC



Robert J. Taylor, Jr., M.A.  
Principal Investigator



# **Attachment J**

## **VAFWIS, DCR-NDHE, and Species List**



## United States Department of the Interior

### FISH AND WILDLIFE SERVICE

Virginia Ecological Services Field Office

6669 Short Lane

Gloucester, VA 23061-4410

Phone: (804) 693-6694



In Reply Refer To:

12/13/2024 19:05:03 UTC

Project Code: 2025-0031838

Project Name: Tobacco Trail Solar, LLC

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*). Any activity proposed on National Wildlife Refuge lands must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

<https://www.fws.gov/sites/default/files/documents/endangered-species-consultation-handbook.pdf>

**Migratory Birds:** In addition to responsibilities to protect threatened and endangered species under the Endangered Species Act (ESA), there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) to protect native birds from project-related impacts. Any activity, intentional or unintentional, resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). For more information regarding these Acts, see <https://www.fws.gov/program/migratory-bird-permit/what-we-do>.

The MBTA has no provision for allowing take of migratory birds that may be unintentionally killed or injured by otherwise lawful activities. It is the responsibility of the project proponent to comply with these Acts by identifying potential impacts to migratory birds and eagles within applicable NEPA documents (when there is a federal nexus) or a Bird/Eagle Conservation Plan (when there is no federal nexus). Proponents should implement conservation measures to avoid or minimize the production of project-related stressors or minimize the exposure of birds and their resources to the project-related stressors. For more information on avian stressors and recommended conservation measures, see <https://www.fws.gov/library/collections/threats-birds>.

In addition to MBTA and BGEPA, Executive Order 13186: *Responsibilities of Federal Agencies to Protect Migratory Birds*, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 provides for the protection of both migratory birds and migratory bird habitat. For information regarding the implementation of Executive Order 13186, please visit <https://www.fws.gov/partner/council-conservation-migratory-birds>.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Project Code in the header of this

letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List
- USFWS National Wildlife Refuges and Fish Hatcheries
- Bald & Golden Eagles
- Migratory Birds

## OFFICIAL SPECIES LIST

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

**Virginia Ecological Services Field Office**

6669 Short Lane

Gloucester, VA 23061-4410

(804) 693-6694

## PROJECT SUMMARY

Project Code: 2025-0031838

Project Name: Tobacco Trail Solar, LLC

Project Type: Power Gen - Solar

Project Description: Utility-scale solar energy facility (150 MW)

Project Location:

The approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/@37.098320900000004,-78.45404454662336,14z>



Counties: Prince Edward County, Virginia

## ENDANGERED SPECIES ACT SPECIES

There is a total of 2 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries<sup>1</sup>, as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

- 
1. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.



## MAMMALS

NAME	STATUS
Northern Long-eared Bat <i>Myotis septentrionalis</i> No critical habitat has been designated for this species. Species profile: <a href="https://ecos.fws.gov/ecp/species/9045">https://ecos.fws.gov/ecp/species/9045</a>	Endangered

## INSECTS

NAME	STATUS
Monarch Butterfly <i>Danaus plexippus</i> There is <b>proposed</b> critical habitat for this species. Species profile: <a href="https://ecos.fws.gov/ecp/species/9743">https://ecos.fws.gov/ecp/species/9743</a>	Proposed Threatened

## CRITICAL HABITATS

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

YOU ARE STILL REQUIRED TO DETERMINE IF YOUR PROJECT(S) MAY HAVE EFFECTS ON ALL ABOVE LISTED SPECIES.

## USFWS NATIONAL WILDLIFE REFUGE LANDS AND FISH HATCHERIES

Any activity proposed on lands managed by the [National Wildlife Refuge](#) system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS OR FISH HATCHERIES WITHIN YOUR PROJECT AREA.

## BALD & GOLDEN EAGLES

Bald and golden eagles are protected under the Bald and Golden Eagle Protection Act<sup>1</sup> and the Migratory Bird Treaty Act<sup>2</sup>.

Any person or organization who plans or conducts activities that may result in impacts to bald or golden eagles, or their habitats<sup>3</sup>, should follow appropriate regulations and consider implementing appropriate conservation measures, as described in the links below. Specifically, please review the ["Supplemental Information on Migratory Birds and Eagles"](#).

- 
1. The [Bald and Golden Eagle Protection Act](#) of 1940.
  2. The [Migratory Birds Treaty Act](#) of 1918.
  3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

There are likely bald eagles present in your project area. For additional information on bald eagles, refer to [Bald Eagle Nesting and Sensitivity to Human Activity](#)

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, see the PROBABILITY OF PRESENCE SUMMARY below to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
<b>Bald Eagle</b> <i>Haliaeetus leucocephalus</i> This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. <a href="https://ecos.fws.gov/ecp/species/1626">https://ecos.fws.gov/ecp/species/1626</a>	Breeds Sep 1 to Jul 31

## PROBABILITY OF PRESENCE SUMMARY

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read "[Supplemental Information on Migratory Birds and Eagles](#)", specifically the FAQ section titled "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

### Probability of Presence (■)

Green bars; the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during that week of the year.

### Breeding Season (■)

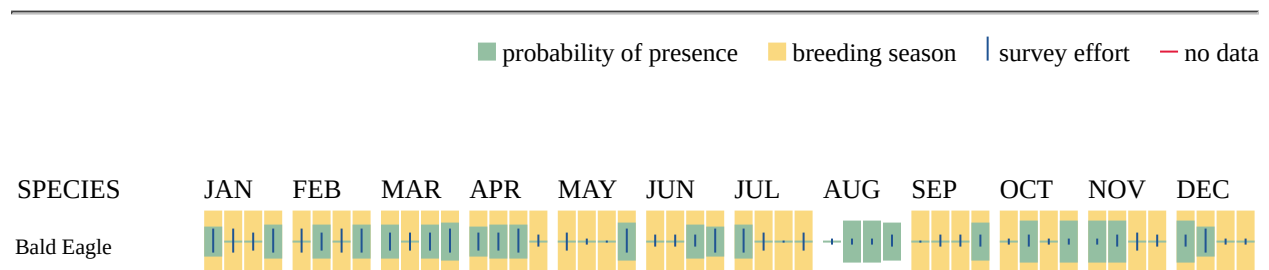
Yellow bars; liberal estimate of the timeframe inside which the bird breeds across its entire range.

**Survey Effort (|)**

Vertical black lines; the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps.

**No Data (—)**

A week is marked as having no data if there were no survey events for that week.



Non-BCC  
Vulnerable

Additional information can be found using the following links:

- Eagle Management <https://www.fws.gov/program/eagle-management>
- Measures for avoiding and minimizing impacts to birds <https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds>
- Nationwide conservation measures for birds <https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf>
- Supplemental Information for Migratory Birds and Eagles in IPaC <https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action>

## MIGRATORY BIRDS

Certain birds are protected under the Migratory Bird Treaty Act<sup>1</sup> and the Bald and Golden Eagle Protection Act<sup>2</sup>.

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats<sup>3</sup> should follow appropriate regulations and consider implementing appropriate conservation measures, as described in the links below. Specifically, please review the "[Supplemental Information on Migratory Birds and Eagles](#)".

- 
1. The [Migratory Birds Treaty Act](#) of 1918.
  2. The [Bald and Golden Eagle Protection Act](#) of 1940.
  3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, see the PROBABILITY OF PRESENCE SUMMARY below to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
Bald Eagle <i>Haliaeetus leucocephalus</i> This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. <a href="https://ecos.fws.gov/ecp/species/1626">https://ecos.fws.gov/ecp/species/1626</a>	Breeds Sep 1 to Jul 31

NAME	BREEDING SEASON
<b>Chimney Swift <i>Chaetura pelagica</i></b> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. <a href="https://ecos.fws.gov/ecp/species/9406">https://ecos.fws.gov/ecp/species/9406</a>	Breeds Mar 15 to Aug 25
<b>Chuck-will's-widow <i>Antrostomus carolinensis</i></b> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA <a href="https://ecos.fws.gov/ecp/species/9604">https://ecos.fws.gov/ecp/species/9604</a>	Breeds May 10 to Jul 10
<b>Eastern Whip-poor-will <i>Antrostomus vociferus</i></b> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. <a href="https://ecos.fws.gov/ecp/species/10678">https://ecos.fws.gov/ecp/species/10678</a>	Breeds May 1 to Aug 20
<b>Grasshopper Sparrow <i>Ammodramus savannarum perpallidus</i></b> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA <a href="https://ecos.fws.gov/ecp/species/8329">https://ecos.fws.gov/ecp/species/8329</a>	Breeds Jun 1 to Aug 20
<b>Prairie Warbler <i>Setophaga discolor</i></b> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. <a href="https://ecos.fws.gov/ecp/species/9513">https://ecos.fws.gov/ecp/species/9513</a>	Breeds May 1 to Jul 31
<b>Prothonotary Warbler <i>Protonotaria citrea</i></b> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. <a href="https://ecos.fws.gov/ecp/species/9439">https://ecos.fws.gov/ecp/species/9439</a>	Breeds Apr 1 to Jul 31
<b>Red-headed Woodpecker <i>Melanerpes erythrocephalus</i></b> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. <a href="https://ecos.fws.gov/ecp/species/9398">https://ecos.fws.gov/ecp/species/9398</a>	Breeds May 10 to Sep 10
<b>Rusty Blackbird <i>Euphagus carolinus</i></b> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA <a href="https://ecos.fws.gov/ecp/species/9478">https://ecos.fws.gov/ecp/species/9478</a>	Breeds elsewhere
<b>Wood Thrush <i>Hylocichla mustelina</i></b> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. <a href="https://ecos.fws.gov/ecp/species/9431">https://ecos.fws.gov/ecp/species/9431</a>	Breeds May 10 to Aug 31

## PROBABILITY OF PRESENCE SUMMARY

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read ["Supplemental](#)

[Information on Migratory Birds and Eagles](#)", specifically the FAQ section titled "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

### Probability of Presence (■)

Green bars; the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during that week of the year.

### Breeding Season (■)

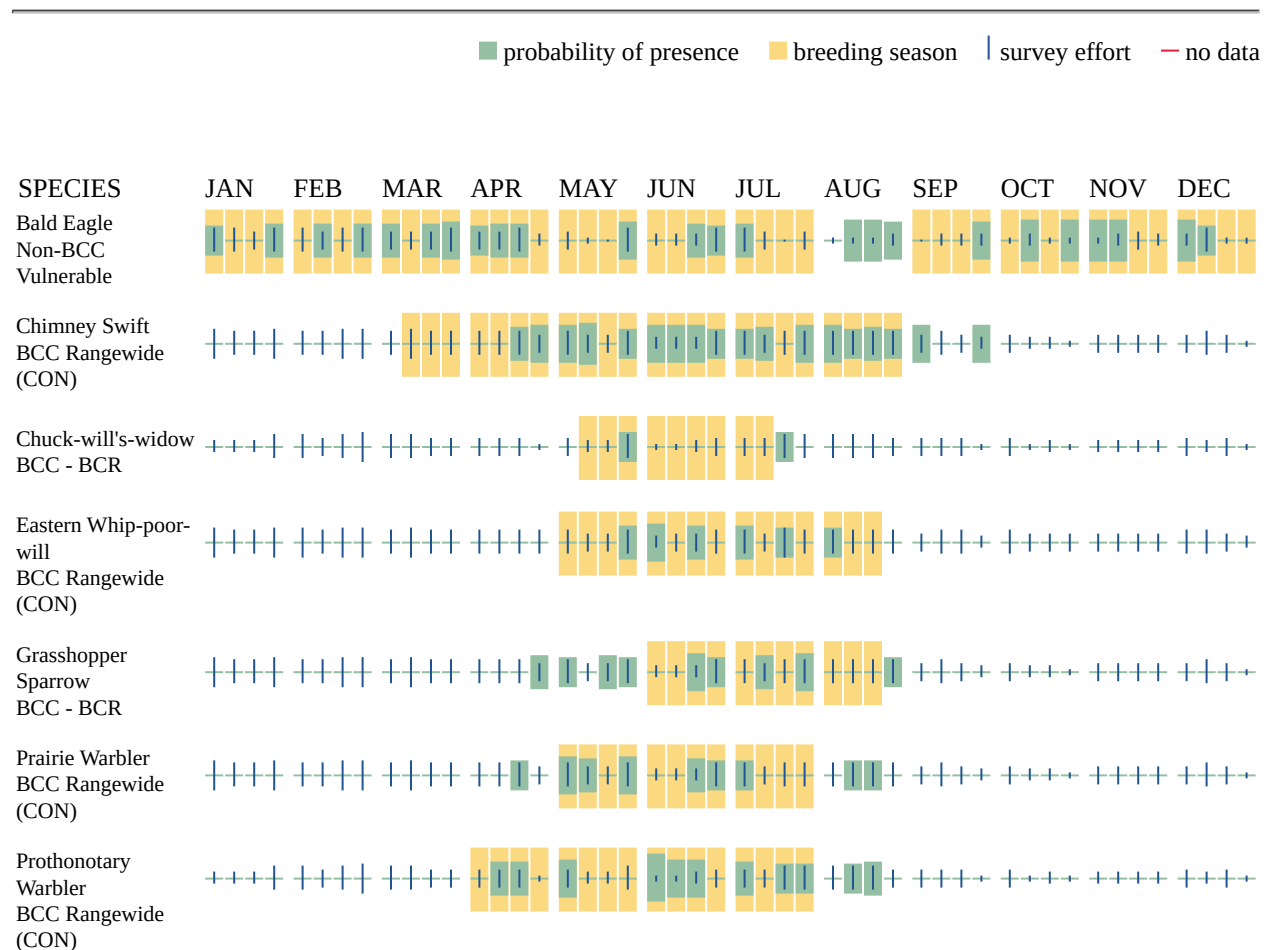
Yellow bars; liberal estimate of the timeframe inside which the bird breeds across its entire range.

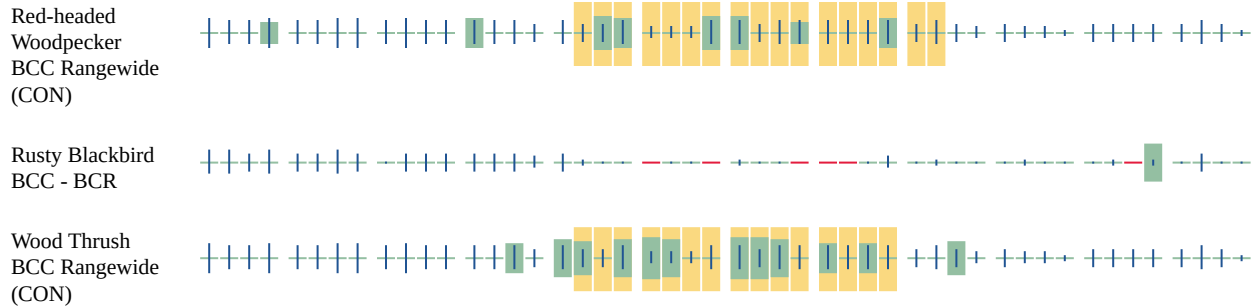
### Survey Effort (|)

Vertical black lines; the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps.

**No Data (—)**

A week is marked as having no data if there were no survey events for that week.





Additional information can be found using the following links:

- Eagle Management <https://www.fws.gov/program/eagle-management>
- Measures for avoiding and minimizing impacts to birds <https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds>
- Nationwide conservation measures for birds <https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf>
- Supplemental Information for Migratory Birds and Eagles in IPaC <https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action>



## **IPAC USER CONTACT INFORMATION**

Agency: Private Entity  
Name: Kevin Seaford  
Address: 800 Taylor St, Suite 200  
City: Durham  
State: NC  
Zip: 27701  
Email: kseaford@hotmail.com  
Phone: 8043870869

## **LEAD AGENCY CONTACT INFORMATION**

Lead Agency: Army Corps of Engineers



Department of Conservation & Recreation

CONSERVING VIRGINIA'S NATURAL & RECREATIONAL RESOURCES

***PROJECT INFORMATION***

---

**TITLE:** Tobacco Trail Solar

**DESCRIPTION:** Utility-scale solar energy facility

**EXISTING SITE CONDITIONS:** Managed timber (pine), mostly clearcut.

**QUADRANGLES:** Keysville

**COUNTIES:** Prince Edward

**Latitude/Longitude (DMS):** 37° 5' 48.6165" N / 78° 26' 38.4606" W

**Acreage:** 2,305 acres

**Comments:** The parcels were joined/connected in GIS in order to create a single polygon for the NHDE map website.

***REQUESTOR INFORMATION***

---

**Priority:** N

**Tier Level:** Tier I

**Tax ID:**

**Contact Name:** Kevin Seaford

**Company Name:** Strata Clean Energy

**Address:** 800 Taylor St, Suite 200

**City:** Durham

**State:** NC

**Zip:** 27701

**Phone:** 8043870869

**Fax:**

**Email:** kseaford@stratacleanenergy.com

**Web Project ID:** WEB0000024327

**Client Project Number:**

Conservation Site	Site Type	Brank	Acreage	Listed Species Presence	Essential Conservation Site?
Natural Heritage Screening Features Intersecting Project Boundary					
Intersecting Predictive Models					
Predictive Model Results					

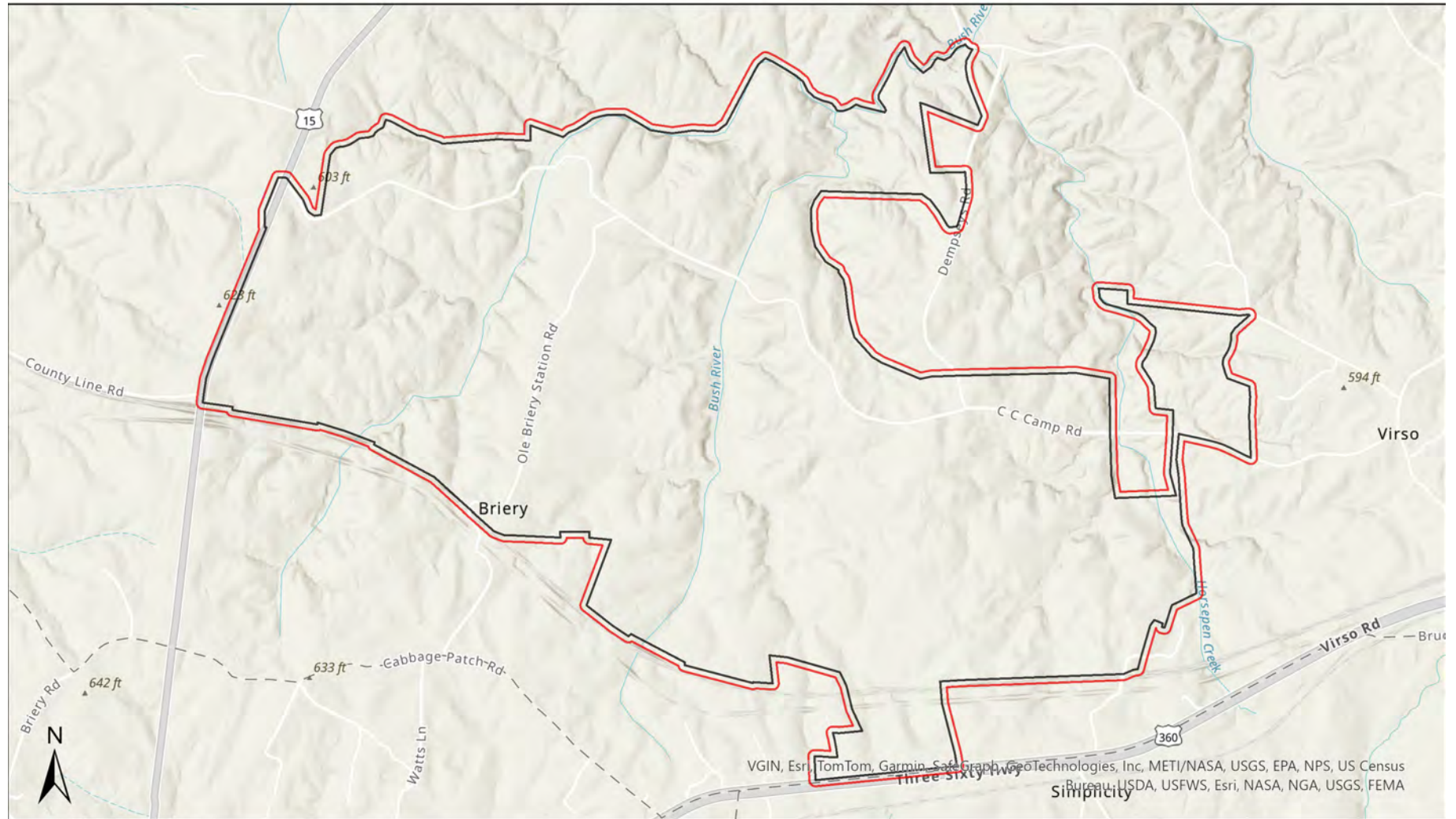
**ECOLOGICAL CORES** In addition, the proposed project will impact an Ecological Core(s) C3,C4 as identified in the Virginia Natural Landscape Assessment (<https://www.dcr.virginia.gov/natural-heritage/vaconvisvnl>). Mapped cores in the project area can be viewed via the Virginia Natural Heritage Data Explorer, available here: <https://vanhde.org/content/map>.

Ecological Cores are areas of at least 100 acres of continuous interior, natural cover that provide habitat for a wide range of species, from interior-dependent forest species to habitat generalists, as well as species that utilize marsh, dune, and beach habitats. Interior core areas begin 100 meters inside core edges and continue to the deepest parts of cores. Cores also provide the natural, economic, and quality of life benefits of open space, recreation, thermal moderation, water quality (including drinking water recharge and protection, and erosion prevention), and air quality (including sequestration of carbon, absorption of gaseous pollutants, and production of oxygen). Cores are ranked from C1 to C5 (C5 being the least significant) using nine prioritization criteria, including the habitats of natural heritage resources they contain.

Impacts to cores occur when their natural cover is partially or completely converted permanently to developed land uses. Habitat conversion to development causes reductions in ecosystem processes, native biodiversity, and habitat quality due to habitat loss; less viable plant and animal populations; increased predation; and increased introduction and establishment of invasive species.

DCR recommends avoidance of impacts to cores. When avoidance cannot be achieved, DCR recommends minimizing the area of impacts overall and concentrating the impacted area at the edges of cores, so that the most interior remains intact.

# Tobacco Trail Solar



- Buffered Project Boundary
- Project Boundary

0 0.3 0.6 1.2 Miles

Scale: 1:25,511

Quads: Keysville

Counties: Prince Edward

Company: Strata Clean Energy

Lat/Long: 370548 / -782638



COMMONWEALTH of VIRGINIA  
DEPARTMENT OF CONSERVATION AND RECREATION

The project mapped as part of this report has been searched against the Department of Conservation and Recreation's Biotics Data System for occurrences of natural heritage resources in the vicinity of the area indicated for this project. Natural heritage resources are defined as the habitat of rare, threatened, or endangered plant and animal species, unique or exemplary natural communities, and significant geologic formations.

According to the information currently in Biotics, natural heritage resources have not been documented within the submitted project boundary including a 100 foot buffer. In addition, the project area does not intersect any of the predictive models identifying potential habitat for natural heritage resources.

Under a Memorandum of Agreement established between the Virginia Department of Agriculture and Consumer Services (VDACS) and the Virginia Department of Conservation and Recreation (DCR), DCR represents VDACS in comments regarding potential impacts on state-listed threatened and endangered plant and insect species. The current activity will not affect any documented state-listed plants or insects.

Any absence of data may indicate that the project area has not been surveyed, rather than confirm that the area lacks additional natural heritage resources. New and updated information is continually added to Biotics. Please revisit this website or contact DCR for an update on this natural heritage information if a significant amount of time passes (DCR recommends no more than six months) before it is utilized.

The Virginia Department of Wildlife Resources maintains a database of wildlife locations, including threatened and endangered species, trout streams, and anadromous fish waters, that may contain information not documented in the Natural Heritage Data Explorer. Their database may be accessed from <https://services.dwr.virginia.gov/fwis/> or contact Amy Martin (804-367-2211 or [amy.martin@dwr.virginia.gov](mailto:amy.martin@dwr.virginia.gov)).

Thank you for submitting your project to the Virginia Department of Conservation and Recreation's Natural Heritage Data Explorer Web Service. **Based on the preliminary screening results for this project, no further correspondence will be sent from this office.** Should you have any questions or concerns about this report, the Data Explorer, or other Virginia Natural Heritage Program services, please contact the Natural Heritage Project Review Unit at 804-371-2708.

# VaFWIS Search Report

## A Small Renewable Energy Project (Wind) Report on Wildlife Species and Habitat

Compiled on 12/13/2024, 8:54:00 AM

[Help](#)

Known or likely to occur within a **2 mile buffer around polygon; center 37.0969167 -78.4438611**  
in **037 Charlotte County, 111 Lunenburg County, 147 Prince Edward County, VA**

[View Map of Site Location](#)

517 Known or Likely Species ordered by Status Concern for Conservation  
(displaying first 31) (31 species with Status\* or Tier I\*\* or Tier II\*\* )

<a href="#">BOVA Code</a>	<a href="#">Status*</a>	<a href="#">Tier**</a>	<a href="#">Common Name</a>	<a href="#">Scientific Name</a>	<a href="#">Confirmed</a>	<a href="#">Database(s)</a>
050022	FEST	Ia	<a href="#">Bat, northern long-eared</a>	Myotis septentrionalis		BOVA
060003	FESE	Ia	<a href="#">Wedgemussel, dwarf</a>	Alasmidonta heterodon		BOVA
010214	FESE	IIa	<a href="#">Loggerch, Roanoke</a>	Percina rex		BOVA
060173	FTST	Ia	<a href="#">Pigtoe, Atlantic</a>	Fusconaia masoni		BOVA
060029	FTST	IIa	<a href="#">Lance, yellow</a>	Elliptio lanceolata		BOVA
050020	SE	Ia	<a href="#">Bat, little brown</a>	Myotis lucifugus		BOVA
050027	FPSE	Ia	<a href="#">Bat, tri-colored</a>	Perimyotis subflavus		BOVA
060006	SE	Ib	<a href="#">Floater, brook</a>	Alasmidonta varicosa		BOVA
040293	ST	Ia	<a href="#">Shrike, loggerhead</a>	Lanius ludovicianus		BOVA
040385	ST	Ia	<a href="#">Sparrow, Bachman's</a>	Peucaea aestivalis		BOVA,HU6
040379	ST	Ia	<a href="#">Sparrow, Henslow's</a>	Centronyx henslowii		BOVA
060081	FPST	IIa	<a href="#">Floater, green</a>	Lasmigona subviridis		BOVA
010353	ST	IIc	<a href="#">Darter, Carolina</a>	Etheostoma collis		BOVA,HU6
010070	ST	IIc	<a href="#">Shiner, whitemouth</a>	Miniellus alborus		BOVA,HU6
040292	ST		<a href="#">Shrike, migrant loggerhead</a>	Lanius ludovicianus migrans		BOVA
100079	FC	IIIa	<a href="#">Butterfly, monarch</a>	Danaus plexippus		BOVA
030063	CC	IIIa	<a href="#">Turtle, spotted</a>	Clemmys guttata		BOVA
030031	CC	IIIc	<a href="#">Kingsnake, scarlet</a>	Lampropeltis elapsoides		BOVA
010174		Ia	<a href="#">Bass, Roanoke</a>	Ambloplites cavifrons		BOVA,HU6
010077		Ia	<a href="#">Shiner, bridle</a>	Notropis bifrenatus		BOVA
020023		IIa	<a href="#">Salamander, mole</a>	Ambystoma talpoideum		BOVA
020002		IIa	<a href="#">Treefrog, barking</a>	Hyla gratiosa		BOVA
040052		IIa	<a href="#">Duck, American black</a>	Anas rubripes		BOVA,HU6
040036		IIa	<a href="#">Night-heron, yellow-crowned</a>	Nyctanassa violacea violacea		BOVA
040181		IIa	<a href="#">Tern, common</a>	Sterna hirundo		BOVA,HU6
040320		IIa	<a href="#">Warbler, cerulean</a>	Setophaga cerulea		BOVA,HU6
040140		IIa	<a href="#">Woodcock, American</a>	Scolopax minor		BOVA,HU6
060071		IIa	<a href="#">Lampmussel, yellow</a>	Lampsilis cariosa		BOVA
040105		IIb	<a href="#">Rail, king</a>	Rallus elegans		BOVA
060175		IIb	<a href="#">Slabshell, Roanoke</a>	Elliptio roanokensis		HU6
100166		IIc	<a href="#">Skipper, Dotted</a>	Hesperia attalus slossonae		BOVA,HU6

To view **All 517 species** [View 517](#)



\*FE=Federal Endangered; FT=Federal Threatened; SE=State Endangered; ST=State Threatened; FP=Federal Proposed; FC=Federal Candidate; CC=Collection Concern

\*\*I=VA Wildlife Action Plan - Tier I - Critical Conservation Need; II=VA Wildlife Action Plan - Tier II - Very High Conservation Need; III=VA Wildlife Action Plan - Tier III - High Conservation Need; IV=VA Wildlife Action Plan - Tier IV - Moderate Conservation Need  
Virginia Wildlife Action Plan Conservation Opportunity Ranking:  
a - On the ground management strategies/actions exist and can be feasibly implemented.; b -  
On the ground actions or research needs have been identified but cannot feasibly be implemented at this time.; c -  
No on the ground actions or research needs have been identified or all identified conservation opportunities have been exhausted.

Permit By Rule (Wind) Concern for Bat hibernacula and Colonies

Bat Hibernacula within 5 miles: **Not Known**  
Bat bachelor and maternity colonies within 12 miles **Not Known**

Permit By Rule (Wind) Sea Turtle Nesting Beaches

Sea Turtle Nesting Beaches within 1 mile: **Not Known**

Anadromous Fish Use Streams

N/A

Colonial Water Bird Survey

N/A

Threatened and Endangered Waters

N/A

Managed Trout Streams

N/A

Bald Eagle Concentration Areas and Roosts

N/A

Bald Eagle Nests

N/A

Species Observations ( 21 records - displaying first 20 ) [View Map of All Query Results Species Observations](#)

obsID	class	Date Observed	Observer	N Species			View Map
				Different Species	Highest TE*	Highest Tier**	

<a href="#">339122</a>	SppObs	Jun 24 1997	J. Copeland, K. Woodward, M. Luisi, J. Willey	26		III	<a href="#">Yes</a>
<a href="#">11674</a>	SppObs	Jun 12 1990	ANGERMEIER ET AL	25		III	<a href="#">Yes</a>
<a href="#">11309</a>	SppObs	Jul 16 1985	NORMAN	15		III	<a href="#">Yes</a>
<a href="#">425133</a>	SppObs	Apr 4 2011	VCU - INSTAR	8			<a href="#">Yes</a>
<a href="#">305342</a>	SppObs	Mar 18 2004	Emily Moriarty	1			<a href="#">Yes</a>
<a href="#">305341</a>	SppObs	Mar 16 2004	Emily Moriarty	1			<a href="#">Yes</a>
<a href="#">322362</a>	SppObs	Apr 24 1986	M. Norman; R. Southwick; G. Wilda	20			<a href="#">Yes</a>
<a href="#">11362</a>	SppObs	Apr 24 1986	NORMAN	13			<a href="#">Yes</a>
<a href="#">15451</a>	SppObs	Sep 7 1979	WHITE	8			<a href="#">Yes</a>
<a href="#">336815</a>	SppObs	Jan 1 1979	GW-B-WHITE	4			<a href="#">Yes</a>
<a href="#">18566</a>	SppObs	Jan 1 1900		1			<a href="#">Yes</a>
<a href="#">362771</a>	SppObs	Jan 1 1900		1			<a href="#">Yes</a>
<a href="#">18022</a>	SppObs	Jan 1 1900		1			<a href="#">Yes</a>
<a href="#">362805</a>	SppObs	Jan 1 1900		1			<a href="#">Yes</a>
<a href="#">362787</a>	SppObs	Jan 1 1900		1			<a href="#">Yes</a>
<a href="#">27049</a>	SppObs	Jan 1 1900	Mitchell, J. C.	1			<a href="#">Yes</a>
<a href="#">18565</a>	SppObs	Jan 1 1900		1			<a href="#">Yes</a>
<a href="#">26965</a>	SppObs	Jan 1 1900	Mitchell, J. C.	1			<a href="#">Yes</a>
<a href="#">362686</a>	SppObs	Jan 1 1900		1			<a href="#">Yes</a>
<a href="#">362695</a>	SppObs	Jan 1 1900		1			<a href="#">Yes</a>

Displayed 20 Species Observations

Selected 21 Observations [View all 21 Species Observations](#)

#### Habitat Predicted for Aquatic WAP Tier I & II Species

N/A

#### Habitat Predicted for Terrestrial WAP Tier I & II Species

N/A

#### Public Holdings:

N/A

#### Summary of BOVA Species Associated with Cities and Counties of the Commonwealth of Virginia:

FIPS Code	City and County Name	Different Species	Highest TE	Highest Tier
037	<a href="#">Charlotte</a>	339	FESE	I
111	<a href="#">Lunenburg</a>	346	FESE	I
147	<a href="#">Prince Edward</a>	404	FESE	I

#### USGS 7.5' Quadrangles:

USGS National 6th Order Watersheds Summary of Wildlife Action Plan Tier I, II, III, and IV Species:

HU6 Code	USGS 6th Order Hydrologic Unit	Different Species	Highest TE	Highest Tier
CM04	<a href="#">North Meherrin River-Ledbetter Creek</a>	55	ST	I
JA10	<a href="#">Briery Creek</a>	50		II
JA11	<a href="#">Bush River-Evans Creek</a>	47	ST	I
RU81	<a href="#">Roanoke Creek-Spring Creek</a>	54	ST	I

Compiled on 12/13/2024, 8:54:00 AM P3090083.0 report=PBRWind searchType= P dist= 3219 poi= 37.0969167 -78.4438611 siteDD= 37.0836388 -78.4377276;37.0821000 -78.4365193;37.0817777 -78.4385998;37.0809083 -78.4383582;37.0807277 -78.4398998;37.0798583 -78.4395693;37.0797583 -78.4383998;37.0799083 -78.4354276;37.0803277 -78.4315387;37.0841694 -78.4325776;37.0840583 -78.4275498;37.0840583 -78.4238582;37.0844083 -78.4203387;37.0870777 -78.4202498;37.0868500 -78.4194387;37.0877000 -78.4192387;37.0880277 -78.4176887;37.0892583 -78.4177387;37.0911694 -78.4195693;37.0924000 -78.4197082;37.0939888 -78.4199193;37.0940777 -78.4205498;37.0928500 -78.4204082;37.0930500 -78.4230082;37.0968000 -78.4229776;37.0974277 -78.4189887;37.0972000 -78.4180998;37.0962583 -78.4182193;37.0960194 -78.4168776;37.0958694 -78.4168887;37.0956583 -78.4170693;37.0948694 -78.4170998;37.0945500 -78.4159387;37.0938000 -78.4141693;37.0937000 -78.4129082;37.0960777 -78.4131887;37.0967000 -78.4149693;37.0972777 -78.4154887;37.0982000 -78.4146498;37.0986388 -78.4148082;37.0997000 -78.4136998;37.1005888 -78.4184387;37.1011000 -78.4219276;37.1018194 -78.4219998;37.1017083 -78.4234387;37.1010583 -78.4234582;37.1005888 -78.4214998;37.1001277 -78.4205193;37.0992694 -78.4206387;37.0986194 -78.4205693;37.0976583 -78.4194387;37.0975888 -78.4229498;37.0979000 -78.4236582;37.0975083 -78.4323998;37.0973777 -78.4330387;37.0994083 -78.4370193;37.1012277 -78.4376776;37.1023194 -78.4380887;37.1032000 -78.4391387;37.1042277 -78.4398276;37.1055194 -78.4395082;37.1064500 -78.4390276;37.1058777 -78.4329276;37.1055888 -78.4325776;37.1045583 -78.4318887;37.1041777 -78.4310082;37.1063277 -78.4303887;37.1069777 -78.4305498;37.1070277 -78.4326193;37.1102000 -78.4327776;37.1087083 -78.4302193;37.1097083 -78.4297387;37.1104388 -78.4302582;37.1113083 -78.4305887;37.1121694 -78.4302887;37.1127277 -78.4298193;37.1127500 -78.4305387;37.1124777 -78.4312693;37.1126388 -78.4320693;37.1123583 -78.4327082;37.1119500 -78.4332693;37.1126694 -78.4335998;37.1125500 -78.4345082;37.1116194 -78.4350776;37.1105500 -78.4356498;37.1097500 -78.4353193;37.1102888 -78.4369193;37.1098777 -78.4378387;37.1103277 -78.4386276;37.1105000 -78.4398887;37.1110777 -78.4399582;37.1116000 -78.4405693;37.1121277 -78.4416276;37.1118583 -78.4428082;37.1109388 -78.4435582;37.1096000 -78.4448693;37.1096694 -78.4480082;37.1102777 -78.4496082;37.1103083 -78.4511387;37.1093500 -78.4531582;37.1096000 -78.4551276;37.1088694 -78.4544276;37.1089083 -78.4565887;37.1090000 -78.4607276;37.1098388 -78.4627693;37.1091277 -78.4630693;37.1088583 -78.4642387;37.1088194 -78.4655998;37.1081083 -78.4662498;37.1054500 -78.4666998;37.1052500 -78.4671582;37.1061194 -78.4674887;37.1069388 -78.4685387;37.1060777 -78.4689276;37.1018694 -78.4711387;37.0978777 -78.4730693;37.0967277 -78.4732887;37.0960277 -78.4678193;37.0954000 -78.4648693;37.0946277 -78.4628276;37.0938000 -78.4610582;37.0923777 -78.4586693;37.0909694 -78.4569193;37.0906000 -78.4531582;37.0909583 -78.4528693;37.0907083 -78.4514387;37.0904194 -78.4515387;37.0903888 -78.4500082;37.0866583 -78.4507693;37.0860583 -78.4497082;37.0849277 -78.4475887;37.0845277 -78.4455276;37.0840388 -78.4431193;37.0837000 -78.4408776;37.0850000 -78.4408276;37.0847500 -78.4393082;37.0843583 -78.4379693;37.0838583 -78.4378998

PixelSize=64; Anadromous=0.019728; BBA=0.043994; BECAR=0.019681; Buffer=0.169943; County=0.065103; HU6=0.085738; Impediments=0.020274; Init=0.227434; PBRWind=0.039425; PublicLands=0.024251; Quad=0.046711; SppObs=0.156536; TEWaters=0.030687; TierReaches=0.039263; TierTerrestrial=0.088904; Total=1.188715; Tracking\_BOVA=0.208551; Trout=0.021738; huva=0.046404

# **Attachment K**

## **Solar Panel Specifications Sheet**

Harvest the Sunshine

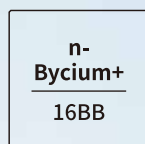
620W



JA SOLAR

## JAM66D45 LB n-type Double Glass Bifacial Modules

### Premium Cells



MBB Half-Cell  
Technology

26%



Cell Conversion  
Efficiency

### Premium Modules



Higher power  
generation better LCOE



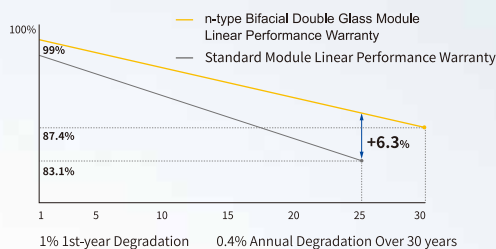
n-type with very  
Lower LID



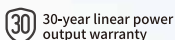
Better Temperature  
Coefficient



Better low irradiance  
response



12-year product  
warranty



30-year linear power  
output warranty

### Comprehensive Certificates

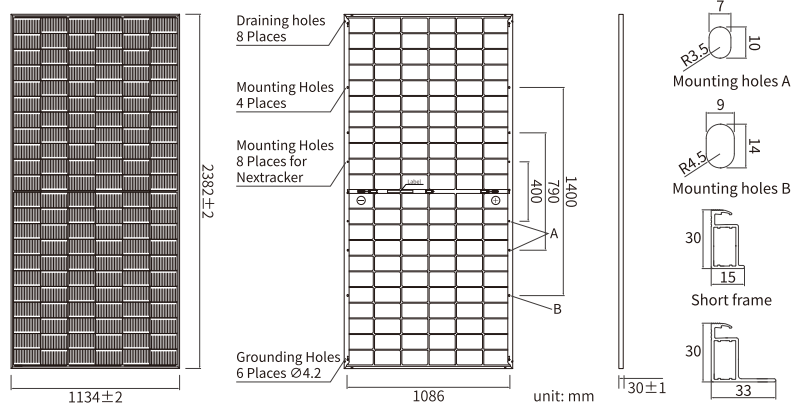
- IEC 61215, IEC 61730, UL 61215, UL 61730
- ISO 9001: 2015 Quality management systems
- ISO 14001: 2015 Environmental management systems
- ISO 45001: 2018 Occupational health and safety management systems
- IEC 62941: 2019 Terrestrial photovoltaic (PV) modules - Quality system for PV module manufacturing



DEEP BLUE 4.0 Pro

# JAM66D45 LB

n-type Double Glass Bifacial Modules



## MECHANICAL PARAMETERS

Cell	Mono
Weight	33.1kg
Dimensions	2382±2mm×1134±2mm×30±1mm
Cable Cross Section Size	4mm²(IEC), 12 AWG(UL)
No. of cells	132(6×22)
Junction Box	IP68, 3diodes
Connector	QC 4.10-351/ MC4-EVO2
Cable Length (Including Connector)	Portrait: 300mm(+)/400mm(-) Landscape: 1500mm(+)/1500mm(-)
Front Glass/Back Glass	2.0mm/2.0mm
Packaging Configuration	36pcs/Pallet, 540pcs/40HQ Container

Remark: customized frame color and cable length available upon request

## ELECTRICAL PARAMETERS AT STC

TYPE	JAM66D45 595/LB	JAM66D45 600/LB	JAM66D45 605/LB	JAM66D45 610/LB	JAM66D45 615/LB	JAM66D45 620/LB
Rated Maximum Power(P <sub>max</sub> ) [W]	595	600	605	610	615	620
Open Circuit Voltage (V <sub>oc</sub> ) [V]	47.50	47.70	47.90	48.10	48.30	48.50
Maximum Power Voltage(V <sub>mp</sub> ) [V]	39.27	39.44	39.60	39.77	39.96	40.21
Short Circuit Current(I <sub>sc</sub> ) [A]	15.90	15.95	16.00	16.05	16.10	16.13
Maximum Power Current(I <sub>mp</sub> ) [A]	15.15	15.21	15.28	15.34	15.39	15.42
Module Efficiency [%]	22.0	22.2	22.4	22.6	22.8	23.0
Power Tolerance	0~+3%					
Temperature Coefficient of I <sub>sc</sub> /α <sub>Isc</sub>	+0.045%/°C					
Temperature Coefficient of V <sub>oc</sub> (β <sub>Voc</sub> )	-0.250%/°C					
Temperature Coefficient of P <sub>max</sub> (γ <sub>Pmp</sub> )	-0.290%/°C					
STC	Irradiance 1000W/m², cell temperature 25°C, AM1.5G					

Remark: Electrical data in this catalog do not refer to a single module and they are not part of the offer. They only serve for comparison among different module types.

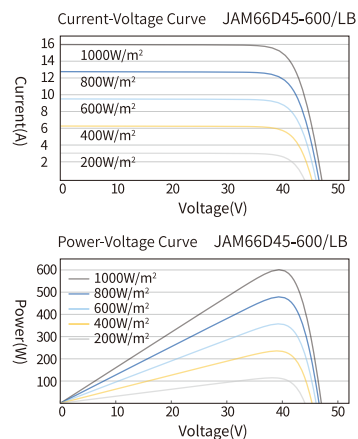
## ELECTRICAL CHARACTERISTICS WITH 10% SOLAR IRRADIATION RATIO

TYPE	JAM66D45 595/LB	JAM66D45 600/LB	JAM66D45 605/LB	JAM66D45 610/LB	JAM66D45 615/LB	JAM66D45 620/LB
Rated Max Power(P <sub>max</sub> ) [W]	643	648	653	659	664	670
Open Circuit Voltage(V <sub>oc</sub> ) [V]	47.50	47.70	47.90	48.10	48.30	48.50
Max Power Voltage(V <sub>mp</sub> ) [V]	39.27	39.44	39.60	39.77	39.96	40.21
Short Circuit Current(I <sub>sc</sub> ) [A]	17.17	17.23	17.28	17.33	17.39	17.42
Max Power Current(I <sub>mp</sub> ) [A]	16.36	16.43	16.50	16.56	16.62	16.65
Irradiation Ratio (rear/front)	10%					

\* For Nextacker installations, maximum static load please take compatibility approve letter between JA Solar and Nextacker for reference.

\*\* Bifaciality=P<sub>max</sub>, rear/Rated P<sub>max</sub>, front

## CHARACTERISTICS



## OPERATING CONDITIONS

Maximum System Voltage	1500V DC
Operating Temperature	-40°C~+85°C
Maximum Series Fuse Rating	35A
Maximum Static Load, Front*	5400Pa(112 lb/ft²)
Maximum Static Load, Back*	2400Pa(50 lb/ft²)
NOCT	45±2°C
Bifaciality**	80%±10%
Safety Class	Class II
Fire Performance	UL Type 29/Class C



### Headquarters

No. 8 Building, Nuode Center, No.1 Courtyard, East Auto Museum Road,  
Fengtai District, Beijing  
Tel: +86 10 6361 1888 Fax: +86 10 6361 9999  
E-mail: sales@jasolar.com marketing@jasolar.com www.jasolar.com

Specifications subject to technical changes and tests.  
JA Solar reserves the right of final interpretation.

Version No. : Global-EN-20240529A



**Laura Wilson**

---

**From:** Tosho Galitev <Teodor.galitev@jasolar.us>  
**Sent:** Wednesday, December 18, 2024 12:40 PM  
**To:** William Johnson  
**Subject:** RE: ARC- JAM66DD45/ JAM72D40

**CAUTION: NON-STRATA EMAIL!**

Hello Will,  
Yes I can confirm that both products (JAM66D45 and JAM72D40) have ARC on the front glass.  
Thanks  
Best,  
Tosho



Teodor Galitev (Tosho) | Product Support and Engineering | JA Solar USA, Inc.  
2570 North First Street, Suite 360, San Jose, CA 95131  
Main: 408-586-0000 | Cell: 657-464-0027 | [Teodor.galitev@jasolar.us](mailto:Teodor.galitev@jasolar.us)

---

**From:** William Johnson <wmjohnson@stratacleanenergy.com>  
**Sent:** Wednesday, December 18, 2024 5:16 AM  
**To:** Tosho Galitev <Teodor.galitev@jasolar.us>  
**Subject:** ARC- JAM66DD45/ JAM72D40

Hi, Tosho, can you please confirm that both the JAM66D45 and JAM72D40 has Anti-Reflective Coating (ARC)?  
  
I assume they do, but it is not mentioned on the spec sheets.

---

**William Johnson**

*Director, Procurement*



800 Taylor St, Suite 200  
Durham, NC 27701  
O: [919-960-6015](tel:919-960-6015) x 357  
M: [703-946-4199](tel:703-946-4199)  
E: [wmjohnson@stratasolar.com](mailto:wmjohnson@stratasolar.com)

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# **Attachment L**

## **Community Meeting Notes**

# **Tobacco Trail Solar Community Meeting Notes**

## **Meeting 1**

**Date:** December 10, 2024

**Time:** 4 – 7 pm

**Location:** Meherrin Volunteer Fire & Rescue, 102 Moores Ordinary Road, Meherrin, VA

## **December Meeting Recap**

During the event, we heard from several members of the Prince Edward County community.

Key concerns raised during the meeting included:

- Environmental impacts of the project.
- Plans for erosion and sediment control.
- Impacts on surrounding property values.
- Effects on local wildlife.

We addressed these questions with information supported by professionally sourced data and scientific studies. Additionally, we shared our contact information with attendees to encourage follow-up questions or requests for further details.

## **Meeting 2**

**Date:** Thursday, March 20, 2025

**Time:** 4 – 7 pm

**Location:** Meherrin Volunteer Fire & Rescue, 102 Moores Ordinary Road, Meherrin, VA

### **March Meeting Recap**

Tobacco Trail held an official community meeting, as required by County ordinance.

Topics of discussion:

1. No BESS on the site
2. No cadmium panels
3. Strata's Track record in VA
4. Concern over E&S controls

The Project again listened to concerns and provided information supported by professionally sourced data and scientific studies. We shared our contact information with attendees to encourage follow-up questions or requests for further details.

**December 10, 2024**

**Community Meeting Attendees**

Name	Address
Arthur Miller	104 Miller Dr, Meherrin, VA 23954
Vincent Marsh	1737 Virso Rd, Meherrin, VA 23954
Debra Marsh	1737 Virso Rd, Meherrin, VA 23954
David Mayberry	1227 Falkland Rd Meherrin, VA 23954
Denise Mayberry	1227 Falkland Rd Meherrin, VA 23954
Jeff Haertel	470 Rolling Hill Rd, Pamplin, VA 23958
Arthur Miller	104 Miller Dr, Meherrin, VA 23954
Vincent Marsh	1737 Virso Rd, Meherrin, VA 23954
Debra Marsh	1737 Virso Rd, Meherrin, VA 23954
David Mayberry	1227 Falkland Rd Meherrin, VA 23954

**March 20, 2025**

**Community Meeting Attendees**

Name	Address
Anne Bowman	3607 Mt. Pleasant Road, Meherrin, VA
Seth Cogbill	9630 Hill Trace Court. Midlothian, VA
Debra Marsh	1737 Virso Road, Meherrin, VA
V. Marsh, Jr.	1737 Virso Road, Meherrin VA
Robert Love	PE County
Deniece Mayberry	1727 Falkland Road. Meherrin, VA
DT Mayberry	1727 Falkland Road, Meherrin, VA
Doug Stanley	PE County
Mary Bacon	3925 Mt. Pleasant Road, Meherrin, VA
Dawn Gillings	3925 Mt. Pleasant Road, Meherrin, VA
Dee Hobgood	3925 Mt. Pleasant Road, Meherrin, VA
Lane Gunn	16476 Kings Hwy, Williesburg, VA
Ryan Romack	Phenix, VA
Bryon Zaun	697 Meherrin Road, Meherrin, VA
Doris Rank	928 New Bethel Road, Meherrin, VA
Allysa Rank	714 New Bethel Road, Meherrin, VA
Nevil Rank	714 New Bethel Road, Meherrin, VA
David Jennings	PO Box 203, Green Bay, VA

# **Attachment M**

## **FAA Notice Criteria Tool**





## Notice Criteria Tool

[Notice Criteria Tool - Desk Reference Guide V\\_2018.2.0](#)

The requirements for filing with the Federal Aviation Administration for proposed structures vary based on a number of factors: height, proximity to an airport, location, and frequencies emitted from the structure, etc. For more details, please reference [CFR Title 14 Part 77.9](#).

You must file with the FAA at least 45 days prior to construction if:

- your structure will exceed 200ft above ground level
- your structure will be in proximity to an airport and will exceed the slope ratio
- your structure involves construction of a traverseway (i.e. highway, railroad, waterway etc...) and once adjusted upward with the appropriate vertical distance would exceed a standard of 77.9(a) or (b)
- your structure will emit frequencies, and does not meet the conditions of the [FAA Co-location Policy](#)
- your structure will be in an instrument approach area and might exceed part 77 Subpart C
- your proposed structure will be in proximity to a navigation facility and may impact the assurance of navigation signal reception
- your structure will be on an airport or heliport
- filing has been requested by the FAA

If you require additional information regarding the filing requirements for your structure, please identify and contact the appropriate FAA representative using the [Air Traffic Areas of Responsibility map](#) for Off Airport construction, or contact the [FAA Airports Region / District Office](#) for On Airport construction.

The tool below will assist in applying Part 77 Notice Criteria.

<b>* Structure Type:</b>	SOLAR   Solar Panel ▼			
Please select structure type and complete location point information.				
<b>Latitude:</b>	37	Deg	6	M 12.61 S N ▼
<b>Longitude:</b>	78	Deg	26	M 7.987 S W ▼
<b>Horizontal Datum:</b>	NAD83 ▼			
<b>Site Elevation (SE):</b>	580	(nearest foot)		
<b>Structure Height :</b>	20	(nearest foot)		
<b>Is structure on airport:</b>	<input checked="" type="radio"/> No <input type="radio"/> Yes			

### Results

You do not exceed Notice Criteria.



# **Attachment N**

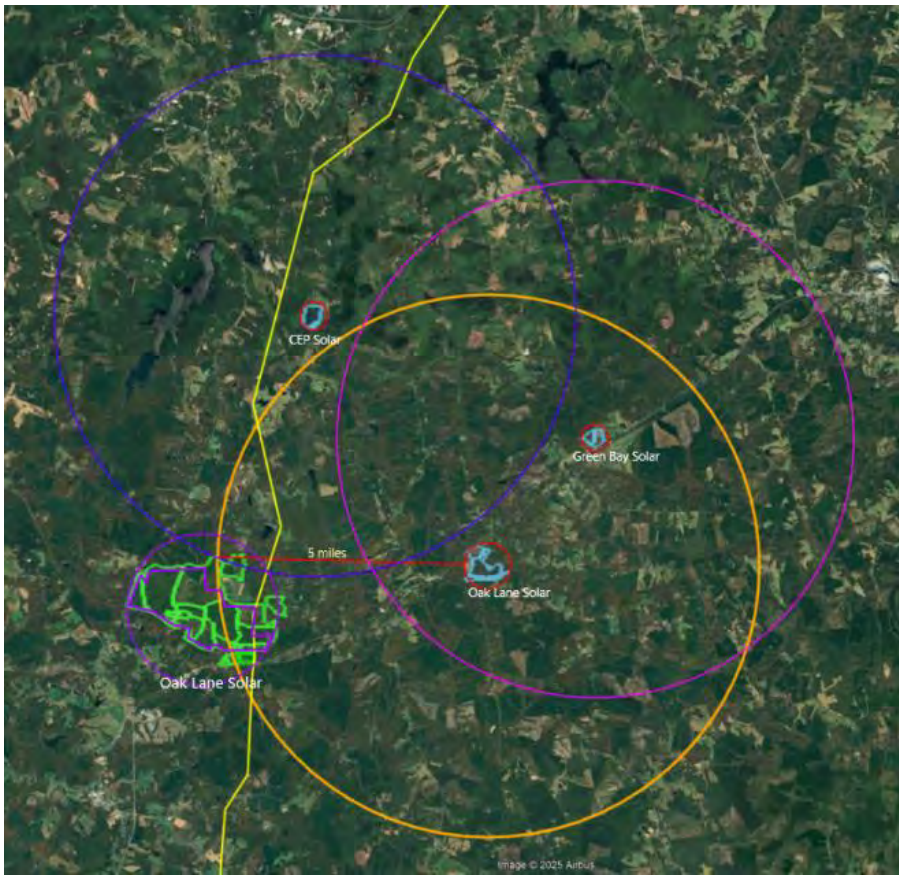
## **Density and Location Requirements**

Attachment N – Density and Location Requirements

ARTICLE VII. ALTERNATIVE ENERGY FACILITIES Sec. 7-110. J Density; location, cont.

“...no more than **5.5 percent** of the land in a five-mile radius of **the project area of any existing large or utility scale energy facility** shall be approved for use as the project area for a new large or utility scale energy facility. In no case shall any energy facility exceed **2,513 acres.**”

The image illustrates a 5-mile radius around the Green Bay, Oak Lane, and CEP Solar project areas. Oak Lane's radius covers both the proposed Tobacco Trail and Green Bay Solar projects, making it the most conservative for density calculations. The fenced area would comprise 1.8% (909 acres) of the land within this radius. Additionally, the disturbed acreage for all three projects is 3.2% (1,611 acres), remaining below required thresholds.



Project Name	Disturbed Acres	Fenced-In Acres
CEP	335	211
Oak Lane	112	61
Green Bay	39	27
Tobacco Trail	1,125	610
TOTAL	1,611	909
% in 5 Mile Radius	3.2%	1.8%



# Construction Traffic Management Plan

Tobacco Trail Solar, LLC  
Tobacco Trail Solar Project  
Prince Edward County, Virginia

GAI Project Number: R220801.08  
January 2025

Prepared by: GAI Consultants, Inc.  
Pittsburgh Office  
385 E Waterfront Dr  
Homestead, PA 15120-5005

Prepared for: Tobacco Trail Solar, LLC  
800 Taylor St, Suite 200  
Durham, NC 27701



# Construction Traffic Management Plan

Tobacco Trail Solar, LLC  
Tobacco Trail Solar Project  
Prince Edward County, Virginia

GAI Project Number: R220801.08

January 2025

Prepared for:  
Tobacco Trail Solar, LLC  
800 Taylor Street, Suite 200  
Durham NC, 27701

Prepared by:  
GAI Consultants, Inc.  
Homestead Office  
385 E Waterfront Dr.  
Homestead, PA 15120-5005

Report Authors:

---

Enrique Bazán-Arias, PE, EMBA  
Project Manager

**Todd M. Wilson**

Digitally signed by Todd M. Wilson  
DN: E=T.Wilson@gaiconsultants.com, CN=Todd  
M. Wilson  
Date: 2025.01.30 20:55:56-05'00'

---

Todd Wilson, PE, MBA  
Transportation Project Engineer



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Appendix A	Area Roadways Photographs
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## Construction Traffic Management Plan

GAI Consultants, Inc. (GAI) is pleased to present this Construction Traffic Management Plan to Tobacco Trail Solar, LLC Solar Development, LLC, for the Tobacco Trail Solar Project (Project) located in Prince Edward County, Virginia (VA). GAI was contracted by the Project's developer and compiled this report in January 2025.

### 1.0 Introduction

The solar facility Project is proposed to be located in south central Prince Edward County, Virginia, near the northern border of Charlotte County. The project location is approximately four miles north of Keysville, Charlotte County, and thirteen miles south of Farmville, Prince Edward County. Refer to the map in Figure 1. Construction is anticipated to take around 18 months, with the schedule dependent on securing all permits and approvals. This construction traffic management plan will consider traffic impacts during facility construction, operation, and decommissioning.

#### 1.1 Zoning Requirements

The project is being designed to exceed applicable zoning requirements, with anticipated minimum setbacks of 100 feet from adjacent property lines, 125 feet from public right-of-way, and 400 feet from main buildings on adjoining parcels. Minimum requirements are 50 feet from adjacent property lines, 75 feet from public right-of-way, and 75 feet from main buildings on adjoining parcels. Refer to Figure 2 for the site plan.

#### 1.2 Site Access

The Project is proposed to have four driveways, two driveways along US Route (US) 15 (Farmville Road), one at the end of Secondary Route (SC) 635 (Ole Briery Station Road), and one near the end of SC 721 (Dempseys Road). Compacted gravel roads will be built connecting the driveways through the site, though the northern US 15 driveway will only serve a gravel road accessing a small discontinuous portion of the site upon completion. Refer to the site plan and subsequent figures for driveway locations and planned internal roadways.

### 2.0 Existing Road Network and Traffic Conditions

The Project will be located in a triangular area bounded by US 15 (Farmville Road) to the west, US 360 (Patrick Henry Highway) to the southeast, and SC 634 (New Bethel Road) which continues onto SC 633 (Virso Road) to the northeast. SC 654 (Cabbage Patch Road) connects US 15 and US 360 south of the Project. Two dead-end roads extend from the bordering secondary routes to the site: SC 721 (Dempseys Road) to the north and SC 635 (Ole Briery Station Road) to the south.

Norfolk Southern Railroad forms much of the Project's southern border. Both US 15 and SC 633 (Virso Road) cross the railroad via overhead bridges. Both bridges lack shoulders. They do not have posted weight restrictions. SC 635 (Ole Briery Station Road) crosses at-grade at a gated crossing.

Refer to Figure 3 for a traffic volume map of the proposed site as it relates to the surrounding roadway network. Existing traffic information is shown on the map and summarized in Table 1. Conditions of each surrounding roadway are summarized in Table 2 and are described following the table. Maximum Annual Average Weekday Traffic (AAWDT) is below 5,000 vehicles per day and peak hour bidirectional volumes are below 450 vehicles per day, showing area roadways have relatively low traffic volumes.

Road signs and observations are summarized along SC 634 (New Bethel Road) / SC 633 (Virso Road) to SC 721 (Dempseys Road) and along SC 654 (Cabbage Patch Road) to SC 635 (Ole Briery Station Road) in Figures 4A and 4B, respectively. Photographs are included in Appendix A.

**Table 1**  
**Existing Roadway Traffic Volumes**

Roadway	AAWDT <sup>1</sup>	Truck/ Bus Percent	Peak Hour Total Volume <sup>2</sup>	Peak Hour Directional Volume <sup>3</sup>
US 15 Farmville Rd	4,000	9%	360	220
US 360 Patrick Henry Hwy	4,900	13%	441	229
SC 633 Virso Rd	540	N/A	54	33
SC 634 New Bethel Rd	240	N/A	24	15
SC 635 Ole Briery Station Rd	90	N/A	9	6
SC 654 Cabbage Patch Rd	490	7%	49	27
SC 721 Dempseys Rd	70	N/A	7	4

1. Annual Average Weekday Traffic (AAWT) volume per day.
2. Calculated by multiplying the K factor by AAWDT. 10% assumed where the K factor is unknown.
3. Calculated by multiplying the D factor to the Peak Hour Volume. The highest recorded volume (0.61) on Figure 3 assumed where the D factor has not been estimated.

**Table 2**  
**Existing Road Conditions**

Roadway	Functional Classification	Surface	Width	Speed Limit	Characteristic
US 15 Farmville Rd	Minor Arterial	Asphalt	60' R/W 26' Pavement 11' to 12' Lanes 1' to 2' Shoulders	55	One lane in each direction. Double yellow centerline and solid white edgelines.
US 360 Patrick Henry Hwy	Principal Arterial	Asphalt	130' R/W 26' Pavement/Dir. 12' Lanes 1' Shoulders	60	Two lanes in each direction with 56' median, turn lanes, and pavement markings.
SC 633 Virso Rd	Local Road	Asphalt	40' R/W 18' Pavement	45	One lane in each direction without pavement markings.
SC 634 New Bethel Rd	Local Road	Asphalt	40' R/W 18' Pavement	Unposted (30 mph advisory)	One lane in each direction without pavement markings.
SC 635 Ole Briery Station Rd	Local Road	Asphalt / Unpaved	30' R/W 10' - 18' Pavement	Unposted	One lane in each direction without pavement markings transitions to an unpaved bidirectional lane.
SC 654 Cabbage Patch Rd	Minor Collector	Asphalt	40' R/W 22' Pavement	Unposted	One lane in each direction without pavement markings.
SC 721 Dempseys Rd	Local Road	Asphalt	40' R/W 18' Pavement	35	One lane in each direction without pavement markings.

## **2.1 US 15 Farmville Road**

US 15 is a multi-state United States highway, stretching 792 miles from Corning, New York, to Walterboro, South Carolina. In Virginia it connects the greater Washington, D.C. area (Leesburg and Haymarket) to Culpepper, Farmville, Keysville, and Clarksville, and then onto Durham, NC, crossing I-66, I-64, I-85, and I-40. This minor arterial is a Surface Transportation Assistance Act (STAA) truck route that allows larger trucks, so it is suitable as a construction route for truck traffic and equipment deliveries. Field observations showed it being used by logging trucks. In the project vicinity, the two-lane roadway is posted at 55 mph and has rolling hills. Since site driveways are proposed along this route, larger vehicle deliveries should use these driveways to avoid impacts to smaller roadways.

## **2.2 US 360 Patrick Henry Highway**

US 360 is a United States highway spur within Virginia, stretching 225 miles from Danville through Richmond to Reedville, ending by the Chesapeake Bay. It connects US 29 (a limited access facility that connects to I-40), I-64, and I-95. This principal arterial is a Surface Transportation Assistance Act (STAA) truck route that allows larger trucks. In the project vicinity, the four-lane divided highway is posted at 60 mph and has rolling hills. US 360 is well suited to be the primary truck route for oversize deliveries, as trucks can travel from I-95 or I-40 via US 360 to US 15 to the project. US 360 and US 15 connect at an interchange and roundabout north of Keysville, facilitating heavy vehicle access between the two routes.

## **2.3 SC 633 Virso Road**

SC 633 (Virso Road) from US 360 to SC 634 (New Bethel Road) provides site access to the proposed site driveway along SC 721 (Dempseys Road). The 18-foot roadway does not have pavement markings. Its intersection with US 360 is unsignalized, with SC 633 (Virso Road) stop-controlled and US 360 free-flowing. Due to the 40-foot median, smaller vehicles making a left turn onto US 360 can do so as a two-stage turn. Larger trucks have insufficient median storage and have to make this left turn in one movement, which could be challenging. Due to frequent residential driveways and tight curves along SC 633 (Virso Road), the roadway has a reduced speed limit of 45 mph and an advisory speed limit of 30 mph at curves. Larger trucks would likely encroach beyond the center of the pavement around these sharper curves with limited sight distance. There are "Watch for Children" signs along the road, and it is a school bus route. Due to these conditions, larger trucks are not recommended for this route and should have flaggers or pilot vehicles for assistance. Deliveries beyond single-unit trucks will be directed to site driveways along US 15 as much as feasible.

## **2.4 SC 634 New Bethel Road**

SC 634 (New Bethel Road) from SC 633 (Virso Road) to US 15 provides site access to the proposed site driveway along SC 721 (Dempseys Road). Its intersections with SC 633 and US 15 are stop-controlled with the other route free flowing. The 18-foot roadway does not have pavement markings. Due to tight curves, the unposted roadway has advisory speed limits of 30 mph at most curves and 20 mph at the bridge over the Brush River. Some curves are tight enough to have chevron signs. School bus stop warning signs are present along this route. As modeled in AutoTURN simulation software in Figure 5A and 5B, larger trucks such as WB-67s will encroach across the centerline to make tighter turns. Due to these conditions, larger construction trucks using this road are not recommended unless flaggers or pilot vehicles are provided for assistance. Deliveries beyond single-unit trucks will be directed to site driveways along US 15 as much as feasible.

## **2.5 SC 721 Dempseys Road**

SC 721 (Dempseys Road) is a dead-end local road stretching south from SC 634 (New Bethel Road). The road has a posted speed limit of 35 mph, due to its narrow 18-foot width, steep slopes, and tight turns. SC 721 (Dempseys Road) is stop-controlled at its intersection with SC 634 (New Bethel Road) which is free-flowing. The intersection is built up above ground level, so the surrounding unpaved areas gently slope downward to the right-of-way lines. There is a culvert without rail protection

immediately south of SC 634 (New Bethel Road). Based on AutoTURN modeling in Figures 6A and 6B, larger trucks will encroach onto the unpaved shoulders to make turning movements at this intersection. Due to these conditions, larger construction trucks using this road are not recommended unless flaggers or pilot vehicles are provided for assistance. Deliveries beyond single-unit trucks will be directed to site driveways along US 15 as much as feasible.

## **2.6 SC 635 Ole Briery Station Road**

SC 635 (Ole Briery Station Road) is a dead-end local road that goes north from SC 654 (Cabbage Patch Road) across the Norfolk Southern tracks and ends just north of the proposed site driveway. SC 635 (Ole Briery Station Road) is stop-controlled at its connecting intersection with SC 654 (Cabbage Patch Road), which is free-flowing. After the first 200 feet, pavement ends on the 18-foot-wide asphalt road, with the remainder unpaved. The roadway appears to narrow to a single bi-directional lane at some places (though the road was snow covered during field observations). The roadway crosses the Norfolk Southern Railroad at-grade. The crossing has warning lights and gates. Located between tight horizontal curves, the crossing has a steep vertical curve across the tracks could lead to larger trucks bottoming out and getting stuck. AutoTURN modeling in Figures 6A-7B shows that larger trucks such as WB-67s encroach across the entire roadway and may need to offtrack adjacent to the roadway to make some of these tight turns. Flaggers would need to stop traffic on the entire roadway starting from SC 654 (Cabbage Patch Road) to permit deliveries. Therefore, this route is not recommended for delivery trucks or frequent employee trips without improvements.

## **2.7 SC 654 Cabbage Patch Road**

SC 654 (Cabbage Patch Road) connects SC 635 (Ole Briery Station Road) with US 15 and US 360. The minor collector has an unposted statutory 55 mph speed limit, and the pavement is approximately 22 feet wide. There are school bus stop signs and farm crossing warning signs along the roadway. At the intersections with US 15 and US 360, the US highways are free-flowing and SC 654 (Cabbage Patch Road) stop-controlled. Larger vehicles may offtrack at its intersection with SC 635 (Ole Briery Station Road). While SC 654 (Cabbage Patch Road) is wider than other secondary highways, it should only be used as a construction route to access SC 635 (Ole Briery Station Road) which itself is not suitable for larger trucks. Through vehicles should use the US 15/US 360 interchange to the south.

## **3.0 Site Traffic**

The Project will have three phases of traffic generation: Construction, Operations and Maintenance (O&M) and Decommissioning. While the construction phase will generate the highest traffic volumes, site driveways and long-term impacts focus on the O&M phase.

### **3.1 Construction Phase**

The Project is anticipated to be constructed over an 18-month period. Construction trips will vary depending on scheduled activities, so the number of workers and deliveries will fluctuate at that time. During construction, the maximum number of construction deliveries is about 45 loads per day. This may consist of up to 10 racking trucks, 10 to 15 module trucks, 10 trucks of electrical components, and the remainder miscellaneous deliveries such as ice, water, and dumpsters. Deliveries will occur throughout the day, with up to 25 percent (or 12 trucks) occurring during the peak hour. Due to access route limitations, most construction delivery trucks are anticipated to use the construction entrances along US Route 15. Due to the low number of peak hour trips and the nature of existing truck traffic on the nearby US highways, no major traffic impacts are anticipated. Flaggers may need to be provided to facilitate construction deliveries into and out of driveways, especially for larger vehicles. Use of access roads other than US highways for trucks larger than single-unit vehicles will likely require flagger or pilot vehicle support.

The number of employees during construction will also vary through the 18-month schedule. One shift is anticipated. A 300-space parking lot will be provided on-site, though this capacity is only anticipated



to be needed for a few months of the construction schedule. Employees will use various site driveways and generally come from either direction on US 15 or US 360. Considering the various site driveways, up to around 100 employees are anticipated to enter or leave the Project from any one direction during a peak construction shift. All area arterial roadways have a peak hour directional volume of fewer than 230 vehicles per hour and a two-way volume of fewer 450 vehicles per hour. Local roads have a peak hour directional volume of fewer than 35 vehicles per hour. According to the Highway Capacity Manual, free-flow conditions vary from 1,800 to 2,300 vehicles per hour per lane. Minor approaches at a stop-controlled intersection crossed by a free-flowing arterial carrying around 400 vehicles per hour have a maximum capacity of 540 vehicles per hour. Therefore, there is sufficient capacity to add around additional 115 directional trips to various roadways, so traffic impacts during construction are not anticipated to last more than a few minutes at the beginning or end of shifts. Flaggers may need to be stationed at site entrances to help control entering and exiting employee traffic at site driveways.

### 3.2 Operations and Maintenance Phase

The facility will not require full time staff once operational. Typical employee trips will include equipment monitoring, maintenance/repairs, and landscaping/mowing. Fewer than 20 trips per month, or around one per weekday, are anticipated. Recurring truck trips are not anticipated and would likely be limited to occasional facility repair and equipment upgrades. Operation of the facility is anticipated to have negligible impact to surrounding traffic patterns.

### 3.3 Decommissioning

Should the facility be decommissioned, impacts would be anticipated to be similar to the construction phase but at a smaller scale. Decommissioning would be anticipated to take less than a year, and daily trips would not be expected to exceed construction trips. Due to the rural character of the area, no significant area changes are expected.

## 4.0 Proposed Site Driveways

Four site access driveways are proposed, two along US 15, one along SC 635 (Ole Briery Station Road), and one along SC 721 (Dempseys Road). Refer to the site plan for driveway locations and Appendix B for views looking left and right from the proposed driveways. Refer to Table 3 for a summary of driveway locations and anticipated available stopping sight distance (SSD).

Field reviews were conducted in January 2025 under snowy conditions, prior to site driveway locations being finalized or built, so sight distance measurements are preliminary. Driveways are anticipated to have adequate sight distance as long as vegetation is trimmed and maintained, though sight distance will need to be verified upon construction. Notes about each proposed driveway are as follows:

- ▶ Southern US 15 Driveway (Access 1) is in the interior of a cleared curve, so sight distance is adequate in both directions. SC 671 (County Line Road) meets US 15 approximately 400 feet to the south. US 15 crosses a narrow bridge over Norfolk Southern approximately 550 feet to the south. Parapets and road signs create partial sight distance obstructions.
- ▶ Northern US 15 Driveway (Access 2) is along a roadway stretch with rolling hills. Per the photographs in Appendix B, oncoming vehicles appear to be visible for beyond the minimum stopping sight distance despite vertical crests, though this will need to be verified upon construction since there is no existing driveway at this location.
- ▶ SC 635 (Ole Briery Station Road) (Access 3) is at the end of a single-lane unpaved road. Oncoming vehicles are anticipated to drive slowly due to conditions, reducing sight distance needs. A crest vertical curve limits oncoming sight distance to around 500 feet, though this needs to be verified in summer conditions. Vegetation trimming will be required.
- ▶ SC 712 (Dempseys Road) (Access 4) is near the end of a two-lane paved, unmarked road. The driveway location is near the crest of a hill, so final driveway placement will impact sight distance.

**Table 3**  
**Approximate Driveway Stopping Sight Distance Measurements<sup>1</sup>**

Entrance	Approximate Location	Driveway Type	SSD Left <sup>2</sup>	SSD Right <sup>2</sup>	MOT <sup>3</sup>	Remarks
			Available / (Required)			
Access 1 US 15 S	37°05'53.9"N 78°28'22.5"W	LV-CE	670 / (495)	700 / (495)	TTC 4.2 TTC 5.2 TTC 23.2	Driveway 200 ft left and bridge over NS 550 ft left
Access 2 US 15 N	US 15 37°06'06.3"N 78°28'16.3"W	LV-CE	840 / (495) <sup>3</sup>	> 1000 / (495)	TTC 4.2 TTC 5.2 TTC 23.2	Driveway to residence opposite US 15.
Access 3 SC 635 Ole Briery Station Rd	37°05'38.7"N 78°27'19.4"W	LV-CE	500 <sup>4</sup> / (155/ 495) <sup>3 4</sup>	N/A <sup>5</sup>	TTC 4.2 TTC 5.2 TTC 23.2	Road ends to the right. Nearest driveway 100 ft to the left.
Access 4 SC 721 Dempseys Rd	37°06'16.1"N 78°25'52.1"W	LV-CE	435 / (250)	300 / (250)	TTC 4.2 TTC 5.2 TTC 23.2	Nearest driveway 200 ft to the right

1. Stopping sight distance measurements were conducted on January 13, 2025, in clear conditions with snow on the ground and lack of vegetation as typical with wintertime conditions. Measurements are approximate based on assumed driveway locations and field conditions. Stopping sight distances shall be verified upon actual driveway construction in summertime conditions to ensure adequate visibility is met and vegetation is trimmed where needed.
2. Required stopping sight distance based on Table 2-6 of the Virginia Department of Transportation's Road Design Manual, Appendix F.
3. Roadway is unposted, so the statutory speed limit is 55 mph. Due to the unpaved, narrow characteristics, the operating speed limit is estimated to be 25 mph. At 25 mph, 155 ft of SSD is required. At 55 mph, 495 ft is required.
4. Roadway was snow covered during the field view, so field measurements could not be performed precisely. SSD estimated based on site view, site photographs, and contour mapping, assuming tree trimming when the driveway is constructed. Trees to the immediate left of the driveway may block sight distance.
5. Roadway was gated to the right of the driveway where state maintenance ends. SSD could not be measured on private property.

During O&M activities these driveways may average only a single vehicle per weekday, they will be designed in accordance with the VDOT Standard Private Entrance detail provided in Appendix C.

During construction, employee vehicles can use the planned VDOT standard private entrance driveways without encroachment. Larger trucks, such as WB-67s, will encroach beyond driveway pavement. During construction, compacted gravel should be placed where needed to facilitate smooth truck turning maneuvers. Due to limitations with the secondary roads, all larger trucks are anticipated to use entrances on US 15 as feasible. Refer to Figure 9A-12B for WB-67 AutoTURN truck turning templates showing where additional compacted gravel would need to be placed beyond driveway radii to facilitate entering and exiting truck traffic.

## 5.0 Crash Data Review

Crash data from 2019 to 2024 was reviewed for roadways within 1,000 feet of proposed access driveways and along secondary roads from proposed driveways to the US highway arterials. Figure 13 and the following tables summarize reportable crash data per driveway location from the Virginia Highway Safety Office (VAHSO), Traffic Records Management, Reporting and Analysis Division.

**Table 4A**  
**Reportable Crashes (2019-2024) near US 15 Southern Site Driveway - Access 1**

Year	Type	Severity (No. of Injuries)	Conditions	Lighting	Roadway Surface Condition	Traffic Control Device	First Harmful Event
2020	Other	PDO	No Adverse Cond. (Clear/Cloudy)	Darkness - Road Lighted	Dry	No Traffic Control	Other Movable Object
2022	Fixed Object - Off Road	PDO	No Adverse Cond. (Clear/Cloudy)	Darkness - Road Not Lighted	Dry	Stop Sign	Guard Rail
2022	Rear End	Visible Injury (1)	No Adverse Cond. (Clear/Cloudy)	Daylight	Dry	No Traffic Control	Motor Vehicle In Transport
2023	Rear End	PDO	No Adverse Cond. (Clear/Cloudy)	Darkness - Road Not Lighted	Dry	No Passing Lines	Motor Vehicle In Transport
2024	Rear End	PDO	No Adverse Cond. (Clear/Cloudy)	Daylight	Dry	No Passing Lines	Motor Vehicle In Transport

Source: Traffic Records Management, Reporting and Analysis Division, Virginia Highway Safety Office (VAHSO)

**Table 4B**  
**Reportable Crashes (2019-2024) near US 15 Northern Site Driveway - Access 2**

Year	Type	Severity (No. of Injuries)	Conditions	Lighting	Roadway Surface Condition	Traffic Control Device	First Harmful Event
2020	Fixed Object - Off Road	PDO	Rain	Daylight	Wet	Traffic Lanes Marked	Utility Pole
2022	Fixed Object - Off Road	PDO	Snow	Daylight	Snowy	Traffic Lanes Marked	Trees
2022	Fixed Object - Off Road	PDO	Rain	Daylight	Wet	No Traffic Control	Utility Pole

Source: Traffic Records Management, Reporting and Analysis Division, Virginia Highway Safety Office (VAHSO)

**Table 4C**  
**Reportable Crashes (2019-2024) - SC 635 & 654 (Ole Briery Station & Cabbage Patch Roads) - Access 3**

Year	Type	Severity (No. of Injuries)	Conditions	Lighting	Roadway Surface Condition	Traffic Control Device	First Harmful Event
2019	Angle	PDO	No Adverse Cond. (Clear/Cloudy)	Daylight	Wet	Stop Sign	Motor Vehicle In Transport
2021	Other	PDO	No Adverse Cond. (Clear/Cloudy)	Darkness - Road Not Lighted	Dry	No Passing Lines	Overturn (Rollover)
2021	Fixed Object - Off Road	PDO	No Adverse Cond. (Clear/Cloudy)	Daylight	Dry	No Traffic Control	Ran Off Road
2021	Deer	PDO	No Adverse Cond. (Clear/Cloudy)	Dawn	Dry	Traffic Lanes Marked	Animal
2022	Deer	PDO	No Adverse Cond. (Clear/Cloudy)	Daylight	Dry	Traffic Lanes Marked	Animal
2022	Angle	PDO	No Adverse Cond. (Clear/Cloudy)	Daylight	Dry	Traffic Lanes Marked	Motor Vehicle In Transport
2022	Other	Fatal Injury (2)	No Adverse Cond. (Clear/Cloudy)	Darkness - Road Not Lighted	Dry	Traffic Lanes Marked	Other Movable Object
2023	Fixed Object - Off Road	PDO	No Adverse Cond. (Clear/Cloudy)	Daylight	Dry	Traffic Lanes Marked	Bank Or Ledge
2023	Angle	Visible Injury (3)	No Adverse Cond. (Clear/Cloudy)	Daylight	Dry	Traffic Lanes Marked	Motor Vehicle In Transport
2024	Angle	Visible Injury (1)	No Adverse Cond. (Clear/Cloudy)	Daylight	Dry	Stop Sign	Motor Vehicle In Transport
2024	Angle	Fatal Injury (1)	No Adverse Cond. (Clear/Cloudy)	Darkness - Road Not Lighted	Wet	Stop Sign	Motor Vehicle In Transport
2024	Angle	Visible Injury (3)	No Adverse Cond. (Clear/Cloudy)	Daylight	Dry	Traffic Lanes Marked	Motor Vehicle In Transport

Source: Traffic Records Management, Reporting and Analysis Division, Virginia Highway Safety Office (VAHSO)

**Table 4D**  
**Reportable Crashes (2019-2024) - SC 633, 634 & 721 (Virso, New Bethel & Dempseys Roads) - Access 4**

Year	Type	Severity (No. of Injuries)	Conditions	Lighting	Roadway Surface Condition	Traffic Control Device	First Harmful Event
2019	Angle	Visible Injury (2)	No Adverse Cond. (Clear/Cloudy)	Darkness - Road Not Lighted	Dry	No Passing Lines	Motor Vehicle In Transport
2019	Fixed Object - Off Road	PDO	Rain	Darkness - Road Not Lighted	Wet	Traffic Lanes Marked	Bank Or Ledge
2020	Deer	PDO	No Adverse Cond. (Clear/Cloudy)	Darkness - Road Not Lighted	Dry	No Traffic Control	Animal
2020	Other	PDO	Rain	Darkness - Road Not Lighted	Wet	No Traffic Control	Overturn (Rollover)
2021	Fixed Object - Off Road	PDO	No Adverse Cond. (Clear/Cloudy)	Darkness - Road Not Lighted	Dry	No Traffic Control	Fence Or Post
2021	Deer	PDO	No Adverse Cond. (Clear/Cloudy)	Darkness - Road Not Lighted	Dry	No Traffic Control	Animal
2021	Sideswipe - Opposite Direction	PDO	No Adverse Cond. (Clear/Cloudy)	Daylight	Dry	No Traffic Control	Motor Vehicle In Transport
2022	Fixed Object - Off Road	PDO	No Adverse Cond. (Clear/Cloudy)	Daylight	Dry	No Passing Lines	Guard Rail
2022	Fixed Object - Off Road	Fatal Injury (1)	No Adverse Cond. (Clear/Cloudy)	Daylight	Dry	No Traffic Control	Fence Or Post
2022	Sideswipe - Opposite Direction	PDO	No Adverse Cond. (Clear/Cloudy)	Daylight	Dry	No Traffic Control	Motor Vehicle In Transport
2022	Deer	PDO	No Adverse Cond. (Clear/Cloudy)	Darkness - Road Not Lighted	Dry	No Traffic Control	Animal
2022	Fixed Object - Off Road	PDO	Snow	Darkness - Road Not Lighted	Snowy	No Traffic Control	Trees
2023	Fixed Object - Off Road	Visible Injury (1)	No Adverse Cond. (Clear/Cloudy)	Daylight	Dry	No Passing Lines	Trees
2023	Non- Collision	PDO	No Adverse Cond. (Clear/Cloudy)	Daylight	Dry	No Traffic Control	Overturn (Rollover)
2023	Fixed Object in Road	PDO	Rain	Darkness - Road Not Lighted	Wet	Traffic Lanes Marked	Trees
2024	Head On	Visible Injury (3)	No Adverse Cond. (Clear/Cloudy)	Darkness - Road Not Lighted	Dry	No Traffic Control	Motor Vehicle In Transport

Source: Traffic Records Management, Reporting and Analysis Division, Virginia Highway Safety Office (VAHSO)

The crash data review indicates that out the roadway areas near the US 15 access points and along the local roads to the other two access points, 36 incidents occurred from 2019 to 2024, resulting in 15 injuries and 4 fatalities. Relatively few crashes occurred near the driveway locations, with an average of no more than one per year near a proposed driveway along US 15. Incidents near those driveways were predominantly rear-end collisions and fixed-object off-road accidents with a majority being property damage only (PDO) crashes.

Severe crashes were more frequent at local road intersections with US 15 and US 360, as well as at curves along SC 633 (Virso Road) and SC 634 (New Bethel Road). The crash review indicated that, for accidents occurring along potential access routes to driveways 3 and 4 along SC 635 (Ole Briery Station Road) and SC 721 (Dempseys Road), motorists had higher rates of crashes during poor lighting/nighttime conditions and wet weather conditions. Nearly a quarter of incidents along those roads involved motorist distraction or speeds in excess of advisory speeds. Among these crashes, most incidents had non-motor vehicle collision events with animals or fixed objects off-road. Angle crashes comprised most motor vehicle collisions at intersections. While crash clusters (five or more crashes of similar causation factors at the same location in a year) were not observed, the review shows that heavier vehicles could experience difficulty turning from local roads to US highways.

## 6.0 Conclusions

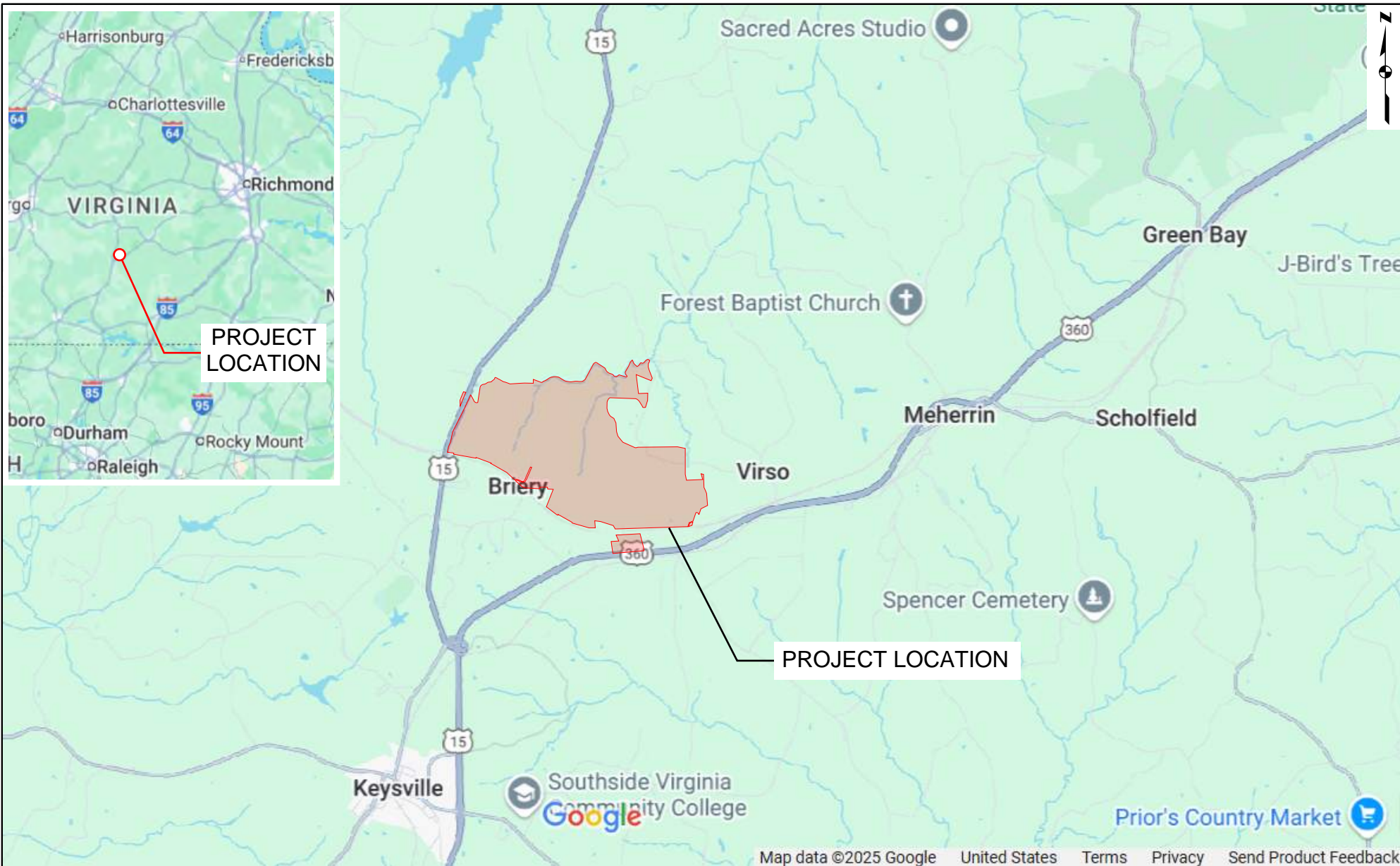
The Tobacco Trail Solar Project will provide an environmentally friendly power facility in Prince Edward County. Traffic impacts will occur during the Project's 18-month construction schedule. All site driveways will be designed as VDOT Standard Private Entrances due to their low anticipated use once construction has been completed. Driveways with heavy construction truck traffic may need to be temporarily widened with additional crushed gravel areas placed to facilitate turning movements, identified in truck turning movement figures. The project will have internal roadways, construction parking lots, staging areas, and other infrastructure to facilitate construction. The solar facility is to have four driveways to help distribute traffic and mitigate temporary construction impacts. Located in a rural area of southern Price Edward County, traffic on surrounding US highways currently do not exceed 230 directional trips per hour. Traffic on local roads do not exceed 35 directional trips per hour. With a maximum projected traffic burden of up to 300 employees and 45 deliveries per day, spread out throughout the adjacent roadway network, up to 115 combined directional combined employee and delivery trips can be anticipated per roadway. However, due to such low existing traffic volumes, few traffic impacts during construction are anticipated. Flaggers can be provided as necessary to mitigate local site impacts, such as assisting employees and deliveries enter and exit the site. Employee trips may be distributed throughout the various driveways as needed, but truck trips will be concentrated along the US 15 entrances. Secondary routes are not suitable for truck trips due to sharp turns and vertical transitions and should have flagger or pilot vehicle assistance if used.

Upon completion, the solar project is anticipated to have minimal typical trips, as there will be no permanent staff on site. About 20 vehicles per month, or one per weekday, are assumed to visit the site for O&M activities.

As the project design progresses, survey and other field work will be required for various tasks. VDOT requirements must be met throughout the site plan and detailed design process for site driveways. Any additional permits, such as VDOT Land Use Permits and delivery haul route permits, will be obtained by the designer or contractor prior to facility construction. Tobacco Trail Solar is pleased to present a valuable public utility that will benefit the surrounding community.

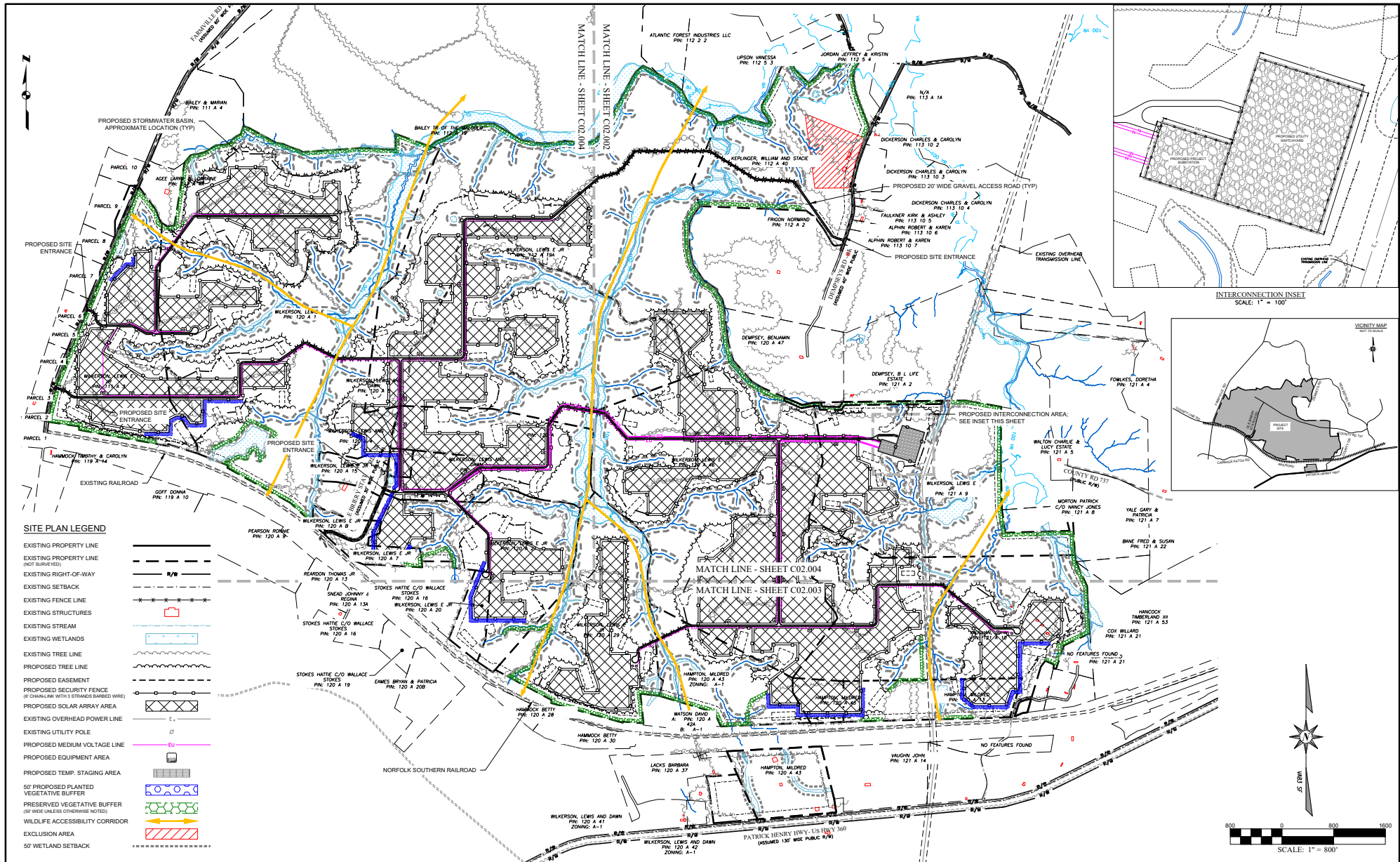


## FIGURES



	<p>REFERENCE: © GOOGLE MAPS 2025</p>	<p><b>LEGEND</b></p> <div data-bbox="800 1323 873 1359" style="display: inline-block; width: 20px; height: 10px; background-color: #f08080; border: 1px solid black; margin-right: 5px;"></div> PROJECT LOCATION BOUNDARY
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SCALE: 2 MI



REFERENCE:  
© STRADA CLEAN ENERGY 2025

FIGURE 2  
ZONING SITE PLAN

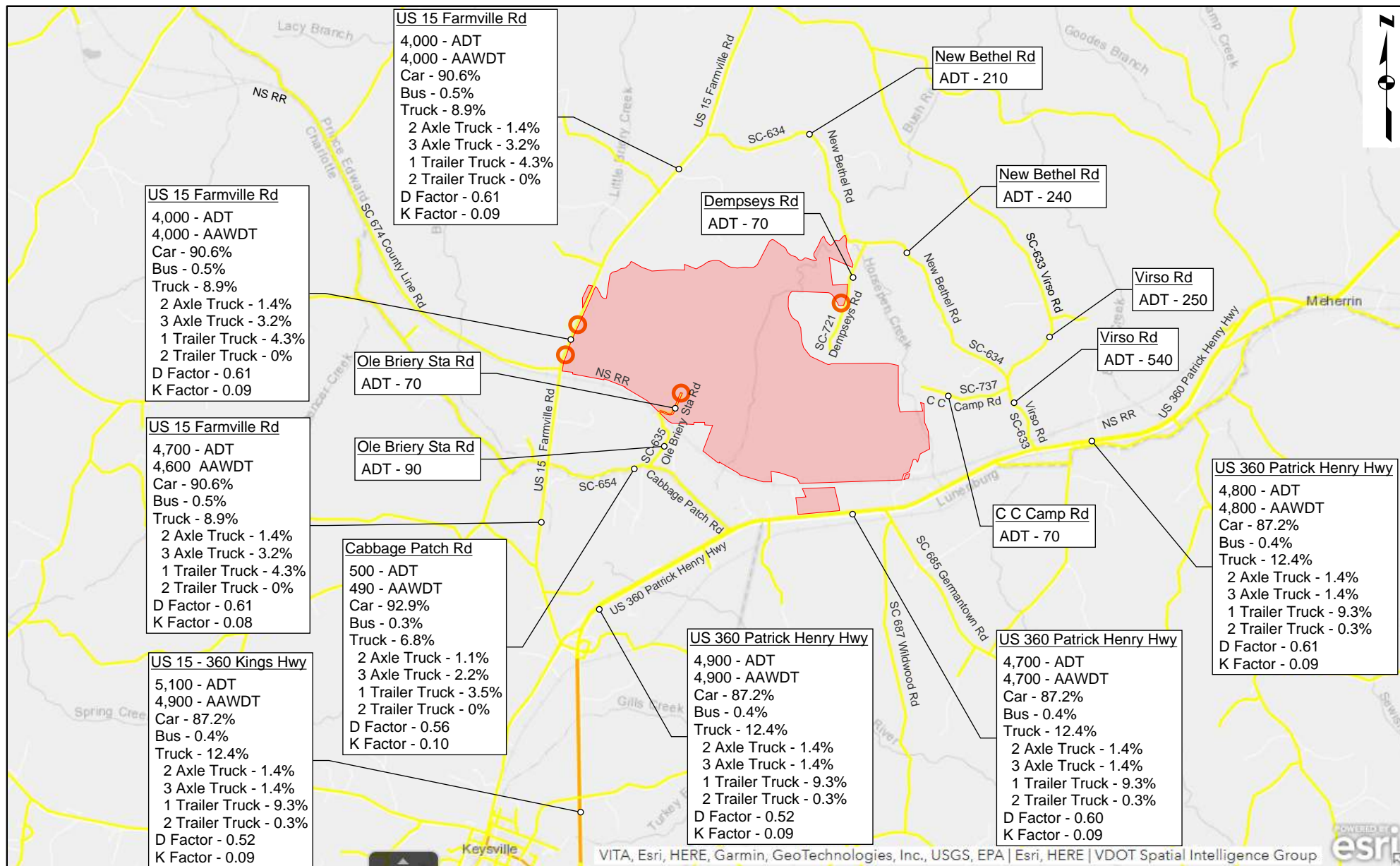


TOBACCO TRAIL SOLAR  
TOBACCO TRAIL SOLAR, LLC

DRAWN BY: TMW  
CHECKED: BSG

DATE: 1/15/2025  
APPROVED: 1/16/2025





#### REFERENCE:

Virginia Traffic Volume Map  
 VirginiaRoads.org  
 Accessed 1-15-2025

#### LEGEND

- [Red Outline] PROJECT LOCATION BOUNDARY
- [Orange Circle] CONSTRUCTION ENTRANCE
- [Yellow Line] ADT 0 - 5,000
- [Orange Line] ADT 5,001 - 20,000

SCALE: 1 MI

#### FIGURE 3 TRAFFIC VOLUME MAP



**TOBACCO TRAIL SOLAR**  
 TOBACCO TRAIL SOLAR, LLC

DRAWN BY: TMW  
 CHECKED: BSG

DATE: 1/15/2025  
 APPROVED: 1/16/2025







VGIN, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, MET/NASA, USGS, EPA, NPS, US Census Bureau, USDA, USFWS | This data was created as part of the Roadway Network System Program, contained under the Infor...

#### REFERENCE:

Virginia Designated Truck Routes and Length Restrictions Map  
Updated 7-25-2024  
© GOOGLE MAPS 2025

#### LEGEND

- PROJECT LOCATION BOUNDARY
- CONSTRUCTION ENTRANCE
- NATIONAL NETWORK + VIRGINIA QUALIFYING HIGHWAYS FOR STAA VEHICLES
- POTENTIAL ACCESS ROUTE
- SCHOOL BUS ROUTE/STOP

SCALE: 2000 FT

#### FIGURE 4B

ACCESS ROAD CONDITIONS TO  
SC-635 OLE BRIERY STATION RD



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CHECKED: BSG

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REFERENCE:

**LEGEND**

WB-67

	feet
Tractor Width	: 8.00
Trailer Width	: 8.50
Tractor Track	: 8.00
Trailer Track	: 8.50
Lock to Lock Time	: 6.0
Steering Angle	: 28.4
Articulating Angle	: 75.0

SCALE: 25 FT

**FIGURE 5A**  
**AUTOTURN WB-67 SIMULATION**  
**SC 634 NEW BETHEL RD EASTBOUND**

**TOBACCO TRAIL SOLAR**  
**TOBACCO TRAIL SOLAR, LLC**

<b>DRAWN BY:</b> BSG	<b>DATE:</b> 1/15/2025
<b>CHECKED:</b> TMW	<b>APPROVED:</b> 1/16/2025





REFERENCE:

**LEGEND**

WB-67

	feet	
Tractor Width	: 8.00	Lock to Lock Time
Trailer Width	: 8.50	Steering Angle
Tractor Track	: 8.00	Articulating Angle
Trailer Track	: 8.50	

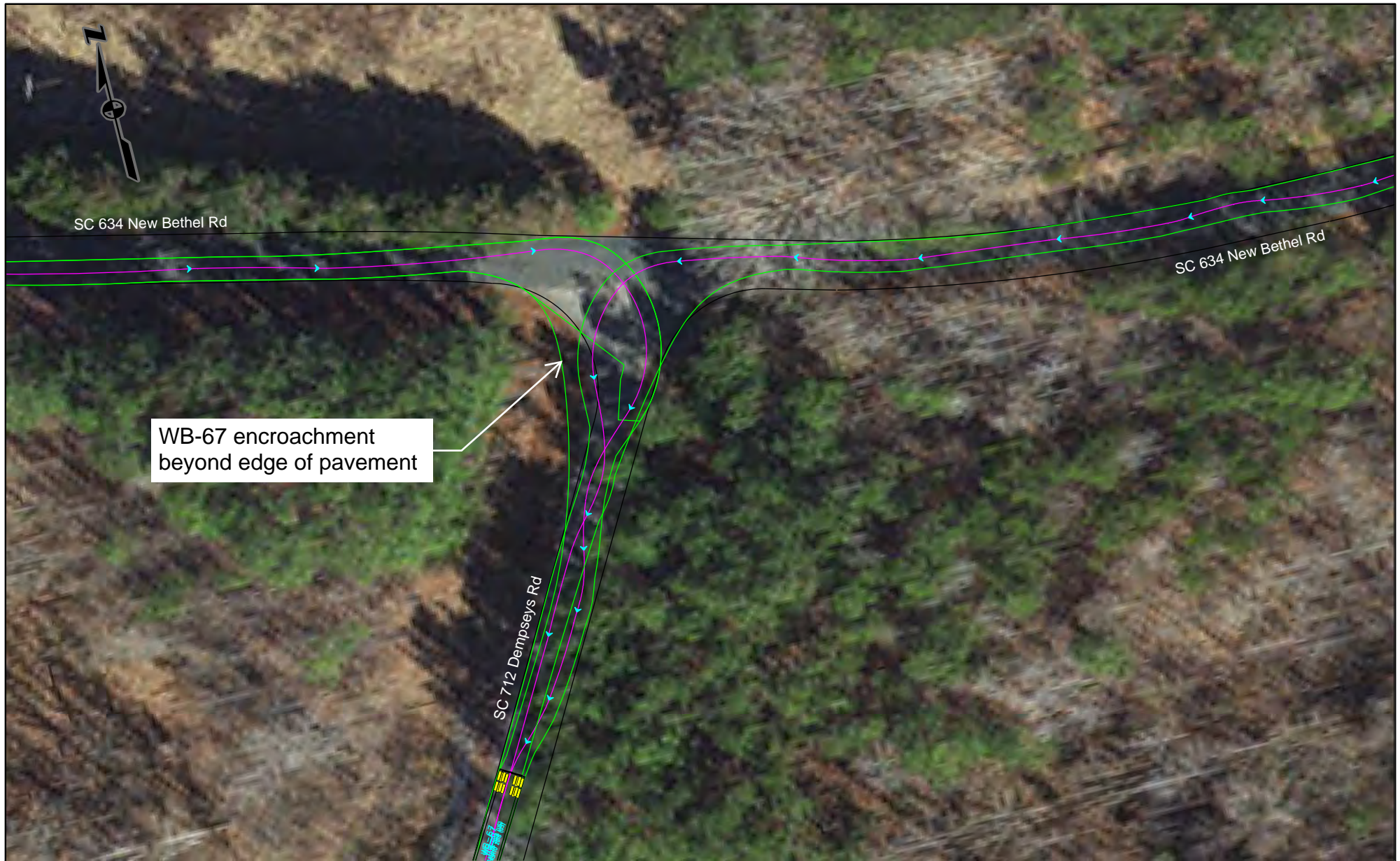
SCALE: 25 FT

**FIGURE 5B**  
**AUTOTURN WB-67 SIMULATION**  
**SC 634 NEW BETHEL RD WESTBOUND**

**TOBACCO TRAIL SOLAR**  
**TOBACCO TRAIL SOLAR, LLC**

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<b>CHECKED:</b> TMW	<b>APPROVED:</b> 1/16/2025





WB-67 encroachment  
beyond edge of pavement

REFERENCE:

**LEGEND**

WB-67

	feet
Tractor Width	: 8.00
Trailer Width	: 8.50
Tractor Track	: 8.00
Trailer Track	: 8.50
Lock to Lock Time	: 6.0
Steering Angle	: 28.4
Articulating Angle	: 75.0

SCALE: 25 FT

**FIGURE 6A**

**AUTOTURN WB-67 SIMULATION**

**SC 721 DEMPSEYS RD ENTERING**

gai consultants

**TOBACCO TRAIL SOLAR**

TOBACCO TRAIL SOLAR, LLC

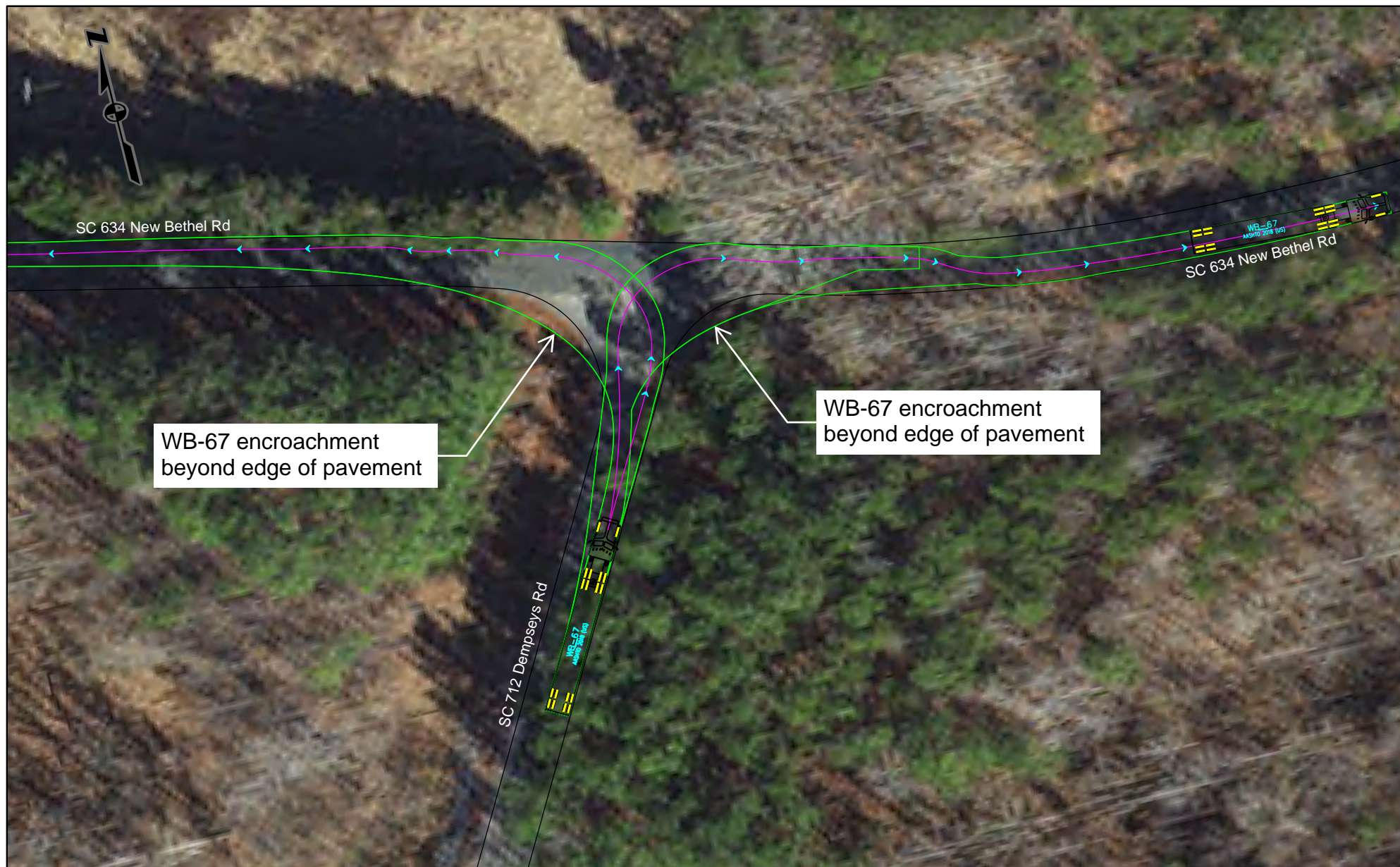
**DRAWN BY:** BSG

**DATE:** 1/15/2025

**CHECKED:** TMW

**APPROVED:** 1/16/2025





REFERENCE:


**LEGEND**

WB-67

	feet	
Tractor Width	: 8.00	Lock to Lock Time
Trailer Width	: 8.50	Steering Angle
Tractor Track	: 8.00	Articulating Angle
Trailer Track	: 8.50	

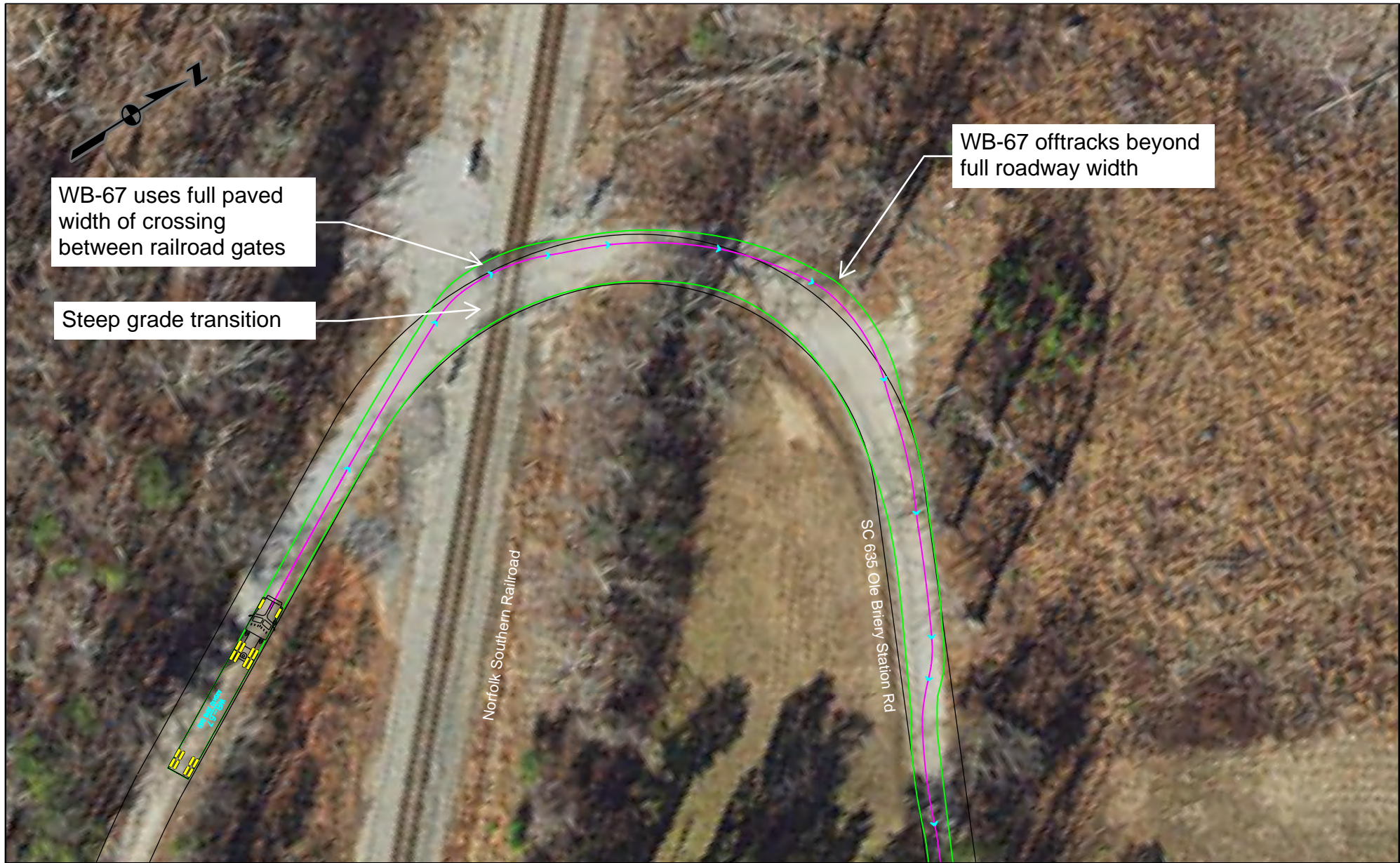
SCALE: 25 FT

**FIGURE 6B**  
AUTOTURN WB-67 SIMULATION  
SC 721 DEMPSEYS RD EXITING

 **TOBACCO TRAIL SOLAR**  
TOBACCO TRAIL SOLAR, LLC

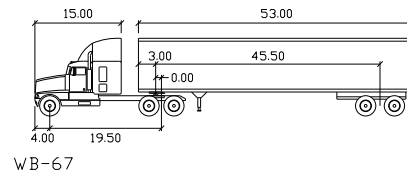
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<b>CHECKED:</b> TMW	<b>APPROVED:</b> 1/16/2025





REFERENCE:

#### LEGEND



WB-67

feet

Tractor Width	: 8.00	Lock to Lock Time	: 6.0
Trailer Width	: 8.50	Steering Angle	: 28.4
Tractor Track	: 8.00	Articulating Angle	: 75.0
Trailer Track	: 8.50		

SCALE: 25 FT

#### FIGURE 7A

AUTOTURN WB-67 SIMULATION  
SC 635 OLE BRIERY STA RD NS CROSSING NB



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CHECKED: TMW

DATE: 1/15/2025  
APPROVED: 1/16/2025





REFERENCE:

**LEGEND**

WB-67

Tractor Width	: 8.00	Lock to Lock Time	: 6.0
Trailer Width	: 8.50	Steering Angle	: 28.4
Tractor Track	: 8.00	Articulating Angle	: 75.0
Trailer Track	: 8.50		

feet

SCALE: 25 FT

**FIGURE 7B**  
**AUTOTURN WB-67 SIMULATION**  
**SC 635 OLE BRIERY STA RD NS CROSSING SB**

**TOBACCO TRAIL SOLAR**  
**TOBACCO TRAIL SOLAR, LLC**

**gai consultants**

<b>DRAWN BY:</b> BSG	<b>DATE:</b> 1/15/2025
<b>CHECKED:</b> TMW	<b>APPROVED:</b> 1/16/2025





REFERENCE:

**LEGEND**

WB-67

	feet		
Tractor Width	: 8.00	Lock to Lock Time	: 6.0
Trailer Width	: 8.50	Steering Angle	: 28.4
Tractor Track	: 8.00	Articulating Angle	: 75.0
Trailer Track	: 8.50		

SCALE: 25 FT

**FIGURE 8A**  
**AUTOTURN WB-67 SIMULATION**  
**SC 635 OLE BRIERY STA RD S-CURVE NB**

**TOBACCO TRAIL SOLAR**  
**TOBACCO TRAIL SOLAR, LLC**

<b>DRAWN BY:</b> BSG	<b>DATE:</b> 1/15/2025
<b>CHECKED:</b> TMW	<b>APPROVED:</b> 1/16/2025





REFERENCE:

**LEGEND**

WB-67

Tractor Width	: 8.00	Lock to Lock Time	: 6.0
Trailer Width	: 8.50	Steering Angle	: 28.4
Tractor Track	: 8.00	Articulating Angle	: 75.0
Trailer Track	: 8.50		

SCALE: 25 FT

**FIGURE 8B**

**AUTOTURN WB-67 SIMULATION**

**SC 635 OLE BRIERY STA RD S-CURVE SB**

**TOBACCO TRAIL SOLAR**

TOBACCO TRAIL SOLAR, LLC

**DRAWN BY: BSG**

**CHECKED: TMW**


**DATE: 1/15/2025**

**APPROVED: 1/16/2025**



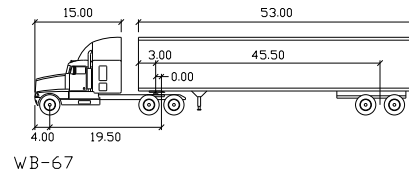


REFERENCE:

 TEMPORARY  
WIDENING FOR  
TRUCK ACCESS

SCALE: 25 FT 

#### LEGEND




	feet		
Tractor Width	: 8.00	Lock to Lock Time	: 6.0
Trailer Width	: 8.50	Steering Angle	: 28.4
Tractor Track	: 8.00	Articulating Angle	: 75.0
Trailer Track	: 8.50		

FIGURE 9A

AUTOTURN WB-67 SIMULATION

US 15 SOUTHERN DRIVEWAY (#1) - ENTERING



gai consultants

TOBACCO TRAIL SOLAR

TOBACCO TRAIL SOLAR, LLC

DRAWN BY: BSG

CHECKED: TMW


DATE: 1/15/2025

APPROVED: 1/16/2025



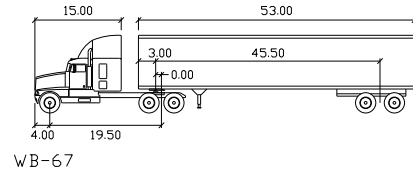


REFERENCE:

 TEMPORARY  
WIDENING FOR  
TRUCK ACCESS

SCALE: 25 FT 

### LEGEND



	feet		
Tractor Width	: 8.00	Lock to Lock Time	: 6.0
Trailer Width	: 8.50	Steering Angle	: 28.4
Tractor Track	: 8.00	Articulating Angle	: 75.0
Trailer Track	: 8.50		

FIGURE 9B  
AUTOTURN WB-67 SIMULATION  
US 15 SOUTHERN DRIVEWAY (#1) - EXITING



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TOBACCO TRAIL SOLAR, LLC

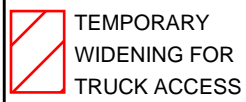
DRAWN BY: BSG  
CHECKED: TMW

DATE: 1/15/2025  
APPROVED: 1/16/2025





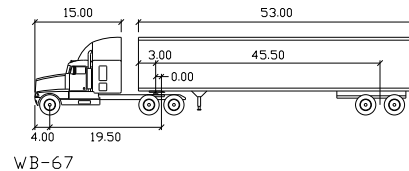
REFERENCE:



TEMPORARY  
WIDENING FOR  
TRUCK ACCESS

SCALE: 25 FT

#### LEGEND



WB-67

Tractor Width	: 8.00	Lock to Lock Time	: 6.0
Trailer Width	: 8.50	Steering Angle	: 28.4
Tractor Track	: 8.00	Articulating Angle	: 75.0
Trailer Track	: 8.50		

FIGURE 10A  
AUTOTURN WB-67 SIMULATION  
US 15 NORTHERN DRIVEWAY (#2) - ENTERING

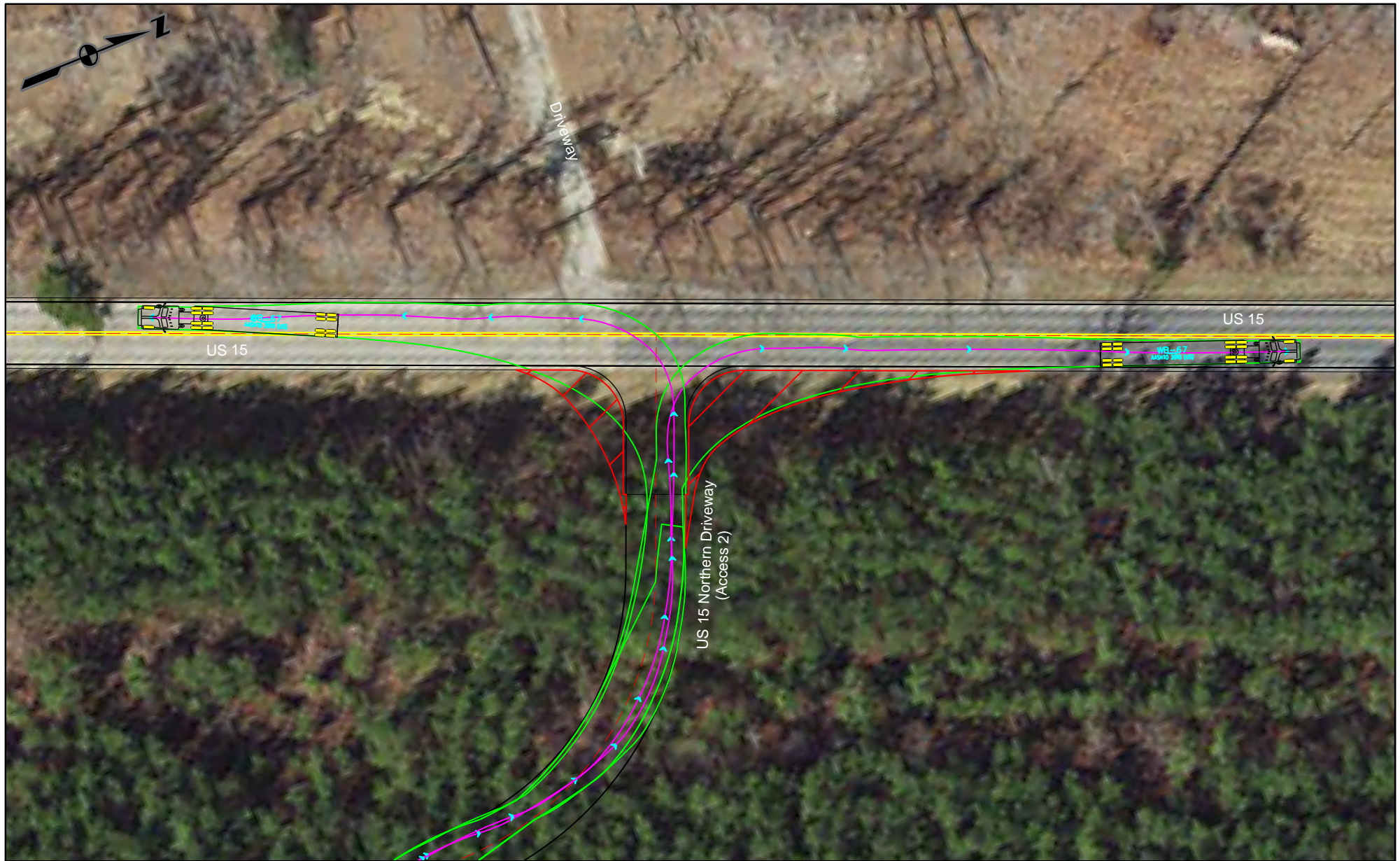


TOBACCO TRAIL SOLAR  
TOBACCO TRAIL SOLAR, LLC


DRAWN BY: BSG  
CHECKED: TMW

DATE: 1/15/2025  
APPROVED: 1/16/2025



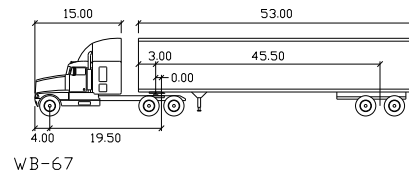


REFERENCE:

 TEMPORARY  
WIDENING FOR  
TRUCK ACCESS

SCALE: 25 FT 

#### LEGEND



Tractor Width	: 8.00	Lock to Lock Time	: 6.0
Trailer Width	: 8.50	Steering Angle	: 28.4
Tractor Track	: 8.00	Articulating Angle	: 75.0
Trailer Track	: 8.50		

FIGURE 10B  
AUTOTURN WB-67 SIMULATION  
US 15 NORTHERN DRIVEWAY (#2) - EXITING



TOBACCO TRAIL SOLAR  
TOBACCO TRAIL SOLAR, LLC


DRAWN BY: BSG  
CHECKED: TMW

DATE: 1/15/2025  
APPROVED: 1/16/2025



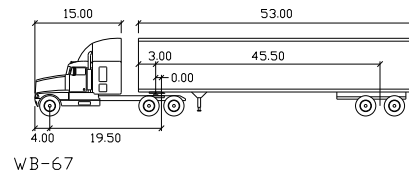


REFERENCE:

 TEMPORARY  
WIDENING FOR  
TRUCK ACCESS

SCALE: 25 FT 

#### LEGEND




Tractor Width	: 8.00	Lock to Lock Time	: 6.0
Trailer Width	: 8.50	Steering Angle	: 28.4
Tractor Track	: 8.00	Articulating Angle	: 75.0
Trailer Track	: 8.50		

**FIGURE 11A**

**AUTOTURN WB-67 SIMULATION**

**SC 635 OLE BRIERY STA RD DWY (#3) - ENTERING**



**TOBACCO TRAIL SOLAR**

TOBACCO TRAIL SOLAR, LLC

**DRAWN BY: BSG**

**CHECKED: TMW**


**DATE: 1/15/2025**

**APPROVED: 1/16/2025**



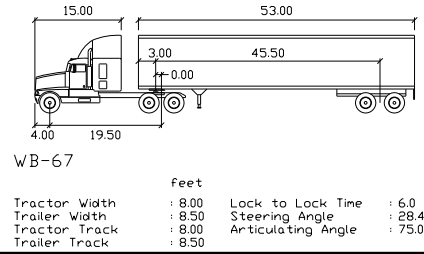


REFERENCE:

 TEMPORARY  
WIDENING FOR  
TRUCK ACCESS

SCALE: 25 FT 


**LEGEND**



**FIGURE 11B**

**AUTOTURN WB-67 SIMULATION**

**SC 635 OLE BRIERY STA RD DWY (#3) - EXITING**



**gai consultants**

**TOBACCO TRAIL SOLAR**

**TOBACCO TRAIL SOLAR, LLC**

**DRAWN BY: BSG**

**DATE: 1/15/2025**

**CHECKED: TMW**

**APPROVED: 1/16/2025**





REFERENCE:

TEMPORARY  
WIDENING FOR  
TRUCK ACCESS

SCALE: 25 FT

**LEGEND**

WB-67

	feet		
Tractor Width	: 8.00	Lock to Lock Time	: 6.0
Trailer Width	: 8.50	Steering Angle	: 28.4
Tractor Track	: 8.00	Articulating Angle	: 75.0
Trailer Track	: 8.50		

**FIGURE 12A**

**AUTOTURN WB-67 SIMULATION**

**SC 721 DEMPSEYS ROAD DWY (#4) - ENTERING**

**TOBACCO TRAIL SOLAR**

TOBACCO TRAIL SOLAR, LLC

**DRAWN BY: BSG**

**CHECKED: TMW**


**DATE: 1/15/2025**

**APPROVED: 1/16/2025**



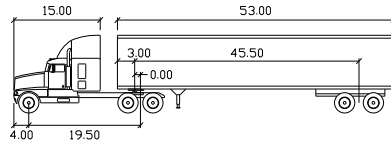


REFERENCE:




TEMPORARY  
WIDENING FOR  
TRUCK ACCESS

**LEGEND**



WB-67


Tractor Width	: 8.00	Lock to Lock Time	: 6.0
Trailer Width	: 8.50	Steering Angle	: 28.4
Tractor Track	: 8.00	Articulating Angle	: 75.0
Trailer Track	: 8.50		

SCALE: 25 FT 

**FIGURE 12B**

**AUTOTURN WB-67 SIMULATION**

**SC 721 DEMPSEYS ROAD DWY (#4) - EXITING**



gai consultants

**TOBACCO TRAIL SOLAR**

TOBACCO TRAIL SOLAR, LLC

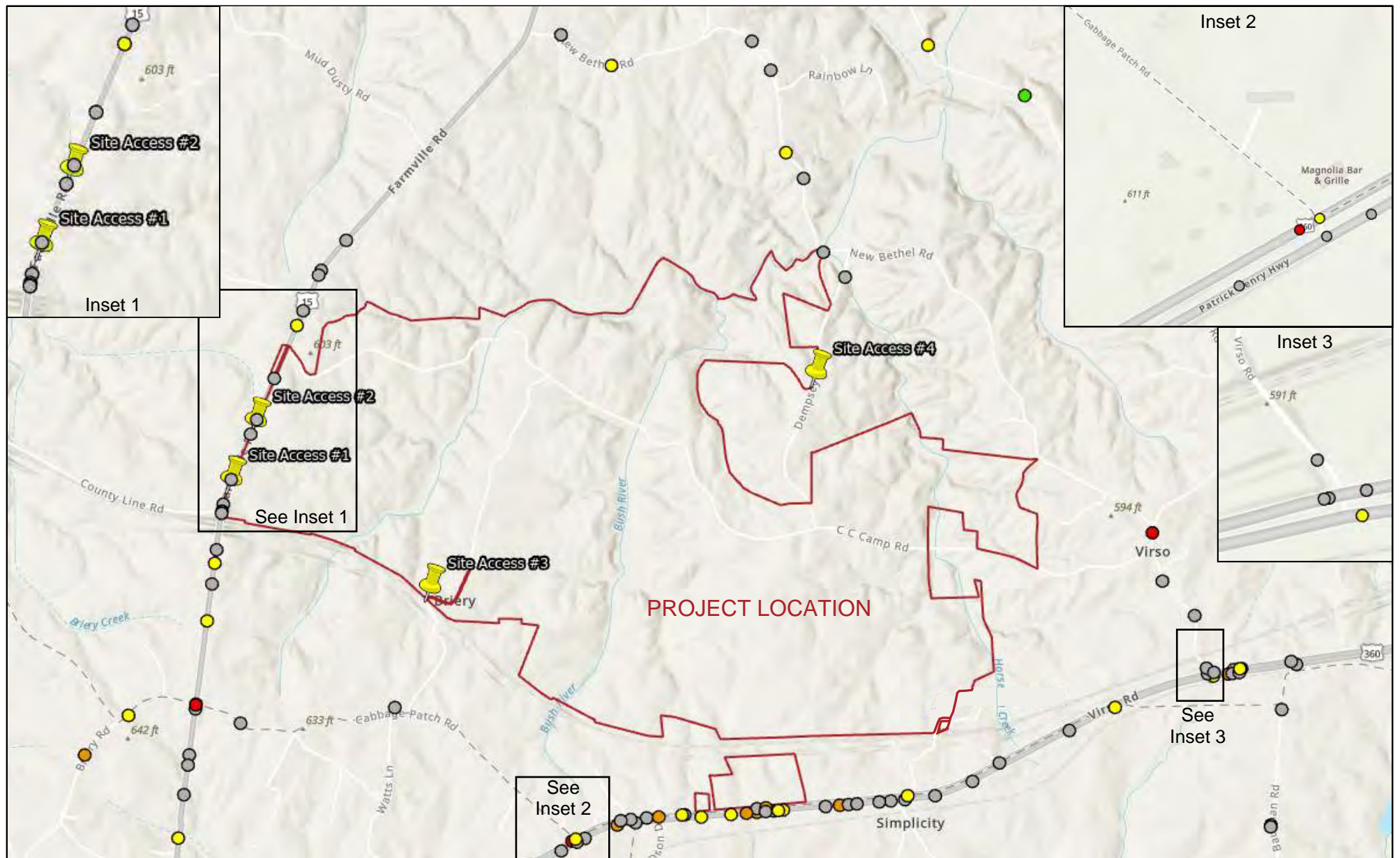
**DRAWN BY: BSG**

**DATE: 1/15/2025**

**CHECKED: TMW**

**APPROVED: 1/16/2025**





REFERENCE:  
VIRGINIA DEPT OF MOTOR VEHICLES  
(VIA ARCGIS PRO)

#### LEGEND

- PROJECT LOCATION BOUNDARY
- 📌 PROPOSED SITE ACCESS DRIVEWAYS
- K. FATAL INJURY
- A. SEVERE INJURY
- B. VISIBLE INJURY
- C. NONVISIBLE INJURY
- PDO. PROPERTY DAMAGE ONLY

SCALE: 1 MI

**FIGURE 13**  
**CRASH HISTORY (2019-2024)**



**TOBACCO TRAIL SOLAR**  
TOBACCO TRAIL SOLAR, LLC

DRAWN BY: BSG  
CHECKED: TMW

DATE: 1/15/2025  
APPROVED: 1/16/2025



## **APPENDIX A AREA ROADWAYS PHOTOGRAPHS**

## US 15 Farmville Road



Typical View with Rolling Hills



Narrow Bridge over Norfolk Southern Railroad



## US 360 Patrick Henry Highway



**Typical View with Mailboxes and Median Openings**



**School Bus Signage**



## SC-721 Dempseys Road



**Intersection with SC-634 New Bethel Rd**



**End of State Road**





**Culvert over Horsepen Creek**



**Sight Distance Limitation**



## SC-634 New Bethel Road



**Typical View with Sharp Curves**



**Curve and School Bus Stop Warning Signs**





**Structure over Brush Run**



**Intersection with SC-633 Virso Rd**



## SC-633 Virso Rd



**Typical View with Curve Warning Sign and 45 mph Speed Restriction**



**Bridge over Norfolk Southern Railroad**





**Looking Left to Turn Right to US 360 Patrick Henry Dr Westbound**



**Looking Straight to Turn Left to US 360 Patrick Henry Dr Eastbound**



## Country Drive



**Looking Left to US 360 Patrick Henry Highway at Uncontrolled Location**



**Uncontrolled Intersection from US 360 Patrick Henry Highway**





**Ungated Private Railroad Crossing**



**Typical View**



## SC-635 Ole Briery Station Road



**Typical View of Paved Portion near SC-654 Cabbage Patch Rd**



**End of Asphalt Pavement Approaching Railroad Crossing**





**Gated Railroad Crossing with Steep Grade Change**



**End of Road**





**Looking Left to SC-654 Cabbage Patch Rd**



**Looking Right to SC-654 Cabbage Patch Rd**



## SC-654 Cabbage Patch Road



**Typical View**



**Intersection with US 360 Patrick Henry Highway**





**Looking Left to US 15 Farmville Rd**



**Looking Right to US 15 Farmville Rd**





**Farm Vehicle / School Bus Warning Signs**



**Looking West toward Ole Briery Station Rd**

## **APPENDIX B**

# **PROPOSED SITE DRIVEWAY PHOTOGRAPHS**



## US 15 Farmville Road Southern Driveway near County Line Rd



Looking Left



Looking Right





**Looking North on US 15 toward Proposed Driveway on Right**



**Looking South toward Proposed Driveway on Left**



## US 15 Farmville Road Northern Driveway near 16176 Farmville Rd



Looking Left



Looking Right





**Sight Distance View toward Crest of Hill Looking Left from Proposed Driveway**



**Sight Distance View at Crest of Hill Looking North to Proposed Driveway on Right**



## SC-721 Dempseys Road Driveway



Looking Left



Looking Right



## Ole Briery Station Rd Driveway



Looking Left



Looking Right

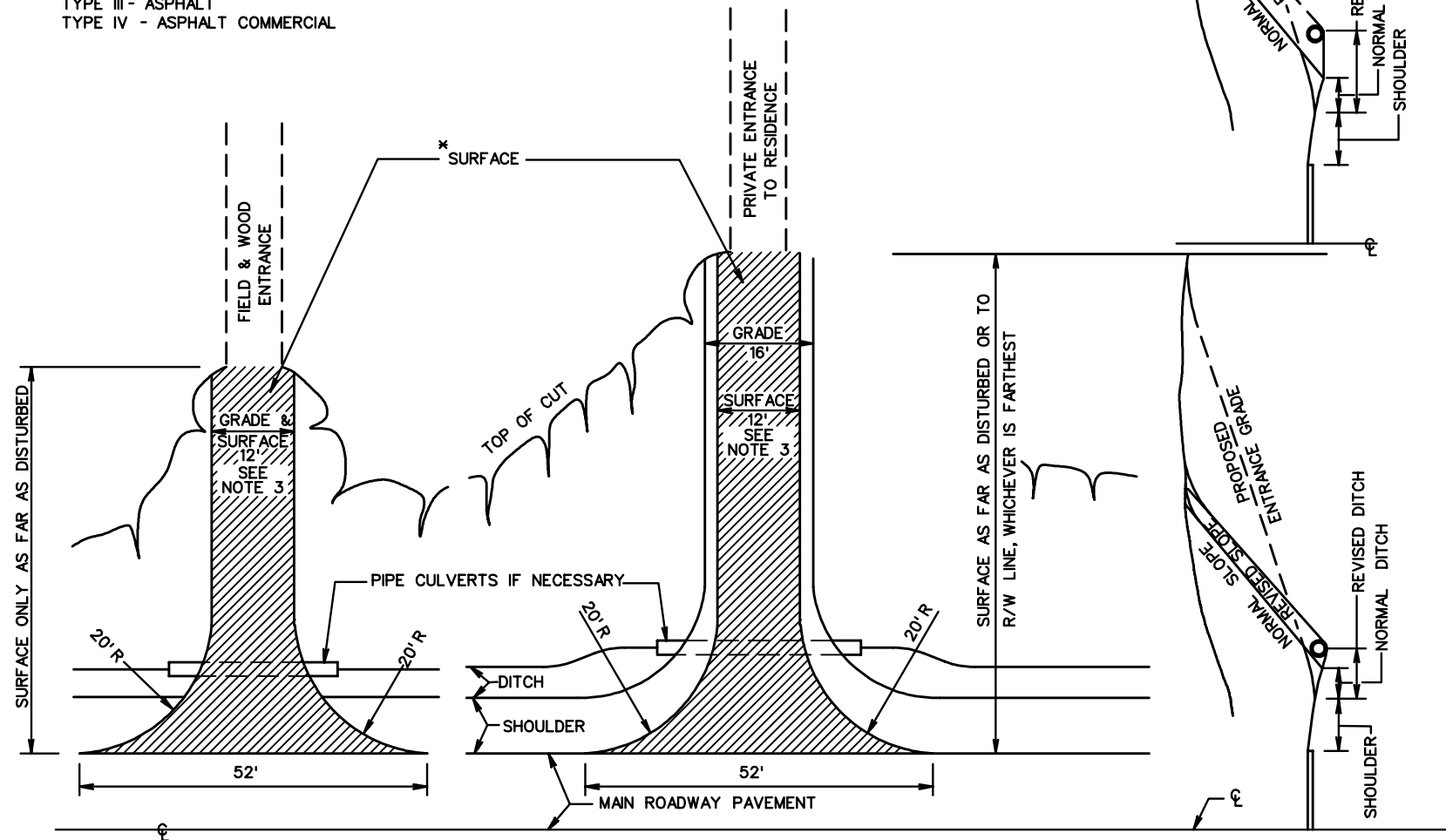
## **APPENDIX C**

### **VDOT STANDARD PRIVATE ENTRANCE DETAIL**



\* TO BE DETERMINED BY THE EXISTING CONDITIONS  
AT THE TIME OF CONSTRUCTION

TYPE I - CRUSHER RUN AGGREGATE  
TYPE II - CONCRETE  
TYPE III - ASPHALT  
TYPE IV - ASPHALT COMMERCIAL



NOTES:

1. ALL ENTRANCE GRADES SHALL START BACK OF THE SHOULDER LINE. IF DRAINAGE IS NECESSARY, THE DITCH MAY BE MOVED BACK TO PROVIDE AT LEAST 9" OF COVER OVER PIPE, AS SHOWN IN THE ALTERNATE METHODS FOR PLACING PIPE UNDER ENTRANCES DIAGRAM.
2. ENTRANCE GRADES ARE TO BE SMOOTHLY TIED INTO THE ROADWAY BY ROUNDING AS NECESSARY.
3. 12' OR EXISTING WIDTH WHICHEVER IS GREATER.
4. LENGTHS OF CULVERTS SHOWN ON ROAD PLANS FOR ENTRANCES ARE APPROXIMATE AND SHALL BE ADJUSTED TO OBTAIN ABOVE ROADWAY WIDTHS.
5. ENTRANCES IN FILL TO BE SAME AS ABOVE EXCEPT LOCATION OF CULVERT (WHEN NECESSARY).

SPECIFICATION  
REFERENCE

512

## STANDARD PRIVATE ENTRANCES

VIRGINIA DEPARTMENT OF TRANSPORTATION

VDOT

ROAD AND BRIDGE STANDARDS

REVISION DATE

SHEET 1 OF 1

602.02

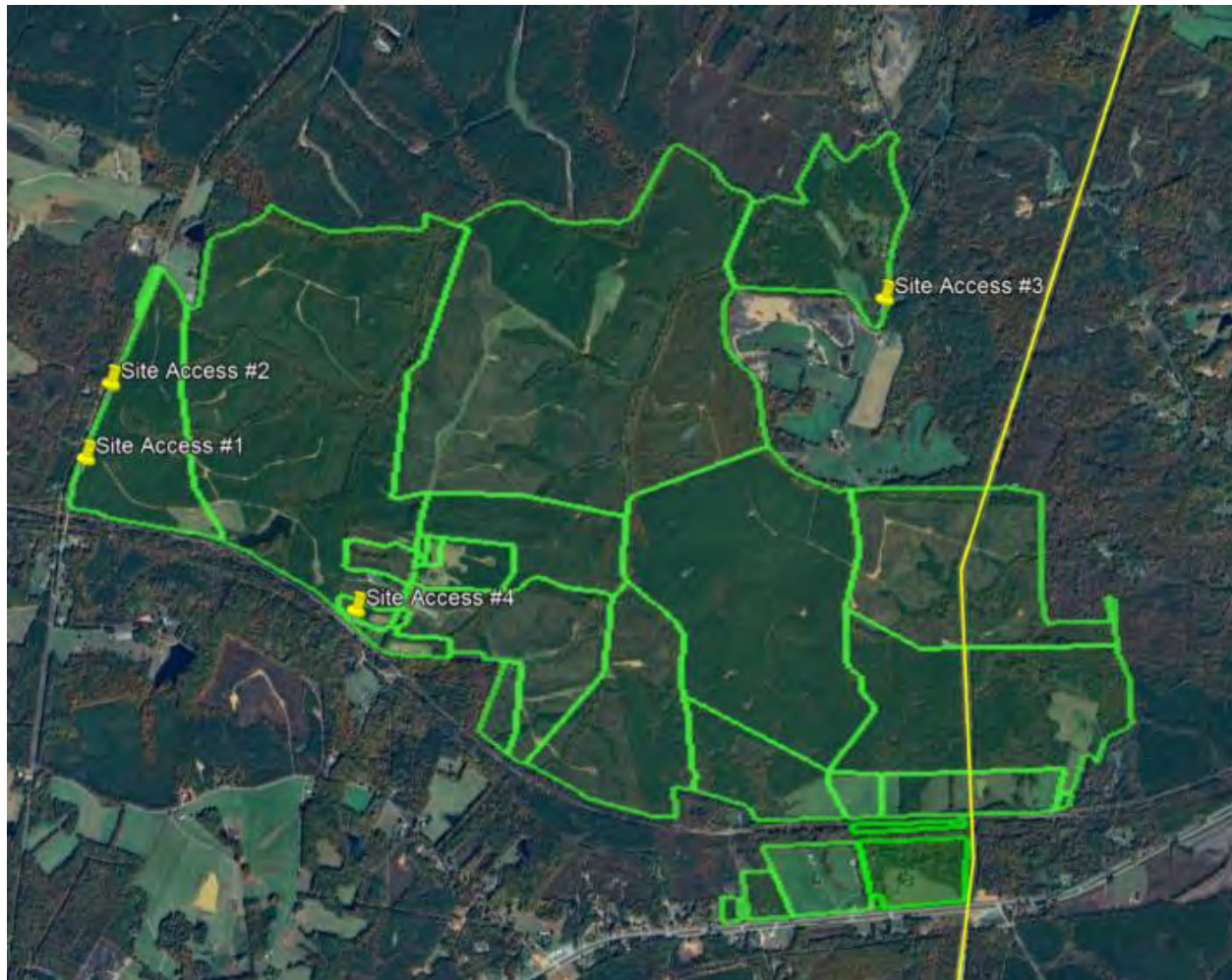
ALTERNATE METHODS FOR PLACING PIPES UNDER ENTRANCES

# **Attachment P**

## **Visual Renderings & Visual Heat Map**

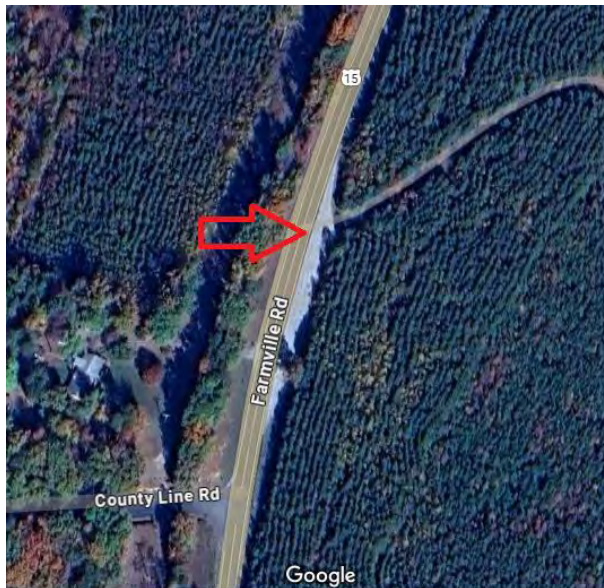
## Visual Renderings

### Tobacco Trail Site Visual Renderings Locations





## Site Access #1- Route 15 Farmville Road, facing East





Site Access #2 - Route 15 Farmville Road, facing East





## Site Access #3 – Dempseys Road Facing West



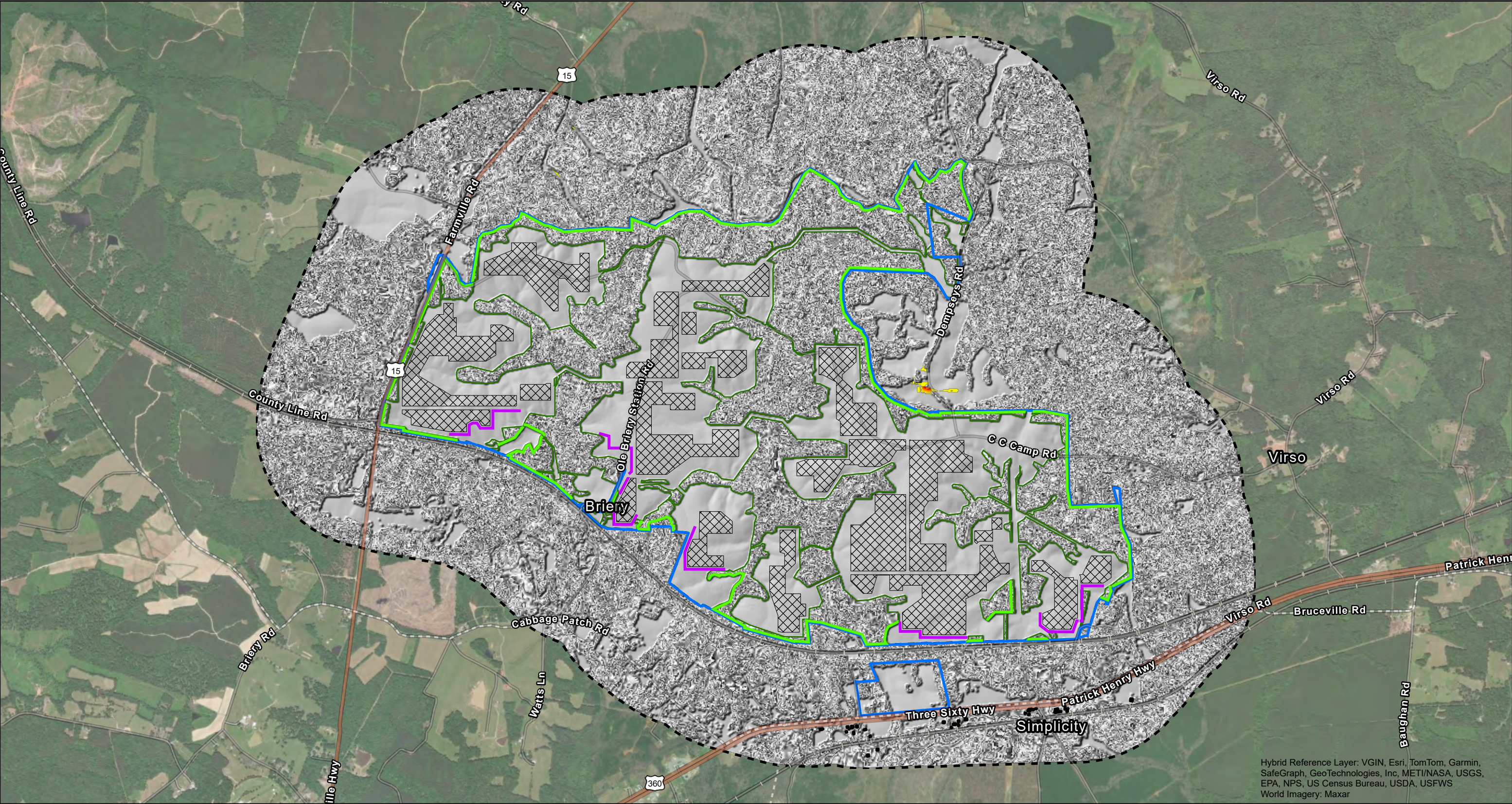


## Site Access #4 – Ole Briery Station Road, Facing Northeast

\*Visible from public areas; Road is dead end unless accessing the Project.







Hybrid Reference Layer: VGIN, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, US Census Bureau, USDA, USFWS  
World Imagery: Maxar

☒ Photovoltaic Panel Array Group (max. height 16')

Planted Forest Buffer

Vegetation Buffer to Remain

Onsite Forested Area

Site Boundary

1/2 mile Radius

Building Footprints

Visible at 5.2 ft. AGL

1 - 10%

11 - 20%

21 - 30%

31 - 40%

41 - 50%

51 - 60%

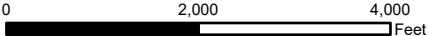
61 - 70%

71 - 80%

81 - 90%

91 - 100%

- Notes:  
AGL = Above Ground Level
1. Panel Array visibility outside the Project Site is based on 50 foot average vegetation height above ground within the Project Site and Existing Vegetation surrounding the Project Site,
  2. Project visibility analysis includes both Vegetation buffer to Remain and Planted Forest Buffer.
  3. Analysis is based on regional average height of male and female adult eye level of 5.2 ft AGL.



Predicted Project Visibility with Screening Measures

TOBACCO TRAIL SOLAR, LLC  
OLE BRIERY STATION RD  
KEYSVILLE, VA 23947  
PRINCE EDWARD COUNTY

Geosyntec  
consultants

Columbia, MD

January 2025

Figure  
1



**Attachment Q**

**Virginia Tech White Paper**

**Soil Site Management Protocols**

**& Best Management Practices for Utility Scale**

**Solar**



COLLEGE OF AGRICULTURE AND LIFE SCIENCES  
SCHOOL OF PLANT AND  
ENVIRONMENTAL SCIENCES  
VIRGINIA TECH.



COLLEGE OF ENGINEERING  
COLLEGE OF AGRICULTURE AND LIFE SCIENCES  
BIOLOGICAL SYSTEMS  
ENGINEERING  
VIRGINIA TECH.

## White Paper

# Soil-Site Management Protocols & Best Management Practices (BMPs) for Utility Scale Solar Site (USS) Development and Management in Virginia



*USS Site Under Active Development in Southside Virginia (image from DEQ/AEP)*

### Primary Authors:

**W. Lee Daniels, Professor<sup>1</sup>, Land Rehabilitation, [wdaniels@vt.edu](mailto:wdaniels@vt.edu)**  
**Ryan D. Stewart, Associate Professor<sup>1</sup>, Soil Physics & Hydrology, [rds@vt.edu](mailto:rds@vt.edu)**  
**John Ignosh, Extension Specialist<sup>2</sup>, Alternative Energy, [jignosh@vt.edu](mailto:jignosh@vt.edu)**  
**David Sample, Professor<sup>3</sup>, Stormwater Management, [dsample@vt.edu](mailto:dsample@vt.edu)**

### Collaborators:

**Pat Donovan, GIS Specialist<sup>1</sup>, [padanova@vt.edu](mailto:padanova@vt.edu)**  
**John Fike, Professor<sup>1</sup>, Forage & Grazing Management, [jfike@vt.edu](mailto:jfike@vt.edu)**  
**Ben Tracy, Professor<sup>1</sup>, Forage Ecology, [btracy@vt.edu](mailto:btracy@vt.edu)**

<sup>1</sup>School of Plant & Environmental Sciences, Blacksburg Campus

<sup>2</sup>Department of Biosystems Engineering, Harrisonburg Extension Center

<sup>3</sup>Department of Biosystems Engineering, Hampton Roads AREC

<https://landrehab.org/home/programs/solar-farms/>

**May 12, 2024**



## **Executive Summary**

Large areas of the Mid-Atlantic region will be converted into photovoltaic (PV) panel “solar farms” over the coming decade. In particular, development of Utility Scale Solar (USS) facilities (> 5 MW) will potentially impact at least 200,000 acres of existing agricultural and forested landscapes in Virginia; Virginia DEQ currently estimates over 350,000 acres could potentially be affected by 2045 (McPhillips et al., 2024). Even small local projects (< 5 MW) can lead to significant landscape impacts since it takes up to 10 acres/MW to accommodate panels, drainage and stormwater systems, access roads, collection & transmission infrastructure, and buffers.

The intensity of impacts varies dramatically based on local site conditions and infrastructure development practices. However, from 10% to > 75% of the existing soil landscape will likely undergo some level of disturbance. Significant areas of most sites will remain bare for some period of time during active site installation and then complete stabilization and revegetation generally takes several years. While less than 40% of the USS site is generally covered by panels, the combination of soil disturbance/compaction and the impervious cover from the panels may lead to enhanced runoff, particularly in the early years before the site is fully stabilized.

Prediction, management and rehabilitation of these soil x landform effects is critical for (a) minimizing sediment losses, (b) managing and reducing stormwater impacts, and (c) return of these lands to productive uses following site decommissioning. At Virginia Tech, we are actively working to address the full range of issues and challenges associated (1) planning and permitting, (2) installation & stabilization, (3) active management and (4) long-term closure of USS facilities related to local soil and water quality protection. We encourage and support full transparency throughout the project lifetime with respect to planning and permitting procedures, expected short- versus long-term impacts, and scientifically based projections for medium- and long-term site productivity potentials for various uses.

In this White Paper, we present our overview of the challenges that USS development, active management and closure potentially poses to local soil and water quality over varying time scales along with our recommended best management practices (BMPs). Minimizing overall soil disturbance, particularly via limiting net cut/fill and grading is of paramount importance. Limiting and remediating soil compaction during all phases of site development, active management and closure is also critically important to enhance rainfall infiltration vs. runoff and maintain and restore overall soil quality. We strongly believe that prompt compliance with existing DEQ and local erosion control guidelines, appropriate active site vegetation management practices, and final remediation upon decommissioning can largely offset initial site disturbance impacts. However, certain impacts for installation of essential infrastructure (e.g. stormwater conveyances and ponds) will more than likely be permanent.

***This document reflects our scientific opinion and position on these issues as of May 12, 2024, and will be revised and updated as needed due to changes in research findings or regulations.***

## **List of Abbreviations and Acronyms**

ASS – Acid Sulfate Soil

BMP – Best Management Practice

CN – Curve Number

DCR – Virginia Department of Conservation and Recreation

DEQ – Virginia Department of Environmental Quality

ESC – Erosion & Sediment Control

FIW – U.S. Department of Interior Fish & Wildlife Service

LDA – Land Disturbing Activity

MW - Megawatt

NMP – Nutrient Management Plan

NRCS – Natural Resources Conservation Service

PV - Photovoltaic

RV – Runoff value (also Rv)

SW – Stormwater

SWM – Stormwater Management

SWMM – Stormwater Management Model (USEPA)

TCLP – Toxicity Characteristic Leachate Procedure (USEPA)

VALEN – Virginia Land & Energy Navigator; [https://valen.ext.vt.edu/web\\_portal/about](https://valen.ext.vt.edu/web_portal/about)

VDACS – Virginia Department of Agriculture and Consumer Services

NWI – National Wetland Inventory– <https://www.fws.gov/program/national-wetlands-inventory/wetlands-mapper>

USEPA – United States Environmental Protection Agency

VRRM – Virginia Runoff Reduction Method [Guidance & VRRM | Virginia DEQ](#)

WSS – Web Soil Survey – <https://websoilsurvey.nrcs.usda.gov/app/>

## **Overview and Background**

Large scale utility-scale solar (USS) development is relatively new to Virginia and has greatly accelerated in the past five years by a combination of state (e.g. the 2020 Virginia Clean Economy Act) and federal energy infrastructure policy initiatives. Development of USS facilities with power generation capabilities of > 5 MW will potentially impact at least 200,000 acres of existing agricultural and forested landscapes in Virginia over the next decade; Virginia DEQ currently estimates over 350,000 acres could be affected by 2045 (McPhillips et al., 2024). The intensity of impacts varies dramatically based on local site conditions and infrastructure development practices. Anywhere from 10% to > 75% of the existing soil landscape will undergo some level of substantial disturbance at most sites (Figs. 1 and 2). Prediction, management, and rehabilitation of these soil x landform effects is critical for (a) minimizing sediment losses, (b) managing and reducing stormwater impacts, and (c) preparing to return these lands to productive use following site decommissioning. Therefore, a range of essential Best Management Practices (BMPs) need to be prescribed and implemented during the full project lifecycle including (1) preliminary planning/design/permitting, (2) active site development and stabilization, (3) long-term site operation, and (4) final site infrastructure removal and decommissioning.

### **Review of Existing Studies on Impacts of USS on Soil & Local Runoff**

Extensive USS development in the mid-Atlantic region of the U.S. is a relatively new phenomenon, and few published studies are available to date (May 2024) based on actual impacts to soil and water resources, revegetation, and post-disturbance land use potentials. However, extensive directly related studies have been conducted by Virginia Tech (<https://landrehab.org/>) and a wide range of our colleagues at other universities and agencies across the USA for over 50 years to assess direct impacts of mining, road construction, and urbanization on both agricultural and forest soils and local water quality. Collectively, land and soil disturbance processes and rehabilitation practices are well-understood and a number of these important underlying studies and findings are described and cited later in this document.

With respect to published studies on solar site development, several studies in varied soil/climatic zones report the strong influence of panel shading and architecture on soil temperature/moisture relationships (Hassanpour et al., 2018; Lambert et al., 2021). Choi et al. (2020) described the generally negative effects of infrastructure development on long-term (7-year) differences in important soil chemical and physical properties over time, while Choi et al. (2023) detailed and advocated for the maintenance and use of native vegetation within USS sites for improvement of soil conditions following installation disturbance. Yavari et al. (2022) and Hernandez et al. (2014) provided detailed overall reviews of the potential impacts of USS



**Figure 1.** Utility-scale solar (USS) facilities during initial stages of development and stabilization in the Virginia Piedmont. During the initial establishment phase (top) trenching, cut/fill and grading activities will disturb anywhere from 15 to > 75% of most sites. Once final grading is completed and infrastructure is installed (bottom), full revegetation and stabilization against erosion losses generally takes several years. In general, revegetation practices should result in  $\geq 75\%$  living perennial cover of the intended or other appropriate species, which are most commonly mixed grass/legume stands. Note the “drip line” evident below the panel edges.





**Figure 2.** Fully stabilized three-year-old site on a similar Piedmont soil landscape to Figure 1. Once permanently revegetated, sediment losses and stormwater runoff are greatly reduced, but the landscape will still have been considerably transformed with respect to overall landform, soil, and hydrologic conditions. Removal of USS infrastructure at site decommissioning (not shown) will lead to another cycle of soil disturbance that will require some level of remediation, particularly if the land is intended to be returned to pre-existing agriculture or forestry land uses.

development on landscape hydrology, stormwater management, and potential effects on receiving streams. Current ongoing research by Nair et al. (2023) in Pennsylvania is focused on application of more advanced modeling approaches (e.g., USEPA SWMM) to better predict the influence of various panel configurations and soil/site conditions on runoff.

One widely cited modeling study based in Maryland concluded that the addition of panel arrays would not increase overall site runoff per se. However, that finding was based on the assumptions that that (1) underlying conditions (e.g. vegetation status) of the receiving soil surface would promote infiltration, and (2) that the panels could potentially lead to concentrated “drip lines” if not mitigated for via use of gravel beds or more aggressive surface stabilization



(Cook & McCuen, 2013). Elamri et al. (2018) also spoke to the potential for the development of “drip lines” and other localized concentrated flow zones under installed panel edges. To our knowledge, the only regional publication that directly addresses solar infrastructure development vs. agricultural production practices is the well-referenced White Paper from North Carolina (NCSU, 2019) that explores a number of topics similar to our Virginia issues and efforts, as presented below.

The majority of published studies to date on USS development have indicated that some level of short-term soil degradation is expected, particularly a reduction in infiltration due to overall surface and subsoil compaction coupled with potential loss of topsoil quality. Most studies have concluded that USS development will potentially increase local site runoff, particularly during the development phase, but some studies have discounted that notion (e.g., Cook & McCuen, 2013). Several of the studies cited above also reported lower levels of soil organic matter and nutrients along with an increase in short-range variability in soil moisture and temperature regimes due to a combination of simple shading/interception by the panels and routine site cut/fill/grading practices. However, there is a wide range of BMPs that can be applied to sequential USS development and long-term management protocols to either minimize or mitigate these impacts over time. Our primary purpose in this paper is therefore to describe and recommend an optimal suite of site x soil management practices that are applicable to the full range of USS site development, management, and final decommissioning practices. We consider some level of “soil disturbance” to be an inevitable product of the overall process, but one which can be readily mitigated over time via application of well-established soil reconstruction and revegetation practices that have been successfully applied to mining and construction sites for decades.

### **USS Permitting and Regulation in Virginia**

Currently (2024), USS permitting and development are regulated in Virginia by a mixture of programs depending on the size of the proposed site. Larger projects (i.e., > 150 MW) are reviewed by the State Corporation Commission (SCC) while smaller projects (5 to 150 MW) are currently reviewed by the Department of Environmental Quality (DEQ) under Permit by Rule (PBR) procedures. These procedures are currently being finalized under mandate from Virginia House Bill 206, *Small renewable energy projects; impact on natural resources*, (<https://lis.virginia.gov/cgi-bin/legp604.exe?221+sum+HB206>). This regulation requires appropriate assessment and mitigation protocols and standards be developed by July 2024 for projects ≤ 150 MW that would disturb a total of more than 10 acres of NRCS defined prime farmlands or 50 acres of contiguous forest lands. Finally, relatively small (< 5 MW) local projects are generally regulated and permitted by County or City land disturbance and zoning regulations.

All USS projects are subject to DEQ Erosion & Sediment Control (ESC) and stormwater management (SWM) requirements along with local conditional use zoning and construction permitting requirements, the latter which vary widely across the Commonwealth. Recent site-specific guidance from DEQ for solar site SWM and ESC protocols can be found at <https://www.deq.virginia.gov/home/showpublisheddocument/16685/638186144540630000>. More extensive SWM and ESC guidance, including updated revegetation practices, are also included in revisions to the new online version of the DEQ ESC/SW Manual which are effective July 1, 2024 (<https://online.encodeplus.com/regs/deq-va/index.aspx>).

Depending on their location, projects may also be subject to jurisdictional wetland impact (i.e., Section 404) or Chesapeake Bay Act setbacks, buffers, and restrictions. On the local level, many cities and counties are requesting a more detailed description of longer-term site infrastructure removal and decommissioning practices, particularly with respect to return of USS affected areas to previous land use potentials (e.g., agricultural production). The preservation of prime farmland soils and productivity, along with unique water quality and habitat values associated with forested lands, continue to be particularly important to a range of stakeholder groups. Thus, the combination of ongoing regulatory developments, coupled with increasing public interest in USS development impacts, should lead to more uniform implementation of statewide policies on USS site selection, development, and closure practices.

### **Rationale for Current Positions and Recommendations**

The positions and recommendations presented here are based on our collective 50+ years of research and outreach experience on impacts and stabilization of land-disturbing activities, including mining, road construction, urbanization, and wetland restoration and creation. The specific practices recommended here are evolving and are based on our assessment of civil plans/geotechnical reports and actual site conditions for over 35 proposed or implemented USS sites in Virginia since 2020.

The opinions and positions expressed here are intended as supplementary to existing and developing Virginia DEQ (or other) regulatory requirements. Our recommendations are complementary with existing SWM+ESC BMP requirements. Furthermore, we are currently collaborating with a range of scientists at Virginia Tech and other institutions in Virginia to carefully monitor and describe the actual effects of large-scale USS development on runoff, water quality and soil conditions across a wide range of sites across Virginia. Thus, these summary recommendations will be reviewed and updated periodically.

### **Framework for Overall USS Site Development, Management, and Closure**

All USS development, management, and closure practices should protect local soil and water quality and associated ecological functions and values, including return of decommissioned

project areas to productive agriculture, forestry or other pre-planned uses. Essential to this commitment is the application of a range of BMP that are designed to minimize impacts to soil and water resources during and after site development. Following infrastructure removal, the developer should commit to rehabilitation and restoration of any disturbed areas to optimize their productivity for varied post-closure uses. Those future land uses are difficult to predict, but may include continued renewable energy production, agricultural practices, silviculture, or other more urban uses with concurrence of landowners and other key stakeholders. Key to this effort is the commitment to full transparency throughout the long-term (25+ year) relationship with local and regional stakeholders with respect to planning and permitting procedures, expected short- vs. long-term impacts, and scientifically based projections for medium- and long-term site productivity potentials for various uses.

### **Specific Objectives of this White Paper**

1. Develop recommended protocols for defining and minimizing soil disturbance of high-quality agricultural or forest soils during the installation and decommissioning stages of the site's life cycle, specifically using BMPs that are consistent with definitions and final regulations of Virginia HB 206, *Small renewable energy projects; impact on natural resources*, and other current (2024) regulatory development initiatives in Virginia.
2. Recommend appropriate procedures for remediation of soil disturbance and hydrologic impacts at various stages of the project's life cycle that are also consistent with Virginia SWM and ESC mandates, mitigation protocols require by HB 206, and other applicable regulations.
3. Provide site-specific strategies and associated protocols to quickly establish vigorous vegetation for both (a) initial ESC and (b) longer term low maintenance site management needs that accommodate alternatives agricultural uses such as sheep grazing, and (c) final restoration to original land uses or approved alternatives.
4. Recommend soil, site, and animal management practices that will maintain or enhance soil quality and health over time. Important indicators include organic matter, aggregation, carbon sequestration potentials, and maintenance of infiltration rates.
5. Provide estimates of the likely effects of soil disturbance and various recommended remediation practices on the future productivity of the lands for various uses, including return to agriculture or forestry, following final site infrastructure removal and decommissioning.

6. Suggest alternative approaches for runoff prediction from USS sites, including adjustment of National Resource Conservation Service (NRCS) curve numbers (CNs) or Virginia Runoff Reduction Method (VRRM) runoff coefficients for predicting effects of site disturbance activities and/or remediation efforts on stormwater flows.
7. Combine all the above information and recommendations into a summary list of BMP guidelines that can be shared with landowners and other interested local stakeholders.

## **Overview of Soil Disturbance and Minimization/Mitigation Protocols**

### **Soils defined, including profiles vs. horizons**

Soils are comprised of mineral and organic matter, along with associated microbial communities, which occur at the earth's surface, are capable of supporting rooted vegetation, and are responding to soil-forming factors, i.e., parent material, climate, vegetation, topography, and time (Jenny, 1941). Soils include pore spaces between solid particles that can be filled with fluids such as water or air, or most commonly both phases. The arrangement of different soil individual particles into large units occurs due to a process known as aggregation, and the overall arrangement of aggregates and particles (including the pore spaces between them) is referred to as soil structure. Soils are dynamic and vary over the landscape due to the complex interactions of soil-forming factors such as climate, vegetation, and topography over time. Relatively undisturbed soils in Virginia are characterized by distinct layers with depth that are called *horizons* and that can be observed in road cuts or borings as *soil profiles*. The organic matter-enriched mineral topsoil is the *A horizon*, the underlying clay and Fe-oxide rich layer is the *B horizon*, and the partially weathered parent material below the common zone of rooting is the *C horizon*. Intact forest soils also commonly contain a litter layer (*O horizon*) at the surface and often include a light-colored acid-stripped horizon between the A and the B called the *E horizon*. If hard bedrock is encountered within the depth of excavation, this is referred to as the *R layer*.

Most native soils in Virginia are quite old in age (>10K to 2M years) and highly weathered, leading to relatively high accumulations of clay and Fe/Al oxides in their B horizons along with acidic (i.e., low) pH throughout the profile. The uppermost soil horizons supporting plant growth (A and E horizons) are generally referred to as ***topsoil*** while the underlying B and C horizons are ***subsoil***. However, it is important to note that many soils in Virginia have been heavily eroded due to historic agricultural practices, which accounts for the widespread occurrence of red and yellow former B horizon material at the surface. More detail on soil profiles and general Virginia soil properties can be found in Daniels & Haering (2018).



### **Soil disturbance defined**

Land-disturbing activity (LDA) is defined in Code of Virginia § 62.1-44.15:24 as "a man-made change to the land surface that potentially changes its runoff characteristics including clearing, grading, or excavation" (unless specifically exempted), may be subject to regulation under the Virginia Erosion and Stormwater Management Act (VESMA) the Virginia Erosion and Stormwater Management Regulation, 9VAC25-875, the Erosion and Sediment Control Law for Localities (<https://online.encodeplus.com/regs/deq-va/doc-viewer.aspx#secid-94>)

However, for the purpose of this document, we (VT SPES & BSE) define soil disturbance as any activity that leads to a significant alteration of the original soil profile that directly limits plant growth or increases surface runoff and potential for sediment losses. Examples of disturbance activities commonly encountered in USS development include:

- Removal, storage and reapplication of topsoil.
- Grading to level panel arrays or engineered structures and roads and/or interconnect corridors that leads to exposure of subsoil at the surface and/or significant soil compaction.
- Trenching for cables.
- Development of stormwater conveyances and detention ponds and outlets.
- Concentrated traffic that compacts the soil to levels that limit rooting and water penetration.
- Stump pulling and extensive root-raking/rock-picking following forest clearing.
- Other practices that lead to disturbance and mixing of the pre-development soil profile to a depth  $\geq 6$  inches.

From a practical standpoint, minimal surface grading that (a) disturbs no more than six inches of the profile, (b) does not expose or highly compact the underlying subsoil (B and C horizons), and (c) is stabilized immediately (7 to 14 days) is not defined here as “significant”. However, complete removal, storage and return of the topsoil over an altered subsoil is considered “significant disturbance” and will likely lead to decreased soil productivity without appropriate remediation following soil profile reconstruction. Similarly, extensive exposure of bare subsoil materials for extended periods of time is also considered significant.

### **Impacts of soil disturbance on soil productivity, rooting, yield, infiltration/runoff**

The most immediate and obvious impact of active USS site development is removal or suppression of existing vegetation and any existing litter layers (O horizons), which exposes soil individual soil particles and aggregates to direct rainfall impact leading to detachment, suspension, and transport when runoff conditions occur. Sediment loss from erosion is further enhanced by the degradation of structural aggregation in the surface by compaction, smearing, and lack of active plant rooting as discussed below. Therefore, insofar as possible, the existing

topsoil horizons should be left intact and exposure of deeper subsoil materials should be minimized. Retention of even 60-70% vegetation, plant litter or mulch cover drastically limits sediment detachment and local transport while enhancing infiltration (Coppin & Richards, 1990; Weil & Brady, 2017). That being said, it is also clear that establishment of necessary herbaceous vegetative covers will usually require sufficient seedbed preparation to ensure direct soil-seed contact.

Soil disturbance influences plant growth in many ways; the most common limitation in recently constructed sites is compaction. When soils become compacted, solid particles become compressed into and fill these open larger pores, resulting in relatively high bulk densities. The common range of bulk density for a dry mineral soil is  $\sim 1.25$  to  $1.95 \text{ g/cm}^3$ . While the relationship between bulk density and rooting impedance is also dependent on moisture development and the degree of aggregation and structure, values above  $1.80 \text{ g/cm}^3$  for sandy soils and  $1.45 \text{ g/cm}^3$  for massive (i.e., non-structured) clays are considered to be root limiting (Weil & Brady, 2017). Actively growing plant root tips are very fine in size, soft and pliable, and must find continuous pores large enough to proliferate through soil since they cannot physically displace soil particles per se (Carson et al., 1971). However, once a root has penetrated into a continuous pore, it can radially widen that pathway due to its ability to apply substantial axial spreading forces. The commonly observed phenomenon of tree roots buckling a sidewalk is due to this axial spreading pressure after the fine root tip has exploited the linear crack between the concrete and the underlying subgrade. Thus, the common assumption that simply establishing “deeply rooted vegetation” will loosen a compacted subsoil layer over time is fallacious unless its fine root hairs are able to exploit continuous vertical pore spaces.

Increased bulk density and loss of aggregation and structure also leads to decreased surface soil infiltration rates and decreases in saturated permeability (e.g.  $K_{sat}$ ) of subsoil layers. In combination, these factors typically lead to greater stormwater runoff from compacted vs. uncompacted soils. Maintenance of soil structure is very important for both rooting and water penetration. Well-aggregated topsoil is usually relatively loose in the hand and contains readily visible rounded and subrounded aggregates. Well-structured subsoils in Virginia typically contain more angular blocky aggregates that enhance downward and lateral root and water movement along their cracks (macropores), even if the soil bulk density within aggregates is relatively high. When soils are graded, cut and filled during active cut/fill development processes, much of their native structure is degraded and lost (Booze-Daniels et al., 2000; Daniels, 2018) due to grading related compaction and/or smearing of clayey cut faces.

Deep-seated soil compaction can be remediated to some extent (but not completely) via deep ripping with dozer-pulled shank rippers or tractor-pulled no-till winged rippers or chisel-plows. However, this approach is only viable on disturbed areas of USS sites if applied before panels are mounted to uprights or following infrastructure removal. Alternatively, a wide range of smaller rippers and near-surface tillage implements is also available for use in confined settings (e.g., rows in the middle of panel arrays). It is important to understand that in order for deep-

ripping to be successful, the soil moisture content must be at an appropriate water content for the dense subsoil material to shatter. If the soil is too wet, the shanks will pull through the material with very little effect and the traces will quickly seal back together (e.g. like a knife through peanut butter). On the other hand, if the subsoil is too dry, the implements will pull up large chunks of subsoil to the surface and require much larger equipment and fuel usage. In some instances, damage to the implements may occur in highly compacted and very dry soils. Therefore, timing of deep ripping operations needs to be coordinated with onsite evaluations of subsoil moisture conditions (NRCS, 1998).

Exposure of typical red/yellow high clay subsoils (Bt horizons) during the development process also leads to low pH (< 5.5), enhanced solubility of phytotoxic aluminum (Al), and lower levels of essential plant nutrients (N-P-K and Ca+Mg). These limitations need to be remediated via liming and fertilization before revegetation. Subsoils are also higher in silt and clay particles and much lower in organic matter, which leads to enhanced sediment detachment and losses in runoff when compared to sandy or loamy topsoils. Clayey subsoils are also subject to being smeared and sealed when they are cut and filled, which further amplifies rooting and water movement restrictions (Daniels, 2018). However, it is important to note that much of the Piedmont and Upper Coastal Plain suffered from extensive soil erosion through the mid-1900's, frequently leaving exposed red/yellow clayey subsoils as the remaining surface (Trimble, 2008). Similar erosion occurred on many steeper sideslopes in the limestone valley and Blue Ridge regions. Therefore, it is important to note that USS disturbance impacts to soil quality and productivity may not be as great on these previously degraded soils when compared to NRCS prime farmland soils where the existing native topsoil resource is still largely intact (by definition).

Finally, it is important to note that forestry practices such as stump pulling, extensive root/rock raking and slash burning can also lead to significant soil disturbance and short-range variability in essential soil chemical and physical properties (Aust et al., 1998). Concentrated skidder trails and load out areas are particularly susceptible to compaction and rutting, particularly during wet periods. Where compatible with site development, forest litter layers should be left intact until the final intended vegetative cover is established.

#### **Use of Web Soil Survey (WSS) and other online tools for initial assessment of soils & wetlands for regulatory compliance and planning**

Initial investigations of site soil and landscape conditions should be completed via utilization of mapping and interpretive resources available from NRCS Web Soil Survey (WSS; <https://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm>), USDI-FIW National Wetlands Inventory (NWI; <https://www.fws.gov/program/national-wetlands-inventory/wetlands-mapper>) and others (e.g. VDE & USGS geologic mapping). Much of this information is also available for application to USS site assessment and planning via the Virginia Land & Energy Navigator VaLEN tool; [https://valen.ext.vt.edu/web\\_portal/about](https://valen.ext.vt.edu/web_portal/about).

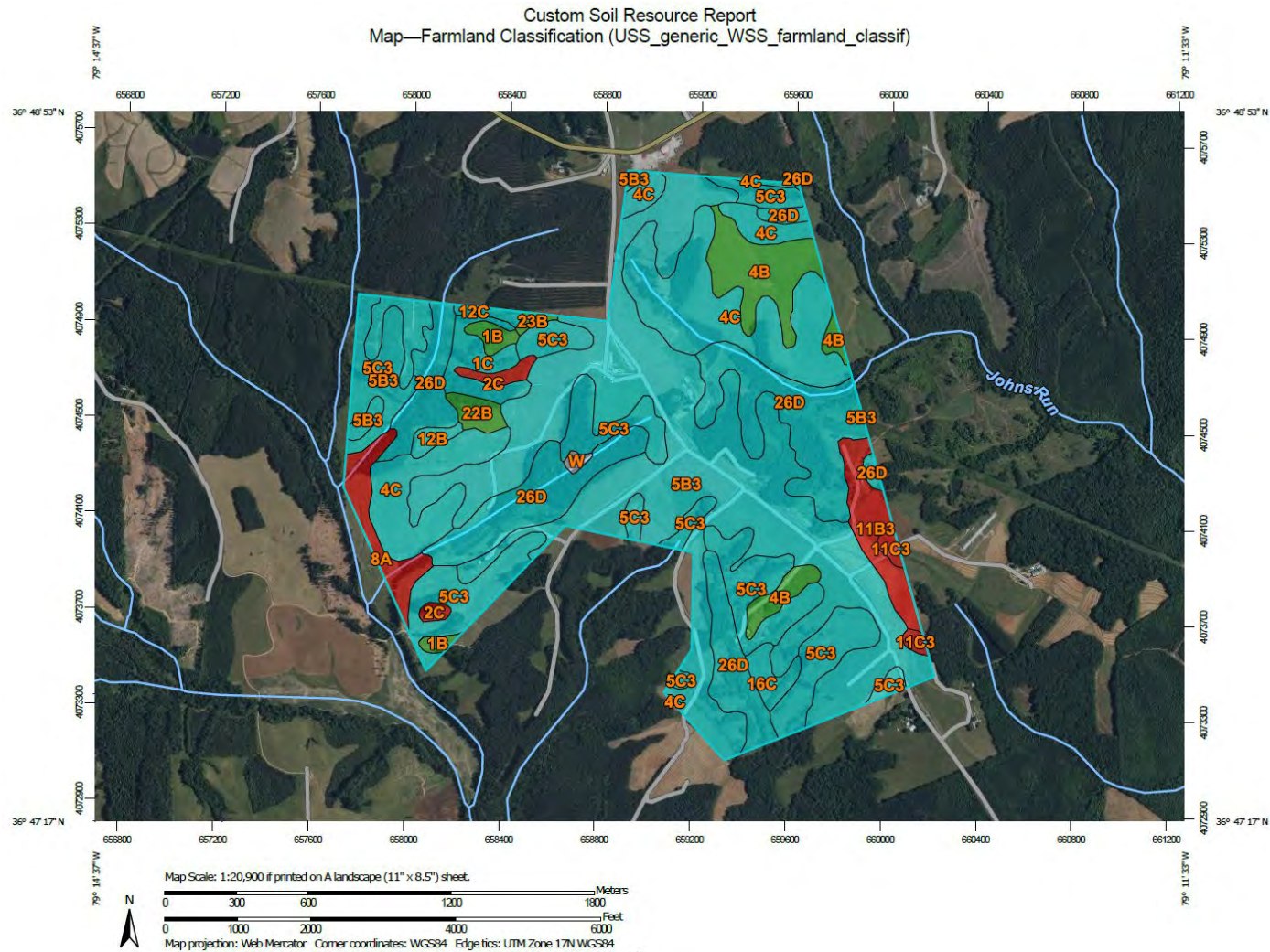
Soil information derived from WSS or via onsite investigations is used for a wide array of applications in the overall USS permitting and development process:

- Assignment of runoff curve numbers (CN) or runoff values (RV) for SWM and ESC planning and predictions via NRCS TR-55 or VRRM procedures.
- Preliminary identification of wetland/hydric soils and riparian buffer areas.
- Identification of local surface drainage networks.
- Determination of extent of NRCS prime farmlands per HB 206 requirements.
- Initial identification of karst features.
- Projections of overall soil depth and rock outcrop abundance.

Examples of a current WSS base map, prime farmland overlay and map unit legend for a hypothetical USS project area in the southern Piedmont of Virginia (Pittsylvania County) are presented in Figure 3 and Table 1. The current NWI map for that same potential project area is given in Figure 4. In addition to their obvious utility in identifying dominant soil types, slope classes, and potential riparian/wetland zone boundaries, these combined resources can also provide an abundance of interpretive information via their linked databases and other resources. This initial determination is very important since HB 206 requires a range of mitigation protocols for any project directly regulated by Virginia DEQ (5 to 150 MW) that entails disturbance of > 10 acres of NRCS prime farmland or > 50 acres of contiguous forest resource. The mitigation requirements for HB 206 vary based on the extent and depth of soil disturbance and whether appropriate soil/vegetation management practices are prescribed over time. Appendix A (*Pending final rule publication by DEQ*) contains a complete example of how mitigation credits and requirements for this sample site would be calculated and applied per HB 206.

Note that it is very important to understand the effects of the original mapping and compilation scales for these interpretations. For example, WSS maps have been compiled and published to match the USGS quadrangle scale of 1:24,000, which means that the smallest delineations would be  $\geq 2.5$  acres of contrasting soil types or slope classes. In fact, the smallest delineations found in most WSS maps for Virginia range from 5 to 10 acres. It is also important to understand the mapping unit legend naming conventions used. For example, where a legend indicates one soil series name (e.g., Clifford), one can generally assume that up to 85% of the soils occurring in that unit (consociation) would classify as Clifford or as similar soils in terms of use and management (e.g., Bentley or Nathalie series soils). However, up to 15% of that same map unit may contain strongly contrasting soils (e.g., frequently flooded areas containing the Codorus-Comus series). Furthermore, two or more soil names occurring together in the map unit legend indicate a “soil complex”, which occur when soils with differing use and management limitations are found in a regular pattern together and cannot be separated at the 1:24,000 scale. Much more information on soil mapping protocols, map unit concepts, field/lab methods and procedures is found in the NRCS Soil Survey Manual (2017).



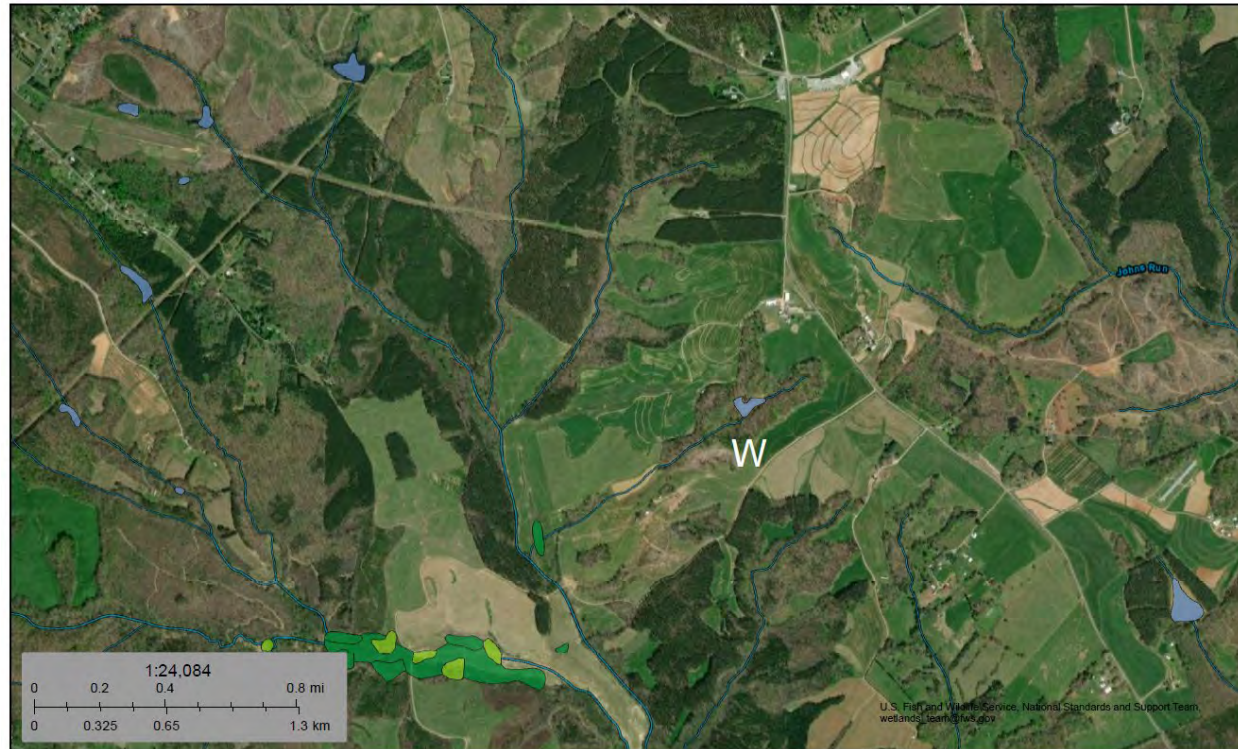


**Figure 3.** Web Soil Survey (WSS) soil map for a hypothetical USS area in Pittsylvania County south of Lucks. The areas in green shading qualify as NRCS prime farmland, total ~60 acres on gentle A and B slopes ( $\leq 7\%$ ), and would require mitigation under Virginia HB 206. The areas in light blue shading are designated as farmlands of statewide importance, but would not require mandatory mitigation under HB 206. It is important to note that this soil map was produced at a final compiled scale of 1:24,00 and that any dissimilar soil bodies less than ~ 5 acres in size would not have been delineated separately.

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
1B	Nathalie sandy loam, 2 to 7 percent slopes	All areas are prime farmland	6.7	0.8%
1C	Nathalie sandy loam, 7 to 15 percent slopes	Farmland of statewide importance	16.9	1.9%
2C	Bannertown fine sandy loam, 7 to 15 percent slopes	Not prime farmland	6.5	0.7%
4B	Clifford sandy loam, 2 to 7 percent slopes	All areas are prime farmland	42.2	4.9%
4C	Clifford sandy loam, 7 to 15 percent slopes	Farmland of statewide importance	123.7	14.3%
5B3	Clifford sandy clay loam, 2 to 7 percent slopes, severely eroded	Farmland of statewide importance	310.0	35.8%
5C3	Clifford sandy clay loam, 7 to 15 percent slopes, severely eroded	Farmland of statewide importance	143.6	16.6%
8A	Codorus-Comus complex, 0 to 2 percent slopes, frequently flooded	Not prime farmland	18.3	2.1%
11B3	Minnieville clay loam, 2 to 7 percent slopes, severely eroded	Not prime farmland	21.8	2.5%
11C3	Minnieville clay loam, 7 to 15 percent slopes, severely eroded	Not prime farmland	4.3	0.5%
12B	Enott fine sandy loam, 2 to 7 percent slopes	Farmland of statewide importance	4.0	0.5%
12C	Enott fine sandy loam, 7 to 15 percent slopes	Farmland of statewide importance	3.1	0.4%
16C	Halifax sandy loam, 7 to 15 percent slopes	Farmland of statewide importance	8.0	0.9%
22B	Bentley sandy loam, 2 to 7 percent slopes	All areas are prime farmland	6.7	0.8%
23B	Clover fine sandy loam, 2 to 7 percent slopes	All areas are prime farmland	1.9	0.2%
26D	Fairview fine sandy loam, 15 to 25 percent slopes	Farmland of statewide importance	145.6	16.8%
W	Water		1.6	0.2%
<b>Totals for Area of Interest</b>			<b>865.1</b>	<b>100.0%</b>



**Table 1.** Soil map unit legend for Web Soil Survey (WSS) Area of Interest (AOI) depicted in Figure 2. An example of the full standard WSS output is given in Appendix A. Soil map units named for one soil series (e.g. Clifford) are presumed to be approximately 85% Clifford or similar soils in use & management. However, map units such as 8A (Codorus-Comus complex) with two given series names contain soils with dissimilar use & management potentials that commonly occur together, but could not be separated at the scale of field mapping and compilation (e.g. 1:24,000). More detailed information on soil series is available at <https://www.nrcs.usda.gov/resources/data-and-reports/official-soil-series-descriptions-osd>.






January 20, 2024

**Wetlands**

-  Estuarine and Marine Deepwater
-  Estuarine and Marine Wetland

-  Freshwater Emergent Wetland
-  Freshwater Forested/Shrub Wetland
-  Freshwater Pond

-  Lake
-  Other
-  Riverine

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

National Wetlands Inventory (NWI)  
This page was produced by the NWI mapper

**Figure 4.** National Wetlands Inventory map and legend for the area south of Lucks in Pittsylvania County, Virginia. This view expanded beyond the actual proposed project area shown in Figure 2 above to show the nearest potential jurisdictional wetlands. The “W” point labeled here corresponds to the pond symbol mapped in Figure 2. Note that the four drainages from WSS appear here as “Riverine” and would need to be buffered.

Regardless of their scale limitations, careful review and interpretation of these mapping resources, particularly spot symbols, is critical to initial site assessment and development planning. For example, upon review of the WSS map for this site, (Figure 3; Table 1), we can see the following:

- The dominant soil type over much of the property is the Clifford Series, which is deep and contains no major subsoil rooting or drainage limitations, but does contain a Bt horizon with high clay content over a highly weathered saprolitic (rotten rock) C horizon.
- Where the Clifford soils occur on summits with relatively low slope classes (B; < 7%), they meet NRCS criteria for “Prime Farmland”, while on steeper C slopes (7-15%) they are classified as “Farmland of Statewide Importance”.
- This project area contains over 10 acres of NRCS prime farmland and impacts to those areas would need to be mitigated per HB 206.
- The site also contains several tracts of contiguous forest that > 50 acres that would also require mitigation (See Appendix A).
- Note that a number of the Clifford and other map units are separated out due to their severe erosion class (e.g. 5B3 vs. 4B), indicating that the majority of the original topsoil resource has been eroded due to past agricultural or forest harvesting practices.
- Contrasting major map units on site include Minnieville soils (on sideslopes, redder, and severely eroded) and Codorus-Comus complex (flooded in drainways).
- Clifford, Minnieville and similar upland Piedmont soils in this region are derived from highly micaceous crystalline rocks and may contain numerous sand and silt sized mica flakes in their subsoils, which can complicate their compaction into local fills.
- This particular Area of Interest (AOI) only contains one demarcated “special symbol” (W for a small pond), but it is critically important to review all special symbols that appear on a given WSS map. Special symbols denote areas of land use interpretive importance such as rock outcrops, wet or marshy spots, or sinkholes that were not large enough (e.g. < 5 acres) to be delineated and compiled at the scale of mapping, but clearly influence land use at a finer scale.
- Four established natural drainage ways (concave swales or first-order stream channels) are noted as blue lines. These may or may not conform with USGS topographic map requirements for “blue line streams”, but do indicate clear local drainage patterns.



Similarly, review of the NWI maps (Figure 4) indicates the following:

- No wetland boundaries are included within the proposed site boundaries, but the site does include riverine areas (shown again as blue lines). The soils immediately adjacent to the blue-lined drainages on both maps are likely to be much more restricted in internal drainage (wetter) than their enclosing map units (Fig. 3), but were too limited in extent to be separated at the scale of mapping. They would then be part of the “15% dissimilar soils” fraction discussed above for consociations.

These examples illustrate how review of multiple sources of mapping and imagery for a given project area can greatly aid initial site assessment and planning; however, they do not replace site specific field verification and delineation by qualified soil scientists and wetland delineators.

### **NRCS & VA prime and important agricultural & forested lands definitions**

Preliminary identification of prime farmlands and contiguous forest lands is essential for future compliance with HB 206 provisions as described above and for development of appropriate operational BMPs and decommissioning protocols. Recent work by Virginia Cooperative Extension and agency colleagues on related energy regulation ([HB 894 - 2022](#)) produced a public report that coalesced all available state and federal definitions and information on land use mapping resources (Goerlich et al., 2022). That working group provided the following definitions and explanatory text for Prime Farmland:

*The HB 894 Workgroup was tasked with developing a map or repository of prime farmland in Virginia as defined in §3.2-205 of the Code of Virginia. This section defines prime farmland as: “...land that has the best combination of physical and chemical characteristics for producing food, feed, fiber, forage, oilseed, nursery, and other agricultural crops with minimum inputs of fuel, fertilizer, pesticides, and labor, and without intolerable soil erosion. Prime farmland includes land that possesses the above characteristics but is being used currently to produce livestock and timber. It does not include land already in or committed to urban development or water storage ...”*  
(Code of Virginia §3.2-205 Part C, 2008).

*At the federal level, prime farmland is defined in the Code of Federal Regulations 7 CFR §657.5(a) as: “...land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops, and is also available for these uses (the land could be cropland, pastureland, rangeland, forest land, or other land, but not urban built-up land or water). It has the soil quality, growing season, and moisture supply needed to economically produce sustained high yields of crops when treated and managed, including water management, according to acceptable farming methods. In general, prime farmlands have an adequate and*

*dependable water supply from precipitation or irrigation, a favorable temperature and growing season, acceptable acidity or alkalinity, acceptable salt and sodium content, and few or no rocks. They are permeable to water and air. Prime farmlands are not excessively erodible or saturated with water for a long period of time, and they either do not flood frequently or are protected from flooding ...” (Code of Federal Regulations 7 CFR §657.5(a)(1), 1978).*

As noted above in the example WSS/NWI study area (Figs. 3 and 4), individual states can also designate other specific soils as being “unique” or as “additional farmland of statewide importance” that do not otherwise meet the NRCS prime farmland criteria. These lands may be involved in specialty crop production or be limited to some extent by slope, erosion class or other management factors. These areas are not subject to HB 206 mapping and mitigation requirements at the Virginia state level, but are often highly productive and valuable, and therefore may require other mitigation considerations if required by local or state authorities. Furthermore, certain Virginia localities (e.g. Fauquier County) also employ alternative land use categorization criteria that may be more detailed and differ from NRCS.

The Goerlich et al. (2022) report cited above includes references and links to a wide array of other forest and ecological land classification systems used by state and federal agencies, along with an integrated set of web resources to identify and map both prime farmlands and various categories of forest lands and other natural resources in Virginia. As noted above, this resource is available online as the [Virginia Land and Energy Navigator \(VaLEN\)](#) and was fully deployed in early 2023.

### **Acid Sulfate Soil Risk Assessment and Investigation**

Local exposure of sulfidic geologic materials that quickly weather into acid sulfate soil (ASS) conditions poses the single greatest localized risk to soil and water quality at USS sites. Fortunately, ASS impacts are usually limited to less than several acres, but the costs of remediating these materials is very high. Thus, all proposed USS sites should be evaluated for their potential to encounter and expose sulfidic geologic materials that can oxidize to generate acid sulfate soil (ASS) and associated very low (pH < 4.0; Fanning et al., 2004) soil and surface water runoff conditions.

Detailed guidance on recognizing, avoiding, and managing ASS materials is available at <https://landrehab.org/home/programs/acid-sulfate-soils-management/>. Related methods and criteria are also now in Chapter 6 of the online DEQ combined SW/ESC Manual (<https://online.encodeplus.com/regs/deq-va/doc-viewer.aspx#secid-219>). A Google Earth .kmz file is available from that site for download that allows the user to make a preliminary determination of ASS risk, based on current Virginia Department of Energy interactive geologic mapping, related Virginia Tech research, published USGS/VDE mapping and reports, and other

published literature. The acid sulfate soil risk map is also available on the VaLEN site: <https://valen.ext.vt.edu/>.

The highest risk of USS development encountering ASS materials occurs in the Coastal Plain region where intact reduced (anaerobic) sulfidic materials can potentially be exposed in stormwater ponds excavated into lower landscape positions (Fig. 5). In general, as long as active grading and cut/fill operations remain in well-drained and oxidized upland soil landscapes with red/yellow subsoils, the risk is low. Additional more limited areas of high risk occur over certain mineralized formations in the Piedmont.



**Figure 5.** Exposure of acid sulfate soil (ASS) materials in a deep stormwater pond excavation in Miocene age Coastal Plain sediments in the Fredericksburg area. The darker gray sulfidic materials are reduced (anaerobic) and then oxidize to form sulfuric acid and very low pH (< 3.5) and metal enrichment (Al, Fe and Mn) in soil and receiving waters. Remediation of these materials requires very heavy lime applications (> 15-50 tons ag lime per acre six inches). *Note:* This site is not from the area depicted in Figures 2 and 3 above, but these materials commonly occur at depth throughout the Coastal Plain, eastern Piedmont, and certain other Virginia locales.

Finally, it is important to reemphasize that due to their scale limitations, final onsite confirmation of soils and wetland delineations, particularly for prime farmlands, jurisdictional wetlands, and ASS should be made by a qualified professional soil and/or wetland scientist. This step would be

particularly applicable and advised if the proposed site is above the 10/50 acre threshold for prime farmland/forest impacts per HB 206 mitigation requirements.

### **Recognition of short- vs. long-term soil impacts**

Developing an appropriate plan to minimize and mitigate soil disturbance requires an understanding of the nature and differences between short- and long-term impacts. Certain impacts such as exposure of bare soils to erosion losses must be rapidly mitigated via immediate revegetation, mulching, or other short-term erosion control measures. However, as noted earlier, establishment of most post-disturbance vegetative covers will require at least some short-term exposure of bare soil on any graded or cut/fill areas. Fortunately, surface exposure of low pH and infertile subsoil materials can be quickly remediated via lime and fertilizer additions coupled with effective revegetation. Similarly, moderate surface soil compaction (< 6" deep) can be rapidly remediated via conventional tillage practices. However, significant root-limiting compaction, particularly when it occurs deeper than 6", will take years to be remediated by natural freeze-thaw and wet-dry cycles. Root-limiting compaction occurring at depths  $\geq 12$ " should be considered a permanent long-term negative impact that could potentially limit plant productivity and water penetration for the lifetime of a USS project, unless it is remediated via deep ripping practices (as discussed below).

### **Avoidance, minimization, and rehabilitation of soil impacts**

Prediction, recognition, and mitigation of significant impacts to prime farmland and larger blocks of contiguous forest by USS projects will be required by late 2024 with the full implementation of HB 206. Mitigation must be considered as an ongoing process that first involves site development planning that avoids direct surface soil impacts, e.g., use of low tire pressure equipment for panel infrastructure placement coupled with limited grading and topsoil removal. The second component of the mitigation process is minimization of impacts via limiting grading, trenching and the overall cut/fill footprint insofar as possible. This effort should then be followed by appropriate remedial measures such as surface tillage to loosen compaction and rapid topsoil return for quick revegetation of these areas. Finally, it is important to realize that certain impacts (e.g., subsoil exposure in cut/fill; significant compaction) will more than likely be persistent limitations for the lifetime of the project and will require a combination of deep and shallow tillage and soil amendment in the final site rehabilitation phase. As detailed below, it is also important to recognize that complete restoration of areas of heavily disturbed prime farmland soils to 100% of their previous levels of rowcrop productivity may not be possible (Daniels et al., 2003; 2018).



## Overall USS Project Lifecycle and Potential Soil Impacts

### Initial site development phase

Topsoil removal and storage will generally lead to degradation of topsoil quality over time with respect to organic matter content, pH and fertility, depending on length of storage, storage berm configuration, and vegetation condition. Temporary topsoil storage berms should be located on well-drained landscape positions, have sideslopes shallower than 2.5:1, and be stabilized with deeply rooted vegetation. Topsoil removal, particularly via dozer push and tracking, will lead to compaction of the underlying subsoil to some extent and will smear and degrade soil structure at the contact. Return spreading and regrading of topsoil will lead to further surface soil compaction under most conditions and rutting if reapplied under wet conditions.

General site grading and deeper cuts and development of fills will generate fundamentally differing materials. General site grading ( $\leq 12''$ ), even with topsoil salvage and return, results in some degradation of topsoil microbial communities along with increased short-range variability in physical and chemical soil properties of the graded areas. Deeper cuts (e.g.  $> 12-18''$ ) to develop terraces, roads, or stormwater basins will expose vertical soil profiles with strongly differing properties with depth. Deeper B horizon cut faces will usually be much more acidic and infertile than exposed A+E horizons and will generally require heavier lime and NPK fertilizer applications for revegetation. Cut clay horizons are also subject to smearing and sealing when excavated while wet. Fill materials are frequently compacted intentionally to maximize strength/stability and minimize their volume to limit haulage distances/costs. Fills also commonly contain strongly differing layers with respect to texture and density that limit water penetration and “perch” local saturated zones, particularly in the winter months. More detail on these contrasting materials on active construction sites is available in Daniels (2018) and Booze-Daniels et al. (2000).

Trenching for cabling or other infrastructure (e.g., culverts) will generate strongly mixed soils horizons, bringing subsoil B and C horizons to the surface, particularly if topsoil is not salvaged. On some USS sites, trenching is the most extensive type of soil disturbance.

Building/structural pads and surrounding cuts/fills for transformers and other engineered structures pose a relatively minimal footprint impact, but would still need to be accounted for.

Stormwater conveyances and ponds will produce variable zones of partially cut and fill areas. On many sites, stormwater ponds will be the deepest and steepest exposed cut slopes for revegetation of exposure of both active normal soils and potential ASS materials. Moderately to strongly sloping sites will also likely contain internal sediment traps and sumps that will cause local disturbance during emplacement and removal.

Permanent and temporary roads and work areas will involve cut/fill on sloping sites and will be compacted and can be covered in aggregate for both short- and long-term use.

General site grading to level panel racking arrays or developed infrastructure will lead to moderate local soil mixing and compaction, depending on topsoil removal and return practices and soil moisture content during active site operations.

### **Operational phase (following initial ESC/SWM release)**

Soil temperature and moisture conditions will vary greatly under panels (particularly fixed) and alleys between panel runs. In general, zones beneath panels will be drier and cooler (Yavari et al., 2022), which leads to strong differences in vegetation establishment and maintenance over time between areas directly under panels versus between rows and in open or buffer areas.

Routine mowing and maintenance can potentially compact surface soils in high traffic such as panel array alleys if wheel tracks are not varied over time.

Road corridors and substation/transformer pads will generate locally concentrated runoff.

Panel “drip lines” will develop, particularly for fixed arrays or where active storm onset controls are not employed for tracking arrays (Yavari et al., 2018). These drip lines concentrate local erosion risk, particularly if revegetation and soil cover requirements are not met.

Panel imperviousness and its effects on actual runoff versus proper application of runoff modeling parameters is currently controversial and subject to research validation (Shobe, 2022). As noted below, conservative adjustment of curve numbers (CN) or other runoff coefficients (e.g., RVs in VRRM) should be included for long term SWM planning.

### **Decommissioning phase**

A repeat of direct impacts via panel and cable infrastructure removal will occur with similar focused soil impacts to those occurring during site development. In particular, removal of trenched cabling and culverts will produce significant linear disturbances. Removal of roads and infrastructure will produce localized disturbances.

Final overall site grading should be limited wherever possible, but will be required for roads, stormwater conveyances and ponds and other engineered structural areas.

Topsoil return from long-term stockpiles (if employed) will likely lead to some re-compaction of both returned A+E horizon materials and underlying materials.

Short-term bare soil exposures from all combined final closure practices will produce another period of enhanced stormwater runoff and sediment loss risk; a new round of active ESC measures will be required.

## **Recommended Revegetation and Vegetation Management Strategies**

### **Essential revegetation concepts for short-, medium-, and long-term management**

First and foremost, it must be recognized and understood that the overall revegetation and management strategy employed at a USS site has two primary goals (1) short-term and immediate control of enhanced erosion/stormwater losses leading sequentially into (2) medium and long-term maintenance of the site and projected operational phase land uses (simple ESC, grazing, natives/pollinators, etc.). This necessarily requires changes in management strategy and inputs over time. Above all, the demands over the entire project lifecycle demands need to be projected and planned for *before* any disturbance occurs.

Following are general recommendations for BMPs to protect, preserve and restore soil quality at USS development sites within Virginia and throughout the Mid-Atlantic region. These recommendations also have direct bearing on ESC and SWM compliance. Final specific recommendations should be tailored for application to differing parts of the site depending on the intended operational land use. For example, very different establishment protocols would be used for (a) general mixed grass/legume mowed areas, (b) native grass/pollinator plantings, and (c) livestock grazing systems. More detail on specific seeding practices appears below.

Immediate short-term ESC is needed during site development. Virginia combined SW/ESC protocols (<https://online.encodeplus.com/regs/deq-va/index.aspx>) or any more stringent local standards must be met. In particular, *at least* 75% living vegetative or intact litter/residue/mulch/EC matting cover should be established within 7 days of any final grading or 14 days of non-managed (inactive) exposure of bare (denuded) soils, regardless of prior installation of BMPs such as silt fencing, compost socks, sediment detention sumps, etc.

Pre-established BMPs must be well-maintained, including vegetated buffers, drainage swales, stormwater berms and other prescribed site-specific SWM & ESC practices.

General guidance for temporary and perennial seedings should be followed. Guidelines and resources are available for Virginia and specific regions, including recommended seed mixes successfully used in other disturbance sectors (e.g., southwest Virginia coal mining and statewide road stabilization); for more information refer to Skousen & Zipper (2018) and Booze-Daniels et al. (2000). Revised Virginia DEQ SW and ESC guidance is available in online format, will be in effect by July 1, 2024, and is summarized below:

According to DEQ standard MS-1 - Stabilization (<https://online.encodeplus.com/regs/deq-va/index.aspx>) and associated guidance, permanent (BMP C-SSM-10) or temporary (BMP C-

SSM-09) soil stabilization shall be applied to denuded areas within 7 days after final grade is reached on any portion of the site. Temporary soil stabilization shall be applied within 7 days to denuded areas that are not at final grade but will remain dormant for longer than 14 days. Permanent stabilization shall be applied in areas to be left dormant for more than one year. Thus, it is critically important that disturbed areas within a USS development be stabilized incrementally over time and that large, denuded areas are not left unvegetated, particularly during the winter period that typically has enhanced runoff.

- Slope, aspect (i.e., the direction of the landform), and panel shading interactions affect revegetation success and short-range species diversity, particularly on south-facing slopes > 5%. Only very shade tolerant species will persist under low fixed panels. Mixed cool season grasses and legumes will be favored in partially shaded zones (including under tracking panel edges) while warm season grasses (and invasive annuals) are favored in full sun alleyways between panel rows. It is therefore advantageous to use diverse seed mixes of both grasses and legumes with a range of adaptations.
- In general, temporary seeding strategies with annual species are used in the winter and summer seasons. Seedings using perennial species are most successful during the spring or fall. In some instances, perennial seeding strategies can be employed year-round, but with lower likelihood of success. More details on integrated seeding strategies are found below.
- Pure grass perennial stands will require periodic N fertilizer applications every two to three years to maintain sufficient viable and living cover ( $\geq 75\%$ ). Therefore, establishment and maintenance of mixed grass and legume stand with at least 25% legume cover is recommended to maintain N availability to the dominant grass cover over time unless periodic N fertilization is planned for.
- Temporary seeding is needed for late fall and winter and annual species such as cereal rye (*Secale cereal*) or annual ryegrass (*Lolium multiflorum*) should be utilized. Late spring and summer temporary seedings should be with German millet (*Setaria italica*) or other heat-tolerant annual species. All initial perennial seedings should also include a cover/nurse crop such as cereal rye in the fall and German millet in the spring.
- A wide range of perennial grasses is available; use at least two different species when possible. Mixes of tall fescue (*Festuca arundinacea*) and hard fescues (*Festuca rubra* or *ovina*) and orchardgrass (*Dactylis glomerata*) have been successfully established across a wide range of environments.
- Similarly, at least two regionally adapted legumes should be included. Birdsfoot trefoil (*Lotus corniculatus*), Korean/Kobe lespedeza (*Lespedeza striata/stipulacea*), white and red clover (*Trifolium pratense/repens*) do well in Virginia, as do a wide range of sweet



and white clovers. Use of Chines/sericea lespedeza (*Lespedeza cuneata*) and crownvetch (*Coronilla varia*) should be avoided, as both are now considered invasive by Virginia Department of Conservation and Recreation (DCR). Use of tall fescue (unless containing novel endophyte) in certain equine grazing or hayland environments is not recommended.

- Unfortunately, there are few native species, particularly legumes, which can establish rapidly enough to meet the combination of short-term ESC and longer-term management goals discussed in this document. Therefore, the use of non-native or “naturalized” species will be necessary for most seedings, particularly for initial erosion and sediment control needs around/under panel arrays.
- A wide range of potentially suitable species for permanent seedings can be found in C-SSM-10 (<https://online.encodeplus.com/regs/deq-va/doc-viewer.aspx>) that includes species adapted to all regions of Virginia. However, while tall fescue is included in the majority of regional cool season grass suggested mixes, other alternatives (e.g. orchardgrass) are more desirable for many grazing scenarios.
- However, it is feasible to apply multi-year management protocols involving conventional nurse species for initial ESC followed by more diverse native grass and pollinator-friendly seed mixes (DeBerry et al., 2019); <https://www.dcr.virginia.gov/natural-heritage/pollinator-smart>. These plantings are most appropriate for external buffers and open areas away from panel arrays, but they can also be compatible with panels if taller species are avoided and mowing is carefully timed.
- Alternatively, once a site is successfully stabilized with a conventional mixed grass/legume stand, there is a range of methods available to convert the stand over time to native grasses and flowering pollinator species. These methods involve suppressing competing non-native and weedy species competition via mowing, tillage, or herbicide applications, and minimizing fertilizer N and P applications. Certain highly competitive species (e.g., tall fescue) should not be included in initial seed mixes if this approach is being considered.
- Overall, very different establishment and management strategies may be required for routine operational within panel array areas compared with plantings in other drainage or buffer areas which could be managed with taller native plant species and/or pollinator species.
- There are number of pollinator-friendly species that can be readily established into mixed grass/legume stand for grazing systems, particularly for cattle (Ghajar et al., 2022). Expertise on actively managing forage systems for sheep in agrivoltaic systems is

available from Dr. John Fike ([jfike@vt.edu](mailto:jfike@vt.edu)) and for “bee-friendly beef” from Dr. Ben Tracy ([bftracy@vt.edu](mailto:bftracy@vt.edu)) and their forage management colleagues at Virginia Tech. For the past 5 years, Tracy’s research team has been researching various methods to successfully establish native grasses and wildflowers under different environmental conditions while Fike’s has extensive experience with sheep grazing systems.

- Active grazing should be limited until a viable perennial and suitable forage stand is established with at least 75% living cover.
- Even with actively managed grazing some level of mowing management will be required for most USS facilities.
- Surface soil compaction will be the most common limiting factor across any USS development site. Any areas that are denuded to the extent that they require temporary or permanent seeding should be de-compacted with appropriate soil tillage implements to at least 4 inches below the final grade surface.

#### **Underlying and supporting concepts for successful revegetation**

- Use VDOT green tag variety recommendations & VDACS certified seed (<http://www.virginiacrop.org/vdot-green-tag-program.html>) whenever possible. For tall fescue, do not use KY-31 unless absolutely necessary; it is inferior to modern improved varieties. All seeding rates should be on a Pure Live Seed (PLS) basis (Skousen & Zipper, 2018; Booze-Daniels et al., 2000).
- Use at least two different perennial grasses and two perennial legumes along with an appropriate cover/nurse crop. Diverse seed mixes increase your overall chance of revegetation success, particularly when you expect strong local variability in soil and microclimate conditions (e.g., on USS sites).
- A rapidly germinating cover crop is important to (1) protect the soil from raindrop impact, (2) delay sheet flow and local sediment movement, (3) take up highly soluble forms of N and P and slowly return them to the soil via root and litter decay, and (4) provide shade and a more appropriate microclimate for the slower establishing perennials beneath them.
- Establishing legumes in the permanent perennial stand is essential to assure long term plant-available N supply to companion grasses unless routine fertilization is planned for mowed/managed areas. Legumes also take up initially available soluble P forms and transform them into organically complexed forms, enhancing P cycling and availability.

- All legumes must be seeded with their appropriate and genus/species specific *Rhizobia* sp. bacterial inoculant; the inoculant should be fresh (< 6 months old) and stored properly until used. Many seed merchants now provide the inoculant within a seed coating.
- Hydroseeding is the preferred method for rapid revegetation on most sloping and disturbed sites, but certain sites with low slopes or adequate seedbed preparation can be established via broadcast seeding or drilling (either conventional or no-till).
- Hydroseeding efforts should include paper or wood fiber mulch (preferred) at  $\geq 1500$  lbs per acre. Straw mulch should also be used on problematic sites and can be integrated into hydroseeding via the “two step method” (Booze-Daniels et al., 2000). EC 2 and EC 3 erosion control matting (per VA ESC specifications) should be used on particularly problematic steeper or adverse soil areas.
- Fertilizer additions are essential to hydroseeding mixes and should be based on appropriate recent site soil testing recommendations. However, some N and P fertilizers increase acidity (lower pH) and soluble salts to levels in the tank mix that can negatively affect seed and *Rhizobia* viability after prolonged exposures. Therefore, lime should be added to tank mixes as indicated on fertilizer labeling and seeding operations should commence quickly ( $\leq 1$  hour) following additions of seed+inoculants (Brown et al., 1983).
- In order to maintain legume viability, the soil pH must be  $> 5.5$  and remain above that level over time. Lime rates should be based on appropriate soil test samples (<https://www.soiltest.vt.edu/sampling-instructions.html>) taken from the site and applied as Virginia Certified Agricultural Limestone meeting the fineness guarantee and calcium carbonate equivalence (CCE).
- Apply the specified lime rate, even when using highly soluble products. A number of commercial liming products are marketed as being highly soluble based on their fineness and more rapid reaction rate when applied via hydroseeding. These products are often marketed as being needed at much lower rates (e.g. 200–400 lbs/acre) when compared with agricultural limestone. While these products can be quite effective at modifying soil pH in the upper  $\frac{1}{2}$ ” of soil for a relatively short period of time (months) they do not replace the full and longer-term efficacy of the fully specified rate of agricultural lime.

- Use successive applications when adding lime at rates greater than the equivalent of 2-3 tons of CCE lime per acre. Pre-application of the lime before seeding with some level of incorporation is recommended where feasible.
- Request supporting evidence from the vendor when considering additives and admixtures, many of which are available and promoted in the hydroseeding and general ESC markets. Their actual cost effectiveness should be carefully considered based on credible supporting cost-effectiveness in similar applications. Microbial additives and liquid lime products warrant particularly scrutiny.
- Many native species (grasses, legumes and other forbs) are not compatible with hydroseeding and require hand seeding, broadcasting or drilling. It is also important to point out that native species seedings usually require lower fertilizer and lime applications than conventional erosion control mixes.
- Conventional soil testing procedures are calibrated for expected natural soil conditions and may not accurately predict actual nutrient availability for highly disturbed soils where underlying low pH, high clay or fresh geologic materials are being evaluated. This is particularly true for P, which may therefore be needed at much higher levels than recommended by a given soil test.
- Any soil pH test value < 4.2 should be considered as a potential indicator of acid-sulfate soil conditions and will require appropriate screening protocols (<https://landrehab.org/home/programs/acid-sulfate-soils-management/>).
- Extensive “tracking-in” and smoothing of final revegetation surfaces is counter-productive to revegetation and enhances short-term runoff and sediment losses. In general, leaving the surface roughened up is a best management practice. Leaving narrow terraces intact across steeper slopes is also encouraged (Booze-Daniels et al., 2000).
- Regardless of the guidance provided above, the timing of seeding (particularly for perennial stands) is often the most critical factor for initial revegetation success. Late spring perennial cool season species seedings are particularly subject to failure due to initial germination followed by summer heat and drought stress.

### **Recommended Soil, Site, and Animal Practices for Enhancing Soil Quality**

The term “soil quality” was first introduced in the 1960’s by Doran and others (Karlen et al., 2001) in association with efforts to identify and quantify indicator soil properties that were most closely related to combined plant productivity, water quality protection, and overall managed



ecosystem stability. Work across a wide range of climatic and plant management zones have generally indicated that several parameters, particularly organic matter content, bulk density, rooting depth, and degree of aggregation are the most consistent indicators of soil quality, complemented by local variables such as soil pH, texture, and relative fertility levels. Over the past twenty years, many of the original concepts of the soil quality have evolved into the current federal and private sector emphasis on “soil health” (<https://www.nrcs.usda.gov/conservation-basics/natural-resource-concerns/soils/soil-health>), which incorporates added emphasis on soil microbial and biological functions, sustainability, and overall resiliency to disturbance.

For USS development and management, a range of practices are encouraged in all phases of site development and management that will (1) improve overall vegetation growth and resilience, (2) protect local and regional water quality, and (3) potentially lead to development of C-sequestration or nutrient reduction credits.

#### **Specific Suggested Grazing Management Practices:**

- Intensive and rotational grazing practices should be employed to enhance and support overall operational vegetation management needs along with recycling N and P internally within the grazing areas in lieu of frequent fertilization. Vegetation height of forage should be monitored to determine when animals are moved/rotated around the site to avoid overgrazing.
- Panel height, wiring, and mechanical configurations may need to be adjusted and modified for particular grazing species if employed. For example, many species will readily benefit from daily shade provided by panel arrays, but the height will vary for sheep (lower) versus cattle (higher). Animals rubbing against exposed gears or other mechanical interferences also need to be accounted for or prevented.
- Site revegetation plans should be carefully tailored to produce a forage stand suitable for the intended animal grazing system type and intensity.
- Maintenance of deep-rooted perennial vegetation in disturbed areas should lead to significant increases and then stabilization of soil organic matter and aggregation with time (e.g., over decades). The establishment of such vegetation has important benefits and implications for the restoration of the site back into decommissioned land uses.
- Periodic soil testing of all contrasting management areas and recommended lime/fertilizer amendment should occur every three to five years for low maintenance areas (e.g., mowed panel arrays) and more frequently for more intensively managed or problematic areas (e.g., bare soil patches).

### **Practices to Enhance and Document Changes in Soil Quality**

- Where and when possible, the application of appropriate organic soil amendments should be considered, including composts, biosolids or animal manures. However, all such applications must occur within sound nutrient management planning (NMP) guidelines to ensure minimal losses of nitrogen (N) and phosphorus (P).
- Differing zones (panels, open areas and buffers) of the USS site will likely have differing management protocols and should be sampled for soil quality separately every 3 to 5 years following successful establishment.
- The following parameters are recommended for soil quality monitoring at USS sites at which assertions are being made with respect to carbon sequestration or other soil quality improvements. Soil samples should be collected every five to ten years and at final closure in the A horizon and upper B horizon, and should include a statistically valid design that compares differing management zones (e.g., within panel areas versus buffers or external control sites). These samples should be assessed for:
  1. Organic matter (humus) content along with total C, N and P;
  2. Aggregation/structure size/type/strength and stability;
  3. Bulk density via core ring sampler or other methods;
  4. Surface soil infiltration rate; and
  5. Routine plant available macro- and micro-nutrients, pH and soluble salts.
- To develop accurate carbon sequestration rate estimates, the following minimum protocols should also be employed:
  - 1, Establish baseline levels using valid control areas that are external to the panel areas and represent the pre-existing soil properties and land use (i.e., before USS development) to the extent possible;
  2. Collect soil samples from the surface to at least 18"; 40" is preferred by NRCS.
  3. Quantify soil carbon content and soil bulk density following accepted laboratory methods; and
  4. Account for field spatial variability due to disturbance and panel arrays, etc., for example by using a grid-based approach or a random sampling scheme that includes different areas representing that variability.

### **Other Concerns Regarding Soil & Water Quality**

We recognize that a wide range of other concerns exist with respect to the potential effects of USS development, management and decommissioning on soil, surface water and groundwater quality. In particular, several published research articles (Zeng et al., 2015; Ramos-Ruiz et al. 2017) reported on the potential risk of heavy metal leaching from Cd/Te panels and have generated considerable public comment and concern. We are aware of these issues and concerns and are actively evaluating a wider range of available studies. At this point in time (May 2024) we can offer the following general opinions on this particular issue/concern:

- The two articles of primary public concern employed methods (e.g. TCLP) that are utilized to simulate long-term conditions within a landfill environment and are not directly applicable to what would occur at an installed and managed USS facility.
- The panel materials employed in these two studies were ground to < 5 mm for the Ramos-Ruiz (2017) paper and < 0.06 mm for Zeng et al. (2015) paper and subjected to aggressive leaching methods that differ considerably from those encountered with ambient rainfall interacts with panel arrays and underlying soils and vegetation.
- Another recent publication (Robinson and Meindel, 2019) reported on a similar leaching/extraction (via TCLP) study for actual field site soils (in NY under monocrystalline-Si panels). These authors found detectable (but limited) enrichment in soils closer to panels, but deemed the levels to be lower than would be associated with “ecosystem risk”.
- There is a wide range of scientific and non-scientific literature and reporting available on this topic. However, actual site-specific and replicated field studies on relative soil accumulation compared to normal background conditions are very rare.
- We are aware of a several ongoing investigations at national and state institutions that are studying metal accumulation and mobility under field conditions. Hopefully, these other researchers will report their findings over the next several years.
- We believe this issue could (and should) be directly and readily addressed in the field under a range of panel types (e.g. Cd/Te vs. Mono/Polycrystalline-Si vs. Fixed/Tracking panels). Any such study should include appropriate control areas outside of the USS facility.
- We will continue to analyze and evaluate all applicable studies and resources on this and other soil quality issues as they become available. We will provide updates on this and other important soil quality issues as new results become available.

## **Predicting Effects of Soil Disturbance and Remedial Practices on Post-Closure Soil and Landscape Productivity**

Increasingly, stakeholder acceptance of new USS development projects is requiring the development of closure plans that include projected protocols for either returning the site to its original land use or to some similar alternative use. To date, there has not been any specific published research on the range of issues covered in this document; however, there have been a number of directly related studies conducted in Virginia and the eastern USA from mining reclamation and highway revegetation efforts. Several pertinent studies are summarized and cited below.

Virginia Tech has conducted over 30 years of replicated research experiments and field studies on the restoration of prime farmlands to varying post-mining uses including prime farmland, hayland or pasture (Daniels et al., 2018), and commercial loblolly pine plantings <https://landrehab.org/>.

Results from our specific studies in Virginia indicate the following:

- Reclamation of significantly disturbed and reconstructed areas to productive row-cropping systems is possible with adequate deep ripping, surface tillage, liming, and fertilizer applications. Utilization of organic amendments (e.g., biosolids) enhances the rate of recovery (Wick et al., 2013), but long-term yields (i.e., over 10 years) should still be expected to be reduced by ~15 to 25% relative to comparative adjacent prime farmlands under identical management (Daniels et al., 2003; 2018). Limitations are due primarily to subsoil compaction, poor internal drainage, and associated seasonal wetness or drought stress.
- Reclamation of pasture productivity to pre-disturbance levels is possible for disturbed prime farmlands and highly likely for lower productivity non-prime areas (Teutsch et al., 2008). However, deep ripping may still be necessary to eliminate seasonal wetness due to poor internal soil drainage that can pose management limitations for hay production (e.g., spring and fall equipment access).
- The survival and initial growth of loblolly pines is enhanced by weed control and direct fertilization into the planting hole, but is inhibited by broadcast fertilizers that encourage nearby herbaceous competition. Compared with regional performance on undisturbed Piedmont soils, pine tree growth may be slower for the first few years after planting due to subsoil compaction, but can equal or exceed undisturbed soils for later years (e.g., 4-10 years after planting). Longer term effects of subsoil compaction on pine growth are still under study. Contact [wdaniels@vt.edu](mailto:wdaniels@vt.edu) for more details on pine results.



Related coal mining research in the 1980's on highly productive prime farmlands in Illinois and Kentucky that involved complete reconstruction of A, B, and C horizon profiles produced similar results (Dunker et al., 1992):

- Deep ripping, often to 48+", was required along with periodic surface tillage to establish and maintain productivity.
- Soil horizon placement methods strongly influenced both subsoil and topsoil compaction and yield reductions. Best results were obtained by avoiding use of pan-scrappers, end-dumping returned soils in closely space piles, followed by minimal final dozer grading.
- Soil P was usually the most common limiting nutrient, but was easily remedied via repeated fertilization.
- Return to ~90% of pre-mining productivity was achieved over multiple seasons in a number of studies, but was strongly influenced by seasonal weather variations and the choice of crop variety.

Extensive research into restoration of both commercial and native forest productivity following significant disturbance in Illinois (Ashby, 1998) and the central Appalachians (Burger & Zipper, 2018) has indicated that:

- Overall soil depth to compaction or other rooting limiting layers is the primary tree productivity limiting factor as long so pH is within normal ranges (e.g., 4.5 to 6.5).
- Deep ripping and establishment of seedlings into ripper traces is an appropriate BMP. Recent work by our group at Virginia Tech strongly reinforces these findings for mineral sands mined lands returned to loblolly pine production.
- Rough grading is superior to smooth grading for seedling establishment and growth and for limiting initial runoff and sediment losses.
- Initial seedling survival and growth is enhanced by minimizing use of competitive herbaceous companion species (e.g., tall fescue) and by decreasing initial N fertilizer rates. Erosion was minimized as long as total ground cover was  $\geq 50\%$ .

Furthermore, several recent literature review (Brehm & Culman, 2022) and site-specific studies (Brehm & Culman, 2023) on the effects of pipeline corridor installation and rehabilitation on crop yields also indicate to consistent decreases in rowcrop yield potentials due to combined effects of soil compaction and degraded structure (aggregation).

Combined, these studies across a wide range of disturbance environments emphasize the importance of being transparent with stakeholders from initial conceptual stages through to final closure to ensure that expectations are reasonable and clearly attainable based on the anticipated

degree of disturbance and the final soil reconstruction and revegetation practices that will be employed.

### **Accounting for Soil Disturbance in Stormwater Modeling**

There is also a general lack of USS-specific research and findings in the mid-Atlantic region that compare actual versus predicted stormwater runoff and sediment losses. One of the few published studies to date (Cook & McKuen, 2013) compared modeling simulations and was not based on field observations. However, recent practical experience by the industry and initial research efforts by Virginia Tech indicate that the following areas deserve attention when developing or applying models to predict stormwater quantity and quality from USS sites:

- The official guidance from the NRCS (2007) regarding assignment of Hydrologic Soil Groups (HSG's A, B, C and D) clearly states that the concept is not applicable to disturbed soils and alternative methods should be employed. One recommended approach (also required by DEQ GM 2022-12 as cited earlier) is for users to account for disturbance during the active site development and stabilization phase by adjusting HSG's up one letter (e.g., from B to C) when assigning values for NRCS/TR-55 Curve Numbers (CN; <https://www.hec.usace.army.mil/confluence/hmsdocs/hmstrm/cn-tables>) or for VRRM Rv values (<https://swbmp.vwrrc.vt.edu/vrrm/>).
- Unless appropriate remediation measures are taken during site stabilization to alleviate soil compaction and maintain other important soil quality parameters (e.g., aggregation and infiltration), the CN and Rv values utilized for estimating runoff should be higher than for original undisturbed conditions.
- USS developers should understand the limitations of interpretive scale as discussed earlier when using Web Soil Survey maps for aggregating modeled predictions for runoff, sediment loss and nutrient loading. On-site validation and confirmation will often be necessary.
- Any assignment of CN and RV values to USS stormwater and erosion estimates should attempt to account for the influence of differences in soil disturbance and associated short-range variability and the unpredictability of essential infiltration/runoff partitioning estimators.
- Currently there is some debate regarding the validity of current estimates of the relative imperviousness of solar panel array fields and overall revegetation effectiveness on fully stabilized sites for maintenance of disconnected sheet flow conditions during most storm events (Shobe, 2022), but very little if any actual site-specific research has been done to

validate those assumptions. Temporary ESC and SWM BMPs should be sized to account for impervious panel + bare ground runoff conditions during the site stabilization phase.

- In addition to the commonly used runoff modeling approaches discussed above, a number of more detailed and event-based approaches are available. These include the Hydrologic Engineering Center Hydrologic Modeling System (HEC-HMS), the USEPA Storm Water Management Model (SWMM), K2/O2 (Kineros2-Opus2), HYDRUS, among others. HEC-HMS is a lumped-parameter hydrologic model, primarily used in larger watersheds. SWMM is also a lumped-parameter hydrologic model, but it contains detailed modeling of BMPs, and is fully capable of water quality modeling. The K2/O2 model combines the spatially-distributed KINEROS2 (KINematic runoff and EROSion) watershed model with Opus2, a soil profile/biogeochemical model. K2/O2 models hydrology, sediment transport, and nutrient cycling in small- to medium-sized watersheds. HYDRUS was used as the basis of a modeling study underlying the PV-SMaRT stormwater runoff calculator (<https://www.nrel.gov/solar/market-research-analysis/pv-smart.html>). Additional detail on potential application of alternative models is available from Dr. David Sample at Virginia Tech (<https://www.bse.vt.edu/people/faculty/david-sample.html>).
- Recent [DEQ guidance on stormwater policy](https://online.encodeplus.com/regs/deq-va/index.aspx) along with upcoming SWM & ESC Manual revisions (July 2024; <https://online.encodeplus.com/regs/deq-va/index.aspx>) revisions list a number of specific provisions for solar farm permit applications, including the following:
  - Runoff predictions must account for panel imperviousness.
  - However, rainfall sensors can be installed to move panels to vertical to reduce the net effects of the imperviousness adjustment.
  - Panel coverage x imperviousness calculations should conform with DEQ GM 2022-12) or subsequent final guidance as issued in July 2024.  
<https://www.deq.virginia.gov/home/showpublisheddocument/16685/638186144540630000>.
  - HSG's should be adjusted up one letter for disturbed areas (as detailed above)
  - Surfaces should be revegetated within the specified timeframe (7 days for temporary grading and 14 days for final grading), and other measures may be required to maintain unconnected surface water flow following peak rain events

### **Final Soil and Site Reconstruction BMPs for Varying Land Uses**

The majority of USS development proposals in Virginia and the Mid-Atlantic region are accompanied by an assertion that disturbed project areas will be returned to their original land use capability following site decommissioning after 25-30 years of active service. Many

localities now require some level of performance bonding and guarantees around this assumption, and HB 206 will require closure planning for sites that fall under PBR regulation by DEQ. Since the vast majority of USS sites in Virginia are less than five years old, it is difficult to predict the extent to which these areas will actually be converted back into agricultural or forested land uses as opposed to continued energy production or more intensive uses. Regardless of this uncertainty, some level of final mitigation and remediation will be necessary to eventually return these areas to agricultural or forest use.

Our recommendations for final site reconstruction protocols (listed below) are based on the following rationale and assumptions:

- All USS infrastructure will be removed and the area returned to a land use that is suitable to the landowner.
- Appropriate soil remediation practices will be followed during the active installation and stabilization phase and acceptable management practices will be followed over the site lifetime that allow for vigorous ( $\geq 75\%$  living cover) perennial herbaceous vegetation to persist for the lifetime of the project.
- Soil quality of significantly disturbed areas, particularly organic matter and aggregation in the topsoil/A horizon, will improve over the operational phase of the project lifecycle.
- Disturbed areas will be clearly identified and mapped during installation and known to closure contractors.
- Deep-ripping of subsoils and other major soil reconstruction efforts will be delayed until final closure (unless essential for stabilization) and based on final closure surface/subsoil conditions, projected final landuse(s), and available technologies/implements needed at that time.
- Final remedial practices may be applied uniformly or differentially based on disturbance maps and final soil quality observations.

Based on these assumptions, we recommend the following reconstruction practices:

**Prime farmland:** All disturbed areas intended for return to intensive agricultural uses (row cropping or vegetable production) will need to be deep ripped to  $\geq 24''$  with shanks  $\leq 30''$  apart in two directions ( $90^\circ$  opposed) followed by chisel plowing to just below the topsoil/subsoil contact as needed. The deep tillage event should be conducted under appropriate soil moisture conditions. Existing herbaceous vegetation will more than likely need to be suppressed via tillage or other methods. As discussed earlier, return of highly disturbed areas of prime farmland to 100% of their original row crop productivity and management practices may not be possible.



**Pasture and hayland:** Disturbed areas will be chisel- or no-till plowed to a depth of 12” and reseeded into appropriate vegetation. Deeper tillage may be required in areas of excess surface soil wetness due to underlying compaction. Areas that remain undisturbed and uncompacted by infrastructure removal and decommissioning efforts may be left in their existing state if the vegetation is suitable for the intended management system.

**Forest lands:** Significantly disturbed areas (e.g., with root-limiting subsoil bulk density) will be deep-ripped to > 18” in one direction consistent with intended planting spacing. Non-disturbed and/or uncompacted areas may require no further remediation. Competing vegetation on all areas will need to be controlled and/or suppressed with appropriate tillage or herbicides. Tree seedlings should be planted into ripper traces whenever possible.

**Other uses:** Other non-agricultural or forestry land uses are possible and appropriate site preparation and conversion practices will be dependent upon landowner and local governmental consent. We view continued energy production as a likely long-term land use for many USS sites.

Regardless of the intended final land use, the disturbance history of the overall USS lifecycle will need to be accounted for and will most likely increase local soil spatial variability on the overall restored site relative to original undisturbed conditions.

## **Summary of Recommended Protocols & Best Management Practices (BMPs)**

### **Stakeholder Involvement and Transparency**

All stakeholders should be committed to the sustainable development and management of USS projects, including return of the decommissioned project area to productive agriculture, forestry or other pre-planned uses. Essential to this commitment is the application of a wide range of BMPs to minimize impacts to soil and water resources during site development and their careful integration into appropriate soil and vegetation management practices during the multi-decadal operational phase. Following infrastructure removal, developers should rehabilitate and restore any disturbed areas to optimize their productivity for the specific post-closure use designated by the landowner. Finally, we encourage and support full transparency throughout project lifetime with respect to planning and permitting procedures, expected short- versus long-term impacts, and scientifically based projections for medium- and long-term site productivity potentials for various uses.

### **Pre-Development Assessment and Planning Practices**

- Identify all soil types on site using NRCS Web Soil Survey or other resources (e.g., FIW NWI, VT VALEN site, VT Acid Sulfate Soils, DCR karst, etc.) to categorize prime farmland units (via NRCS criteria), forested areas, wetlands and other sensitive areas and features.

- Verify presumed soil types, forested areas, wetland boundaries and other limiting features via on-site investigations by a qualified professional when needed.
- Collect baseline pre-development data on important soil health indicators, including topsoil depth, organic matter and aggregation, bulk density, and permeability.
- Establish and map appropriate and required buffers around sensitive features, riparian zones, Resource Protection Areas, drainage swales, sinkholes, rock outcrops, wetlands, etc.
- Utilize gathered information to minimize grading (cut/fill) and other site development impacts to existing soil resources while avoiding impacts to particularly sensitive features (e.g. sinkholes and wetlands).
- Utilize conservative runoff estimators (e.g., higher NRCS CN's and/or VRRM RV's) for stormwater and erosion prediction modeling and SWM BMP specifications, particularly during the development/stabilization phase.
- Adjust design BMP SWM volumes to account for (a) site disturbance and (b) panel imperviousness. This effort should include adjusting the Soil Hydrologic Group (HSG) designation per DEQ GM 22-2012 guidance.
- Develop detailed *a priori* vegetation establishment and management plans to meet initial site stabilization demands coupled with longer term operational vegetation management needs.

### **Active Site Development Best Practices**

- Carefully establish and maintain all required buffers, setbacks, and all temporary and permanent ESC + SWM BMPs.
- Minimize grading and cut/fill for roads and structures when leveling or reducing slope grade changes for panel arrays, wherever possible.
- Consider dual-axis tracking systems or U-joints in single-axis systems to minimize cut/fill requirements when working on steeper or more undulating terrains.
- Use rain sensors to trigger panels to move panels to more vertical positions when triggered by major rain events.
- Anticipate development of drip lines below downhill panel edges on slopes and develop appropriate strategies to maintain disconnected flow conditions, restore sheet flow, or increase the time of concentration.

- Predict and map all areas of significant soil disturbance including roads, infrastructure (e.g., substation pads), trenches, temporary ESC measures, and engineered stormwater conveyances and ponds.
- Minimize topsoil removal wherever possible and maintain temporary topsoil stockpiles in an aerated condition, covered with deep-rooted vegetation and kept away from wet areas.
- Utilize light agricultural scale machinery with low pressure tires or tracks whenever possible for site development and maintenance activities. Avoid trafficking site soils during wet soil conditions.
- Assume that site development will compact the soil to some extent. Assess and remediate root-limiting compaction and smearing of disturbed surface soil materials to 4-6 inches with appropriate mechanical tillage methods. Add and incorporate soil amendments (lime/N-P-K/organic matter) to all final revegetation surfaces based on appropriate field sampling and soil testing protocols as described by Virginia Tech or other DCR approved labs <https://www.soiltest.vt.edu/sampling-instructions.html>.
- Sample topsoil stockpiles before return to disturbed areas and develop appropriate liming/fertilization/amendment prescriptions for seeding.
- Where topsoil is not salvaged and returned, assume exposed cut subsoils will most likely be compacted and low in pH and plant-available nutrients; test all contrasting cut/fill regraded areas separately.
- Utilize compost, biosolids, or other appropriate organic soil amendments where possible and feasible. Apply all soil amendments within DCR/DEQ/VDACS land application, NMP or label requirements.
- Return topsoil to disturbed areas from stockpiles as quickly as site closure conditions allow, or utilize direct haul strategies to immediately move actively collected topsoil to adjacent soil reconstruction areas. Loosen returned topsoil or exposed subsoil for revegetation steps with equipment consistent with use in the confined panel array environment.
- Minimize final smooth grading (tracking in) on sloping areas and leave surface roughened up where possible.
- Establish temporary vegetation (to achieve  $\geq 75\%$  living cover) within 14 days or less of disturbance wherever possible, including immediately following closure of trenches (returning topsoil back over backfill whenever possible) and installation of panel

uprights. Temporary seeding or stabilization with tacked mulch should include any internal rough-graded areas that will not be returned to final grade or permanent vegetation for more than 30 days.

- Establish permanent vegetation (to achieve  $\geq 75\%$  living cover, with maximum bare areas of less than 250 square feet) on all exposed soils within 7 days of final grading with diverse species mixtures for perennial seedings. Ensure legume establishment ( $\geq 25\%$  cover) unless intensive turf type management with routine fertilization is prescribed post-development management.
- Ensure that revegetation strategies meet both short and long-term ESC needs, including coupling with longer term active soil/vegetation/grazing management goals. For example, limit animal grazing activities until the permanent vegetation is fully established and viable (i.e.,  $\geq 75\%$  living cover).
- Use combined seeding, liming, fertilization, and organic amendment strategies to enhance initial vegetation establishment goals along with enhancing longer term soil health and quality.
- Avoid seeding DCR-listed invasive species such as Sericea/Chinese lespedeza and crown vetch into uplands or overall aggressive species such as reed canary grass into wetter pond and drainageway positions.

### **Post-Development and Operational Site Management Practices**

- Maintain diverse mixed grass/legume stands in panel array zones that are consistent with intended maintenance, mowing, or grazing regimes.
- Where possible, use pollinator-friendly and native species in seed mixes that are consistent with panel zone management goals.
- Monitor and document vegetation type, persistence, and cover in differing management zones including under and between panel arrays, disturbed road shoulders, stormwater conveyances and ponds, and in undisturbed buffers. Utilize these observations to adjust management and reseeding practices as necessary.
- Utilize buffers and other non-paneled areas for establishment and maintenance of native grasses and/or pollinator species where feasible.
- Avoid working on-site when soil is wet and use light, low-wheel-pressure vehicles for routine maintenance.
- Establish permanent soil quality sampling and monitoring locations for critical parameters such as organic matter, aggregation, permeability, and bulk density. These

locations should include both actively managed undisturbed and reconstructed soil areas to allow for valid documentation of actual soil carbon sequestration rates (if desired for markets or offsets) and other parameters.

- Collect routine soil testing samples from vegetation monitoring areas at least every third year and apply lime, N-P-K fertilizers and other amendments as needed to maintain and meet vegetation management goals for differing management zones.
- Integrate animal grazing management practices such as rotational grazing where possible to assist with vegetation maintenance and enhance soil quality.

### **Final Closure and Decommissioning Practices**

- Reestablish all necessary ESC and temporary SWM controls.
- Evaluate existing soil quality parameters, particularly subsoil compaction, for all areas, particularly those that underwent significant disturbance during site development.
- Minimize repeat soil disturbance associated with infrastructure removal following similar or improved practices used during the development phase.
- If indicated as necessary for a given land use (e.g., agriculture or intensive forestry), deep-rip all significantly disturbed areas to  $\geq 24$  inches, ensuring soils are at appropriate moisture levels to optimize bulk density remediation.
- Soil test all areas for final revegetation prescriptions and apply appropriate lime, N-P-K fertilizer, and organic amendments.
- If necessary, suppress the existing herbaceous stand to allow for establishment of final targeted agricultural, forest or other pre-planned uses such as urban re-development
- Use appropriate tillage practices (e.g., chisel plow, disk, or rototiller) to incorporate final soil amendments and remediate any final surface soil compaction to  $\geq 6$  inches.
- Monitor rehabilitation efforts for two seasons to ensure appropriate ESC and SWM compliance along with successful establishment of intended vegetation or cropping system.

### **Acknowledgments**

We deeply appreciate the continuing support of our USS industry cooperators, Virginia DEQ, and our colleagues in the School of Plant & Environmental Sciences, the Department of Biosystems Engineering and the Hampton Roads Agricultural Research & Extension Center (Va Beach).



## **References**

- Ashby, W.C. 1998. Reclamation with trees pre- and post-SMCRA in Southern Illinois. *International Journal of Surface Mining, Reclamation and Environment*. DOI:[10.1080/09208118908944034](https://doi.org/10.1080/09208118908944034)
- Aust, W.M., J.A. Burger, E.A. Carter, D.P. Preston and S.C. Patterson. 1998. Visually determined soil disturbance classes used as indices of forest harvest disturbance. *Southern Journal of Applied Forestry*, Volume 22, Issue 4, November 1998, Pages 245–250, <https://doi.org/10.1093/sjaf/22.4.245>
- Booze-Daniels, J.N., J.M. Krouse, W.L. Daniels, D.L. Wright, and R.E. Schmidt. 2000. Establishment of low maintenance vegetation in highway corridors. p. 887-920. In: R.I. Barnhisel et al. (ed.) *Reclamation of drastically disturbed lands*. Agronomy 41. American Society of Agronomy, Madison, WI. [https://www.researchgate.net/publication/338656151\\_Establishment\\_of\\_low\\_maintenance\\_vegetation\\_in\\_highway\\_corridors](https://www.researchgate.net/publication/338656151_Establishment_of_low_maintenance_vegetation_in_highway_corridors)
- Burger, J.A. and C.E. Zipper. 2018. [How to Restore Forests on Surface-Mined Land](#). J.A. Burger and C.E. Zipper. Powell River Project Publication 460-123. Virginia Tech Cooperative Extension, Blacksburg.
- Brehm, T. and S. Culman. (2022). Pipeline installation effects on soils and plants: A review and quantitative synthesis. *Agrosyst Geosci Environ*. 2022;5:e20312. <https://doi.org/10.1002/agg2.20312>
- Brehm, T. and S. Culman. (2022). Soil degradation and crop yield declines persist 5 years after pipeline installations. *Soil Sci. Soc. Am. J.* 2023;87:350–364. DOI: [10.1002/saj2.20506](https://doi.org/10.1002/saj2.20506).
- Brown, M.R., D.D. Wolf, R.D. Morse and J.L. Neal. Viability of Rhizobium in Fertilizer Slurries Used for Hydroseeding. *J. Env. Qual.* 12(3): 388-390. <https://doi.org/10.2134/jeq1983.00472425001200030016x>
- Carson, E.W. (Ed.) and others. 1971. *The Plant Root and its Environment*; Proceedings of the Symposium at Virginia Tech. University of Virginia Press, Charlottesville. <https://sirislbraries.si.edu/ipac20/ipac.jsp?url=full=3100001~!42053!0>
- Choi, S.K., A.E. Cagle, J. Macknick, D.E. Bloom, J.S. Caplan and S. Ravi. 2020. Effects of Revegetation on Soil Physical and Chemical Properties in Solar Photovoltaic Infrastructure. *Frontiers in Env. Sci.*, 9 p. <https://doi.org/10.3389/fenvs.2020.00140>
- Choi, S.K., J. Macknick, L.P. Yudl, D. Bloom, J. McCall and S. Ravi. 2023. Environmental Co-Benefits of Maintaining Native Vegetation with Solar Photovoltaic Infrastructure. 12 p. *AGU -Earth's Future*, 11, e2023EF003542. <https://doi.org/10.1029/2023EF003542>
- Cook, L.M., and R.H. McKuen. 2013. Hydrologic Response of Solar Farms. *Journal of Hydrologic Engineering*, Vol. 18, No. 5, May 1, 2013. [http://dx.doi.org/10.1061/\(ASCE\)HE.1943-5584.0000530](http://dx.doi.org/10.1061/(ASCE)HE.1943-5584.0000530)

Coppin, N.J. and Richards, I.G. (1990) Use of Vegetation in Civil Engineering. Butterworth, London, 272.

Daniels, W. L. 2018. Managing urban soils. p. 3.1-3.12. In: M. Goatley and K. Hensler (ed.) Urban nutrient management handbook. Virginia Cooperative Extension Publication 420-350. Virginia Tech, Blacksburg, VA. <https://www.pubs.ext.vt.edu/430/430-350/430-350.html>

Daniels W.L., and K.C. Haering. 2015. Concepts of basic soil science. p. 31-52. In: K.C. Haering and G.K. Evanylo (ed.) The Mid-Atlantic nutrient management handbook. CSES-122. Virginia Cooperative Extension, Blacksburg, VA. Available on-line at: <http://pubs.ext.vt.edu/CSES/CSES-122/CSES-122-pdf.pdf>.

Daniels, W.L. and C.E. Zipper. 2018. [Creation and Management of Productive Mine Soils](#). Powell River Project, Publication 460-121. Virginia Tech Cooperative Extension, Blacksburg.

Daniels, W. L., and K. C. Haering. 2018. General soil science principles. p. 2.1-2.13. In: M. Goatley and K. Hensler (ed.) Urban nutrient management handbook. Virginia Cooperative Extension Publication 420-350. Virginia Tech, Blacksburg, VA. [http://pubs.ext.vt.edu/430/430-350/430-350\\_pdf.pdf](http://pubs.ext.vt.edu/430/430-350/430-350_pdf.pdf)

Daniels, W.L., P.D. Schroeder, S.M. Nagle, L.W. Zelazny, and M.M. Alley. 2003. Reclamation of prime farmland following mineral sands mining in Virginia. Min. Eng. 55(12): 42-48. [https://www.researchgate.net/publication/338655955\\_Daniels\\_et\\_al\\_2003\\_Reclamation\\_of\\_prime\\_farmland](https://www.researchgate.net/publication/338655955_Daniels_et_al_2003_Reclamation_of_prime_farmland)

Daniels, W. L., Orndorff, Z. W., Stilson, C., Zimmerman, C., & Haywood, A. (2018). Development of Effective Rehabilitation Protocols for Mineral Sands Mining in Virginia USA. In Mined Land Reclamation: From Start to Finish. Carlton, VIC, Australia: Australia Institute for Mining and Minerals. Retrieved from <http://www.ausimm.com/>

DeBerry, D., C. Cyrus, R. Davis, R. Ernst, A. Ernst, R. Hypes, K. Heffernan, S. Baxter, M. Major, J. Bulluck, and K. Dramby. 2019. Virginia Pollinator-Smart Solar Industry: Comprehensive Manual, Version 1.2. Virginia Department of Environmental Quality and Virginia Department of Conservation and Recreation. Natural Heritage Technical Report 19-21. <https://www.dcr.virginia.gov/natural-heritage/pollinator-smart>.

Dunker, R E, Barnhisel, R I and Darmody, R G (eds), 1992. Prime Farmland Reclamation, 284 p (University of Illinois: Urbana-Champaign). <https://www.abebooks.com/Proceedings-1992-National-Symposium-Prime-Farmland/871943132/bd>

Elamri, Y., B. Cheviron, A. Mange, C. Dejean, F. Liron, and G. Belaud. (2018). Rain concentration and sheltering effect of solar panels on cultivated plots. Hydrol. Earth Syst. Sci., 22, 1285–1298, 2018. <https://doi.org/10.5194/hess-22-1285-2018>

Fanning, D., M. Rabenhorst, C. Coppock, W. Daniels and Z. Orndorff. 2004. Upland active acid sulfate soils from construction of new Stafford County, Virginia, USA, airport. *Aust. J. Soil Res.* 42:527-536. <https://doi.org/10.1071/SR03085>

Ghajar SM, Wagner JF, O'Rourke M, Tracy BF. 2022. Evaluating methods to establish biodiverse pasturelands with native grasses and wildflowers. *Native Plants Journal* 23(1):65–74. [doi:10.3368/npj.23.1.65](https://doi.org/10.3368/npj.23.1.65)

Goerlich, D., P. Donovan, B. Herndon and J. Ignosh. 2022. Virginia Land and Energy Navigator “VaLEN”. Initial Report on the Development of a Map for Prime Farmland HB894 Workgroup. December 1, 2022. Due for public release in early 2023.

Hassanpour, A. E., Selker, J. S., & C. W. Higgins. (2018) Remarkable agrivoltaic influence on soil moisture, micrometeorology and water-use efficiency. *PLOS ONE* 13(11): e0203256. <https://doi.org/10.1371/journal.pone.0203256>.

Hernandez, R.R., S.B. Easter, M.L. Murphy-Mariscal, F. T.Maestre, M. Tavassoli, E.B. Allen, C.W. Barrows, J. Belnap, R. Ochoa-Hueso, S. Ravi, and M.F. Allen. 2014. *Renewable and Sustainable Energy Reviews* 29 (2014) 766-779. <http://dx.doi.org/10.1016/j.rser.2013.08.041>

Jenny, H. (1941) *Factors of Soil Formation: A System of Quantitative Pedology*. Dover Publications, New York, 281 p.

Karlen, D.L., S.S. Andrews and J.W. Doran. 2001. Soil quality: Current concepts and applications. *Advances in Agronomy, Volume 74*, 2001, Pages 1-40. [https://doi.org/10.1016/S0065-2113\(01\)74029-1](https://doi.org/10.1016/S0065-2113(01)74029-1)

Lambert, Q., Bischoff, A., Cueff, S., Cluchier, A., & Gros, R. (2021). Effects of solar park construction and solar panels on soil quality, microclimate, CO2 effluxes, and vegetation under a Mediterranean climate. *Land Degradation & Development*, 32(18), 5190–5202. <https://doi.org/10.1002/ldr.4101>

McPhillips, L., A. Buda, Z. Easton, W. L. Daniels, S. Fathel, J. Ignosh, C. Raj, D. Sample. 2024. Best Management Practices to Minimize Impacts of Solar Farms on Landscape Hydrology and Water Quality. STAC Publication Number 24-001, Edgewater, MD. 42 pp. [STAC – Chesapeake Bay Scientific and Technical Advisory Committee](#)

Nair et al 2023

NCSU (North Carolina State University), 2019. Balancing Agricultural Productivity with Ground-Based Solar Photovoltaic (PV) Development – White Paper. NCSU – NC Clean Energy Technology Center, 16 p. <https://nccleantech.ncsu.edu/wp-content/uploads/2019/10/Balancing-Agricultural-Productivity-with-Ground-Based-Solar-Photovoltaic-PV-Development-1.pdf>

NRCS. (1998). Estimating Soil Moisture by Feel and Appearance. USDA NRCS Program Aid Number 1619. Washington, DC.

<https://nrcspad.sc.egov.usda.gov/DistributionCenter/product.aspx?ProductID=199>

NRCS. 2007. Part 630 Hydrology, National Engineering Handbook, Chapter 7 Hydrologic Soil Groups. <https://directives.sc.egov.usda.gov/>. Washington, DC.

NRCS. 2017. Soil Survey Manual. By Soil Science Division Staff. United States Department of Agriculture. Handbook No. 18. Issued March 2017.

<https://www.nrcs.usda.gov/resources/guides-and-instructions/soil-survey-manual>

Ramos-Ruiz, A. J.V Wilkening, J.A. Field, R. Sierra-Alvarez. 2017. Leaching of cadmium and tellurium from cadmium telluride (CdTe) thin-film solar panels under simulated landfill conditions. Journal of Hazardous Materials 336 (2017) 57–64 .

[dx.doi.org/10.1016/j.jhazmat.2017.04.052](https://doi.org/10.1016/j.jhazmat.2017.04.052).

Robinson, S.A. and G.A. Meindel. 2019. Potential for leaching of heavy metals and metalloids from crystalline silicon photovoltaic systems. Journal of Natural Resources and Development 2019; 09: 19-24. <http://jnrd.info/2016/01/10-5027jnrd-v6i0-01>.

Shobe, C. 2022. How impervious are solar arrays? On the need for geomorphic assessment of energy transition technologies. Earth Surf. Process. Landforms. 2022;47:3219–3223.

<https://doi.org/10.1002/esp.5489>

Skousen, J. and C.E. Zipper. 2018. Revegetation Species and Practices. Powell River Project Bulletin 460-122. Virginia Tech Cooperative Extension Division.

[https://www.pubs.ext.vt.edu/content/pubs\\_ext\\_vt\\_edu/en/460/460-122/460-122.html](https://www.pubs.ext.vt.edu/content/pubs_ext_vt_edu/en/460/460-122/460-122.html)

Teutsch, C.D., W. L. Daniels, Z.W. Orndorff, M.M. Alley, K.R. Meredith, and W. Tilson. 2008. Impact of soil reconstruction method on yield nutritive value and botanical composition of a mixed grass-legume stand. p. 1267-1282. In: R.I. Barnhisel (ed.) Proc. Am. Soc. Min. Reclam., Richmond, VA. 14-19 Jun. 2008. ASMR, Lexington, KY.

Trimble, S.W. 2008. Man-Induced Soil Erosion on the Southern Piedmont: 1700-1970 (Enhanced Second Edition), 80 pages, Soil & Water Cons. Soc. Amer., ISBN 978-0-9769432-5-9. <https://www.swcs.org/resources/publications/man-induced-soil-erosion-on-the-piedmont-printed>.

Weil, R.W. and N.C. Brady. 2017. The Nature and Properties of Soils, 15<sup>th</sup> Ed., Chapters 4 (physical properties) and 17 (erosion). Pearson, NY.

Wick, A.F., W.L. Daniels, Z.W. Orndorff, and M.M. Alley. 2013. Organic matter accumulation post-mineral sands mining. Soil Use and Management 29: 354-364.

<https://doi.org/10.1111/sum.12058>

Yavari, R., D. Zaliwiciw, R. Cibin, and L. McPhillips. 2022. Minimizing environmental impacts of solar farms: a review of current science on landscape hydrology and guidance on stormwater management. *Env. Res. Infrastructure and Sustain.* <https://doi.org/10.1088/2634-4505/ac76dd>

Zeng, C., A. Ramos-Ruiz, J.A. Field and R. Sierra-Alvarez. 2015. Cadmium telluride (CdTe) and cadmium selenide (CdSe) leaching behavior and surface chemistry in response to pH and O<sub>2</sub>. *Journal of Environmental Management* 154 (2015) 78e85. <http://dx.doi.org/10.1016/j.jenvman.2015.02.033>.



**Appendix A**  
**Examples of Data Layers and Mitigation**  
**Alternatives for Example Project Area**

***This Appendix will be released following final  
publication of the final HB 2026 Rule by  
Virginia DEQ***

# **Attachment R**

## **Solar PV Recycling Information**



Home <<https://epa.gov/>> / Hazardous Waste <<https://epa.gov/hw>>

# Solar Panel Recycling

Find out how solar panels are recycled and where to take your end-of-life solar panels for recycling.

## On this page:

- Background
- How Solar Panels are Recycled
- Where to Recycle Solar Panels
- Solar Panel Reuse
- Additional Resources



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## Background

Waste from end-of-life solar panels presents opportunities to recover valuable materials and create jobs through recycling. According to the International Renewable Energy Agency [🔗](https://www.irena.org/-/media/files/irena/agency/publication/2016/irena_ieapvps_end-of-life_solar_pv_panels_2016.pdf) <[https://www.irena.org/-/media/files/irena/agency/publication/2016/irena\\_ieapvps\\_end-of-life\\_solar\\_pv\\_panels\\_2016.pdf](https://www.irena.org/-/media/files/irena/agency/publication/2016/irena_ieapvps_end-of-life_solar_pv_panels_2016.pdf)>, by 2030, the cumulative value of recoverable raw materials from end-of-life panels globally will be about \$450 million, which is equivalent to the cost of raw materials currently needed to produce about 60 million new panels. Diverting solar panels from landfills to recycling saves space in landfills in addition to capturing the value of the raw materials.

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# How Solar Panels are Recycled

## Recycling Overview

Crystalline-silicon solar technology represents most of the solar panel market share. This type of panel is constructed with an aluminum frame, glass, copper wire, polymer layers and a backsheet, silicon solar cells, and a plastic junction box. The polymer layers seal the panel from exposure to weather but can make recycling and panel disassembling difficult, as high temperatures are often required to loosen the adhesive.

Many of these components can be recycled. Glass composes most of the weight of a solar panel (about 75 percent), and glass recycling is already a well-established industry. Other materials that are easily recyclable include the aluminum frame, copper wire, and plastic junction box.

## How to Choose a Responsible Recycler

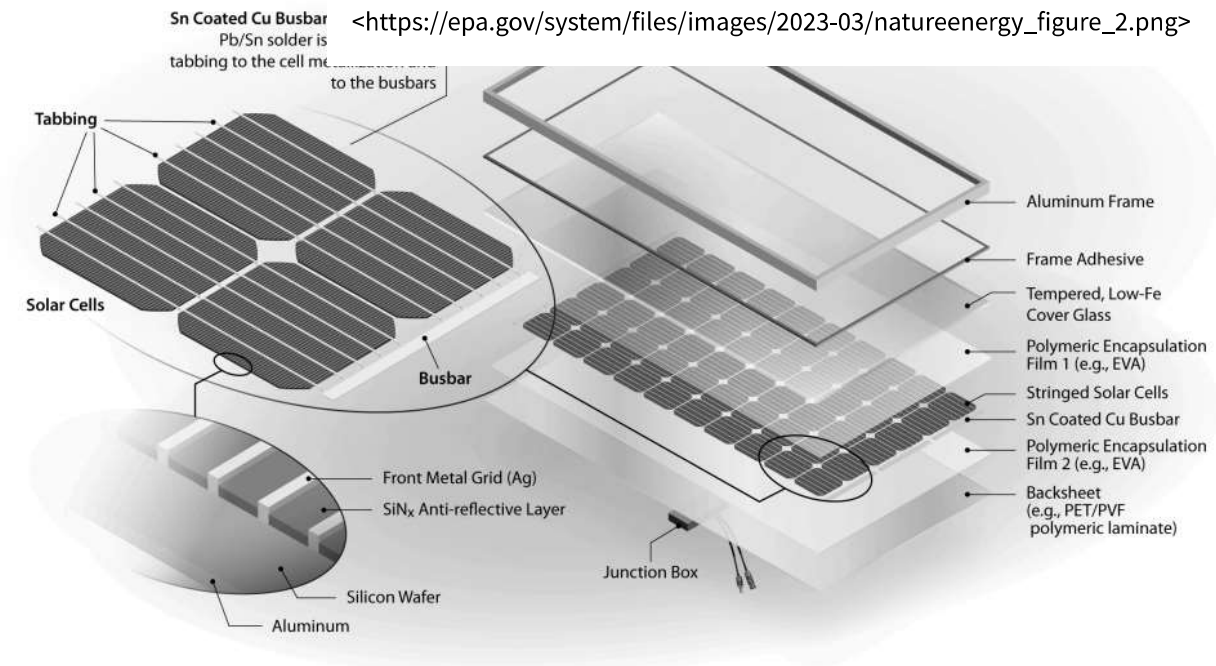
For information on how to choose a responsible recycler, read the following fact sheet

[https://epa.gov/sites/default/files/2015-08/documents/responsible-recycler\\_1.pdf](https://epa.gov/sites/default/files/2015-08/documents/responsible-recycler_1.pdf).

Another way to choose a responsible recycler is to find recyclers that operate under recycling standards set by accredited organizations like SERI's R2 Standard <https://sustainableelectronics.org/about-story-and-mission/> or the e-Stewards <https://e-stewards.org/>

<https://sustainableelectronics.org/about-story-and-mission/> or the e-Stewards <https://e-stewards.org/>

stewards.org/about-us/the-  
e-stewards-story/>  
standard.



**Source: National Renewable Energy Laboratory.**

***Click the image to enlarge it.***

Other materials located within the solar cells may be more difficult to recycle. Silver and internal copper are valuable components, but panels typically contain very small amounts of these materials. Toxic metals like lead and cadmium may also be present in solar panels.

Solar panels may contain critical materials [🔗 <https://www.usgs.gov/news/interior-releases-2018-s-final-list-35-minerals-deemed-critical-us-national-security-and>](https://www.usgs.gov/news/interior-releases-2018-s-final-list-35-minerals-deemed-critical-us-national-security-and), including aluminum, tin, tellurium, and antimony, as well as gallium and indium in some thin-film modules.

Other components of a solar power system may include inverters, racking, and battery backup systems, which may also be recycled. Inverters may be able to be recycled with electronic waste, and racking may be recycled with similar scrap metals. Battery-based grid energy storage systems may be handled with current battery recycling programs [<https://epa.gov/recycle/used-lithium-ion-batteries>](https://epa.gov/recycle/used-lithium-ion-batteries).



# Recycling Process

An ideal recycling system would recover as much material from solar panels as possible. There are different methods to recycle solar panels, which can include some or all of the following three steps:

1. Removal of the frame and junction box;
2. Separation of the glass and the silicon wafer through thermal, mechanical or chemical processes; and/or
3. Separation and purification of the silicon cells and specialty metals (e.g., silver, tin, lead, copper) through chemical and electrical techniques.

The industry is new and still growing, with researchers examining how to commercialize recycling to economically recover most of the components of a solar panel. Elements of this recycling process can be found in the United States, but it is not yet happening on a large scale.

Recycling is already established in the glass, metals, and electronics industries, which can accommodate solar panels and other solar power system components. These processes typically involve crushing, shredding, and milling, usually after removal of the frame and junction box. In these processes, glass, aluminum, and copper may be recovered and the other materials, including the silicon solar cells, may be incinerated.

Thin film cadmium-telluride panels, which represent a smaller part of the solar market, undergo a different recycling process. At least one U.S. manufacturer runs dedicated recycling facilities for thin film panels which recover the semiconductor material (cadmium and tellurium) in addition to glass and copper.

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## Where to Recycle Solar Panels

You can search for solar panel recycling options on the following organizations' websites:

- Department of Energy Solar Energy Technologies Office U.S. Solar Photovoltaic Manufacturing Map [🔗](https://www.energy.gov/eere/solar/solar-manufacturing-map) <<https://www.energy.gov/eere/solar/solar-manufacturing-map>> (including recyclers).

- Earth911. [🔗](https://search.earth911.com/) <https://search.earth911.com/>
- Solar Energy Industries Association (SEIA). [🔗](https://www.seia.org/initiatives/seia-national-pv-recycling-program) <https://www.seia.org/initiatives/seia-national-pv-recycling-program>

*Disclaimer: These sites are listed for informational purposes only. U.S. EPA does not endorse any of these entities nor their services.*

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## Solar Panel Reuse

Another way to keep solar panels out of landfills is through panel reuse, either by direct reuse or after refurbishment. When reused, solar panels get a second life generating clean energy at a different location. The secondary market has not yet gained traction in the United States, and regulatory considerations include electrical grid interconnection regulations, and fire, building, and electrical codes that must be examined when planning for solar panel reuse. However, there are many beneficial ways solar panels could be reused in situations where they aren't connected to the electrical grid, including electric bike or vehicle charging stations, or other remote locations.

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## Additional Resources

For more information on solar panel recycling, please visit the following resources:

- Frequent questions on solar panel waste. <<https://epa.gov/hw/solar-panel-frequent-questions>>
- Recorded EPA webinar on solar panel recycling. <<https://epa.gov/smm/sustainable-materials-management-smm-web-academy-webinar-shining-light-solar-panel-recycling>>
- EPA Solar Panel Waste webpage. <<https://epa.gov/hw/end-life-solar-panels-regulations-and-management>>
- Department of Energy Web Page on End-of-Life Management for Solar Photovoltaics. [🔗](https://www.energy.gov/eere/solar/end-life-management-solar-photovoltaics) <<https://www.energy.gov/eere/solar/end-life-management-solar-photovoltaics>>

- Information from the National Renewable Energy Laboratory (NREL) on solar panel reuse and recycling. [🔗](https://www.nrel.gov/news/program/2021/what-it-takes-to-realize-a-circular-economy-for-solar-photovoltaic-system-materials.html) <<https://www.nrel.gov/news/program/2021/what-it-takes-to-realize-a-circular-economy-for-solar-photovoltaic-system-materials.html>>
- International Renewable Energy Agency report on end-of-life solar panel management. [🔗](https://www.irena.org/publications/2016/jun/end-of-life-management-solar-photovoltaic-panels) <<https://www.irena.org/publications/2016/jun/end-of-life-management-solar-photovoltaic-panels>>
- Heath et al. paper on photovoltaic module recycling. [🔗](#)

Last updated on November 13, 2024

# PV Recycling

## Solar Energy Industries Association (SEIA) Current Recycling Partners

<https://seia.org/initiative/circular-economy>



# **Attachment S**

## **Sheep Grazing**



## Overview of Sheep Grazing for Solar Installations

Prepared by Jess Gray, a [2023 Nuffield International Agricultural Scholar](#), CEO Gray's Lambscaping

As the scale of solar array construction increases across the Mid-Atlantic, particularly in Virginia, novel solutions must be employed to meet the various objectives of stakeholders. One approach that is gaining momentum is the use of sheep grazing to manage vegetation around the panels. Over time, as flocks grow, landscape-level management with animals becomes possible. During this transitional phase, from mechanical mowing and spraying being the primary methods of plant control, a combination of grazing and equipment is necessary to address invasive or unpalatable plant species distributions. During times of rapid grass and forb growth or if a site has been neglected it may be necessary mow ahead of the sheep. However, the integration of following up with weed management behind sheep grazing will promote desirable plants for animal performance, wildlife habitat, stormwater mitigation and other benefits. The dual technique will also help promote wildflower plantings where pollinator habitat resources are preferred.

Sheep are controlled with temporary electric fencing consisting of fiberglass posts and commercially-available polywire strands, energized by a low voltage solar charger. Animals are moved from one pasture division (paddock) on a regular basis, generally every 1-4 days depending on site conditions, weather, animal performance and additional considerations of the farmer. The sheep are often accompanied by livestock guardian dogs, which are people friendly, whose presence is needed to deter predators from attacking the sheep. The dogs are fed with automatic feeders and have access to the same water as the sheep. Lambs are born on pasture within the array and given the size of the average solar development, may spend the majority of their lives on site. Mortality of sheep are low if properly managed and individuals advanced in age may be relocated as necessary to maintain productive vigor of the flock.

Stocking rate on properties can vary widely due to the age of grass and forb establishment, vegetation composition, rainfall, forage response to management, presence of invasive plants but for rotational grazing, to generalize, 100 acres can maintain 200 sheep given average conditions. The goal is to maintain residual vegetation (6-8 inches of stockpile) to graze through the winter months to minimize supplemental feeding. Minerals needed by the animals are provided free choice and medical treatment of all domestic species on site are provided by the shepherd with veterinary consultation as needed. A major consideration that all personnel and vendors much be aware of is the importance of closing the gate to the perimeter as to avoid escaped sheep or dogs.

The market for lambs produced is strong and growing. Additional revenue opportunities include live animal sales to stock additional farms and breeding ram sales will be an option. Jobs post-construction focus on vegetation management currently, but grazing will also influence restaurants, retail butcher shops, livestock processing facilities and more outlet venues looking for local products for regular activities but also special events. The ethnic changes within the United States are driving an increase in demand for lamb and mutton. The country currently imports half of the lamb consumed domestically. The lower amount of water that sheep need compared to other types of livestock make them a better choice.

Creating quality pollinator habitat under solar but managing it with sheep in the absence of deer browsing will allow control of disturbance regimes to benefit dozens of bee and butterfly species at the landscape-level when the livestock are rotated appropriately. In the future, carbon credits may be an additional revenue stream for landowners or companies instituting agrivoltaics.

Solar grazing with sheep offers an unprecedented chance in modern times to involve new people of all backgrounds in farming. Access to land and operating capital are the two most-cited reasons preventing

young, new or underrepresented farmers from entering the workforce. Paying grazers to keep their animals on land that they do not own eliminates significant barriers that will lead to business growth and also future land ownership.

### **Benefits of Grazing Solar**

1. **Effective Vegetation Management:** Sheep effectively control vegetation growth under solar panels, reducing the need for mechanical or chemical vegetation management methods. Solar grazing offers an efficient solution to vegetation management in solar farms. Sheep naturally graze on grass and weeds that grow around and under solar panels, maintaining a manageable vegetation height without manual intervention. This process ensures that solar panels remain unobstructed, maximizing their exposure to sunlight and maintaining optimal energy production. Unlike mechanical methods, grazing prevents overgrowth without damaging the solar infrastructure, providing a sustainable way to manage ground cover.
2. **Cost-Effective:** Solar grazing can be more cost-effective than traditional landscaping services, as sheep provide a natural solution to vegetation control, potentially lowering maintenance costs for years to come. In the first year, your grazer will likely combine mowing and grazing, but mowing costs decrease significantly over time. Integrating solar grazing into solar farm maintenance can lead to significant cost savings over time. The initial investment in a flock of sheep and a grazing management plan may be offset by the reduced need for mechanical mowing, herbicide application, and labor costs associated with traditional vegetation management techniques. Solar farms can lower operational costs by utilizing sheep, making solar energy production more economically viable in the long run. Compared to heavy mowers that can fling rocks, dust, and debris at solar arrays, sheep safely navigate around panels. For instance, a rocky site in Texas reported [savings of \\$413,774](#) over traditional mowing methods by opting for sheep grazing, emphasizing the cost-efficiency of grazing. Similarly, Tampa Electric demonstrated that solar grazing could yield a [75% cost reduction](#) compared to traditional mowing.
3. **Eco-Friendly:** Solar grazing contributes to environmental conservation by eliminating the need for chemical herbicides and reducing greenhouse gas emissions from gasoline-powered mowing equipment. This practice supports a cleaner, more sustainable approach to managing solar farms, aligning with the overarching goal of solar energy to reduce carbon footprints. Furthermore, the natural grazing process helps sequester carbon in the soil, contributing to efforts to mitigate climate change.
4. **Better Land Use:** Solar grazing represents an innovative approach to land use that brings mutual benefits to farmers and solar energy producers, who often compete for valuable land resources. By integrating livestock grazing with solar farms, this practice allows for the dual use of land, ensuring that it simultaneously serves agricultural and energy production purposes. For farmers, solar grazing opens up new pasture and livestock management avenues without additional land acquisition. Sheep benefit from high-quality forage and shade from solar panels, reducing the risk of heat stress. Likewise, solar farmers can maintain the efficiency of their solar arrays through natural vegetation management, reducing the reliance on mechanical or chemical methods. This synergy not only optimizes land use but also enhances the sustainability of both industrial sectors.
5. **Improves Soil Health:** The grazing sheep's activity controls vegetation and promotes healthier soil. As sheep move across the land, their hooves aerate the soil, and their manure acts as a natural fertilizer, enriching the soil with nutrients. This process enhances soil structure, encourages microbial diversity, and facilitates the growth of various plant species. Improved soil health supports a robust ecosystem under solar panels, contributing to the overall sustainability of the solar farm. Sheep also help enrich the soil's minerals. Excess nutrients from their diet and supplementation are directly deposited into the landscape, improving soil composition for future plant growth.

6. **Protects Panels:** Sheep pose minimal risk to solar panels compared to mechanical vegetation management methods that can accidentally damage the infrastructure. The animals are generally too short to reach the panels with their mouths or bodies, ensuring they remain safe from physical harm. This natural method of vegetation control allows for proximity grazing without the risk of disrupting or damaging the solar array, preserving the longevity and effectiveness of the solar investment.
7. **Promotes Renewable Energy:** Solar grazing combines two forms of renewable energy, solar power and biomass from grass, supporting a sustainable ecosystem. This approach generates clean electricity from solar panels and utilizes the renewable biomass resource from grasses. Solar grazing embodies the principles of a circular economy, where waste is minimized, and natural cycles are utilized to support energy production and agriculture.
8. **Supports Local Economies:** Solar grazing offers local farmers and shepherds economic opportunities by providing additional grazing land and income sources. By partnering with solar farms, livestock owners can expand their operations without purchasing or leasing additional land. This collaboration can bolster the local agricultural economy, creating jobs and supporting the community's sustainability goals through an innovative blend of technology and traditional farming. Solar grazing supports ancillary industries, including butchers and meat producers, sheepherders, working dog trainers, and wool fiber producers.
9. **Conserves Water:** Grazing reduces the need for irrigation compared to traditional ground management strategies, conserving water resources. Solar grazing indirectly contributes to maintaining the cleanliness of solar panels, an essential factor in maximizing their efficiency. In areas prone to dust and dirt accumulation, traditional methods of cleaning solar panels often require significant amounts of water, a precious resource in many regions. Sheep grazing around the panels naturally disturbs the ground and can help reduce the overall dust levels in the air, potentially minimizing the dust settling on the panels. While the primary goal of solar grazing is vegetation management, reducing dust accumulation can decrease the frequency of water-intensive cleaning processes. This conserves water and ensures that solar panels maintain higher operational efficiency by staying cleaner for longer periods. This benefit, while indirect, aligns with the sustainability goals of solar energy production by optimizing resource use and minimizing environmental impact.
10. **Biodiversity Enhancement:** The varied vegetation managed by sheep grazing under solar panels can create habitats for various wildlife species. This biodiversity includes plants, insects, birds, and small mammals that find food and shelter in the solar farm ecosystem. Enhancing biodiversity is crucial for ecological balance and resilience, and solar grazing helps to create a more diverse and thriving environment within the solar farm. Solar grazing also allows for staggered bloom times and encourages reblooming. Whereas mowing knocks down foliage on-site all at once, decimating pollinator environments, grazing is a more gradual process that supports pollinators throughout the growing season.
11. **Public Relations and Education:** Solar grazing projects are powerful education and public relations tools. They demonstrate a practical application of sustainable practices, combining renewable energy production with ecological land management. These projects can engage the community, foster discussions about sustainability, and serve as a model for integrating renewable energy with agriculture. By showcasing the benefits of solar grazing, solar energy companies can enhance their public image and promote wider adoption of sustainable practices.

Overall, solar grazing supports renewable energy production, transforming the land into a more productive and valuable asset. The sheep's grazing habits prevent overgrowth and maintain a balanced ecosystem, while their manure serves as an organic fertilizer, enriching the soil with essential nutrients. This process of aeration and fertilization improves soil structure, increases water retention capacity, and encourages the growth of a diverse range of plant species. Over time, these ecological benefits contribute to developing more robust and resilient ecosystems under and around solar panels.

# **Attachment T**

## **Glare Study**





GLARE STUDY

# Tobacco Trail Solar

Prince Edward County, Virginia

October 10, 2025

PREPARED FOR:  
Stratta Solar, LLC

PREPARED BY:  
**Westwood**



# Glare Study

**Tobacco Trail Solar**  
Prince Edward County, Virginia

**Prepared For:**

Tobacco Trail Solar, LLC.  
800 Taylor St, Suite 200  
Durham, NC 27701

**Prepared By:**

Westwood Professional Services  
12701 Whitewater Drive, Suite 300  
Minnetonka, MN 55343  
(952) 937-5150

Project Number: 0072250.00  
Date: October 10, 2025

## Executive Summary

Westwood Professional Services, Inc. (Westwood) completed a glare study using ForgeSolar's GlareGauge software to analyze potential glare hazards for the proposed Tobacco Trail Solar (Project). The Project Area covers approximately 2,310 acres located in Prince Edward County, Virginia. It is shown on the site location map (Exhibit 1) (**Exhibit 2**).

Glare was modeled for the proposed PV solar Project using the engineered design parameters provided by the project sponsor. The proposed Project will use an array height of 6-feet when the rest angle is 60-degrees (60-DRA). Glare was also modeled to simulate alternate designs with a 6-foot and 9-foot array height having 10-DRA, and 0-DRA (**Figure 4**).

Receptors points and routes were modeled within approximately 500 feet near the Project. They included 65 Observation Points (OPs) consisting of 27 residences assumed to have two levels, 5-feet above ground and 15-feet above ground to simulate a person's eye level on a first and second floor, and 11 residences assumed to have one level, 5-feet above ground.

Fourteen routes were modeled for glare. An eye level of 3.5-feet above ground was used to model the drivers eye height (**Table 2**).

Results predicted no green, yellow, or red glare at residences (OPs) or routes modeled when the preferred 60-DRA with either a preferred 6-foot or an alternate 9-foot array were modeled. Additionally, for alternate specifications with a 10-DRA no glare was predicted. However, when a 0-DRA is modeled, green and yellow glare was predicted with both a 6-foot and 9-foot average height array (**Table 1, Appendix 1 & 2**).

**TABLE 1: SUMMARY OF RECEPTORS RECEIVING GLARE FOR THE MODELED ARRAYS**

Tobacco Trail Analysis Receptors with Glare Grand Summary																		
Number of Components with Glare	Red Glare						Yellow Glare						Green Glare					
	6ft			9ft			6ft			9ft			6ft			9ft		
	Degree Rest Angle																	
	0	10	60	0	10	60	0	10	60	0	10	60	0	10	60	0	10	60
Observation Points (OPs)	-	-	-	-	-	-	16	-	-	17	-	-	53	-	-	52	-	-
Routes	-	-	-	-	-	-	9	-	-	9	-	-	12	-	-	12	-	-

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## Exhibits

Exhibit 1: Site Location Map

Exhibit 2: Glare Study Array Layout and Receptors

## Appendices

Appendix A: Glare Study Summary Tables

Appendix B: Glare Study Model Detail Results

    60° Rest Angle with a 6- or 9-Foot Arrays (preferred design)

    10° Rest Angle with a 6- or 9-Foot Arrays

    0° Rest Angle with a 6- or 9-Foot Arrays

Appendix C: Impact of Glare from Solar Modules

# 1.0 Introduction and Purpose

The purpose of this glare study is for due diligence reporting of modeled qualitative and quantitative glare impacts to identified receptors adjacent and proximal to the proposed Tobacco Trail Solar (Project). Tobacco Trail Solar (Client) contracted Westwood Professional Services, Inc. (Westwood) to report potential glare associated with the Project.

This study provides answers to the following questions:

1. Will glare from the photovoltaic (PV) modules be visible to residents or receptors near the Project?
2. Will glare from the PV modules be visible to routes near the Project?
3. If glare is visible, what is its duration and hazard category?

Study results are summarized in Section 4 and **Appendix A**. Detailed data are presented in **Appendix B**. A discussion on the impact of glare from solar modules is in (**Appendix C**).

## 2.0 Glare Study Methodology

### 2.1 Summary

This analysis modeled glare for a preferred array racking of 6-feet with a 60-degree rest angle. An alternate array height of 9-feet was also modeled as were 10-degree and 0-degree resting angles (also referred to as stow angles). Data are summarized in **Appendix A** and analysis details are in **Appendix B**. The glare values of minutes per year are calculated using line of sight elevations and do not account for existing vegetation or structures that would reduce the visibility of glare from arrays by physical screening.

For glare modeling, the array layout is shown in **Exhibit 2**. To model the potential intensity and time of Project-related glare to receptors, Westwood used ForgeSolar's GlareGauge software, a web-based tool that models when and where glare could occur throughout a typical year from a modeled PV array as viewed from specified observer locations. GlareGauge software uses an interactive web map interface with user-specified parameters such as orientation and tilt of the modules to calculate the occurrence, intensity, and size of the potential glare throughout the year.

Observation points (OPs) and route segments (Routes) were assessed for glare in this study. The receptors modeled for glare are simulated human eyes at single, stationary OPs, and by drivers along segments of public road (Routes). The OPs are derived from residences located near the arrays; each residence was assessed for glare at two heights: 5-feet and 15-feet above ground level (AGL). Mobile homes were modeled at 5-feet assuming a single level. Road segments were assessed for glare using an assumed eye height of 3.5-feet following U.S. Department of Transportation, Federal Highway Administration (FHWA) standards.

TABLE 2: RECEPTORS MODELED FOR GLARE

Receptor Types	Total Number of Receptors	
A. Observation Points (OPs)	65	
Residential OPs		38
B. Flight Paths (FPs)*	0	
C. Routes	14	

The Project is not proposed on or near a federally obligated airport. The Federal Aviation Administration (FAA) does not require glare analysis for air traffic control towers (ATCT) or aircraft flying over a PV solar energy system that is not located on a federally obligated airport. The project developer anticipates that, based on the FAA's analysis, any glint and glare from solar energy systems experienced by pilots flying through the project area would be similar to glint and glare pilots routinely experience from water bodies, glass-facade buildings, parking lots, and similar features.

## 2.2 Green, Yellow, and Red Glare Definitions

The analysis presented in this study was prepared with the ForgeSolar GlareGauge software which uses the Solar Glare Hazard Analysis Tool (SGHAT). This technology was developed by Sandia National Laboratories and is compatible with 2021 and 2013 FAA glare guidelines. The SGHAT tool estimates when and where reflected solar glare could occur in one-minute intervals throughout the year from a modeled PV array.

If glare is predicted, the GlareGauge program categorizes the glare hazard of PV arrays for the identified receptors modeled in the analysis. Ocular hazards are separated into categories of severity from a *low potential to cause temporary after-image* to *retinal burn*.

GlareGauge produces a three-stage, color coded display of the potential for glare to result in an ocular impact.

- Green glare: low potential to cause temporary after-image.
  - Exposure is the least intense of the glare categories.
- Yellow glare: potential to cause temporary after-image.
  - Example: is experienced when seeing a camera flash in the eye. Following the flash, the observer typically blinks, and the bright light temporarily appears visible.
- Red glare: the most intense, can result in retinal burn.
  - PV modules do not focus or concentrate reflected sunlight and therefore do not produce red glare (retinal burn).

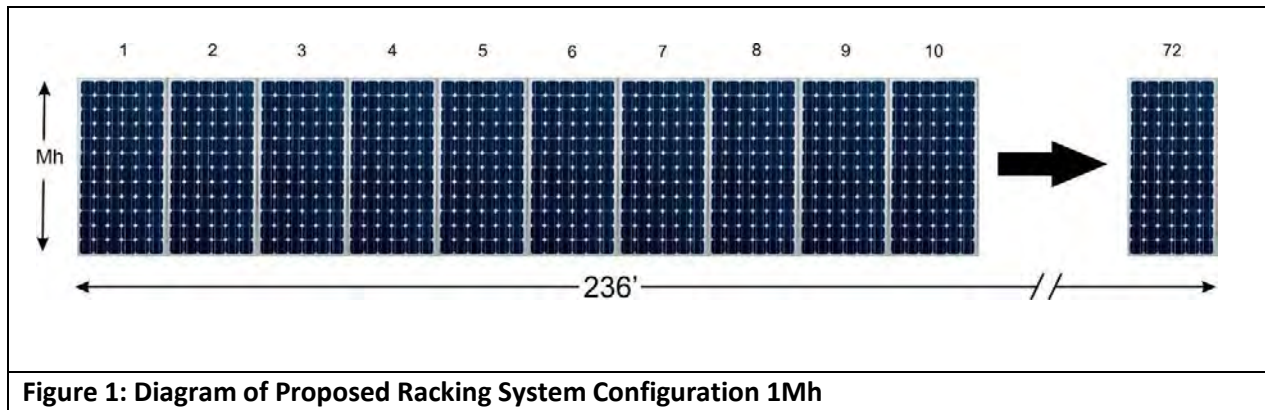
## 3.0 Project Locations and Descriptions

The Project Area consists of approximately 2,310 acres of land. It is located 2 miles north and northeast of the US 15 and 360 interchange near the unincorporated community of Briery in Prince Edward County, Virginia (**Exhibit 1 and 2**).

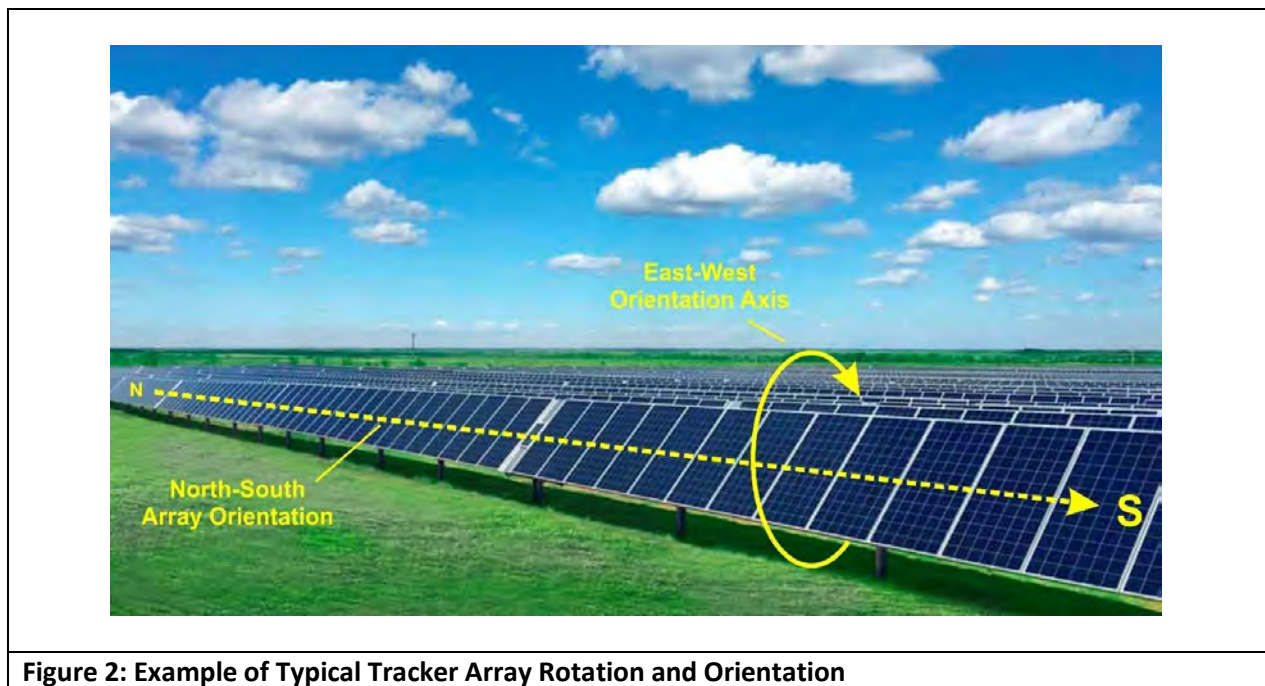
PV modules will be attached to single axis solar trackers with electrical inverters and associated racking, foundations, collection lines, and access roads (**Exhibit 2**).

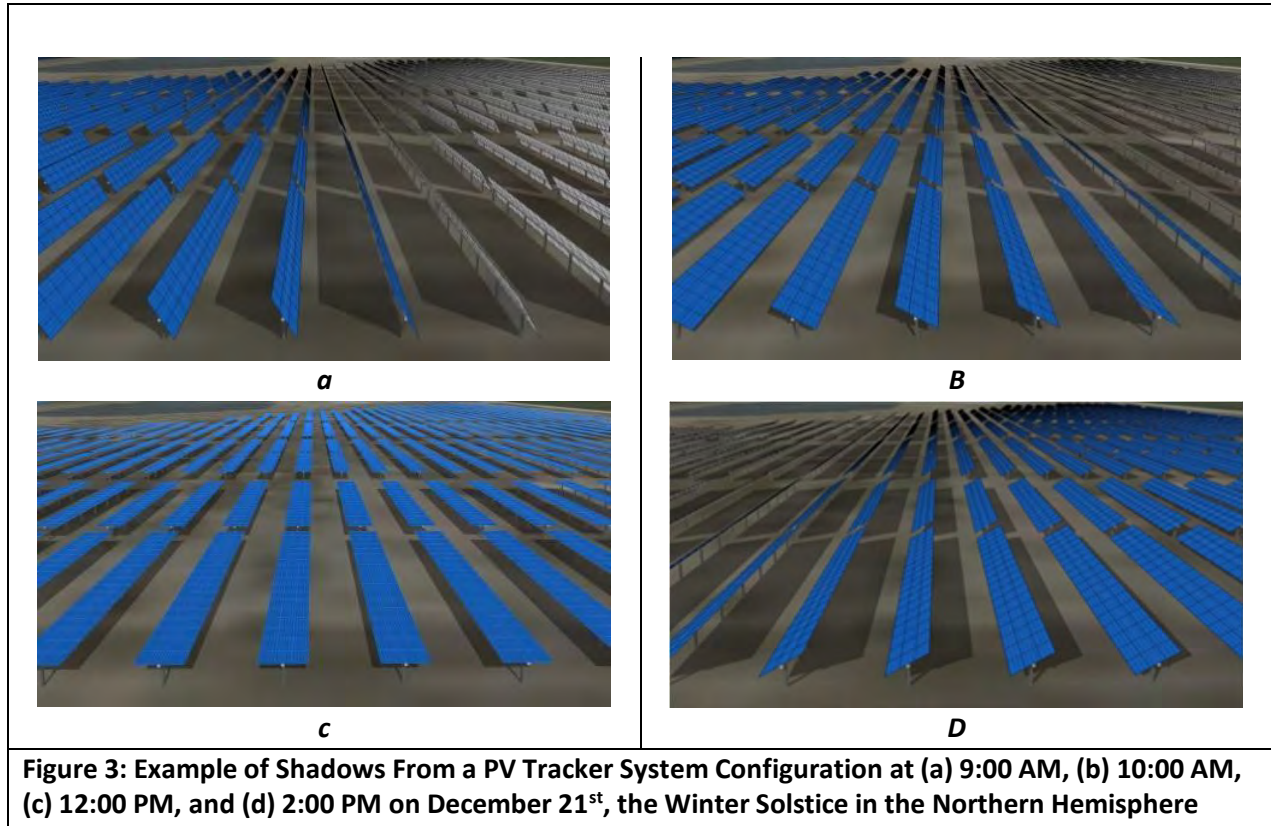


The PV modules will be stacked in a one or two module height (Mh) configuration in a portrait orientation on a single axis tracker system. The stacked modules will be configured in tracker rows of PV modules and arranged in a series of variable rectangular units (arrays) (**Figure 1**).

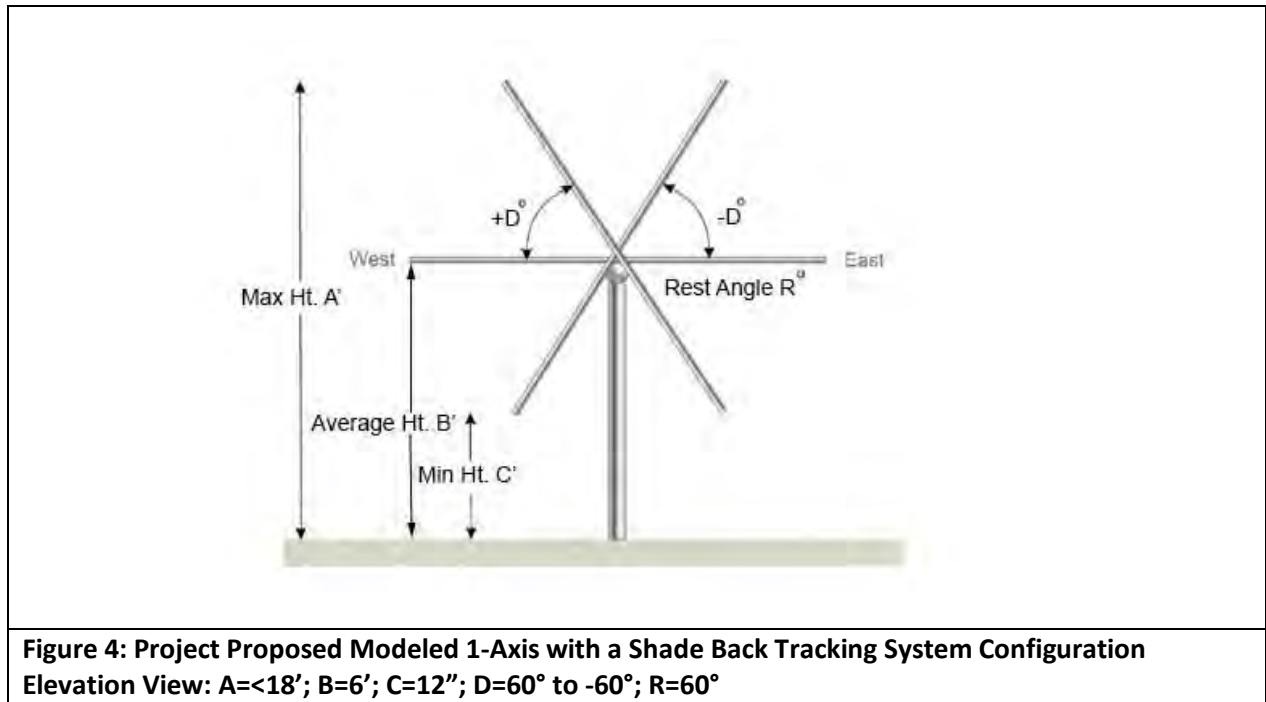


Rows of PV modules will be constructed along a north-south orientated axis. Trackers will rotate each row of modules daily east to west following the sun as shown in **Figure 2** and **Figure 3**.





The dimensions and specifications of the preferred modeled single axis tracking system elevation used in this study are shown in **Figure 4**.



### 3.1 Modeled Observation Points at Residences and Sensitive Facilities

Twenty-seven OP Receptors (residences) modeled for glare were each modeled at receptor eye heights with two elevations, 5-feet, and 15-feet to simulate a person assumed first and second level. Eleven mobile homes (MH) were modeled at 5-feet to simulate a person assumed one level residence. (Table 3).

**TABLE 3: LOCATION OF MODELED OPs**

OP #	Latitude (deg)	Longitude (deg)	Elevation	Height Above Ground	Total Elevation
100	37.109713	-78.467903	599.7271	5	604.7271
101	37.109713	-78.467903	599.7271	15	614.7271
102	37.107782	-78.469048	606.3937	5	611.3937
103	37.107782	-78.469048	606.3937	15	621.3937
104	37.10673	-78.466781	605.546	5	610.546
105	37.10673	-78.466781	605.546	15	620.546
106	37.101635	-78.472188	620.3231	5	625.3231
107	37.101635	-78.472188	620.3231	15	635.3231
108	37.09779	-78.473879	626.6177	5	631.6177
109	37.09779	-78.473879	626.6177	15	641.6177
110	37.095718	-78.47273	616.8489	5	621.8489
111	37.095718	-78.47273	616.8489	15	631.8489
112	37.095512	-78.473852	611.9993	5	616.9993
113	37.095512	-78.473852	611.9993	15	626.9993
114	37.094658	-78.474216	622.2221	5	627.2221
115	37.094658	-78.474216	622.2221	15	637.2221
116	37.092467	-78.468147	601.3994	5	606.3994
117	37.092467	-78.468147	601.3994	15	616.3994
118	37.094368	-78.457405	565.8864	5	570.8864
119	37.094368	-78.457405	565.8864	15	580.8864
120	37.091807	-78.457647	578.9842	5	583.9842
121	37.091807	-78.457647	578.9842	15	593.9842
122	37.089328	-78.458024	583.4523	5	588.4523
123	37.089328	-78.458024	583.4523	15	598.4523
124	37.088922	-78.45777	584.2065	5	589.2065
125	37.088922	-78.45777	584.2065	15	599.2065
126	37.088434	-78.457979	582.7125	5	587.7125
127	37.088434	-78.457979	582.7125	15	597.7125
128	37.081725	-78.446397	584.3862	5	589.3862
129	37.081725	-78.446397	584.3862	15	599.3862
130	37.081517	-78.444528	584.7049	5	589.7049

131	37.081517	-78.444528	584.7049	15	599.7049
132	37.081957	-78.44258	584.6372	5	589.6372
133	37.081957	-78.44258	584.6372	15	599.6372
134	37.082188	-78.438018	590.8785	5	595.8785
135	37.082188	-78.438018	590.8785	15	605.8785
136	37.084329	-78.438463	563.0349	5	568.0349
137	37.084329	-78.438463	563.0349	15	578.0349
138	37.081646	-78.434442	594.289	5	599.289
139	37.081646	-78.434442	594.289	15	609.289
140	37.080695	-78.431575	599.8128	5	604.8128
141	37.080695	-78.431575	599.8128	15	614.8128
142	37.081663	-78.429872	606.6746	5	611.6746
143	37.081663	-78.429872	606.6746	15	621.6746
144	37.080989	-78.424564	600.3689	5	605.3689
145	37.080989	-78.424564	600.3689	15	615.3689
146	37.081652	-78.421567	589.41	5	594.41
147	37.081652	-78.421567	589.41	15	604.41
148	37.082481	-78.419503	595.9572	5	600.9572
149	37.082481	-78.419503	595.9572	15	610.9572
150	37.099626	-78.433371	565.5132	5	570.5132
151	37.099626	-78.433371	565.5132	15	580.5132
152	37.103234	-78.43457	553.4203	5	558.4203
153	37.103234	-78.43457	553.4203	15	568.4203
154	37.08342	-78.419096	583.6555	5	588.6555
155	37.083278	-78.418742	586.5725	5	591.5725
156	37.083574	-78.418356	579.3373	5	584.3373
157	37.083335	-78.41812	580.6639	5	585.6639
158	37.083471	-78.418062	577.7565	5	582.7565
159	37.085092	-78.419321	548.6951	5	553.6951
160	37.085471	-78.419281	542.1211	5	547.1211
161	37.085751	-78.418884	539.3573	5	544.3573
162	37.086392	-78.418679	536.2667	5	541.2667
163	37.08663	-78.418545	532.4713	5	537.4713
164	37.086756	-78.41884	531.284	5	536.284

### 3.2 Modeled Routes

Fourteen Route segments were also modeled for glare (**Table 4**). All OPs and Routes are mapped in **Exhibits 1** and **2**. An example of an array and adjacent residence and route receptors is shown in **Figure 5**.

**Table 4: Location of Routes Modeled**

US Hwy 15	#	Latitude (deg)	Longitude (deg)	Elevation	Height Above Ground	Total Elevation
	10001	37.093744	-78.473877	626.7181	3.5	630.2181
	10006	37.111238	-78.466281	586.1655	3.5	589.6655

County Line Rd	#	Latitude (deg)	Longitude (deg)	Elevation	Height Above Ground	Total Elevation
	10007	37.09728	-78.476651	594.539	3.5	598.039
	10010	37.097309	-78.47327	621.365	3.5	624.865

Henderson Rd	#	Latitude (deg)	Longitude (deg)	Elevation	Height Above Ground	Total Elevation
	10011	37.109995	-78.468285	603.0541	3.5	606.5541
	10012	37.10959	-78.467164	592.1085	3.5	595.6085

Ole Briery Station Rd Seg 1	#	Latitude (deg)	Longitude (deg)	Elevation	Height Above Ground	Total Elevation
	10013	37.092208	-78.458646	563.1461	3.5	566.6461
	10024	37.087648	-78.458228	575.4366	3.5	578.9366

Ole Briery Station Rd Seg 2	#	Latitude (deg)	Longitude (deg)	Elevation	Height Above Ground	Total Elevation
	10025	37.095314	-78.455184	559.5483	3.5	563.0483
	10034	37.092208	-78.458646	563.1461	3.5	566.6461

Harley Ln	#	Latitude (deg)	Longitude (deg)	Elevation	Height Above Ground	Total Elevation
	10035	37.081527	-78.446166	585.6085	3.5	589.1085
	10036	37.081071	-78.445886	588.4266	3.5	591.9266

Collins Dr	#	Latitude (deg)	Longitude (deg)	Elevation	Height Above Ground	Total Elevation
	10037	37.081871	-78.442797	585.4573	3.5	588.9573
	10038	37.080705	-78.442104	593.9523	3.5	597.4523

Thistle Knob Ln	#	Latitude (deg)	Longitude (deg)	Elevation	Height Above Ground	Total Elevation
	10039	37.083651	-78.438932	566.1442	3.5	569.6442
	10043	37.082049	-78.438472	587.0339	3.5	590.5339

US Hwy 360	#	Latitude (deg)	Longitude (deg)	Elevation	Height Above Ground	Total Elevation
------------	---	----------------	-----------------	-----------	---------------------	-----------------



	10044	37.08086	-78.42267	595.4059	3.5	598.9059
	10049	37.082144	-78.418682	579.7269	3.5	583.2269

Country Dr Seg 1	#	Latitude (deg)	Longitude (deg)	Elevation	Height Above Ground	Total Elevation
	10050	37.08086	-78.423727	596.2173	3.5	599.7173
	10062	37.084267	-78.42215	573.4048	3.5	576.9048

Country Dr Seg 2	#	Latitude (deg)	Longitude (deg)	Elevation	Height Above Ground	Total Elevation
	10063	37.084267	-78.42215	573.4048	3.5	576.9048
	10072	37.085107	-78.419377	548.1298	3.5	551.6298

Hillside Dr	#	Latitude (deg)	Longitude (deg)	Elevation	Height Above Ground	Total Elevation
	10073	37.083329	-78.418574	583.6099	3.5	587.1099
	10075	37.082844	-78.41802	580.2294	3.5	583.7294

Dempseys Rd	#	Latitude (deg)	Longitude (deg)	Elevation	Height Above Ground	Total Elevation
	10076	37.100853	-78.432978	553.086	3.5	556.586
	10081	37.099499	-78.433266	563.9267	3.5	567.4267

Tobacco Heritage Trail	#	Latitude (deg)	Longitude (deg)	Elevation	Height Above Ground	Total Elevation
	10082	37.090771	-78.458017	565.0522	5	570.0522
	10095	37.084121	-78.417318	571.5374	5	576.5374

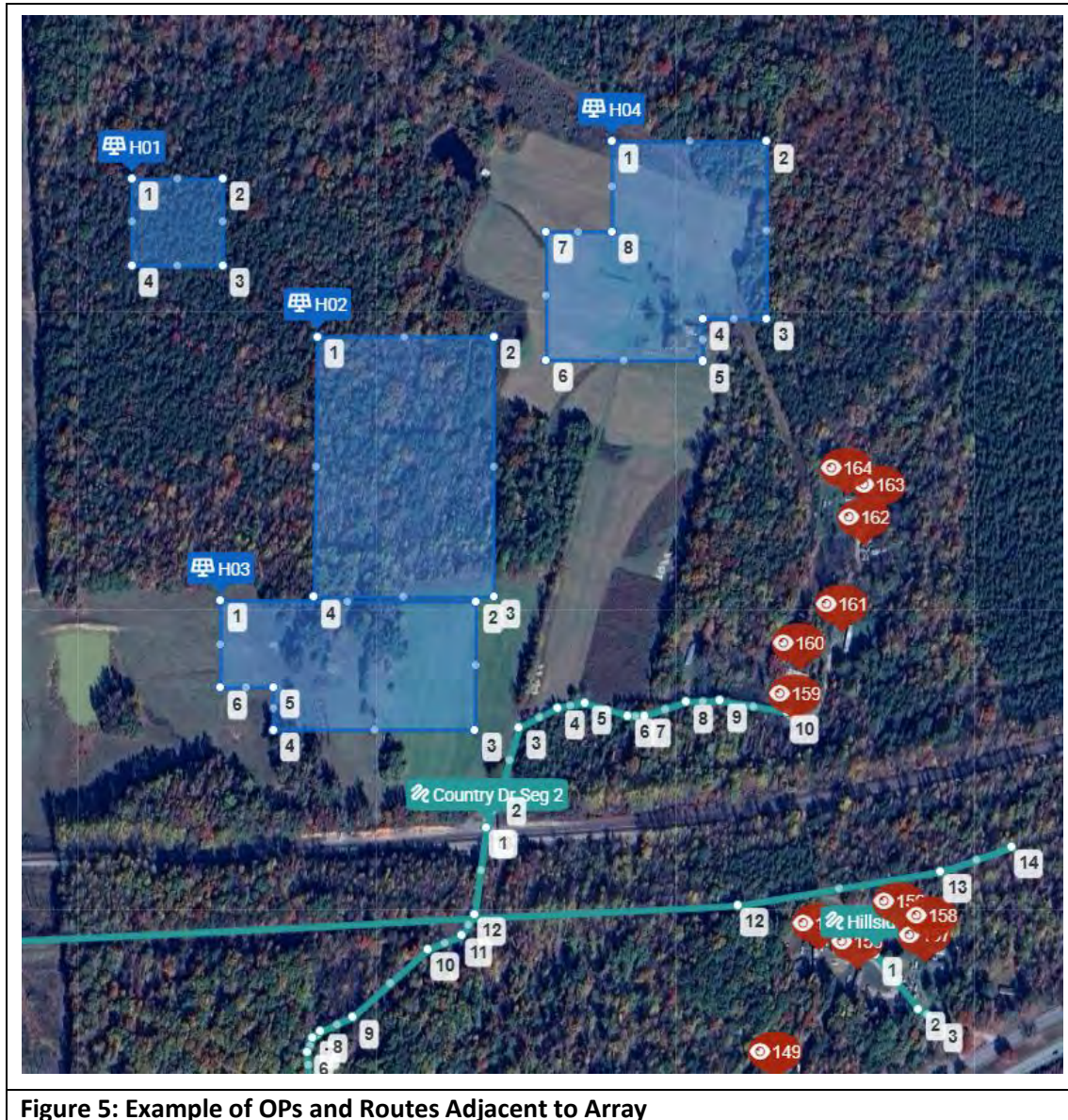


Figure 5: Example of OPs and Routes Adjacent to Array

## 4.0 Summary Of Glare Results

The summary in **Table 1** reports the number of OPs and Routes receiving the three categories of glare: **red glare** (*potential for permanent eye damage [retinal burn]*), **yellow glare** (*potential to cause temporary after-image*), and **green glare** (*low potential to cause temporary after-image*).

This Project will use photovoltaic (PV) modules which do not focus reflected sunlight and thereby do not produce red glare. The PV modules being considered for this Project are manufactured to absorb as much light as possible rather than reflecting light thereby reducing yellow and green glare. This Project will use a single axis tracker to follow the sun, which also produces less glare and provides more options to mitigate glare when it occurs than a fixed mount solar project does.

**Table 1: Summary of Receptors Receiving Glare**

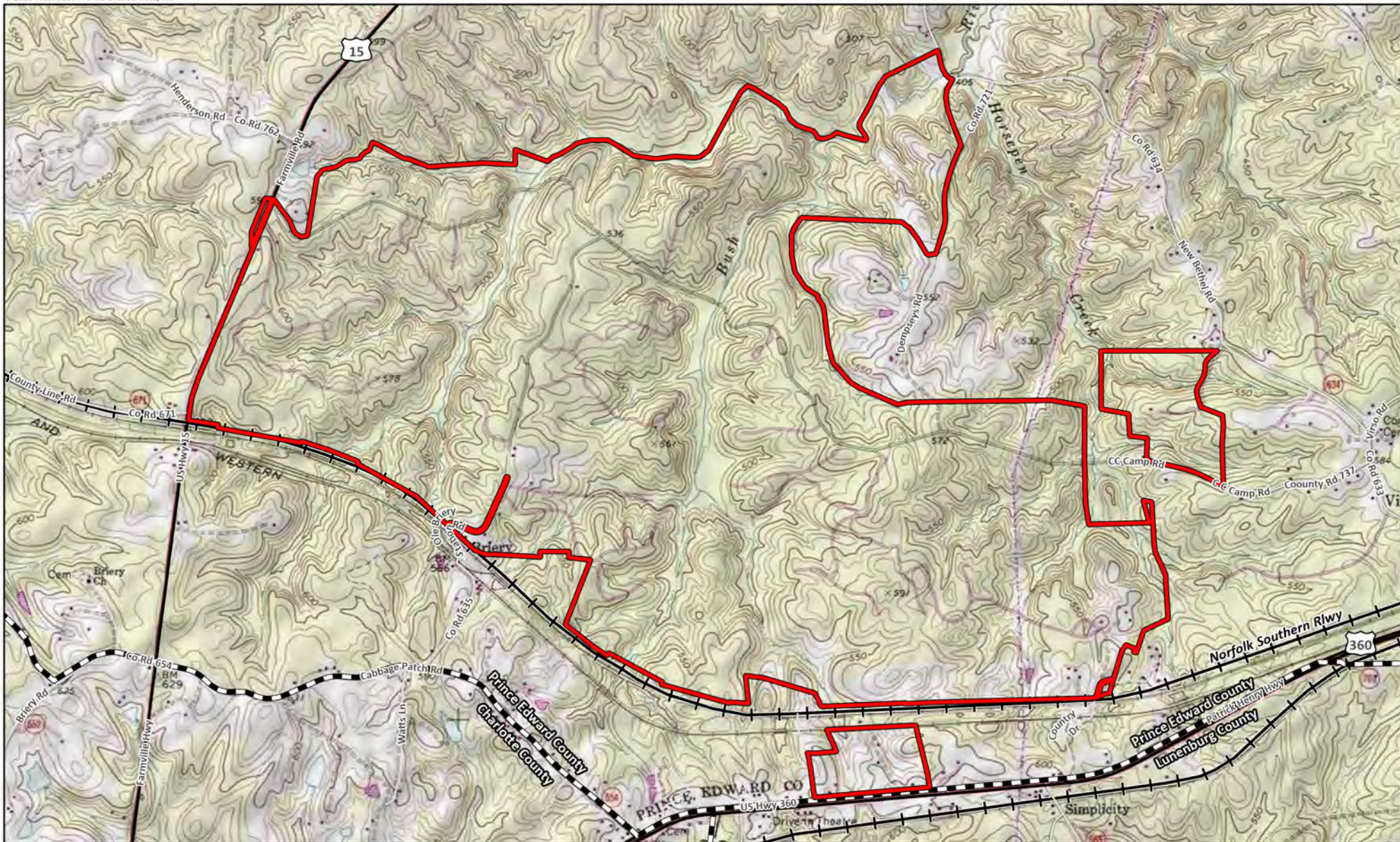
Tobacco Trail Analysis Receptors with Glare Grand Summary																		
Number of Components with Glare	Red Glare						Yellow Glare						Green Glare					
	6ft			9ft			6ft			9ft			6ft			9ft		
	Degree Rest Angle																	
	0	10	60	0	10	60	0	10	60	0	10	60	0	10	60	0	10	60
Observation Points (OPs)	-	-	-	-	-	-	16	-	-	17	-	-	53	-	-	52	-	-
Routes	-	-	-	-	-	-	9	-	-	9	-	-	12	-	-	12	-	-

Results from the GlareGauge analysis determined that no glare would be visible to OP residences or routes modeled using the preferred design of a 6-foot array height and a 60-DRA. Also, no glare was predicted to OPs and routes modeled if an alternate height array of 9- feet with a 60-DRA or a 10-DRA were used. Green and yellow glare is predicted at several of the OPs and routes if a 0-DRA and a 6-foot or 9-foot array were to be used (Appendix A and Appendix B).

The glare values reported are in minutes per year and are calculated using line of sight elevations, and do not account for existing vegetation or structures that would reduce the visibility of glare from arrays by existing physical screening.

Exhibits





Data Source(s): Westwood (2025); Esri WMS U.S. Topo & World Streets Basemaps (Accessed 2025); U.S. Census Bureau (2024).



**Westwood**

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## Tobacco Trail Solar Project

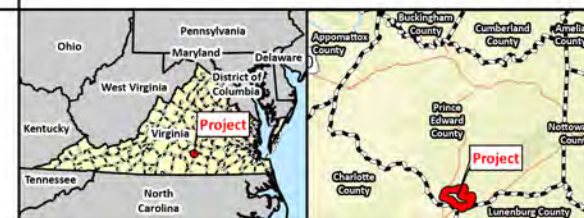
Project Location & USGS Topography

### Legend

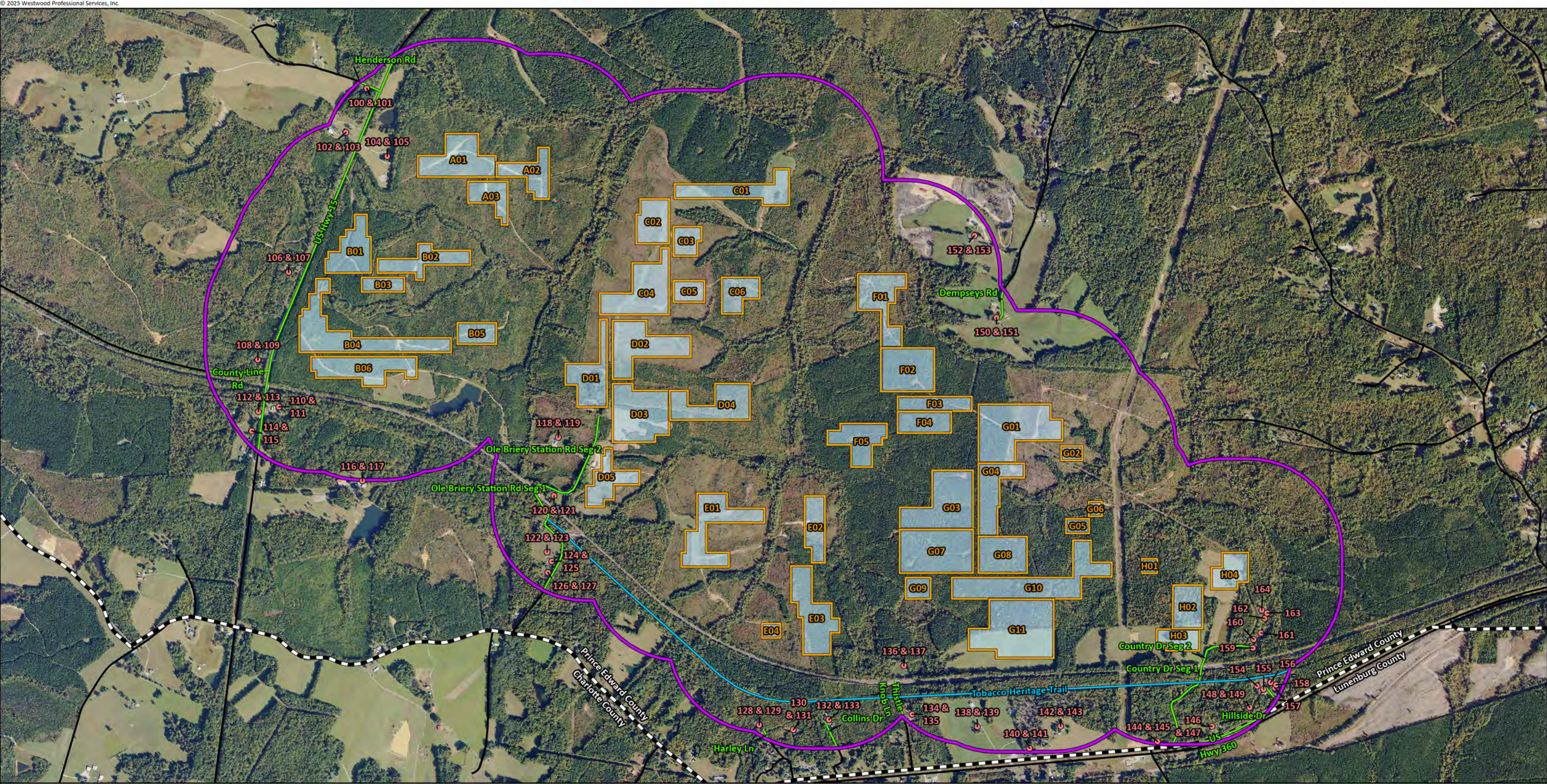
- Project Area
- County Boundary
- Major Road
- Road
- Railroad

Prince Edward County, Virginia

Exhibit 1







Data Source(s): Westwood (2025); NAIP (2023); U.S. Census Bureau (2024).










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## Tobacco Trail Solar Project

Glare Study

### Legend

-  Sub-Array Group
-  Array Groups 1500ft Buffer
-  County Boundary
-  Modeled Public Transportation Route
-  Modeled Public Trail
-  Road
-  Observation Point

Prince Edward County, Virginia

Exhibit 2



**Appendix A**  
**Glare Summary Pages**

**6-Foot (Preferred)  
9-Foot (Alternate) Arrays  
60-Degree Rest Angle Summary**

**No Glare Predicted**

**6-Foot and 9-Foot Arrays  
10-Degree Rest Angle Summary**



**No Glare Predicted**

**6-Foot Array  
0-Degree Rest Angle  
Summary**

Arrays A01-C06 at 6ft with 0 Degree Rest Angle Green Glare Min/Yr																	
Component	A01	A02	A03	B01	B02	B03	B04	B05	B06	C01	C02	C03	C04	C05	C06	Maximum Minutes	
OP 100	0	193	0	0	0	0	0	0	0	0	548	0	0	0	0	548	
OP 101	0	204	0	0	0	0	0	0	0	0	563	0	0	0	0	563	
OP 102	0	103	0	0	0	0	0	0	0	0	369	0	0	0	0	369	
OP 103	0	104	0	0	0	0	0	0	0	0	373	0	0	0	0	373	
OP 104	302	64	0	0	0	0	0	0	0	0	295	0	0	0	0	302	
OP 105	333	66	0	0	0	0	0	0	0	0	299	0	0	0	0	333	
OP 106	221	0	724	0	0	0	315	0	0	229	0	0	131	88	0	724	
OP 107	249	0	769	206	0	0	76	0	0	261	0	0	113	94	0	769	
OP 108	0	0	115	0	0	77	0	0	0	365	0	0	81	97	0	365	
OP 109	0	0	140	0	0	47	0	0	50	360	0	0	108	100	0	360	
OP 110	0	0	0	0	0	0	0	0	228	177	0	0	236	57	0	236	
OP 111	0	0	0	0	0	0	0	254	390	184	0	0	248	68	15	390	
OP 112	0	0	0	0	0	0	0	0	0	178	0	0	206	42	0	206	
OP 113	0	0	0	0	0	0	0	0	347	188	0	0	217	54	15	347	
OP 114	0	0	0	0	0	0	0	147	274	143	0	0	271	65	42	274	
OP 115	0	0	0	0	0	0	0	257	289	154	0	0	267	80	52	289	
OP 116	0	0	0	0	0	0	0	0	0	0	0	0	17	26	184	184	
OP 117	0	0	0	0	0	0	0	0	0	0	0	0	0	29	190	190	
Routes																	
Collins Dr	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Country Dr Seg 1	0	0	0	772	0	0	0	632	1150	0	0	0	40	0	0	1150	
Country Dr Seg 2	90	0	0	977	0	790	20	399	649	0	0	0	579	0	25	977	
County Line Dr	0	0	699	0	0	602	138	48	271	1099	0	94	454	218	0	1099	
Dempseys Rd	0	0	0	0	0	794	113	84	15	0	0	0	0	0	0	794	
Harley Ln	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Henderson Rd	0	617	0	0	0	0	0	0	0	0	1640	0	0	281	0	1640	
Hillside Dr	0	0	0	898	0	771	0	503	704	0	0	0	413	0	0	898	
Ole Briery Station Rd Seg 1	0	0	0	0	0	0	0	0	303	0	0	0	0	0	0	303	
Ole Briery Station Rd Seg 2	0	0	0	0	0	0	0	0	738	0	0	0	0	0	0	738	
Thistle Knob Ln	0	0	0	0	0	0	0	0	202	0	0	0	0	0	0	202	
Tobacco Heritage Trail	94	0	15	995	0	963	19	752	1310	0	0	0	570	0	39	1310	
US Hwy 15	36	0	481	257	0	895	0	0	0	1075	0	22	47	0	0	1075	
US Hwy 360	0	0	0	784	0	795	0	634	1153	0	0	0	0	0	0	1153	

Arrays A01-C06 at 6ft with 0 Degree Rest Angle Yellow Glare Min/Yr																	
Component	A01	A02	A03	B01	B02	B03	B04	B05	B06	C01	C02	C03	C04	C05	C06	Maximum Minutes	
OP 100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
OP 101	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
OP 102	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
OP 103	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
OP 104	156	0	0	0	0	0	0	0	0	0	0	0	0	0	0	156	
OP 105	229	0	0	0	0	0	0	0	0	0	0	0	0	0	0	229	
OP 106	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
OP 107	0	0	0	352	0	0	0	0	0	0	0	0	0	0	0	352	
OP 108	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
OP 109	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
OP 110	0	0	0	0	0	0	0	0	245	0	0	0	0	0	0	245	
OP 111	0	0	0	0	0	0	0	0	254	0	0	0	0	0	0	254	
OP 112	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
OP 113	0	0	0	0	0	0	0	0	163	0	0	0	0	0	0	163	
OP 114	0	0	0	0	0	0	0	0	63	0	0	0	0	0	0	63	
OP 115	0	0	0	0	0	0	0	0	85	0	0	0	0	0	0	85	
OP 116	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
OP 117	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Routes																	
Collins Dr	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Country Dr Seg 1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	
Country Dr Seg 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
County Line Dr	0	0	0	0	0	0	1	0	174	0	0	0	0	0	0	174	
Dempseys Rd	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Harley Ln	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Henderson Rd	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Hillside Dr	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Ole Briery Station Rd Seg 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Ole Briery Station Rd Seg 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Thistle Knob Ln	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Tobacco Heritage Trail	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
US Hwy 15	764	0	1185	753	0	301	0	0	42	0	0	0	0	0	0	1185	
US Hwy 360	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

Arrays D01-E04 at 6ft with 0 Degree Rest Angle Green Glare Min/Yr										
Component	D01	D02	D03	D04	D05	E01	E02	E03	E04	Maximum Minutes
OP 118	0	0	0	0	0	0	303	285	0	303
OP 119	0	0	0	0	0	0	330	275	0	330
OP 120	0	0	0	0	337	0	121	571	159	571
OP 121	0	0	0	0	283	0	114	570	129	570
OP 122	0	0	0	0	0	0	0	284	228	284
OP 123	0	0	0	0	0	0	0	307	266	307
OP 124	0	0	0	0	0	0	0	193	287	287
OP 125	0	0	0	0	0	0	0	206	199	206
OP 126	0	0	0	0	0	0	0	79	156	156
OP 127	0	0	0	0	0	0	0	70	124	124
OP 128	0	0	0	0	0	0	0	0	0	0
OP 129	0	0	0	0	0	0	0	0	0	0
OP 130	0	0	0	0	0	0	0	0	0	0
OP 131	0	0	0	0	0	0	0	0	0	0
OP 132	0	0	0	0	0	0	0	0	0	0
OP 133	0	0	0	0	0	0	0	0	0	0
Routes										
Collins Dr	0	0	0	0	0	0	0	0	0	0
Country Dr Seg 1	0	308	342	0	1602	1056	0	0	133	1602
Country Dr Seg 2	0	457	262	0	661	381	0	0	93	661
County Line Dr	425	29	133	318	0	0	434	1130	892	1130
Dempseys Rd	0	217	517	983	0	43	0	0	0	983
Harley Ln	0	0	0	0	0	0	0	0	0	0
Henderson Rd	0	0	0	968	0	0	0	0	0	968
Hillside Dr	0	400	297	0	738	431	0	0	107	738
Ole Briery Station Rd Seg 1	0	0	85	0	373	464	768	1735	1154	1735
Ole Briery Station Rd Seg 2	0	0	28	0	667	57	538	1544	675	1544
Thistle Knob Ln	0	0	0	0	0	184	0	0	0	184
Tobacco Heritage Trail	0	459	404	0	1893	1195	458	1220	1480	1893
US Hwy 15	0	0	0	0	0	0	0	0	0	0
US Hwy 360	0	249	330	0	1570	1014	0	0	122	1570

Arrays D01-E04 at 6ft with 0 Degree Rest Angle Yellow Glare Min/Yr										
Component	D01	D02	D03	D04	D05	E01	E02	E03	E04	Maximum Minutes
OP 118	0	0	0	0	0	0	0	0	0	0
OP 119	0	0	0	0	0	0	0	0	0	0
OP 120	0	0	0	0	221	0	0	0	0	221
OP 121	0	0	0	0	509	0	0	0	0	509
OP 122	0	0	0	0	0	0	0	0	0	0
OP 123	0	0	0	0	0	0	0	0	0	0
OP 124	0	0	0	0	0	0	0	0	0	0
OP 125	0	0	0	0	0	0	0	0	0	0
OP 126	0	0	0	0	0	0	0	0	0	0
OP 127	0	0	0	0	0	0	0	0	0	0
OP 128	0	0	0	0	0	0	0	0	0	0
OP 129	0	0	0	0	0	0	0	0	0	0
OP 130	0	0	0	0	0	0	0	0	0	0
OP 131	0	0	0	0	0	0	0	0	0	0
OP 132	0	0	0	0	0	0	0	0	0	0
OP 133	0	0	0	0	0	0	0	0	0	0
Routes										
Collins Dr	0	0	0	0	0	0	0	0	0	0
Country Dr Seg 1	0	0	0	0	0	0	0	0	0	0
Country Dr Seg 2	0	0	0	0	0	0	0	0	0	0
County Line Dr	0	0	0	0	0	0	0	0	0	0
Dempseys Rd	0	0	0	0	0	0	0	0	0	0
Harley Ln	0	0	0	0	0	0	0	0	0	0
Henderson Rd	0	0	0	0	0	0	0	0	0	0
Hillside Dr	0	0	0	0	0	0	0	0	0	0
Ole Briery Station Rd Seg 1	0	0	0	0	655	0	0	0	0	655
Ole Briery Station Rd Seg 2	0	0	127	0	3586	0	0	0	0	3586
Thistle Knob Ln	0	0	0	0	0	0	0	0	0	0
Tobacco Heritage Trail	0	0	0	0	0	94	0	601	0	601
US Hwy 15	0	0	0	0	0	0	0	0	0	0
US Hwy 360	0	0	0	0	0	0	0	0	0	0

Arrays F01-G05 at 6ft with 0 Degree Rest Angle Green Glare Min/Yr											
Component	F01	F02	F03	F04	F05	G01	G02	G03	G04	G05	Maximum Minutes
OP 134	0	0	0	0	0	0	0	0	0	0	0
OP 135	0	0	0	0	0	0	0	0	0	0	0
OP 136	0	0	0	0	0	0	0	0	0	0	0
OP 137	0	0	0	0	0	0	0	0	0	0	0
OP 138	0	0	0	0	0	0	0	0	0	0	0
OP 139	0	0	0	0	0	0	0	0	0	0	0
OP 140	0	0	0	0	0	0	0	0	0	0	0
OP 141	0	0	0	0	0	0	0	0	0	0	0
OP 142	0	0	0	0	0	0	0	0	0	0	0
OP 143	0	0	0	0	0	0	0	0	0	0	0
OP 144	0	0	0	0	0	0	0	0	0	0	0
OP 145	0	0	0	0	0	0	0	0	0	0	0
OP 146	0	0	0	0	0	0	0	0	0	0	0
OP 147	0	0	0	0	0	0	0	0	0	0	0
OP 148	0	0	0	0	0	0	0	0	0	0	0
OP 149	0	0	0	0	0	0	0	0	0	0	0
OP 150	193	206	0	0	347	0	0	0	0	0	347
OP 151	341	249	0	0	421	0	0	0	0	0	421
OP 152	282	0	0	0	0	0	0	0	0	0	282
OP 153	261	0	0	0	0	0	0	0	0	0	261
OP 154	0	0	0	0	0	0	0	0	0	0	0
OP 155	0	0	0	0	0	0	0	0	0	0	0
OP 156	0	0	0	0	0	0	0	0	0	0	0
OP 157	0	0	0	0	0	0	0	0	0	0	0
OP 158	0	0	0	0	0	0	0	0	0	0	0
OP 159	0	0	0	68	0	0	0	0	0	0	68
OP 160	0	0	0	93	0	0	0	0	0	0	93
OP 161	0	0	0	110	0	0	0	0	0	0	110
OP 162	0	0	40	128	0	0	0	0	0	0	128
OP 163	0	0	44	134	0	0	0	0	0	0	134
OP 164	0	0	44	134	0	0	0	0	0	0	134
Routes											
Collins Dr	0	0	0	0	0	0	0	0	0	0	0
Country Dr Seg 1	0	0	0	0	0	0	0	0	0	0	0
Country Dr Seg 2	0	0	0	23	0	0	0	0	0	0	23
County Line Dr	85	172	109	130	391	53	67	290	125	0	391
Dempseys Rd	474	627	0	0	733	0	0	0	0	0	733
Harley Ln	0	0	0	0	0	0	0	0	0	0	0
Henderson Rd	850	857	81	0	1246	307	0	349	375	323	1246
Hillside Dr	0	0	0	0	0	0	0	0	0	0	0
Ole Briery Station Rd Seg 1	0	143	1001	1285	0	0	211	359	0	0	1285
Ole Briery Station Rd Seg 2	0	209	294	331	63	0	90	279	0	0	331
Thistle Knob Ln	0	0	0	0	0	0	0	0	0	0	0
Tobacco Heritage Trail	0	0	99	224	0	0	117	246	0	0	246
US Hwy 15	0	0	0	0	0	0	0	0	0	0	0
US Hwy 360	0	0	0	0	0	0	0	0	0	0	0

Arrays F01-G05 at 6ft with 0 Degree Rest Angle Yellow Glare Min/Yr											
Component	F01	F02	F03	F04	F05	G01	G02	G03	G04	G05	Maximum Minutes
OP 134	0	0	0	0	0	0	0	0	0	0	0
OP 135	0	0	0	0	0	0	0	0	0	0	0
OP 136	0	0	0	0	0	0	0	0	0	0	0
OP 137	0	0	0	0	0	0	0	0	0	0	0
OP 138	0	0	0	0	0	0	0	0	0	0	0
OP 139	0	0	0	0	0	0	0	0	0	0	0
OP 140	0	0	0	0	0	0	0	0	0	0	0
OP 141	0	0	0	0	0	0	0	0	0	0	0
OP 142	0	0	0	0	0	0	0	0	0	0	0
OP 143	0	0	0	0	0	0	0	0	0	0	0
OP 144	0	0	0	0	0	0	0	0	0	0	0
OP 145	0	0	0	0	0	0	0	0	0	0	0
OP 146	0	0	0	0	0	0	0	0	0	0	0
OP 147	0	0	0	0	0	0	0	0	0	0	0
OP 148	0	0	0	0	0	0	0	0	0	0	0
OP 149	0	0	0	0	0	0	0	0	0	0	0
OP 150	0	80	0	0	0	0	0	0	0	0	80
OP 151	0	102	0	0	0	0	0	0	0	0	102
OP 152	41	0	0	0	0	0	0	0	0	0	41
OP 153	272	0	0	0	0	0	0	0	0	0	272
OP 154	0	0	0	0	0	0	0	0	0	0	0
OP 155	0	0	0	0	0	0	0	0	0	0	0
OP 156	0	0	0	0	0	0	0	0	0	0	0
OP 157	0	0	0	0	0	0	0	0	0	0	0
OP 158	0	0	0	0	0	0	0	0	0	0	0
OP 159	0	0	0	0	0	0	0	0	0	0	0
OP 160	0	0	0	0	0	0	0	0	0	0	0
OP 161	0	0	0	0	0	0	0	0	0	0	0
OP 162	0	0	0	0	0	0	0	0	0	0	0
OP 163	0	0	0	0	0	0	0	0	0	0	0
OP 164	0	0	0	0	0	0	0	0	0	0	0
Routes											
Collins Dr	0	0	0	0	0	0	0	0	0	0	0
Country Dr Seg 1	0	0	0	0	0	0	0	0	0	0	0
Country Dr Seg 2	0	0	0	0	0	0	0	0	0	0	0
County Line Dr	0	0	0	0	0	0	0	0	0	0	0
Dempseys Rd	0	863	0	0	76	0	0	0	0	0	863
Harley Ln	0	0	0	0	0	0	0	0	0	0	0
Henderson Rd	0	0	0	0	0	0	0	0	0	0	0
Hillside Dr	0	0	0	0	0	0	0	0	0	0	0
Ole Briery Station Rd Seg 1	0	0	0	0	0	0	0	0	0	0	0
Ole Briery Station Rd Seg 2	0	0	0	0	0	0	0	0	0	0	0
Thistle Knob Ln	0	0	0	0	0	0	0	0	0	0	0
Tobacco Heritage Trail	0	0	0	0	0	0	0	0	0	0	0
US Hwy 15	0	0	0	0	0	0	0	0	0	0	0
US Hwy 360	0	0	0	0	0	0	0	0	0	0	0



Arrays G06-H04 at 6ft with 0 Degree Rest Angle Green Glare Min/Yr												
Component	G06	G07	G08	G09	G10	G11	H01	H02	H03	H04	Maximum Minutes	
OP 134	0	0	0	0	0	257	0	0	0	0	257	
OP 135	0	0	0	0	0	291	0	0	0	0	291	
OP 136	0	0	0	0	201	243	0	0	0	0	243	
OP 137	0	0	0	0	221	286	0	0	0	0	286	
OP 138	0	0	0	0	0	0	0	0	0	0	0	
OP 139	0	0	0	0	0	0	0	0	0	0	0	
OP 140	0	0	0	0	0	0	0	0	0	0	0	
OP 141	0	0	0	0	0	0	0	0	0	0	0	
OP 142	0	0	0	0	0	0	0	0	0	0	0	
OP 143	0	0	0	0	0	0	0	0	0	0	0	
OP 144	0	0	0	205	0	301	0	0	0	0	301	
OP 145	0	0	0	220	0	340	0	0	0	0	340	
OP 146	0	0	0	428	416	89	0	0	0	0	428	
OP 147	0	0	0	456	423	0	0	0	0	0	456	
OP 148	0	0	277	61	629	125	0	0	0	0	629	
OP 149	0	0	272	81	626	0	0	0	0	0	626	
OP 150	0	0	0	0	0	0	0	0	0	0	0	
OP 151	0	0	0	0	0	0	0	0	0	0	0	
OP 152	0	0	0	0	0	0	0	0	0	0	0	
OP 153	0	0	0	0	0	0	0	0	0	0	0	
OP 154	0	0	275	0	682	42	0	0	0	0	682	
OP 155	0	0	271	0	686	42	0	0	0	0	686	
OP 156	0	0	283	0	698	24	0	136	0	0	698	
OP 157	0	0	284	0	701	30	0	106	0	0	701	
OP 158	0	0	280	0	700	25	0	149	0	0	700	
OP 159	0	0	0	0	665	0	0	261	0	0	665	
OP 160	0	0	0	0	610	0	15	262	0	0	610	
OP 161	0	0	0	0	554	0	49	269	0	0	554	
OP 162	0	0	0	0	447	0	100	259	34	0	447	
OP 163	0	0	0	0	254	0	98	115	74	0	254	
OP 164	0	0	0	0	240	0	99	82	90	0	240	
Routes												
Collins Dr	0	0	0	0	0	0	0	0	0	0	0	
Country Dr Seg 1	0	0	352	1184	1299	973	0	0	0	0	1299	
Country Dr Seg 2	0	0	590	0	1673	58	0	450	0	0	1673	
County Line Dr	0	209	0	0	0	0	142	47	374	284	374	
Dempseys Rd	0	0	0	0	0	0	0	0	0	0	0	
Harley Ln	0	0	0	0	0	0	0	0	0	0	0	
Henderson Rd	0	0	0	0	0	0	367	43	717	832	832	
Hillside Dr	0	0	557	229	1609	149	0	0	0	0	1609	
Ole Briery Station Rd Seg 1	0	379	0	110	0	72	170	62	400	224	400	
Ole Briery Station Rd Seg 2	0	247	0	21	0	0	128	51	338	216	338	
Thistle Knob Ln	0	0	0	0	0	0	0	0	0	0	0	
Tobacco Heritage Trail	0	678	646	2476	2725	1260	729	813	500	282	2725	
US Hwy 15	0	0	0	0	0	0	0	0	0	0	0	
US Hwy 360	0	0	134	1158	1365	616	0	0	0	0	1365	

Arrays G06-H04 at 6ft with 0 Degree Rest Angle Yellow Glare Min/Yr												
Component	G06	G07	G08	G09	G10	G11	H01	H02	H03	H04	Maximum Minutes	
OP 134	0	0	0	0	0	0	0	0	0	0	0	
OP 135	0	0	0	0	0	0	0	0	0	0	0	
OP 136	0	0	0	0	36	107	0	0	0	0	107	
OP 137	0	0	0	0	68	170	0	0	0	0	170	
OP 138	0	0	0	0	0	0	0	0	0	0	0	
OP 139	0	0	0	0	0	0	0	0	0	0	0	
OP 140	0	0	0	0	0	0	0	0	0	0	0	
OP 141	0	0	0	0	0	0	0	0	0	0	0	
OP 142	0	0	0	0	0	0	0	0	0	0	0	
OP 143	0	0	0	0	0	0	0	0	0	0	0	
OP 144	0	0	0	0	0	0	0	0	0	0	0	
OP 145	0	0	0	0	0	0	0	0	0	0	0	
OP 146	0	0	0	0	0	0	0	0	0	0	0	
OP 147	0	0	0	0	0	0	0	0	0	0	0	
OP 148	0	0	0	0	0	0	0	0	0	0	0	
OP 149	0	0	0	0	0	0	0	0	0	0	0	
OP 150	0	0	0	0	0	0	0	0	0	0	0	
OP 151	0	0	0	0	0	0	0	0	0	0	0	
OP 152	0	0	0	0	0	0	0	0	0	0	0	
OP 153	0	0	0	0	0	0	0	0	0	0	0	
OP 154	0	0	0	0	0	0	0	0	0	0	0	
OP 155	0	0	0	0	0	0	0	0	0	0	0	
OP 156	0	0	0	0	0	0	0	0	0	0	0	
OP 157	0	0	0	0	0	0	0	0	0	0	0	
OP 158	0	0	0	0	0	0	0	0	0	0	0	
OP 159	0	0	0	0	0	0	0	0	0	0	0	
OP 160	0	0	0	0	0	0	0	0	0	0	0	
OP 161	0	0	0	0	0	0	0	0	0	0	0	
OP 162	0	0	0	0	0	0	0	0	0	0	0	
OP 163	0	0	0	0	0	0	0	0	0	0	0	
OP 164	0	0	0	0	0	0	0	0	0	0	0	
Routes												
Collins Dr	0	0	0	0	0	0	0	0	0	0	0	
Country Dr Seg 1	0	0	0	0	184	214	0	0	0	0	214	
Country Dr Seg 2	0	0	0	0	516	0	0	0	0	0	516	
County Line Dr	0	0	0	0	0	0	0	0	0	0	0	
Dempseys Rd	0	0	0	0	0	0	0	0	0	0	0	
Harley Ln	0	0	0	0	0	0	0	0	0	0	0	
Henderson Rd	0	0	0	0	0	0	0	0	0	0	0	
Hillside Dr	0	0	0	0	199	0	0	0	0	0	199	
Ole Briery Station Rd Seg 1	0	0	0	0	0	0	0	0	0	0	0	
Ole Briery Station Rd Seg 2	0	0	0	0	0	0	0	0	0	0	0	
Thistle Knob Ln	0	0	0	0	0	0	0	0	0	0	0	
Tobacco Heritage Trail	0	6	0	0	1087	1451	0	2	0	0	1451	
US Hwy 15	0	0	0	0	0	0	0	0	0	0	0	
US Hwy 360	0	0	0	0	0	0	0	0	0	0	0	

**9-Foot Array  
0-Degree Rest Angle  
Summary**

Arrays A01-C06 at 9ft with 0 Degree Rest Angle Green Glare Min/Yr																
Component	A01	A02	A03	B01	B02	B03	B04	B05	B06	C01	C02	C03	C04	C05	C06	Maximum Minutes
OP 100	0	193	0	0	0	0	0	0	0	0	538	0	0	0	0	538
OP 101	0	203	0	0	0	0	0	0	0	0	553	0	0	0	0	553
OP 102	0	102	0	0	0	0	0	0	0	0	370	0	0	0	0	370
OP 103	0	104	0	0	0	0	0	0	0	0	367	0	0	0	0	367
OP 104	255	64	0	0	0	0	0	0	0	0	286	0	0	0	0	286
OP 105	300	65	0	0	0	0	0	0	0	0	298	0	0	0	0	300
OP 106	210	0	712	171	0	0	326	0	0	233	0	0	130	87	0	712
OP 107	247	0	760	233	0	0	291	0	0	250	0	0	122	93	0	760
OP 108	0	0	112	0	0	71	0	0	0	365	0	0	62	96	0	365
OP 109	0	0	127	0	0	52	0	0	77	259	0	0	105	98	0	259
OP 110	0	0	0	0	0	0	0	0	308	172	0	0	225	54	0	308
OP 111	0	0	0	0	0	0	0	209	365	184	0	0	244	63	0	365
OP 112	0	0	0	0	0	0	0	0	202	179	0	0	204	38	0	204
OP 113	0	0	0	0	0	0	0	0	369	186	0	0	199	51	0	369
OP 114	0	0	0	0	0	0	0	0	250	140	0	0	274	61	42	274
OP 115	0	0	0	0	0	0	0	252	286	150	0	0	278	76	49	286
OP 116	0	0	0	0	0	0	0	0	0	0	0	0	0	26	174	174
OP 117	0	0	0	0	0	0	0	0	0	0	0	0	0	28	192	192
Routes																
Collins Dr	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Country Dr Seg 1	0	0	0	771	0	792	0	630	1151	0	0	0	69	0	0	1151
Country Dr Seg 2	89	0	0	976	0	606	18	397	648	0	0	0	578	0	22	976
County Line Dr	0	0	695	0	0	767	138	46	346	1090	0	85	457	0	0	1090
Dempseys Rd	0	0	0	0	0	0	113	82	0	0	0	0	0	214	0	214
Harley Ln	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Henderson Rd	0	625	0	0	0	0	0	0	0	0	1616	0	0	286	0	1616
Hillside Dr	0	0	0	896	0	767	15	504	710	0	0	0	413	0	0	896
Ole Briery Station Rd Seg 1	0	0	0	0	0	0	0	0	298	0	0	0	0	0	0	298
Ole Briery Station Rd Seg 2	0	0	0	0	0	0	0	0	737	0	0	0	0	0	0	737
Thistle Knob Ln	0	0	0	0	0	0	0	0	192	0	0	0	0	0	0	192
Tobacco Heritage Trail	93	0	0	993	0	961	18	746	1306	0	0	0	577	0	39	1306
US Hwy 15	135	0	454	13	0	1054	0	0	1	1065	0	0	38	0	0	1065
US Hwy 360	0	0	0	784	0	790	0	631	1155	0	0	0	0	0	0	1155

Arrays A01-C06 at 9ft with 0 Degree Rest Angle Yellow Glare Min/Yr																
Component	A01	A02	A03	B01	B02	B03	B04	B05	B06	C01	C02	C03	C04	C05	C06	Maximum Minutes
OP 100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
OP 101	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
OP 102	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
OP 103	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
OP 104	98	0	0	0	0	0	0	0	0	0	0	0	0	0	0	98
OP 105	216	0	0	0	0	0	0	0	0	0	0	0	0	0	0	216
OP 106	0	0	0	24	0	0	0	0	0	0	0	0	0	0	0	24
OP 107	0	0	0	320	0	0	0	0	0	0	0	0	0	0	0	320
OP 108	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
OP 109	0	0	0	0	0	0	0	0	17	0	0	0	0	0	0	17
OP 110	0	0	0	0	0	0	0	0	167	0	0	0	0	0	0	167
OP 111	0	0	0	0	0	0	0	0	229	0	0	0	0	0	0	229
OP 112	0	0	0	0	0	0	0	0	26	0	0	0	0	0	0	26
OP 113	0	0	0	0	0	0	0	0	75	0	0	0	0	0	0	75
OP 114	0	0	0	0	0	0	0	0	27	0	0	0	0	0	0	27
OP 115	0	0	0	0	0	0	0	0	71	0	0	0	0	0	0	71
OP 116	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
OP 117	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Routes																
Collins Dr	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Country Dr Seg 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Country Dr Seg 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
County Line Dr	0	0	0	0	0	0	0	0	160	0	0	0	0	0	0	160
Dempseys Rd	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Harley Ln	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Henderson Rd	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hillside Dr	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ole Briery Station Rd Seg 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ole Briery Station Rd Seg 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Thistle Knob Ln	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Tobacco Heritage Trail	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
US Hwy 15	727	0	1194	716	0	166	0	0	41	0	0	0	0	0	0	1194
US Hwy 360	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Arrays D01-E04 at 9ft with 0 Degree Rest Angle Green Glare Min/Yr										
Component	D01	D02	D03	D04	D05	E01	E02	E03	E04	Maximum Minutes
OP 118	0	0	0	0	0	0	298	275	0	298
OP 119	0	0	0	0	0	0	317	259	0	317
OP 120	0	0	0	0	0	0	121	571	171	571
OP 121	0	0	0	0	308	0	119	581	132	581
OP 122	0	0	0	0	0	0	0	277	204	277
OP 123	0	0	0	0	0	0	0	296	253	296
OP 124	0	0	0	0	0	0	0	190	158	190
OP 125	0	0	0	0	0	0	0	199	191	199
OP 126	0	0	0	0	0	0	0	81	152	152
OP 127	0	0	0	0	0	0	0	71	141	141
OP 128	0	0	0	0	0	0	0	0	0	0
OP 129	0	0	0	0	0	0	0	0	0	0
OP 130	0	0	0	0	0	0	0	0	0	0
OP 131	0	0	0	0	0	0	0	0	0	0
OP 132	0	0	0	0	0	0	0	0	0	0
OP 133	0	0	0	0	0	0	0	0	0	0
Routes										
Collins Dr	0	0	0	0	0	0	0	0	0	0
Country Dr Seg 1	0	307	336	0	1589	1057	0	0	129	1589
Country Dr Seg 2	0	454	262	0	659	378	0	0	93	659
County Line Dr	419	29	137	315	0	0	434	1119	875	1119
Dempseys Rd	0	212	510	991	0	41	0	0	0	991
Harley Ln	0	0	0	0	0	0	0	0	0	0
Henderson Rd	0	0	0	972	0	0	0	0	0	972
Hillside Dr	0	398	297	0	734	424	0	0	107	734
Ole Briery Station Rd Seg 1	0	0	85	0	285	462	734	1712	1093	1712
Ole Briery Station Rd Seg 2	0	0	26	0	395	57	532	1534	666	1534
Thistle Knob Ln	0	0	0	0	0	184	0	0	0	184
Tobacco Heritage Trail	0	455	410	0	1937	1193	452	1174	1333	1937
US Hwy 15	0	0	0	0	0	0	0	0	0	0
US Hwy 360	0	247	325	0	1569	1010	0	0	125	1569

Arrays D01-E04 at 9ft with 0 Degree Rest Angle Yellow Glare Min/Yr										
Component	D01	D02	D03	D04	D05	E01	E02	E03	E04	Maximum Minutes
OP 118	0	0	0	0	0	0	0	0	0	0
OP 119	0	0	0	0	0	0	0	0	0	0
OP 120	0	0	0	0	0	0	0	0	0	0
OP 121	0	0	0	0	355	0	0	0	0	355
OP 122	0	0	0	0	0	0	0	0	0	0
OP 123	0	0	0	0	0	0	0	0	0	0
OP 124	0	0	0	0	0	0	0	0	0	0
OP 125	0	0	0	0	0	0	0	0	0	0
OP 126	0	0	0	0	0	0	0	0	0	0
OP 127	0	0	0	0	0	0	0	0	0	0
OP 128	0	0	0	0	0	0	0	0	0	0
OP 129	0	0	0	0	0	0	0	0	0	0
OP 130	0	0	0	0	0	0	0	0	0	0
OP 131	0	0	0	0	0	0	0	0	0	0
OP 132	0	0	0	0	0	0	0	0	0	0
OP 133	0	0	0	0	0	0	0	0	0	0
Routes										
Collins Dr	0	0	0	0	0	0	0	0	0	0
Country Dr Seg 1	0	0	0	0	0	0	0	0	0	0
Country Dr Seg 2	0	0	0	0	0	0	0	0	0	0
County Line Dr	0	0	0	0	0	0	0	0	0	0
Dempseys Rd	0	0	0	0	0	0	0	0	0	0
Harley Ln	0	0	0	0	0	0	0	0	0	0
Henderson Rd	0	0	0	0	0	0	0	0	0	0
Hillside Dr	0	0	0	0	0	0	0	0	0	0
Ole Briery Station Rd Seg 1	0	0	0	0	727	0	0	0	0	727
Ole Briery Station Rd Seg 2	0	0	126	0	3486	0	0	0	0	3486
Thistle Knob Ln	0	0	0	0	0	0	0	0	0	0
Tobacco Heritage Trail	0	0	0	0	0	93	0	586	0	586
US Hwy 15	0	0	0	0	0	0	0	0	0	0
US Hwy 360	0	0	0	0	0	0	0	0	0	0

Arrays F01-G05 at 9ft with 0 Degree Rest Angle Green Glare Min/Yr												
Component	F01	F02	F03	F04	F05	G01	G02	G03	G04	G05	Maximum Minutes	
OP 134	0	0	0	0	0	0	0	0	0	0	0	0
OP 135	0	0	0	0	0	0	0	0	0	0	0	0
OP 136	0	0	0	0	0	0	0	0	0	0	0	0
OP 137	0	0	0	0	0	0	0	0	0	0	0	0
OP 138	0	0	0	0	0	0	0	0	0	0	0	0
OP 139	0	0	0	0	0	0	0	0	0	0	0	0
OP 140	0	0	0	0	0	0	0	0	0	0	0	0
OP 141	0	0	0	0	0	0	0	0	0	0	0	0
OP 142	0	0	0	0	0	0	0	0	0	0	0	0
OP 143	0	0	0	0	0	0	0	0	0	0	0	0
OP 144	0	0	0	0	0	0	0	0	0	0	0	0
OP 145	0	0	0	0	0	0	0	0	0	0	0	0
OP 146	0	0	0	0	0	0	0	0	0	0	0	0
OP 147	0	0	0	0	0	0	0	0	0	0	0	0
OP 148	0	0	0	0	0	0	0	0	0	0	0	0
OP 149	0	0	0	0	0	0	0	0	0	0	0	0
OP 150	0	194	0	0	347	0	0	0	0	0	0	347
OP 151	322	235	0	0	385	0	0	0	0	0	0	385
OP 152	0	0	0	0	0	0	0	0	0	0	0	0
OP 153	277	0	0	0	0	0	0	0	0	0	0	277
OP 154	0	0	0	0	0	0	0	0	0	0	0	0
OP 155	0	0	0	0	0	0	0	0	0	0	0	0
OP 156	0	0	0	0	0	0	0	0	0	0	0	0
OP 157	0	0	0	0	0	0	0	0	0	0	0	0
OP 158	0	0	0	0	0	0	0	0	0	0	0	0
OP 159	0	0	0	68	0	0	0	0	0	0	0	68
OP 160	0	0	0	93	0	0	0	0	0	0	0	93
OP 161	0	0	0	110	0	0	0	0	0	0	0	110
OP 162	0	0	40	128	0	0	0	0	0	0	0	128
OP 163	0	0	40	134	0	0	0	0	0	0	0	134
OP 164	0	0	43	134	0	0	0	0	0	0	0	134
Routes												
Collins Dr	0	0	0	0	0	0	0	0	0	0	0	0
Country Dr Seg 1	0	0	0	0	0	0	0	0	0	0	0	0
Country Dr Seg 2	0	0	0	38	0	0	0	0	0	0	0	38
County Line Dr	84	171	107	130	389	56	66	288	165	0	0	389
Dempseys Rd	581	587	0	0	679	0	0	0	0	0	0	679
Harley Ln	0	0	0	0	0	0	0	0	0	0	0	0
Henderson Rd	811	852	81	0	1247	514	0	344	303	391	0	1247
Hillside Dr	0	0	0	0	0	0	0	0	0	0	0	0
Ole Briery Station Rd Seg 1	0	138	995	1278	0	0	210	350	0	0	0	1278
Ole Briery Station Rd Seg 2	0	205	293	324	59	0	90	274	0	0	0	324
Thistle Knob Ln	0	0	0	0	0	0	0	0	0	0	0	0
Tobacco Heritage Trail	0	0	99	253	0	0	106	247	0	0	0	253
US Hwy 15	0	0	0	0	0	0	0	0	0	0	0	0
US Hwy 360	0	0	0	0	0	0	0	0	0	0	0	0

Arrays F01-G05 at 9ft with 0 Degree Rest Angle Yellow Glare Min/Yr												
Component	F01	F02	F03	F04	F05	G01	G02	G03	G04	G05	Maximum Minutes	
OP 134	0	0	0	0	0	0	0	0	0	0	0	
OP 135	0	0	0	0	0	0	0	0	0	0	0	
OP 136	0	0	0	0	0	0	0	0	0	0	0	
OP 137	0	0	0	0	0	0	0	0	0	0	0	
OP 138	0	0	0	0	0	0	0	0	0	0	0	
OP 139	0	0	0	0	0	0	0	0	0	0	0	
OP 140	0	0	0	0	0	0	0	0	0	0	0	
OP 141	0	0	0	0	0	0	0	0	0	0	0	
OP 142	0	0	0	0	0	0	0	0	0	0	0	
OP 143	0	0	0	0	0	0	0	0	0	0	0	
OP 144	0	0	0	0	0	0	0	0	0	0	0	
OP 145	0	0	0	0	0	0	0	0	0	0	0	
OP 146	0	0	0	0	0	0	0	0	0	0	0	
OP 147	0	0	0	0	0	0	0	0	0	0	0	
OP 148	0	0	0	0	0	0	0	0	0	0	0	
OP 149	0	0	0	0	0	0	0	0	0	0	0	
OP 150	0	74	0	0	0	0	0	0	0	0	74	
OP 151	0	97	0	0	0	0	0	0	0	0	97	
OP 152	0	0	0	0	0	0	0	0	0	0	0	
OP 153	228	0	0	0	0	0	0	0	0	0	228	
OP 154	0	0	0	0	0	0	0	0	0	0	0	
OP 155	0	0	0	0	0	0	0	0	0	0	0	
OP 156	0	0	0	0	0	0	0	0	0	0	0	
OP 157	0	0	0	0	0	0	0	0	0	0	0	
OP 158	0	0	0	0	0	0	0	0	0	0	0	
OP 159	0	0	0	0	0	0	0	0	0	0	0	
OP 160	0	0	0	0	0	0	0	0	0	0	0	
OP 161	0	0	0	0	0	0	0	0	0	0	0	
OP 162	0	0	0	0	0	0	0	0	0	0	0	
OP 163	0	0	0	0	0	0	0	0	0	0	0	
OP 164	0	0	0	0	0	0	0	0	0	0	0	
Routes												
Collins Dr	0	0	0	0	0	0	0	0	0	0	0	
Country Dr Seg 1	0	0	0	0	0	0	0	0	0	0	0	
Country Dr Seg 2	0	0	0	0	0	0	0	0	0	0	0	
County Line Dr	0	0	0	0	0	0	0	0	0	0	0	
Dempseys Rd	0	857	0	0	23	0	0	0	0	0	857	
Harley Ln	0	0	0	0	0	0	0	0	0	0	0	
Henderson Rd	0	0	0	0	0	0	0	0	0	0	0	
Hillside Dr	0	0	0	0	0	0	0	0	0	0	0	
Ole Briery Station Rd Seg 1	0	0	0	0	0	0	0	0	0	0	0	
Ole Briery Station Rd Seg 2	0	0	0	0	0	0	0	0	0	0	0	
Thistle Knob Ln	0	0	0	0	0	0	0	0	0	0	0	
Tobacco Heritage Trail	0	0	0	0	0	0	0	0	0	0	0	
US Hwy 15	0	0	0	0	0	0	0	0	0	0	0	
US Hwy 360	0	0	0	0	0	0	0	0	0	0	0	



Arrays G06-H04 at 9ft with 0 Degree Rest Angle Green Glare Min/Yr												
Component	G06	G07	G08	G09	G10	G11	H01	H02	H03	H04	Maximum Minutes	
OP 134	0	0	0	0	0	257	0	0	0	0	257	
OP 135	0	0	0	0	0	291	0	0	0	0	291	
OP 136	0	0	0	0	201	243	0	0	0	0	243	
OP 137	0	0	0	0	221	386	0	0	0	0	386	
OP 138	0	0	0	0	0	0	0	0	0	0	0	
OP 139	0	0	0	0	0	0	0	0	0	0	0	
OP 140	0	0	0	0	0	0	0	0	0	0	0	
OP 141	0	0	0	0	0	0	0	0	0	0	0	
OP 142	0	0	0	0	0	0	0	0	0	0	0	
OP 143	0	0	0	0	0	0	0	0	0	0	0	
OP 144	0	0	0	202	0	301	0	0	0	0	301	
OP 145	0	0	0	215	0	340	0	0	0	0	340	
OP 146	0	0	0	417	416	89	0	0	0	0	417	
OP 147	0	0	0	438	423	0	0	0	0	0	438	
OP 148	0	0	277	84	629	125	0	0	0	0	629	
OP 149	0	0	275	91	626	0	0	0	0	0	626	
OP 150	0	0	0	0	0	0	0	0	0	0	0	
OP 151	0	0	0	0	0	0	0	0	0	0	0	
OP 152	0	0	0	0	0	0	0	0	0	0	0	
OP 153	0	0	0	0	0	0	0	0	0	0	0	
OP 154	0	0	272	0	682	42	0	0	0	0	682	
OP 155	0	0	269	0	686	42	0	0	0	0	686	
OP 156	0	0	259	0	698	24	0	136	0	0	698	
OP 157	0	0	284	0	701	30	0	106	0	0	701	
OP 158	0	0	273	0	700	25	0	149	0	0	700	
OP 159	0	0	0	0	665	0	0	261	0	0	665	
OP 160	0	0	0	0	610	0	15	262	0	0	610	
OP 161	0	0	0	0	554	0	49	269	0	0	554	
OP 162	0	0	0	0	447	0	100	259	34	0	447	
OP 163	0	0	0	0	254	0	98	115	74	0	254	
OP 164	0	0	0	0	240	0	99	82	90	0	240	
Routes												
Collins Dr	0	0	0	0	0	0	0	0	0	0	0	
Country Dr Seg 1	0	0	248	1152	0	973	0	0	0	0	1152	
Country Dr Seg 2	0	0	486	0	0	58	0	450	0	0	486	
County Line Dr	0	216	0	0	0	0	142	47	374	284	374	
Dempseys Rd	0	0	0	0	0	0	0	0	0	0	0	
Harley Ln	0	0	0	0	0	0	0	0	0	0	0	
Henderson Rd	0	0	0	0	0	0	367	43	717	832	832	
Hillside Dr	0	0	545	0	1609	149	0	0	0	0	1609	
Ole Briery Station Rd Seg 1	0	354	0	114	0	72	170	62	400	224	400	
Ole Briery Station Rd Seg 2	0	242	0	20	0	0	128	51	338	216	338	
Thistle Knob Ln	0	0	0	0	0	0	0	0	0	0	0	
Tobacco Heritage Trail	0	674	626	2433	2725	1260	729	813	500	282	2725	
US Hwy 15	0	0	0	0	0	0	0	0	0	0	0	
US Hwy 360	0	0	100	1129	1365	616	0	0	0	0	1365	

Arrays G06-H04 at 9ft with 0 Degree Rest Angle Yellow Glare Min/Yr												
Component	G06	G07	G08	G09	G10	G11	H01	H02	H03	H04	Maximum Minutes	
OP 134	0	0	0	0	0	0	0	0	0	0	0	
OP 135	0	0	0	0	0	0	0	0	0	0	0	
OP 136	0	0	0	0	36	107	0	0	0	0	107	
OP 137	0	0	0	0	68	170	0	0	0	0	170	
OP 138	0	0	0	0	0	0	0	0	0	0	0	
OP 139	0	0	0	0	0	0	0	0	0	0	0	
OP 140	0	0	0	0	0	0	0	0	0	0	0	
OP 141	0	0	0	0	0	0	0	0	0	0	0	
OP 142	0	0	0	0	0	0	0	0	0	0	0	
OP 143	0	0	0	0	0	0	0	0	0	0	0	
OP 144	0	0	0	0	0	0	0	0	0	0	0	
OP 145	0	0	0	0	0	0	0	0	0	0	0	
OP 146	0	0	0	0	0	0	0	0	0	0	0	
OP 147	0	0	0	0	0	0	0	0	0	0	0	
OP 148	0	0	0	0	0	0	0	0	0	0	0	
OP 149	0	0	0	0	0	0	0	0	0	0	0	
OP 150	0	0	0	0	0	0	0	0	0	0	0	
OP 151	0	0	0	0	0	0	0	0	0	0	0	
OP 152	0	0	0	0	0	0	0	0	0	0	0	
OP 153	0	0	0	0	0	0	0	0	0	0	0	
OP 154	0	0	0	0	0	0	0	0	0	0	0	
OP 155	0	0	0	0	0	0	0	0	0	0	0	
OP 156	0	0	0	0	0	0	0	0	0	0	0	
OP 157	0	0	0	0	0	0	0	0	0	0	0	
OP 158	0	0	0	0	0	0	0	0	0	0	0	
OP 159	0	0	0	0	0	0	0	0	0	0	0	
OP 160	0	0	0	0	0	0	0	0	0	0	0	
OP 161	0	0	0	0	0	0	0	0	0	0	0	
OP 162	0	0	0	0	0	0	0	0	0	0	0	
OP 163	0	0	0	0	0	0	0	0	0	0	0	
OP 164	0	0	0	0	0	0	0	0	0	0	0	
Routes												
Collins Dr	0	0	0	0	0	0	0	0	0	0	0	
Country Dr Seg 1	0	0	0	0	184	214	0	0	0	0	214	
Country Dr Seg 2	0	0	0	0	516	0	0	0	0	0	516	
County Line Dr	0	0	0	0	0	0	0	0	0	0	0	
Dempseys Rd	0	0	0	0	0	0	0	0	0	0	0	
Harley Ln	0	0	0	0	0	0	0	0	0	0	0	
Henderson Rd	0	0	0	0	0	0	0	0	0	0	0	
Hillside Dr	0	0	0	0	199	0	0	0	0	0	199	
Ole Briery Station Rd Seg 1	0	0	0	0	0	0	0	0	0	0	0	
Ole Briery Station Rd Seg 2	0	0	0	0	0	0	0	0	0	0	0	
Thistle Knob Ln	0	0	0	0	0	0	0	0	0	0	0	
Tobacco Heritage Trail	0	7	0	0	1087	1451	0	2	0	0	1451	
US Hwy 15	0	0	0	0	0	0	0	0	0	0	0	
US Hwy 360	0	0	0	0	0	5	0	0	0	0	5	

**Appendix B**  
**Glare Detail Pages**

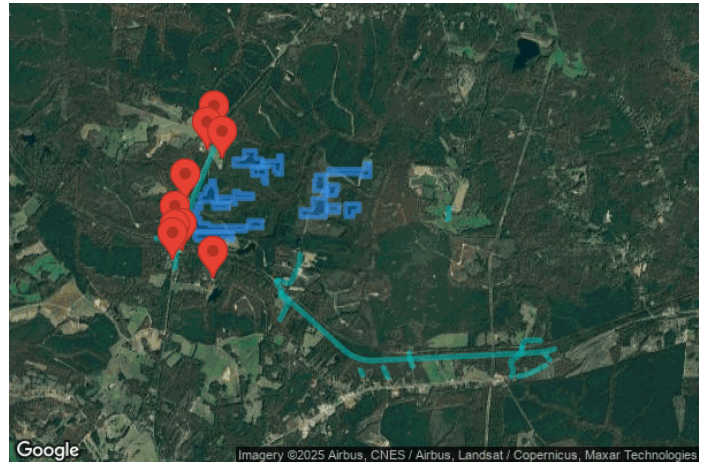
**6-foot Array  
60-DRA  
(Preferred)  
Glare Detail Pages**

# Tobacco Trail Solar

## TT\_A01-C06\_6fA\_60DRA\_SGARC

**Created** Oct 02, 2025  
**Updated** Oct 02, 2025  
**Time-step** 1 minute  
**Timezone offset** UTC-5  
**Minimum sun altitude** 0.0 deg  
**Site ID** 160918.26911

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



### Misc. Analysis Settings

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

**PV Analysis Methodology:** Version 2  
**Enhanced subtended angle calculation:** On

### Summary of Results

No glare predicted!

PV Name	Tilt	Orientation	"Green" Glare	"Yellow" Glare	Energy Produced
	deg	deg	min	min	kWh
A01	SA tracking	SA tracking	0	0	-
A02	SA tracking	SA tracking	0	0	-
A03	SA tracking	SA tracking	0	0	-
B01	SA tracking	SA tracking	0	0	-
B02	SA tracking	SA tracking	0	0	-
B03	SA tracking	SA tracking	0	0	-
B04	SA tracking	SA tracking	0	0	-
B05	SA tracking	SA tracking	0	0	-
B06	SA tracking	SA tracking	0	0	-
C01	SA tracking	SA tracking	0	0	-
C02	SA tracking	SA tracking	0	0	-
C03	SA tracking	SA tracking	0	0	-
C04	SA tracking	SA tracking	0	0	-
C05	SA tracking	SA tracking	0	0	-
C06	SA tracking	SA tracking	0	0	-



# Tobacco Trail Solar

## TT\_D01-E04\_6fA\_\_60DRA\_SGARC

**Created** Oct 02, 2025  
**Updated** Oct 02, 2025  
**Time-step** 1 minute  
**Timezone offset** UTC-5  
**Minimum sun altitude** 0.0 deg  
**Site ID** 160925.26911

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



### Misc. Analysis Settings

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

PV Analysis Methodology: **Version 2**  
 Enhanced subtended angle calculation: **On**

### Summary of Results No glare predicted!

PV Name	Tilt	Orientation	"Green" Glare	"Yellow" Glare	Energy Produced
	deg	deg	min	min	kWh
D01	SA tracking	SA tracking	0	0	-
D02	SA tracking	SA tracking	0	0	-
D03	SA tracking	SA tracking	0	0	-
D04	SA tracking	SA tracking	0	0	-
D05	SA tracking	SA tracking	0	0	-
E01	SA tracking	SA tracking	0	0	-
E02	SA tracking	SA tracking	0	0	-
E03	SA tracking	SA tracking	0	0	-
E04	SA tracking	SA tracking	0	0	-

Component	Green glare (min)	Yellow glare (min)
OP: OP 118	0	0
OP: OP 119	0	0
OP: OP 120	0	0
OP: OP 121	0	0
OP: OP 122	0	0
OP: OP 123	0	0
OP: OP 124	0	0
OP: OP 125	0	0
OP: OP 126	0	0
OP: OP 127	0	0
OP: OP 128	0	0
OP: OP 129	0	0
OP: OP 130	0	0
OP: OP 131	0	0
OP: OP 132	0	0
OP: OP 133	0	0
Route: Collins Dr	0	0
Route: Country Dr Seg 1	0	0
Route: Country Dr Seg 2	0	0
Route: County Line Rd	0	0
Route: Dempseys Rd	0	0
Route: Harley Ln	0	0
Route: Henderson Rd	0	0
Route: Hillside Dr	0	0
Route: Ole Briery Station Rd Seg 1	0	0
Route: Ole Briery Station Rd Seg 2	0	0
Route: Thistle Knob Ln	0	0
Route: Tobacco Heritage Trail	0	0
Route: US Hwy 15	0	0
Route: US Hwy 360	0	0

*No glare found*

## Summary of Vertical Surface Glare Analysis

## Assumptions

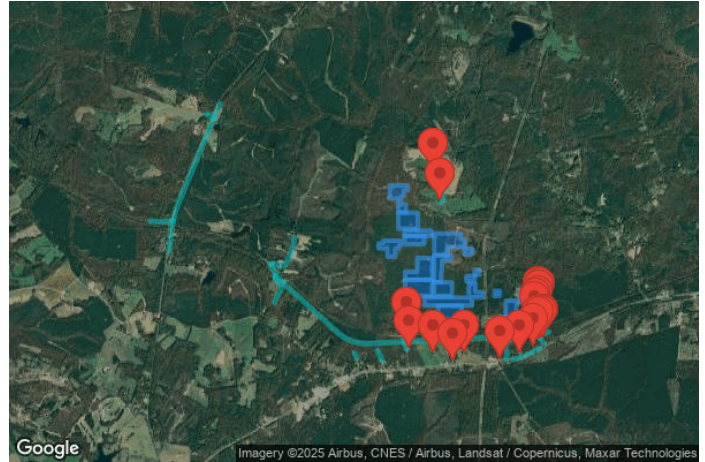
- Times associated with glare are denoted in Standard time. For Daylight Savings, add one hour.
- Glare analyses do not automatically account for physical obstructions between reflectors and receptors. This includes buildings, tree cover and geographical obstructions.
- Detailed system geometry is not rigorously simulated.
- The glare hazard determination relies on several approximations including observer eye characteristics, angle of view, and typical blink response time. Actual values and results may vary.
- The system output calculation is a DNI-based approximation that assumes clear, sunny skies year-round. It should not be used in place of more rigorous modeling methods.
- Several V1 calculations utilize the PV array centroid, rather than the actual glare spot location, due to algorithm limitations. This may affect results for large PV footprints. Additional analyses of array sub-sections can provide additional information on expected glare.

# Tobacco Trail Solar

## TT\_F01-H03\_6fA\_60DRA\_SGARC

**Created** Oct 02, 2025  
**Updated** Oct 03, 2025  
**Time-step** 1 minute  
**Timezone offset** UTC-5  
**Minimum sun altitude** 0.0 deg  
**Site ID** 160935.26911

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



### Misc. Analysis Settings

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

**PV Analysis Methodology:** Version 2  
**Enhanced subtended angle calculation:** On

### Summary of Results

No glare predicted!

PV Name	Tilt	Orientation	"Green" Glare	"Yellow" Glare	Energy Produced
	deg	deg	min	min	kWh
F01	SA tracking	SA tracking	0	0	-
F02	SA tracking	SA tracking	0	0	-
F03	SA tracking	SA tracking	0	0	-
F04	SA tracking	SA tracking	0	0	-
F05	SA tracking	SA tracking	0	0	-
G01	SA tracking	SA tracking	0	0	-
G02	SA tracking	SA tracking	0	0	-
G03	SA tracking	SA tracking	0	0	-
G04	SA tracking	SA tracking	0	0	-
G05	SA tracking	SA tracking	0	0	-
G06	SA tracking	SA tracking	0	0	-
G07	SA tracking	SA tracking	0	0	-
G08	SA tracking	SA tracking	0	0	-
G09	SA tracking	SA tracking	0	0	-
G10	SA tracking	SA tracking	0	0	-
G11	SA tracking	SA tracking	0	0	-
H01	SA tracking	SA tracking	0	0	-
H02	SA tracking	SA tracking	0	0	-
H03	SA tracking	SA tracking	0	0	-
H04	SA tracking	SA tracking	0	0	-

## **9-Ft Array 60-Degree Rest Angle Details**

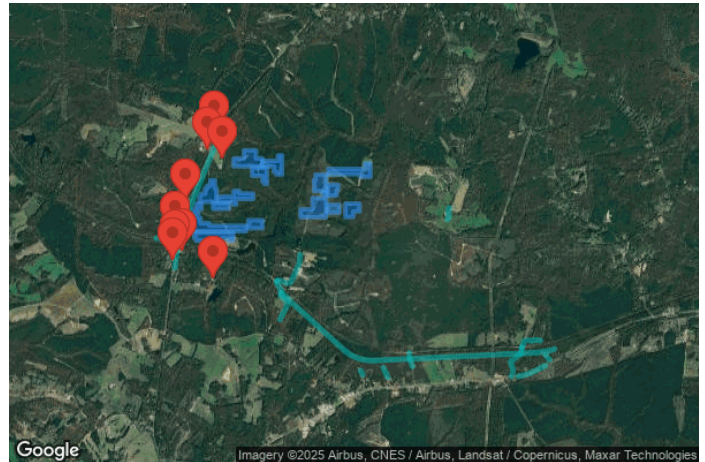


# Tobacco Trail Solar

TT\_A01-C06\_9fA\_\_60DRA\_SGARC

**Created** Oct 02, 2025  
**Updated** Oct 02, 2025  
**Time-step** 1 minute  
**Timezone offset** UTC-5  
**Minimum sun altitude** 0.0 deg  
**Site ID** 160923.26911

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



## Misc. Analysis Settings

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

**PV Analysis Methodology:** Version 2  
**Enhanced subtended angle calculation:** On

## Summary of Results

No glare predicted!

<b>PV Name</b>	<b>Tilt</b>	<b>Orientation</b>	<b>"Green" Glare</b>	<b>"Yellow" Glare</b>	<b>Energy Produced</b>
	<b>deg</b>	<b>deg</b>	<b>min</b>	<b>min</b>	<b>kWh</b>
A01	SA tracking	SA tracking	0	0	-
A02	SA tracking	SA tracking	0	0	-
A03	SA tracking	SA tracking	0	0	-
B01	SA tracking	SA tracking	0	0	-
B02	SA tracking	SA tracking	0	0	-
B03	SA tracking	SA tracking	0	0	-
B04	SA tracking	SA tracking	0	0	-
B05	SA tracking	SA tracking	0	0	-
B06	SA tracking	SA tracking	0	0	-
C01	SA tracking	SA tracking	0	0	-
C02	SA tracking	SA tracking	0	0	-
C03	SA tracking	SA tracking	0	0	-
C04	SA tracking	SA tracking	0	0	-
C05	SA tracking	SA tracking	0	0	-
C06	SA tracking	SA tracking	0	0	-

# Tobacco Trail Solar

## TT\_D01-E04\_9fA\_\_60DRA\_SGARC

**Created** Oct 02, 2025  
**Updated** Oct 02, 2025  
**Time-step** 1 minute  
**Timezone offset** UTC-5  
**Minimum sun altitude** 0.0 deg  
**Site ID** 160932.26911

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



### Misc. Analysis Settings

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

PV Analysis Methodology: **Version 2**  
 Enhanced subtended angle calculation: **On**

### Summary of Results No glare predicted!

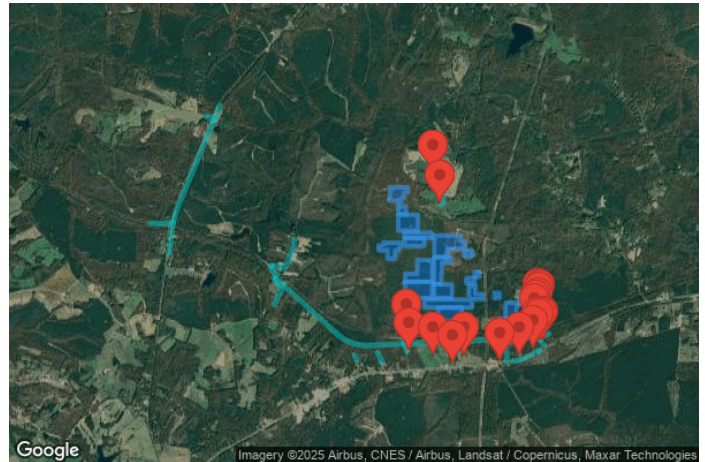
PV Name	Tilt	Orientation	"Green" Glare	"Yellow" Glare	Energy Produced
	deg	deg	min	min	kWh
D01	SA tracking	SA tracking	0	0	-
D02	SA tracking	SA tracking	0	0	-
D03	SA tracking	SA tracking	0	0	-
D04	SA tracking	SA tracking	0	0	-
D05	SA tracking	SA tracking	0	0	-
E01	SA tracking	SA tracking	0	0	-
E02	SA tracking	SA tracking	0	0	-
E03	SA tracking	SA tracking	0	0	-
E04	SA tracking	SA tracking	0	0	-

# Tobacco Trail Solar

## TT\_F01-H03\_9fA\_60DRA\_SGARC

Created Oct 02, 2025  
Updated Oct 03, 2025  
Time-step 1 minute  
Timezone offset UTC-5  
Minimum sun altitude 0.0 deg  
Site ID 160943.26911

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



### Misc. Analysis Settings

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

PV Analysis Methodology: Version 2  
Enhanced subtended angle calculation: On

### Summary of Results

No glare predicted!

PV Name	Tilt	Orientation	"Green" Glare	"Yellow" Glare	Energy Produced
	deg	deg	min	min	kWh
F01	SA tracking	SA tracking	0	0	-
F02	SA tracking	SA tracking	0	0	-
F03	SA tracking	SA tracking	0	0	-
F04	SA tracking	SA tracking	0	0	-
F05	SA tracking	SA tracking	0	0	-
G01	SA tracking	SA tracking	0	0	-
G02	SA tracking	SA tracking	0	0	-
G03	SA tracking	SA tracking	0	0	-
G04	SA tracking	SA tracking	0	0	-
G05	SA tracking	SA tracking	0	0	-
G06	SA tracking	SA tracking	0	0	-
G07	SA tracking	SA tracking	0	0	-
G08	SA tracking	SA tracking	0	0	-
G09	SA tracking	SA tracking	0	0	-
G10	SA tracking	SA tracking	0	0	-
G11	SA tracking	SA tracking	0	0	-
H01	SA tracking	SA tracking	0	0	-
H02	SA tracking	SA tracking	0	0	-
H03	SA tracking	SA tracking	0	0	-
H04	SA tracking	SA tracking	0	0	-



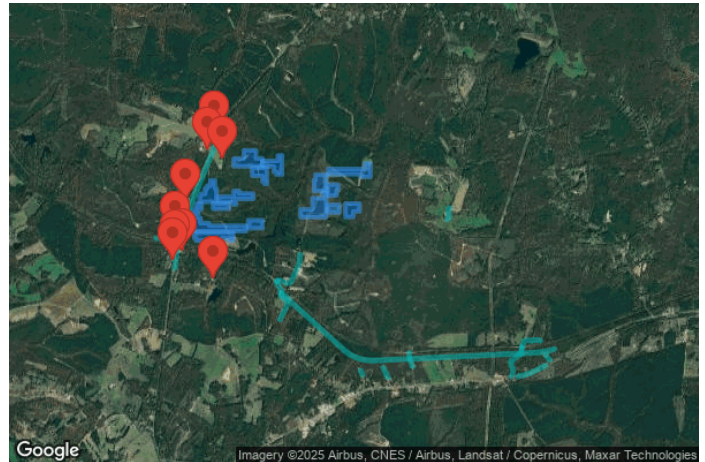
## **6-Ft Array 10-Degree Rest Angle Details**

# Tobacco Trail Solar

## TT\_A01-C06\_6fA\_\_10DRA\_SGARC

**Created** Oct 02, 2025  
**Updated** Oct 02, 2025  
**Time-step** 1 minute  
**Timezone offset** UTC-5  
**Minimum sun altitude** 0.0 deg  
**Site ID** 160916.26911

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



### Misc. Analysis Settings

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

**PV Analysis Methodology:** Version 2  
**Enhanced subtended angle calculation:** On

### Summary of Results

No glare predicted!

PV Name	Tilt	Orientation	"Green" Glare	"Yellow" Glare	Energy Produced
	deg	deg	min	min	kWh
A01	SA tracking	SA tracking	0	0	-
A02	SA tracking	SA tracking	0	0	-
A03	SA tracking	SA tracking	0	0	-
B01	SA tracking	SA tracking	0	0	-
B02	SA tracking	SA tracking	0	0	-
B03	SA tracking	SA tracking	0	0	-
B04	SA tracking	SA tracking	0	0	-
B05	SA tracking	SA tracking	0	0	-
B06	SA tracking	SA tracking	0	0	-
C01	SA tracking	SA tracking	0	0	-
C02	SA tracking	SA tracking	0	0	-
C03	SA tracking	SA tracking	0	0	-
C04	SA tracking	SA tracking	0	0	-
C05	SA tracking	SA tracking	0	0	-
C06	SA tracking	SA tracking	0	0	-

# Tobacco Trail Solar

## TT\_D01-E04\_6fA\_\_10DRA\_SGARC

**Created** Oct 02, 2025  
**Updated** Oct 02, 2025  
**Time-step** 1 minute  
**Timezone offset** UTC-5  
**Minimum sun altitude** 0.0 deg  
**Site ID** 160924.26911

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



### Misc. Analysis Settings

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

PV Analysis Methodology: **Version 2**  
 Enhanced subtended angle calculation: **On**

### Summary of Results No glare predicted!

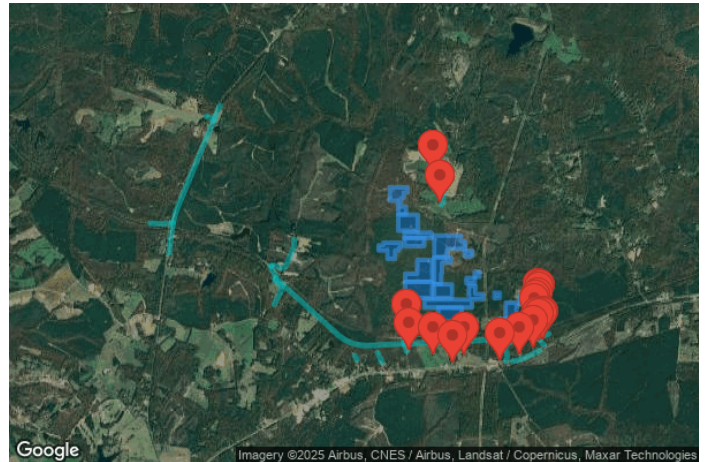
PV Name	Tilt	Orientation	"Green" Glare	"Yellow" Glare	Energy Produced
	deg	deg	min	min	kWh
D01	SA tracking	SA tracking	0	0	-
D02	SA tracking	SA tracking	0	0	-
D03	SA tracking	SA tracking	0	0	-
D04	SA tracking	SA tracking	0	0	-
D05	SA tracking	SA tracking	0	0	-
E01	SA tracking	SA tracking	0	0	-
E02	SA tracking	SA tracking	0	0	-
E03	SA tracking	SA tracking	0	0	-
E04	SA tracking	SA tracking	0	0	-

# Tobacco Trail Solar

## TT\_F01-H03\_6fA\_10DRA\_SGARC

**Created** Oct 02, 2025  
**Updated** Oct 03, 2025  
**Time-step** 1 minute  
**Timezone offset** UTC-5  
**Minimum sun altitude** 0.0 deg  
**Site ID** 160934.26911

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



### Misc. Analysis Settings

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

**PV Analysis Methodology:** Version 2  
**Enhanced subtended angle calculation:** On

### Summary of Results

No glare predicted!



PV Name	Tilt	Orientation	"Green" Glare	"Yellow" Glare	Energy Produced
	deg	deg	min	min	kWh
F01	SA tracking	SA tracking	0	0	-
F02	SA tracking	SA tracking	0	0	-
F03	SA tracking	SA tracking	0	0	-
F04	SA tracking	SA tracking	0	0	-
F05	SA tracking	SA tracking	0	0	-
G01	SA tracking	SA tracking	0	0	-
G02	SA tracking	SA tracking	0	0	-
G03	SA tracking	SA tracking	0	0	-
G04	SA tracking	SA tracking	0	0	-
G05	SA tracking	SA tracking	0	0	-
G06	SA tracking	SA tracking	0	0	-
G07	SA tracking	SA tracking	0	0	-
G08	SA tracking	SA tracking	0	0	-
G09	SA tracking	SA tracking	0	0	-
G10	SA tracking	SA tracking	0	0	-
G11	SA tracking	SA tracking	0	0	-
H01	SA tracking	SA tracking	0	0	-
H02	SA tracking	SA tracking	0	0	-
H03	SA tracking	SA tracking	0	0	-
H04	SA tracking	SA tracking	0	0	-

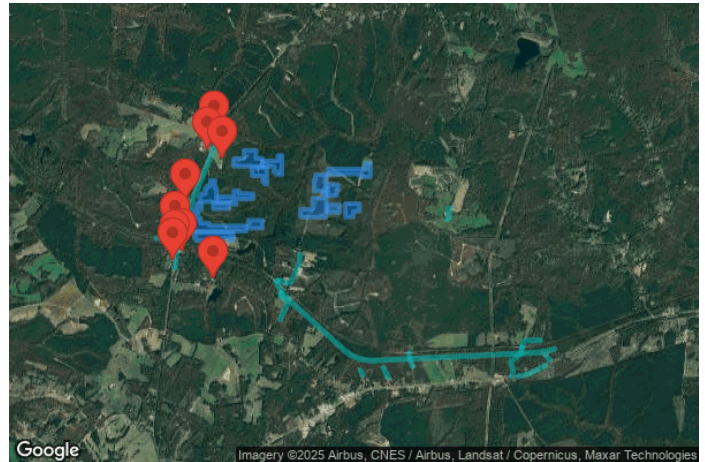
## **9-Ft Array 10-Degree Rest Angle Details**

# Tobacco Trail Solar

## TT\_A01-C06\_9fA\_\_10DRA\_SGARC

**Created** Oct 02, 2025  
**Updated** Oct 02, 2025  
**Time-step** 1 minute  
**Timezone offset** UTC-5  
**Minimum sun altitude** 0.0 deg  
**Site ID** 160921.26911

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



### Misc. Analysis Settings

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

**PV Analysis Methodology:** Version 2  
**Enhanced subtended angle calculation:** On

### Summary of Results

No glare predicted!

PV Name	Tilt	Orientation	"Green" Glare	"Yellow" Glare	Energy Produced
	deg	deg	min	min	kWh
A01	SA tracking	SA tracking	0	0	-
A02	SA tracking	SA tracking	0	0	-
A03	SA tracking	SA tracking	0	0	-
B01	SA tracking	SA tracking	0	0	-
B02	SA tracking	SA tracking	0	0	-
B03	SA tracking	SA tracking	0	0	-
B04	SA tracking	SA tracking	0	0	-
B05	SA tracking	SA tracking	0	0	-
B06	SA tracking	SA tracking	0	0	-
C01	SA tracking	SA tracking	0	0	-
C02	SA tracking	SA tracking	0	0	-
C03	SA tracking	SA tracking	0	0	-
C04	SA tracking	SA tracking	0	0	-
C05	SA tracking	SA tracking	0	0	-
C06	SA tracking	SA tracking	0	0	-

# Tobacco Trail Solar

## TT\_D01-E04\_9fA\_\_10DRA\_SGARC

**Created** Oct 02, 2025  
**Updated** Oct 02, 2025  
**Time-step** 1 minute  
**Timezone offset** UTC-5  
**Minimum sun altitude** 0.0 deg  
**Site ID** 160929.26911

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



### Misc. Analysis Settings

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

PV Analysis Methodology: **Version 2**  
 Enhanced subtended angle calculation: **On**

### Summary of Results No glare predicted!

PV Name	Tilt	Orientation	"Green" Glare	"Yellow" Glare	Energy Produced
	deg	deg	min	min	kWh
D01	SA tracking	SA tracking	0	0	-
D02	SA tracking	SA tracking	0	0	-
D03	SA tracking	SA tracking	0	0	-
D04	SA tracking	SA tracking	0	0	-
D05	SA tracking	SA tracking	0	0	-
E01	SA tracking	SA tracking	0	0	-
E02	SA tracking	SA tracking	0	0	-
E03	SA tracking	SA tracking	0	0	-
E04	SA tracking	SA tracking	0	0	-

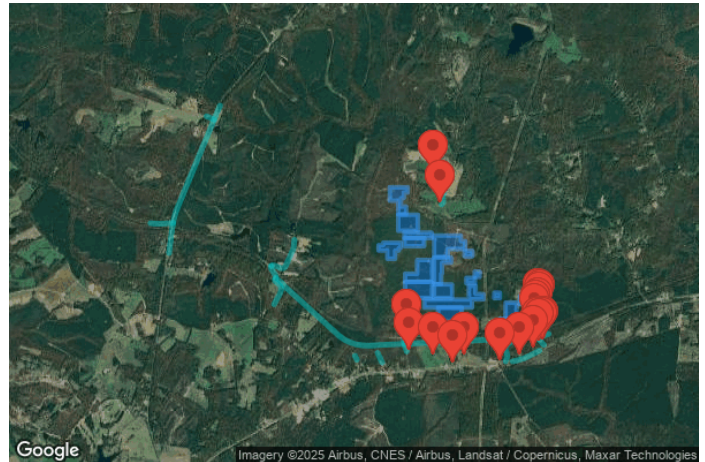


# Tobacco Trail Solar

## TT\_F01-H03\_9fA\_10DRA\_SGARC

Created Oct 02, 2025  
Updated Oct 03, 2025  
Time-step 1 minute  
Timezone offset UTC-5  
Minimum sun altitude 0.0 deg  
Site ID 160940.26911

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



### Misc. Analysis Settings

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

PV Analysis Methodology: Version 2  
Enhanced subtended angle calculation: On

### Summary of Results

No glare predicted!

PV Name	Tilt	Orientation	"Green" Glare	"Yellow" Glare	Energy Produced
	deg	deg	min	min	kWh
F01	SA tracking	SA tracking	0	0	-
F02	SA tracking	SA tracking	0	0	-
F03	SA tracking	SA tracking	0	0	-
F04	SA tracking	SA tracking	0	0	-
F05	SA tracking	SA tracking	0	0	-
G01	SA tracking	SA tracking	0	0	-
G02	SA tracking	SA tracking	0	0	-
G03	SA tracking	SA tracking	0	0	-
G04	SA tracking	SA tracking	0	0	-
G05	SA tracking	SA tracking	0	0	-
G06	SA tracking	SA tracking	0	0	-
G07	SA tracking	SA tracking	0	0	-
G08	SA tracking	SA tracking	0	0	-
G09	SA tracking	SA tracking	0	0	-
G10	SA tracking	SA tracking	0	0	-
G11	SA tracking	SA tracking	0	0	-
H01	SA tracking	SA tracking	0	0	-
H02	SA tracking	SA tracking	0	0	-
H03	SA tracking	SA tracking	0	0	-
H04	SA tracking	SA tracking	0	0	-

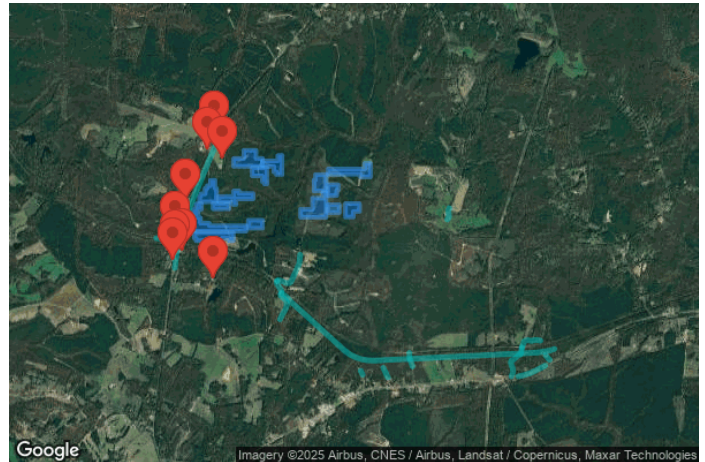
## **6-Ft Array 0-Degree Rest Angle Details**

# Tobacco Trail Solar

## TT\_A01-C06\_6fA\_0DRA\_SGARC

**Created** Oct 01, 2025  
**Updated** Oct 03, 2025  
**Time-step** 1 minute  
**Timezone offset** UTC-5  
**Minimum sun altitude** 0.0 deg  
**Site ID** 160827.26911

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



### Misc. Analysis Settings

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

**PV Analysis Methodology:** Version 2  
**Enhanced subtended angle calculation:** On

### 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
A01	SA tracking	SA tracking	1,325	1,149	-
A02	SA tracking	SA tracking	1,351	0	-
A03	SA tracking	SA tracking	2,943	1,185	-
B01	SA tracking	SA tracking	4,889	1,105	-
B02	SA tracking	SA tracking	0	0	-
B03	SA tracking	SA tracking	5,734	301	-
B04	SA tracking	SA tracking	681	1	-
B05	SA tracking	SA tracking	3,710	0	-
B06	SA tracking	SA tracking	8,073	1,026	-
C01	SA tracking	SA tracking	4,413	0	-
C02	SA tracking	SA tracking	4,087	0	-
C03	SA tracking	SA tracking	116	0	-
C04	SA tracking	SA tracking	3,998	0	-
C05	SA tracking	SA tracking	1,299	0	-
C06	SA tracking	SA tracking	562	0	-



Component Data

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## PV Array(s)

Total PV footprint area: 139.7 acres

Name: A01

Footprint area: 13.1 acres

Axis tracking: Single-axis rotation

Backtracking: Shade

Tracking axis orientation: 180.0 deg

Maximum tracking angle: 60.0 deg

Resting angle: 0.0 deg

Ground Coverage Ratio: 0.5

Rated power: -

Panel material: Smooth glass with AR coating

Vary reflectivity with sun position? Yes

Correlate slope error with surface type? Yes

Slope error: 8.43 mrad



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	37.106761	-78.465111	583.77	6.00	589.77
2	37.106760	-78.463599	586.76	6.00	592.76
3	37.107730	-78.463598	568.29	6.00	574.29
4	37.107730	-78.461789	569.64	6.00	575.64
5	37.106760	-78.461790	576.41	6.00	582.41
6	37.106759	-78.460818	568.72	6.00	574.72
7	37.105818	-78.460821	568.55	6.00	574.55
8	37.105818	-78.465111	563.97	6.00	569.97

Name: A02

Footprint area: 7.9 acres

Axis tracking: Single-axis rotation

Backtracking: Shade

Tracking axis orientation: 180.0 deg

Maximum tracking angle: 60.0 deg

Resting angle: 0.0 deg

Ground Coverage Ratio: 0.5

Rated power: -

Panel material: Smooth glass with AR coating

Vary reflectivity with sun position? Yes

Correlate slope error with surface type? Yes

Slope error: 8.43 mrad



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	37.106454	-78.460791	574.78	6.00	580.78
2	37.106453	-78.458523	535.18	6.00	541.18
3	37.107118	-78.458522	527.08	6.00	533.08
4	37.107117	-78.457901	531.83	6.00	537.83
5	37.104846	-78.457903	539.05	6.00	545.05
6	37.104847	-78.458739	540.55	6.00	546.55
7	37.105153	-78.458739	543.42	6.00	549.42
8	37.105152	-78.459117	537.67	6.00	543.67
9	37.105816	-78.459117	531.38	6.00	537.38
10	37.105817	-78.460791	568.12	6.00	574.12

Name: A03

Footprint area: 6.2 acres

Axis tracking: Single-axis rotation

Backtracking: Shade

Tracking axis orientation: 180.0 deg

Maximum tracking angle: 60.0 deg

Resting angle: 0.0 deg

Ground Coverage Ratio: 0.5

Rated power: -

Panel material: Smooth glass with AR coating

Vary reflectivity with sun position? Yes

Correlate slope error with surface type? Yes

Slope error: 8.43 mrad



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	37.105625	-78.462356	546.24	6.00	552.24
2	37.105625	-78.460169	547.76	6.00	553.76
3	37.103712	-78.460171	541.50	6.00	547.50
4	37.103713	-78.460522	535.38	6.00	541.38
5	37.104018	-78.460522	533.96	6.00	539.96
6	37.104018	-78.460846	535.82	6.00	541.82
7	37.104683	-78.460844	551.83	6.00	557.83
8	37.104683	-78.462357	552.50	6.00	558.50

Name: B01

Footprint area: 10.1 acres

Axis tracking: Single-axis rotation

Backtracking: Shade

Tracking axis orientation: 180.0 deg

Maximum tracking angle: 60.0 deg

Resting angle: 0.0 deg

Ground Coverage Ratio: 0.5

Rated power: -

Panel material: Smooth glass with AR coating

Vary reflectivity with sun position? Yes

Correlate slope error with surface type? Yes

Slope error: 8.43 mrad



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	37.104174	-78.468567	608.79	6.00	614.79
2	37.104173	-78.467893	589.54	6.00	595.54
3	37.103205	-78.467893	589.41	6.00	595.41
4	37.103204	-78.467677	583.33	6.00	589.33
5	37.101598	-78.467674	604.21	6.00	610.21
6	37.101598	-78.470188	609.84	6.00	615.84
7	37.102235	-78.470188	609.36	6.00	615.36
8	37.102234	-78.470026	611.41	6.00	617.41
9	37.102540	-78.470026	606.23	6.00	612.23
10	37.102540	-78.469378	613.92	6.00	619.92
11	37.103204	-78.469378	606.38	6.00	612.38
12	37.103205	-78.469054	609.42	6.00	615.42
13	37.103509	-78.469054	606.18	6.00	612.18
14	37.103509	-78.468568	606.76	6.00	612.76

**Name:** B02

**Footprint area:** 9.1 acres

**Axis tracking:** Single-axis rotation

**Backtracking:** Shade

**Tracking axis orientation:** 180.0 deg

**Maximum tracking angle:** 60.0 deg

**Resting angle:** 0.0 deg

**Ground Coverage Ratio:** 0.5

**Rated power:** -

**Panel material:** Smooth glass with AR coating

**Vary reflectivity with sun position?** Yes

**Correlate slope error with surface type?** Yes

**Slope error:** 8.43 mrad



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	37.102234	-78.467326	588.09	6.00	594.09
2	37.102233	-78.465112	574.79	6.00	580.79
3	37.102898	-78.465112	561.27	6.00	567.27
4	37.102897	-78.464329	565.12	6.00	571.12
5	37.102593	-78.464329	565.59	6.00	571.59
6	37.102591	-78.462223	557.04	6.00	563.04
7	37.101954	-78.462224	552.31	6.00	558.31
8	37.101953	-78.464762	576.60	6.00	582.60
9	37.101291	-78.464762	573.44	6.00	579.44
10	37.101291	-78.465221	582.89	6.00	588.89
11	37.101599	-78.465221	584.05	6.00	590.05
12	37.101597	-78.467326	599.83	6.00	605.83

**Name:** B03

**Footprint area:** 3.7 acres

**Axis tracking:** Single-axis rotation

**Backtracking:** Shade

**Tracking axis orientation:** 180.0 deg

**Maximum tracking angle:** 60.0 deg

**Resting angle:** 0.0 deg

**Ground Coverage Ratio:** 0.5

**Rated power:** -

**Panel material:** Smooth glass with AR coating

**Vary reflectivity with sun position?** Yes

**Correlate slope error with surface type?** Yes

**Slope error:** 8.43 mrad



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	37.101405	-78.468191	608.76	6.00	614.76
2	37.101404	-78.465842	583.54	6.00	589.54
3	37.100767	-78.465842	567.40	6.00	573.40
4	37.100768	-78.468191	598.29	6.00	604.29

**Name:** B04

**Footprint area:** 20.4 acres

**Axis tracking:** Single-axis rotation

**Backtracking:** Shade

**Tracking axis orientation:** 180.0 deg

**Maximum tracking angle:** 60.0 deg

**Resting angle:** 0.0 deg

**Ground Coverage Ratio:** 0.5

**Rated power:** -

**Panel material:** Smooth glass with AR coating

**Vary reflectivity with sun position?** Yes

**Correlate slope error with surface type?** Yes

**Slope error:** 8.43 mrad



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	37.101355	-78.470702	609.38	6.00	615.38
2	37.101354	-78.469919	600.78	6.00	606.78
3	37.100717	-78.469919	580.45	6.00	586.45
4	37.100718	-78.470405	590.50	6.00	596.50
5	37.099721	-78.470405	596.32	6.00	602.32
6	37.099720	-78.470081	595.32	6.00	601.32
7	37.099056	-78.470082	604.47	6.00	610.47
8	37.099055	-78.468732	584.09	6.00	590.09
9	37.098750	-78.468732	589.14	6.00	595.14
10	37.098749	-78.463278	567.78	6.00	573.78
11	37.098112	-78.463278	564.31	6.00	570.31
12	37.098114	-78.471621	606.01	6.00	612.01
13	37.099721	-78.471620	618.90	6.00	624.90
14	37.099720	-78.471458	616.63	6.00	622.63
15	37.100026	-78.471458	619.42	6.00	625.42
16	37.100026	-78.471080	606.76	6.00	612.76
17	37.100690	-78.471080	612.68	6.00	618.68
18	37.100690	-78.470702	603.57	6.00	609.57

**Name:** B05

**Footprint area:** 4.9 acres

**Axis tracking:** Single-axis rotation

**Backtracking:** Shade

**Tracking axis orientation:** 180.0 deg

**Maximum tracking angle:** 60.0 deg

**Resting angle:** 0.0 deg

**Ground Coverage Ratio:** 0.5

**Rated power:** -

**Panel material:** Smooth glass with AR coating

**Vary reflectivity with sun position?** Yes

**Correlate slope error with surface type?** Yes

**Slope error:** 8.43 mrad



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	37.099412	-78.462940	570.73	6.00	576.73
2	37.099412	-78.460807	562.20	6.00	568.20
3	37.098469	-78.460808	548.93	6.00	554.93
4	37.098474	-78.462939	570.15	6.00	576.15



**Name:** B06

**Footprint area:** 12.8 acres

**Axis tracking:** Single-axis rotation

**Backtracking:** Shade

**Tracking axis orientation:** 180.0 deg

**Maximum tracking angle:** 60.0 deg

**Resting angle:** 0.0 deg

**Ground Coverage Ratio:** 0.5

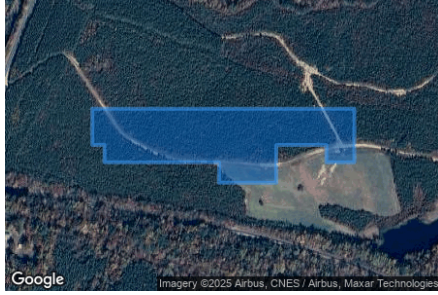
**Rated power:** -

**Panel material:** Smooth glass with AR coating

**Vary reflectivity with sun position?** Yes

**Correlate slope error with surface type?** Yes

**Slope error:** 8.43 mrad



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	37.097921	-78.470973	609.85	6.00	615.85
2	37.097920	-78.465168	575.23	6.00	581.23
3	37.096978	-78.465169	566.91	6.00	572.91
4	37.096978	-78.465790	569.55	6.00	575.55
5	37.097283	-78.465789	577.51	6.00	583.51
6	37.097283	-78.466897	578.30	6.00	584.30
7	37.096619	-78.466897	581.83	6.00	587.83
8	37.096619	-78.468166	594.31	6.00	600.31
9	37.096978	-78.468165	598.37	6.00	604.37
10	37.096979	-78.470703	602.21	6.00	608.21
11	37.097286	-78.470703	604.64	6.00	610.64
12	37.097284	-78.470973	598.37	6.00	604.37

**Name:** C01

**Footprint area:** 12.2 acres

**Axis tracking:** Single-axis rotation

**Backtracking:** Shade

**Tracking axis orientation:** 180.0 deg

**Maximum tracking angle:** 60.0 deg

**Resting angle:** 0.0 deg

**Ground Coverage Ratio:** 0.5

**Rated power:** -

**Panel material:** Smooth glass with AR coating

**Vary reflectivity with sun position?** Yes

**Correlate slope error with surface type?** Yes

**Slope error:** 8.43 mrad



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	37.105507	-78.451023	531.84	6.00	537.84
2	37.105504	-78.445569	541.65	6.00	547.65
3	37.106169	-78.445568	550.54	6.00	556.54
4	37.106168	-78.444731	534.14	6.00	540.14
5	37.104562	-78.444732	524.31	6.00	530.31
6	37.104562	-78.446217	525.04	6.00	531.04
7	37.104868	-78.446217	528.50	6.00	534.50
8	37.104870	-78.451023	531.54	6.00	537.54

**Name:** C02

**Footprint area:** 8.3 acres

**Axis tracking:** Single-axis rotation

**Backtracking:** Shade

**Tracking axis orientation:** 180.0 deg

**Maximum tracking angle:** 60.0 deg

**Resting angle:** 0.0 deg

**Ground Coverage Ratio:** 0.5

**Rated power:** -

**Panel material:** Smooth glass with AR coating

**Vary reflectivity with sun position?** Yes

**Correlate slope error with surface type?** Yes

**Slope error:** 8.43 mrad



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	37.104847	-78.452913	519.97	6.00	525.97
2	37.104847	-78.451320	531.41	6.00	537.41
3	37.102881	-78.451321	534.63	6.00	540.63
4	37.102882	-78.453130	542.77	6.00	548.77
5	37.104183	-78.453129	533.46	6.00	539.46
6	37.104183	-78.452913	534.10	6.00	540.10

**Name:** C03

**Footprint area:** 4.5 acres

**Axis tracking:** Single-axis rotation

**Backtracking:** Shade

**Tracking axis orientation:** 180.0 deg

**Maximum tracking angle:** 60.0 deg

**Resting angle:** 0.0 deg

**Ground Coverage Ratio:** 0.5

**Rated power:** -

**Panel material:** Smooth glass with AR coating

**Vary reflectivity with sun position?** Yes

**Correlate slope error with surface type?** Yes

**Slope error:** 8.43 mrad



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	37.103637	-78.451085	533.54	6.00	539.54
2	37.103636	-78.449546	524.85	6.00	530.85
3	37.102999	-78.449546	526.44	6.00	532.44
4	37.102999	-78.449762	529.66	6.00	535.66
5	37.102335	-78.449763	519.19	6.00	525.19
6	37.102335	-78.451086	526.81	6.00	532.81

**Name:** C04

**Footprint area:** 16.0 acres

**Axis tracking:** Single-axis rotation

**Backtracking:** Shade

**Tracking axis orientation:** 180.0 deg

**Maximum tracking angle:** 60.0 deg

**Resting angle:** 0.0 deg

**Ground Coverage Ratio:** 0.5

**Rated power:** -

**Panel material:** Smooth glass with AR coating

**Vary reflectivity with sun position?** Yes

**Correlate slope error with surface type?** Yes

**Slope error:** 8.43 mrad



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	37.102034	-78.453346	541.26	6.00	547.26
2	37.102034	-78.451780	534.36	6.00	540.36
3	37.102698	-78.451780	538.59	6.00	544.59
4	37.102698	-78.451321	532.98	6.00	538.98
5	37.099763	-78.451325	527.03	6.00	533.03
6	37.099764	-78.455130	535.95	6.00	541.95
7	37.100712	-78.455132	530.07	6.00	536.07
8	37.100705	-78.453347	544.34	6.00	550.34

**Name:** C05

**Footprint area:** 3.9 acres

**Axis tracking:** Single-axis rotation

**Backtracking:** Shade

**Tracking axis orientation:** 180.0 deg

**Maximum tracking angle:** 60.0 deg

**Resting angle:** 0.0 deg

**Ground Coverage Ratio:** 0.5

**Rated power:** -

**Panel material:** Smooth glass with AR coating

**Vary reflectivity with sun position?** Yes

**Correlate slope error with surface type?** Yes

**Slope error:** 8.43 mrad



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	37.101256	-78.451086	523.05	6.00	529.05
2	37.101255	-78.449385	537.31	6.00	543.31
3	37.100313	-78.449386	529.95	6.00	535.95
4	37.100313	-78.451087	529.14	6.00	535.14

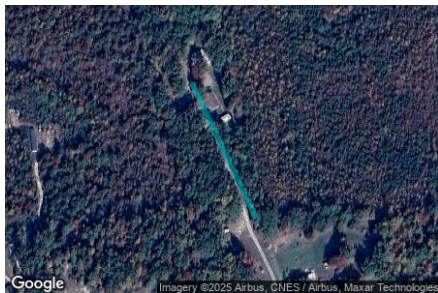
**Name:** C06  
**Footprint area:** 6.6 acres  
**Axis tracking:** Single-axis rotation  
**Backtracking:** Shade  
**Tracking axis orientation:** 180.0 deg  
**Maximum tracking angle:** 60.0 deg  
**Resting angle:** 0.0 deg  
**Ground Coverage Ratio:** 0.5  
**Rated power:** -  
**Panel material:** Smooth glass with AR coating  
**Vary reflectivity with sun position?** Yes  
**Correlate slope error with surface type?** Yes  
**Slope error:** 8.43 mrad

Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	37.101400	-78.448437	529.95	6.00	535.95
2	37.101399	-78.446359	518.48	6.00	524.48
3	37.100457	-78.446359	520.09	6.00	526.09
4	37.100457	-78.447277	529.80	6.00	535.80
5	37.099793	-78.447278	516.90	6.00	522.90
6	37.099793	-78.448438	523.99	6.00	529.99



## Route Receptor(s)

**Name:** Collins Dr  
**Route type** Two-way  
**Azimuthal view angle:** 50.0 deg  
**Downward view angle:** 90.0 deg



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	37.081871	-78.442797	585.46	3.50	588.96
2	37.080705	-78.442104	593.95	3.50	597.45

**Name:** Country Dr Seg 1  
**Route type** Two-way  
**Azimuthal view angle:** 50.0 deg  
**Downward view angle:** 90.0 deg



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	37.080860	-78.423727	596.22	3.50	599.72
2	37.081335	-78.423484	593.74	3.50	597.24
3	37.081523	-78.423466	592.70	3.50	596.20
4	37.081829	-78.423540	592.79	3.50	596.29
5	37.082428	-78.423782	598.80	3.50	602.30
6	37.082611	-78.423798	598.76	3.50	602.26
7	37.082719	-78.423744	598.06	3.50	601.56
8	37.082768	-78.423668	597.93	3.50	601.43
9	37.082867	-78.423382	593.53	3.50	597.03
10	37.083365	-78.422690	575.99	3.50	579.49
11	37.083472	-78.422377	574.16	3.50	577.66
12	37.083628	-78.422257	574.14	3.50	577.64
13	37.084267	-78.422150	573.40	3.50	576.90

**Name:** Country Dr Seg 2  
**Route type** Two-way  
**Azimuthal view angle:** 50.0 deg  
**Downward view angle:** 90.0 deg



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	37.084267	-78.422150	573.40	3.50	576.90
2	37.084508	-78.422031	569.83	3.50	573.33
3	37.084996	-78.421843	569.58	3.50	573.08
4	37.085142	-78.421494	566.57	3.50	570.07
5	37.085170	-78.421251	561.04	3.50	564.54
6	37.085078	-78.420854	551.39	3.50	554.89
7	37.085078	-78.420700	547.34	3.50	550.84
8	37.085178	-78.420314	542.35	3.50	545.85
9	37.085193	-78.420005	540.85	3.50	544.35
10	37.085107	-78.419377	548.13	3.50	551.63



**Name:** County Line Rd  
**Route type** Two-way  
**Azimuthal view angle:** 50.0 deg  
**Downward view angle:** 90.0 deg



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	37.097280	-78.476651	594.54	3.50	598.04
2	37.097219	-78.475855	598.80	3.50	602.30
3	37.097213	-78.474994	607.28	3.50	610.78
4	37.097309	-78.473270	621.37	3.50	624.87

**Name:** Dempseys Rd  
**Route type** Two-way  
**Azimuthal view angle:** 50.0 deg  
**Downward view angle:** 90.0 deg



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	37.100853	-78.432978	553.09	3.50	556.59
2	37.100660	-78.433062	555.40	3.50	558.90
3	37.100457	-78.433086	558.88	3.50	562.38
4	37.099830	-78.433036	562.04	3.50	565.54
5	37.099719	-78.433062	562.51	3.50	566.01
6	37.099499	-78.433266	563.93	3.50	567.43

**Name:** Harley Ln  
**Route type** Two-way  
**Azimuthal view angle:** 50.0 deg  
**Downward view angle:** 90.0 deg



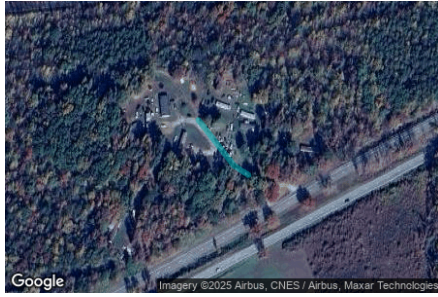
Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	37.081527	-78.446166	585.61	3.50	589.11
2	37.081071	-78.445886	588.43	3.50	591.93

**Name:** Henderson Rd  
**Route type** Two-way  
**Azimuthal view angle:** 50.0 deg  
**Downward view angle:** 90.0 deg



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	37.109995	-78.468285	603.05	3.50	606.55
2	37.109590	-78.467164	592.11	3.50	595.61

**Name:** Hillside Dr  
**Route type** Two-way  
**Azimuthal view angle:** 50.0 deg  
**Downward view angle:** 90.0 deg



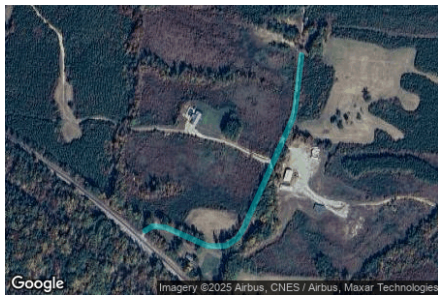
Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	37.083329	-78.418574	583.61	3.50	587.11
2	37.082929	-78.418183	584.69	3.50	588.19
3	37.082844	-78.418020	580.23	3.50	583.73

**Name:** Ole Briery Station Rd Seg 1  
**Route type** Two-way  
**Azimuthal view angle:** 50.0 deg  
**Downward view angle:** 90.0 deg



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	37.092208	-78.458646	563.15	3.50	566.65
2	37.092090	-78.458691	563.42	3.50	566.92
3	37.091871	-78.458666	558.97	3.50	562.47
4	37.090953	-78.457951	563.80	3.50	567.30
5	37.090854	-78.457956	564.22	3.50	567.72
6	37.090611	-78.458144	565.23	3.50	568.73
7	37.090481	-78.458117	566.86	3.50	570.36
8	37.089856	-78.457249	576.52	3.50	580.02
9	37.089653	-78.457170	576.31	3.50	579.81
10	37.089216	-78.457209	577.01	3.50	580.51
11	37.088870	-78.457369	579.14	3.50	582.64
12	37.087648	-78.458228	575.44	3.50	578.94

**Name:** Ole Briery Station Rd Seg 2  
**Route type** Two-way  
**Azimuthal view angle:** 50.0 deg  
**Downward view angle:** 90.0 deg



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	37.095314	-78.455184	559.55	3.50	563.05
2	37.094405	-78.455316	561.00	3.50	564.50
3	37.094194	-78.455375	562.46	3.50	565.96
4	37.092243	-78.456468	580.33	3.50	583.83
5	37.092079	-78.456596	579.50	3.50	583.00
6	37.091937	-78.456866	578.09	3.50	581.59
7	37.091938	-78.457261	579.65	3.50	583.15
8	37.092266	-78.458188	570.75	3.50	574.25
9	37.092288	-78.458480	566.19	3.50	569.69
10	37.092208	-78.458646	563.15	3.50	566.65

**Name:** Thistle Knob Ln  
**Route type** Two-way  
**Azimuthal view angle:** 50.0 deg  
**Downward view angle:** 90.0 deg



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	37.083651	-78.438932	566.14	3.50	569.64
2	37.083055	-78.438885	572.01	3.50	575.51
3	37.082951	-78.438866	573.45	3.50	576.95
4	37.082709	-78.438732	575.45	3.50	578.95
5	37.082049	-78.438472	587.03	3.50	590.53

**Name:** Tobacco Heritage Trail  
**Route type** Two-way  
**Azimuthal view angle:** 50.0 deg  
**Downward view angle:** 90.0 deg



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	37.090771	-78.458017	565.05	5.00	570.05
2	37.090288	-78.457220	565.24	5.00	570.24
3	37.089770	-78.456642	564.98	5.00	569.98
4	37.083905	-78.448547	568.62	5.00	573.62
5	37.083402	-78.447640	568.23	5.00	573.23
6	37.083141	-78.446961	569.57	5.00	574.57
7	37.082894	-78.446050	570.13	5.00	575.13
8	37.082777	-78.445198	569.37	5.00	574.37
9	37.082731	-78.443998	572.72	5.00	577.72
10	37.082823	-78.442329	570.64	5.00	575.64
11	37.082941	-78.438861	573.48	5.00	578.48
12	37.083691	-78.419842	572.55	5.00	577.55
13	37.083938	-78.417972	572.02	5.00	577.02
14	37.084121	-78.417318	571.54	5.00	576.54

**Name:** US Hwy 15  
**Route type** Two-way  
**Azimuthal view angle:** 50.0 deg  
**Downward view angle:** 90.0 deg



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	37.093744	-78.473877	626.72	3.50	630.22
2	37.096495	-78.473451	577.75	3.50	581.25
3	37.097894	-78.473140	622.81	3.50	626.31
4	37.098651	-78.472866	621.89	3.50	625.39
5	37.110506	-78.466686	589.30	3.50	592.80
6	37.111238	-78.466281	586.17	3.50	589.67

**Name:** US Hwy 360  
**Route type** Two-way  
**Azimuthal view angle:** 50.0 deg  
**Downward view angle:** 90.0 deg



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	37.080860	-78.422670	595.41	3.50	598.91
2	37.080926	-78.422273	593.85	3.50	597.35
3	37.081051	-78.421682	591.95	3.50	595.45
4	37.081265	-78.420884	589.00	3.50	592.50
5	37.081528	-78.420136	586.19	3.50	589.69
6	37.082144	-78.418682	579.73	3.50	583.23

## Discrete Observation Receptors

Number	Latitude	Longitude	Ground elevation	Height above ground	Total Elevation
	deg	deg	ft	ft	ft
OP 100	37.109713	-78.467903	599.73	5.00	604.73
OP 101	37.109713	-78.467903	599.73	15.00	614.73
OP 102	37.107782	-78.469048	606.39	5.00	611.39
OP 103	37.107782	-78.469048	606.39	15.00	621.39
OP 104	37.106730	-78.466781	605.55	5.00	610.55
OP 105	37.106730	-78.466781	605.55	15.00	620.55
OP 106	37.101635	-78.472188	620.32	5.00	625.32
OP 107	37.101635	-78.472188	620.32	15.00	635.32
OP 108	37.097790	-78.473879	626.62	5.00	631.62
OP 109	37.097790	-78.473879	626.62	15.00	641.62
OP 110	37.095718	-78.472730	616.85	5.00	621.85
OP 111	37.095718	-78.472730	616.85	15.00	631.85
OP 112	37.095512	-78.473852	612.00	5.00	617.00
OP 113	37.095512	-78.473852	612.00	15.00	627.00
OP 114	37.094658	-78.474216	622.22	5.00	627.22
OP 115	37.094658	-78.474216	622.22	15.00	637.22
OP 116	37.092467	-78.468147	601.40	5.00	606.40
OP 117	37.092467	-78.468147	601.40	15.00	616.40

# 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	
A01	SA tracking	SA tracking	1,325	1,149	-	-
A02	SA tracking	SA tracking	1,351	0	-	-
A03	SA tracking	SA tracking	2,943	1,185	-	-
B01	SA tracking	SA tracking	4,889	1,105	-	-
B02	SA tracking	SA tracking	0	0	-	-
B03	SA tracking	SA tracking	5,734	301	-	-
B04	SA tracking	SA tracking	681	1	-	-
B05	SA tracking	SA tracking	3,710	0	-	-
B06	SA tracking	SA tracking	8,073	1,026	-	-
C01	SA tracking	SA tracking	4,413	0	-	-
C02	SA tracking	SA tracking	4,087	0	-	-
C03	SA tracking	SA tracking	116	0	-	-
C04	SA tracking	SA tracking	3,998	0	-	-
C05	SA tracking	SA tracking	1,299	0	-	-
C06	SA tracking	SA tracking	562	0	-	-

## 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
a01 (green)	0	0	0	93	70	148	20	61	135	4	0	0
a01 (yellow)	0	0	0	148	194	214	205	166	97	0	0	0
a02 (green)	163	82	0	0	0	0	0	0	0	73	157	173
a02 (yellow)	0	0	0	0	0	0	0	0	0	0	0	0
a03 (green)	0	0	0	174	119	161	135	205	3	0	0	0
a03 (yellow)	0	0	0	70	324	292	310	189	0	0	0	0
b01 (green)	0	0	0	43	349	495	428	95	0	0	0	0
b01 (yellow)	0	0	0	146	259	264	215	190	0	0	0	0
b03 (green)	0	0	0	50	549	660	626	207	0	0	0	0
b03 (yellow)	0	0	0	0	78	100	117	6	0	0	0	0
b04 (green)	22	96	117	58	12	0	1	24	97	149	15	5
b04 (yellow)	0	0	0	1	0	0	0	0	0	0	0	0
b05 (green)	0	0	46	25	434	320	246	71	51	3	0	0
b05 (yellow)	0	0	0	0	0	0	0	0	0	0	0	0
b06 (green)	0	0	9	336	544	472	362	526	56	0	0	0
b06 (yellow)	0	0	11	79	95	146	5	59	44	0	0	0
c01 (green)	0	0	0	114	341	306	332	316	68	0	0	0
c01 (yellow)	0	0	0	0	0	0	0	0	0	0	0	0
c02 (green)	472	235	0	0	0	0	0	0	0	267	459	385
c02 (yellow)	0	0	0	0	0	0	0	0	0	0	0	0
c03 (green)	0	0	0	29	24	0	4	37	0	0	0	0
c03 (yellow)	0	0	0	0	0	0	0	0	0	0	0	0
c04 (green)	0	0	15	195	343	293	208	174	148	0	0	0
c04 (yellow)	0	0	0	0	0	0	0	0	0	0	0	0
c05 (green)	79	0	94	113	94	0	0	70	50	0	28	174
c05 (yellow)	0	0	0	0	0	0	0	0	0	0	0	0
c06 (green)	0	0	0	6	258	39	0	0	0	0	0	0
c06 (yellow)	0	0	0	0	0	0	0	0	0	0	0	0

## PV & Receptor Analysis Results

Results for each PV array and receptor

### A01 potential temporary after-image

Component	Green glare (min)	Yellow glare (min)
OP: OP 100	0	0
OP: OP 101	0	0
OP: OP 102	0	0
OP: OP 103	0	0
OP: OP 104	302	156
OP: OP 105	333	229
OP: OP 106	221	0
OP: OP 107	249	0
OP: OP 108	0	0
OP: OP 109	0	0
OP: OP 110	0	0

OP: OP 111	0	0
OP: OP 112	0	0
OP: OP 113	0	0
OP: OP 114	0	0
OP: OP 115	0	0
OP: OP 116	0	0
OP: OP 117	0	0
Route: Collins Dr	0	0
Route: Country Dr Seg 1	0	0
Route: Country Dr Seg 2	90	0
Route: County Line Rd	0	0
Route: Dempseys Rd	0	0
Route: Harley Ln	0	0
Route: Henderson Rd	0	0
Route: Hillside Dr	0	0
Route: Ole Briery Station Rd Seg 1	0	0
Route: Ole Briery Station Rd Seg 2	0	0
Route: Thistle Knob Ln	0	0
Route: Tobacco Heritage Trail	94	0
Route: US Hwy 15	36	764
Route: US Hwy 360	0	0

#### A01: OP 100

*No glare found*

#### A01: OP 101

*No glare found*

#### A01: OP 102

*No glare found*

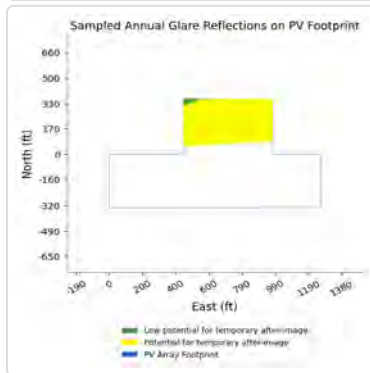
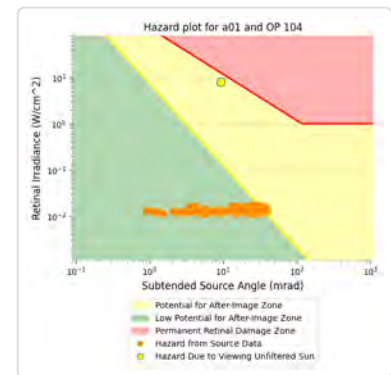
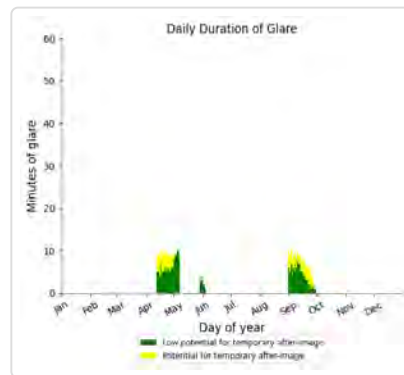
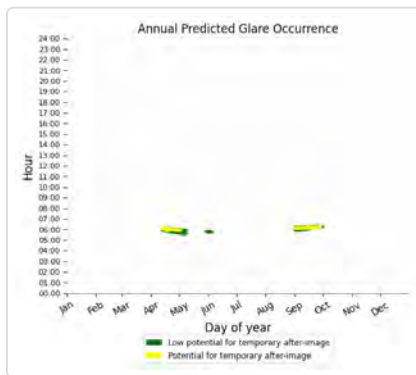
#### A01: OP 103

*No glare found*

## A01: OP 104

PV array is expected to produce the following glare for this receptor:

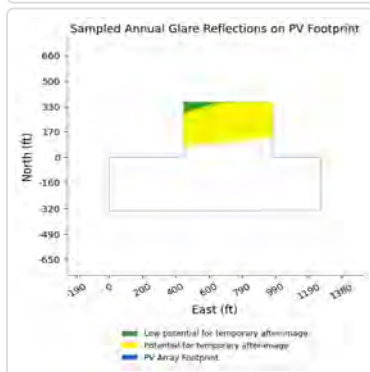
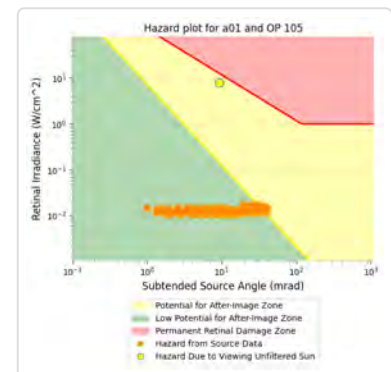
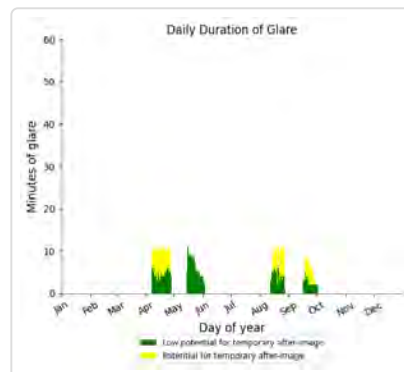
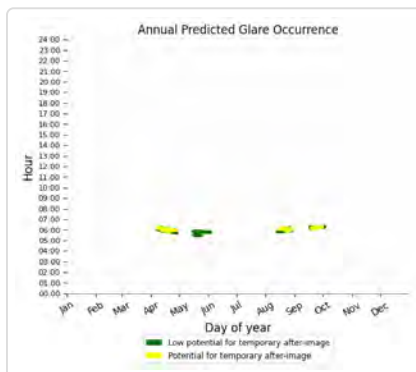
- 302 minutes of "green" glare with low potential to cause temporary after-image.
- 156 minutes of "yellow" glare with potential to cause temporary after-image.



## A01: OP 105

PV array is expected to produce the following glare for this receptor:

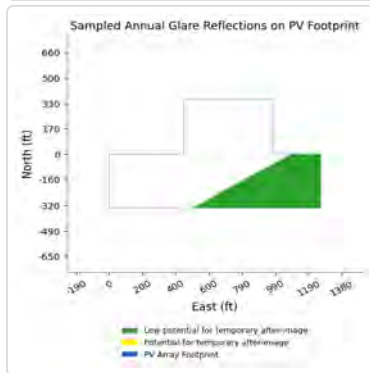
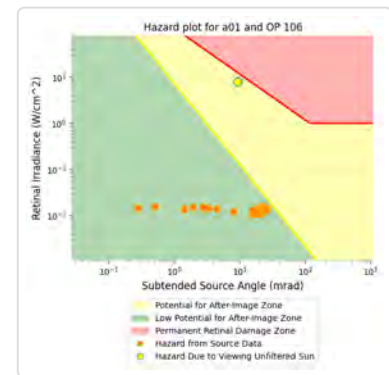
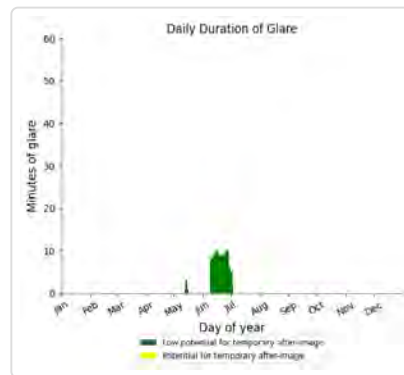
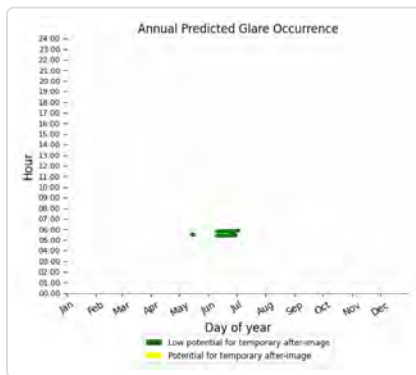
- 333 minutes of "green" glare with low potential to cause temporary after-image.
- 229 minutes of "yellow" glare with potential to cause temporary after-image.



## A01: OP 106

PV array is expected to produce the following glare for this receptor:

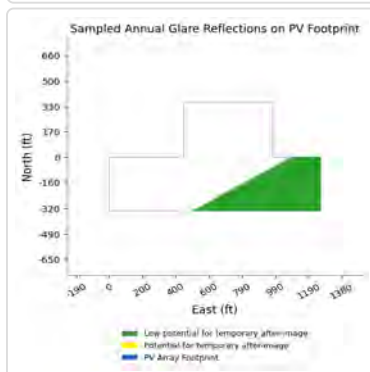
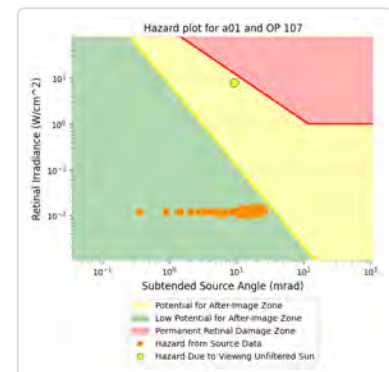
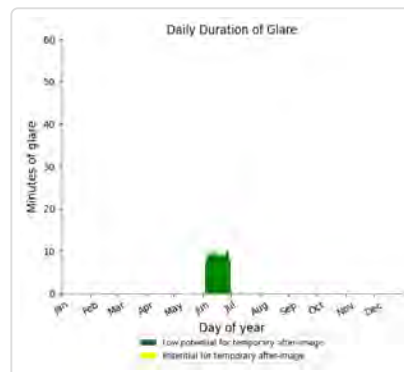
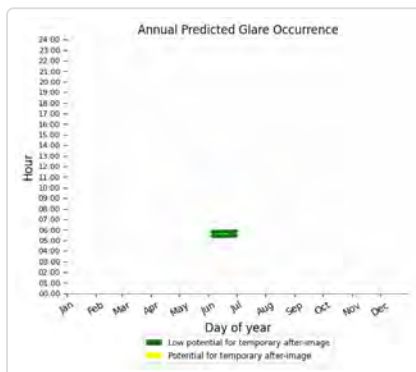
- 221 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## A01: OP 107

PV array is expected to produce the following glare for this receptor:

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



**A01: OP 108**

*No glare found*

**A01: OP 109**

*No glare found*

**A01: OP 110**

*No glare found*

**A01: OP 111**

*No glare found*

**A01: OP 112**

*No glare found*

**A01: OP 113**

*No glare found*

**A01: OP 114**

*No glare found*

**A01: OP 115**

*No glare found*

**A01: OP 116**

*No glare found*

**A01: OP 117**

*No glare found*

**A01: Collins Dr**

*No glare found*

**A01: Country Dr Seg 1**

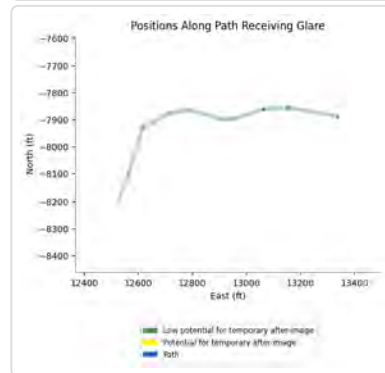
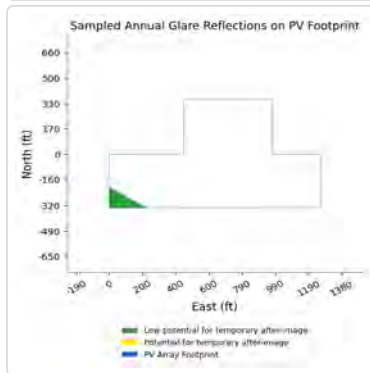
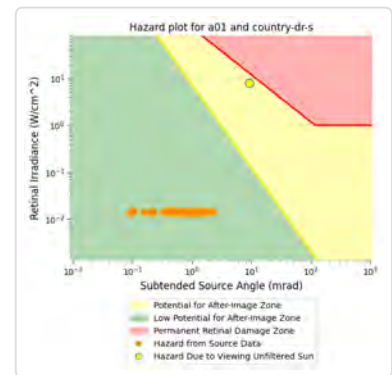
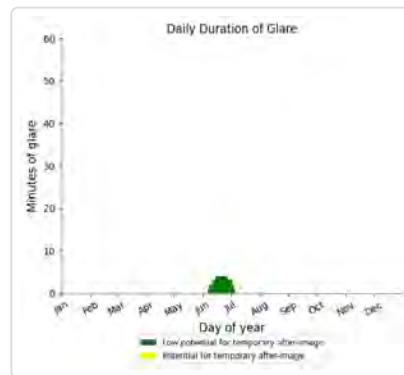
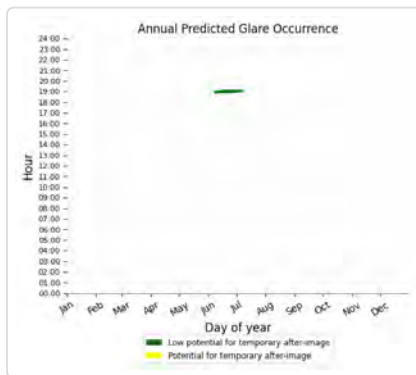
*No glare found*



## A01: Country Dr Seg 2

PV array is expected to produce the following glare for this receptor:

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



## A01: County Line Rd

No glare found

## A01: Dempseys Rd

No glare found

## A01: Harley Ln

No glare found

## A01: Henderson Rd

No glare found

## A01: Hillside Dr

No glare found

## A01: Ole Briery Station Rd Seg 1

No glare found

## A01: Ole Briery Station Rd Seg 2

No glare found

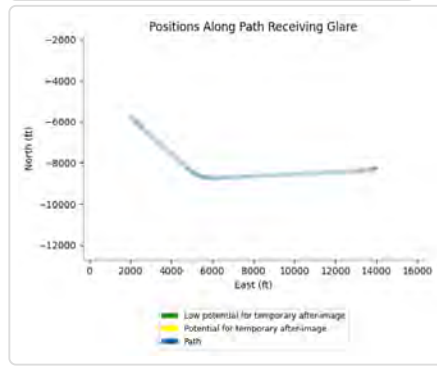
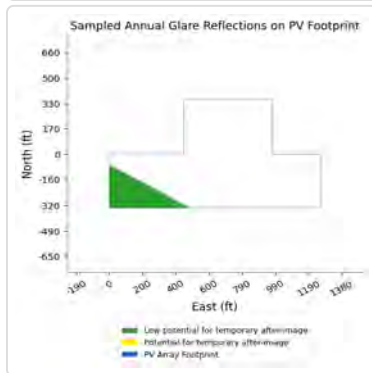
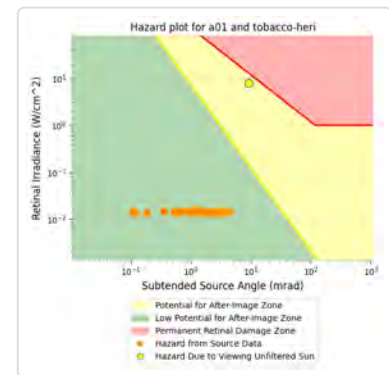
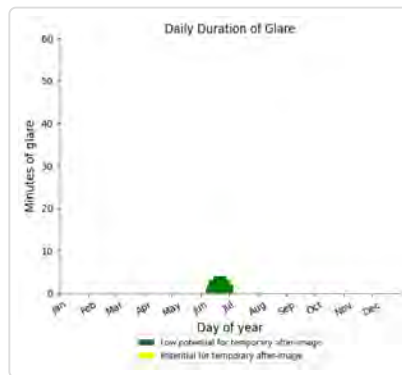
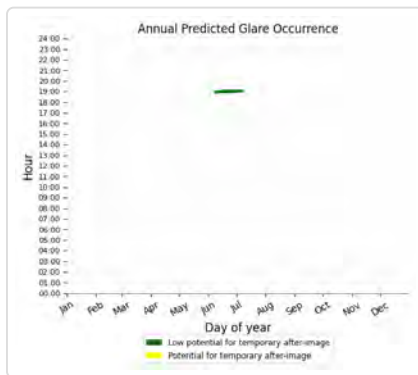
## A01: Thistle Knob Ln

No glare found

## A01: Tobacco Heritage Trail

PV array is expected to produce the following glare for this receptor:

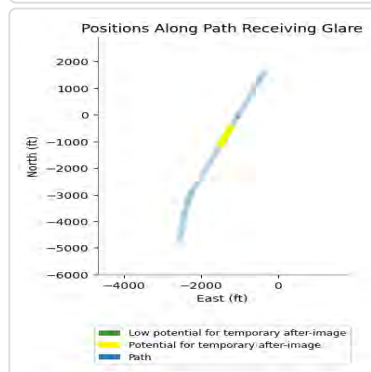
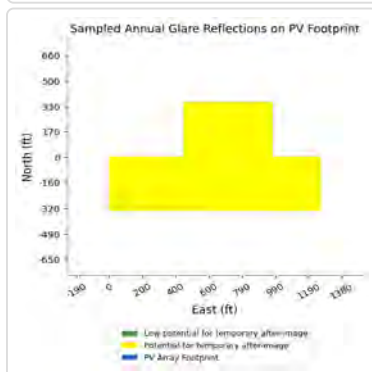
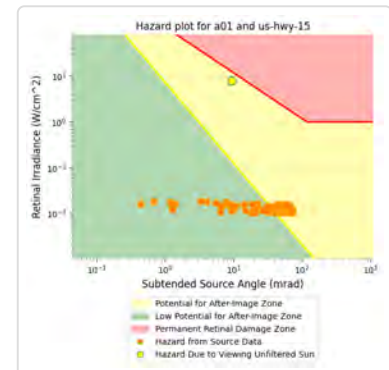
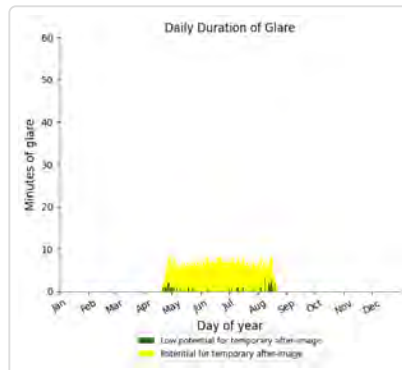
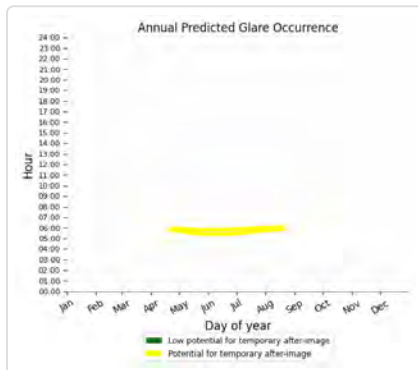
- 94 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## A01: US Hwy 15

PV array is expected to produce the following glare for this receptor:

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



## A01: US Hwy 360

*No glare found*

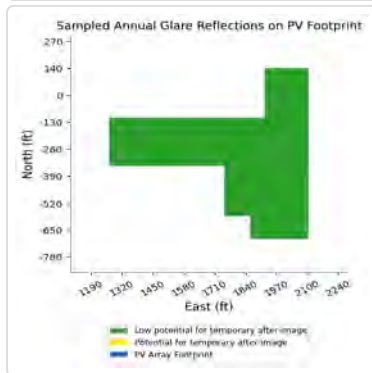
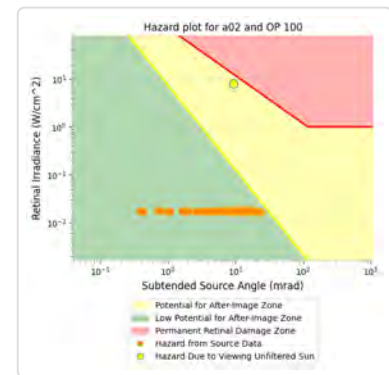
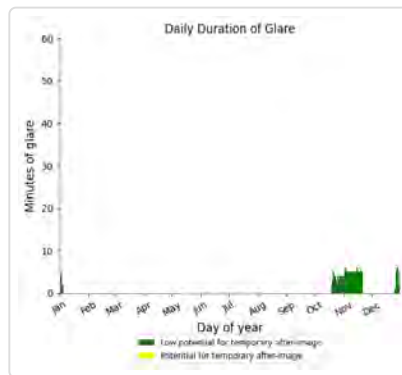
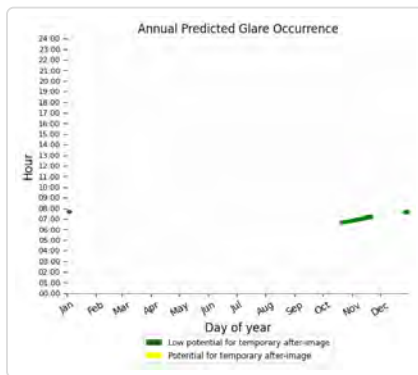
## A02 low potential for temporary after-image

Component	Green glare (min)	Yellow glare (min)
OP: OP 100	193	0
OP: OP 101	204	0
OP: OP 102	103	0
OP: OP 103	104	0
OP: OP 104	64	0
OP: OP 105	66	0
OP: OP 106	0	0
OP: OP 107	0	0
OP: OP 108	0	0
OP: OP 109	0	0
OP: OP 110	0	0
OP: OP 111	0	0
OP: OP 112	0	0
OP: OP 113	0	0
OP: OP 114	0	0
OP: OP 115	0	0
OP: OP 116	0	0
OP: OP 117	0	0
Route: Collins Dr	0	0
Route: Country Dr Seg 1	0	0
Route: Country Dr Seg 2	0	0
Route: County Line Rd	0	0
Route: Dempseys Rd	0	0
Route: Harley Ln	0	0
Route: Henderson Rd	617	0
Route: Hillside Dr	0	0
Route: Ole Briery Station Rd Seg 1	0	0
Route: Ole Briery Station Rd Seg 2	0	0
Route: Thistle Knob Ln	0	0
Route: Tobacco Heritage Trail	0	0
Route: US Hwy 15	0	0
Route: US Hwy 360	0	0

## A02: OP 100

PV array is expected to produce the following glare for this receptor:

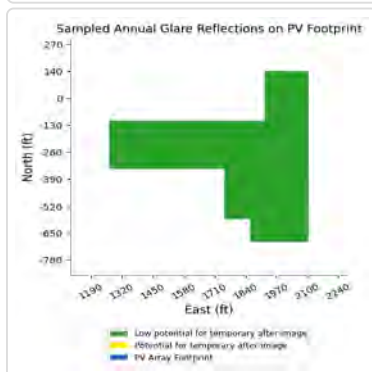
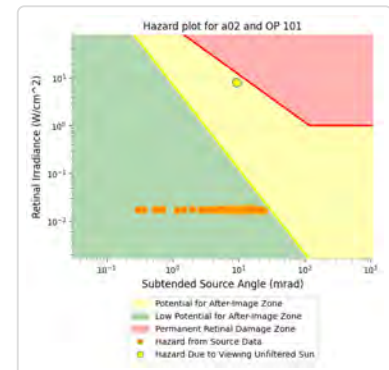
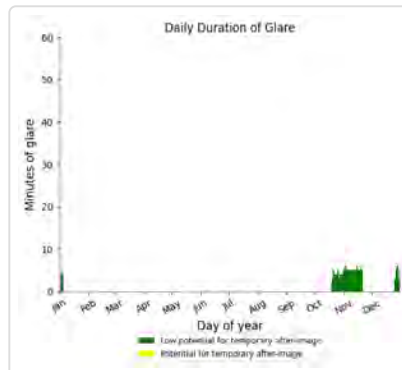
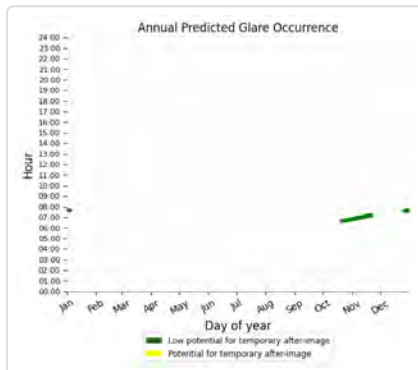
- 193 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## A02: OP 101

PV array is expected to produce the following glare for this receptor:

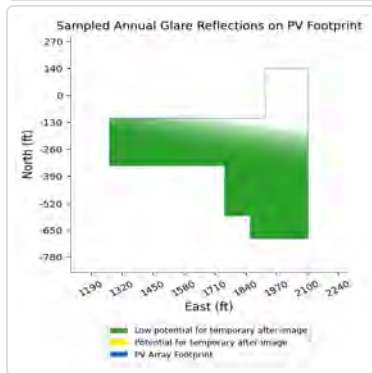
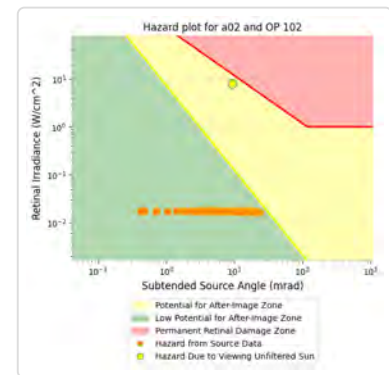
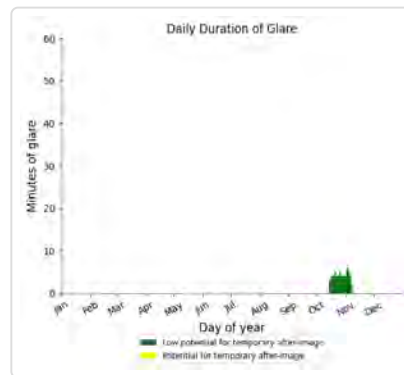
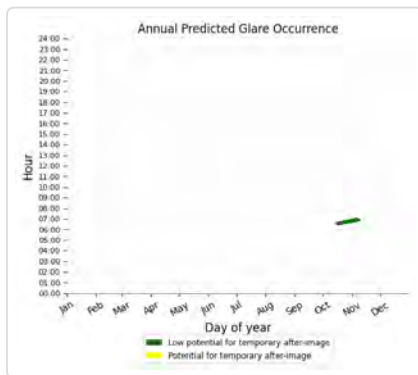
- 204 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## A02: OP 102

PV array is expected to produce the following glare for this receptor:

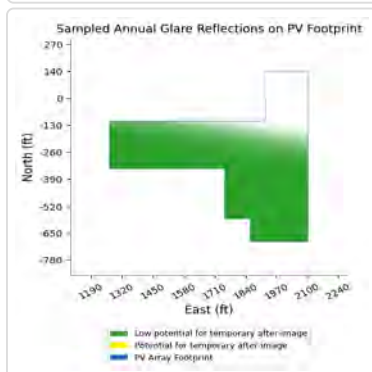
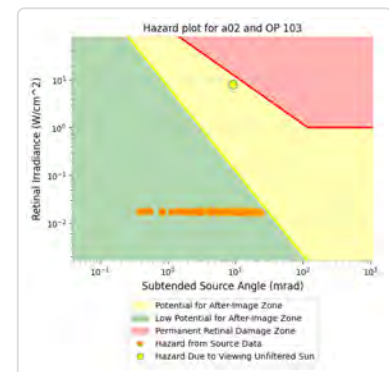
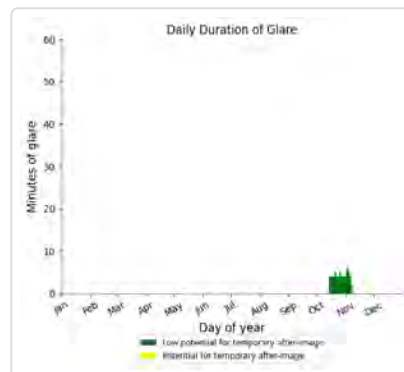
- 103 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## A02: OP 103

PV array is expected to produce the following glare for this receptor:

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

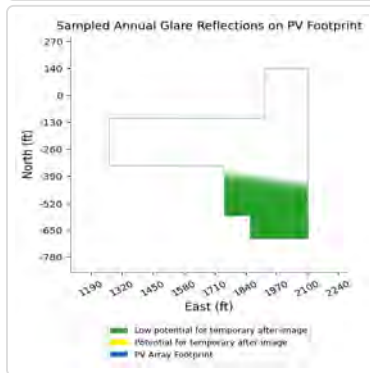
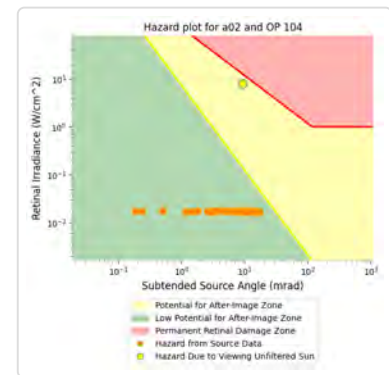
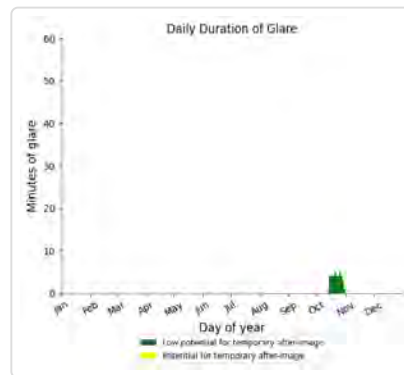
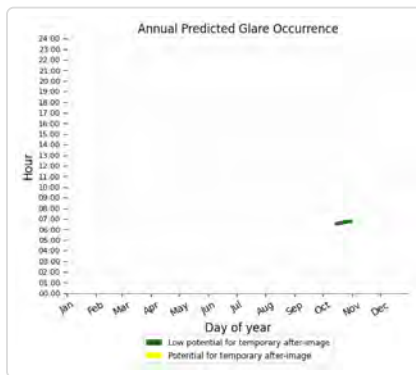




## A02: OP 104

PV array is expected to produce the following glare for this receptor:

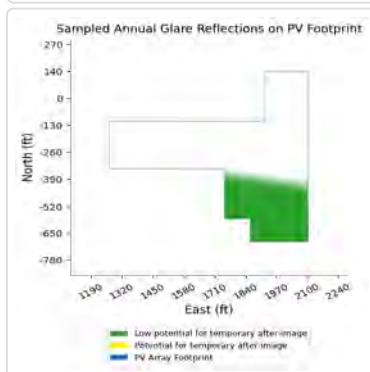
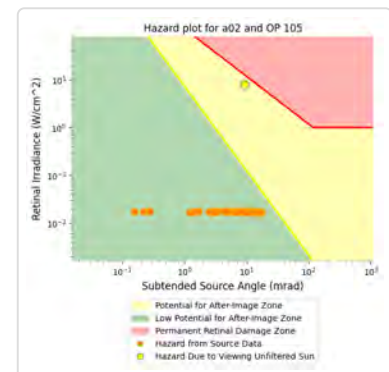
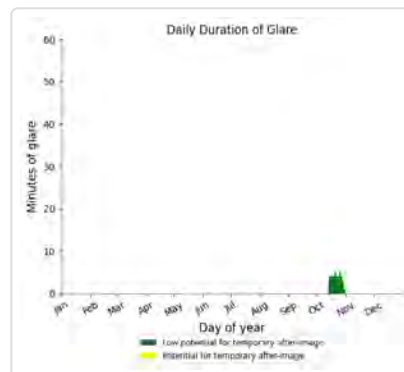
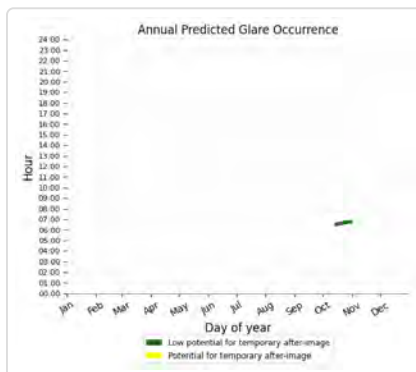
- 64 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## A02: OP 105

PV array is expected to produce the following glare for this receptor:

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



**A02: OP 106**

*No glare found*

**A02: OP 107**

*No glare found*

**A02: OP 108**

*No glare found*

**A02: OP 109**

*No glare found*

**A02: OP 110**

*No glare found*

**A02: OP 111**

*No glare found*

**A02: OP 112**

*No glare found*

**A02: OP 113**

*No glare found*

**A02: OP 114**

*No glare found*

**A02: OP 115**

*No glare found*

**A02: OP 116**

*No glare found*

**A02: OP 117**

*No glare found*

**A02: Collins Dr**

*No glare found*

**A02: Country Dr Seg 1**

*No glare found*

**A02: Country Dr Seg 2**

*No glare found*

## A02: County Line Rd

No glare found

## A02: Dempseys Rd

No glare found

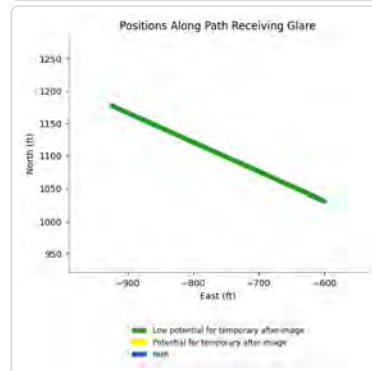
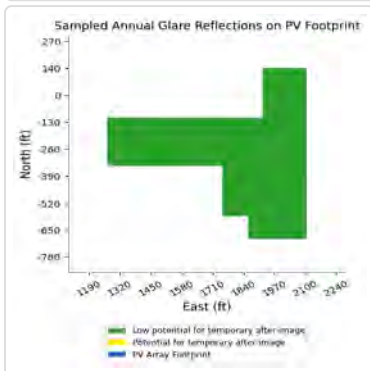
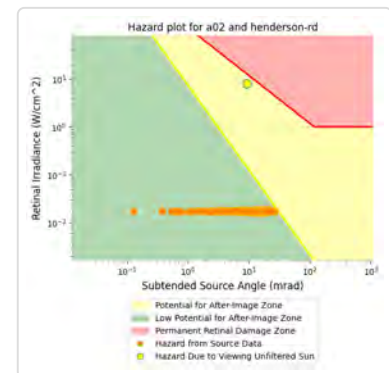
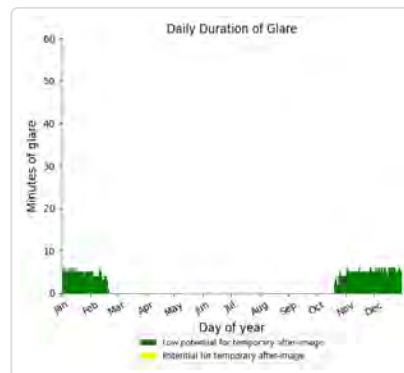
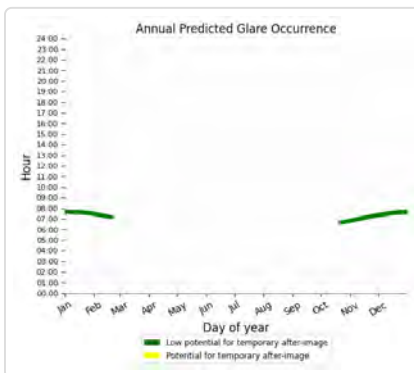
## A02: Harley Ln

No glare found

## A02: Henderson Rd

PV array is expected to produce the following glare for this receptor:

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



## A02: Hillside Dr

No glare found

## A02: Ole Briery Station Rd Seg 1

No glare found

## A02: Ole Briery Station Rd Seg 2

No glare found

## A02: Thistle Knob Ln

No glare found

## A02: Tobacco Heritage Trail

No glare found

## A02: US Hwy 15

*No glare found*

## A02: US Hwy 360

*No glare found*

## A03 potential temporary after-image

Component	Green glare (min)	Yellow glare (min)
OP: OP 100	0	0
OP: OP 101	0	0
OP: OP 102	0	0
OP: OP 103	0	0
OP: OP 104	0	0
OP: OP 105	0	0
OP: OP 106	724	0
OP: OP 107	769	0
OP: OP 108	115	0
OP: OP 109	140	0
OP: OP 110	0	0
OP: OP 111	0	0
OP: OP 112	0	0
OP: OP 113	0	0
OP: OP 114	0	0
OP: OP 115	0	0
OP: OP 116	0	0
OP: OP 117	0	0
Route: Collins Dr	0	0
Route: Country Dr Seg 1	0	0
Route: Country Dr Seg 2	0	0
Route: County Line Rd	699	0
Route: Dempseys Rd	0	0
Route: Harley Ln	0	0
Route: Henderson Rd	0	0
Route: Hillside Dr	0	0
Route: Ole Briery Station Rd Seg 1	0	0
Route: Ole Briery Station Rd Seg 2	0	0
Route: Thistle Knob Ln	0	0
Route: Tobacco Heritage Trail	15	0
Route: US Hwy 15	481	1185
Route: US Hwy 360	0	0

## A03: OP 100

*No glare found*

## A03: OP 101

*No glare found*

A03: OP 102

No glare found

A03: OP 103

No glare found

A03: OP 104

No glare found

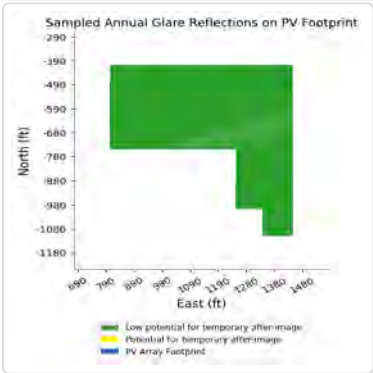
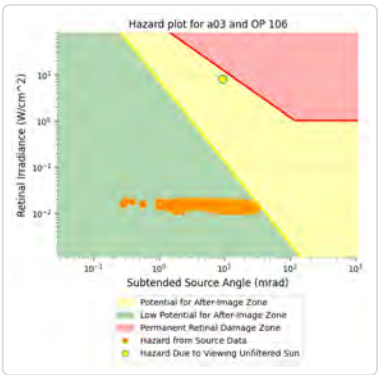
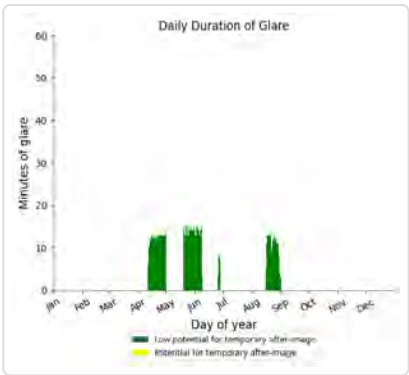
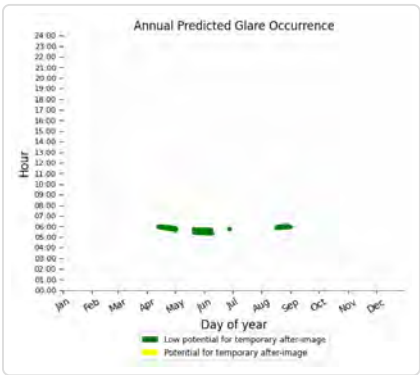
A03: OP 105

No glare found

A03: OP 106

PV array is expected to produce the following glare for this receptor:

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

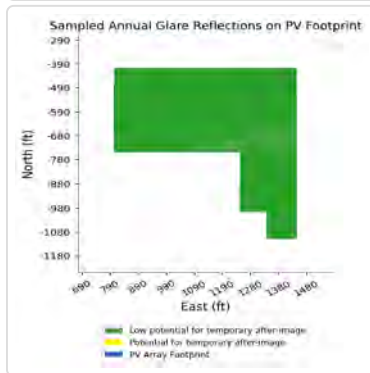
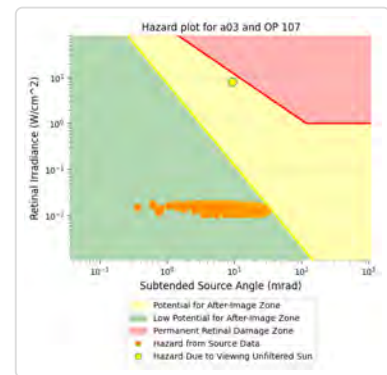
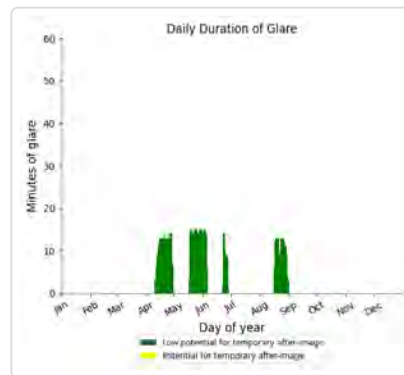
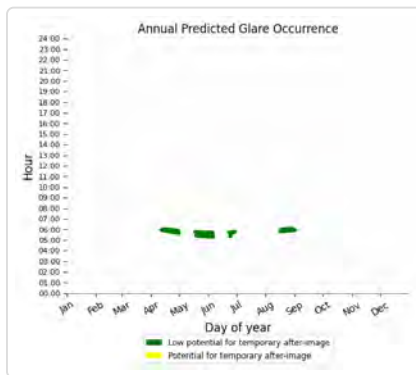




### A03: OP 107

PV array is expected to produce the following glare for this receptor:

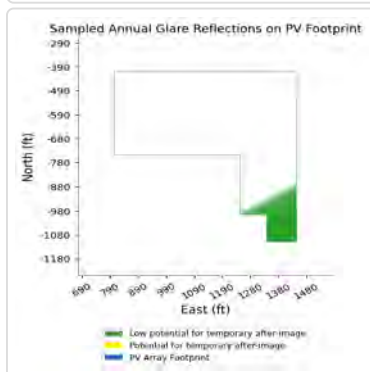
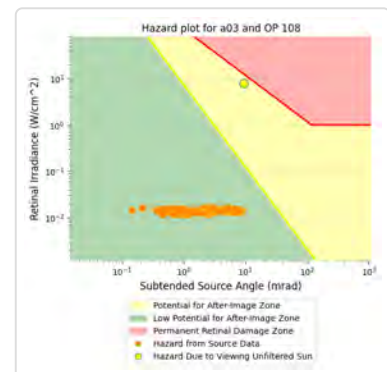
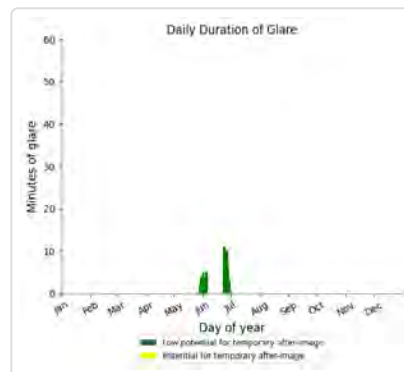
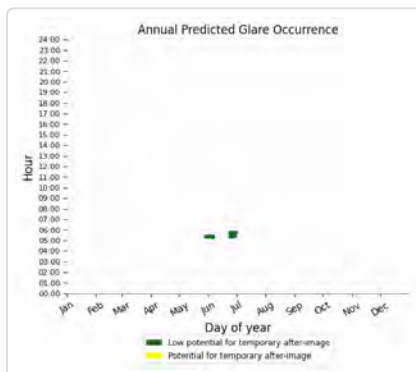
- 769 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



### A03: OP 108

PV array is expected to produce the following glare for this receptor:

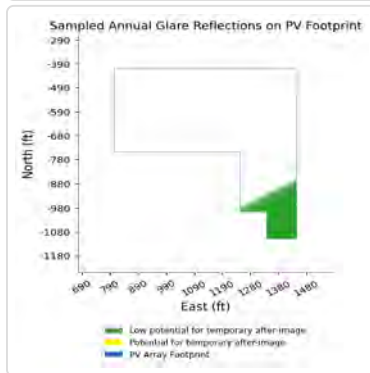
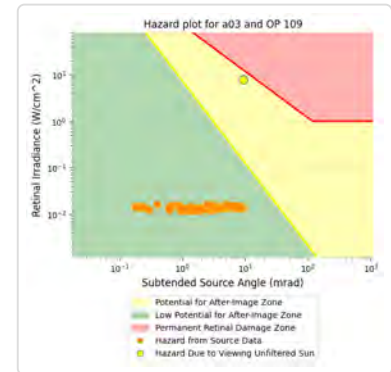
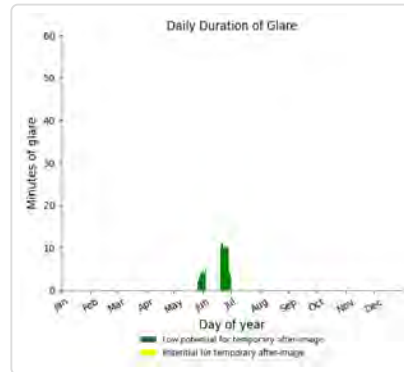
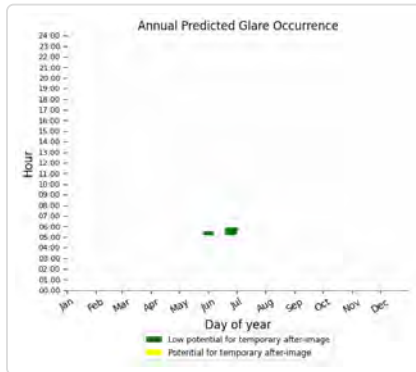
- 115 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



### A03: OP 109

PV array is expected to produce the following glare for this receptor:

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



### A03: OP 110

No glare found

### A03: OP 111

No glare found

### A03: OP 112

No glare found

### A03: OP 113

No glare found

### A03: OP 114

No glare found

### A03: OP 115

No glare found

### A03: OP 116

No glare found

### A03: OP 117

No glare found

### A03: Collins Dr

No glare found

### A03: Country Dr Seg 1

No glare found

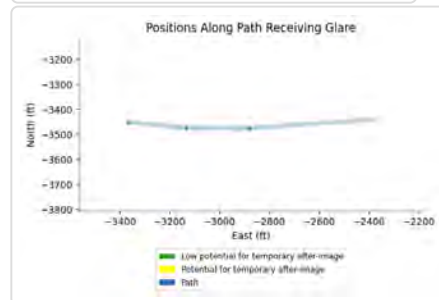
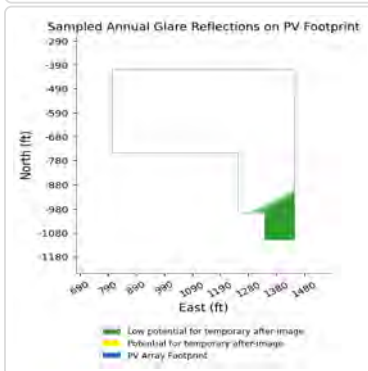
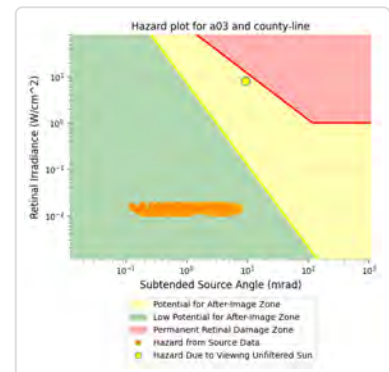
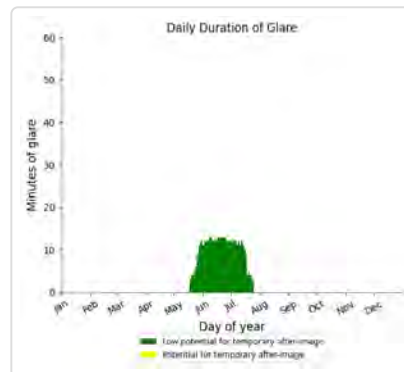
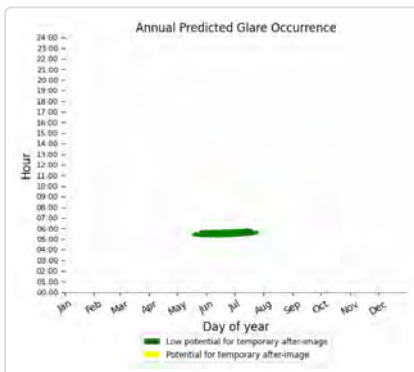
### A03: Country Dr Seg 2

No glare found

### A03: County Line Rd

PV array is expected to produce the following glare for this receptor:

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



### A03: Dempseys Rd

No glare found

### A03: Harley Ln

No glare found

### A03: Henderson Rd

No glare found

### A03: Hillside Dr

No glare found

### A03: Ole Briery Station Rd Seg 1

No glare found

### A03: Ole Briery Station Rd Seg 2

No glare found

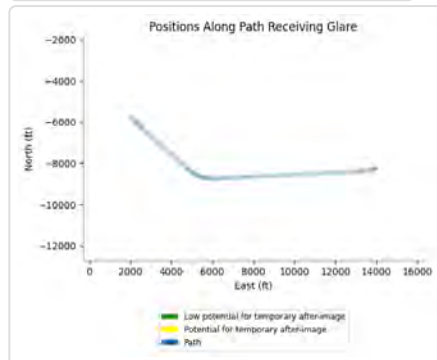
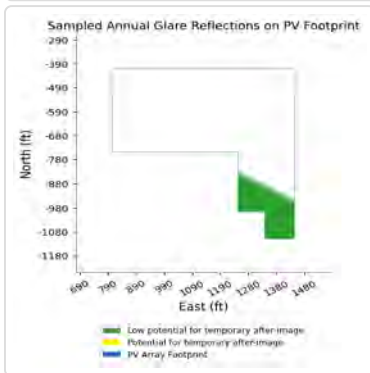
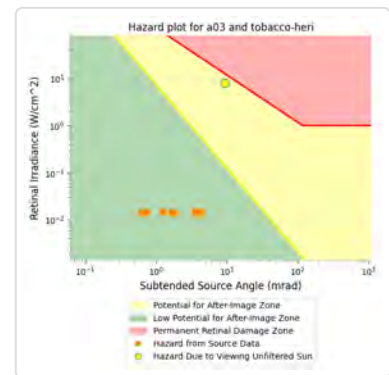
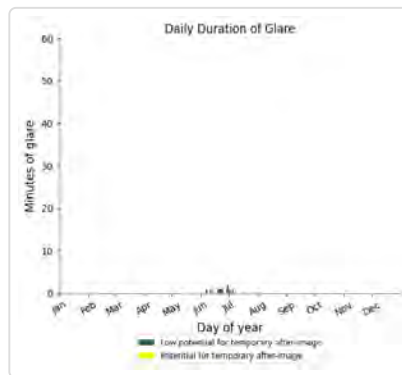
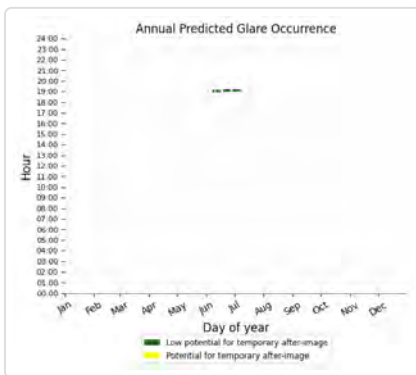
### A03: Thistle Knob Ln

No glare found

### A03: Tobacco Heritage Trail

PV array is expected to produce the following glare for this receptor:

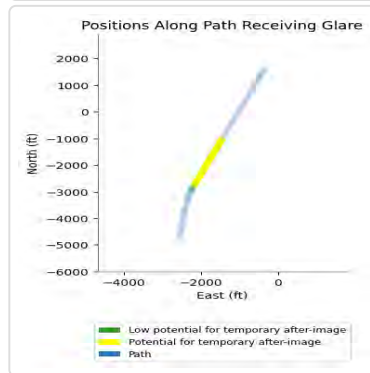
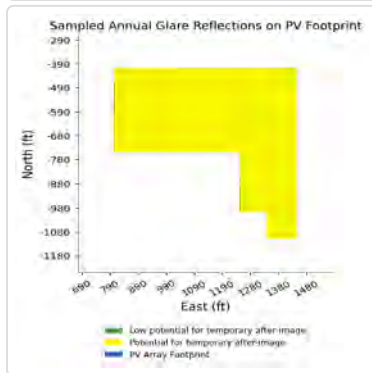
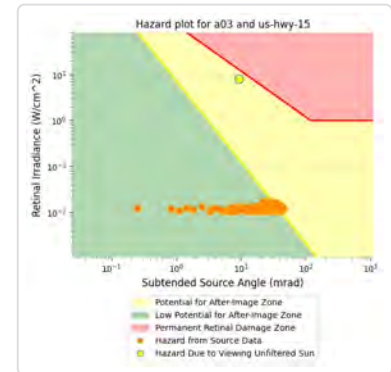
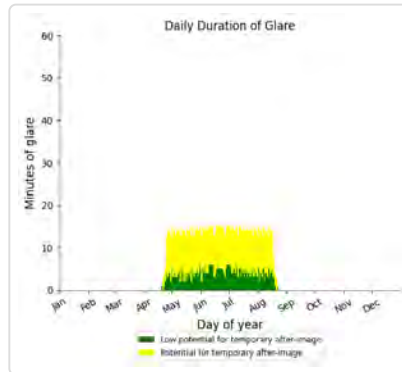
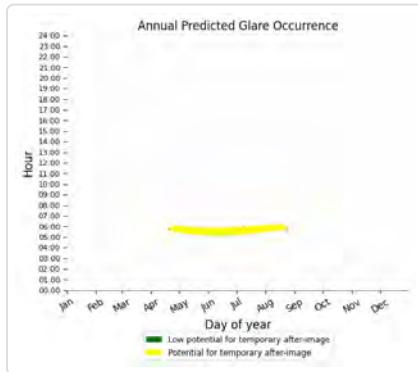
- 15 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



### A03: US Hwy 15

PV array is expected to produce the following glare for this receptor:

- 481 minutes of "green" glare with low potential to cause temporary after-image.
- 1,185 minutes of "yellow" glare with potential to cause temporary after-image.



### A03: US Hwy 360

No glare found

### B01 potential temporary after-image

Component	Green glare (min)	Yellow glare (min)
OP: OP 100	0	0
OP: OP 101	0	0
OP: OP 102	0	0
OP: OP 103	0	0
OP: OP 104	0	0
OP: OP 105	0	0
OP: OP 106	0	0
OP: OP 107	206	352
OP: OP 108	0	0
OP: OP 109	0	0
OP: OP 110	0	0
OP: OP 111	0	0
OP: OP 112	0	0
OP: OP 113	0	0
OP: OP 114	0	0
OP: OP 115	0	0
OP: OP 116	0	0
OP: OP 117	0	0
Route: Collins Dr	0	0



Route: Country Dr Seg 1	772	0
Route: Country Dr Seg 2	977	0
Route: County Line Rd	0	0
Route: Dempseys Rd	0	0
Route: Harley Ln	0	0
Route: Henderson Rd	0	0
Route: Hillside Dr	898	0
Route: Ole Briery Station Rd Seg 1	0	0
Route: Ole Briery Station Rd Seg 2	0	0
Route: Thistle Knob Ln	0	0
Route: Tobacco Heritage Trail	995	0
Route: US Hwy 15	257	753
Route: US Hwy 360	784	0

### **B01: OP 100**

*No glare found*

### **B01: OP 101**

*No glare found*

### **B01: OP 102**

*No glare found*

### **B01: OP 103**

*No glare found*

### **B01: OP 104**

*No glare found*

### **B01: OP 105**

*No glare found*

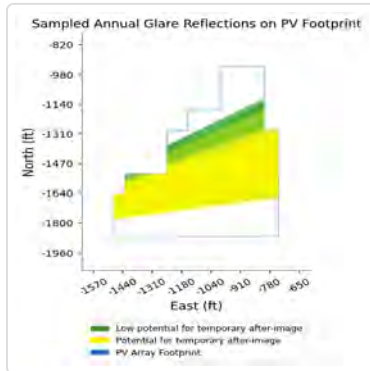
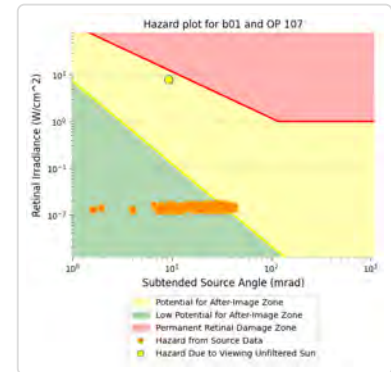
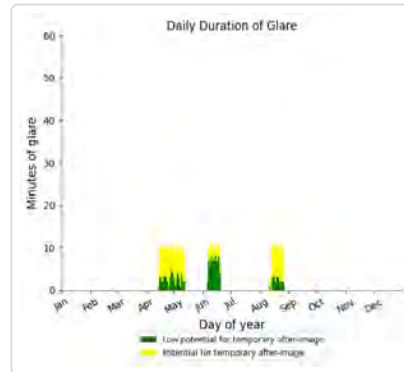
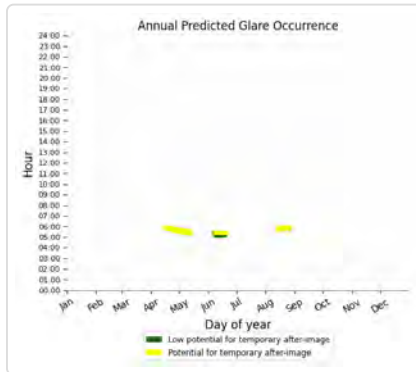
### **B01: OP 106**

*No glare found*

## B01: OP 107

PV array is expected to produce the following glare for this receptor:

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



## B01: OP 108

No glare found

## B01: OP 109

No glare found

## B01: OP 110

No glare found

## B01: OP 111

No glare found

## B01: OP 112

No glare found

## B01: OP 113

No glare found

## B01: OP 114

No glare found

## B01: OP 115

No glare found

## B01: OP 116

No glare found

## B01: OP 117

No glare found

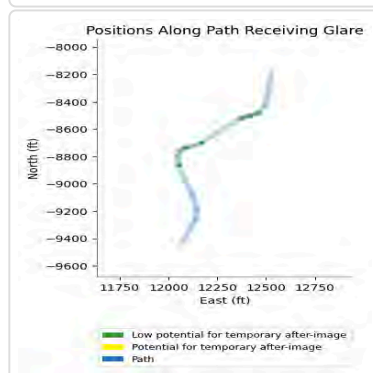
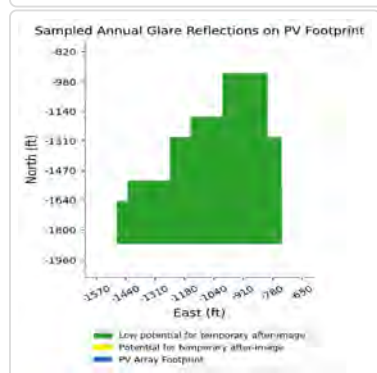
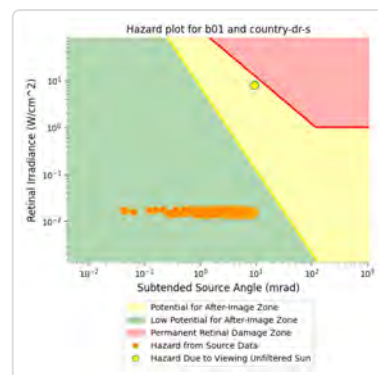
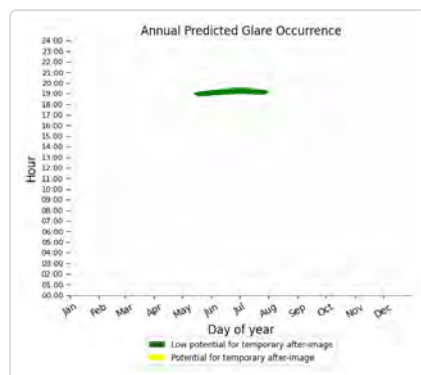
## B01: Collins Dr

No glare found

## B01: Country Dr Seg 1

PV array is expected to produce the following glare for this receptor:

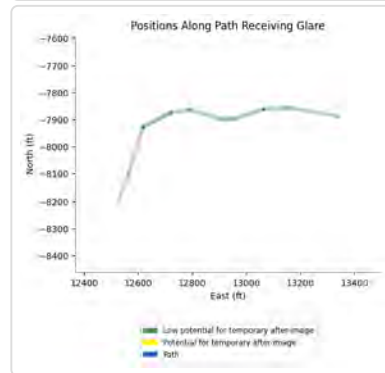
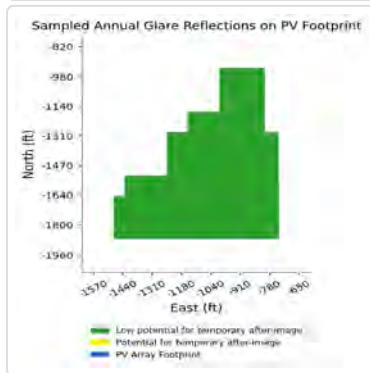
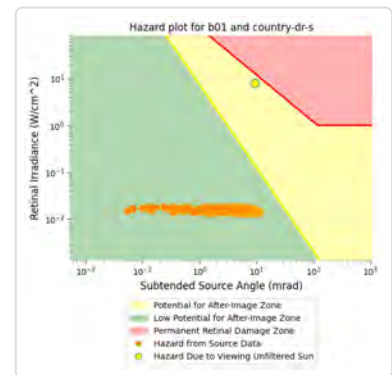
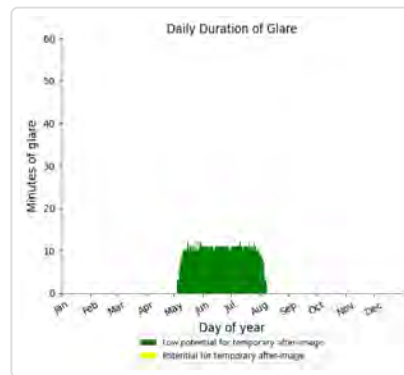
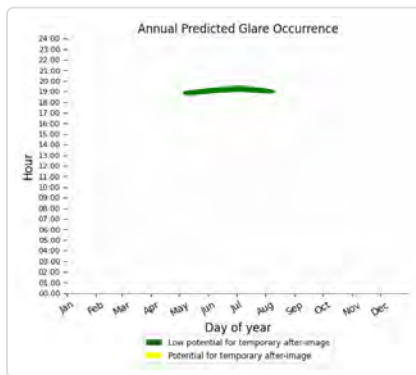
- 772 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## B01: Country Dr Seg 2

PV array is expected to produce the following glare for this receptor:

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



## B01: County Line Rd

No glare found

## B01: Dempseys Rd

No glare found

## B01: Harley Ln

No glare found

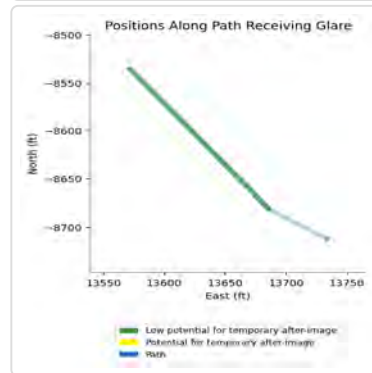
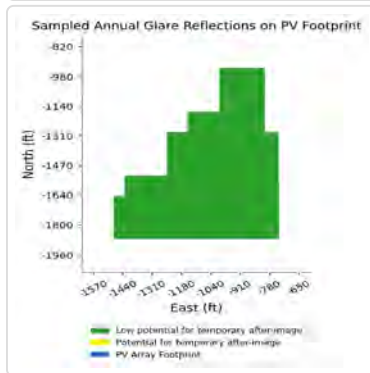
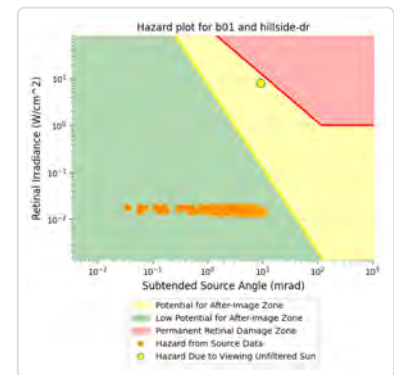
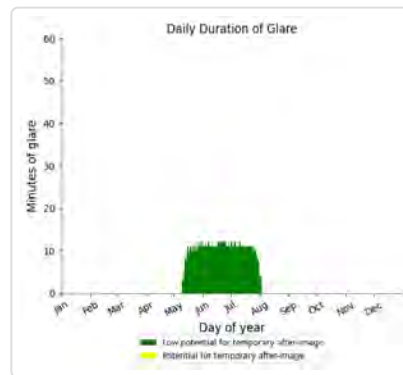
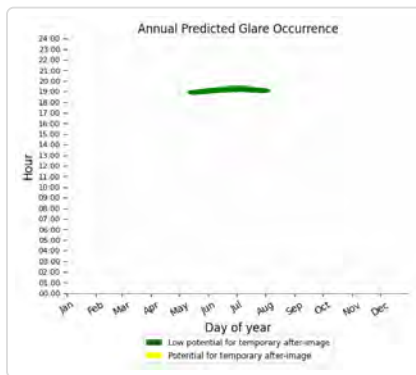
## B01: Henderson Rd

No glare found

## B01: Hillside Dr

PV array is expected to produce the following glare for this receptor:

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



## B01: Ole Briery Station Rd Seg 1

No glare found

## B01: Ole Briery Station Rd Seg 2

No glare found

## B01: Thistle Knob Ln

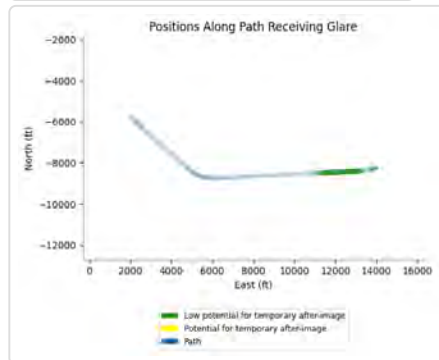
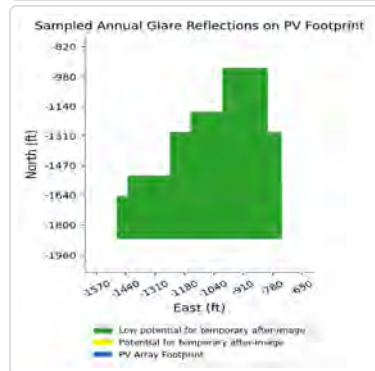
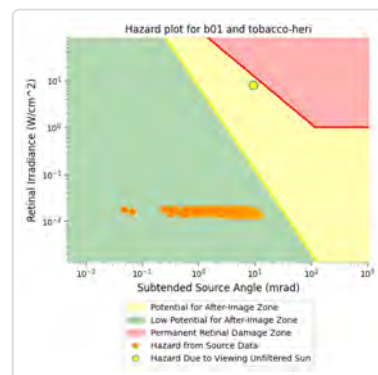
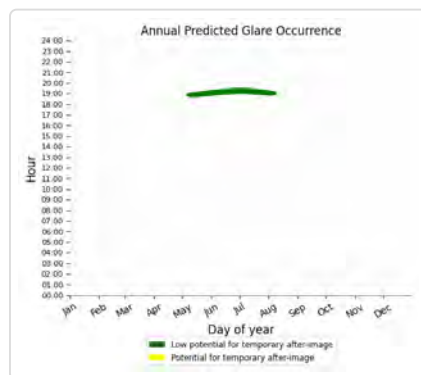
No glare found



## B01: Tobacco Heritage Trail

PV array is expected to produce the following glare for this receptor:

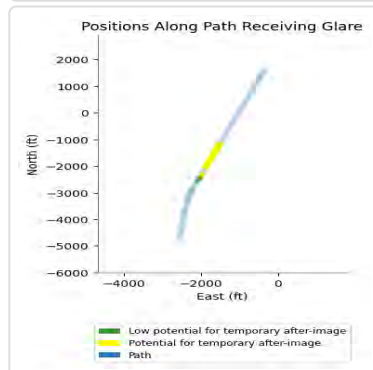
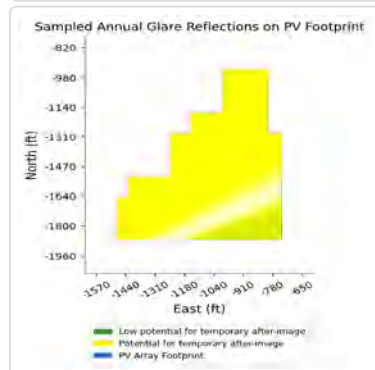
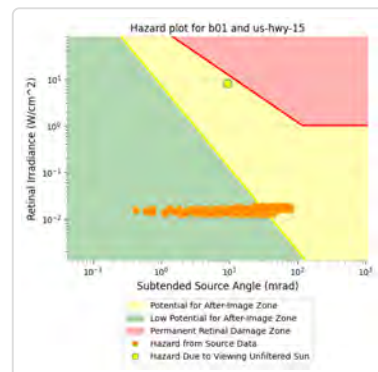
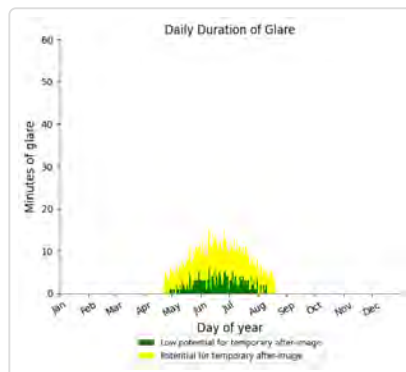
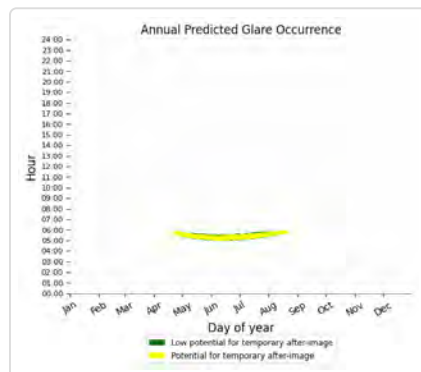
- 995 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## B01: US Hwy 15

PV array is expected to produce the following glare for this receptor:

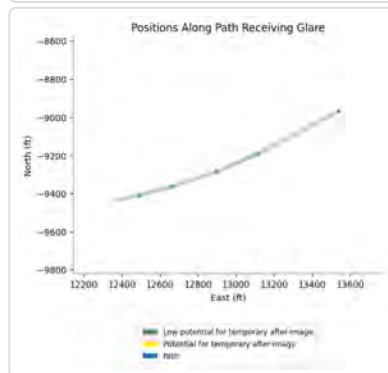
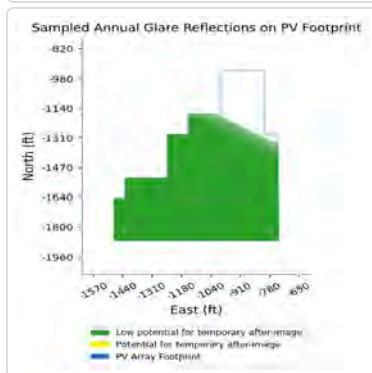
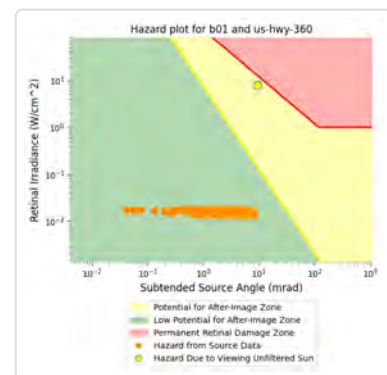
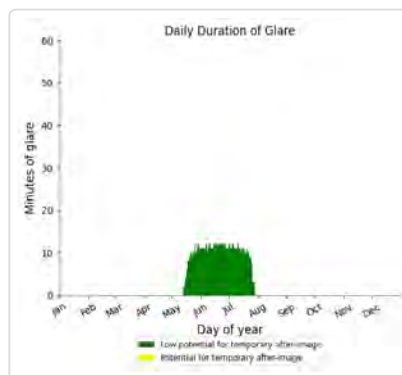
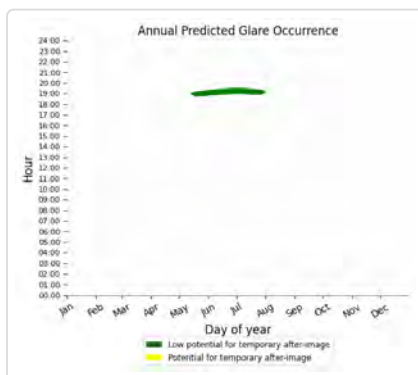
- 257 minutes of "green" glare with low potential to cause temporary after-image.
- 753 minutes of "yellow" glare with potential to cause temporary after-image.



## B01: US Hwy 360

PV array is expected to produce the following glare for this receptor:

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



## B02 no glare found

Component	Green glare (min)	Yellow glare (min)
OP: OP 100	0	0
OP: OP 101	0	0
OP: OP 102	0	0
OP: OP 103	0	0
OP: OP 104	0	0
OP: OP 105	0	0
OP: OP 106	0	0
OP: OP 107	0	0
OP: OP 108	0	0
OP: OP 109	0	0
OP: OP 110	0	0
OP: OP 111	0	0
OP: OP 112	0	0
OP: OP 113	0	0
OP: OP 114	0	0
OP: OP 115	0	0
OP: OP 116	0	0
OP: OP 117	0	0
Route: Collins Dr	0	0
Route: Country Dr Seg 1	0	0
Route: Country Dr Seg 2	0	0
Route: County Line Rd	0	0
Route: Dempseys Rd	0	0
Route: Harley Ln	0	0
Route: Henderson Rd	0	0
Route: Hillside Dr	0	0
Route: Ole Briery Station Rd Seg 1	0	0
Route: Ole Briery Station Rd Seg 2	0	0
Route: Thistle Knob Ln	0	0
Route: Tobacco Heritage Trail	0	0
Route: US Hwy 15	0	0
Route: US Hwy 360	0	0

No glare found

## B03 potential temporary after-image

Component	Green glare (min)	Yellow glare (min)
OP: OP 100	0	0
OP: OP 101	0	0
OP: OP 102	0	0
OP: OP 103	0	0
OP: OP 104	0	0
OP: OP 105	0	0
OP: OP 106	0	0
OP: OP 107	0	0

OP: OP 108	77	0
OP: OP 109	47	0
OP: OP 110	0	0
OP: OP 111	0	0
OP: OP 112	0	0
OP: OP 113	0	0
OP: OP 114	0	0
OP: OP 115	0	0
OP: OP 116	0	0
OP: OP 117	0	0
Route: Collins Dr	0	0
Route: Country Dr Seg 1	790	0
Route: Country Dr Seg 2	602	0
Route: County Line Rd	794	0
Route: Dempseys Rd	0	0
Route: Harley Ln	0	0
Route: Henderson Rd	0	0
Route: Hillside Dr	771	0
Route: Ole Briery Station Rd Seg 1	0	0
Route: Ole Briery Station Rd Seg 2	0	0
Route: Thistle Knob Ln	0	0
Route: Tobacco Heritage Trail	963	0
Route: US Hwy 15	895	301
Route: US Hwy 360	795	0

### **B03: OP 100**

*No glare found*

### **B03: OP 101**

*No glare found*

### **B03: OP 102**

*No glare found*

### **B03: OP 103**

*No glare found*

### **B03: OP 104**

*No glare found*

### **B03: OP 105**

*No glare found*

### **B03: OP 106**

*No glare found*

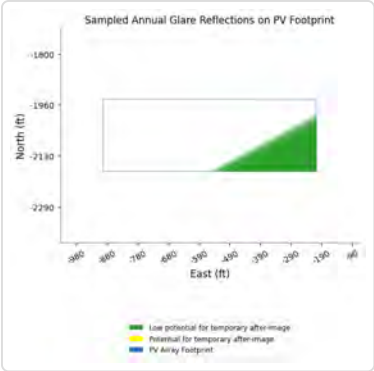
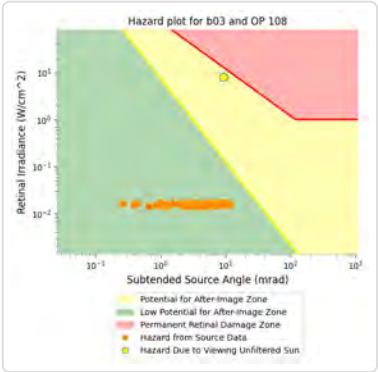
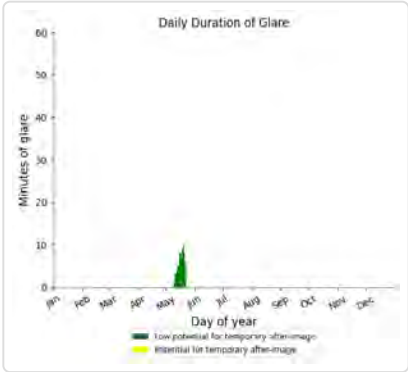
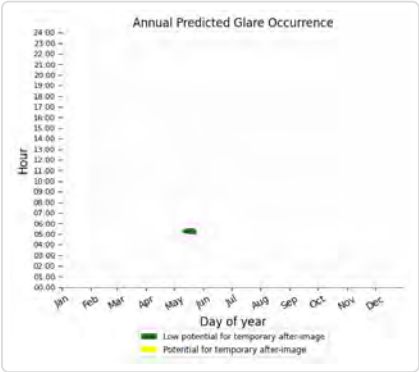
B03: OP 107

No glare found

B03: OP 108

PV array is expected to produce the following glare for this receptor:

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

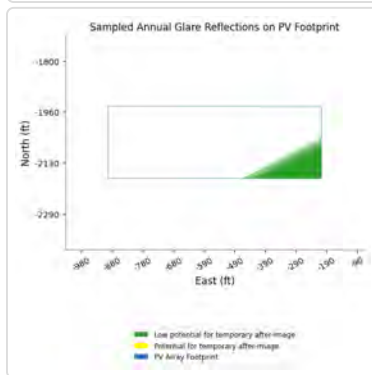
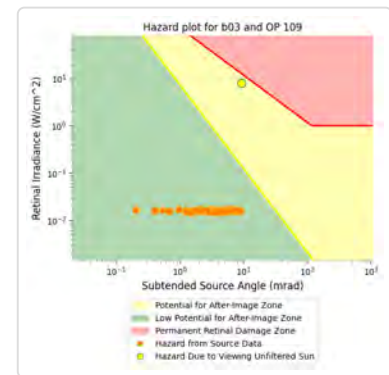
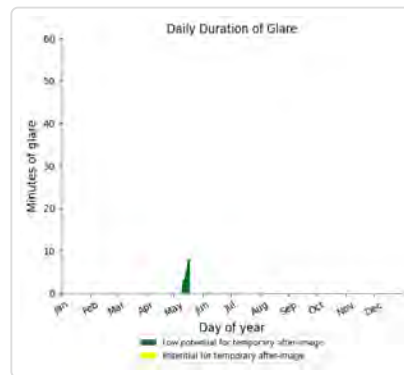
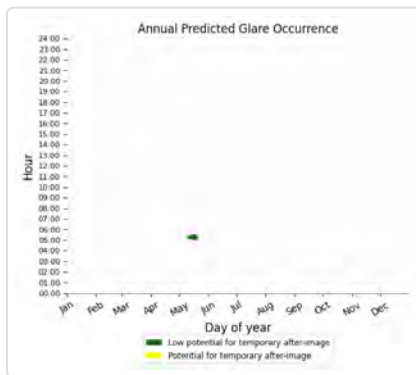




### B03: OP 109

PV array is expected to produce the following glare for this receptor:

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



### B03: OP 110

No glare found

### B03: OP 111

No glare found

### B03: OP 112

No glare found

### B03: OP 113

No glare found

### B03: OP 114

No glare found

### B03: OP 115

No glare found

### B03: OP 116

No glare found

### B03: OP 117

No glare found

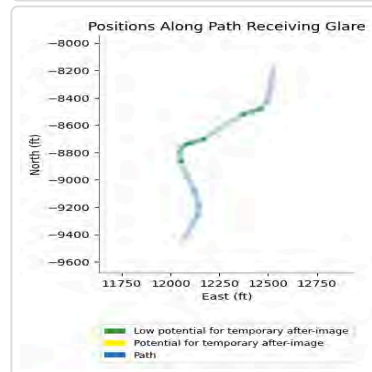
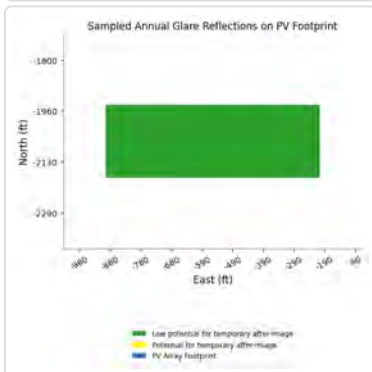
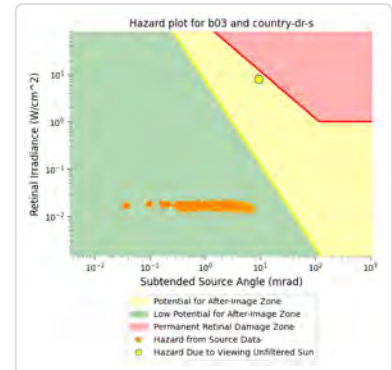
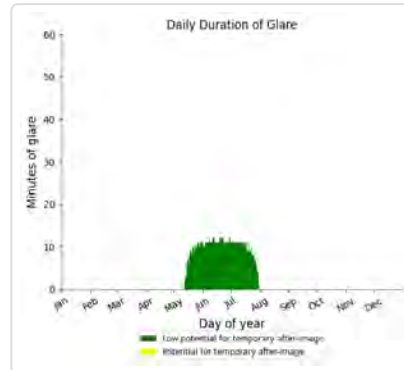
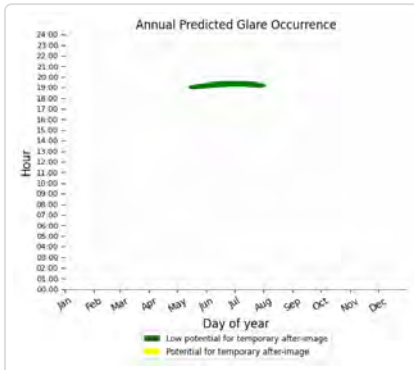
## B03: Collins Dr

No glare found

## B03: Country Dr Seg 1

PV array is expected to produce the following glare for this receptor:

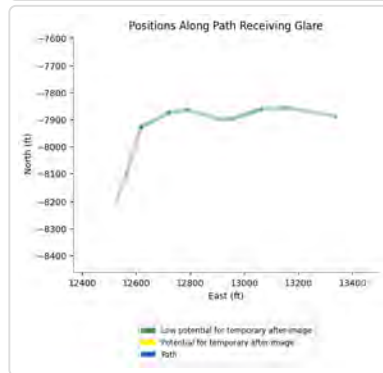
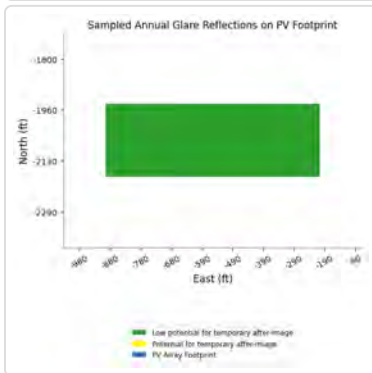
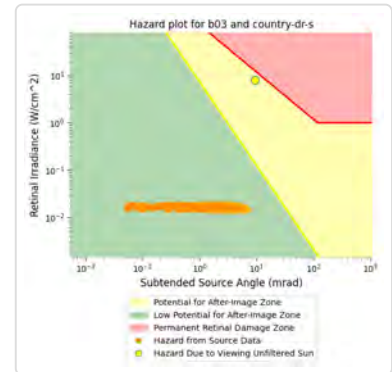
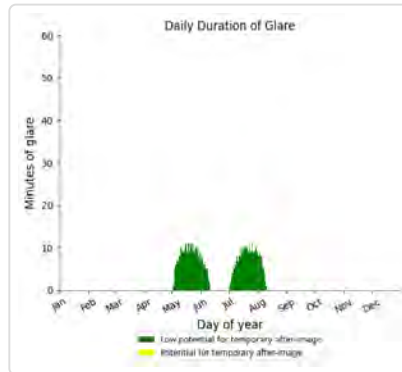
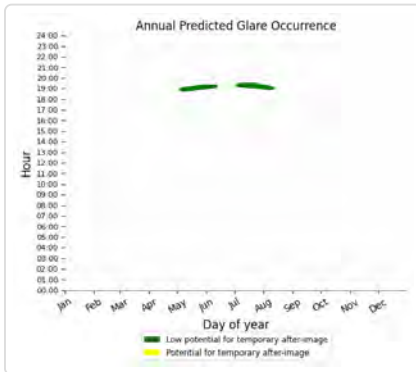
- 790 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## B03: Country Dr Seg 2

PV array is expected to produce the following glare for this receptor:

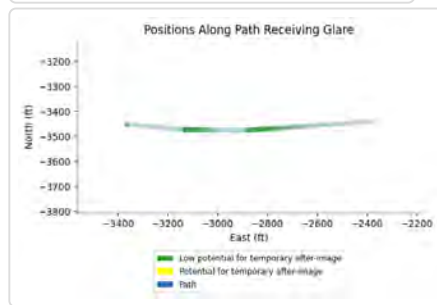
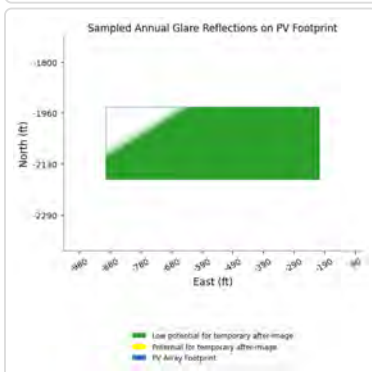
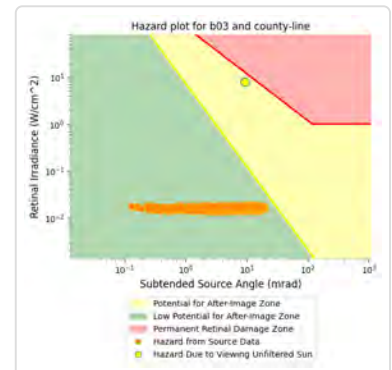
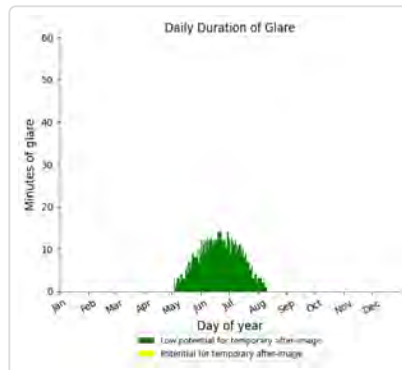
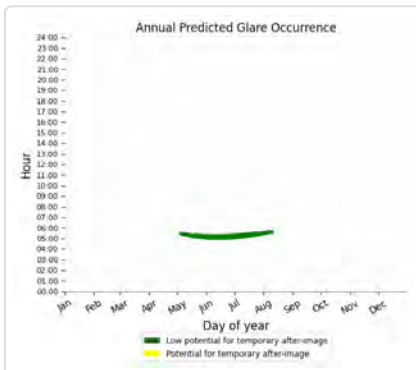
- 602 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## B03: County Line Rd

PV array is expected to produce the following glare for this receptor:

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



### B03: Dempseys Rd

No glare found

### B03: Harley Ln

No glare found

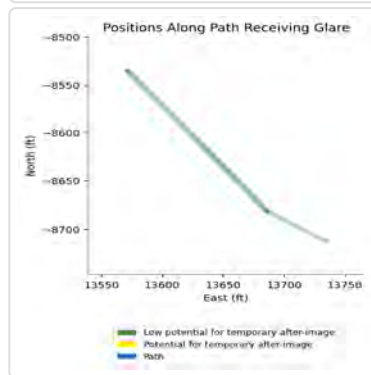
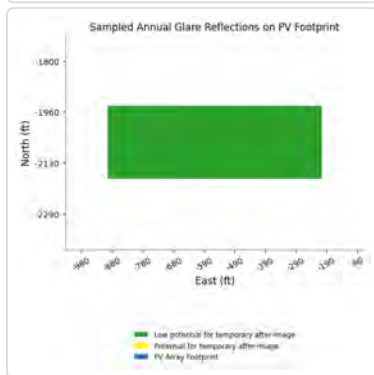
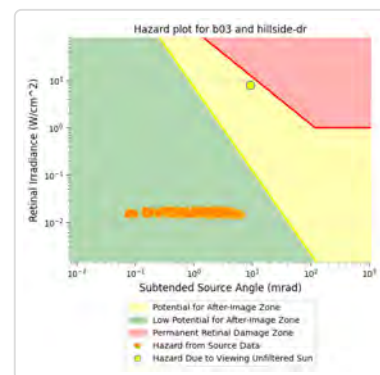
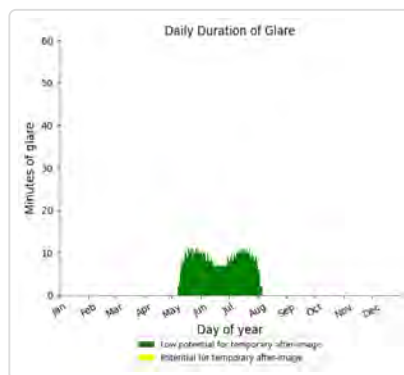
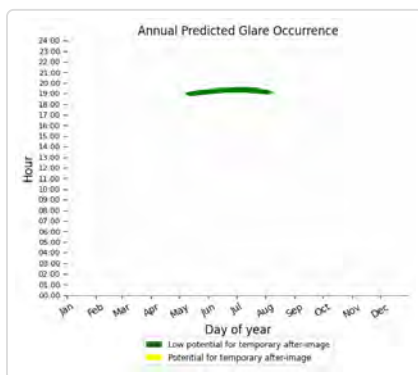
### B03: Henderson Rd

No glare found

### B03: Hillside Dr

PV array is expected to produce the following glare for this receptor:

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



### B03: Ole Briery Station Rd Seg 1

No glare found

### B03: Ole Briery Station Rd Seg 2

No glare found

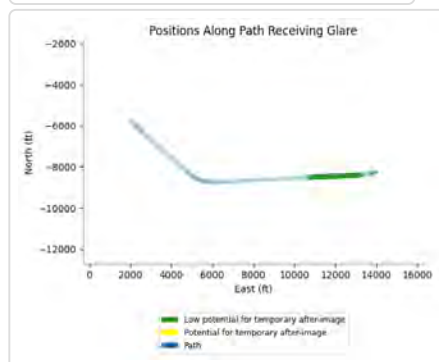
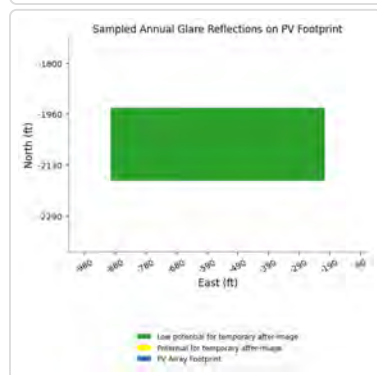
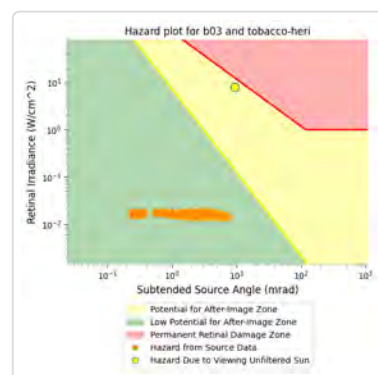
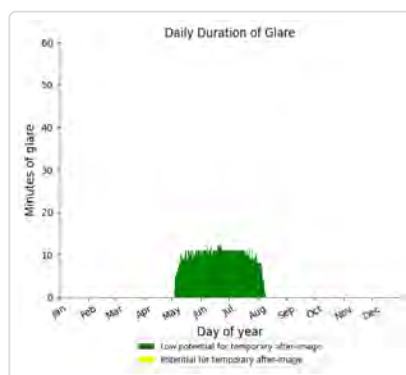
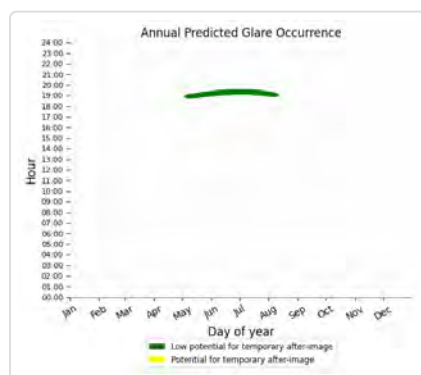
### B03: Thistle Knob Ln

No glare found

## B03: Tobacco Heritage Trail

PV array is expected to produce the following glare for this receptor:

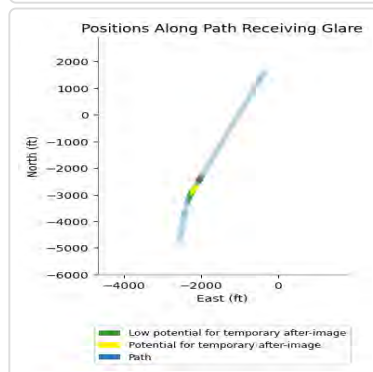
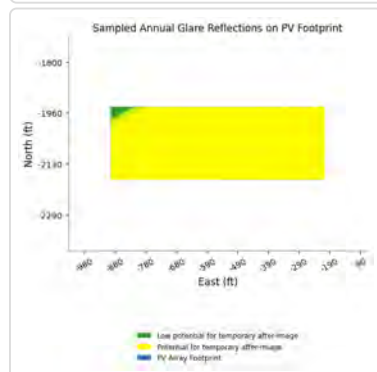
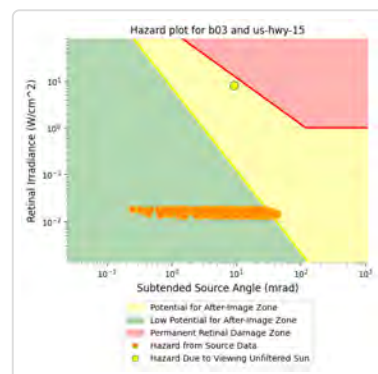
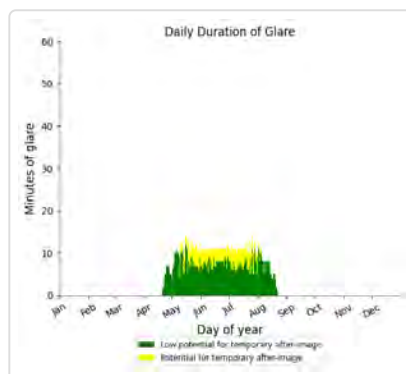
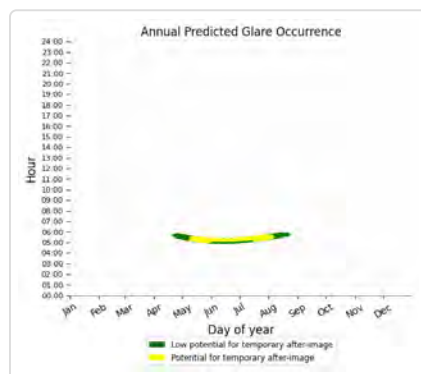
- 963 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## B03: US Hwy 15

PV array is expected to produce the following glare for this receptor:

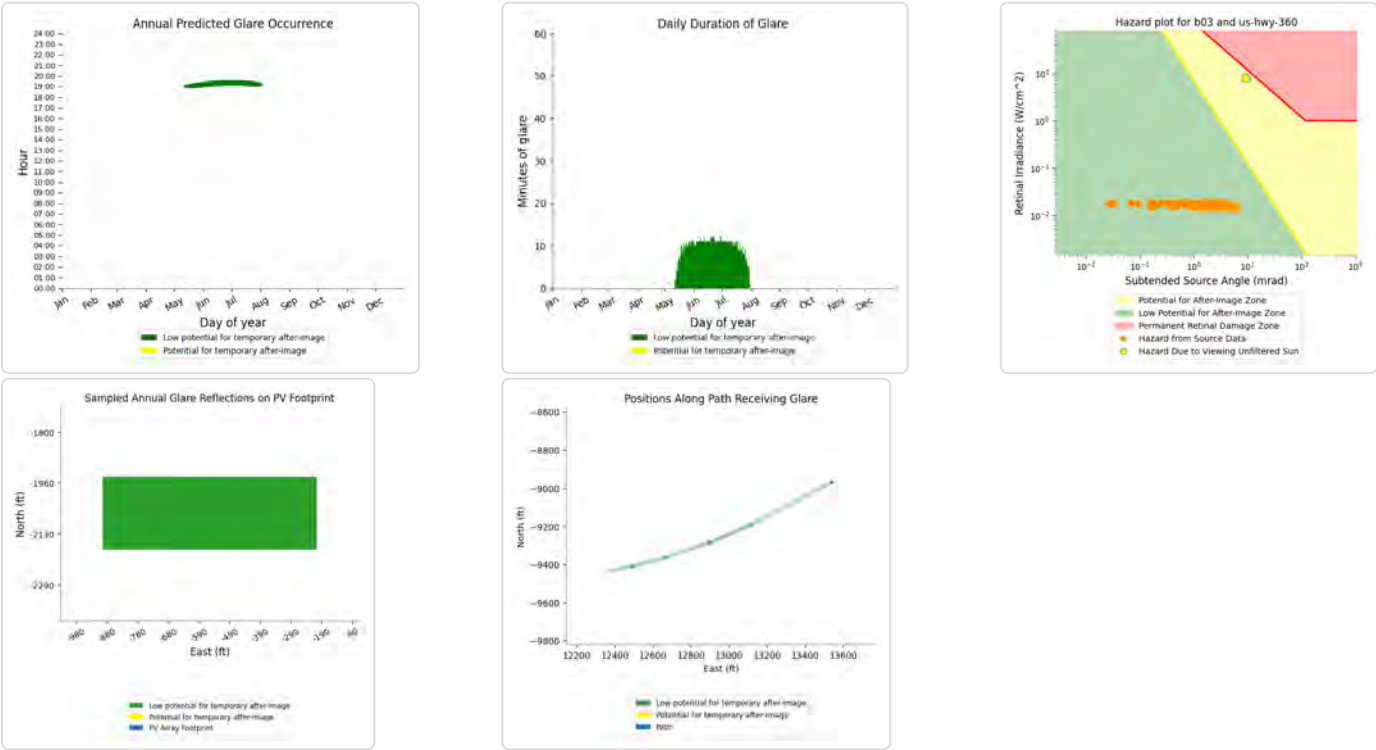
- 895 minutes of "green" glare with low potential to cause temporary after-image.
- 301 minutes of "yellow" glare with potential to cause temporary after-image.





B03: US Hwy 360

- PV array is expected to produce the following glare for this receptor:
- 795 minutes of "green" glare with low potential to cause temporary after-image.
  - 0 minutes of "yellow" glare with potential to cause temporary after-image.



B04 potential temporary after-image

Component	Green glare (min)	Yellow glare (min)
OP: OP 100	0	0
OP: OP 101	0	0
OP: OP 102	0	0
OP: OP 103	0	0
OP: OP 104	0	0
OP: OP 105	0	0
OP: OP 106	315	0
OP: OP 107	76	0
OP: OP 108	0	0
OP: OP 109	0	0
OP: OP 110	0	0
OP: OP 111	0	0
OP: OP 112	0	0
OP: OP 113	0	0
OP: OP 114	0	0
OP: OP 115	0	0
OP: OP 116	0	0
OP: OP 117	0	0
Route: Collins Dr	0	0
Route: Country Dr Seg 1	0	0
Route: Country Dr Seg 2	20	0
Route: County Line Rd	138	1

Route: Dempseys Rd	113	0
Route: Harley Ln	0	0
Route: Henderson Rd	0	0
Route: Hillside Dr	0	0
Route: Ole Briery Station Rd Seg 1	0	0
Route: Ole Briery Station Rd Seg 2	0	0
Route: Thistle Knob Ln	0	0
Route: Tobacco Heritage Trail	19	0
Route: US Hwy 15	0	0
Route: US Hwy 360	0	0

#### **B04: OP 100**

*No glare found*

#### **B04: OP 101**

*No glare found*

#### **B04: OP 102**

*No glare found*

#### **B04: OP 103**

*No glare found*

#### **B04: OP 104**

*No glare found*

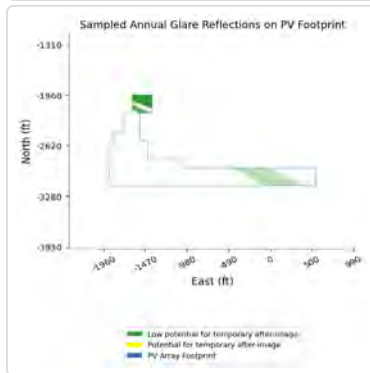
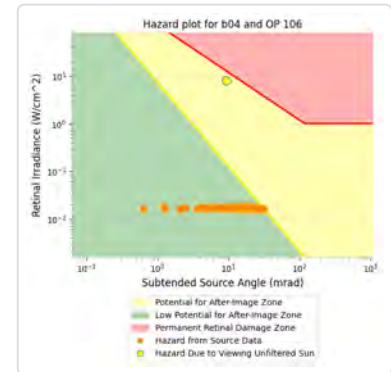
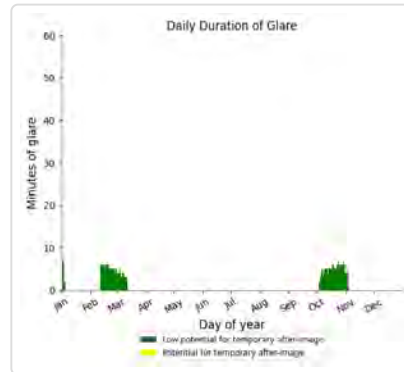
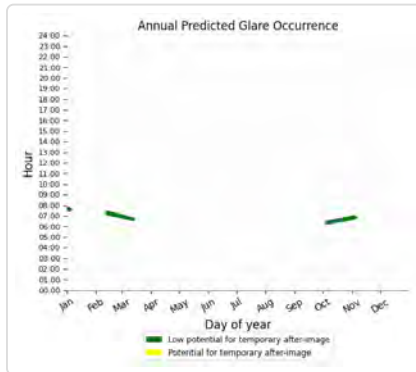
#### **B04: OP 105**

*No glare found*

## B04: OP 106

PV array is expected to produce the following glare for this receptor:

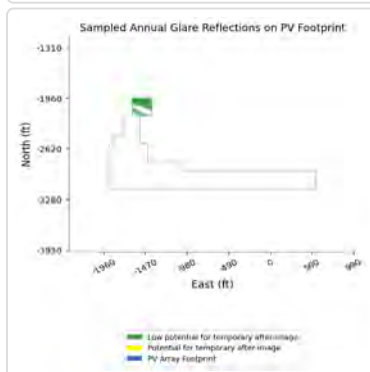
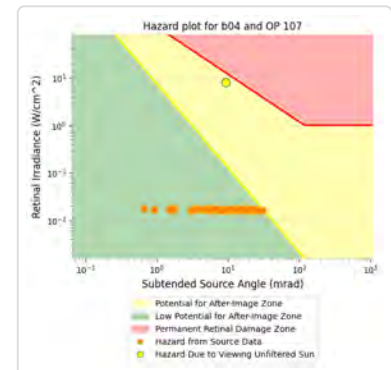
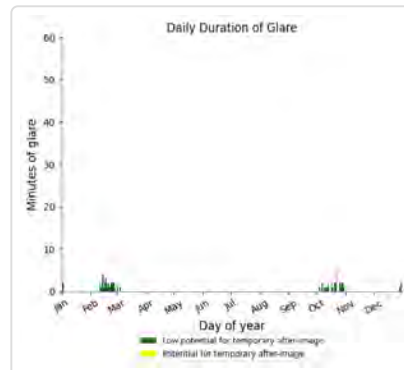
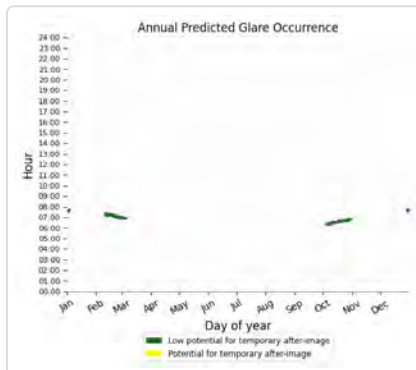
- 315 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## B04: OP 107

PV array is expected to produce the following glare for this receptor:

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



**B04: OP 108**

*No glare found*

**B04: OP 109**

*No glare found*

**B04: OP 110**

*No glare found*

**B04: OP 111**

*No glare found*

**B04: OP 112**

*No glare found*

**B04: OP 113**

*No glare found*

**B04: OP 114**

*No glare found*

**B04: OP 115**

*No glare found*

**B04: OP 116**

*No glare found*

**B04: OP 117**

*No glare found*

**B04: Collins Dr**

*No glare found*

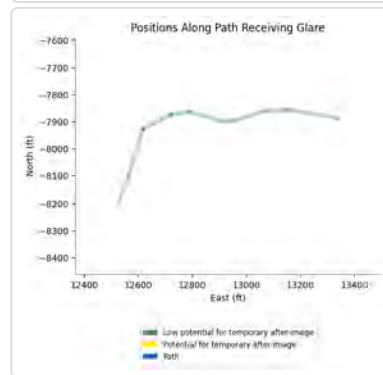
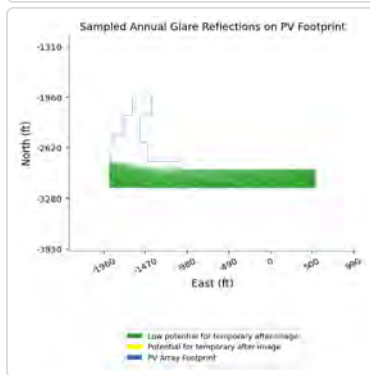
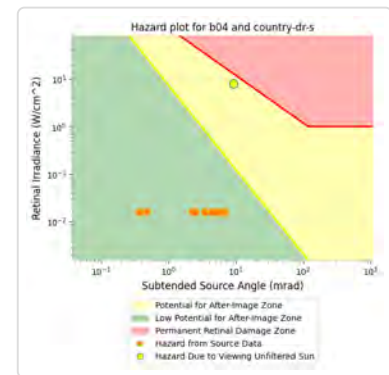
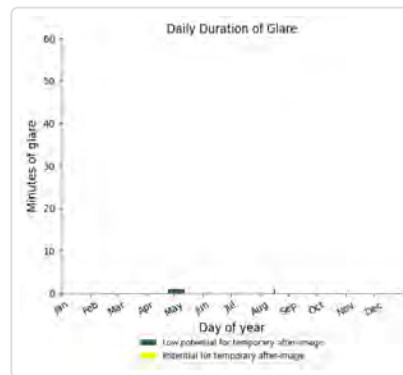
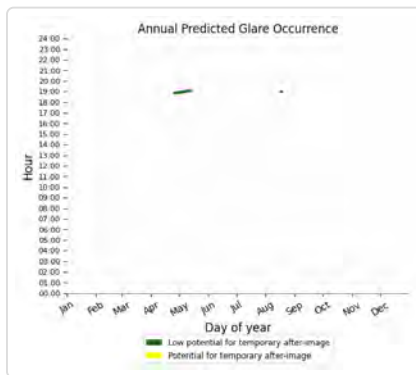
**B04: Country Dr Seg 1**

*No glare found*

## B04: Country Dr Seg 2

PV array is expected to produce the following glare for this receptor:

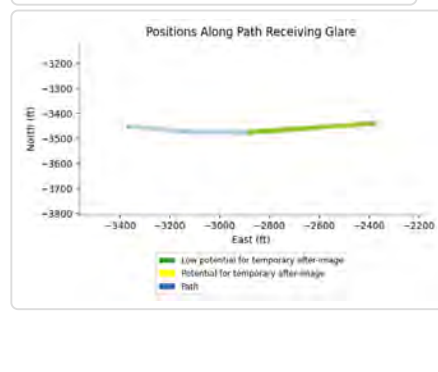
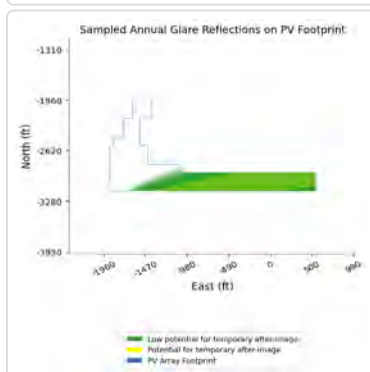
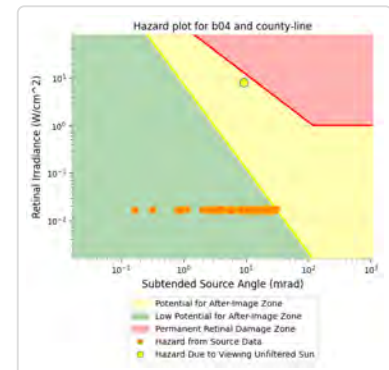
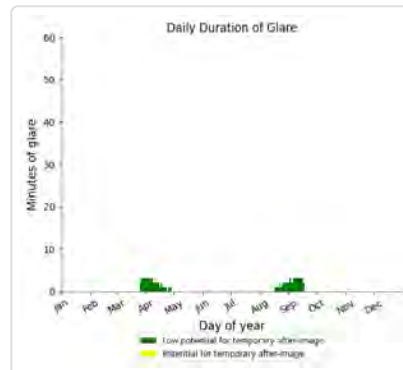
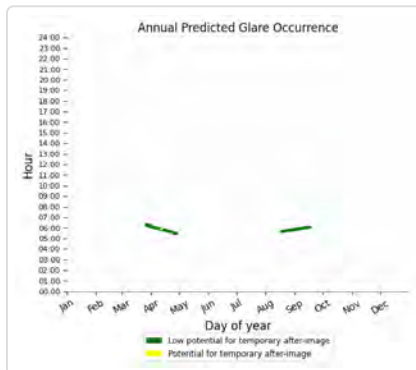
- 20 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## B04: County Line Rd

PV array is expected to produce the following glare for this receptor:

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

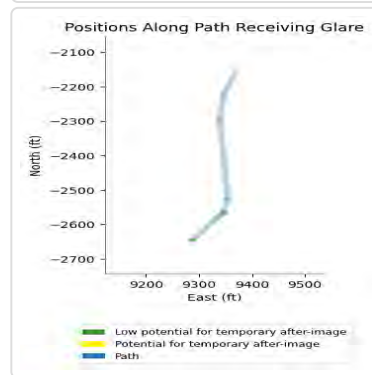
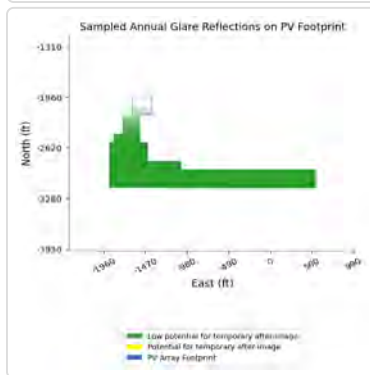
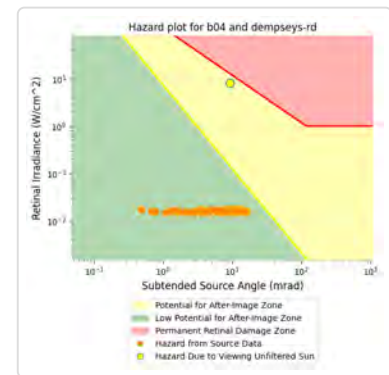
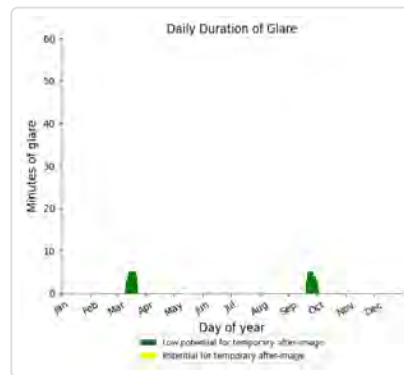
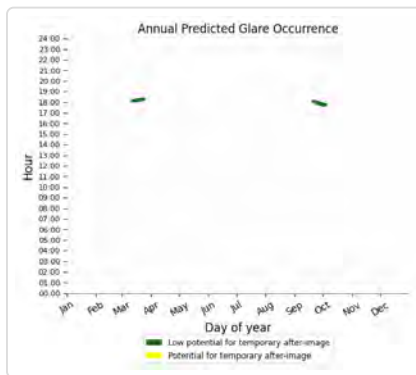




## B04: Dempseys Rd

PV array is expected to produce the following glare for this receptor:

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



## B04: Harley Ln

No glare found

## B04: Henderson Rd

No glare found

## B04: Hillside Dr

No glare found

## B04: Ole Briery Station Rd Seg 1

No glare found

## B04: Ole Briery Station Rd Seg 2

No glare found

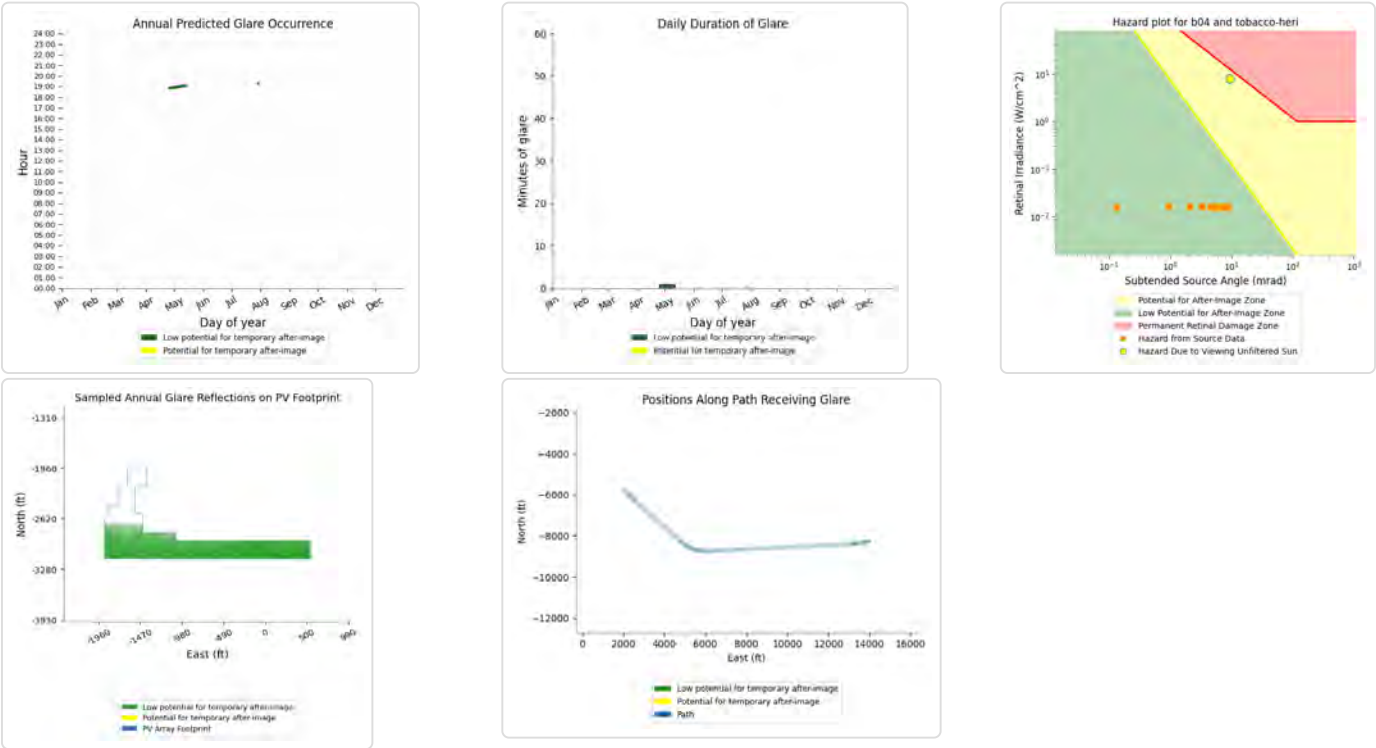
## B04: Thistle Knob Ln

No glare found

B04: Tobacco Heritage Trail

PV array is expected to produce the following glare for this receptor:

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



B04: US Hwy 15

No glare found

B04: US Hwy 360

No glare found

B05 low potential for temporary after-image

Component	Green glare (min)	Yellow glare (min)
OP: OP 100	0	0
OP: OP 101	0	0
OP: OP 102	0	0
OP: OP 103	0	0
OP: OP 104	0	0
OP: OP 105	0	0
OP: OP 106	0	0
OP: OP 107	0	0
OP: OP 108	0	0
OP: OP 109	0	0
OP: OP 110	0	0
OP: OP 111	254	0
OP: OP 112	0	0
OP: OP 113	0	0
OP: OP 114	147	0

OP: OP 115	257	0
OP: OP 116	0	0
OP: OP 117	0	0
Route: Collins Dr	0	0
Route: Country Dr Seg 1	632	0
Route: Country Dr Seg 2	399	0
Route: County Line Rd	48	0
Route: Dempseys Rd	84	0
Route: Harley Ln	0	0
Route: Henderson Rd	0	0
Route: Hillside Dr	503	0
Route: Ole Briery Station Rd Seg 1	0	0
Route: Ole Briery Station Rd Seg 2	0	0
Route: Thistle Knob Ln	0	0
Route: Tobacco Heritage Trail	752	0
Route: US Hwy 15	0	0
Route: US Hwy 360	634	0

#### **B05: OP 100**

*No glare found*

#### **B05: OP 101**

*No glare found*

#### **B05: OP 102**

*No glare found*

#### **B05: OP 103**

*No glare found*

#### **B05: OP 104**

*No glare found*

#### **B05: OP 105**

*No glare found*

#### **B05: OP 106**

*No glare found*

#### **B05: OP 107**

*No glare found*

#### **B05: OP 108**

*No glare found*

## B05: OP 109

No glare found

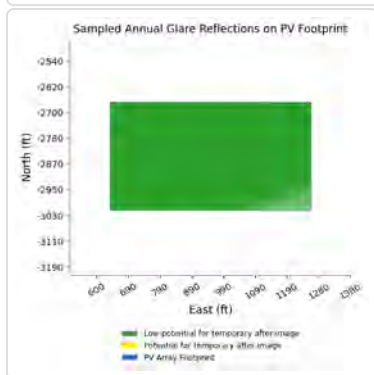
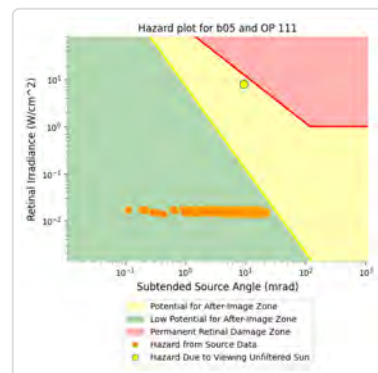
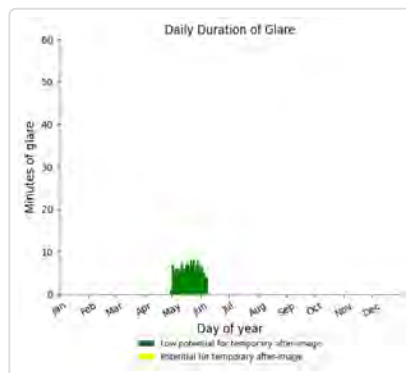
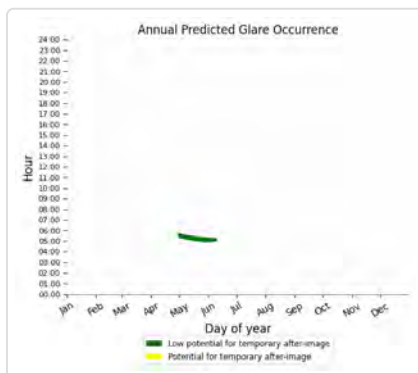
## B05: OP 110

No glare found

## B05: OP 111

PV array is expected to produce the following glare for this receptor:

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



## B05: OP 112

No glare found

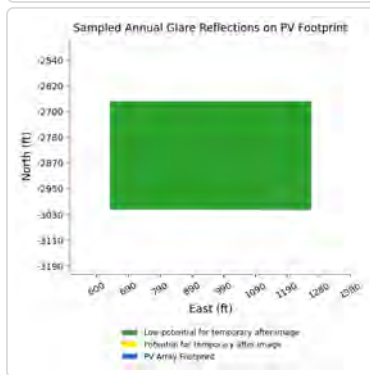
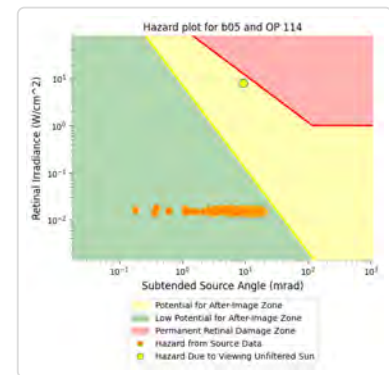
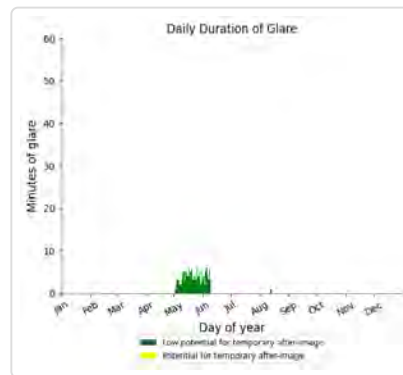
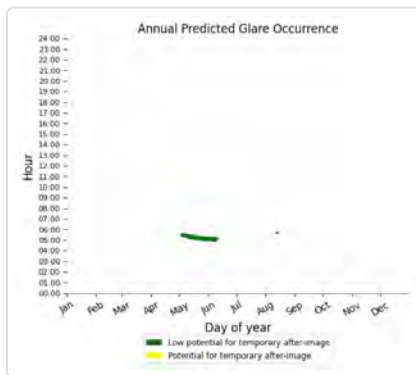
## B05: OP 113

No glare found

## B05: OP 114

PV array is expected to produce the following glare for this receptor:

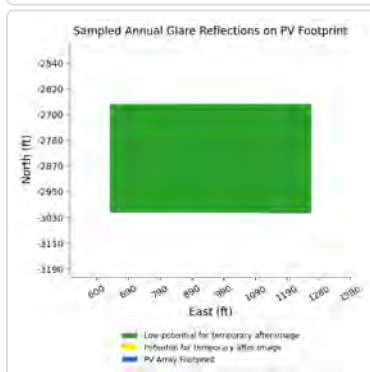
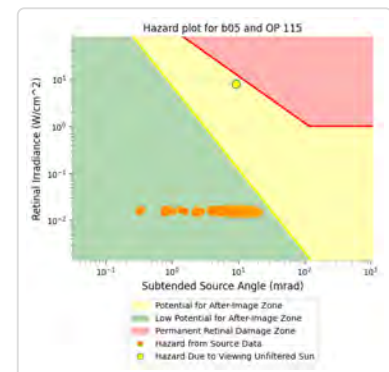
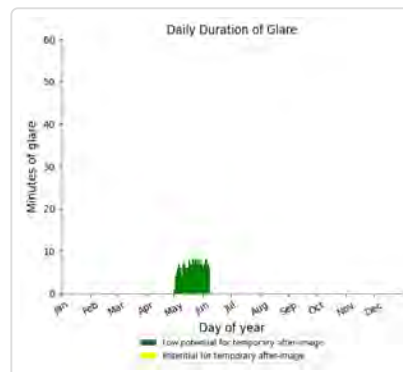
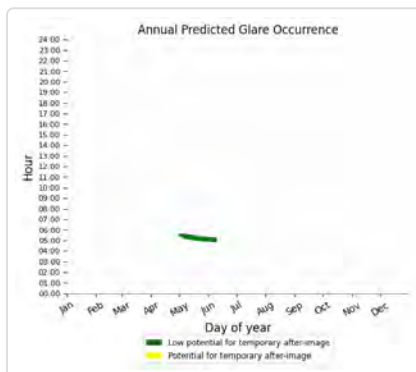
- 147 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## B05: OP 115

PV array is expected to produce the following glare for this receptor:

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





## B05: OP 116

No glare found

## B05: OP 117

No glare found

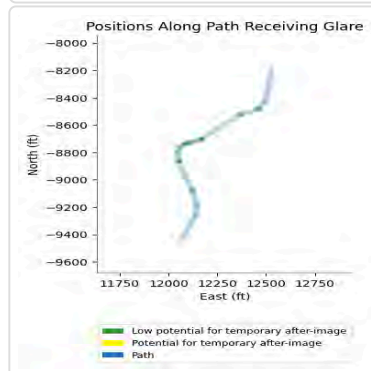
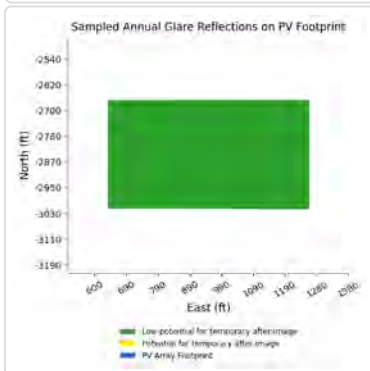
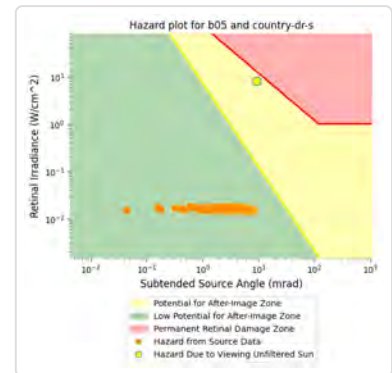
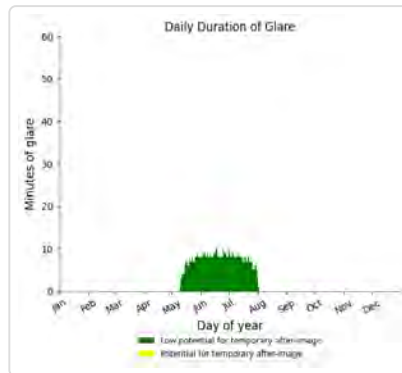
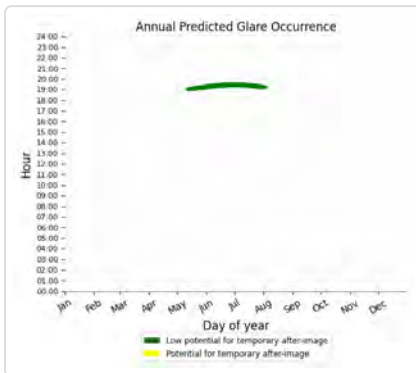
## B05: Collins Dr

No glare found

## B05: Country Dr Seg 1

PV array is expected to produce the following glare for this receptor:

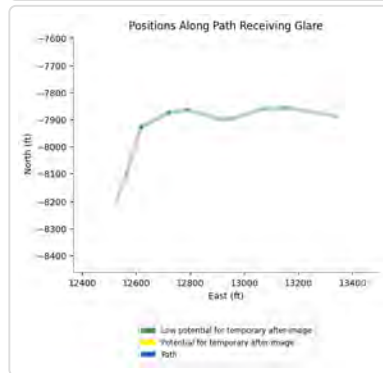
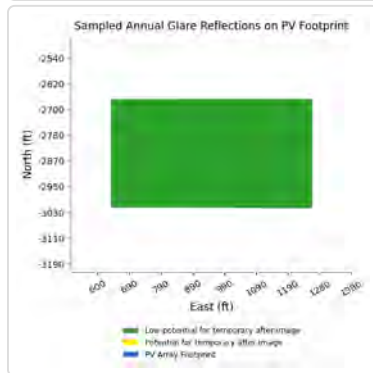
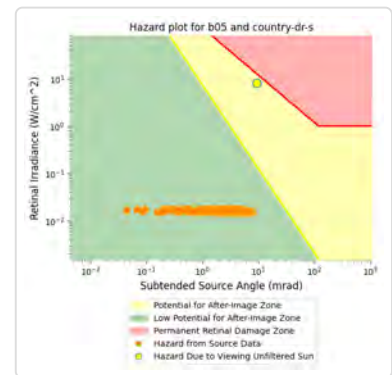
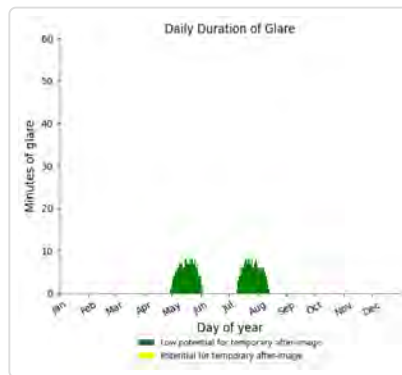
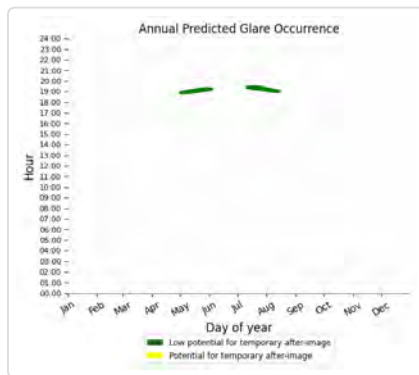
- 632 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## B05: Country Dr Seg 2

PV array is expected to produce the following glare for this receptor:

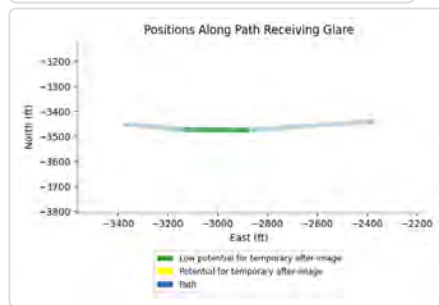
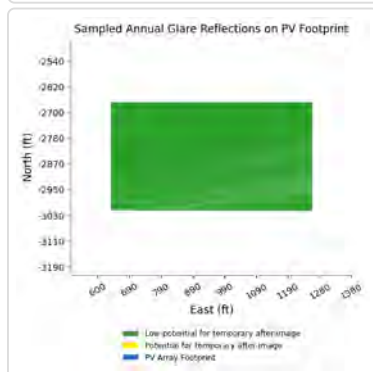
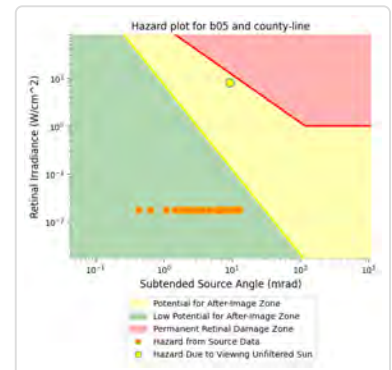
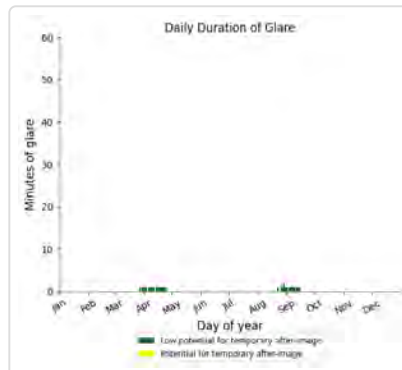
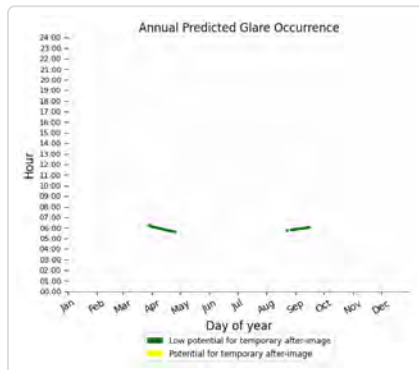
- 399 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## B05: County Line Rd

PV array is expected to produce the following glare for this receptor:

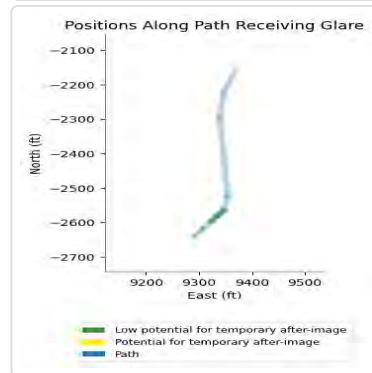
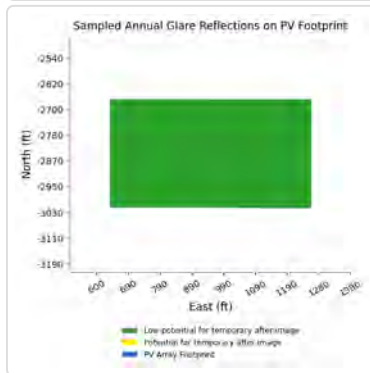
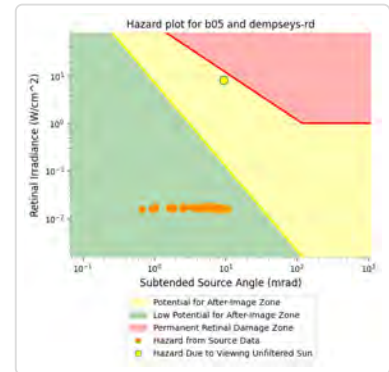
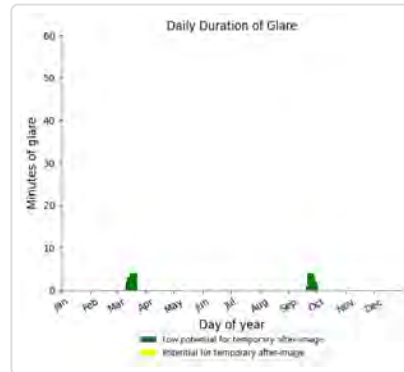
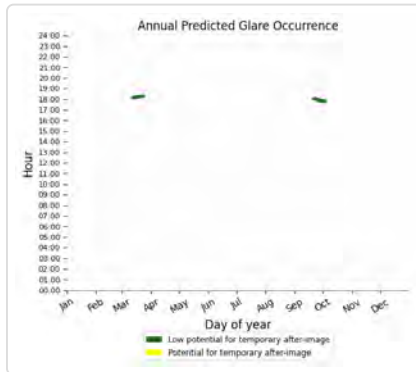
- 48 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## B05: Dempseys Rd

PV array is expected to produce the following glare for this receptor:

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



## B05: Harley Ln

No glare found

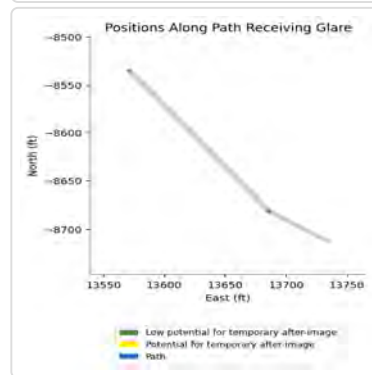
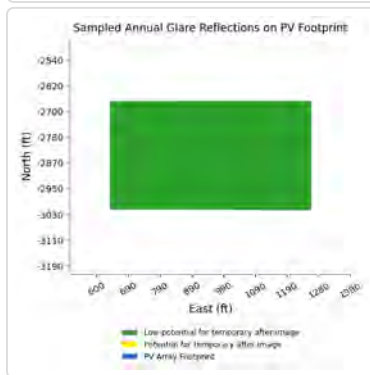
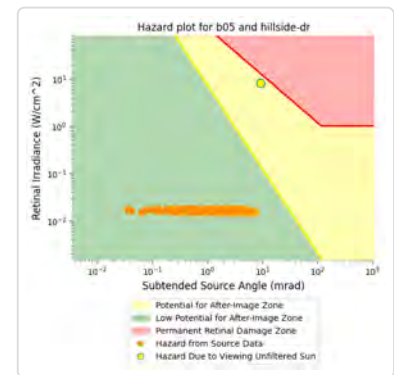
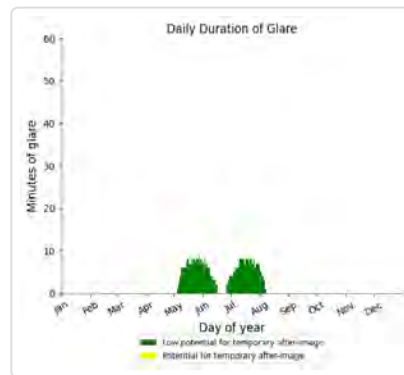
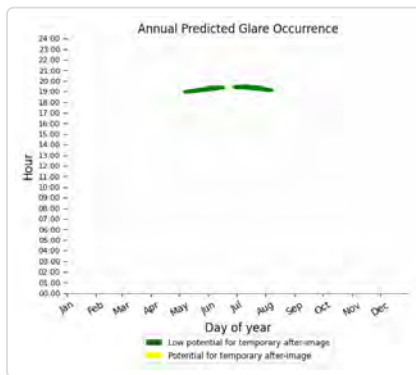
## B05: Henderson Rd

No glare found

## B05: Hillside Dr

PV array is expected to produce the following glare for this receptor:

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



## B05: Ole Briery Station Rd Seg 1

No glare found

## B05: Ole Briery Station Rd Seg 2

No glare found

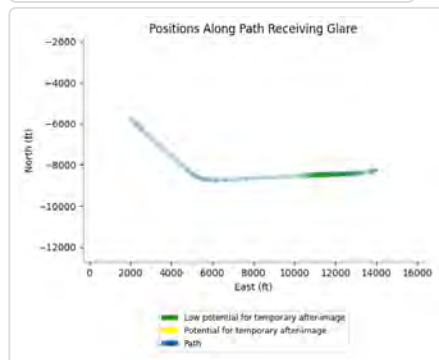
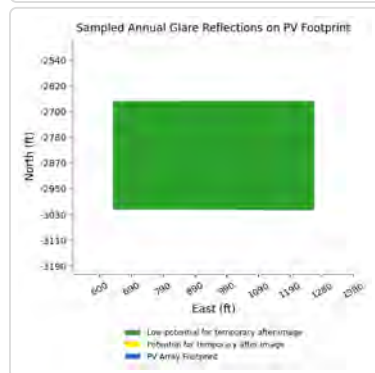
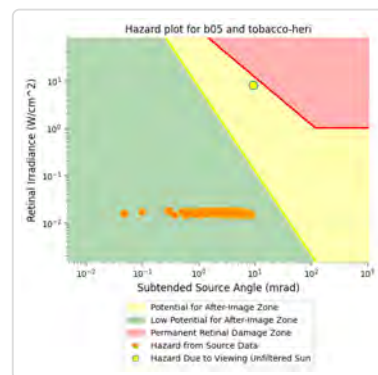
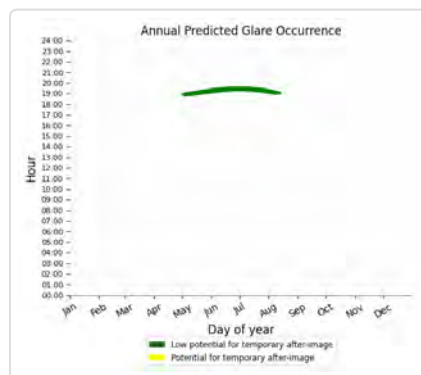
## B05: Thistle Knob Ln

No glare found

## B05: Tobacco Heritage Trail

PV array is expected to produce the following glare for this receptor:

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



## B05: US Hwy 15

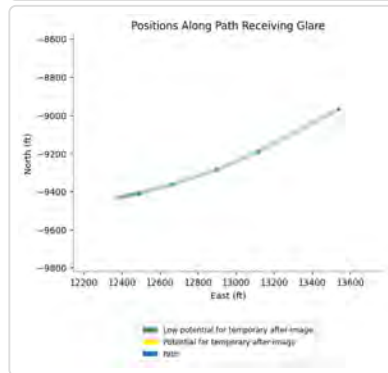
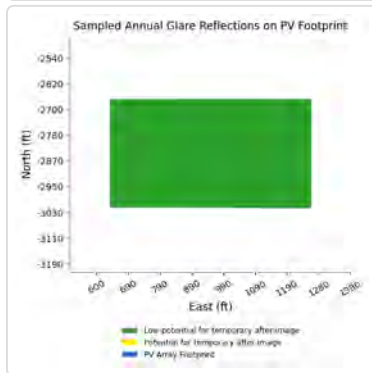
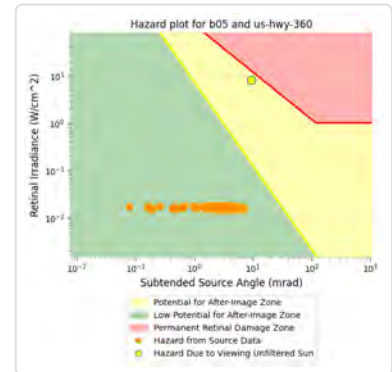
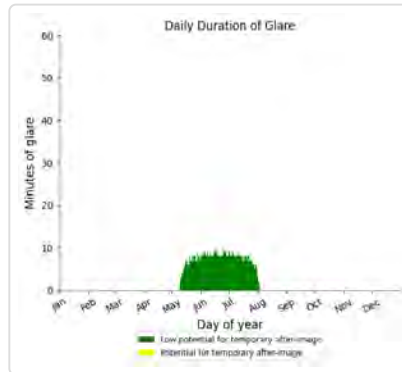
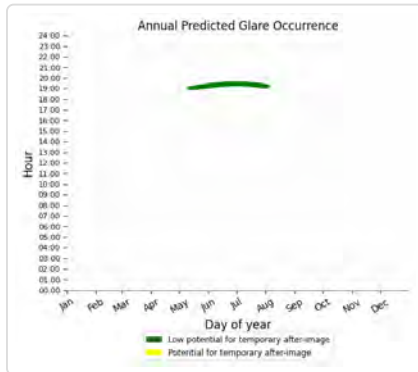
No glare found



## B05: US Hwy 360

PV array is expected to produce the following glare for this receptor:

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



## B06 potential temporary after-image

Component	Green glare (min)	Yellow glare (min)
OP: OP 100	0	0
OP: OP 101	0	0
OP: OP 102	0	0
OP: OP 103	0	0
OP: OP 104	0	0
OP: OP 105	0	0
OP: OP 106	0	0
OP: OP 107	0	0
OP: OP 108	0	0
OP: OP 109	50	0
OP: OP 110	228	245
OP: OP 111	390	254
OP: OP 112	0	0
OP: OP 113	347	163
OP: OP 114	274	63
OP: OP 115	289	85
OP: OP 116	0	0
OP: OP 117	0	0
Route: Collins Dr	0	0
Route: Country Dr Seg 1	1150	0
Route: Country Dr Seg 2	649	0
Route: County Line Rd	271	174

Route: Dempseys Rd	15	0
Route: Harley Ln	0	0
Route: Henderson Rd	0	0
Route: Hillside Dr	704	0
Route: Ole Briery Station Rd Seg 1	303	0
Route: Ole Briery Station Rd Seg 2	738	0
Route: Thistle Knob Ln	202	0
Route: Tobacco Heritage Trail	1310	0
Route: US Hwy 15	0	42
Route: US Hwy 360	1153	0

#### **B06: OP 100**

*No glare found*

#### **B06: OP 101**

*No glare found*

#### **B06: OP 102**

*No glare found*

#### **B06: OP 103**

*No glare found*

#### **B06: OP 104**

*No glare found*

#### **B06: OP 105**

*No glare found*

#### **B06: OP 106**

*No glare found*

#### **B06: OP 107**

*No glare found*

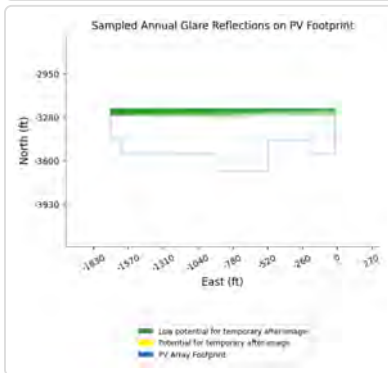
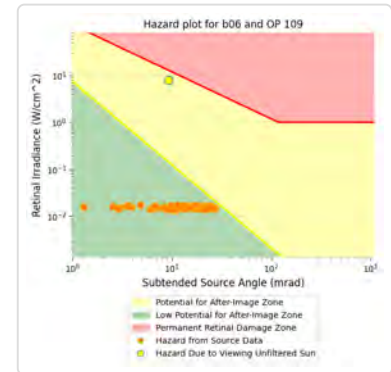
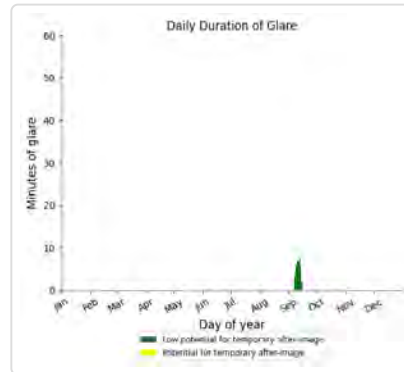
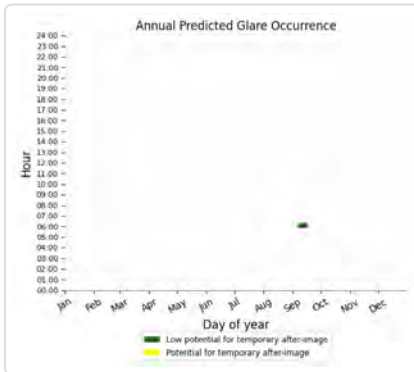
#### **B06: OP 108**

*No glare found*

## B06: OP 109

PV array is expected to produce the following glare for this receptor:

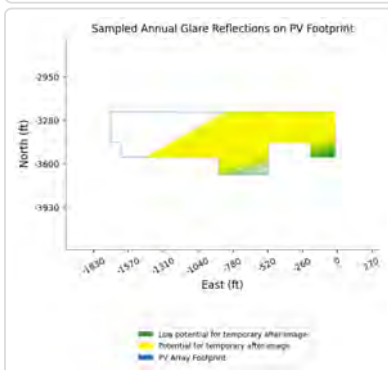
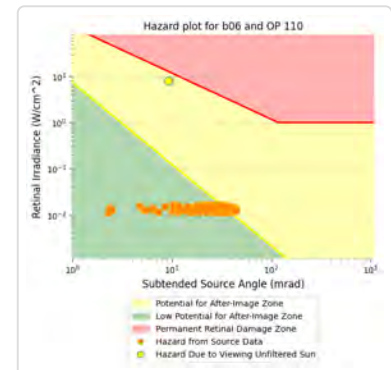
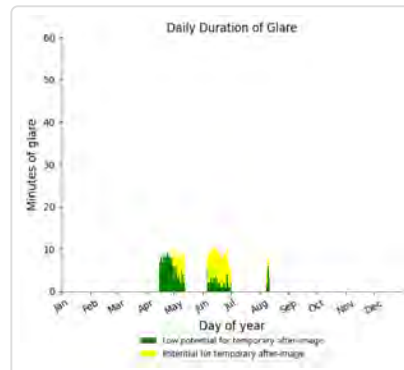
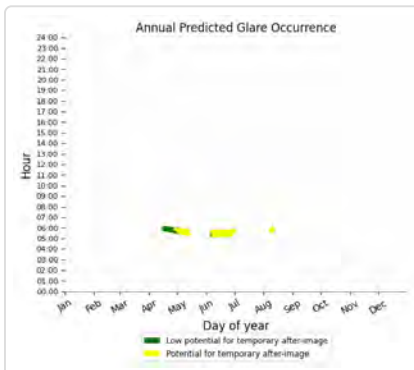
- 50 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## B06: OP 110

PV array is expected to produce the following glare for this receptor:

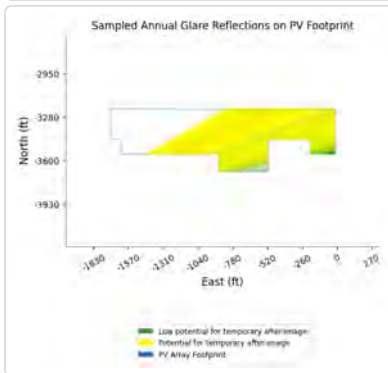
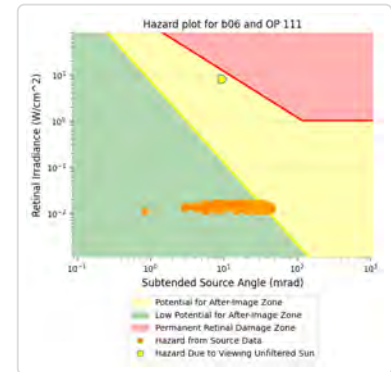
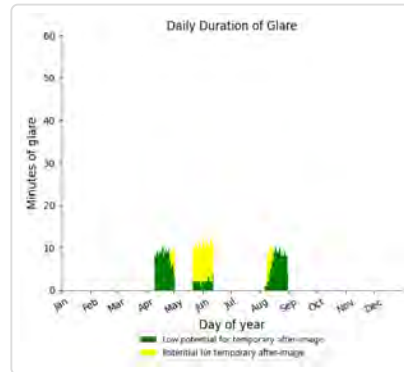
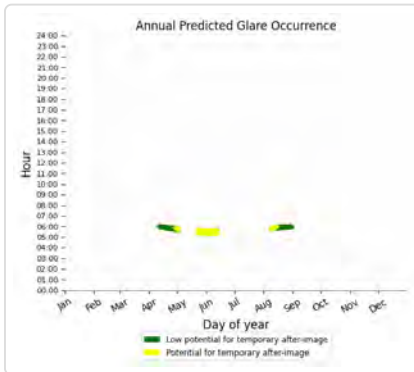
- 228 minutes of "green" glare with low potential to cause temporary after-image.
- 245 minutes of "yellow" glare with potential to cause temporary after-image.



## B06: OP 111

PV array is expected to produce the following glare for this receptor:

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



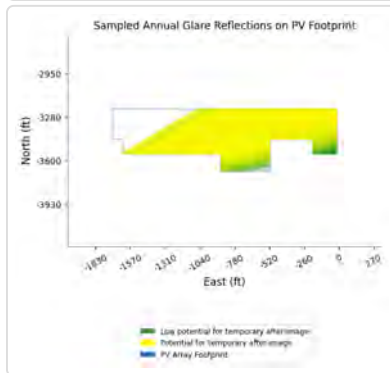
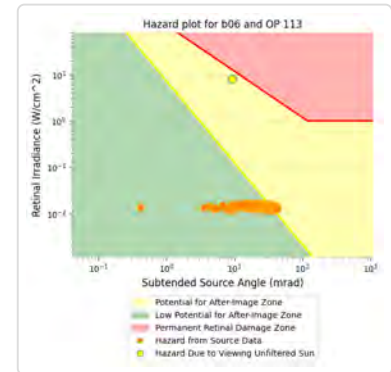
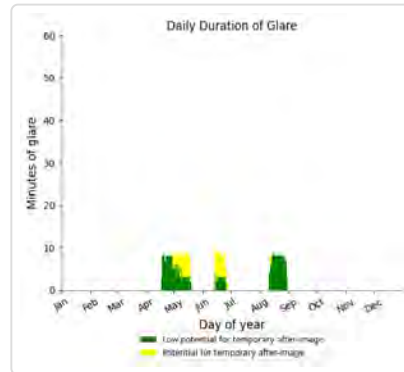
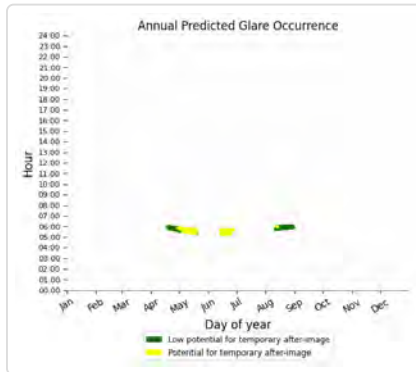
## B06: OP 112

No glare found

## B06: OP 113

PV array is expected to produce the following glare for this receptor:

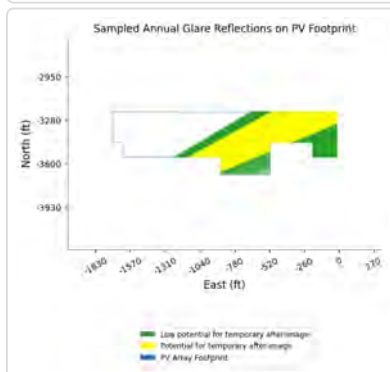
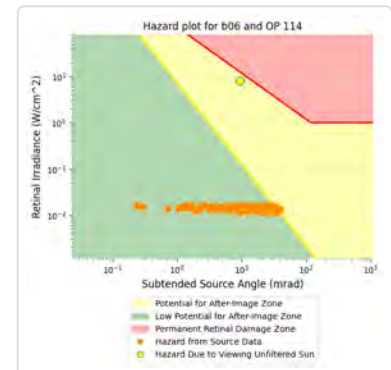
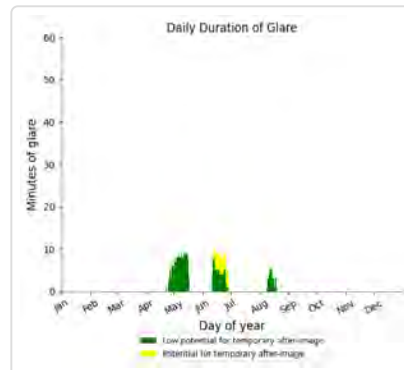
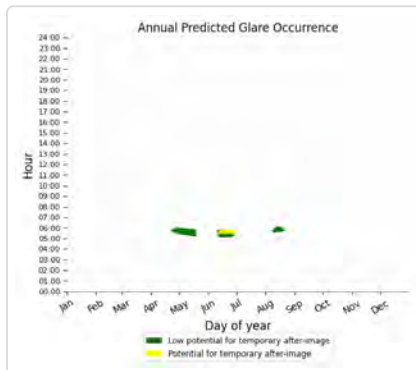
- 347 minutes of "green" glare with low potential to cause temporary after-image.
- 163 minutes of "yellow" glare with potential to cause temporary after-image.



## B06: OP 114

PV array is expected to produce the following glare for this receptor:

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

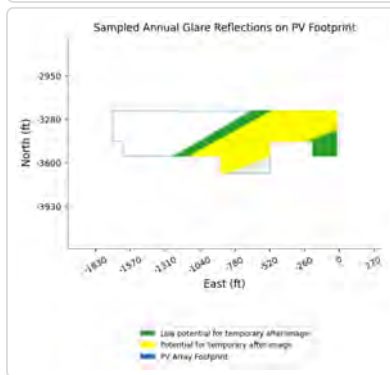
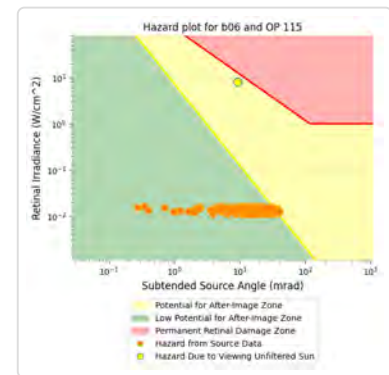
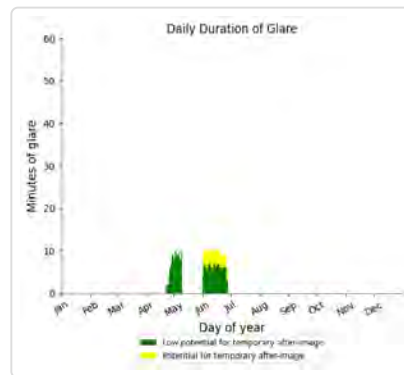
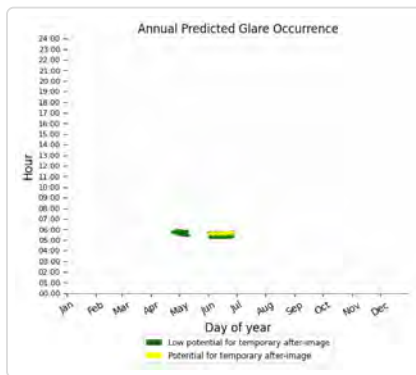




## B06: OP 115

PV array is expected to produce the following glare for this receptor:

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



## B06: OP 116

No glare found

## B06: OP 117

No glare found

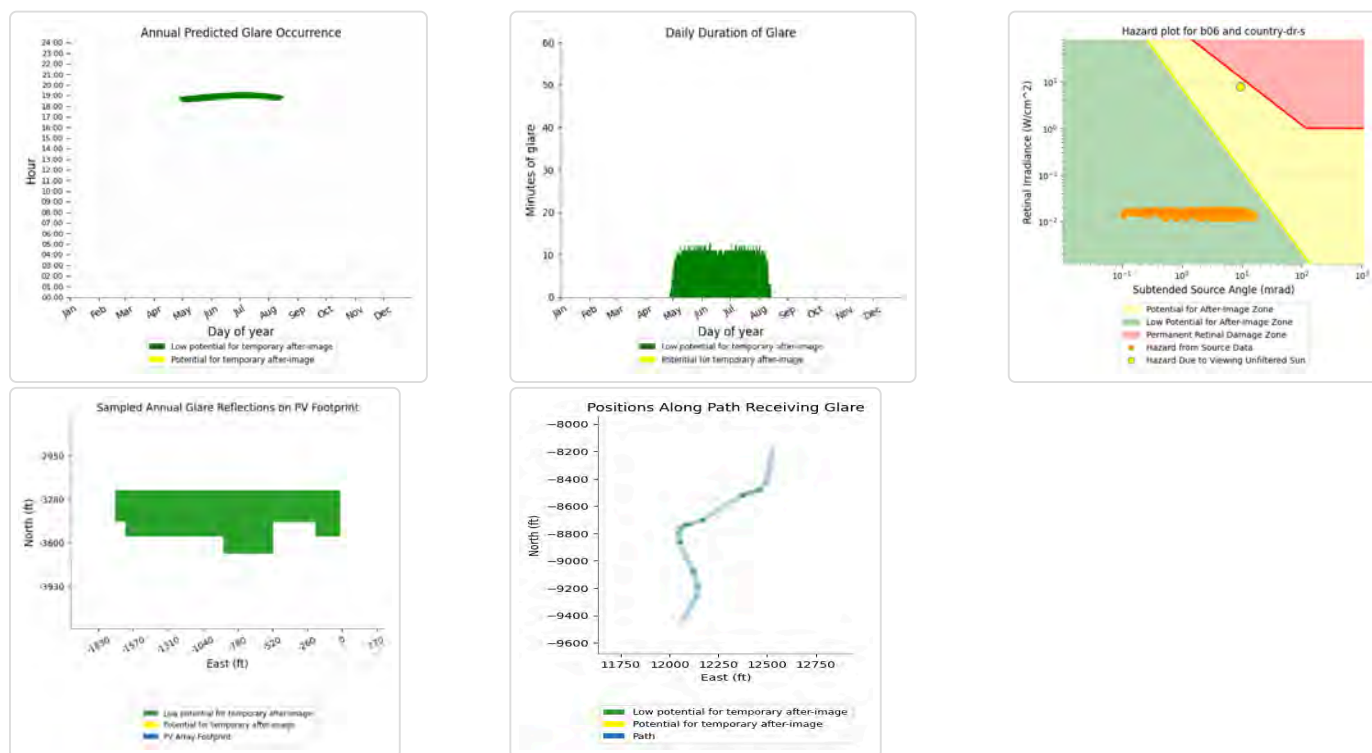
## B06: Collins Dr

No glare found

## B06: Country Dr Seg 1

PV array is expected to produce the following glare for this receptor:

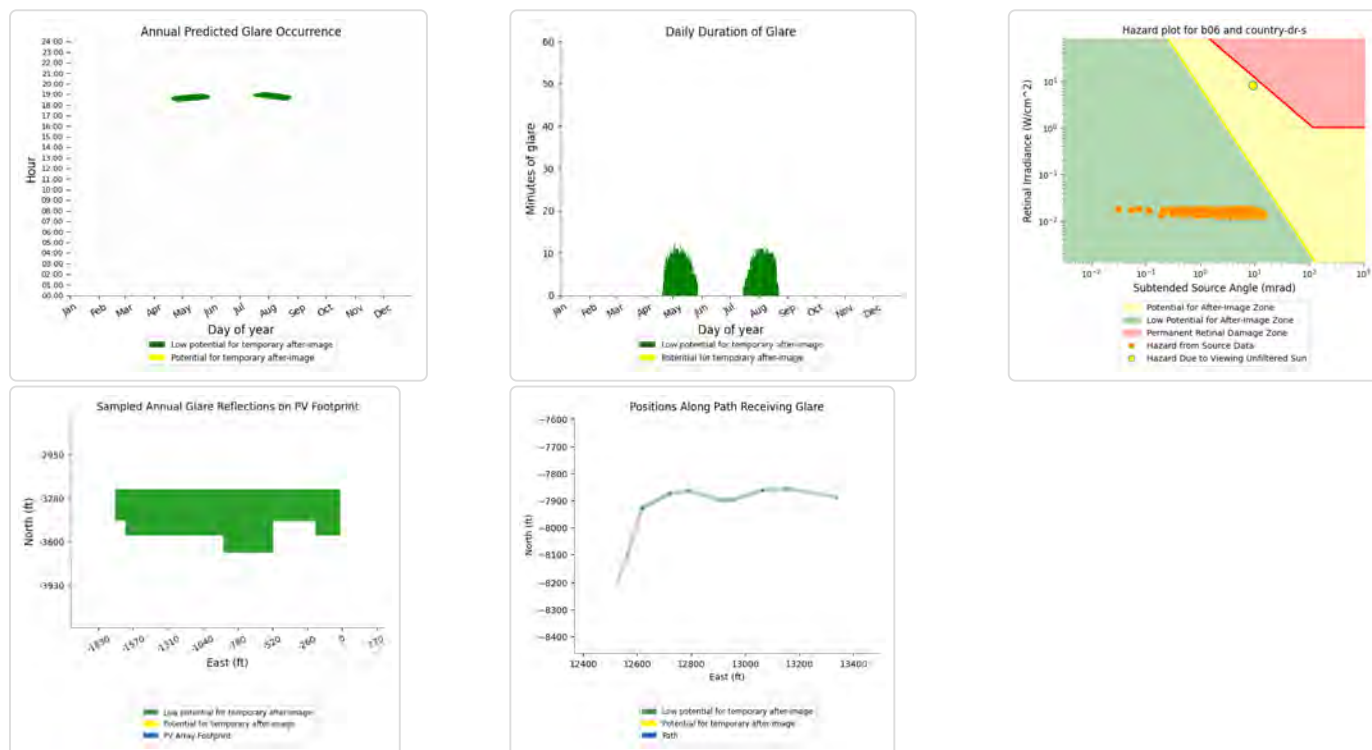
- 1,150 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## B06: Country Dr Seg 2

PV array is expected to produce the following glare for this receptor:

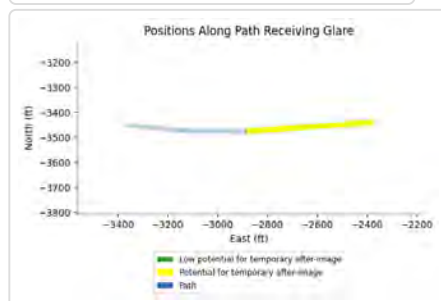
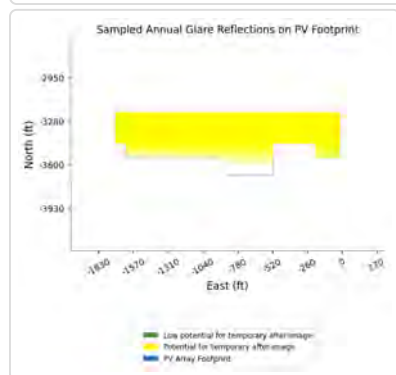
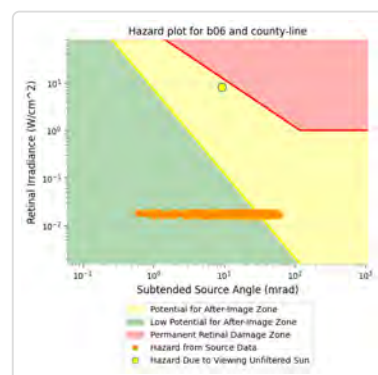
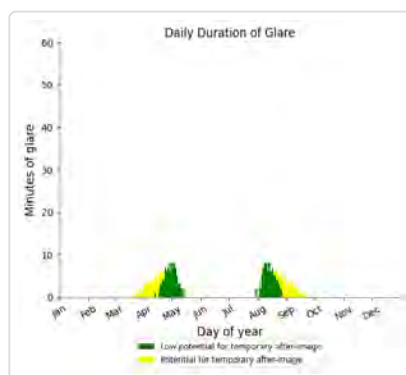
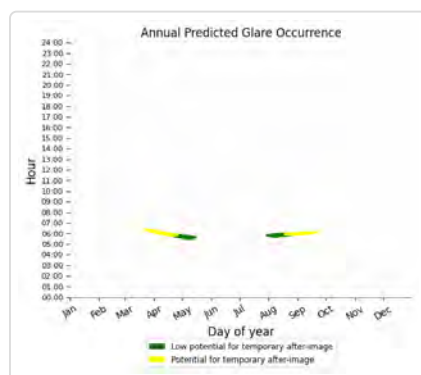
- 649 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## B06: County Line Rd

PV array is expected to produce the following glare for this receptor:

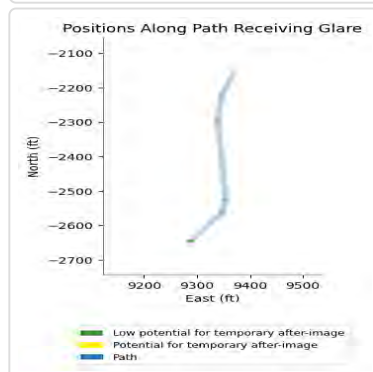
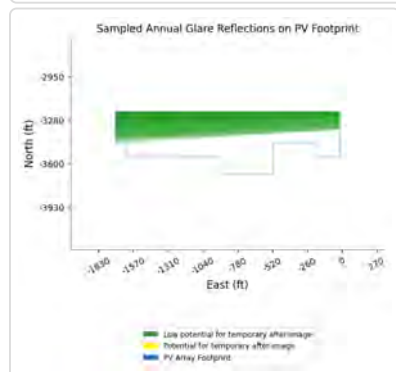
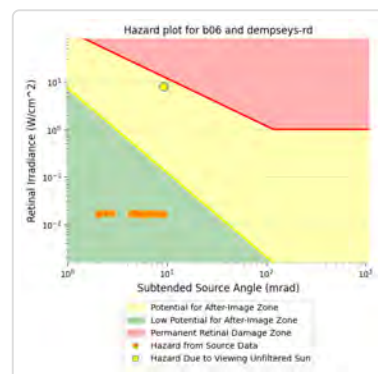
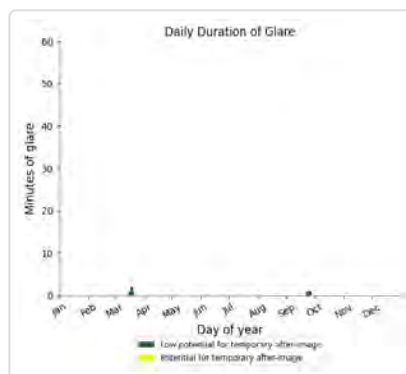
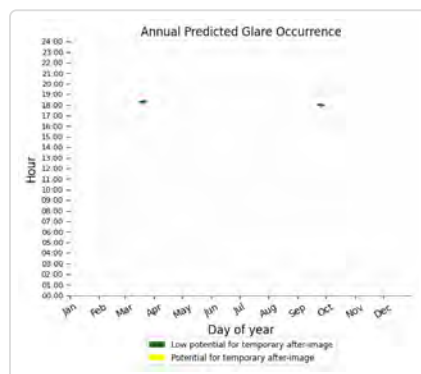
- 271 minutes of "green" glare with low potential to cause temporary after-image.
- 174 minutes of "yellow" glare with potential to cause temporary after-image.



## B06: Dempseys Rd

PV array is expected to produce the following glare for this receptor:

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



B06: Harley Ln

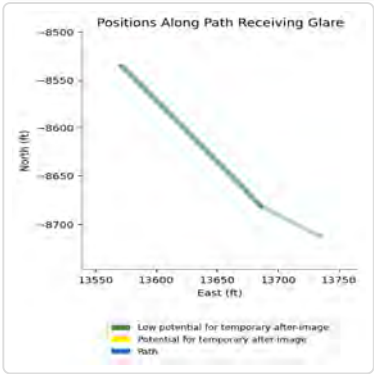
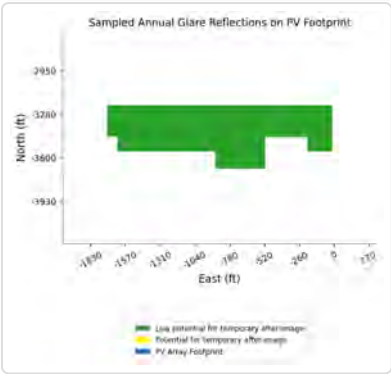
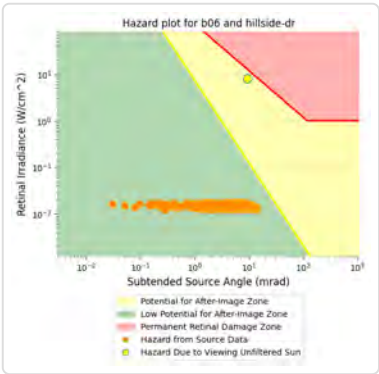
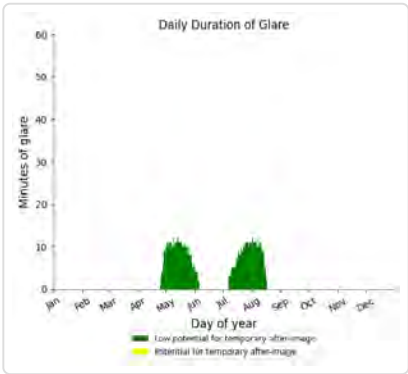
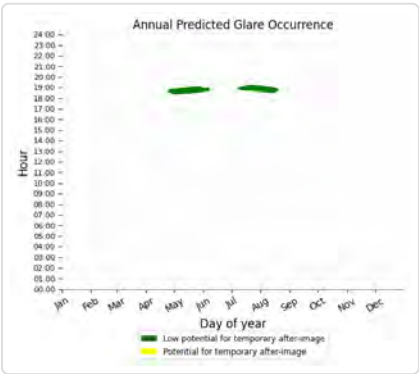
No glare found

B06: Henderson Rd

No glare found

B06: Hillside Dr

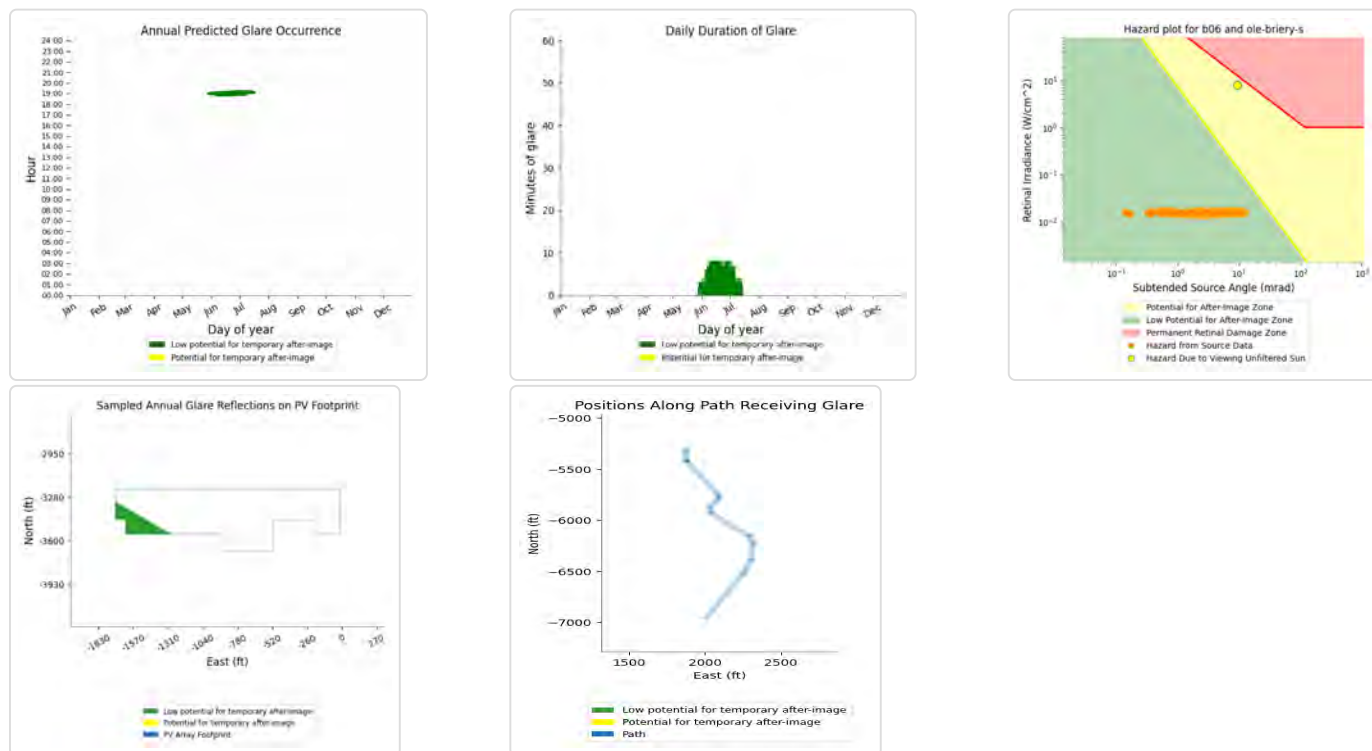
- PV array is expected to produce the following glare for this receptor:
- 704 minutes of "green" glare with low potential to cause temporary after-image.
  - 0 minutes of "yellow" glare with potential to cause temporary after-image.



## B06: Ole Briery Station Rd Seg 1

PV array is expected to produce the following glare for this receptor:

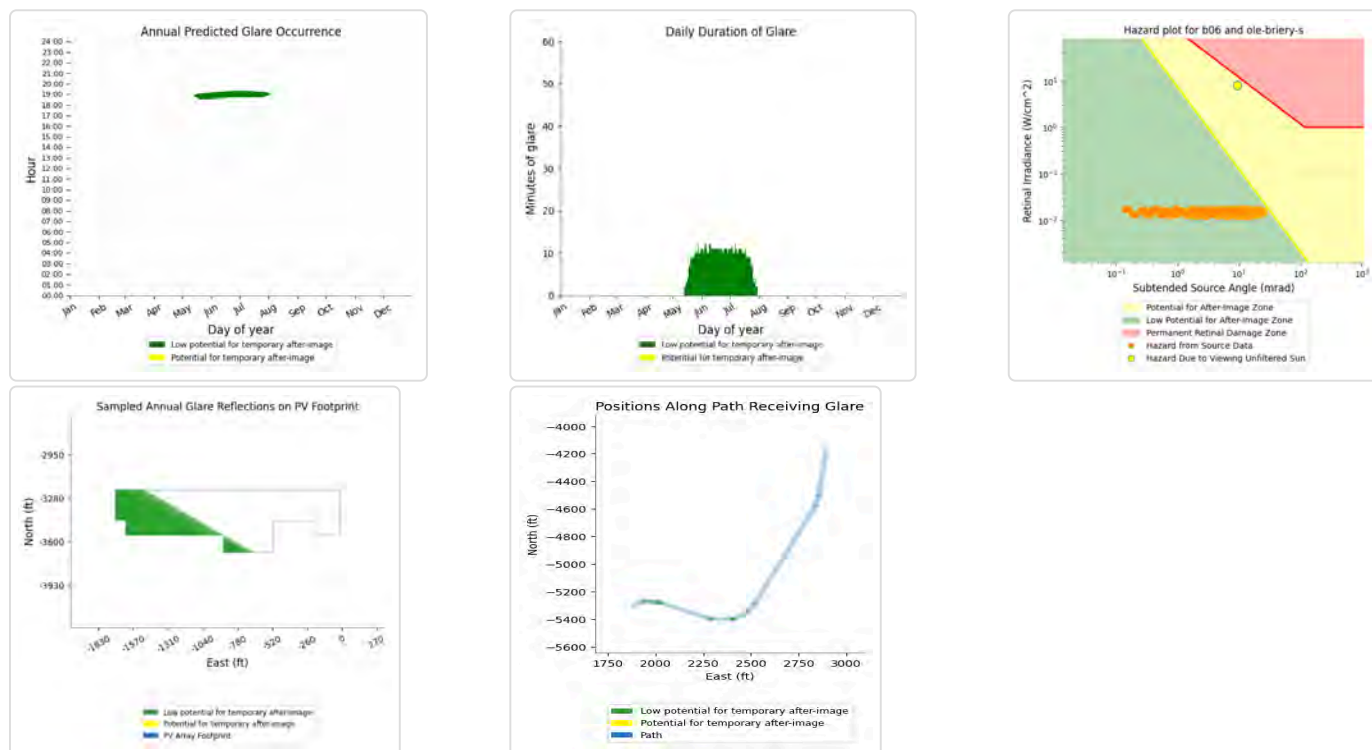
- 303 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## B06: Ole Briery Station Rd Seg 2

PV array is expected to produce the following glare for this receptor:

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

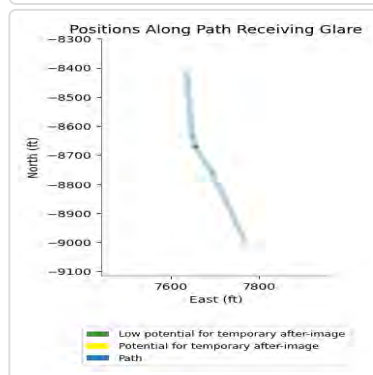
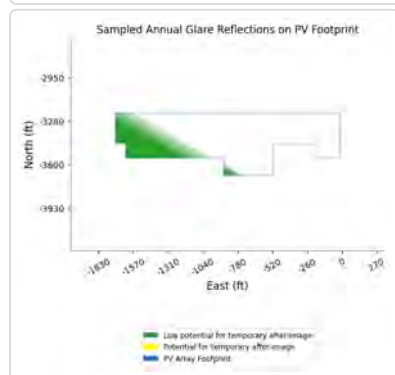
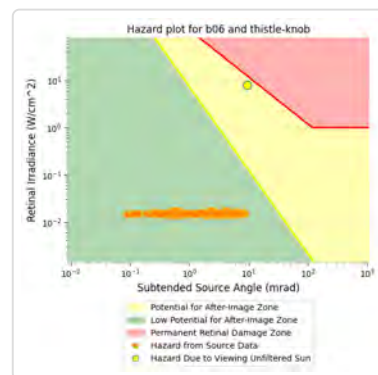
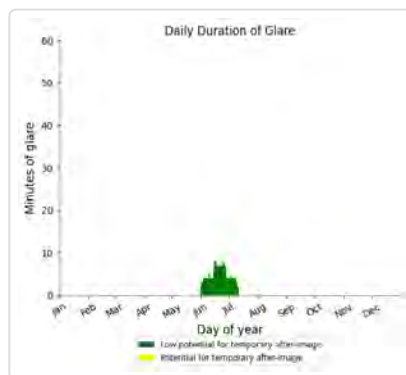
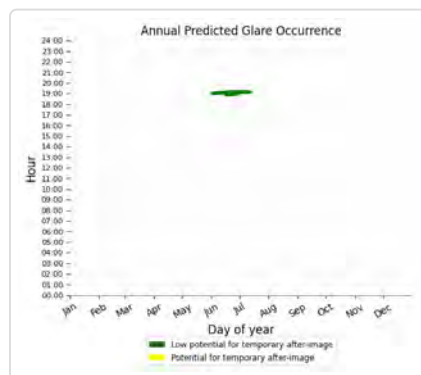




## B06: Thistle Knob Ln

PV array is expected to produce the following glare for this receptor:

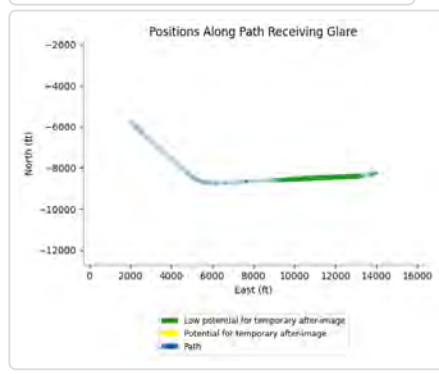
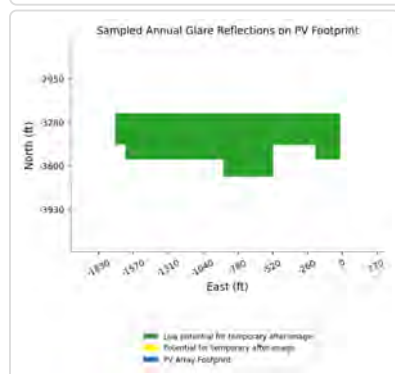
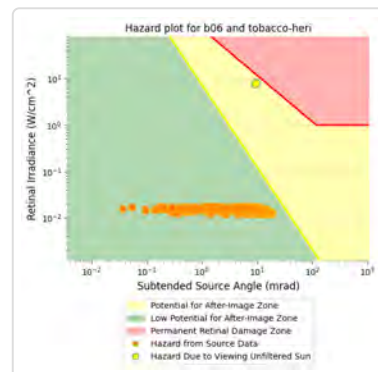
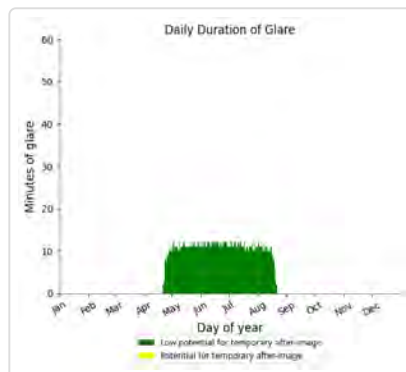
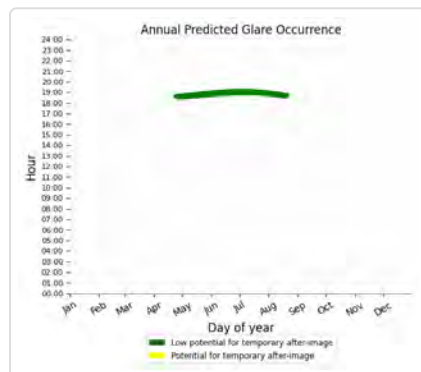
- 202 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## B06: Tobacco Heritage Trail

PV array is expected to produce the following glare for this receptor:

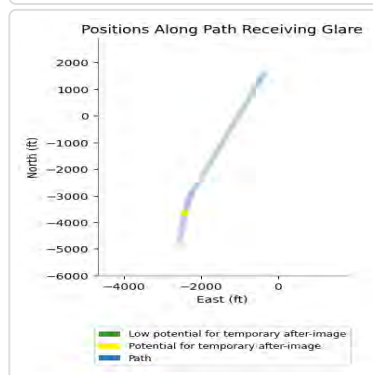
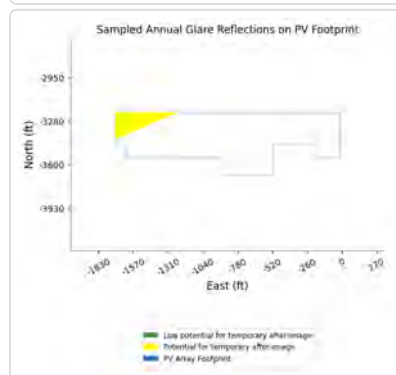
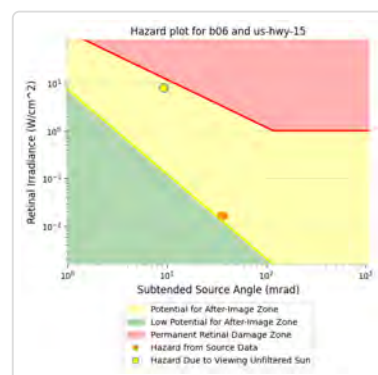
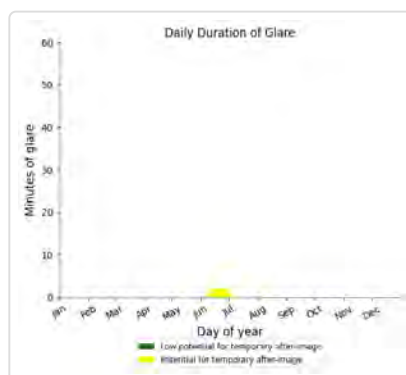
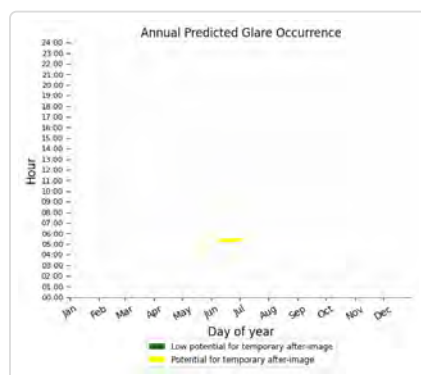
- 1,310 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## B06: US Hwy 15

PV array is expected to produce the following glare for this receptor:

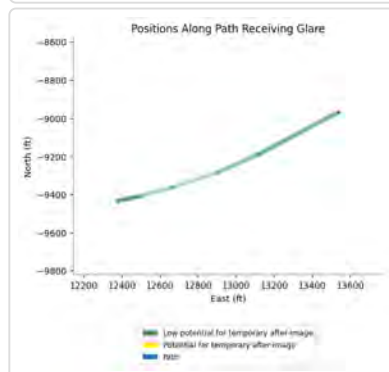
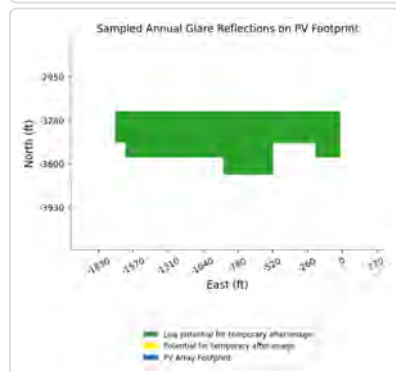
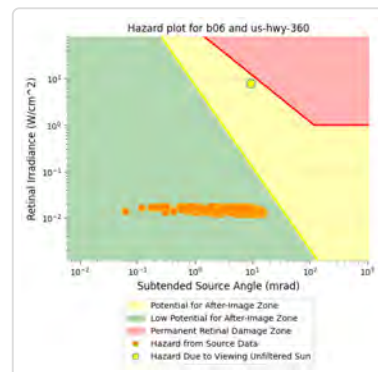
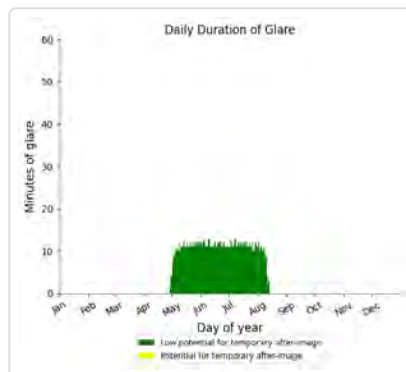
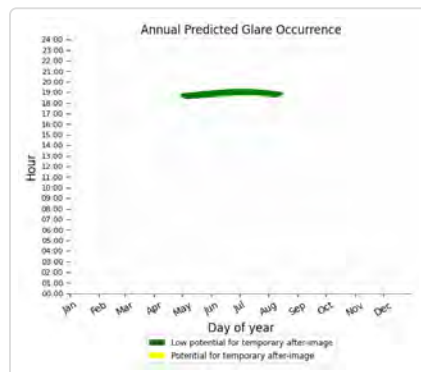
- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 42 minutes of "yellow" glare with potential to cause temporary after-image.



## B06: US Hwy 360

PV array is expected to produce the following glare for this receptor:

- 1,153 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



**C01** low potential for temporary after-image

Component	Green glare (min)	Yellow glare (min)
OP: OP 100	0	0
OP: OP 101	0	0
OP: OP 102	0	0
OP: OP 103	0	0
OP: OP 104	0	0
OP: OP 105	0	0
OP: OP 106	229	0
OP: OP 107	261	0
OP: OP 108	365	0
OP: OP 109	360	0
OP: OP 110	177	0
OP: OP 111	184	0
OP: OP 112	178	0
OP: OP 113	188	0
OP: OP 114	143	0
OP: OP 115	154	0
OP: OP 116	0	0
OP: OP 117	0	0
Route: Collins Dr	0	0
Route: Country Dr Seg 1	0	0
Route: Country Dr Seg 2	0	0
Route: County Line Rd	1099	0
Route: Dempseys Rd	0	0
Route: Harley Ln	0	0
Route: Henderson Rd	0	0
Route: Hillside Dr	0	0
Route: Ole Briery Station Rd Seg 1	0	0
Route: Ole Briery Station Rd Seg 2	0	0
Route: Thistle Knob Ln	0	0
Route: Tobacco Heritage Trail	0	0
Route: US Hwy 15	1075	0
Route: US Hwy 360	0	0

**C01: OP 100***No glare found***C01: OP 101***No glare found***C01: OP 102***No glare found***C01: OP 103***No glare found*

C01: OP 104

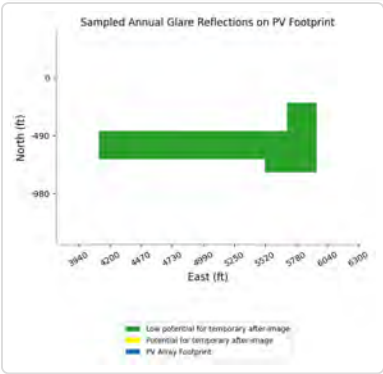
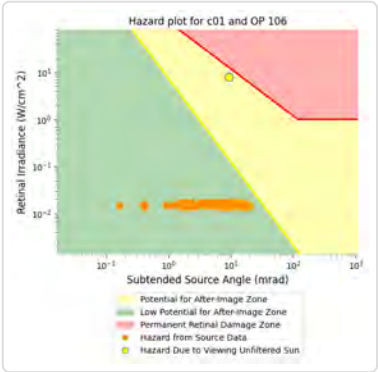
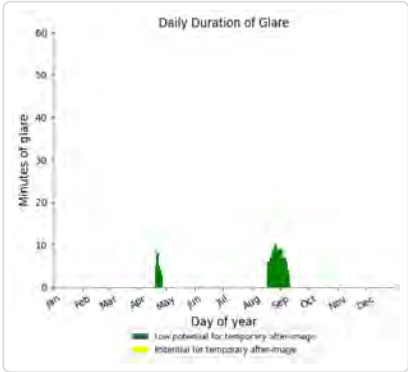
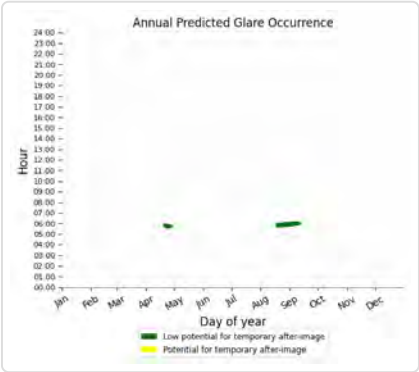
No glare found

C01: OP 105

No glare found

C01: OP 106

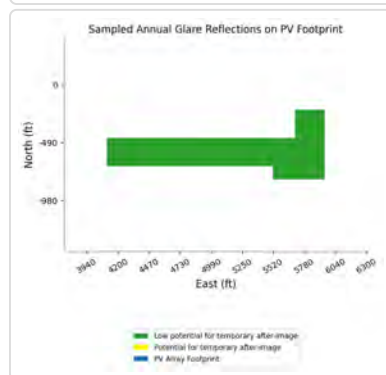
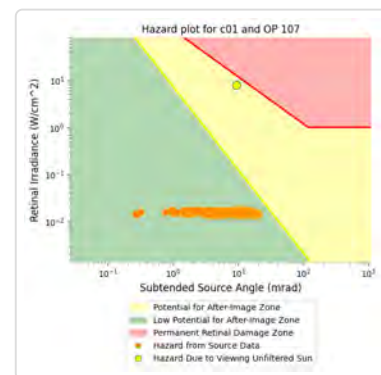
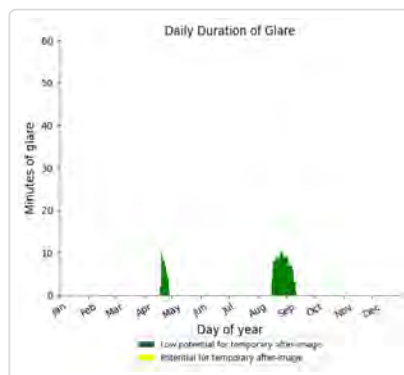
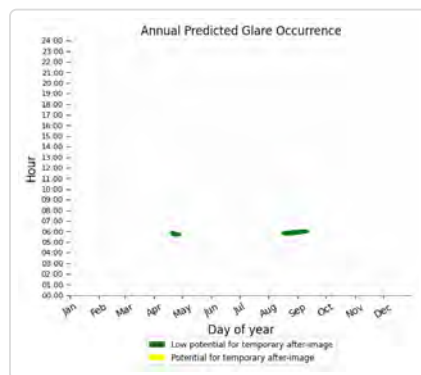
- PV array is expected to produce the following glare for this receptor:
- 229 minutes of "green" glare with low potential to cause temporary after-image.
  - 0 minutes of "yellow" glare with potential to cause temporary after-image.



## C01: OP 107

PV array is expected to produce the following glare for this receptor:

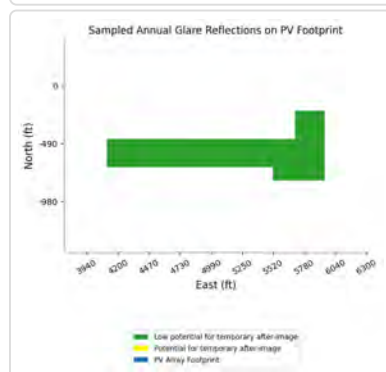
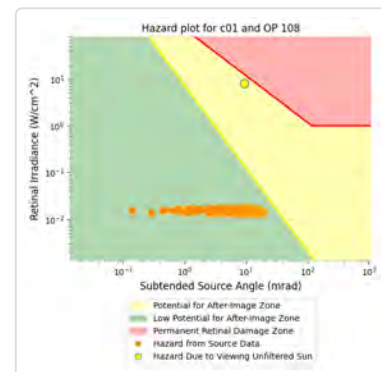
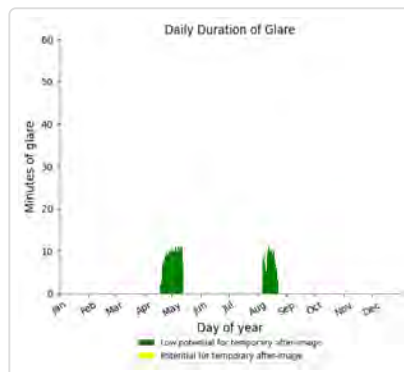
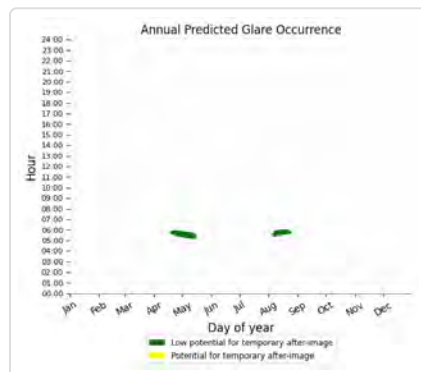
- 261 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## C01: OP 108

PV array is expected to produce the following glare for this receptor:

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

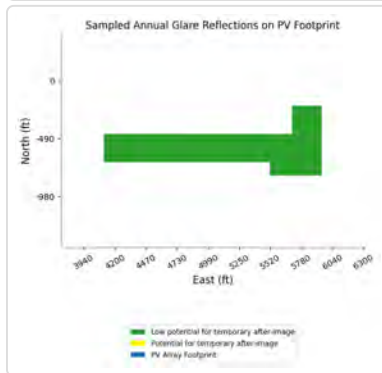
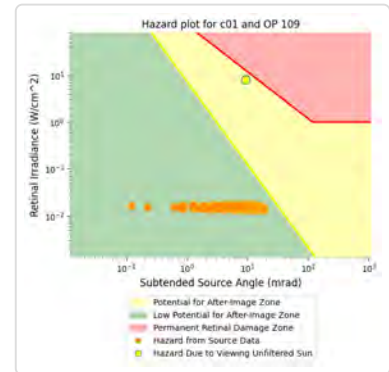
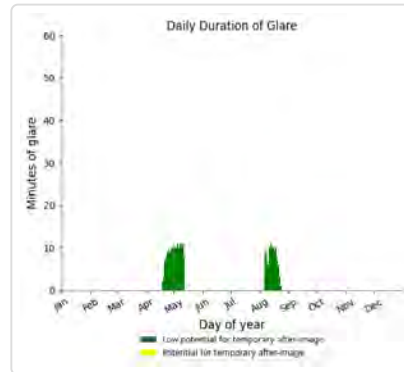
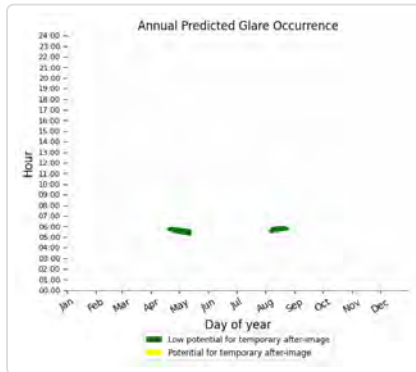




## C01: OP 109

PV array is expected to produce the following glare for this receptor:

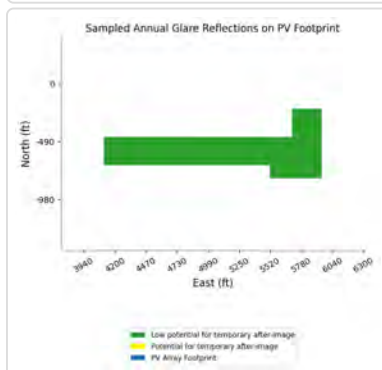
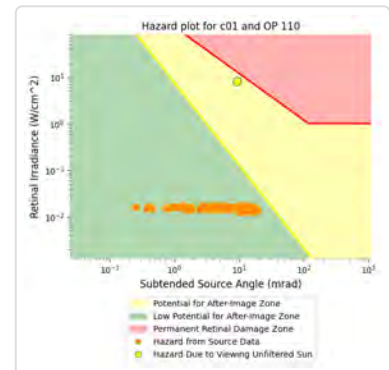
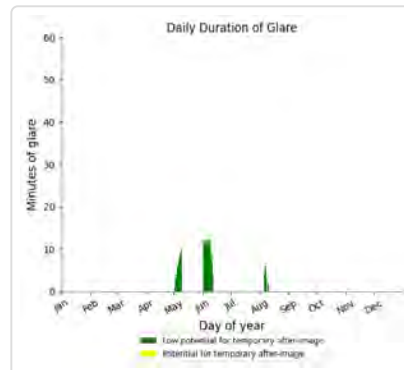
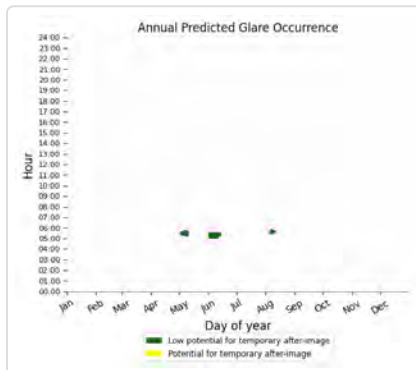
- 360 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## C01: OP 110

PV array is expected to produce the following glare for this receptor:

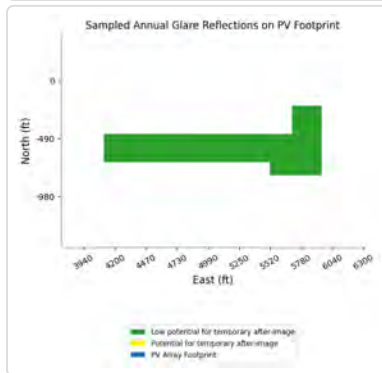
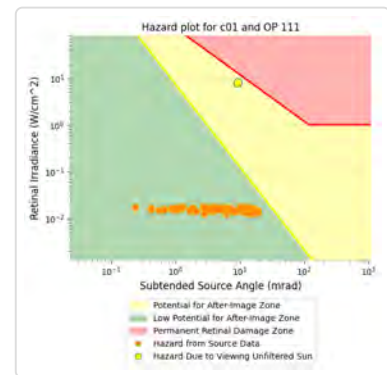
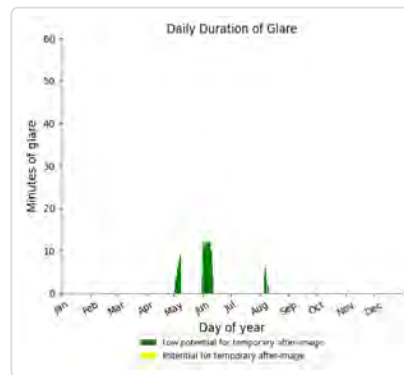
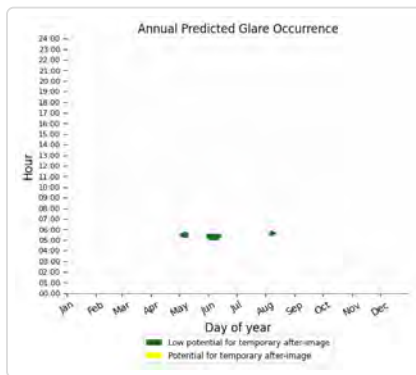
- 177 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## C01: OP 111

PV array is expected to produce the following glare for this receptor:

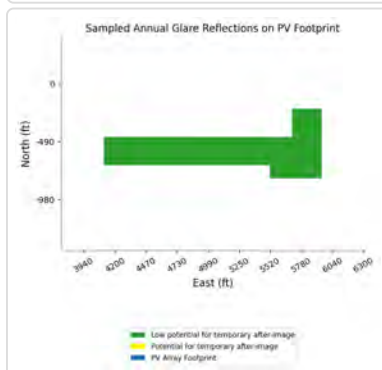
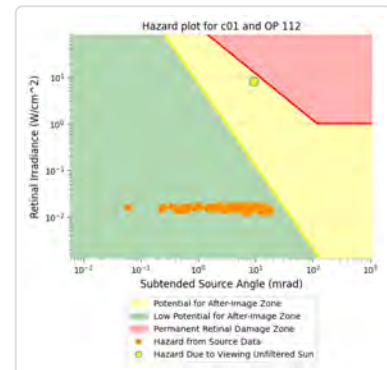
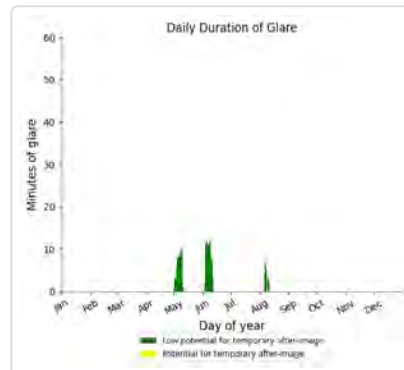
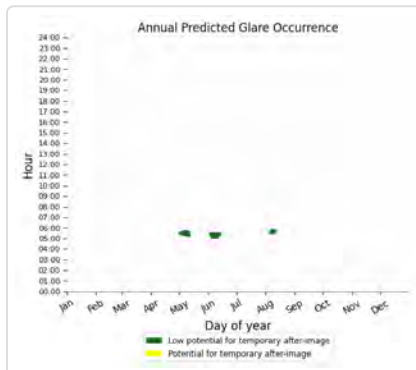
- 184 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## C01: OP 112

PV array is expected to produce the following glare for this receptor:

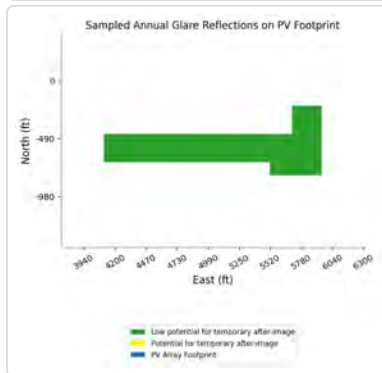
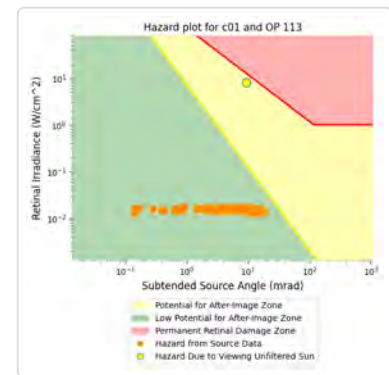
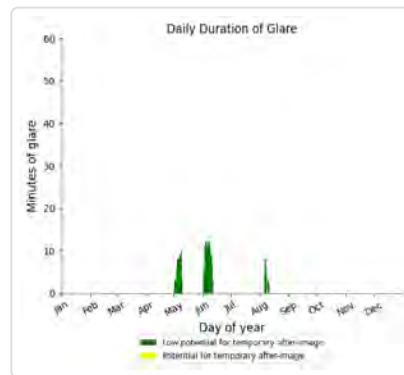
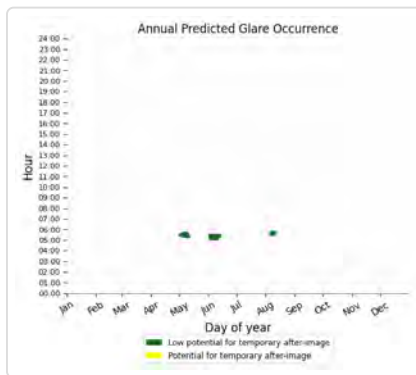
- 178 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## C01: OP 113

PV array is expected to produce the following glare for this receptor:

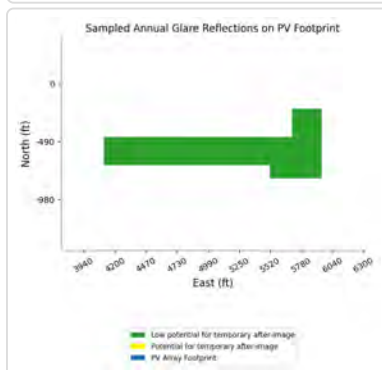
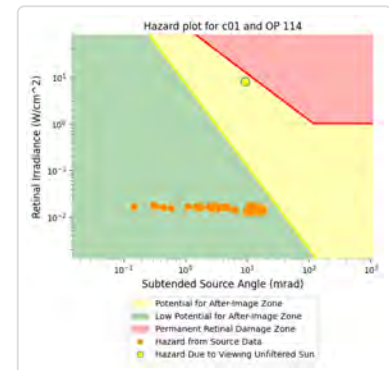
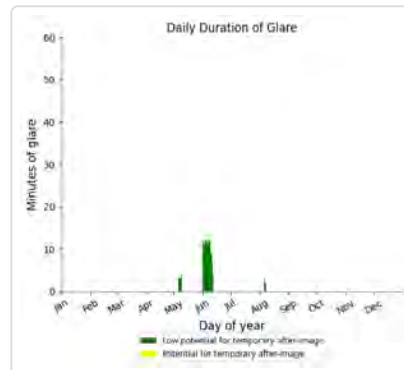
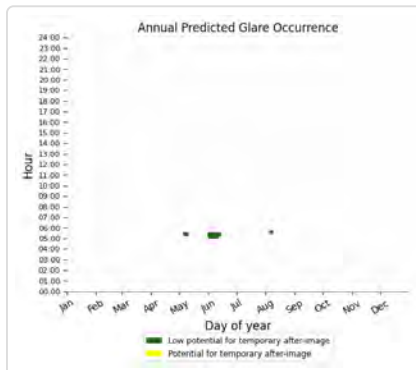
- 188 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## C01: OP 114

PV array is expected to produce the following glare for this receptor:

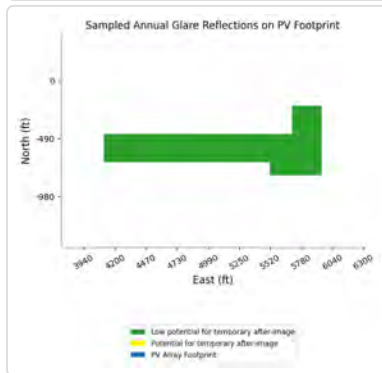
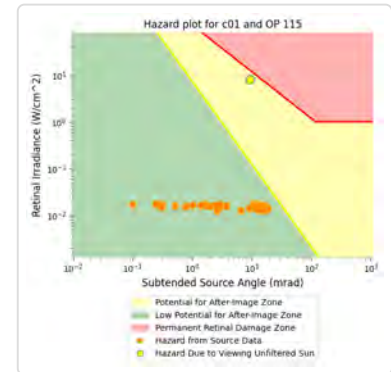
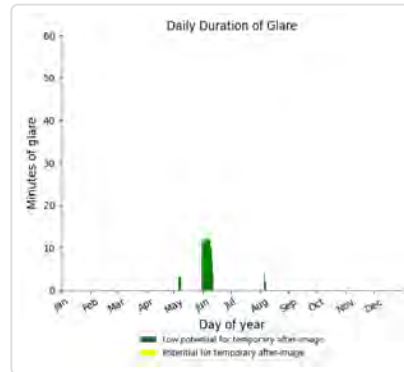
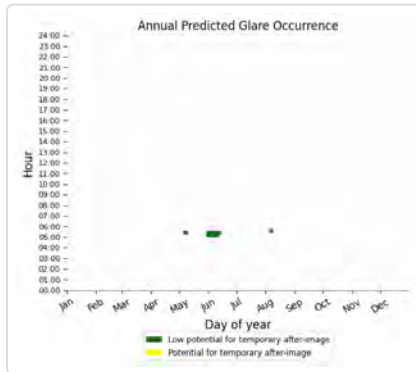
- 143 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## C01: OP 115

PV array is expected to produce the following glare for this receptor:

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



## C01: OP 116

No glare found

## C01: OP 117

No glare found

## C01: Collins Dr

No glare found

## C01: Country Dr Seg 1

No glare found

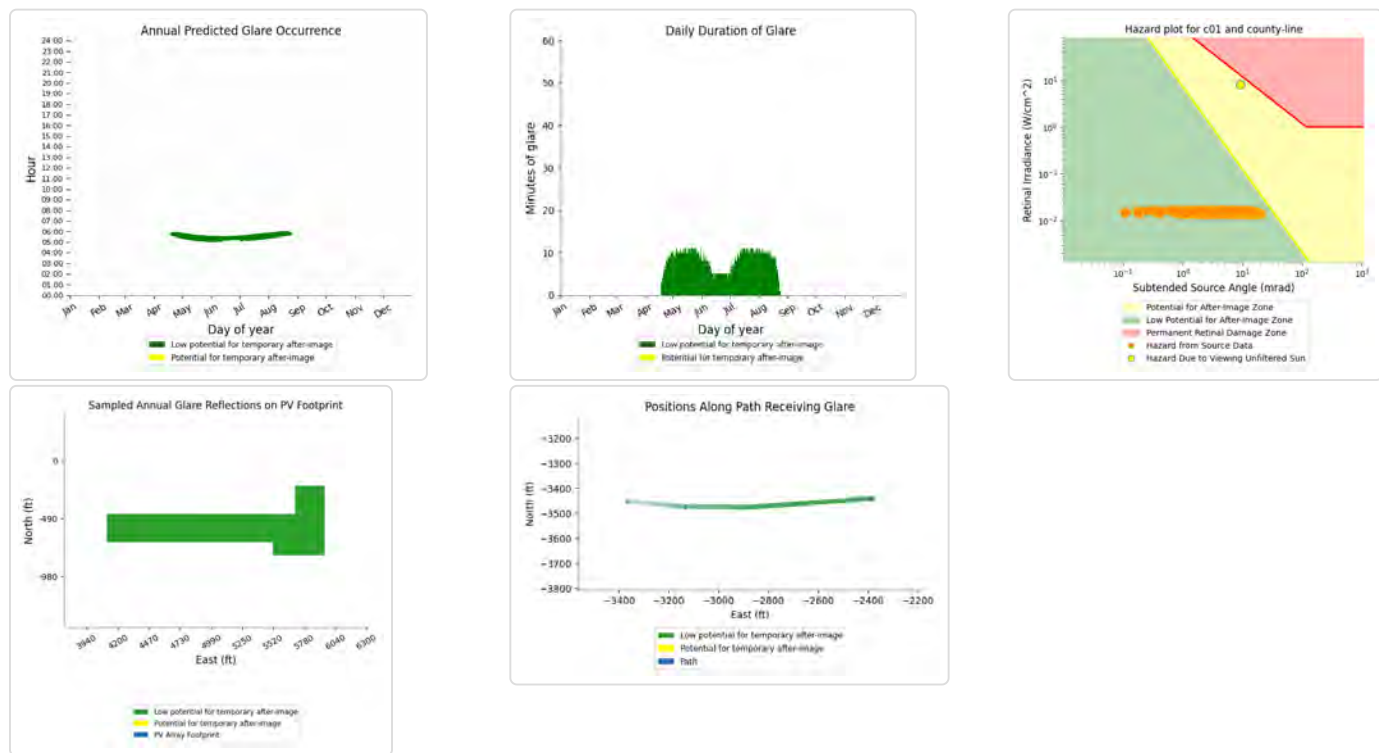
## C01: Country Dr Seg 2

No glare found

## C01: County Line Rd

PV array is expected to produce the following glare for this receptor:

- 1,099 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## C01: Dempseys Rd

No glare found

## C01: Harley Ln

No glare found

## C01: Henderson Rd

No glare found

## C01: Hillside Dr

No glare found

## C01: Ole Briery Station Rd Seg 1

No glare found

## C01: Ole Briery Station Rd Seg 2

No glare found

## C01: Thistle Knob Ln

No glare found

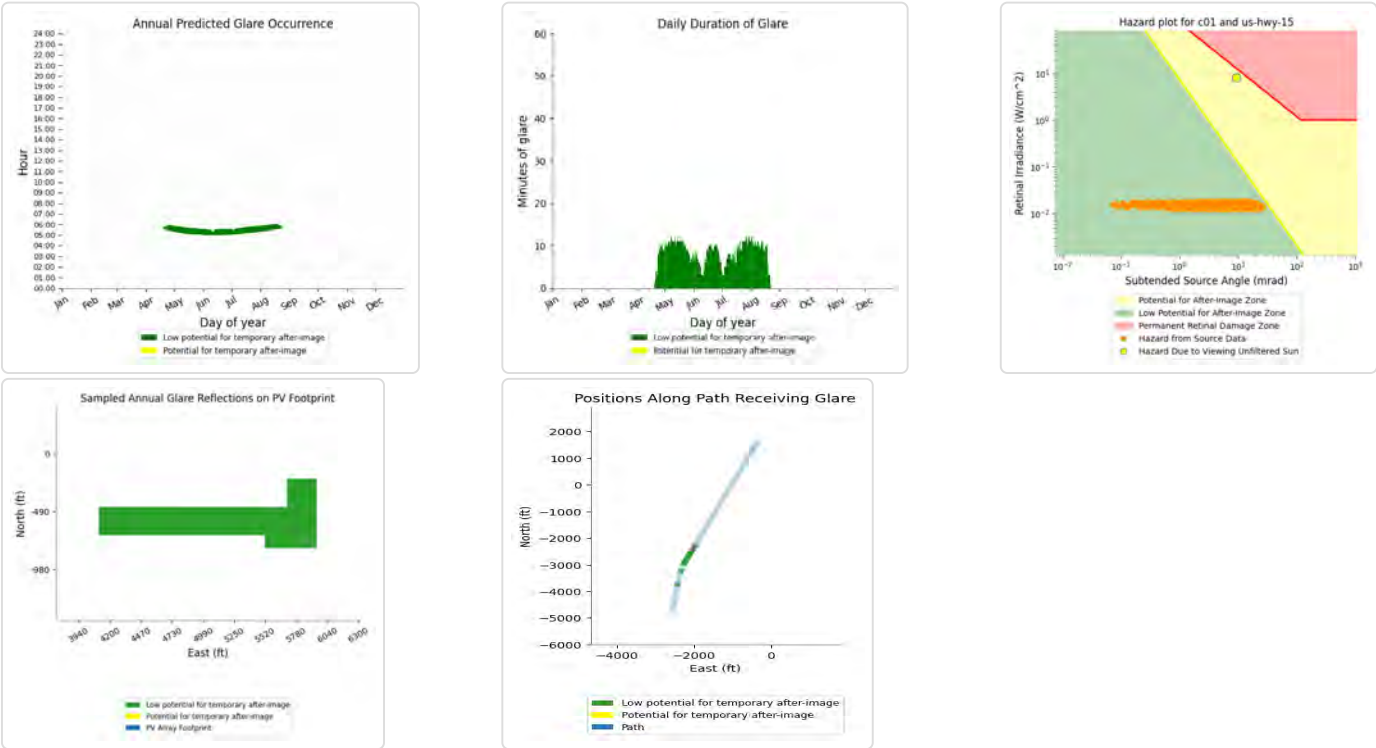
## C01: Tobacco Heritage Trail

No glare found



C01: US Hwy 15

- PV array is expected to produce the following glare for this receptor:
- 1,075 minutes of "green" glare with low potential to cause temporary after-image.
  - 0 minutes of "yellow" glare with potential to cause temporary after-image.



C01: US Hwy 360

No glare found

C02 low potential for temporary after-image

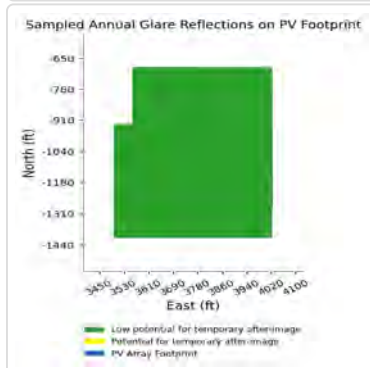
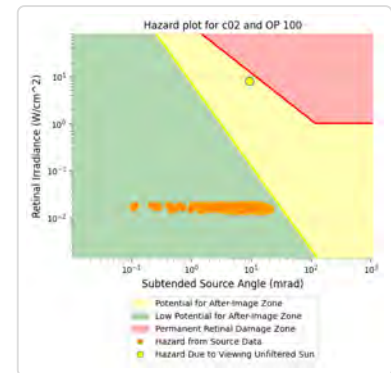
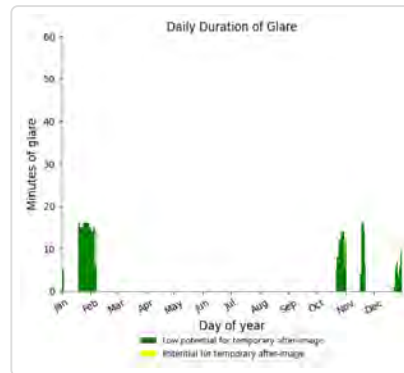
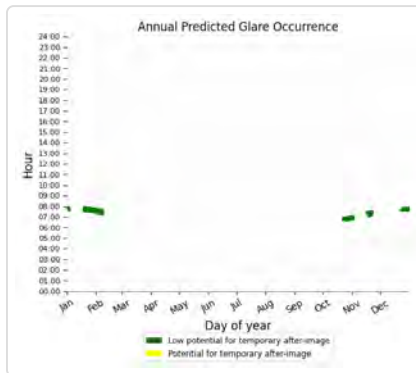
Component	Green glare (min)	Yellow glare (min)
OP: OP 100	548	0
OP: OP 101	563	0
OP: OP 102	369	0
OP: OP 103	373	0
OP: OP 104	295	0
OP: OP 105	299	0
OP: OP 106	0	0
OP: OP 107	0	0
OP: OP 108	0	0
OP: OP 109	0	0
OP: OP 110	0	0
OP: OP 111	0	0
OP: OP 112	0	0
OP: OP 113	0	0
OP: OP 114	0	0
OP: OP 115	0	0
OP: OP 116	0	0
OP: OP 117	0	0
Route: Collins Dr	0	0

Route: Country Dr Seg 1	0	0
Route: Country Dr Seg 2	0	0
Route: County Line Rd	0	0
Route: Dempseys Rd	0	0
Route: Harley Ln	0	0
Route: Henderson Rd	1640	0
Route: Hillside Dr	0	0
Route: Ole Briery Station Rd Seg 1	0	0
Route: Ole Briery Station Rd Seg 2	0	0
Route: Thistle Knob Ln	0	0
Route: Tobacco Heritage Trail	0	0
Route: US Hwy 15	0	0
Route: US Hwy 360	0	0

## C02: OP 100

PV array is expected to produce the following glare for this receptor:

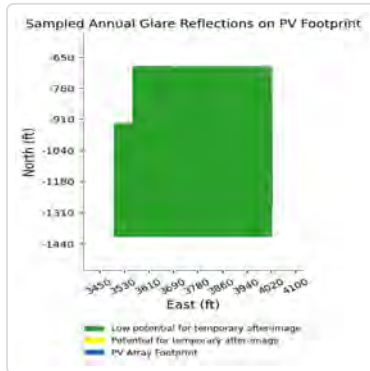
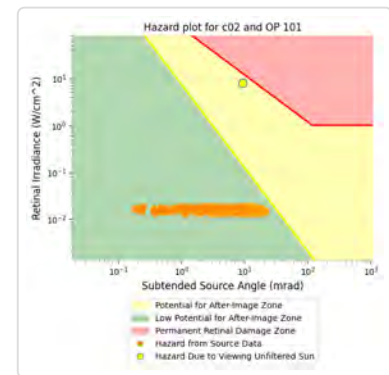
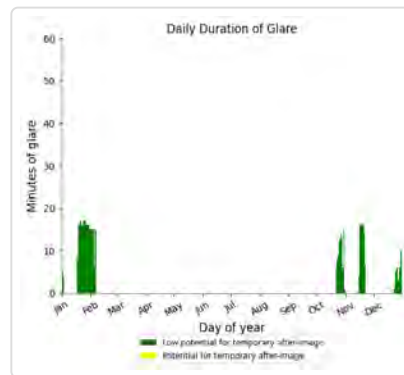
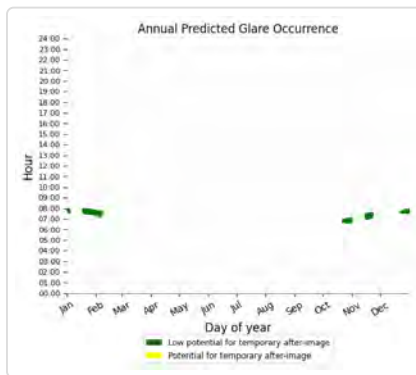
- 548 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## C02: OP 101

PV array is expected to produce the following glare for this receptor:

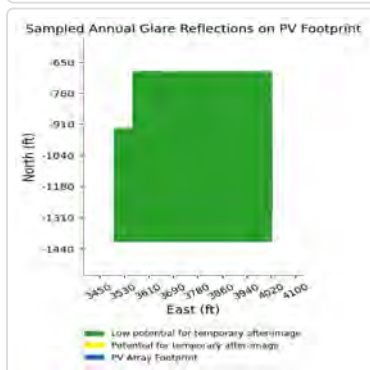
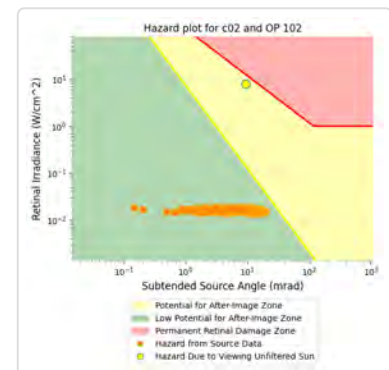
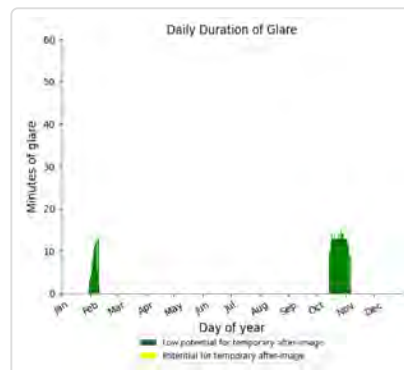
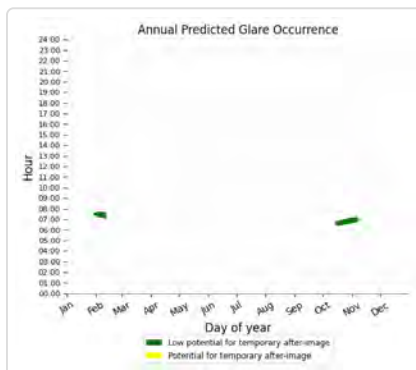
- 563 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## C02: OP 102

PV array is expected to produce the following glare for this receptor:

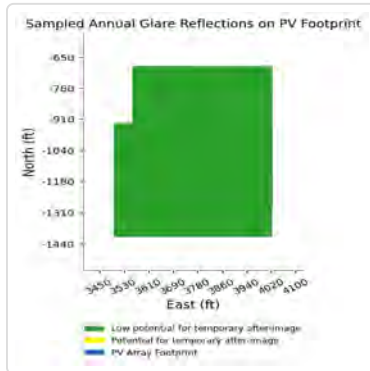
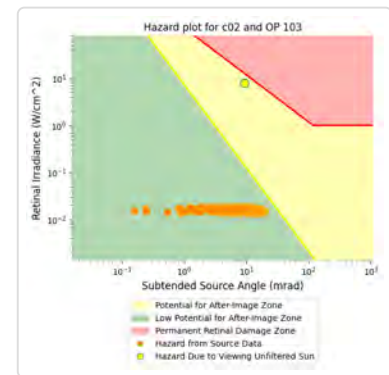
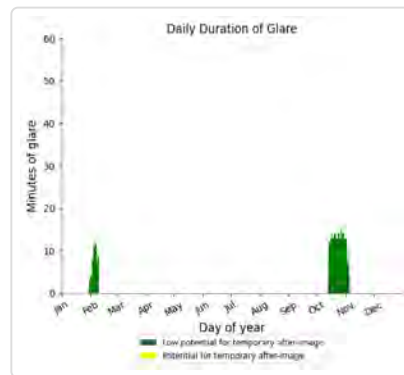
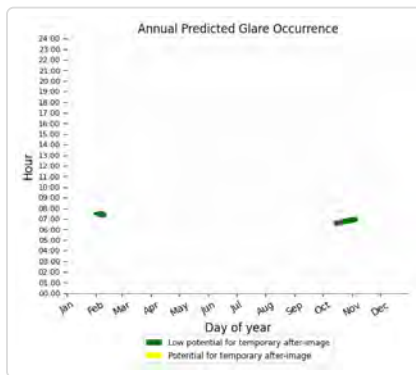
- 369 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## C02: OP 103

PV array is expected to produce the following glare for this receptor:

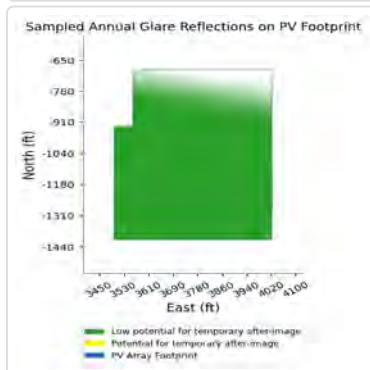
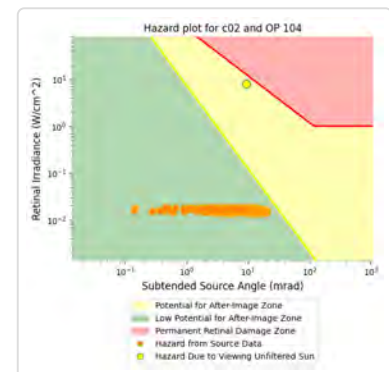
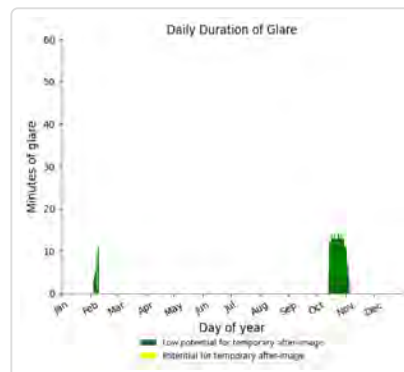
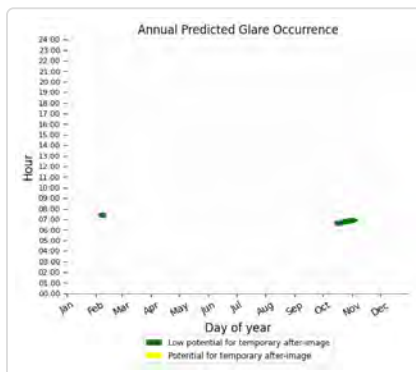
- 373 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## C02: OP 104

PV array is expected to produce the following glare for this receptor:

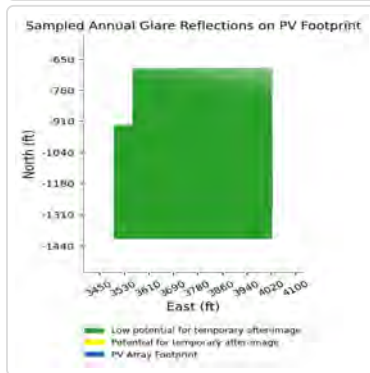
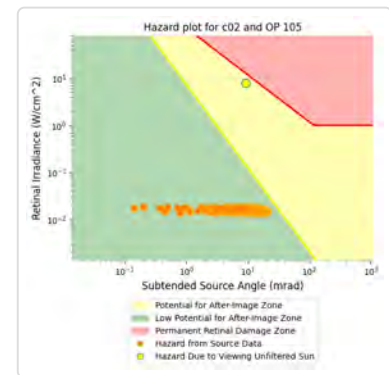
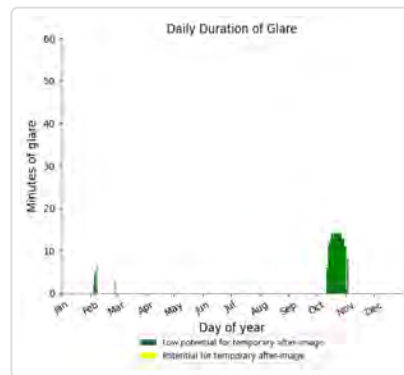
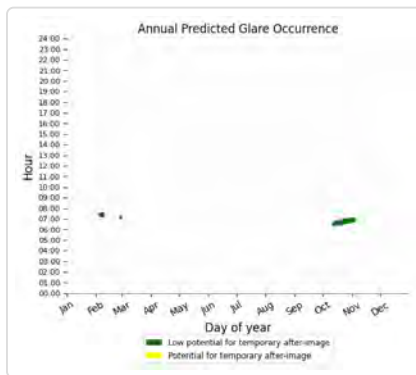
- 295 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## C02: OP 105

PV array is expected to produce the following glare for this receptor:

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



## C02: OP 106

No glare found

## C02: OP 107

No glare found

## C02: OP 108

No glare found

## C02: OP 109

No glare found

## C02: OP 110

No glare found

## C02: OP 111

No glare found

## C02: OP 112

No glare found

## C02: OP 113

No glare found



**C02: OP 114**

*No glare found*

**C02: OP 115**

*No glare found*

**C02: OP 116**

*No glare found*

**C02: OP 117**

*No glare found*

**C02: Collins Dr**

*No glare found*

**C02: Country Dr Seg 1**

*No glare found*

**C02: Country Dr Seg 2**

*No glare found*

**C02: County Line Rd**

*No glare found*

**C02: Dempseys Rd**

*No glare found*

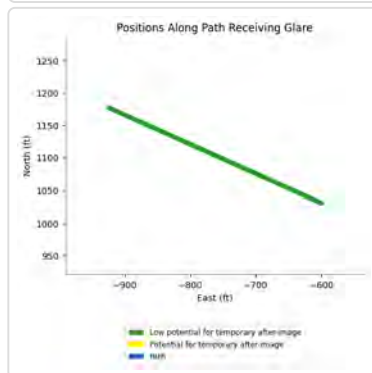
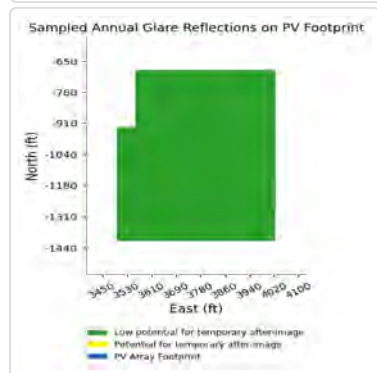
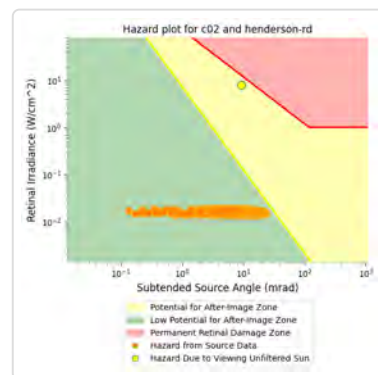
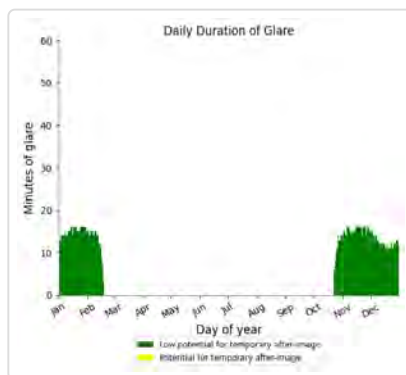
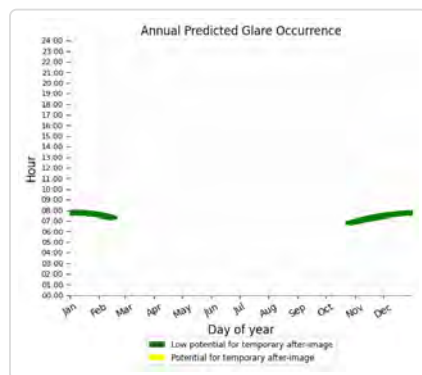
**C02: Harley Ln**

*No glare found*

## C02: Henderson Rd

PV array is expected to produce the following glare for this receptor:

- 1,640 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## C02: Hillside Dr

No glare found

## C02: Ole Briery Station Rd Seg 1

No glare found

## C02: Ole Briery Station Rd Seg 2

No glare found

## C02: Thistle Knob Ln

No glare found

## C02: Tobacco Heritage Trail

No glare found

## C02: US Hwy 15

No glare found

## C02: US Hwy 360

No glare found

## C03 low potential for temporary after-image

Component	Green glare (min)	Yellow glare (min)
OP: OP 100	0	0
OP: OP 101	0	0
OP: OP 102	0	0
OP: OP 103	0	0
OP: OP 104	0	0
OP: OP 105	0	0
OP: OP 106	0	0
OP: OP 107	0	0
OP: OP 108	0	0
OP: OP 109	0	0
OP: OP 110	0	0
OP: OP 111	0	0
OP: OP 112	0	0
OP: OP 113	0	0
OP: OP 114	0	0
OP: OP 115	0	0
OP: OP 116	0	0
OP: OP 117	0	0
Route: Collins Dr	0	0
Route: Country Dr Seg 1	0	0
Route: Country Dr Seg 2	0	0
Route: County Line Rd	94	0
Route: Dempseys Rd	0	0
Route: Harley Ln	0	0
Route: Henderson Rd	0	0
Route: Hillside Dr	0	0
Route: Ole Briery Station Rd Seg 1	0	0
Route: Ole Briery Station Rd Seg 2	0	0
Route: Thistle Knob Ln	0	0
Route: Tobacco Heritage Trail	0	0
Route: US Hwy 15	22	0
Route: US Hwy 360	0	0

### C03: OP 100

*No glare found*

### C03: OP 101

*No glare found*

### C03: OP 102

*No glare found*

### C03: OP 103

*No glare found*

**C03: OP 104**

*No glare found*

**C03: OP 105**

*No glare found*

**C03: OP 106**

*No glare found*

**C03: OP 107**

*No glare found*

**C03: OP 108**

*No glare found*

**C03: OP 109**

*No glare found*

**C03: OP 110**

*No glare found*

**C03: OP 111**

*No glare found*

**C03: OP 112**

*No glare found*

**C03: OP 113**

*No glare found*

**C03: OP 114**

*No glare found*

**C03: OP 115**

*No glare found*

**C03: OP 116**

*No glare found*

**C03: OP 117**

*No glare found*

**C03: Collins Dr**

*No glare found*

### C03: Country Dr Seg 1

No glare found

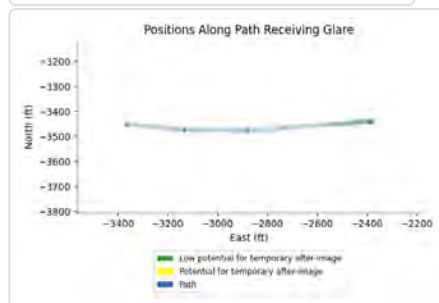
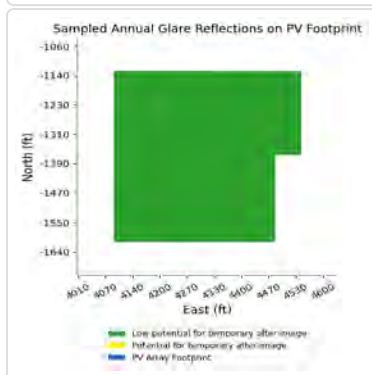
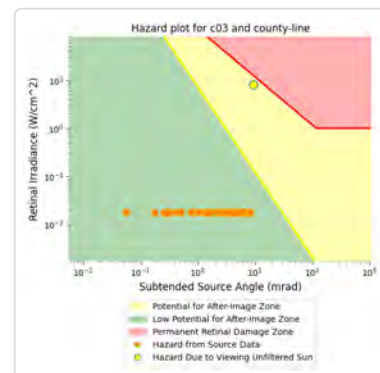
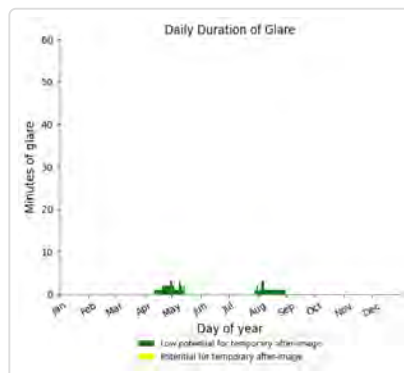
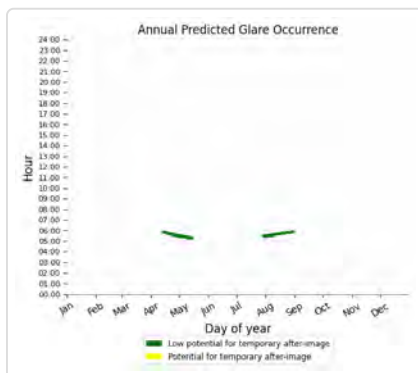
### C03: Country Dr Seg 2

No glare found

### C03: County Line Rd

PV array is expected to produce the following glare for this receptor:

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



### C03: Dempseys Rd

No glare found

### C03: Harley Ln

No glare found

### C03: Henderson Rd

No glare found

### C03: Hillside Dr

No glare found

### C03: Ole Briery Station Rd Seg 1

No glare found

### C03: Ole Briery Station Rd Seg 2

No glare found



C03: Thistle Knob Ln

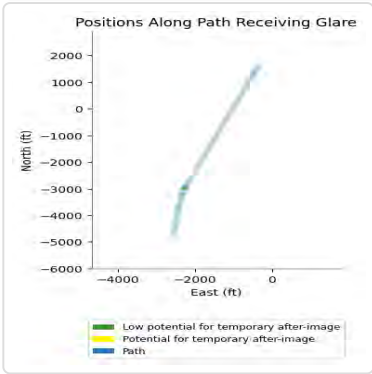
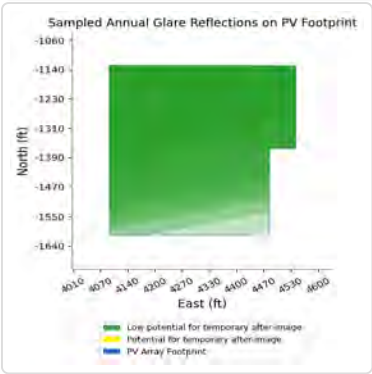
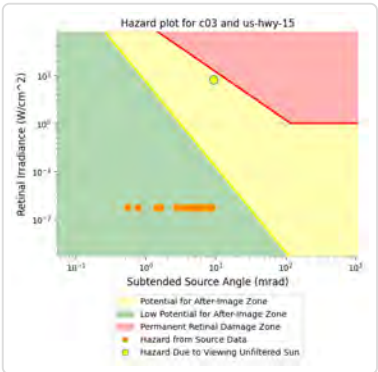
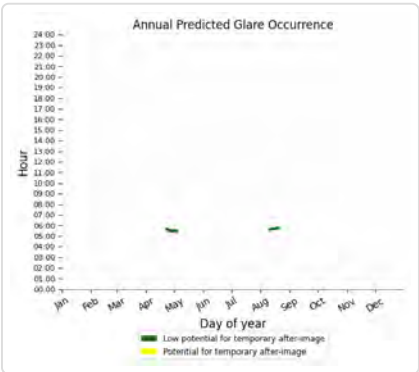
No glare found

C03: Tobacco Heritage Trail

No glare found

C03: US Hwy 15

- PV array is expected to produce the following glare for this receptor:
- 22 minutes of "green" glare with low potential to cause temporary after-image.
  - 0 minutes of "yellow" glare with potential to cause temporary after-image.



C03: US Hwy 360

No glare found

C04 low potential for temporary after-image

Component	Green glare (min)	Yellow glare (min)
OP: OP 100	0	0
OP: OP 101	0	0
OP: OP 102	0	0
OP: OP 103	0	0
OP: OP 104	0	0
OP: OP 105	0	0
OP: OP 106	131	0
OP: OP 107	113	0
OP: OP 108	81	0
OP: OP 109	108	0
OP: OP 110	236	0
OP: OP 111	248	0

OP: OP 112	206	0
OP: OP 113	217	0
OP: OP 114	271	0
OP: OP 115	267	0
OP: OP 116	17	0
OP: OP 117	0	0
Route: Collins Dr	0	0
Route: Country Dr Seg 1	40	0
Route: Country Dr Seg 2	579	0
Route: County Line Rd	454	0
Route: Dempseys Rd	0	0
Route: Harley Ln	0	0
Route: Henderson Rd	0	0
Route: Hillside Dr	413	0
Route: Ole Briery Station Rd Seg 1	0	0
Route: Ole Briery Station Rd Seg 2	0	0
Route: Thistle Knob Ln	0	0
Route: Tobacco Heritage Trail	570	0
Route: US Hwy 15	47	0
Route: US Hwy 360	0	0

#### **C04: OP 100**

*No glare found*

#### **C04: OP 101**

*No glare found*

#### **C04: OP 102**

*No glare found*

#### **C04: OP 103**

*No glare found*

#### **C04: OP 104**

*No glare found*

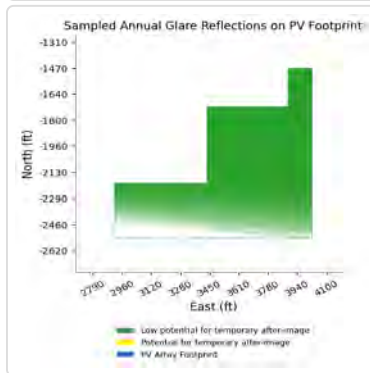
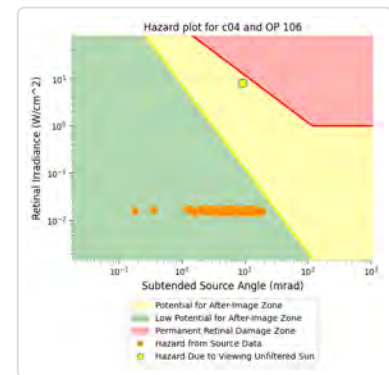
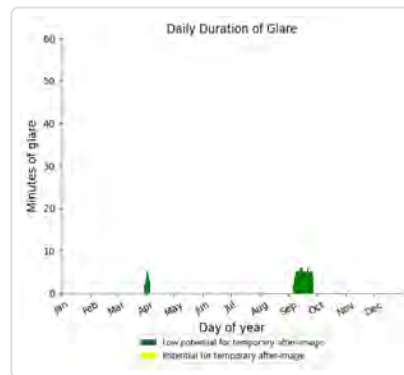
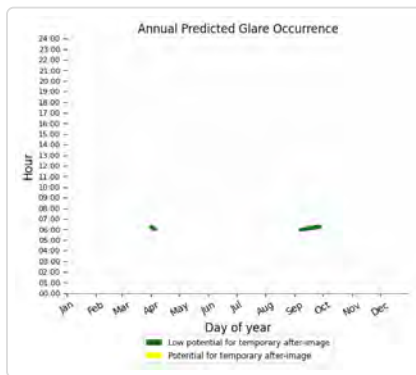
#### **C04: OP 105**

*No glare found*

## C04: OP 106

PV array is expected to produce the following glare for this receptor:

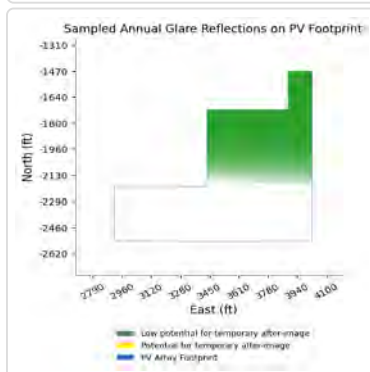
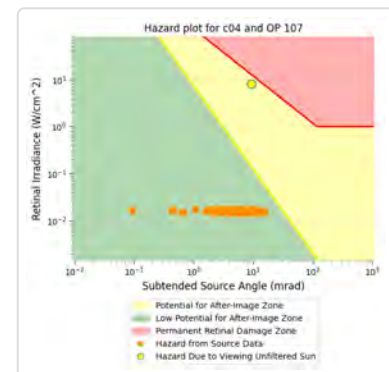
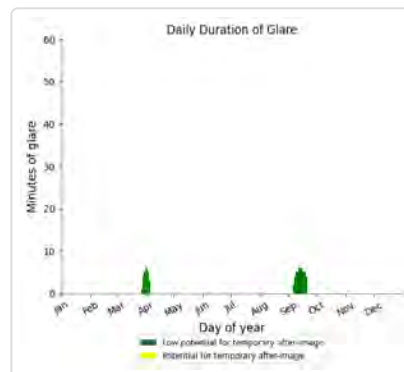
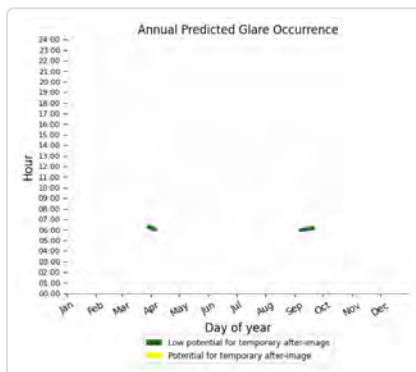
- 131 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## C04: OP 107

PV array is expected to produce the following glare for this receptor:

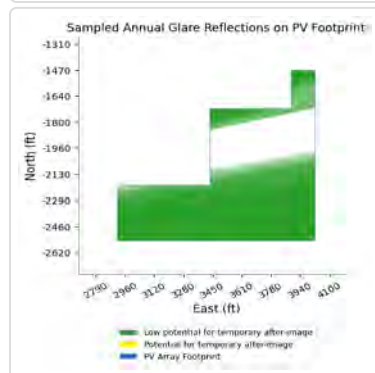
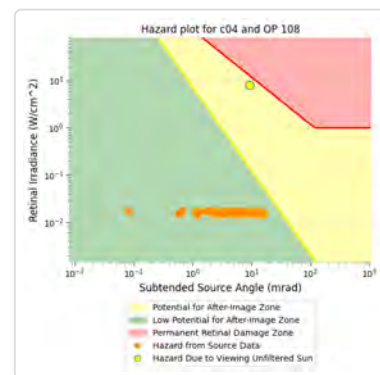
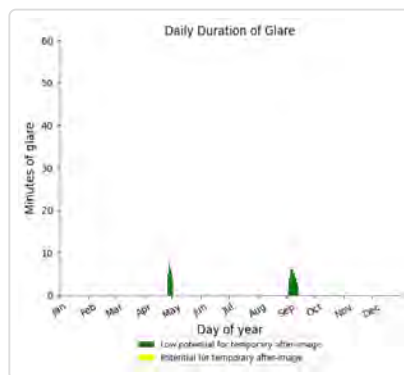
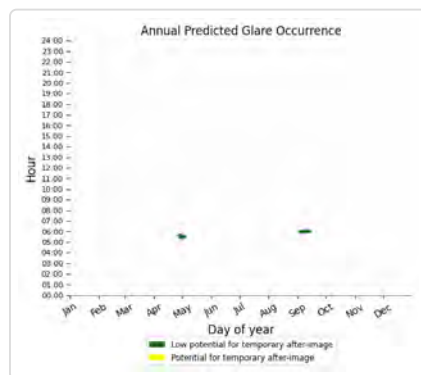
- 113 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## C04: OP 108

PV array is expected to produce the following glare for this receptor:

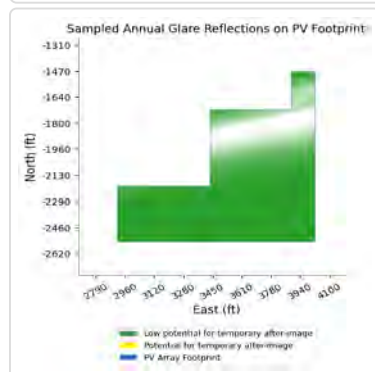
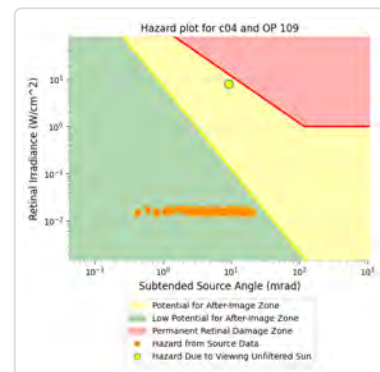
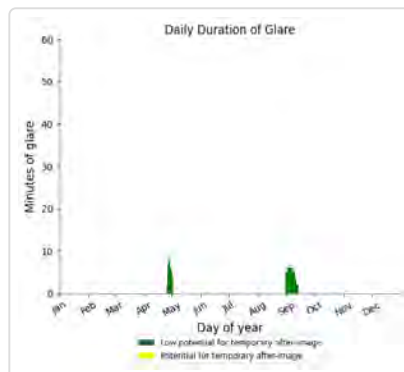
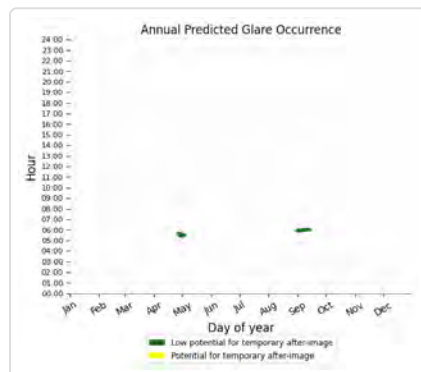
- 81 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## C04: OP 109

PV array is expected to produce the following glare for this receptor:

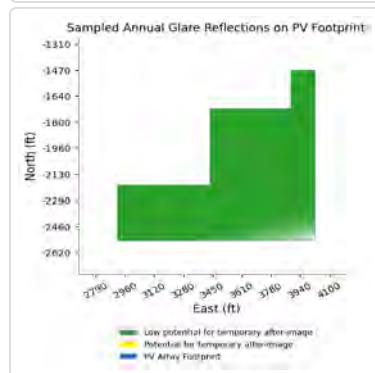
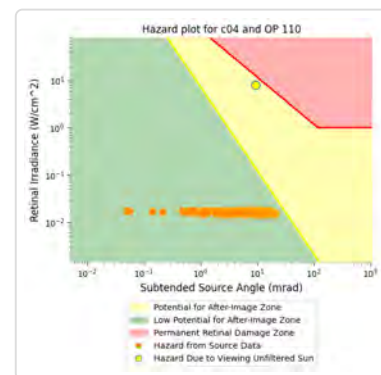
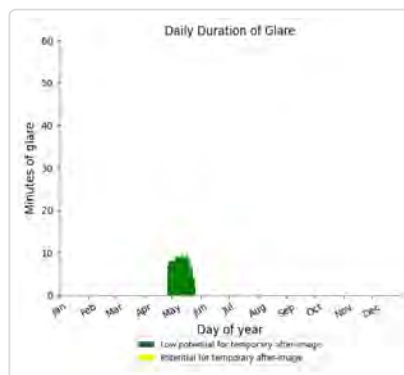
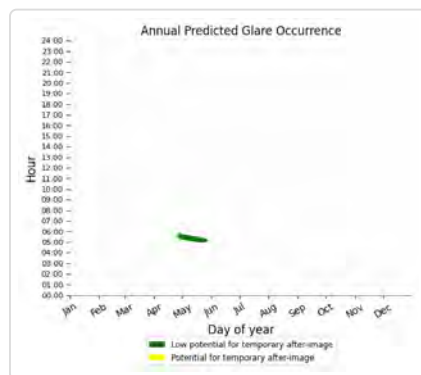
- 108 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## C04: OP 110

PV array is expected to produce the following glare for this receptor:

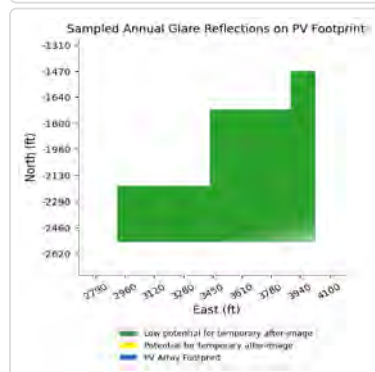
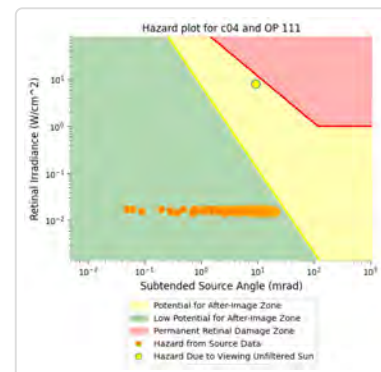
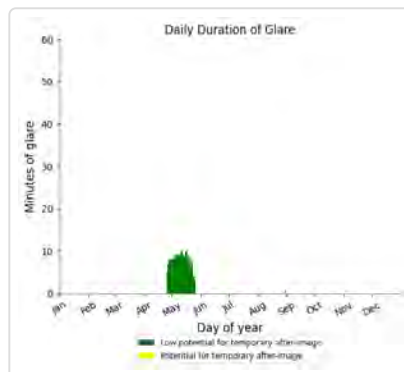
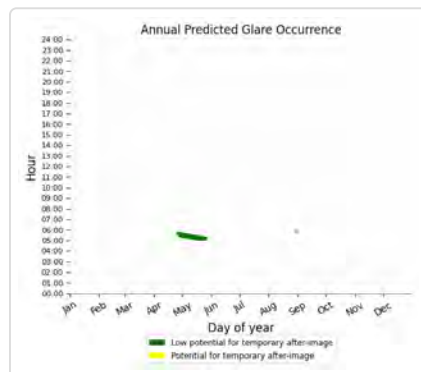
- 236 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## C04: OP 111

PV array is expected to produce the following glare for this receptor:

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

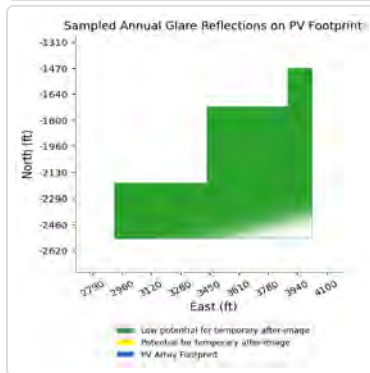
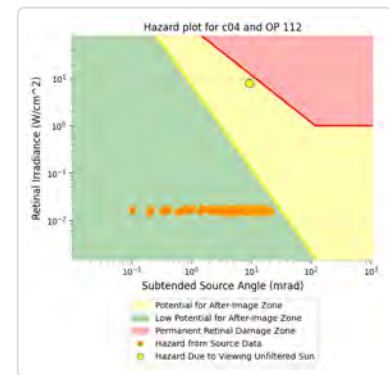
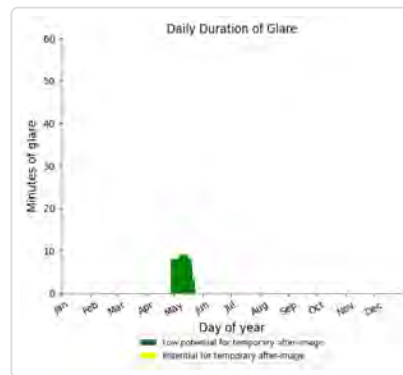
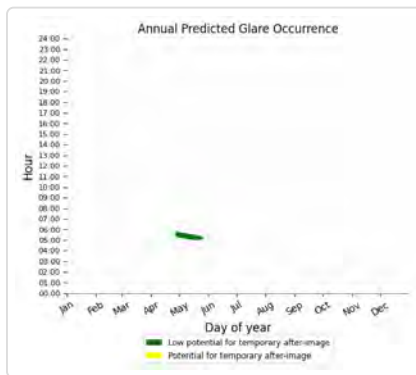




## C04: OP 112

PV array is expected to produce the following glare for this receptor:

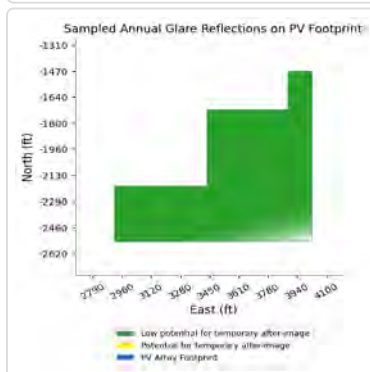
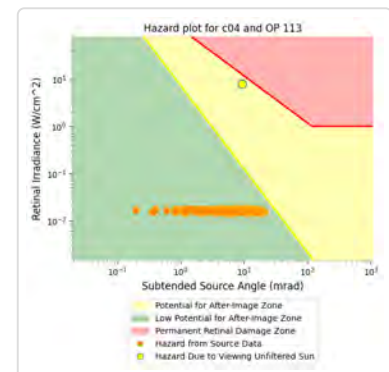
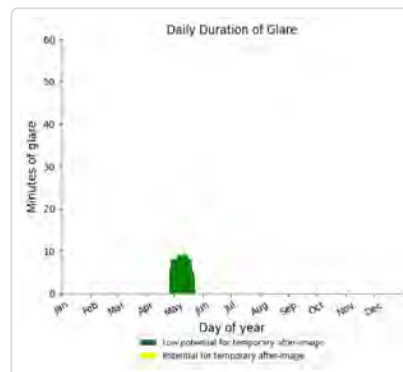
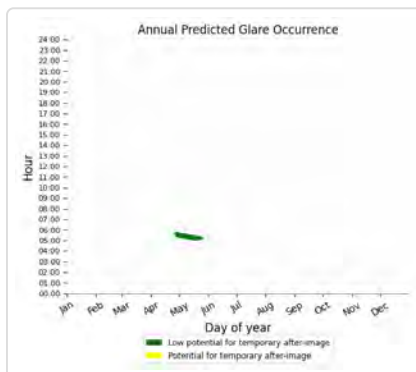
- 206 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## C04: OP 113

PV array is expected to produce the following glare for this receptor:

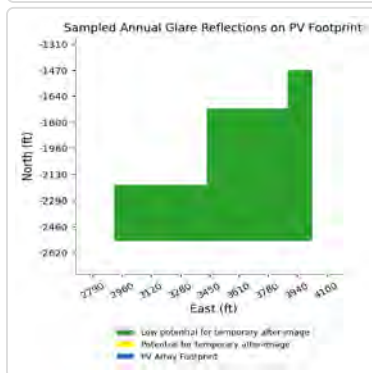
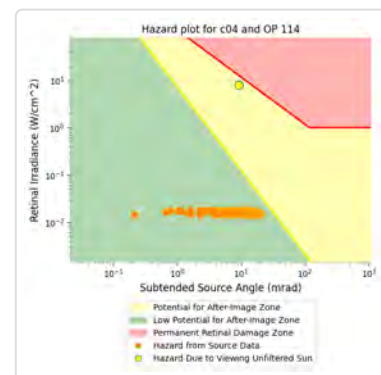
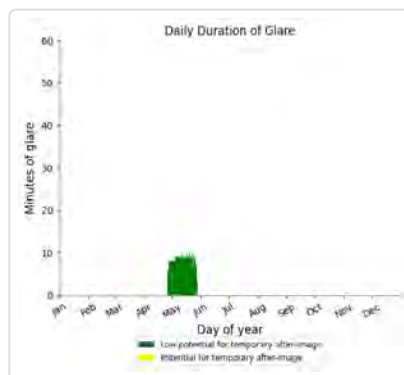
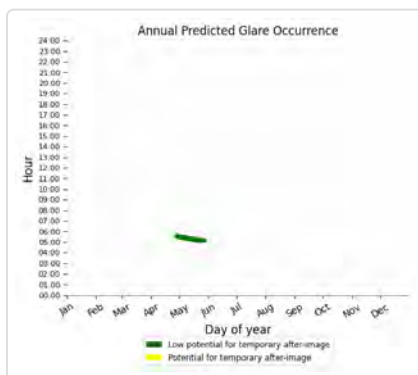
- 217 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## C04: OP 114

PV array is expected to produce the following glare for this receptor:

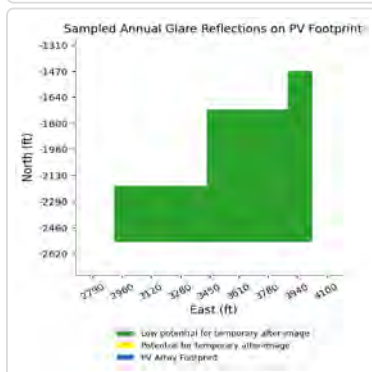
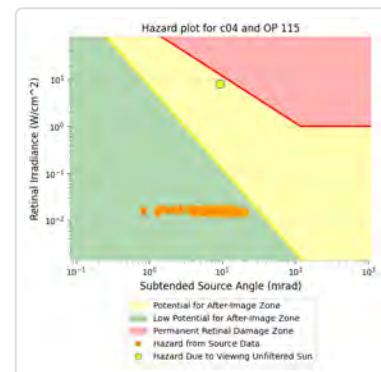
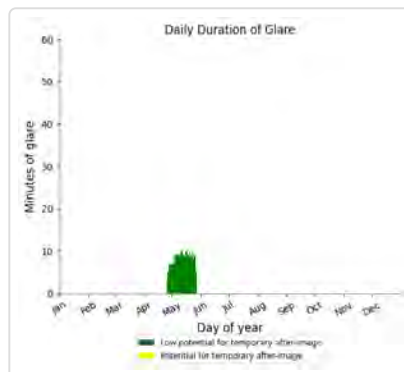
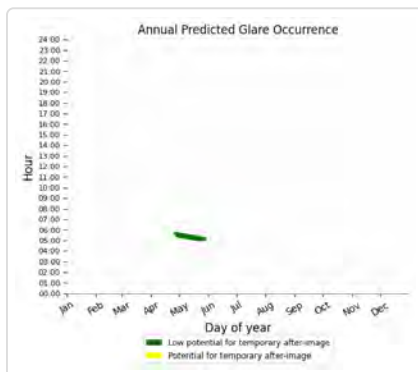
- 271 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## C04: OP 115

PV array is expected to produce the following glare for this receptor:

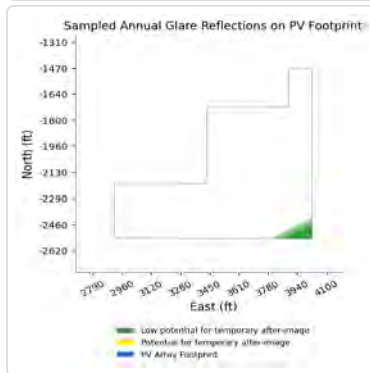
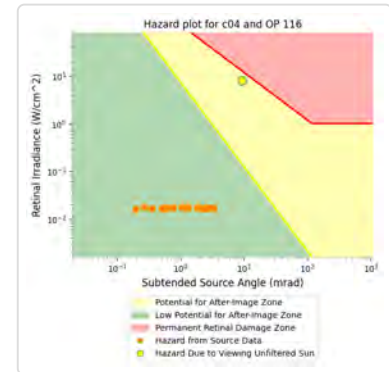
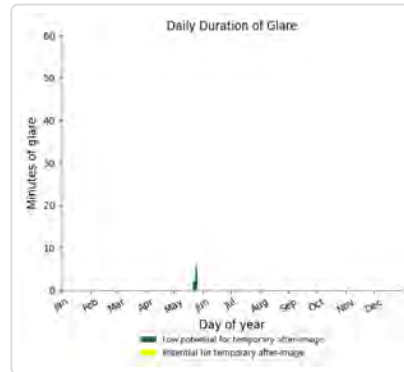
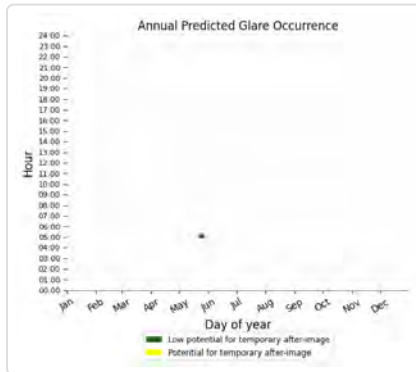
- 267 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## C04: OP 116

PV array is expected to produce the following glare for this receptor:

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



## C04: OP 117

No glare found

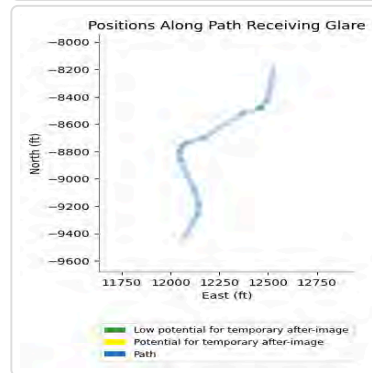
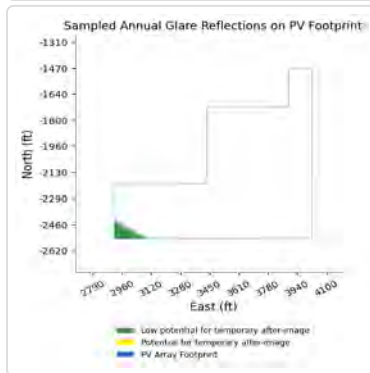
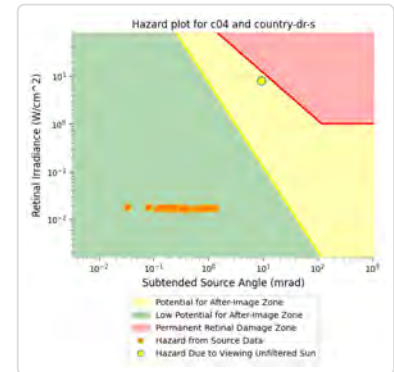
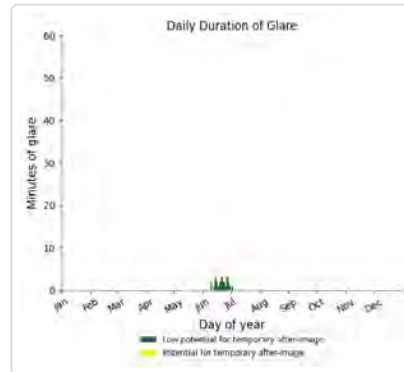
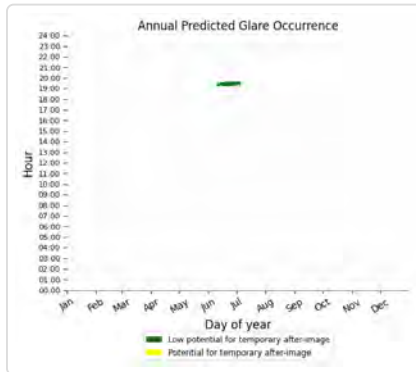
## C04: Collins Dr

No glare found

## C04: Country Dr Seg 1

PV array is expected to produce the following glare for this receptor:

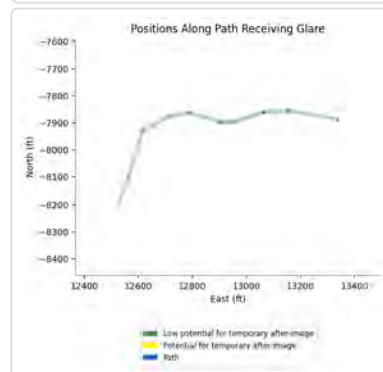
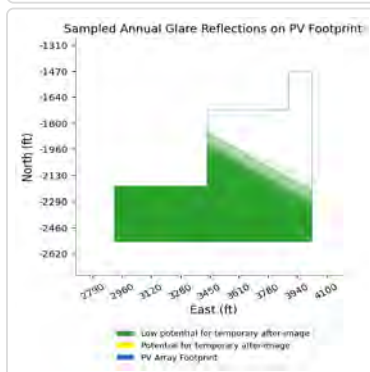
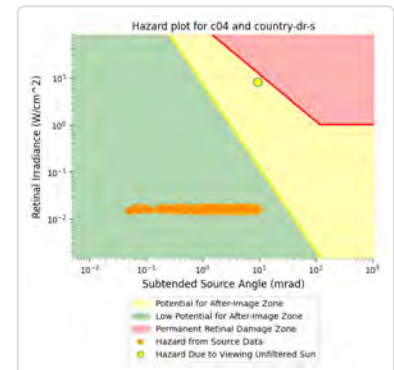
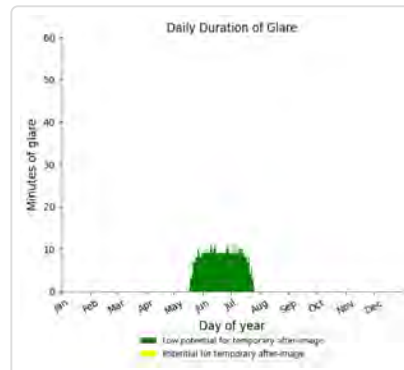
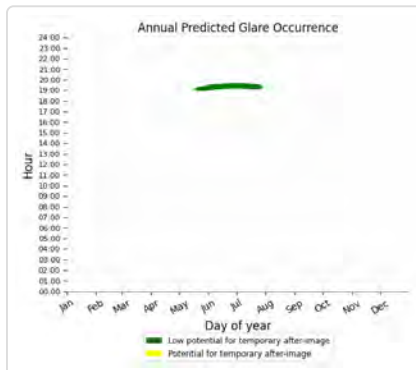
- 40 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## C04: Country Dr Seg 2

PV array is expected to produce the following glare for this receptor:

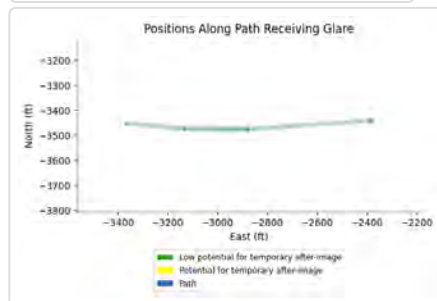
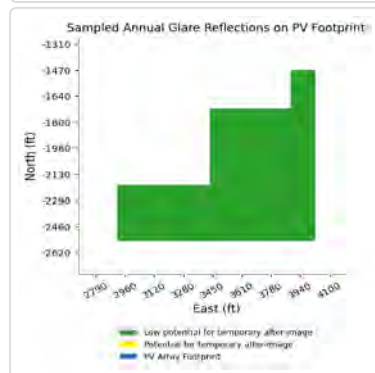
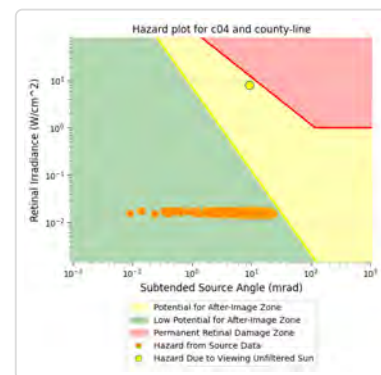
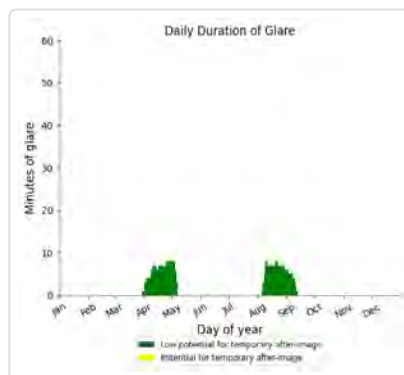
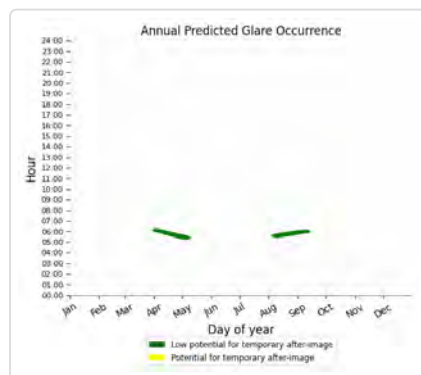
- 579 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## C04: County Line Rd

PV array is expected to produce the following glare for this receptor:

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



## C04: Dempseys Rd

No glare found

## C04: Harley Ln

No glare found

## C04: Henderson Rd

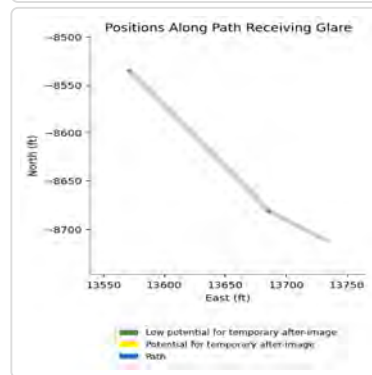
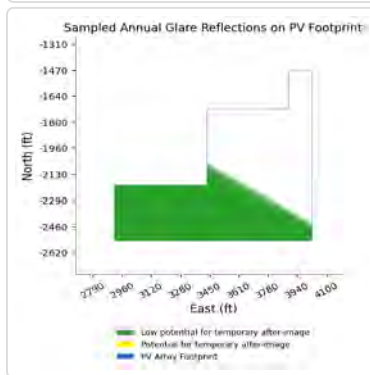
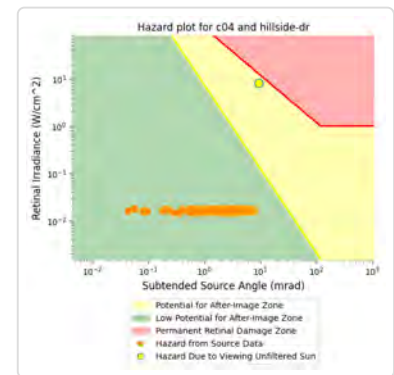
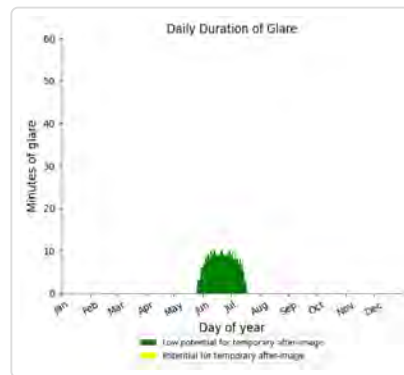
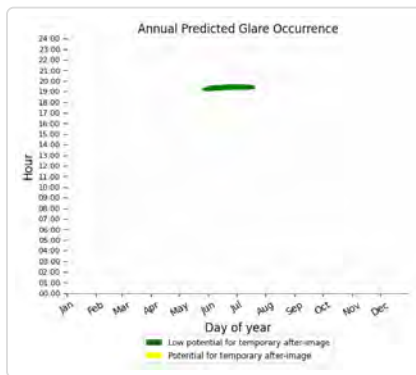
No glare found



## C04: Hillside Dr

PV array is expected to produce the following glare for this receptor:

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



## C04: Ole Briery Station Rd Seg 1

No glare found

## C04: Ole Briery Station Rd Seg 2

No glare found

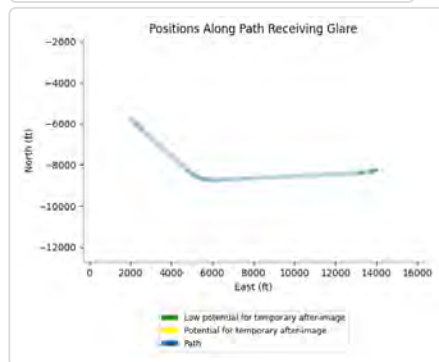
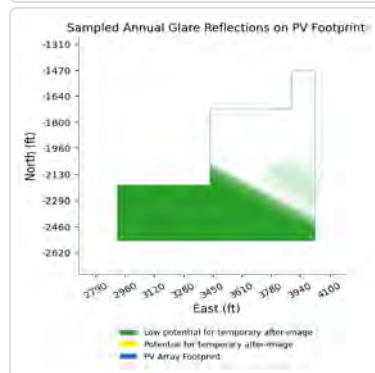
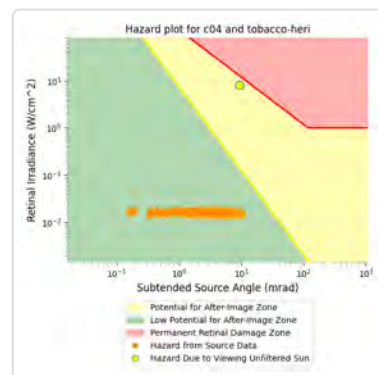
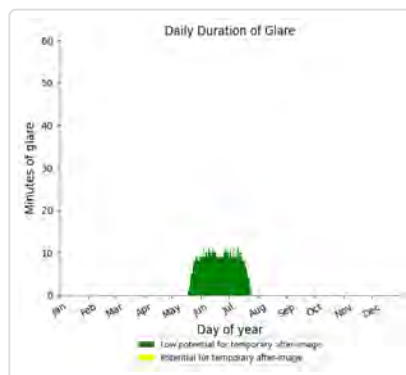
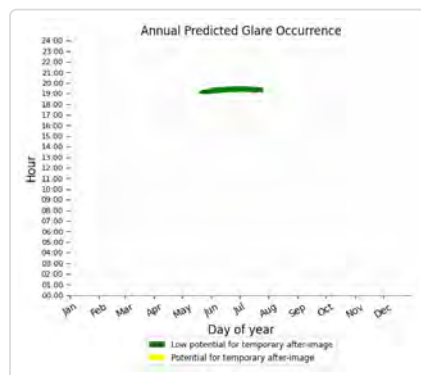
## C04: Thistle Knob Ln

No glare found

## C04: Tobacco Heritage Trail

PV array is expected to produce the following glare for this receptor:

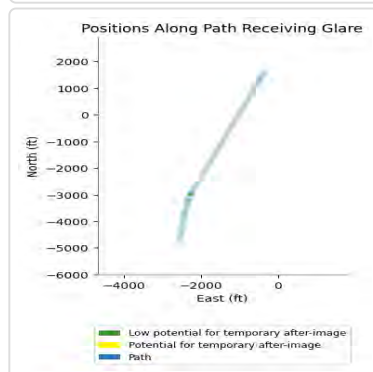
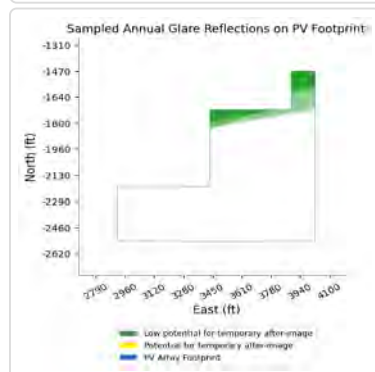
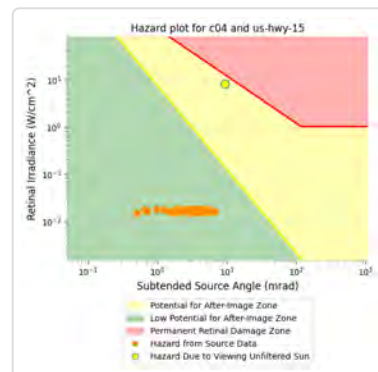
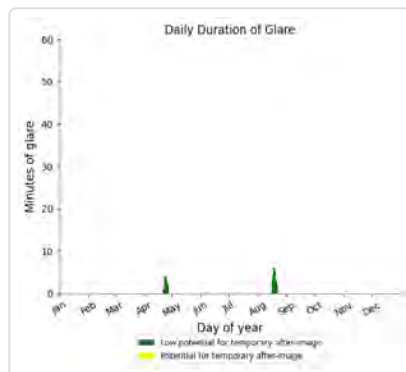
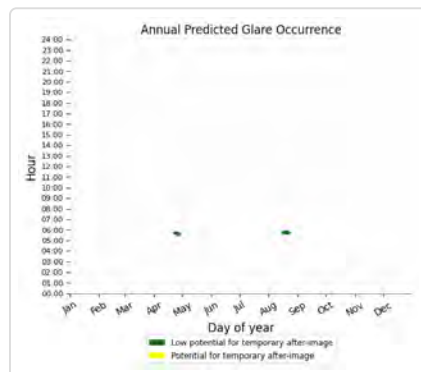
- 570 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## C04: US Hwy 15

PV array is expected to produce the following glare for this receptor:

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



## C04: US Hwy 360

*No glare found*

## C05 low potential for temporary after-image

Component	Green glare (min)	Yellow glare (min)
OP: OP 100	0	0
OP: OP 101	0	0
OP: OP 102	0	0
OP: OP 103	0	0
OP: OP 104	0	0
OP: OP 105	0	0
OP: OP 106	88	0
OP: OP 107	94	0
OP: OP 108	97	0
OP: OP 109	100	0
OP: OP 110	57	0
OP: OP 111	68	0
OP: OP 112	42	0
OP: OP 113	54	0
OP: OP 114	65	0
OP: OP 115	80	0
OP: OP 116	26	0
OP: OP 117	29	0
Route: Collins Dr	0	0
Route: Country Dr Seg 1	0	0
Route: Country Dr Seg 2	0	0
Route: County Line Rd	218	0
Route: Dempseys Rd	0	0
Route: Harley Ln	0	0
Route: Henderson Rd	281	0
Route: Hillside Dr	0	0
Route: Ole Briery Station Rd Seg 1	0	0
Route: Ole Briery Station Rd Seg 2	0	0
Route: Thistle Knob Ln	0	0
Route: Tobacco Heritage Trail	0	0
Route: US Hwy 15	0	0
Route: US Hwy 360	0	0

## C05: OP 100

*No glare found*

## C05: OP 101

*No glare found*

## C05: OP 102

*No glare found*

## C05: OP 103

No glare found

## C05: OP 104

No glare found

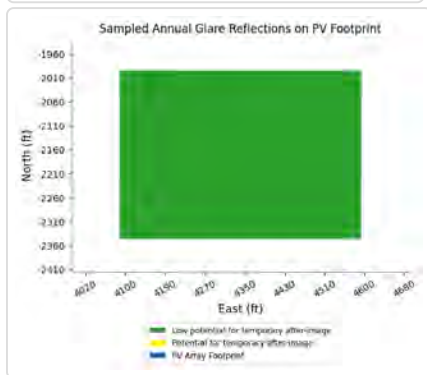
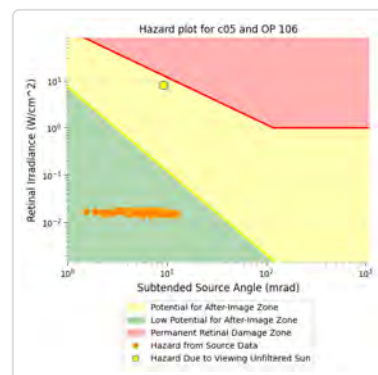
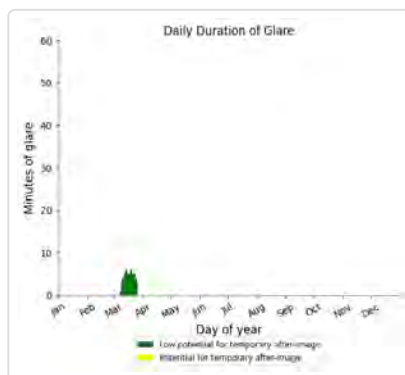
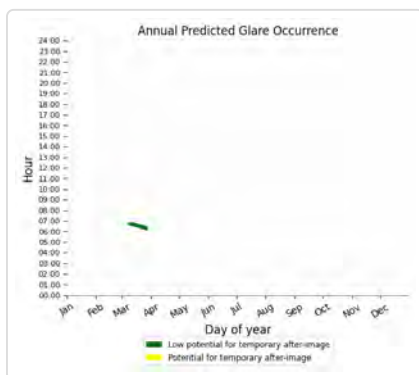
## C05: OP 105

No glare found

## C05: OP 106

PV array is expected to produce the following glare for this receptor:

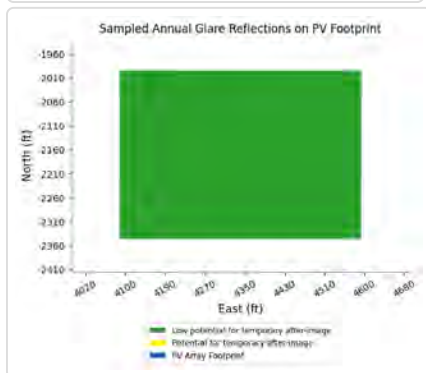
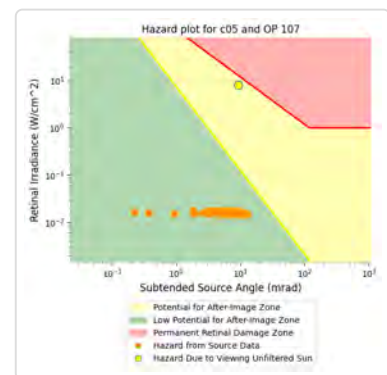
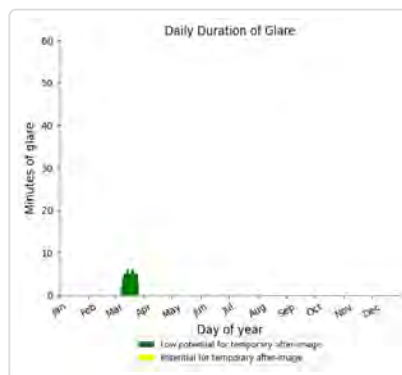
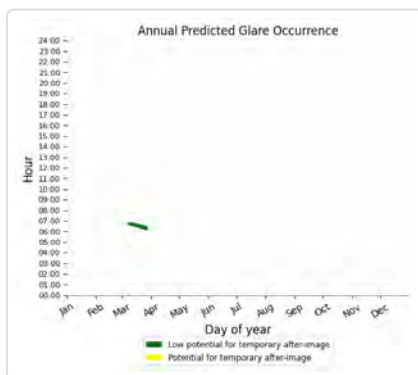
- 88 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## C05: OP 107

PV array is expected to produce the following glare for this receptor:

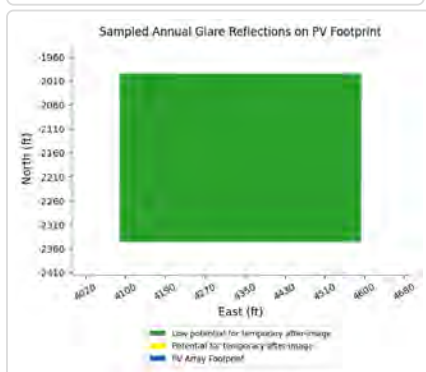
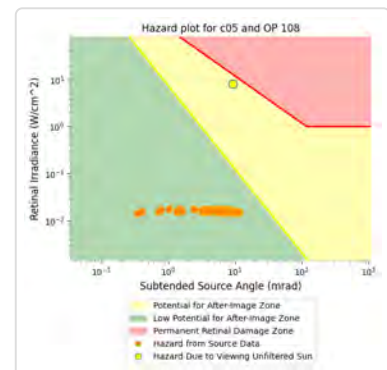
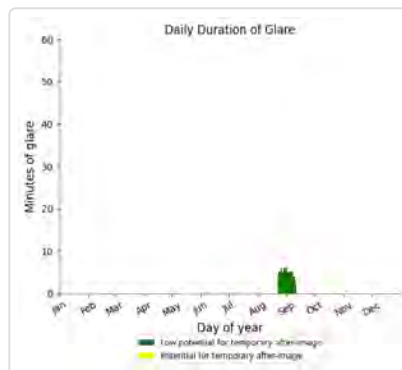
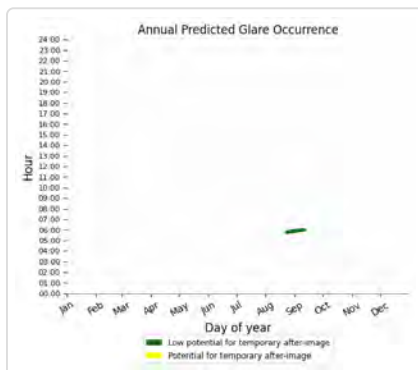
- 94 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## C05: OP 108

PV array is expected to produce the following glare for this receptor:

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

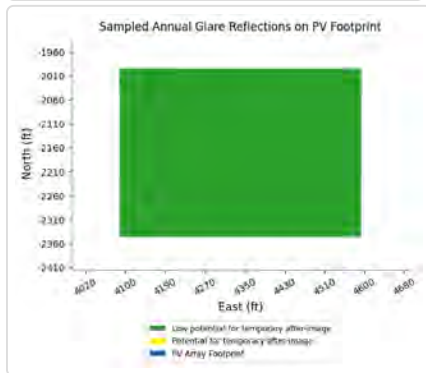
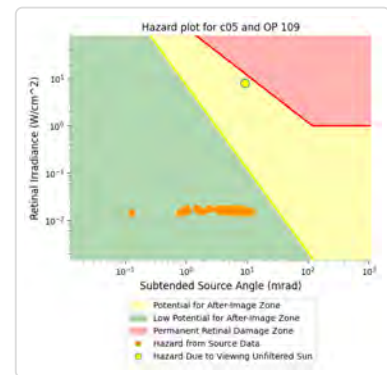
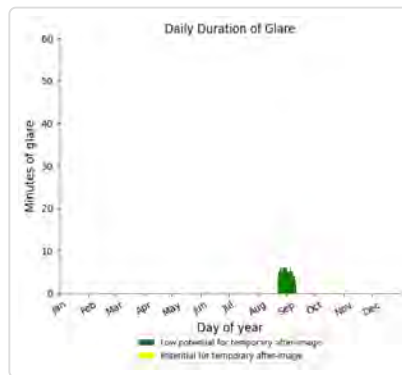
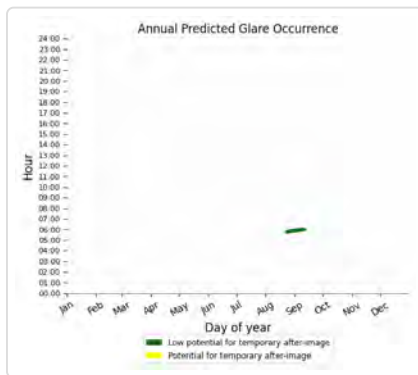




## C05: OP 109

PV array is expected to produce the following glare for this receptor:

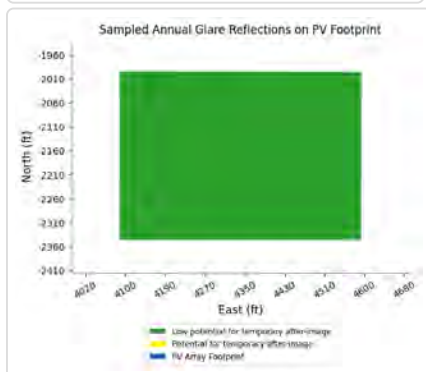
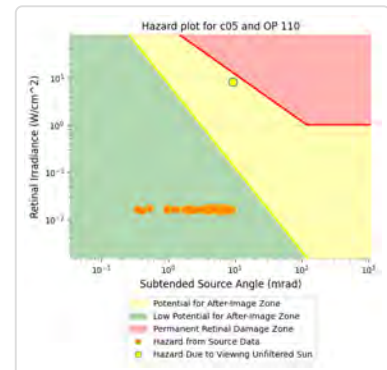
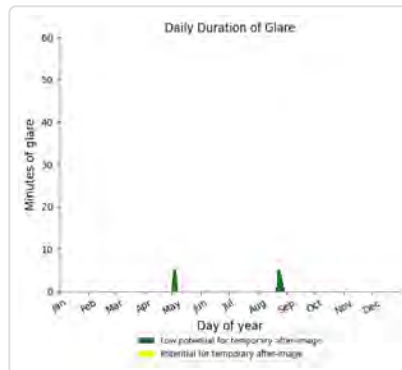
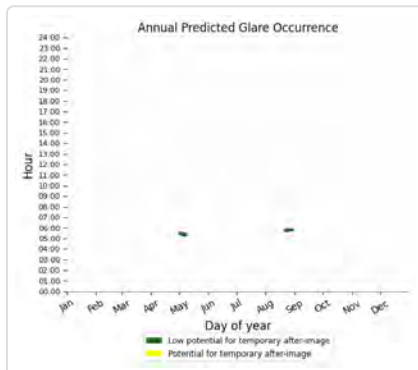
- 100 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## C05: OP 110

PV array is expected to produce the following glare for this receptor:

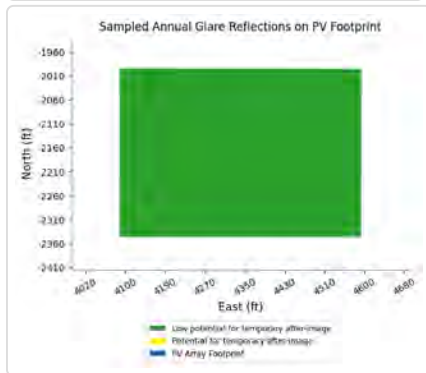
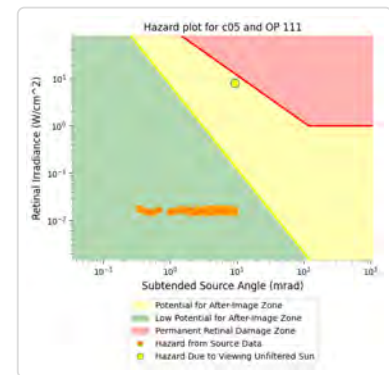
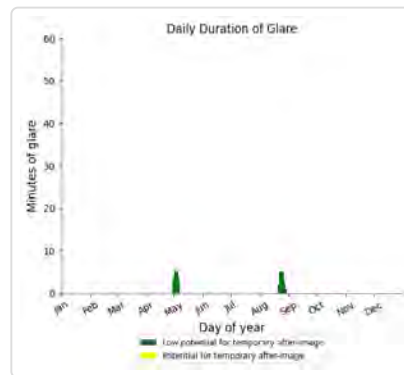
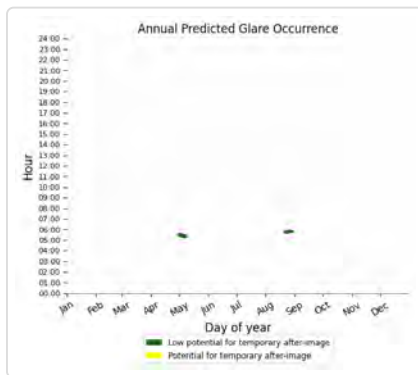
- 57 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## C05: OP 111

PV array is expected to produce the following glare for this receptor:

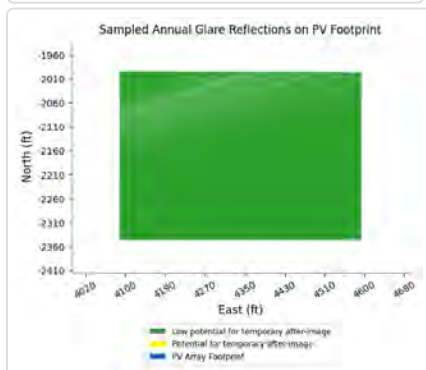
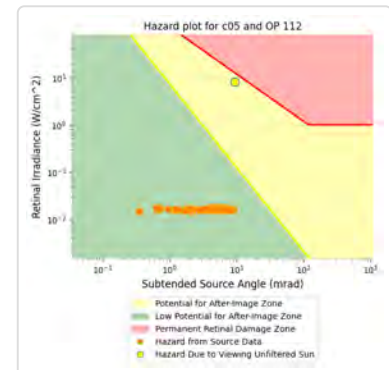
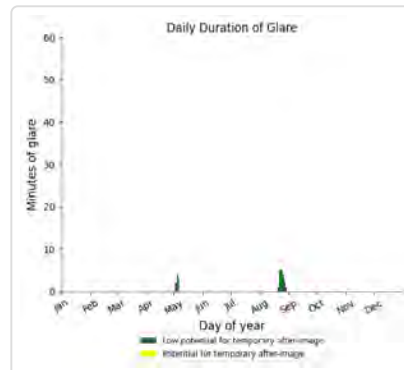
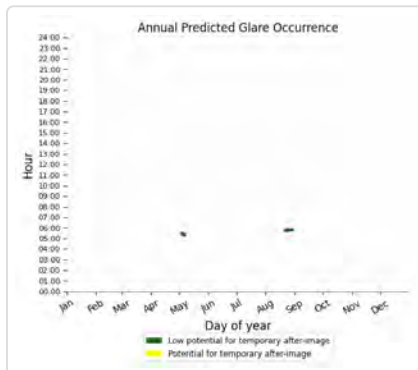
- 68 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## C05: OP 112

PV array is expected to produce the following glare for this receptor:

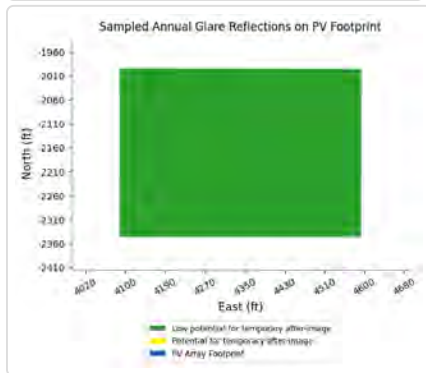
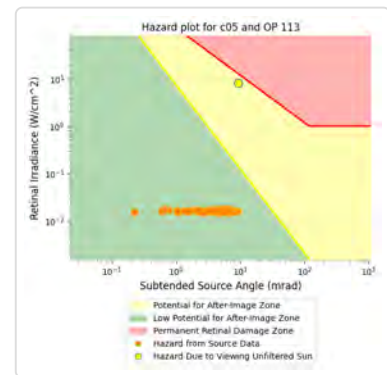
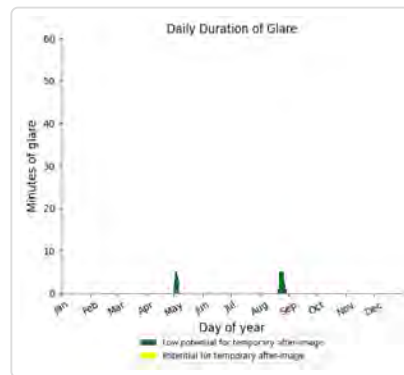
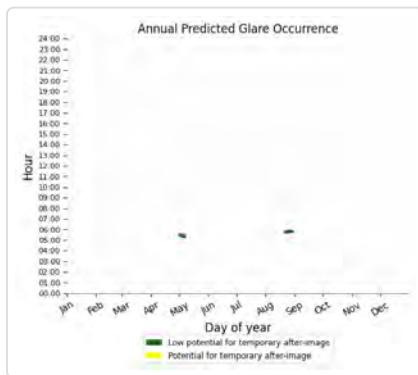
- 42 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## C05: OP 113

PV array is expected to produce the following glare for this receptor:

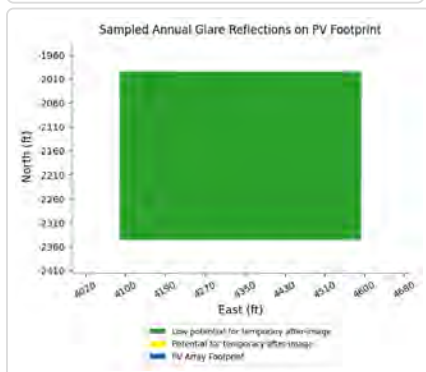
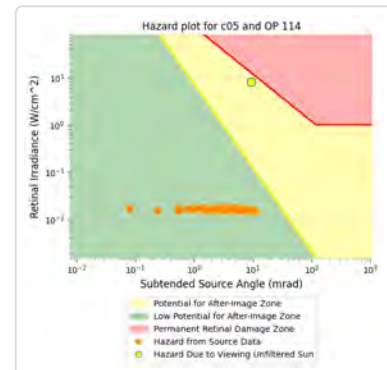
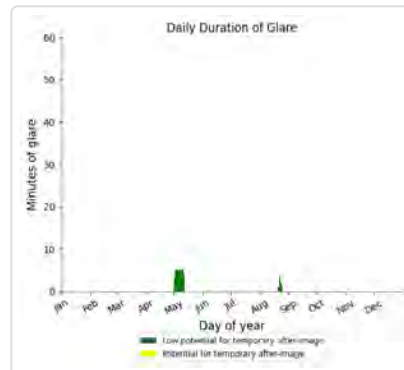
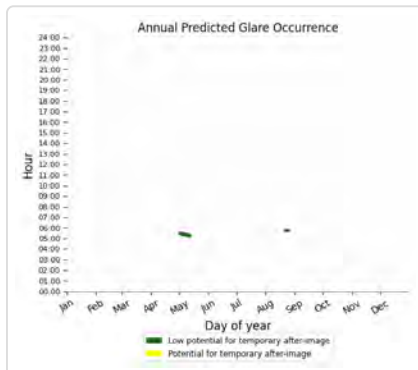
- 54 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## C05: OP 114

PV array is expected to produce the following glare for this receptor:

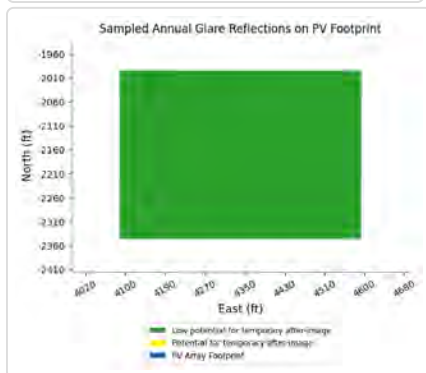
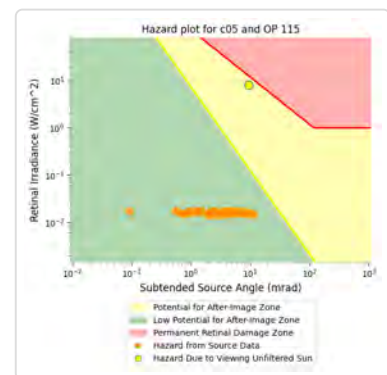
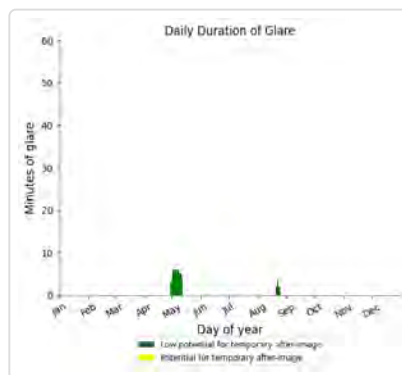
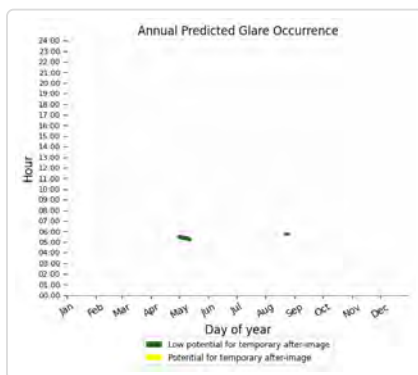
- 65 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## C05: OP 115

PV array is expected to produce the following glare for this receptor:

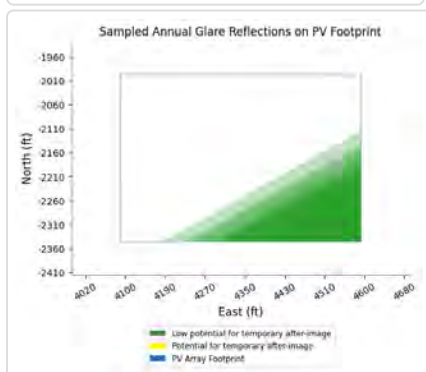
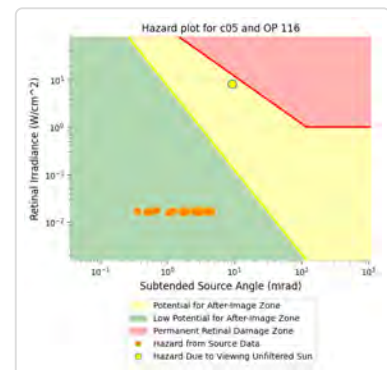
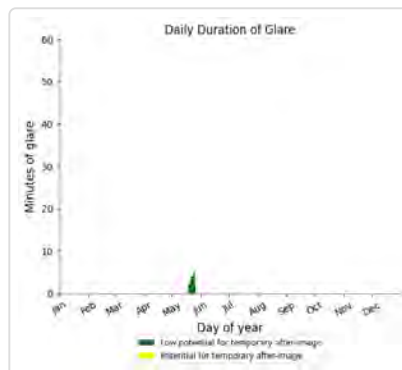
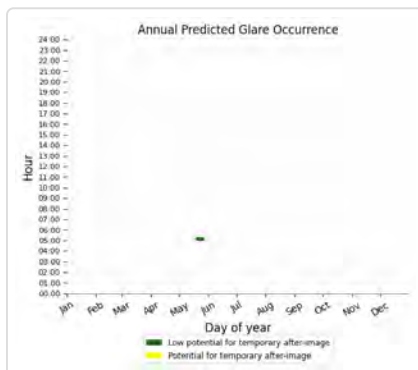
- 80 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## C05: OP 116

PV array is expected to produce the following glare for this receptor:

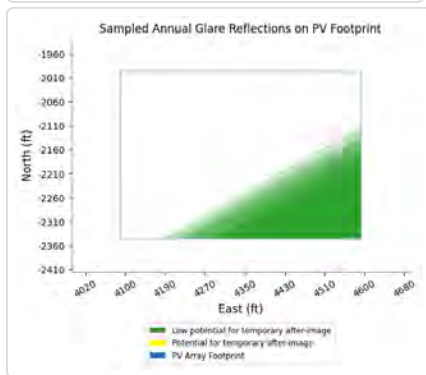
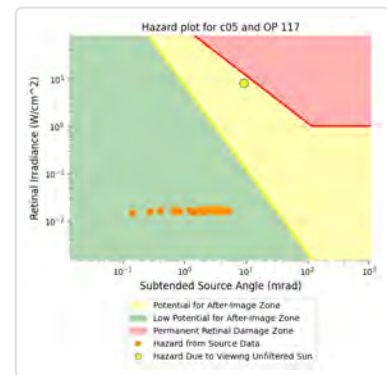
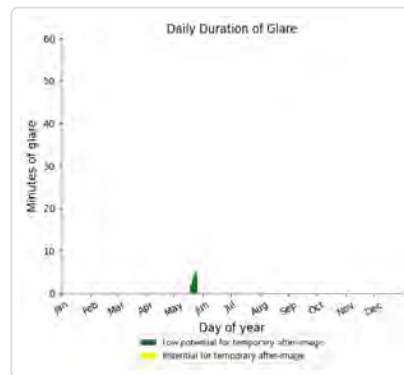
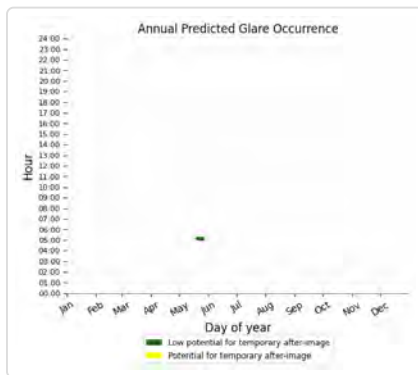
- 26 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## C05: OP 117

PV array is expected to produce the following glare for this receptor:

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



## C05: Collins Dr

No glare found

## C05: Country Dr Seg 1

No glare found

## C05: Country Dr Seg 2

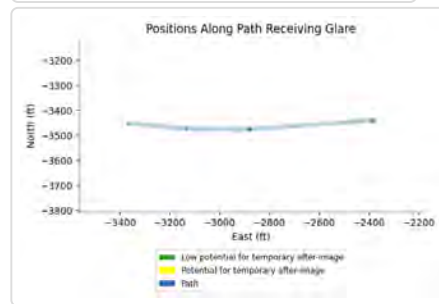
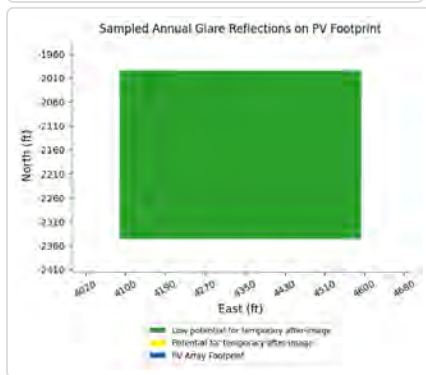
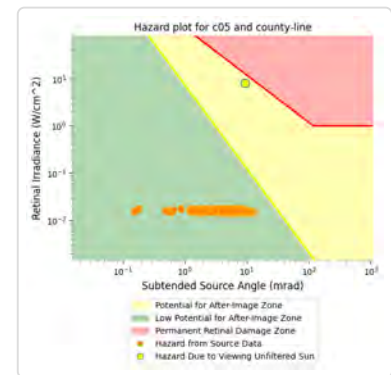
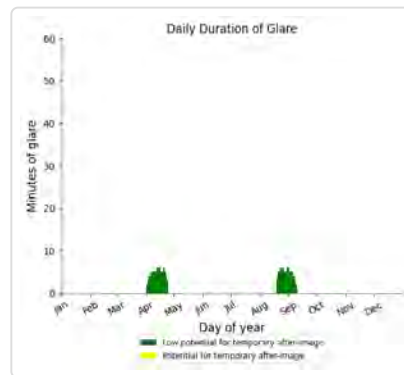
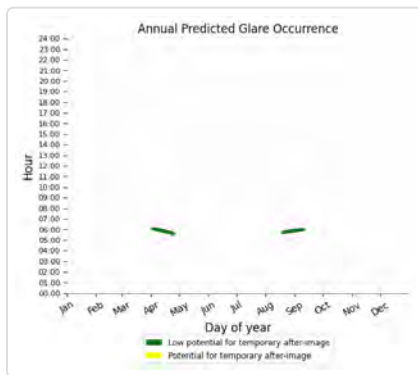
No glare found



## C05: County Line Rd

PV array is expected to produce the following glare for this receptor:

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



## C05: Dempseys Rd

No glare found

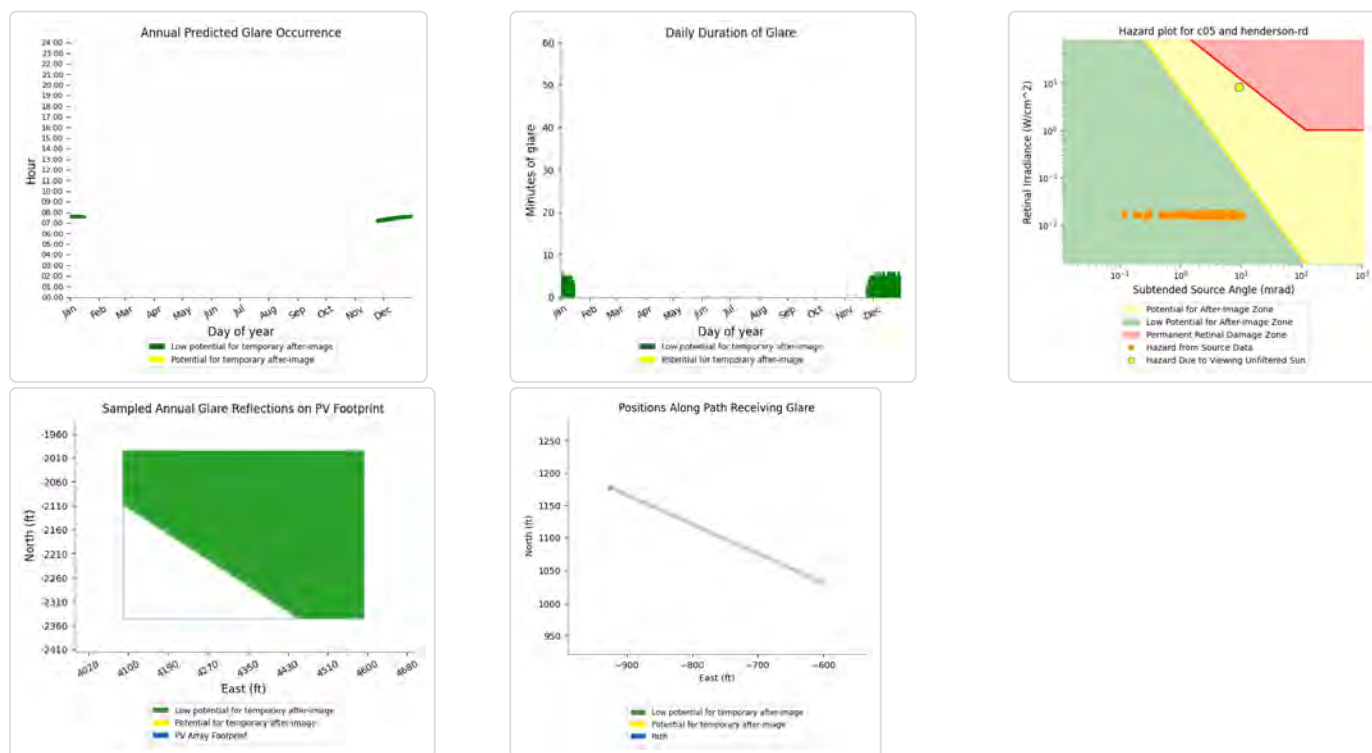
## C05: Harley Ln

No glare found

## C05: Henderson Rd

PV array is expected to produce the following glare for this receptor:

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



## C05: Hillside Dr

No glare found

## C05: Ole Briery Station Rd Seg 1

No glare found

## C05: Ole Briery Station Rd Seg 2

No glare found

## C05: Thistle Knob Ln

No glare found

## C05: Tobacco Heritage Trail

No glare found

## C05: US Hwy 15

No glare found

## C05: US Hwy 360

No glare found

## C06 low potential for temporary after-image

Component	Green glare (min)	Yellow glare (min)
OP: OP 100	0	0
OP: OP 101	0	0
OP: OP 102	0	0
OP: OP 103	0	0
OP: OP 104	0	0
OP: OP 105	0	0
OP: OP 106	0	0
OP: OP 107	0	0
OP: OP 108	0	0
OP: OP 109	0	0
OP: OP 110	0	0
OP: OP 111	15	0
OP: OP 112	0	0
OP: OP 113	15	0
OP: OP 114	42	0
OP: OP 115	52	0
OP: OP 116	184	0
OP: OP 117	190	0
Route: Collins Dr	0	0
Route: Country Dr Seg 1	0	0
Route: Country Dr Seg 2	25	0
Route: County Line Rd	0	0
Route: Dempseys Rd	0	0
Route: Harley Ln	0	0
Route: Henderson Rd	0	0
Route: Hillside Dr	0	0
Route: Ole Briery Station Rd Seg 1	0	0
Route: Ole Briery Station Rd Seg 2	0	0
Route: Thistle Knob Ln	0	0
Route: Tobacco Heritage Trail	39	0
Route: US Hwy 15	0	0
Route: US Hwy 360	0	0

#### C06: OP 100

*No glare found*

#### C06: OP 101

*No glare found*

#### C06: OP 102

*No glare found*

#### C06: OP 103

*No glare found*

C06: OP 104

No glare found

C06: OP 105

No glare found

C06: OP 106

No glare found

C06: OP 107

No glare found

C06: OP 108

No glare found

C06: OP 109

No glare found

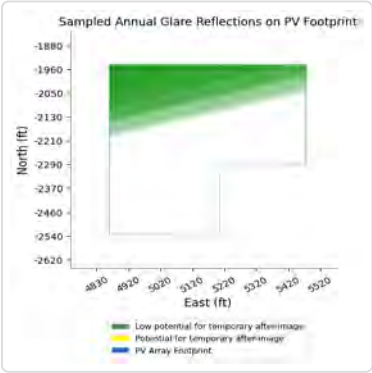
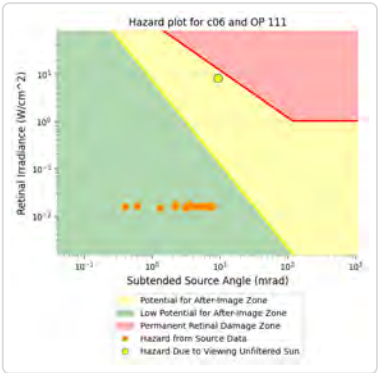
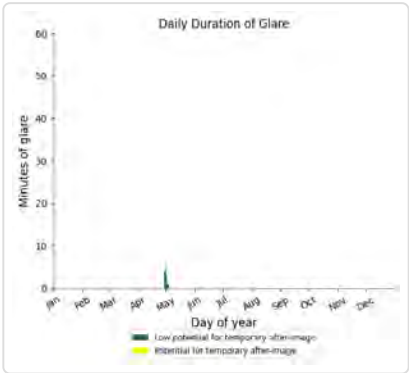
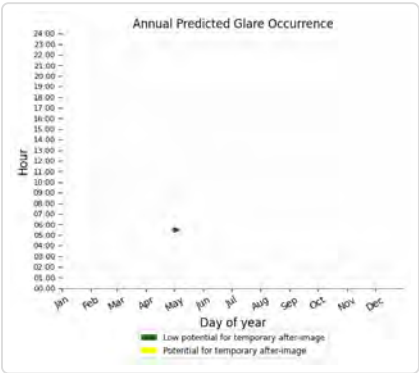
C06: OP 110

No glare found

C06: OP 111

PV array is expected to produce the following glare for this receptor:

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



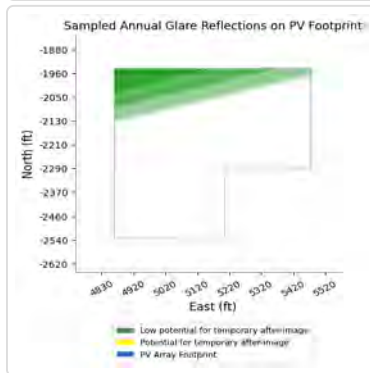
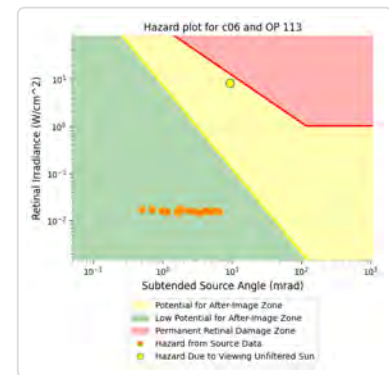
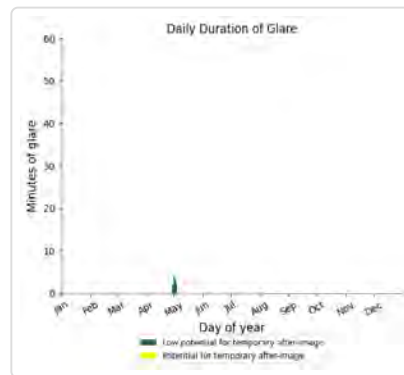
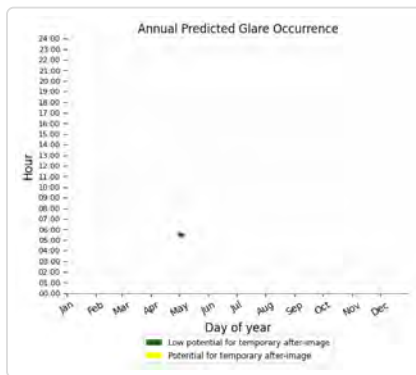
C06: OP 112

No glare found

## C06: OP 113

PV array is expected to produce the following glare for this receptor:

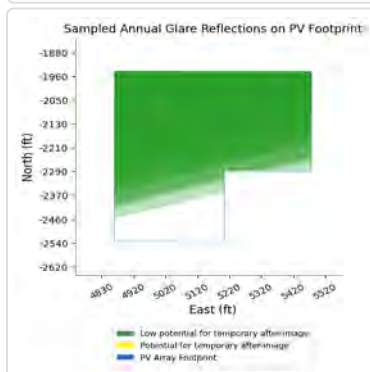
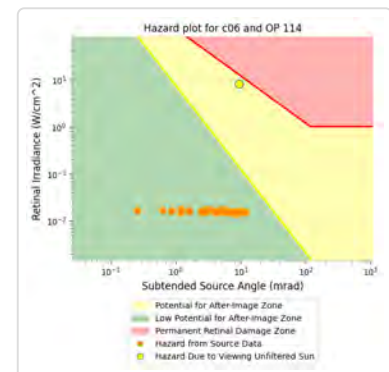
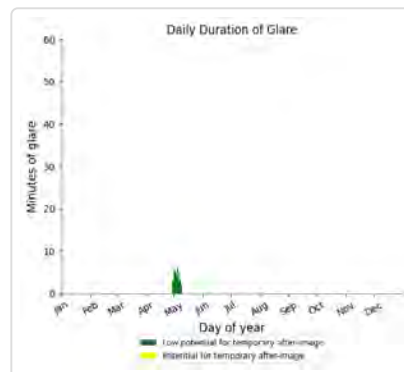
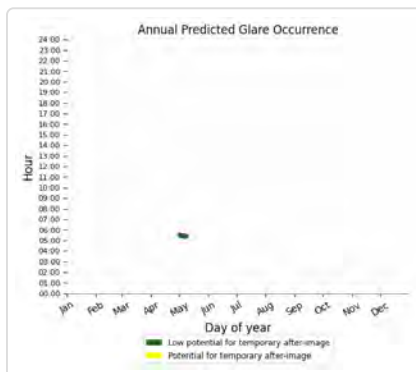
- 15 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## C06: OP 114

PV array is expected to produce the following glare for this receptor:

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

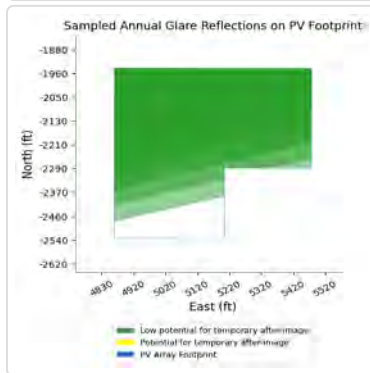
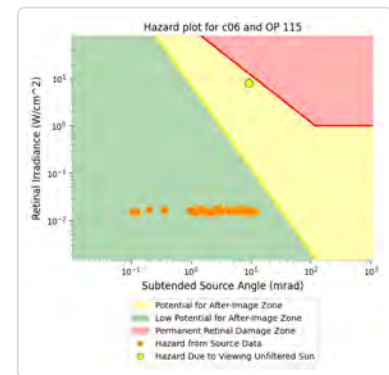
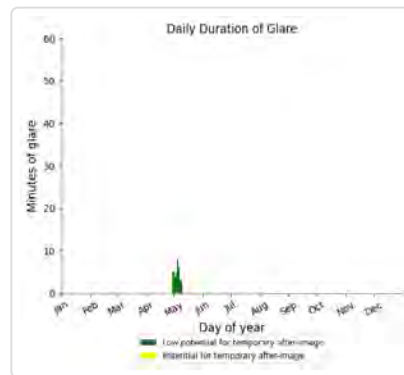
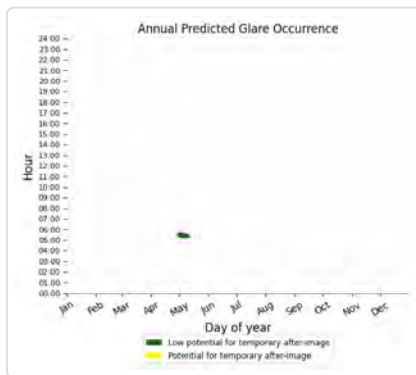




## C06: OP 115

PV array is expected to produce the following glare for this receptor:

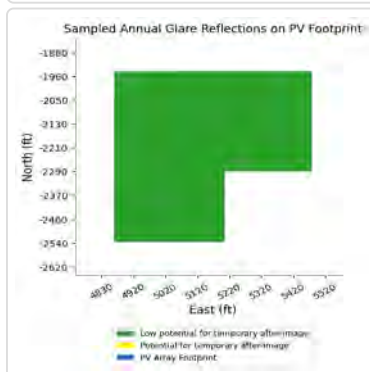
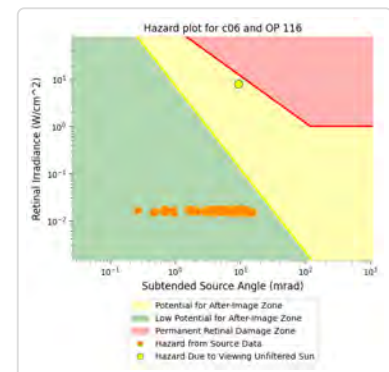
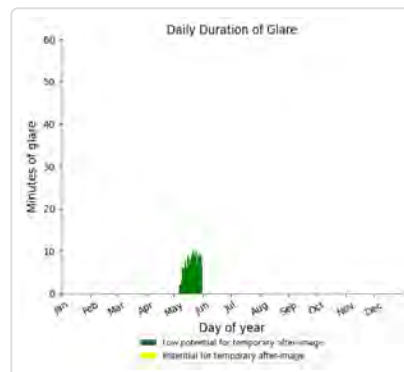
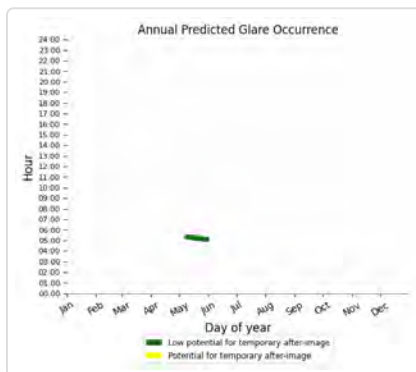
- 52 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## C06: OP 116

PV array is expected to produce the following glare for this receptor:

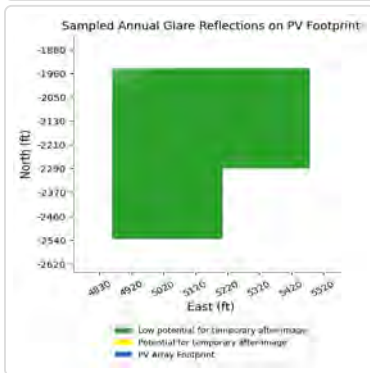
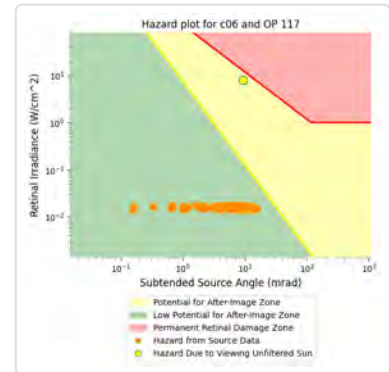
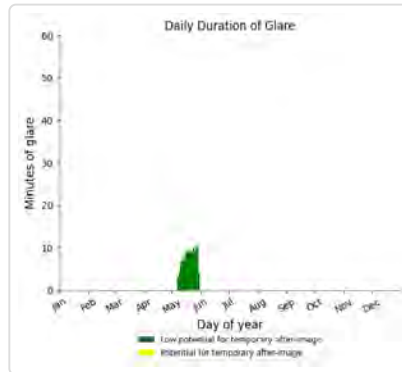
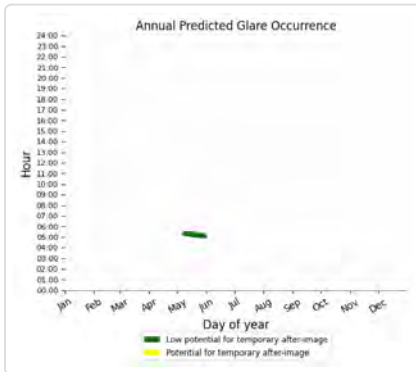
- 184 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## C06: OP 117

PV array is expected to produce the following glare for this receptor:

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



## C06: Collins Dr

No glare found

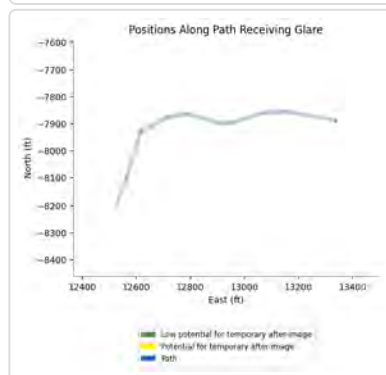
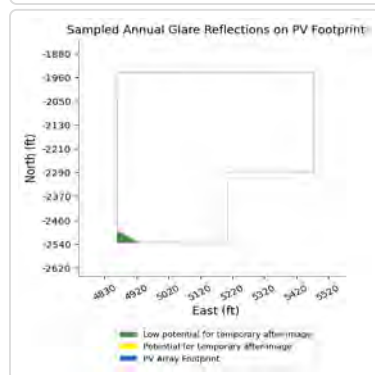
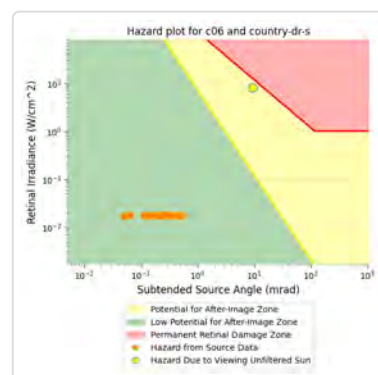
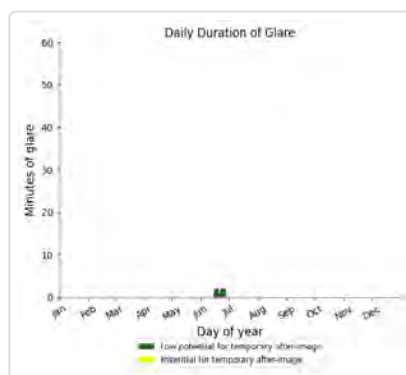
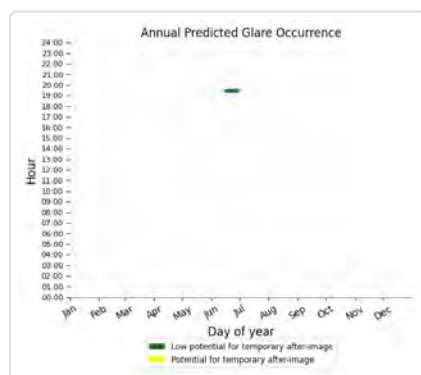
## C06: Country Dr Seg 1

No glare found

## C06: Country Dr Seg 2

PV array is expected to produce the following glare for this receptor:

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



## C06: County Line Rd

No glare found

## C06: Dempseys Rd

No glare found

## C06: Harley Ln

No glare found

## C06: Henderson Rd

No glare found

## C06: Hillside Dr

No glare found

## C06: Ole Briery Station Rd Seg 1

No glare found

## C06: Ole Briery Station Rd Seg 2

No glare found

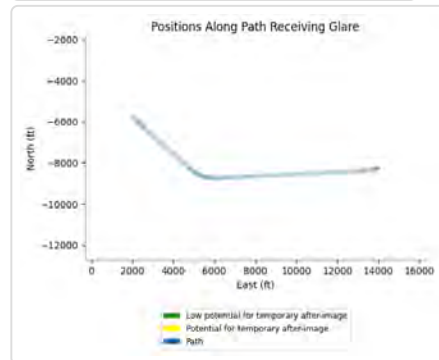
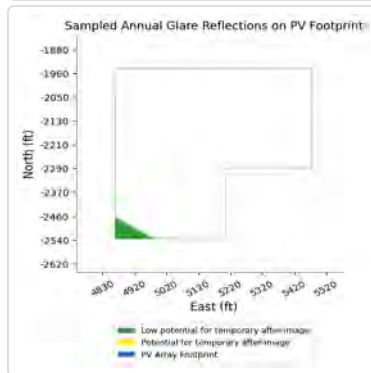
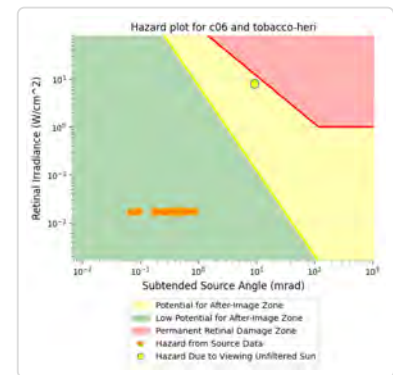
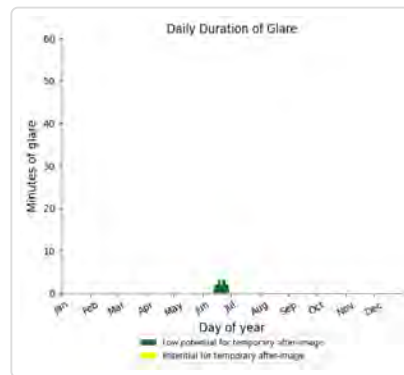
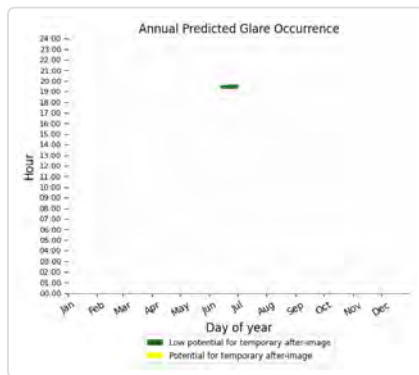
## C06: Thistle Knob Ln

No glare found

## C06: Tobacco Heritage Trail

PV array is expected to produce the following glare for this receptor:

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



## C06: US Hwy 15

No glare found

## C06: US Hwy 360

No glare found

## Summary of Vertical Surface Glare Analysis

### Assumptions

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

# Tobacco Trail Solar

## TT\_D01-E04\_6fA\_\_0DRA\_SGARC

**Created** Oct 02, 2025  
**Updated** Oct 02, 2025  
**Time-step** 1 minute  
**Timezone offset** UTC-5  
**Minimum sun altitude** 0.0 deg  
**Site ID** 160889.26911

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



### Misc. Analysis Settings

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

PV Analysis Methodology: **Version 2**  
 Enhanced subtended angle calculation: **On**

### 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
D01	SA tracking	SA tracking	425	0	-
D02	SA tracking	SA tracking	2,119	0	-
D03	SA tracking	SA tracking	2,398	127	-
D04	SA tracking	SA tracking	2,269	0	-
D05	SA tracking	SA tracking	8,124	4,971	-
E01	SA tracking	SA tracking	4,825	94	-
E02	SA tracking	SA tracking	3,066	0	-
E03	SA tracking	SA tracking	8,469	601	-
E04	SA tracking	SA tracking	6,104	0	-



Component Data

---

## PV Array(s)

Total PV footprint area: 103.0 acres

Name: D01

Footprint area: 11.1 acres

Axis tracking: Single-axis rotation

Backtracking: Shade

Tracking axis orientation: 180.0 deg

Maximum tracking angle: 60.0 deg

Resting angle: 0.0 deg

Ground Coverage Ratio: 0.5

Rated power: -

Panel material: Smooth glass with AR coating

Vary reflectivity with sun position? Yes

Correlate slope error with surface type? Yes

Slope error: 8.43 mrad



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	37.097618	-78.457021	553.16	6.00	559.16
2	37.097617	-78.455131	548.99	6.00	554.99
3	37.099556	-78.455130	540.36	6.00	546.36
4	37.099557	-78.454730	547.45	6.00	553.45
5	37.095705	-78.454727	564.97	6.00	570.97
6	37.095705	-78.456374	561.68	6.00	567.68
7	37.096675	-78.456374	558.04	6.00	564.04
8	37.096675	-78.457022	548.13	6.00	554.13

Name: D02

Footprint area: 15.5 acres

Axis tracking: Single-axis rotation

Backtracking: Shade

Tracking axis orientation: 180.0 deg

Maximum tracking angle: 60.0 deg

Resting angle: 0.0 deg

Ground Coverage Ratio: 0.5

Rated power: -

Panel material: Smooth glass with AR coating

Vary reflectivity with sun position? Yes

Correlate slope error with surface type? Yes

Slope error: 8.43 mrad



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	37.099507	-78.454428	548.47	6.00	554.47
2	37.099506	-78.452565	537.56	6.00	543.56
3	37.098841	-78.452566	539.73	6.00	545.73
4	37.098840	-78.450136	523.98	6.00	529.98
5	37.097898	-78.450136	523.46	6.00	529.46
6	37.097899	-78.453322	540.90	6.00	546.90
7	37.096930	-78.453323	540.82	6.00	546.82
8	37.096930	-78.454430	552.31	6.00	558.31

**Name:** D03

**Footprint area:** 17.4 acres

**Axis tracking:** Single-axis rotation

**Backtracking:** Shade

**Tracking axis orientation:** 180.0 deg

**Maximum tracking angle:** 60.0 deg

**Resting angle:** 0.0 deg

**Ground Coverage Ratio:** 0.5

**Rated power:** -

**Panel material:** Smooth glass with AR coating

**Vary reflectivity with sun position?** Yes

**Correlate slope error with surface type?** Yes

**Slope error:** 8.43 mrad



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	37.096738	-78.454430	550.00	6.00	556.00
2	37.096737	-78.453323	546.71	6.00	552.71
3	37.096435	-78.453323	554.76	6.00	560.76
4	37.096431	-78.451325	530.87	6.00	536.87
5	37.094465	-78.451327	520.06	6.00	526.06
6	37.094466	-78.452082	532.23	6.00	538.23
7	37.094160	-78.452083	535.04	6.00	541.04
8	37.094159	-78.454434	563.04	6.00	569.04

**Name:** D04

**Footprint area:** 12.6 acres

**Axis tracking:** Single-axis rotation

**Backtracking:** Shade

**Tracking axis orientation:** 180.0 deg

**Maximum tracking angle:** 60.0 deg

**Resting angle:** 0.0 deg

**Ground Coverage Ratio:** 0.5

**Rated power:** -

**Panel material:** Smooth glass with AR coating

**Vary reflectivity with sun position?** Yes

**Correlate slope error with surface type?** Yes

**Slope error:** 8.43 mrad



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	37.096431	-78.451298	530.30	6.00	536.30
2	37.096431	-78.450299	520.81	6.00	526.81
3	37.095766	-78.450300	530.12	6.00	536.12
4	37.095766	-78.448815	536.76	6.00	542.76
5	37.096735	-78.448814	512.98	6.00	518.98
6	37.096735	-78.446897	550.58	6.00	556.58
7	37.095131	-78.446895	532.79	6.00	538.79
8	37.095130	-78.451272	531.62	6.00	537.62

**Name:** D05

**Footprint area:** 8.2 acres

**Axis tracking:** Single-axis rotation

**Backtracking:** Shade

**Tracking axis orientation:** 180.0 deg

**Maximum tracking angle:** 60.0 deg

**Resting angle:** 0.0 deg

**Ground Coverage Ratio:** 0.5

**Rated power:** -

**Panel material:** Smooth glass with AR coating

**Vary reflectivity with sun position?** Yes

**Correlate slope error with surface type?** Yes

**Slope error:** 8.43 mrad



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	37.093894	-78.454867	563.86	6.00	569.86
2	37.093894	-78.454463	560.69	6.00	566.69
3	37.092924	-78.454463	559.25	6.00	565.25
4	37.092924	-78.452951	547.56	6.00	553.56
5	37.092287	-78.452952	534.49	6.00	540.49
6	37.092287	-78.454356	558.74	6.00	564.74
7	37.091623	-78.454356	547.24	6.00	553.24
8	37.091625	-78.454896	549.71	6.00	555.71
9	37.091318	-78.454896	550.00	6.00	556.00
10	37.091318	-78.455895	569.82	6.00	575.82
11	37.092260	-78.455894	577.02	6.00	583.02
12	37.092260	-78.455462	565.92	6.00	571.92
13	37.092925	-78.455462	571.77	6.00	577.77
14	37.092924	-78.455030	565.87	6.00	571.87
15	37.093589	-78.455030	565.77	6.00	571.77
16	37.093589	-78.454868	563.71	6.00	569.71

**Name:** E01

**Footprint area:** 15.3 acres

**Axis tracking:** Single-axis rotation

**Backtracking:** Shade

**Tracking axis orientation:** 180.0 deg

**Maximum tracking angle:** 60.0 deg

**Resting angle:** 0.0 deg

**Ground Coverage Ratio:** 0.5

**Rated power:** -

**Panel material:** Smooth glass with AR coating

**Vary reflectivity with sun position?** Yes

**Correlate slope error with surface type?** Yes

**Slope error:** 8.43 mrad



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	37.091916	-78.449801	547.42	6.00	553.42
2	37.091915	-78.448154	538.33	6.00	544.33
3	37.091250	-78.448154	554.93	6.00	560.93
4	37.091249	-78.446103	519.61	6.00	525.61
5	37.090612	-78.446103	507.62	6.00	513.62
6	37.090615	-78.449289	553.75	6.00	559.75
7	37.089311	-78.449290	550.56	6.00	556.56
8	37.089311	-78.448048	536.66	6.00	542.66
9	37.088674	-78.448048	523.82	6.00	529.82
10	37.088675	-78.450667	557.80	6.00	563.80
11	37.089312	-78.450666	562.67	6.00	568.67
12	37.089312	-78.450450	561.40	6.00	567.40
13	37.090284	-78.450450	556.80	6.00	562.80
14	37.090281	-78.449802	547.90	6.00	553.90

Name: E02

Footprint area: 7.3 acres

Axis tracking: Single-axis rotation

Backtracking: Shade

Tracking axis orientation: 180.0 deg

Maximum tracking angle: 60.0 deg

Resting angle: 0.0 deg

Ground Coverage Ratio: 0.5

Rated power: -

Panel material: Smooth glass with AR coating

Vary reflectivity with sun position? Yes

Correlate slope error with surface type? Yes

Slope error: 8.43 mrad



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	37.091791	-78.443896	517.36	6.00	523.36
2	37.091790	-78.442790	516.73	6.00	522.73
3	37.088854	-78.442792	538.47	6.00	544.47
4	37.088855	-78.443521	534.59	6.00	540.59
5	37.089519	-78.443520	533.55	6.00	539.55
6	37.089519	-78.443898	532.04	6.00	538.04

Name: E03

Footprint area: 14.1 acres

Axis tracking: Single-axis rotation

Backtracking: Shade

Tracking axis orientation: 180.0 deg

Maximum tracking angle: 60.0 deg

Resting angle: 0.0 deg

Ground Coverage Ratio: 0.5

Rated power: -

Panel material: Smooth glass with AR coating

Vary reflectivity with sun position? Yes

Correlate slope error with surface type? Yes

Slope error: 8.43 mrad



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	37.088714	-78.444654	531.46	6.00	537.46
2	37.088714	-78.443494	538.11	6.00	544.11
3	37.087080	-78.443495	551.46	6.00	557.46
4	37.087079	-78.442415	552.28	6.00	558.28
5	37.086415	-78.442416	554.77	6.00	560.77
6	37.086414	-78.441984	549.74	6.00	555.74
7	37.085777	-78.441984	541.92	6.00	547.92
8	37.085778	-78.442470	551.96	6.00	557.96
9	37.084808	-78.442471	557.37	6.00	563.37
10	37.084808	-78.443998	563.20	6.00	569.20
11	37.086443	-78.444008	551.03	6.00	557.03
12	37.086443	-78.444278	545.19	6.00	551.19
13	37.087107	-78.444278	546.26	6.00	552.26
14	37.087104	-78.444657	534.39	6.00	540.39



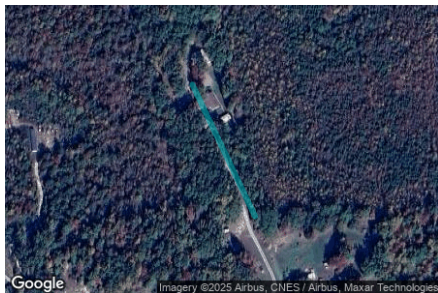
**Name:** E04  
**Footprint area:** 1.6 acres  
**Axis tracking:** Single-axis rotation  
**Backtracking:** Shade  
**Tracking axis orientation:** 180.0 deg  
**Maximum tracking angle:** 60.0 deg  
**Resting angle:** 0.0 deg  
**Ground Coverage Ratio:** 0.5  
**Rated power:** -  
**Panel material:** Smooth glass with AR coating  
**Vary reflectivity with sun position?** Yes  
**Correlate slope error with surface type?** Yes  
**Slope error:** 8.43 mrad



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	37.086184	-78.446238	550.37	6.00	556.37
2	37.086184	-78.445239	548.39	6.00	554.39
3	37.085547	-78.445239	555.76	6.00	561.76
4	37.085547	-78.446238	560.62	6.00	566.62

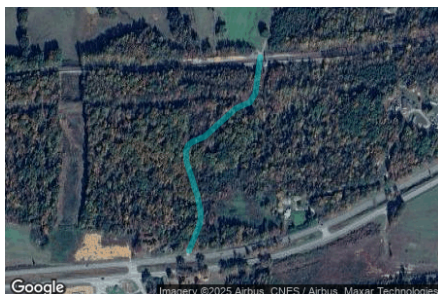
## Route Receptor(s)

**Name:** Collins Dr  
**Route type** Two-way  
**Azimuthal view angle:** 50.0 deg  
**Downward view angle:** 90.0 deg



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	37.081871	-78.442797	585.46	3.50	588.96
2	37.080705	-78.442104	593.95	3.50	597.45

**Name:** Country Dr Seg 1  
**Route type** Two-way  
**Azimuthal view angle:** 50.0 deg  
**Downward view angle:** 90.0 deg



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	37.080860	-78.423727	596.22	3.50	599.72
2	37.081335	-78.423484	593.74	3.50	597.24
3	37.081523	-78.423466	592.70	3.50	596.20
4	37.081829	-78.423540	592.79	3.50	596.29
5	37.082428	-78.423782	598.80	3.50	602.30
6	37.082611	-78.423798	598.76	3.50	602.26
7	37.082719	-78.423744	598.06	3.50	601.56
8	37.082768	-78.423668	597.93	3.50	601.43
9	37.082867	-78.423382	593.53	3.50	597.03
10	37.083365	-78.422690	575.99	3.50	579.49
11	37.083472	-78.422377	574.16	3.50	577.66
12	37.083628	-78.422257	574.14	3.50	577.64
13	37.084267	-78.422150	573.40	3.50	576.90

**Name:** Country Dr Seg 2  
**Route type** Two-way  
**Azimuthal view angle:** 50.0 deg  
**Downward view angle:** 90.0 deg



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	37.084267	-78.422150	573.40	3.50	576.90
2	37.084508	-78.422031	569.83	3.50	573.33
3	37.084996	-78.421843	569.58	3.50	573.08
4	37.085142	-78.421494	566.57	3.50	570.07
5	37.085170	-78.421251	561.04	3.50	564.54
6	37.085078	-78.420854	551.39	3.50	554.89
7	37.085078	-78.420700	547.34	3.50	550.84
8	37.085178	-78.420314	542.35	3.50	545.85
9	37.085193	-78.420005	540.85	3.50	544.35
10	37.085107	-78.419377	548.13	3.50	551.63

**Name:** County Line Rd  
**Route type** Two-way  
**Azimuthal view angle:** 50.0 deg  
**Downward view angle:** 90.0 deg



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	37.097280	-78.476651	594.54	3.50	598.04
2	37.097219	-78.475855	598.80	3.50	602.30
3	37.097213	-78.474994	607.28	3.50	610.78
4	37.097309	-78.473270	621.37	3.50	624.87

**Name:** Dempseys Rd  
**Route type** Two-way  
**Azimuthal view angle:** 50.0 deg  
**Downward view angle:** 90.0 deg



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	37.100853	-78.432978	553.09	3.50	556.59
2	37.100660	-78.433062	555.40	3.50	558.90
3	37.100457	-78.433086	558.88	3.50	562.38
4	37.099830	-78.433036	562.04	3.50	565.54
5	37.099719	-78.433062	562.51	3.50	566.01
6	37.099499	-78.433266	563.93	3.50	567.43

**Name:** Harley Ln  
**Route type** Two-way  
**Azimuthal view angle:** 50.0 deg  
**Downward view angle:** 90.0 deg



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	37.081527	-78.446166	585.61	3.50	589.11
2	37.081071	-78.445886	588.43	3.50	591.93

**Name:** Henderson Rd  
**Route type** Two-way  
**Azimuthal view angle:** 50.0 deg  
**Downward view angle:** 90.0 deg



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	37.109995	-78.468285	603.05	3.50	606.55
2	37.109590	-78.467164	592.11	3.50	595.61



**Name:** Hillside Dr  
**Route type** Two-way  
**Azimuthal view angle:** 50.0 deg  
**Downward view angle:** 90.0 deg



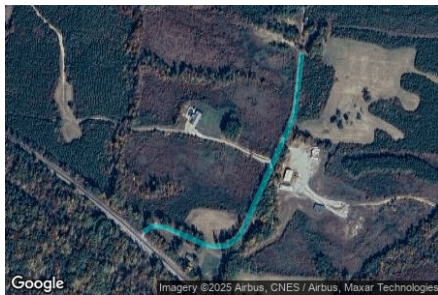
Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	37.083329	-78.418574	583.61	3.50	587.11
2	37.082929	-78.418183	584.69	3.50	588.19
3	37.082844	-78.418020	580.23	3.50	583.73

**Name:** Ole Briery Station Rd Seg 1  
**Route type** Two-way  
**Azimuthal view angle:** 50.0 deg  
**Downward view angle:** 90.0 deg



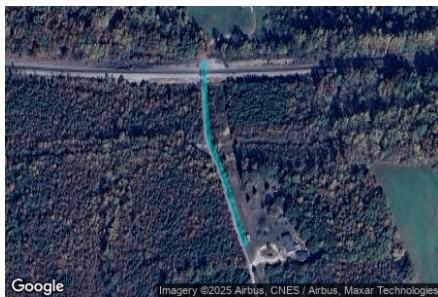
Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	37.092208	-78.458646	563.15	3.50	566.65
2	37.092090	-78.458691	563.42	3.50	566.92
3	37.091871	-78.458666	558.97	3.50	562.47
4	37.090953	-78.457951	563.80	3.50	567.30
5	37.090854	-78.457956	564.22	3.50	567.72
6	37.090611	-78.458144	565.23	3.50	568.73
7	37.090481	-78.458117	566.86	3.50	570.36
8	37.089856	-78.457249	576.52	3.50	580.02
9	37.089653	-78.457170	576.31	3.50	579.81
10	37.089216	-78.457209	577.01	3.50	580.51
11	37.088870	-78.457369	579.14	3.50	582.64
12	37.087648	-78.458228	575.44	3.50	578.94

**Name:** Ole Briery Station Rd Seg 2  
**Route type** Two-way  
**Azimuthal view angle:** 50.0 deg  
**Downward view angle:** 90.0 deg



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	37.095314	-78.455184	559.55	3.50	563.05
2	37.094405	-78.455316	561.00	3.50	564.50
3	37.094194	-78.455375	562.46	3.50	565.96
4	37.092243	-78.456468	580.33	3.50	583.83
5	37.092079	-78.456596	579.50	3.50	583.00
6	37.091937	-78.456866	578.09	3.50	581.59
7	37.091938	-78.457261	579.65	3.50	583.15
8	37.092266	-78.458188	570.75	3.50	574.25
9	37.092288	-78.458480	566.19	3.50	569.69
10	37.092208	-78.458646	563.15	3.50	566.65

**Name:** Thistle Knob Ln  
**Route type** Two-way  
**Azimuthal view angle:** 50.0 deg  
**Downward view angle:** 90.0 deg



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	37.083651	-78.438932	566.14	3.50	569.64
2	37.083055	-78.438885	572.01	3.50	575.51
3	37.082951	-78.438866	573.45	3.50	576.95
4	37.082709	-78.438732	575.45	3.50	578.95
5	37.082049	-78.438472	587.03	3.50	590.53

**Name:** Tobacco Heritage Trail  
**Route type** Two-way  
**Azimuthal view angle:** 50.0 deg  
**Downward view angle:** 90.0 deg



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	37.090771	-78.458017	565.05	5.00	570.05
2	37.090288	-78.457220	565.24	5.00	570.24
3	37.089770	-78.456642	564.98	5.00	569.98
4	37.083905	-78.448547	568.62	5.00	573.62
5	37.083402	-78.447640	568.23	5.00	573.23
6	37.083141	-78.446961	569.57	5.00	574.57
7	37.082894	-78.446050	570.13	5.00	575.13
8	37.082777	-78.445198	569.37	5.00	574.37
9	37.082731	-78.443998	572.72	5.00	577.72
10	37.082823	-78.442329	570.64	5.00	575.64
11	37.082941	-78.438861	573.48	5.00	578.48
12	37.083691	-78.419842	572.55	5.00	577.55
13	37.083938	-78.417972	572.02	5.00	577.02
14	37.084121	-78.417318	571.54	5.00	576.54

**Name:** US Hwy 15  
**Route type** Two-way  
**Azimuthal view angle:** 50.0 deg  
**Downward view angle:** 90.0 deg



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	37.093744	-78.473877	626.72	3.50	630.22
2	37.096495	-78.473451	577.75	3.50	581.25
3	37.097894	-78.473140	622.81	3.50	626.31
4	37.098651	-78.472866	621.89	3.50	625.39
5	37.110506	-78.466686	589.30	3.50	592.80
6	37.111238	-78.466281	586.17	3.50	589.67

**Name:** US Hwy 360  
**Route type** Two-way  
**Azimuthal view angle:** 50.0 deg  
**Downward view angle:** 90.0 deg



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	37.080860	-78.422670	595.41	3.50	598.91
2	37.080926	-78.422273	593.85	3.50	597.35
3	37.081051	-78.421682	591.95	3.50	595.45
4	37.081265	-78.420884	589.00	3.50	592.50
5	37.081528	-78.420136	586.19	3.50	589.69
6	37.082144	-78.418682	579.73	3.50	583.23



## Discrete Observation Receptors

Number	Latitude	Longitude	Ground elevation	Height above ground	Total Elevation
	deg	deg	ft	ft	ft
OP 118	37.094368	-78.457405	565.89	5.00	570.89
OP 119	37.094368	-78.457405	565.89	15.00	580.89
OP 120	37.091807	-78.457647	578.98	5.00	583.98
OP 121	37.091807	-78.457647	578.98	15.00	593.98
OP 122	37.089328	-78.458024	583.45	5.00	588.45
OP 123	37.089328	-78.458024	583.45	15.00	598.45
OP 124	37.088922	-78.457770	584.21	5.00	589.21
OP 125	37.088922	-78.457770	584.21	15.00	599.21
OP 126	37.088434	-78.457979	582.71	5.00	587.71
OP 127	37.088434	-78.457979	582.71	15.00	597.71
OP 128	37.081725	-78.446397	584.39	5.00	589.39
OP 129	37.081725	-78.446397	584.39	15.00	599.39
OP 130	37.081517	-78.444528	584.70	5.00	589.70
OP 131	37.081517	-78.444528	584.70	15.00	599.70
OP 132	37.081957	-78.442580	584.64	5.00	589.64
OP 133	37.081957	-78.442580	584.64	15.00	599.64

# 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	
D01	SA tracking	SA tracking	425	0	-	-
D02	SA tracking	SA tracking	2,119	0	-	-
D03	SA tracking	SA tracking	2,398	127	-	-
D04	SA tracking	SA tracking	2,269	0	-	-
D05	SA tracking	SA tracking	8,124	4,971	-	-
E01	SA tracking	SA tracking	4,825	94	-	-
E02	SA tracking	SA tracking	3,066	0	-	-
E03	SA tracking	SA tracking	8,469	601	-	-
E04	SA tracking	SA tracking	6,104	0	-	-

## 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
d01 (green)	0	0	143	69	0	0	0	16	159	38	0	0
d01 (yellow)	0	0	0	0	0	0	0	0	0	0	0	0
d02 (green)	0	9	107	6	121	164	161	25	60	60	0	0
d02 (yellow)	0	0	0	0	0	0	0	0	0	0	0	0
d03 (green)	56	168	94	25	124	127	128	61	25	191	116	0
d03 (yellow)	0	0	0	26	39	5	20	37	0	0	0	0
d04 (green)	338	355	269	0	0	0	0	0	114	431	276	486
d04 (yellow)	0	0	0	0	0	0	0	0	0	0	0	0
d05 (green)	0	21	36	228	482	519	518	386	38	34	2	0
d05 (yellow)	0	45	283	452	593	501	569	540	364	126	0	0
e01 (green)	11	5	15	164	321	353	359	269	37	19	0	32
e01 (yellow)	0	0	24	22	0	0	0	7	41	0	0	0
e02 (green)	37	224	181	129	25	0	0	93	162	216	86	0
e02 (yellow)	0	0	0	0	0	0	0	0	0	0	0	0
e03 (green)	390	208	20	49	13	0	1	44	14	128	365	404
e03 (yellow)	0	70	172	61	0	0	0	13	152	133	0	0
e04 (green)	350	235	69	89	12	0	2	50	80	183	322	376
e04 (yellow)	0	0	0	0	0	0	0	0	0	0	0	0

## PV & Receptor Analysis Results

Results for each PV array and receptor

D01 low potential for temporary after-image

Component	Green glare (min)	Yellow glare (min)
-----------	-------------------	--------------------

OP: OP 118	0	0
OP: OP 119	0	0
OP: OP 120	0	0
OP: OP 121	0	0
OP: OP 122	0	0
OP: OP 123	0	0
OP: OP 124	0	0
OP: OP 125	0	0
OP: OP 126	0	0
OP: OP 127	0	0
OP: OP 128	0	0
OP: OP 129	0	0
OP: OP 130	0	0
OP: OP 131	0	0
OP: OP 132	0	0
OP: OP 133	0	0
Route: Collins Dr	0	0
Route: Country Dr Seg 1	0	0
Route: Country Dr Seg 2	0	0
Route: County Line Rd	425	0
Route: Dempseys Rd	0	0
Route: Harley Ln	0	0
Route: Henderson Rd	0	0
Route: Hillside Dr	0	0
Route: Ole Briery Station Rd Seg 1	0	0
Route: Ole Briery Station Rd Seg 2	0	0
Route: Thistle Knob Ln	0	0
Route: Tobacco Heritage Trail	0	0
Route: US Hwy 15	0	0
Route: US Hwy 360	0	0

#### D01: OP 118

*No glare found*

#### D01: OP 119

*No glare found*

#### D01: OP 120

*No glare found*

#### D01: OP 121

*No glare found*

#### D01: OP 122

*No glare found*

**D01: OP 123**

*No glare found*

**D01: OP 124**

*No glare found*

**D01: OP 125**

*No glare found*

**D01: OP 126**

*No glare found*

**D01: OP 127**

*No glare found*

**D01: OP 128**

*No glare found*

**D01: OP 129**

*No glare found*

**D01: OP 130**

*No glare found*

**D01: OP 131**

*No glare found*

**D01: OP 132**

*No glare found*

**D01: OP 133**

*No glare found*

**D01: Collins Dr**

*No glare found*

**D01: Country Dr Seg 1**

*No glare found*

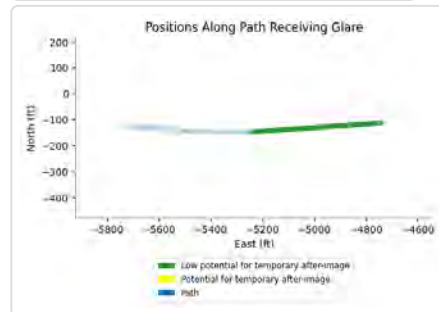
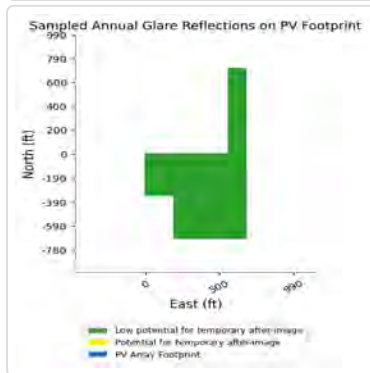
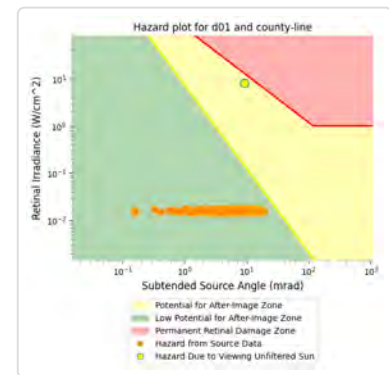
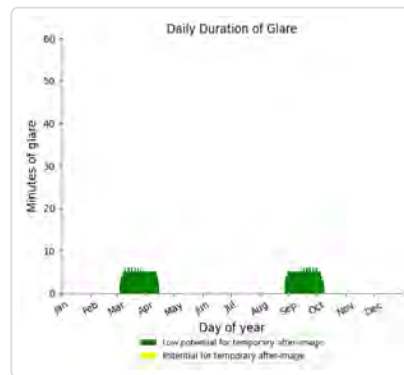
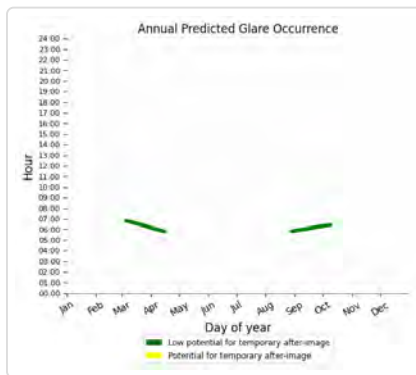
**D01: Country Dr Seg 2**

*No glare found*

## D01: County Line Rd

PV array is expected to produce the following glare for this receptor:

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



## D01: Dempseys Rd

No glare found

## D01: Harley Ln

No glare found

## D01: Henderson Rd

No glare found

## D01: Hillside Dr

No glare found

## D01: Ole Briery Station Rd Seg 1

No glare found

## D01: Ole Briery Station Rd Seg 2

No glare found

## D01: Thistle Knob Ln

No glare found

## D01: Tobacco Heritage Trail

No glare found



## D01: US Hwy 15

*No glare found*

## D01: US Hwy 360

*No glare found*

## D02 low potential for temporary after-image

Component	Green glare (min)	Yellow glare (min)
OP: OP 118	0	0
OP: OP 119	0	0
OP: OP 120	0	0
OP: OP 121	0	0
OP: OP 122	0	0
OP: OP 123	0	0
OP: OP 124	0	0
OP: OP 125	0	0
OP: OP 126	0	0
OP: OP 127	0	0
OP: OP 128	0	0
OP: OP 129	0	0
OP: OP 130	0	0
OP: OP 131	0	0
OP: OP 132	0	0
OP: OP 133	0	0
Route: Collins Dr	0	0
Route: Country Dr Seg 1	308	0
Route: Country Dr Seg 2	457	0
Route: County Line Rd	29	0
Route: Dempseys Rd	217	0
Route: Harley Ln	0	0
Route: Henderson Rd	0	0
Route: Hillside Dr	400	0
Route: Ole Briery Station Rd Seg 1	0	0
Route: Ole Briery Station Rd Seg 2	0	0
Route: Thistle Knob Ln	0	0
Route: Tobacco Heritage Trail	459	0
Route: US Hwy 15	0	0
Route: US Hwy 360	249	0

## D02: OP 118

*No glare found*

## D02: OP 119

*No glare found*

**D02: OP 120**

*No glare found*

**D02: OP 121**

*No glare found*

**D02: OP 122**

*No glare found*

**D02: OP 123**

*No glare found*

**D02: OP 124**

*No glare found*

**D02: OP 125**

*No glare found*

**D02: OP 126**

*No glare found*

**D02: OP 127**

*No glare found*

**D02: OP 128**

*No glare found*

**D02: OP 129**

*No glare found*

**D02: OP 130**

*No glare found*

**D02: OP 131**

*No glare found*

**D02: OP 132**

*No glare found*

**D02: OP 133**

*No glare found*

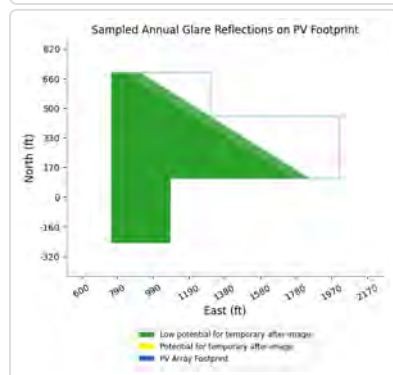
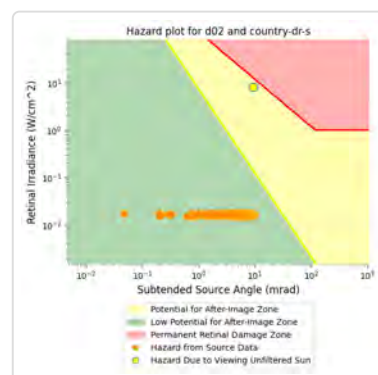
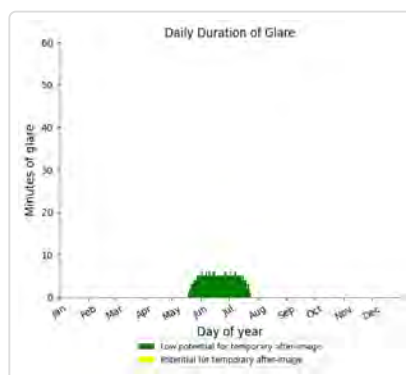
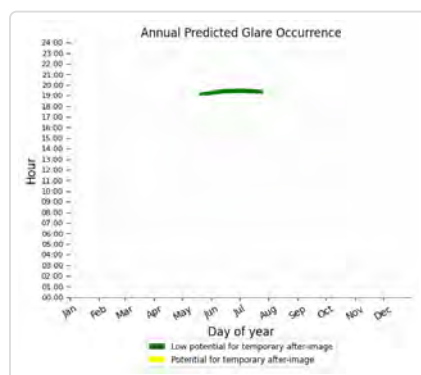
**D02: Collins Dr**

*No glare found*

## D02: Country Dr Seg 1

PV array is expected to produce the following glare for this receptor:

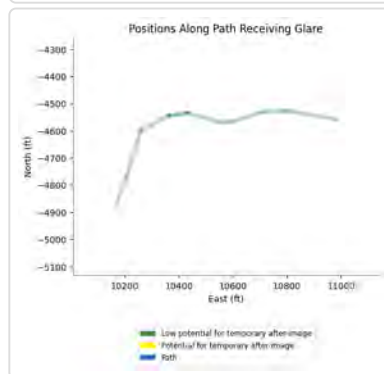
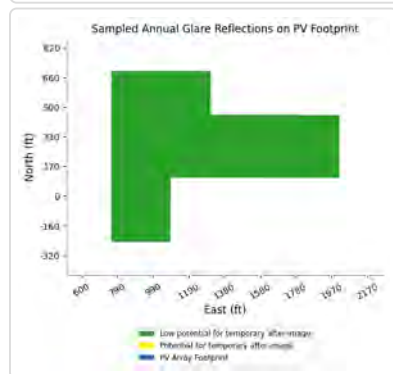
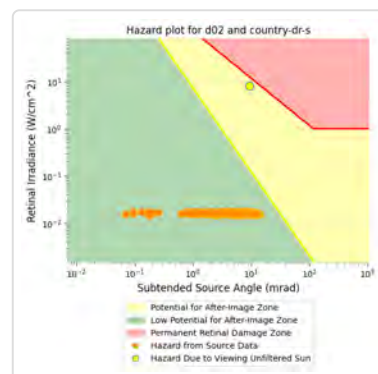
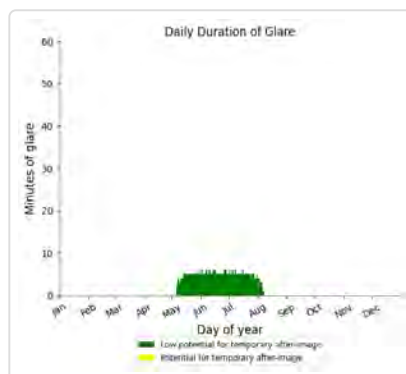
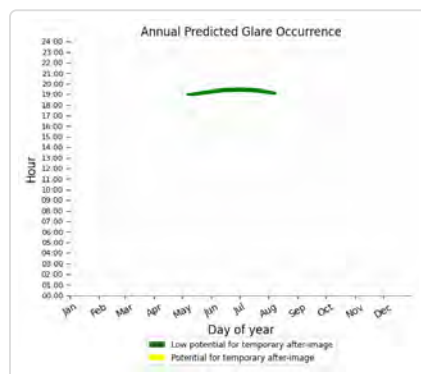
- 308 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## D02: Country Dr Seg 2

PV array is expected to produce the following glare for this receptor:

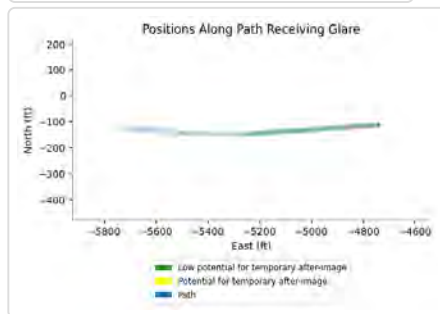
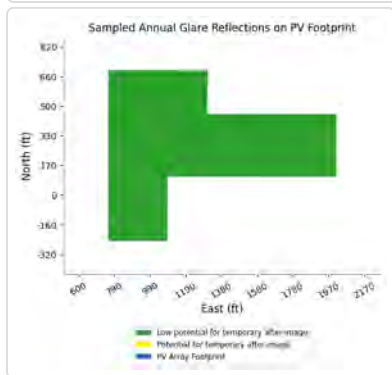
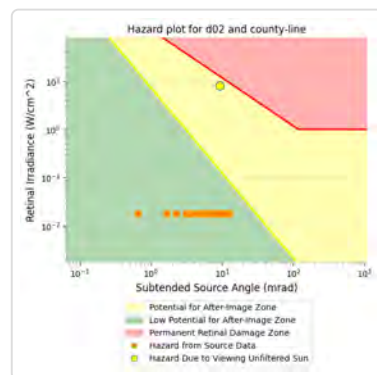
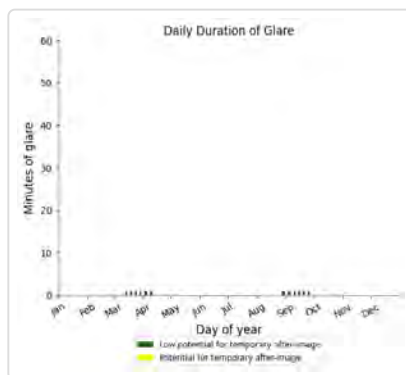
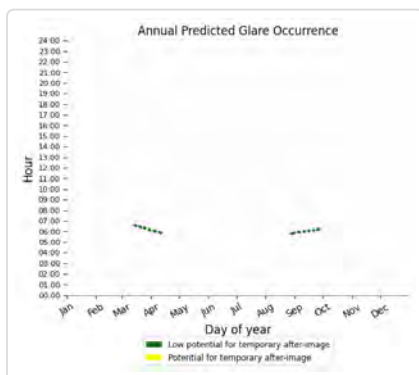
- 457 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## D02: County Line Rd

PV array is expected to produce the following glare for this receptor:

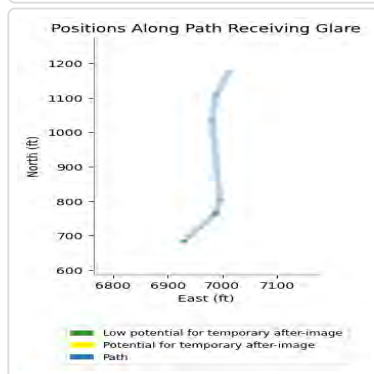
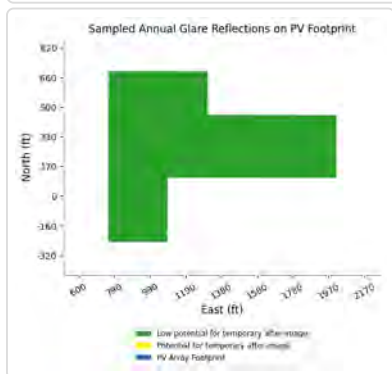
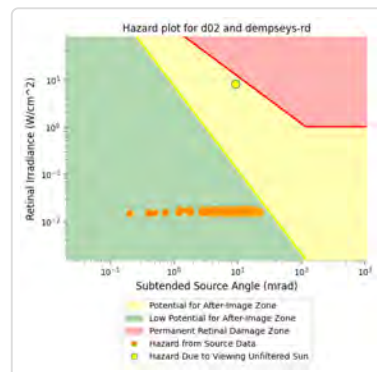
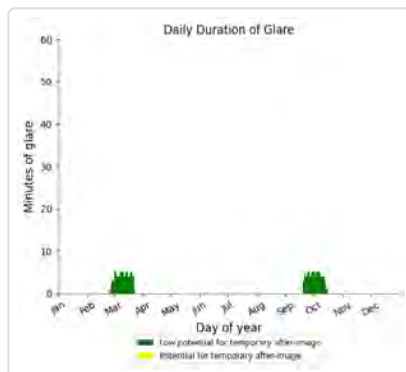
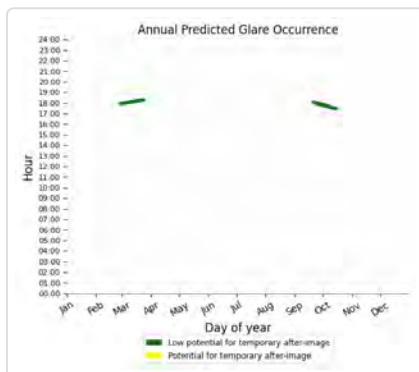
- 29 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## D02: Dempseys Rd

PV array is expected to produce the following glare for this receptor:

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



D02: Harley Ln

No glare found

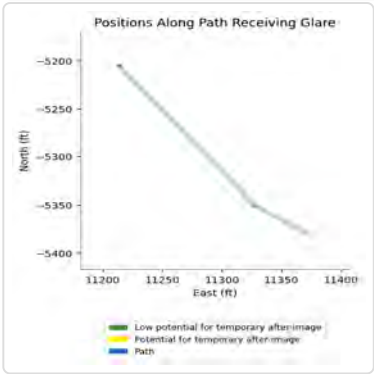
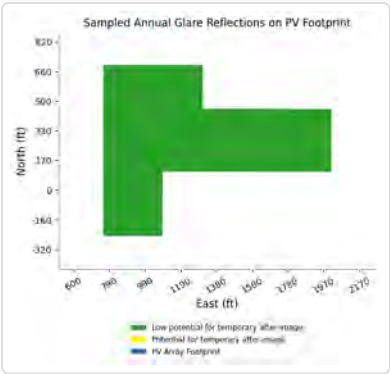
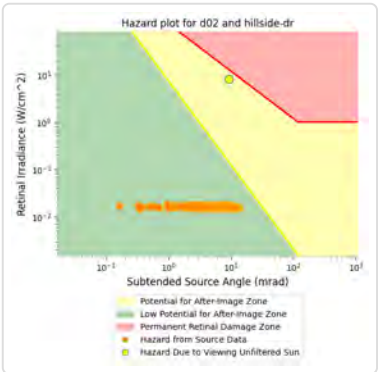
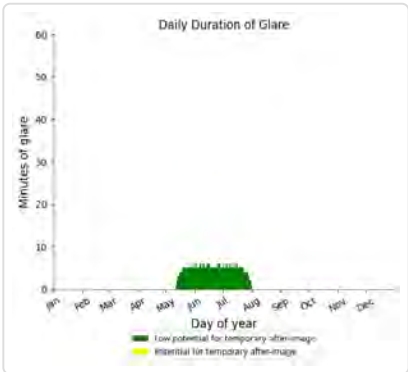
D02: Henderson Rd

No glare found

D02: Hillside Dr

PV array is expected to produce the following glare for this receptor:

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



D02: Ole Briery Station Rd Seg 1

No glare found

D02: Ole Briery Station Rd Seg 2

No glare found

D02: Thistle Knob Ln

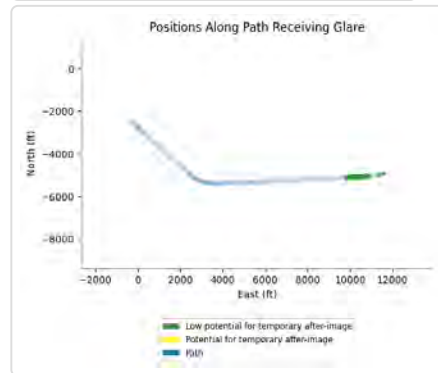
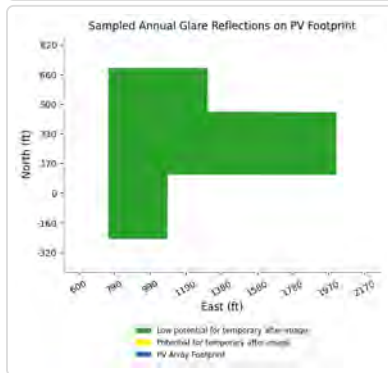
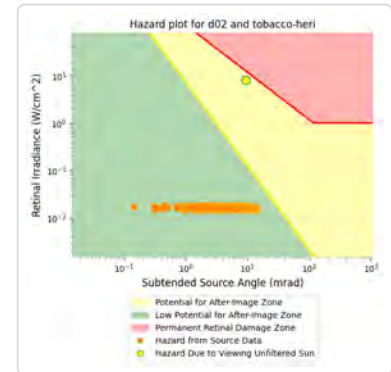
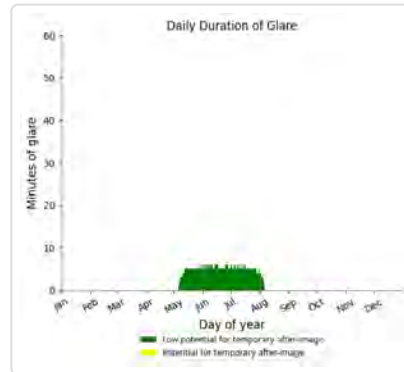
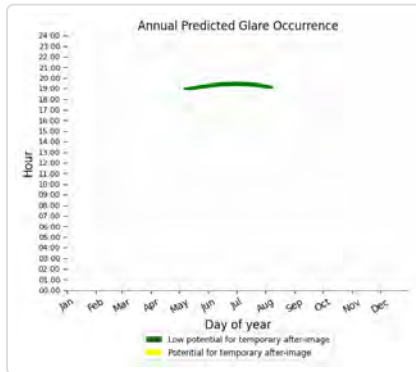
No glare found



## D02: Tobacco Heritage Trail

PV array is expected to produce the following glare for this receptor:

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



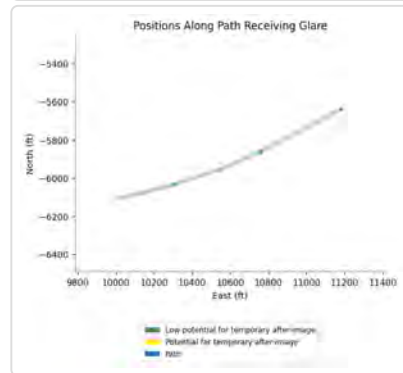
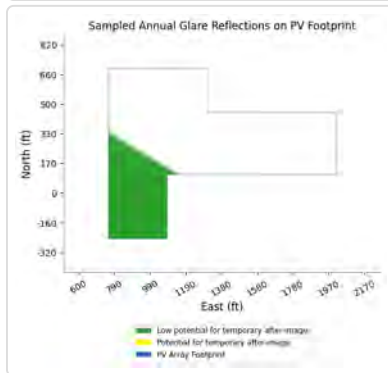
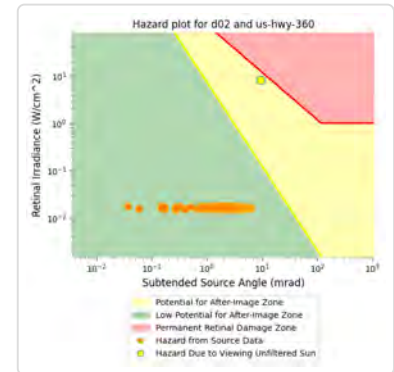
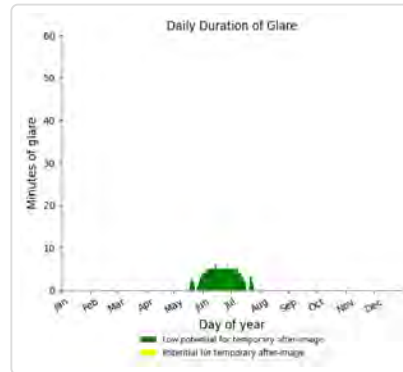
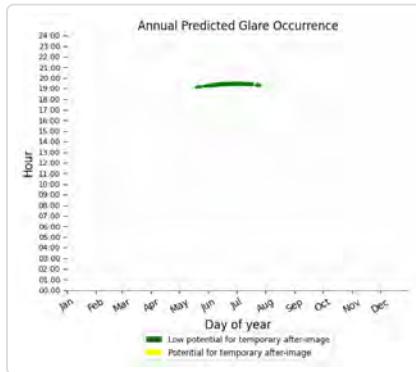
## D02: US Hwy 15

No glare found

## D02: US Hwy 360

PV array is expected to produce the following glare for this receptor:

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



## D03 potential temporary after-image

Component	Green glare (min)	Yellow glare (min)
OP: OP 118	0	0
OP: OP 119	0	0
OP: OP 120	0	0
OP: OP 121	0	0
OP: OP 122	0	0
OP: OP 123	0	0
OP: OP 124	0	0
OP: OP 125	0	0
OP: OP 126	0	0
OP: OP 127	0	0
OP: OP 128	0	0
OP: OP 129	0	0
OP: OP 130	0	0
OP: OP 131	0	0
OP: OP 132	0	0
OP: OP 133	0	0
Route: Collins Dr	0	0
Route: Country Dr Seg 1	342	0
Route: Country Dr Seg 2	262	0
Route: County Line Rd	133	0
Route: Dempseys Rd	517	0
Route: Harley Ln	0	0

Route: Henderson Rd	0	0
Route: Hillside Dr	297	0
Route: Ole Briery Station Rd Seg 1	85	0
Route: Ole Briery Station Rd Seg 2	28	127
Route: Thistle Knob Ln	0	0
Route: Tobacco Heritage Trail	404	0
Route: US Hwy 15	0	0
Route: US Hwy 360	330	0

### D03: OP 118

*No glare found*

### D03: OP 119

*No glare found*

### D03: OP 120

*No glare found*

### D03: OP 121

*No glare found*

### D03: OP 122

*No glare found*

### D03: OP 123

*No glare found*

### D03: OP 124

*No glare found*

### D03: OP 125

*No glare found*

### D03: OP 126

*No glare found*

### D03: OP 127

*No glare found*

### D03: OP 128

*No glare found*

### D03: OP 129

*No glare found*

### D03: OP 130

No glare found

### D03: OP 131

No glare found

### D03: OP 132

No glare found

### D03: OP 133

No glare found

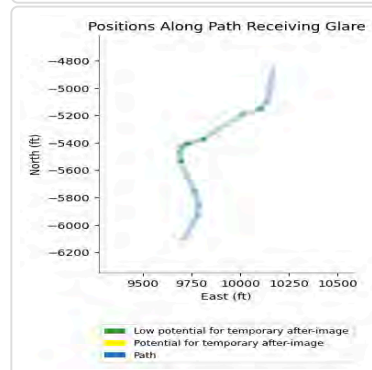
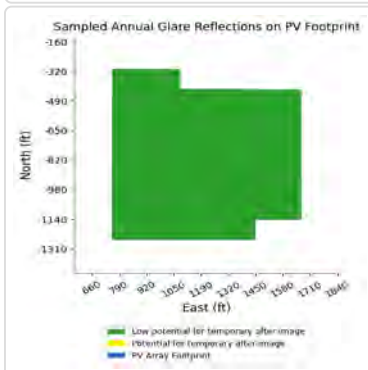
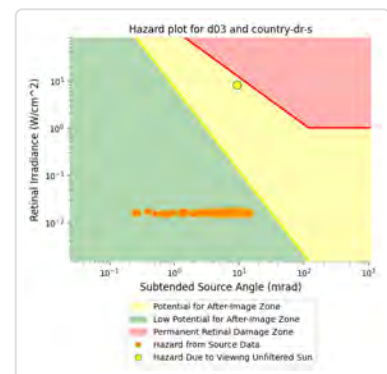
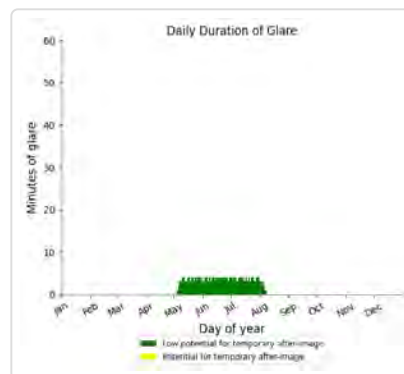
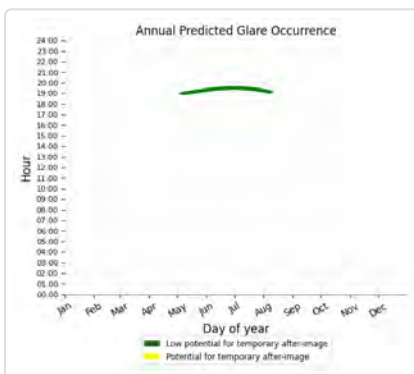
### D03: Collins Dr

No glare found

### D03: Country Dr Seg 1

PV array is expected to produce the following glare for this receptor:

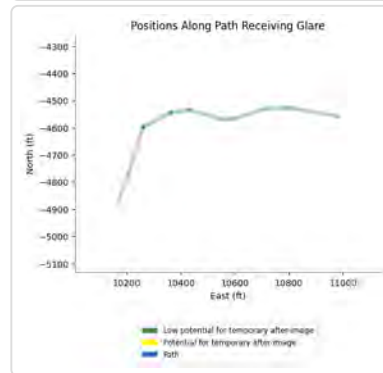
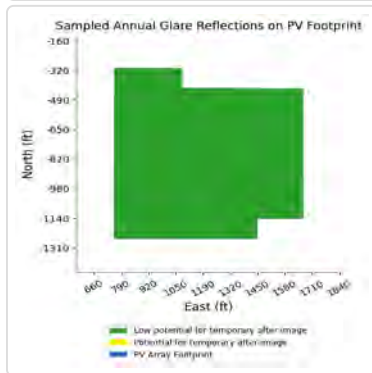
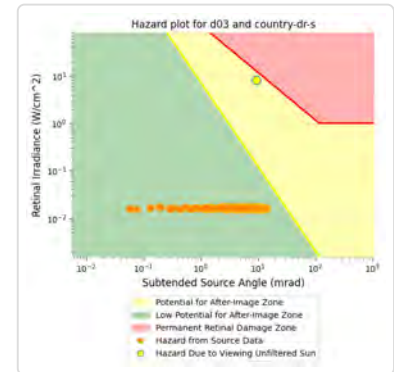
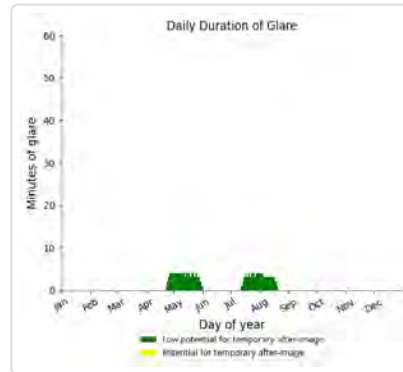
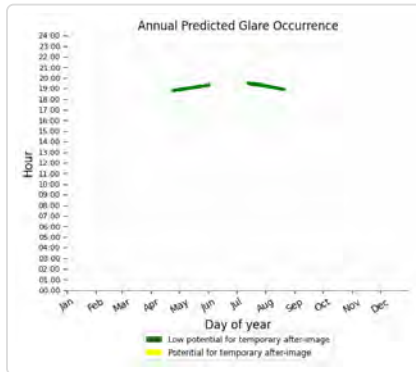
- 342 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## D03: Country Dr Seg 2

PV array is expected to produce the following glare for this receptor:

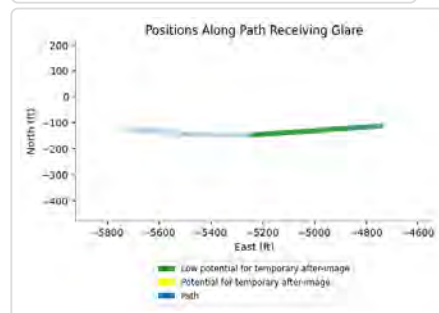
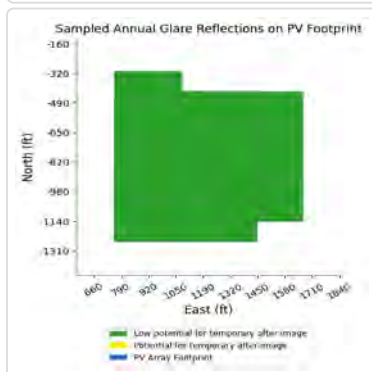
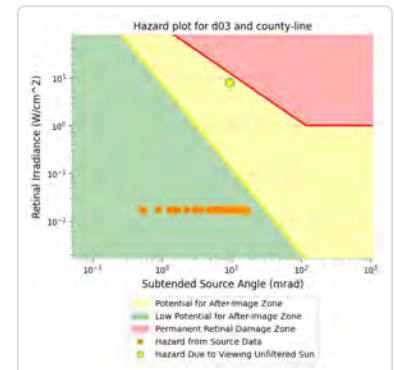
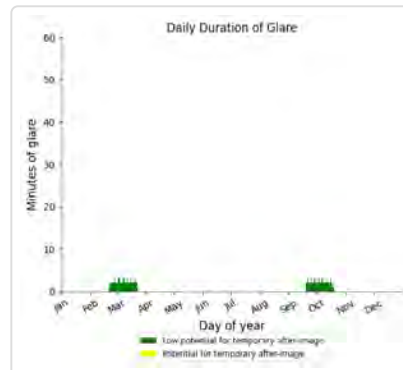
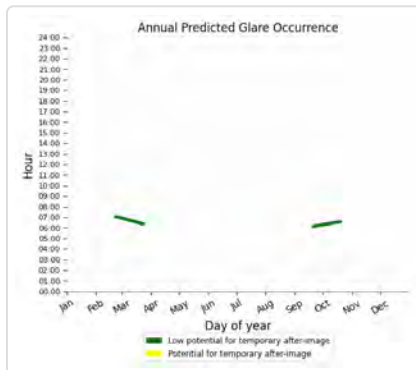
- 262 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## D03: County Line Rd

PV array is expected to produce the following glare for this receptor:

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

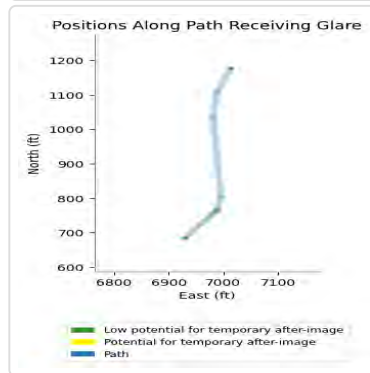
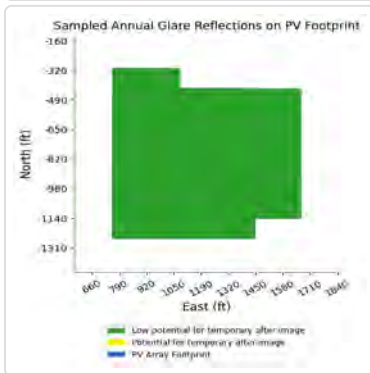
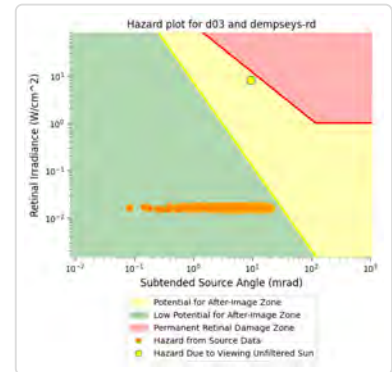
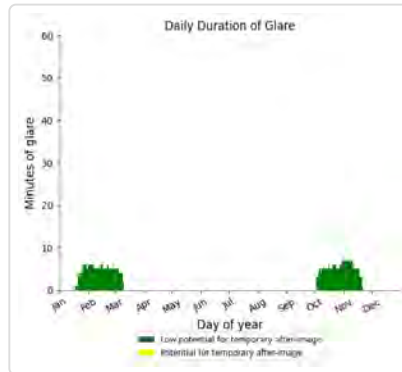
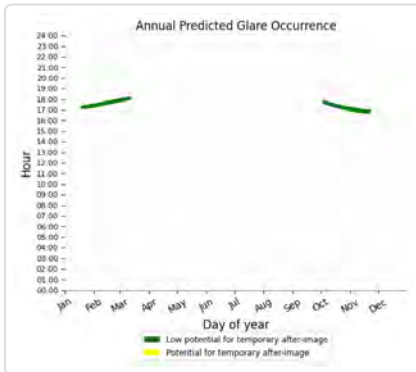




### D03: Dempseys Rd

PV array is expected to produce the following glare for this receptor:

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



### D03: Harley Ln

No glare found

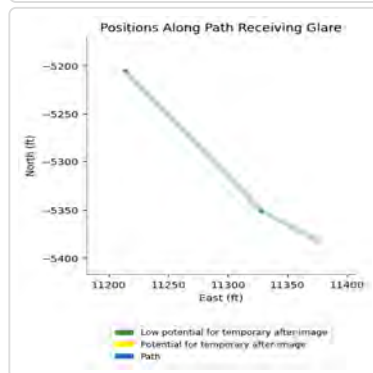
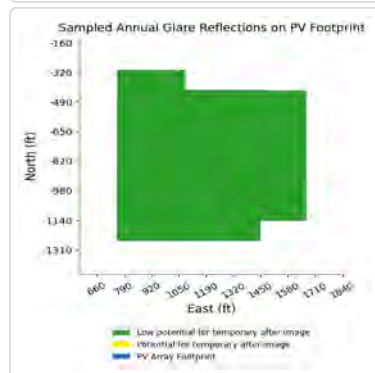
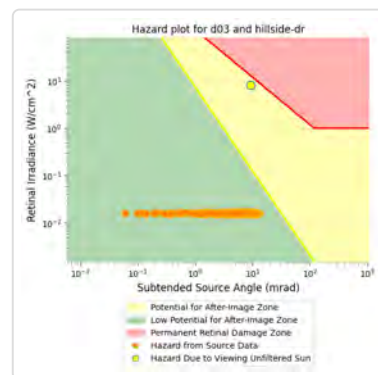
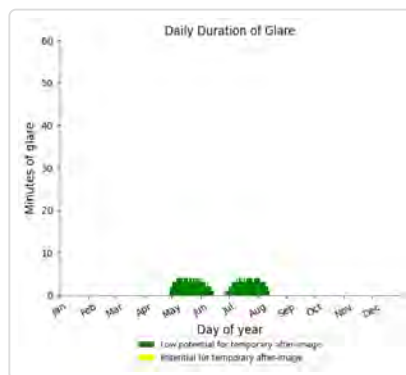
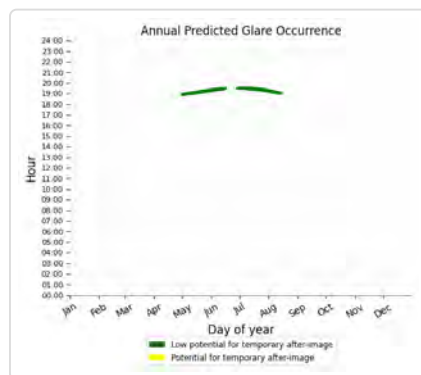
### D03: Henderson Rd

No glare found

### D03: Hillside Dr

PV array is expected to produce the following glare for this receptor:

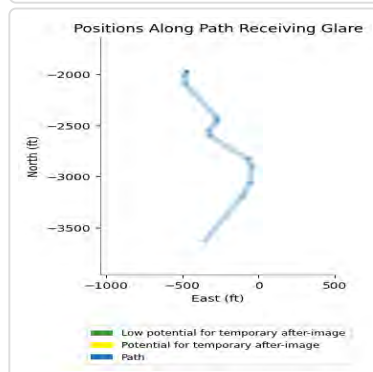
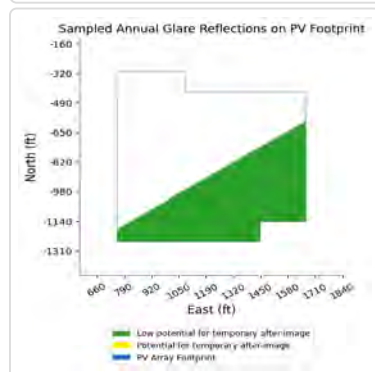
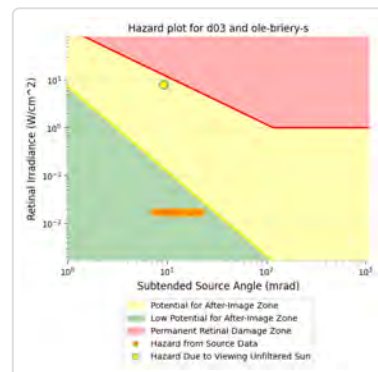
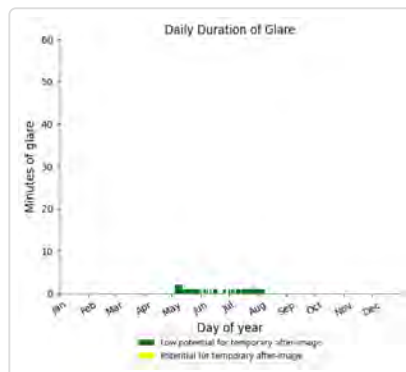
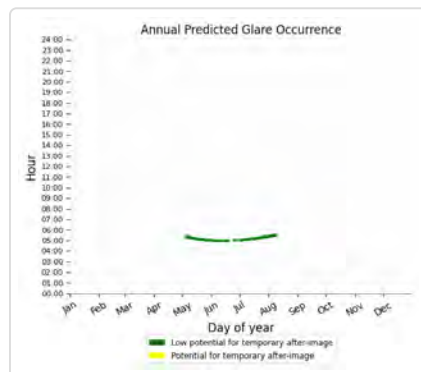
- 297 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



### D03: Ole Briery Station Rd Seg 1

PV array is expected to produce the following glare for this receptor:

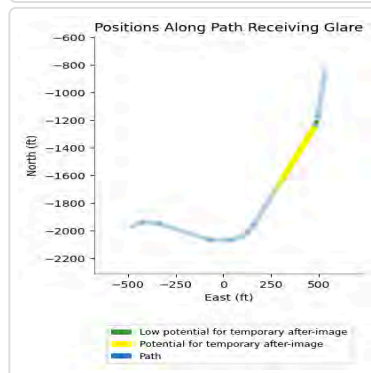
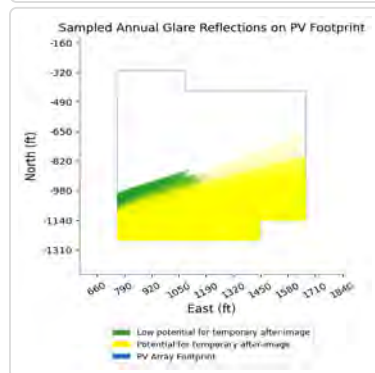
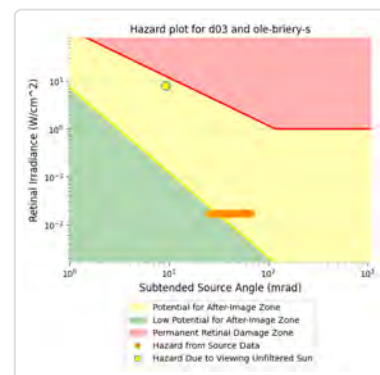
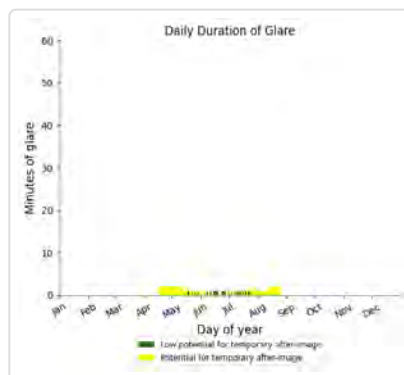
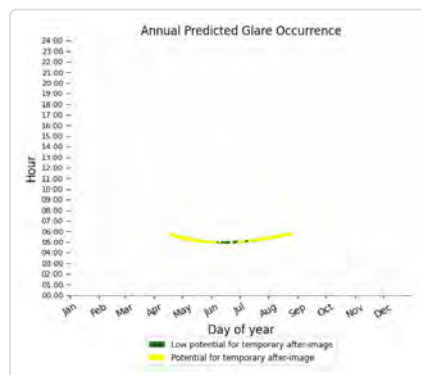
- 85 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



### D03: Ole Briery Station Rd Seg 2

PV array is expected to produce the following glare for this receptor:

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



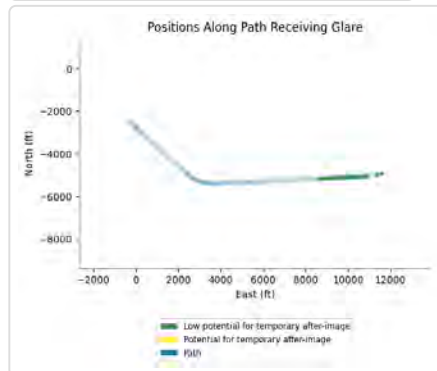
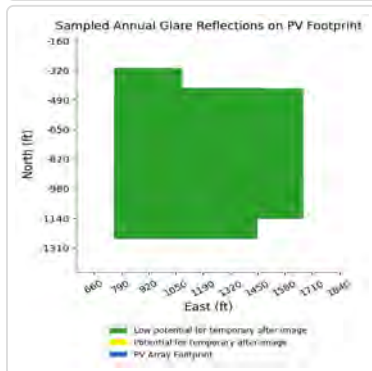
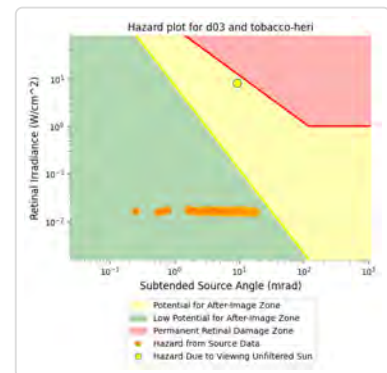
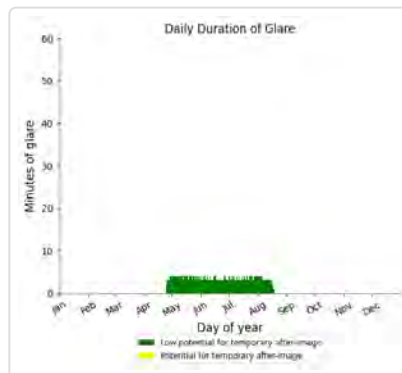
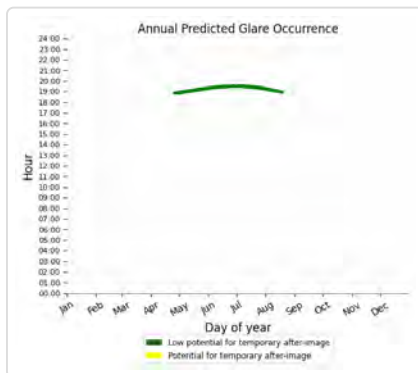
### D03: Thistle Knob Ln

No glare found

## D03: Tobacco Heritage Trail

PV array is expected to produce the following glare for this receptor:

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

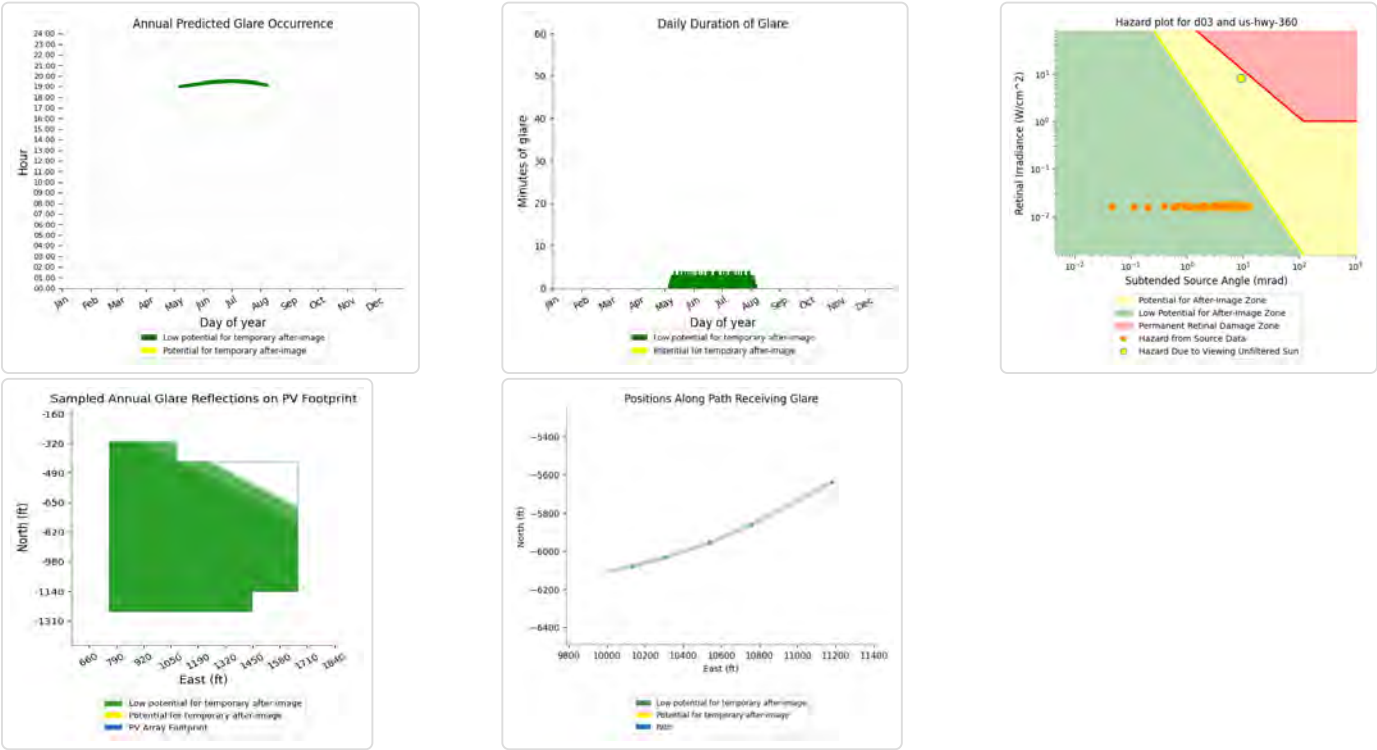


## D03: US Hwy 15

No glare found

D03: US Hwy 360

- PV array is expected to produce the following glare for this receptor:
- 330 minutes of "green" glare with low potential to cause temporary after-image.
  - 0 minutes of "yellow" glare with potential to cause temporary after-image.



D04 low potential for temporary after-image

Component	Green glare (min)	Yellow glare (min)
OP: OP 118	0	0
OP: OP 119	0	0
OP: OP 120	0	0
OP: OP 121	0	0
OP: OP 122	0	0
OP: OP 123	0	0
OP: OP 124	0	0
OP: OP 125	0	0
OP: OP 126	0	0
OP: OP 127	0	0
OP: OP 128	0	0
OP: OP 129	0	0
OP: OP 130	0	0
OP: OP 131	0	0
OP: OP 132	0	0
OP: OP 133	0	0
Route: Collins Dr	0	0
Route: Country Dr Seg 1	0	0
Route: Country Dr Seg 2	0	0
Route: County Line Rd	318	0
Route: Dempseys Rd	983	0
Route: Harley Ln	0	0



Route: Henderson Rd	968	0
Route: Hillside Dr	0	0
Route: Ole Briery Station Rd Seg 1	0	0
Route: Ole Briery Station Rd Seg 2	0	0
Route: Thistle Knob Ln	0	0
Route: Tobacco Heritage Trail	0	0
Route: US Hwy 15	0	0
Route: US Hwy 360	0	0

#### **D04: OP 118**

*No glare found*

#### **D04: OP 119**

*No glare found*

#### **D04: OP 120**

*No glare found*

#### **D04: OP 121**

*No glare found*

#### **D04: OP 122**

*No glare found*

#### **D04: OP 123**

*No glare found*

#### **D04: OP 124**

*No glare found*

#### **D04: OP 125**

*No glare found*

#### **D04: OP 126**

*No glare found*

#### **D04: OP 127**

*No glare found*

#### **D04: OP 128**

*No glare found*

#### **D04: OP 129**

*No glare found*

#### D04: OP 130

No glare found

#### D04: OP 131

No glare found

#### D04: OP 132

No glare found

#### D04: OP 133

No glare found

#### D04: Collins Dr

No glare found

#### D04: Country Dr Seg 1

No glare found

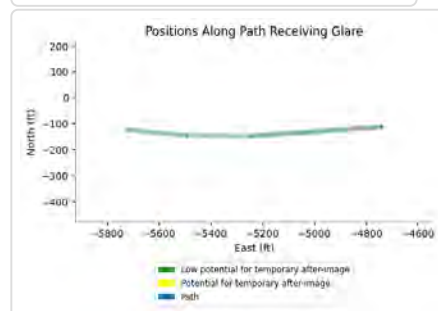
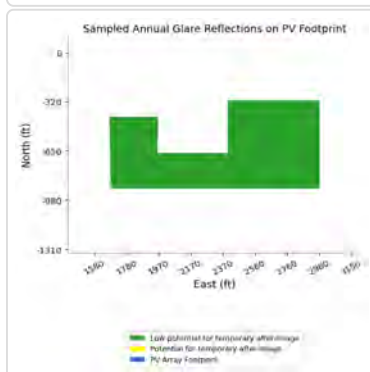
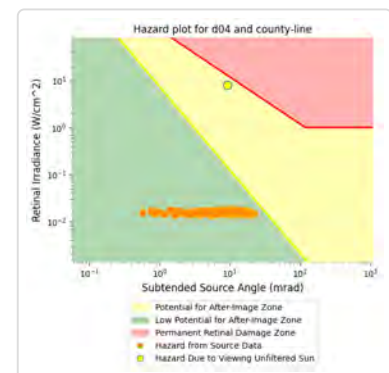
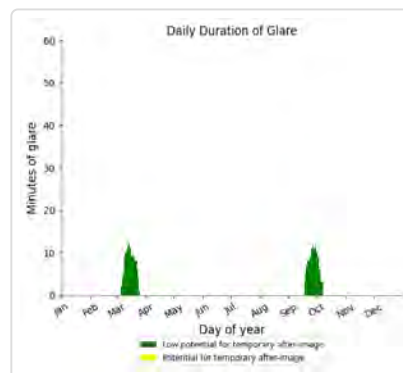
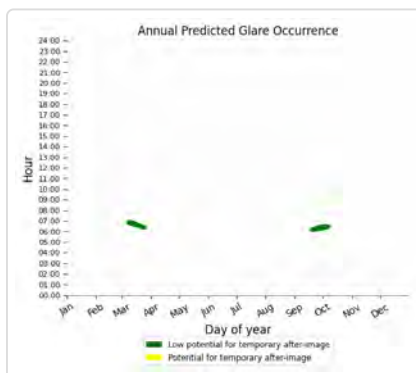
#### D04: Country Dr Seg 2

No glare found

#### D04: County Line Rd

PV array is expected to produce the following glare for this receptor:

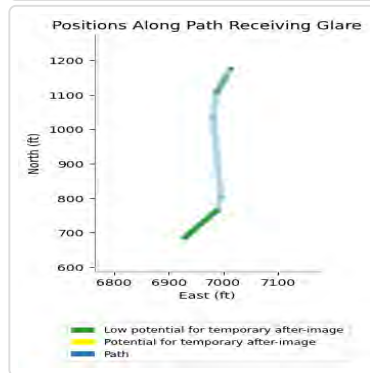
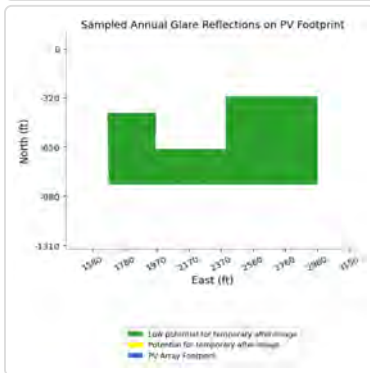
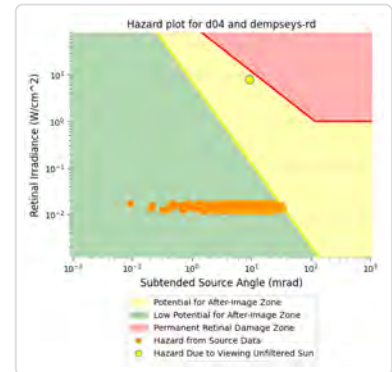
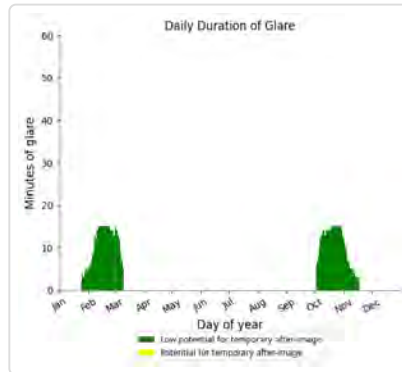
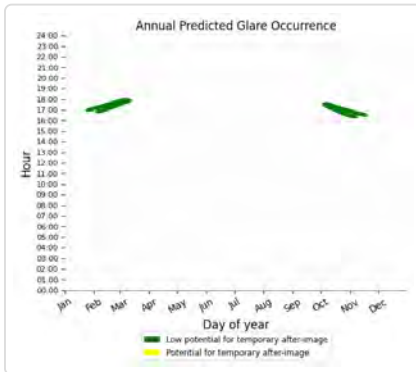
- 318 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## D04: Dempseys Rd

PV array is expected to produce the following glare for this receptor:

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



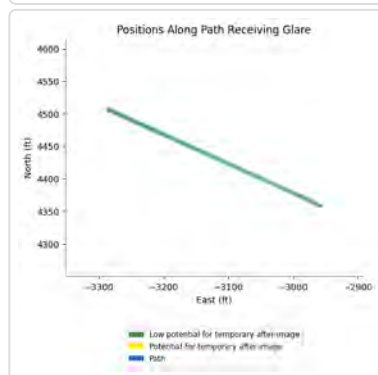
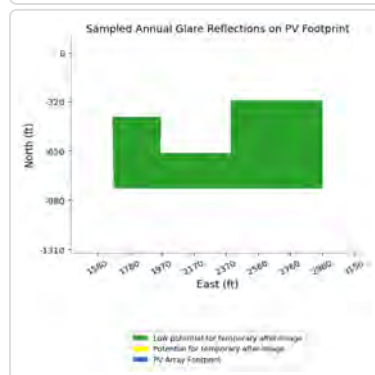
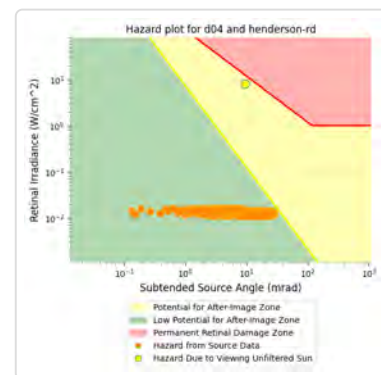
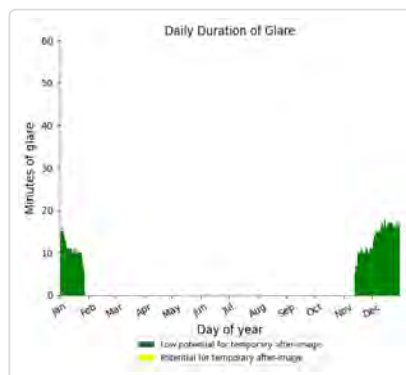
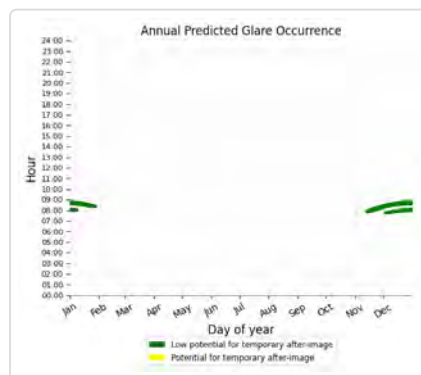
## D04: Harley Ln

No glare found

## D04: Henderson Rd

PV array is expected to produce the following glare for this receptor:

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



## D04: Hillside Dr

No glare found

## D04: Ole Briery Station Rd Seg 1

No glare found

## D04: Ole Briery Station Rd Seg 2

No glare found

## D04: Thistle Knob Ln

No glare found

## D04: Tobacco Heritage Trail

No glare found

## D04: US Hwy 15

No glare found

## D04: US Hwy 360

No glare found

## D05 potential temporary after-image

Component	Green glare (min)	Yellow glare (min)
OP: OP 118	0	0
OP: OP 119	0	0
OP: OP 120	337	221
OP: OP 121	283	509
OP: OP 122	0	0
OP: OP 123	0	0
OP: OP 124	0	0
OP: OP 125	0	0
OP: OP 126	0	0
OP: OP 127	0	0
OP: OP 128	0	0
OP: OP 129	0	0
OP: OP 130	0	0
OP: OP 131	0	0
OP: OP 132	0	0
OP: OP 133	0	0
Route: Collins Dr	0	0
Route: Country Dr Seg 1	1602	0
Route: Country Dr Seg 2	661	0
Route: County Line Rd	0	0
Route: Dempseys Rd	0	0
Route: Harley Ln	0	0
Route: Henderson Rd	0	0
Route: Hillside Dr	738	0
Route: Ole Briery Station Rd Seg 1	373	655
Route: Ole Briery Station Rd Seg 2	667	3586
Route: Thistle Knob Ln	0	0
Route: Tobacco Heritage Trail	1893	0
Route: US Hwy 15	0	0
Route: US Hwy 360	1570	0

## D05: OP 118

*No glare found*

## D05: OP 119

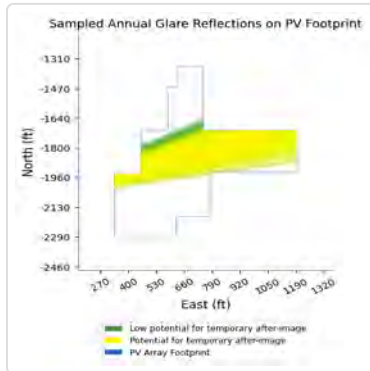
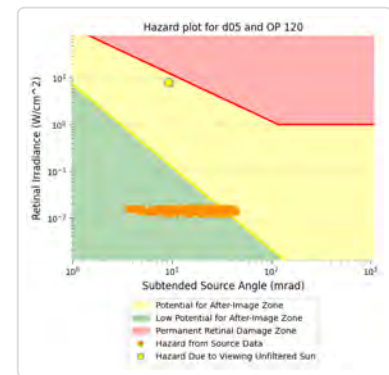
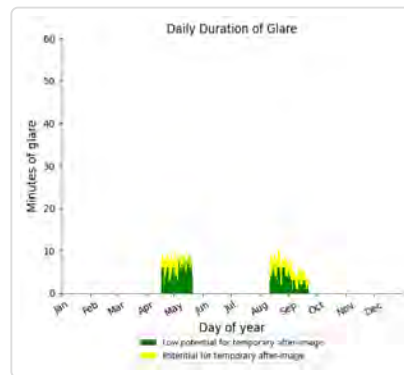
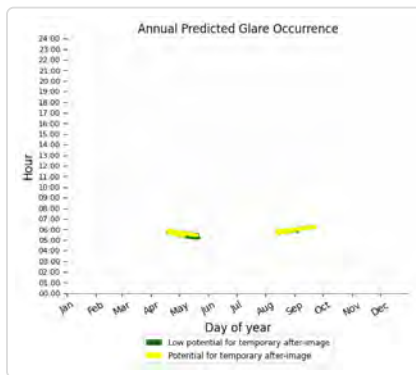
*No glare found*



## D05: OP 120

PV array is expected to produce the following glare for this receptor:

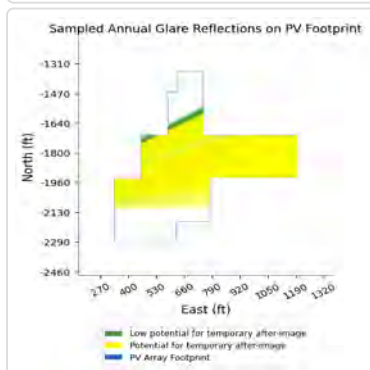
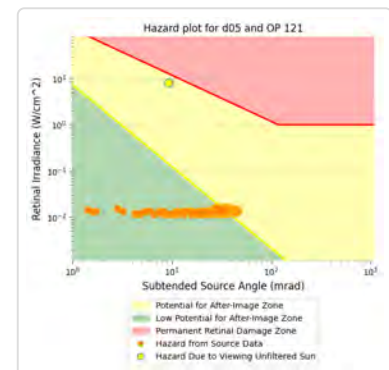
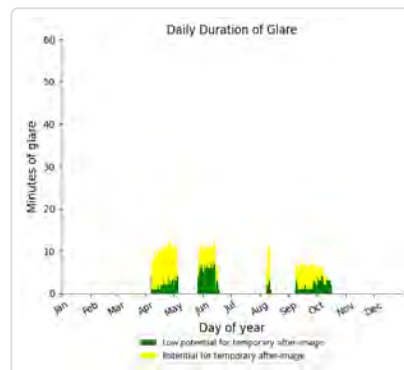
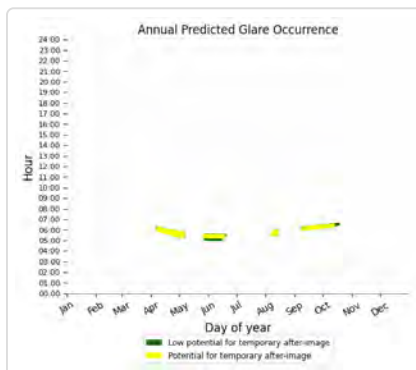
- 337 minutes of "green" glare with low potential to cause temporary after-image.
- 221 minutes of "yellow" glare with potential to cause temporary after-image.



## D05: OP 121

PV array is expected to produce the following glare for this receptor:

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



**D05: OP 122**

*No glare found*

**D05: OP 123**

*No glare found*

**D05: OP 124**

*No glare found*

**D05: OP 125**

*No glare found*

**D05: OP 126**

*No glare found*

**D05: OP 127**

*No glare found*

**D05: OP 128**

*No glare found*

**D05: OP 129**

*No glare found*

**D05: OP 130**

*No glare found*

**D05: OP 131**

*No glare found*

**D05: OP 132**

*No glare found*

**D05: OP 133**

*No glare found*

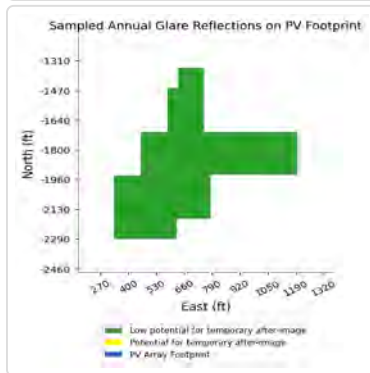
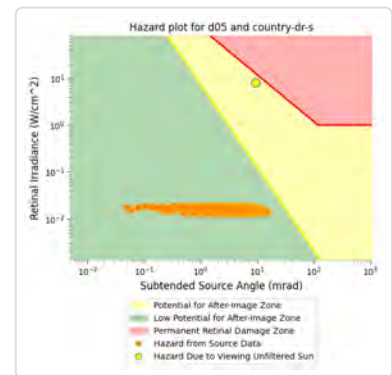
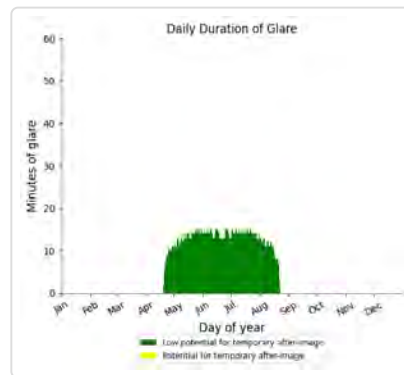
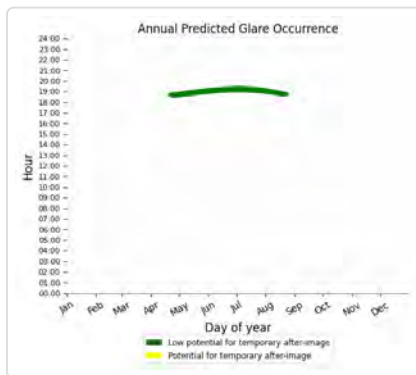
**D05: Collins Dr**

*No glare found*

## D05: Country Dr Seg 1

PV array is expected to produce the following glare for this receptor:

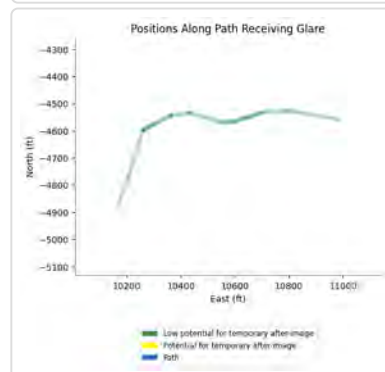
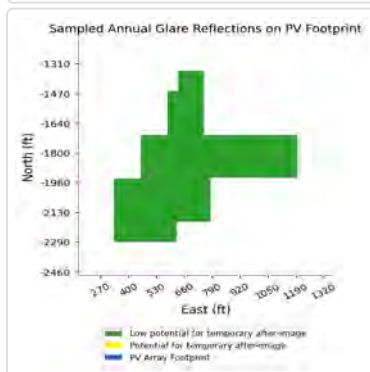
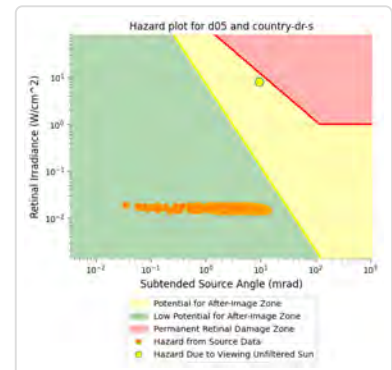
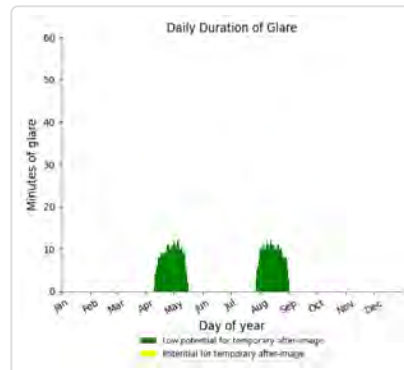
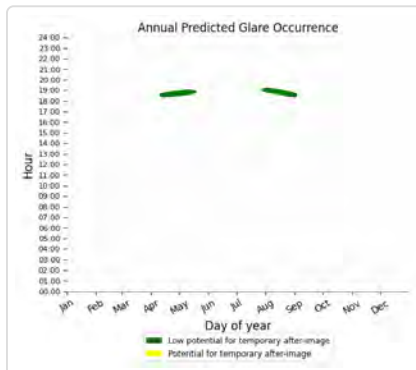
- 1,602 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## D05: Country Dr Seg 2

PV array is expected to produce the following glare for this receptor:

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



D05: County Line Rd

No glare found

D05: Dempseys Rd

No glare found

D05: Harley Ln

No glare found

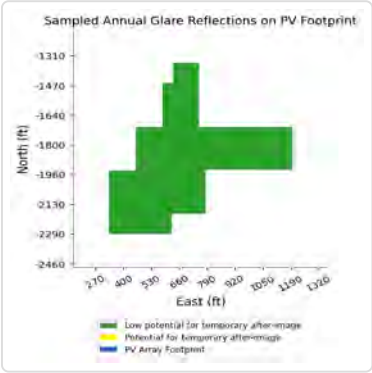
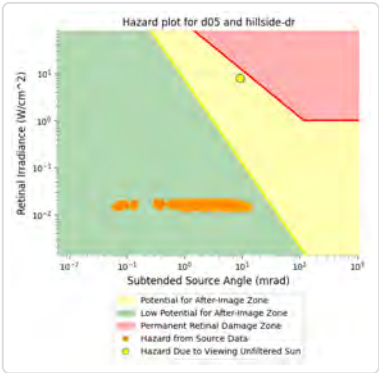
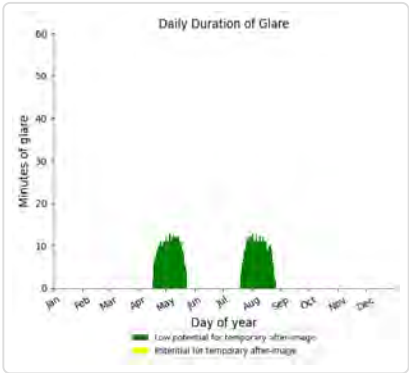
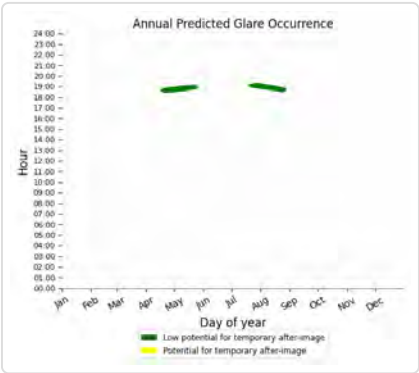
D05: Henderson Rd

No glare found

D05: Hillside Dr

PV array is expected to produce the following glare for this receptor:

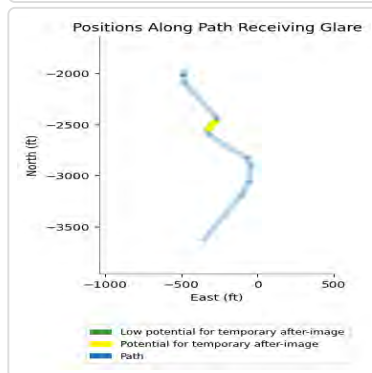
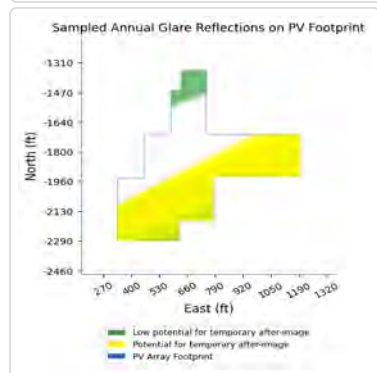
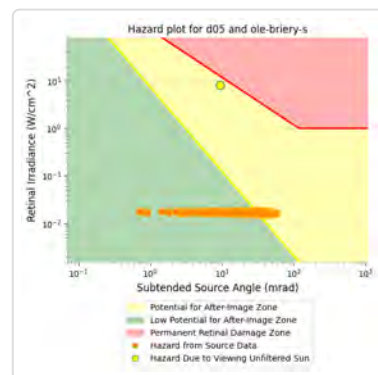
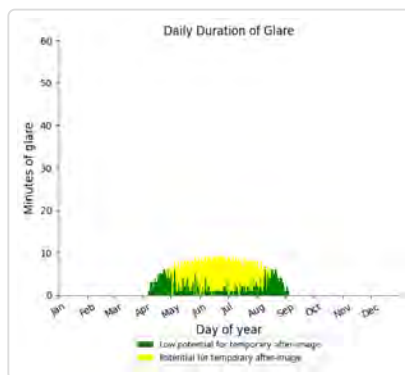
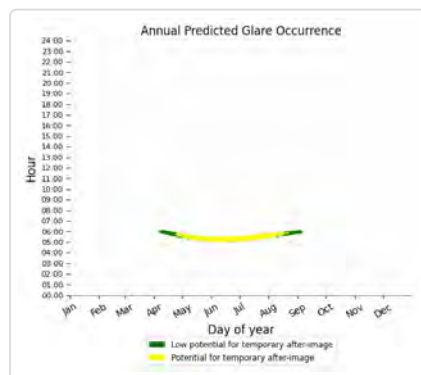
- 738 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## D05: Ole Briery Station Rd Seg 1

PV array is expected to produce the following glare for this receptor:

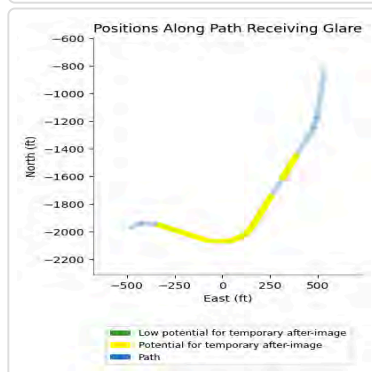
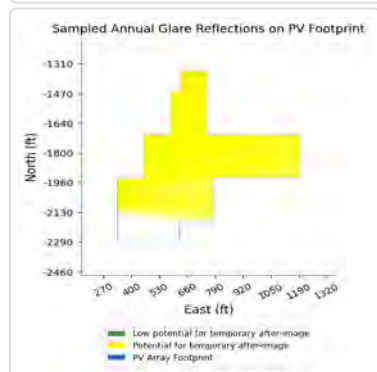
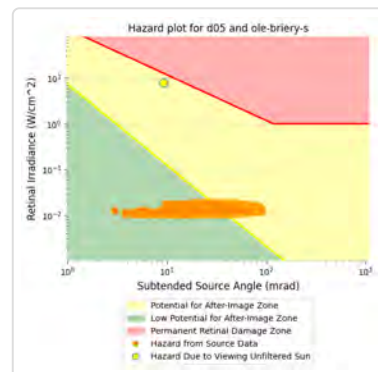
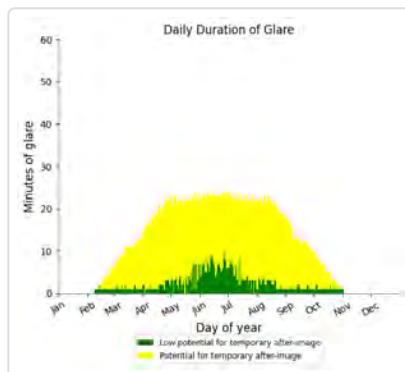
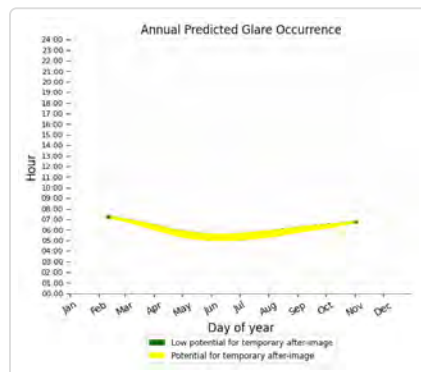
- 373 minutes of "green" glare with low potential to cause temporary after-image.
- 655 minutes of "yellow" glare with potential to cause temporary after-image.



## D05: Ole Briery Station Rd Seg 2

PV array is expected to produce the following glare for this receptor:

- 667 minutes of "green" glare with low potential to cause temporary after-image.
- 3,586 minutes of "yellow" glare with potential to cause temporary after-image.





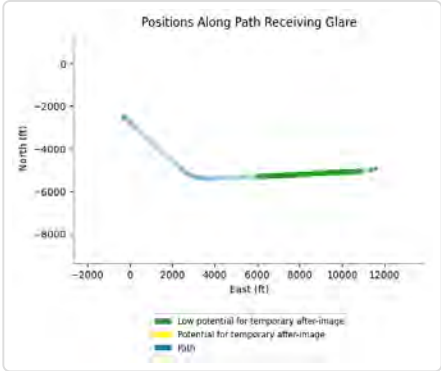
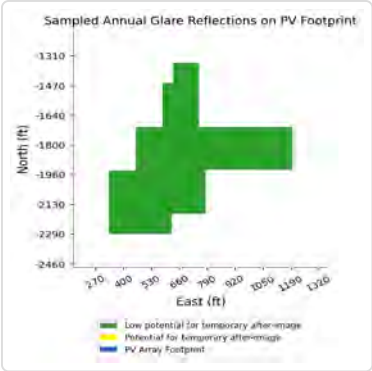
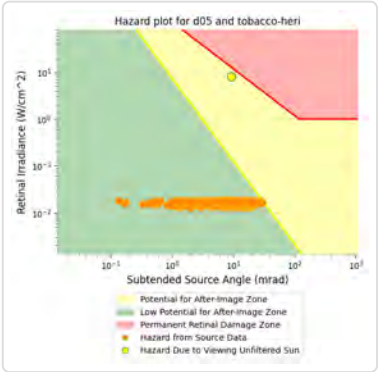
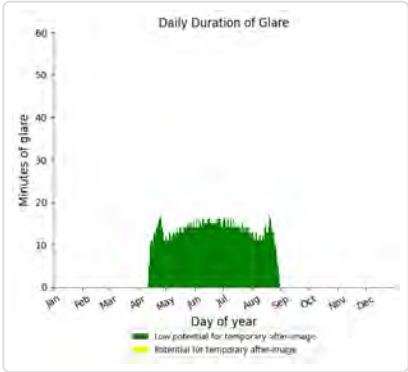
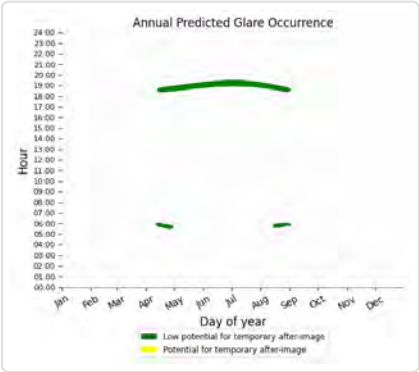
D05: Thistle Knob Ln

No glare found

D05: Tobacco Heritage Trail

PV array is expected to produce the following glare for this receptor:

- 1,893 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



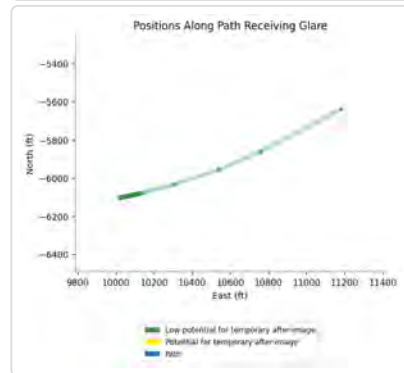
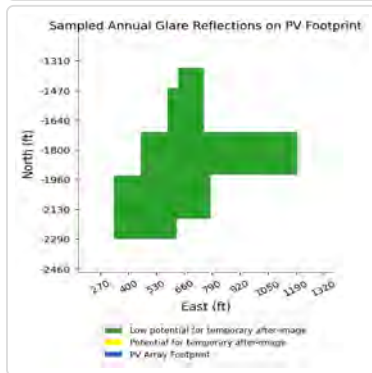
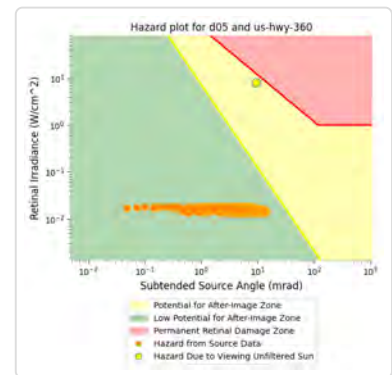
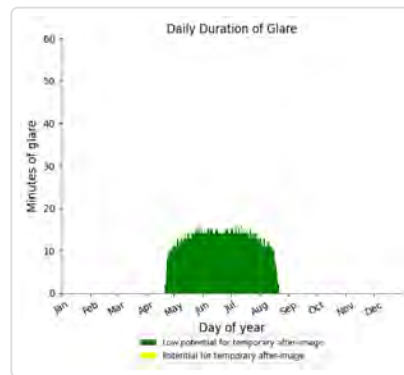
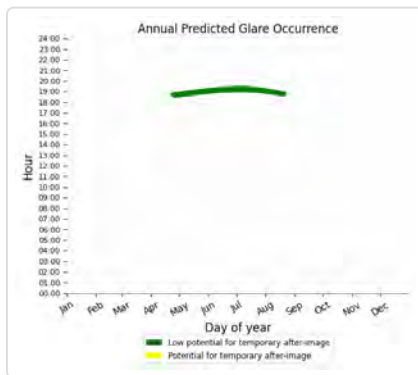
D05: US Hwy 15

No glare found

## D05: US Hwy 360

PV array is expected to produce the following glare for this receptor:

- 1,570 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## E01 potential temporary after-image

Component	Green glare (min)	Yellow glare (min)
OP: OP 118	0	0
OP: OP 119	0	0
OP: OP 120	0	0
OP: OP 121	0	0
OP: OP 122	0	0
OP: OP 123	0	0
OP: OP 124	0	0
OP: OP 125	0	0
OP: OP 126	0	0
OP: OP 127	0	0
OP: OP 128	0	0
OP: OP 129	0	0
OP: OP 130	0	0
OP: OP 131	0	0
OP: OP 132	0	0
OP: OP 133	0	0
Route: Collins Dr	0	0
Route: Country Dr Seg 1	1056	0
Route: Country Dr Seg 2	381	0
Route: County Line Rd	0	0
Route: Dempseys Rd	43	0
Route: Harley Ln	0	0

Route: Henderson Rd	0	0
Route: Hillside Dr	431	0
Route: Ole Briery Station Rd Seg 1	464	0
Route: Ole Briery Station Rd Seg 2	57	0
Route: Thistle Knob Ln	184	0
Route: Tobacco Heritage Trail	1195	94
Route: US Hwy 15	0	0
Route: US Hwy 360	1014	0

#### **E01: OP 118**

*No glare found*

#### **E01: OP 119**

*No glare found*

#### **E01: OP 120**

*No glare found*

#### **E01: OP 121**

*No glare found*

#### **E01: OP 122**

*No glare found*

#### **E01: OP 123**

*No glare found*

#### **E01: OP 124**

*No glare found*

#### **E01: OP 125**

*No glare found*

#### **E01: OP 126**

*No glare found*

#### **E01: OP 127**

*No glare found*

#### **E01: OP 128**

*No glare found*

#### **E01: OP 129**

*No glare found*

## E01: OP 130

No glare found

## E01: OP 131

No glare found

## E01: OP 132

No glare found

## E01: OP 133

No glare found

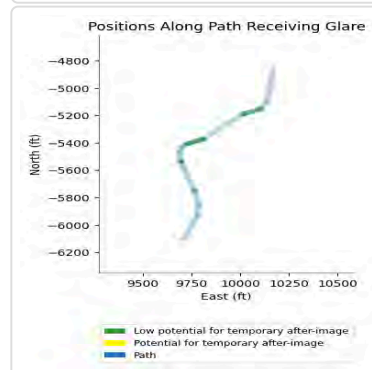
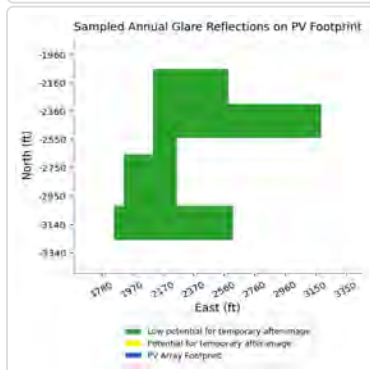
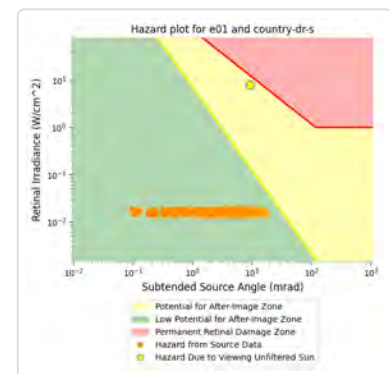
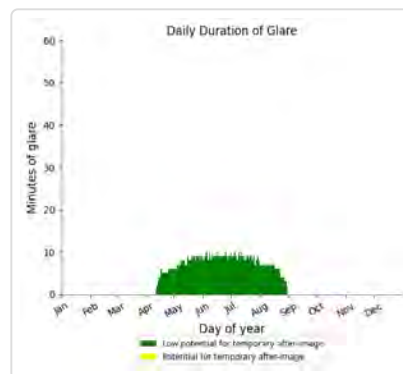
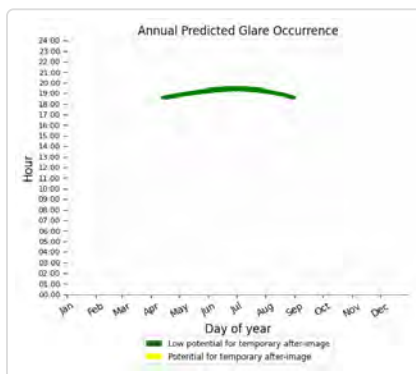
## E01: Collins Dr

No glare found

## E01: Country Dr Seg 1

PV array is expected to produce the following glare for this receptor:

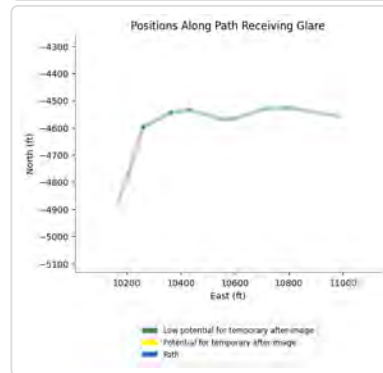
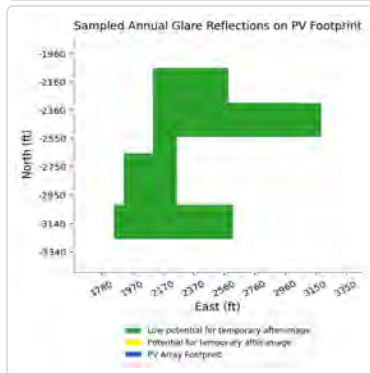
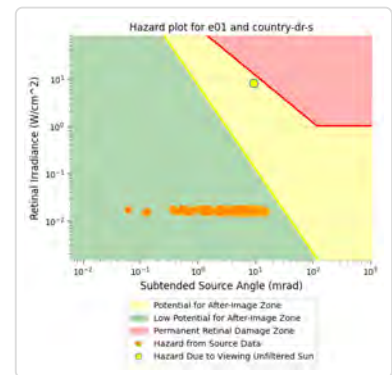
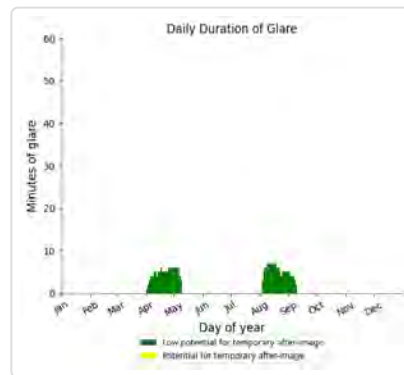
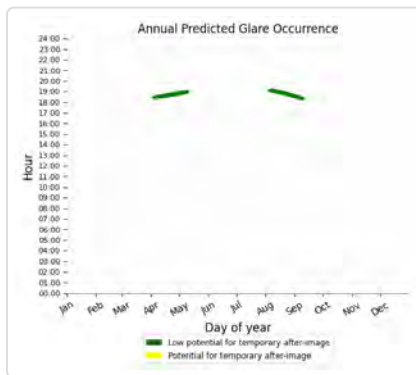
- 1,056 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## E01: Country Dr Seg 2

PV array is expected to produce the following glare for this receptor:

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



## E01: County Line Rd

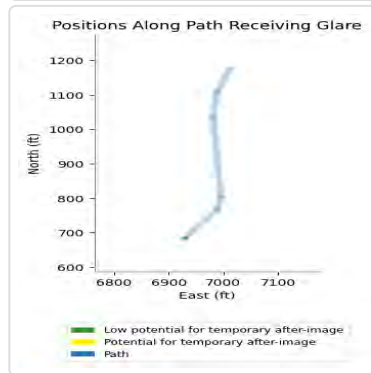
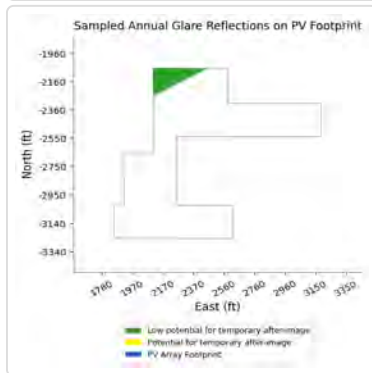
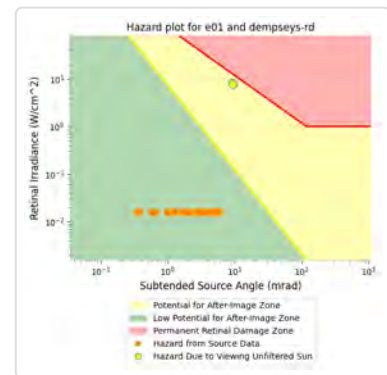
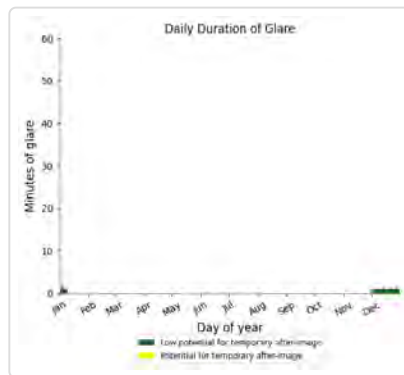
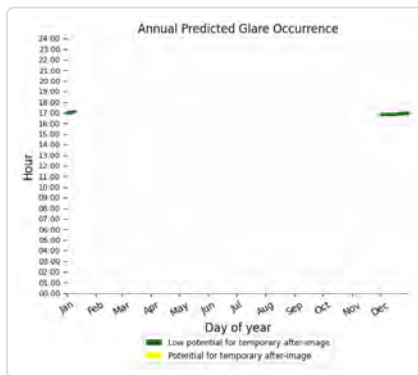
No glare found



## E01: Dempseys Rd

PV array is expected to produce the following glare for this receptor:

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



## E01: Harley Ln

No glare found

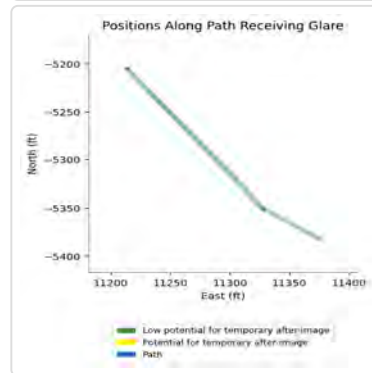
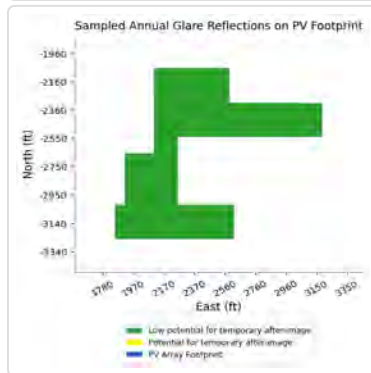
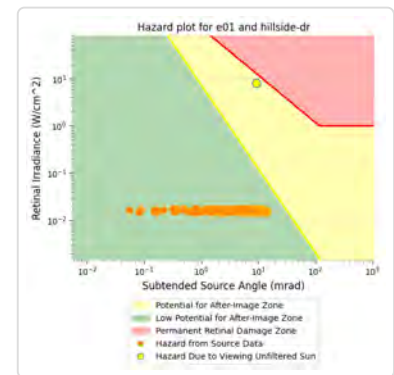
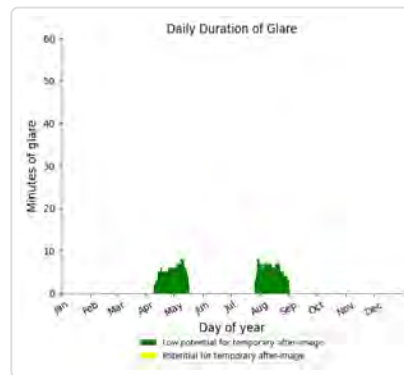
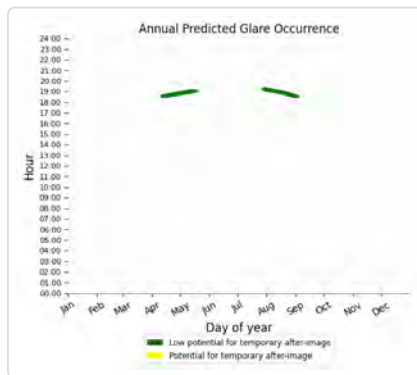
## E01: Henderson Rd

No glare found

## E01: Hillside Dr

PV array is expected to produce the following glare for this receptor:

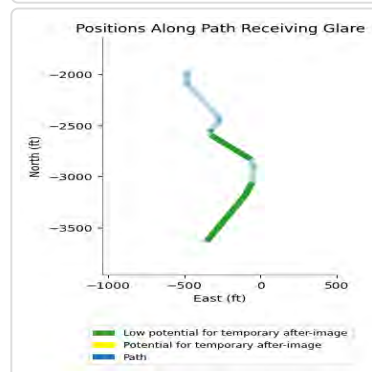
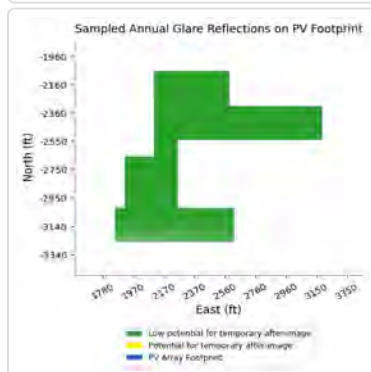
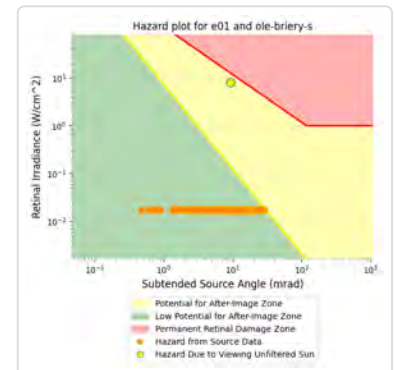
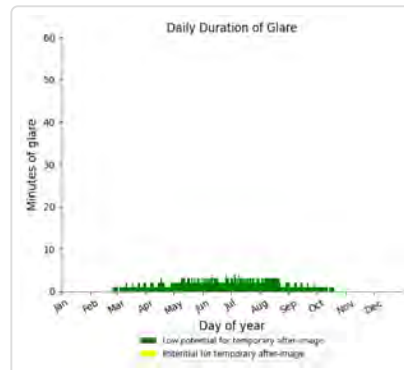
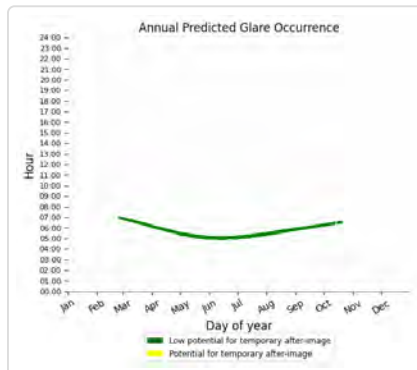
- 431 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## E01: Ole Briery Station Rd Seg 1

PV array is expected to produce the following glare for this receptor:

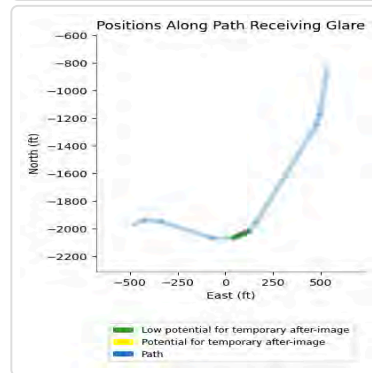
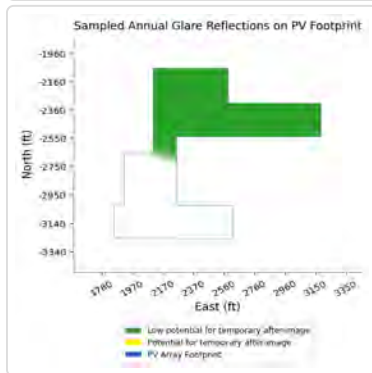
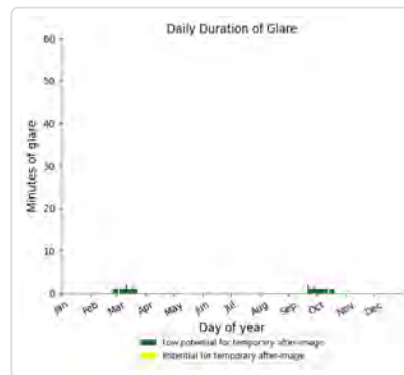
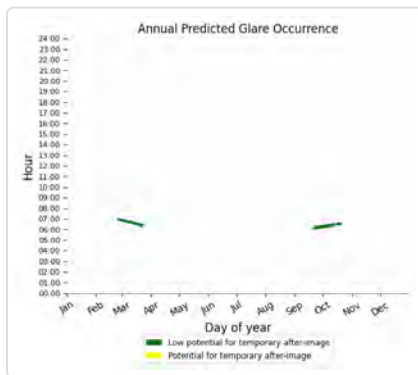
- 464 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## E01: Ole Briery Station Rd Seg 2

PV array is expected to produce the following glare for this receptor:

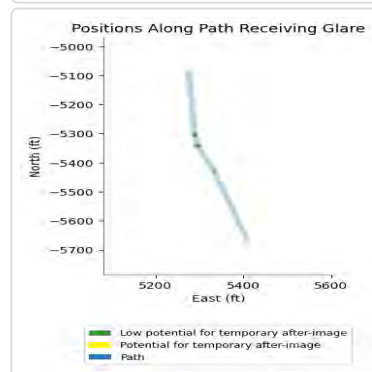
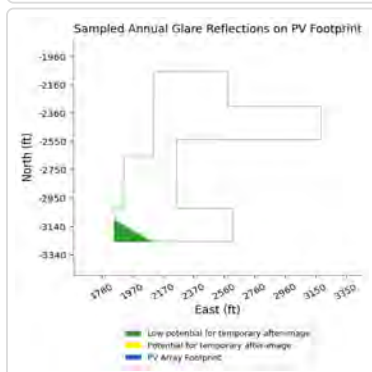
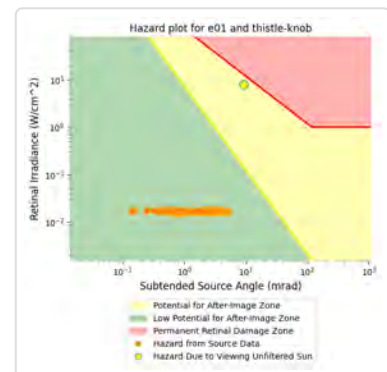
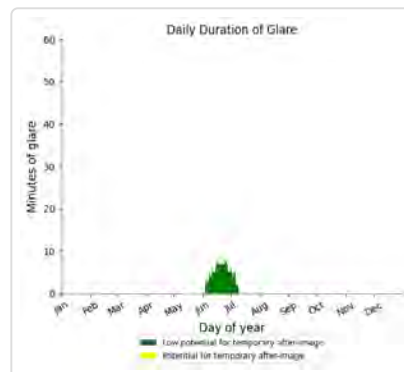
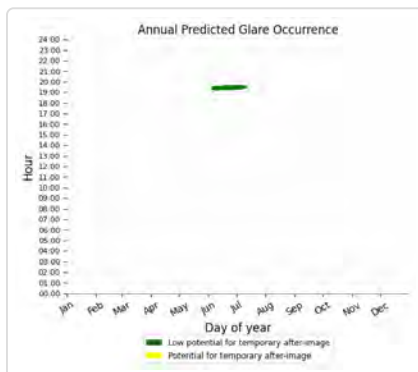
- 57 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## E01: Thistle Knob Ln

PV array is expected to produce the following glare for this receptor:

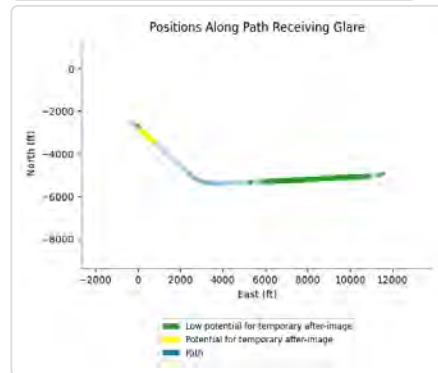
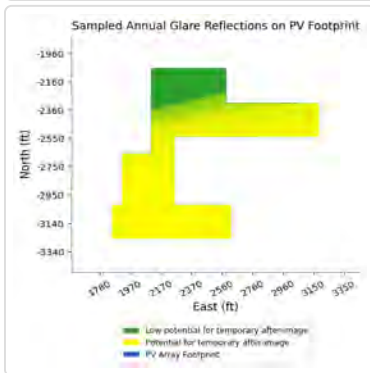
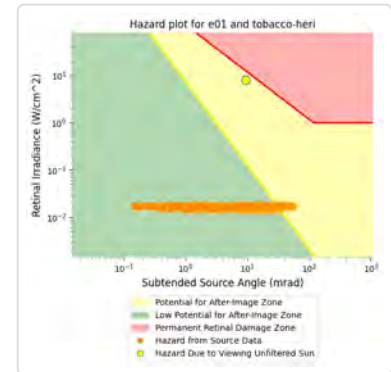
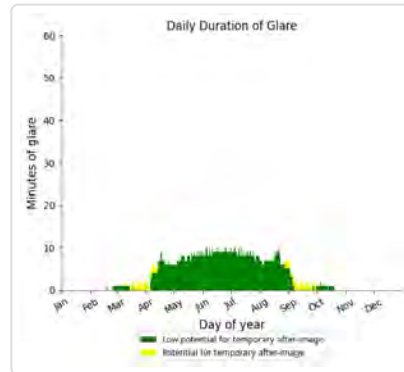
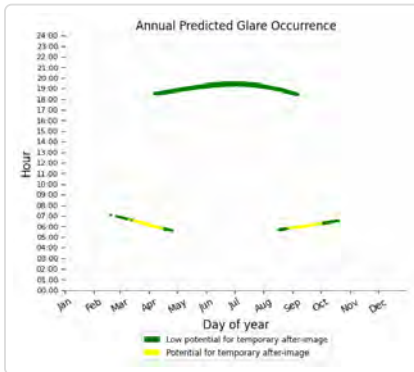
- 184 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## E01: Tobacco Heritage Trail

PV array is expected to produce the following glare for this receptor:

- 1,195 minutes of "green" glare with low potential to cause temporary after-image.
- 94 minutes of "yellow" glare with potential to cause temporary after-image.



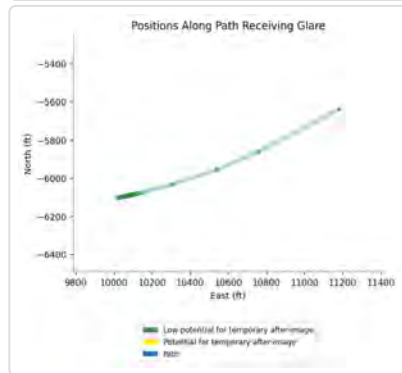
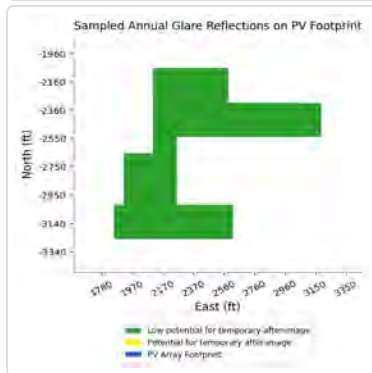
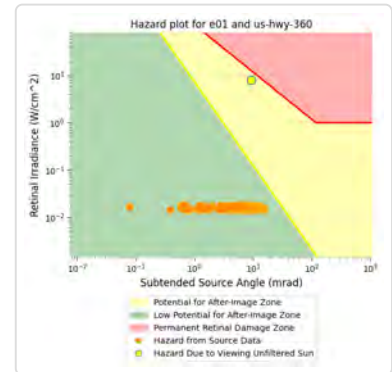
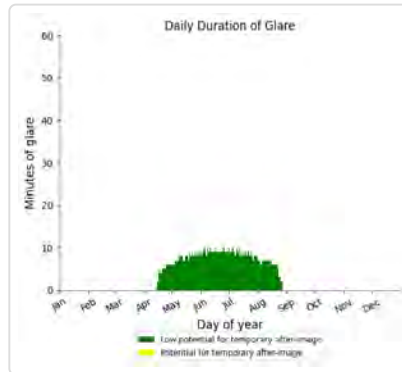
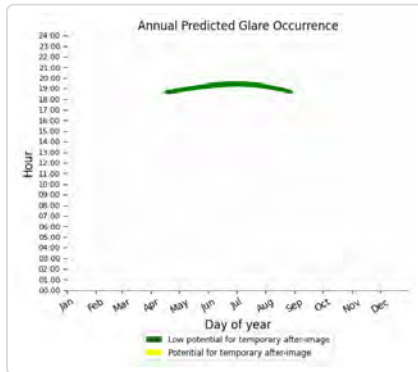
## E01: US Hwy 15

No glare found

## E01: US Hwy 360

PV array is expected to produce the following glare for this receptor:

- 1,014 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## E02 low potential for temporary after-image

Component	Green glare (min)	Yellow glare (min)
OP: OP 118	303	0
OP: OP 119	330	0
OP: OP 120	121	0
OP: OP 121	114	0
OP: OP 122	0	0
OP: OP 123	0	0
OP: OP 124	0	0
OP: OP 125	0	0
OP: OP 126	0	0
OP: OP 127	0	0
OP: OP 128	0	0
OP: OP 129	0	0
OP: OP 130	0	0
OP: OP 131	0	0
OP: OP 132	0	0
OP: OP 133	0	0
Route: Collins Dr	0	0
Route: Country Dr Seg 1	0	0
Route: Country Dr Seg 2	0	0
Route: County Line Rd	434	0
Route: Dempseys Rd	0	0
Route: Harley Ln	0	0

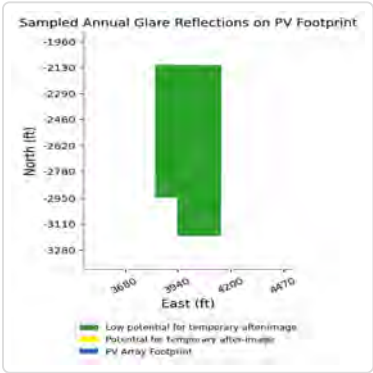
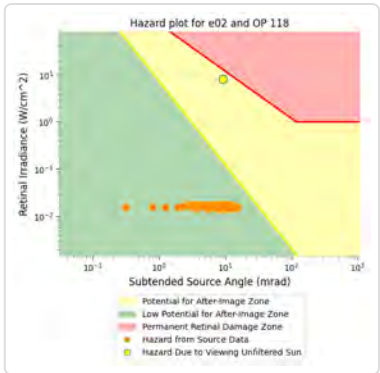
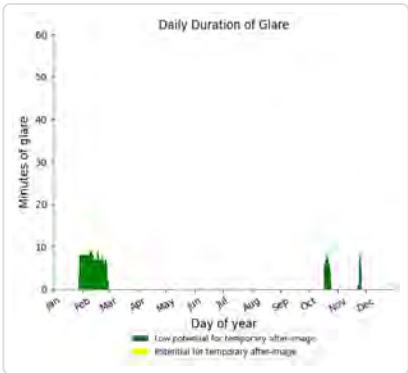
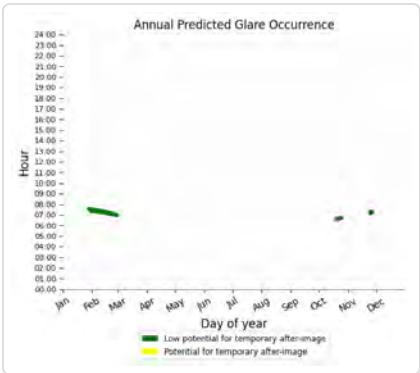


Route: Henderson Rd	0	0
Route: Hillside Dr	0	0
Route: Ole Briery Station Rd Seg 1	768	0
Route: Ole Briery Station Rd Seg 2	538	0
Route: Thistle Knob Ln	0	0
Route: Tobacco Heritage Trail	458	0
Route: US Hwy 15	0	0
Route: US Hwy 360	0	0

### E02: OP 118

PV array is expected to produce the following glare for this receptor:

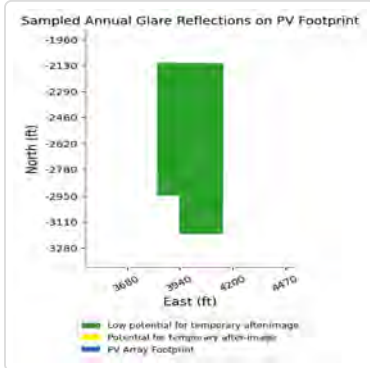
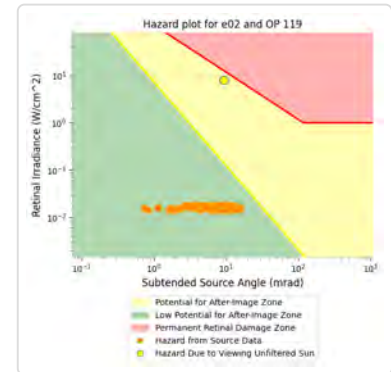
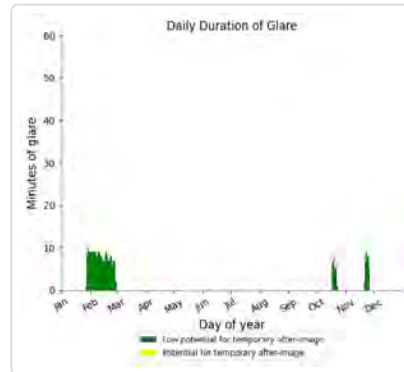
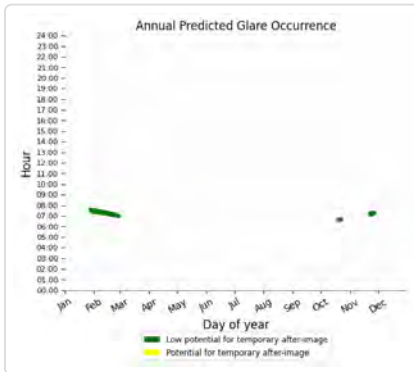
- 303 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## EP2: OP 119

PV array is expected to produce the following glare for this receptor:

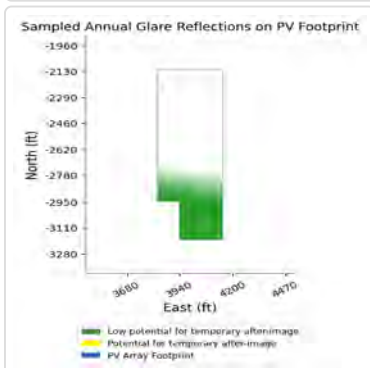
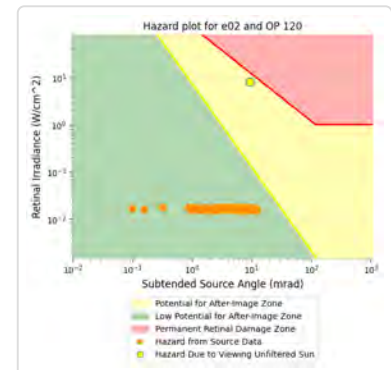
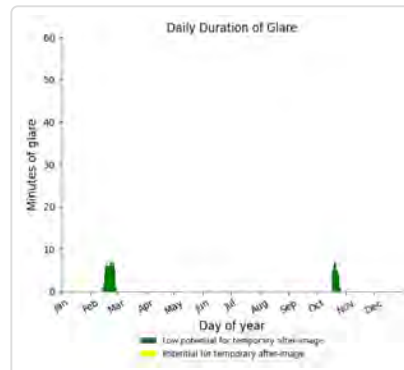
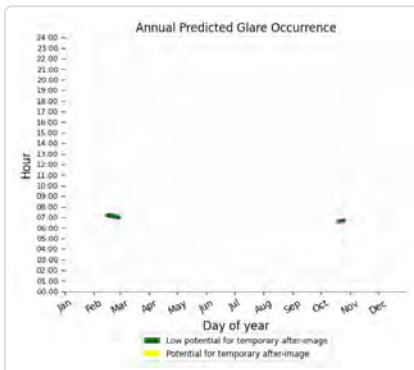
- 330 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## EP2: OP 120

PV array is expected to produce the following glare for this receptor:

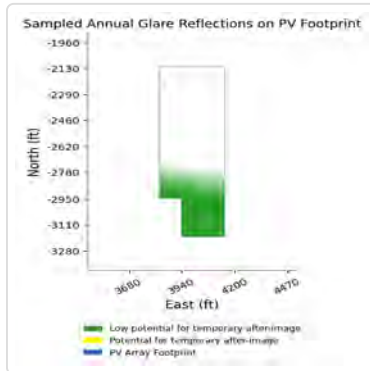
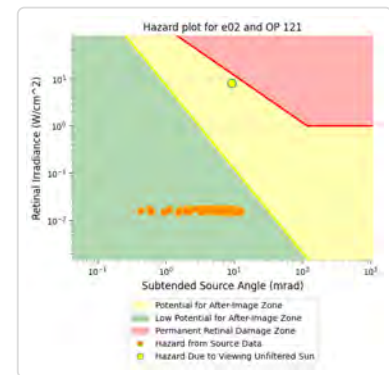
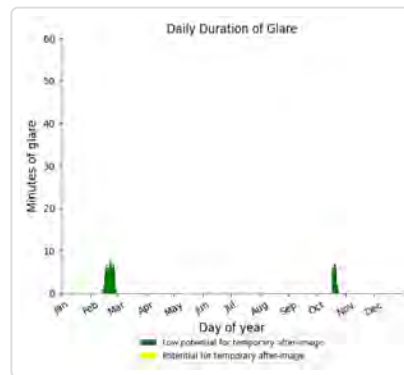
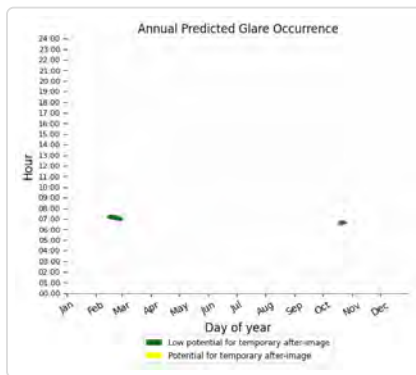
- 121 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## E02: OP 121

PV array is expected to produce the following glare for this receptor:

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



## E02: OP 122

No glare found

## E02: OP 123

No glare found

## E02: OP 124

No glare found

## E02: OP 125

No glare found

## E02: OP 126

No glare found

## E02: OP 127

No glare found

## E02: OP 128

No glare found

## E02: OP 129

No glare found

## E02: OP 130

No glare found

## E02: OP 131

No glare found

## E02: OP 132

No glare found

## E02: OP 133

No glare found

## E02: Collins Dr

No glare found

## E02: Country Dr Seg 1

No glare found

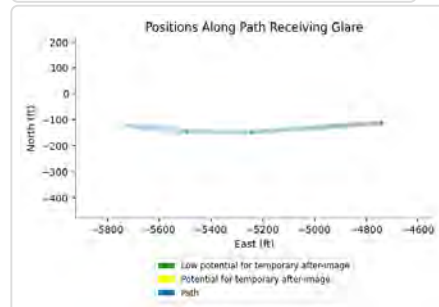
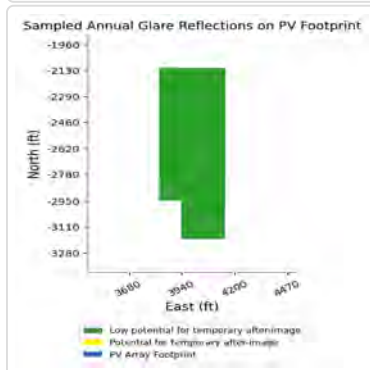
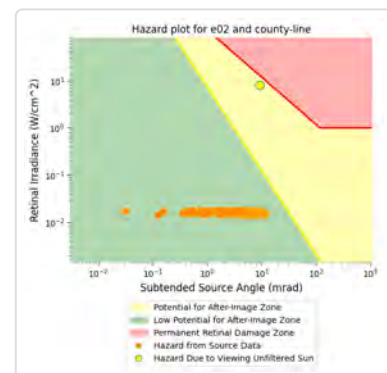
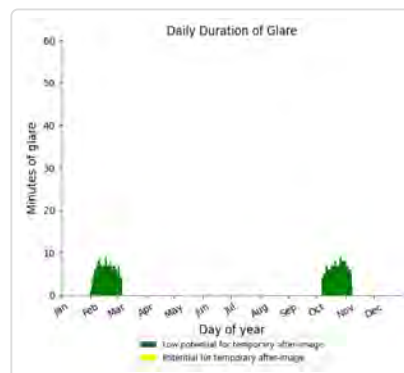
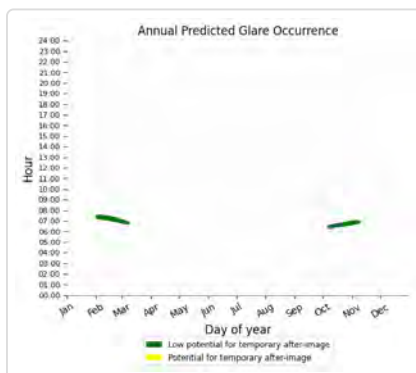
## E02: Country Dr Seg 2

No glare found

## E02: County Line Rd

PV array is expected to produce the following glare for this receptor:

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



## E02: Dempseys Rd

No glare found

## E02: Harley Ln

No glare found

## E02: Henderson Rd

No glare found

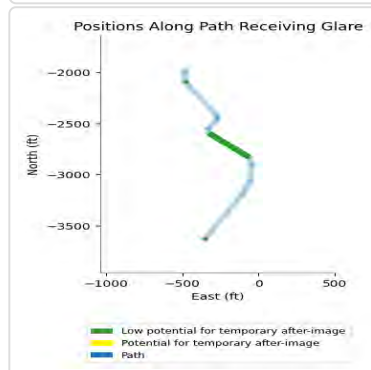
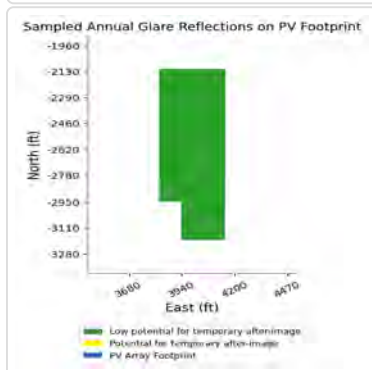
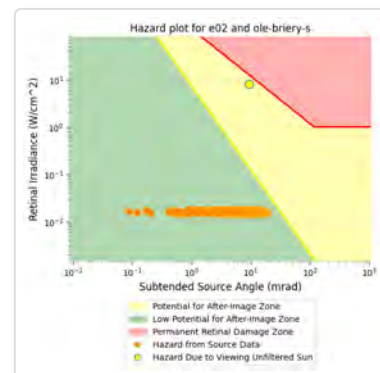
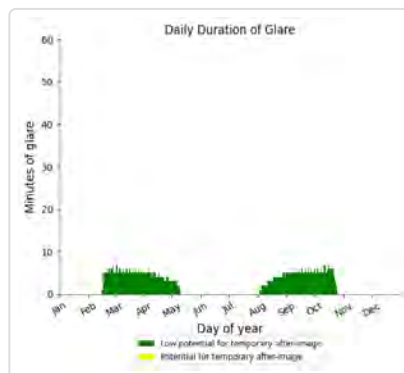
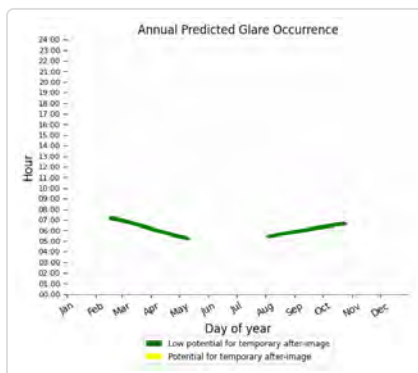
## E02: Hillside Dr

No glare found

## E02: Ole Briery Station Rd Seg 1

PV array is expected to produce the following glare for this receptor:

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

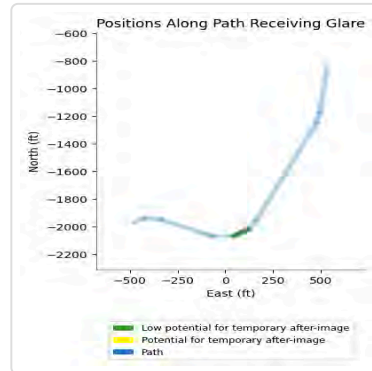
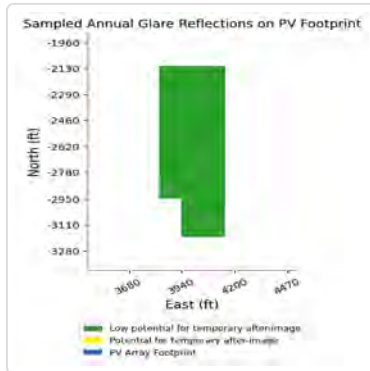
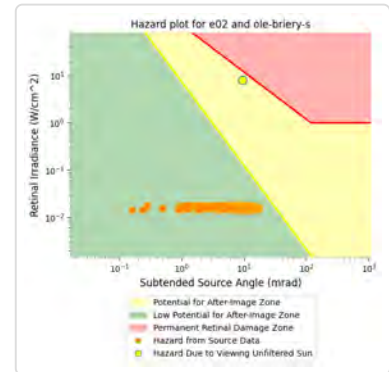
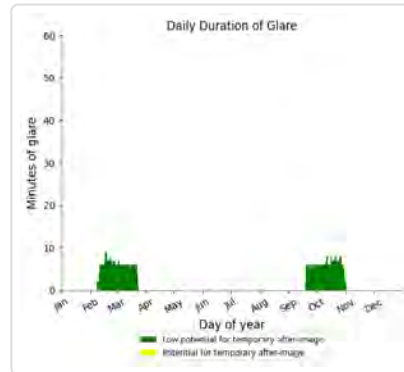
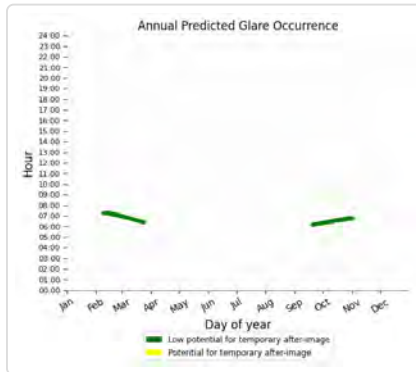




## E02: Ole Briery Station Rd Seg 2

PV array is expected to produce the following glare for this receptor:

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



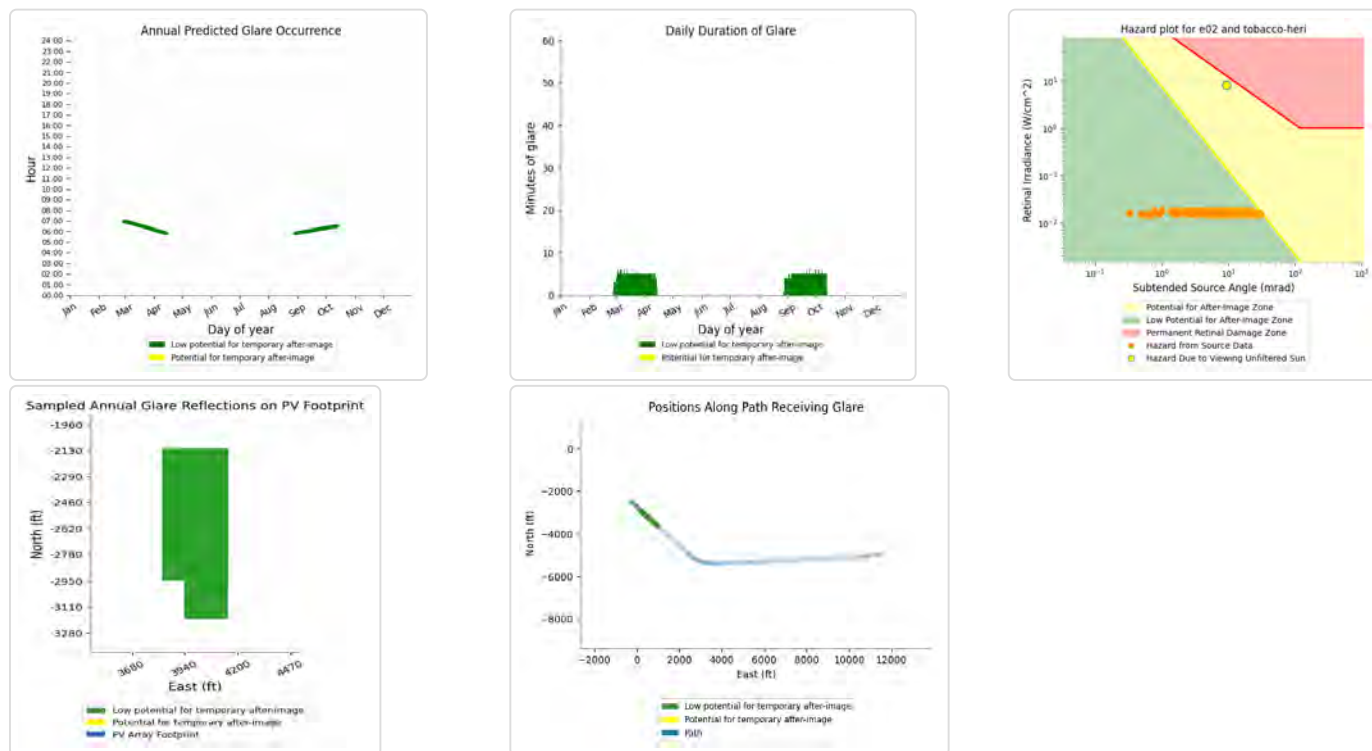
## E02: Thistle Knob Ln

No glare found

## E02: Tobacco Heritage Trail

PV array is expected to produce the following glare for this receptor:

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



## E02: US Hwy 15

No glare found

## E02: US Hwy 360

No glare found

## E03 potential temporary after-image

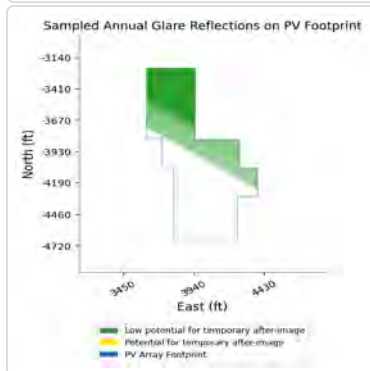
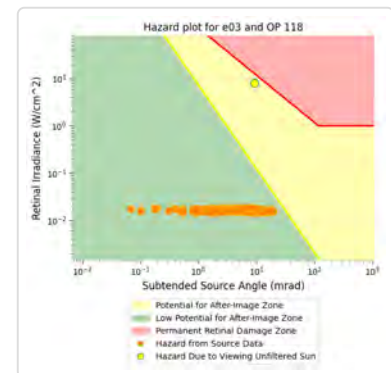
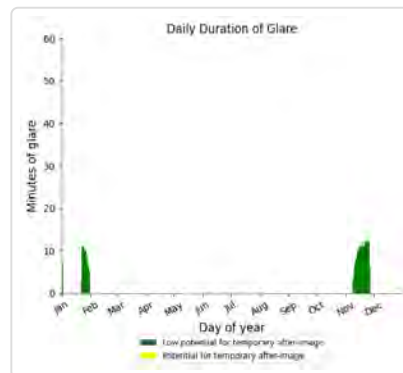
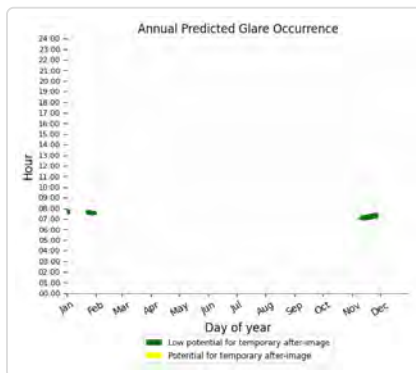
Component	Green glare (min)	Yellow glare (min)
OP: OP 118	285	0
OP: OP 119	275	0
OP: OP 120	571	0
OP: OP 121	570	0
OP: OP 122	284	0
OP: OP 123	307	0
OP: OP 124	193	0
OP: OP 125	206	0
OP: OP 126	79	0
OP: OP 127	70	0
OP: OP 128	0	0
OP: OP 129	0	0
OP: OP 130	0	0
OP: OP 131	0	0
OP: OP 132	0	0

OP: OP 133	0	0
Route: Collins Dr	0	0
Route: Country Dr Seg 1	0	0
Route: Country Dr Seg 2	0	0
Route: County Line Rd	1130	0
Route: Dempseys Rd	0	0
Route: Harley Ln	0	0
Route: Henderson Rd	0	0
Route: Hillside Dr	0	0
Route: Ole Briery Station Rd Seg 1	1735	0
Route: Ole Briery Station Rd Seg 2	1544	0
Route: Thistle Knob Ln	0	0
Route: Tobacco Heritage Trail	1220	601
Route: US Hwy 15	0	0
Route: US Hwy 360	0	0

### E03: OP 118

PV array is expected to produce the following glare for this receptor:

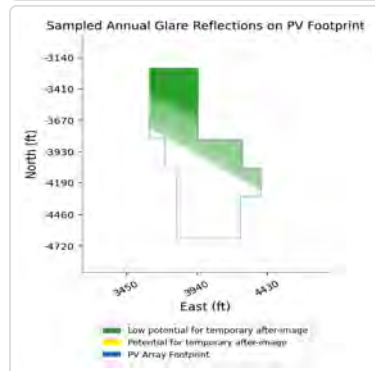
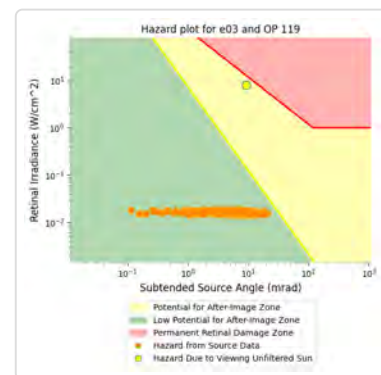
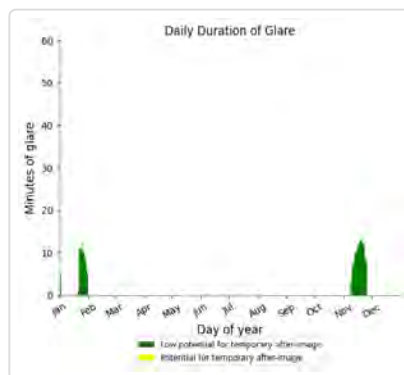
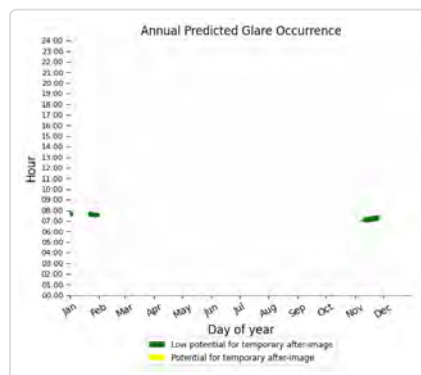
- 285 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



### E03: OP 119

PV array is expected to produce the following glare for this receptor:

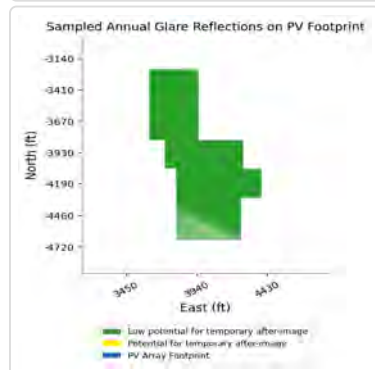
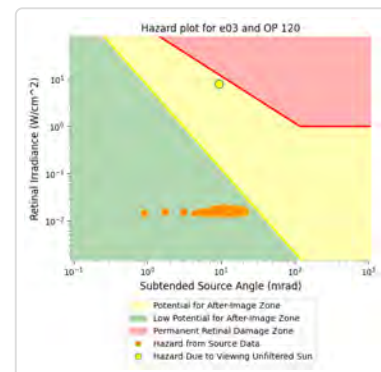
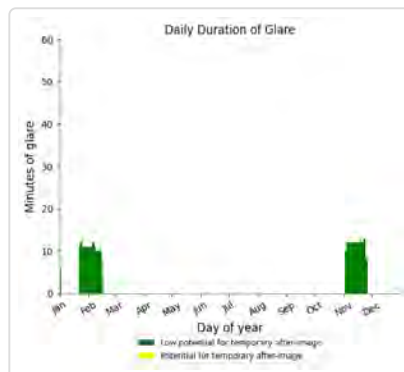
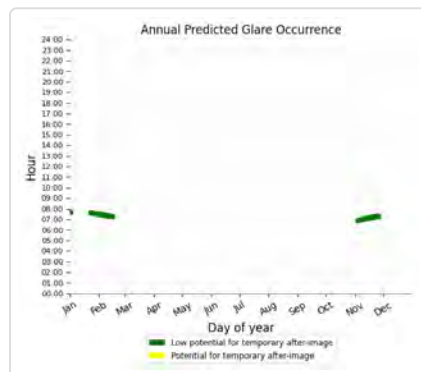
- 275 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



### E03: OP 120

PV array is expected to produce the following glare for this receptor:

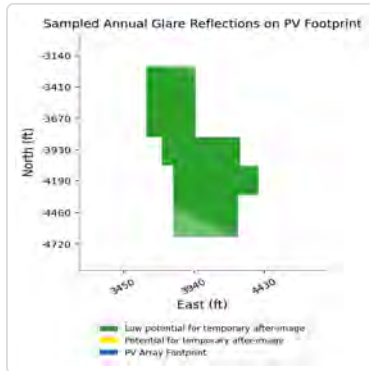
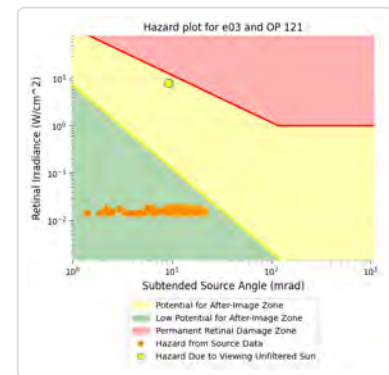
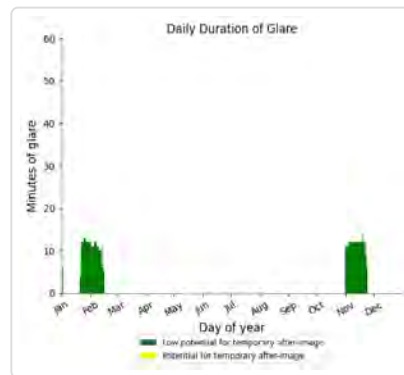
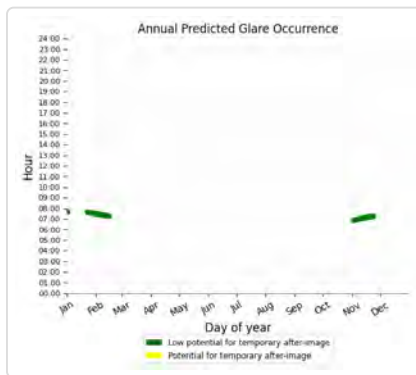
- 571 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



### E03: OP 121

PV array is expected to produce the following glare for this receptor:

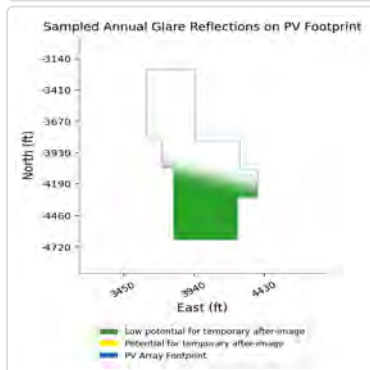
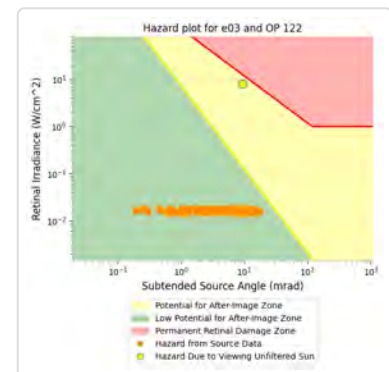
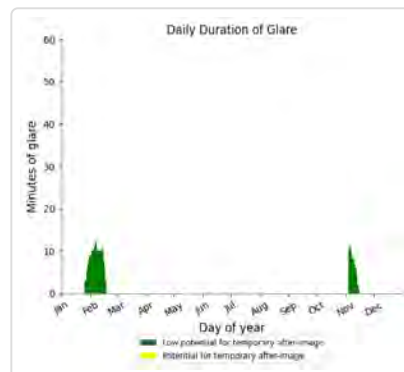
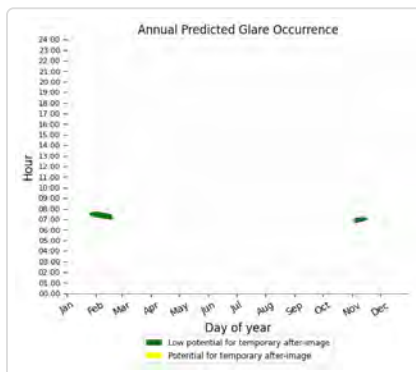
- 570 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



### E03: OP 122

PV array is expected to produce the following glare for this receptor:

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

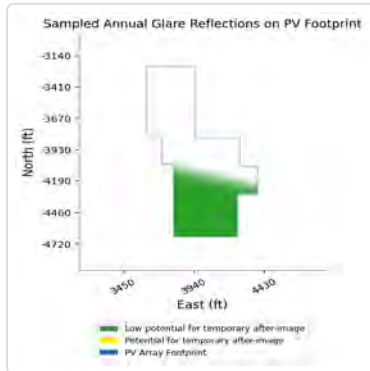
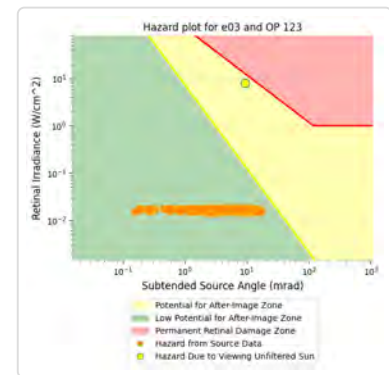
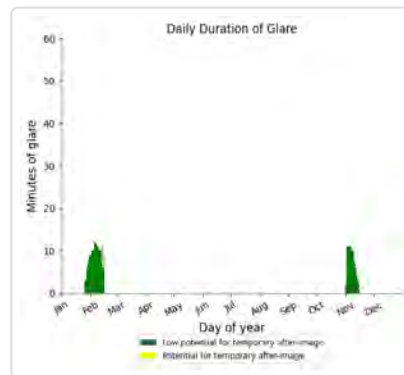
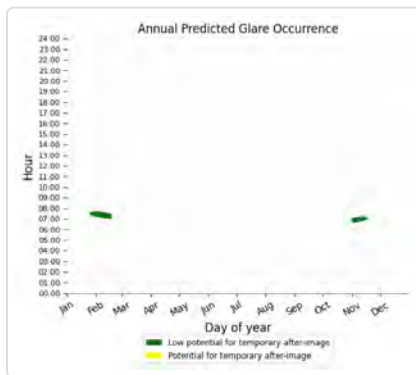




### E03: OP 123

PV array is expected to produce the following glare for this receptor:

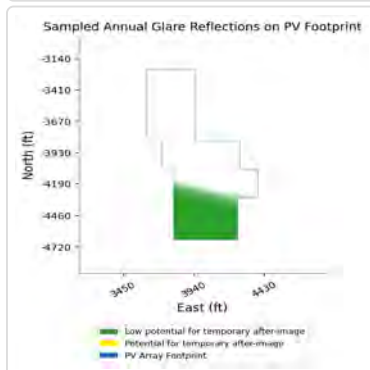
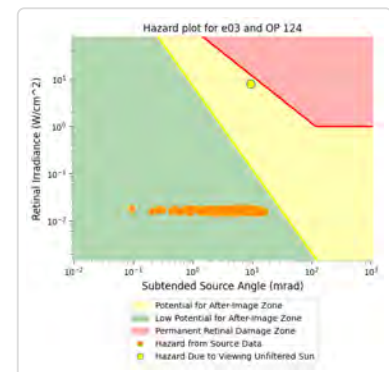
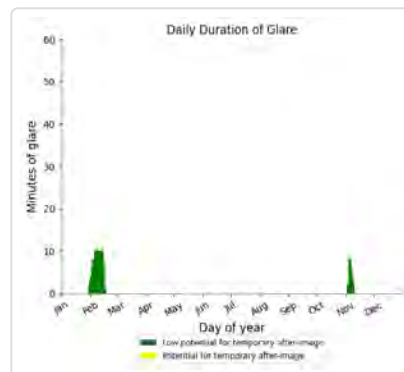
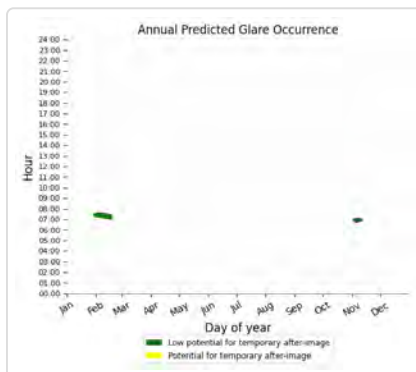
- 307 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



### E03: OP 124

PV array is expected to produce the following glare for this receptor:

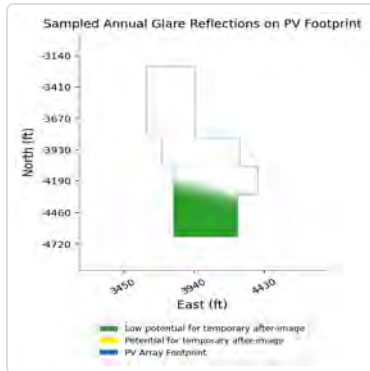
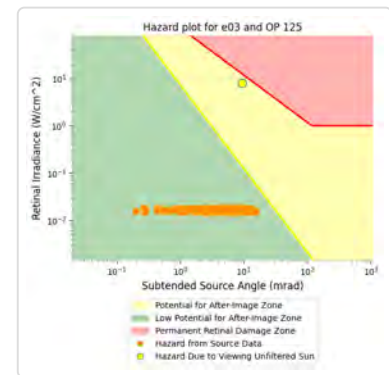
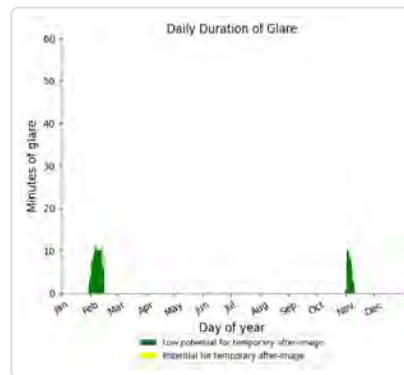
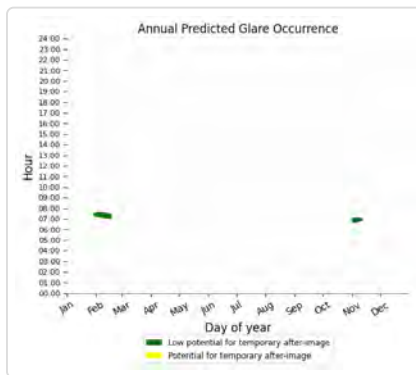
- 193 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



### E03: OP 125

PV array is expected to produce the following glare for this receptor:

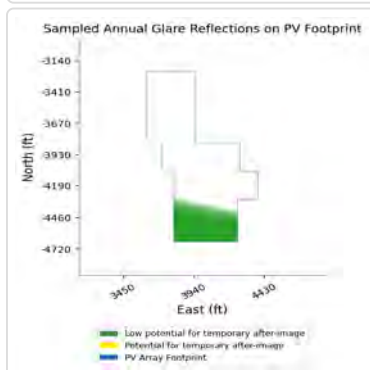
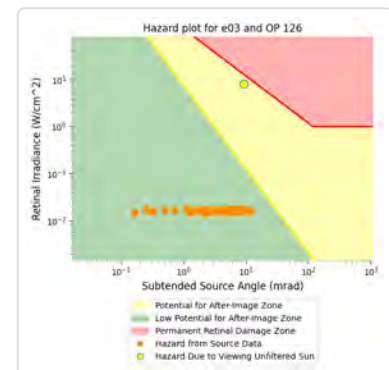
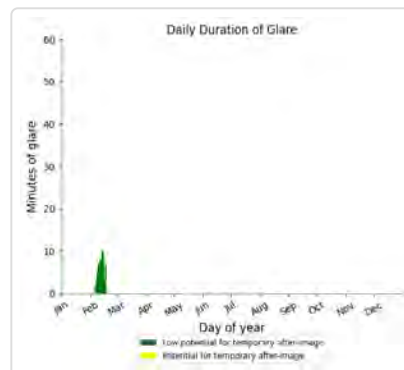
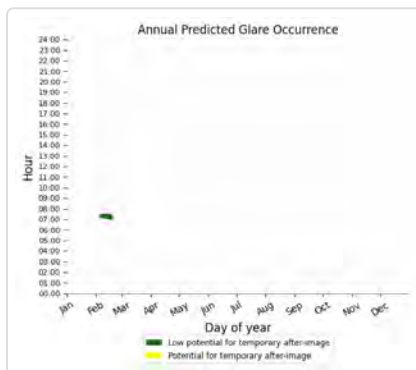
- 206 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



### E03: OP 126

PV array is expected to produce the following glare for this receptor:

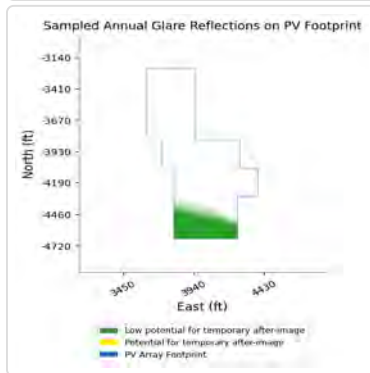
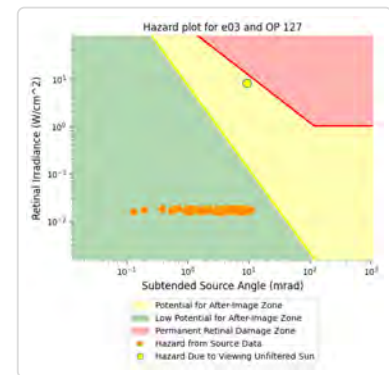
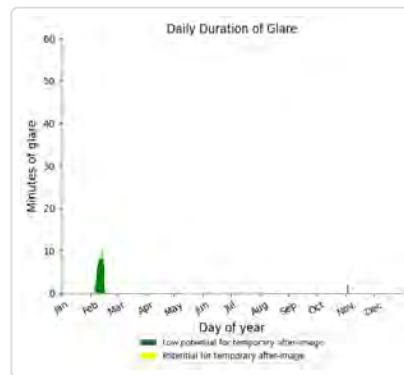
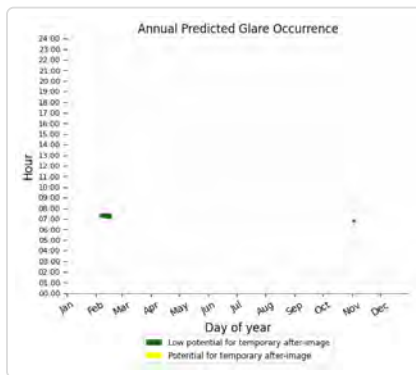
- 79 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



### E03: OP 127

PV array is expected to produce the following glare for this receptor:

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



### E03: OP 128

No glare found

### E03: OP 129

No glare found

### E03: OP 130

No glare found

### E03: OP 131

No glare found

### E03: OP 132

No glare found

### E03: OP 133

No glare found

### E03: Collins Dr

No glare found

### E03: Country Dr Seg 1

No glare found

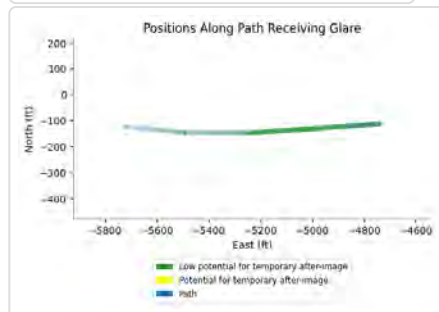
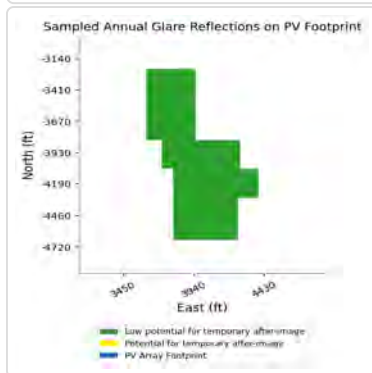
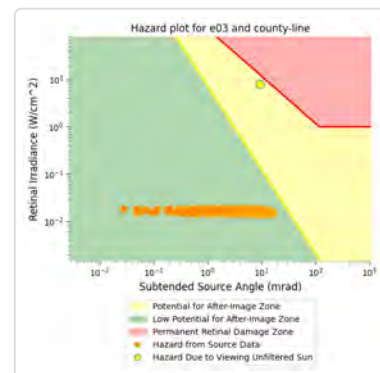
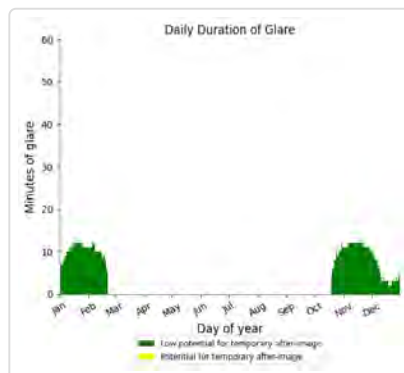
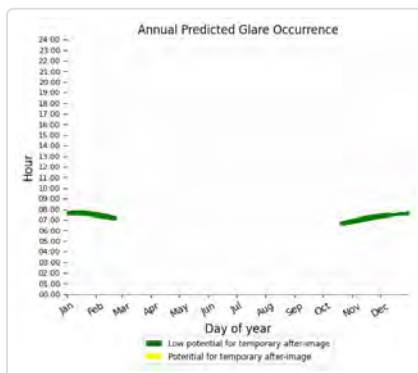
### E03: Country Dr Seg 2

No glare found

### E03: County Line Rd

PV array is expected to produce the following glare for this receptor:

- 1,130 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



### E03: Dempseys Rd

No glare found

### E03: Harley Ln

No glare found

### E03: Henderson Rd

No glare found

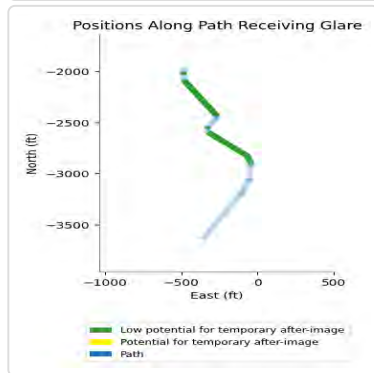
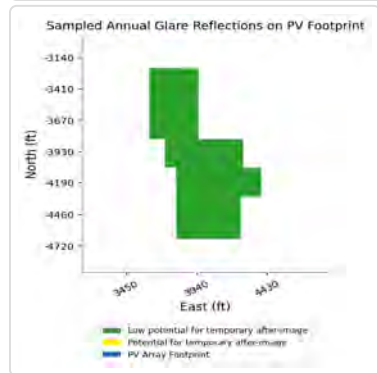
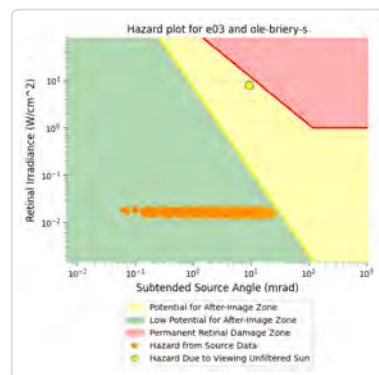
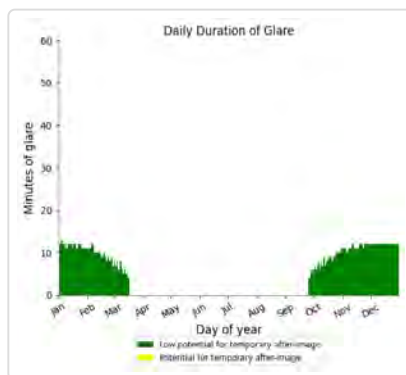
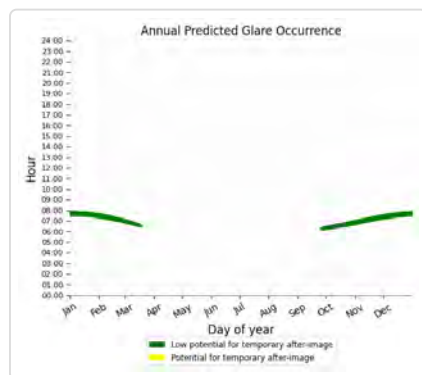
### E03: Hillside Dr

No glare found

### E03: Ole Briery Station Rd Seg 1

PV array is expected to produce the following glare for this receptor:

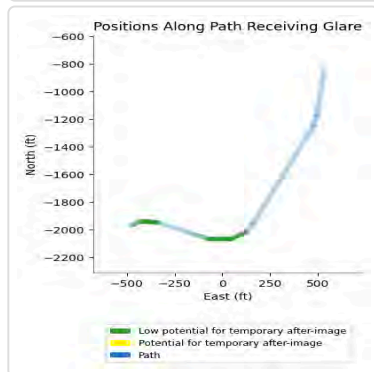
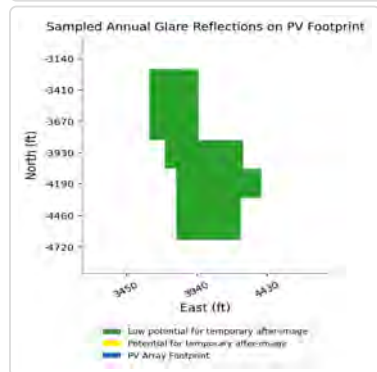
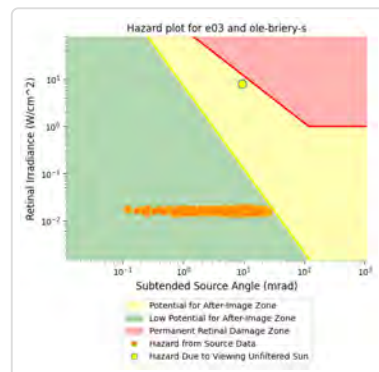
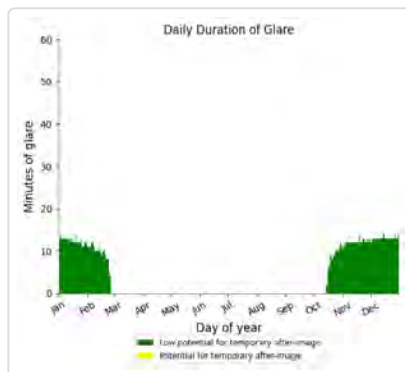
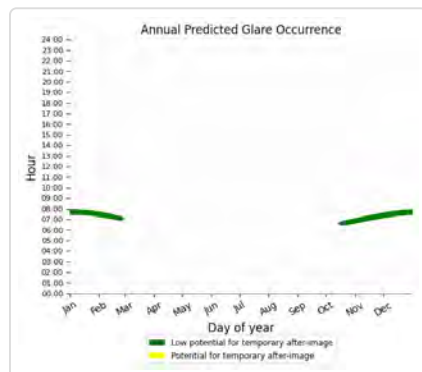
- 1,735 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



### E03: Ole Briery Station Rd Seg 2

PV array is expected to produce the following glare for this receptor:

- 1,544 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.





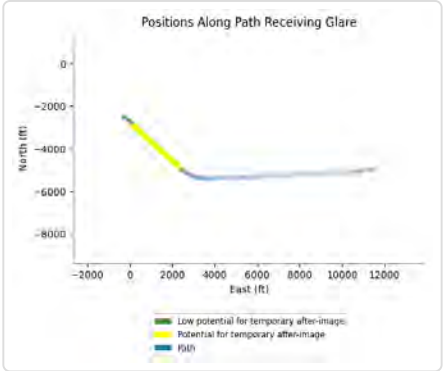
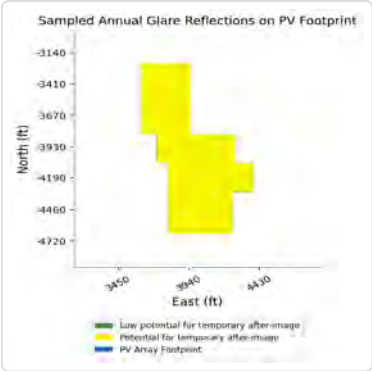
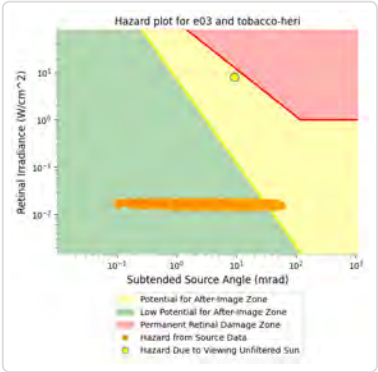
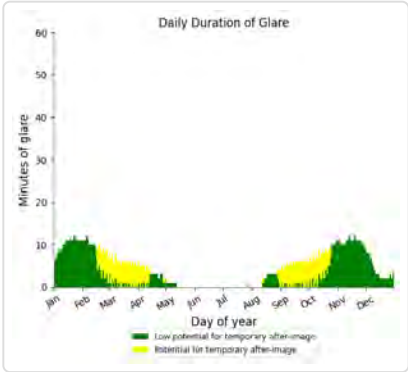
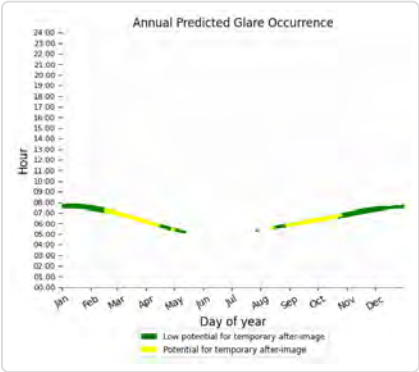
E03: Thistle Knob Ln

No glare found

E03: Tobacco Heritage Trail

PV array is expected to produce the following glare for this receptor:

- 1,220 minutes of "green" glare with low potential to cause temporary after-image.
- 601 minutes of "yellow" glare with potential to cause temporary after-image.



E03: US Hwy 15

No glare found

E03: US Hwy 360

No glare found

E04 low potential for temporary after-image

Component	Green glare (min)	Yellow glare (min)
OP: OP 118	0	0
OP: OP 119	0	0
OP: OP 120	159	0
OP: OP 121	129	0
OP: OP 122	228	0
OP: OP 123	266	0
OP: OP 124	187	0
OP: OP 125	199	0
OP: OP 126	156	0
OP: OP 127	124	0
OP: OP 128	0	0
OP: OP 129	0	0

OP: OP 130	0	0
OP: OP 131	0	0
OP: OP 132	0	0
OP: OP 133	0	0
Route: Collins Dr	0	0
Route: Country Dr Seg 1	133	0
Route: Country Dr Seg 2	93	0
Route: County Line Rd	892	0
Route: Dempseys Rd	0	0
Route: Harley Ln	0	0
Route: Henderson Rd	0	0
Route: Hillside Dr	107	0
Route: Ole Briery Station Rd Seg 1	1154	0
Route: Ole Briery Station Rd Seg 2	675	0
Route: Thistle Knob Ln	0	0
Route: Tobacco Heritage Trail	1480	0
Route: US Hwy 15	0	0
Route: US Hwy 360	122	0

#### E04: OP 118

No glare found

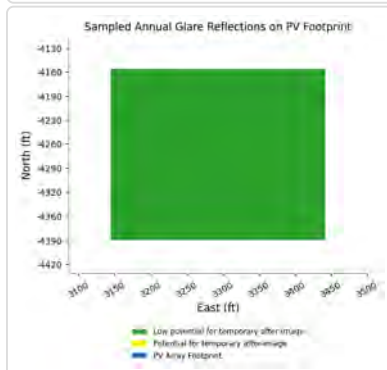
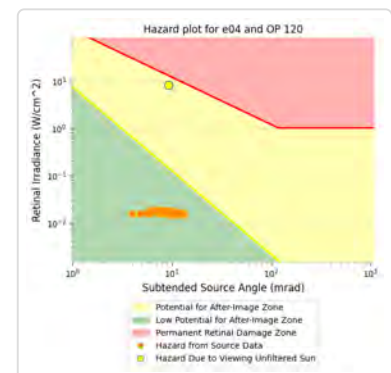
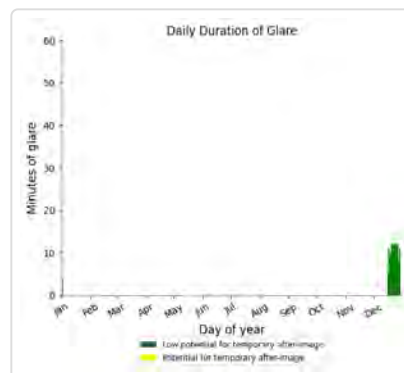
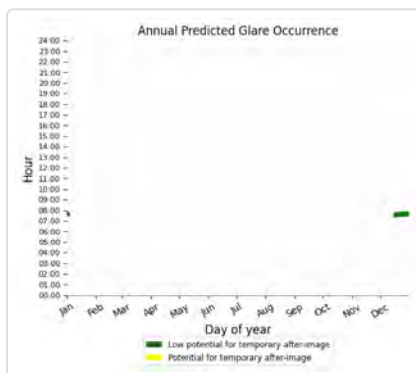
#### E04: OP 119

No glare found

#### E04: OP 120

PV array is expected to produce the following glare for this receptor:

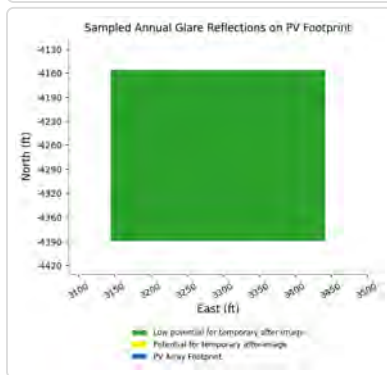
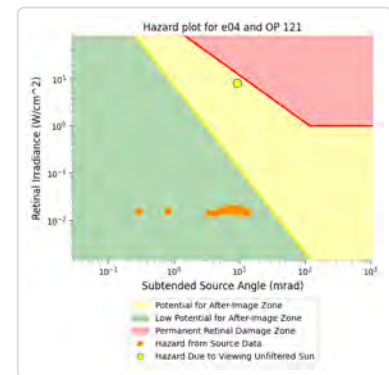
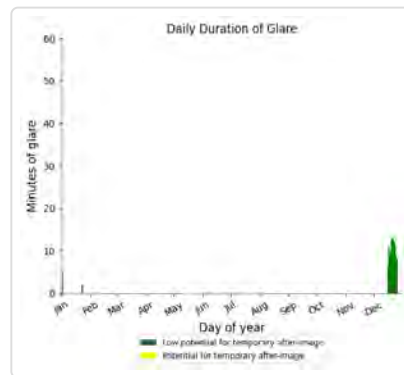
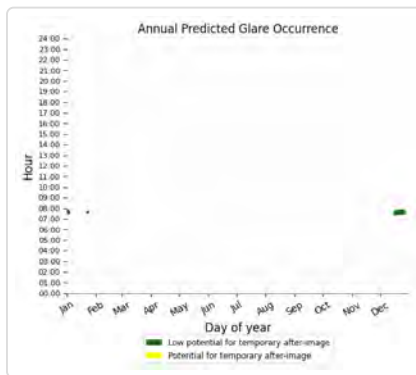
- 159 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## E04: OP 121

PV array is expected to produce the following glare for this receptor:

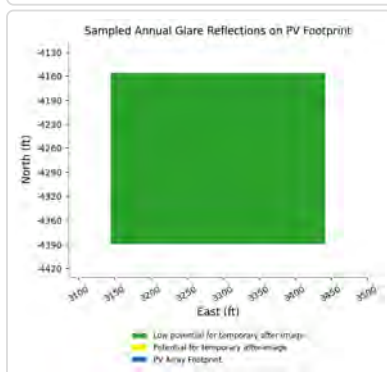
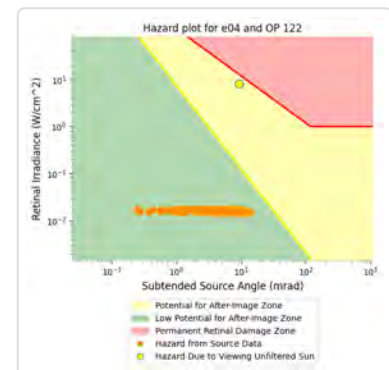
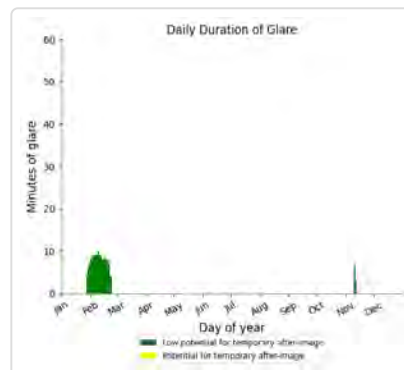
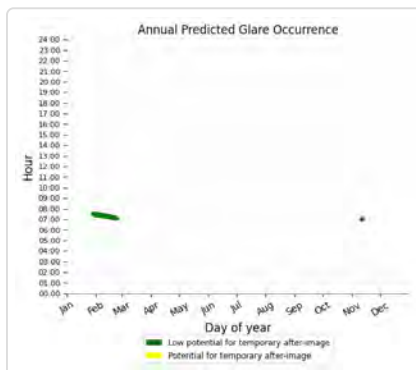
- 129 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## E04: OP 122

PV array is expected to produce the following glare for this receptor:

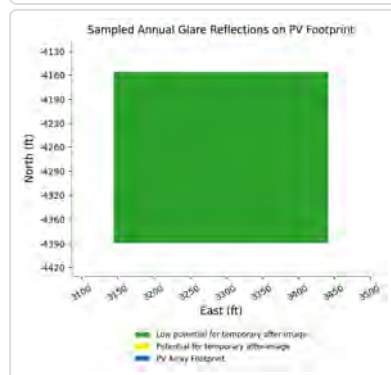
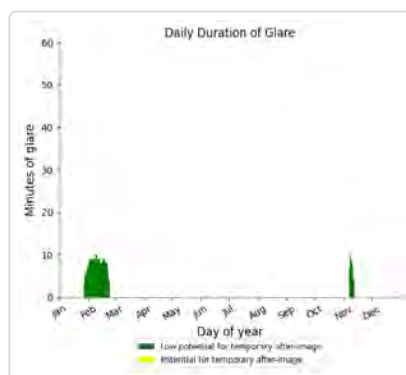
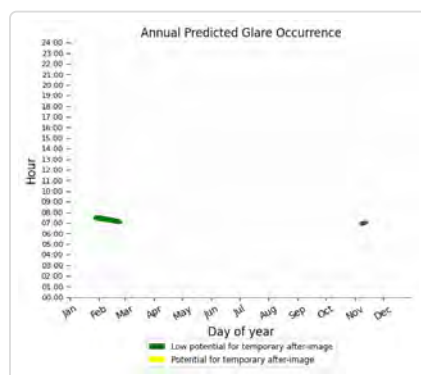
- 228 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## E04: OP 123

PV array is expected to produce the following glare for this receptor:

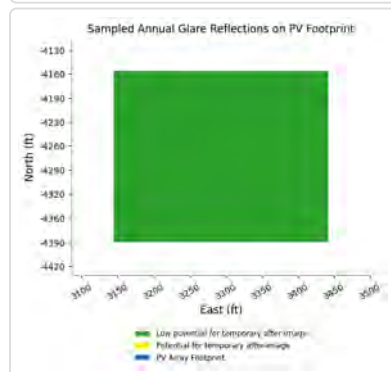
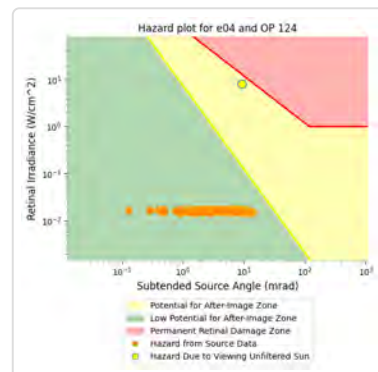
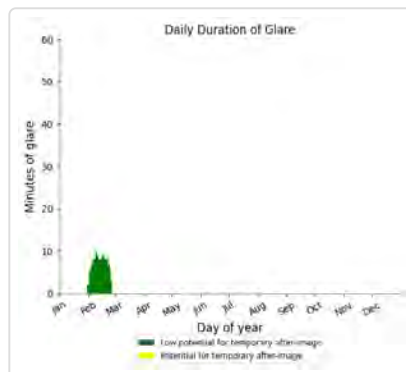
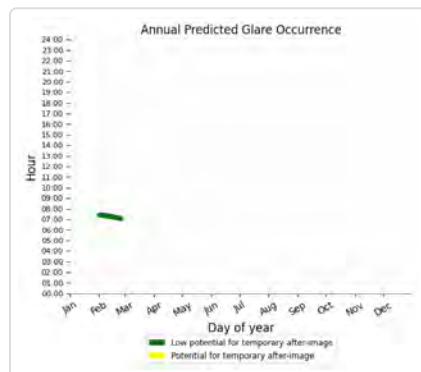
- 266 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## E04: OP 124

PV array is expected to produce the following glare for this receptor:

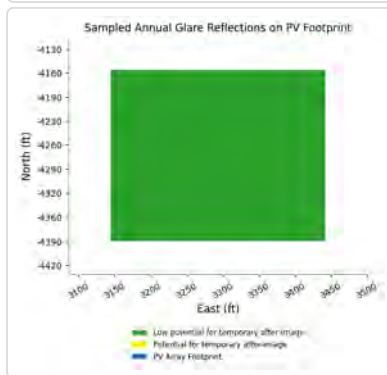
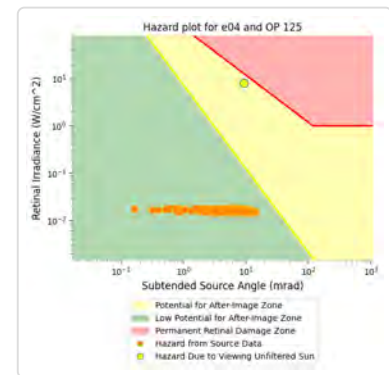
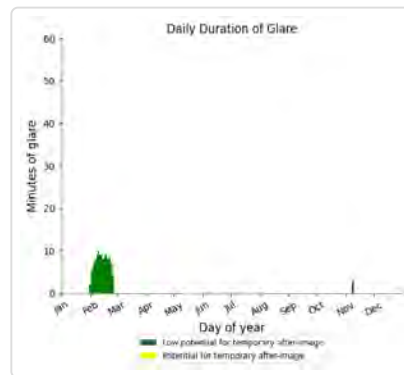
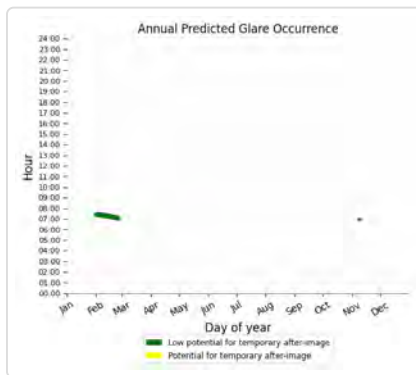
- 187 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## E04: OP 125

PV array is expected to produce the following glare for this receptor:

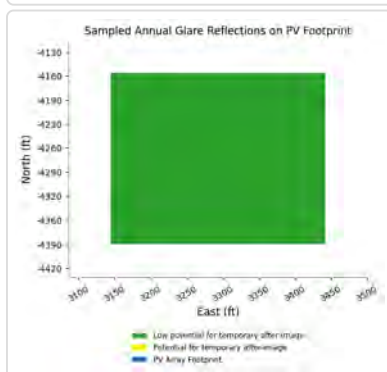
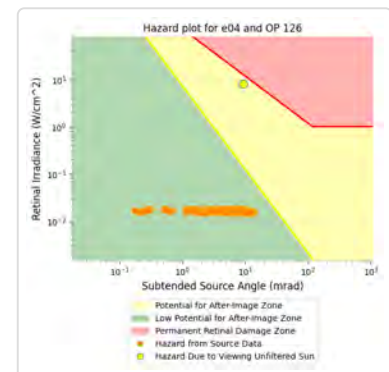
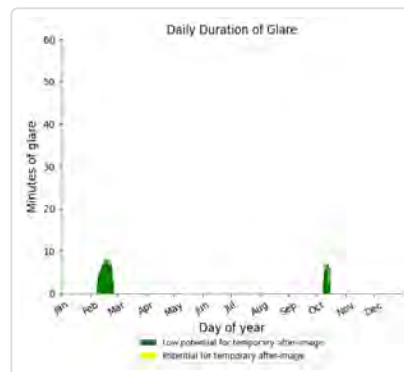
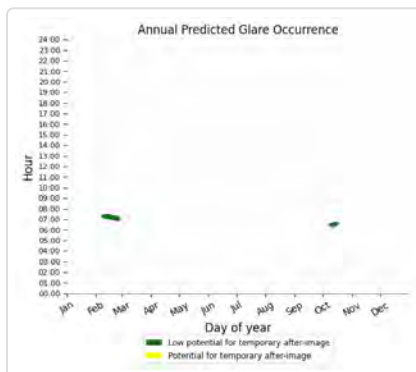
- 199 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## E04: OP 126

PV array is expected to produce the following glare for this receptor:

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

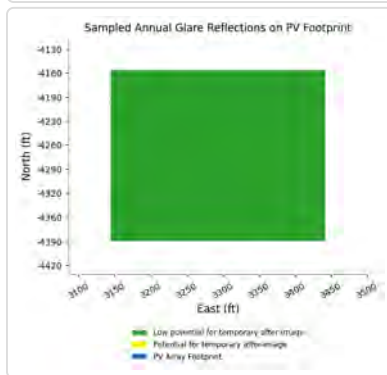
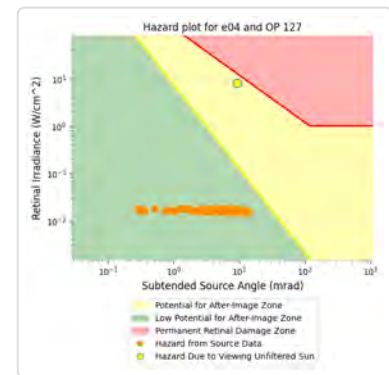
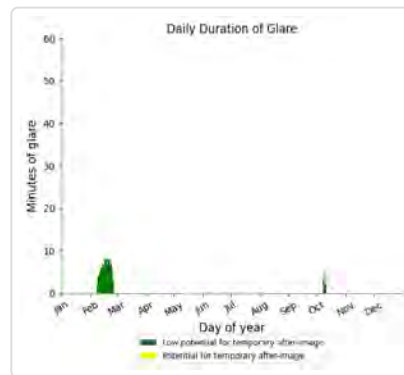
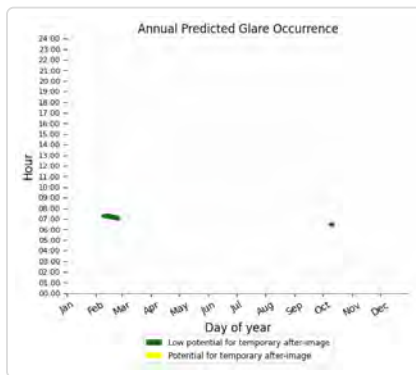




#### E04: OP 127

PV array is expected to produce the following glare for this receptor:

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



#### E04: OP 128

No glare found

#### E04: OP 129

No glare found

#### E04: OP 130

No glare found

#### E04: OP 131

No glare found

#### E04: OP 132

No glare found

#### E04: OP 133

No glare found

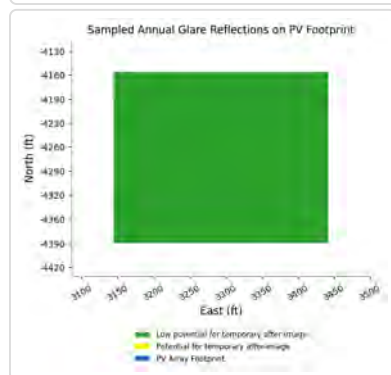
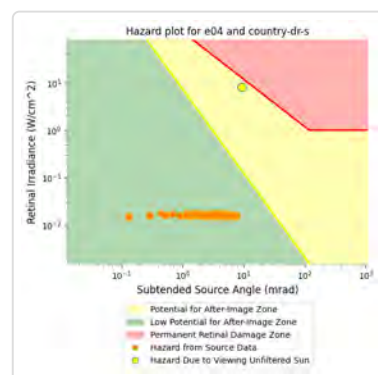
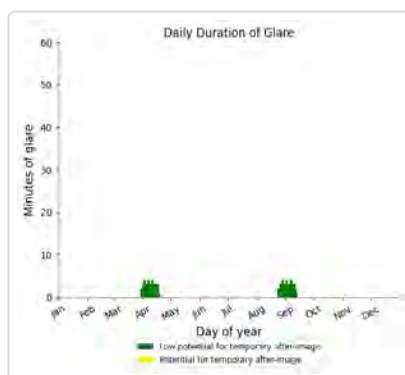
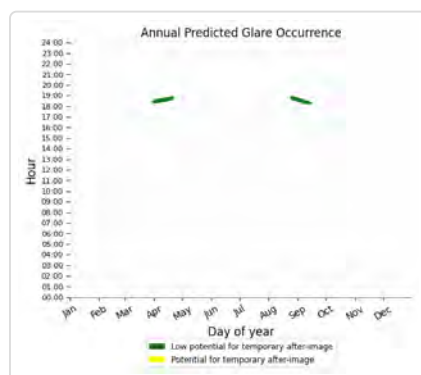
#### E04: Collins Dr

No glare found

## E04: Country Dr Seg 1

PV array is expected to produce the following glare for this receptor:

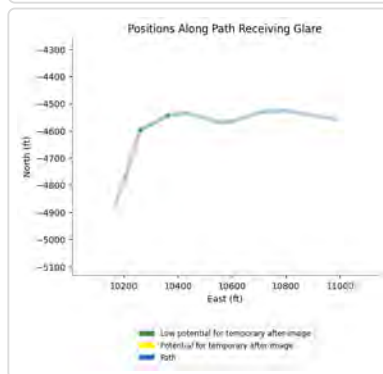
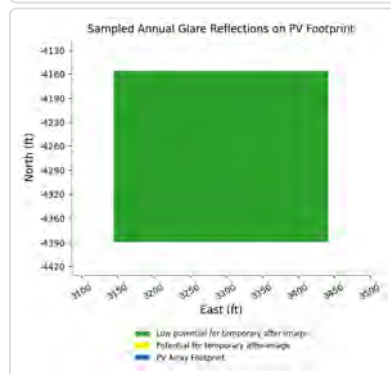
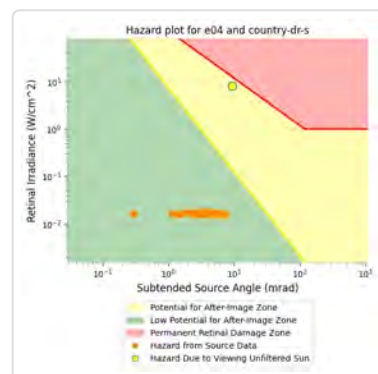
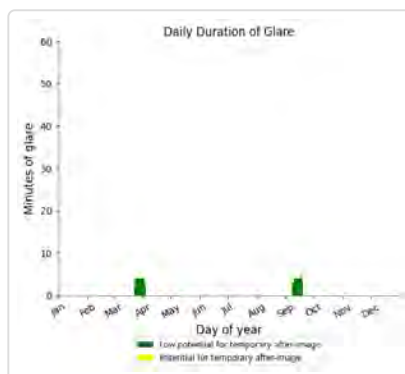
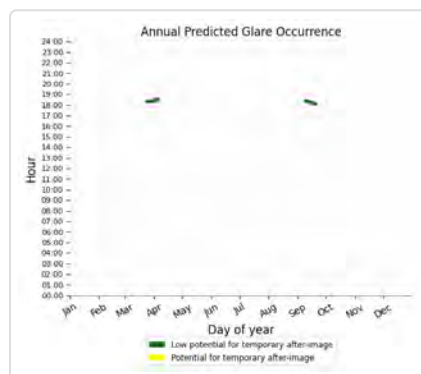
- 133 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## E04: Country Dr Seg 2

PV array is expected to produce the following glare for this receptor:

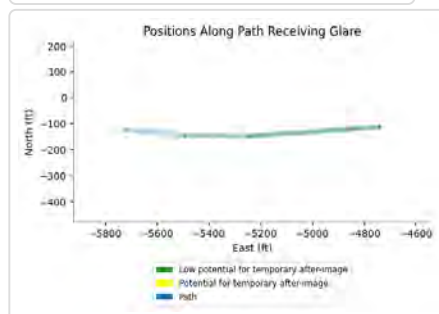
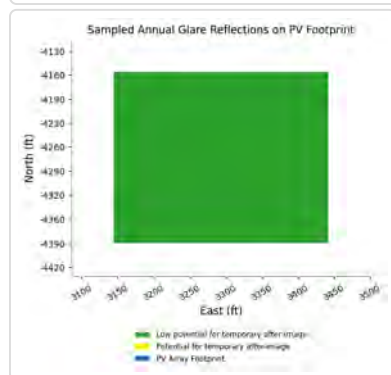
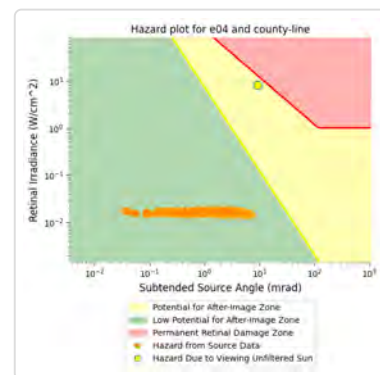
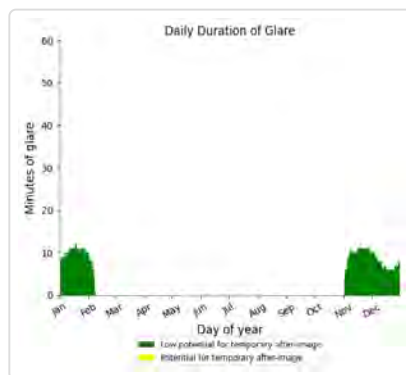
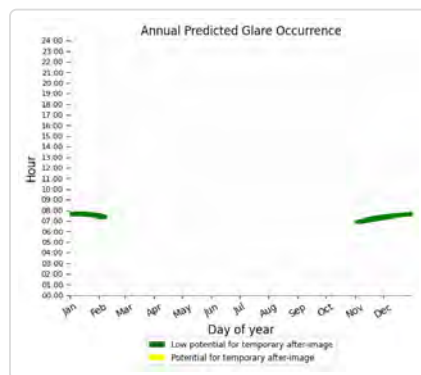
- 93 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## E04: County Line Rd

PV array is expected to produce the following glare for this receptor:

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



## E04: Dempseys Rd

No glare found

## E04: Harley Ln

No glare found

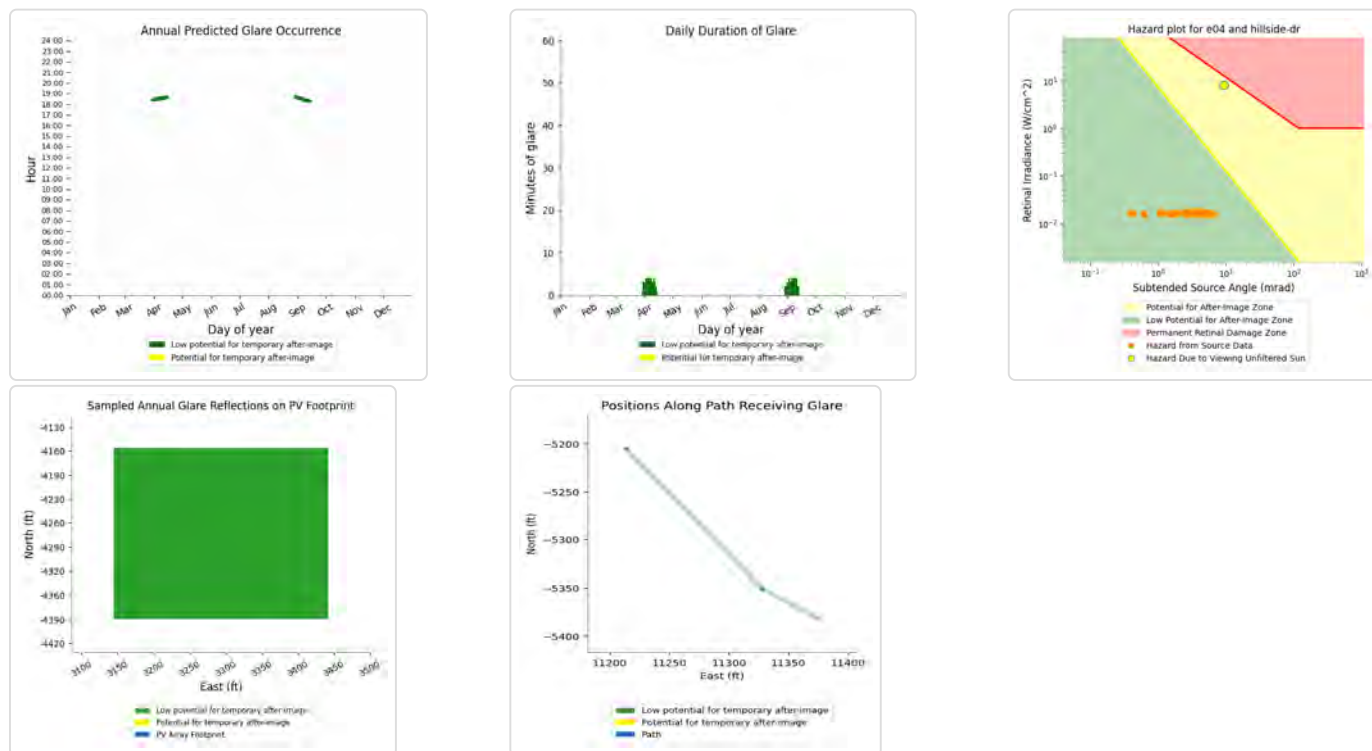
## E04: Henderson Rd

No glare found

## E04: Hillside Dr

PV array is expected to produce the following glare for this receptor:

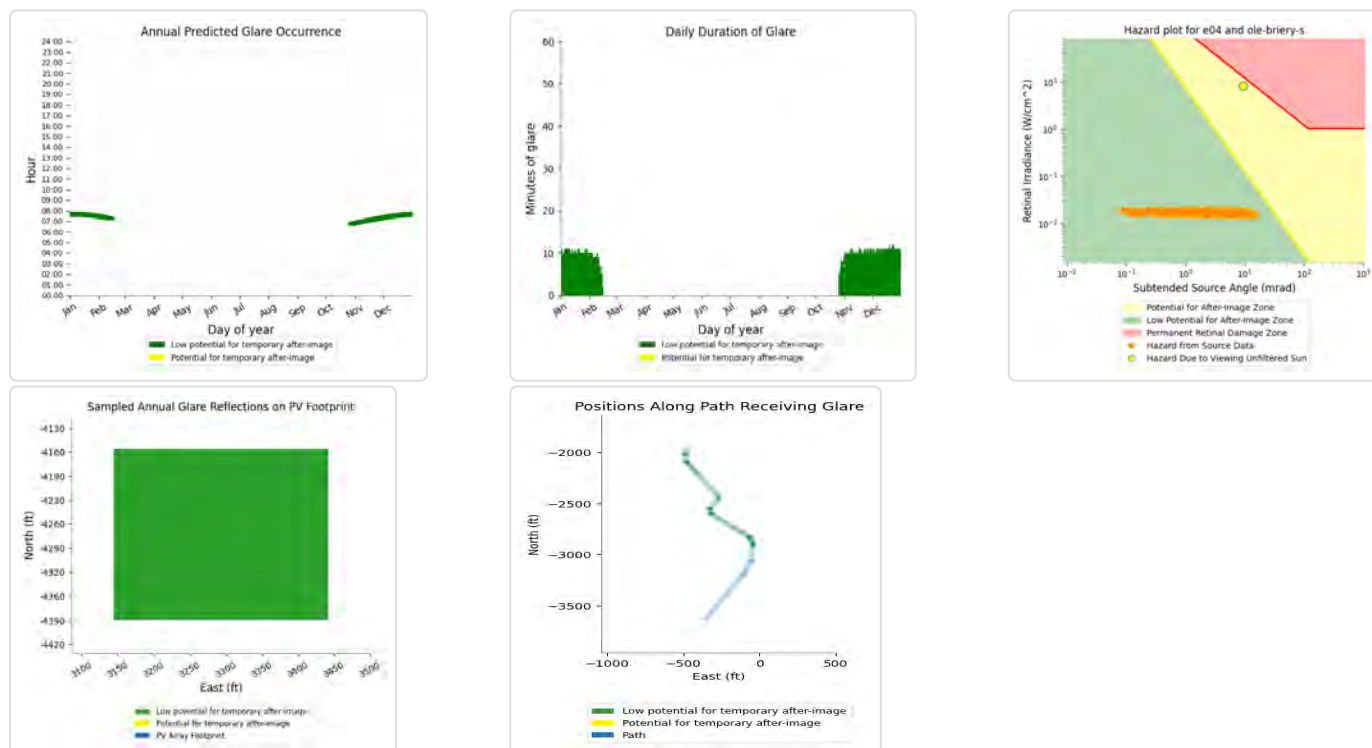
- 107 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## E04: Ole Briery Station Rd Seg 1

PV array is expected to produce the following glare for this receptor:

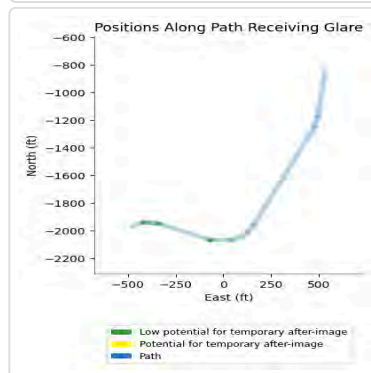
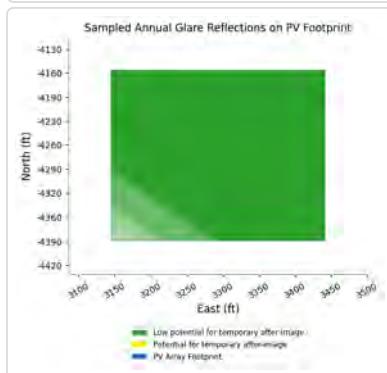
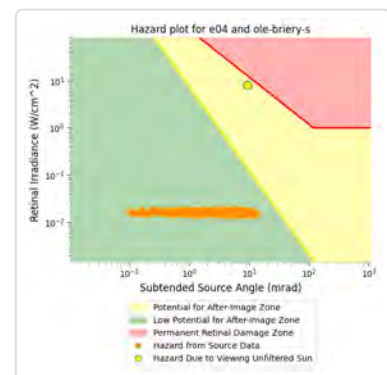
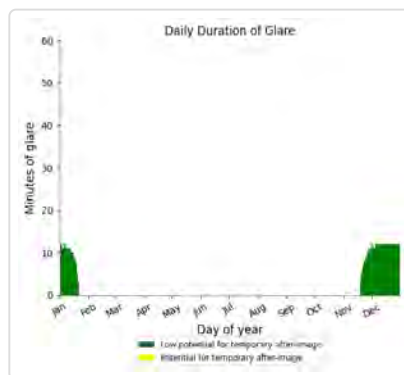
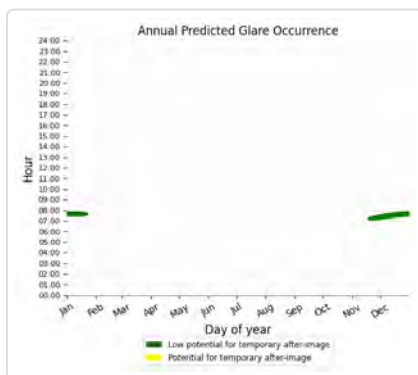
- 1,154 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## E04: Ole Briery Station Rd Seg 2

PV array is expected to produce the following glare for this receptor:

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



## E04: Thistle Knob Ln

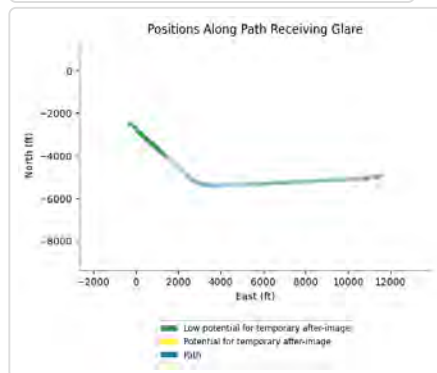
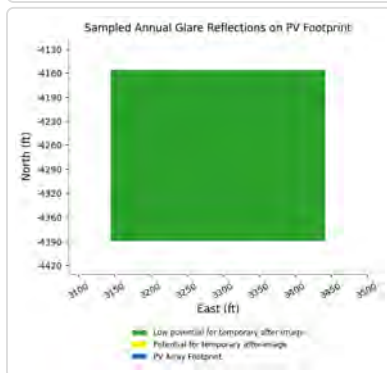
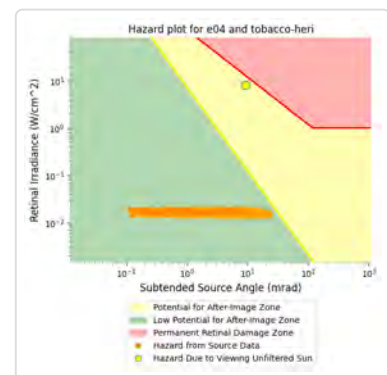
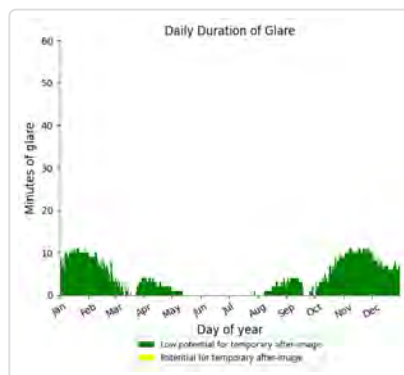
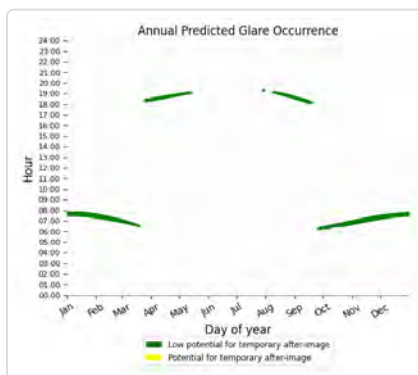
No glare found



## E04: Tobacco Heritage Trail

PV array is expected to produce the following glare for this receptor:

- 1,480 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



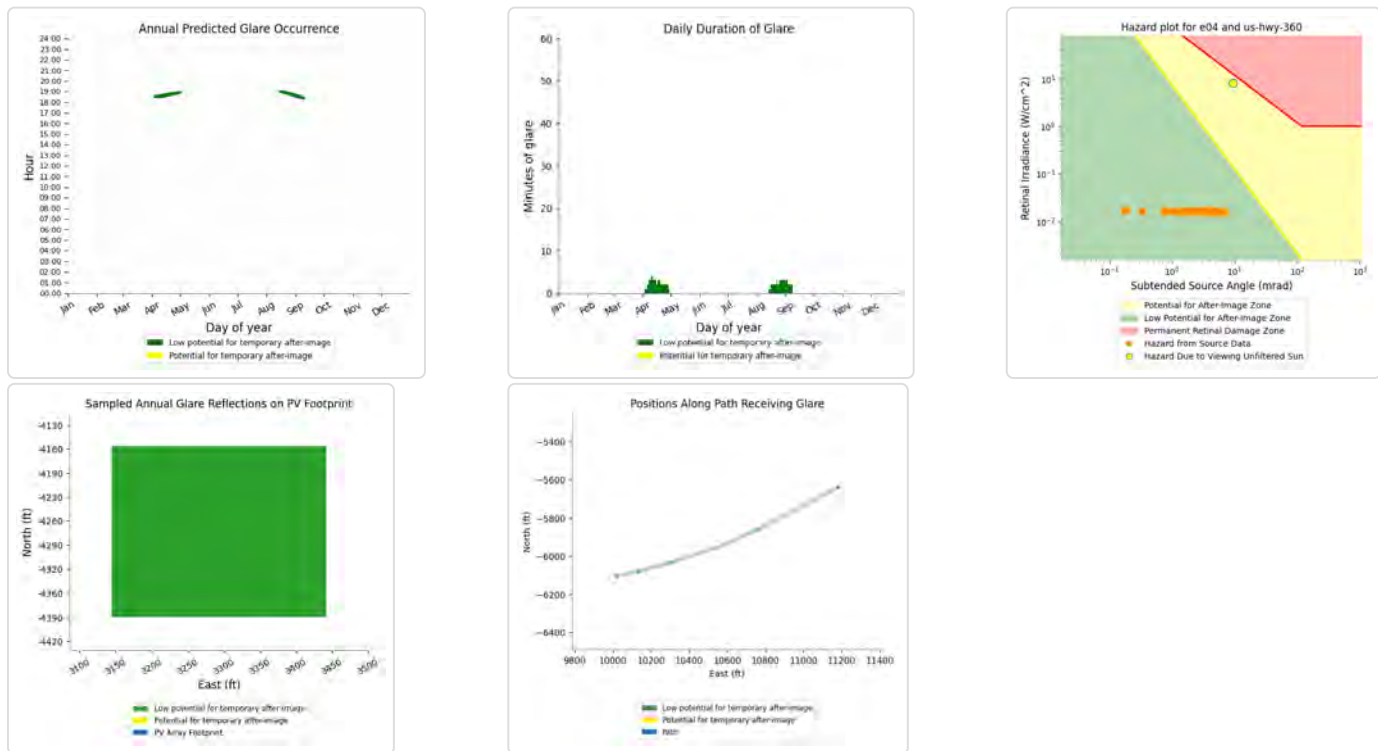
## E04: US Hwy 15

No glare found

## E04: US Hwy 360

PV array is expected to produce the following glare for this receptor:

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



## Summary of Vertical Surface Glare Analysis

### Assumptions

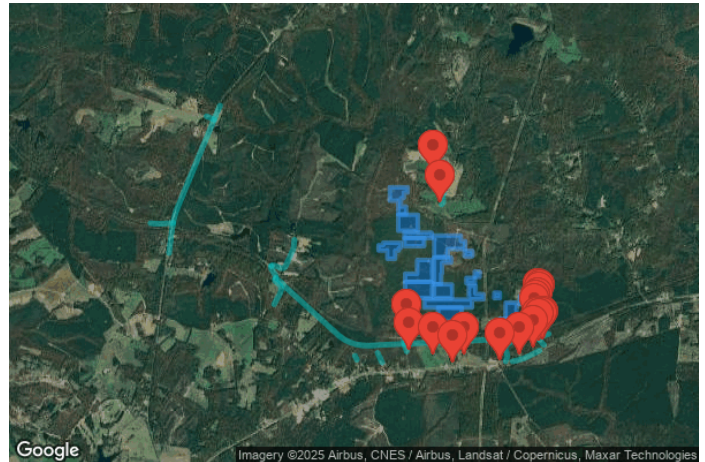
- Times associated with glare are denoted in Standard time. For Daylight Savings, add one hour.
- Glare analyses do not automatically account for physical obstructions between reflectors and receptors. This includes buildings, tree cover and geographical obstructions.
- Detailed system geometry is not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

# Tobacco Trail Solar

## TT\_F01-H03\_6fA\_0DRA\_SGARC

Created Oct 02, 2025  
Updated Oct 03, 2025  
Time-step 1 minute  
Timezone offset UTC-5  
Minimum sun altitude 0.0 deg  
Site ID 160908.26911

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



### Misc. Analysis Settings

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

PV Analysis Methodology: Version 2  
Enhanced subtended angle calculation: On

### 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
F01	SA tracking	SA tracking	2,486	313	-
F02	SA tracking	SA tracking	2,463	1,045	-
F03	SA tracking	SA tracking	1,712	0	-
F04	SA tracking	SA tracking	2,660	0	-
F05	SA tracking	SA tracking	3,201	76	-
G01	SA tracking	SA tracking	360	0	-
G02	SA tracking	SA tracking	485	0	-
G03	SA tracking	SA tracking	1,523	0	-
G04	SA tracking	SA tracking	500	0	-
G05	SA tracking	SA tracking	323	0	-
G06	SA tracking	SA tracking	0	0	-
G07	SA tracking	SA tracking	1,511	6	-
G08	SA tracking	SA tracking	4,221	0	-
G09	SA tracking	SA tracking	6,629	0	-
G10	SA tracking	SA tracking	17,582	2,200	-
G11	SA tracking	SA tracking	5,750	2,454	-
H01	SA tracking	SA tracking	1,932	0	-
H02	SA tracking	SA tracking	3,138	6	-
H03	SA tracking	SA tracking	2,526	0	-
H04	SA tracking	SA tracking	1,861	0	-

Component Data

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## PV Array(s)

Total PV footprint area: 201.9 acres

Name: F01

Footprint area: 11.9 acres

Axis tracking: Single-axis rotation

Backtracking: Shade

Tracking axis orientation: 180.0 deg

Maximum tracking angle: 60.0 deg

Resting angle: 0.0 deg

Ground Coverage Ratio: 0.5

Rated power: -

Panel material: Smooth glass with AR coating

Vary reflectivity with sun position? Yes

Correlate slope error with surface type? Yes

Slope error: 8.43 mrad



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	37.101558	-78.440986	533.25	6.00	539.25
2	37.101557	-78.438313	532.86	6.00	538.86
3	37.100920	-78.438314	540.18	6.00	546.18
4	37.100920	-78.438908	531.18	6.00	537.18
5	37.100256	-78.438908	526.11	6.00	532.11
6	37.100256	-78.439313	534.95	6.00	540.95
7	37.099258	-78.439314	541.05	6.00	547.05
8	37.099256	-78.438554	520.56	6.00	526.56
9	37.098316	-78.438559	542.33	6.00	548.33
10	37.098316	-78.439720	525.80	6.00	531.80
11	37.099951	-78.439718	546.29	6.00	552.29
12	37.099951	-78.440987	535.96	6.00	541.96

Name: F02

Footprint area: 13.7 acres

Axis tracking: Single-axis rotation

Backtracking: Shade

Tracking axis orientation: 180.0 deg

Maximum tracking angle: 60.0 deg

Resting angle: 0.0 deg

Ground Coverage Ratio: 0.5

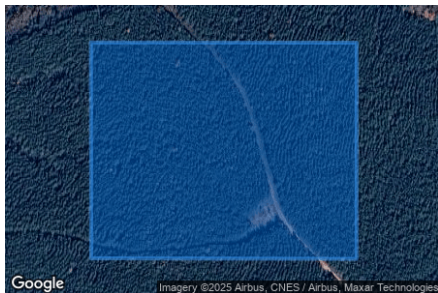
Rated power: -

Panel material: Smooth glass with AR coating

Vary reflectivity with sun position? Yes

Correlate slope error with surface type? Yes

Slope error: 8.43 mrad



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	37.098291	-78.439720	524.68	6.00	530.68
2	37.098289	-78.436778	522.65	6.00	528.65
3	37.096375	-78.436779	547.49	6.00	553.49
4	37.096379	-78.439718	531.77	6.00	537.77

**Name:** F03

**Footprint area:** 6.3 acres

**Axis tracking:** Single-axis rotation

**Backtracking:** Shade

**Tracking axis orientation:** 180.0 deg

**Maximum tracking angle:** 60.0 deg

**Resting angle:** 0.0 deg

**Ground Coverage Ratio:** 0.5

**Rated power:** -

**Panel material:** Smooth glass with AR coating

**Vary reflectivity with sun position?** Yes

**Correlate slope error with surface type?** Yes

**Slope error:** 8.43 mrad



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	37.096157	-78.438803	538.96	6.00	544.96
2	37.096154	-78.434727	550.98	6.00	556.98
3	37.095517	-78.434728	559.71	6.00	565.71
4	37.095520	-78.438804	525.43	6.00	531.43

**Name:** F04

**Footprint area:** 6.7 acres

**Axis tracking:** Single-axis rotation

**Backtracking:** Shade

**Tracking axis orientation:** 180.0 deg

**Maximum tracking angle:** 60.0 deg

**Resting angle:** 0.0 deg

**Ground Coverage Ratio:** 0.5

**Rated power:** -

**Panel material:** Smooth glass with AR coating

**Vary reflectivity with sun position?** Yes

**Correlate slope error with surface type?** Yes

**Slope error:** 8.43 mrad



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	37.095492	-78.438804	525.63	6.00	531.63
2	37.095491	-78.435861	569.70	6.00	575.70
3	37.094552	-78.435862	543.60	6.00	549.60
4	37.094549	-78.438804	536.91	6.00	542.91

**Name:** F05

**Footprint area:** 9.2 acres

**Axis tracking:** Single-axis rotation

**Backtracking:** Shade

**Tracking axis orientation:** 180.0 deg

**Maximum tracking angle:** 60.0 deg

**Resting angle:** 0.0 deg

**Ground Coverage Ratio:** 0.5

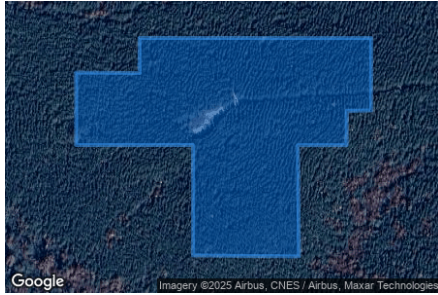
**Rated power:** -

**Panel material:** Smooth glass with AR coating

**Vary reflectivity with sun position?** Yes

**Correlate slope error with surface type?** Yes

**Slope error:** 8.43 mrad



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	37.094672	-78.442652	498.30	6.00	504.30
2	37.094669	-78.441950	512.61	6.00	518.61
3	37.094977	-78.441950	495.98	6.00	501.98
4	37.094976	-78.439385	529.15	6.00	535.15
5	37.094339	-78.439386	542.26	6.00	548.26
6	37.094337	-78.439656	549.92	6.00	555.92
7	37.094034	-78.439656	544.07	6.00	550.07
8	37.094034	-78.440196	543.71	6.00	549.71
9	37.093056	-78.440185	507.92	6.00	513.92
10	37.093065	-78.441357	513.30	6.00	519.30
11	37.094035	-78.441357	526.84	6.00	532.84
12	37.094035	-78.442652	503.07	6.00	509.07

**Name:** G01

**Footprint area:** 21.4 acres

**Axis tracking:** Single-axis rotation

**Backtracking:** Shade

**Tracking axis orientation:** 180.0 deg

**Maximum tracking angle:** 60.0 deg

**Resting angle:** 0.0 deg

**Ground Coverage Ratio:** 0.5

**Rated power:** -

**Panel material:** Smooth glass with AR coating

**Vary reflectivity with sun position?** Yes

**Correlate slope error with surface type?** Yes

**Slope error:** 8.43 mrad



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	37.095821	-78.434367	563.52	6.00	569.52
2	37.095819	-78.430399	562.47	6.00	568.47
3	37.095155	-78.430400	564.69	6.00	570.69
4	37.095156	-78.429758	550.72	6.00	556.72
5	37.094212	-78.429752	541.54	6.00	547.54
6	37.094213	-78.432344	581.74	6.00	587.74
7	37.093244	-78.432345	574.34	6.00	580.34
8	37.093245	-78.434370	578.40	6.00	584.40

**Name:** G02

**Footprint area:** 1.8 acres

**Axis tracking:** Single-axis rotation

**Backtracking:** Shade

**Tracking axis orientation:** 180.0 deg

**Maximum tracking angle:** 60.0 deg

**Resting angle:** 0.0 deg

**Ground Coverage Ratio:** 0.5

**Rated power:** -

**Panel material:** Smooth glass with AR coating

**Vary reflectivity with sun position?** Yes

**Correlate slope error with surface type?** Yes

**Slope error:** 8.43 mrad



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	37.093984	-78.429835	552.80	6.00	558.80
2	37.093983	-78.428675	538.39	6.00	544.39
3	37.093346	-78.428675	527.75	6.00	533.75
4	37.093347	-78.429836	543.11	6.00	549.11

**Name:** G03

**Footprint area:** 18.1 acres

**Axis tracking:** Single-axis rotation

**Backtracking:** Shade

**Tracking axis orientation:** 180.0 deg

**Maximum tracking angle:** 60.0 deg

**Resting angle:** 0.0 deg

**Ground Coverage Ratio:** 0.5

**Rated power:** -

**Panel material:** Smooth glass with AR coating

**Vary reflectivity with sun position?** Yes

**Correlate slope error with surface type?** Yes

**Slope error:** 8.43 mrad



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	37.092913	-78.436908	552.29	6.00	558.29
2	37.092912	-78.434667	576.83	6.00	582.83
3	37.090336	-78.434669	576.74	6.00	582.74
4	37.090338	-78.438692	563.80	6.00	569.80
5	37.091285	-78.438686	545.17	6.00	551.17
6	37.091279	-78.436909	550.53	6.00	556.53

**Name:** G04

**Footprint area:** 10.7 acres

**Axis tracking:** Single-axis rotation

**Backtracking:** Shade

**Tracking axis orientation:** 180.0 deg

**Maximum tracking angle:** 60.0 deg

**Resting angle:** 0.0 deg

**Ground Coverage Ratio:** 0.5

**Rated power:** -

**Panel material:** Smooth glass with AR coating

**Vary reflectivity with sun position?** Yes

**Correlate slope error with surface type?** Yes

**Slope error:** 8.43 mrad



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	37.093217	-78.434370	578.71	6.00	584.71
2	37.093216	-78.431859	570.11	6.00	576.11
3	37.092579	-78.431860	569.96	6.00	575.96
4	37.092577	-78.433210	567.63	6.00	573.63
5	37.091303	-78.433194	567.71	6.00	573.71
6	37.091305	-78.433319	567.31	6.00	573.31
7	37.090025	-78.433326	581.31	6.00	587.31
8	37.090024	-78.434371	573.92	6.00	579.92

**Name:** G05

**Footprint area:** 2.0 acres

**Axis tracking:** Single-axis rotation

**Backtracking:** Shade

**Tracking axis orientation:** 180.0 deg

**Maximum tracking angle:** 60.0 deg

**Resting angle:** 0.0 deg

**Ground Coverage Ratio:** 0.5

**Rated power:** -

**Panel material:** Smooth glass with AR coating

**Vary reflectivity with sun position?** Yes

**Correlate slope error with surface type?** Yes

**Slope error:** 8.43 mrad



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	37.090777	-78.429567	558.57	6.00	564.57
2	37.090776	-78.428298	554.21	6.00	560.21
3	37.090139	-78.428299	560.91	6.00	566.91
4	37.090140	-78.429568	564.47	6.00	570.47

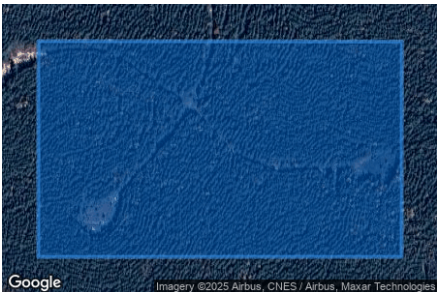


**Name:** G06  
**Footprint area:** 1.1 acres  
**Axis tracking:** Single-axis rotation  
**Backtracking:** Shade  
**Tracking axis orientation:** 180.0 deg  
**Maximum tracking angle:** 60.0 deg  
**Resting angle:** 0.0 deg  
**Ground Coverage Ratio:** 0.5  
**Rated power:** -  
**Panel material:** Smooth glass with AR coating  
**Vary reflectivity with sun position?** Yes  
**Correlate slope error with surface type?** Yes  
**Slope error:** 8.43 mrad



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	37.091529	-78.428324	546.09	6.00	552.09
2	37.091529	-78.427596	550.81	6.00	556.81
3	37.090892	-78.427596	545.60	6.00	551.60
4	37.090892	-78.428325	552.53	6.00	558.53

**Name:** G07  
**Footprint area:** 18.7 acres  
**Axis tracking:** Single-axis rotation  
**Backtracking:** Shade  
**Tracking axis orientation:** 180.0 deg  
**Maximum tracking angle:** 60.0 deg  
**Resting angle:** 0.0 deg  
**Ground Coverage Ratio:** 0.5  
**Rated power:** -  
**Panel material:** Smooth glass with AR coating  
**Vary reflectivity with sun position?** Yes  
**Correlate slope error with surface type?** Yes  
**Slope error:** 8.43 mrad



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	37.090310	-78.438692	564.15	6.00	570.15
2	37.090306	-78.434666	576.26	6.00	582.26
3	37.088399	-78.434668	576.78	6.00	582.78
4	37.088398	-78.438693	559.76	6.00	565.76

**Name:** G08

**Footprint area:** 10.5 acres

**Axis tracking:** Single-axis rotation

**Backtracking:** Shade

**Tracking axis orientation:** 180.0 deg

**Maximum tracking angle:** 60.0 deg

**Resting angle:** 0.0 deg

**Ground Coverage Ratio:** 0.5

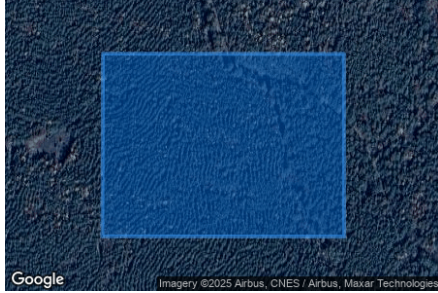
**Rated power:** -

**Panel material:** Smooth glass with AR coating

**Vary reflectivity with sun position?** Yes

**Correlate slope error with surface type?** Yes

**Slope error:** 8.43 mrad



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	37.090003	-78.434372	573.54	6.00	579.54
2	37.090001	-78.431704	578.96	6.00	584.96
3	37.088394	-78.431702	568.10	6.00	574.10
4	37.088397	-78.434380	579.09	6.00	585.09

**Name:** G09

**Footprint area:** 3.2 acres

**Axis tracking:** Single-axis rotation

**Backtracking:** Shade

**Tracking axis orientation:** 180.0 deg

**Maximum tracking angle:** 60.0 deg

**Resting angle:** 0.0 deg

**Ground Coverage Ratio:** 0.5

**Rated power:** -

**Panel material:** Smooth glass with AR coating

**Vary reflectivity with sun position?** Yes

**Correlate slope error with surface type?** Yes

**Slope error:** 8.43 mrad



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	37.088206	-78.438369	561.82	6.00	567.82
2	37.088205	-78.436993	565.62	6.00	571.62
3	37.087267	-78.436995	552.40	6.00	558.40
4	37.087258	-78.438366	542.13	6.00	548.13

**Name:** G10

**Footprint area:** 21.6 acres

**Axis tracking:** Single-axis rotation

**Backtracking:** Shade

**Tracking axis orientation:** 180.0 deg

**Maximum tracking angle:** 60.0 deg

**Resting angle:** 0.0 deg

**Ground Coverage Ratio:** 0.5

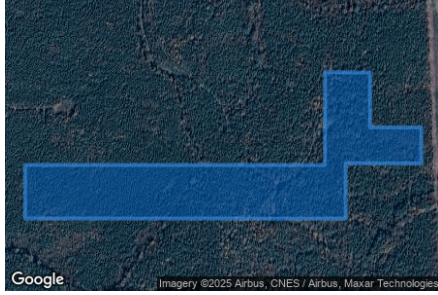
**Rated power:** -

**Panel material:** Smooth glass with AR coating

**Vary reflectivity with sun position?** Yes

**Correlate slope error with surface type?** Yes

**Slope error:** 8.43 mrad



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	37.088204	-78.435832	562.74	6.00	568.74
2	37.088201	-78.429191	557.58	6.00	563.58
3	37.089835	-78.429190	567.10	6.00	573.10
4	37.089829	-78.428193	559.65	6.00	565.65
5	37.088864	-78.428192	557.35	6.00	563.35
6	37.088864	-78.427058	538.40	6.00	544.40
7	37.088227	-78.427059	530.42	6.00	536.42
8	37.088228	-78.428733	555.65	6.00	561.65
9	37.087258	-78.428734	553.52	6.00	559.52
10	37.087262	-78.435833	556.48	6.00	562.48

**Name:** G11

**Footprint area:** 24.4 acres

**Axis tracking:** Single-axis rotation

**Backtracking:** Shade

**Tracking axis orientation:** 180.0 deg

**Maximum tracking angle:** 60.0 deg

**Resting angle:** 0.0 deg

**Ground Coverage Ratio:** 0.5

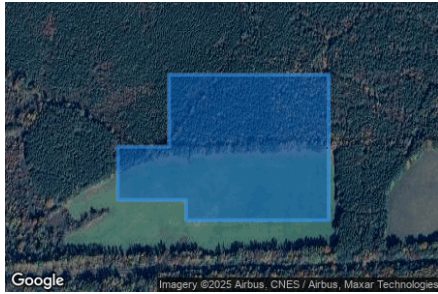
**Rated power:** -

**Panel material:** Smooth glass with AR coating

**Vary reflectivity with sun position?** Yes

**Correlate slope error with surface type?** Yes

**Slope error:** 8.43 mrad



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	37.087233	-78.433786	566.34	6.00	572.34
2	37.087231	-78.430245	585.89	6.00	591.89
3	37.084655	-78.430248	574.84	6.00	580.84
4	37.084657	-78.433406	565.89	6.00	571.89
5	37.085016	-78.433405	574.35	6.00	580.35
6	37.085017	-78.434917	569.03	6.00	575.03
7	37.085959	-78.434917	569.16	6.00	575.16
8	37.085958	-78.433783	579.10	6.00	585.10

**Name:** H01

**Footprint area:** 1.3 acres

**Axis tracking:** Single-axis rotation

**Backtracking:** Shade

**Tracking axis orientation:** 180.0 deg

**Maximum tracking angle:** 60.0 deg

**Resting angle:** 0.0 deg

**Ground Coverage Ratio:** 0.5

**Rated power:** -

**Panel material:** Smooth glass with AR coating

**Vary reflectivity with sun position?** Yes

**Correlate slope error with surface type?** Yes

**Slope error:** 8.43 mrad



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	37.089019	-78.425405	541.86	6.00	547.86
2	37.089019	-78.424569	551.43	6.00	557.43
3	37.088382	-78.424569	556.56	6.00	562.56
4	37.088382	-78.425406	545.60	6.00	551.60

**Name:** H02

**Footprint area:** 7.6 acres

**Axis tracking:** Single-axis rotation

**Backtracking:** Shade

**Tracking axis orientation:** 180.0 deg

**Maximum tracking angle:** 60.0 deg

**Resting angle:** 0.0 deg

**Ground Coverage Ratio:** 0.5

**Rated power:** -

**Panel material:** Smooth glass with AR coating

**Vary reflectivity with sun position?** Yes

**Correlate slope error with surface type?** Yes

**Slope error:** 8.43 mrad



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	37.087862	-78.423704	563.75	6.00	569.75
2	37.087861	-78.422084	555.03	6.00	561.03
3	37.085949	-78.422086	552.57	6.00	558.57
4	37.085950	-78.423733	570.47	6.00	576.47

**Name:** H03

**Footprint area:** 5.0 acres

**Axis tracking:** Single-axis rotation

**Backtracking:** Shade

**Tracking axis orientation:** 180.0 deg

**Maximum tracking angle:** 60.0 deg

**Resting angle:** 0.0 deg

**Ground Coverage Ratio:** 0.5

**Rated power:** -

**Panel material:** Smooth glass with AR coating

**Vary reflectivity with sun position?** Yes

**Correlate slope error with surface type?** Yes

**Slope error:** 8.43 mrad



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	37.085923	-78.424597	553.32	6.00	559.32
2	37.085921	-78.422248	555.36	6.00	561.36
3	37.084978	-78.422251	560.13	6.00	566.13
4	37.084980	-78.424112	572.60	6.00	578.60
5	37.085296	-78.424111	570.01	6.00	576.01
6	37.085286	-78.424597	563.77	6.00	569.77

**Name:** H04

**Footprint area:** 6.5 acres

**Axis tracking:** Single-axis rotation

**Backtracking:** Shade

**Tracking axis orientation:** 180.0 deg

**Maximum tracking angle:** 60.0 deg

**Resting angle:** 0.0 deg

**Ground Coverage Ratio:** 0.5

**Rated power:** -

**Panel material:** Smooth glass with AR coating

**Vary reflectivity with sun position?** Yes

**Correlate slope error with surface type?** Yes

**Slope error:** 8.43 mrad

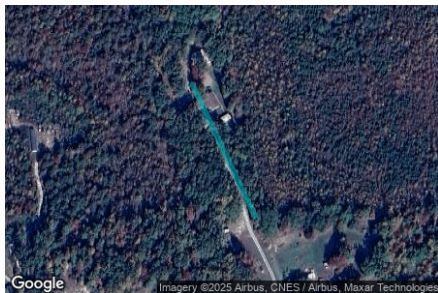


Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	37.089292	-78.421002	542.19	6.00	548.19
2	37.089291	-78.419571	547.89	6.00	553.89
3	37.087990	-78.419573	539.30	6.00	545.30
4	37.087990	-78.420166	552.08	6.00	558.08
5	37.087685	-78.420167	549.21	6.00	555.21
6	37.087686	-78.421597	552.80	6.00	558.80
7	37.088631	-78.421600	531.80	6.00	537.80
8	37.088628	-78.421002	543.67	6.00	549.67



## Route Receptor(s)

**Name:** Collins Dr  
**Route type** Two-way  
**Azimuthal view angle:** 50.0 deg  
**Downward view angle:** 90.0 deg



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	37.081871	-78.442797	585.46	3.50	588.96
2	37.080705	-78.442104	593.95	3.50	597.45

**Name:** Country Dr Seg 1  
**Route type** Two-way  
**Azimuthal view angle:** 50.0 deg  
**Downward view angle:** 90.0 deg



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	37.080860	-78.423727	596.22	3.50	599.72
2	37.081335	-78.423484	593.74	3.50	597.24
3	37.081523	-78.423466	592.70	3.50	596.20
4	37.081829	-78.423540	592.79	3.50	596.29
5	37.082428	-78.423782	598.80	3.50	602.30
6	37.082611	-78.423798	598.76	3.50	602.26
7	37.082719	-78.423744	598.06	3.50	601.56
8	37.082768	-78.423668	597.93	3.50	601.43
9	37.082867	-78.423382	593.53	3.50	597.03
10	37.083365	-78.422690	575.99	3.50	579.49
11	37.083472	-78.422377	574.16	3.50	577.66
12	37.083628	-78.422257	574.14	3.50	577.64
13	37.084267	-78.422150	573.40	3.50	576.90

**Name:** Country Dr Seg 2  
**Route type** Two-way  
**Azimuthal view angle:** 50.0 deg  
**Downward view angle:** 90.0 deg



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	37.084267	-78.422150	573.40	3.50	576.90
2	37.084508	-78.422031	569.83	3.50	573.33
3	37.084996	-78.421843	569.58	3.50	573.08
4	37.085142	-78.421494	566.57	3.50	570.07
5	37.085170	-78.421251	561.04	3.50	564.54
6	37.085078	-78.420854	551.39	3.50	554.89
7	37.085078	-78.420700	547.34	3.50	550.84
8	37.085178	-78.420314	542.35	3.50	545.85
9	37.085193	-78.420005	540.85	3.50	544.35
10	37.085107	-78.419377	548.13	3.50	551.63

**Name:** County Line Rd  
**Route type** Two-way  
**Azimuthal view angle:** 50.0 deg  
**Downward view angle:** 90.0 deg



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	37.097280	-78.476651	594.54	3.50	598.04
2	37.097219	-78.475855	598.80	3.50	602.30
3	37.097213	-78.474994	607.28	3.50	610.78
4	37.097309	-78.473270	621.37	3.50	624.87

**Name:** Dempseys Rd  
**Route type** Two-way  
**Azimuthal view angle:** 50.0 deg  
**Downward view angle:** 90.0 deg



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	37.100853	-78.432978	553.09	3.50	556.59
2	37.100660	-78.433062	555.40	3.50	558.90
3	37.100457	-78.433086	558.88	3.50	562.38
4	37.099830	-78.433036	562.04	3.50	565.54
5	37.099719	-78.433062	562.51	3.50	566.01
6	37.099499	-78.433266	563.93	3.50	567.43

**Name:** Harley Ln  
**Route type** Two-way  
**Azimuthal view angle:** 50.0 deg  
**Downward view angle:** 90.0 deg



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	37.081527	-78.446166	585.61	3.50	589.11
2	37.081071	-78.445886	588.43	3.50	591.93

**Name:** Henderson Rd  
**Route type** Two-way  
**Azimuthal view angle:** 50.0 deg  
**Downward view angle:** 90.0 deg



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	37.109995	-78.468285	603.05	3.50	606.55
2	37.109590	-78.467164	592.11	3.50	595.61

**Name:** Hillside Dr  
**Route type** Two-way  
**Azimuthal view angle:** 50.0 deg  
**Downward view angle:** 90.0 deg



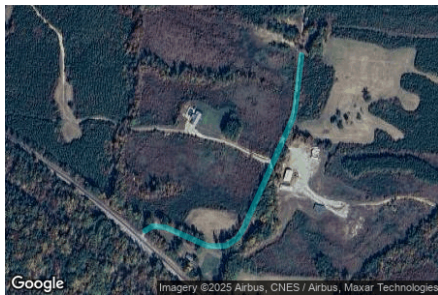
Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	37.083329	-78.418574	583.61	3.50	587.11
2	37.082929	-78.418183	584.69	3.50	588.19
3	37.082844	-78.418020	580.23	3.50	583.73

**Name:** Ole Briery Station Rd Seg 1  
**Route type** Two-way  
**Azimuthal view angle:** 50.0 deg  
**Downward view angle:** 90.0 deg



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	37.092208	-78.458646	563.15	3.50	566.65
2	37.092090	-78.458691	563.42	3.50	566.92
3	37.091871	-78.458666	558.97	3.50	562.47
4	37.090953	-78.457951	563.80	3.50	567.30
5	37.090854	-78.457956	564.22	3.50	567.72
6	37.090611	-78.458144	565.23	3.50	568.73
7	37.090481	-78.458117	566.86	3.50	570.36
8	37.089856	-78.457249	576.52	3.50	580.02
9	37.089653	-78.457170	576.31	3.50	579.81
10	37.089216	-78.457209	577.01	3.50	580.51
11	37.088870	-78.457369	579.14	3.50	582.64
12	37.087648	-78.458228	575.44	3.50	578.94

**Name:** Ole Briery Station Rd Seg 2  
**Route type** Two-way  
**Azimuthal view angle:** 50.0 deg  
**Downward view angle:** 90.0 deg



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	37.095314	-78.455184	559.55	3.50	563.05
2	37.094405	-78.455316	561.00	3.50	564.50
3	37.094194	-78.455375	562.46	3.50	565.96
4	37.092243	-78.456468	580.33	3.50	583.83
5	37.092079	-78.456596	579.50	3.50	583.00
6	37.091937	-78.456866	578.09	3.50	581.59
7	37.091938	-78.457261	579.65	3.50	583.15
8	37.092266	-78.458188	570.75	3.50	574.25
9	37.092288	-78.458480	566.19	3.50	569.69
10	37.092208	-78.458646	563.15	3.50	566.65

**Name:** Thistle Knob Ln  
**Route type** Two-way  
**Azimuthal view angle:** 50.0 deg  
**Downward view angle:** 90.0 deg



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	37.083651	-78.438932	566.14	3.50	569.64
2	37.083055	-78.438885	572.01	3.50	575.51
3	37.082951	-78.438866	573.45	3.50	576.95
4	37.082709	-78.438732	575.45	3.50	578.95
5	37.082049	-78.438472	587.03	3.50	590.53



**Name:** Tobacco Heritage Trail  
**Route type** Two-way  
**Azimuthal view angle:** 50.0 deg  
**Downward view angle:** 90.0 deg



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	37.090771	-78.458017	565.05	5.00	570.05
2	37.090288	-78.457220	565.24	5.00	570.24
3	37.089770	-78.456642	564.98	5.00	569.98
4	37.083905	-78.448547	568.62	5.00	573.62
5	37.083402	-78.447640	568.23	5.00	573.23
6	37.083141	-78.446961	569.57	5.00	574.57
7	37.082894	-78.446050	570.13	5.00	575.13
8	37.082777	-78.445198	569.37	5.00	574.37
9	37.082731	-78.443998	572.72	5.00	577.72
10	37.082823	-78.442329	570.64	5.00	575.64
11	37.082941	-78.438861	573.48	5.00	578.48
12	37.083691	-78.419842	572.55	5.00	577.55
13	37.083938	-78.417972	572.02	5.00	577.02
14	37.084121	-78.417318	571.54	5.00	576.54

**Name:** US Hwy 15  
**Route type** Two-way  
**Azimuthal view angle:** 50.0 deg  
**Downward view angle:** 90.0 deg



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	37.093744	-78.473877	626.72	3.50	630.22
2	37.096495	-78.473451	577.75	3.50	581.25
3	37.097894	-78.473140	622.81	3.50	626.31
4	37.098651	-78.472866	621.89	3.50	625.39
5	37.110506	-78.466686	589.30	3.50	592.80
6	37.111238	-78.466281	586.17	3.50	589.67

**Name:** US Hwy 360  
**Route type** Two-way  
**Azimuthal view angle:** 50.0 deg  
**Downward view angle:** 90.0 deg



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	37.080860	-78.422670	595.41	3.50	598.91
2	37.080926	-78.422273	593.85	3.50	597.35
3	37.081051	-78.421682	591.95	3.50	595.45
4	37.081265	-78.420884	589.00	3.50	592.50
5	37.081528	-78.420136	586.19	3.50	589.69
6	37.082144	-78.418682	579.73	3.50	583.23

## Discrete Observation Receptors

Number	Latitude	Longitude	Ground elevation	Height above ground	Total Elevation
	deg	deg	ft	ft	ft
OP 134	37.082188	-78.438018	590.88	5.00	595.88
OP 135	37.082188	-78.438018	590.88	15.00	605.88
OP 136	37.084329	-78.438463	563.03	5.00	568.03
OP 137	37.084329	-78.438463	563.03	15.00	578.03
OP 138	37.081646	-78.434442	594.29	5.00	599.29
OP 139	37.081646	-78.434442	594.29	15.00	609.29
OP 140	37.080695	-78.431575	599.81	5.00	604.81
OP 141	37.080695	-78.431575	599.81	15.00	614.81
OP 142	37.081663	-78.429872	606.67	5.00	611.67
OP 143	37.081663	-78.429872	606.67	15.00	621.67
OP 144	37.080989	-78.424564	600.37	5.00	605.37
OP 145	37.080989	-78.424564	600.37	15.00	615.37
OP 146	37.081652	-78.421567	589.41	5.00	594.41
OP 147	37.081652	-78.421567	589.41	15.00	604.41
OP 148	37.082481	-78.419503	595.96	5.00	600.96
OP 149	37.082481	-78.419503	595.96	15.00	610.96
OP 150	37.099626	-78.433371	565.51	5.00	570.51
OP 151	37.099626	-78.433371	565.51	15.00	580.51
OP 152	37.103234	-78.434570	553.42	5.00	558.42
OP 153	37.103234	-78.434570	553.42	15.00	568.42
OP 154	37.083420	-78.419096	583.66	5.00	588.66
OP 155	37.083278	-78.418742	586.57	5.00	591.57
OP 156	37.083574	-78.418356	579.34	5.00	584.34
OP 157	37.083335	-78.418120	580.66	5.00	585.66
OP 158	37.083471	-78.418062	577.76	5.00	582.76
OP 159	37.085092	-78.419321	548.70	5.00	553.70
OP 160	37.085471	-78.419281	542.12	5.00	547.12
OP 161	37.085751	-78.418884	539.36	5.00	544.36
OP 162	37.086392	-78.418679	536.27	5.00	541.27
OP 163	37.086630	-78.418545	532.47	5.00	537.47
OP 164	37.086756	-78.418840	531.28	5.00	536.28



# 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	
F01	SA tracking	SA tracking	2,486	313	-	-
F02	SA tracking	SA tracking	2,463	1,045	-	-
F03	SA tracking	SA tracking	1,712	0	-	-
F04	SA tracking	SA tracking	2,660	0	-	-
F05	SA tracking	SA tracking	3,201	76	-	-
G01	SA tracking	SA tracking	360	0	-	-
G02	SA tracking	SA tracking	485	0	-	-
G03	SA tracking	SA tracking	1,523	0	-	-
G04	SA tracking	SA tracking	500	0	-	-
G05	SA tracking	SA tracking	323	0	-	-
G06	SA tracking	SA tracking	0	0	-	-
G07	SA tracking	SA tracking	1,511	6	-	-
G08	SA tracking	SA tracking	4,221	0	-	-
G09	SA tracking	SA tracking	6,629	0	-	-
G10	SA tracking	SA tracking	17,582	2,200	-	-
G11	SA tracking	SA tracking	5,750	2,454	-	-
H01	SA tracking	SA tracking	1,932	0	-	-
H02	SA tracking	SA tracking	3,138	6	-	-
H03	SA tracking	SA tracking	2,526	0	-	-
H04	SA tracking	SA tracking	1,861	0	-	-

## 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
f01 (green)	360	501	175	12	0	0	0	0	75	230	565	144
f01 (yellow)	63	0	0	0	0	0	0	0	0	0	48	176
f02 (green)	404	181	99	53	67	26	45	74	86	140	335	445
f02 (yellow)	248	96	0	0	0	0	0	0	0	42	216	261
f03 (green)	30	0	54	122	238	296	274	196	64	8	14	37
f03 (yellow)	0	0	0	0	0	0	0	0	0	0	0	0
f04 (green)	0	0	64	199	312	348	389	236	92	25	0	0
f04 (yellow)	0	0	0	0	0	0	0	0	0	0	0	0
f05 (green)	678	3	216	6	0	0	0	0	101	128	363	962
f05 (yellow)	5	0	0	0	0	0	0	0	0	0	0	71
g01 (green)	96	12	25	0	0	0	0	0	11	17	71	128
g01 (yellow)	0	0	0	0	0	0	0	0	0	0	0	0
g02 (green)	0	0	57	105	7	0	0	69	67	17	0	0
g02 (yellow)	0	0	0	0	0	0	0	0	0	0	0	0
g03 (green)	69	77	153	94	1	0	0	47	132	138	2	278
g03 (yellow)	0	0	0	0	0	0	0	0	0	0	0	0
g04 (green)	128	9	47	0	0	0	0	0	11	58	85	162
g04 (yellow)	0	0	0	0	0	0	0	0	0	0	0	0
g05 (green)	82	0	0	0	0	0	0	0	0	0	24	217
g05 (yellow)	0	0	0	0	0	0	0	0	0	0	0	0
g07 (green)	0	88	129	65	66	136	119	19	121	135	7	0
g07 (yellow)	0	0	0	3	0	0	0	3	0	0	0	0
g08 (green)	0	0	0	30	174	206	195	89	0	0	0	0
g08 (yellow)	0	0	0	0	0	0	0	0	0	0	0	0
g09 (green)	0	16	119	175	537	693	665	267	140	40	0	0
g09 (yellow)	0	0	0	0	0	0	0	0	0	0	0	0
g10 (green)	0	0	10	352	700	544	664	545	77	0	0	0
g10 (yellow)	0	0	0	9	50	67	44	30	0	0	0	0
g11 (green)	0	4	101	281	253	143	185	325	130	40	0	0
g11 (yellow)	0	0	8	19	313	436	395	83	13	0	0	0
h01 (green)	97	48	140	135	140	98	120	134	128	98	27	247
h01 (yellow)	0	0	0	0	0	0	0	0	0	0	0	0
h02 (green)	10	19	34	75	189	203	206	129	67	33	3	28
h02 (yellow)	0	0	0	0	0	0	0	0	0	0	0	0
h03 (green)	198	194	190	12	0	0	0	0	101	287	109	496
h03 (yellow)	0	0	0	0	0	0	0	0	0	0	0	0
h04 (green)	314	74	174	30	0	0	0	5	115	158	208	311
h04 (yellow)	0	0	0	0	0	0	0	0	0	0	0	0

## PV & Receptor Analysis Results

Results for each PV array and receptor

### F01 potential temporary after-image

Component	Green glare (min)	Yellow glare (min)
OP: OP 134	0	0

OP: OP 135	0	0
OP: OP 136	0	0
OP: OP 137	0	0
OP: OP 138	0	0
OP: OP 139	0	0
OP: OP 140	0	0
OP: OP 141	0	0
OP: OP 142	0	0
OP: OP 143	0	0
OP: OP 144	0	0
OP: OP 145	0	0
OP: OP 146	0	0
OP: OP 147	0	0
OP: OP 148	0	0
OP: OP 149	0	0
OP: OP 150	193	0
OP: OP 151	341	0
OP: OP 152	282	41
OP: OP 153	261	272
OP: OP 154	0	0
OP: OP 155	0	0
OP: OP 156	0	0
OP: OP 157	0	0
OP: OP 158	0	0
OP: OP 159	0	0
OP: OP 160	0	0
OP: OP 161	0	0
OP: OP 162	0	0
OP: OP 163	0	0
OP: OP 164	0	0
Route: Collins Dr	0	0
Route: Country Dr Seg 1	0	0
Route: Country Dr Seg 2	0	0
Route: County Line Rd	85	0
Route: Dempseys Rd	474	0
Route: Harley Ln	0	0
Route: Henderson Rd	850	0
Route: Hillside Dr	0	0
Route: Ole Briery Station Rd Seg 1	0	0
Route: Ole Briery Station Rd Seg 2	0	0
Route: Thistle Knob Ln	0	0
Route: Tobacco Heritage Trail	0	0
Route: US Hwy 15	0	0
Route: US Hwy 360	0	0

## F01: OP 134

*No glare found*

**F01: OP 135**

*No glare found*

**F01: OP 136**

*No glare found*

**F01: OP 137**

*No glare found*

**F01: OP 138**

*No glare found*

**F01: OP 139**

*No glare found*

**F01: OP 140**

*No glare found*

**F01: OP 141**

*No glare found*

**F01: OP 142**

*No glare found*

**F01: OP 143**

*No glare found*

**F01: OP 144**

*No glare found*

**F01: OP 145**

*No glare found*

**F01: OP 146**

*No glare found*

**F01: OP 147**

*No glare found*

**F01: OP 148**

*No glare found*

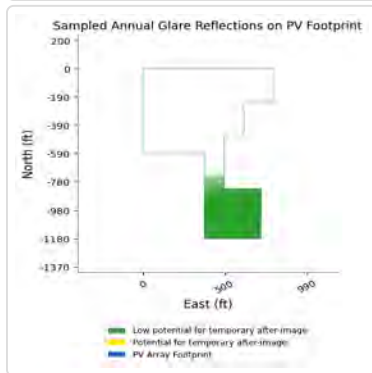
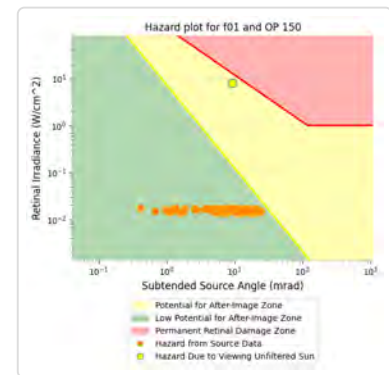
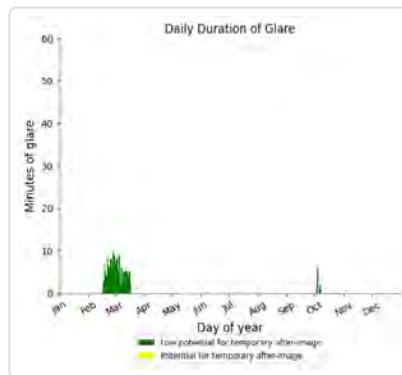
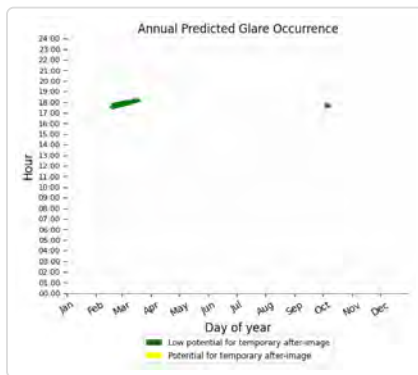
**F01: OP 149**

*No glare found*

## F01: OP 150

PV array is expected to produce the following glare for this receptor:

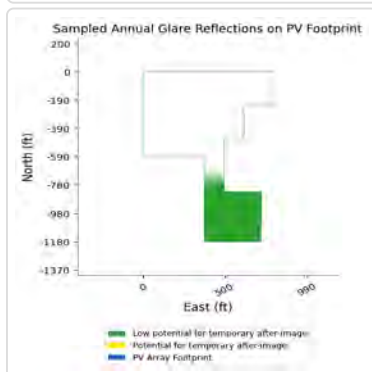
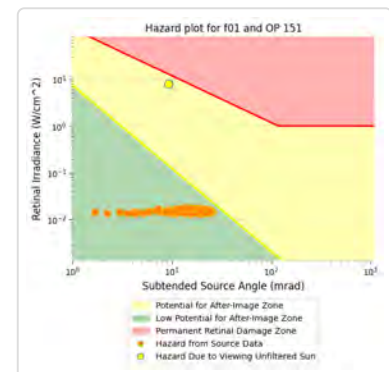
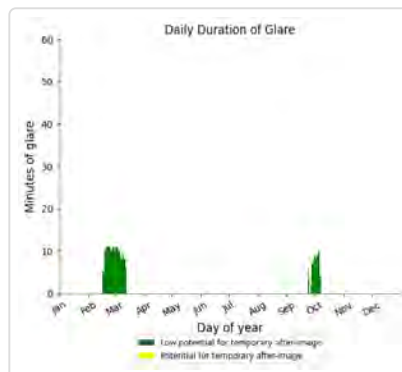
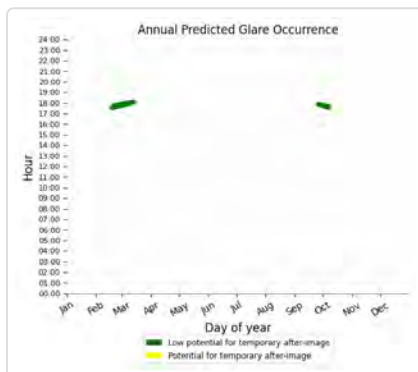
- 193 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## F01: OP 151

PV array is expected to produce the following glare for this receptor:

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

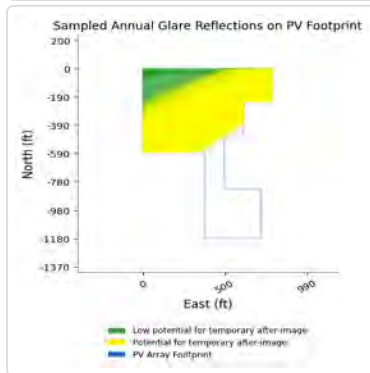
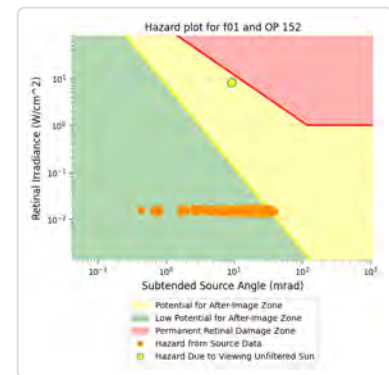
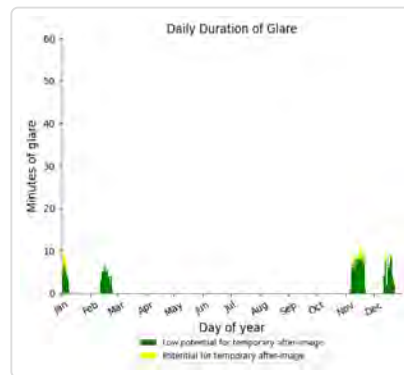
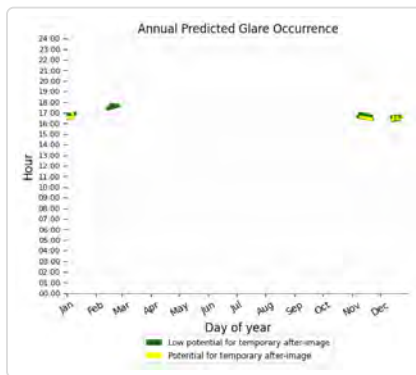




## F01: OP 152

PV array is expected to produce the following glare for this receptor:

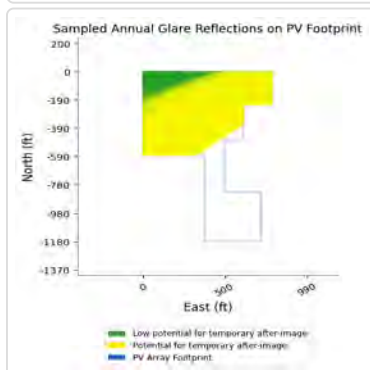
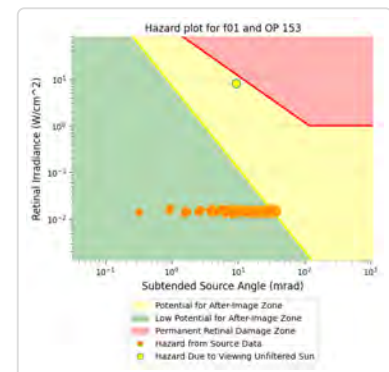
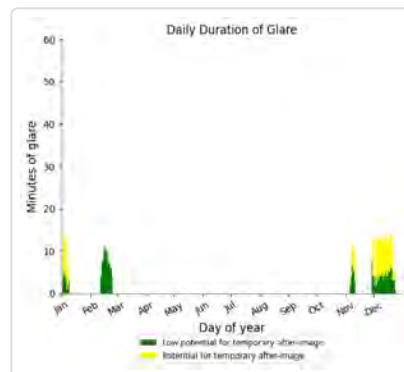
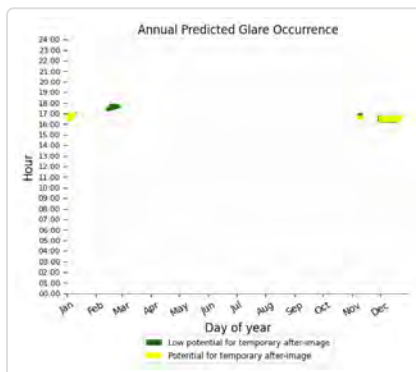
- 282 minutes of "green" glare with low potential to cause temporary after-image.
- 41 minutes of "yellow" glare with potential to cause temporary after-image.



## F01: OP 153

PV array is expected to produce the following glare for this receptor:

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



**F01: OP 154**

*No glare found*

**F01: OP 155**

*No glare found*

**F01: OP 156**

*No glare found*

**F01: OP 157**

*No glare found*

**F01: OP 158**

*No glare found*

**F01: OP 159**

*No glare found*

**F01: OP 160**

*No glare found*

**F01: OP 161**

*No glare found*

**F01: OP 162**

*No glare found*

**F01: OP 163**

*No glare found*

**F01: OP 164**

*No glare found*

**F01: Collins Dr**

*No glare found*

**F01: Country Dr Seg 1**

*No glare found*

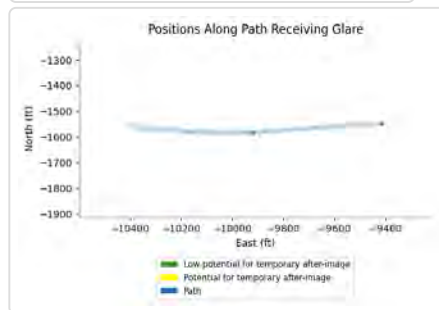
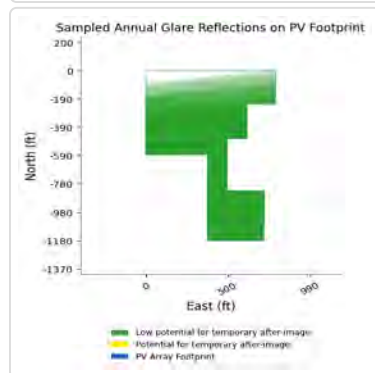
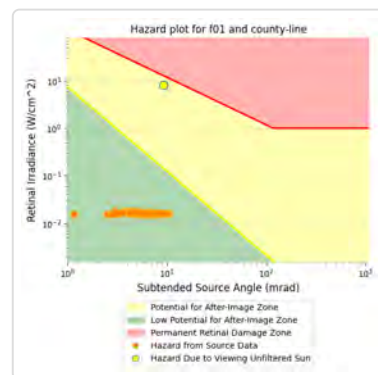
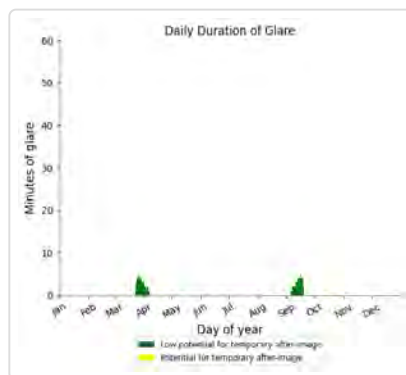
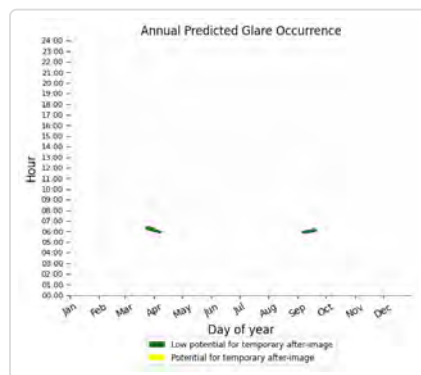
**F01: Country Dr Seg 2**

*No glare found*

## F01: County Line Rd

PV array is expected to produce the following glare for this receptor:

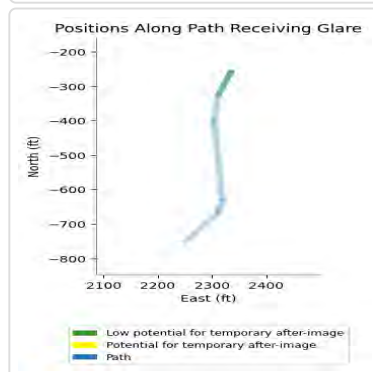
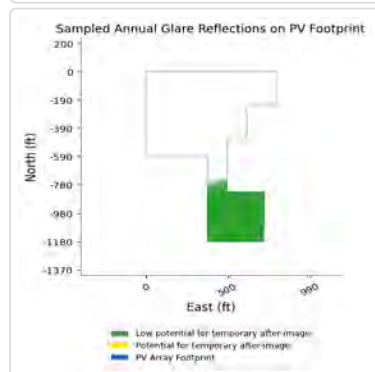
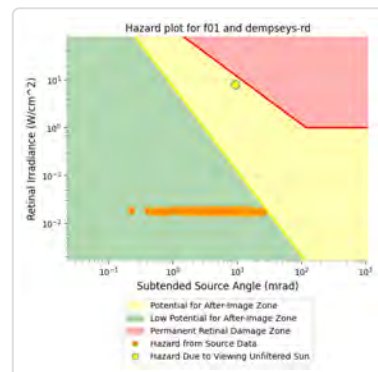
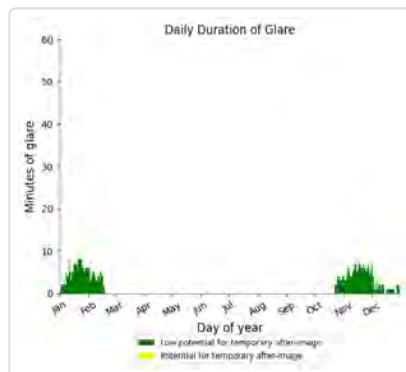
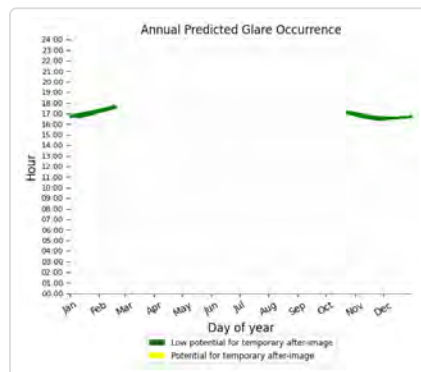
- 85 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## F01: Dempseys Rd

PV array is expected to produce the following glare for this receptor:

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



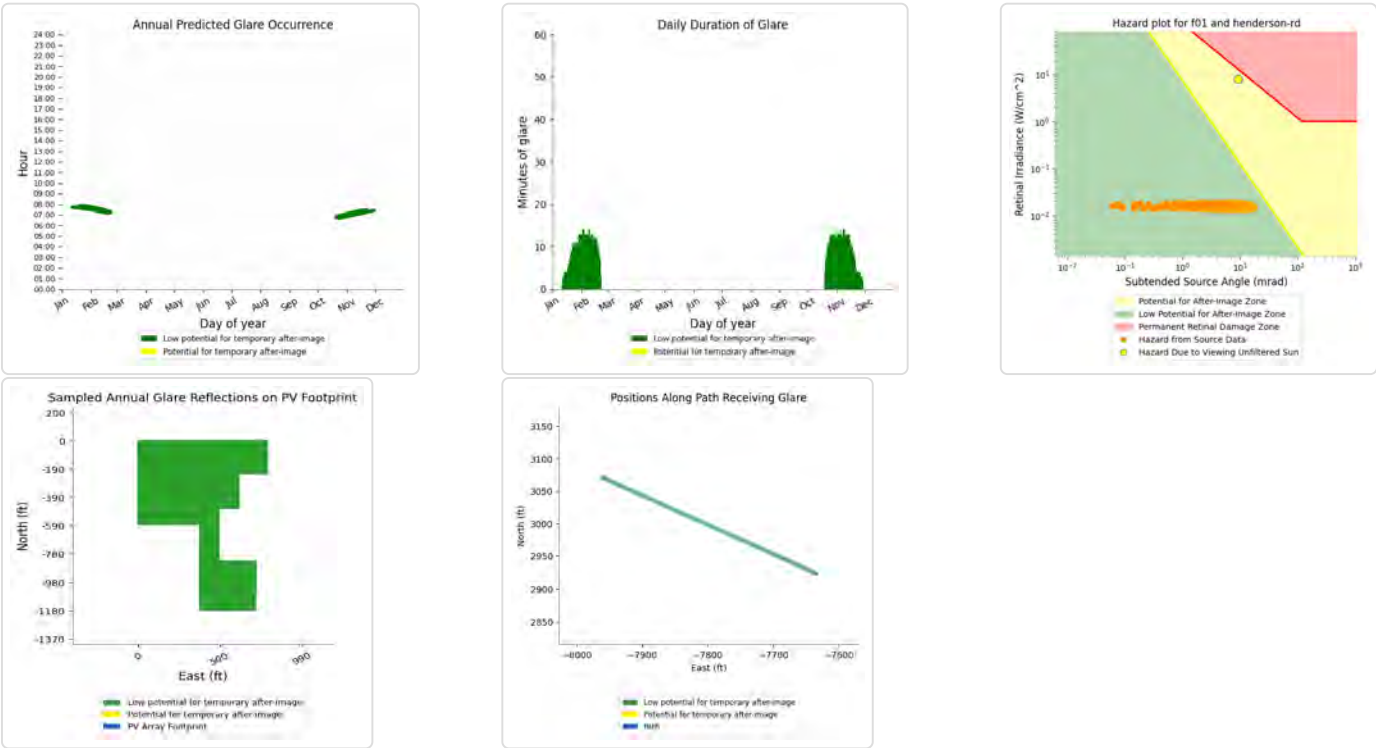
F01: Harley Ln

No glare found

F01: Henderson Rd

PV array is expected to produce the following glare for this receptor:

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



F01: Hillside Dr

No glare found

F01: Ole Briery Station Rd Seg 1

No glare found

F01: Ole Briery Station Rd Seg 2

No glare found

F01: Thistle Knob Ln

No glare found

F01: Tobacco Heritage Trail

No glare found

F01: US Hwy 15

No glare found

F01: US Hwy 360

No glare found

**F02** potential temporary after-image

Component	Green glare (min)	Yellow glare (min)
OP: OP 134	0	0
OP: OP 135	0	0
OP: OP 136	0	0
OP: OP 137	0	0
OP: OP 138	0	0
OP: OP 139	0	0
OP: OP 140	0	0
OP: OP 141	0	0
OP: OP 142	0	0
OP: OP 143	0	0
OP: OP 144	0	0
OP: OP 145	0	0
OP: OP 146	0	0
OP: OP 147	0	0
OP: OP 148	0	0
OP: OP 149	0	0
OP: OP 150	206	80
OP: OP 151	249	102
OP: OP 152	0	0
OP: OP 153	0	0
OP: OP 154	0	0
OP: OP 155	0	0
OP: OP 156	0	0
OP: OP 157	0	0
OP: OP 158	0	0
OP: OP 159	0	0
OP: OP 160	0	0
OP: OP 161	0	0
OP: OP 162	0	0
OP: OP 163	0	0
OP: OP 164	0	0
Route: Collins Dr	0	0
Route: Country Dr Seg 1	0	0
Route: Country Dr Seg 2	0	0
Route: County Line Rd	172	0
Route: Dempseys Rd	627	863
Route: Harley Ln	0	0
Route: Henderson Rd	857	0
Route: Hillside Dr	0	0
Route: Ole Briery Station Rd Seg 1	143	0
Route: Ole Briery Station Rd Seg 2	209	0
Route: Thistle Knob Ln	0	0
Route: Tobacco Heritage Trail	0	0
Route: US Hwy 15	0	0
Route: US Hwy 360	0	0



**F02: OP 134**

*No glare found*

**F02: OP 135**

*No glare found*

**F02: OP 136**

*No glare found*

**F02: OP 137**

*No glare found*

**F02: OP 138**

*No glare found*

**F02: OP 139**

*No glare found*

**F02: OP 140**

*No glare found*

**F02: OP 141**

*No glare found*

**F02: OP 142**

*No glare found*

**F02: OP 143**

*No glare found*

**F02: OP 144**

*No glare found*

**F02: OP 145**

*No glare found*

**F02: OP 146**

*No glare found*

**F02: OP 147**

*No glare found*

**F02: OP 148**

*No glare found*

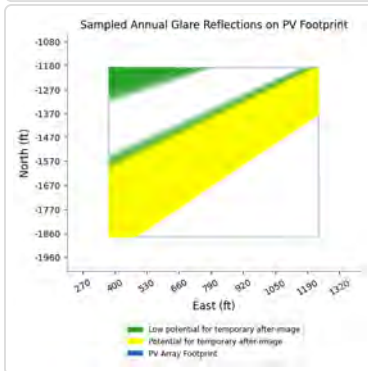
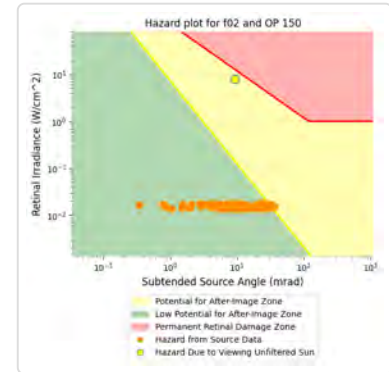
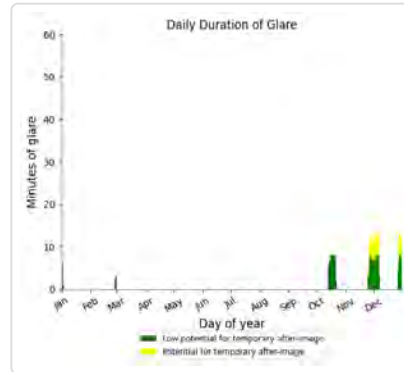
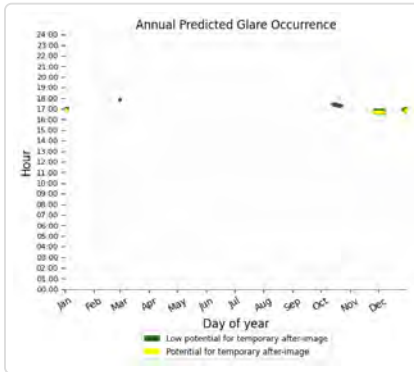
## F02: OP 149

No glare found

## F02: OP 150

PV array is expected to produce the following glare for this receptor:

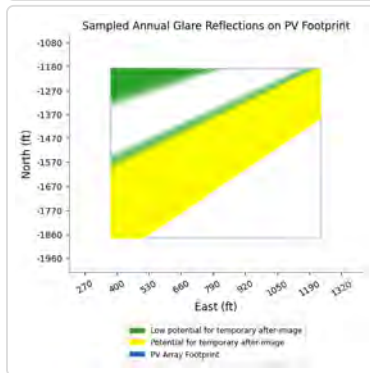
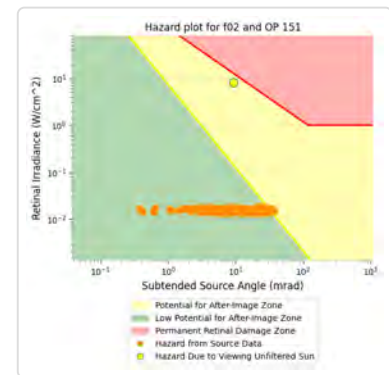
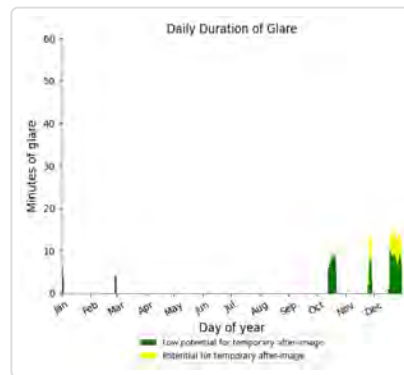
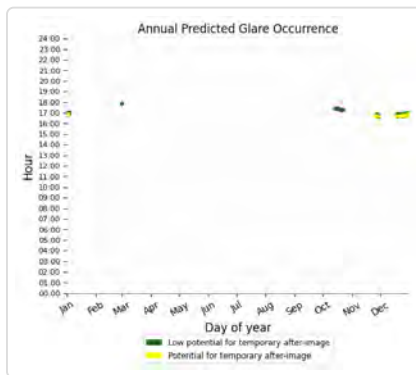
- 206 minutes of "green" glare with low potential to cause temporary after-image.
- 80 minutes of "yellow" glare with potential to cause temporary after-image.



## F02: OP 151

PV array is expected to produce the following glare for this receptor:

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



## F02: OP 152

No glare found

## F02: OP 153

No glare found

## F02: OP 154

No glare found

## F02: OP 155

No glare found

## F02: OP 156

No glare found

## F02: OP 157

No glare found

## F02: OP 158

No glare found

## F02: OP 159

No glare found

**F02: OP 160**

*No glare found*

**F02: OP 161**

*No glare found*

**F02: OP 162**

*No glare found*

**F02: OP 163**

*No glare found*

**F02: OP 164**

*No glare found*

**F02: Collins Dr**

*No glare found*

**F02: Country Dr Seg 1**

*No glare found*

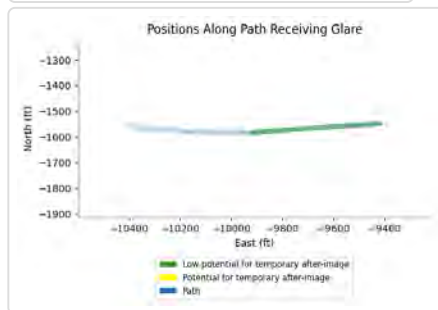
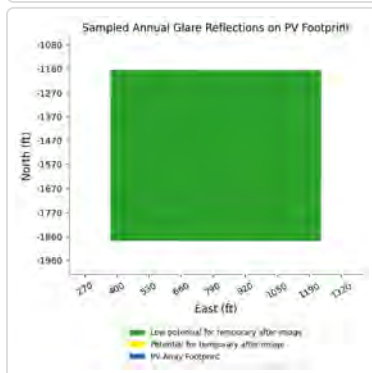
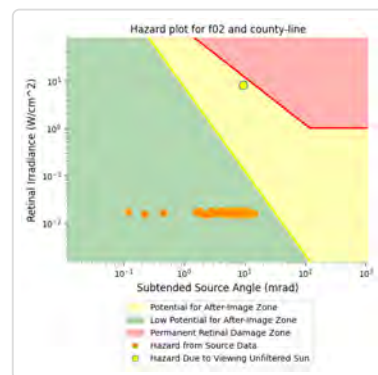
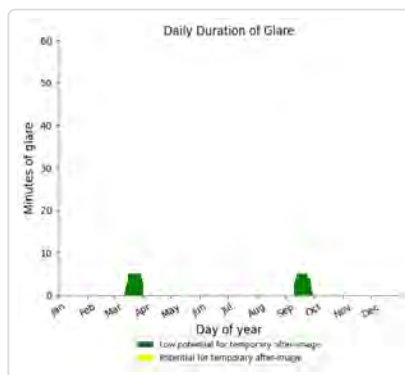
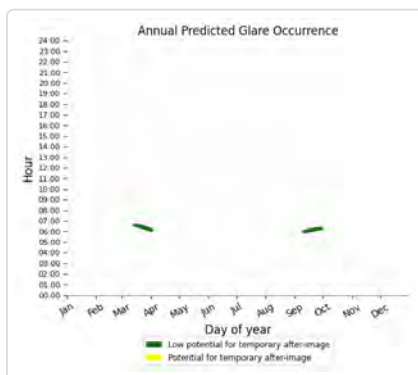
**F02: Country Dr Seg 2**

*No glare found*

## F02: County Line Rd

PV array is expected to produce the following glare for this receptor:

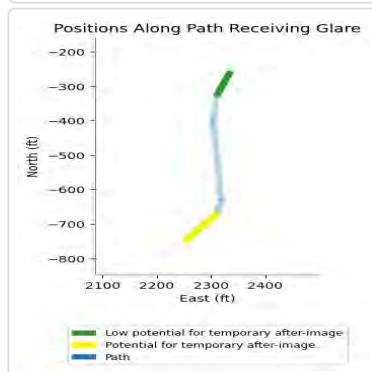
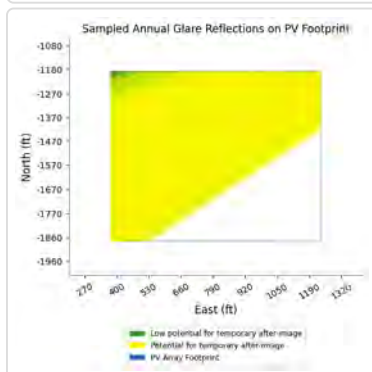
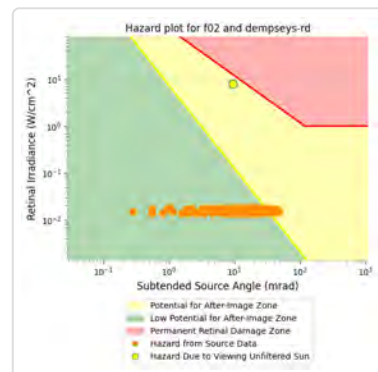
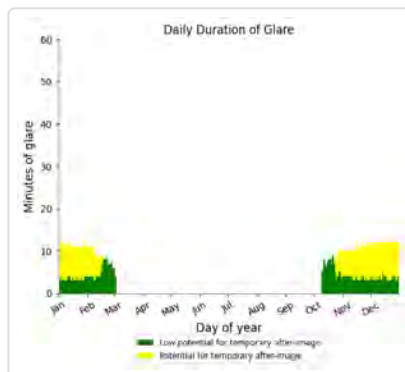
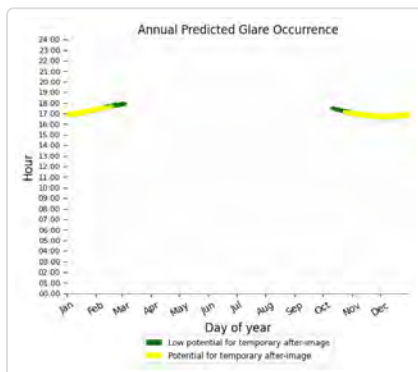
- 172 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## F02: Dempseys Rd

PV array is expected to produce the following glare for this receptor:

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





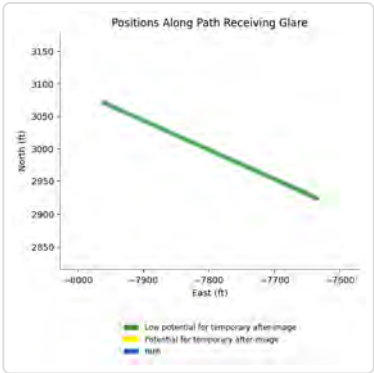
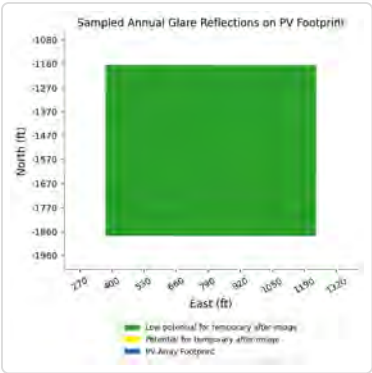
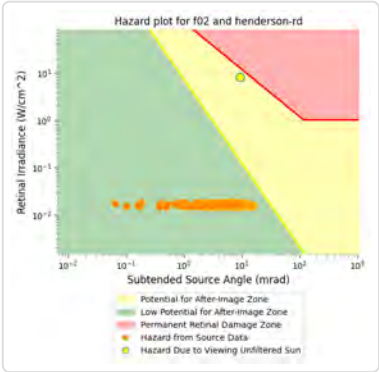
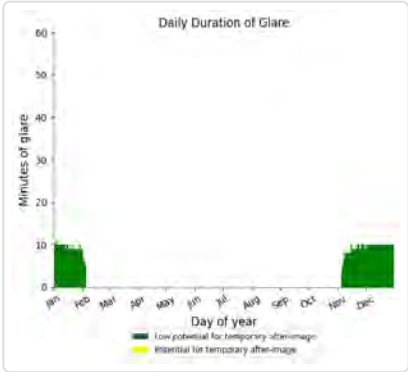
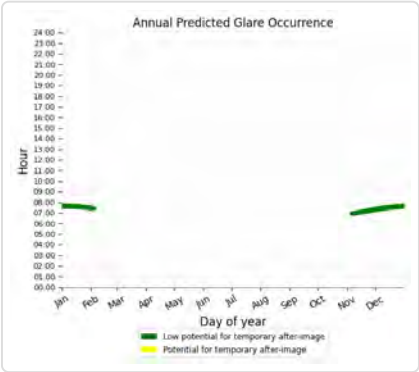
F02: Harley Ln

No glare found

F02: Henderson Rd

PV array is expected to produce the following glare for this receptor:

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



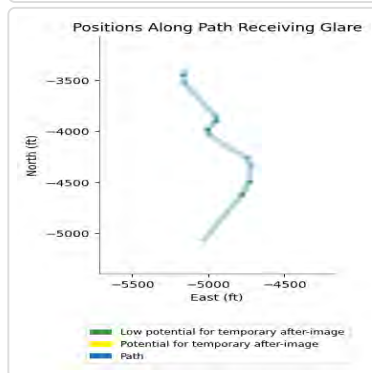
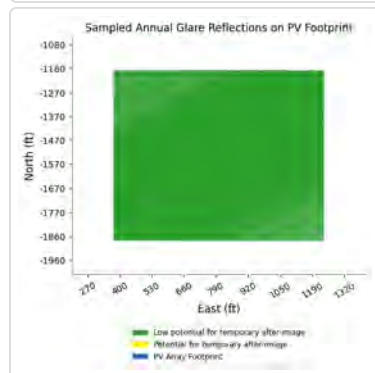
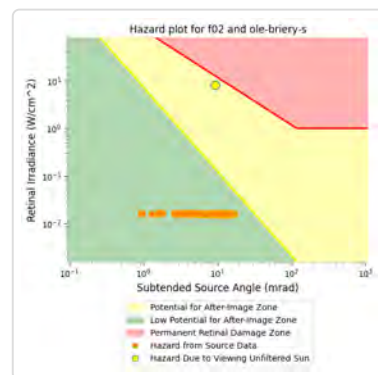
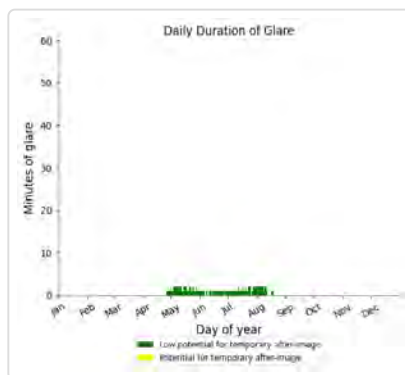
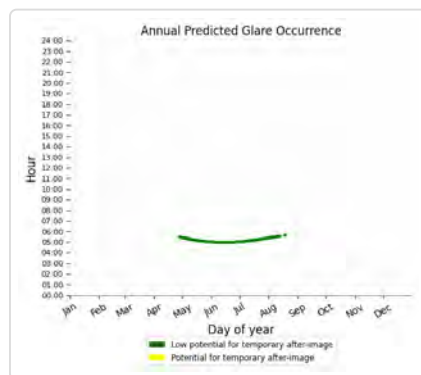
F02: Hillside Dr

No glare found

## F02: Ole Briery Station Rd Seg 1

PV array is expected to produce the following glare for this receptor:

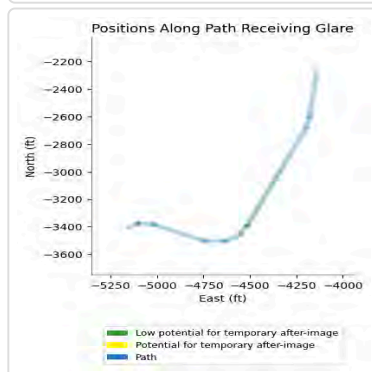
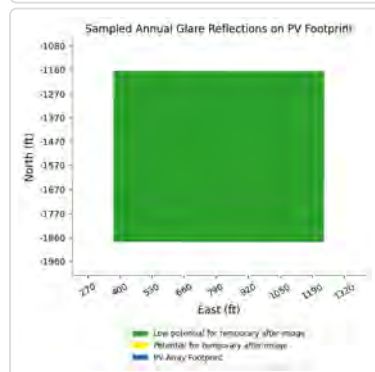
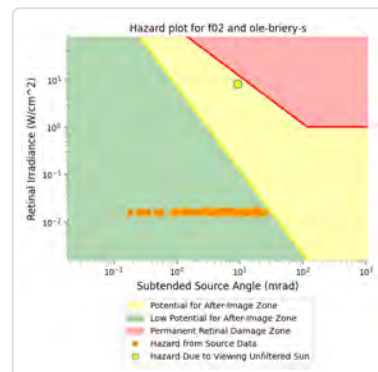
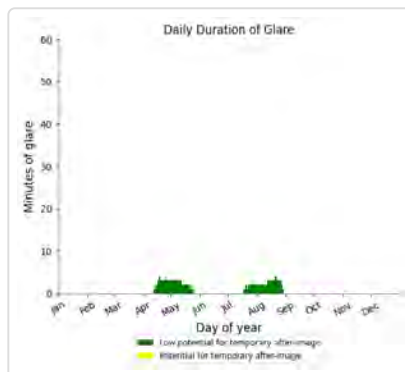
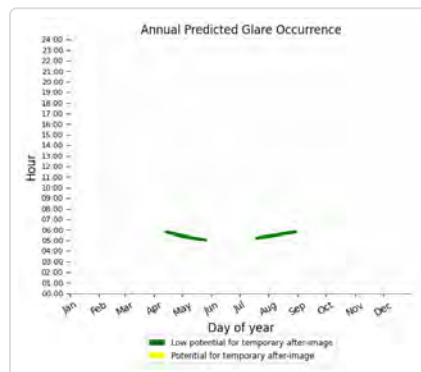
- 143 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## F02: Ole Briery Station Rd Seg 2

PV array is expected to produce the following glare for this receptor:

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



## F02: Thistle Knob Ln

*No glare found*

## F02: Tobacco Heritage Trail

*No glare found*

## F02: US Hwy 15

*No glare found*

## F02: US Hwy 360

*No glare found*

## F03 low potential for temporary after-image

Component	Green glare (min)	Yellow glare (min)
OP: OP 134	0	0
OP: OP 135	0	0
OP: OP 136	0	0
OP: OP 137	0	0
OP: OP 138	0	0
OP: OP 139	0	0
OP: OP 140	0	0
OP: OP 141	0	0
OP: OP 142	0	0
OP: OP 143	0	0
OP: OP 144	0	0
OP: OP 145	0	0
OP: OP 146	0	0
OP: OP 147	0	0
OP: OP 148	0	0
OP: OP 149	0	0
OP: OP 150	0	0
OP: OP 151	0	0
OP: OP 152	0	0
OP: OP 153	0	0
OP: OP 154	0	0
OP: OP 155	0	0
OP: OP 156	0	0
OP: OP 157	0	0
OP: OP 158	0	0
OP: OP 159	0	0
OP: OP 160	0	0
OP: OP 161	0	0
OP: OP 162	40	0
OP: OP 163	44	0
OP: OP 164	44	0
Route: Collins Dr	0	0
Route: Country Dr Seg 1	0	0

Route: Country Dr Seg 2	0	0
Route: County Line Rd	109	0
Route: Dempseys Rd	0	0
Route: Harley Ln	0	0
Route: Henderson Rd	81	0
Route: Hillside Dr	0	0
Route: Ole Briery Station Rd Seg 1	1001	0
Route: Ole Briery Station Rd Seg 2	294	0
Route: Thistle Knob Ln	0	0
Route: Tobacco Heritage Trail	99	0
Route: US Hwy 15	0	0
Route: US Hwy 360	0	0

### **F03: OP 134**

*No glare found*

### **F03: OP 135**

*No glare found*

### **F03: OP 136**

*No glare found*

### **F03: OP 137**

*No glare found*

### **F03: OP 138**

*No glare found*

### **F03: OP 139**

*No glare found*

### **F03: OP 140**

*No glare found*

### **F03: OP 141**

*No glare found*

### **F03: OP 142**

*No glare found*

### **F03: OP 143**

*No glare found*

### **F03: OP 144**

*No glare found*

**F03: OP 145**

*No glare found*

**F03: OP 146**

*No glare found*

**F03: OP 147**

*No glare found*

**F03: OP 148**

*No glare found*

**F03: OP 149**

*No glare found*

**F03: OP 150**

*No glare found*

**F03: OP 151**

*No glare found*

**F03: OP 152**

*No glare found*

**F03: OP 153**

*No glare found*

**F03: OP 154**

*No glare found*

**F03: OP 155**

*No glare found*

**F03: OP 156**

*No glare found*

**F03: OP 157**

*No glare found*

**F03: OP 158**

*No glare found*

**F03: OP 159**

*No glare found*



F03: OP 160

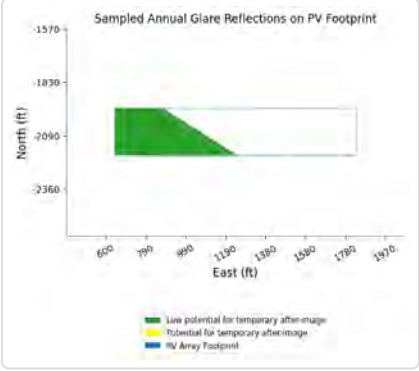
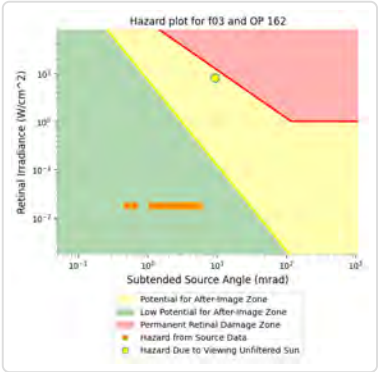
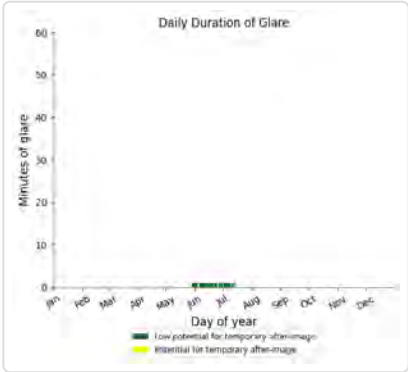
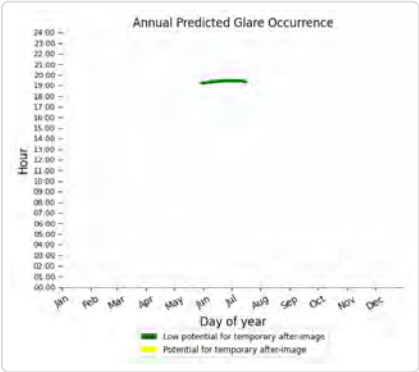
No glare found

F03: OP 161

No glare found

F03: OP 162

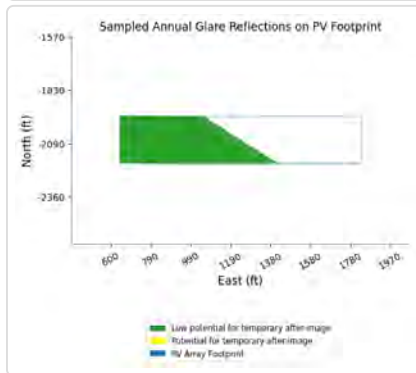
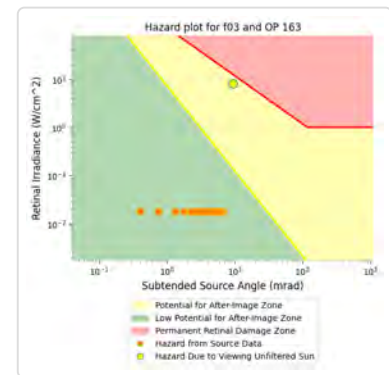
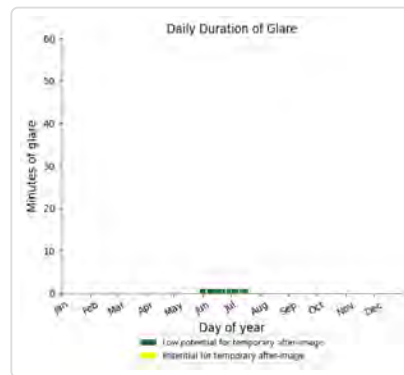
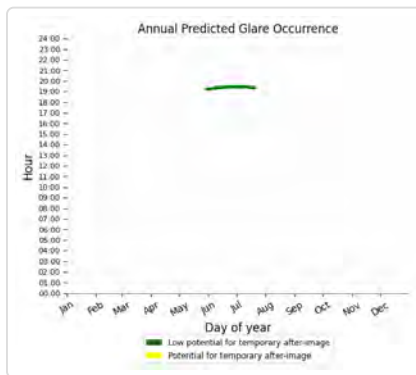
- PV array is expected to produce the following glare for this receptor:
- 40 minutes of "green" glare with low potential to cause temporary after-image.
  - 0 minutes of "yellow" glare with potential to cause temporary after-image.



### F03: OP 163

PV array is expected to produce the following glare for this receptor:

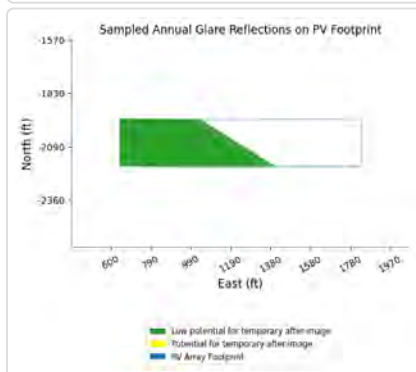
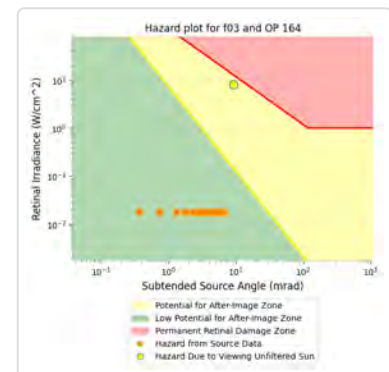
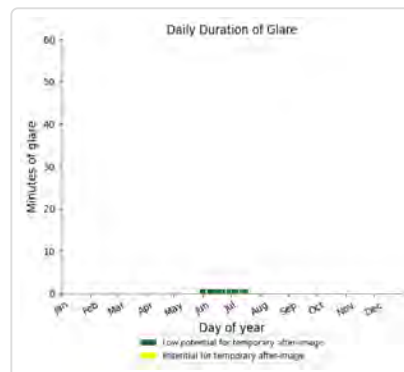
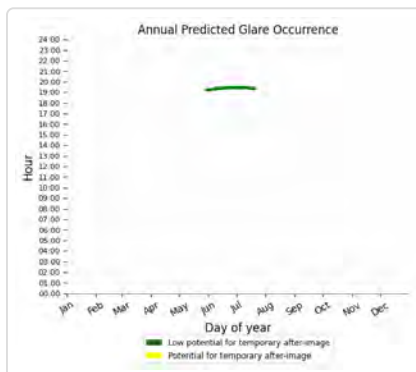
- 44 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



### F03: OP 164

PV array is expected to produce the following glare for this receptor:

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



F03: Collins Dr

No glare found

F03: Country Dr Seg 1

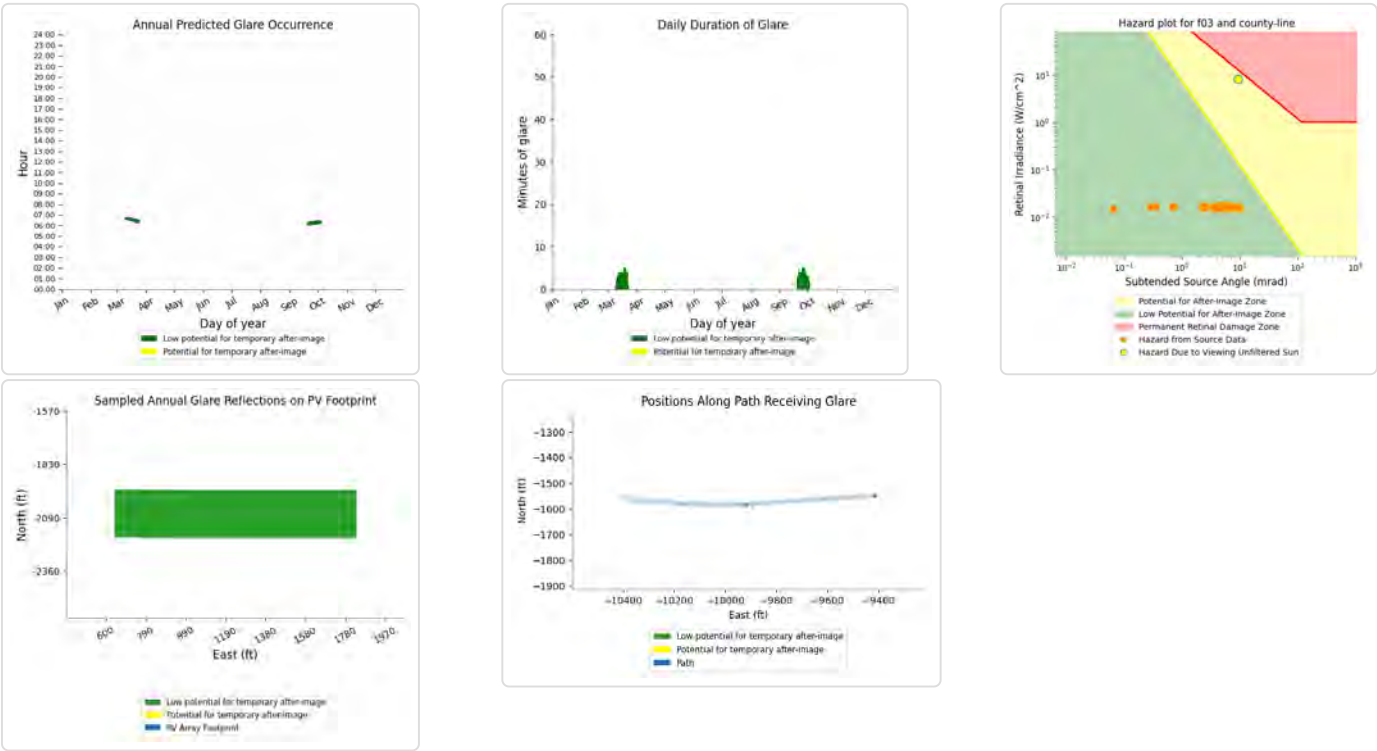
No glare found

F03: Country Dr Seg 2

No glare found

F03: County Line Rd

- PV array is expected to produce the following glare for this receptor:
- 109 minutes of "green" glare with low potential to cause temporary after-image.
  - 0 minutes of "yellow" glare with potential to cause temporary after-image.



F03: Dempseys Rd

No glare found

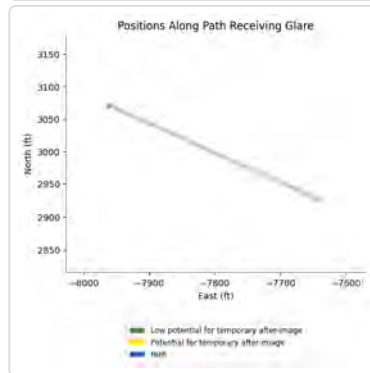
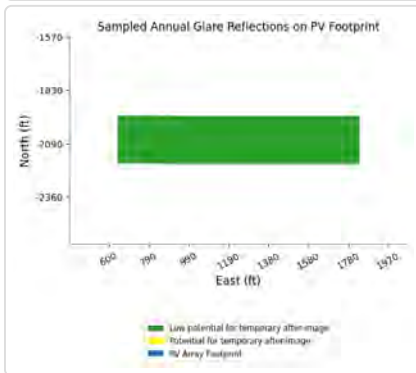
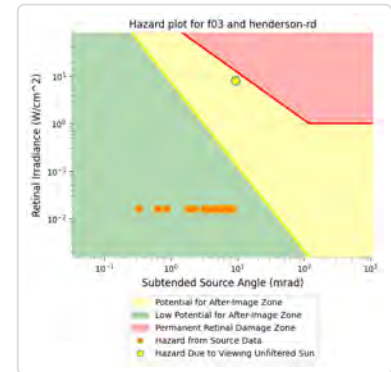
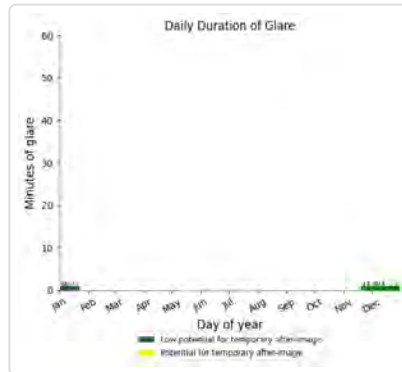
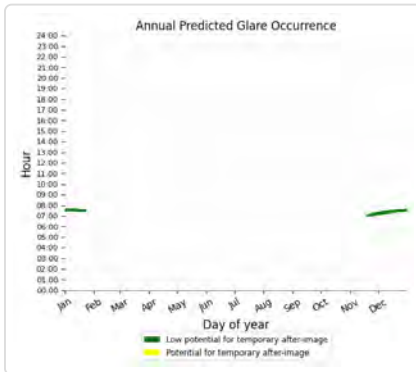
F03: Harley Ln

No glare found

### F03: Henderson Rd

PV array is expected to produce the following glare for this receptor:

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



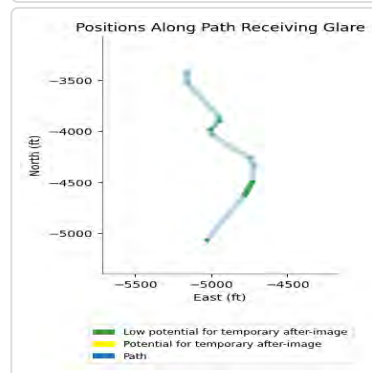
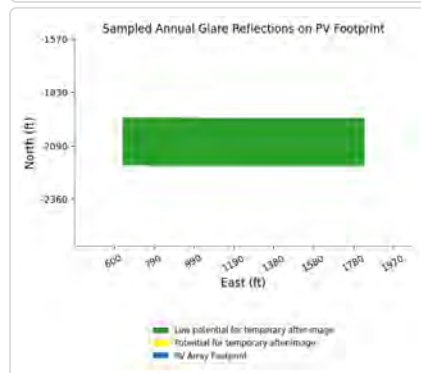
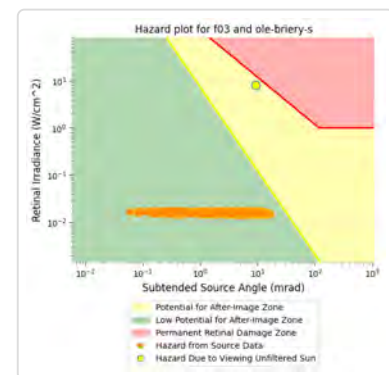
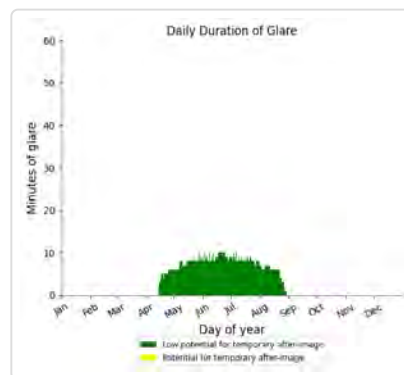
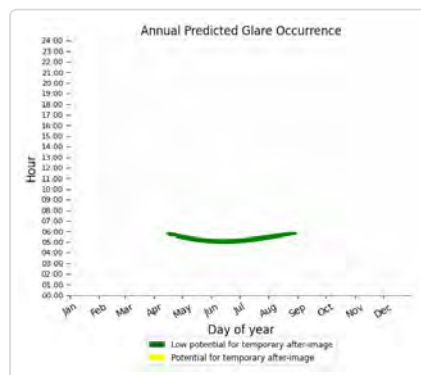
### F03: Hillside Dr

No glare found

### F03: Ole Briery Station Rd Seg 1

PV array is expected to produce the following glare for this receptor:

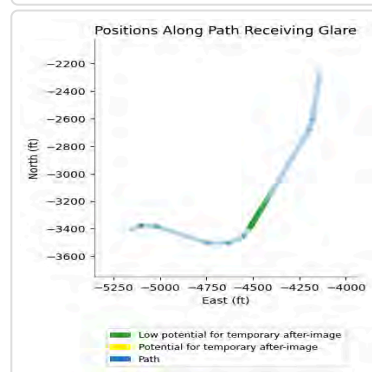
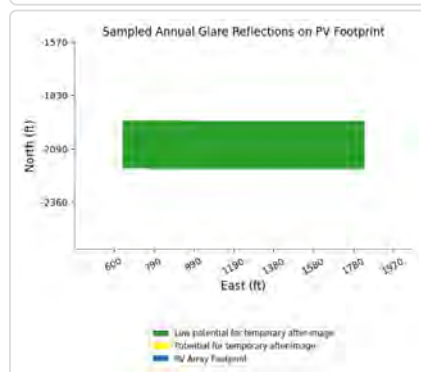
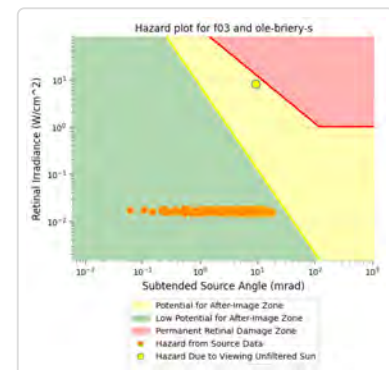
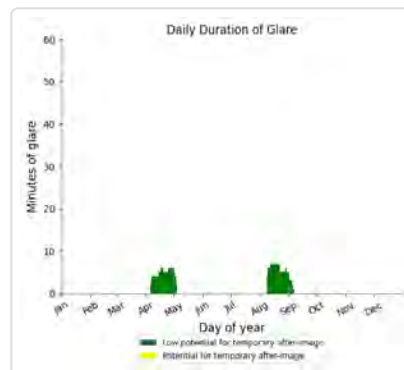
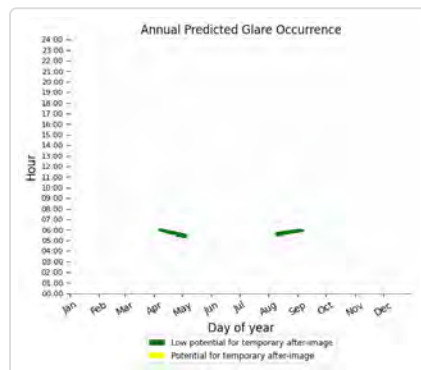
- 1,001 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



### F03: Ole Briery Station Rd Seg 2

PV array is expected to produce the following glare for this receptor:

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





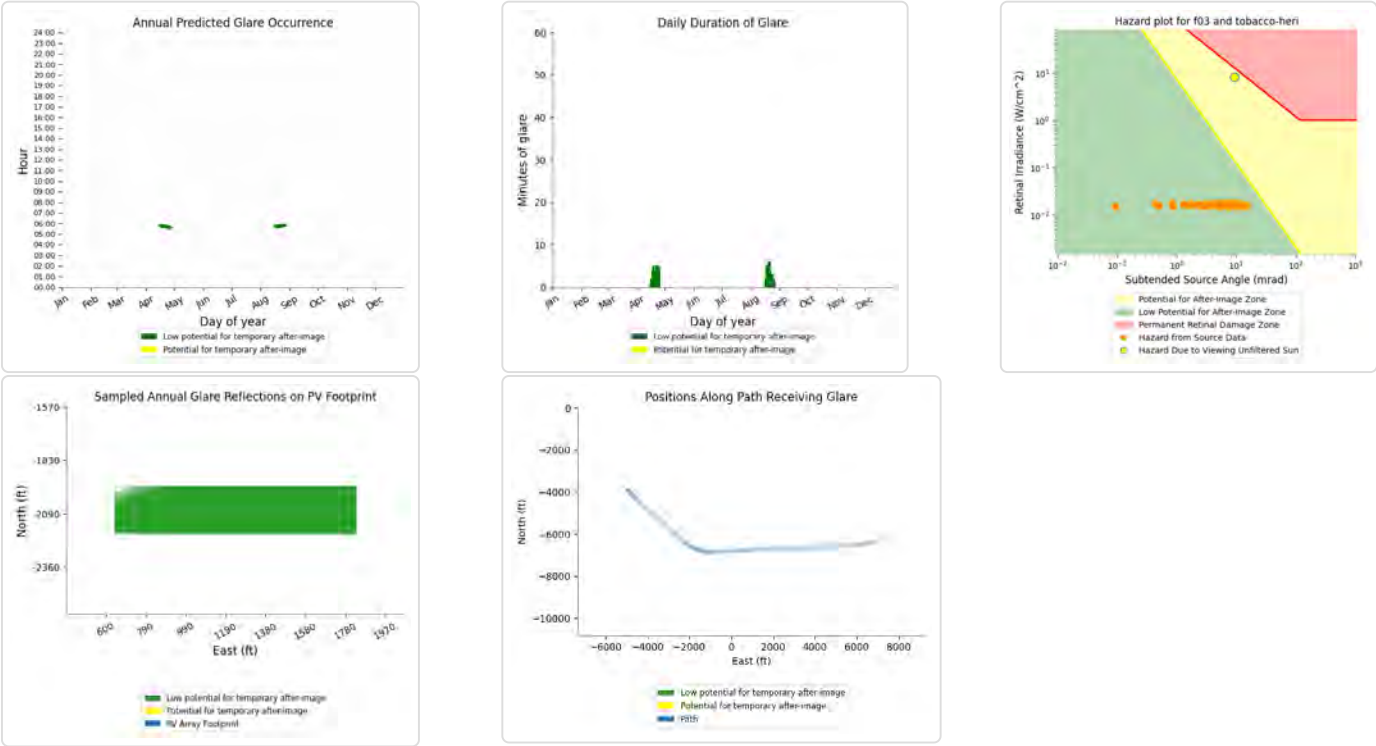
F03: Thistle Knob Ln

No glare found

F03: Tobacco Heritage Trail

PV array is expected to produce the following glare for this receptor:

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



F03: US Hwy 15

No glare found

F03: US Hwy 360

No glare found

F04 low potential for temporary after-image

Component	Green glare (min)	Yellow glare (min)
OP: OP 134	0	0
OP: OP 135	0	0
OP: OP 136	0	0
OP: OP 137	0	0
OP: OP 138	0	0
OP: OP 139	0	0
OP: OP 140	0	0
OP: OP 141	0	0
OP: OP 142	0	0
OP: OP 143	0	0
OP: OP 144	0	0
OP: OP 145	0	0

OP: OP 146	0	0
OP: OP 147	0	0
OP: OP 148	0	0
OP: OP 149	0	0
OP: OP 150	0	0
OP: OP 151	0	0
OP: OP 152	0	0
OP: OP 153	0	0
OP: OP 154	0	0
OP: OP 155	0	0
OP: OP 156	0	0
OP: OP 157	0	0
OP: OP 158	0	0
OP: OP 159	68	0
OP: OP 160	93	0
OP: OP 161	110	0
OP: OP 162	128	0
OP: OP 163	134	0
OP: OP 164	134	0
Route: Collins Dr	0	0
Route: Country Dr Seg 1	0	0
Route: Country Dr Seg 2	23	0
Route: County Line Rd	130	0
Route: Dempseys Rd	0	0
Route: Harley Ln	0	0
Route: Henderson Rd	0	0
Route: Hillside Dr	0	0
Route: Ole Briery Station Rd Seg 1	1285	0
Route: Ole Briery Station Rd Seg 2	331	0
Route: Thistle Knob Ln	0	0
Route: Tobacco Heritage Trail	224	0
Route: US Hwy 15	0	0
Route: US Hwy 360	0	0

#### F04: OP 134

*No glare found*

#### F04: OP 135

*No glare found*

#### F04: OP 136

*No glare found*

#### F04: OP 137

*No glare found*

#### F04: OP 138

*No glare found*

**F04: OP 139**

*No glare found*

**F04: OP 140**

*No glare found*

**F04: OP 141**

*No glare found*

**F04: OP 142**

*No glare found*

**F04: OP 143**

*No glare found*

**F04: OP 144**

*No glare found*

**F04: OP 145**

*No glare found*

**F04: OP 146**

*No glare found*

**F04: OP 147**

*No glare found*

**F04: OP 148**

*No glare found*

**F04: OP 149**

*No glare found*

**F04: OP 150**

*No glare found*

**F04: OP 151**

*No glare found*

**F04: OP 152**

*No glare found*

**F04: OP 153**

*No glare found*

F04: OP 154

No glare found

F04: OP 155

No glare found

F04: OP 156

No glare found

F04: OP 157

No glare found

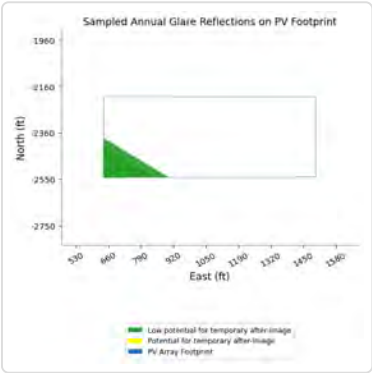
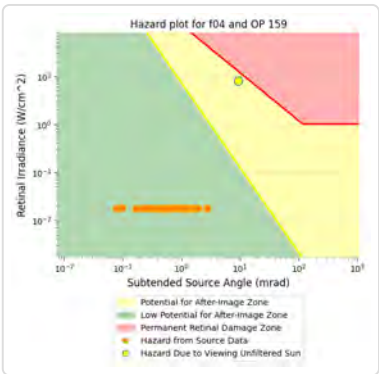
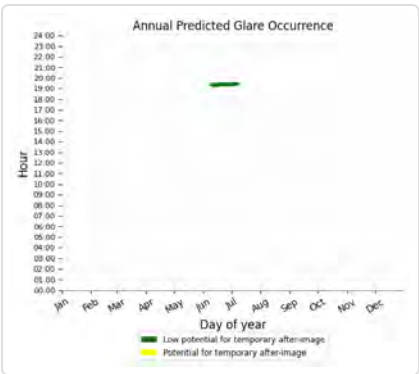
F04: OP 158

No glare found

F04: OP 159

PV array is expected to produce the following glare for this receptor:

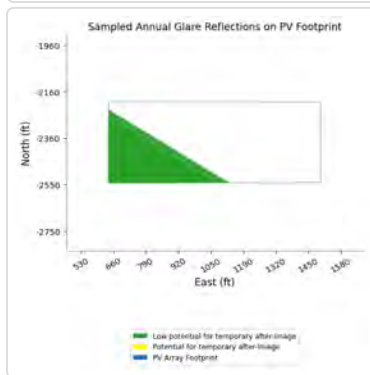
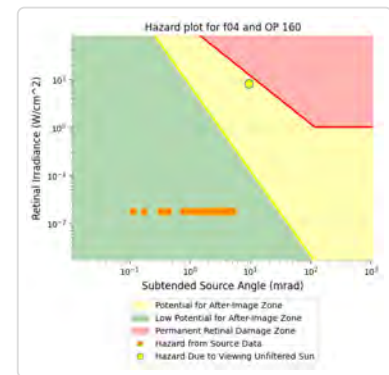
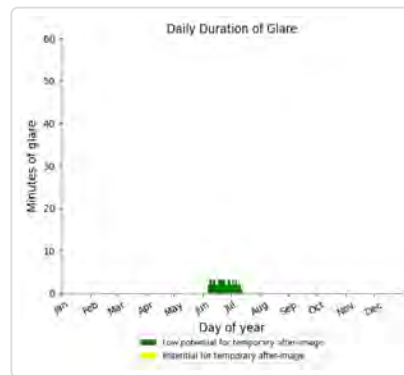
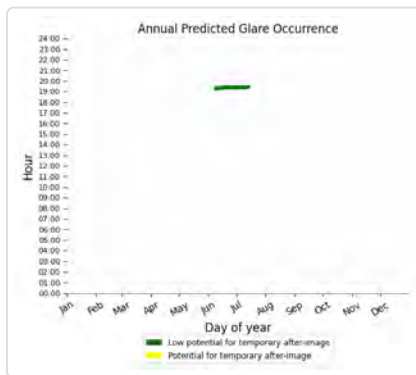
- 68 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



#### F04: OP 160

PV array is expected to produce the following glare for this receptor:

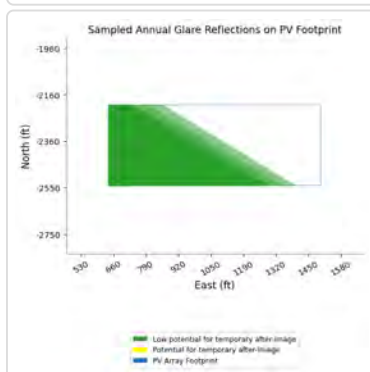
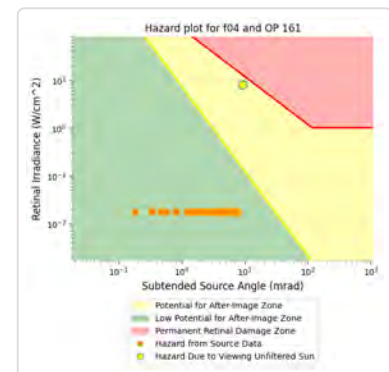
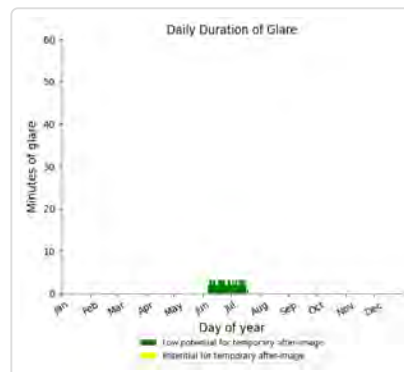
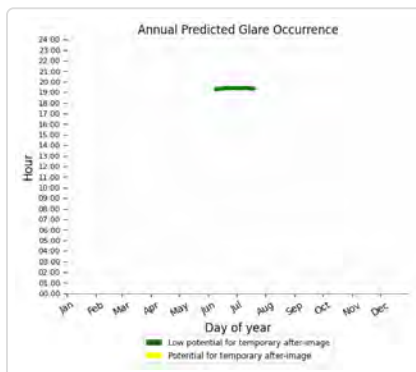
- 93 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



#### F04: OP 161

PV array is expected to produce the following glare for this receptor:

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

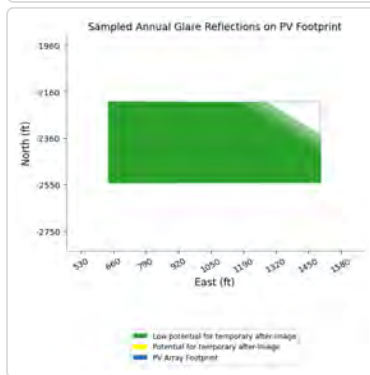
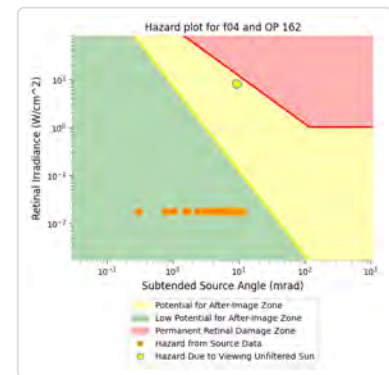
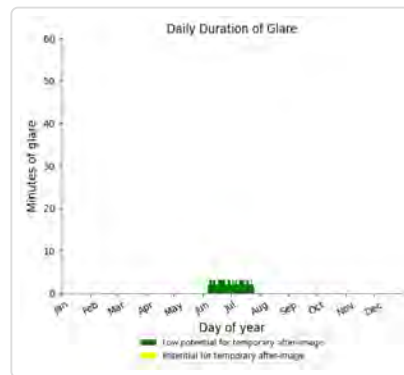
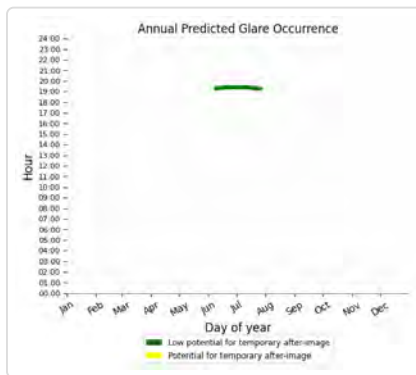




## F04: OP 162

PV array is expected to produce the following glare for this receptor:

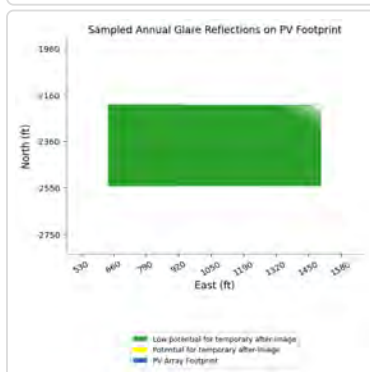
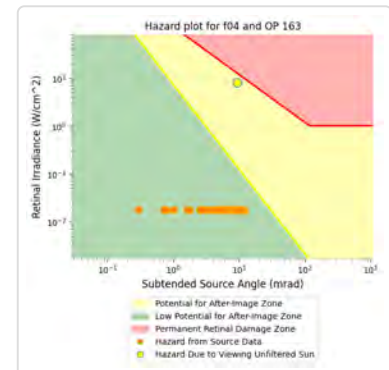
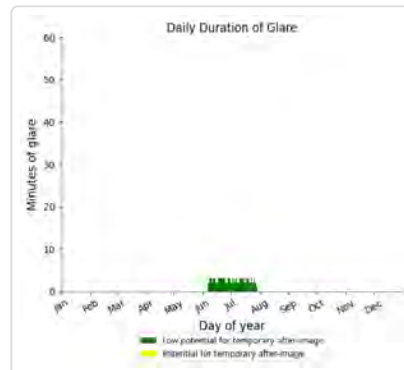
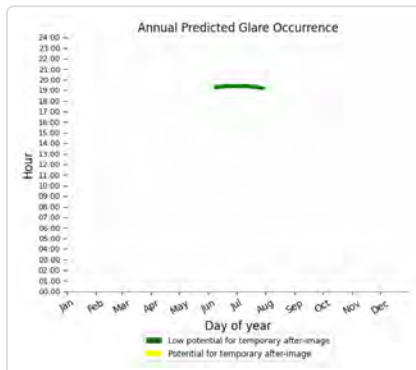
- 128 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## F04: OP 163

PV array is expected to produce the following glare for this receptor:

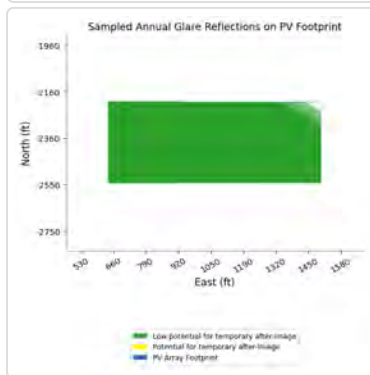
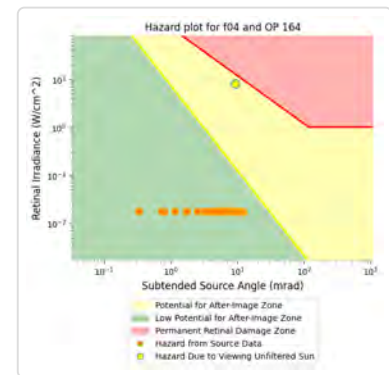
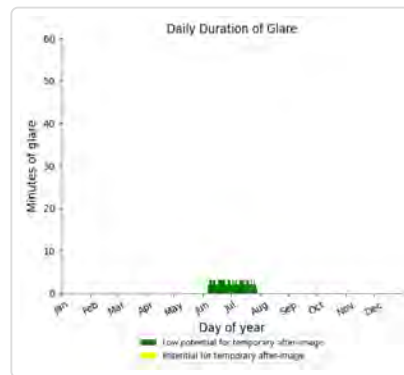
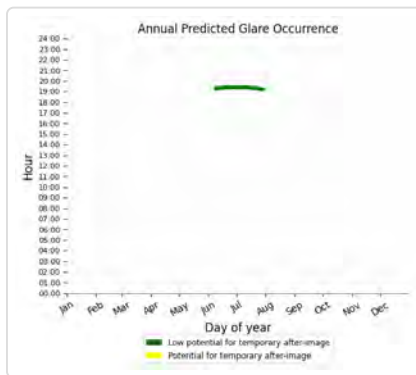
- 134 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## F04: OP 164

PV array is expected to produce the following glare for this receptor:

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



## F04: Collins Dr

No glare found

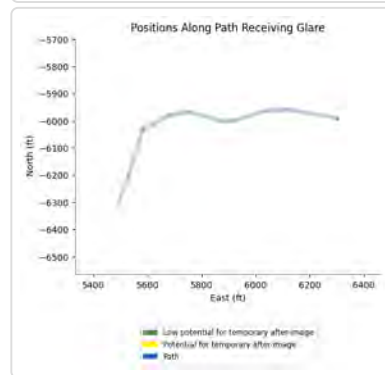
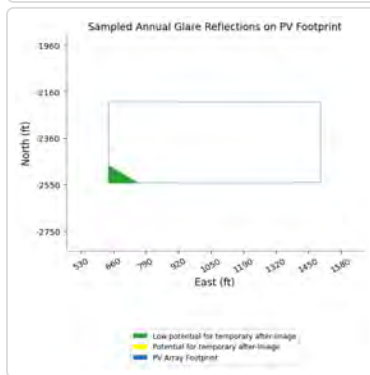
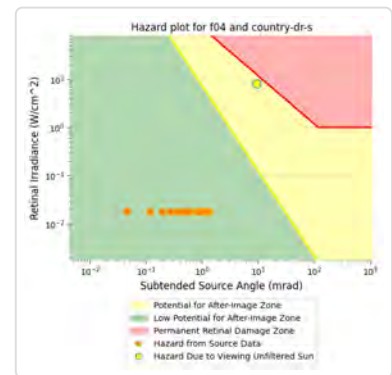
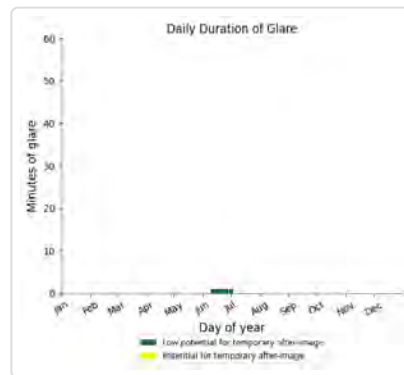
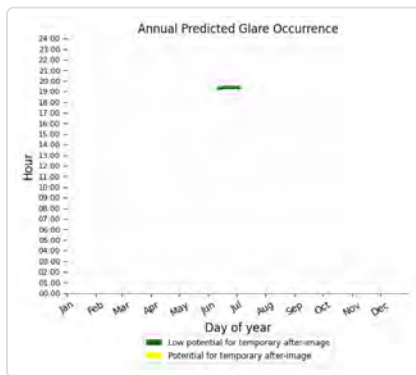
## F04: Country Dr Seg 1

No glare found

## F04: Country Dr Seg 2

PV array is expected to produce the following glare for this receptor:

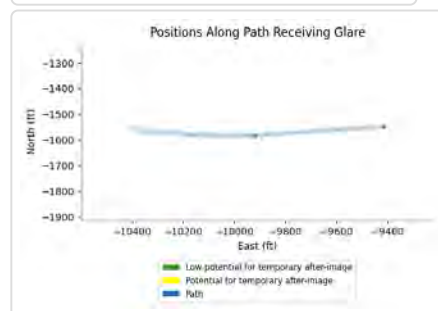
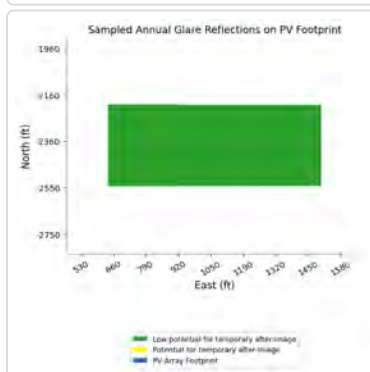
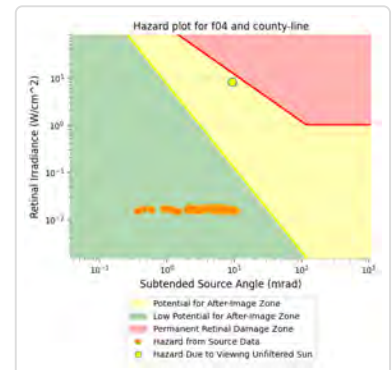
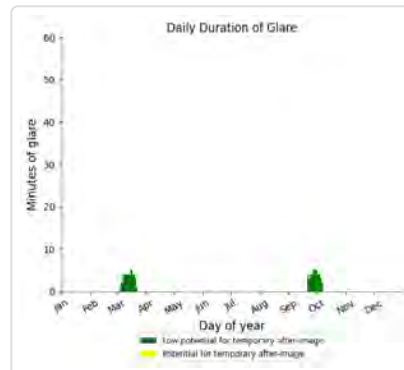
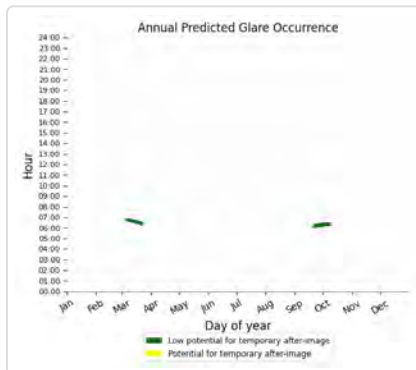
- 23 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## F04: County Line Rd

PV array is expected to produce the following glare for this receptor:

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



## F04: Dempseys Rd

No glare found

## F04: Harley Ln

No glare found

## F04: Henderson Rd

No glare found

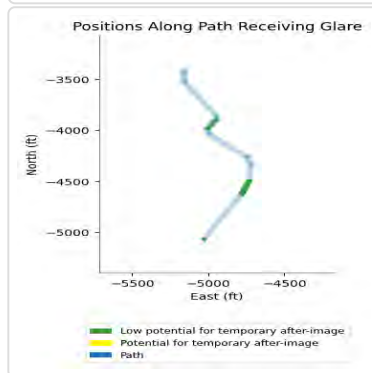
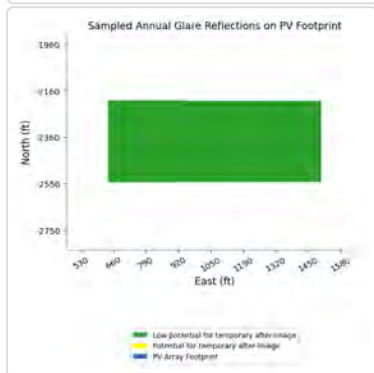
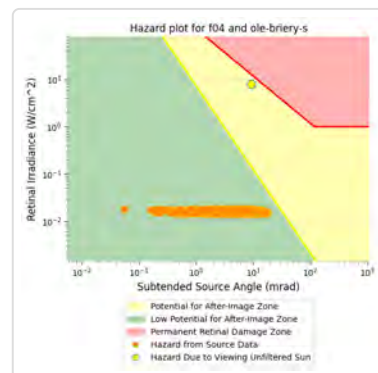
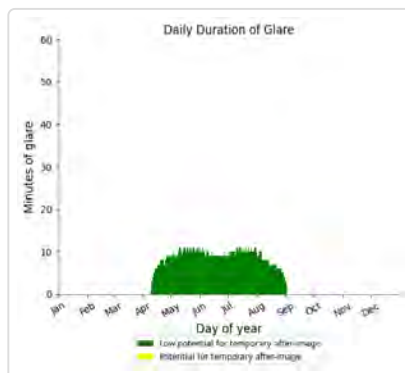
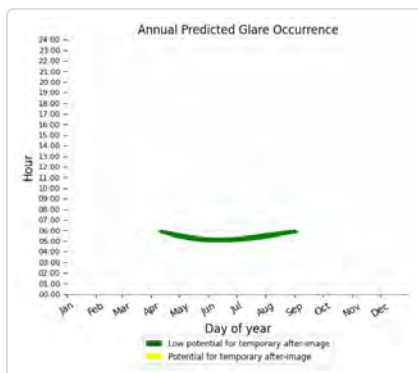
## F04: Hillside Dr

No glare found

## F04: Ole Briery Station Rd Seg 1

PV array is expected to produce the following glare for this receptor:

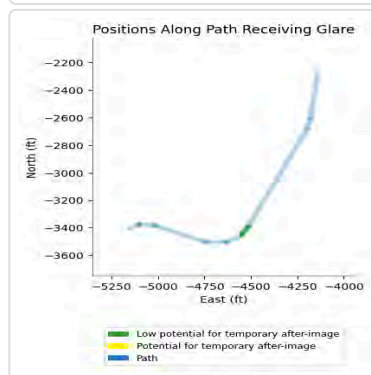
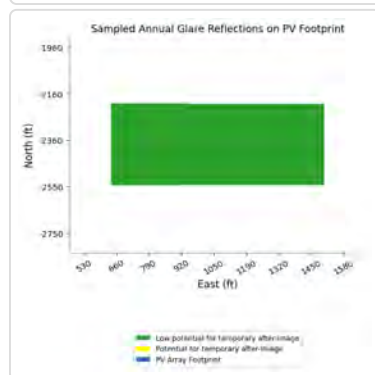
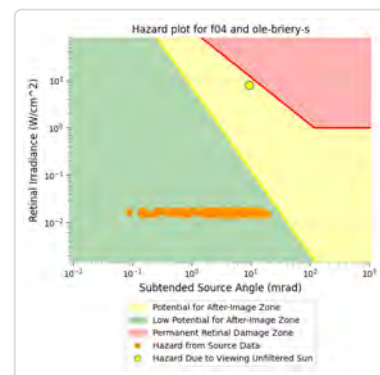
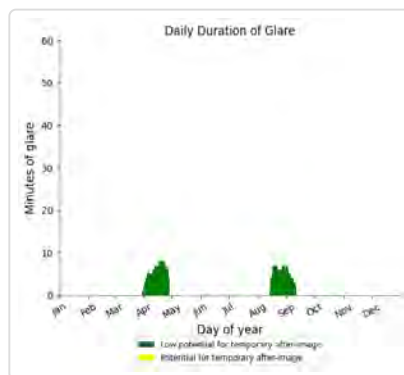
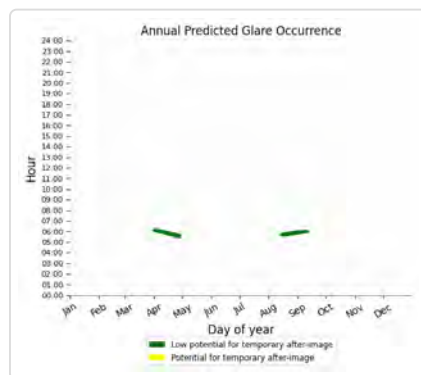
- 1,285 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## F04: Ole Briery Station Rd Seg 2

PV array is expected to produce the following glare for this receptor:

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



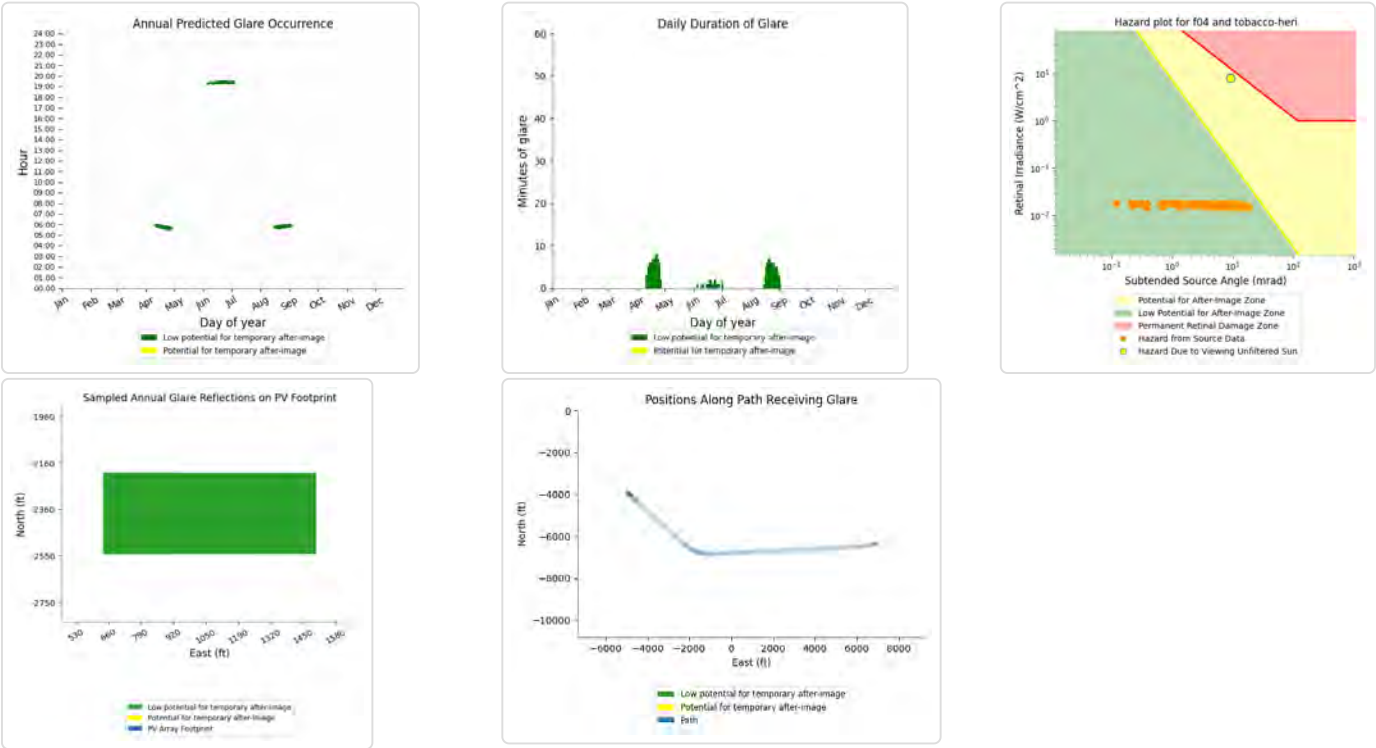
## F04: Thistle Knob Ln

No glare found



F04: Tobacco Heritage Trail

- PV array is expected to produce the following glare for this receptor:
- 224 minutes of "green" glare with low potential to cause temporary after-image.
  - 0 minutes of "yellow" glare with potential to cause temporary after-image.



F04: US Hwy 15

No glare found

F04: US Hwy 360

No glare found

F05 potential temporary after-image

Component	Green glare (min)	Yellow glare (min)
OP: OP 134	0	0
OP: OP 135	0	0
OP: OP 136	0	0
OP: OP 137	0	0
OP: OP 138	0	0
OP: OP 139	0	0
OP: OP 140	0	0
OP: OP 141	0	0
OP: OP 142	0	0
OP: OP 143	0	0
OP: OP 144	0	0
OP: OP 145	0	0
OP: OP 146	0	0
OP: OP 147	0	0
OP: OP 148	0	0

OP: OP 149	0	0
OP: OP 150	347	0
OP: OP 151	421	0
OP: OP 152	0	0
OP: OP 153	0	0
OP: OP 154	0	0
OP: OP 155	0	0
OP: OP 156	0	0
OP: OP 157	0	0
OP: OP 158	0	0
OP: OP 159	0	0
OP: OP 160	0	0
OP: OP 161	0	0
OP: OP 162	0	0
OP: OP 163	0	0
OP: OP 164	0	0
Route: Collins Dr	0	0
Route: Country Dr Seg 1	0	0
Route: Country Dr Seg 2	0	0
Route: County Line Rd	391	0
Route: Dempseys Rd	733	76
Route: Harley Ln	0	0
Route: Henderson Rd	1246	0
Route: Hillside Dr	0	0
Route: Ole Briery Station Rd Seg 1	0	0
Route: Ole Briery Station Rd Seg 2	63	0
Route: Thistle Knob Ln	0	0
Route: Tobacco Heritage Trail	0	0
Route: US Hwy 15	0	0
Route: US Hwy 360	0	0

#### F05: OP 134

*No glare found*

#### F05: OP 135

*No glare found*

#### F05: OP 136

*No glare found*

#### F05: OP 137

*No glare found*

#### F05: OP 138

*No glare found*

**F05: OP 139**

*No glare found*

**F05: OP 140**

*No glare found*

**F05: OP 141**

*No glare found*

**F05: OP 142**

*No glare found*

**F05: OP 143**

*No glare found*

**F05: OP 144**

*No glare found*

**F05: OP 145**

*No glare found*

**F05: OP 146**

*No glare found*

**F05: OP 147**

*No glare found*

**F05: OP 148**

*No glare found*

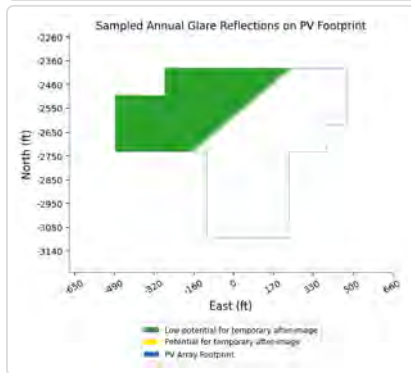
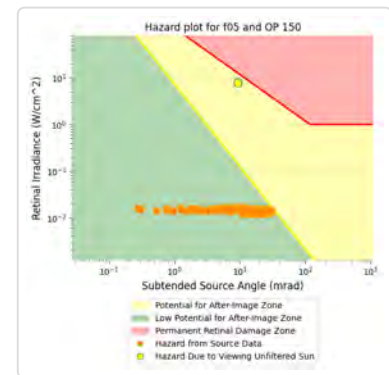
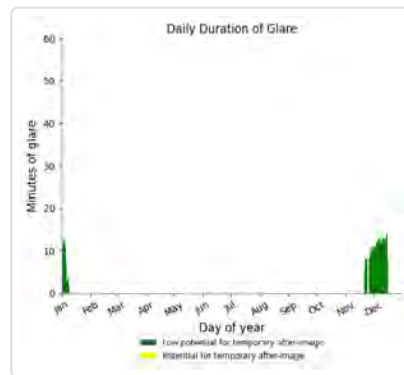
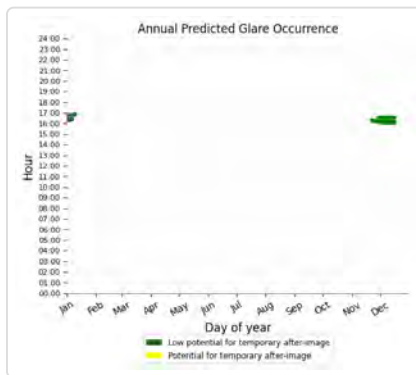
**F05: OP 149**

*No glare found*

## F05: OP 150

PV array is expected to produce the following glare for this receptor:

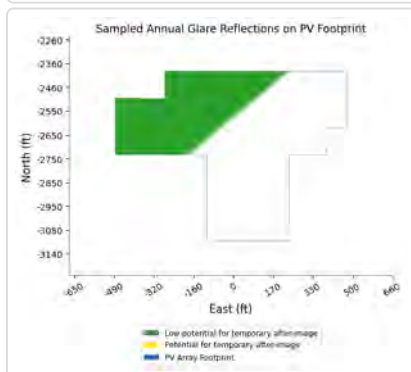
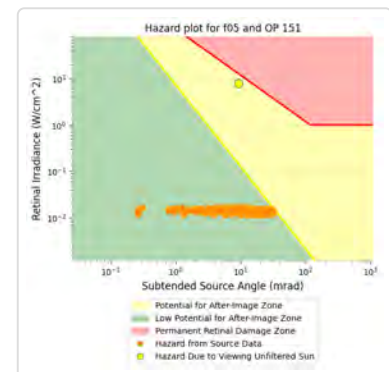
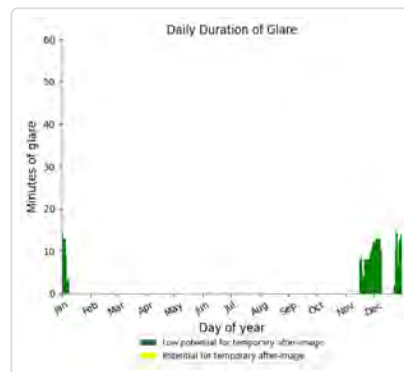
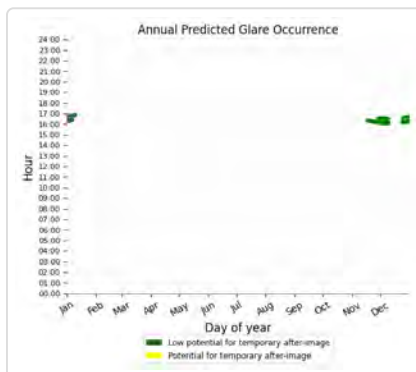
- 347 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## F05: OP 151

PV array is expected to produce the following glare for this receptor:

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



**F05: OP 152**

*No glare found*

**F05: OP 153**

*No glare found*

**F05: OP 154**

*No glare found*

**F05: OP 155**

*No glare found*

**F05: OP 156**

*No glare found*

**F05: OP 157**

*No glare found*

**F05: OP 158**

*No glare found*

**F05: OP 159**

*No glare found*

**F05: OP 160**

*No glare found*

**F05: OP 161**

*No glare found*

**F05: OP 162**

*No glare found*

**F05: OP 163**

*No glare found*

**F05: OP 164**

*No glare found*

**F05: Collins Dr**

*No glare found*

**F05: Country Dr Seg 1**

*No glare found*



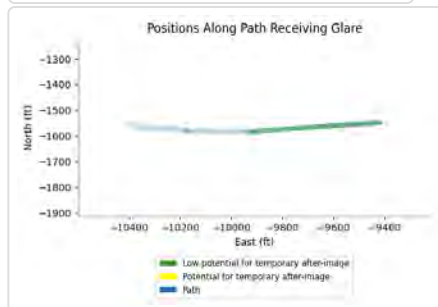
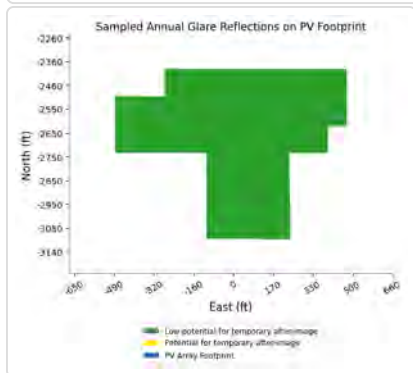
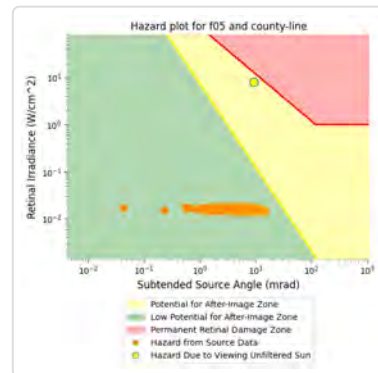
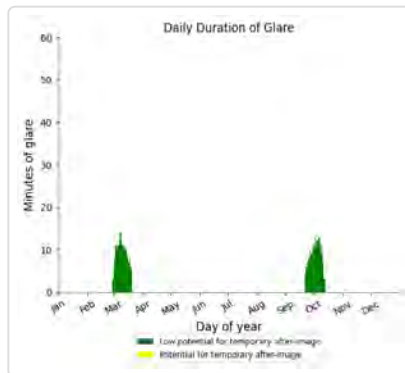
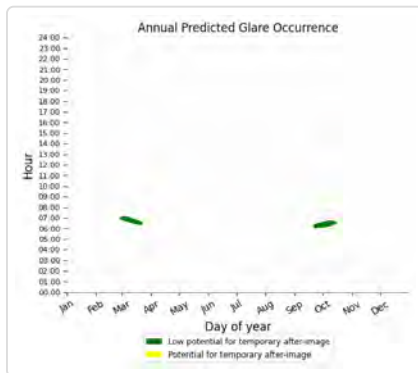
## F05: Country Dr Seg 2

No glare found

## F05: County Line Rd

PV array is expected to produce the following glare for this receptor:

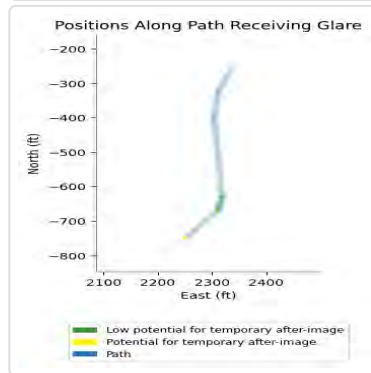
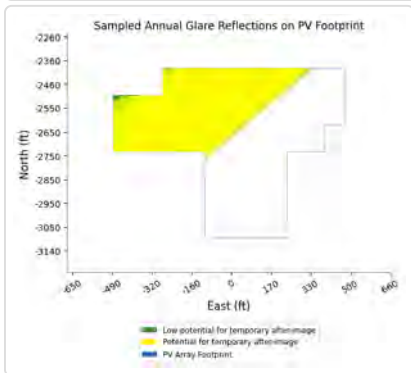
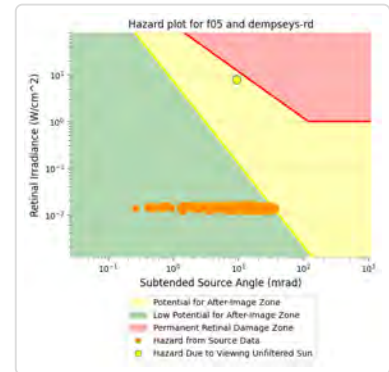
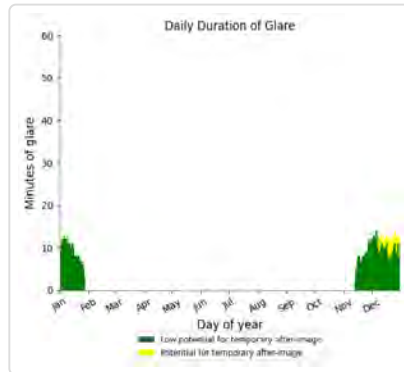
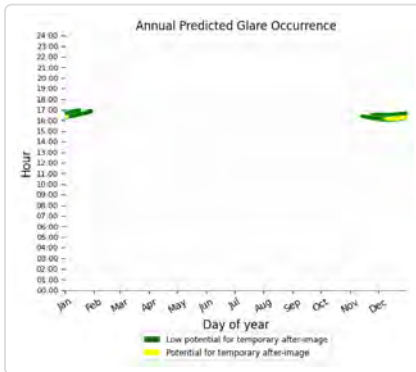
- 391 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## F05: Dempseys Rd

PV array is expected to produce the following glare for this receptor:

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



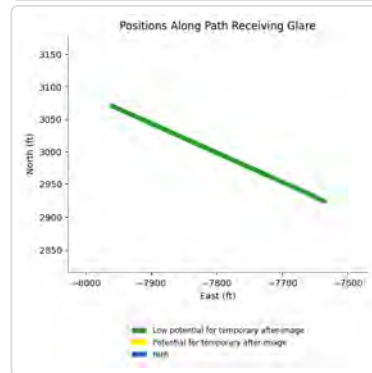
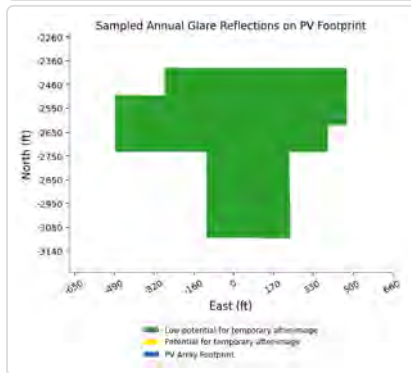
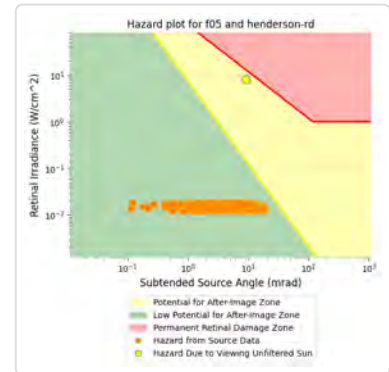
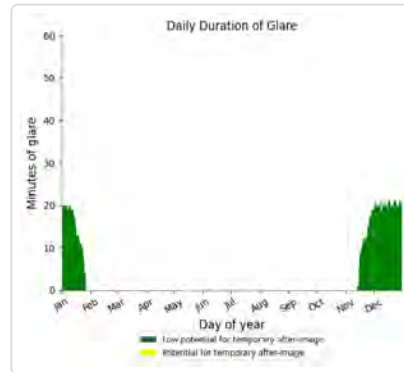
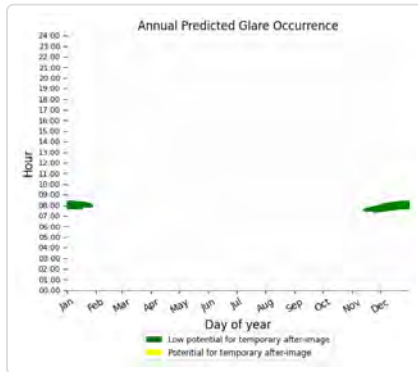
## F05: Harley Ln

No glare found

## F05: Henderson Rd

PV array is expected to produce the following glare for this receptor:

- 1,246 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## F05: Hillside Dr

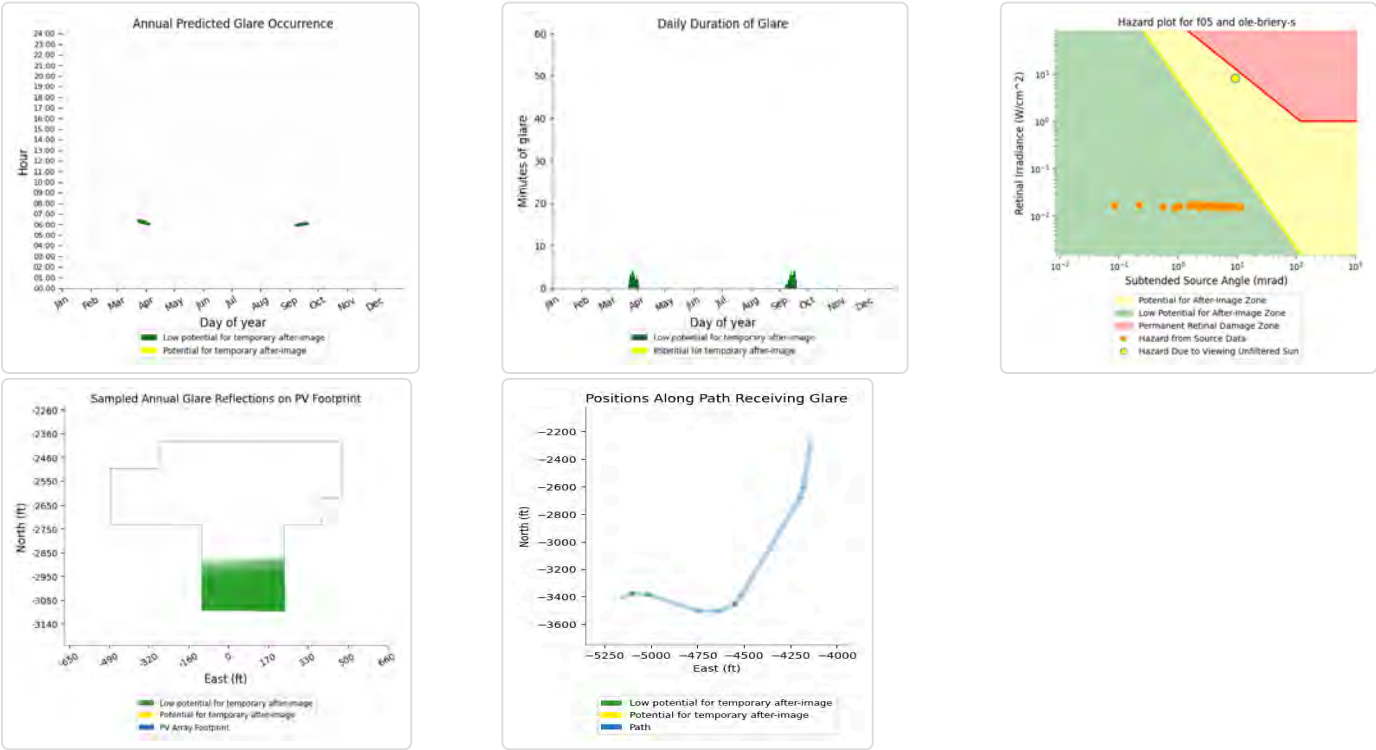
No glare found

## F05: Ole Briery Station Rd Seg 1

No glare found

F05: Ole Briery Station Rd Seg 2

- PV array is expected to produce the following glare for this receptor:
- 63 minutes of "green" glare with low potential to cause temporary after-image.
  - 0 minutes of "yellow" glare with potential to cause temporary after-image.



F05: Thistle Knob Ln

No glare found

F05: Tobacco Heritage Trail

No glare found

F05: US Hwy 15

No glare found

F05: US Hwy 360

No glare found

G01 low potential for temporary after-image

Component	Green glare (min)	Yellow glare (min)
OP: OP 134	0	0
OP: OP 135	0	0
OP: OP 136	0	0
OP: OP 137	0	0
OP: OP 138	0	0
OP: OP 139	0	0
OP: OP 140	0	0
OP: OP 141	0	0
OP: OP 142	0	0

OP: OP 143	0	0
OP: OP 144	0	0
OP: OP 145	0	0
OP: OP 146	0	0
OP: OP 147	0	0
OP: OP 148	0	0
OP: OP 149	0	0
OP: OP 150	0	0
OP: OP 151	0	0
OP: OP 152	0	0
OP: OP 153	0	0
OP: OP 154	0	0
OP: OP 155	0	0
OP: OP 156	0	0
OP: OP 157	0	0
OP: OP 158	0	0
OP: OP 159	0	0
OP: OP 160	0	0
OP: OP 161	0	0
OP: OP 162	0	0
OP: OP 163	0	0
OP: OP 164	0	0
Route: Collins Dr	0	0
Route: Country Dr Seg 1	0	0
Route: Country Dr Seg 2	0	0
Route: County Line Rd	53	0
Route: Dempseys Rd	0	0
Route: Harley Ln	0	0
Route: Henderson Rd	307	0
Route: Hillside Dr	0	0
Route: Ole Briery Station Rd Seg 1	0	0
Route: Ole Briery Station Rd Seg 2	0	0
Route: Thistle Knob Ln	0	0
Route: Tobacco Heritage Trail	0	0
Route: US Hwy 15	0	0
Route: US Hwy 360	0	0

#### G01: OP 134

*No glare found*

#### G01: OP 135

*No glare found*

#### G01: OP 136

*No glare found*

#### G01: OP 137

*No glare found*



**G01: OP 138**

*No glare found*

**G01: OP 139**

*No glare found*

**G01: OP 140**

*No glare found*

**G01: OP 141**

*No glare found*

**G01: OP 142**

*No glare found*

**G01: OP 143**

*No glare found*

**G01: OP 144**

*No glare found*

**G01: OP 145**

*No glare found*

**G01: OP 146**

*No glare found*

**G01: OP 147**

*No glare found*

**G01: OP 148**

*No glare found*

**G01: OP 149**

*No glare found*

**G01: OP 150**

*No glare found*

**G01: OP 151**

*No glare found*

**G01: OP 152**

*No glare found*

**G01: OP 153**

*No glare found*

**G01: OP 154**

*No glare found*

**G01: OP 155**

*No glare found*

**G01: OP 156**

*No glare found*

**G01: OP 157**

*No glare found*

**G01: OP 158**

*No glare found*

**G01: OP 159**

*No glare found*

**G01: OP 160**

*No glare found*

**G01: OP 161**

*No glare found*

**G01: OP 162**

*No glare found*

**G01: OP 163**

*No glare found*

**G01: OP 164**

*No glare found*

**G01: Collins Dr**

*No glare found*

**G01: Country Dr Seg 1**

*No glare found*

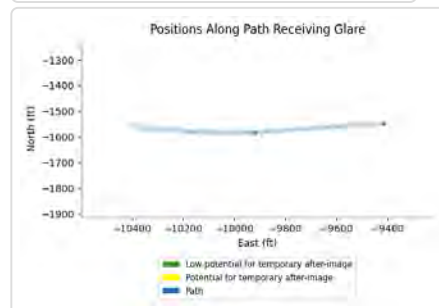
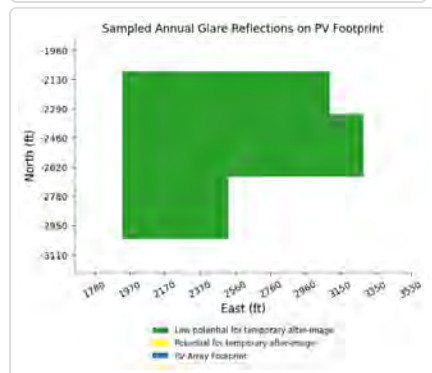
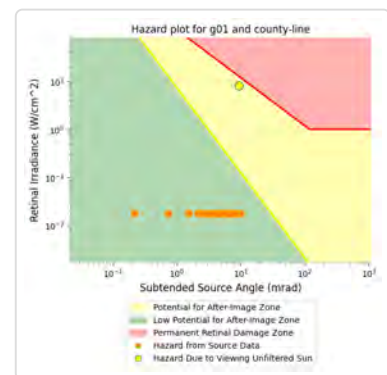
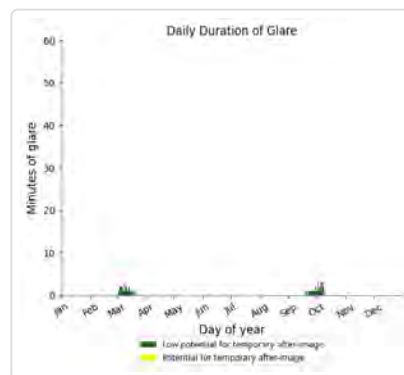
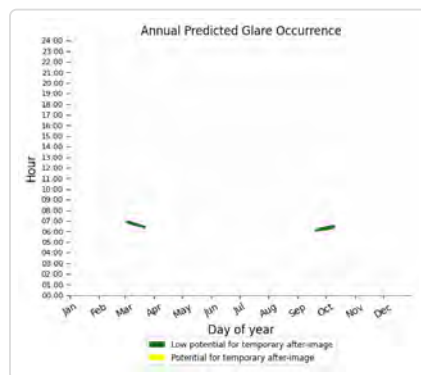
**G01: Country Dr Seg 2**

*No glare found*

## G01: County Line Rd

PV array is expected to produce the following glare for this receptor:

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



## G01: Dempseys Rd

No glare found

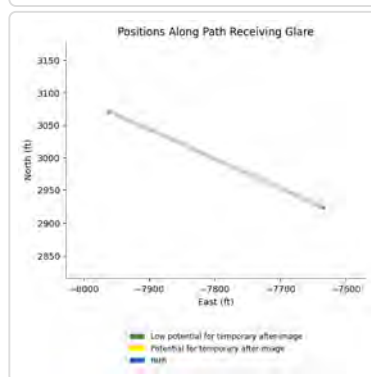
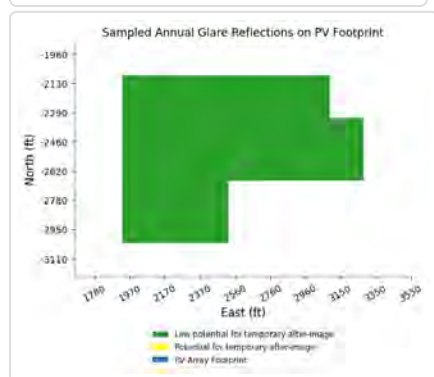
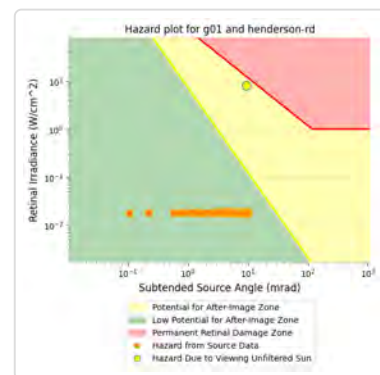
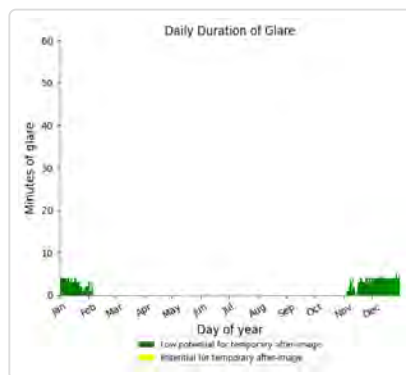
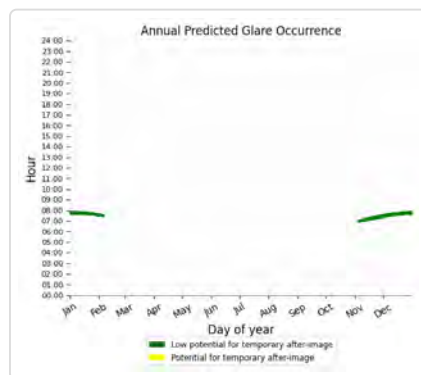
## G01: Harley Ln

No glare found

## G01: Henderson Rd

PV array is expected to produce the following glare for this receptor:

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



## G01: Hillside Dr

No glare found

## G01: Ole Briery Station Rd Seg 1

No glare found

## G01: Ole Briery Station Rd Seg 2

No glare found

## G01: Thistle Knob Ln

No glare found

## G01: Tobacco Heritage Trail

No glare found

## G01: US Hwy 15

No glare found

## G01: US Hwy 360

No glare found

## G02 low potential for temporary after-image

Component	Green glare (min)	Yellow glare (min)
OP: OP 134	0	0
OP: OP 135	0	0
OP: OP 136	0	0
OP: OP 137	0	0
OP: OP 138	0	0
OP: OP 139	0	0
OP: OP 140	0	0
OP: OP 141	0	0
OP: OP 142	0	0
OP: OP 143	0	0
OP: OP 144	0	0
OP: OP 145	0	0
OP: OP 146	0	0
OP: OP 147	0	0
OP: OP 148	0	0
OP: OP 149	0	0
OP: OP 150	0	0
OP: OP 151	0	0
OP: OP 152	0	0
OP: OP 153	0	0
OP: OP 154	0	0
OP: OP 155	0	0
OP: OP 156	0	0
OP: OP 157	0	0
OP: OP 158	0	0
OP: OP 159	0	0
OP: OP 160	0	0
OP: OP 161	0	0
OP: OP 162	0	0
OP: OP 163	0	0
OP: OP 164	0	0
Route: Collins Dr	0	0
Route: Country Dr Seg 1	0	0
Route: Country Dr Seg 2	0	0
Route: County Line Rd	67	0
Route: Dempseys Rd	0	0
Route: Harley Ln	0	0
Route: Henderson Rd	0	0
Route: Hillside Dr	0	0
Route: Ole Briery Station Rd Seg 1	211	0
Route: Ole Briery Station Rd Seg 2	90	0
Route: Thistle Knob Ln	0	0
Route: Tobacco Heritage Trail	117	0
Route: US Hwy 15	0	0
Route: US Hwy 360	0	0



**G02: OP 134**

*No glare found*

**G02: OP 135**

*No glare found*

**G02: OP 136**

*No glare found*

**G02: OP 137**

*No glare found*

**G02: OP 138**

*No glare found*

**G02: OP 139**

*No glare found*

**G02: OP 140**

*No glare found*

**G02: OP 141**

*No glare found*

**G02: OP 142**

*No glare found*

**G02: OP 143**

*No glare found*

**G02: OP 144**

*No glare found*

**G02: OP 145**

*No glare found*

**G02: OP 146**

*No glare found*

**G02: OP 147**

*No glare found*

**G02: OP 148**

*No glare found*

**G02: OP 149**

*No glare found*

**G02: OP 150**

*No glare found*

**G02: OP 151**

*No glare found*

**G02: OP 152**

*No glare found*

**G02: OP 153**

*No glare found*

**G02: OP 154**

*No glare found*

**G02: OP 155**

*No glare found*

**G02: OP 156**

*No glare found*

**G02: OP 157**

*No glare found*

**G02: OP 158**

*No glare found*

**G02: OP 159**

*No glare found*

**G02: OP 160**

*No glare found*

**G02: OP 161**

*No glare found*

**G02: OP 162**

*No glare found*

**G02: OP 163**

*No glare found*

## G02: OP 164

No glare found

## G02: Collins Dr

No glare found

## G02: Country Dr Seg 1

No glare found

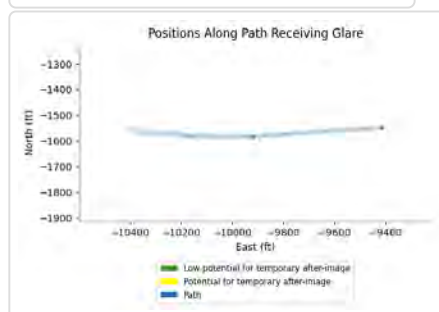
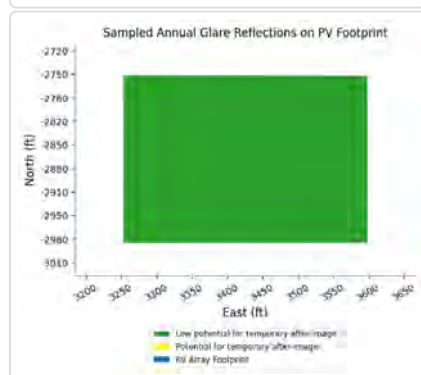
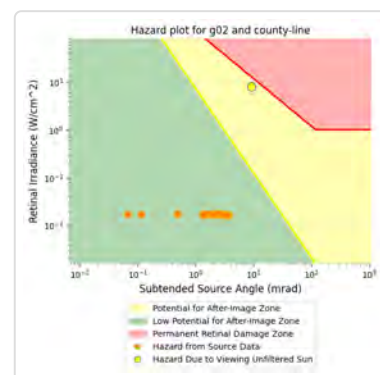
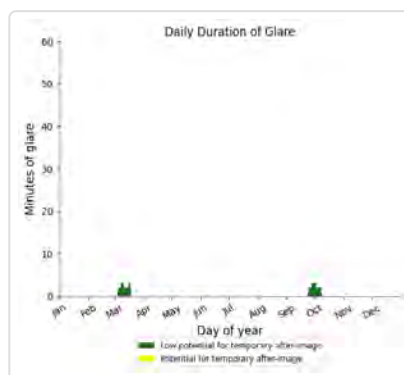
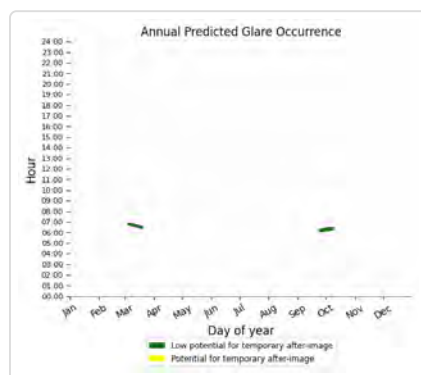
## G02: Country Dr Seg 2

No glare found

## G02: County Line Rd

PV array is expected to produce the following glare for this receptor:

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



## G02: Dempseys Rd

No glare found

## G02: Harley Ln

No glare found

## G02: Henderson Rd

No glare found

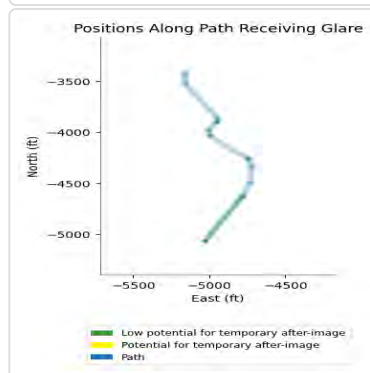
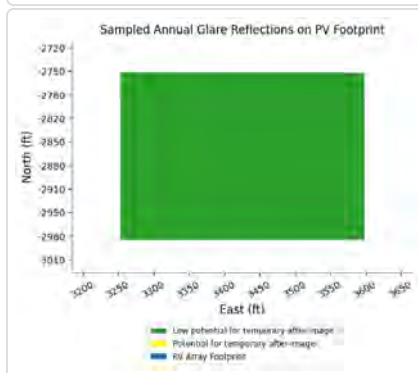
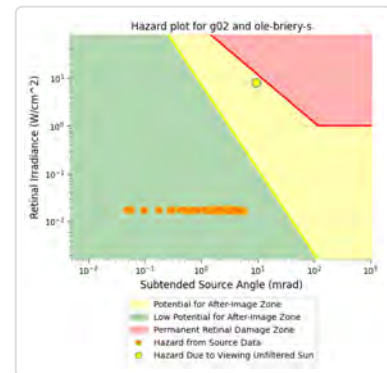
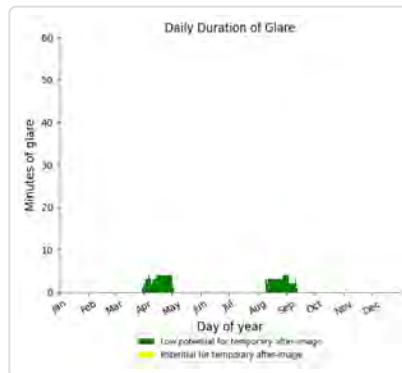
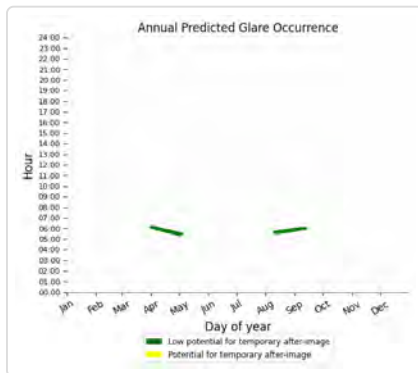
## G02: Hillside Dr

No glare found

## G02: Ole Briery Station Rd Seg 1

PV array is expected to produce the following glare for this receptor:

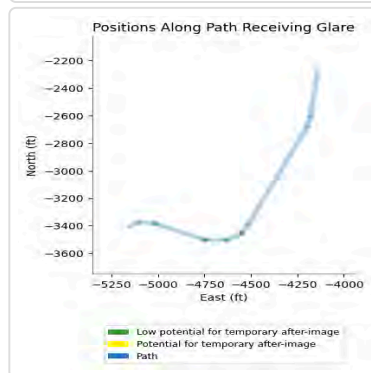
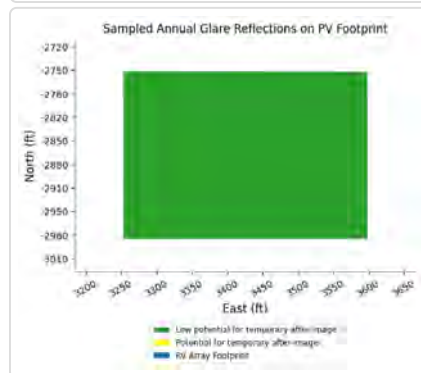
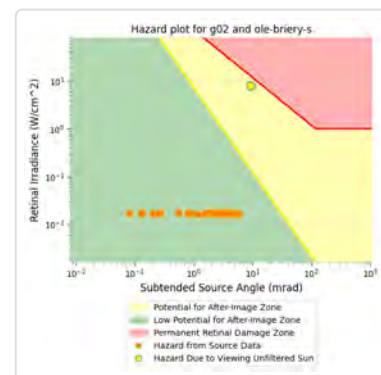
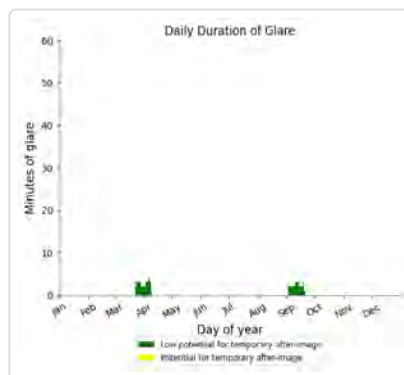
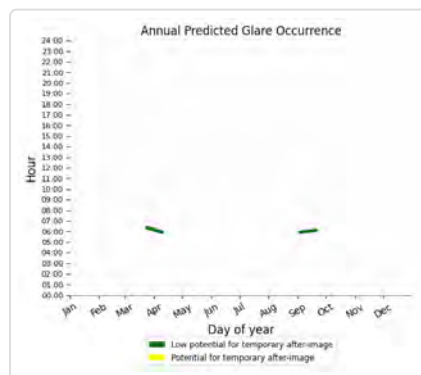
- 211 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## G02: Ole Briery Station Rd Seg 2

PV array is expected to produce the following glare for this receptor:

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



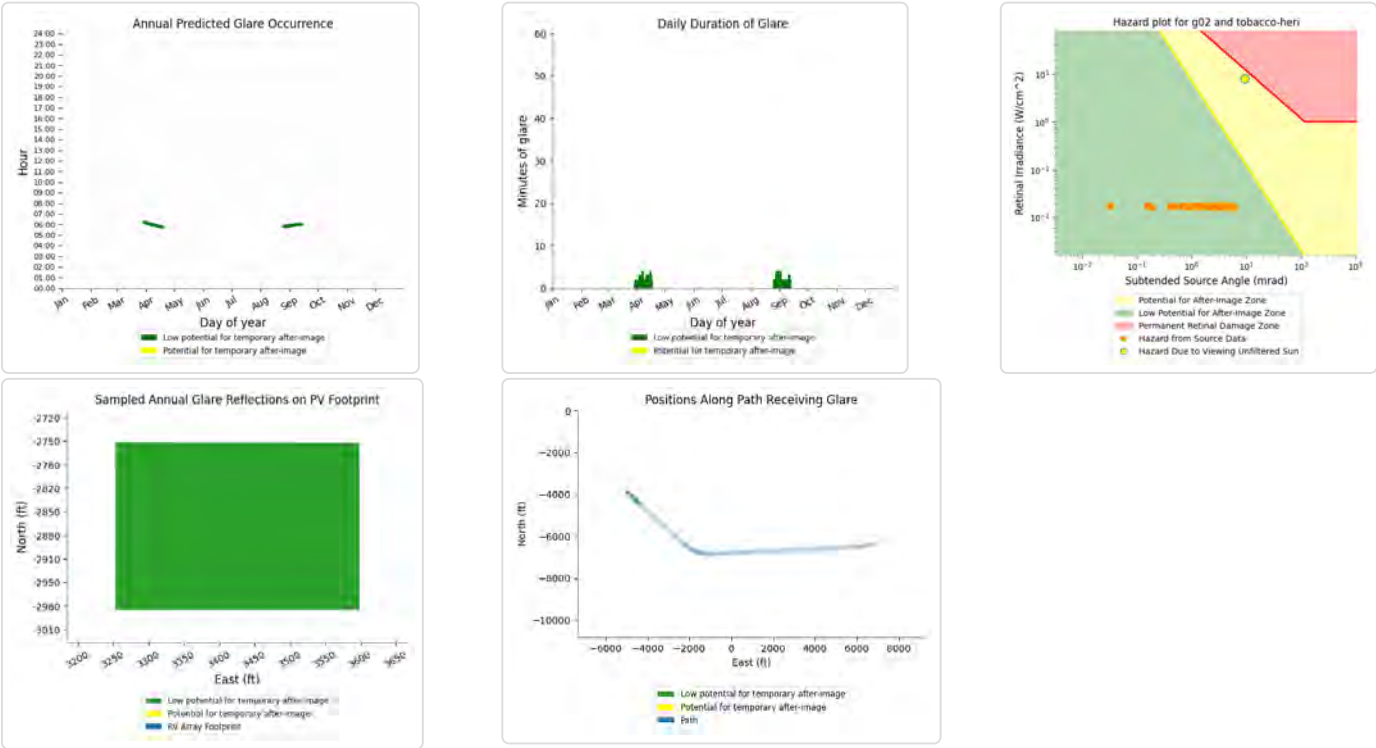
## G02: Thistle Knob Ln

No glare found



G02: Tobacco Heritage Trail

- PV array is expected to produce the following glare for this receptor:
- 117 minutes of "green" glare with low potential to cause temporary after-image.
  - 0 minutes of "yellow" glare with potential to cause temporary after-image.



G02: US Hwy 15

No glare found

G02: US Hwy 360

No glare found

G03 low potential for temporary after-image

Component	Green glare (min)	Yellow glare (min)
OP: OP 134	0	0
OP: OP 135	0	0
OP: OP 136	0	0
OP: OP 137	0	0
OP: OP 138	0	0
OP: OP 139	0	0
OP: OP 140	0	0
OP: OP 141	0	0
OP: OP 142	0	0
OP: OP 143	0	0
OP: OP 144	0	0
OP: OP 145	0	0
OP: OP 146	0	0
OP: OP 147	0	0
OP: OP 148	0	0

OP: OP 149	0	0
OP: OP 150	0	0
OP: OP 151	0	0
OP: OP 152	0	0
OP: OP 153	0	0
OP: OP 154	0	0
OP: OP 155	0	0
OP: OP 156	0	0
OP: OP 157	0	0
OP: OP 158	0	0
OP: OP 159	0	0
OP: OP 160	0	0
OP: OP 161	0	0
OP: OP 162	0	0
OP: OP 163	0	0
OP: OP 164	0	0
Route: Collins Dr	0	0
Route: Country Dr Seg 1	0	0
Route: Country Dr Seg 2	0	0
Route: County Line Rd	290	0
Route: Dempseys Rd	0	0
Route: Harley Ln	0	0
Route: Henderson Rd	349	0
Route: Hillside Dr	0	0
Route: Ole Briery Station Rd Seg 1	359	0
Route: Ole Briery Station Rd Seg 2	279	0
Route: Thistle Knob Ln	0	0
Route: Tobacco Heritage Trail	246	0
Route: US Hwy 15	0	0
Route: US Hwy 360	0	0

### G03: OP 134

*No glare found*

### G03: OP 135

*No glare found*

### G03: OP 136

*No glare found*

### G03: OP 137

*No glare found*

### G03: OP 138

*No glare found*

**G03: OP 139**

*No glare found*

**G03: OP 140**

*No glare found*

**G03: OP 141**

*No glare found*

**G03: OP 142**

*No glare found*

**G03: OP 143**

*No glare found*

**G03: OP 144**

*No glare found*

**G03: OP 145**

*No glare found*

**G03: OP 146**

*No glare found*

**G03: OP 147**

*No glare found*

**G03: OP 148**

*No glare found*

**G03: OP 149**

*No glare found*

**G03: OP 150**

*No glare found*

**G03: OP 151**

*No glare found*

**G03: OP 152**

*No glare found*

**G03: OP 153**

*No glare found*

**G03: OP 154**

*No glare found*

**G03: OP 155**

*No glare found*

**G03: OP 156**

*No glare found*

**G03: OP 157**

*No glare found*

**G03: OP 158**

*No glare found*

**G03: OP 159**

*No glare found*

**G03: OP 160**

*No glare found*

**G03: OP 161**

*No glare found*

**G03: OP 162**

*No glare found*

**G03: OP 163**

*No glare found*

**G03: OP 164**

*No glare found*

**G03: Collins Dr**

*No glare found*

**G03: Country Dr Seg 1**

*No glare found*

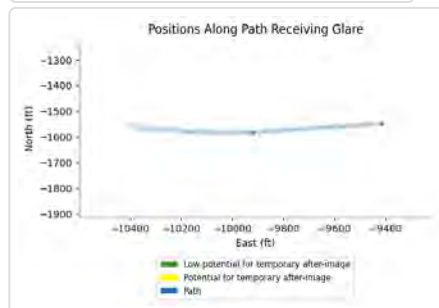
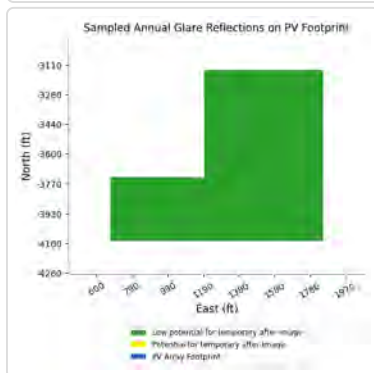
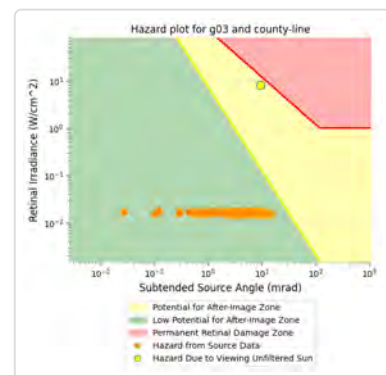
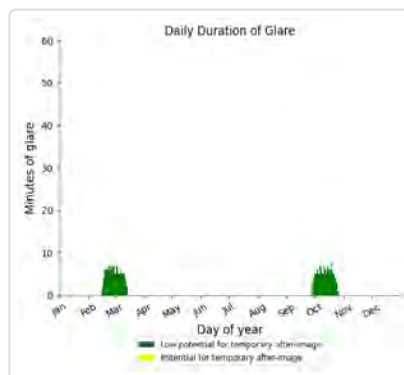
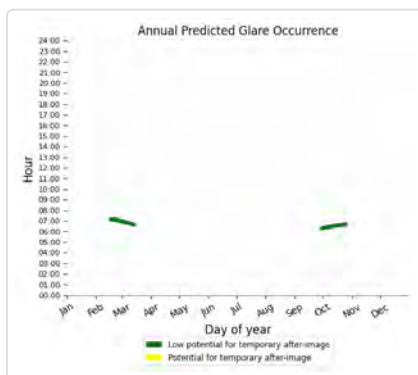
**G03: Country Dr Seg 2**

*No glare found*

## G03: County Line Rd

PV array is expected to produce the following glare for this receptor:

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



## G03: Dempseys Rd

No glare found

## G03: Harley Ln

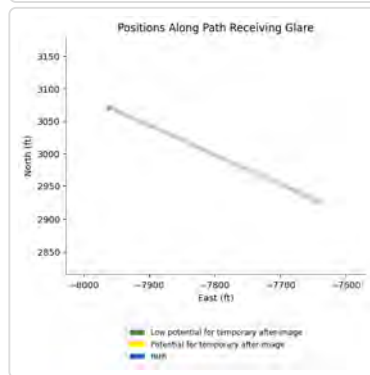
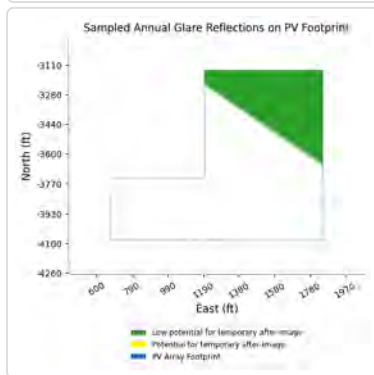
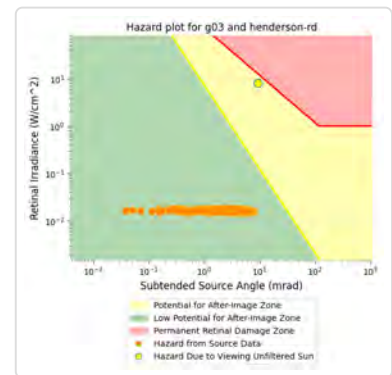
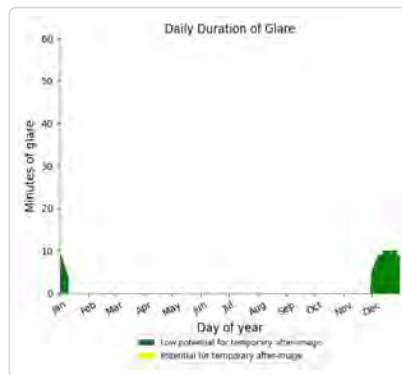
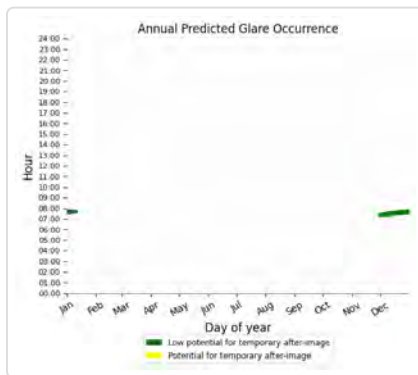
No glare found



## G03: Henderson Rd

PV array is expected to produce the following glare for this receptor:

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



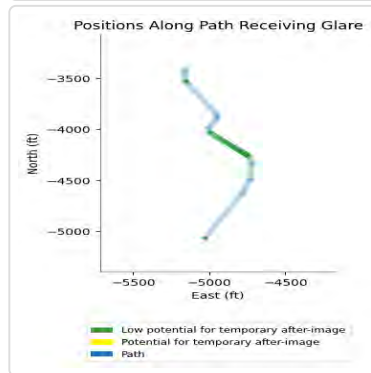
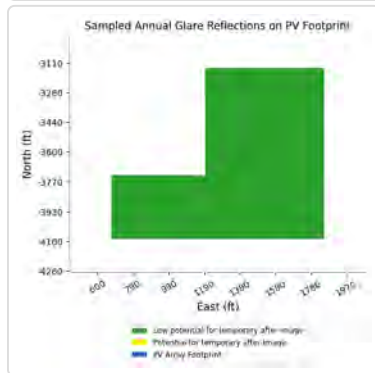
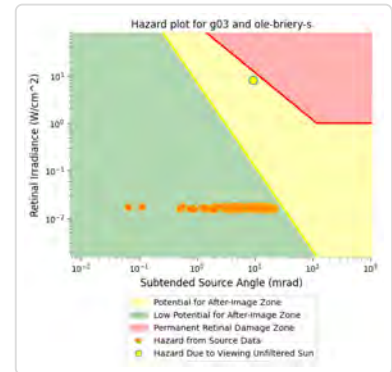
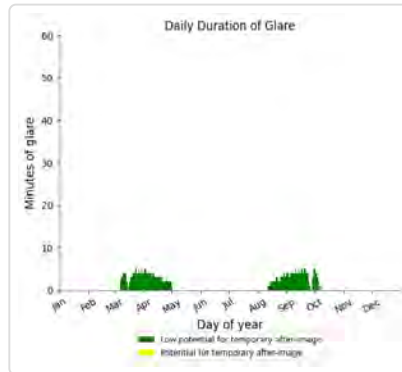
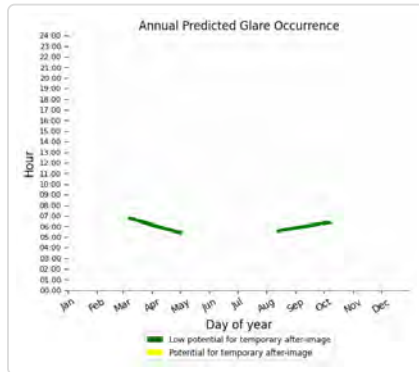
## G03: Hillside Dr

No glare found

### G03: Ole Briery Station Rd Seg 1

PV array is expected to produce the following glare for this receptor:

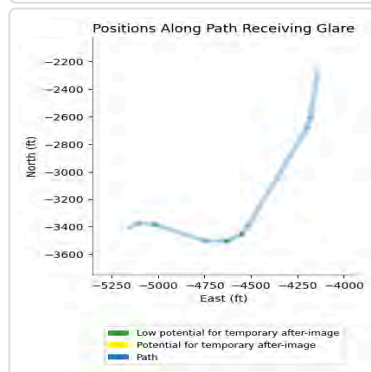
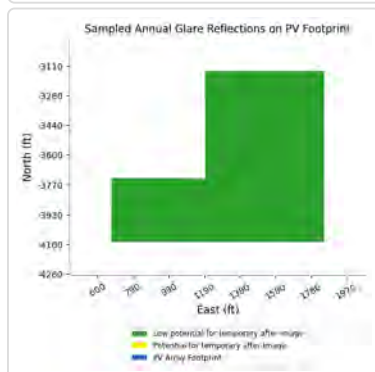
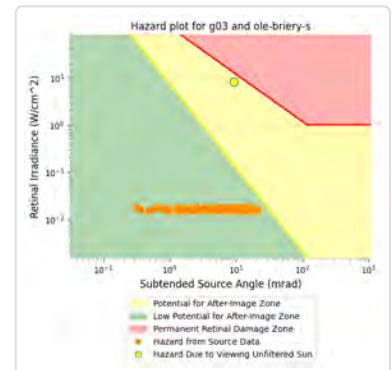
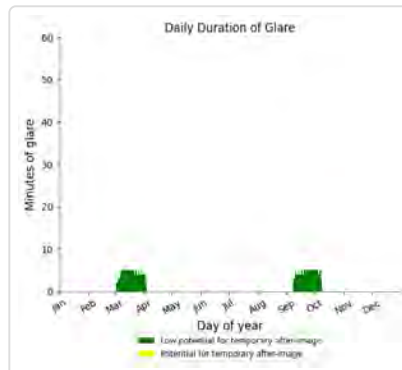
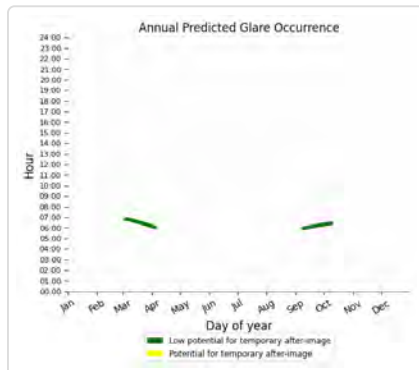
- 359 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



### G03: Ole Briery Station Rd Seg 2

PV array is expected to produce the following glare for this receptor:

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



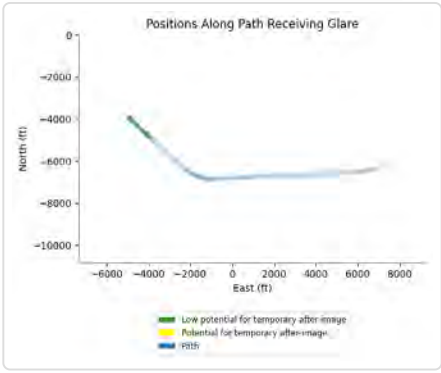
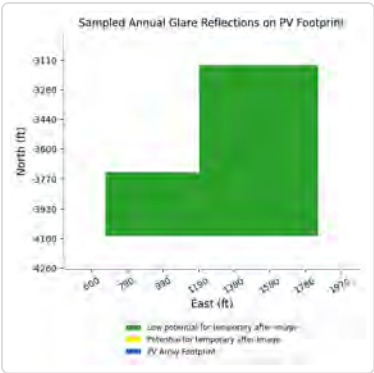
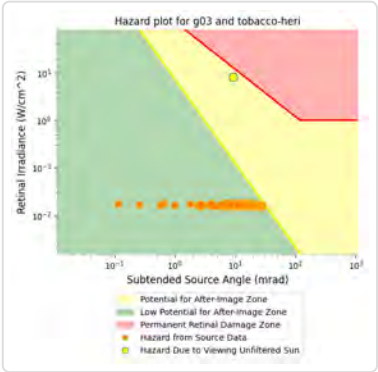
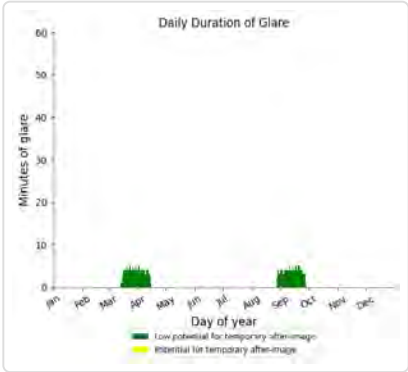
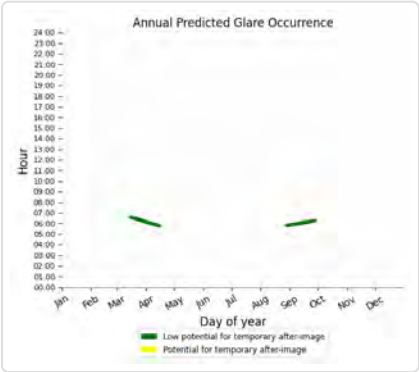
G03: Thistle Knob Ln

No glare found

G03: Tobacco Heritage Trail

PV array is expected to produce the following glare for this receptor:

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



G03: US Hwy 15

No glare found

G03: US Hwy 360

No glare found

G04 low potential for temporary after-image

Component	Green glare (min)	Yellow glare (min)
OP: OP 134	0	0
OP: OP 135	0	0
OP: OP 136	0	0
OP: OP 137	0	0
OP: OP 138	0	0
OP: OP 139	0	0
OP: OP 140	0	0
OP: OP 141	0	0
OP: OP 142	0	0
OP: OP 143	0	0
OP: OP 144	0	0
OP: OP 145	0	0

OP: OP 146	0	0
OP: OP 147	0	0
OP: OP 148	0	0
OP: OP 149	0	0
OP: OP 150	0	0
OP: OP 151	0	0
OP: OP 152	0	0
OP: OP 153	0	0
OP: OP 154	0	0
OP: OP 155	0	0
OP: OP 156	0	0
OP: OP 157	0	0
OP: OP 158	0	0
OP: OP 159	0	0
OP: OP 160	0	0
OP: OP 161	0	0
OP: OP 162	0	0
OP: OP 163	0	0
OP: OP 164	0	0
Route: Collins Dr	0	0
Route: Country Dr Seg 1	0	0
Route: Country Dr Seg 2	0	0
Route: County Line Rd	125	0
Route: Dempseys Rd	0	0
Route: Harley Ln	0	0
Route: Henderson Rd	375	0
Route: Hillside Dr	0	0
Route: Ole Briery Station Rd Seg 1	0	0
Route: Ole Briery Station Rd Seg 2	0	0
Route: Thistle Knob Ln	0	0
Route: Tobacco Heritage Trail	0	0
Route: US Hwy 15	0	0
Route: US Hwy 360	0	0

#### G04: OP 134

*No glare found*

#### G04: OP 135

*No glare found*

#### G04: OP 136

*No glare found*

#### G04: OP 137

*No glare found*

#### G04: OP 138

*No glare found*

**G04: OP 139**

*No glare found*

**G04: OP 140**

*No glare found*

**G04: OP 141**

*No glare found*

**G04: OP 142**

*No glare found*

**G04: OP 143**

*No glare found*

**G04: OP 144**

*No glare found*

**G04: OP 145**

*No glare found*

**G04: OP 146**

*No glare found*

**G04: OP 147**

*No glare found*

**G04: OP 148**

*No glare found*

**G04: OP 149**

*No glare found*

**G04: OP 150**

*No glare found*

**G04: OP 151**

*No glare found*

**G04: OP 152**

*No glare found*

**G04: OP 153**

*No glare found*



**G04: OP 154**

*No glare found*

**G04: OP 155**

*No glare found*

**G04: OP 156**

*No glare found*

**G04: OP 157**

*No glare found*

**G04: OP 158**

*No glare found*

**G04: OP 159**

*No glare found*

**G04: OP 160**

*No glare found*

**G04: OP 161**

*No glare found*

**G04: OP 162**

*No glare found*

**G04: OP 163**

*No glare found*

**G04: OP 164**

*No glare found*

**G04: Collins Dr**

*No glare found*

**G04: Country Dr Seg 1**

*No glare found*

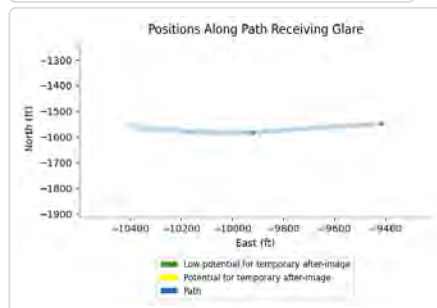
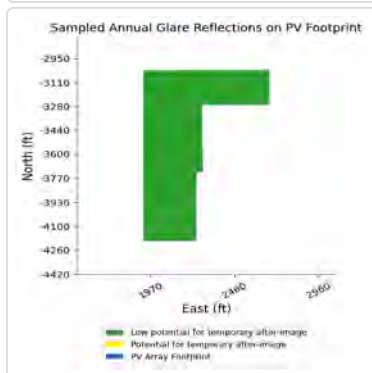
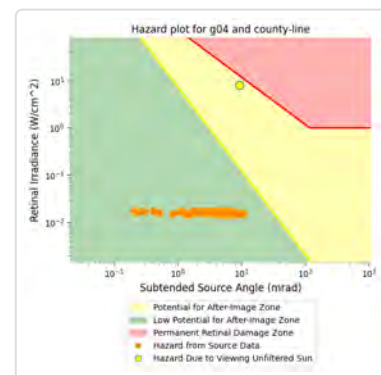
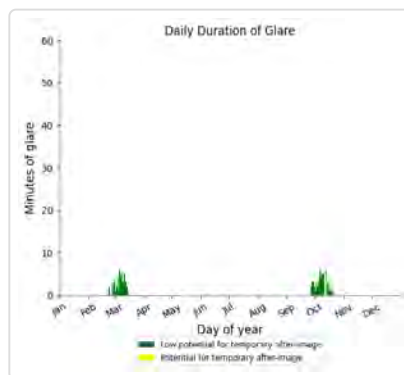
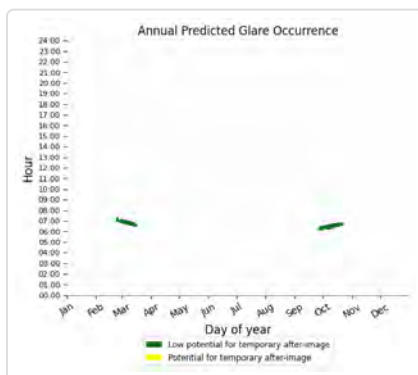
**G04: Country Dr Seg 2**

*No glare found*

## G04: County Line Rd

PV array is expected to produce the following glare for this receptor:

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



## G04: Dempseys Rd

No glare found

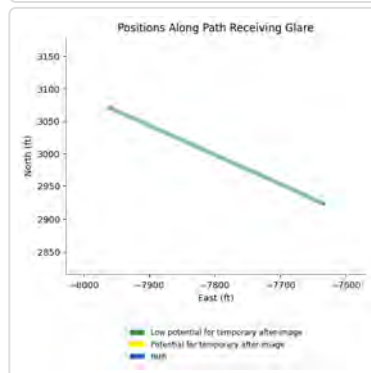
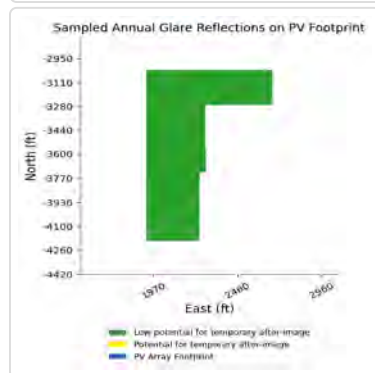
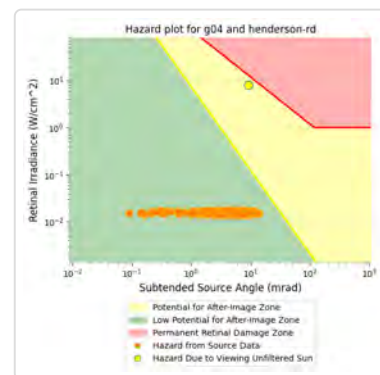
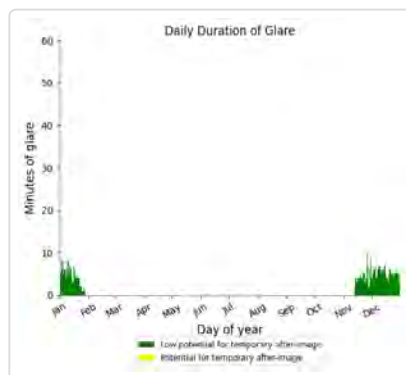
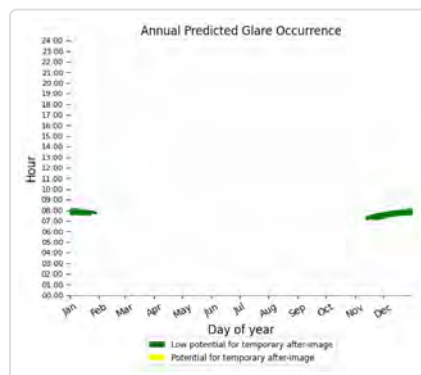
## G04: Harley Ln

No glare found

## G04: Henderson Rd

PV array is expected to produce the following glare for this receptor:

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



## G04: Hillside Dr

No glare found

## G04: Ole Briery Station Rd Seg 1

No glare found

## G04: Ole Briery Station Rd Seg 2

No glare found

## G04: Thistle Knob Ln

No glare found

## G04: Tobacco Heritage Trail

No glare found

## G04: US Hwy 15

No glare found

## G04: US Hwy 360

No glare found

## G05 low potential for temporary after-image

Component	Green glare (min)	Yellow glare (min)
OP: OP 134	0	0
OP: OP 135	0	0
OP: OP 136	0	0
OP: OP 137	0	0
OP: OP 138	0	0
OP: OP 139	0	0
OP: OP 140	0	0
OP: OP 141	0	0
OP: OP 142	0	0
OP: OP 143	0	0
OP: OP 144	0	0
OP: OP 145	0	0
OP: OP 146	0	0
OP: OP 147	0	0
OP: OP 148	0	0
OP: OP 149	0	0
OP: OP 150	0	0
OP: OP 151	0	0
OP: OP 152	0	0
OP: OP 153	0	0
OP: OP 154	0	0
OP: OP 155	0	0
OP: OP 156	0	0
OP: OP 157	0	0
OP: OP 158	0	0
OP: OP 159	0	0
OP: OP 160	0	0
OP: OP 161	0	0
OP: OP 162	0	0
OP: OP 163	0	0
OP: OP 164	0	0
Route: Collins Dr	0	0
Route: Country Dr Seg 1	0	0
Route: Country Dr Seg 2	0	0
Route: County Line Rd	0	0
Route: Dempseys Rd	0	0
Route: Harley Ln	0	0
Route: Henderson Rd	323	0
Route: Hillside Dr	0	0
Route: Ole Briery Station Rd Seg 1	0	0
Route: Ole Briery Station Rd Seg 2	0	0
Route: Thistle Knob Ln	0	0
Route: Tobacco Heritage Trail	0	0
Route: US Hwy 15	0	0
Route: US Hwy 360	0	0

**G05: OP 134**

*No glare found*

**G05: OP 135**

*No glare found*

**G05: OP 136**

*No glare found*

**G05: OP 137**

*No glare found*

**G05: OP 138**

*No glare found*

**G05: OP 139**

*No glare found*

**G05: OP 140**

*No glare found*

**G05: OP 141**

*No glare found*

**G05: OP 142**

*No glare found*

**G05: OP 143**

*No glare found*

**G05: OP 144**

*No glare found*

**G05: OP 145**

*No glare found*

**G05: OP 146**

*No glare found*

**G05: OP 147**

*No glare found*

**G05: OP 148**

*No glare found*



**G05: OP 149**

*No glare found*

**G05: OP 150**

*No glare found*

**G05: OP 151**

*No glare found*

**G05: OP 152**

*No glare found*

**G05: OP 153**

*No glare found*

**G05: OP 154**

*No glare found*

**G05: OP 155**

*No glare found*

**G05: OP 156**

*No glare found*

**G05: OP 157**

*No glare found*

**G05: OP 158**

*No glare found*

**G05: OP 159**

*No glare found*

**G05: OP 160**

*No glare found*

**G05: OP 161**

*No glare found*

**G05: OP 162**

*No glare found*

**G05: OP 163**

*No glare found*

## G05: OP 164

No glare found

## G05: Collins Dr

No glare found

## G05: Country Dr Seg 1

No glare found

## G05: Country Dr Seg 2

No glare found

## G05: County Line Rd

No glare found

## G05: Dempseys Rd

No glare found

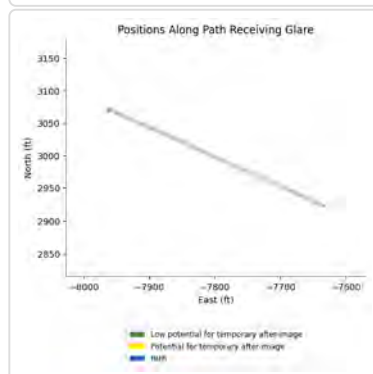
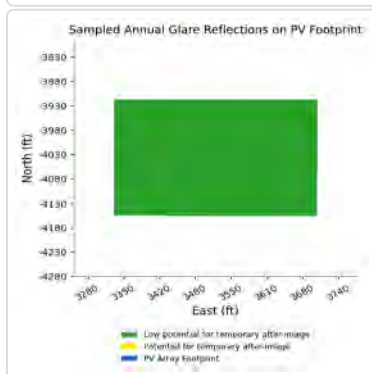
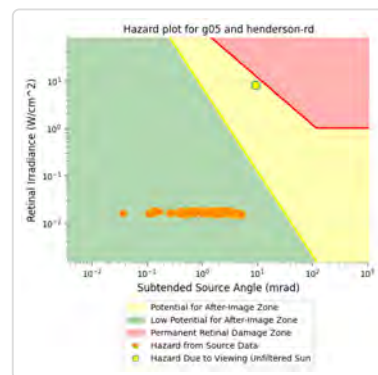
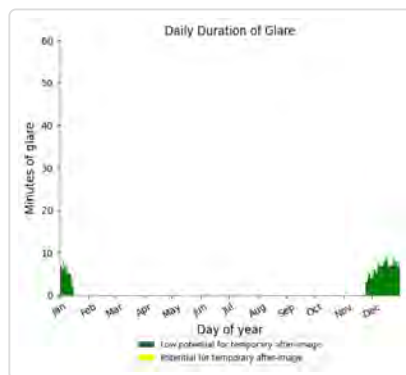
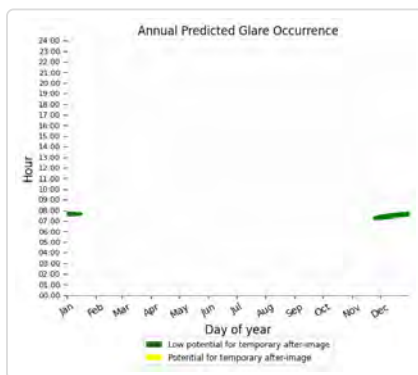
## G05: Harley Ln

No glare found

## G05: Henderson Rd

PV array is expected to produce the following glare for this receptor:

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



**G05: Hillside Dr**

*No glare found*

**G05: Ole Briery Station Rd Seg 1**

*No glare found*

**G05: Ole Briery Station Rd Seg 2**

*No glare found*

**G05: Thistle Knob Ln**

*No glare found*

**G05: Tobacco Heritage Trail**

*No glare found*

**G05: US Hwy 15**

*No glare found*

**G05: US Hwy 360**

*No glare found*

**G06** no glare found

Component	Green glare (min)	Yellow glare (min)
OP: OP 134	0	0
OP: OP 135	0	0
OP: OP 136	0	0
OP: OP 137	0	0
OP: OP 138	0	0
OP: OP 139	0	0
OP: OP 140	0	0
OP: OP 141	0	0
OP: OP 142	0	0
OP: OP 143	0	0
OP: OP 144	0	0
OP: OP 145	0	0
OP: OP 146	0	0
OP: OP 147	0	0
OP: OP 148	0	0
OP: OP 149	0	0
OP: OP 150	0	0
OP: OP 151	0	0
OP: OP 152	0	0
OP: OP 153	0	0
OP: OP 154	0	0
OP: OP 155	0	0
OP: OP 156	0	0
OP: OP 157	0	0
OP: OP 158	0	0
OP: OP 159	0	0
OP: OP 160	0	0
OP: OP 161	0	0
OP: OP 162	0	0
OP: OP 163	0	0
OP: OP 164	0	0
Route: Collins Dr	0	0
Route: Country Dr Seg 1	0	0
Route: Country Dr Seg 2	0	0
Route: County Line Rd	0	0
Route: Dempseys Rd	0	0
Route: Harley Ln	0	0
Route: Henderson Rd	0	0
Route: Hillside Dr	0	0
Route: Ole Briery Station Rd Seg 1	0	0
Route: Ole Briery Station Rd Seg 2	0	0
Route: Thistle Knob Ln	0	0
Route: Tobacco Heritage Trail	0	0
Route: US Hwy 15	0	0
Route: US Hwy 360	0	0

No glare found

**G07** potential temporary after-image

<b>Component</b>	<b>Green glare (min)</b>	<b>Yellow glare (min)</b>
OP: OP 134	0	0
OP: OP 135	0	0
OP: OP 136	0	0
OP: OP 137	0	0
OP: OP 138	0	0
OP: OP 139	0	0
OP: OP 140	0	0
OP: OP 141	0	0
OP: OP 142	0	0
OP: OP 143	0	0
OP: OP 144	0	0
OP: OP 145	0	0
OP: OP 146	0	0
OP: OP 147	0	0
OP: OP 148	0	0
OP: OP 149	0	0
OP: OP 150	0	0
OP: OP 151	0	0
OP: OP 152	0	0
OP: OP 153	0	0
OP: OP 154	0	0
OP: OP 155	0	0
OP: OP 156	0	0
OP: OP 157	0	0
OP: OP 158	0	0
OP: OP 159	0	0
OP: OP 160	0	0
OP: OP 161	0	0
OP: OP 162	0	0
OP: OP 163	0	0
OP: OP 164	0	0
Route: Collins Dr	0	0
Route: Country Dr Seg 1	0	0
Route: Country Dr Seg 2	0	0
Route: County Line Rd	209	0
Route: Dempseys Rd	0	0
Route: Harley Ln	0	0
Route: Henderson Rd	0	0
Route: Hillside Dr	0	0
Route: Ole Briery Station Rd Seg 1	379	0
Route: Ole Briery Station Rd Seg 2	247	0
Route: Thistle Knob Ln	0	0
Route: Tobacco Heritage Trail	676	6
Route: US Hwy 15	0	0
Route: US Hwy 360	0	0



**G07: OP 134**

*No glare found*

**G07: OP 135**

*No glare found*

**G07: OP 136**

*No glare found*

**G07: OP 137**

*No glare found*

**G07: OP 138**

*No glare found*

**G07: OP 139**

*No glare found*

**G07: OP 140**

*No glare found*

**G07: OP 141**

*No glare found*

**G07: OP 142**

*No glare found*

**G07: OP 143**

*No glare found*

**G07: OP 144**

*No glare found*

**G07: OP 145**

*No glare found*

**G07: OP 146**

*No glare found*

**G07: OP 147**

*No glare found*

**G07: OP 148**

*No glare found*

**G07: OP 149**

*No glare found*

**G07: OP 150**

*No glare found*

**G07: OP 151**

*No glare found*

**G07: OP 152**

*No glare found*

**G07: OP 153**

*No glare found*

**G07: OP 154**

*No glare found*

**G07: OP 155**

*No glare found*

**G07: OP 156**

*No glare found*

**G07: OP 157**

*No glare found*

**G07: OP 158**

*No glare found*

**G07: OP 159**

*No glare found*

**G07: OP 160**

*No glare found*

**G07: OP 161**

*No glare found*

**G07: OP 162**

*No glare found*

**G07: OP 163**

*No glare found*

## G07: OP 164

No glare found

## G07: Collins Dr

No glare found

## G07: Country Dr Seg 1

No glare found

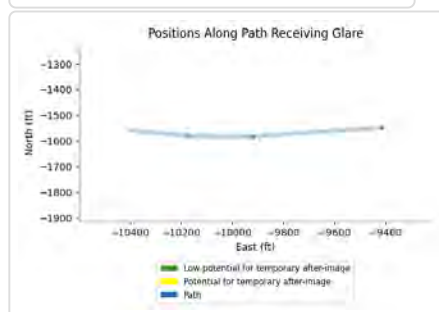
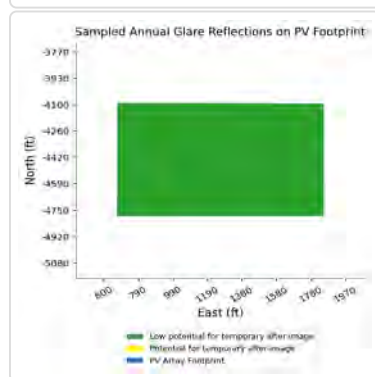
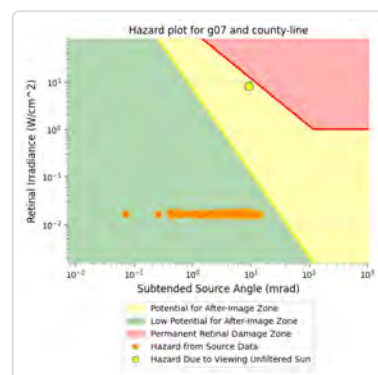
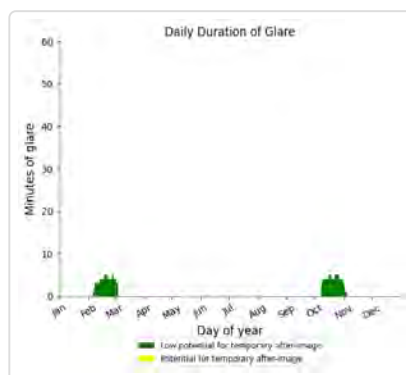
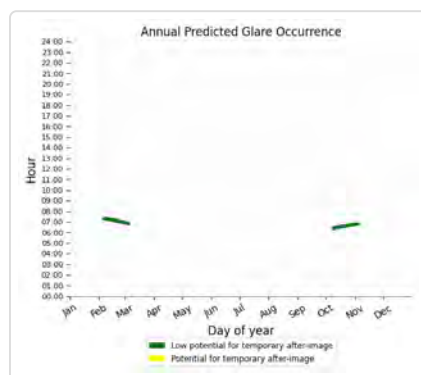
## G07: Country Dr Seg 2

No glare found

## G07: County Line Rd

PV array is expected to produce the following glare for this receptor:

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



## G07: Dempseys Rd

No glare found

## G07: Harley Ln

No glare found

## G07: Henderson Rd

No glare found

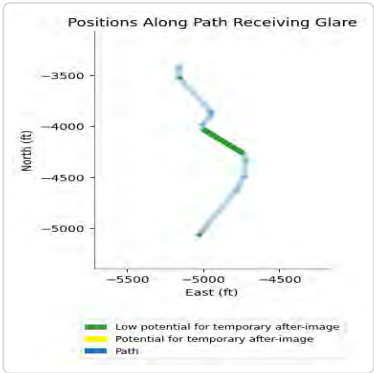
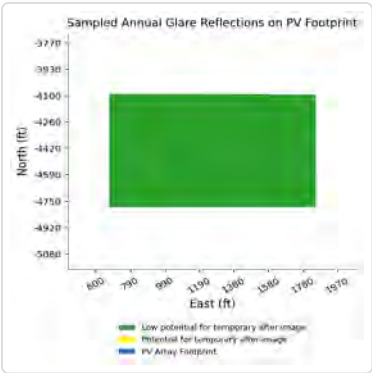
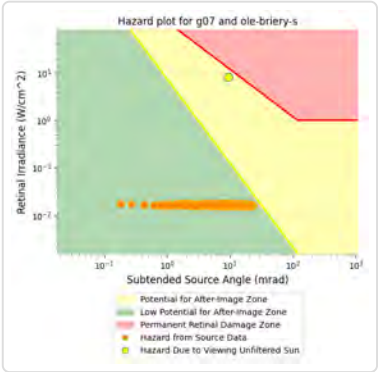
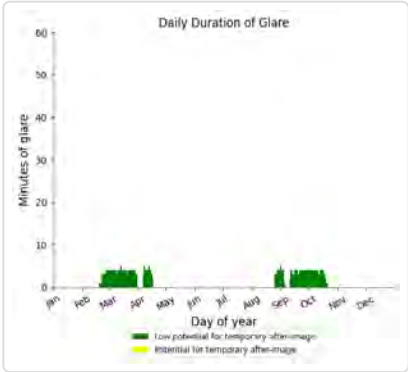
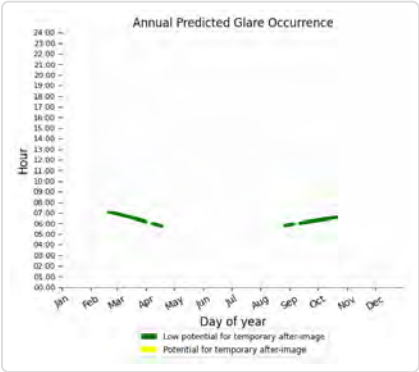
G07: Hillside Dr

No glare found

G07: Ole Briery Station Rd Seg 1

PV array is expected to produce the following glare for this receptor:

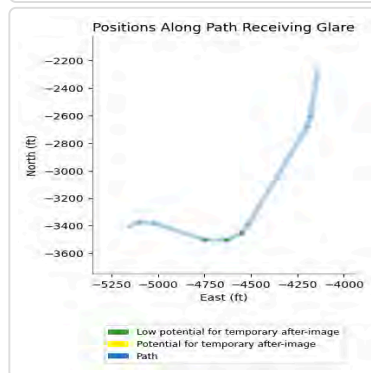
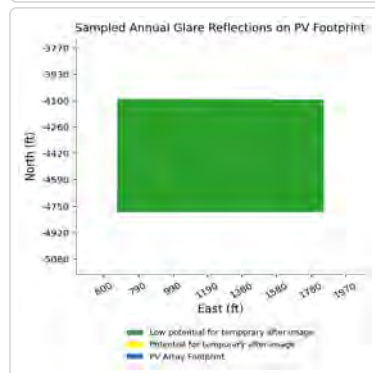
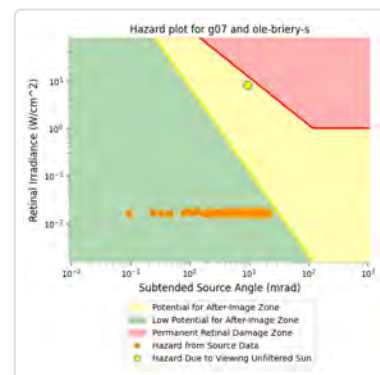
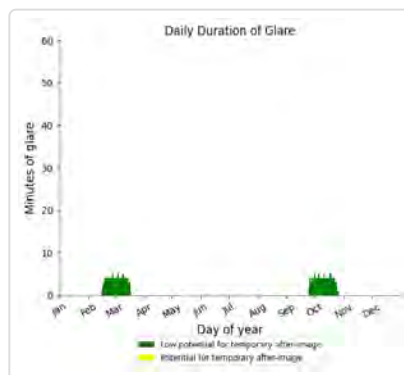
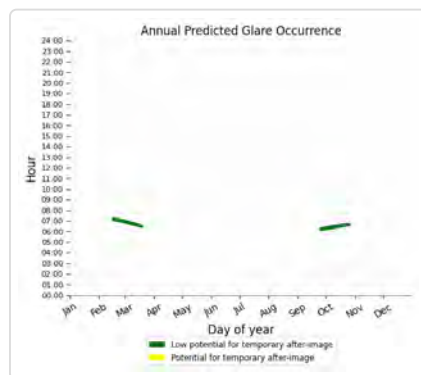
- 379 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## G07: Ole Briery Station Rd Seg 2

PV array is expected to produce the following glare for this receptor:

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



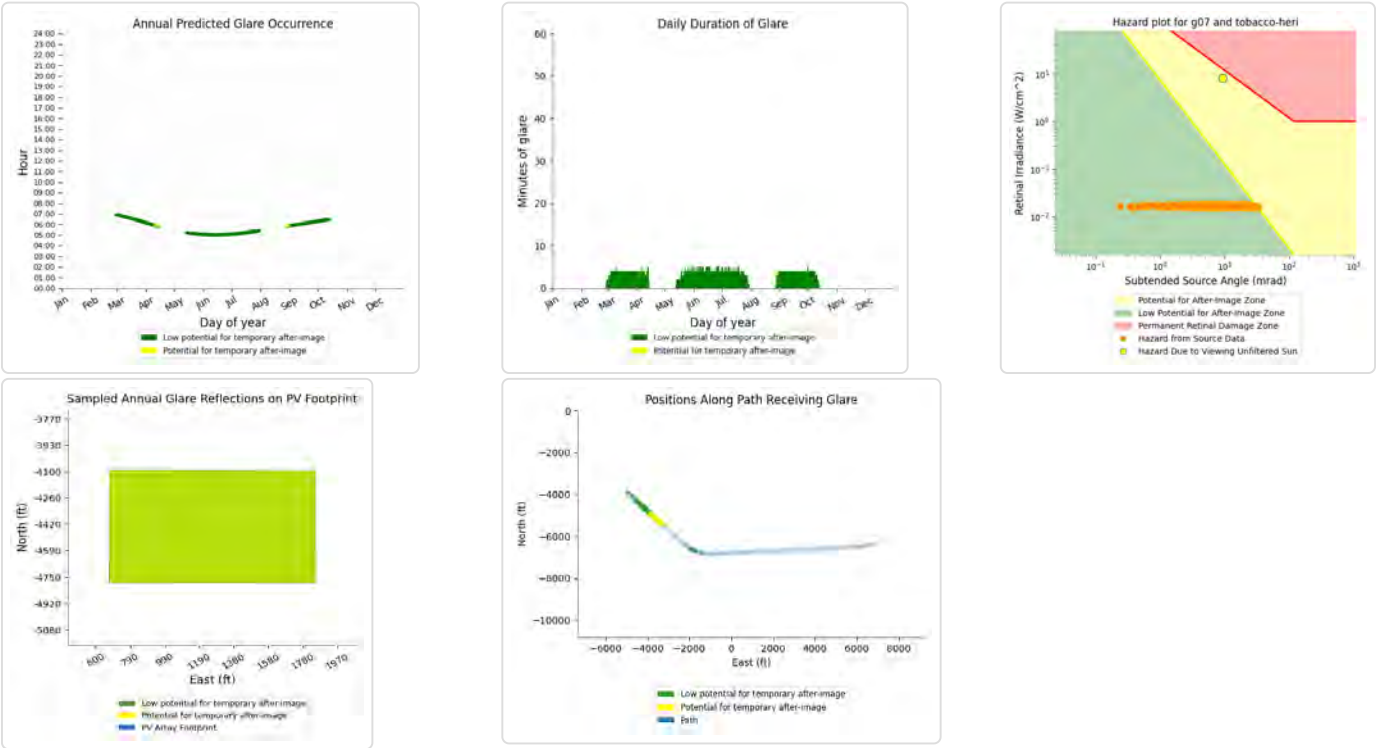
## G07: Thistle Knob Ln

No glare found



G07: Tobacco Heritage Trail

- PV array is expected to produce the following glare for this receptor:
- 676 minutes of "green" glare with low potential to cause temporary after-image.
  - 6 minutes of "yellow" glare with potential to cause temporary after-image.



G07: US Hwy 15

No glare found

G07: US Hwy 360

No glare found

G08 low potential for temporary after-image

Component	Green glare (min)	Yellow glare (min)
OP: OP 134	0	0
OP: OP 135	0	0
OP: OP 136	0	0
OP: OP 137	0	0
OP: OP 138	0	0
OP: OP 139	0	0
OP: OP 140	0	0
OP: OP 141	0	0
OP: OP 142	0	0
OP: OP 143	0	0
OP: OP 144	0	0
OP: OP 145	0	0
OP: OP 146	0	0
OP: OP 147	0	0
OP: OP 148	277	0

OP: OP 149	272	0
OP: OP 150	0	0
OP: OP 151	0	0
OP: OP 152	0	0
OP: OP 153	0	0
OP: OP 154	275	0
OP: OP 155	271	0
OP: OP 156	283	0
OP: OP 157	284	0
OP: OP 158	280	0
OP: OP 159	0	0
OP: OP 160	0	0
OP: OP 161	0	0
OP: OP 162	0	0
OP: OP 163	0	0
OP: OP 164	0	0
Route: Collins Dr	0	0
Route: Country Dr Seg 1	352	0
Route: Country Dr Seg 2	590	0
Route: County Line Rd	0	0
Route: Dempseys Rd	0	0
Route: Harley Ln	0	0
Route: Henderson Rd	0	0
Route: Hillside Dr	557	0
Route: Ole Briery Station Rd Seg 1	0	0
Route: Ole Briery Station Rd Seg 2	0	0
Route: Thistle Knob Ln	0	0
Route: Tobacco Heritage Trail	646	0
Route: US Hwy 15	0	0
Route: US Hwy 360	134	0

#### **G08: OP 134**

*No glare found*

#### **G08: OP 135**

*No glare found*

#### **G08: OP 136**

*No glare found*

#### **G08: OP 137**

*No glare found*

#### **G08: OP 138**

*No glare found*

**G08: OP 139**

*No glare found*

**G08: OP 140**

*No glare found*

**G08: OP 141**

*No glare found*

**G08: OP 142**

*No glare found*

**G08: OP 143**

*No glare found*

**G08: OP 144**

*No glare found*

**G08: OP 145**

*No glare found*

**G08: OP 146**

*No glare found*

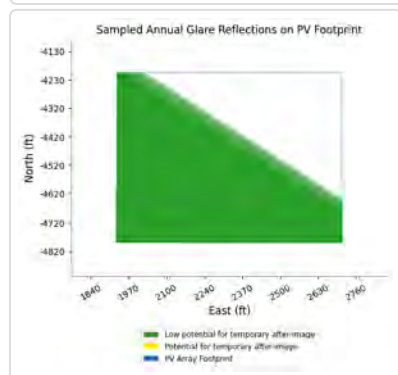
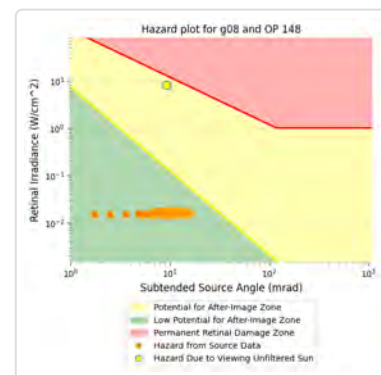
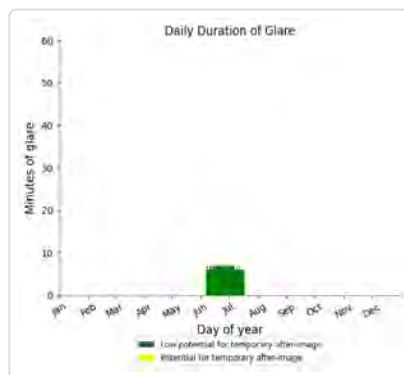
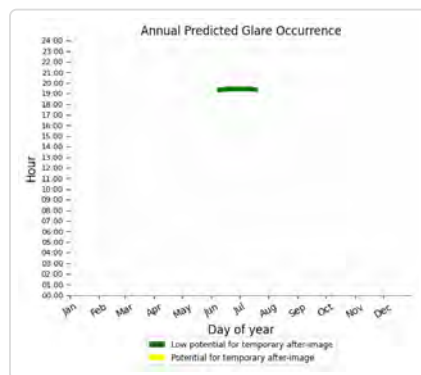
**G08: OP 147**

*No glare found*

## G08: OP 148

PV array is expected to produce the following glare for this receptor:

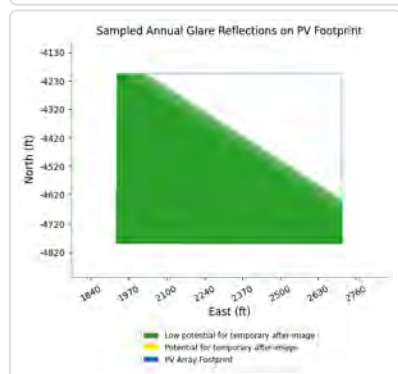
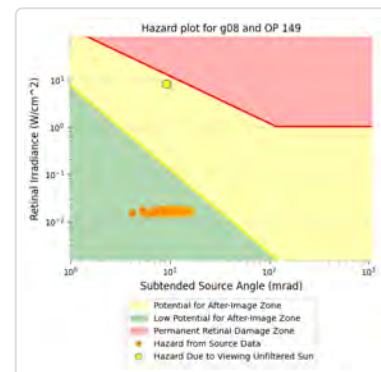
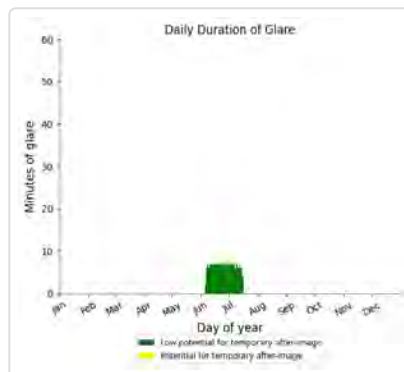
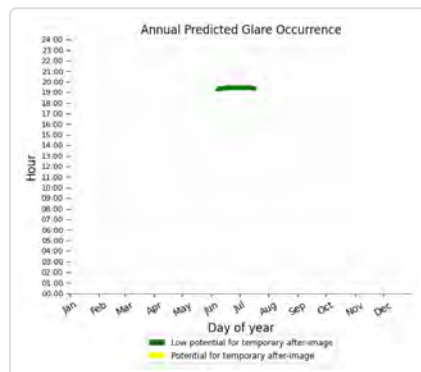
- 277 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## G08: OP 149

PV array is expected to produce the following glare for this receptor:

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



G08: OP 150

No glare found

G08: OP 151

No glare found

G08: OP 152

No glare found

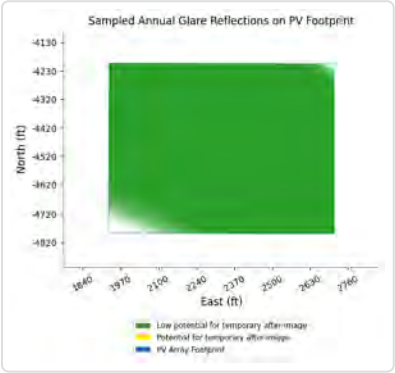
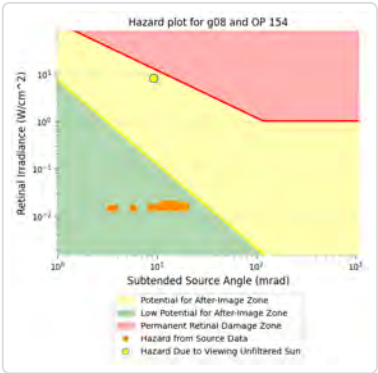
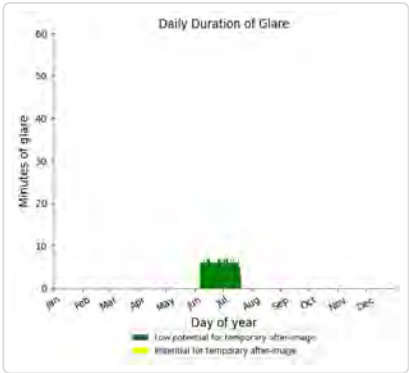
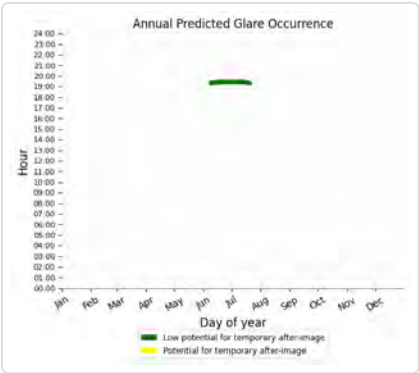
G08: OP 153

No glare found

G08: OP 154

PV array is expected to produce the following glare for this receptor:

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

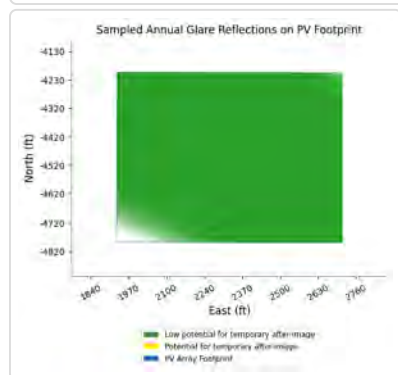
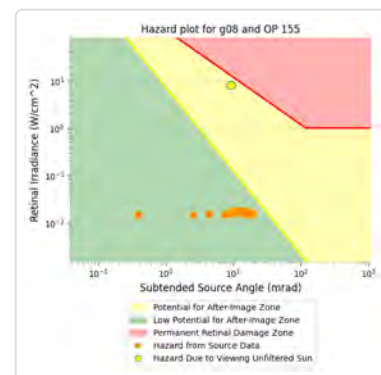
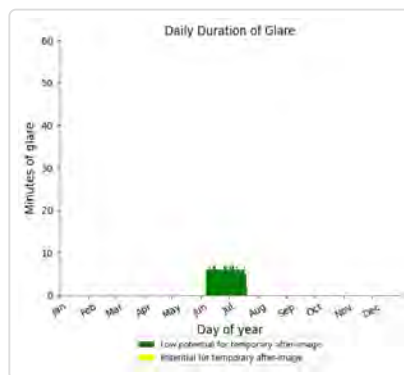
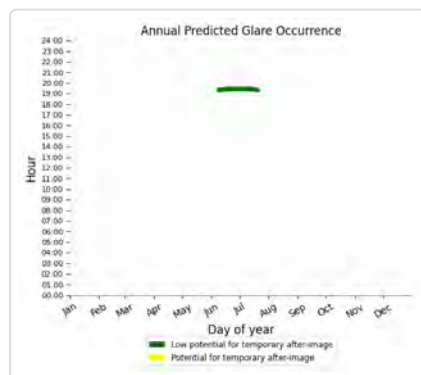




## G08: OP 155

PV array is expected to produce the following glare for this receptor:

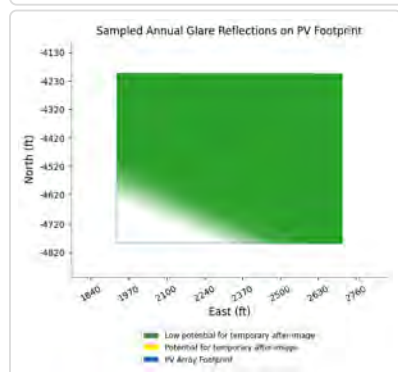
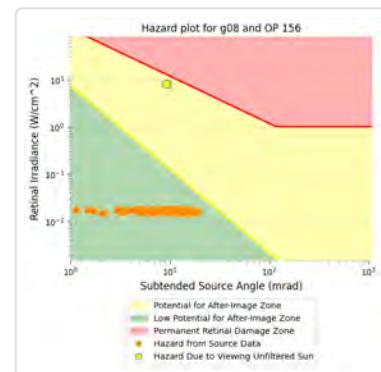
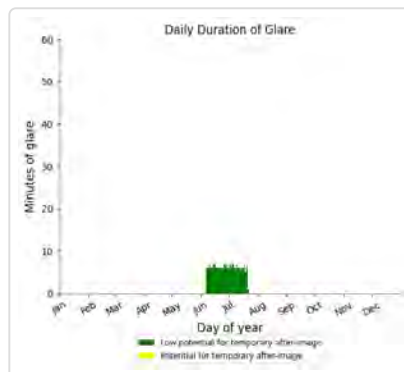
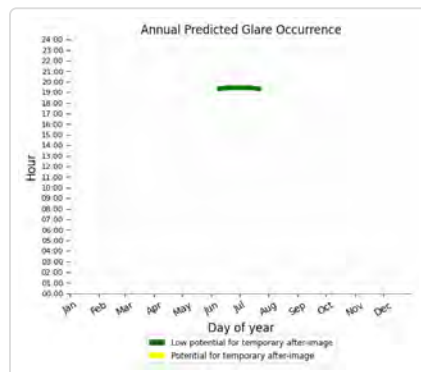
- 271 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## G08: OP 156

PV array is expected to produce the following glare for this receptor:

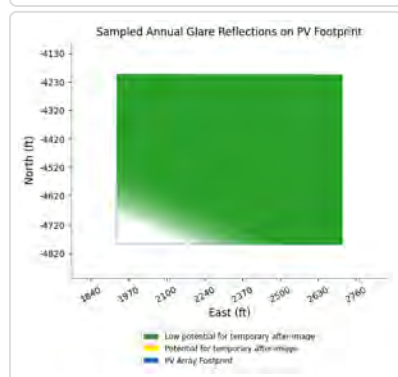
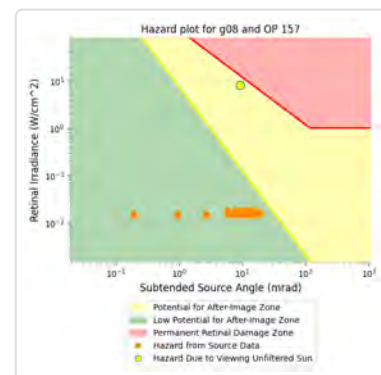
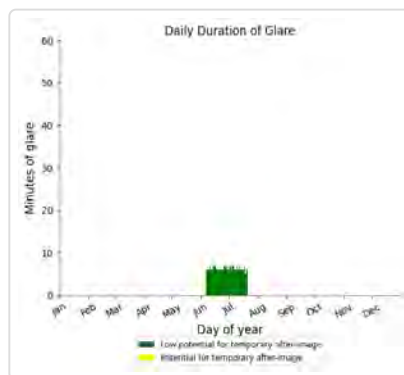
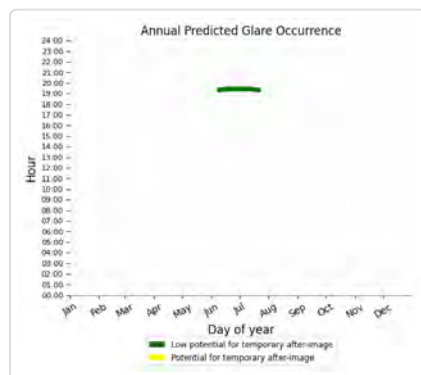
- 283 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## G08: OP 157

PV array is expected to produce the following glare for this receptor:

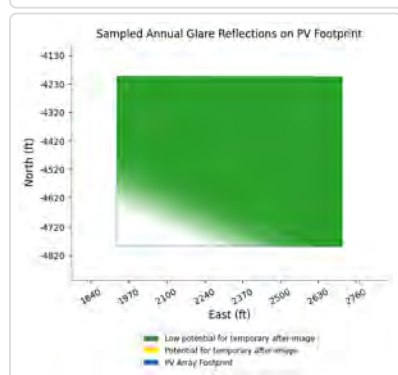
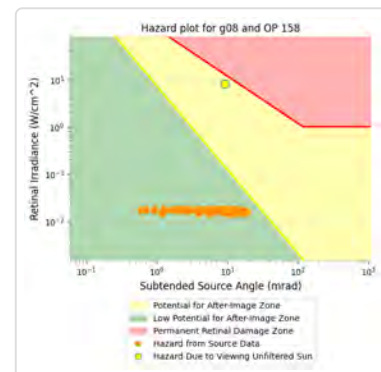
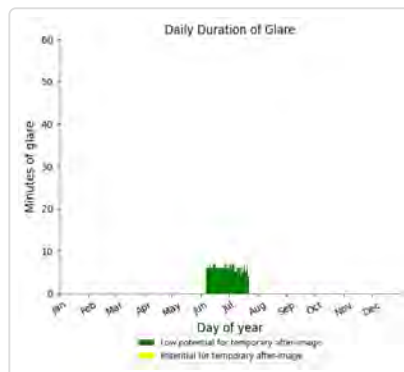
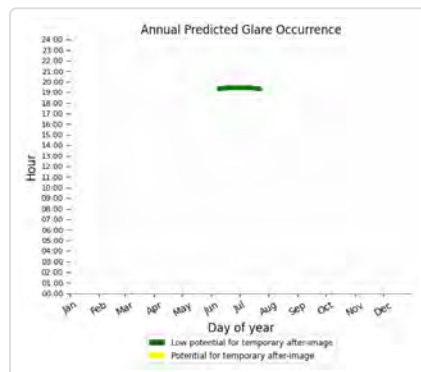
- 284 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## G08: OP 158

PV array is expected to produce the following glare for this receptor:

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



## G08: OP 159

No glare found

## G08: OP 160

No glare found

## G08: OP 161

No glare found

## G08: OP 162

No glare found

## G08: OP 163

No glare found

## G08: OP 164

No glare found

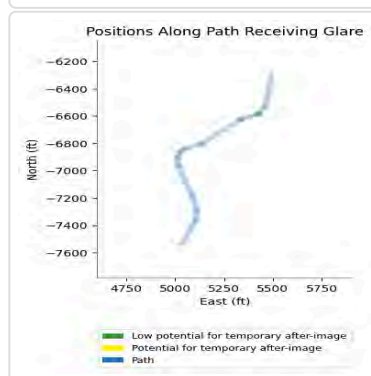
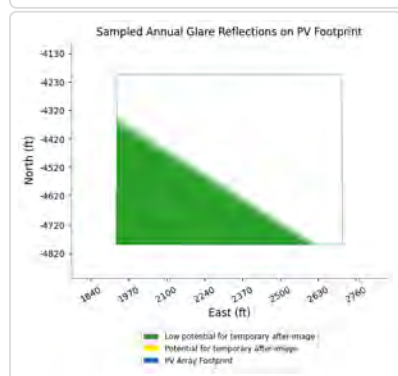
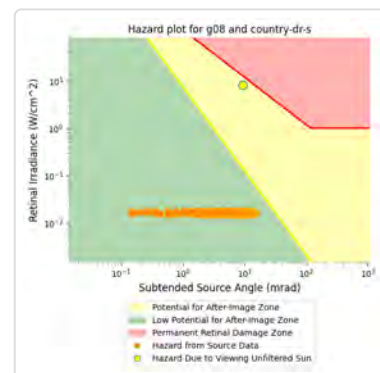
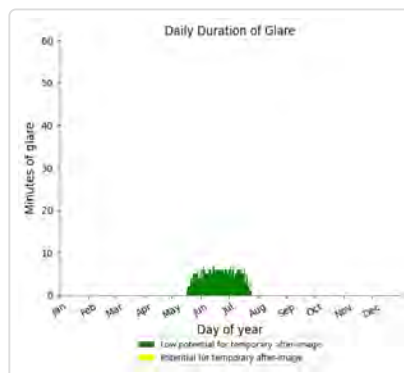
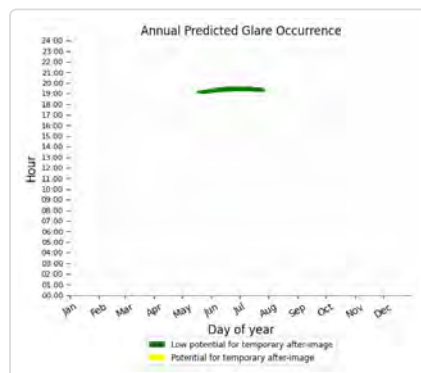
## G08: Collins Dr

No glare found

## G08: Country Dr Seg 1

PV array is expected to produce the following glare for this receptor:

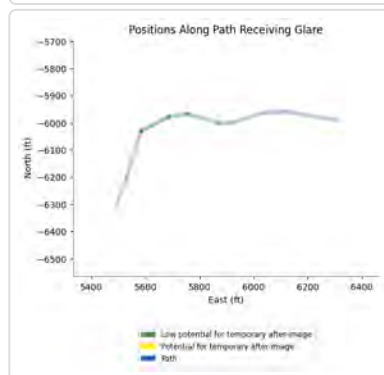
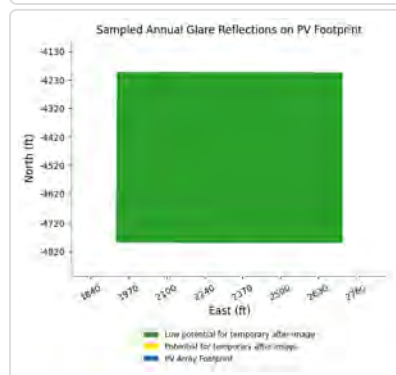
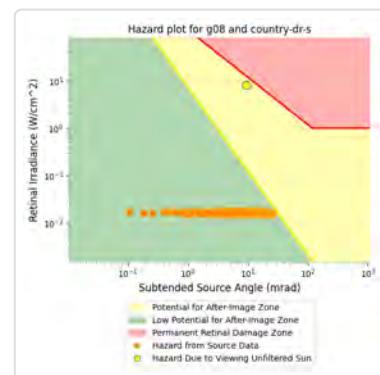
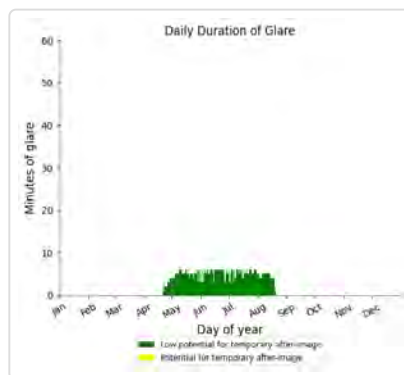
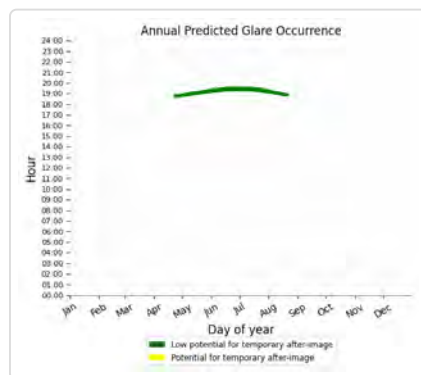
- 352 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## G08: Country Dr Seg 2

PV array is expected to produce the following glare for this receptor:

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



## G08: County Line Rd

No glare found

## G08: Dempseys Rd

No glare found

## G08: Harley Ln

No glare found

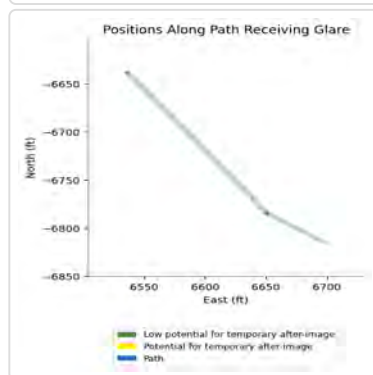
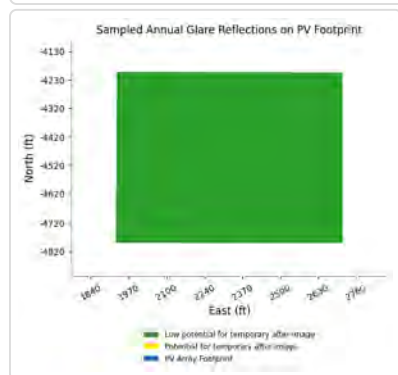
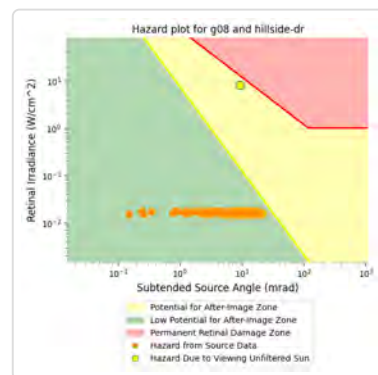
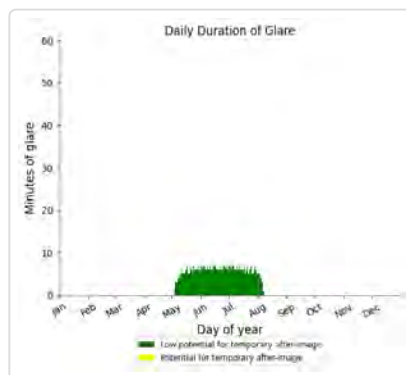
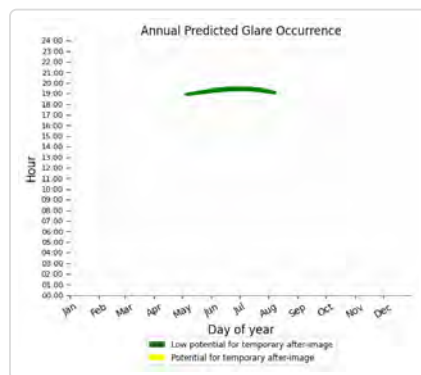
## G08: Henderson Rd

No glare found

## G08: Hillside Dr

PV array is expected to produce the following glare for this receptor:

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



## G08: Ole Briery Station Rd Seg 1

No glare found

## G08: Ole Briery Station Rd Seg 2

No glare found

## G08: Thistle Knob Ln

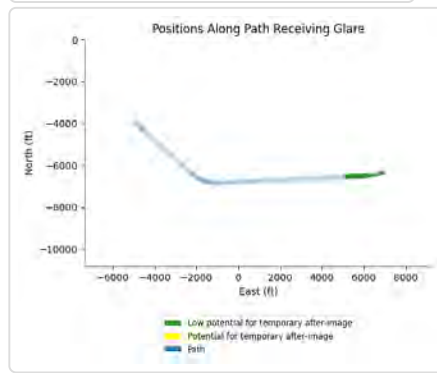
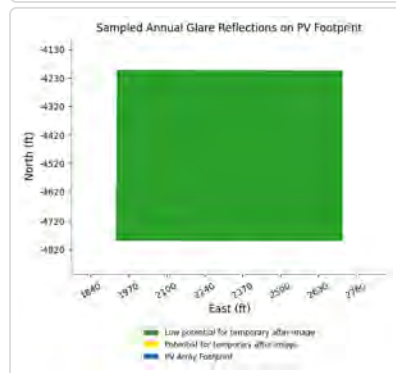
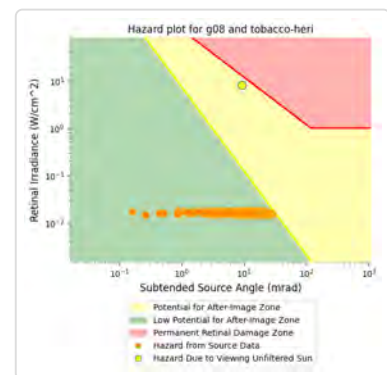
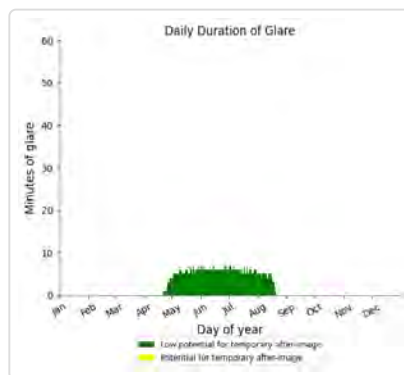
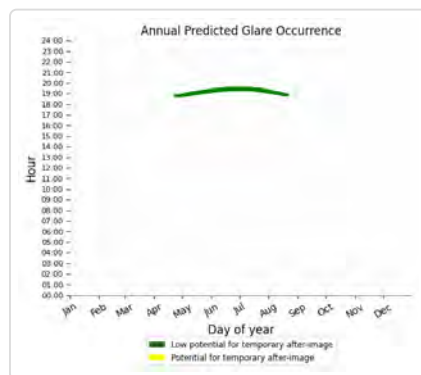
No glare found



## G08: Tobacco Heritage Trail

PV array is expected to produce the following glare for this receptor:

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

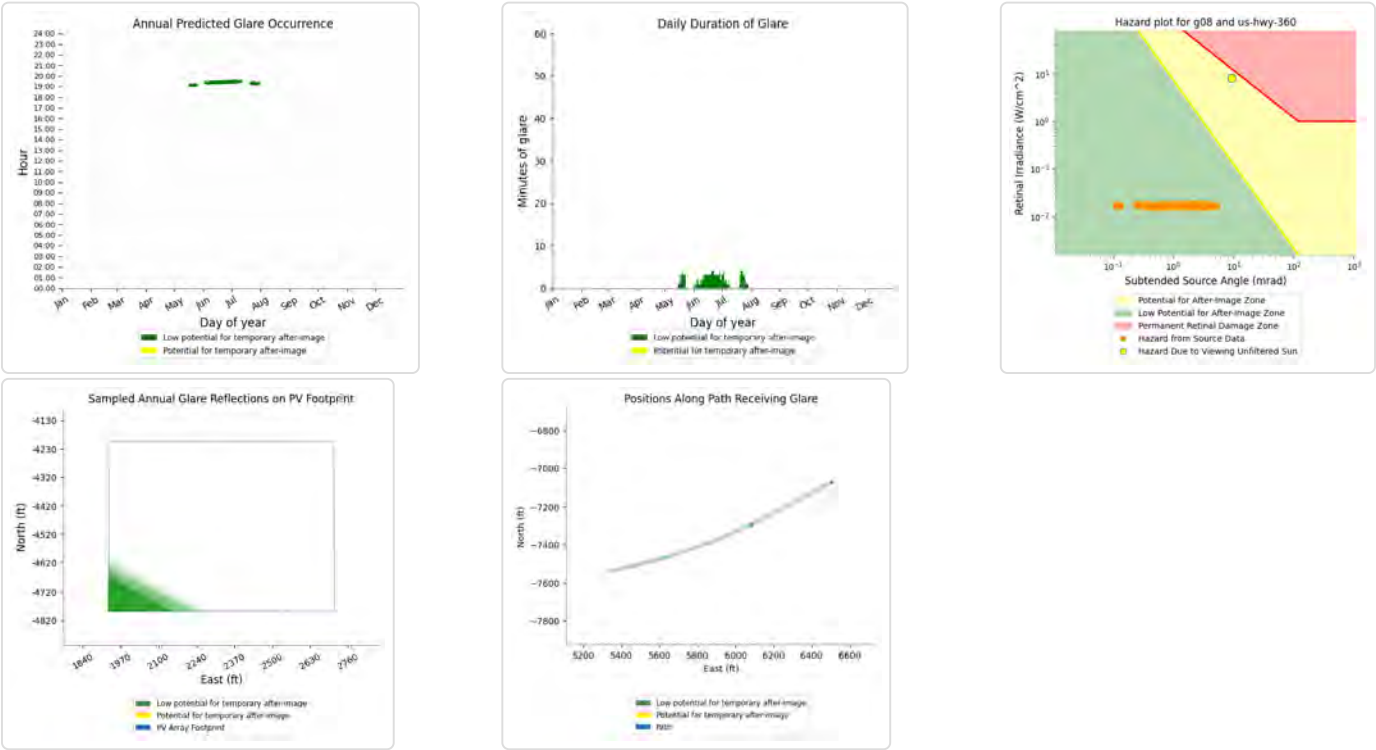


## G08: US Hwy 15

No glare found

G08: US Hwy 360

- PV array is expected to produce the following glare for this receptor:
- 134 minutes of "green" glare with low potential to cause temporary after-image.
  - 0 minutes of "yellow" glare with potential to cause temporary after-image.



G09 low potential for temporary after-image

Component	Green glare (min)	Yellow glare (min)
OP: OP 134	0	0
OP: OP 135	0	0
OP: OP 136	0	0
OP: OP 137	0	0
OP: OP 138	0	0
OP: OP 139	0	0
OP: OP 140	0	0
OP: OP 141	0	0
OP: OP 142	0	0
OP: OP 143	0	0
OP: OP 144	205	0
OP: OP 145	220	0
OP: OP 146	428	0
OP: OP 147	456	0
OP: OP 148	61	0
OP: OP 149	81	0
OP: OP 150	0	0
OP: OP 151	0	0
OP: OP 152	0	0
OP: OP 153	0	0
OP: OP 154	0	0
OP: OP 155	0	0

OP: OP 156	0	0
OP: OP 157	0	0
OP: OP 158	0	0
OP: OP 159	0	0
OP: OP 160	0	0
OP: OP 161	0	0
OP: OP 162	0	0
OP: OP 163	0	0
OP: OP 164	0	0
Route: Collins Dr	0	0
Route: Country Dr Seg 1	1184	0
Route: Country Dr Seg 2	0	0
Route: County Line Rd	0	0
Route: Dempseys Rd	0	0
Route: Harley Ln	0	0
Route: Henderson Rd	0	0
Route: Hillside Dr	229	0
Route: Ole Briery Station Rd Seg 1	110	0
Route: Ole Briery Station Rd Seg 2	21	0
Route: Thistle Knob Ln	0	0
Route: Tobacco Heritage Trail	2476	0
Route: US Hwy 15	0	0
Route: US Hwy 360	1158	0

#### **G09: OP 134**

*No glare found*

#### **G09: OP 135**

*No glare found*

#### **G09: OP 136**

*No glare found*

#### **G09: OP 137**

*No glare found*

#### **G09: OP 138**

*No glare found*

#### **G09: OP 139**

*No glare found*

#### **G09: OP 140**

*No glare found*

#### **G09: OP 141**

*No glare found*

G09: OP 142

No glare found

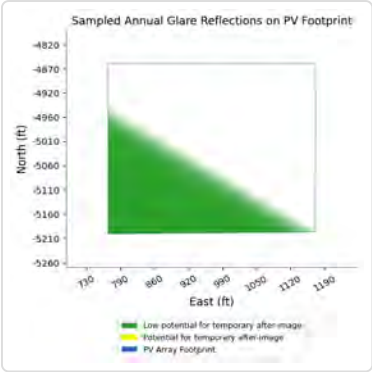
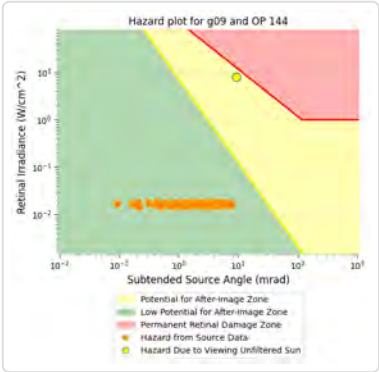
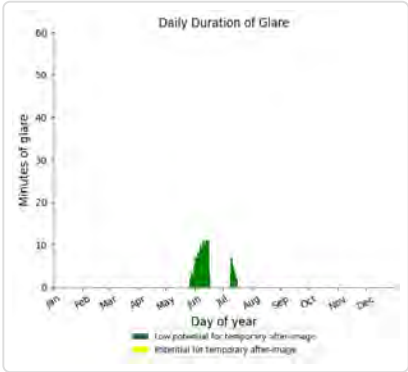
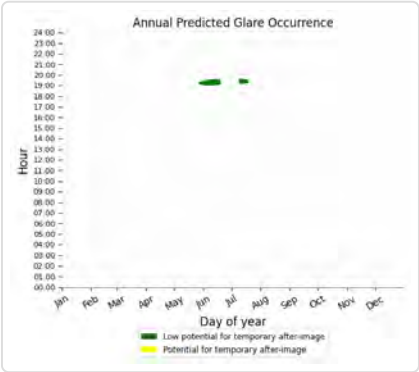
G09: OP 143

No glare found

G09: OP 144

PV array is expected to produce the following glare for this receptor:

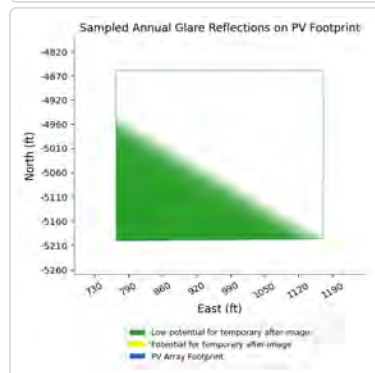
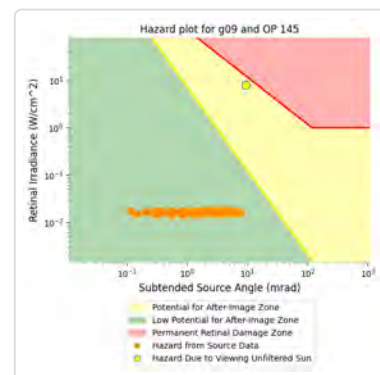
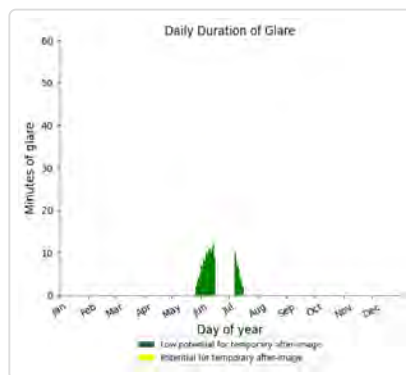
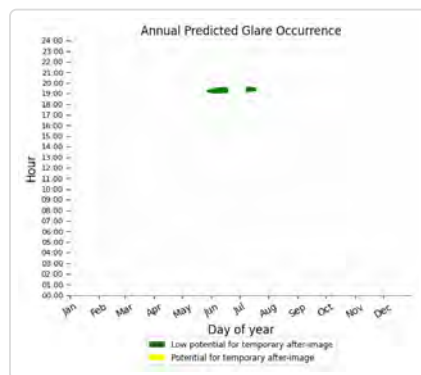
- 205 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## G09: OP 145

PV array is expected to produce the following glare for this receptor:

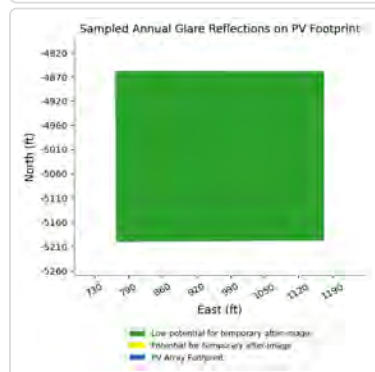
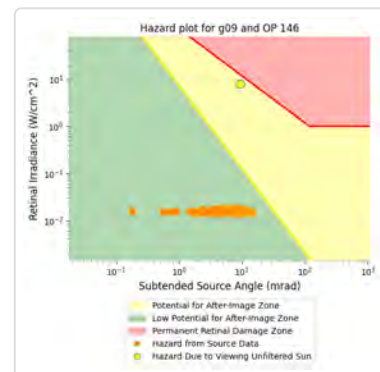
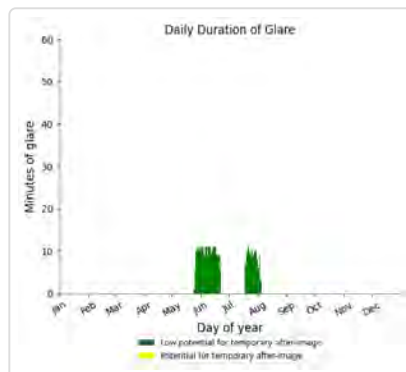
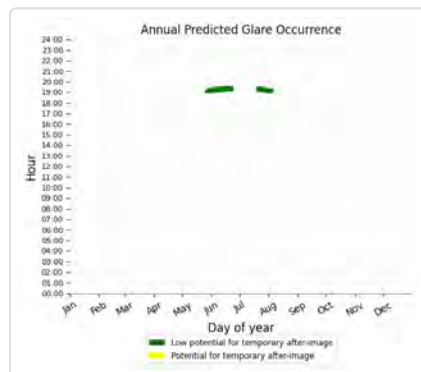
- 220 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## G09: OP 146

PV array is expected to produce the following glare for this receptor:

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

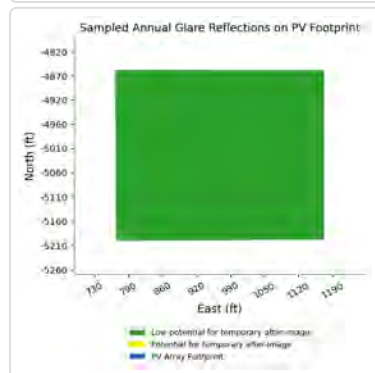
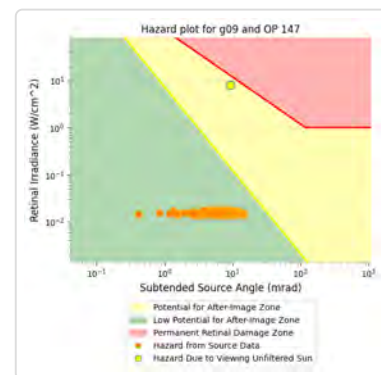
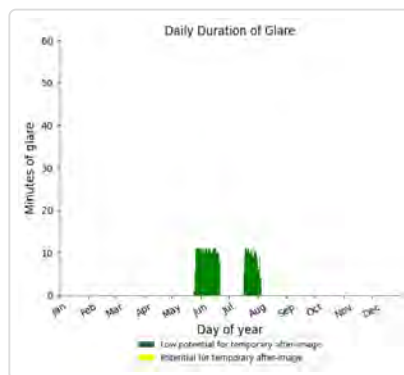
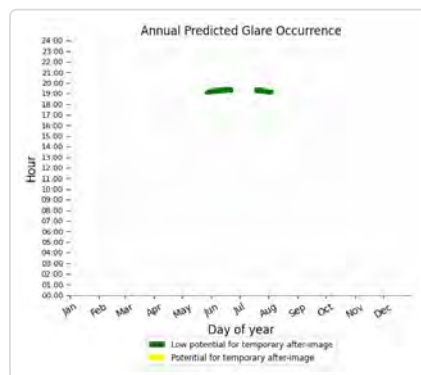




## G09: OP 147

PV array is expected to produce the following glare for this receptor:

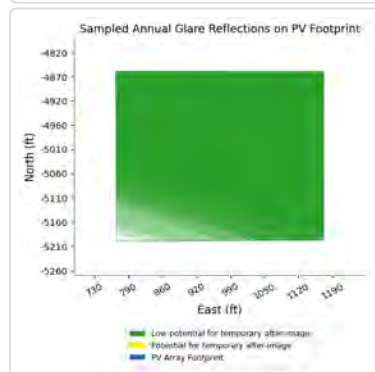
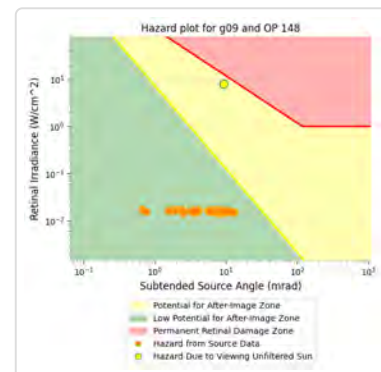
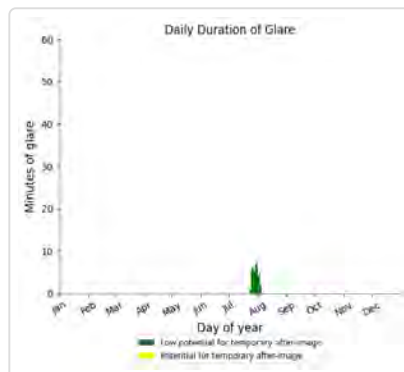
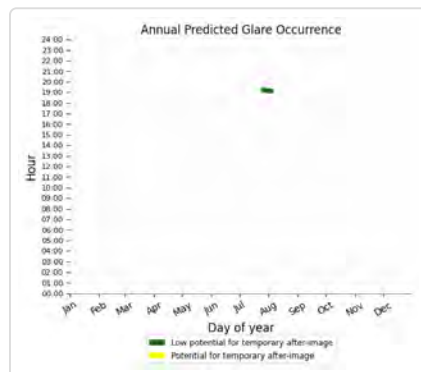
- 456 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## G09: OP 148

PV array is expected to produce the following glare for this receptor:

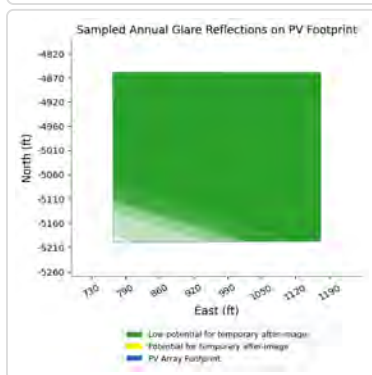
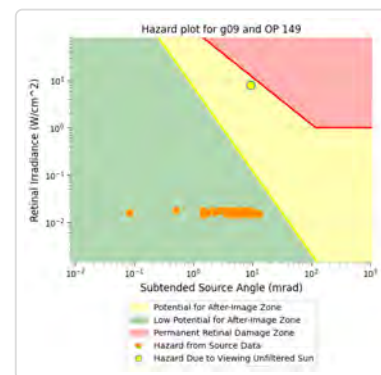
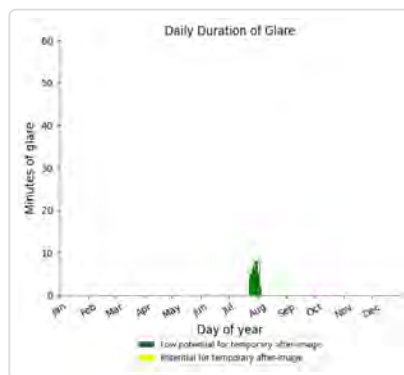
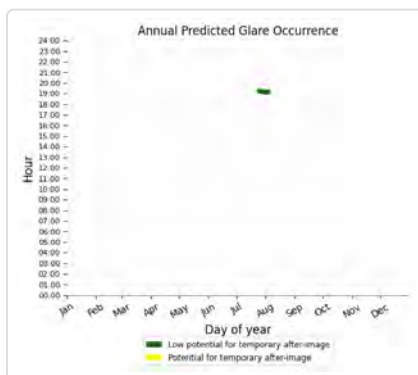
- 61 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## G09: OP 149

PV array is expected to produce the following glare for this receptor:

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



## G09: OP 150

No glare found

## G09: OP 151

No glare found

## G09: OP 152

No glare found

## G09: OP 153

No glare found

## G09: OP 154

No glare found

## G09: OP 155

No glare found

## G09: OP 156

No glare found

## G09: OP 157

No glare found

**G09: OP 158**

*No glare found*

**G09: OP 159**

*No glare found*

**G09: OP 160**

*No glare found*

**G09: OP 161**

*No glare found*

**G09: OP 162**

*No glare found*

**G09: OP 163**

*No glare found*

**G09: OP 164**

*No glare found*

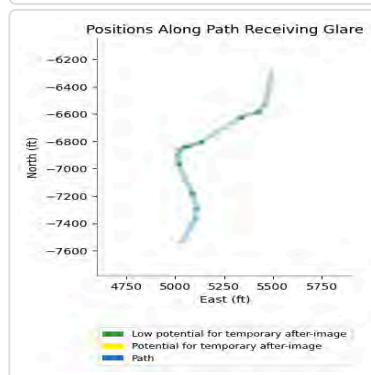
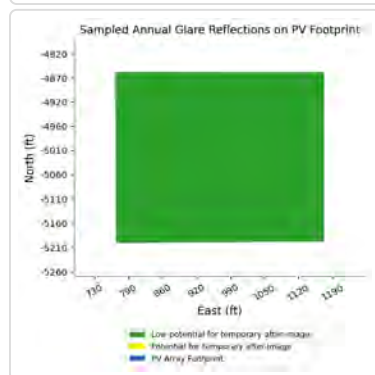
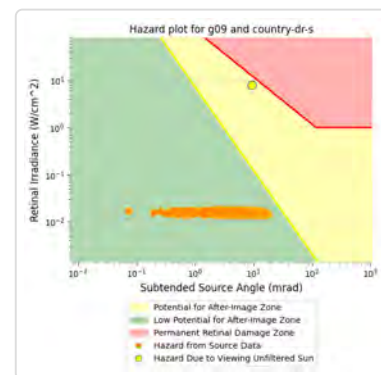
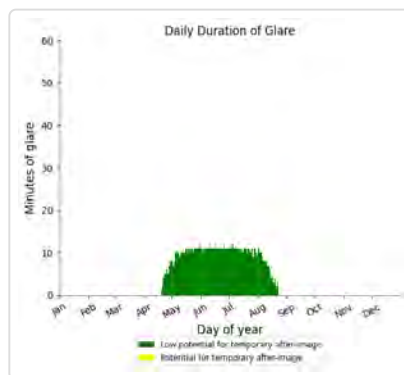
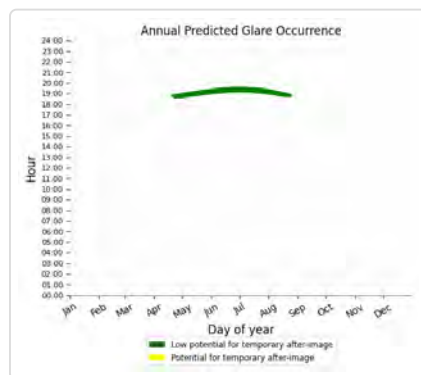
**G09: Collins Dr**

*No glare found*

## G09: Country Dr Seg 1

PV array is expected to produce the following glare for this receptor:

- 1,184 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## G09: Country Dr Seg 2

No glare found

## G09: County Line Rd

No glare found

## G09: Dempseys Rd

No glare found

## G09: Harley Ln

No glare found

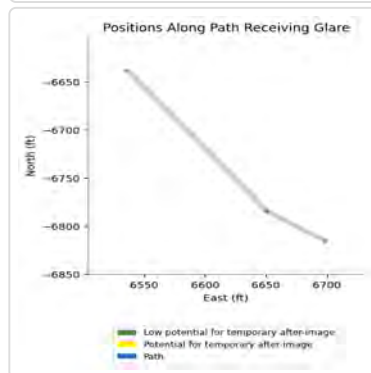
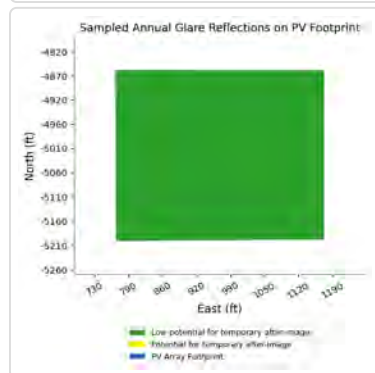
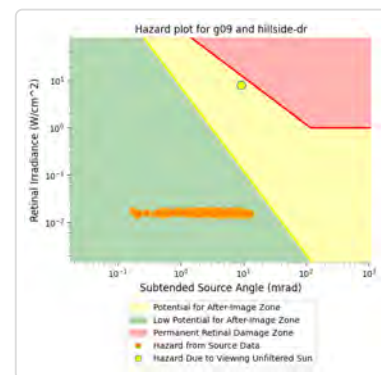
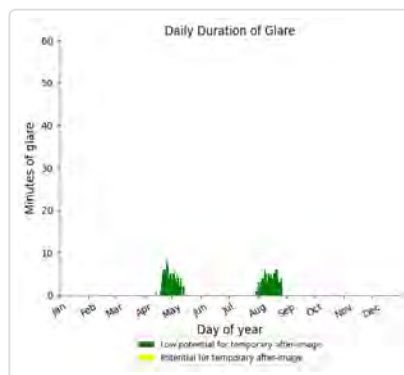
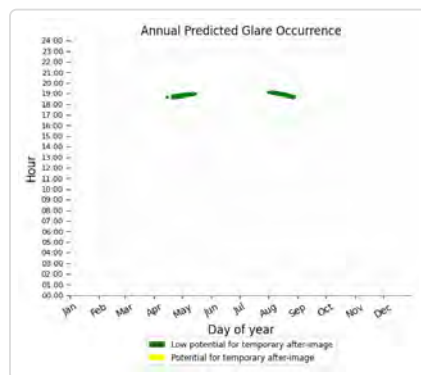
## G09: Henderson Rd

No glare found

## G09: Hillside Dr

PV array is expected to produce the following glare for this receptor:

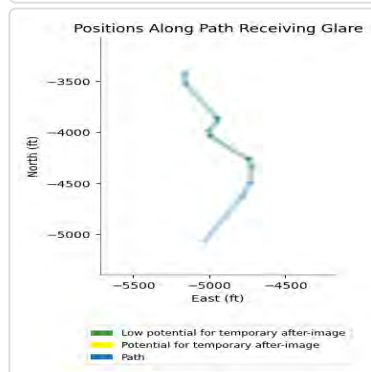
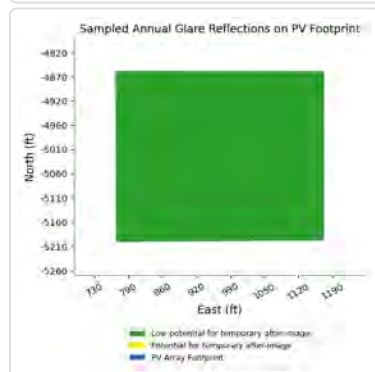
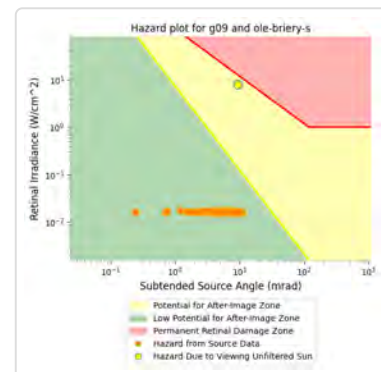
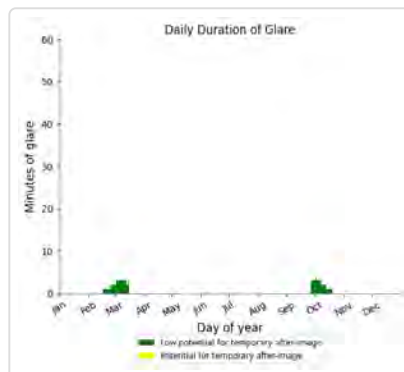
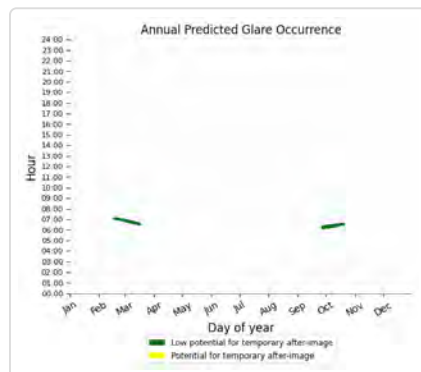
- 229 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## G09: Ole Briery Station Rd Seg 1

PV array is expected to produce the following glare for this receptor:

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

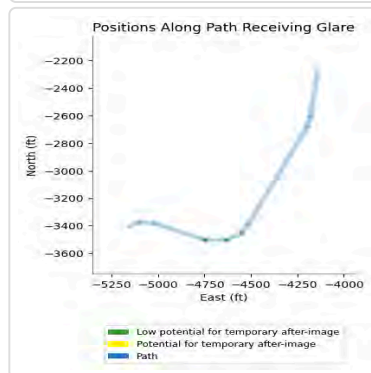
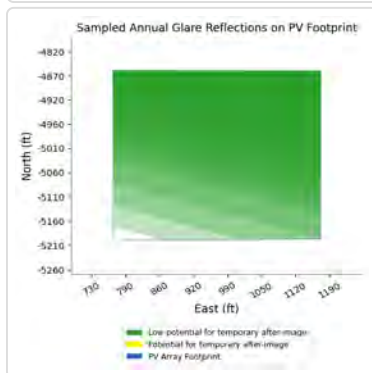
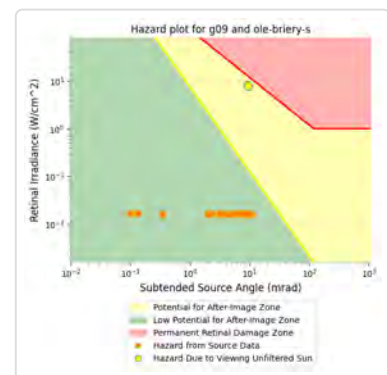
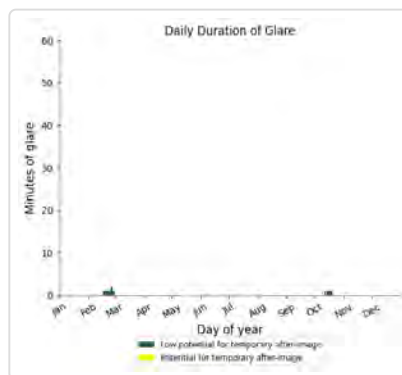
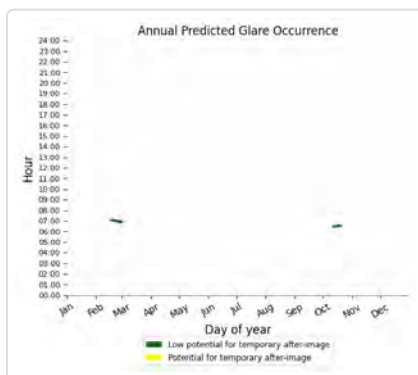




## G09: Ole Briery Station Rd Seg 2

PV array is expected to produce the following glare for this receptor:

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



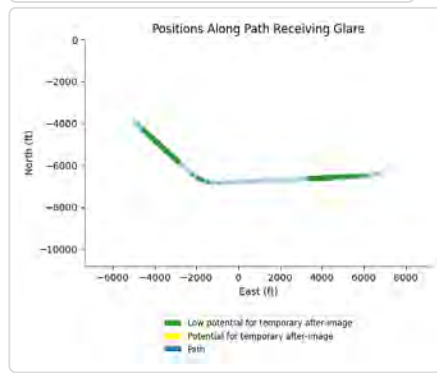
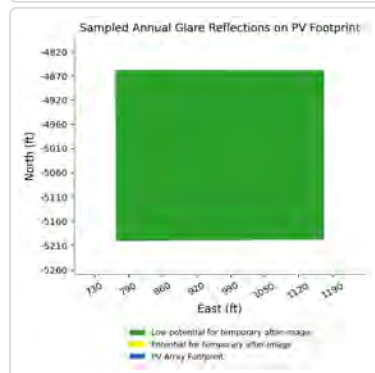
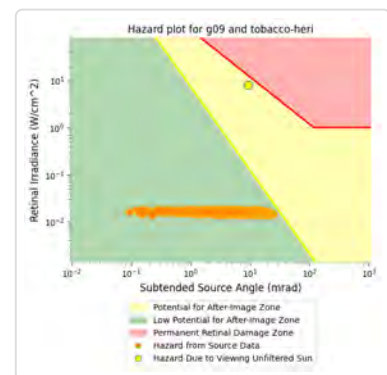
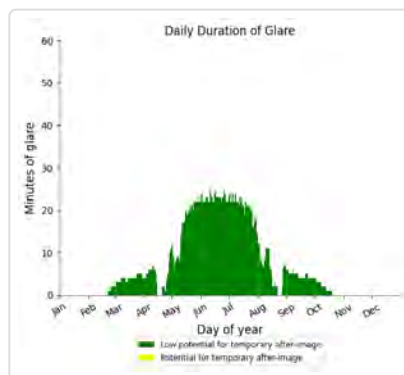
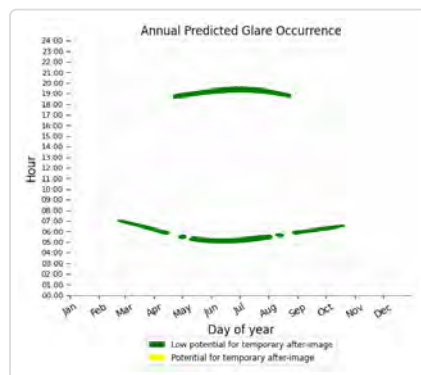
## G09: Thistle Knob Ln

No glare found

## G09: Tobacco Heritage Trail

PV array is expected to produce the following glare for this receptor:

- 2,476 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



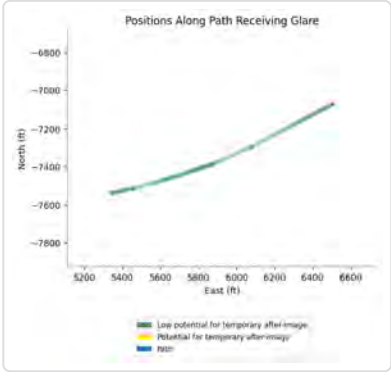
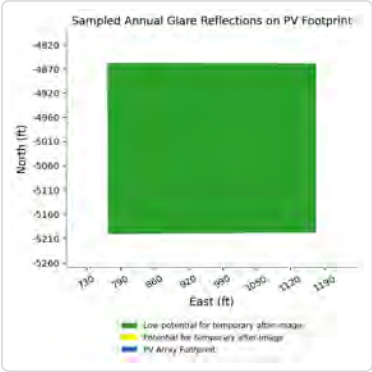
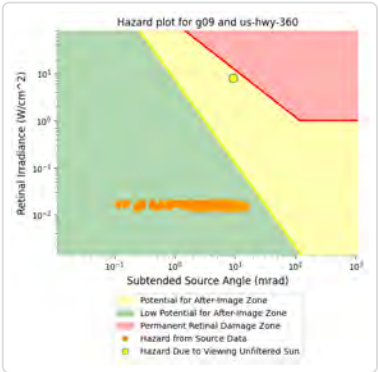
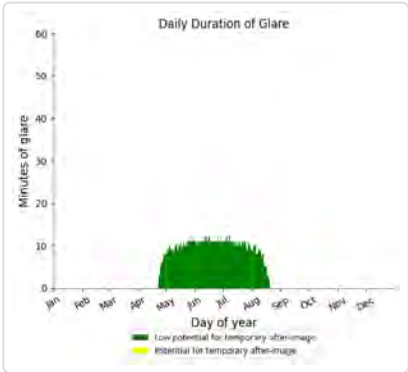
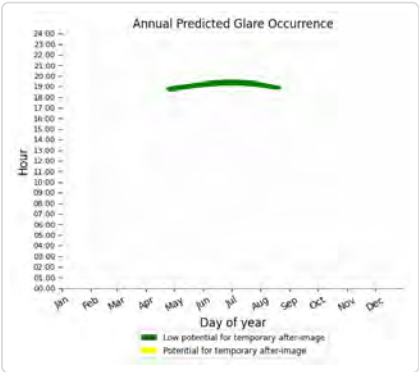
## G09: US Hwy 15

No glare found

G09: US Hwy 360

PV array is expected to produce the following glare for this receptor:

- 1,158 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



G10 potential temporary after-image

Component	Green glare (min)	Yellow glare (min)
OP: OP 134	0	0
OP: OP 135	0	0
OP: OP 136	224	35
OP: OP 137	209	75
OP: OP 138	0	0
OP: OP 139	0	0
OP: OP 140	0	0
OP: OP 141	0	0
OP: OP 142	0	0
OP: OP 143	0	0
OP: OP 144	0	0
OP: OP 145	0	0
OP: OP 146	416	0
OP: OP 147	434	0
OP: OP 148	626	0
OP: OP 149	636	0
OP: OP 150	0	0
OP: OP 151	0	0
OP: OP 152	0	0
OP: OP 153	0	0
OP: OP 154	686	0
OP: OP 155	693	0

OP: OP 156	699	0
OP: OP 157	697	0
OP: OP 158	701	0
OP: OP 159	686	0
OP: OP 160	626	0
OP: OP 161	570	0
OP: OP 162	444	0
OP: OP 163	252	0
OP: OP 164	235	0
Route: Collins Dr	0	0
Route: Country Dr Seg 1	1311	184
Route: Country Dr Seg 2	1690	526
Route: County Line Rd	0	0
Route: Dempseys Rd	0	0
Route: Harley Ln	0	0
Route: Henderson Rd	0	0
Route: Hillside Dr	1615	201
Route: Ole Briery Station Rd Seg 1	0	0
Route: Ole Briery Station Rd Seg 2	0	0
Route: Thistle Knob Ln	0	0
Route: Tobacco Heritage Trail	2765	1179
Route: US Hwy 15	0	0
Route: US Hwy 360	1367	0

#### **G10: OP 134**

*No glare found*

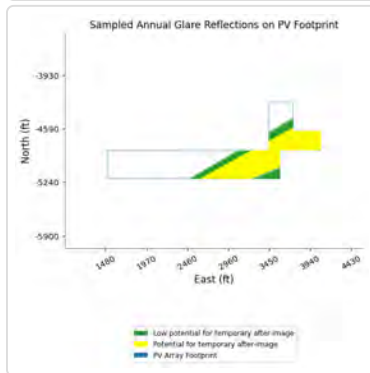
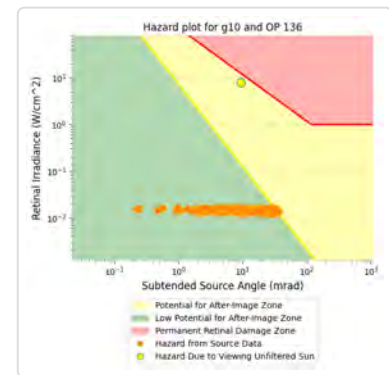
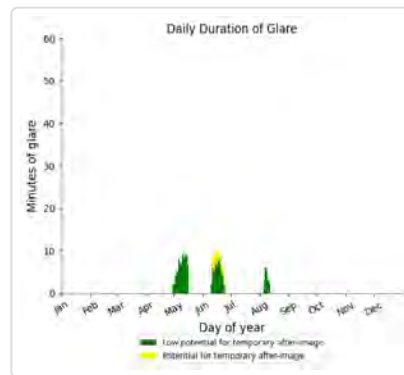
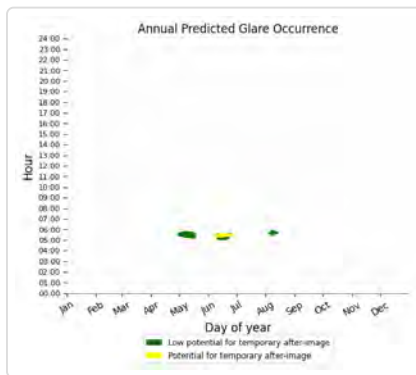
#### **G10: OP 135**

*No glare found*

## G10: OP 136

PV array is expected to produce the following glare for this receptor:

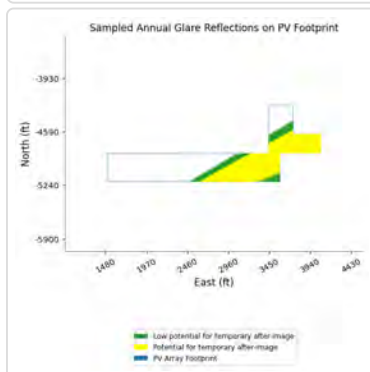
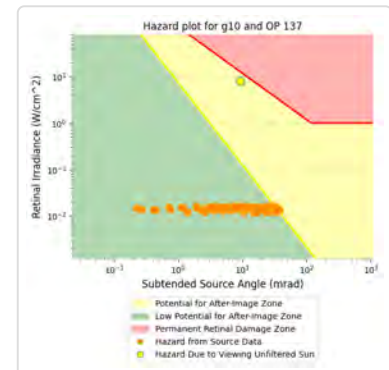
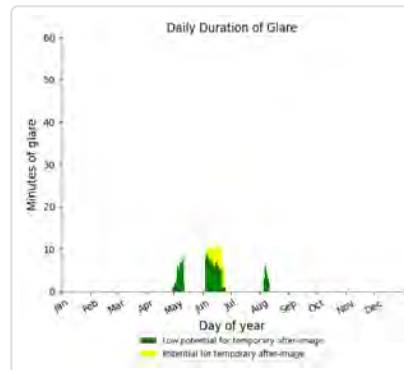
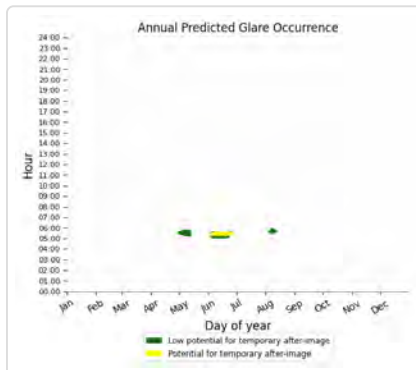
- 224 minutes of "green" glare with low potential to cause temporary after-image.
- 35 minutes of "yellow" glare with potential to cause temporary after-image.



## G10: OP 137

PV array is expected to produce the following glare for this receptor:

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





G10: OP 138

No glare found

G10: OP 139

No glare found

G10: OP 140

No glare found

G10: OP 141

No glare found

G10: OP 142

No glare found

G10: OP 143

No glare found

G10: OP 144

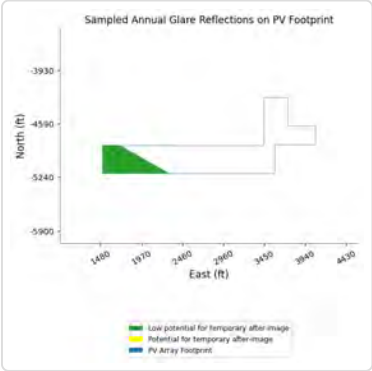
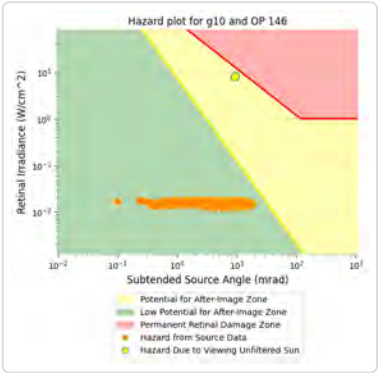
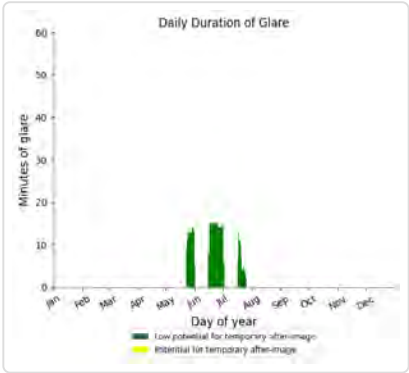
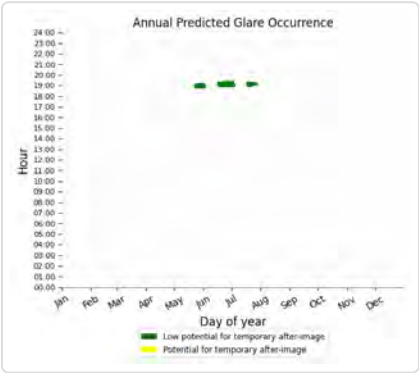
No glare found

G10: OP 145

No glare found

G10: OP 146

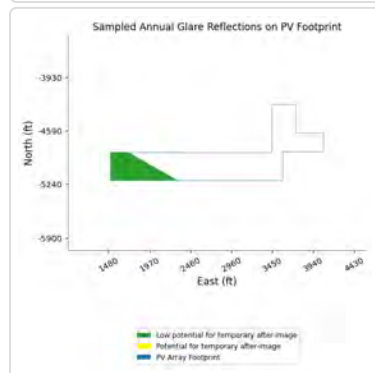
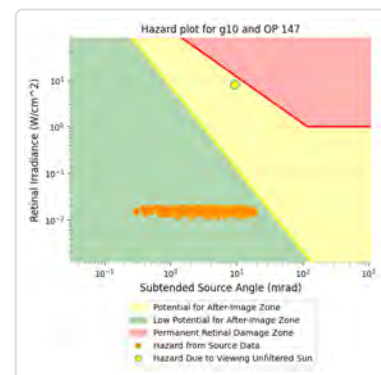
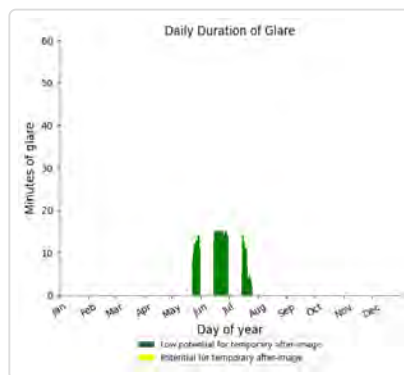
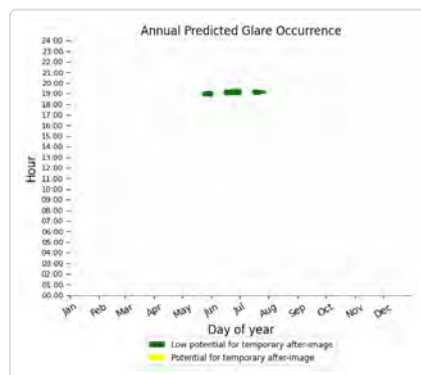
- PV array is expected to produce the following glare for this receptor:
- 416 minutes of "green" glare with low potential to cause temporary after-image.
  - 0 minutes of "yellow" glare with potential to cause temporary after-image.



## G10: OP 147

PV array is expected to produce the following glare for this receptor:

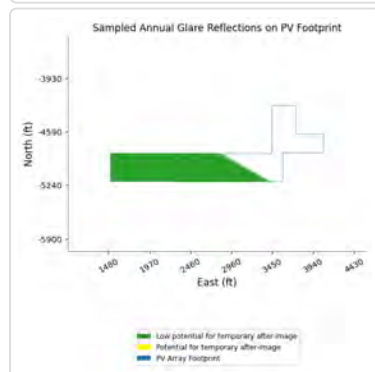
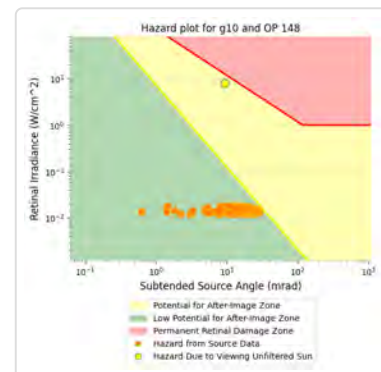
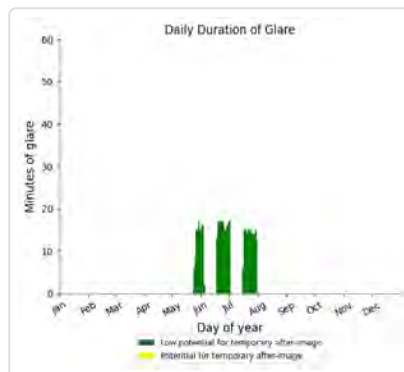
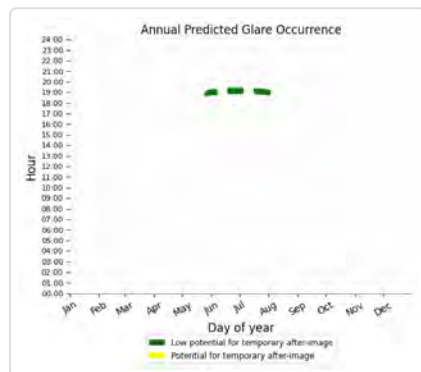
- 434 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## G10: OP 148

PV array is expected to produce the following glare for this receptor:

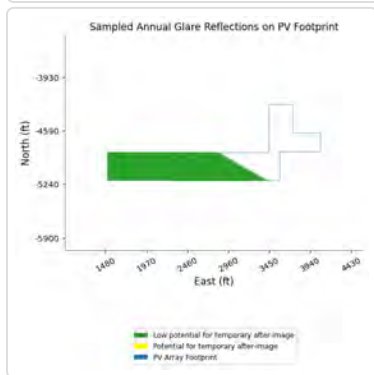
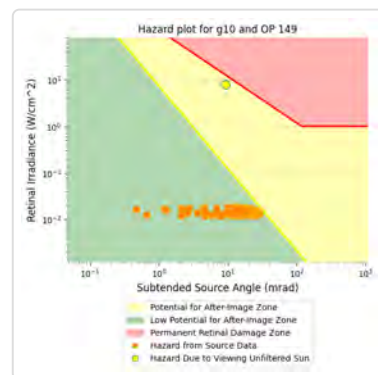
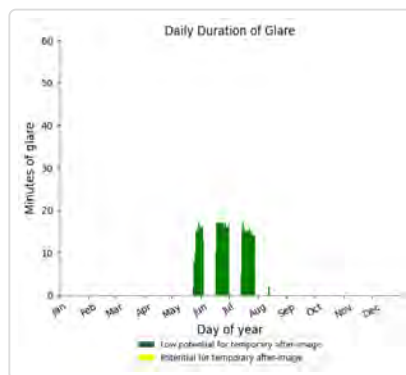
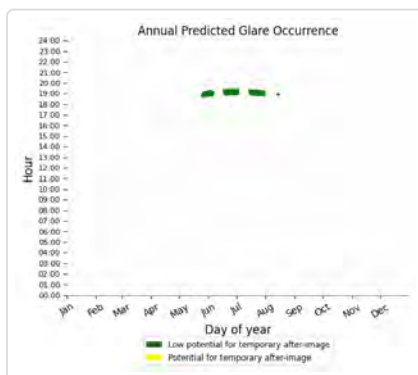
- 626 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## G10: OP 149

PV array is expected to produce the following glare for this receptor:

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



## G10: OP 150

No glare found

## G10: OP 151

No glare found

## G10: OP 152

No glare found

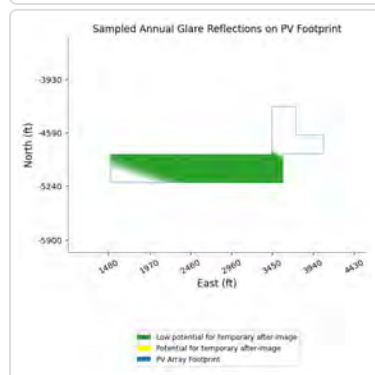
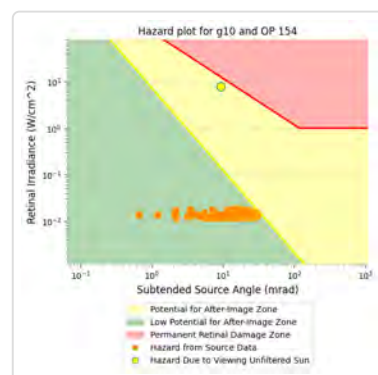
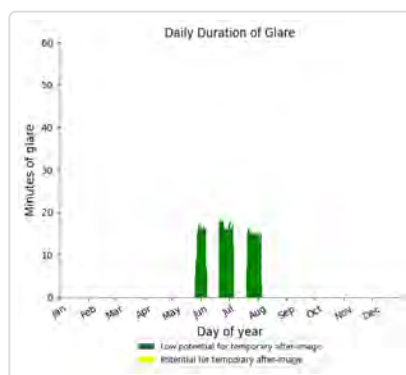
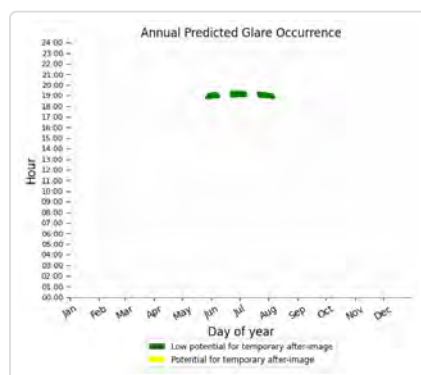
## G10: OP 153

No glare found

## G10: OP 154

PV array is expected to produce the following glare for this receptor:

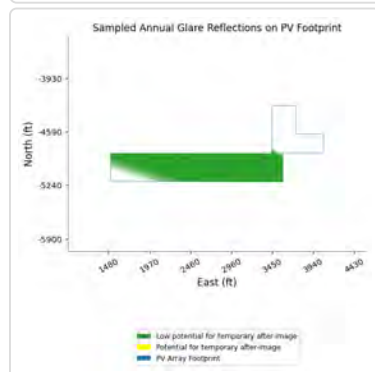
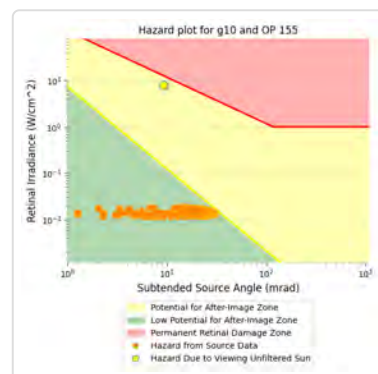
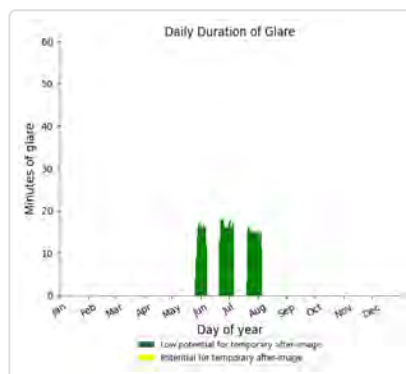
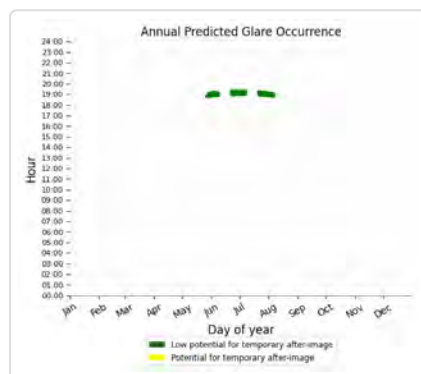
- 686 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## G10: OP 155

PV array is expected to produce the following glare for this receptor:

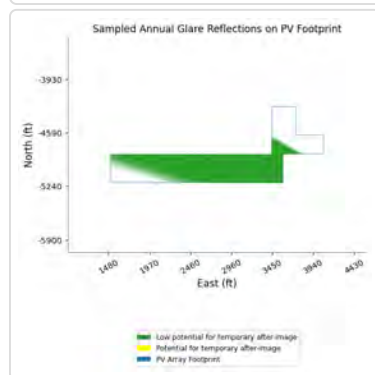
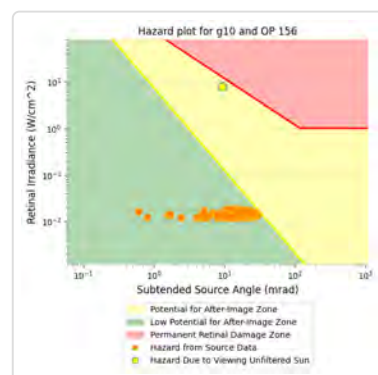
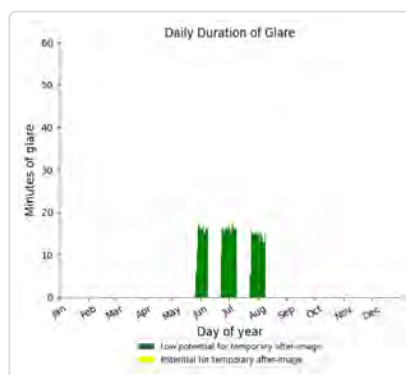
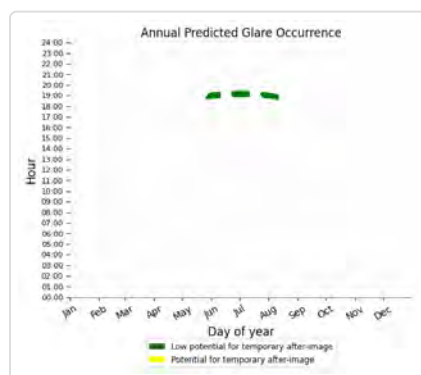
- 693 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## G10: OP 156

PV array is expected to produce the following glare for this receptor:

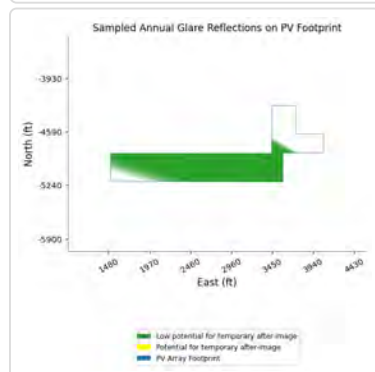
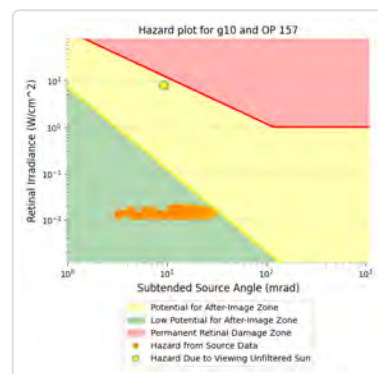
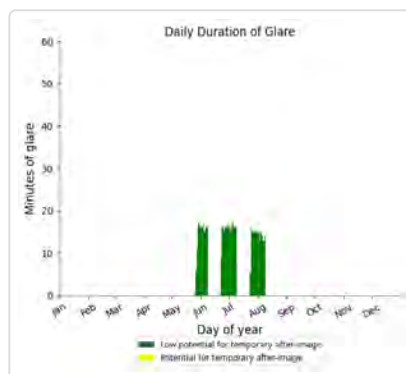
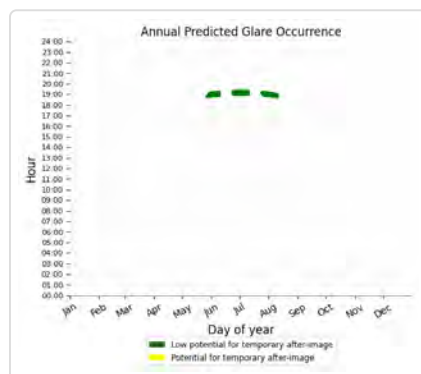
- 699 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## G10: OP 157

PV array is expected to produce the following glare for this receptor:

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

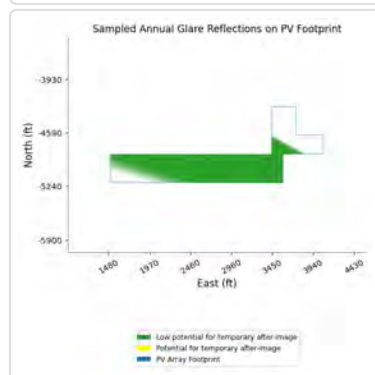
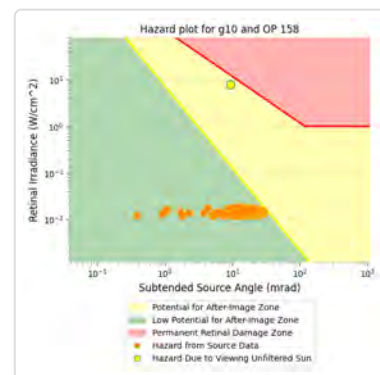
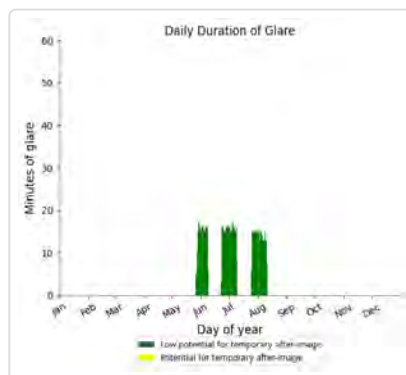
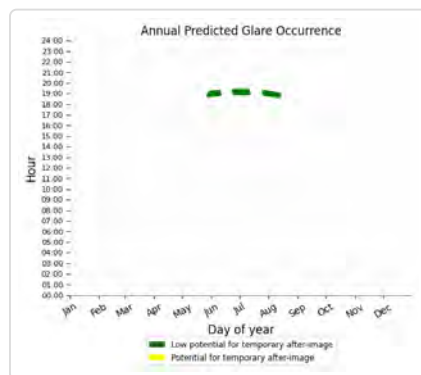




## G10: OP 158

PV array is expected to produce the following glare for this receptor:

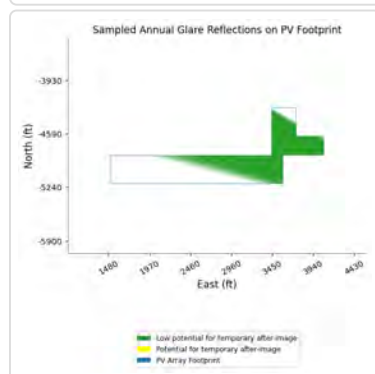
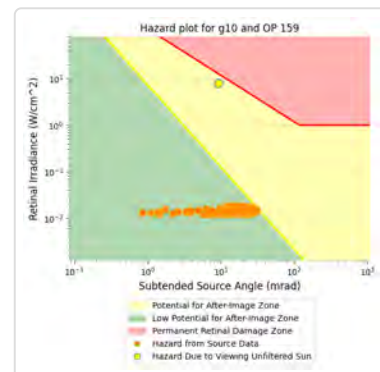
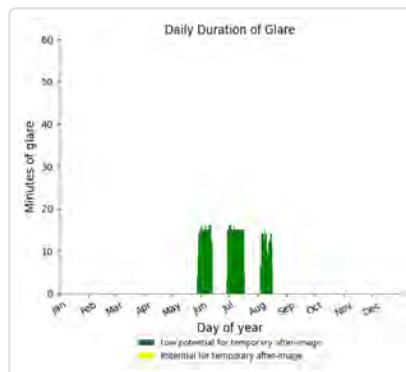
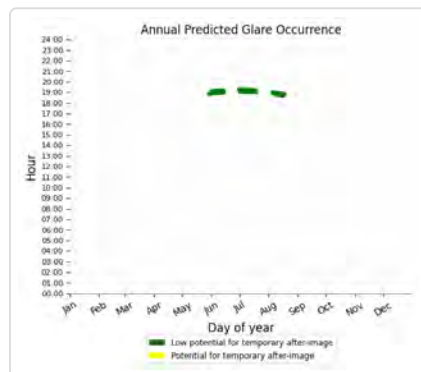
- 701 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## G10: OP 159

PV array is expected to produce the following glare for this receptor:

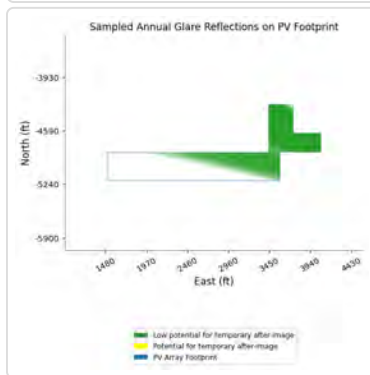
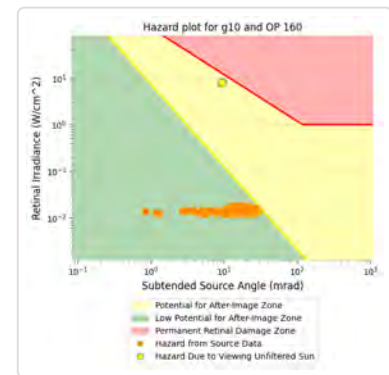
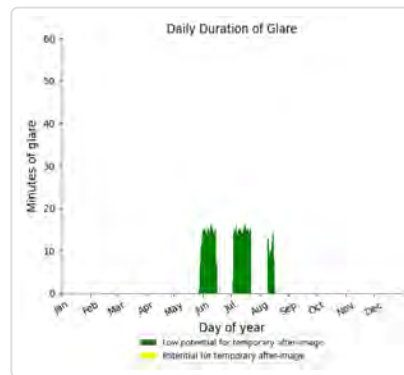
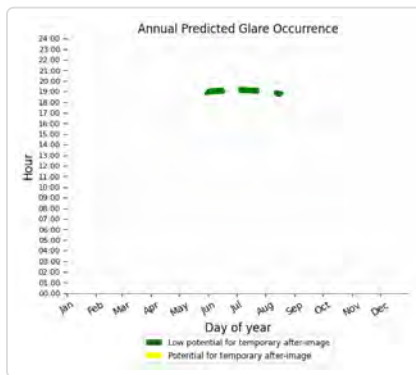
- 686 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## G10: OP 160

PV array is expected to produce the following glare for this receptor:

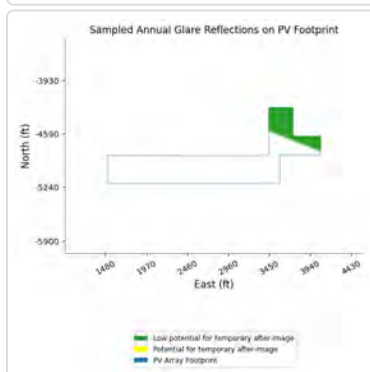
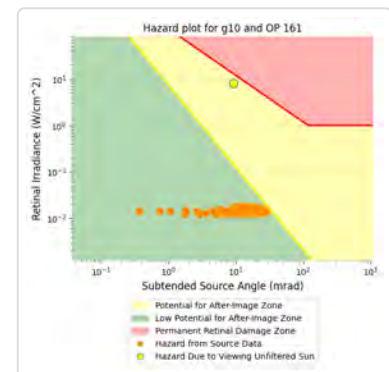
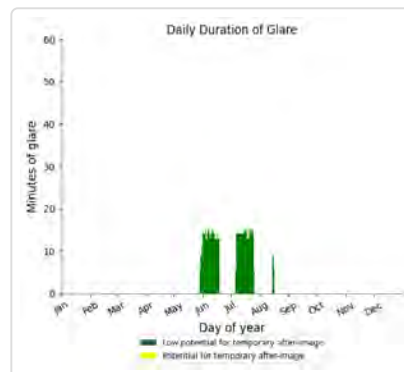
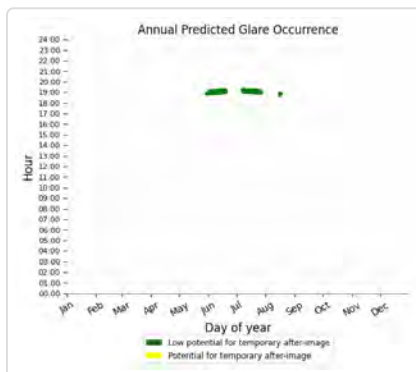
- 626 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## G10: OP 161

PV array is expected to produce the following glare for this receptor:

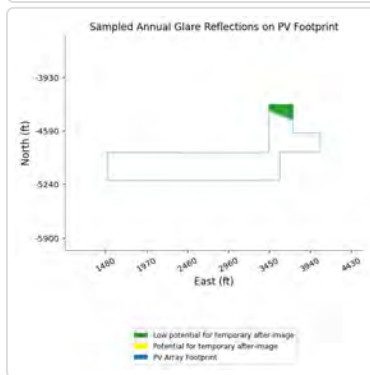
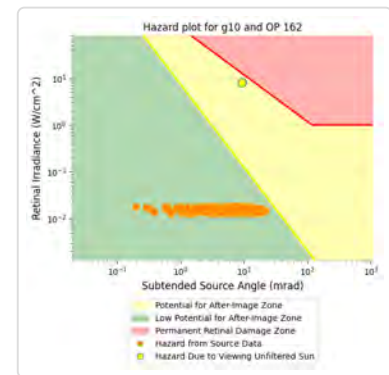
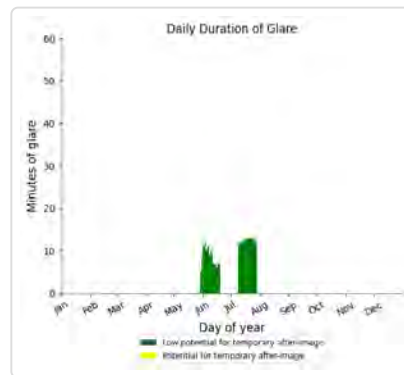
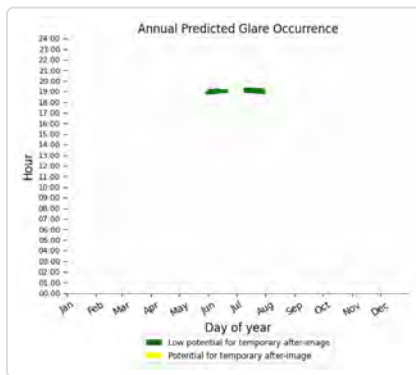
- 570 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## G10: OP 162

PV array is expected to produce the following glare for this receptor:

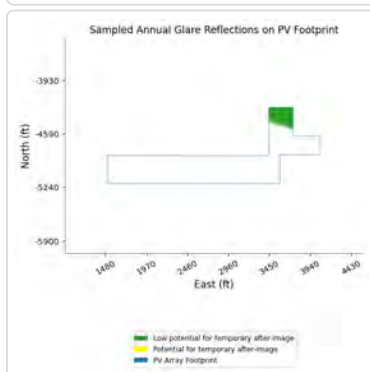
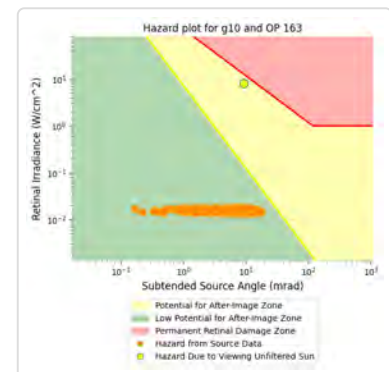
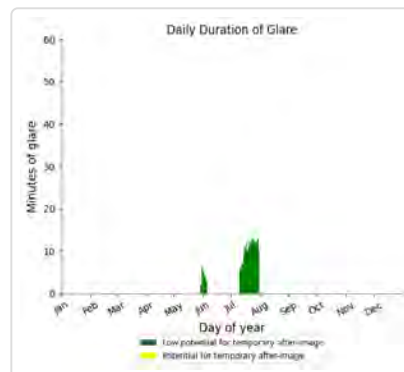
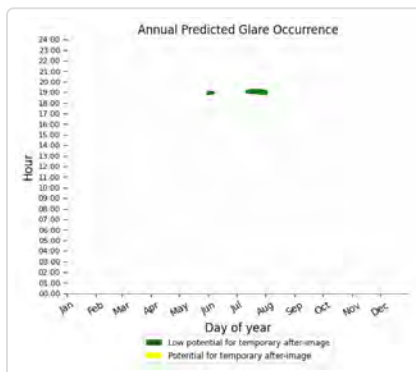
- 444 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## G10: OP 163

PV array is expected to produce the following glare for this receptor:

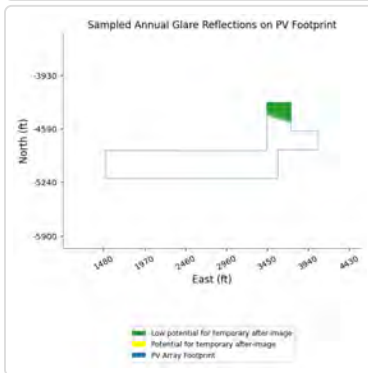
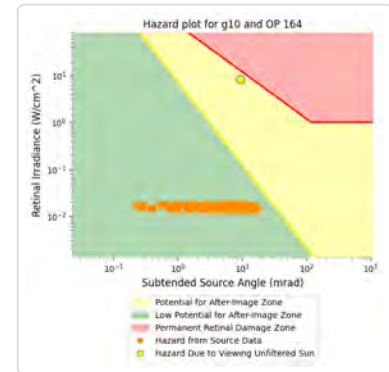
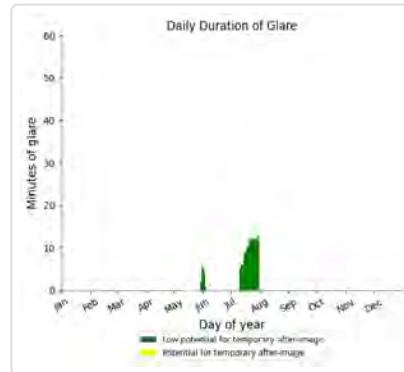
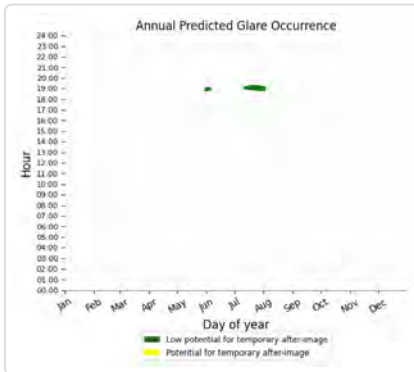
- 252 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## G10: OP 164

PV array is expected to produce the following glare for this receptor:

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



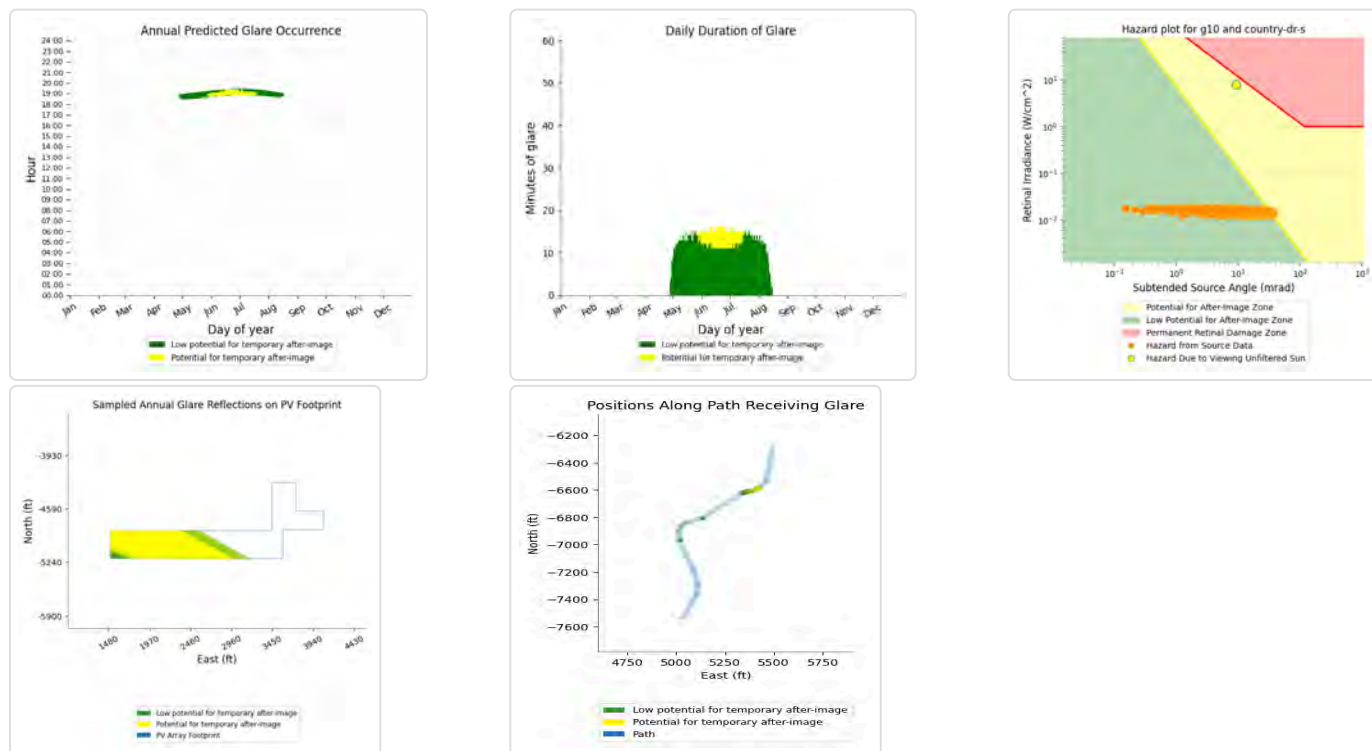
## G10: Collins Dr

No glare found

## G10: Country Dr Seg 1

PV array is expected to produce the following glare for this receptor:

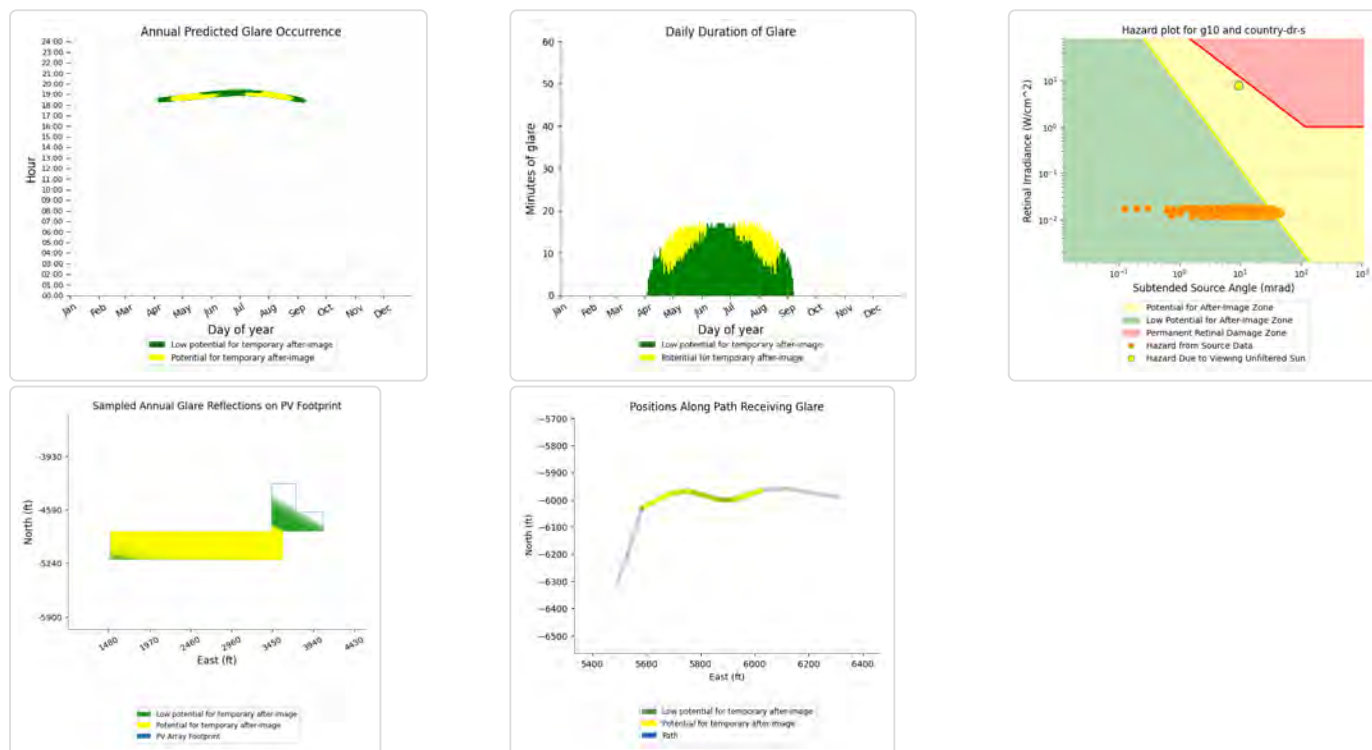
- 1,311 minutes of "green" glare with low potential to cause temporary after-image.
- 184 minutes of "yellow" glare with potential to cause temporary after-image.



## G10: Country Dr Seg 2

PV array is expected to produce the following glare for this receptor:

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





G10: County Line Rd

No glare found

G10: Dempseys Rd

No glare found

G10: Harley Ln

No glare found

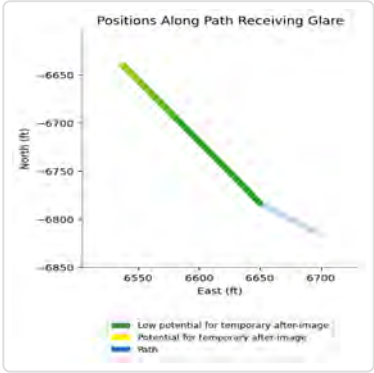
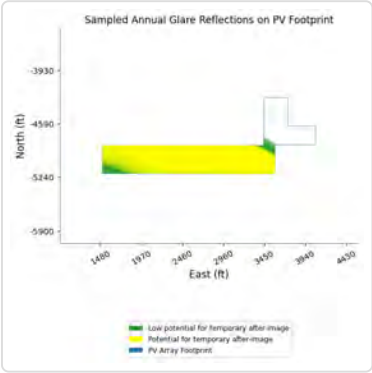
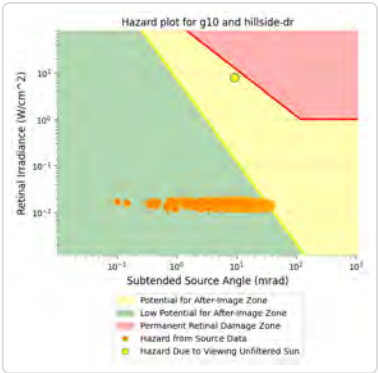
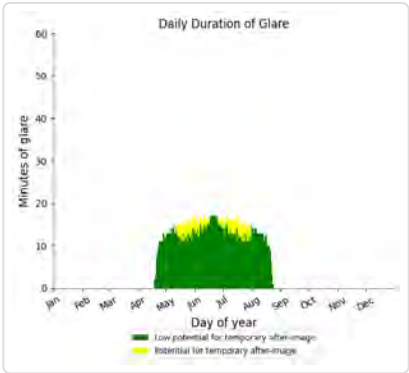
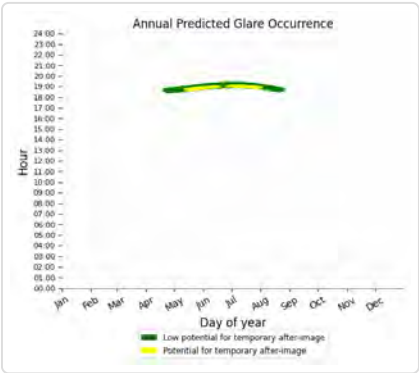
G10: Henderson Rd

No glare found

G10: Hillside Dr

PV array is expected to produce the following glare for this receptor:

- 1,615 minutes of "green" glare with low potential to cause temporary after-image.
- 201 minutes of "yellow" glare with potential to cause temporary after-image.



G10: Ole Briery Station Rd Seg 1

No glare found

G10: Ole Briery Station Rd Seg 2

No glare found

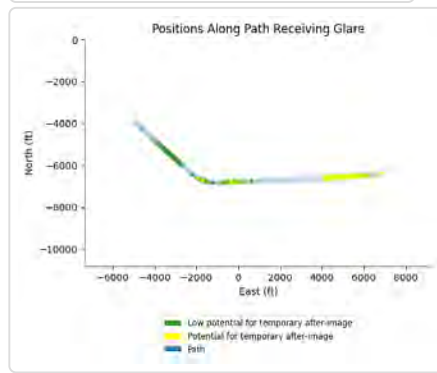
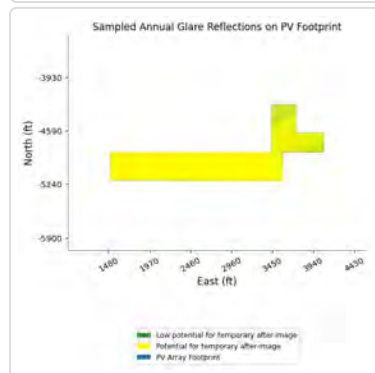
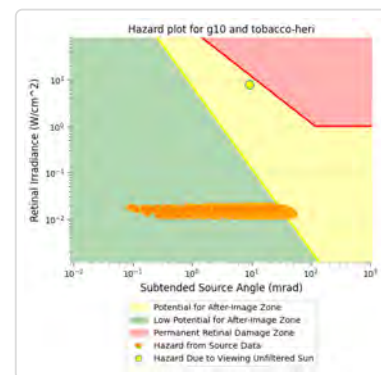
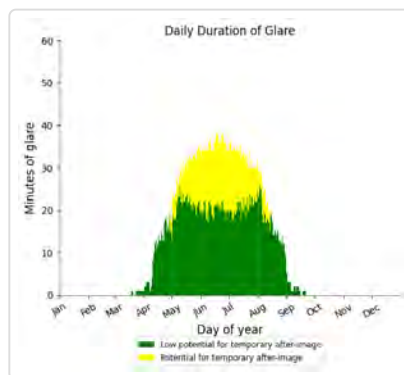
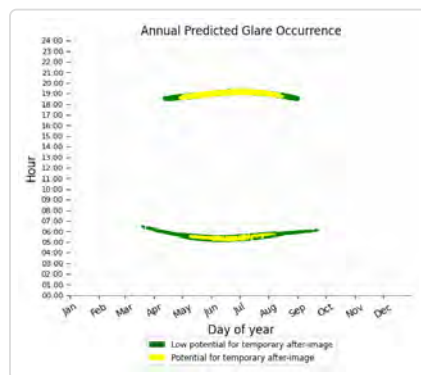
G10: Thistle Knob Ln

No glare found

## G10: Tobacco Heritage Trail

PV array is expected to produce the following glare for this receptor:

- 2,765 minutes of "green" glare with low potential to cause temporary after-image.
- 1,179 minutes of "yellow" glare with potential to cause temporary after-image.



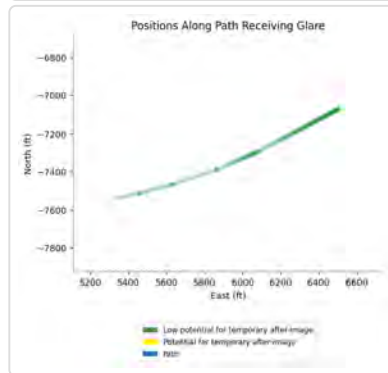
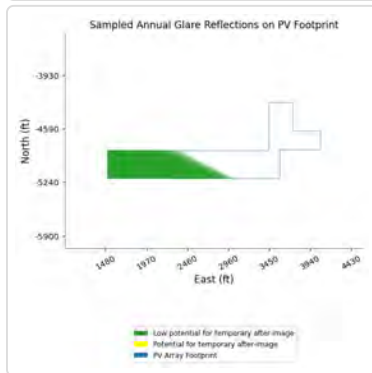
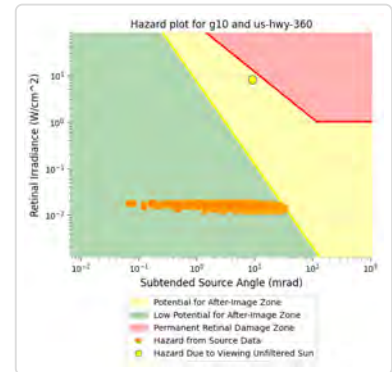
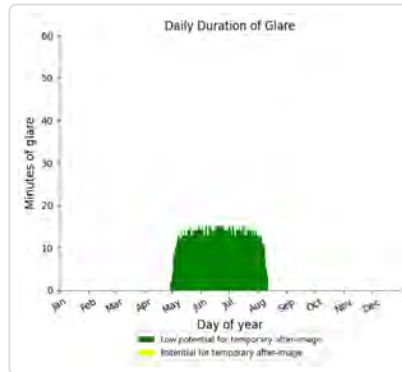
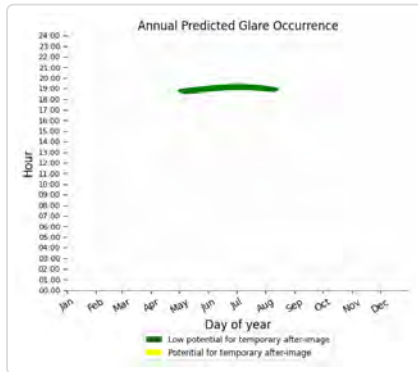
## G10: US Hwy 15

No glare found

## G10: US Hwy 360

PV array is expected to produce the following glare for this receptor:

- 1,367 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## G11 potential temporary after-image

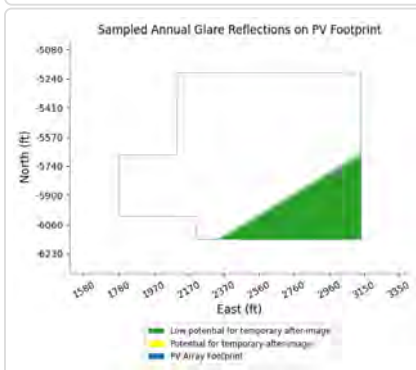
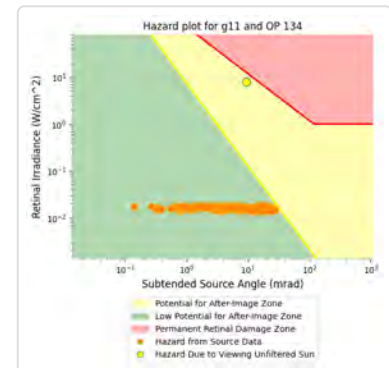
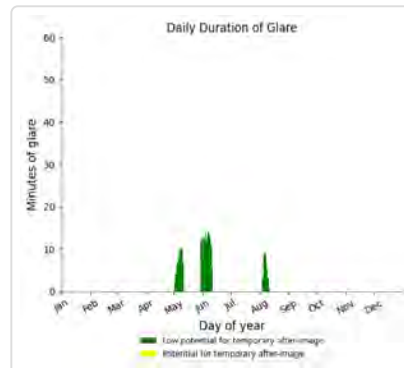
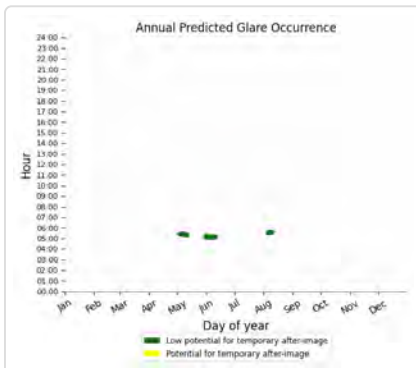
Component	Green glare (min)	Yellow glare (min)
OP: OP 134	277	0
OP: OP 135	297	0
OP: OP 136	376	121
OP: OP 137	391	177
OP: OP 138	0	0
OP: OP 139	0	0
OP: OP 140	0	0
OP: OP 141	0	0
OP: OP 142	0	0
OP: OP 143	0	0
OP: OP 144	318	0
OP: OP 145	357	0
OP: OP 146	0	0
OP: OP 147	289	0
OP: OP 148	107	0
OP: OP 149	0	0
OP: OP 150	0	0
OP: OP 151	0	0
OP: OP 152	0	0
OP: OP 153	0	0
OP: OP 154	38	0
OP: OP 155	36	0

OP: OP 156	22	0
OP: OP 157	19	0
OP: OP 158	25	0
OP: OP 159	0	0
OP: OP 160	0	0
OP: OP 161	0	0
OP: OP 162	0	0
OP: OP 163	0	0
OP: OP 164	0	0
Route: Collins Dr	0	0
Route: Country Dr Seg 1	915	393
Route: Country Dr Seg 2	58	0
Route: County Line Rd	0	0
Route: Dempseys Rd	0	0
Route: Harley Ln	0	0
Route: Henderson Rd	0	0
Route: Hillside Dr	66	0
Route: Ole Briery Station Rd Seg 1	72	0
Route: Ole Briery Station Rd Seg 2	0	0
Route: Thistle Knob Ln	0	0
Route: Tobacco Heritage Trail	1241	1717
Route: US Hwy 15	0	0
Route: US Hwy 360	846	46

## G11: OP 134

PV array is expected to produce the following glare for this receptor:

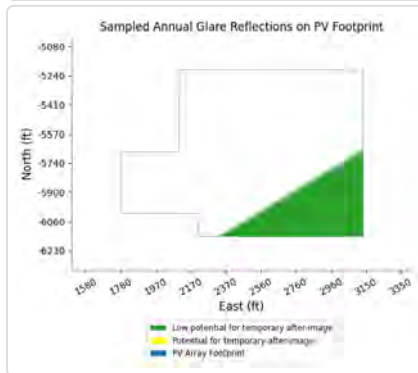
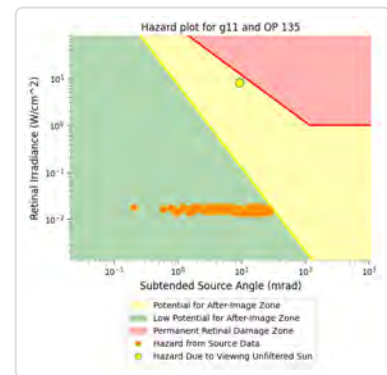
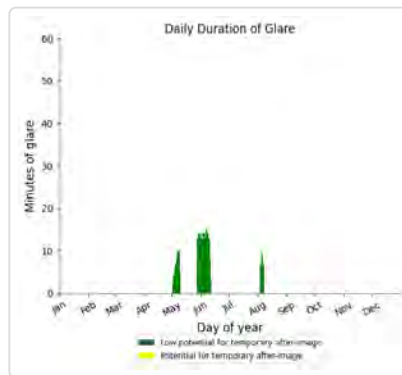
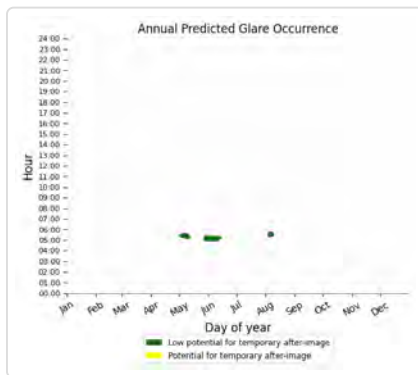
- 277 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## G11: OP 135

PV array is expected to produce the following glare for this receptor:

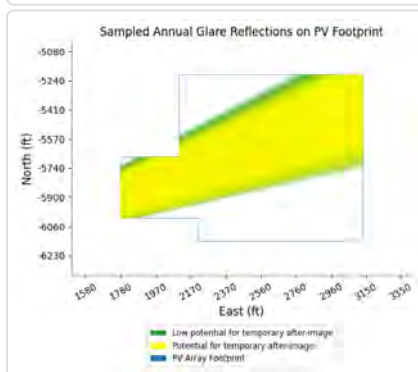
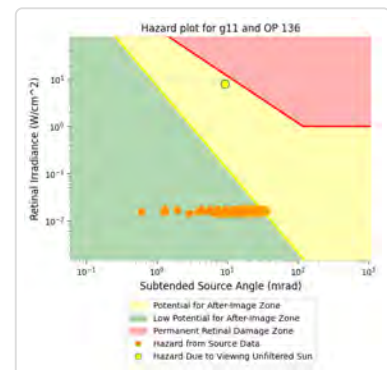
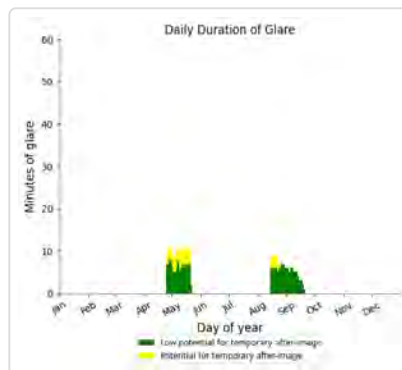
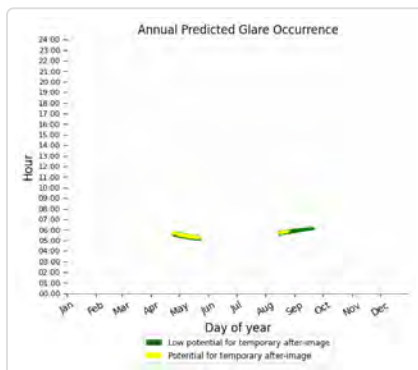
- 297 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## G11: OP 136

PV array is expected to produce the following glare for this receptor:

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

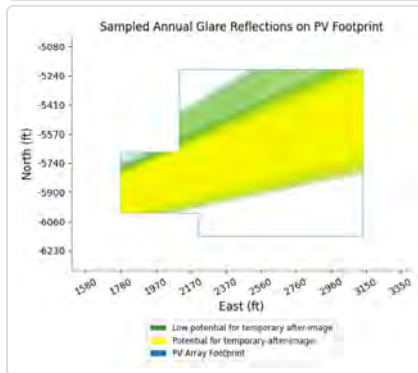
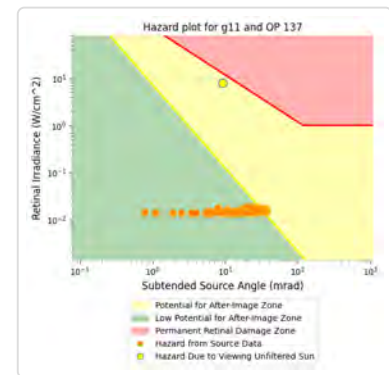
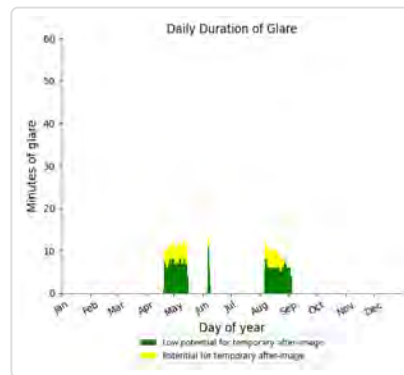
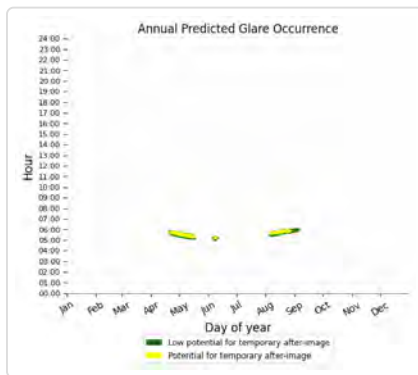




## G11: OP 137

PV array is expected to produce the following glare for this receptor:

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



## G11: OP 138

No glare found

## G11: OP 139

No glare found

## G11: OP 140

No glare found

## G11: OP 141

No glare found

## G11: OP 142

No glare found

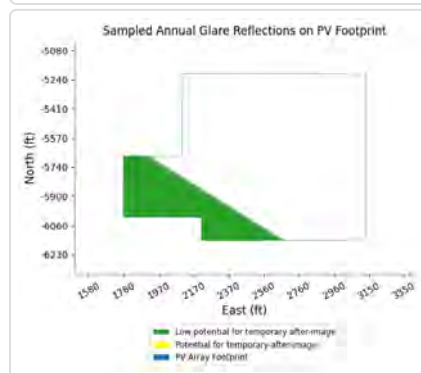
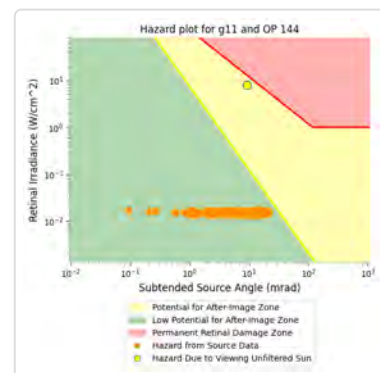
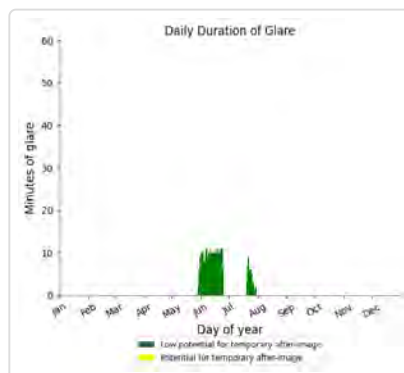
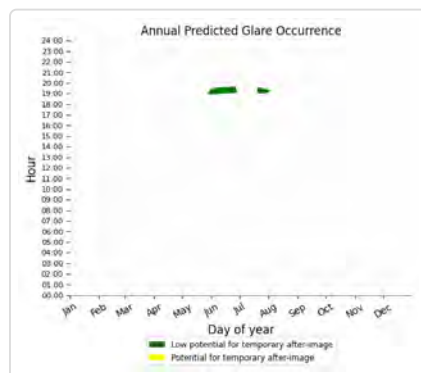
## G11: OP 143

No glare found

## G11: OP 144

PV array is expected to produce the following glare for this receptor:

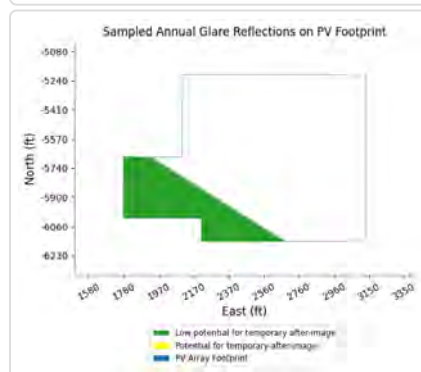
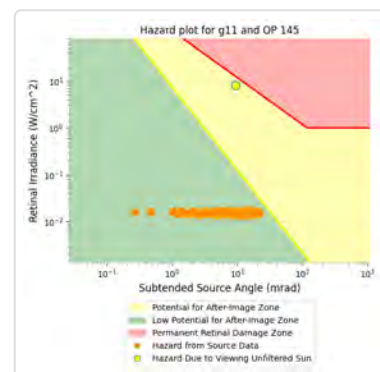
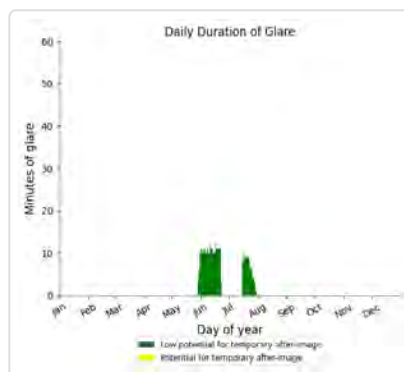
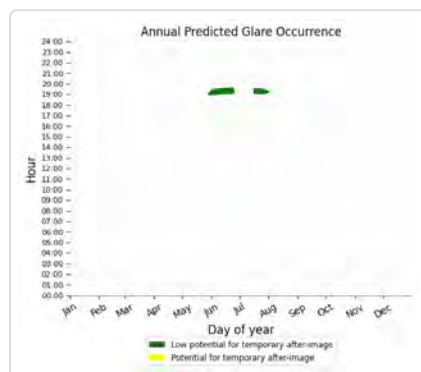
- 318 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## G11: OP 145

PV array is expected to produce the following glare for this receptor:

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



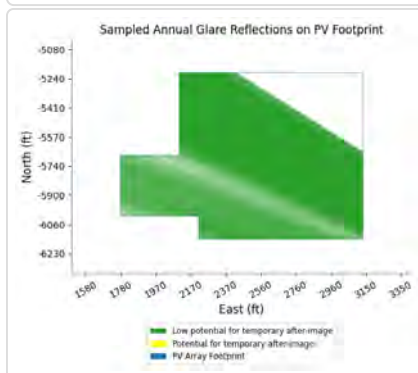
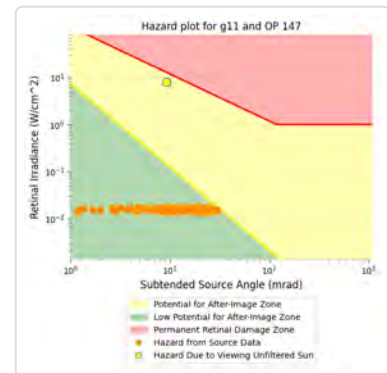
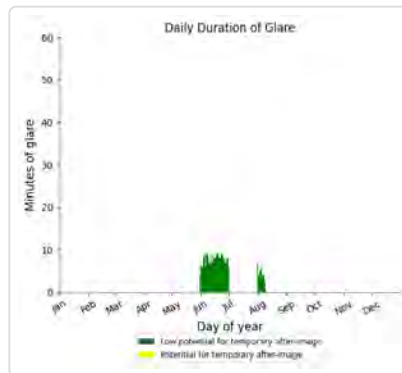
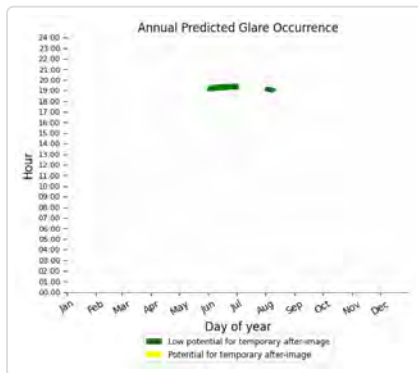
## G11: OP 146

No glare found

## G11: OP 147

PV array is expected to produce the following glare for this receptor:

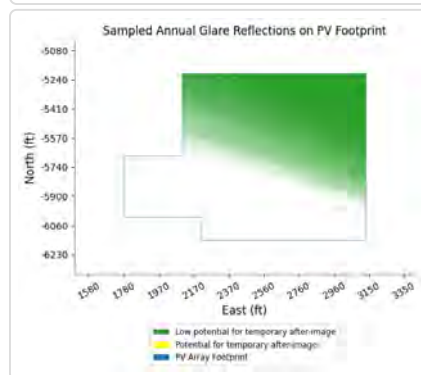
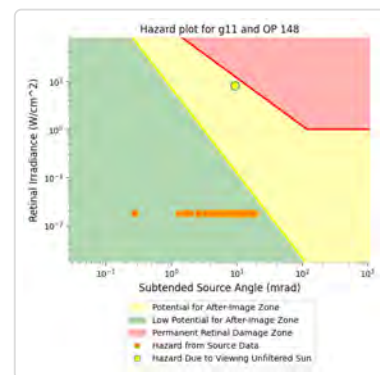
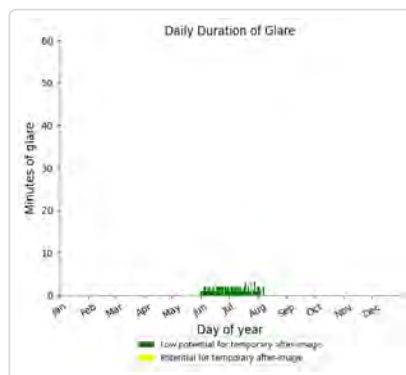
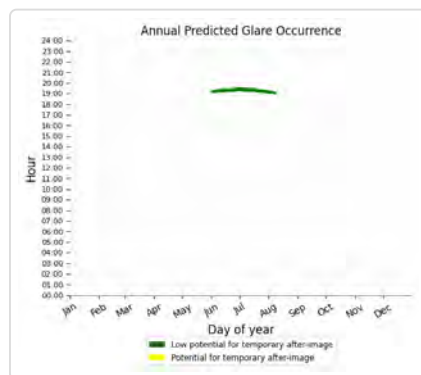
- 289 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## G11: OP 148

PV array is expected to produce the following glare for this receptor:

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



## G11: OP 149

No glare found

## G11: OP 150

No glare found

## G11: OP 151

No glare found

## G11: OP 152

No glare found

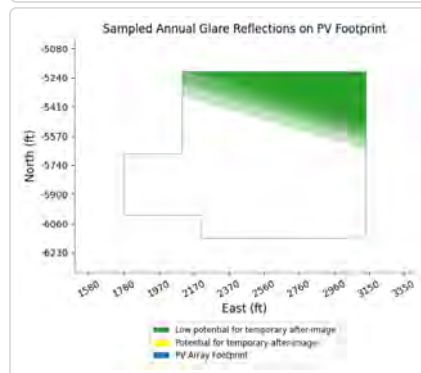
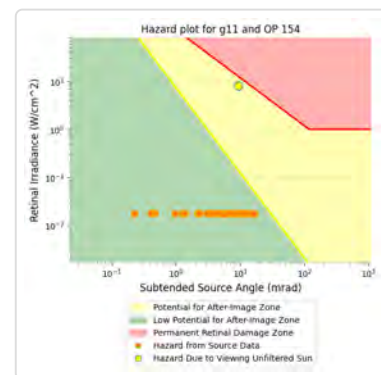
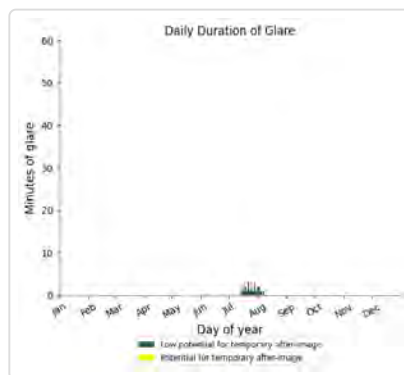
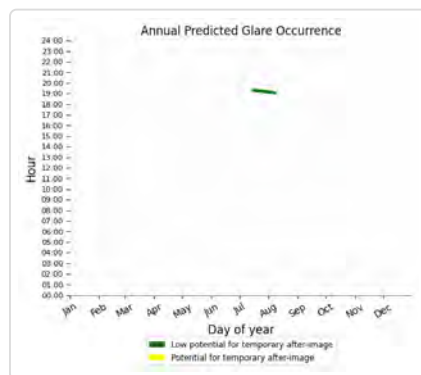
## G11: OP 153

No glare found

## G11: OP 154

PV array is expected to produce the following glare for this receptor:

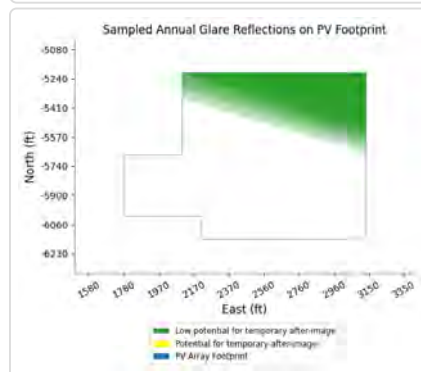
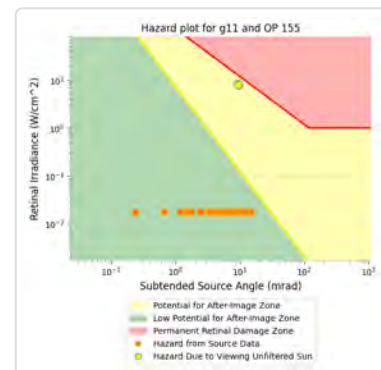
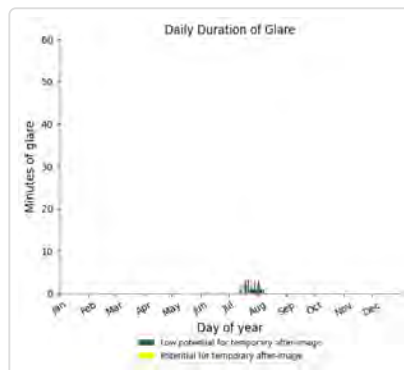
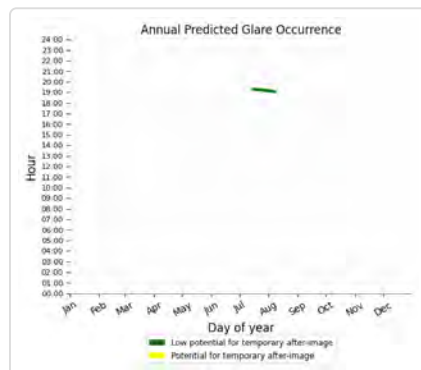
- 38 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## G11: OP 155

PV array is expected to produce the following glare for this receptor:

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

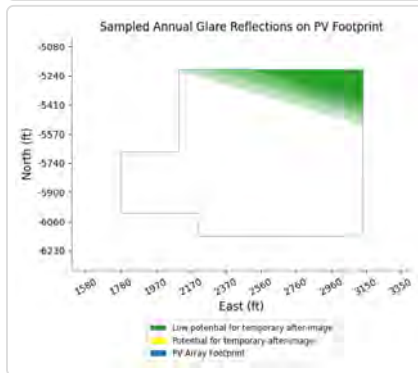
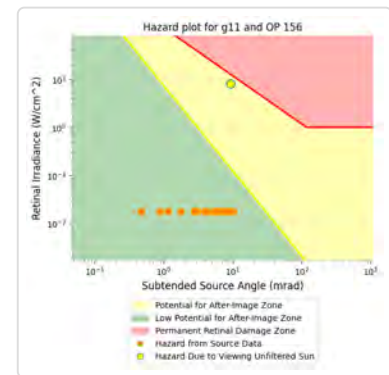
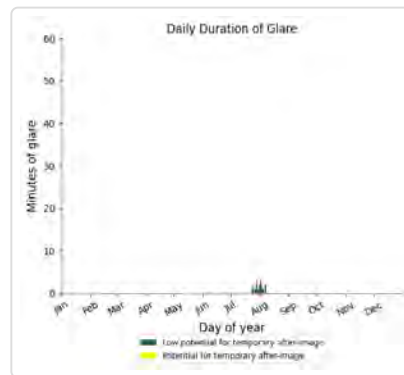
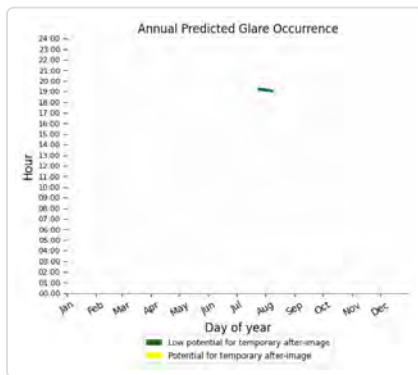




## G11: OP 156

PV array is expected to produce the following glare for this receptor:

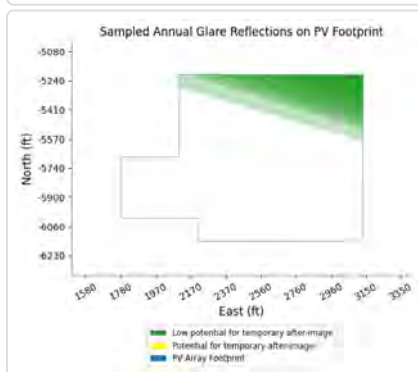
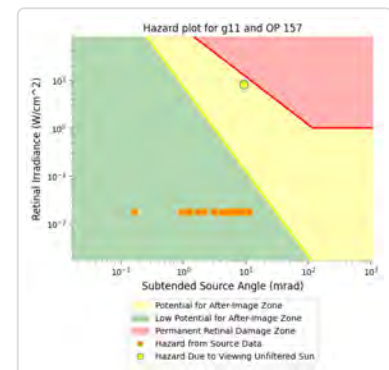
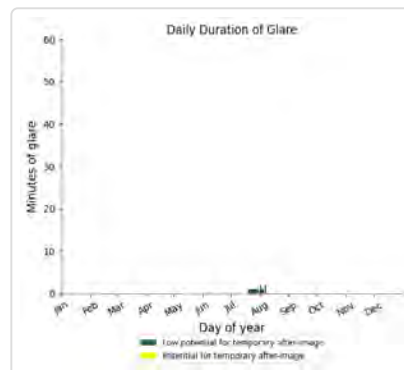
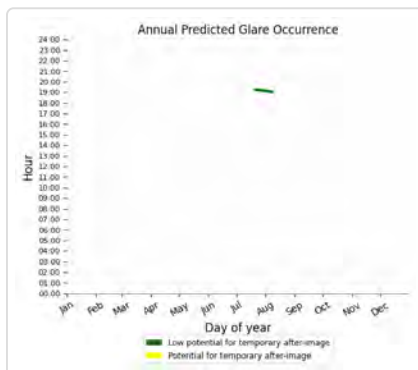
- 22 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## G11: OP 157

PV array is expected to produce the following glare for this receptor:

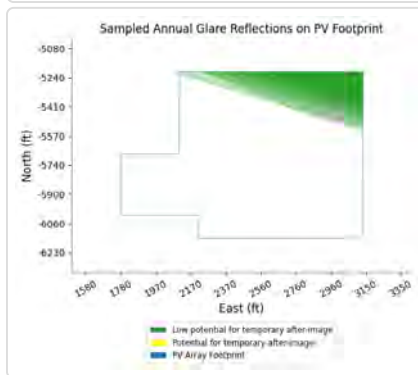
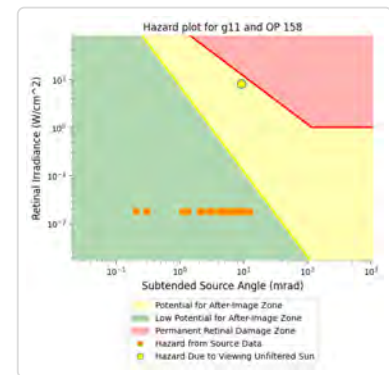
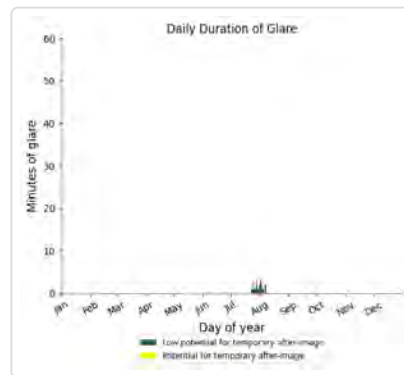
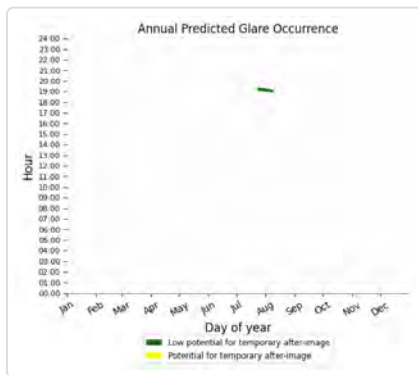
- 19 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## G11: OP 158

PV array is expected to produce the following glare for this receptor:

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



## G11: OP 159

No glare found

## G11: OP 160

No glare found

## G11: OP 161

No glare found

## G11: OP 162

No glare found

## G11: OP 163

No glare found

## G11: OP 164

No glare found

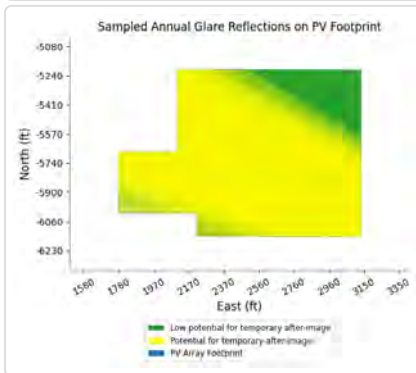
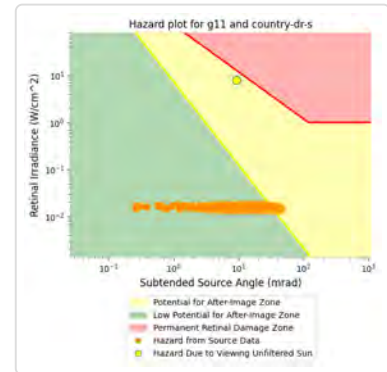
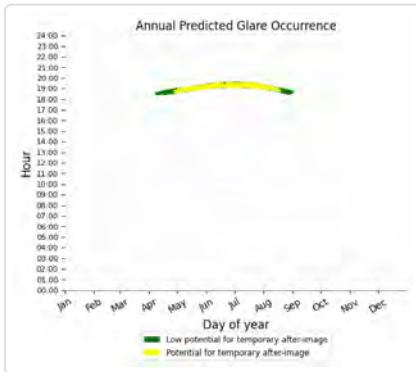
## G11: Collins Dr

No glare found

## G11: Country Dr Seg 1

PV array is expected to produce the following glare for this receptor:

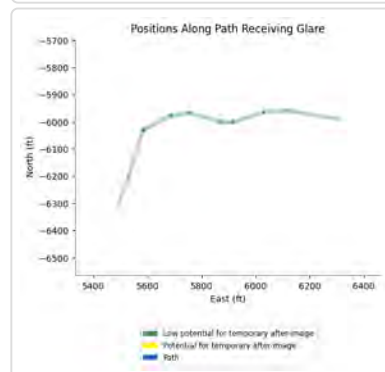
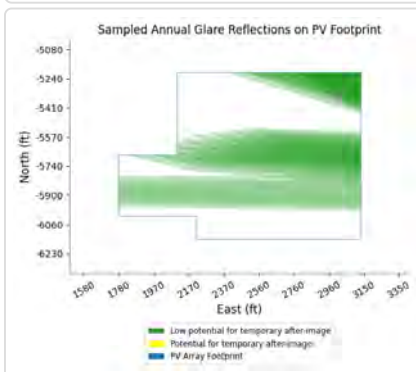
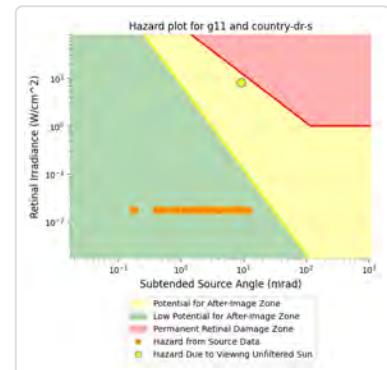
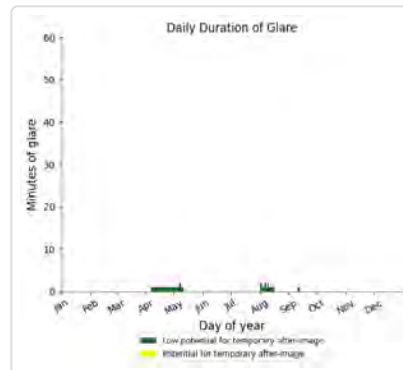
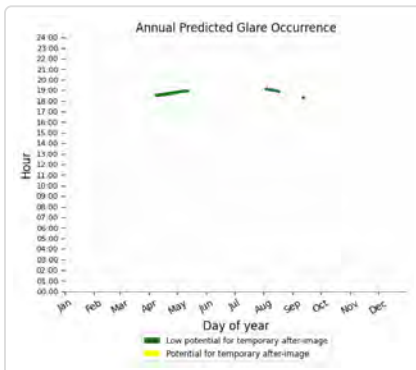
- 915 minutes of "green" glare with low potential to cause temporary after-image.
- 393 minutes of "yellow" glare with potential to cause temporary after-image.



## G11: Country Dr Seg 2

PV array is expected to produce the following glare for this receptor:

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



## G11: County Line Rd

No glare found

## G11: Dempseys Rd

No glare found

## G11: Harley Ln

No glare found

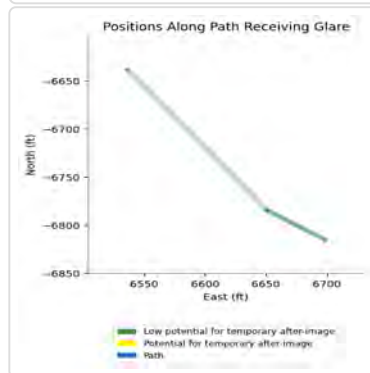
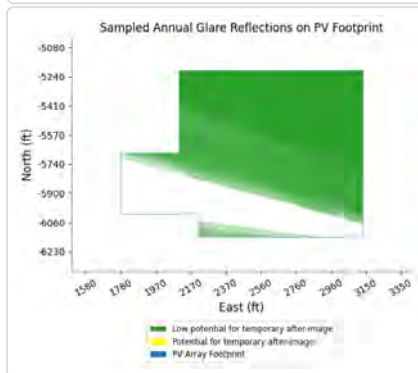
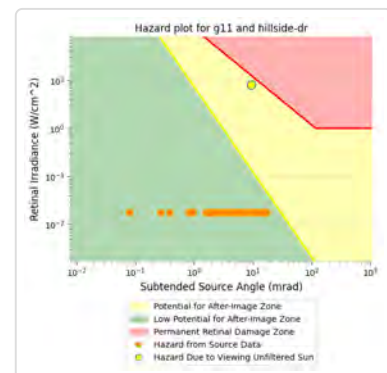
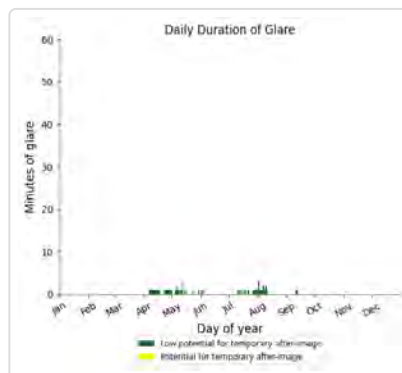
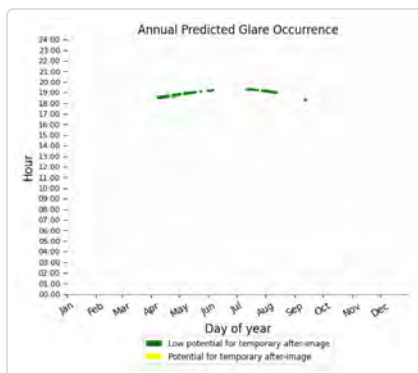
## G11: Henderson Rd

No glare found

## G11: Hillside Dr

PV array is expected to produce the following glare for this receptor:

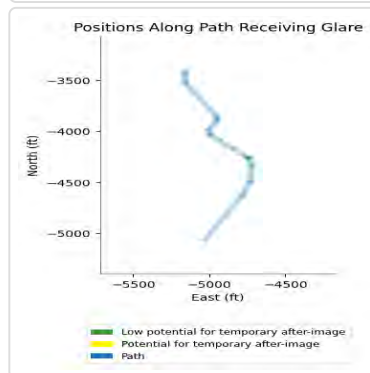
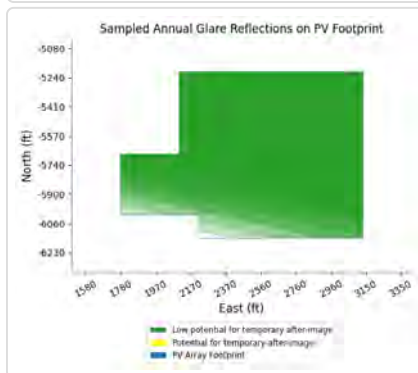
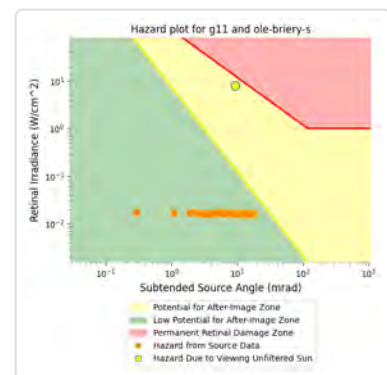
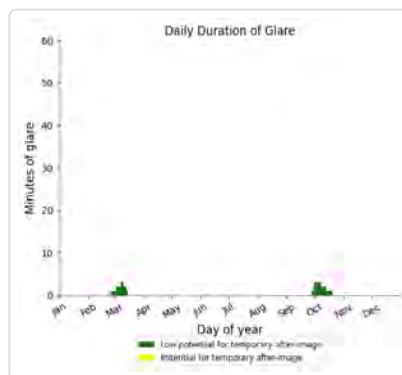
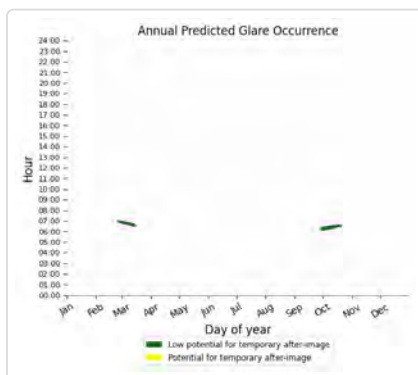
- 66 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## G11: Ole Briery Station Rd Seg 1

PV array is expected to produce the following glare for this receptor:

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



## G11: Ole Briery Station Rd Seg 2

No glare found

## G11: Thistle Knob Ln

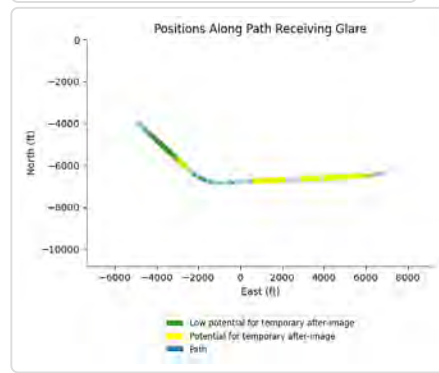
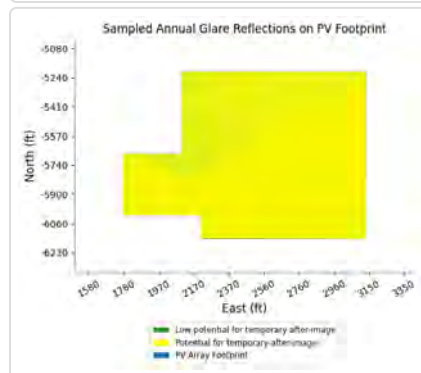
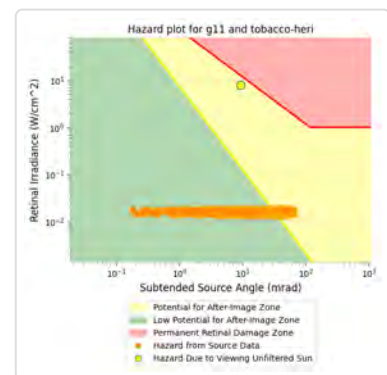
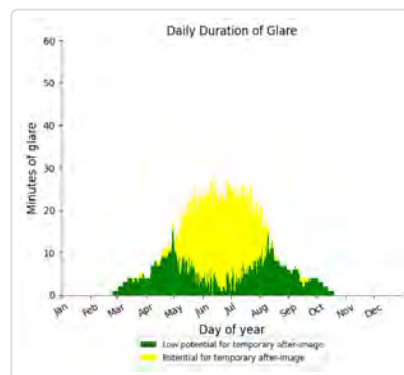
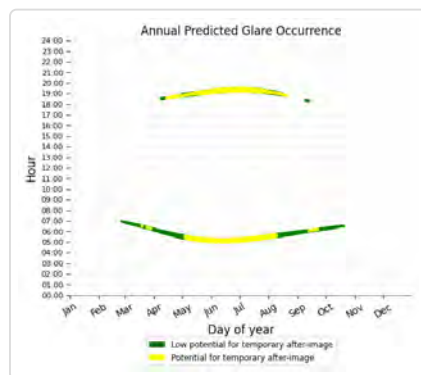
No glare found



## G11: Tobacco Heritage Trail

PV array is expected to produce the following glare for this receptor:

- 1,241 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.



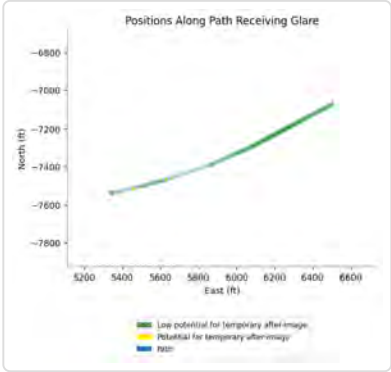
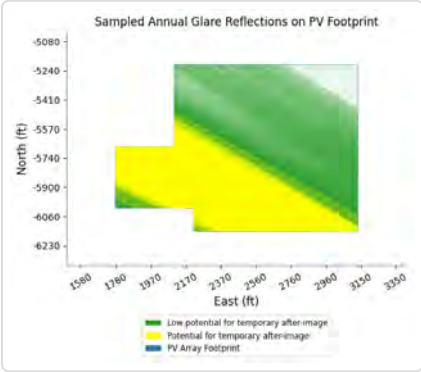
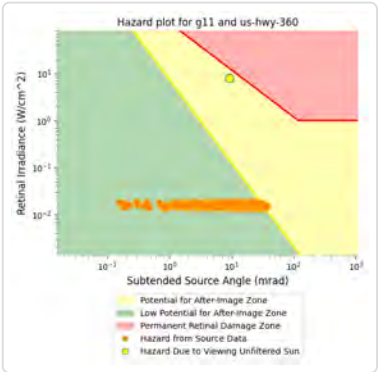
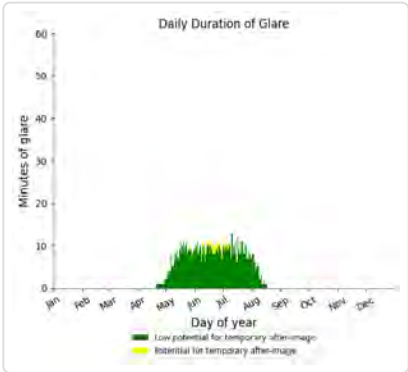
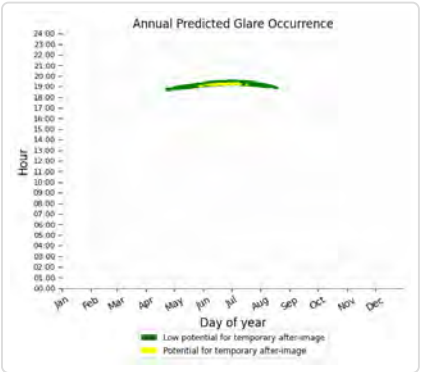
## G11: US Hwy 15

No glare found

G11: US Hwy 360

PV array is expected to produce the following glare for this receptor:

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



H01 low potential for temporary after-image

Component	Green glare (min)	Yellow glare (min)
OP: OP 134	0	0
OP: OP 135	0	0
OP: OP 136	0	0
OP: OP 137	0	0
OP: OP 138	0	0
OP: OP 139	0	0
OP: OP 140	0	0
OP: OP 141	0	0
OP: OP 142	0	0
OP: OP 143	0	0
OP: OP 144	0	0
OP: OP 145	0	0
OP: OP 146	0	0
OP: OP 147	0	0
OP: OP 148	0	0
OP: OP 149	0	0
OP: OP 150	0	0
OP: OP 151	0	0
OP: OP 152	0	0
OP: OP 153	0	0
OP: OP 154	0	0
OP: OP 155	0	0

OP: OP 156	0	0
OP: OP 157	0	0
OP: OP 158	0	0
OP: OP 159	0	0
OP: OP 160	16	0
OP: OP 161	49	0
OP: OP 162	103	0
OP: OP 163	103	0
OP: OP 164	104	0
Route: Collins Dr	0	0
Route: Country Dr Seg 1	0	0
Route: Country Dr Seg 2	0	0
Route: County Line Rd	143	0
Route: Dempseys Rd	0	0
Route: Harley Ln	0	0
Route: Henderson Rd	371	0
Route: Hillside Dr	0	0
Route: Ole Briery Station Rd Seg 1	171	0
Route: Ole Briery Station Rd Seg 2	129	0
Route: Thistle Knob Ln	0	0
Route: Tobacco Heritage Trail	743	0
Route: US Hwy 15	0	0
Route: US Hwy 360	0	0

#### H01: OP 134

*No glare found*

#### H01: OP 135

*No glare found*

#### H01: OP 136

*No glare found*

#### H01: OP 137

*No glare found*

#### H01: OP 138

*No glare found*

#### H01: OP 139

*No glare found*

#### H01: OP 140

*No glare found*

#### H01: OP 141

*No glare found*

**H01: OP 142**

*No glare found*

**H01: OP 143**

*No glare found*

**H01: OP 144**

*No glare found*

**H01: OP 145**

*No glare found*

**H01: OP 146**

*No glare found*

**H01: OP 147**

*No glare found*

**H01: OP 148**

*No glare found*

**H01: OP 149**

*No glare found*

**H01: OP 150**

*No glare found*

**H01: OP 151**

*No glare found*

**H01: OP 152**

*No glare found*

**H01: OP 153**

*No glare found*

**H01: OP 154**

*No glare found*

**H01: OP 155**

*No glare found*

**H01: OP 156**

*No glare found*

H01: OP 157

No glare found

H01: OP 158

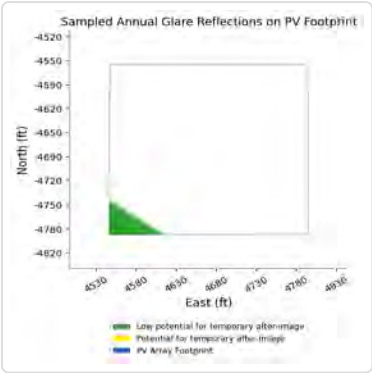
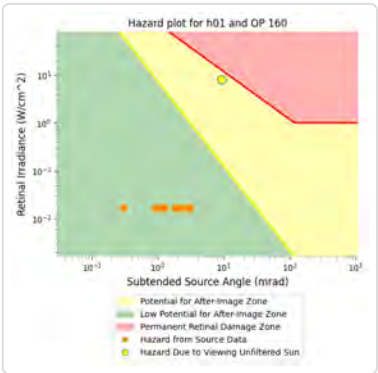
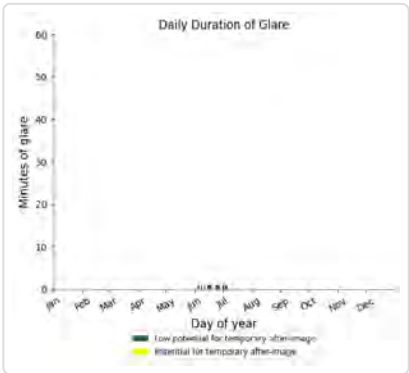
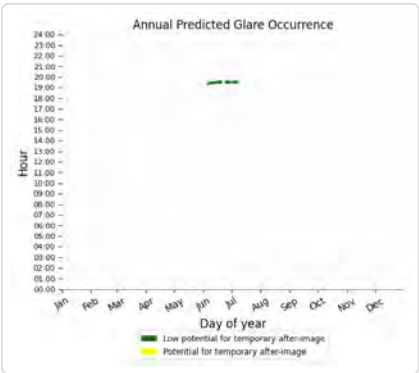
No glare found

H01: OP 159

No glare found

H01: OP 160

- PV array is expected to produce the following glare for this receptor:
- 16 minutes of "green" glare with low potential to cause temporary after-image.
  - 0 minutes of "yellow" glare with potential to cause temporary after-image.

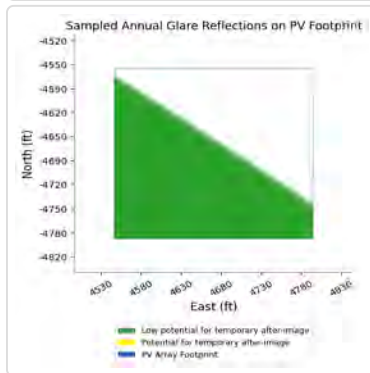
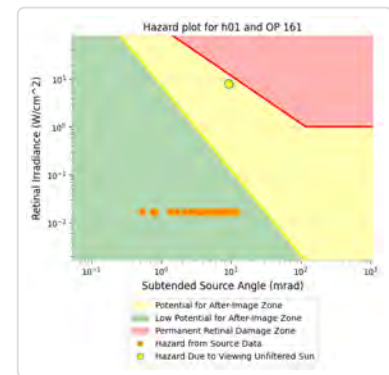
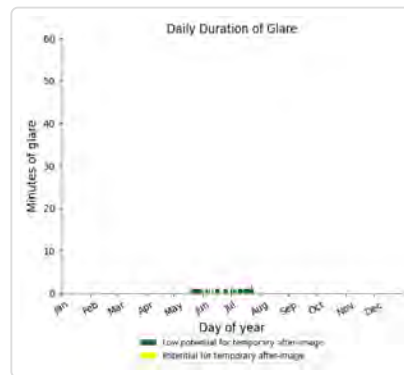
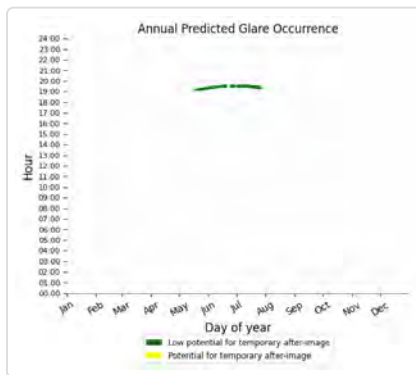




## H01: OP 161

PV array is expected to produce the following glare for this receptor:

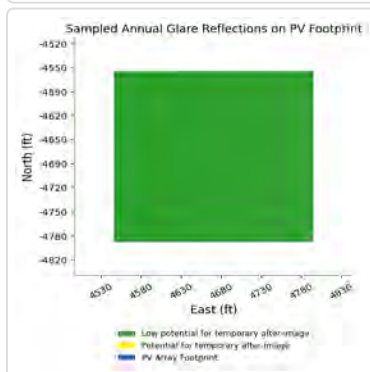
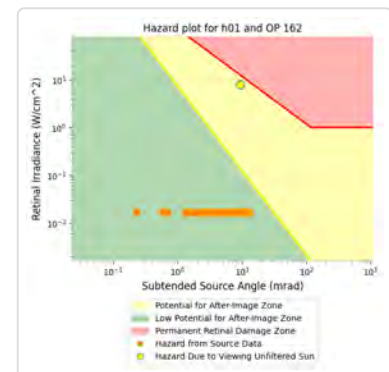
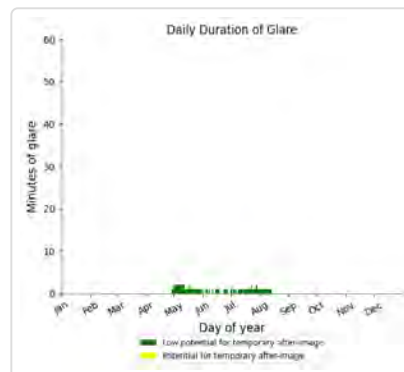
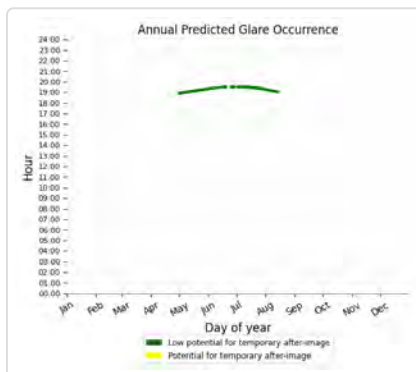
- 49 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## H01: OP 162

PV array is expected to produce the following glare for this receptor:

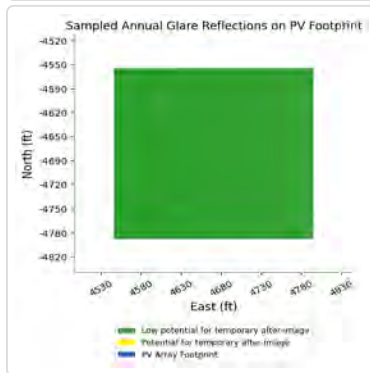
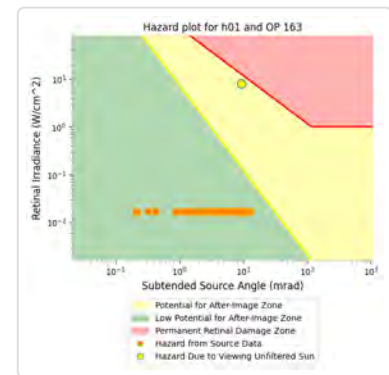
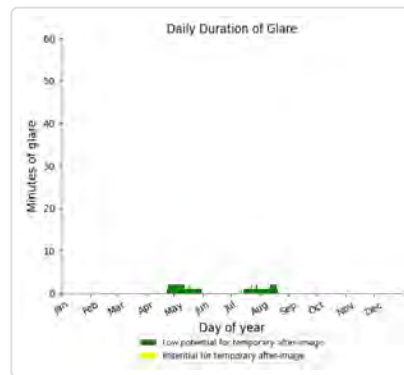
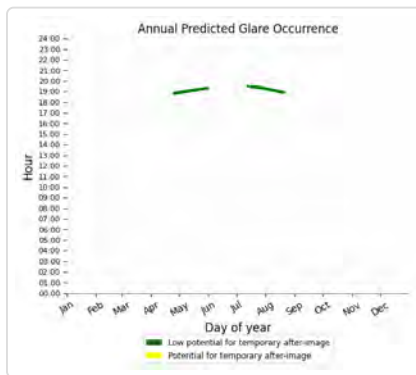
- 103 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## H01: OP 163

PV array is expected to produce the following glare for this receptor:

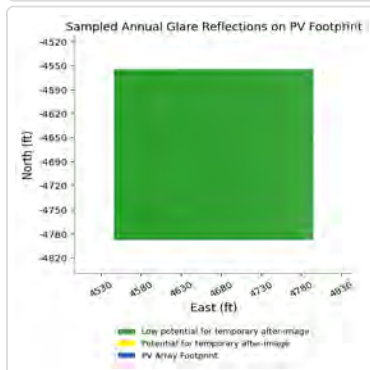
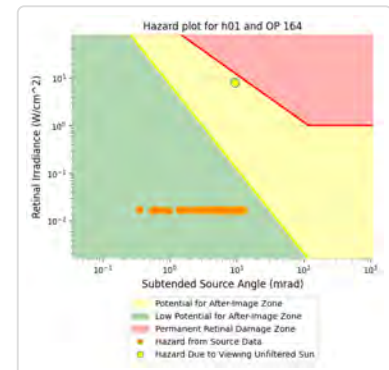
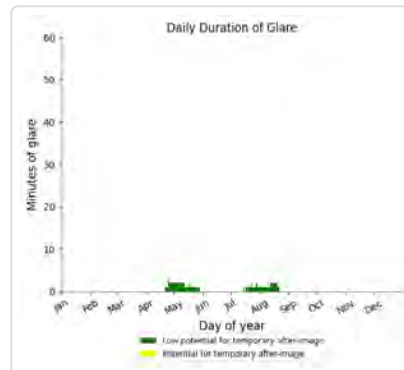
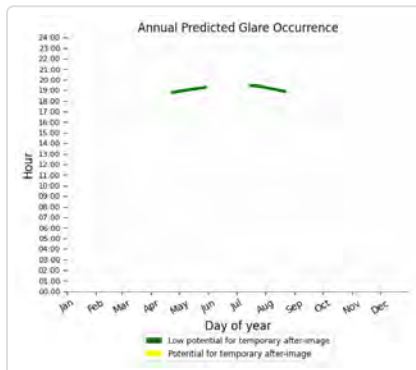
- 103 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## H01: OP 164

PV array is expected to produce the following glare for this receptor:

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



## H01: Collins Dr

No glare found

## H01: Country Dr Seg 1

No glare found

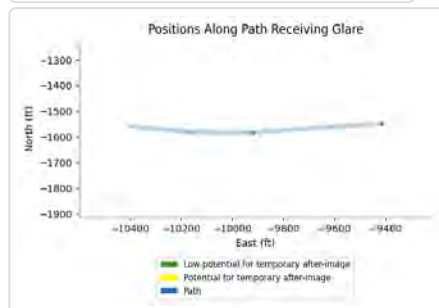
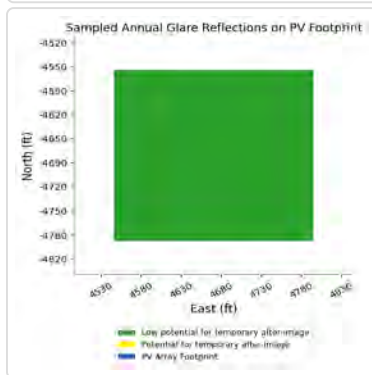
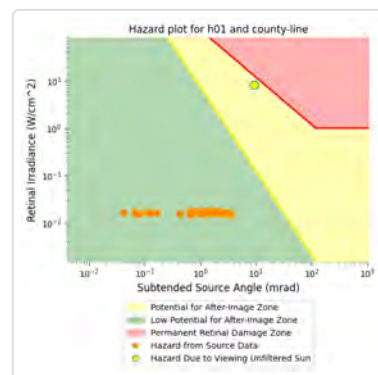
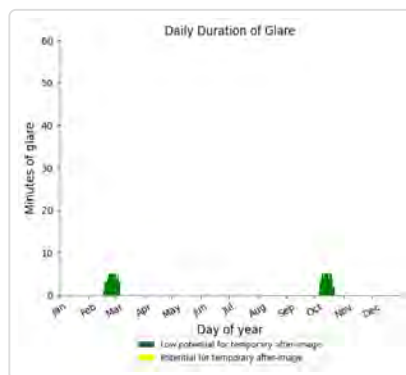
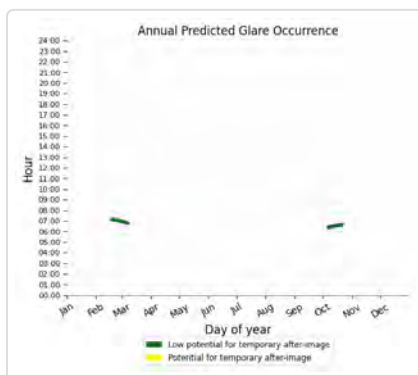
## H01: Country Dr Seg 2

No glare found

## H01: County Line Rd

PV array is expected to produce the following glare for this receptor:

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



## H01: Dempseys Rd

No glare found

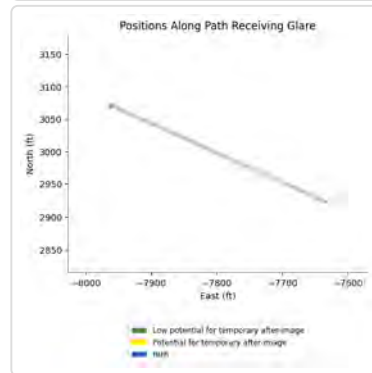
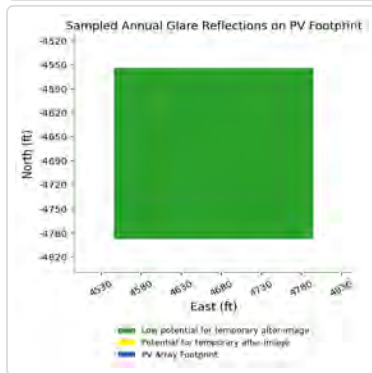
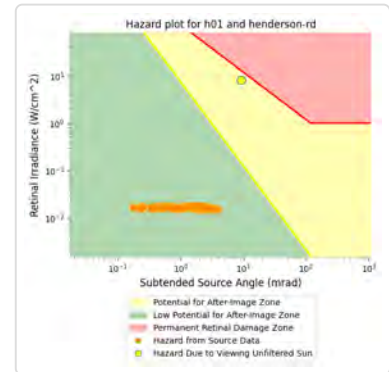
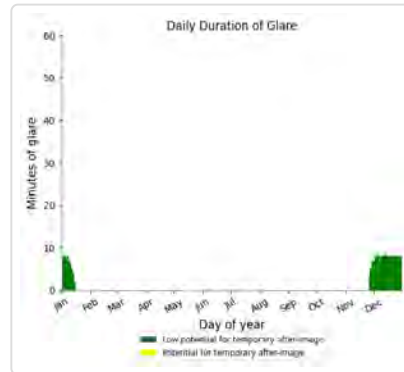
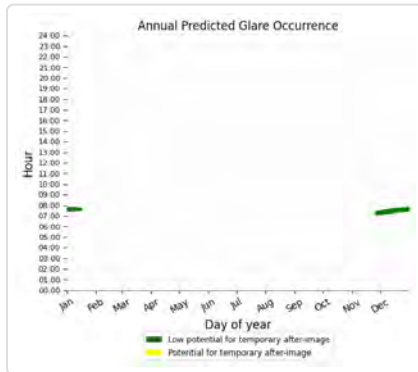
## H01: Harley Ln

No glare found

## H01: Henderson Rd

PV array is expected to produce the following glare for this receptor:

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



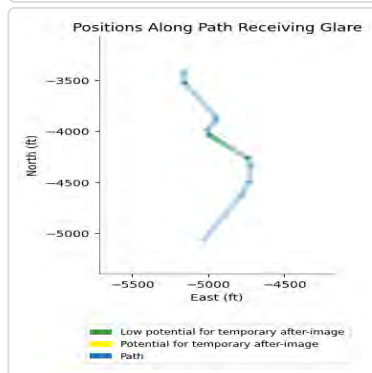
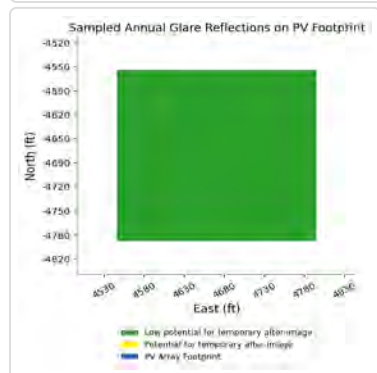
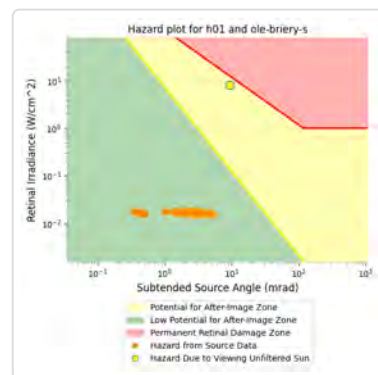
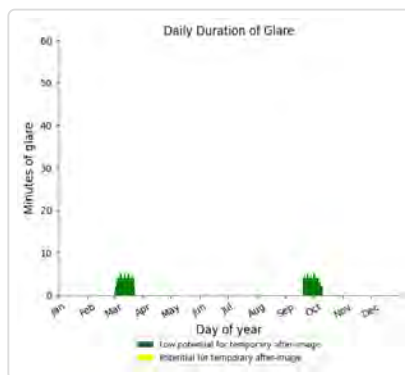
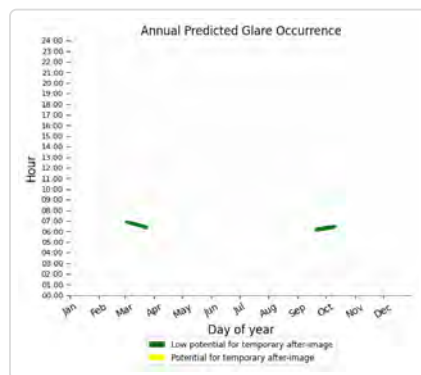
## H01: Hillside Dr

No glare found

## H01: Ole Briery Station Rd Seg 1

PV array is expected to produce the following glare for this receptor:

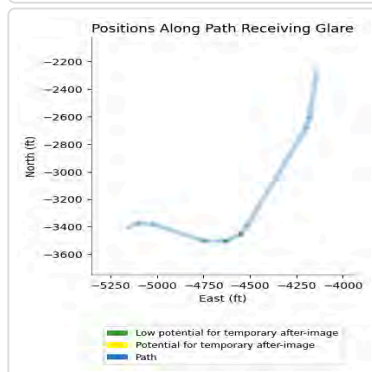
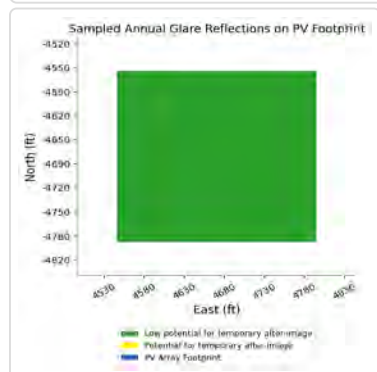
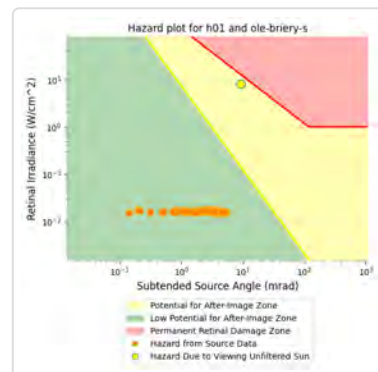
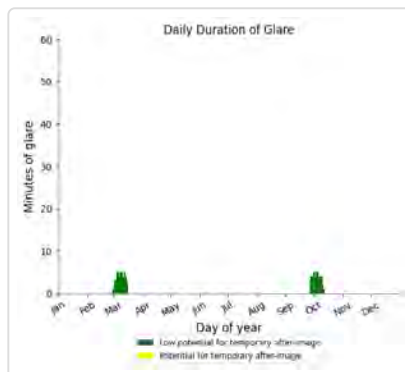
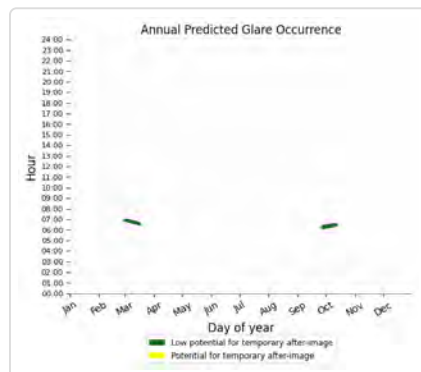
- 171 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## H01: Ole Briery Station Rd Seg 2

PV array is expected to produce the following glare for this receptor:

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





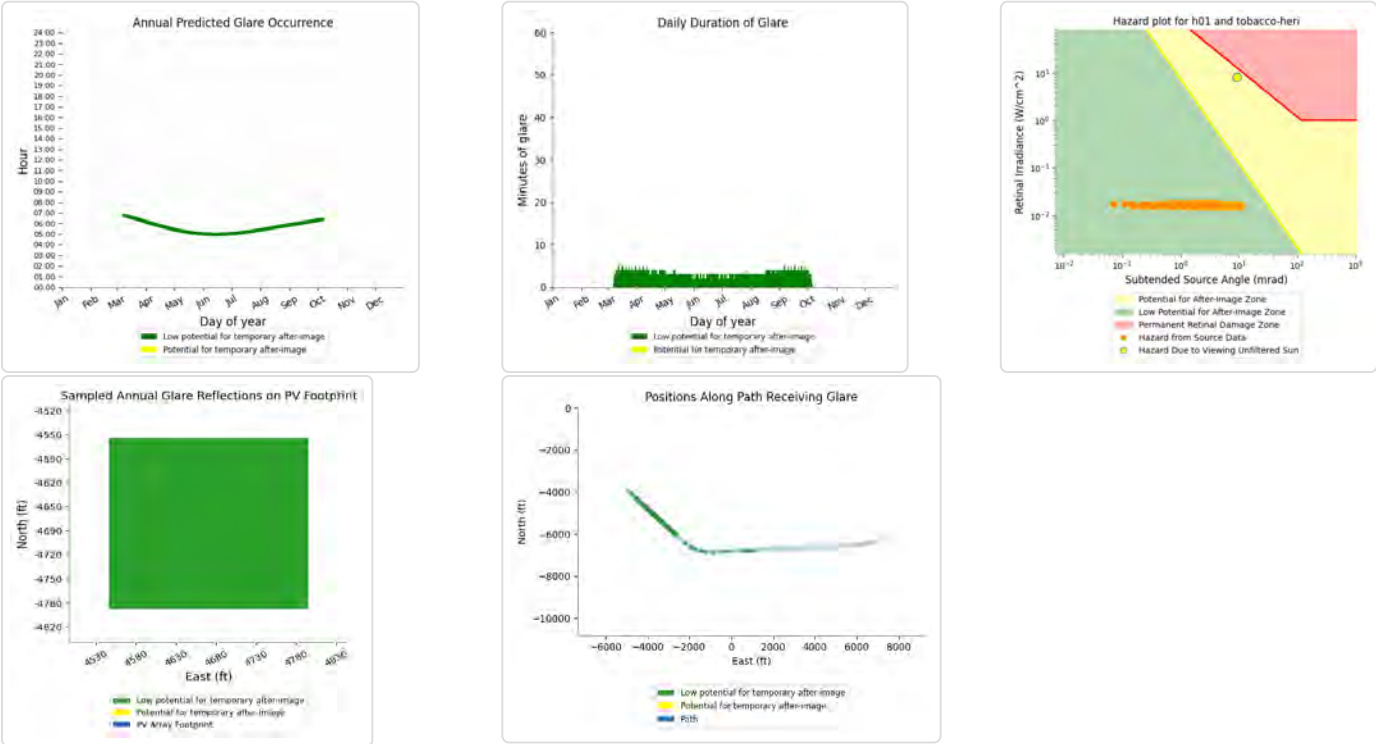
H01: Thistle Knob Ln

No glare found

H01: Tobacco Heritage Trail

PV array is expected to produce the following glare for this receptor:

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



H01: US Hwy 15

No glare found

H01: US Hwy 360

No glare found

H02 potential temporary after-image

Component	Green glare (min)	Yellow glare (min)
OP: OP 134	0	0
OP: OP 135	0	0
OP: OP 136	0	0
OP: OP 137	0	0
OP: OP 138	0	0
OP: OP 139	0	0
OP: OP 140	0	0
OP: OP 141	0	0
OP: OP 142	0	0
OP: OP 143	0	0
OP: OP 144	0	0
OP: OP 145	0	0

OP: OP 146	0	0
OP: OP 147	0	0
OP: OP 148	0	0
OP: OP 149	0	0
OP: OP 150	0	0
OP: OP 151	0	0
OP: OP 152	0	0
OP: OP 153	0	0
OP: OP 154	0	0
OP: OP 155	0	0
OP: OP 156	129	0
OP: OP 157	103	0
OP: OP 158	142	0
OP: OP 159	269	0
OP: OP 160	262	0
OP: OP 161	264	0
OP: OP 162	260	0
OP: OP 163	100	0
OP: OP 164	109	0
Route: Collins Dr	0	0
Route: Country Dr Seg 1	0	0
Route: Country Dr Seg 2	454	6
Route: County Line Rd	47	0
Route: Dempseys Rd	0	0
Route: Harley Ln	0	0
Route: Henderson Rd	41	0
Route: Hillside Dr	16	0
Route: Ole Briery Station Rd Seg 1	62	0
Route: Ole Briery Station Rd Seg 2	51	0
Route: Thistle Knob Ln	0	0
Route: Tobacco Heritage Trail	829	0
Route: US Hwy 15	0	0
Route: US Hwy 360	0	0

## H02: OP 134

*No glare found*

## H02: OP 135

*No glare found*

## H02: OP 136

*No glare found*

## H02: OP 137

*No glare found*

## H02: OP 138

*No glare found*

**H02: OP 139**

*No glare found*

**H02: OP 140**

*No glare found*

**H02: OP 141**

*No glare found*

**H02: OP 142**

*No glare found*

**H02: OP 143**

*No glare found*

**H02: OP 144**

*No glare found*

**H02: OP 145**

*No glare found*

**H02: OP 146**

*No glare found*

**H02: OP 147**

*No glare found*

**H02: OP 148**

*No glare found*

**H02: OP 149**

*No glare found*

**H02: OP 150**

*No glare found*

**H02: OP 151**

*No glare found*

**H02: OP 152**

*No glare found*

**H02: OP 153**

*No glare found*

H02: OP 154

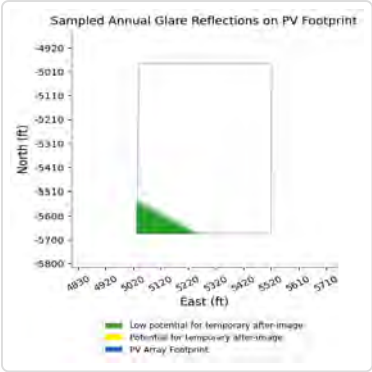
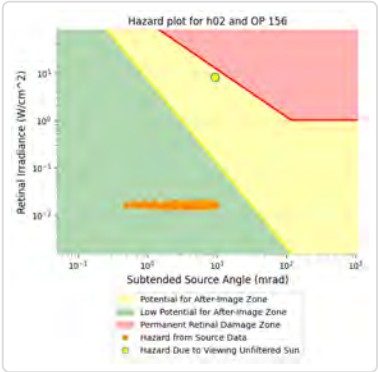
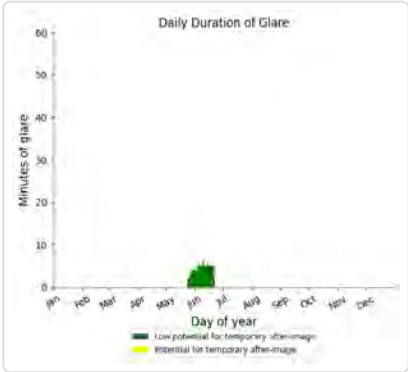
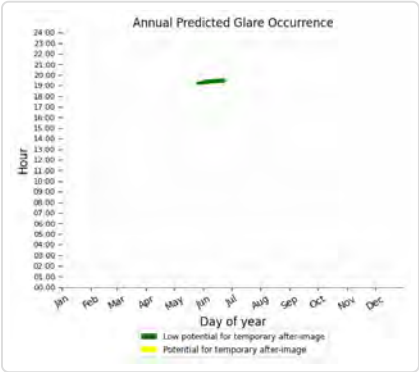
No glare found

H02: OP 155

No glare found

H02: OP 156

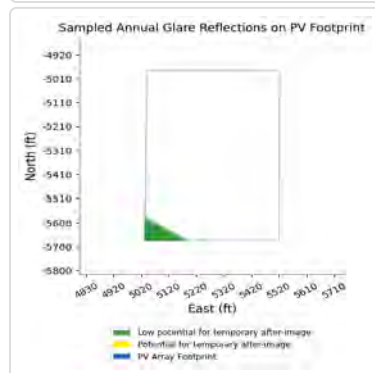
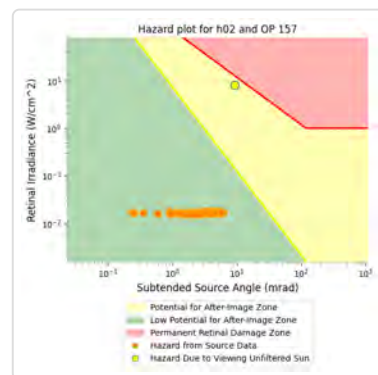
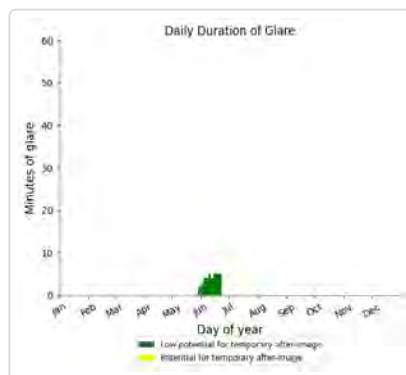
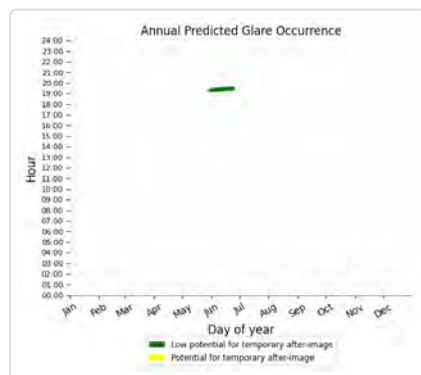
- PV array is expected to produce the following glare for this receptor:
- 129 minutes of "green" glare with low potential to cause temporary after-image.
  - 0 minutes of "yellow" glare with potential to cause temporary after-image.



## H02: OP 157

PV array is expected to produce the following glare for this receptor:

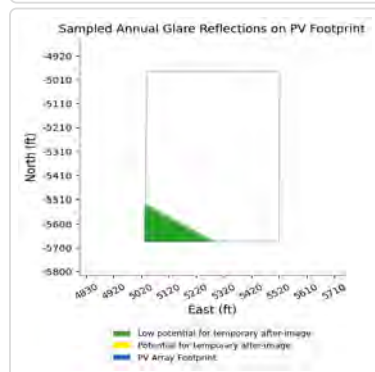
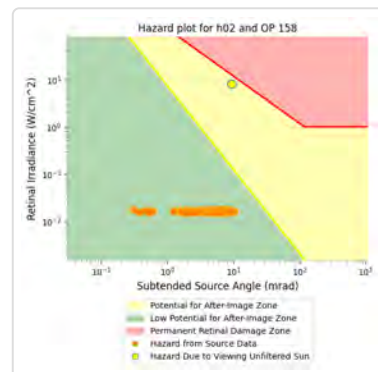
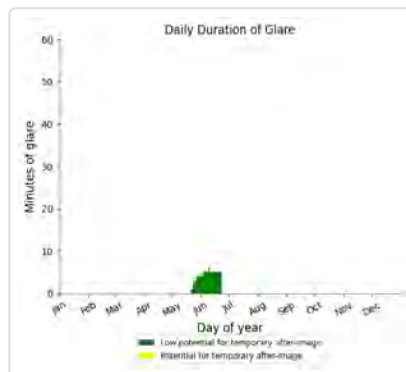
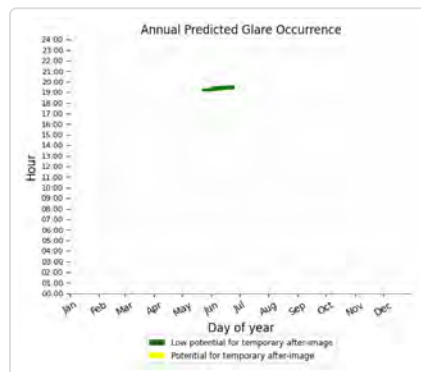
- 103 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## H02: OP 158

PV array is expected to produce the following glare for this receptor:

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

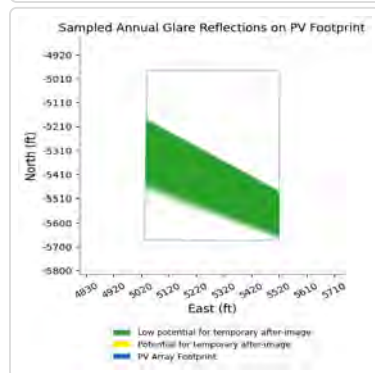
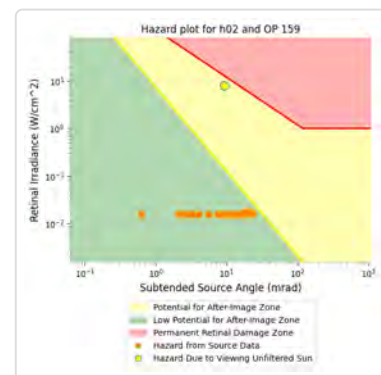
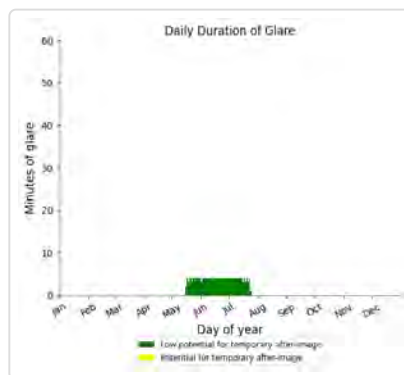
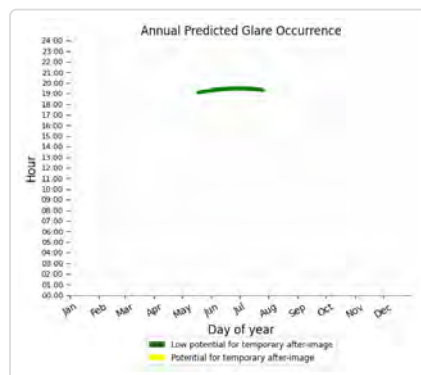




## H02: OP 159

PV array is expected to produce the following glare for this receptor:

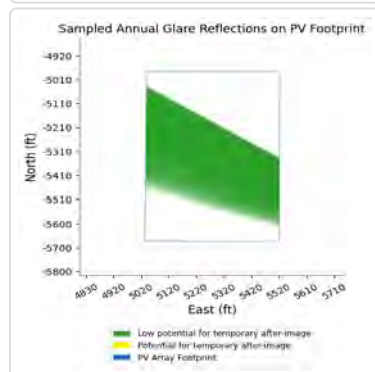
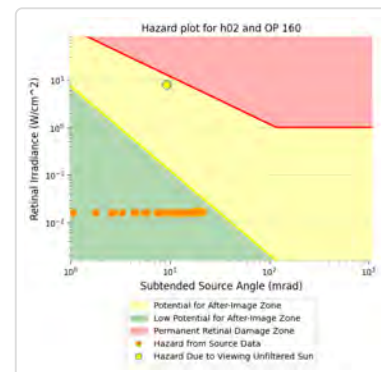
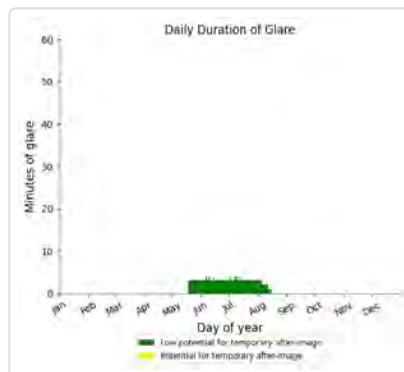
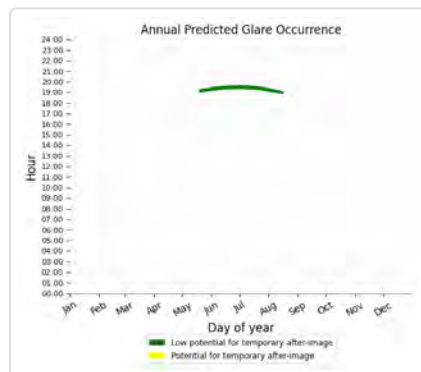
- 269 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## H02: OP 160

PV array is expected to produce the following glare for this receptor:

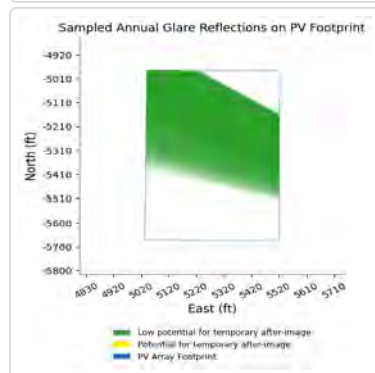
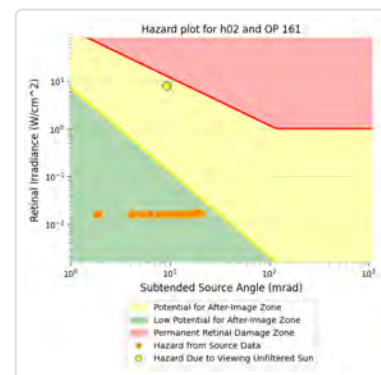
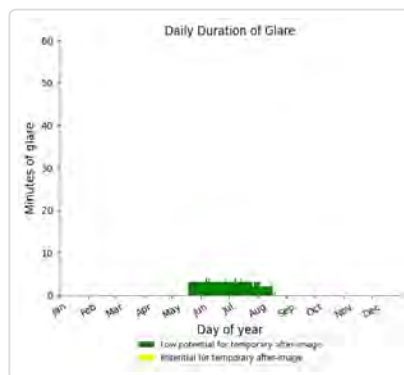
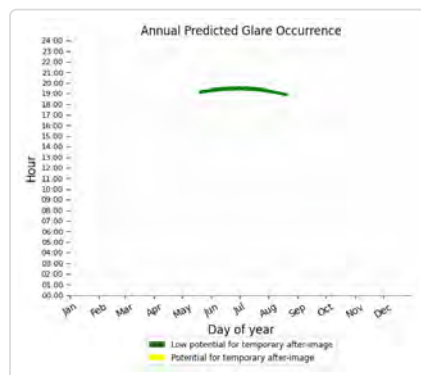
- 262 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## H02: OP 161

PV array is expected to produce the following glare for this receptor:

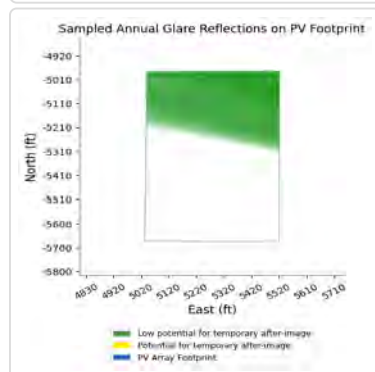
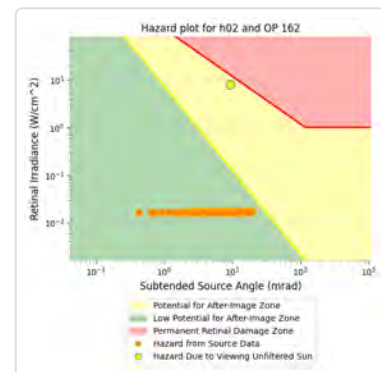
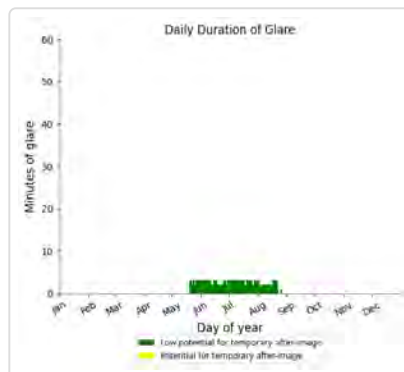
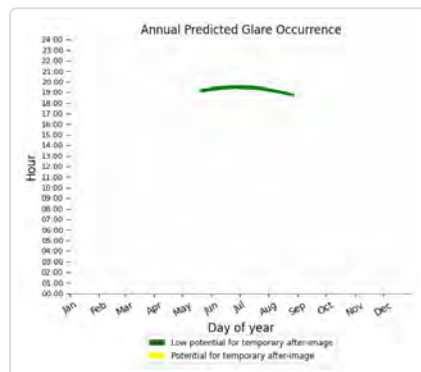
- 264 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## H02: OP 162

PV array is expected to produce the following glare for this receptor:

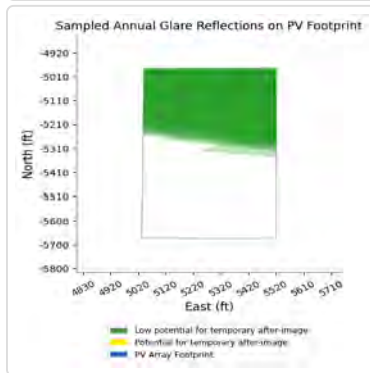
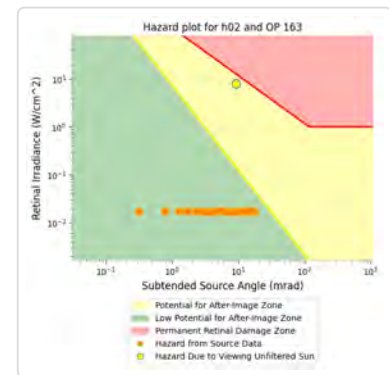
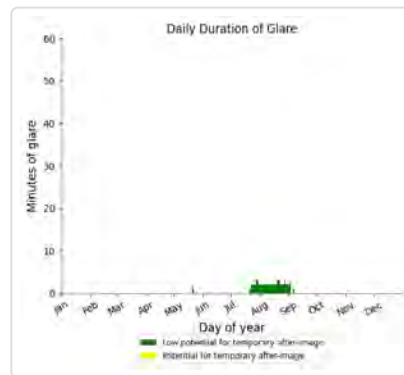
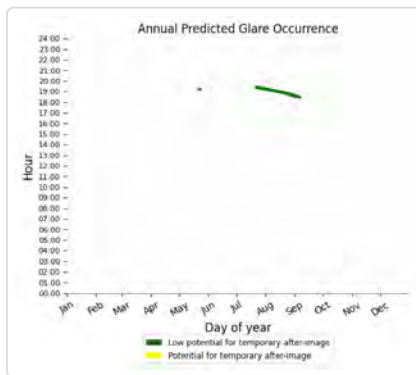
- 260 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## H02: OP 163

PV array is expected to produce the following glare for this receptor:

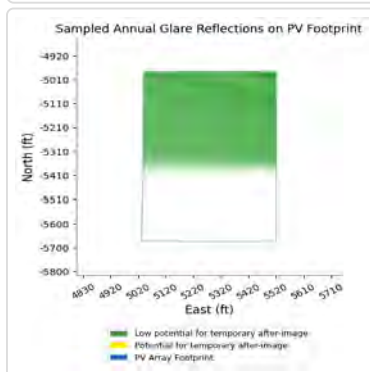
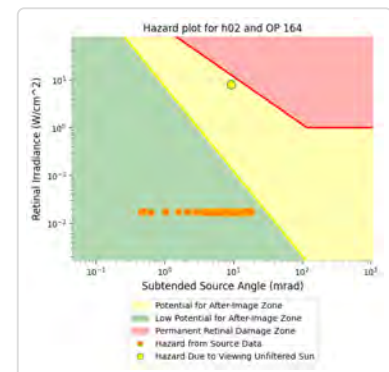
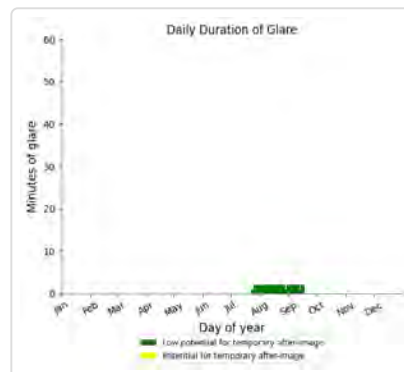
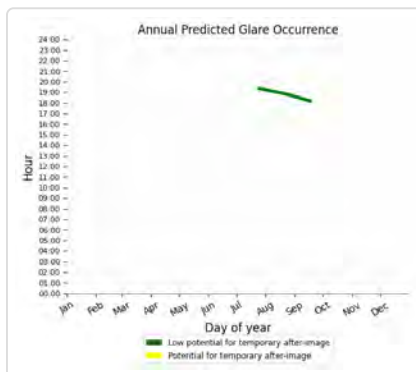
- 100 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## H02: OP 164

PV array is expected to produce the following glare for this receptor:

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



H02: Collins Dr

No glare found

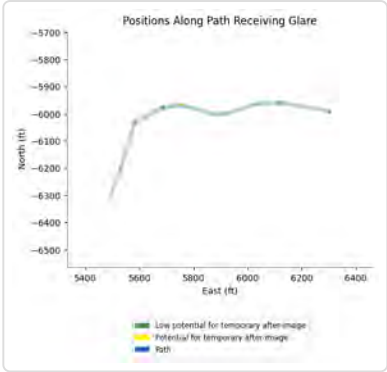
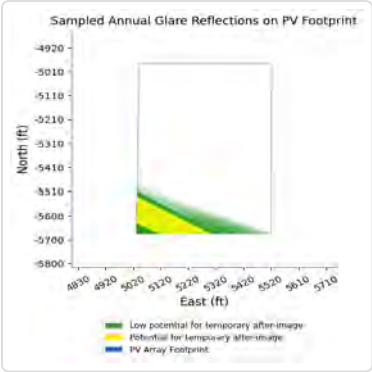
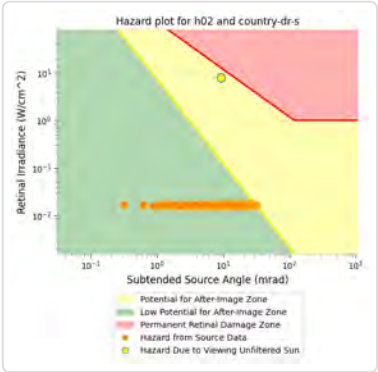
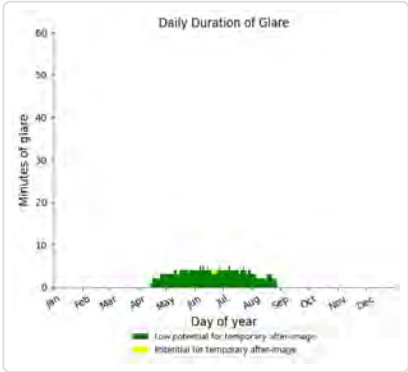
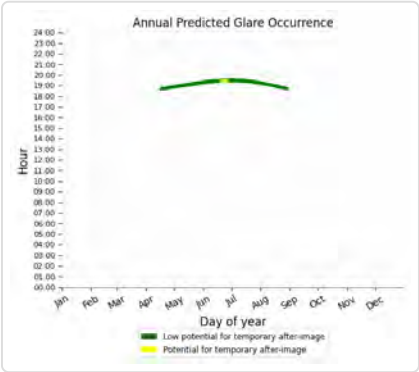
H02: Country Dr Seg 1

No glare found

H02: Country Dr Seg 2

PV array is expected to produce the following glare for this receptor:

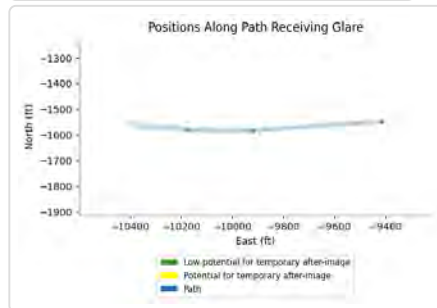
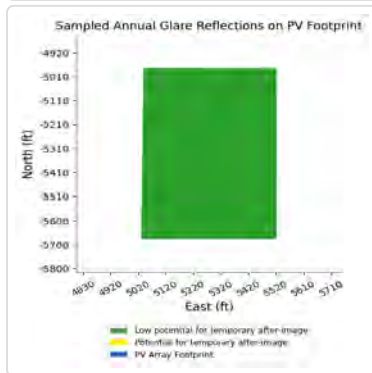
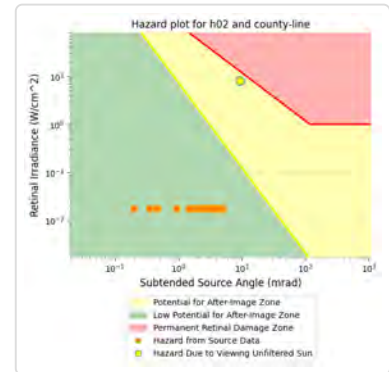
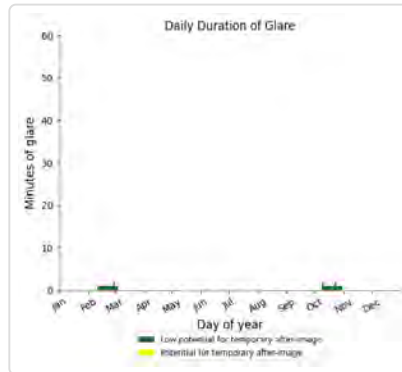
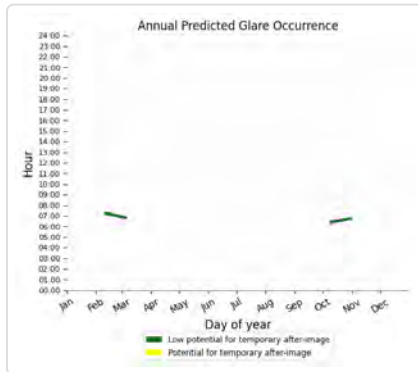
- 454 minutes of "green" glare with low potential to cause temporary after-image.
- 6 minutes of "yellow" glare with potential to cause temporary after-image.



## H02: County Line Rd

PV array is expected to produce the following glare for this receptor:

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



## H02: Dempseys Rd

No glare found

## H02: Harley Ln

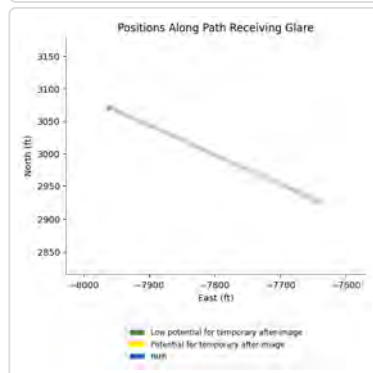
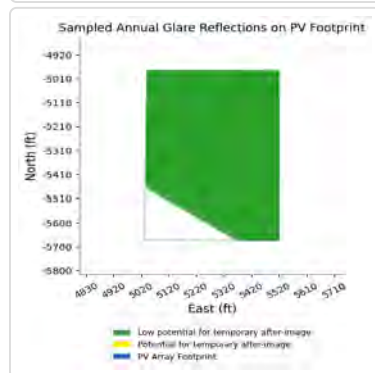
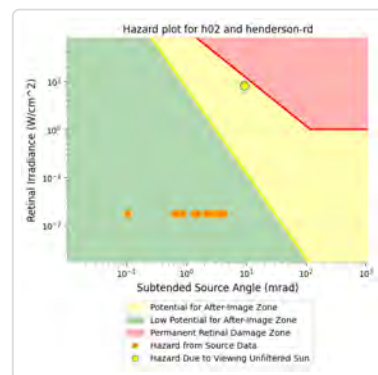
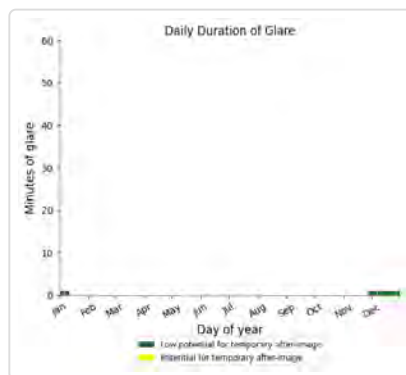
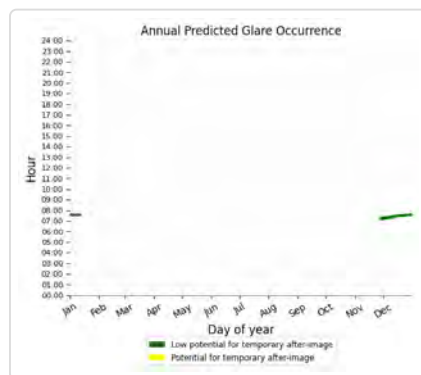
No glare found



## H02: Henderson Rd

PV array is expected to produce the following glare for this receptor:

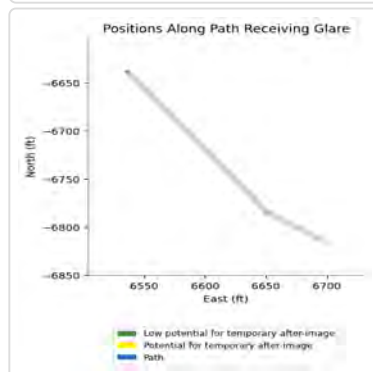
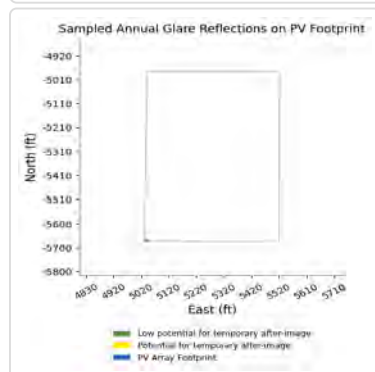
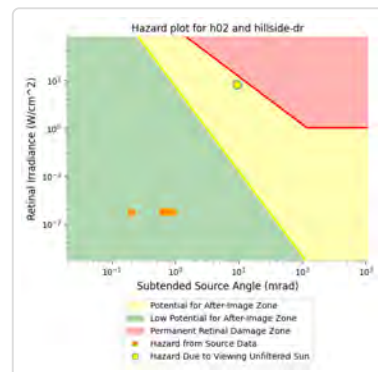
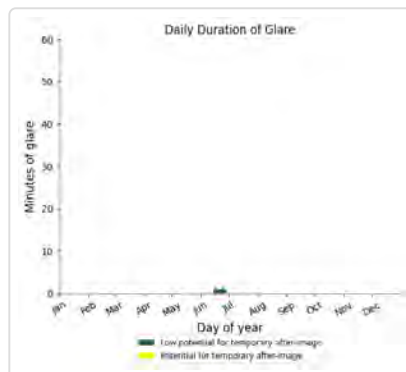
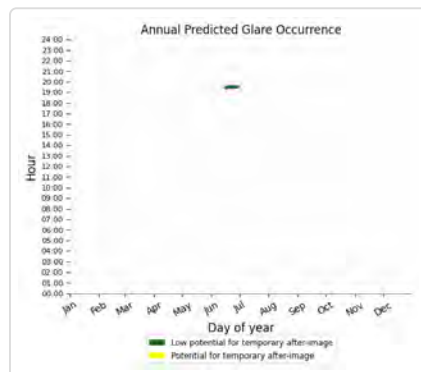
- 41 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## H02: Hillside Dr

PV array is expected to produce the following glare for this receptor:

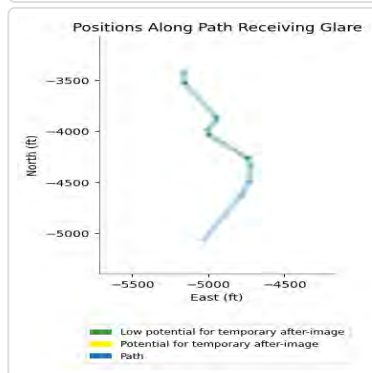
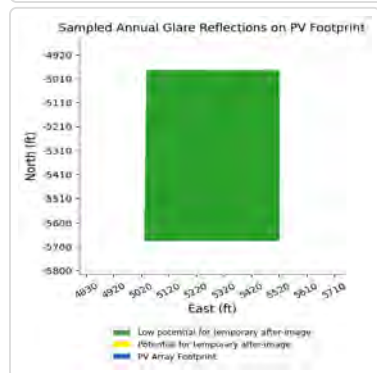
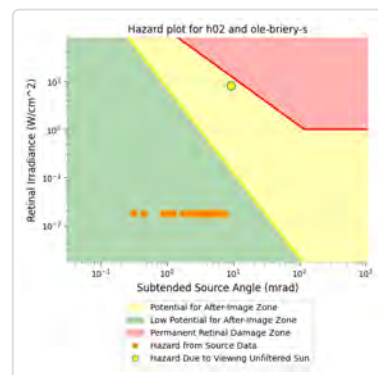
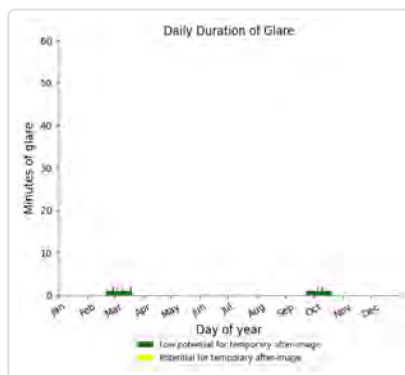
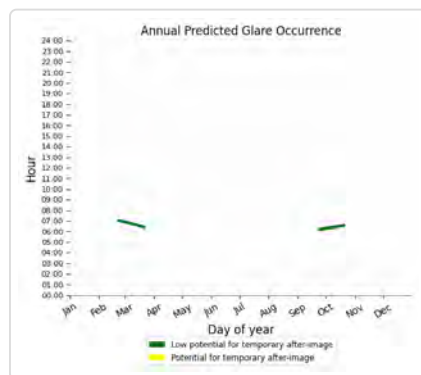
- 16 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## H02: Ole Briery Station Rd Seg 1

PV array is expected to produce the following glare for this receptor:

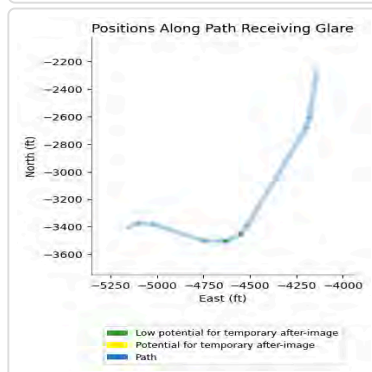
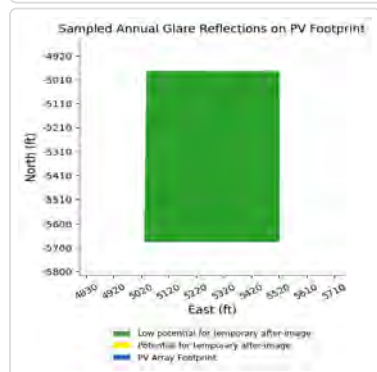
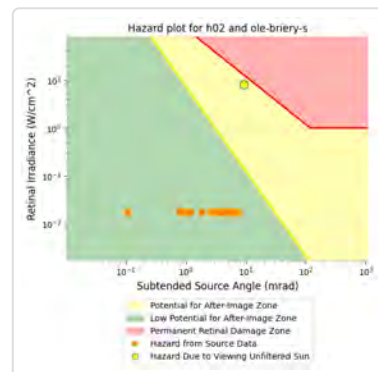
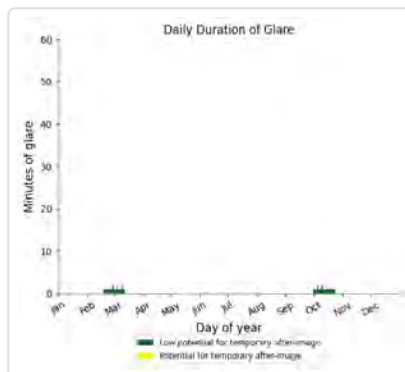
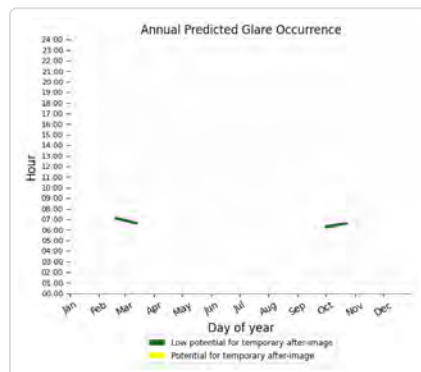
- 62 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## H02: Ole Briery Station Rd Seg 2

PV array is expected to produce the following glare for this receptor:

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



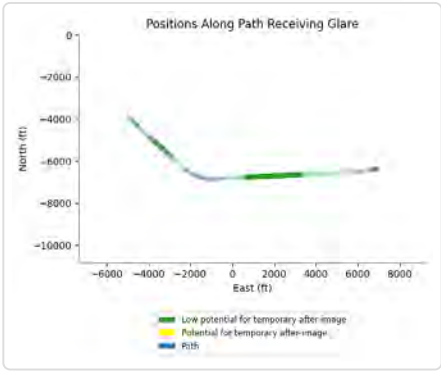
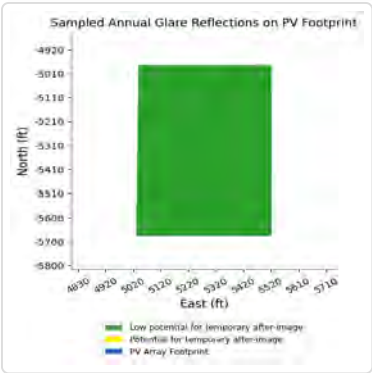
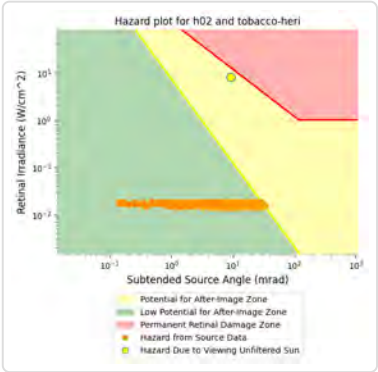
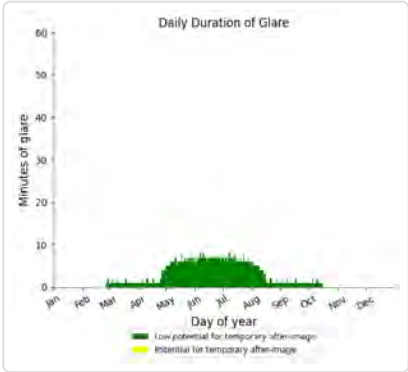
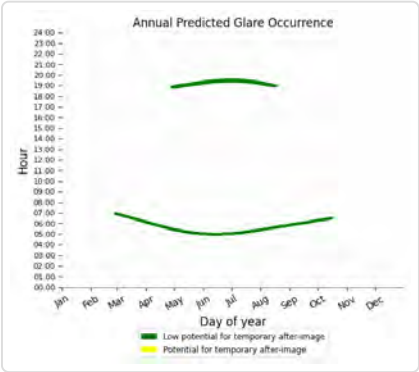
H02: Thistle Knob Ln

No glare found

H02: Tobacco Heritage Trail

PV array is expected to produce the following glare for this receptor:

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



H02: US Hwy 15

No glare found

H02: US Hwy 360

No glare found

H03 low potential for temporary after-image

Component	Green glare (min)	Yellow glare (min)
OP: OP 134	0	0
OP: OP 135	0	0
OP: OP 136	0	0
OP: OP 137	0	0
OP: OP 138	0	0
OP: OP 139	0	0
OP: OP 140	0	0
OP: OP 141	0	0
OP: OP 142	0	0
OP: OP 143	0	0
OP: OP 144	0	0
OP: OP 145	0	0

OP: OP 146	0	0
OP: OP 147	0	0
OP: OP 148	0	0
OP: OP 149	0	0
OP: OP 150	0	0
OP: OP 151	0	0
OP: OP 152	0	0
OP: OP 153	0	0
OP: OP 154	0	0
OP: OP 155	0	0
OP: OP 156	0	0
OP: OP 157	0	0
OP: OP 158	0	0
OP: OP 159	0	0
OP: OP 160	0	0
OP: OP 161	0	0
OP: OP 162	34	0
OP: OP 163	74	0
OP: OP 164	91	0
Route: Collins Dr	0	0
Route: Country Dr Seg 1	0	0
Route: Country Dr Seg 2	0	0
Route: County Line Rd	378	0
Route: Dempseys Rd	0	0
Route: Harley Ln	0	0
Route: Henderson Rd	716	0
Route: Hillside Dr	0	0
Route: Ole Briery Station Rd Seg 1	392	0
Route: Ole Briery Station Rd Seg 2	341	0
Route: Thistle Knob Ln	0	0
Route: Tobacco Heritage Trail	500	0
Route: US Hwy 15	0	0
Route: US Hwy 360	0	0

### H03: OP 134

*No glare found*

### H03: OP 135

*No glare found*

### H03: OP 136

*No glare found*

### H03: OP 137

*No glare found*

### H03: OP 138

*No glare found*

**H03: OP 139**

*No glare found*

**H03: OP 140**

*No glare found*

**H03: OP 141**

*No glare found*

**H03: OP 142**

*No glare found*

**H03: OP 143**

*No glare found*

**H03: OP 144**

*No glare found*

**H03: OP 145**

*No glare found*

**H03: OP 146**

*No glare found*

**H03: OP 147**

*No glare found*

**H03: OP 148**

*No glare found*

**H03: OP 149**

*No glare found*

**H03: OP 150**

*No glare found*

**H03: OP 151**

*No glare found*

**H03: OP 152**

*No glare found*

**H03: OP 153**

*No glare found*



### H03: OP 154

No glare found

### H03: OP 155

No glare found

### H03: OP 156

No glare found

### H03: OP 157

No glare found

### H03: OP 158

No glare found

### H03: OP 159

No glare found

### H03: OP 160

No glare found

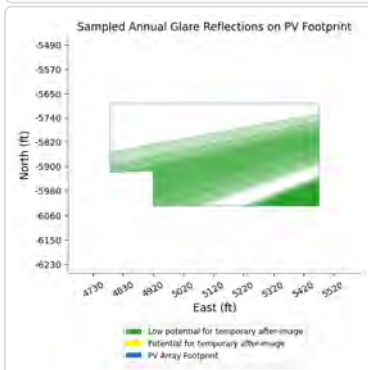
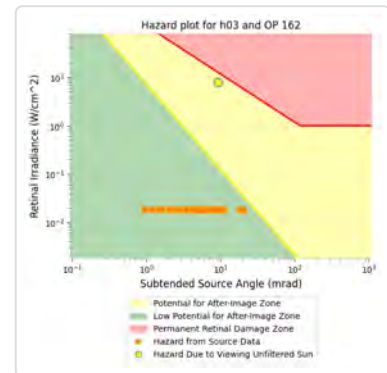
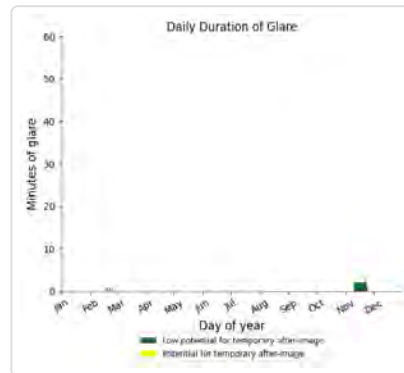
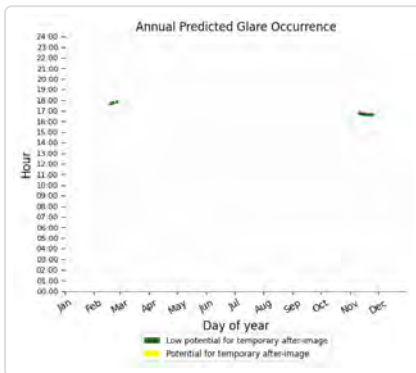
### H03: OP 161

No glare found

### H03: OP 162

PV array is expected to produce the following glare for this receptor:

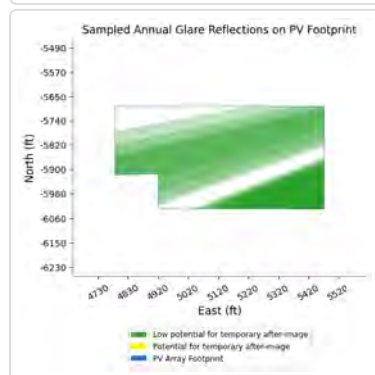
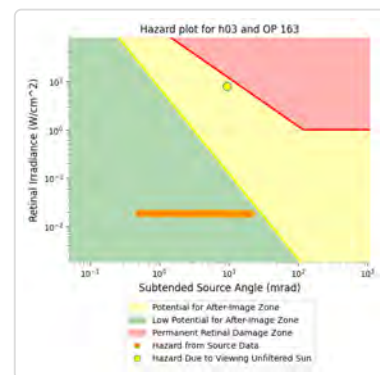
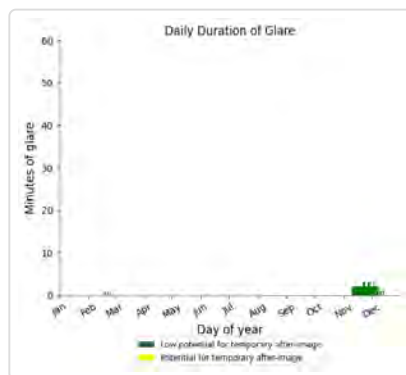
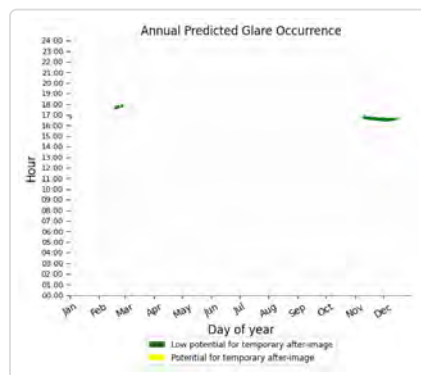
- 34 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



### H03: OP 163

PV array is expected to produce the following glare for this receptor:

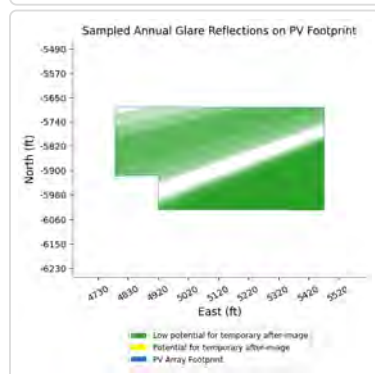
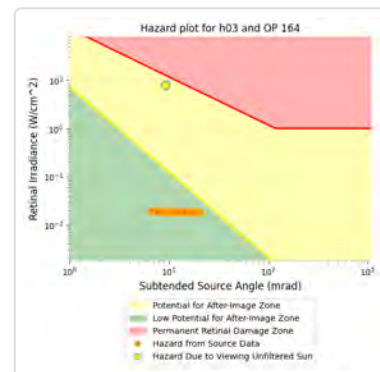
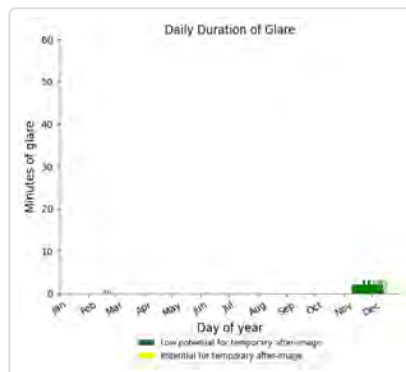
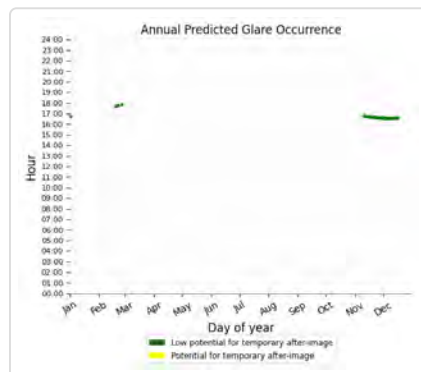
- 74 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



### H03: OP 164

PV array is expected to produce the following glare for this receptor:

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



### H03: Collins Dr

No glare found

### H03: Country Dr Seg 1

No glare found

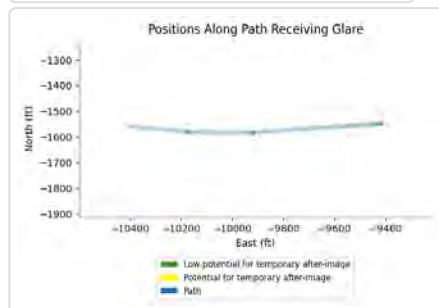
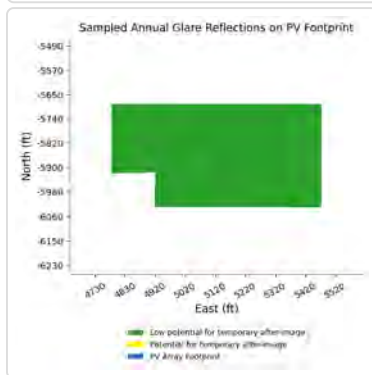
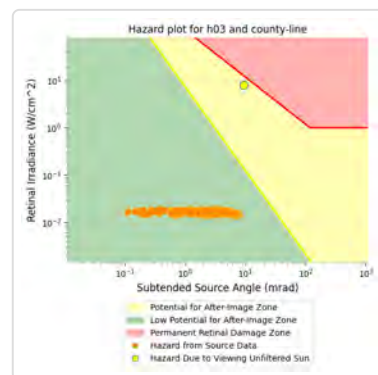
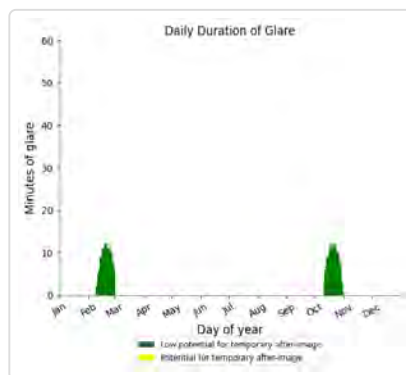
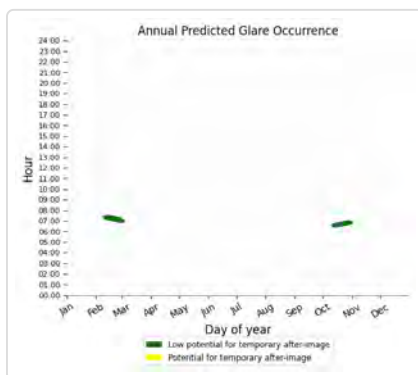
### H03: Country Dr Seg 2

No glare found

### H03: County Line Rd

PV array is expected to produce the following glare for this receptor:

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



### H03: Dempseys Rd

No glare found

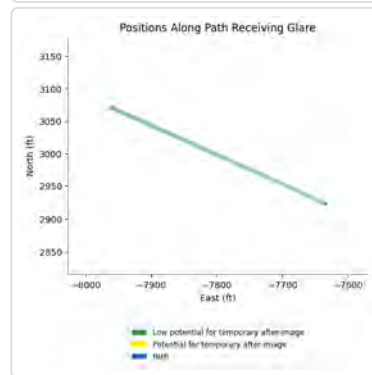
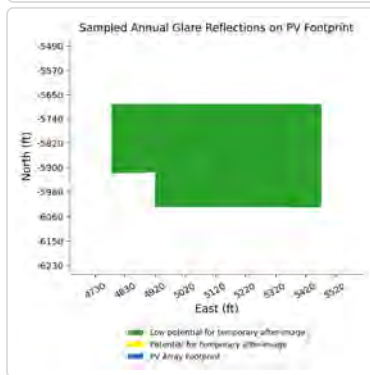
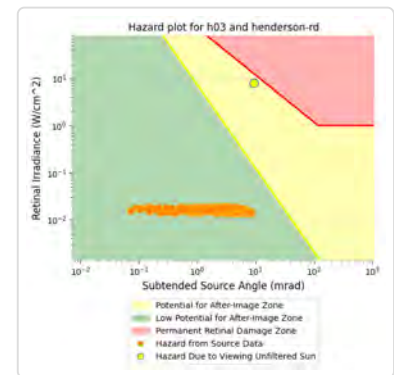
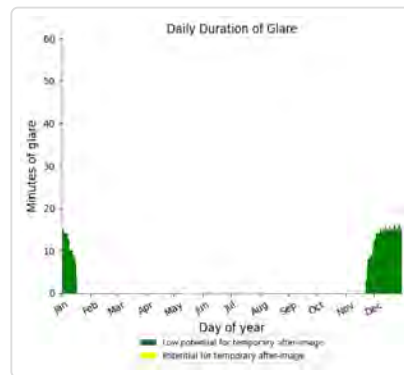
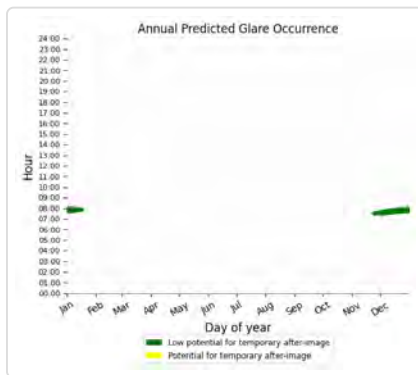
### H03: Harley Ln

No glare found

### H03: Henderson Rd

PV array is expected to produce the following glare for this receptor:

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



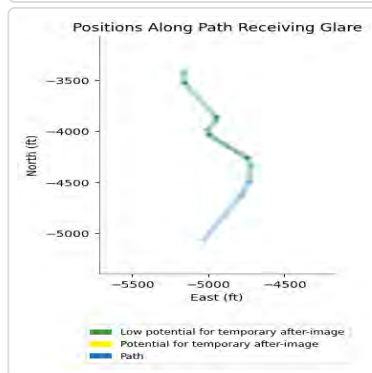
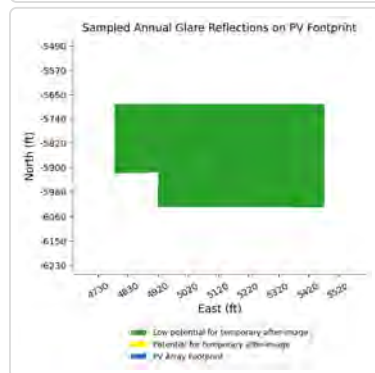
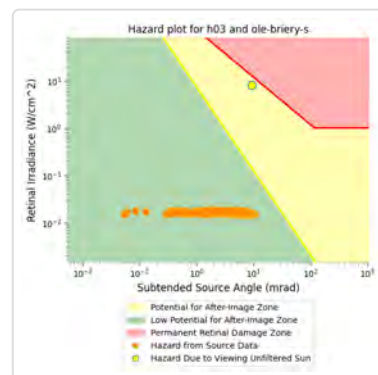
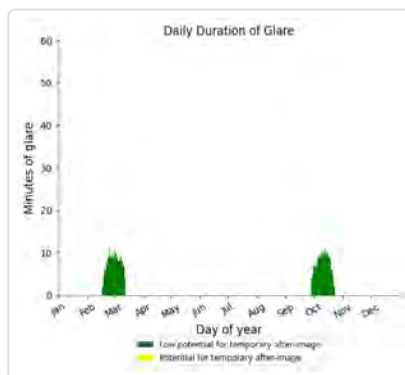
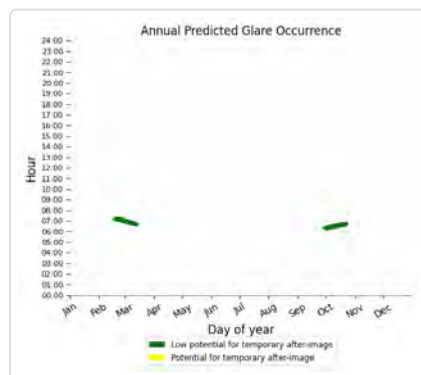
### H03: Hillside Dr

No glare found

### H03: Ole Briery Station Rd Seg 1

PV array is expected to produce the following glare for this receptor:

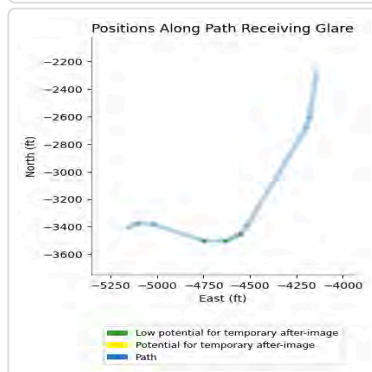
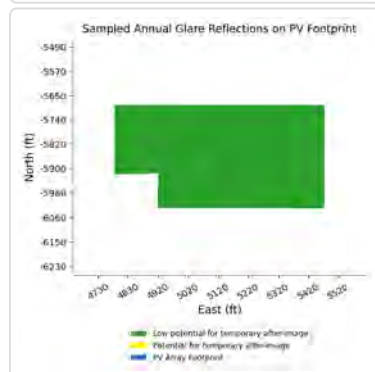
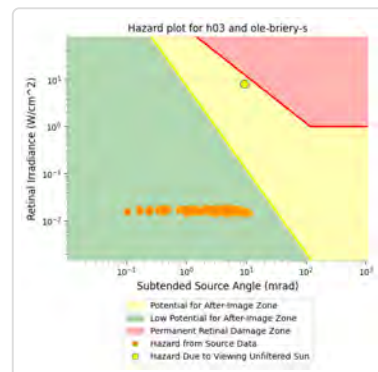
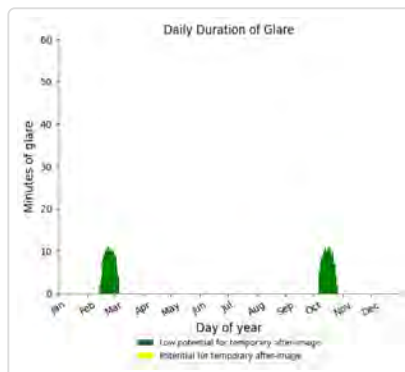
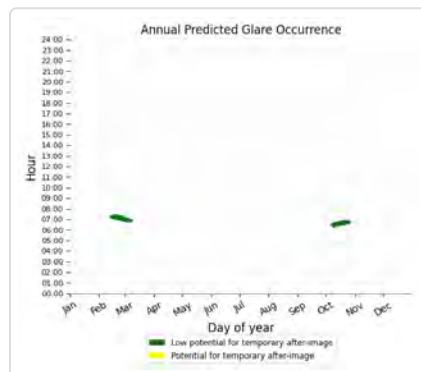
- 392 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



### H03: Ole Briery Station Rd Seg 2

PV array is expected to produce the following glare for this receptor:

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





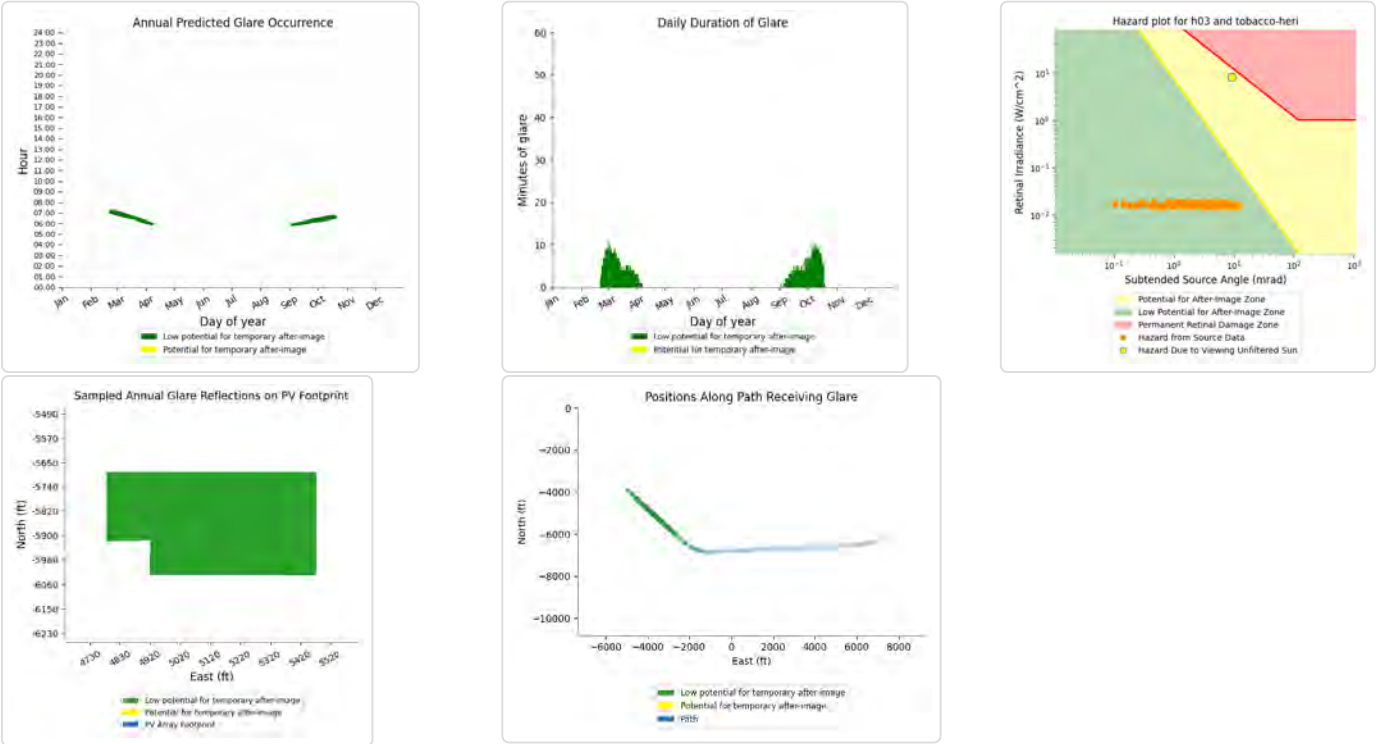
H03: Thistle Knob Ln

No glare found

H03: Tobacco Heritage Trail

PV array is expected to produce the following glare for this receptor:

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



H03: US Hwy 15

No glare found

H03: US Hwy 360

No glare found

H04 low potential for temporary after-image

Component	Green glare (min)	Yellow glare (min)
OP: OP 134	0	0
OP: OP 135	0	0
OP: OP 136	0	0
OP: OP 137	0	0
OP: OP 138	0	0
OP: OP 139	0	0
OP: OP 140	0	0
OP: OP 141	0	0
OP: OP 142	0	0
OP: OP 143	0	0
OP: OP 144	0	0
OP: OP 145	0	0

OP: OP 146	0	0
OP: OP 147	0	0
OP: OP 148	0	0
OP: OP 149	0	0
OP: OP 150	0	0
OP: OP 151	0	0
OP: OP 152	0	0
OP: OP 153	0	0
OP: OP 154	0	0
OP: OP 155	0	0
OP: OP 156	0	0
OP: OP 157	0	0
OP: OP 158	0	0
OP: OP 159	0	0
OP: OP 160	0	0
OP: OP 161	0	0
OP: OP 162	0	0
OP: OP 163	0	0
OP: OP 164	0	0
Route: Collins Dr	0	0
Route: Country Dr Seg 1	0	0
Route: Country Dr Seg 2	0	0
Route: County Line Rd	279	0
Route: Dempseys Rd	0	0
Route: Harley Ln	0	0
Route: Henderson Rd	833	0
Route: Hillside Dr	0	0
Route: Ole Briery Station Rd Seg 1	222	0
Route: Ole Briery Station Rd Seg 2	222	0
Route: Thistle Knob Ln	0	0
Route: Tobacco Heritage Trail	305	0
Route: US Hwy 15	0	0
Route: US Hwy 360	0	0

#### H04: OP 134

*No glare found*

#### H04: OP 135

*No glare found*

#### H04: OP 136

*No glare found*

#### H04: OP 137

*No glare found*

#### H04: OP 138

*No glare found*

**H04: OP 139**

*No glare found*

**H04: OP 140**

*No glare found*

**H04: OP 141**

*No glare found*

**H04: OP 142**

*No glare found*

**H04: OP 143**

*No glare found*

**H04: OP 144**

*No glare found*

**H04: OP 145**

*No glare found*

**H04: OP 146**

*No glare found*

**H04: OP 147**

*No glare found*

**H04: OP 148**

*No glare found*

**H04: OP 149**

*No glare found*

**H04: OP 150**

*No glare found*

**H04: OP 151**

*No glare found*

**H04: OP 152**

*No glare found*

**H04: OP 153**

*No glare found*

**H04: OP 154**

*No glare found*

**H04: OP 155**

*No glare found*

**H04: OP 156**

*No glare found*

**H04: OP 157**

*No glare found*

**H04: OP 158**

*No glare found*

**H04: OP 159**

*No glare found*

**H04: OP 160**

*No glare found*

**H04: OP 161**

*No glare found*

**H04: OP 162**

*No glare found*

**H04: OP 163**

*No glare found*

**H04: OP 164**

*No glare found*

**H04: Collins Dr**

*No glare found*

**H04: Country Dr Seg 1**

*No glare found*

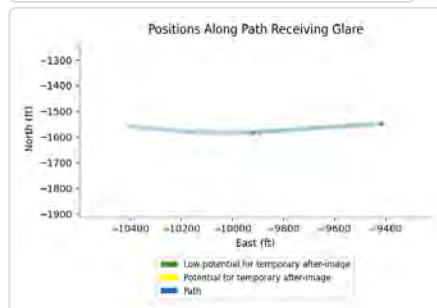
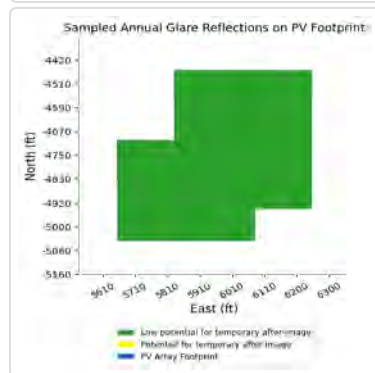
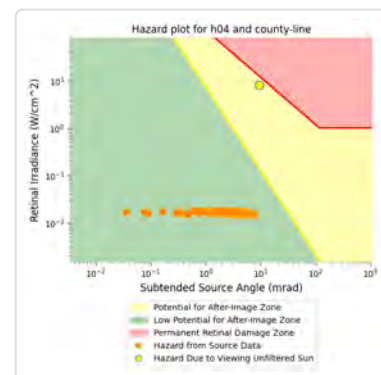
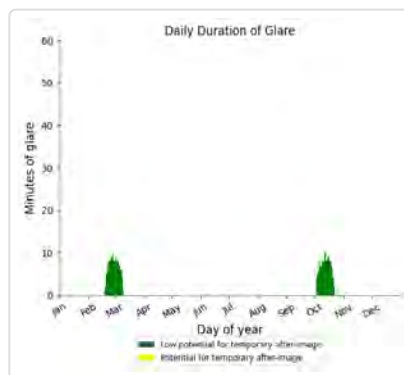
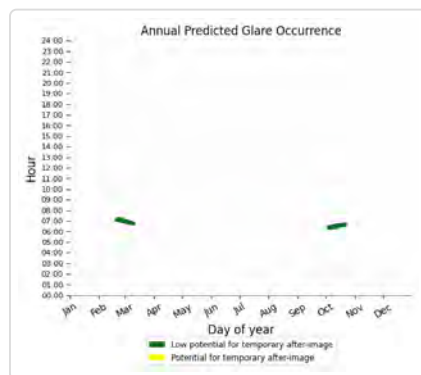
**H04: Country Dr Seg 2**

*No glare found*

## H04: County Line Rd

PV array is expected to produce the following glare for this receptor:

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



## H04: Dempseys Rd

No glare found

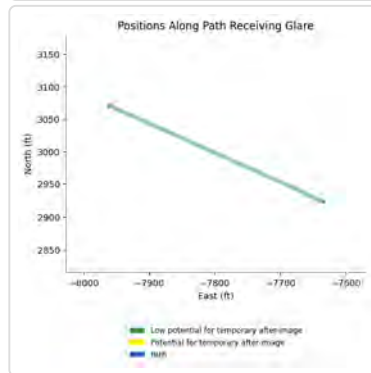
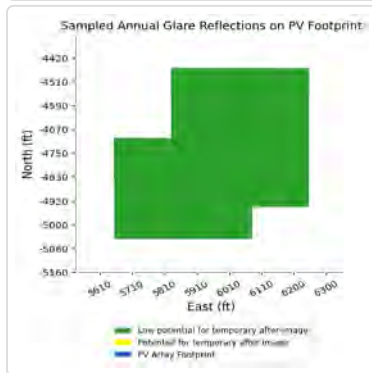
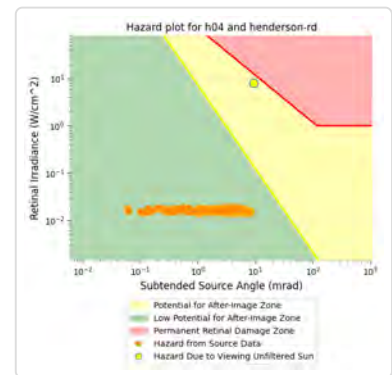
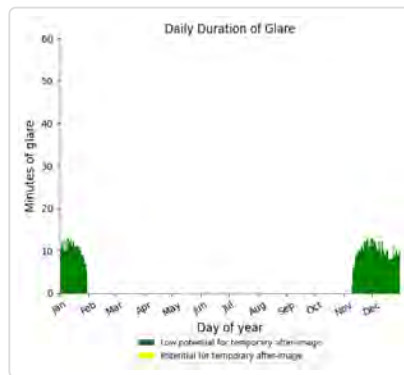
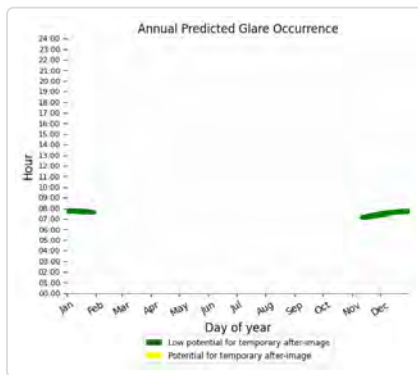
## H04: Harley Ln

No glare found

## H04: Henderson Rd

PV array is expected to produce the following glare for this receptor:

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



## H04: Hillside Dr

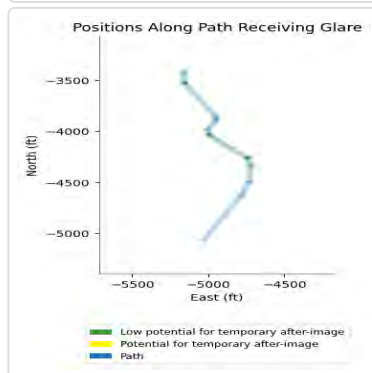
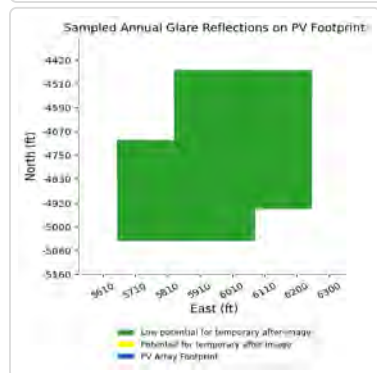
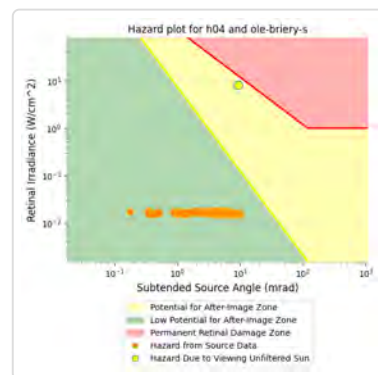
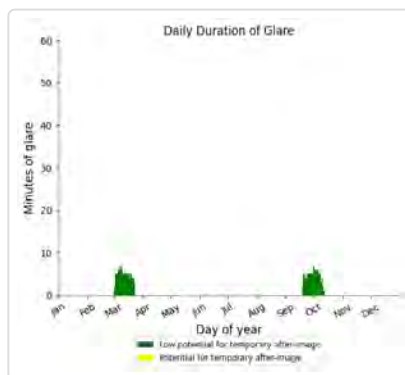
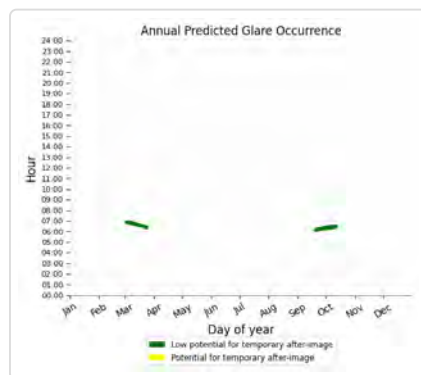
No glare found



## H04: Ole Briery Station Rd Seg 1

PV array is expected to produce the following glare for this receptor:

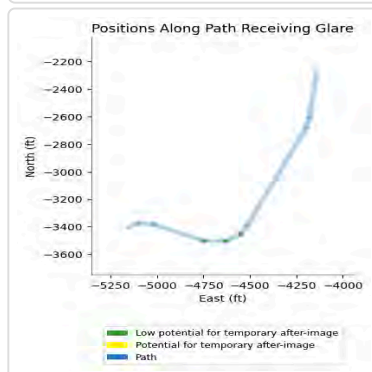
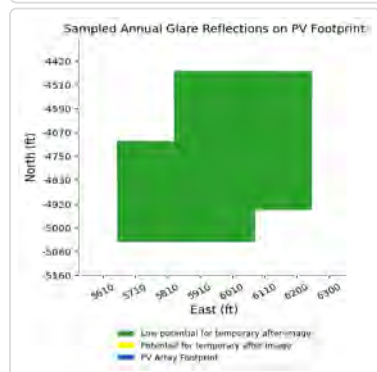
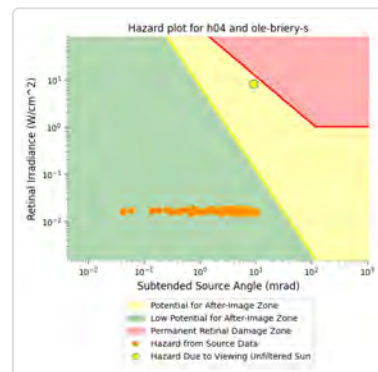
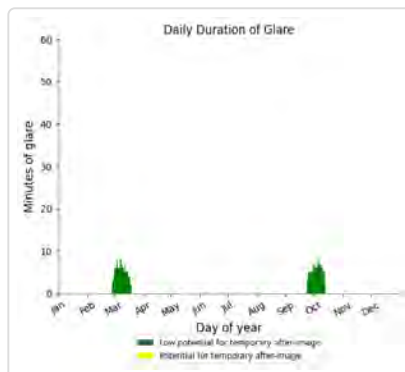
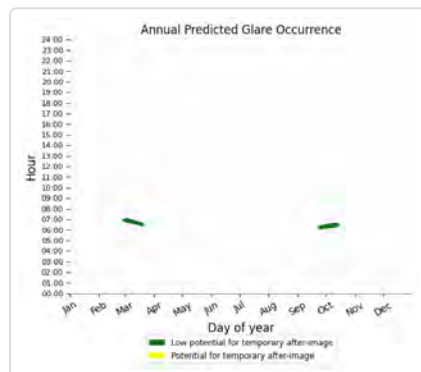
- 222 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## H04: Ole Briery Station Rd Seg 2

PV array is expected to produce the following glare for this receptor:

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



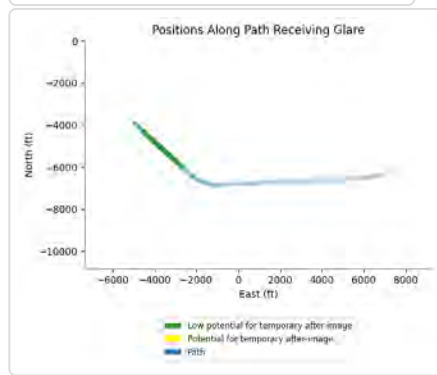
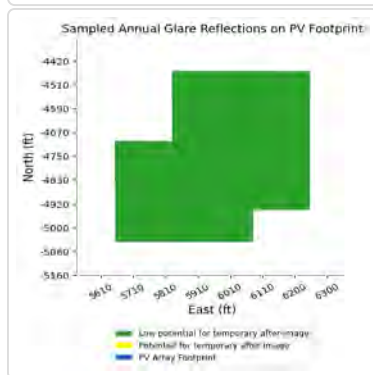
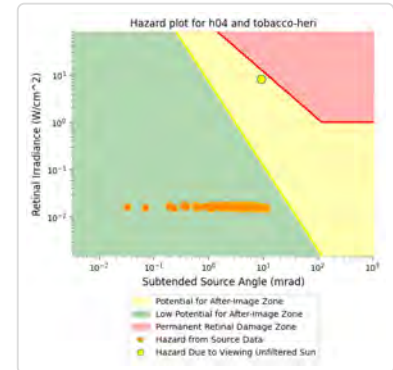
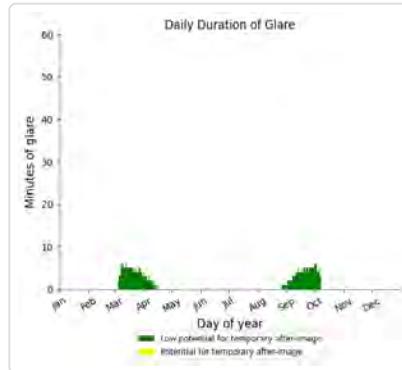
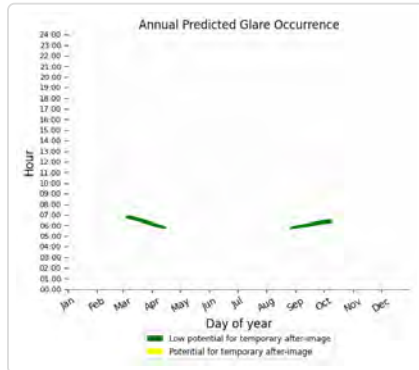
## H04: Thistle Knob Ln

No glare found

## H04: Tobacco Heritage Trail

PV array is expected to produce the following glare for this receptor:

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



## H04: US Hwy 15

No glare found

## H04: US Hwy 360

No glare found

## Summary of Vertical Surface Glare Analysis

## Assumptions

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

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

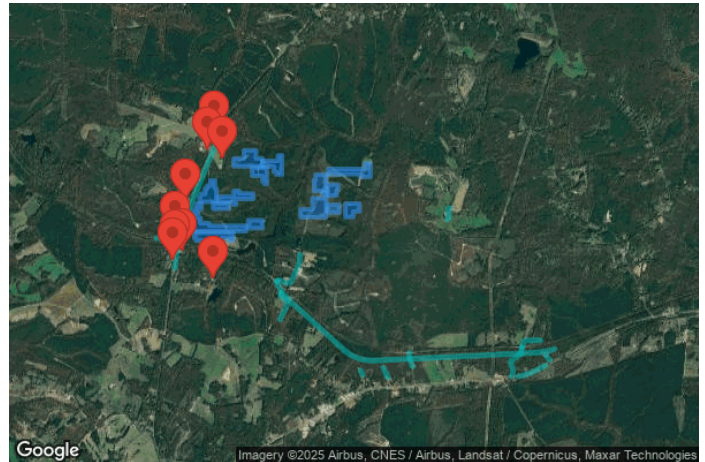
**9-Ft Array  
0-Degree Rest Angle Details**

# Tobacco Trail Solar

## TT\_A01-C06\_9fA\_\_0DRA\_SGARC

**Created** Oct 02, 2025  
**Updated** Oct 02, 2025  
**Time-step** 1 minute  
**Timezone offset** UTC-5  
**Minimum sun altitude** 0.0 deg  
**Site ID** 160919.26911

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



### Misc. Analysis Settings

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

**PV Analysis Methodology:** Version 2  
**Enhanced subtended angle calculation:** On

### 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
A01	SA tracking	SA tracking	1,329	1,041	-
A02	SA tracking	SA tracking	1,356	0	-
A03	SA tracking	SA tracking	2,859	1,194	-
B01	SA tracking	SA tracking	4,837	1,060	-
B02	SA tracking	SA tracking	0	0	-
B03	SA tracking	SA tracking	5,860	166	-
B04	SA tracking	SA tracking	919	0	-
B05	SA tracking	SA tracking	3,497	0	-
B06	SA tracking	SA tracking	8,401	813	-
C01	SA tracking	SA tracking	4,373	0	-
C02	SA tracking	SA tracking	4,028	0	-
C03	SA tracking	SA tracking	85	0	-
C04	SA tracking	SA tracking	3,975	0	-
C05	SA tracking	SA tracking	1,271	0	-
C06	SA tracking	SA tracking	518	0	-



Component Data

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## PV Array(s)

Total PV footprint area: 139.7 acres

Name: A01

Footprint area: 13.1 acres

Axis tracking: Single-axis rotation

Backtracking: Shade

Tracking axis orientation: 180.0 deg

Maximum tracking angle: 60.0 deg

Resting angle: 0.0 deg

Ground Coverage Ratio: 0.5

Rated power: -

Panel material: Smooth glass with AR coating

Vary reflectivity with sun position? Yes

Correlate slope error with surface type? Yes

Slope error: 8.43 mrad



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	37.106761	-78.465111	583.77	9.00	592.77
2	37.106760	-78.463599	586.76	9.00	595.76
3	37.107730	-78.463598	568.29	9.00	577.29
4	37.107730	-78.461789	569.64	9.00	578.64
5	37.106760	-78.461790	576.41	9.00	585.41
6	37.106759	-78.460818	568.72	9.00	577.72
7	37.105818	-78.460821	568.55	9.00	577.55
8	37.105818	-78.465111	563.97	9.00	572.97

Name: A02

Footprint area: 7.9 acres

Axis tracking: Single-axis rotation

Backtracking: Shade

Tracking axis orientation: 180.0 deg

Maximum tracking angle: 60.0 deg

Resting angle: 0.0 deg

Ground Coverage Ratio: 0.5

Rated power: -

Panel material: Smooth glass with AR coating

Vary reflectivity with sun position? Yes

Correlate slope error with surface type? Yes

Slope error: 8.43 mrad



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	37.106454	-78.460791	574.78	9.00	583.78
2	37.106453	-78.458523	535.18	9.00	544.18
3	37.107118	-78.458522	527.08	9.00	536.08
4	37.107117	-78.457901	531.83	9.00	540.83
5	37.104846	-78.457903	539.05	9.00	548.05
6	37.104847	-78.458739	540.55	9.00	549.55
7	37.105153	-78.458739	543.42	9.00	552.42
8	37.105152	-78.459117	537.67	9.00	546.67
9	37.105816	-78.459117	531.38	9.00	540.38
10	37.105817	-78.460791	568.12	9.00	577.12

**Name:** A03

**Footprint area:** 6.2 acres

**Axis tracking:** Single-axis rotation

**Backtracking:** Shade

**Tracking axis orientation:** 180.0 deg

**Maximum tracking angle:** 60.0 deg

**Resting angle:** 0.0 deg

**Ground Coverage Ratio:** 0.5

**Rated power:** -

**Panel material:** Smooth glass with AR coating

**Vary reflectivity with sun position?** Yes

**Correlate slope error with surface type?** Yes

**Slope error:** 8.43 mrad



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	37.105625	-78.462356	546.24	9.00	555.24
2	37.105625	-78.460169	547.76	9.00	556.76
3	37.103712	-78.460171	541.50	9.00	550.50
4	37.103713	-78.460522	535.38	9.00	544.38
5	37.104018	-78.460522	533.96	9.00	542.96
6	37.104018	-78.460846	535.82	9.00	544.82
7	37.104683	-78.460844	551.83	9.00	560.83
8	37.104683	-78.462357	552.50	9.00	561.50

**Name:** B01

**Footprint area:** 10.1 acres

**Axis tracking:** Single-axis rotation

**Backtracking:** Shade

**Tracking axis orientation:** 180.0 deg

**Maximum tracking angle:** 60.0 deg

**Resting angle:** 0.0 deg

**Ground Coverage Ratio:** 0.5

**Rated power:** -

**Panel material:** Smooth glass with AR coating

**Vary reflectivity with sun position?** Yes

**Correlate slope error with surface type?** Yes

**Slope error:** 8.43 mrad



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	37.104174	-78.468567	608.79	9.00	617.79
2	37.104173	-78.467893	589.54	9.00	598.54
3	37.103205	-78.467893	589.41	9.00	598.41
4	37.103204	-78.467677	583.33	9.00	592.33
5	37.101598	-78.467674	604.21	9.00	613.21
6	37.101598	-78.470188	609.84	9.00	618.84
7	37.102235	-78.470188	609.36	9.00	618.36
8	37.102234	-78.470026	611.41	9.00	620.41
9	37.102540	-78.470026	606.23	9.00	615.23
10	37.102540	-78.469378	613.92	9.00	622.92
11	37.103204	-78.469378	606.38	9.00	615.38
12	37.103205	-78.469054	609.42	9.00	618.42
13	37.103509	-78.469054	606.18	9.00	615.18
14	37.103509	-78.468568	606.76	9.00	615.76

**Name:** B02

**Footprint area:** 9.1 acres

**Axis tracking:** Single-axis rotation

**Backtracking:** Shade

**Tracking axis orientation:** 180.0 deg

**Maximum tracking angle:** 60.0 deg

**Resting angle:** 0.0 deg

**Ground Coverage Ratio:** 0.5

**Rated power:** -

**Panel material:** Smooth glass with AR coating

**Vary reflectivity with sun position?** Yes

**Correlate slope error with surface type?** Yes

**Slope error:** 8.43 mrad



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	37.102234	-78.467326	588.09	9.00	597.09
2	37.102233	-78.465112	574.79	9.00	583.79
3	37.102898	-78.465112	561.27	9.00	570.27
4	37.102897	-78.464329	565.12	9.00	574.12
5	37.102593	-78.464329	565.59	9.00	574.59
6	37.102591	-78.462223	557.04	9.00	566.04
7	37.101954	-78.462224	552.31	9.00	561.31
8	37.101953	-78.464762	576.60	9.00	585.60
9	37.101291	-78.464762	573.44	9.00	582.44
10	37.101291	-78.465221	582.89	9.00	591.89
11	37.101599	-78.465221	584.05	9.00	593.05
12	37.101597	-78.467326	599.83	9.00	608.83

**Name:** B03

**Footprint area:** 3.7 acres

**Axis tracking:** Single-axis rotation

**Backtracking:** Shade

**Tracking axis orientation:** 180.0 deg

**Maximum tracking angle:** 60.0 deg

**Resting angle:** 0.0 deg

**Ground Coverage Ratio:** 0.5

**Rated power:** -

**Panel material:** Smooth glass with AR coating

**Vary reflectivity with sun position?** Yes

**Correlate slope error with surface type?** Yes

**Slope error:** 8.43 mrad



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	37.101405	-78.468191	608.76	9.00	617.76
2	37.101404	-78.465842	583.54	9.00	592.54
3	37.100767	-78.465842	567.40	9.00	576.40
4	37.100768	-78.468191	598.29	9.00	607.29

**Name:** B04

**Footprint area:** 20.4 acres

**Axis tracking:** Single-axis rotation

**Backtracking:** Shade

**Tracking axis orientation:** 180.0 deg

**Maximum tracking angle:** 60.0 deg

**Resting angle:** 0.0 deg

**Ground Coverage Ratio:** 0.5

**Rated power:** -

**Panel material:** Smooth glass with AR coating

**Vary reflectivity with sun position?** Yes

**Correlate slope error with surface type?** Yes

**Slope error:** 8.43 mrad



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	37.101355	-78.470702	609.38	9.00	618.38
2	37.101354	-78.469919	600.78	9.00	609.78
3	37.100717	-78.469919	580.45	9.00	589.45
4	37.100718	-78.470405	590.50	9.00	599.50
5	37.099721	-78.470405	596.32	9.00	605.32
6	37.099720	-78.470081	595.32	9.00	604.32
7	37.099056	-78.470082	604.47	9.00	613.47
8	37.099055	-78.468732	584.09	9.00	593.09
9	37.098750	-78.468732	589.14	9.00	598.14
10	37.098749	-78.463278	567.78	9.00	576.78
11	37.098112	-78.463278	564.31	9.00	573.31
12	37.098114	-78.471621	606.01	9.00	615.01
13	37.099721	-78.471620	618.90	9.00	627.90
14	37.099720	-78.471458	616.63	9.00	625.63
15	37.100026	-78.471458	619.42	9.00	628.42
16	37.100026	-78.471080	606.76	9.00	615.76
17	37.100690	-78.471080	612.68	9.00	621.68
18	37.100690	-78.470702	603.57	9.00	612.57

**Name:** B05

**Footprint area:** 4.9 acres

**Axis tracking:** Single-axis rotation

**Backtracking:** Shade

**Tracking axis orientation:** 180.0 deg

**Maximum tracking angle:** 60.0 deg

**Resting angle:** 0.0 deg

**Ground Coverage Ratio:** 0.5

**Rated power:** -

**Panel material:** Smooth glass with AR coating

**Vary reflectivity with sun position?** Yes

**Correlate slope error with surface type?** Yes

**Slope error:** 8.43 mrad



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	37.099412	-78.462940	570.73	9.00	579.73
2	37.099412	-78.460807	562.20	9.00	571.20
3	37.098469	-78.460808	548.93	9.00	557.93
4	37.098474	-78.462939	570.15	9.00	579.15



**Name:** B06

**Footprint area:** 12.8 acres

**Axis tracking:** Single-axis rotation

**Backtracking:** Shade

**Tracking axis orientation:** 180.0 deg

**Maximum tracking angle:** 60.0 deg

**Resting angle:** 0.0 deg

**Ground Coverage Ratio:** 0.5

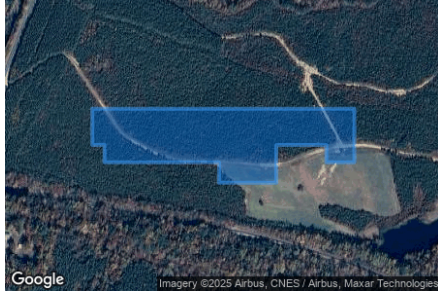
**Rated power:** -

**Panel material:** Smooth glass with AR coating

**Vary reflectivity with sun position?** Yes

**Correlate slope error with surface type?** Yes

**Slope error:** 8.43 mrad



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	37.097921	-78.470973	609.85	9.00	618.85
2	37.097920	-78.465168	575.23	9.00	584.23
3	37.096978	-78.465169	566.91	9.00	575.91
4	37.096978	-78.465790	569.55	9.00	578.55
5	37.097283	-78.465789	577.51	9.00	586.51
6	37.097283	-78.466897	578.30	9.00	587.30
7	37.096619	-78.466897	581.83	9.00	590.83
8	37.096619	-78.468166	594.31	9.00	603.31
9	37.096978	-78.468165	598.37	9.00	607.37
10	37.096979	-78.470703	602.21	9.00	611.21
11	37.097286	-78.470703	604.64	9.00	613.64
12	37.097284	-78.470973	598.37	9.00	607.37

**Name:** C01

**Footprint area:** 12.2 acres

**Axis tracking:** Single-axis rotation

**Backtracking:** Shade

**Tracking axis orientation:** 180.0 deg

**Maximum tracking angle:** 60.0 deg

**Resting angle:** 0.0 deg

**Ground Coverage Ratio:** 0.5

**Rated power:** -

**Panel material:** Smooth glass with AR coating

**Vary reflectivity with sun position?** Yes

**Correlate slope error with surface type?** Yes

**Slope error:** 8.43 mrad



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	37.105507	-78.451023	531.84	9.00	540.84
2	37.105504	-78.445569	541.65	9.00	550.65
3	37.106169	-78.445568	550.54	9.00	559.54
4	37.106168	-78.444731	534.14	9.00	543.14
5	37.104562	-78.444732	524.31	9.00	533.31
6	37.104562	-78.446217	525.04	9.00	534.04
7	37.104868	-78.446217	528.50	9.00	537.50
8	37.104870	-78.451023	531.54	9.00	540.54



**Name:** C02

**Footprint area:** 8.3 acres

**Axis tracking:** Single-axis rotation

**Backtracking:** Shade

**Tracking axis orientation:** 180.0 deg

**Maximum tracking angle:** 60.0 deg

**Resting angle:** 0.0 deg

**Ground Coverage Ratio:** 0.5

**Rated power:** -

**Panel material:** Smooth glass with AR coating

**Vary reflectivity with sun position?** Yes

**Correlate slope error with surface type?** Yes

**Slope error:** 8.43 mrad



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	37.104847	-78.452913	519.97	9.00	528.97
2	37.104847	-78.451320	531.41	9.00	540.41
3	37.102881	-78.451321	534.63	9.00	543.63
4	37.102882	-78.453130	542.77	9.00	551.77
5	37.104183	-78.453129	533.46	9.00	542.46
6	37.104183	-78.452913	534.10	9.00	543.10

**Name:** C03

**Footprint area:** 4.5 acres

**Axis tracking:** Single-axis rotation

**Backtracking:** Shade

**Tracking axis orientation:** 180.0 deg

**Maximum tracking angle:** 60.0 deg

**Resting angle:** 0.0 deg

**Ground Coverage Ratio:** 0.5

**Rated power:** -

**Panel material:** Smooth glass with AR coating

**Vary reflectivity with sun position?** Yes

**Correlate slope error with surface type?** Yes

**Slope error:** 8.43 mrad



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	37.103637	-78.451085	533.54	9.00	542.54
2	37.103636	-78.449546	524.85	9.00	533.85
3	37.102999	-78.449546	526.44	9.00	535.44
4	37.102999	-78.449762	529.66	9.00	538.66
5	37.102335	-78.449763	519.19	9.00	528.19
6	37.102335	-78.451086	526.81	9.00	535.81

**Name:** C04

**Footprint area:** 16.0 acres

**Axis tracking:** Single-axis rotation

**Backtracking:** Shade

**Tracking axis orientation:** 180.0 deg

**Maximum tracking angle:** 60.0 deg

**Resting angle:** 0.0 deg

**Ground Coverage Ratio:** 0.5

**Rated power:** -

**Panel material:** Smooth glass with AR coating

**Vary reflectivity with sun position?** Yes

**Correlate slope error with surface type?** Yes

**Slope error:** 8.43 mrad



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	37.102034	-78.453346	541.26	9.00	550.26
2	37.102034	-78.451780	534.36	9.00	543.36
3	37.102698	-78.451780	538.59	9.00	547.59
4	37.102698	-78.451321	532.98	9.00	541.98
5	37.099763	-78.451325	527.03	9.00	536.03
6	37.099764	-78.455130	535.95	9.00	544.95
7	37.100712	-78.455132	530.07	9.00	539.07
8	37.100705	-78.453347	544.34	9.00	553.34

**Name:** C05

**Footprint area:** 3.9 acres

**Axis tracking:** Single-axis rotation

**Backtracking:** Shade

**Tracking axis orientation:** 180.0 deg

**Maximum tracking angle:** 60.0 deg

**Resting angle:** 0.0 deg

**Ground Coverage Ratio:** 0.5

**Rated power:** -

**Panel material:** Smooth glass with AR coating

**Vary reflectivity with sun position?** Yes

**Correlate slope error with surface type?** Yes

**Slope error:** 8.43 mrad



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	37.101256	-78.451086	523.05	9.00	532.05
2	37.101255	-78.449385	537.31	9.00	546.31
3	37.100313	-78.449386	529.95	9.00	538.95
4	37.100313	-78.451087	529.14	9.00	538.14

**Name:** C06  
**Footprint area:** 6.6 acres  
**Axis tracking:** Single-axis rotation  
**Backtracking:** Shade  
**Tracking axis orientation:** 180.0 deg  
**Maximum tracking angle:** 60.0 deg  
**Resting angle:** 0.0 deg  
**Ground Coverage Ratio:** 0.5  
**Rated power:** -  
**Panel material:** Smooth glass with AR coating  
**Vary reflectivity with sun position?** Yes  
**Correlate slope error with surface type?** Yes  
**Slope error:** 8.43 mrad

Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	37.101400	-78.448437	529.95	9.00	538.95
2	37.101399	-78.446359	518.48	9.00	527.48
3	37.100457	-78.446359	520.09	9.00	529.09
4	37.100457	-78.447277	529.80	9.00	538.80
5	37.099793	-78.447278	516.90	9.00	525.90
6	37.099793	-78.448438	523.99	9.00	532.99



## Route Receptor(s)

**Name:** Collins Dr  
**Route type** Two-way  
**Azimuthal view angle:** 50.0 deg  
**Downward view angle:** 90.0 deg



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	37.081871	-78.442797	585.46	3.50	588.96
2	37.080705	-78.442104	593.95	3.50	597.45

**Name:** Country Dr Seg 1  
**Route type** Two-way  
**Azimuthal view angle:** 50.0 deg  
**Downward view angle:** 90.0 deg



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	37.080860	-78.423727	596.22	3.50	599.72
2	37.081335	-78.423484	593.74	3.50	597.24
3	37.081523	-78.423466	592.70	3.50	596.20
4	37.081829	-78.423540	592.79	3.50	596.29
5	37.082428	-78.423782	598.80	3.50	602.30
6	37.082611	-78.423798	598.76	3.50	602.26
7	37.082719	-78.423744	598.06	3.50	601.56
8	37.082768	-78.423668	597.93	3.50	601.43
9	37.082867	-78.423382	593.53	3.50	597.03
10	37.083365	-78.422690	575.99	3.50	579.49
11	37.083472	-78.422377	574.16	3.50	577.66
12	37.083628	-78.422257	574.14	3.50	577.64
13	37.084267	-78.422150	573.40	3.50	576.90

**Name:** Country Dr Seg 2  
**Route type** Two-way  
**Azimuthal view angle:** 50.0 deg  
**Downward view angle:** 90.0 deg



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	37.084267	-78.422150	573.40	3.50	576.90
2	37.084508	-78.422031	569.83	3.50	573.33
3	37.084996	-78.421843	569.58	3.50	573.08
4	37.085142	-78.421494	566.57	3.50	570.07
5	37.085170	-78.421251	561.04	3.50	564.54
6	37.085078	-78.420854	551.39	3.50	554.89
7	37.085078	-78.420700	547.34	3.50	550.84
8	37.085178	-78.420314	542.35	3.50	545.85
9	37.085193	-78.420005	540.85	3.50	544.35
10	37.085107	-78.419377	548.13	3.50	551.63



**Name:** County Line Rd  
**Route type** Two-way  
**Azimuthal view angle:** 50.0 deg  
**Downward view angle:** 90.0 deg



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	37.097280	-78.476651	594.54	3.50	598.04
2	37.097219	-78.475855	598.80	3.50	602.30
3	37.097213	-78.474994	607.28	3.50	610.78
4	37.097309	-78.473270	621.37	3.50	624.87

**Name:** Dempseys Rd  
**Route type** Two-way  
**Azimuthal view angle:** 50.0 deg  
**Downward view angle:** 90.0 deg



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	37.100853	-78.432978	553.09	3.50	556.59
2	37.100660	-78.433062	555.40	3.50	558.90
3	37.100457	-78.433086	558.88	3.50	562.38
4	37.099830	-78.433036	562.04	3.50	565.54
5	37.099719	-78.433062	562.51	3.50	566.01
6	37.099499	-78.433266	563.93	3.50	567.43

**Name:** Harley Ln  
**Route type** Two-way  
**Azimuthal view angle:** 50.0 deg  
**Downward view angle:** 90.0 deg



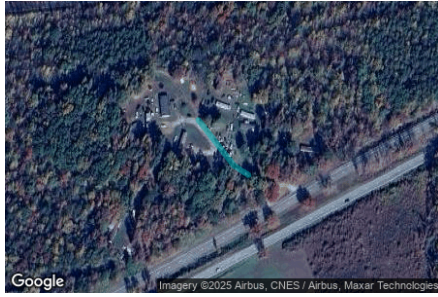
Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	37.081527	-78.446166	585.61	3.50	589.11
2	37.081071	-78.445886	588.43	3.50	591.93

**Name:** Henderson Rd  
**Route type** Two-way  
**Azimuthal view angle:** 50.0 deg  
**Downward view angle:** 90.0 deg



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	37.109995	-78.468285	603.05	3.50	606.55
2	37.109590	-78.467164	592.11	3.50	595.61

**Name:** Hillside Dr  
**Route type** Two-way  
**Azimuthal view angle:** 50.0 deg  
**Downward view angle:** 90.0 deg



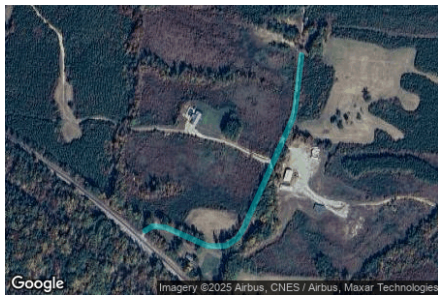
Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	37.083329	-78.418574	583.61	3.50	587.11
2	37.082929	-78.418183	584.69	3.50	588.19
3	37.082844	-78.418020	580.23	3.50	583.73

**Name:** Ole Briery Station Rd Seg 1  
**Route type** Two-way  
**Azimuthal view angle:** 50.0 deg  
**Downward view angle:** 90.0 deg



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	37.092208	-78.458646	563.15	3.50	566.65
2	37.092090	-78.458691	563.42	3.50	566.92
3	37.091871	-78.458666	558.97	3.50	562.47
4	37.090953	-78.457951	563.80	3.50	567.30
5	37.090854	-78.457956	564.22	3.50	567.72
6	37.090611	-78.458144	565.23	3.50	568.73
7	37.090481	-78.458117	566.86	3.50	570.36
8	37.089856	-78.457249	576.52	3.50	580.02
9	37.089653	-78.457170	576.31	3.50	579.81
10	37.089216	-78.457209	577.01	3.50	580.51
11	37.088870	-78.457369	579.14	3.50	582.64
12	37.087648	-78.458228	575.44	3.50	578.94

**Name:** Ole Briery Station Rd Seg 2  
**Route type** Two-way  
**Azimuthal view angle:** 50.0 deg  
**Downward view angle:** 90.0 deg



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	37.095314	-78.455184	559.55	3.50	563.05
2	37.094405	-78.455316	561.00	3.50	564.50
3	37.094194	-78.455375	562.46	3.50	565.96
4	37.092243	-78.456468	580.33	3.50	583.83
5	37.092079	-78.456596	579.50	3.50	583.00
6	37.091937	-78.456866	578.09	3.50	581.59
7	37.091938	-78.457261	579.65	3.50	583.15
8	37.092266	-78.458188	570.75	3.50	574.25
9	37.092288	-78.458480	566.19	3.50	569.69
10	37.092208	-78.458646	563.15	3.50	566.65

**Name:** Thistle Knob Ln  
**Route type** Two-way  
**Azimuthal view angle:** 50.0 deg  
**Downward view angle:** 90.0 deg



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	37.083651	-78.438932	566.14	3.50	569.64
2	37.083055	-78.438885	572.01	3.50	575.51
3	37.082951	-78.438866	573.45	3.50	576.95
4	37.082709	-78.438732	575.45	3.50	578.95
5	37.082049	-78.438472	587.03	3.50	590.53



**Name:** Tobacco Heritage Trail  
**Route type** Two-way  
**Azimuthal view angle:** 50.0 deg  
**Downward view angle:** 90.0 deg



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	37.090771	-78.458017	565.05	5.00	570.05
2	37.090288	-78.457220	565.24	5.00	570.24
3	37.089770	-78.456642	564.98	5.00	569.98
4	37.083905	-78.448547	568.62	5.00	573.62
5	37.083402	-78.447640	568.23	5.00	573.23
6	37.083141	-78.446961	569.57	5.00	574.57
7	37.082894	-78.446050	570.13	5.00	575.13
8	37.082777	-78.445198	569.37	5.00	574.37
9	37.082731	-78.443998	572.72	5.00	577.72
10	37.082823	-78.442329	570.64	5.00	575.64
11	37.082941	-78.438861	573.48	5.00	578.48
12	37.083691	-78.419842	572.55	5.00	577.55
13	37.083938	-78.417972	572.02	5.00	577.02
14	37.084121	-78.417318	571.54	5.00	576.54

**Name:** US Hwy 15  
**Route type** Two-way  
**Azimuthal view angle:** 50.0 deg  
**Downward view angle:** 90.0 deg



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	37.093744	-78.473877	626.72	3.50	630.22
2	37.096495	-78.473451	577.75	3.50	581.25
3	37.097894	-78.473140	622.81	3.50	626.31
4	37.098651	-78.472866	621.89	3.50	625.39
5	37.110506	-78.466686	589.30	3.50	592.80
6	37.111238	-78.466281	586.17	3.50	589.67

**Name:** US Hwy 360  
**Route type** Two-way  
**Azimuthal view angle:** 50.0 deg  
**Downward view angle:** 90.0 deg



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	37.080860	-78.422670	595.41	3.50	598.91
2	37.080926	-78.422273	593.85	3.50	597.35
3	37.081051	-78.421682	591.95	3.50	595.45
4	37.081265	-78.420884	589.00	3.50	592.50
5	37.081528	-78.420136	586.19	3.50	589.69
6	37.082144	-78.418682	579.73	3.50	583.23

## Discrete Observation Receptors

Number	Latitude	Longitude	Ground elevation	Height above ground	Total Elevation
	deg	deg	ft	ft	ft
OP 100	37.109713	-78.467903	599.73	5.00	604.73
OP 101	37.109713	-78.467903	599.73	15.00	614.73
OP 102	37.107782	-78.469048	606.39	5.00	611.39
OP 103	37.107782	-78.469048	606.39	15.00	621.39
OP 104	37.106730	-78.466781	605.55	5.00	610.55
OP 105	37.106730	-78.466781	605.55	15.00	620.55
OP 106	37.101635	-78.472188	620.32	5.00	625.32
OP 107	37.101635	-78.472188	620.32	15.00	635.32
OP 108	37.097790	-78.473879	626.62	5.00	631.62
OP 109	37.097790	-78.473879	626.62	15.00	641.62
OP 110	37.095718	-78.472730	616.85	5.00	621.85
OP 111	37.095718	-78.472730	616.85	15.00	631.85
OP 112	37.095512	-78.473852	612.00	5.00	617.00
OP 113	37.095512	-78.473852	612.00	15.00	627.00
OP 114	37.094658	-78.474216	622.22	5.00	627.22
OP 115	37.094658	-78.474216	622.22	15.00	637.22
OP 116	37.092467	-78.468147	601.40	5.00	606.40
OP 117	37.092467	-78.468147	601.40	15.00	616.40

# 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	
A01	SA tracking	SA tracking	1,329	1,041	-	-
A02	SA tracking	SA tracking	1,356	0	-	-
A03	SA tracking	SA tracking	2,859	1,194	-	-
B01	SA tracking	SA tracking	4,837	1,060	-	-
B02	SA tracking	SA tracking	0	0	-	-
B03	SA tracking	SA tracking	5,860	166	-	-
B04	SA tracking	SA tracking	919	0	-	-
B05	SA tracking	SA tracking	3,497	0	-	-
B06	SA tracking	SA tracking	8,401	813	-	-
C01	SA tracking	SA tracking	4,373	0	-	-
C02	SA tracking	SA tracking	4,028	0	-	-
C03	SA tracking	SA tracking	85	0	-	-
C04	SA tracking	SA tracking	3,975	0	-	-
C05	SA tracking	SA tracking	1,271	0	-	-
C06	SA tracking	SA tracking	518	0	-	-

## 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
a01 (green)	0	0	0	110	118	145	26	117	89	0	0	0
a01 (yellow)	0	0	0	130	180	212	200	179	60	0	0	0
a02 (green)	164	86	0	0	0	0	0	0	0	72	157	173
a02 (yellow)	0	0	0	0	0	0	0	0	0	0	0	0
a03 (green)	0	0	0	173	115	137	128	198	4	0	0	0
a03 (yellow)	0	0	0	70	324	296	313	191	0	0	0	0
b01 (green)	0	0	0	52	319	406	349	141	42	0	0	0
b01 (yellow)	0	0	0	102	280	230	200	203	26	0	0	0
b03 (green)	0	0	0	45	595	679	682	201	0	0	0	0
b03 (yellow)	0	0	0	1	29	76	59	1	0	0	0	0
b04 (green)	23	101	120	58	12	0	2	22	97	155	32	10
b04 (yellow)	0	0	0	0	0	0	0	0	0	0	0	0
b05 (green)	0	0	43	22	424	315	244	71	51	3	0	0
b05 (yellow)	0	0	0	0	0	0	0	0	0	0	0	0
b06 (green)	0	0	0	320	716	546	377	549	93	0	0	0
b06 (yellow)	0	0	11	70	69	160	5	44	57	0	0	0
c01 (green)	0	0	0	113	339	292	325	312	69	0	0	0
c01 (yellow)	0	0	0	0	0	0	0	0	0	0	0	0
c02 (green)	467	231	0	0	0	0	0	0	0	258	457	366
c02 (yellow)	0	0	0	0	0	0	0	0	0	0	0	0
c03 (green)	0	0	0	30	22	0	2	31	0	0	0	0
c03 (yellow)	0	0	0	0	0	0	0	0	0	0	0	0
c04 (green)	0	0	12	198	343	292	208	177	160	0	0	0
c04 (yellow)	0	0	0	0	0	0	0	0	0	0	0	0
c05 (green)	82	0	93	109	92	0	0	68	49	0	29	175
c05 (yellow)	0	0	0	0	0	0	0	0	0	0	0	0
c06 (green)	0	0	0	4	256	39	0	0	0	0	0	0
c06 (yellow)	0	0	0	0	0	0	0	0	0	0	0	0

## PV & Receptor Analysis Results

Results for each PV array and receptor

### A01 potential temporary after-image

Component	Green glare (min)	Yellow glare (min)
OP: OP 100	0	0
OP: OP 101	0	0
OP: OP 102	0	0
OP: OP 103	0	0
OP: OP 104	255	98
OP: OP 105	300	216
OP: OP 106	210	0
OP: OP 107	247	0
OP: OP 108	0	0
OP: OP 109	0	0
OP: OP 110	0	0

OP: OP 111	0	0
OP: OP 112	0	0
OP: OP 113	0	0
OP: OP 114	0	0
OP: OP 115	0	0
OP: OP 116	0	0
OP: OP 117	0	0
Route: Collins Dr	0	0
Route: Country Dr Seg 1	0	0
Route: Country Dr Seg 2	89	0
Route: County Line Rd	0	0
Route: Dempseys Rd	0	0
Route: Harley Ln	0	0
Route: Henderson Rd	0	0
Route: Hillside Dr	0	0
Route: Ole Briery Station Rd Seg 1	0	0
Route: Ole Briery Station Rd Seg 2	0	0
Route: Thistle Knob Ln	0	0
Route: Tobacco Heritage Trail	93	0
Route: US Hwy 15	135	727
Route: US Hwy 360	0	0

#### A01: OP 100

*No glare found*

#### A01: OP 101

*No glare found*

#### A01: OP 102

*No glare found*

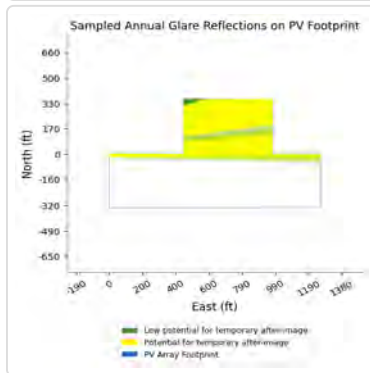
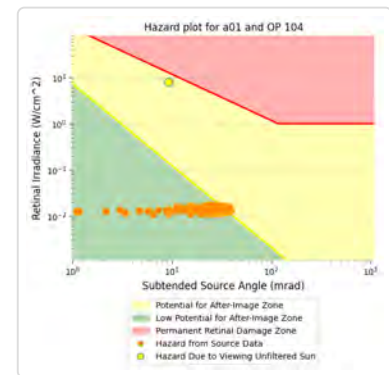
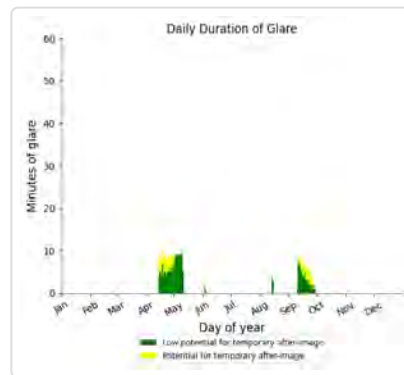
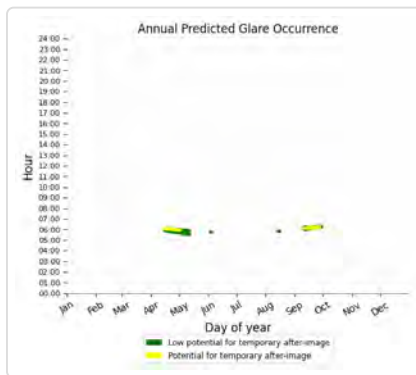
#### A01: OP 103

*No glare found*

## A01: OP 104

PV array is expected to produce the following glare for this receptor:

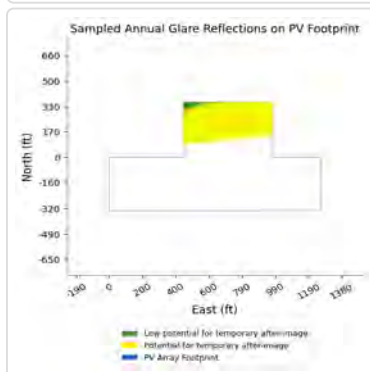
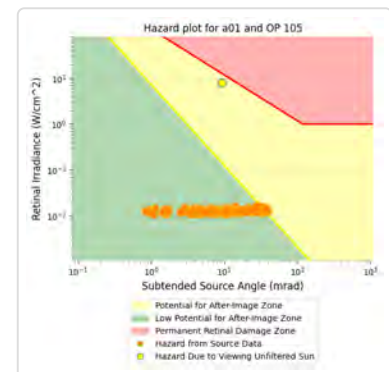
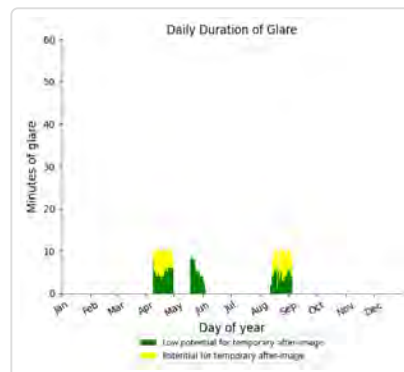
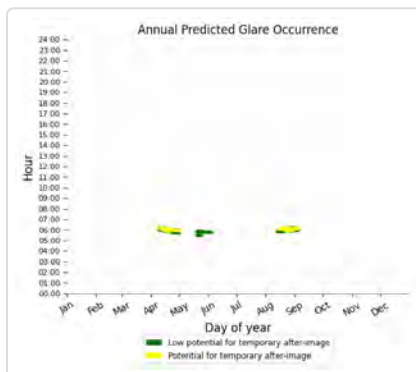
- 255 minutes of "green" glare with low potential to cause temporary after-image.
- 98 minutes of "yellow" glare with potential to cause temporary after-image.



## A01: OP 105

PV array is expected to produce the following glare for this receptor:

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

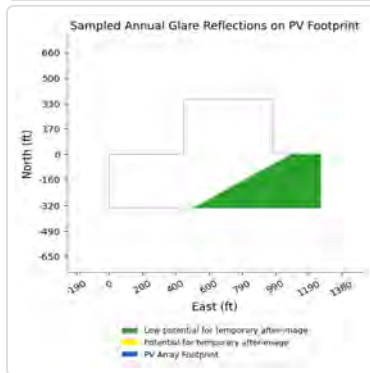
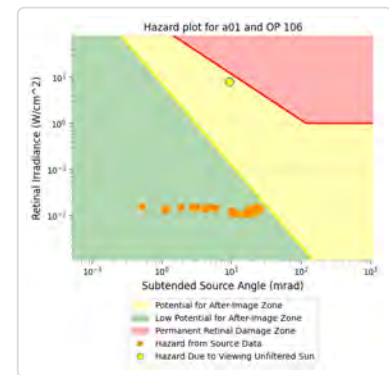
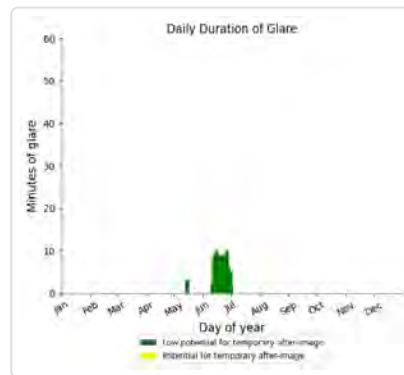
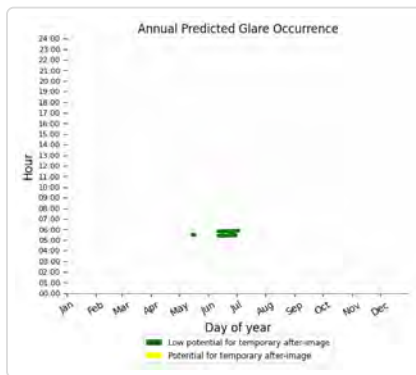




## A01: OP 106

PV array is expected to produce the following glare for this receptor:

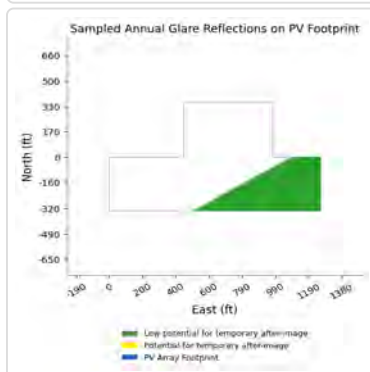
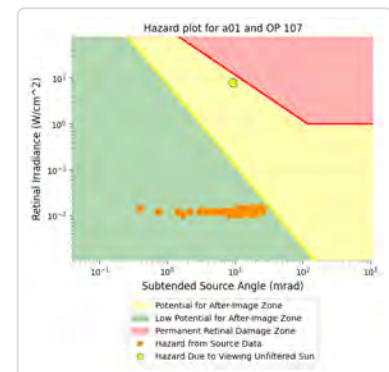
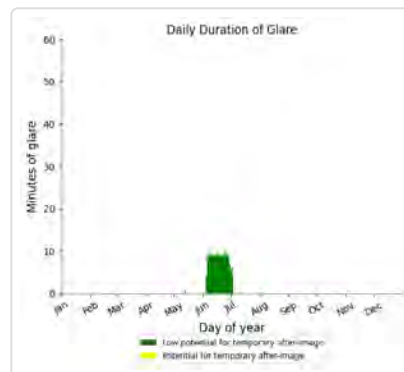
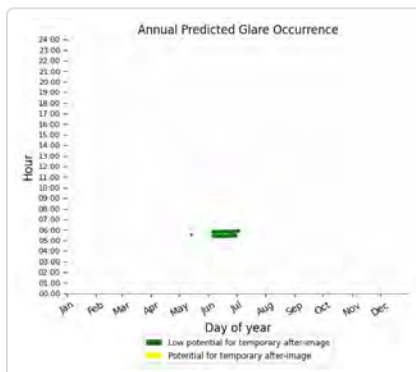
- 210 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## A01: OP 107

PV array is expected to produce the following glare for this receptor:

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



**A01: OP 108**

*No glare found*

**A01: OP 109**

*No glare found*

**A01: OP 110**

*No glare found*

**A01: OP 111**

*No glare found*

**A01: OP 112**

*No glare found*

**A01: OP 113**

*No glare found*

**A01: OP 114**

*No glare found*

**A01: OP 115**

*No glare found*

**A01: OP 116**

*No glare found*

**A01: OP 117**

*No glare found*

**A01: Collins Dr**

*No glare found*

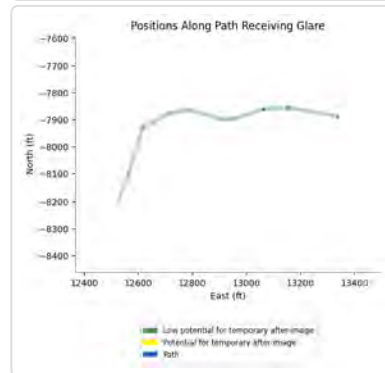
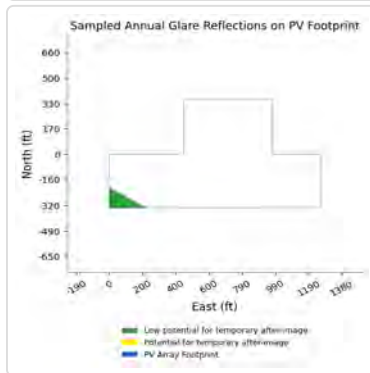
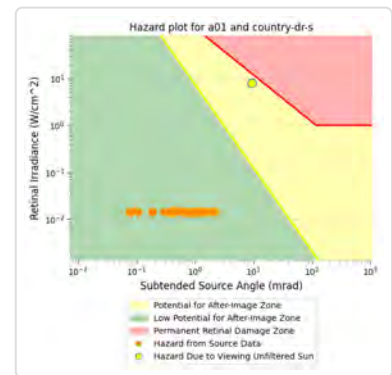
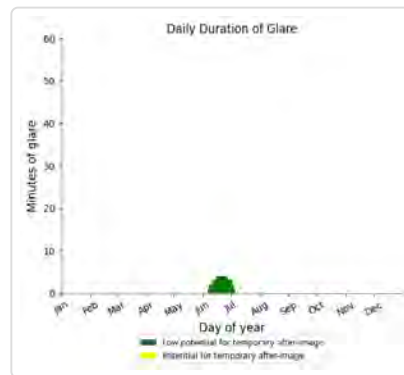
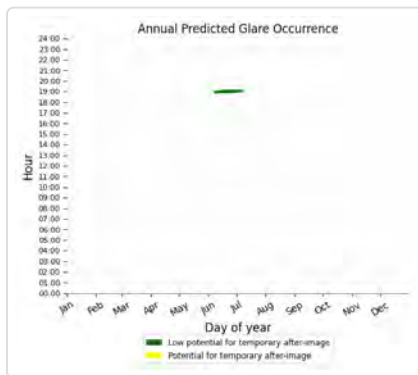
**A01: Country Dr Seg 1**

*No glare found*

## A01: Country Dr Seg 2

PV array is expected to produce the following glare for this receptor:

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



## A01: County Line Rd

No glare found

## A01: Dempseys Rd

No glare found

## A01: Harley Ln

No glare found

## A01: Henderson Rd

No glare found

## A01: Hillside Dr

No glare found

## A01: Ole Briery Station Rd Seg 1

No glare found

## A01: Ole Briery Station Rd Seg 2

No glare found

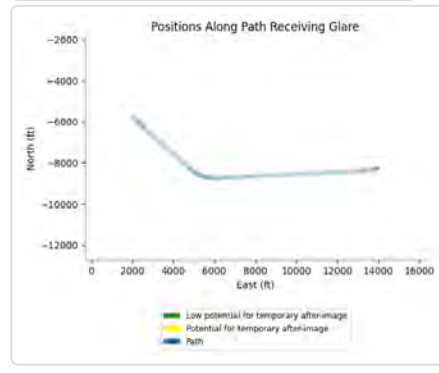
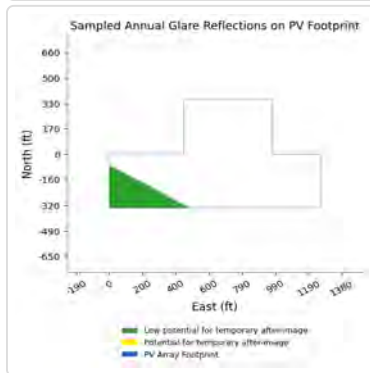
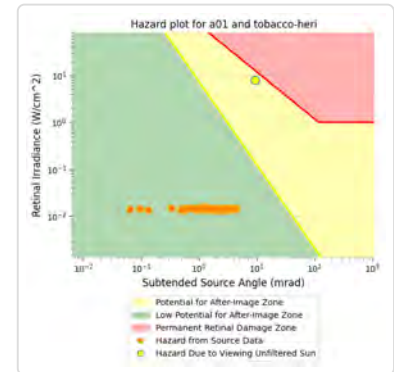
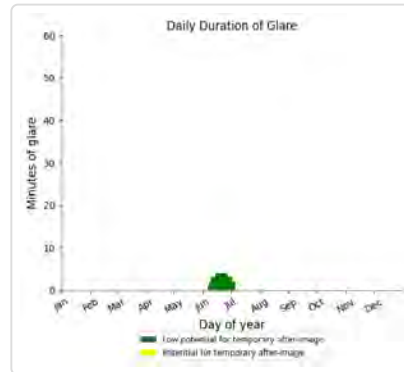
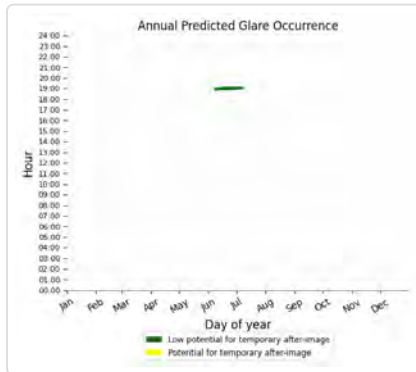
## A01: Thistle Knob Ln

No glare found

## A01: Tobacco Heritage Trail

PV array is expected to produce the following glare for this receptor:

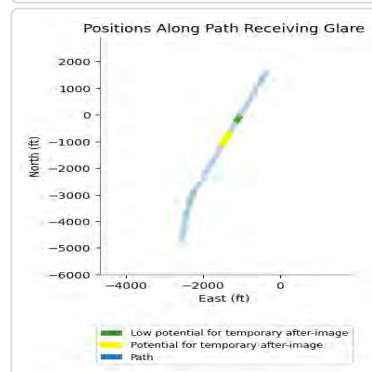
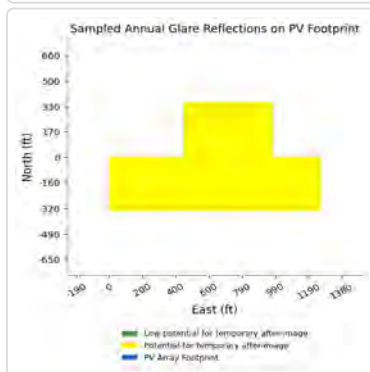
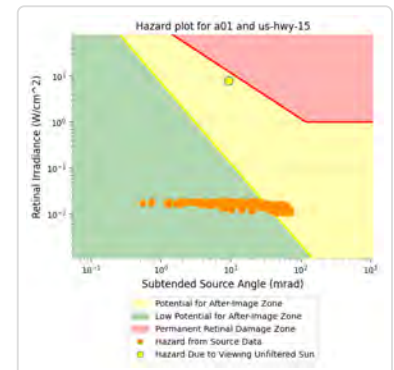
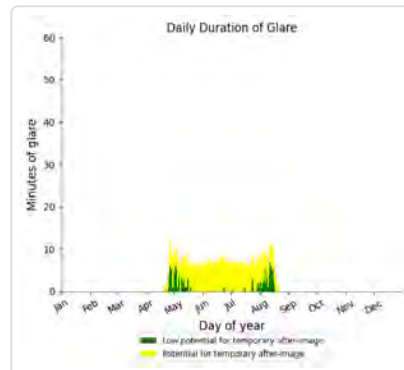
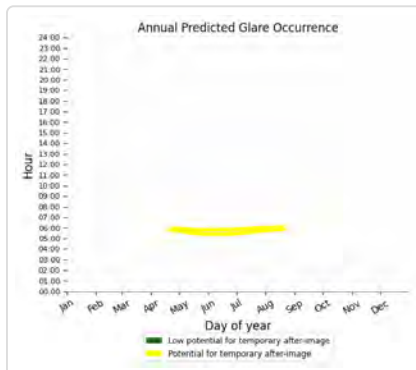
- 93 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## A01: US Hwy 15

PV array is expected to produce the following glare for this receptor:

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



## A01: US Hwy 360

*No glare found*

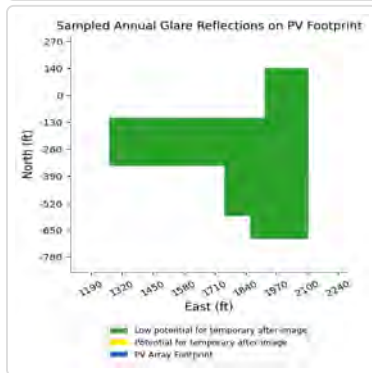
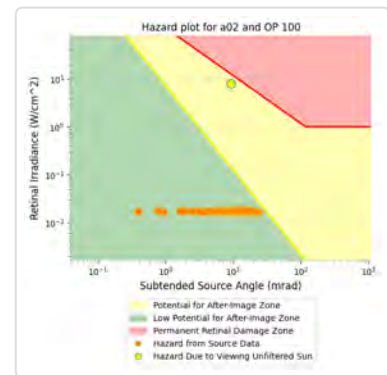
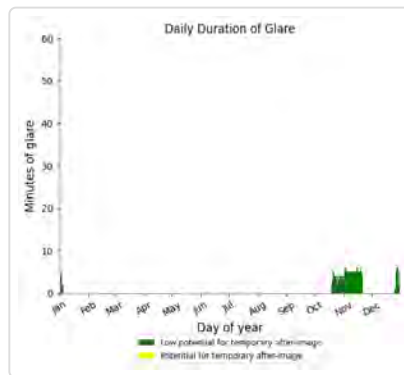
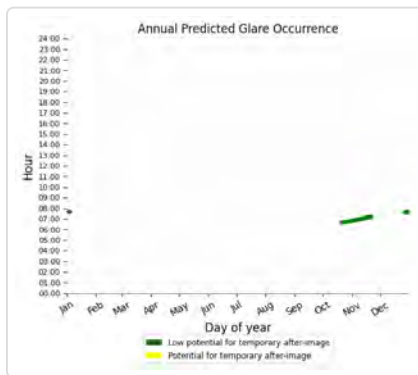
## A02 low potential for temporary after-image

Component	Green glare (min)	Yellow glare (min)
OP: OP 100	193	0
OP: OP 101	203	0
OP: OP 102	102	0
OP: OP 103	104	0
OP: OP 104	64	0
OP: OP 105	65	0
OP: OP 106	0	0
OP: OP 107	0	0
OP: OP 108	0	0
OP: OP 109	0	0
OP: OP 110	0	0
OP: OP 111	0	0
OP: OP 112	0	0
OP: OP 113	0	0
OP: OP 114	0	0
OP: OP 115	0	0
OP: OP 116	0	0
OP: OP 117	0	0
Route: Collins Dr	0	0
Route: Country Dr Seg 1	0	0
Route: Country Dr Seg 2	0	0
Route: County Line Rd	0	0
Route: Dempseys Rd	0	0
Route: Harley Ln	0	0
Route: Henderson Rd	625	0
Route: Hillside Dr	0	0
Route: Ole Briery Station Rd Seg 1	0	0
Route: Ole Briery Station Rd Seg 2	0	0
Route: Thistle Knob Ln	0	0
Route: Tobacco Heritage Trail	0	0
Route: US Hwy 15	0	0
Route: US Hwy 360	0	0

## A02: OP 100

PV array is expected to produce the following glare for this receptor:

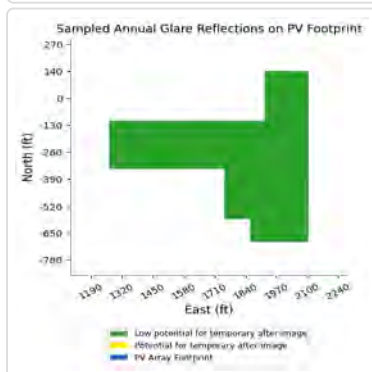
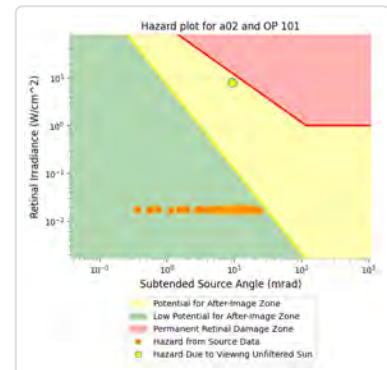
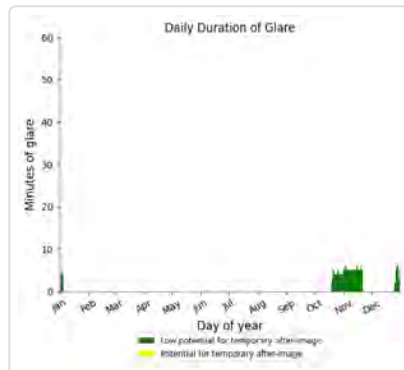
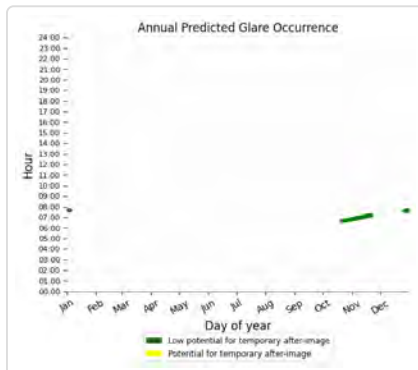
- 193 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## A02: OP 101

PV array is expected to produce the following glare for this receptor:

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

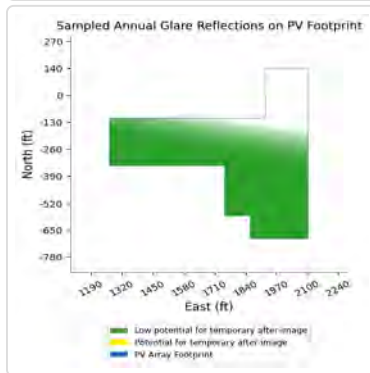
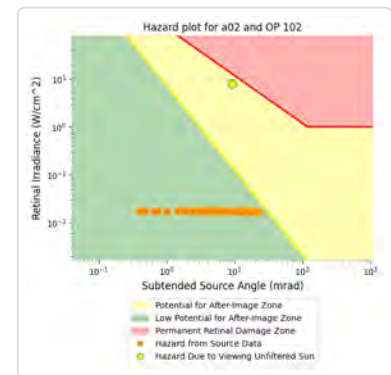
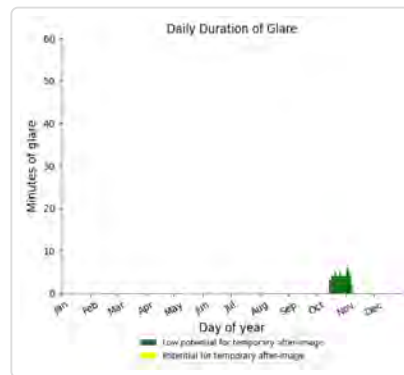
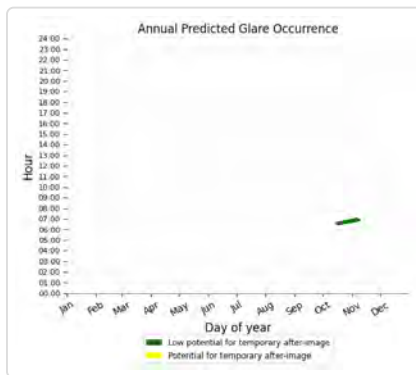




## A02: OP 102

PV array is expected to produce the following glare for this receptor:

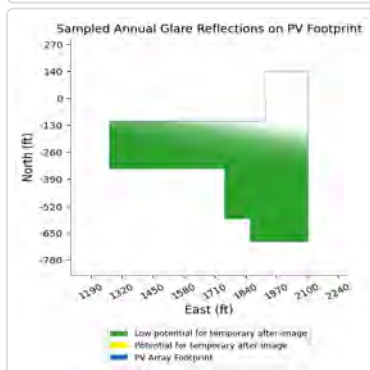
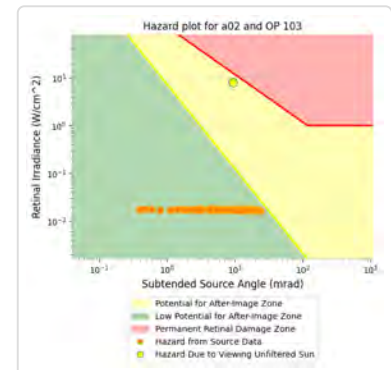
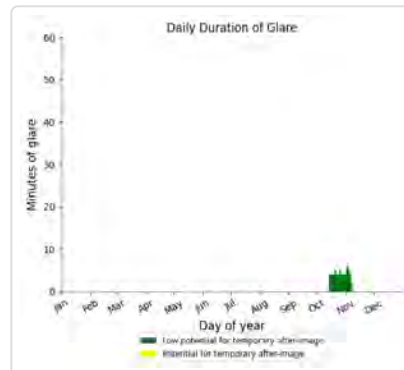
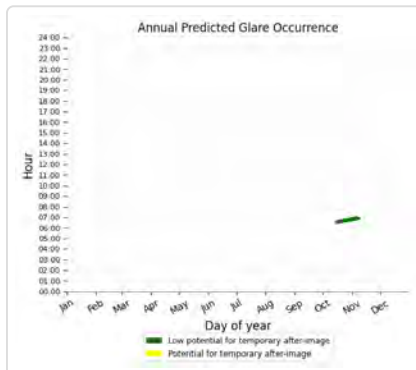
- 102 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## A02: OP 103

PV array is expected to produce the following glare for this receptor:

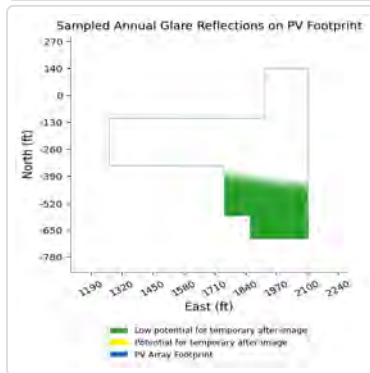
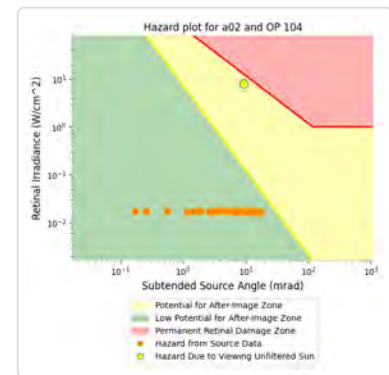
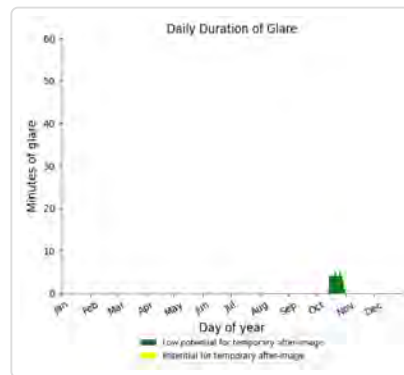
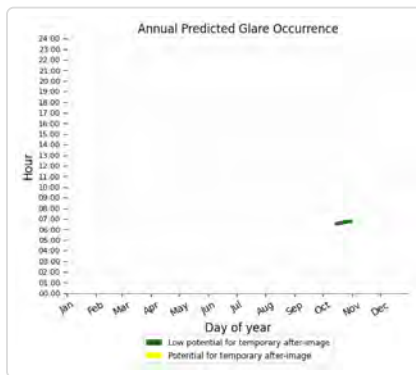
- 104 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## A02: OP 104

PV array is expected to produce the following glare for this receptor:

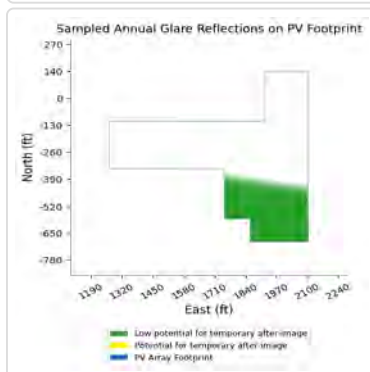
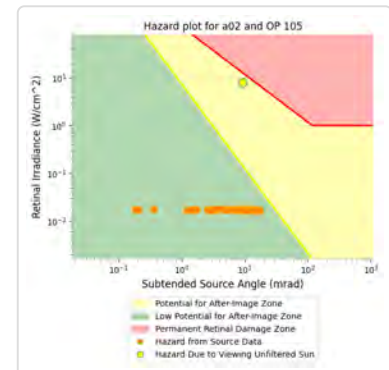
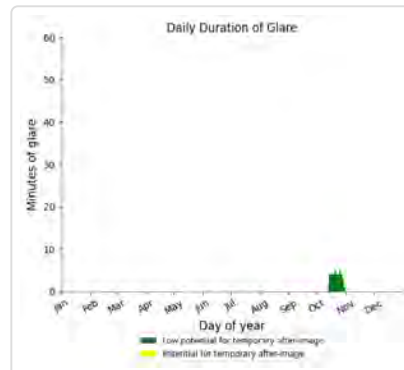
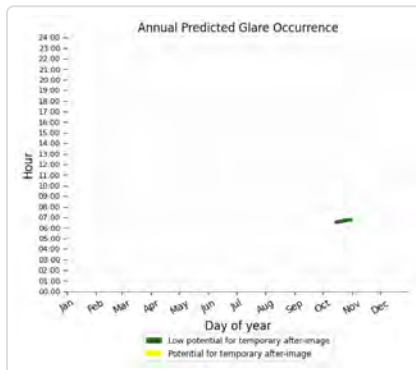
- 64 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## A02: OP 105

PV array is expected to produce the following glare for this receptor:

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



**A02: OP 106**

*No glare found*

**A02: OP 107**

*No glare found*

**A02: OP 108**

*No glare found*

**A02: OP 109**

*No glare found*

**A02: OP 110**

*No glare found*

**A02: OP 111**

*No glare found*

**A02: OP 112**

*No glare found*

**A02: OP 113**

*No glare found*

**A02: OP 114**

*No glare found*

**A02: OP 115**

*No glare found*

**A02: OP 116**

*No glare found*

**A02: OP 117**

*No glare found*

**A02: Collins Dr**

*No glare found*

**A02: Country Dr Seg 1**

*No glare found*

**A02: Country Dr Seg 2**

*No glare found*

## A02: County Line Rd

No glare found

## A02: Dempseys Rd

No glare found

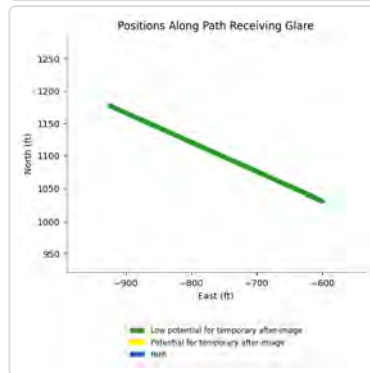
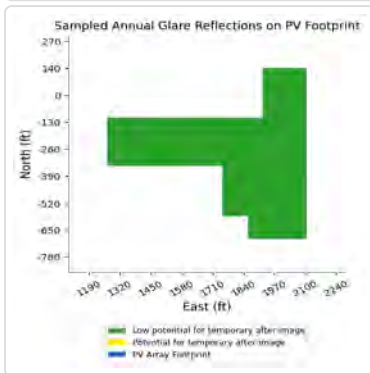
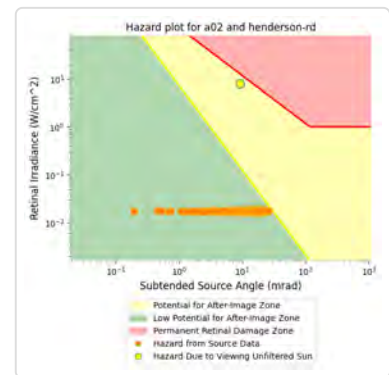
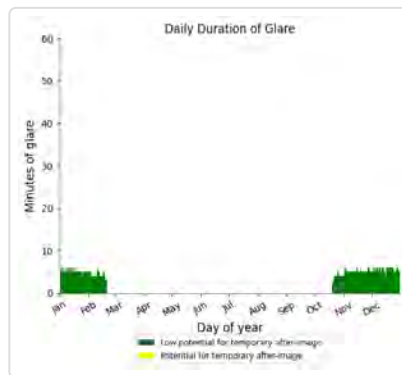
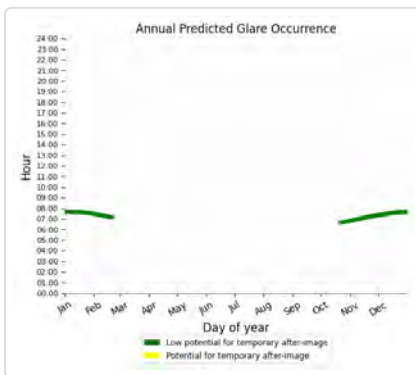
## A02: Harley Ln

No glare found

## A02: Henderson Rd

PV array is expected to produce the following glare for this receptor:

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



## A02: Hillside Dr

No glare found

## A02: Ole Briery Station Rd Seg 1

No glare found

## A02: Ole Briery Station Rd Seg 2

No glare found

## A02: Thistle Knob Ln

No glare found

## A02: Tobacco Heritage Trail

No glare found

## A02: US Hwy 15

*No glare found*

## A02: US Hwy 360

*No glare found*

## A03 potential temporary after-image

Component	Green glare (min)	Yellow glare (min)
OP: OP 100	0	0
OP: OP 101	0	0
OP: OP 102	0	0
OP: OP 103	0	0
OP: OP 104	0	0
OP: OP 105	0	0
OP: OP 106	712	0
OP: OP 107	760	0
OP: OP 108	112	0
OP: OP 109	127	0
OP: OP 110	0	0
OP: OP 111	0	0
OP: OP 112	0	0
OP: OP 113	0	0
OP: OP 114	0	0
OP: OP 115	0	0
OP: OP 116	0	0
OP: OP 117	0	0
Route: Collins Dr	0	0
Route: Country Dr Seg 1	0	0
Route: Country Dr Seg 2	0	0
Route: County Line Rd	694	0
Route: Dempseys Rd	0	0
Route: Harley Ln	0	0
Route: Henderson Rd	0	0
Route: Hillside Dr	0	0
Route: Ole Briery Station Rd Seg 1	0	0
Route: Ole Briery Station Rd Seg 2	0	0
Route: Thistle Knob Ln	0	0
Route: Tobacco Heritage Trail	0	0
Route: US Hwy 15	454	1194
Route: US Hwy 360	0	0

## A03: OP 100

*No glare found*

## A03: OP 101

*No glare found*

A03: OP 102

No glare found

A03: OP 103

No glare found

A03: OP 104

No glare found

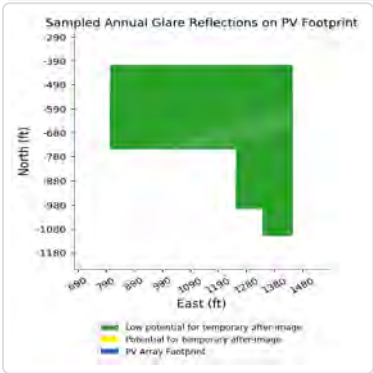
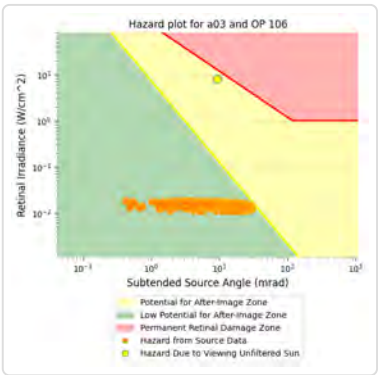
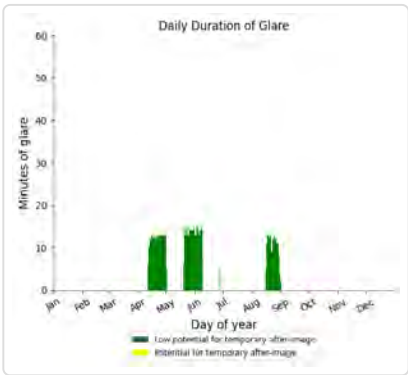
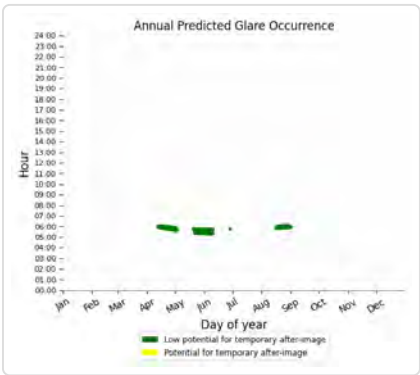
A03: OP 105

No glare found

A03: OP 106

PV array is expected to produce the following glare for this receptor:

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

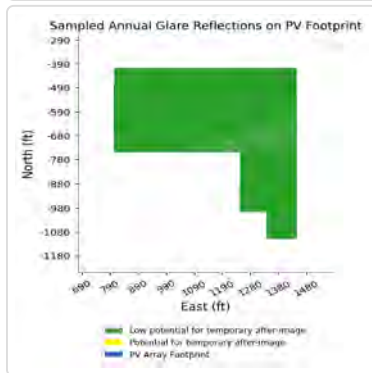
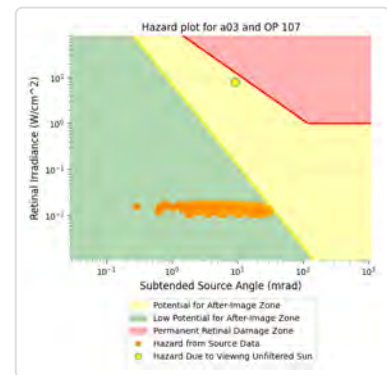
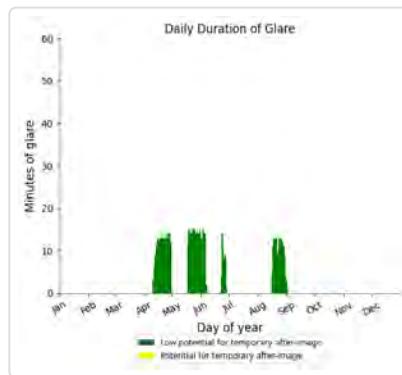
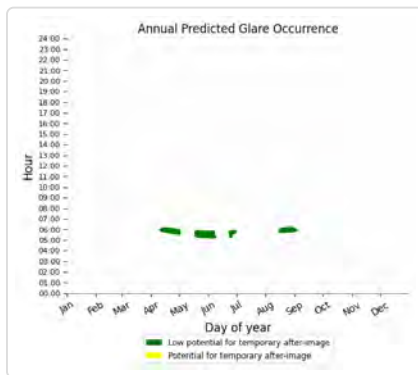




### A03: OP 107

PV array is expected to produce the following glare for this receptor:

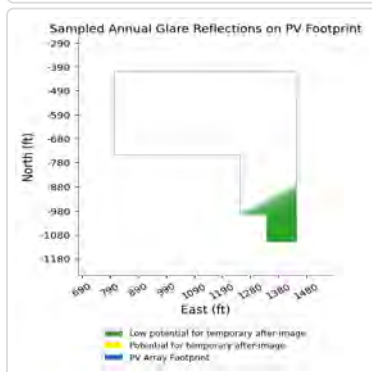
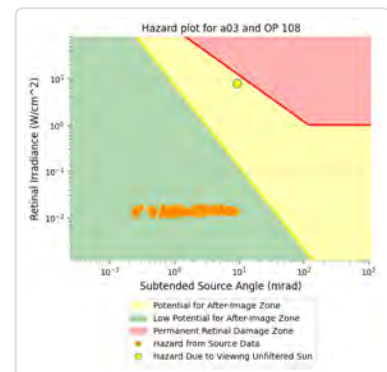
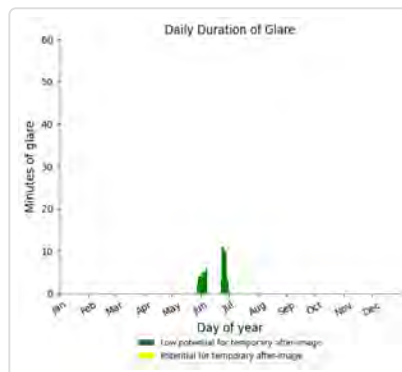
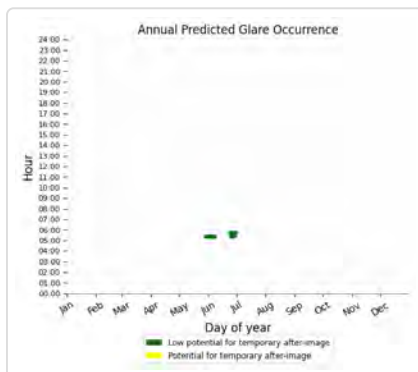
- 760 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



### A03: OP 108

PV array is expected to produce the following glare for this receptor:

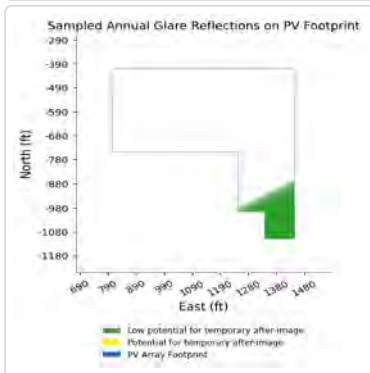
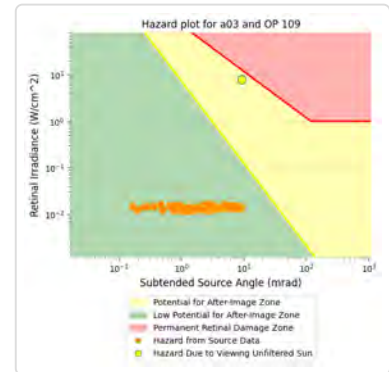
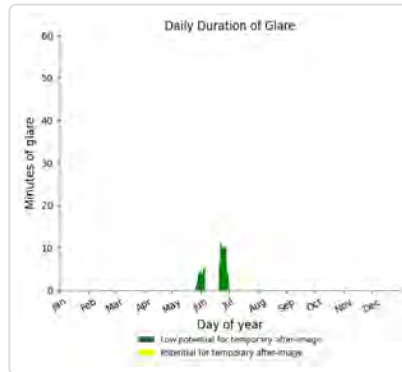
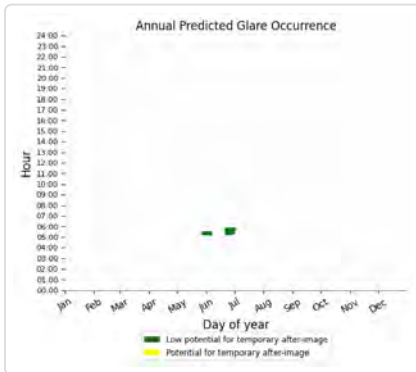
- 112 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



### A03: OP 109

PV array is expected to produce the following glare for this receptor:

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



### A03: OP 110

No glare found

### A03: OP 111

No glare found

### A03: OP 112

No glare found

### A03: OP 113

No glare found

### A03: OP 114

No glare found

### A03: OP 115

No glare found

### A03: OP 116

No glare found

### A03: OP 117

No glare found

A03: Collins Dr

No glare found

A03: Country Dr Seg 1

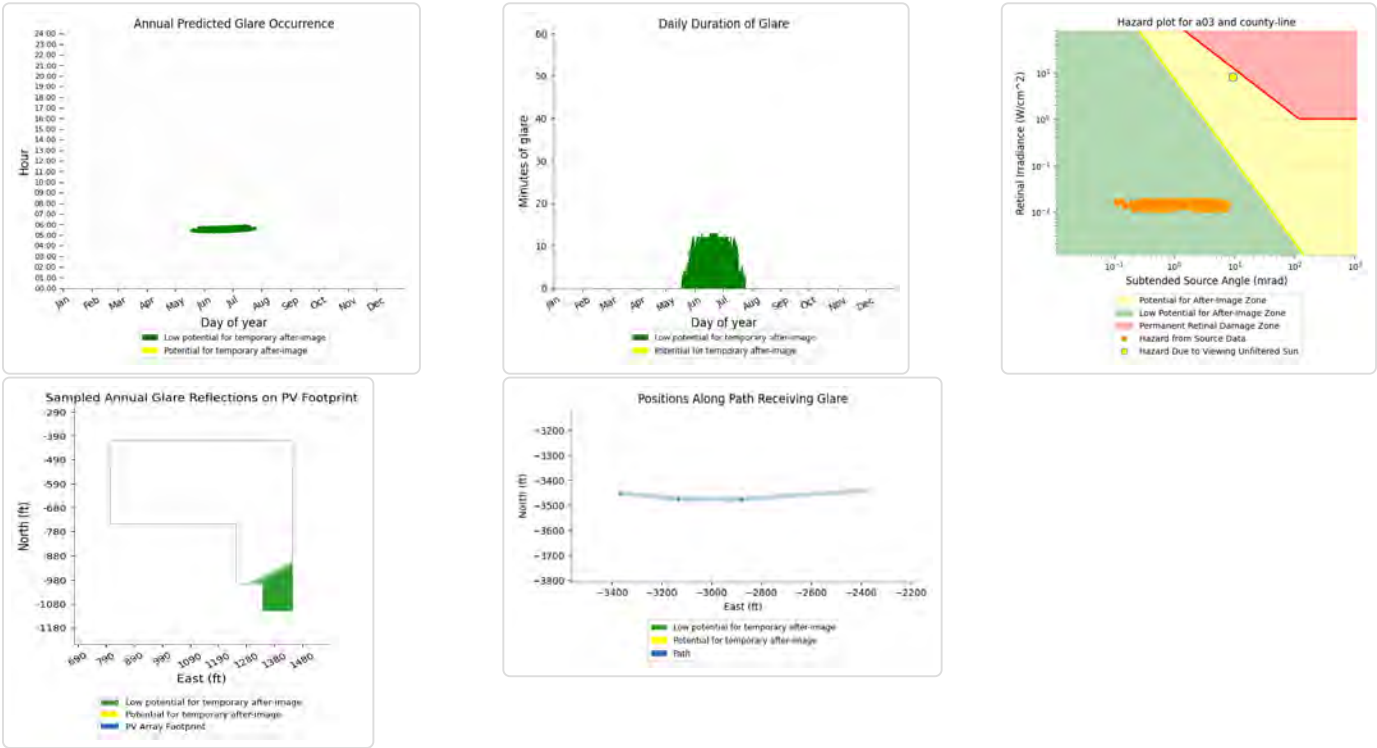
No glare found

A03: Country Dr Seg 2

No glare found

A03: County Line Rd

- PV array is expected to produce the following glare for this receptor:
- 694 minutes of "green" glare with low potential to cause temporary after-image.
  - 0 minutes of "yellow" glare with potential to cause temporary after-image.



A03: Dempseys Rd

No glare found

A03: Harley Ln

No glare found

A03: Henderson Rd

No glare found

A03: Hillside Dr

No glare found

A03: Ole Briery Station Rd Seg 1

No glare found

A03: Ole Briery Station Rd Seg 2

No glare found

A03: Thistle Knob Ln

No glare found

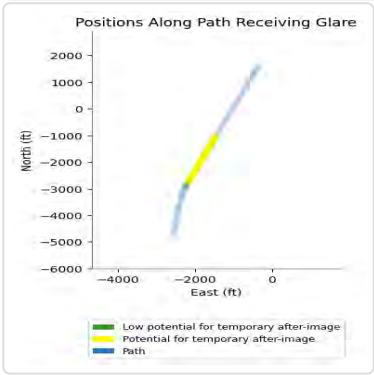
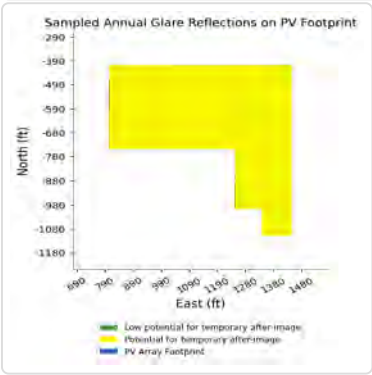
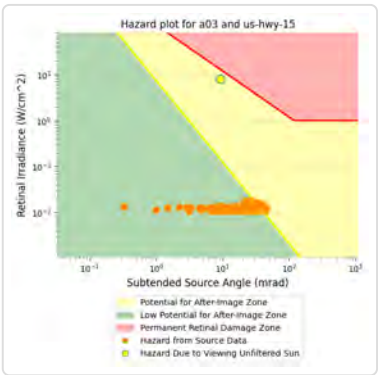
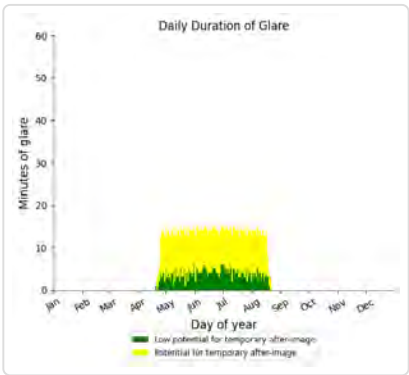
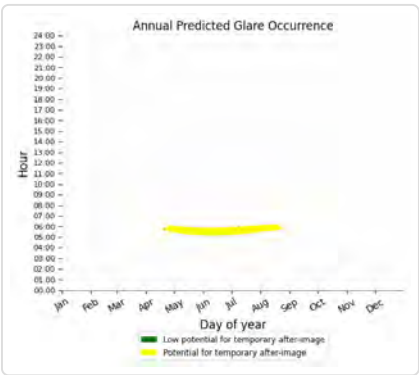
A03: Tobacco Heritage Trail

No glare found

A03: US Hwy 15

PV array is expected to produce the following glare for this receptor:

- 454 minutes of "green" glare with low potential to cause temporary after-image.
- 1,194 minutes of "yellow" glare with potential to cause temporary after-image.



A03: US Hwy 360

No glare found

B01 potential temporary after-image

Component	Green glare (min)	Yellow glare (min)
OP: OP 100	0	0
OP: OP 101	0	0
OP: OP 102	0	0
OP: OP 103	0	0
OP: OP 104	0	0

OP: OP 105	0	0
OP: OP 106	171	24
OP: OP 107	233	320
OP: OP 108	0	0
OP: OP 109	0	0
OP: OP 110	0	0
OP: OP 111	0	0
OP: OP 112	0	0
OP: OP 113	0	0
OP: OP 114	0	0
OP: OP 115	0	0
OP: OP 116	0	0
OP: OP 117	0	0
Route: Collins Dr	0	0
Route: Country Dr Seg 1	771	0
Route: Country Dr Seg 2	976	0
Route: County Line Rd	0	0
Route: Dempseys Rd	0	0
Route: Harley Ln	0	0
Route: Henderson Rd	0	0
Route: Hillside Dr	896	0
Route: Ole Briery Station Rd Seg 1	0	0
Route: Ole Briery Station Rd Seg 2	0	0
Route: Thistle Knob Ln	0	0
Route: Tobacco Heritage Trail	993	0
Route: US Hwy 15	13	716
Route: US Hwy 360	784	0

#### **B01: OP 100**

*No glare found*

#### **B01: OP 101**

*No glare found*

#### **B01: OP 102**

*No glare found*

#### **B01: OP 103**

*No glare found*

#### **B01: OP 104**

*No glare found*

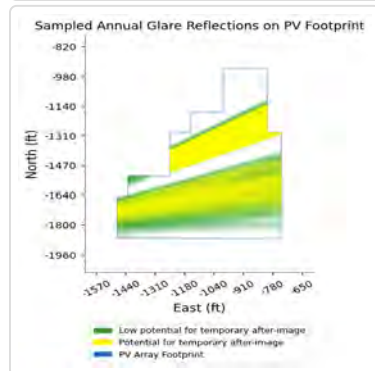
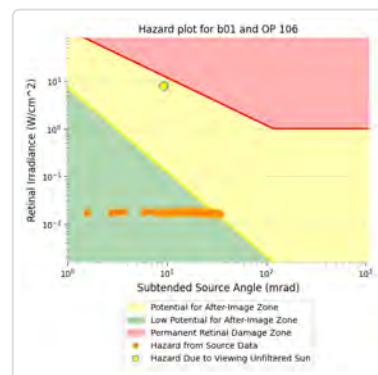
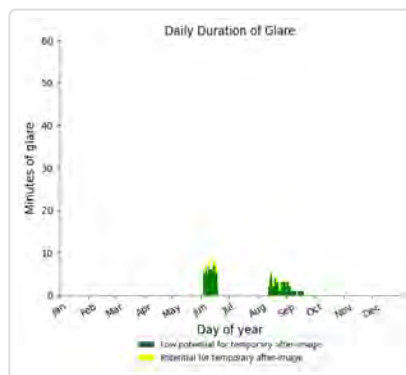
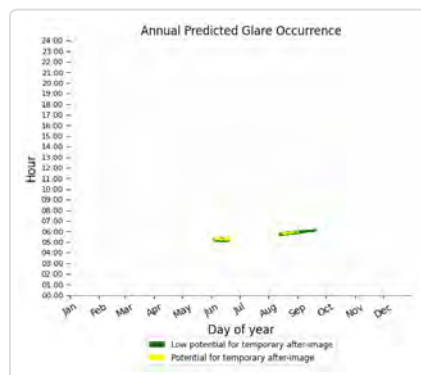
#### **B01: OP 105**

*No glare found*

## B01: OP 106

PV array is expected to produce the following glare for this receptor:

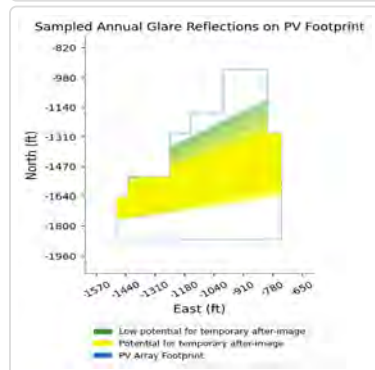
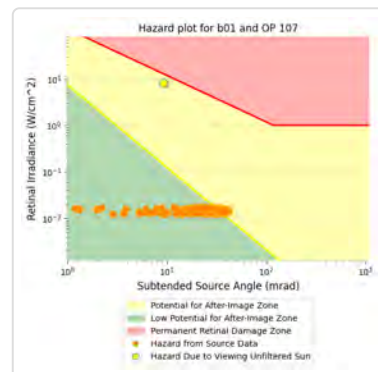
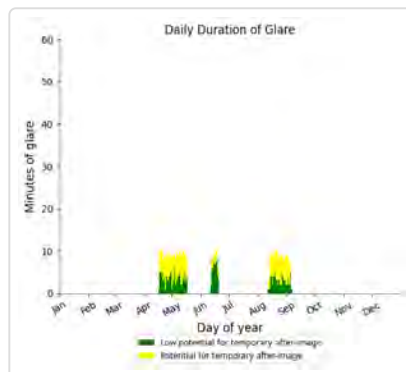
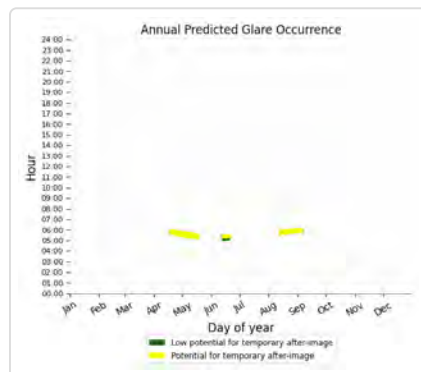
- 171 minutes of "green" glare with low potential to cause temporary after-image.
- 24 minutes of "yellow" glare with potential to cause temporary after-image.



## B01: OP 107

PV array is expected to produce the following glare for this receptor:

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





**B01: OP 108**

*No glare found*

**B01: OP 109**

*No glare found*

**B01: OP 110**

*No glare found*

**B01: OP 111**

*No glare found*

**B01: OP 112**

*No glare found*

**B01: OP 113**

*No glare found*

**B01: OP 114**

*No glare found*

**B01: OP 115**

*No glare found*

**B01: OP 116**

*No glare found*

**B01: OP 117**

*No glare found*

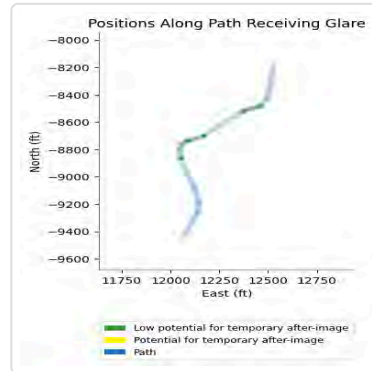
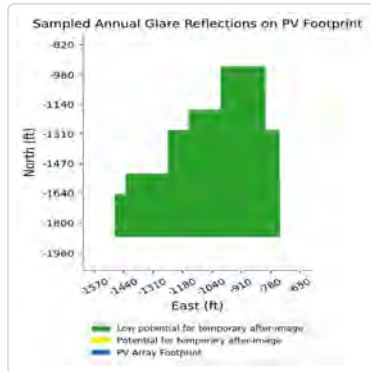
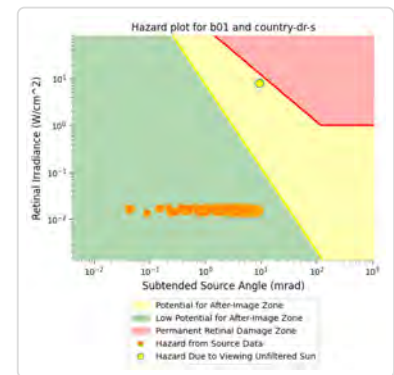
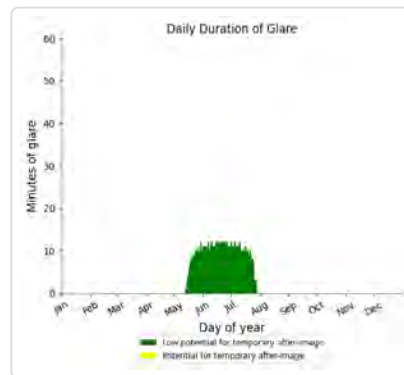
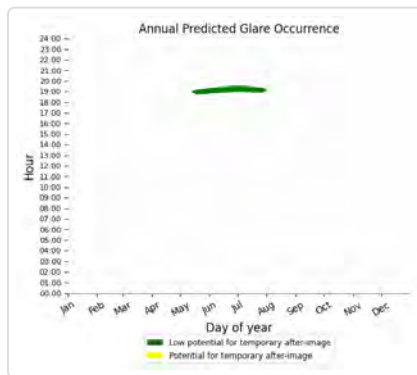
**B01: Collins Dr**

*No glare found*

## B01: Country Dr Seg 1

PV array is expected to produce the following glare for this receptor:

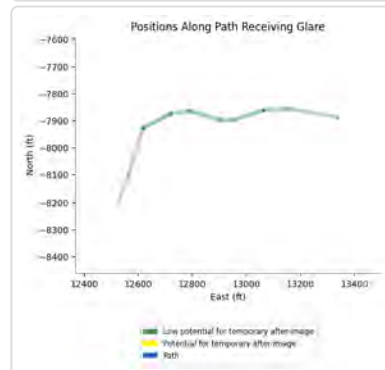
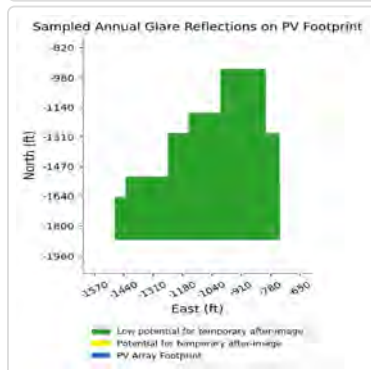
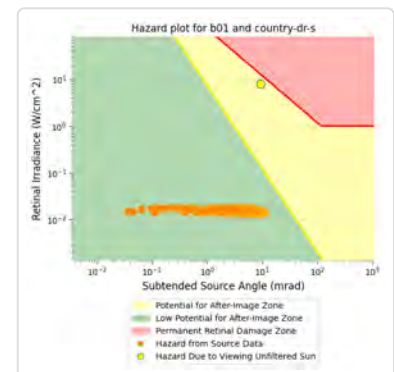
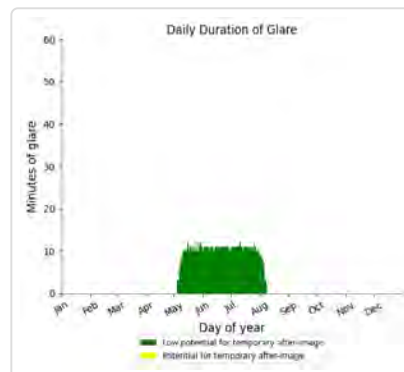
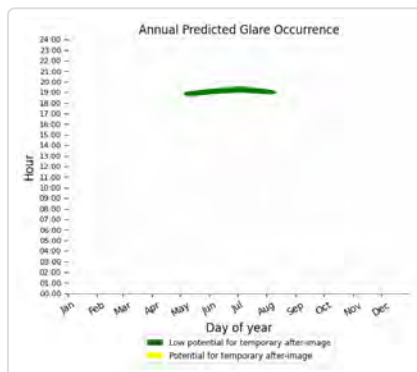
- 771 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## B01: Country Dr Seg 2

PV array is expected to produce the following glare for this receptor:

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



## B01: County Line Rd

No glare found

## B01: Dempseys Rd

No glare found

## B01: Harley Ln

No glare found

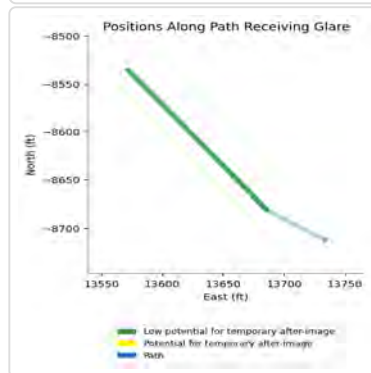
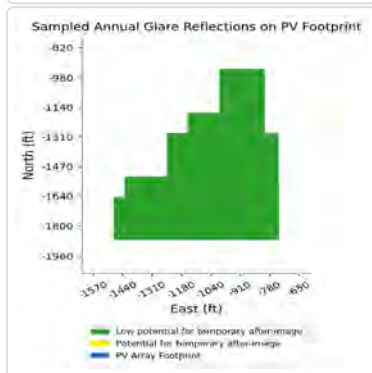
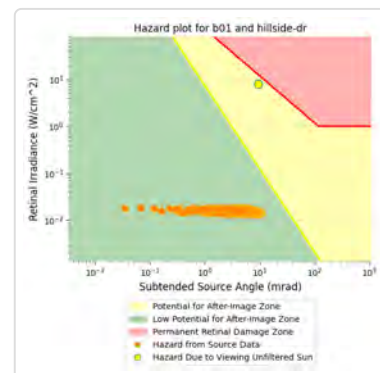
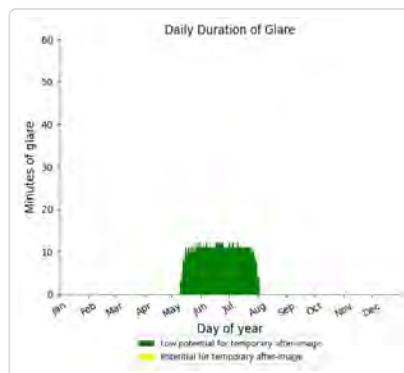
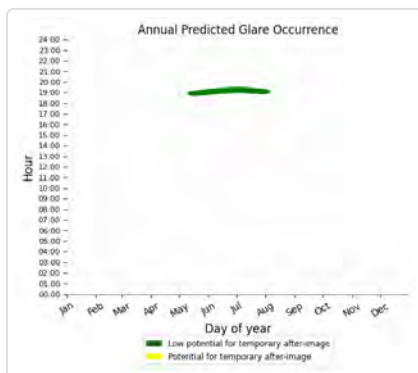
## B01: Henderson Rd

No glare found

## B01: Hillside Dr

PV array is expected to produce the following glare for this receptor:

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



## B01: Ole Briery Station Rd Seg 1

No glare found

## B01: Ole Briery Station Rd Seg 2

No glare found

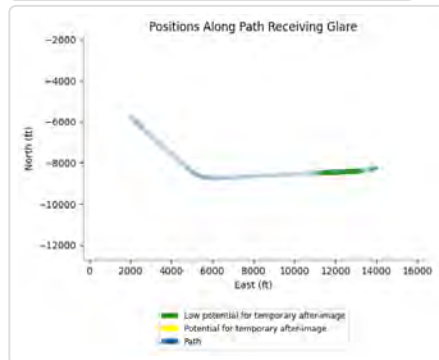
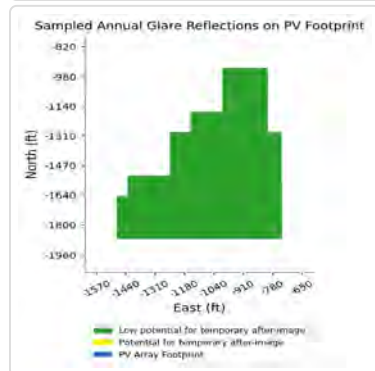
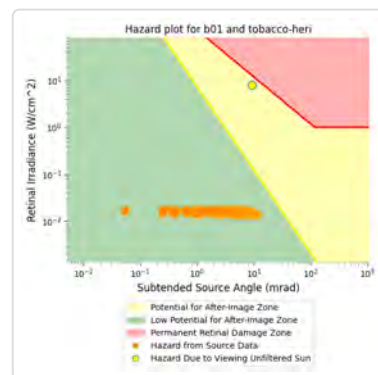
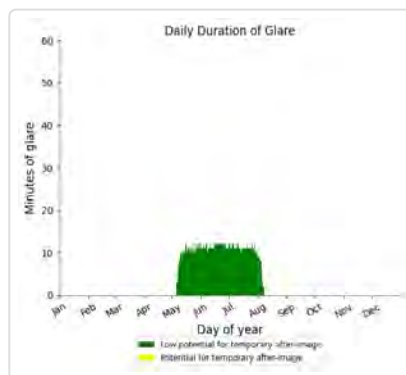
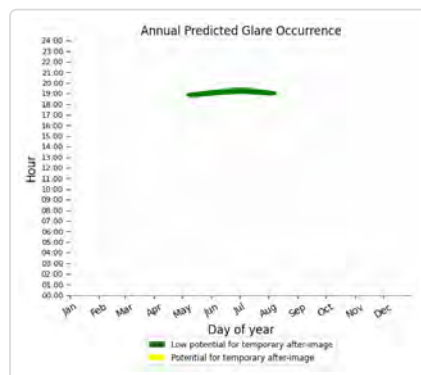
## B01: Thistle Knob Ln

No glare found

## B01: Tobacco Heritage Trail

PV array is expected to produce the following glare for this receptor:

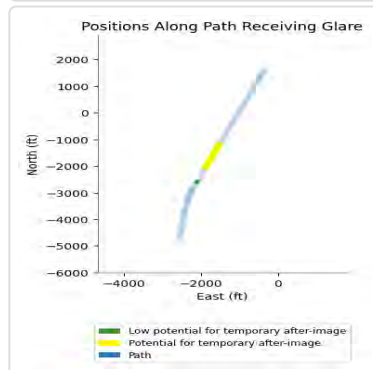
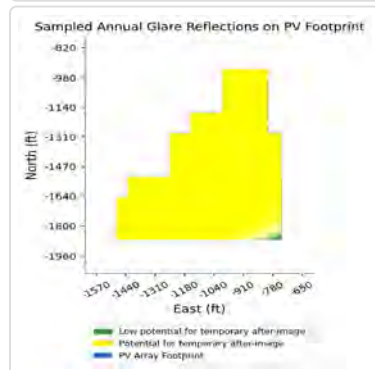
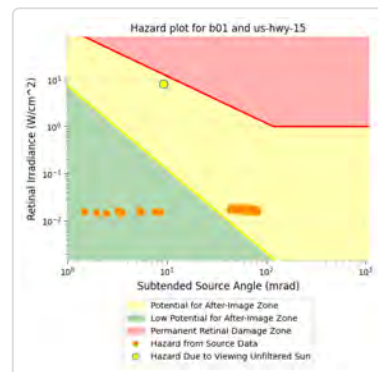
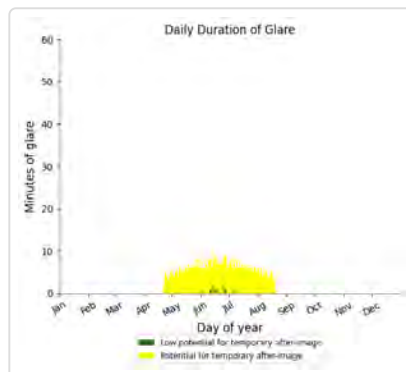
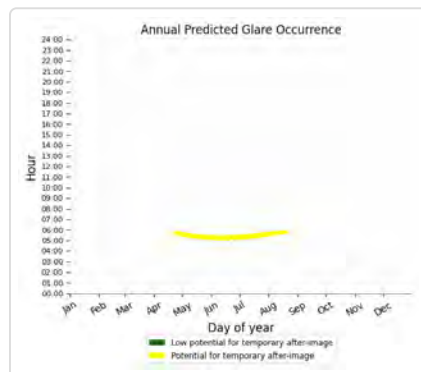
- 993 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## B01: US Hwy 15

PV array is expected to produce the following glare for this receptor:

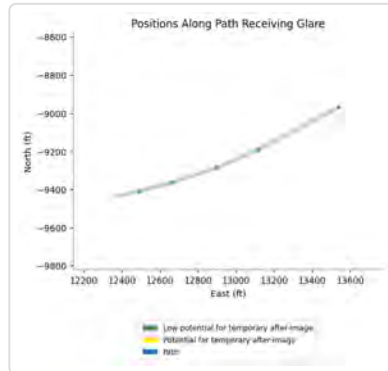
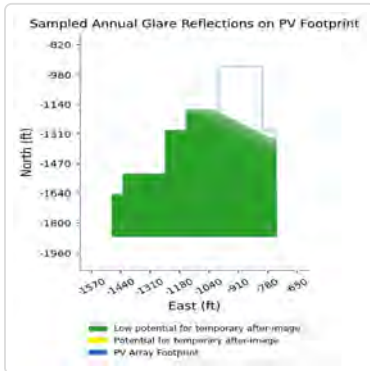
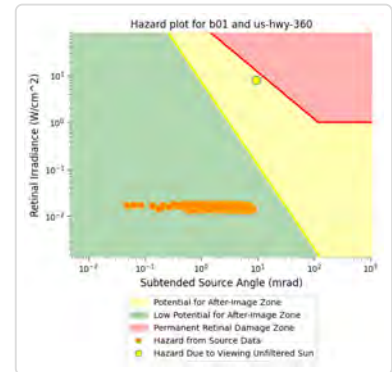
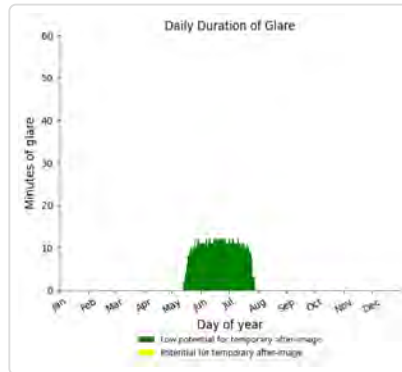
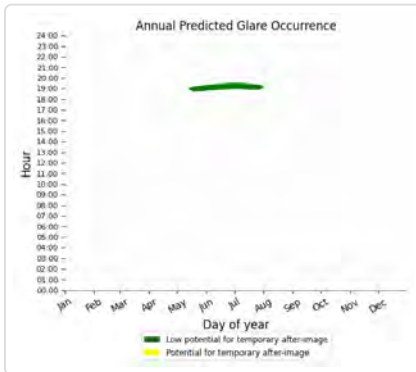
- 13 minutes of "green" glare with low potential to cause temporary after-image.
- 716 minutes of "yellow" glare with potential to cause temporary after-image.



## B01: US Hwy 360

PV array is expected to produce the following glare for this receptor:

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



## B02 no glare found

Component	Green glare (min)	Yellow glare (min)
OP: OP 100	0	0
OP: OP 101	0	0
OP: OP 102	0	0
OP: OP 103	0	0
OP: OP 104	0	0
OP: OP 105	0	0
OP: OP 106	0	0
OP: OP 107	0	0
OP: OP 108	0	0
OP: OP 109	0	0
OP: OP 110	0	0
OP: OP 111	0	0
OP: OP 112	0	0
OP: OP 113	0	0
OP: OP 114	0	0
OP: OP 115	0	0
OP: OP 116	0	0
OP: OP 117	0	0
Route: Collins Dr	0	0
Route: Country Dr Seg 1	0	0
Route: Country Dr Seg 2	0	0
Route: County Line Rd	0	0
Route: Dempseys Rd	0	0
Route: Harley Ln	0	0
Route: Henderson Rd	0	0
Route: Hillside Dr	0	0
Route: Ole Briery Station Rd Seg 1	0	0
Route: Ole Briery Station Rd Seg 2	0	0
Route: Thistle Knob Ln	0	0
Route: Tobacco Heritage Trail	0	0
Route: US Hwy 15	0	0
Route: US Hwy 360	0	0

No glare found

## B03 potential temporary after-image

Component	Green glare (min)	Yellow glare (min)
OP: OP 100	0	0
OP: OP 101	0	0
OP: OP 102	0	0
OP: OP 103	0	0
OP: OP 104	0	0
OP: OP 105	0	0
OP: OP 106	0	0
OP: OP 107	0	0



OP: OP 108	71	0
OP: OP 109	52	0
OP: OP 110	0	0
OP: OP 111	0	0
OP: OP 112	0	0
OP: OP 113	0	0
OP: OP 114	0	0
OP: OP 115	0	0
OP: OP 116	0	0
OP: OP 117	0	0
Route: Collins Dr	0	0
Route: Country Dr Seg 1	792	0
Route: Country Dr Seg 2	606	0
Route: County Line Rd	767	0
Route: Dempseys Rd	0	0
Route: Harley Ln	0	0
Route: Henderson Rd	0	0
Route: Hillside Dr	767	0
Route: Ole Briery Station Rd Seg 1	0	0
Route: Ole Briery Station Rd Seg 2	0	0
Route: Thistle Knob Ln	0	0
Route: Tobacco Heritage Trail	961	0
Route: US Hwy 15	1054	166
Route: US Hwy 360	790	0

### **B03: OP 100**

*No glare found*

### **B03: OP 101**

*No glare found*

### **B03: OP 102**

*No glare found*

### **B03: OP 103**

*No glare found*

### **B03: OP 104**

*No glare found*

### **B03: OP 105**

*No glare found*

### **B03: OP 106**

*No glare found*

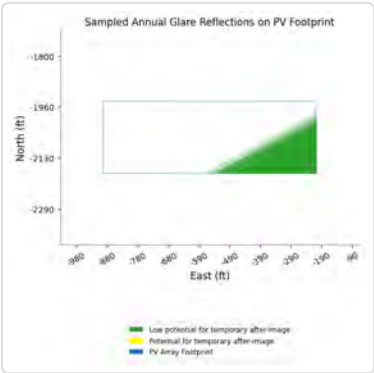
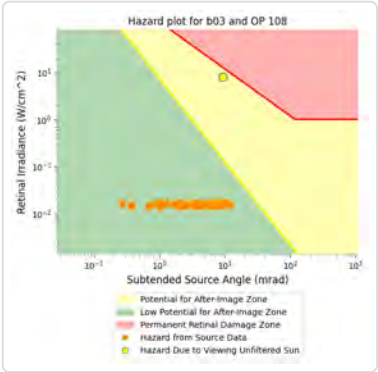
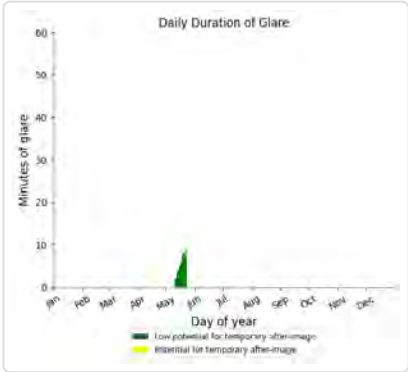
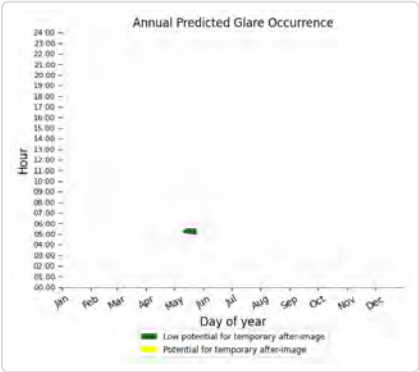
B03: OP 107

No glare found

B03: OP 108

PV array is expected to produce the following glare for this receptor:

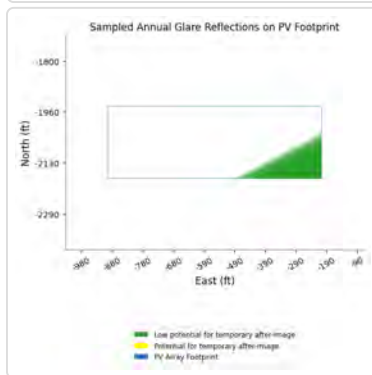
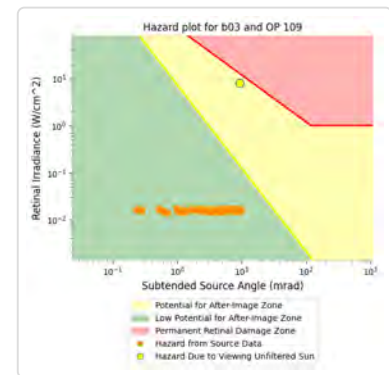
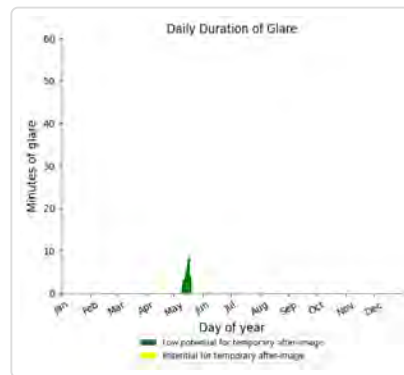
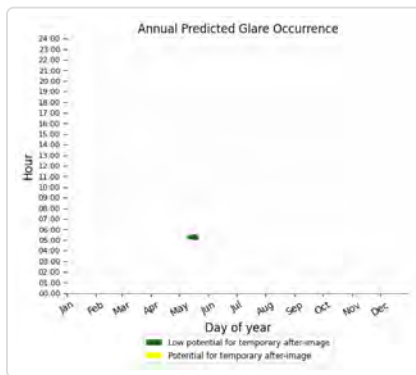
- 71 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



### B03: OP 109

PV array is expected to produce the following glare for this receptor:

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



### B03: OP 110

No glare found

### B03: OP 111

No glare found

### B03: OP 112

No glare found

### B03: OP 113

No glare found

### B03: OP 114

No glare found

### B03: OP 115

No glare found

### B03: OP 116

No glare found

### B03: OP 117

No glare found

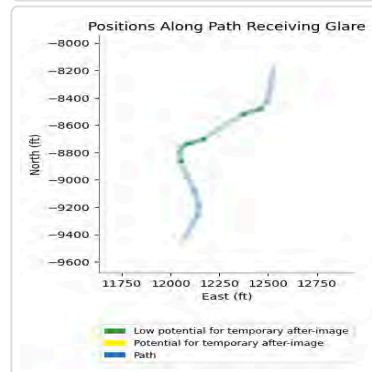
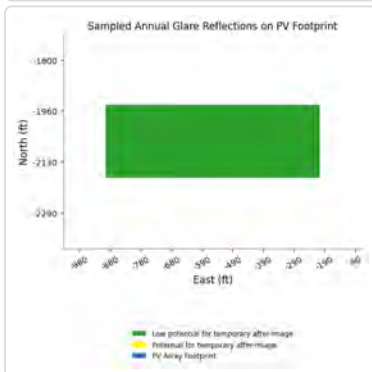
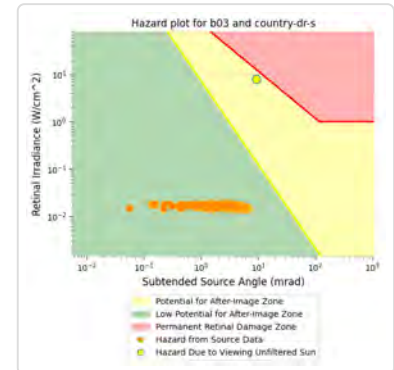
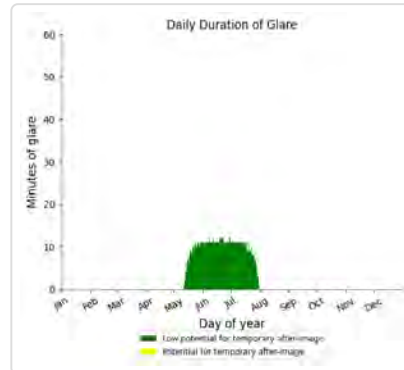
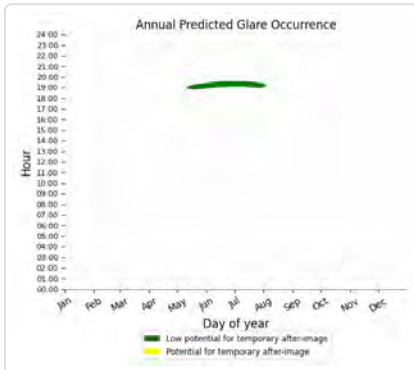
## B03: Collins Dr

No glare found

## B03: Country Dr Seg 1

PV array is expected to produce the following glare for this receptor:

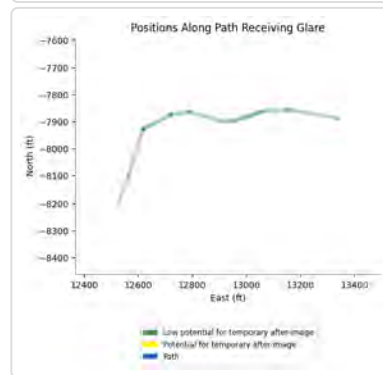
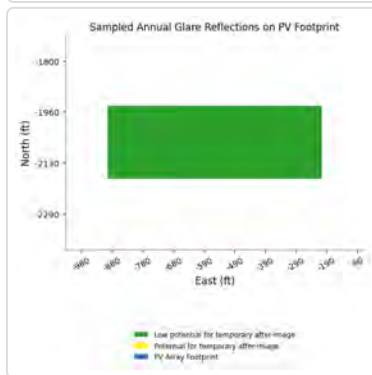
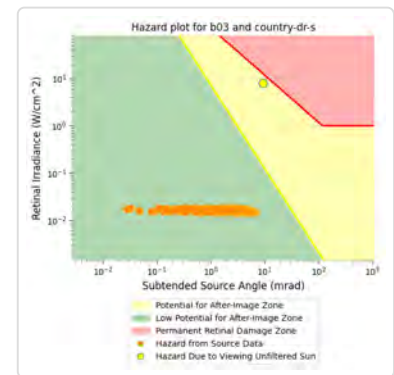
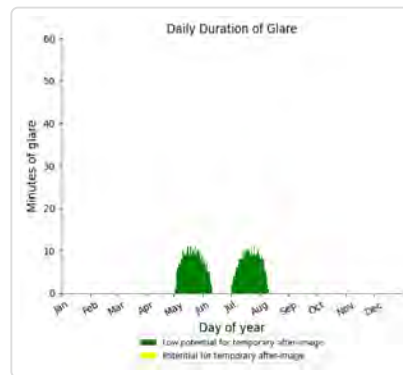
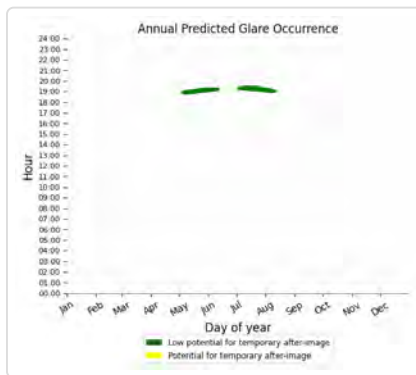
- 792 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## B03: Country Dr Seg 2

PV array is expected to produce the following glare for this receptor:

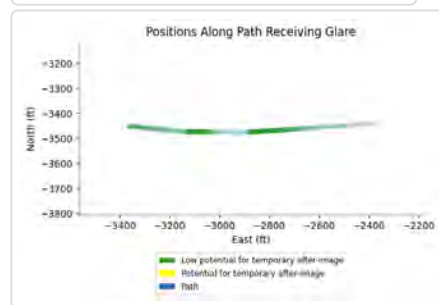
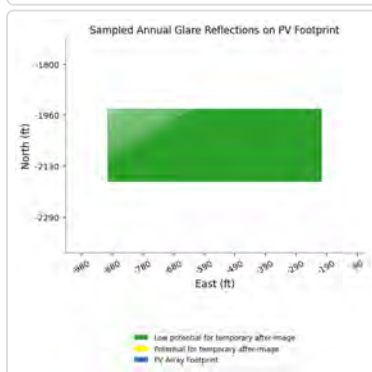
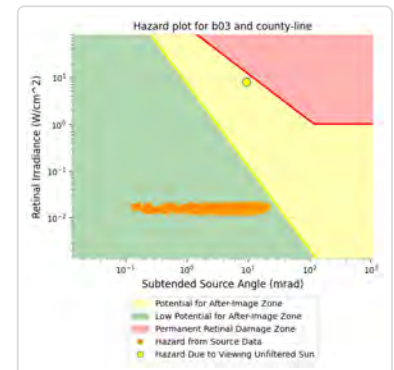
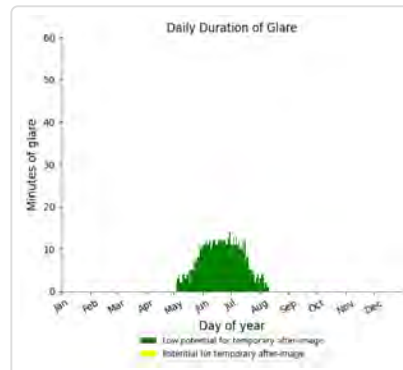
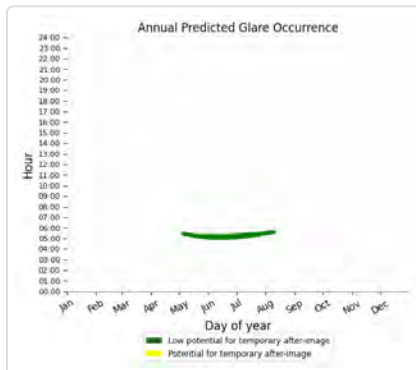
- 606 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## B03: County Line Rd

PV array is expected to produce the following glare for this receptor:

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



### B03: Dempseys Rd

No glare found

### B03: Harley Ln

No glare found

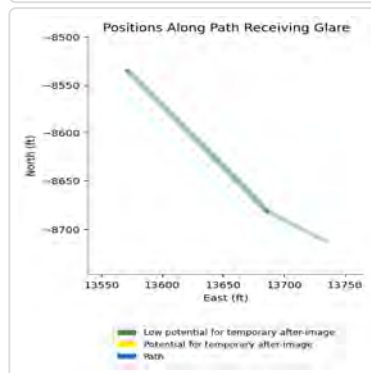
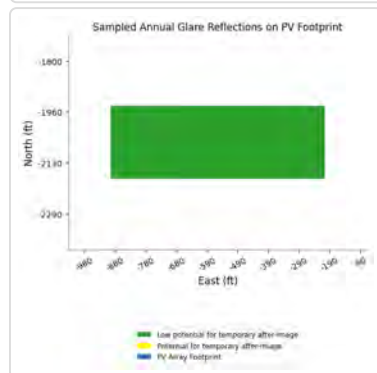
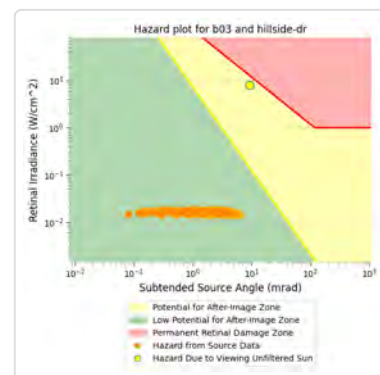
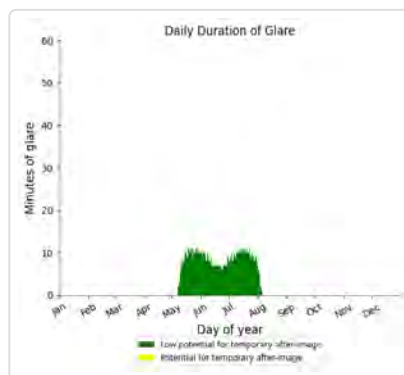
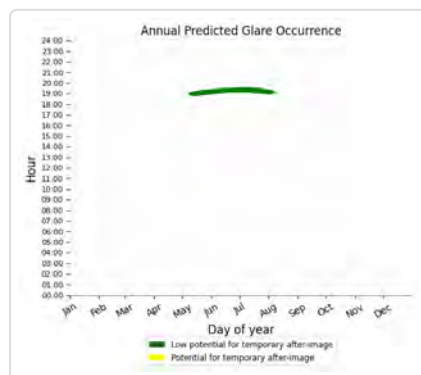
### B03: Henderson Rd

No glare found

### B03: Hillside Dr

PV array is expected to produce the following glare for this receptor:

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



### B03: Ole Briery Station Rd Seg 1

No glare found

### B03: Ole Briery Station Rd Seg 2

No glare found

### B03: Thistle Knob Ln

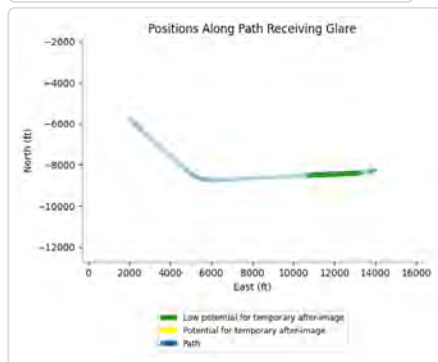
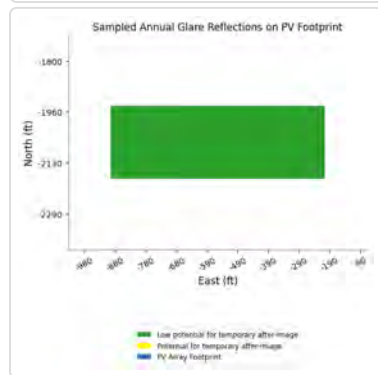
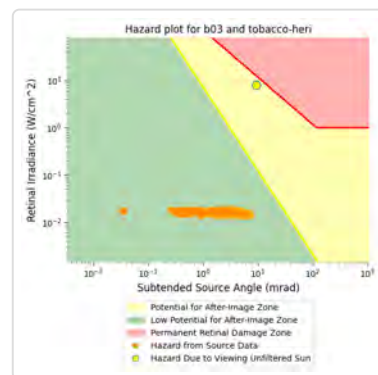
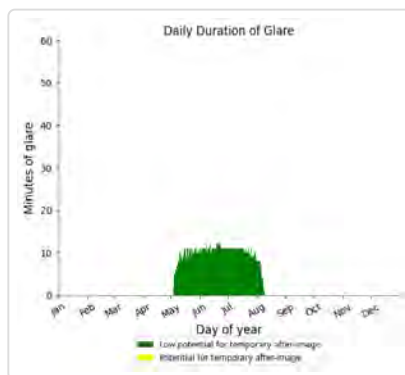
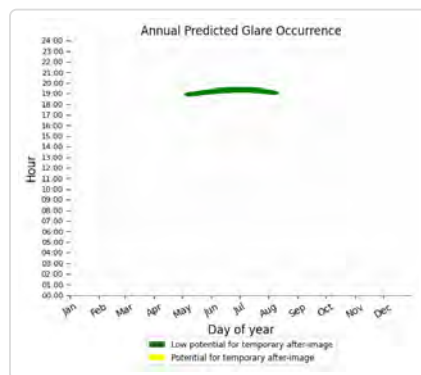
No glare found



## B03: Tobacco Heritage Trail

PV array is expected to produce the following glare for this receptor:

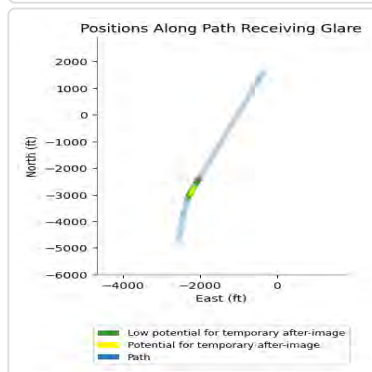
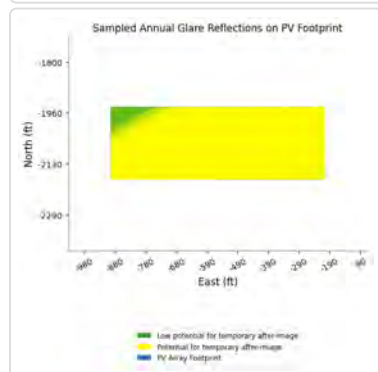
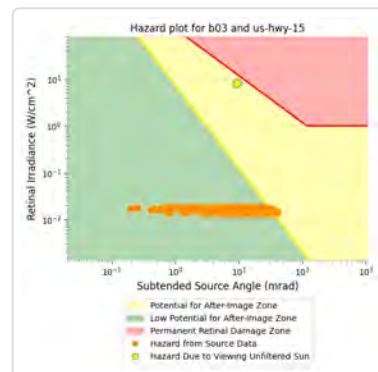
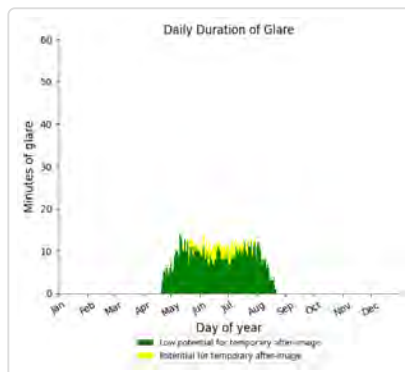
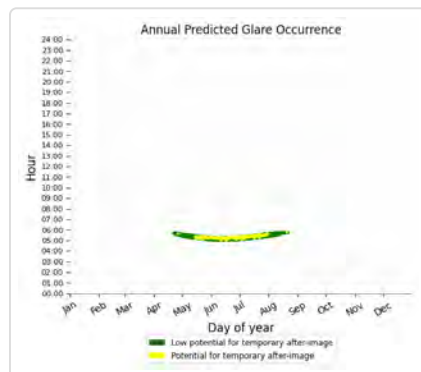
- 961 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## B03: US Hwy 15

PV array is expected to produce the following glare for this receptor:

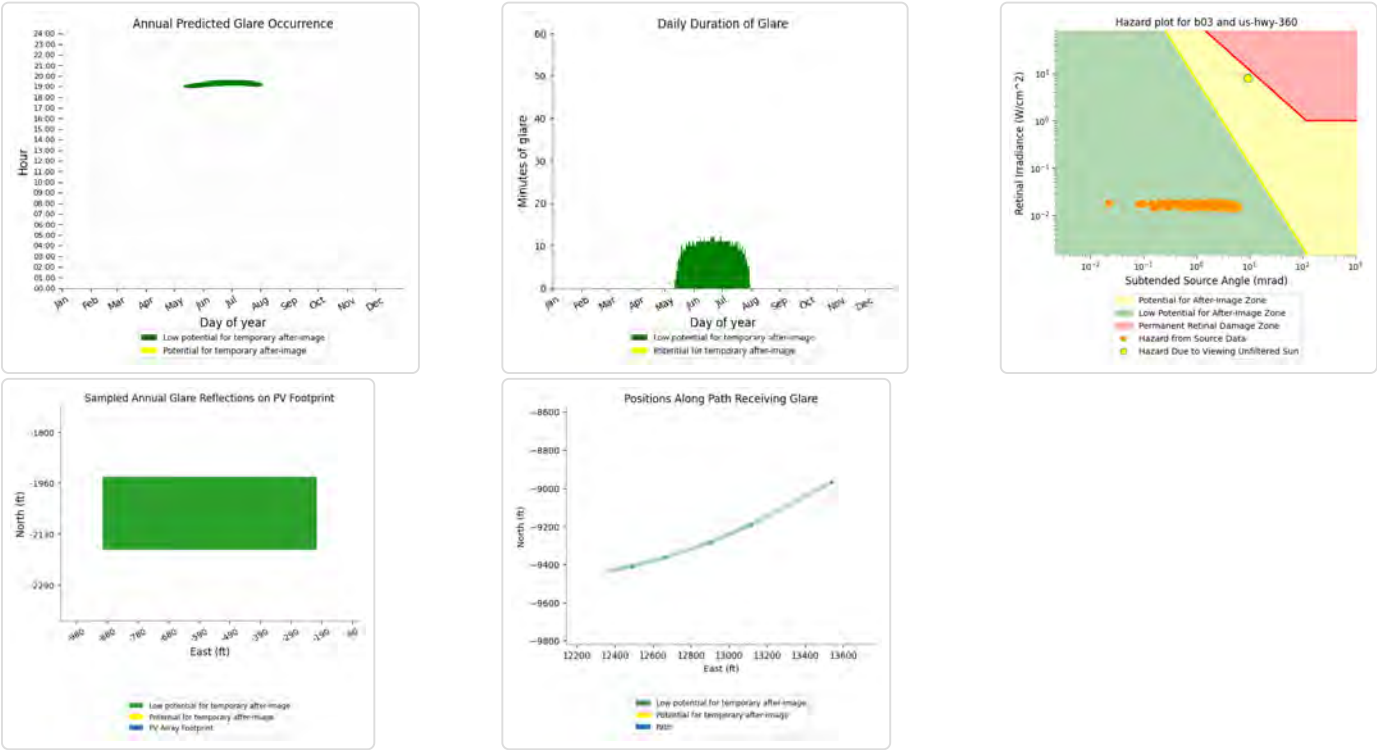
- 1,054 minutes of "green" glare with low potential to cause temporary after-image.
- 166 minutes of "yellow" glare with potential to cause temporary after-image.



B03: US Hwy 360

PV array is expected to produce the following glare for this receptor:

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



B04 low potential for temporary after-image

Component	Green glare (min)	Yellow glare (min)
OP: OP 100	0	0
OP: OP 101	0	0
OP: OP 102	0	0
OP: OP 103	0	0
OP: OP 104	0	0
OP: OP 105	0	0
OP: OP 106	326	0
OP: OP 107	291	0
OP: OP 108	0	0
OP: OP 109	0	0
OP: OP 110	0	0
OP: OP 111	0	0
OP: OP 112	0	0
OP: OP 113	0	0
OP: OP 114	0	0
OP: OP 115	0	0
OP: OP 116	0	0
OP: OP 117	0	0
Route: Collins Dr	0	0
Route: Country Dr Seg 1	0	0
Route: Country Dr Seg 2	18	0
Route: County Line Rd	138	0

Route: Dempseys Rd	113	0
Route: Harley Ln	0	0
Route: Henderson Rd	0	0
Route: Hillside Dr	15	0
Route: Ole Briery Station Rd Seg 1	0	0
Route: Ole Briery Station Rd Seg 2	0	0
Route: Thistle Knob Ln	0	0
Route: Tobacco Heritage Trail	18	0
Route: US Hwy 15	0	0
Route: US Hwy 360	0	0

#### **B04: OP 100**

*No glare found*

#### **B04: OP 101**

*No glare found*

#### **B04: OP 102**

*No glare found*

#### **B04: OP 103**

*No glare found*

#### **B04: OP 104**

*No glare found*

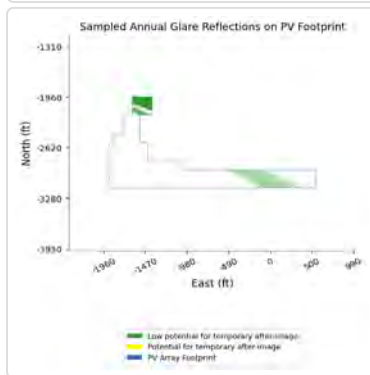
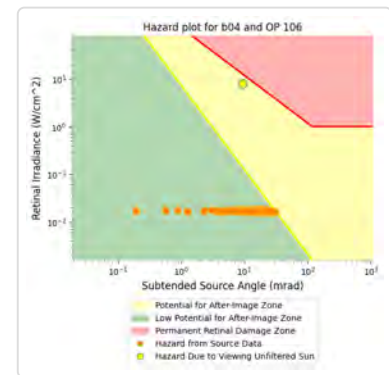
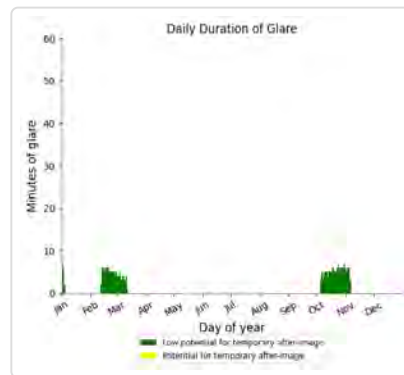
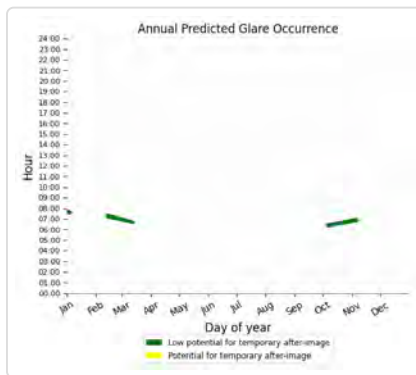
#### **B04: OP 105**

*No glare found*

## B04: OP 106

PV array is expected to produce the following glare for this receptor:

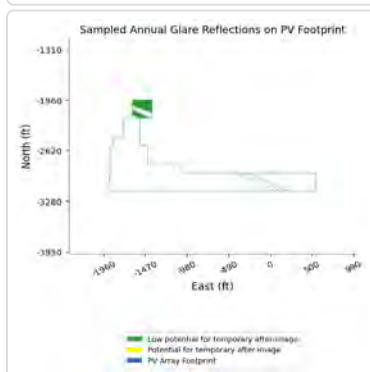
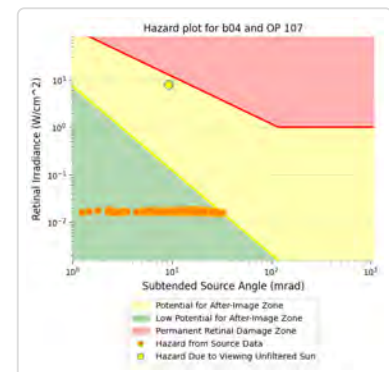
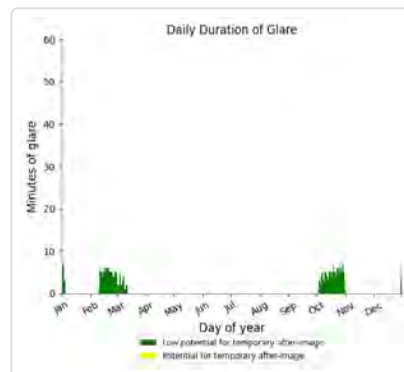
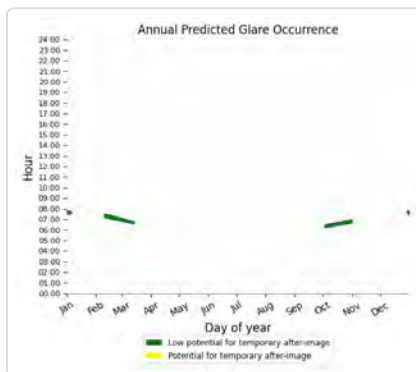
- 326 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## B04: OP 107

PV array is expected to produce the following glare for this receptor:

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



**B04: OP 108**

*No glare found*

**B04: OP 109**

*No glare found*

**B04: OP 110**

*No glare found*

**B04: OP 111**

*No glare found*

**B04: OP 112**

*No glare found*

**B04: OP 113**

*No glare found*

**B04: OP 114**

*No glare found*

**B04: OP 115**

*No glare found*

**B04: OP 116**

*No glare found*

**B04: OP 117**

*No glare found*

**B04: Collins Dr**

*No glare found*

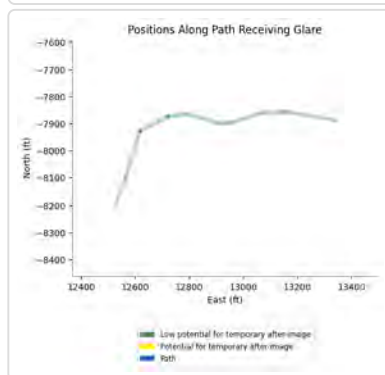
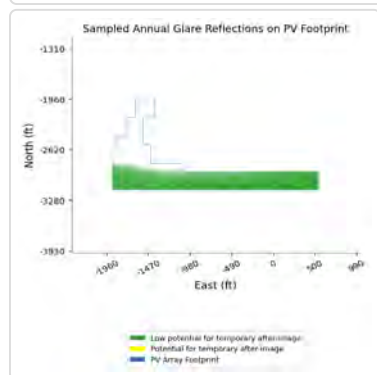
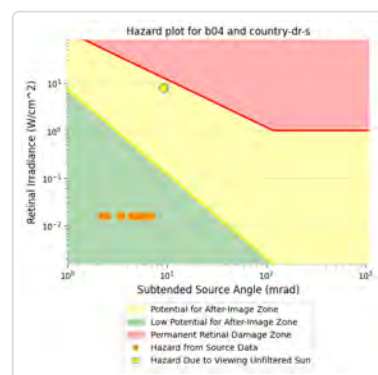
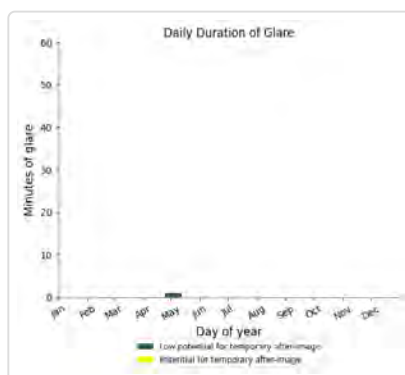
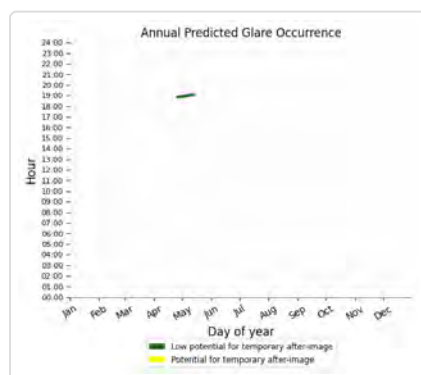
**B04: Country Dr Seg 1**

*No glare found*

## B04: Country Dr Seg 2

PV array is expected to produce the following glare for this receptor:

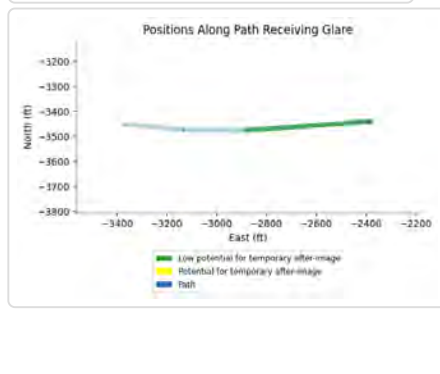
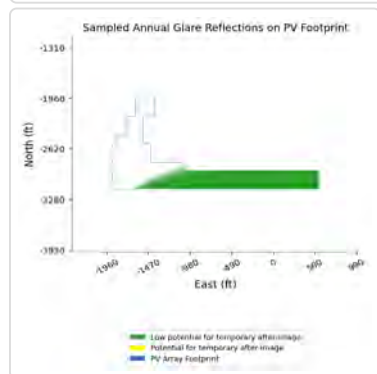
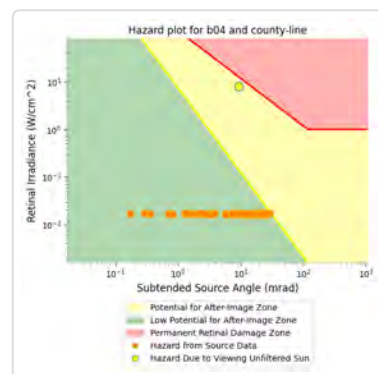
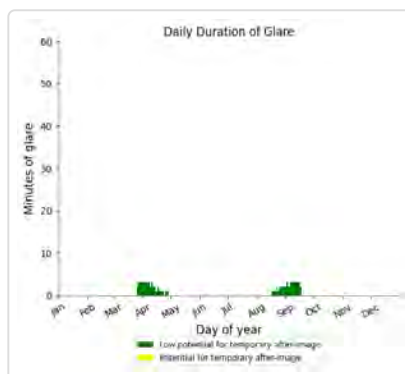
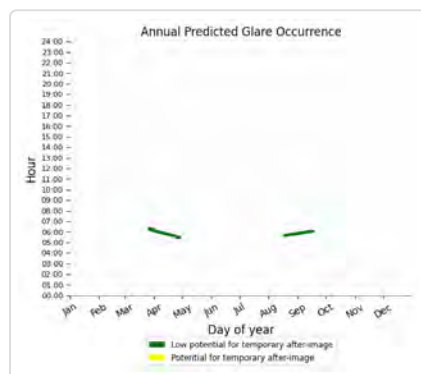
- 18 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## B04: County Line Rd

PV array is expected to produce the following glare for this receptor:

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

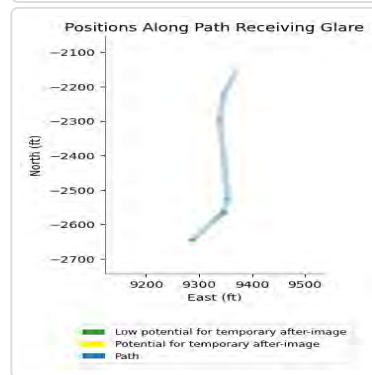
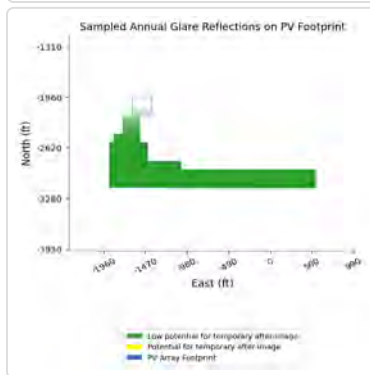
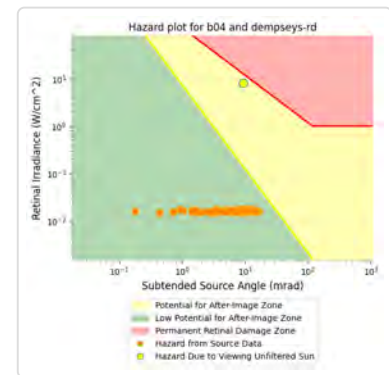
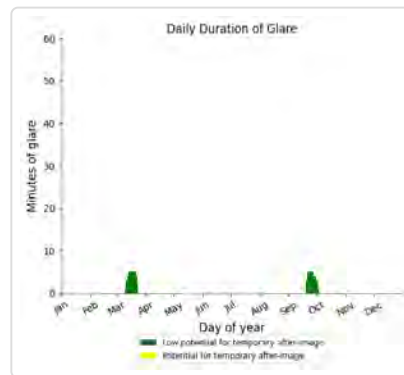
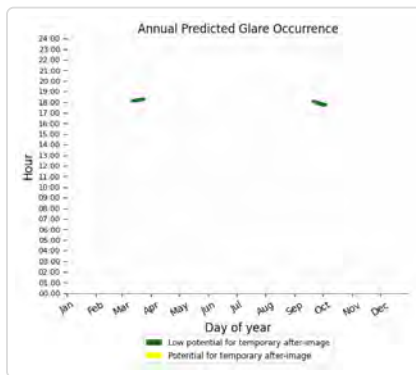




## B04: Dempseys Rd

PV array is expected to produce the following glare for this receptor:

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



## B04: Harley Ln

No glare found

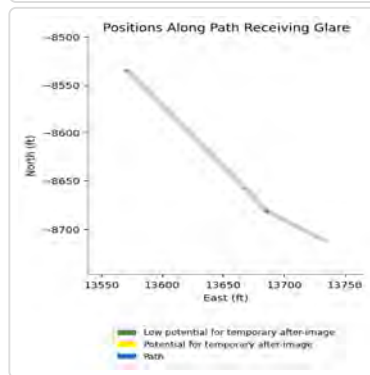
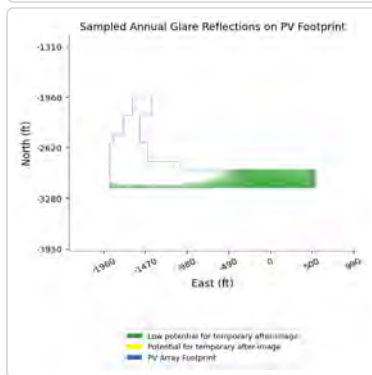
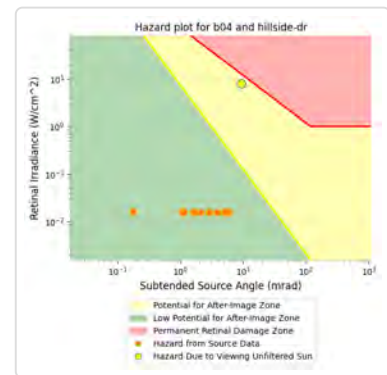
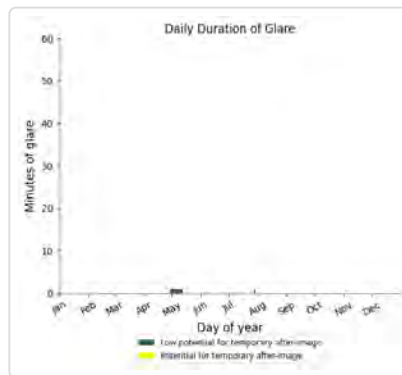
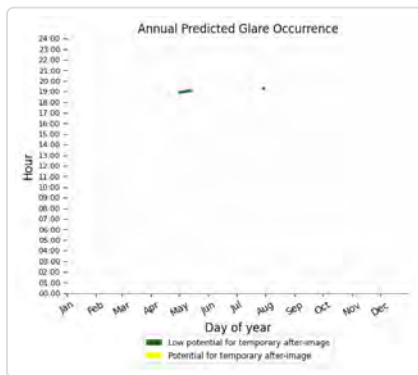
## B04: Henderson Rd

No glare found

## B04: Hillside Dr

PV array is expected to produce the following glare for this receptor:

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



## B04: Ole Briery Station Rd Seg 1

No glare found

## B04: Ole Briery Station Rd Seg 2

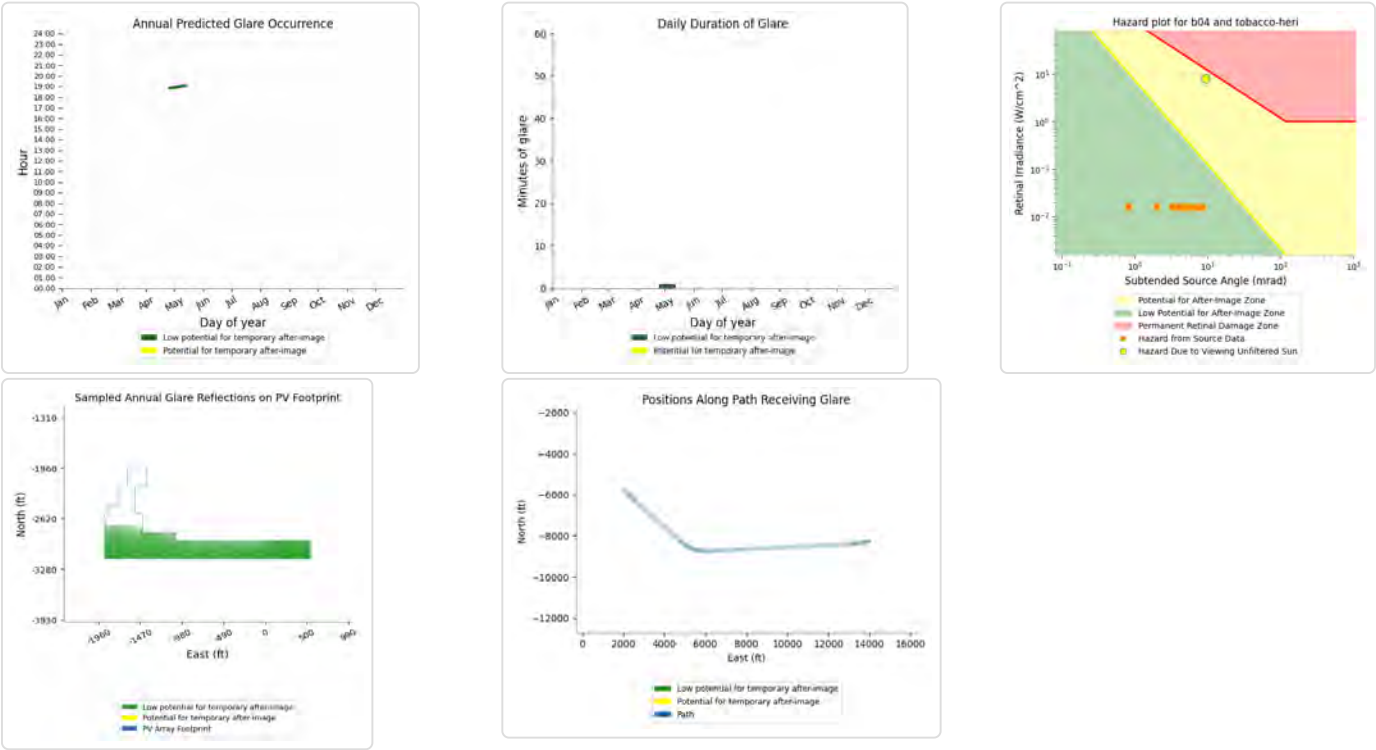
No glare found

## B04: Thistle Knob Ln

No glare found

B04: Tobacco Heritage Trail

- PV array is expected to produce the following glare for this receptor:
- 18 minutes of "green" glare with low potential to cause temporary after-image.
  - 0 minutes of "yellow" glare with potential to cause temporary after-image.



B04: US Hwy 15

No glare found

B04: US Hwy 360

No glare found

B05 low potential for temporary after-image

Component	Green glare (min)	Yellow glare (min)
OP: OP 100	0	0
OP: OP 101	0	0
OP: OP 102	0	0
OP: OP 103	0	0
OP: OP 104	0	0
OP: OP 105	0	0
OP: OP 106	0	0
OP: OP 107	0	0
OP: OP 108	0	0
OP: OP 109	0	0
OP: OP 110	0	0
OP: OP 111	209	0
OP: OP 112	0	0
OP: OP 113	0	0
OP: OP 114	0	0

OP: OP 115	252	0
OP: OP 116	0	0
OP: OP 117	0	0
Route: Collins Dr	0	0
Route: Country Dr Seg 1	630	0
Route: Country Dr Seg 2	397	0
Route: County Line Rd	46	0
Route: Dempseys Rd	82	0
Route: Harley Ln	0	0
Route: Henderson Rd	0	0
Route: Hillside Dr	504	0
Route: Ole Briery Station Rd Seg 1	0	0
Route: Ole Briery Station Rd Seg 2	0	0
Route: Thistle Knob Ln	0	0
Route: Tobacco Heritage Trail	746	0
Route: US Hwy 15	0	0
Route: US Hwy 360	631	0

#### **B05: OP 100**

*No glare found*

#### **B05: OP 101**

*No glare found*

#### **B05: OP 102**

*No glare found*

#### **B05: OP 103**

*No glare found*

#### **B05: OP 104**

*No glare found*

#### **B05: OP 105**

*No glare found*

#### **B05: OP 106**

*No glare found*

#### **B05: OP 107**

*No glare found*

#### **B05: OP 108**

*No glare found*

## B05: OP 109

No glare found

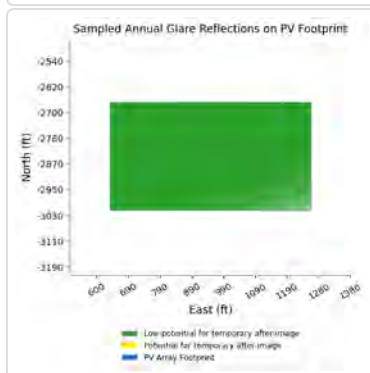
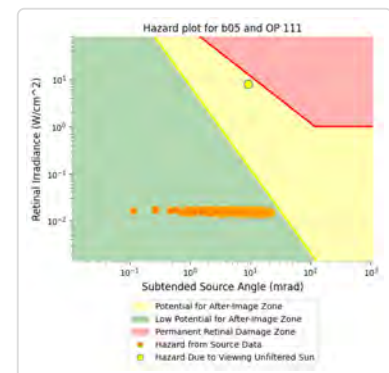
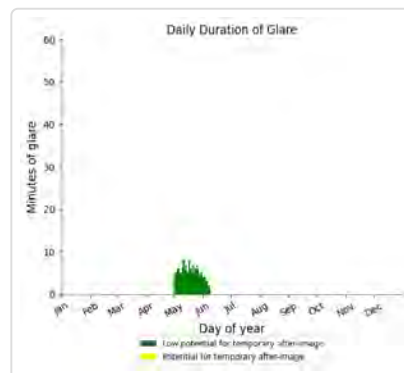
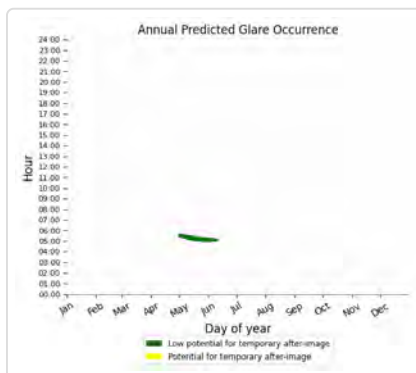
## B05: OP 110

No glare found

## B05: OP 111

PV array is expected to produce the following glare for this receptor:

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



## B05: OP 112

No glare found

## B05: OP 113

No glare found

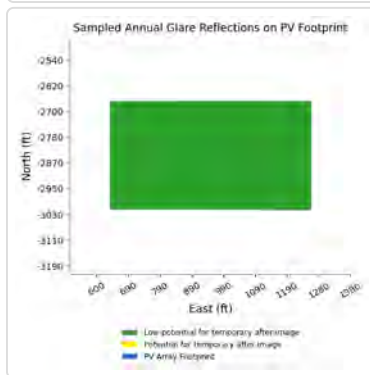
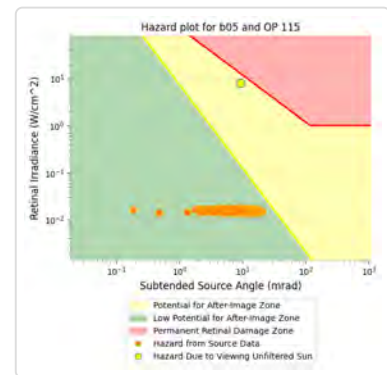
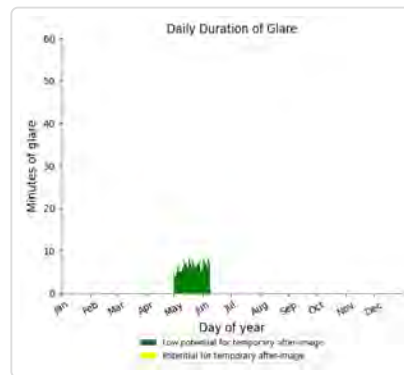
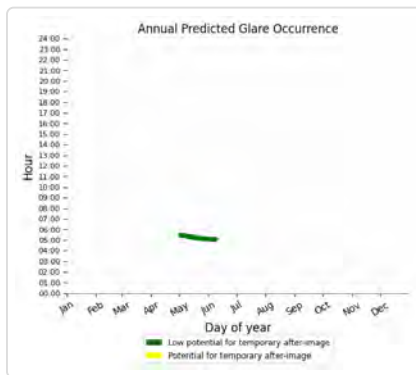
## B05: OP 114

No glare found

## B05: OP 115

PV array is expected to produce the following glare for this receptor:

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



## B05: OP 116

No glare found

## B05: OP 117

No glare found

## B05: Collins Dr

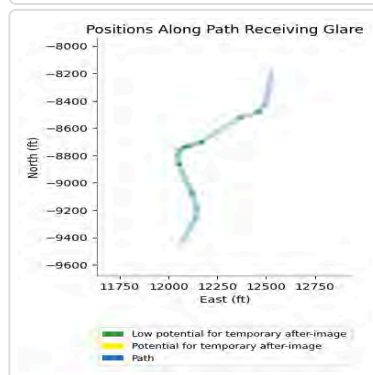
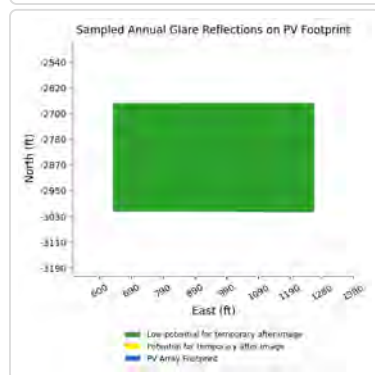
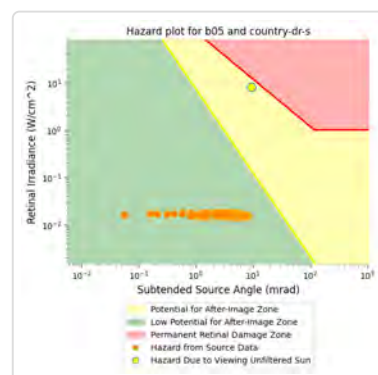
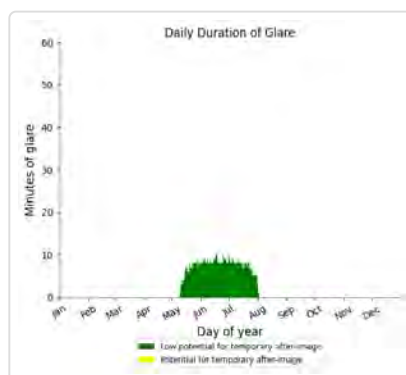
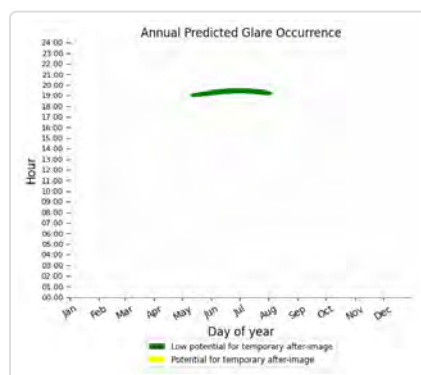
No glare found



## B05: Country Dr Seg 1

PV array is expected to produce the following glare for this receptor:

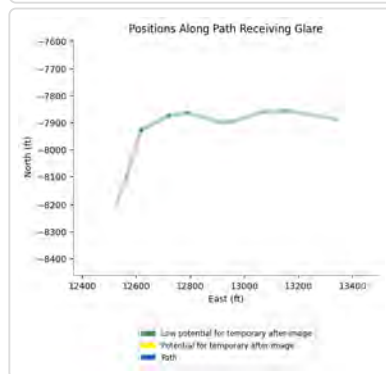
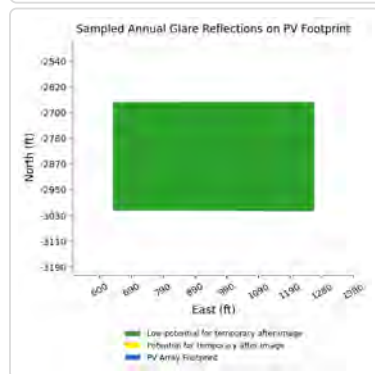
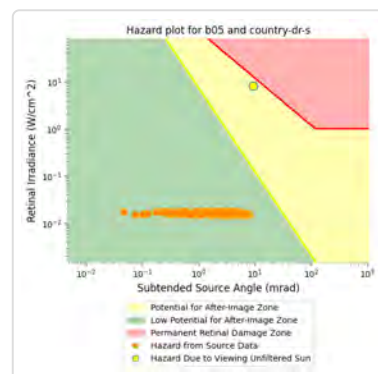
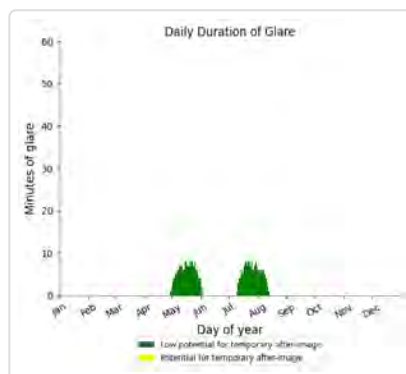
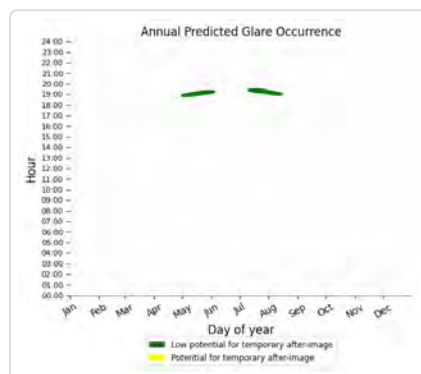
- 630 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## B05: Country Dr Seg 2

PV array is expected to produce the following glare for this receptor:

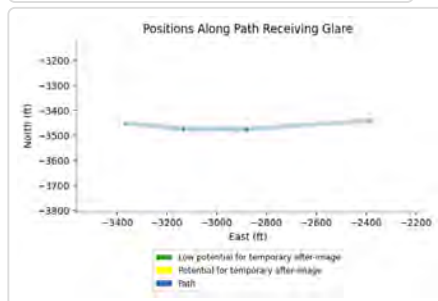
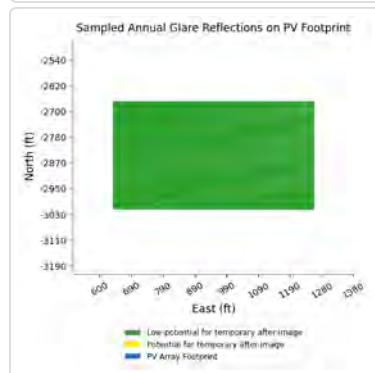
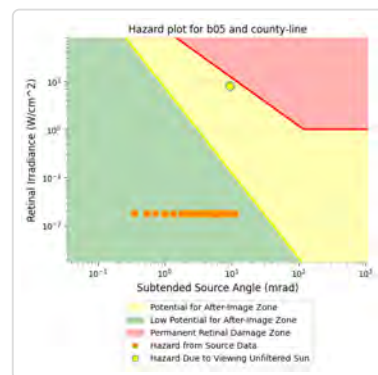
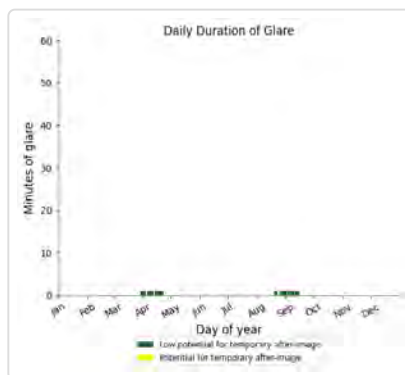
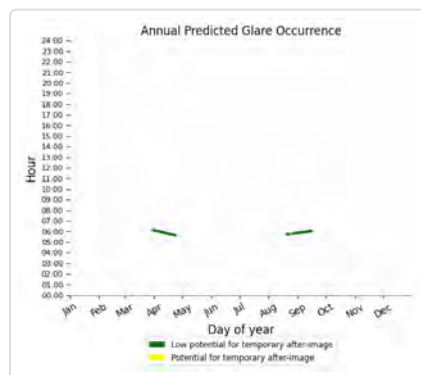
- 397 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## B05: County Line Rd

PV array is expected to produce the following glare for this receptor:

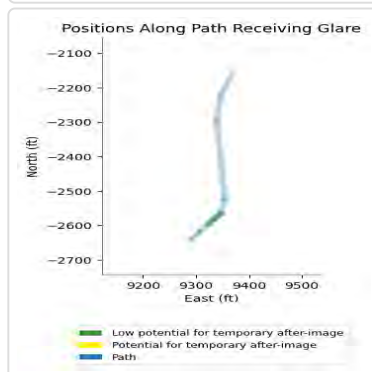
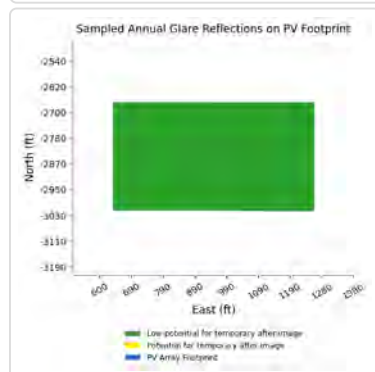
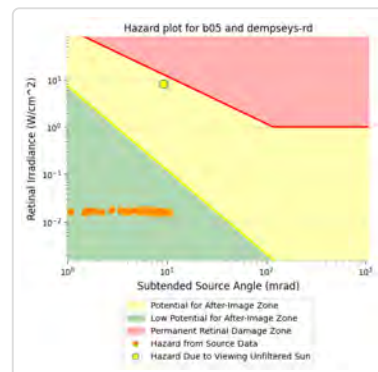
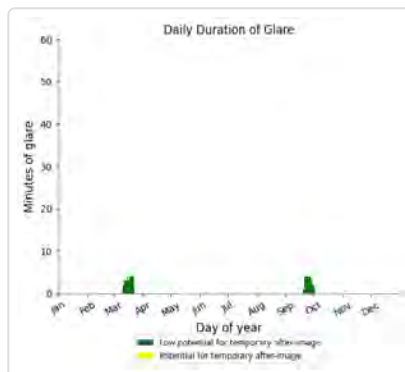
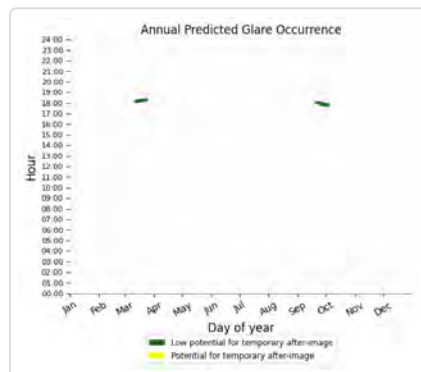
- 46 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## B05: Dempseys Rd

PV array is expected to produce the following glare for this receptor:

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



B05: Harley Ln

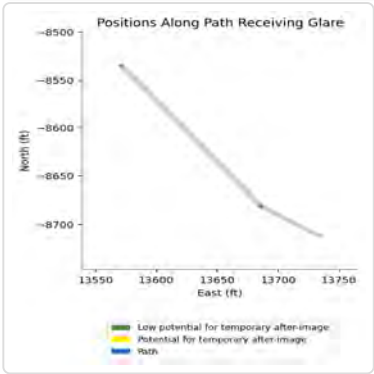
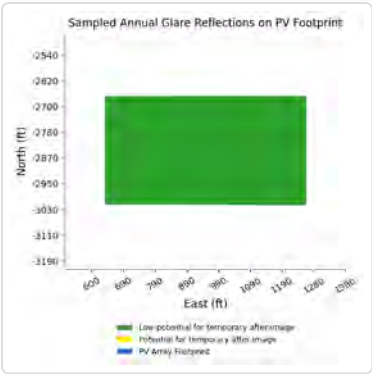
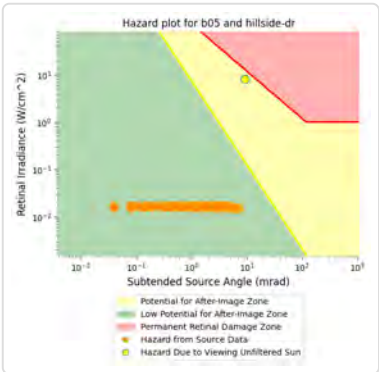
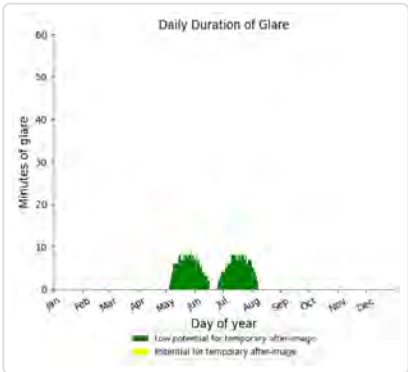
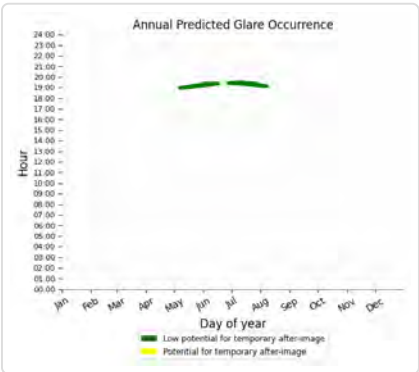
No glare found

B05: Henderson Rd

No glare found

B05: Hillside Dr

- PV array is expected to produce the following glare for this receptor:
- 504 minutes of "green" glare with low potential to cause temporary after-image.
  - 0 minutes of "yellow" glare with potential to cause temporary after-image.



B05: Ole Briery Station Rd Seg 1

No glare found

B05: Ole Briery Station Rd Seg 2

No glare found

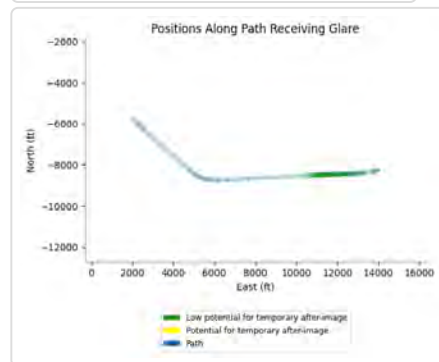
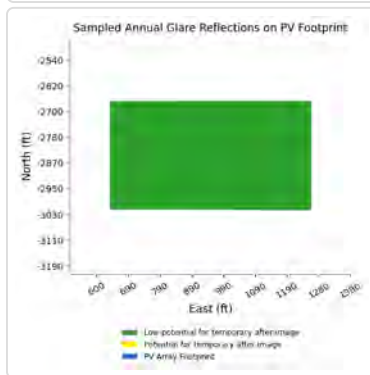
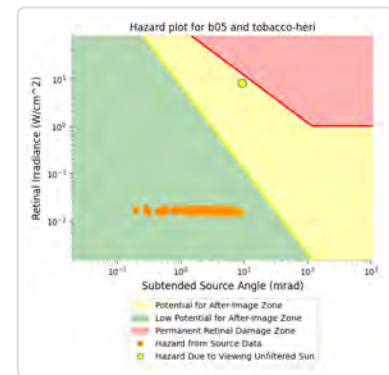
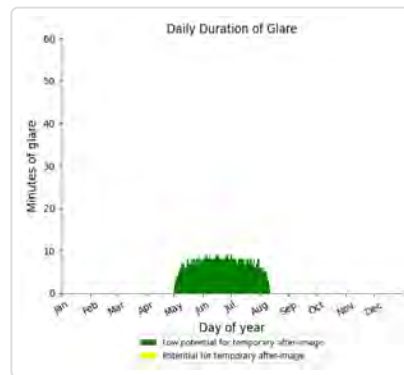
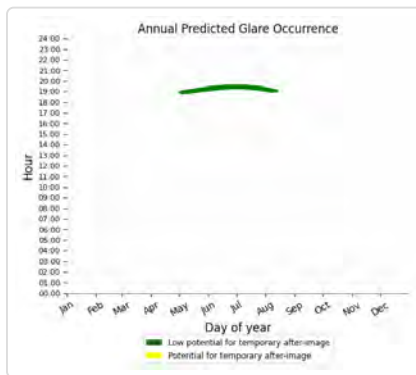
B05: Thistle Knob Ln

No glare found

## B05: Tobacco Heritage Trail

PV array is expected to produce the following glare for this receptor:

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



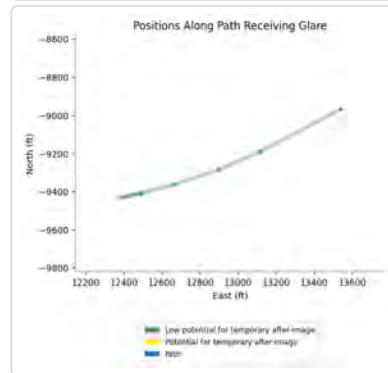
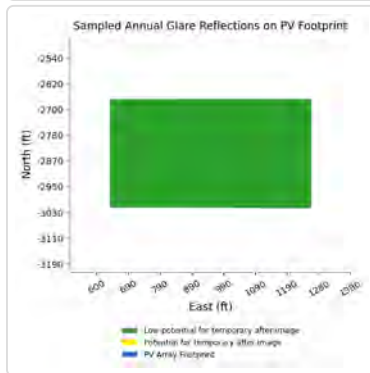
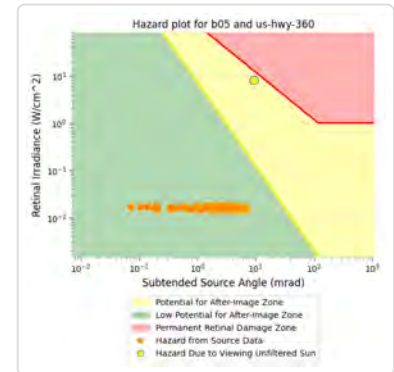
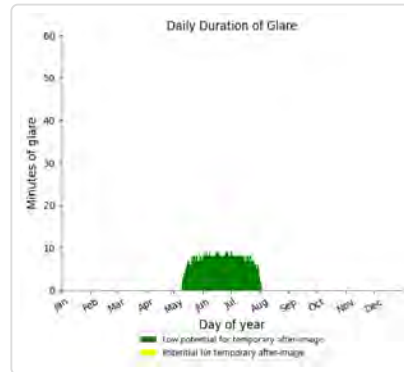
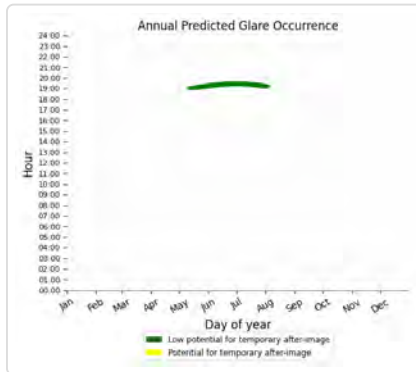
## B05: US Hwy 15

No glare found

## B05: US Hwy 360

PV array is expected to produce the following glare for this receptor:

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



## B06 potential temporary after-image

Component	Green glare (min)	Yellow glare (min)
OP: OP 100	0	0
OP: OP 101	0	0
OP: OP 102	0	0
OP: OP 103	0	0
OP: OP 104	0	0
OP: OP 105	0	0
OP: OP 106	0	0
OP: OP 107	0	0
OP: OP 108	0	0
OP: OP 109	77	17
OP: OP 110	308	167
OP: OP 111	365	229
OP: OP 112	202	26
OP: OP 113	369	75
OP: OP 114	250	27
OP: OP 115	286	71
OP: OP 116	0	0
OP: OP 117	0	0
Route: Collins Dr	0	0
Route: Country Dr Seg 1	1151	0
Route: Country Dr Seg 2	648	0
Route: County Line Rd	346	160

Route: Dempseys Rd	0	0
Route: Harley Ln	0	0
Route: Henderson Rd	0	0
Route: Hillside Dr	710	0
Route: Ole Briery Station Rd Seg 1	298	0
Route: Ole Briery Station Rd Seg 2	737	0
Route: Thistle Knob Ln	192	0
Route: Tobacco Heritage Trail	1306	0
Route: US Hwy 15	1	41
Route: US Hwy 360	1155	0

#### **B06: OP 100**

*No glare found*

#### **B06: OP 101**

*No glare found*

#### **B06: OP 102**

*No glare found*

#### **B06: OP 103**

*No glare found*

#### **B06: OP 104**

*No glare found*

#### **B06: OP 105**

*No glare found*

#### **B06: OP 106**

*No glare found*

#### **B06: OP 107**

*No glare found*

#### **B06: OP 108**

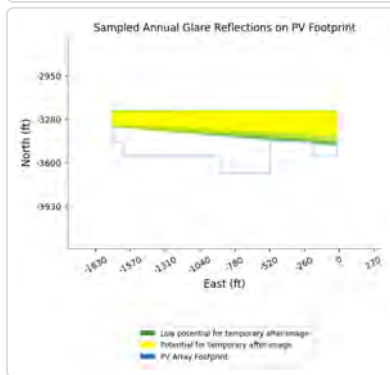
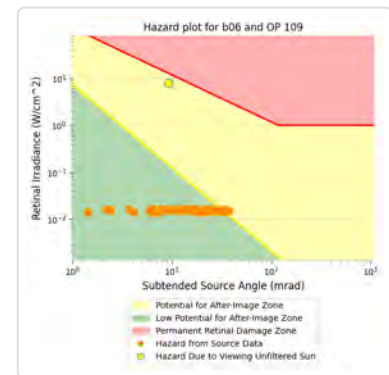
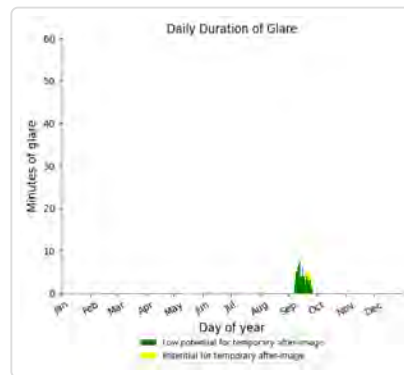
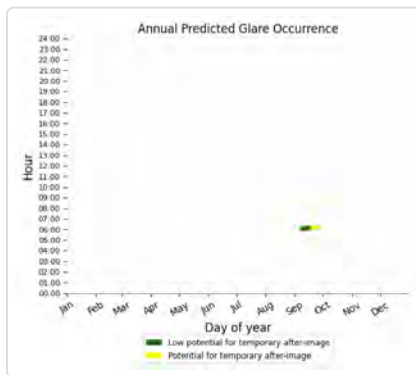
*No glare found*



## B06: OP 109

PV array is expected to produce the following glare for this receptor:

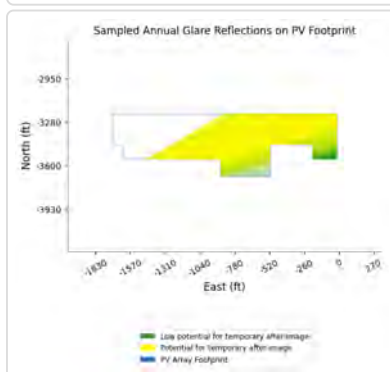
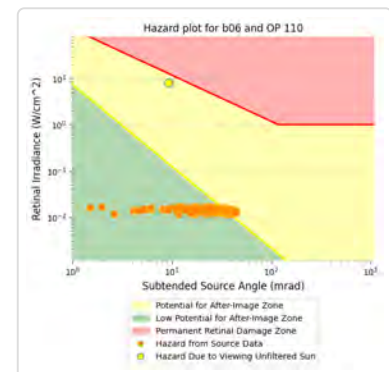
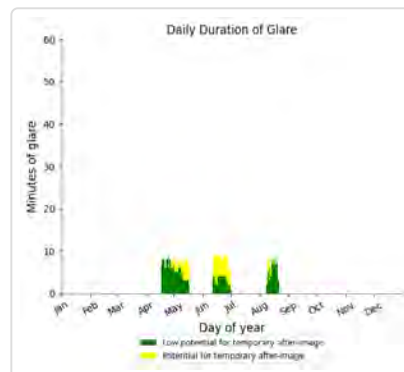
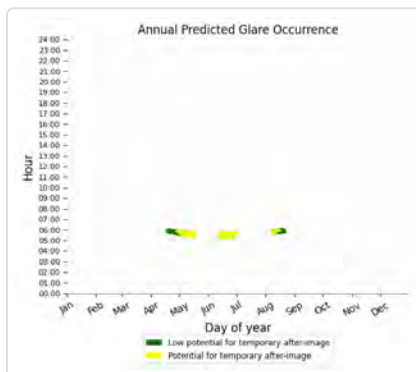
- 77 minutes of "green" glare with low potential to cause temporary after-image.
- 17 minutes of "yellow" glare with potential to cause temporary after-image.



## B06: OP 110

PV array is expected to produce the following glare for this receptor:

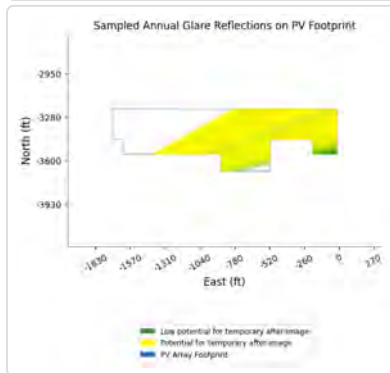
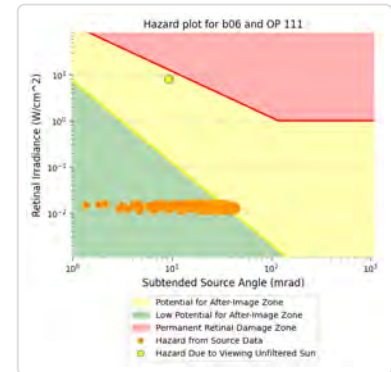
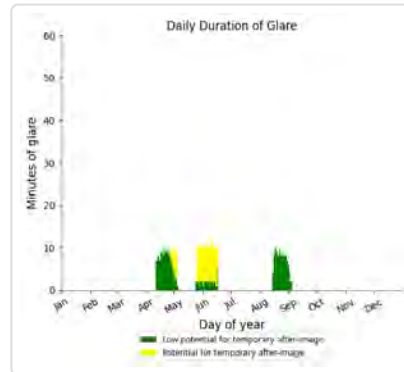
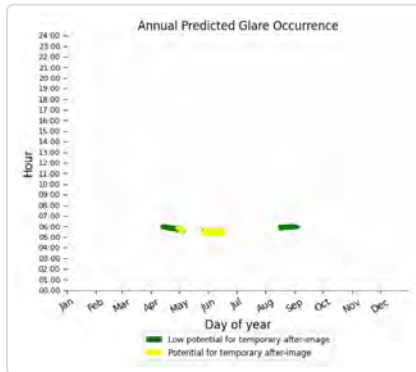
- 308 minutes of "green" glare with low potential to cause temporary after-image.
- 167 minutes of "yellow" glare with potential to cause temporary after-image.



## B06: OP 111

PV array is expected to produce the following glare for this receptor:

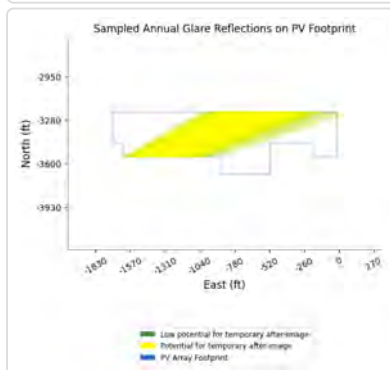
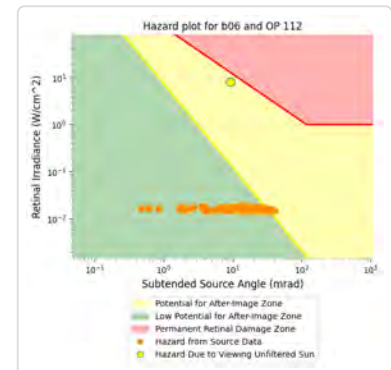
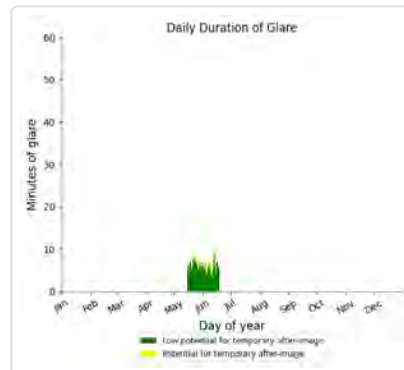
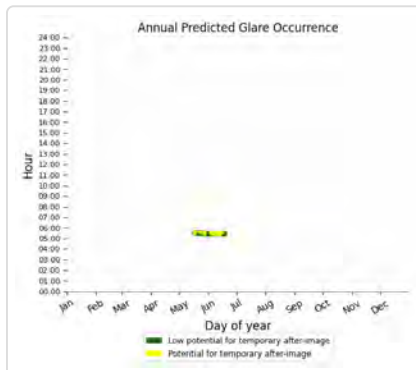
- 365 minutes of "green" glare with low potential to cause temporary after-image.
- 229 minutes of "yellow" glare with potential to cause temporary after-image.



## B06: OP 112

PV array is expected to produce the following glare for this receptor:

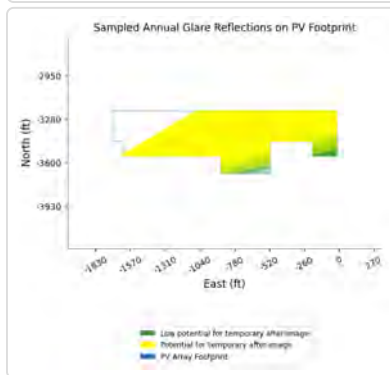
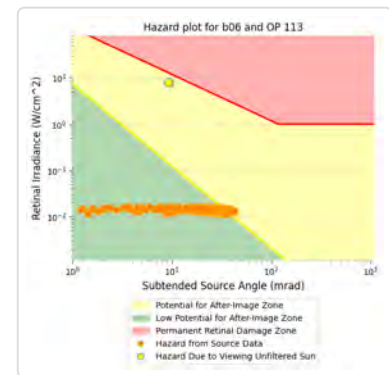
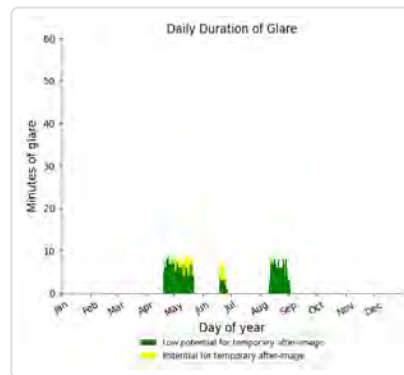
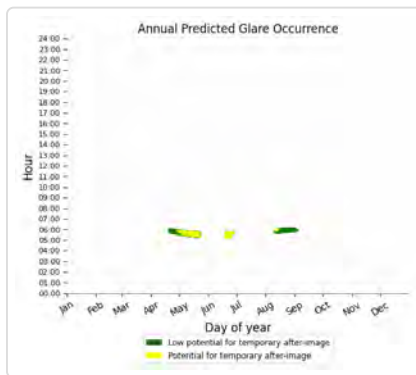
- 202 minutes of "green" glare with low potential to cause temporary after-image.
- 26 minutes of "yellow" glare with potential to cause temporary after-image.



## B06: OP 113

PV array is expected to produce the following glare for this receptor:

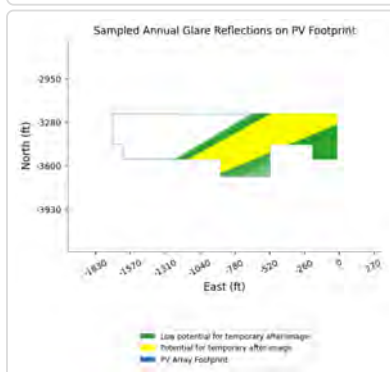
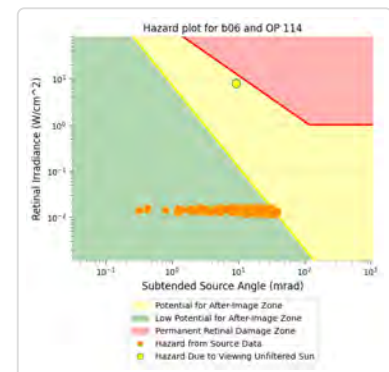
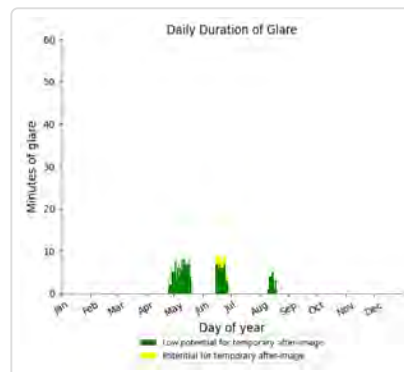
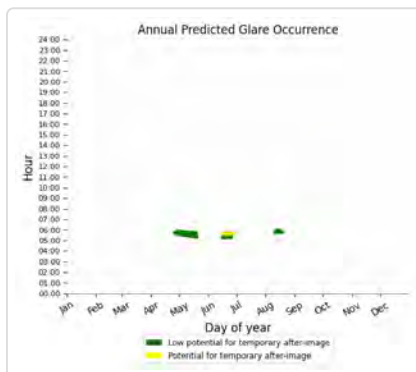
- 369 minutes of "green" glare with low potential to cause temporary after-image.
- 75 minutes of "yellow" glare with potential to cause temporary after-image.



## B06: OP 114

PV array is expected to produce the following glare for this receptor:

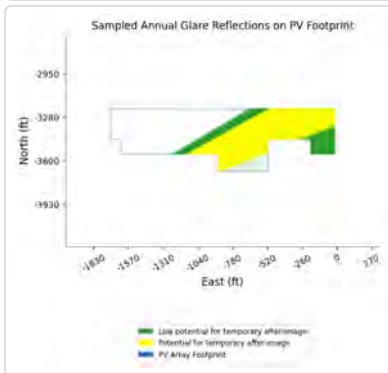
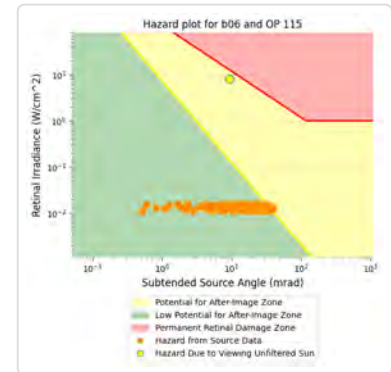
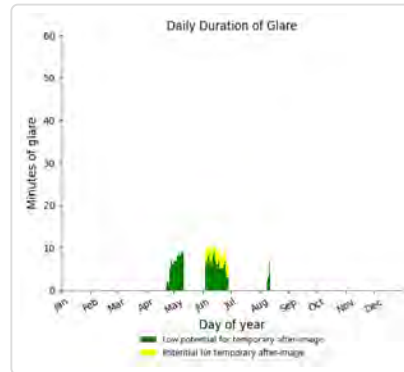
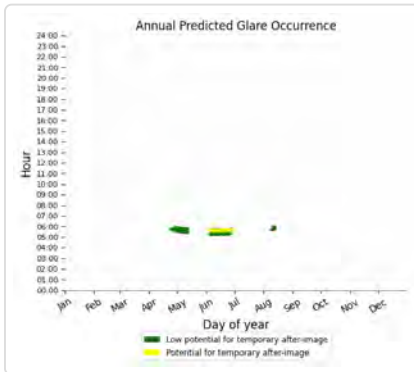
- 250 minutes of "green" glare with low potential to cause temporary after-image.
- 27 minutes of "yellow" glare with potential to cause temporary after-image.



## B06: OP 115

PV array is expected to produce the following glare for this receptor:

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



## B06: OP 116

No glare found

## B06: OP 117

No glare found

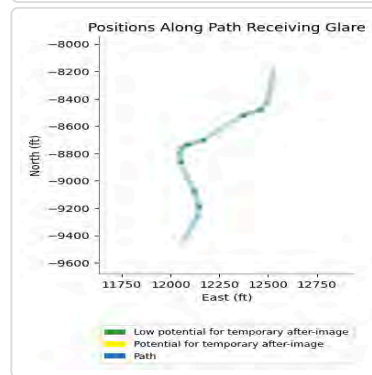
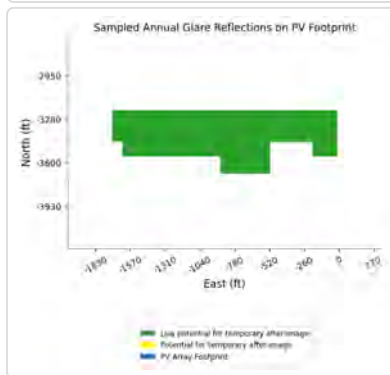
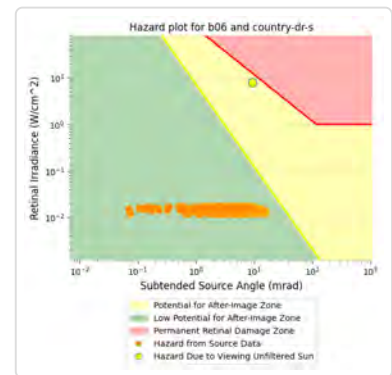
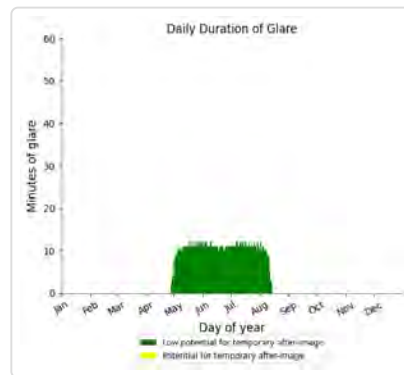
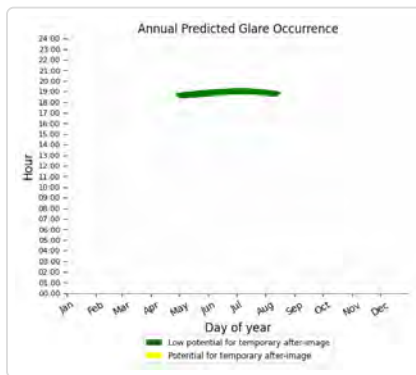
## B06: Collins Dr

No glare found

## B06: Country Dr Seg 1

PV array is expected to produce the following glare for this receptor:

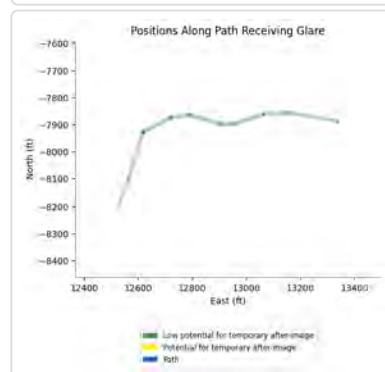
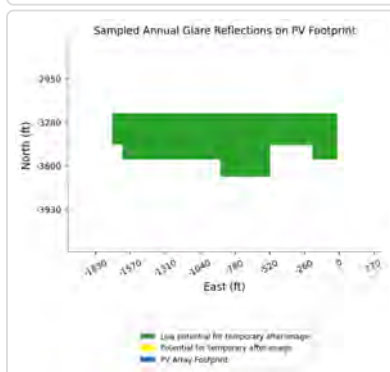
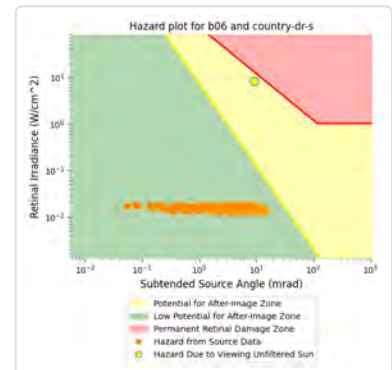
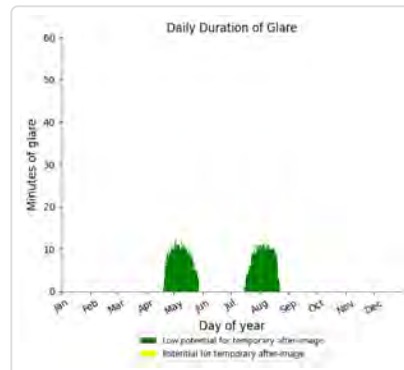
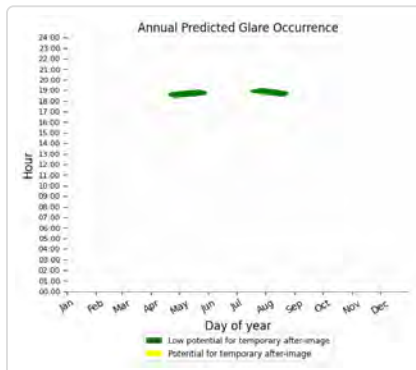
- 1,151 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## B06: Country Dr Seg 2

PV array is expected to produce the following glare for this receptor:

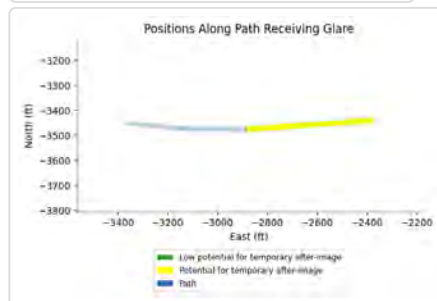
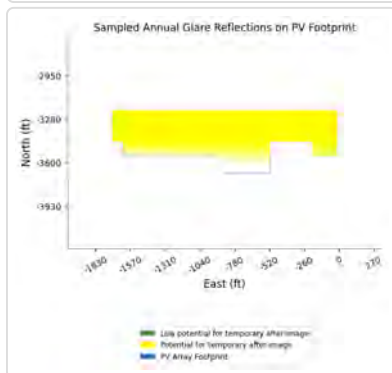
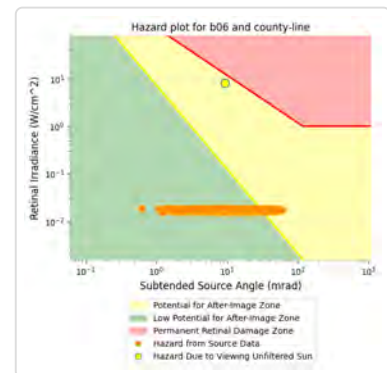
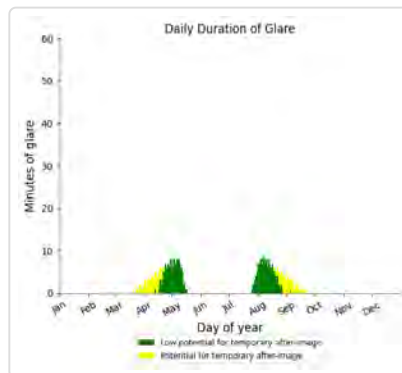
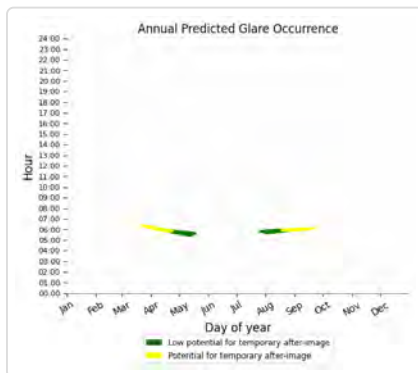
- 648 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## B06: County Line Rd

PV array is expected to produce the following glare for this receptor:

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



## B06: Dempseys Rd

No glare found

## B06: Harley Ln

No glare found

## B06: Henderson Rd

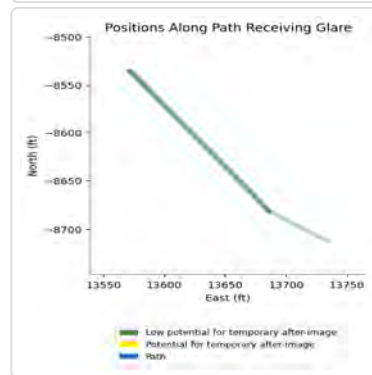
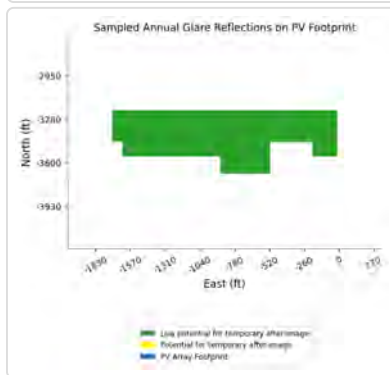
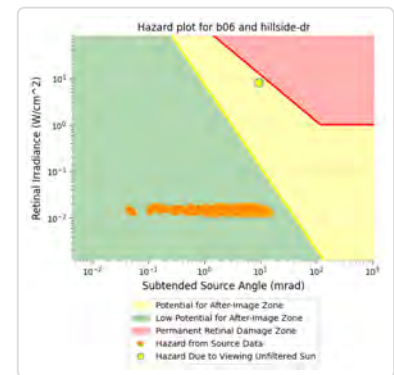
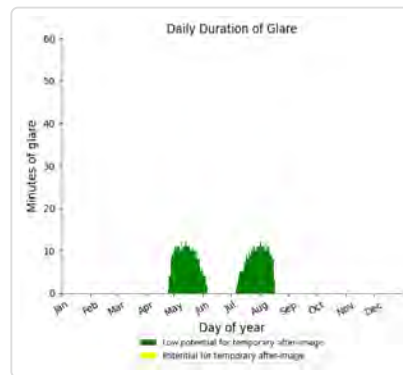
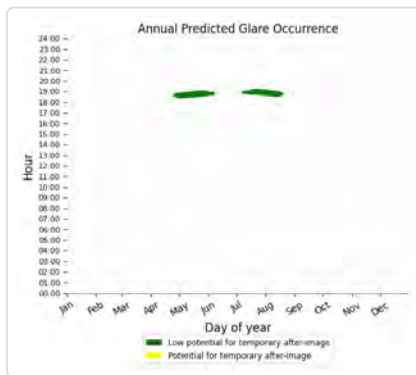
No glare found



## B06: Hillside Dr

PV array is expected to produce the following glare for this receptor:

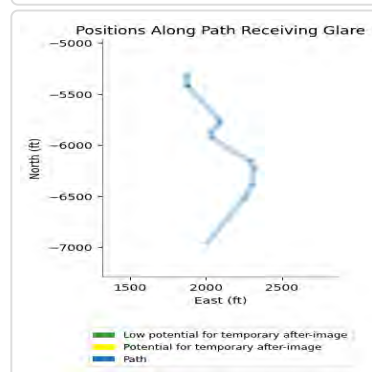
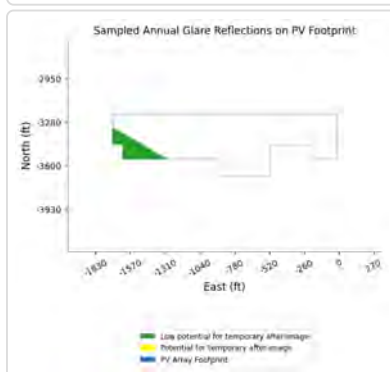
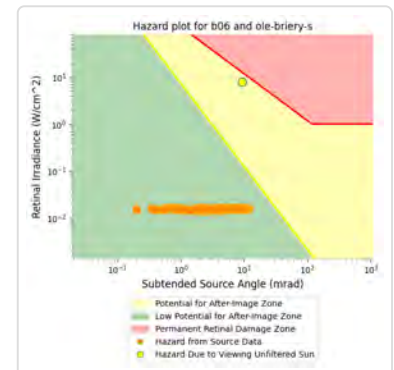
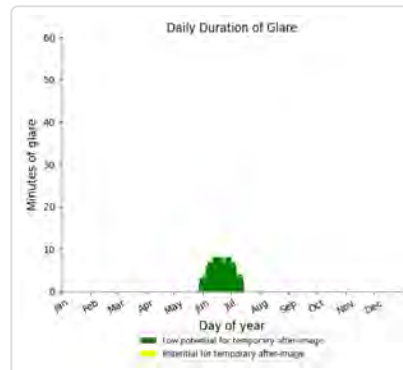
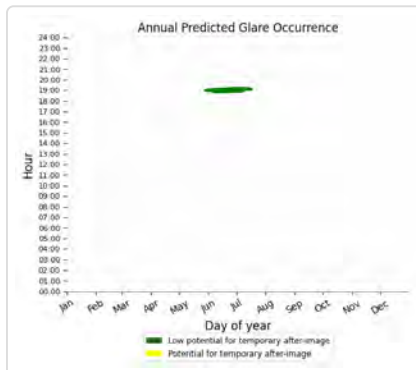
- 710 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## B06: Ole Briery Station Rd Seg 1

PV array is expected to produce the following glare for this receptor:

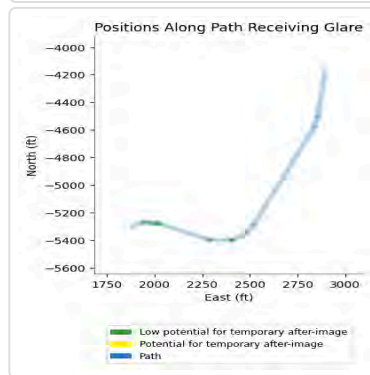
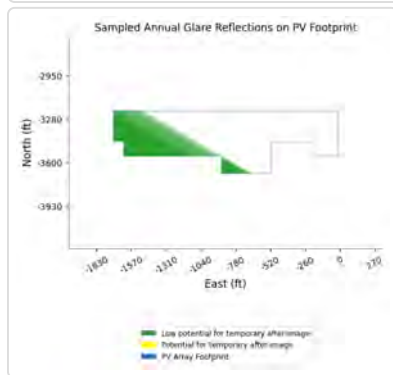
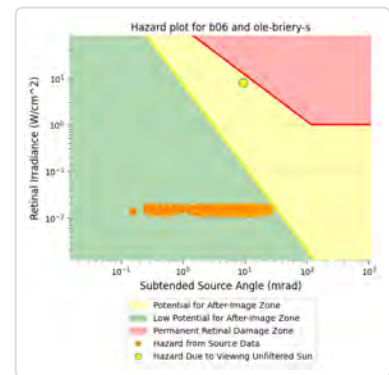
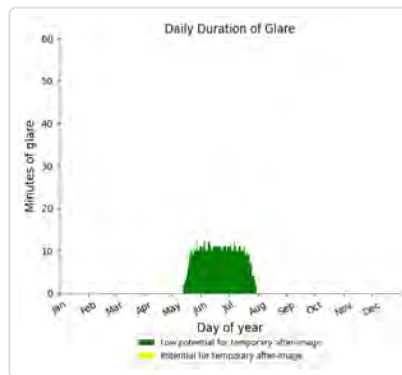
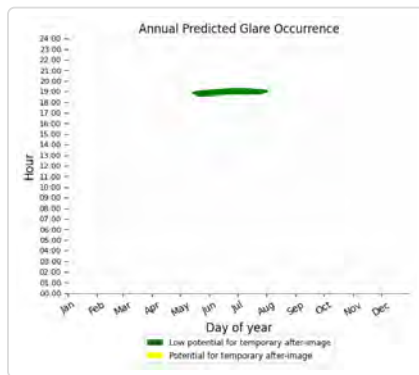
- 298 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## B06: Ole Briery Station Rd Seg 2

PV array is expected to produce the following glare for this receptor:

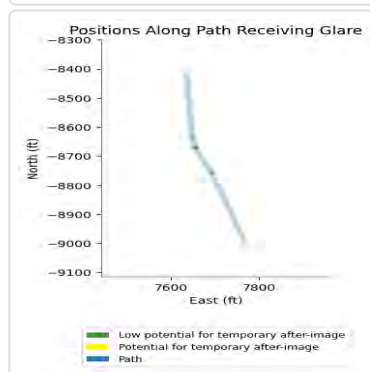
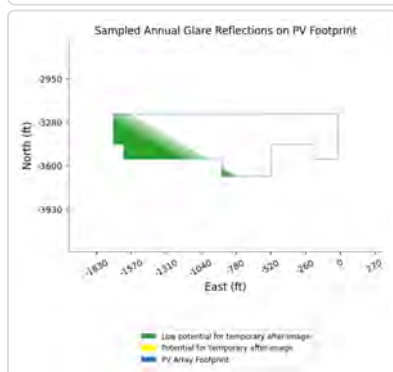
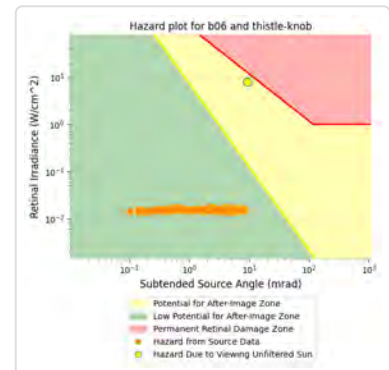
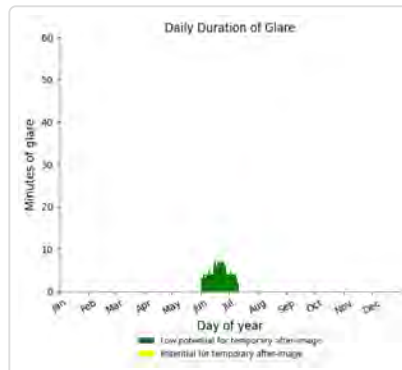
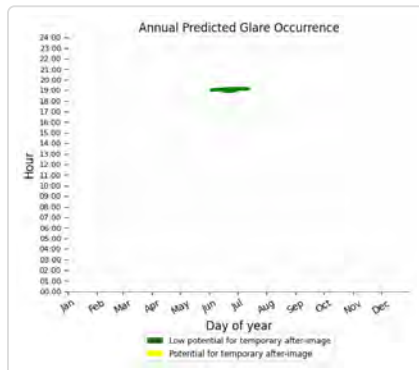
- 737 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## B06: Thistle Knob Ln

PV array is expected to produce the following glare for this receptor:

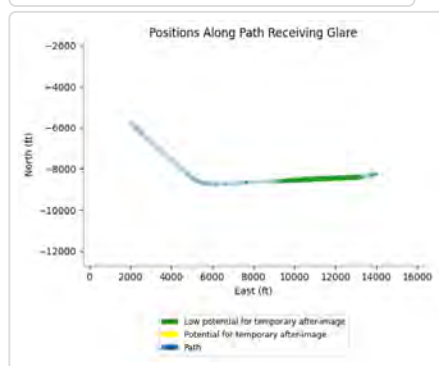
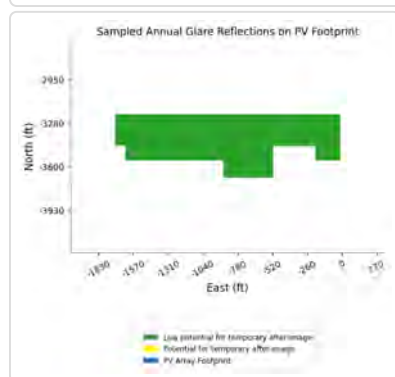
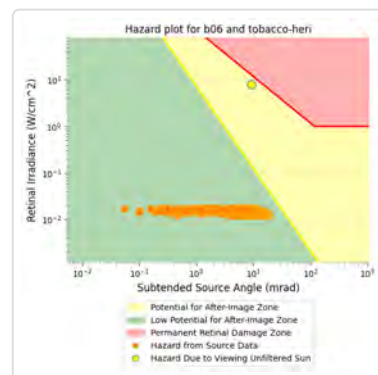
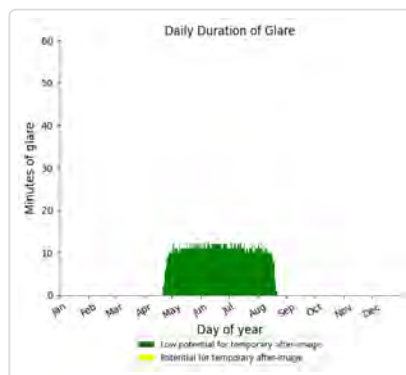
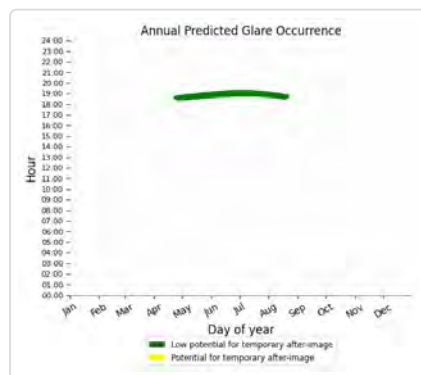
- 192 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## B06: Tobacco Heritage Trail

PV array is expected to produce the following glare for this receptor:

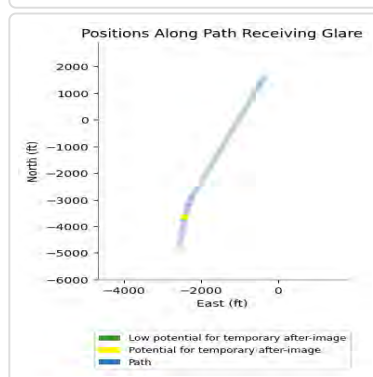
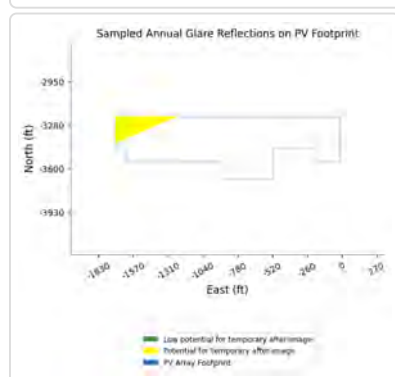
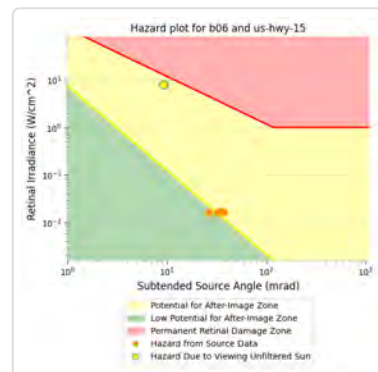
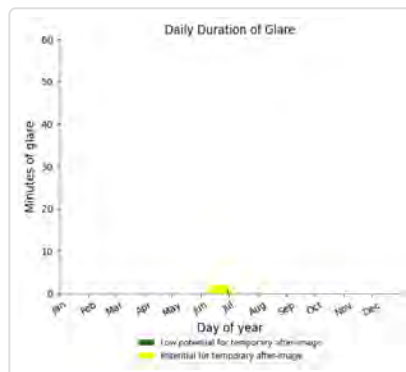
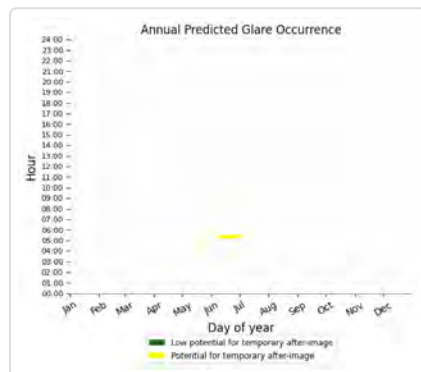
- 1,306 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## B06: US Hwy 15

PV array is expected to produce the following glare for this receptor:

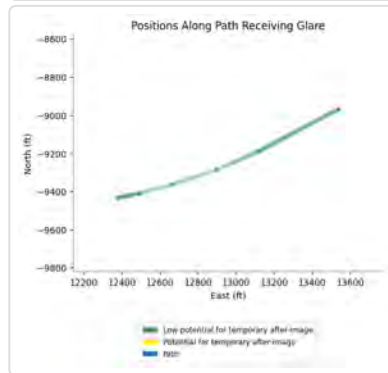
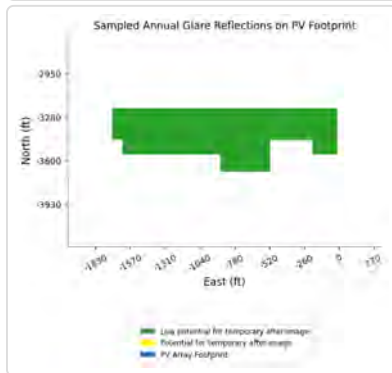
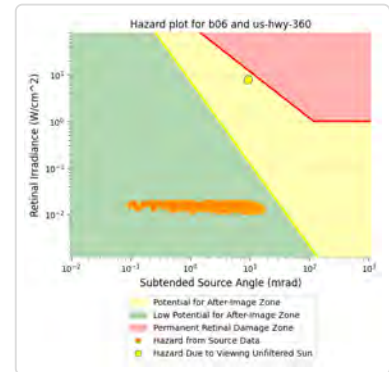
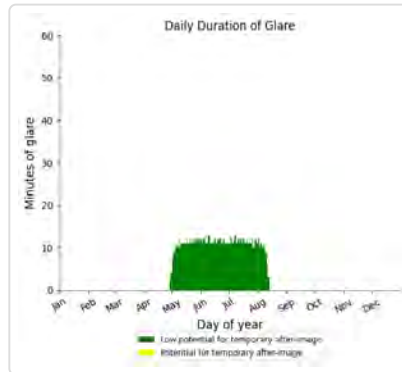
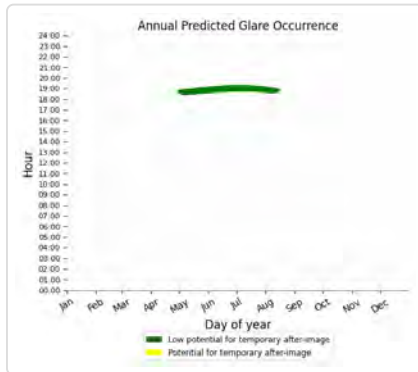
- 1 minutes of "green" glare with low potential to cause temporary after-image.
- 41 minutes of "yellow" glare with potential to cause temporary after-image.



## B06: US Hwy 360

PV array is expected to produce the following glare for this receptor:

- 1,155 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## C01 low potential for temporary after-image

Component	Green glare (min)	Yellow glare (min)
OP: OP 100	0	0
OP: OP 101	0	0
OP: OP 102	0	0
OP: OP 103	0	0
OP: OP 104	0	0
OP: OP 105	0	0
OP: OP 106	233	0
OP: OP 107	250	0
OP: OP 108	365	0
OP: OP 109	359	0
OP: OP 110	172	0
OP: OP 111	184	0
OP: OP 112	179	0
OP: OP 113	186	0
OP: OP 114	140	0
OP: OP 115	150	0
OP: OP 116	0	0
OP: OP 117	0	0
Route: Collins Dr	0	0
Route: Country Dr Seg 1	0	0
Route: Country Dr Seg 2	0	0
Route: County Line Rd	1090	0

Route: Dempseys Rd	0	0
Route: Harley Ln	0	0
Route: Henderson Rd	0	0
Route: Hillside Dr	0	0
Route: Ole Briery Station Rd Seg 1	0	0
Route: Ole Briery Station Rd Seg 2	0	0
Route: Thistle Knob Ln	0	0
Route: Tobacco Heritage Trail	0	0
Route: US Hwy 15	1065	0
Route: US Hwy 360	0	0

#### **C01: OP 100**

*No glare found*

#### **C01: OP 101**

*No glare found*

#### **C01: OP 102**

*No glare found*

#### **C01: OP 103**

*No glare found*

#### **C01: OP 104**

*No glare found*

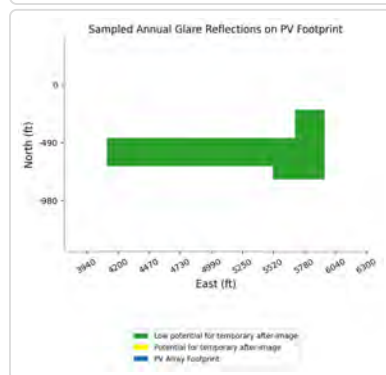
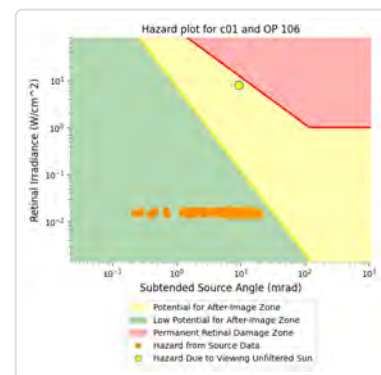
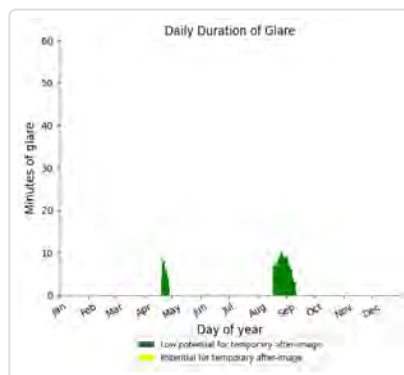
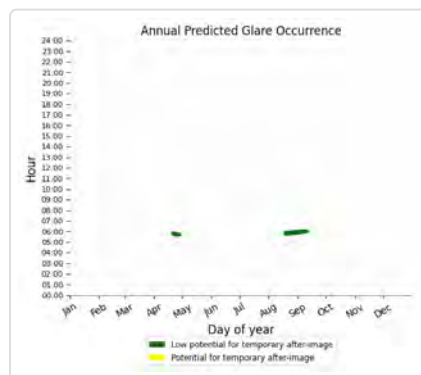
#### **C01: OP 105**

*No glare found*

## C01: OP 106

PV array is expected to produce the following glare for this receptor:

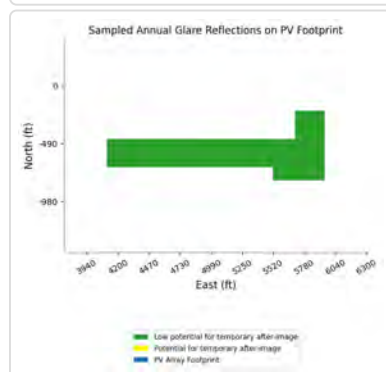
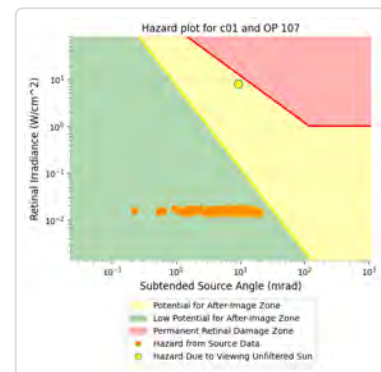
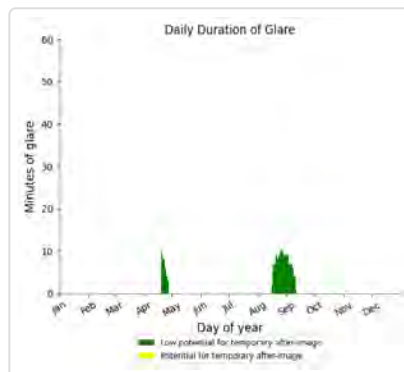
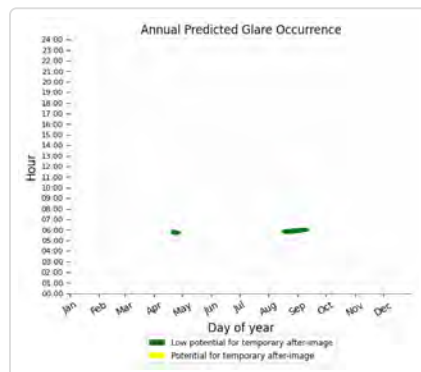
- 233 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## C01: OP 107

PV array is expected to produce the following glare for this receptor:

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

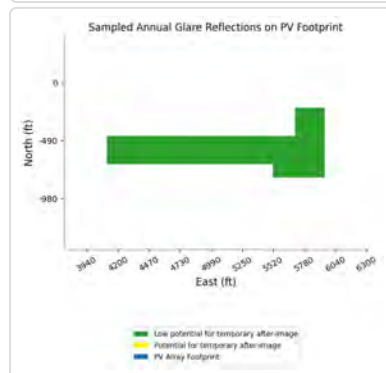
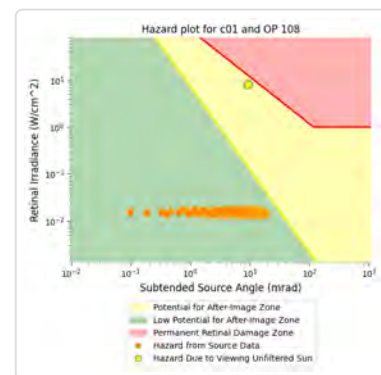
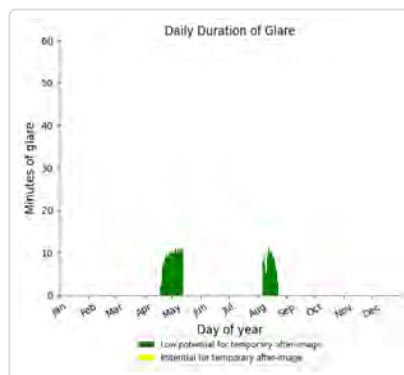
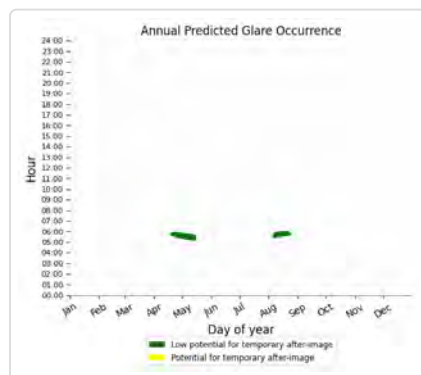




## C01: OP 108

PV array is expected to produce the following glare for this receptor:

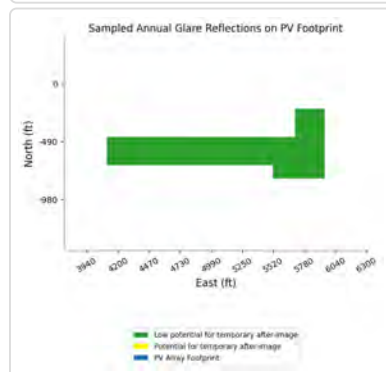
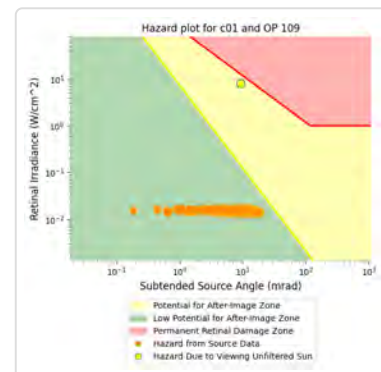
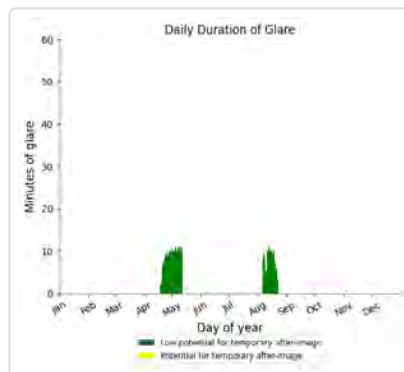
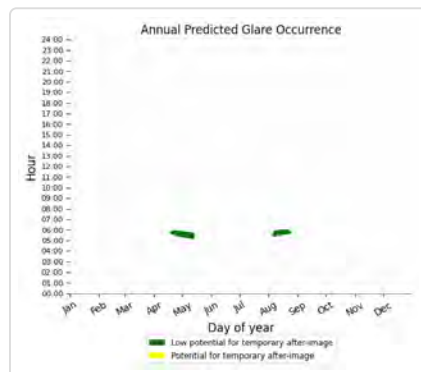
- 365 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## C01: OP 109

PV array is expected to produce the following glare for this receptor:

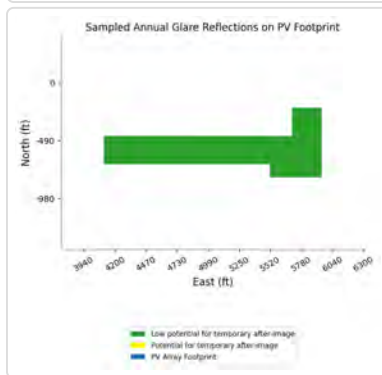
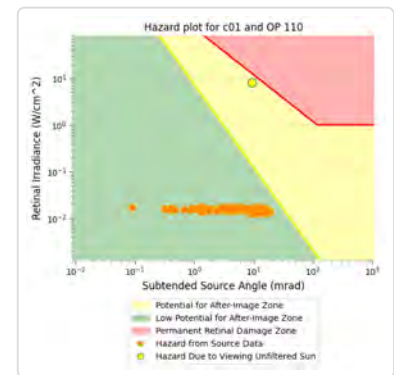
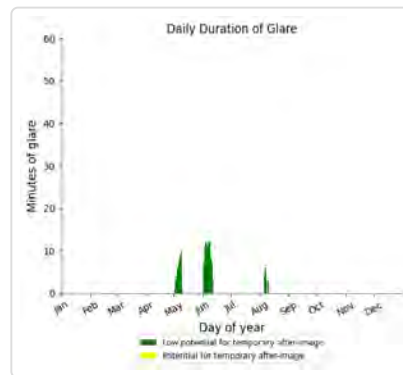
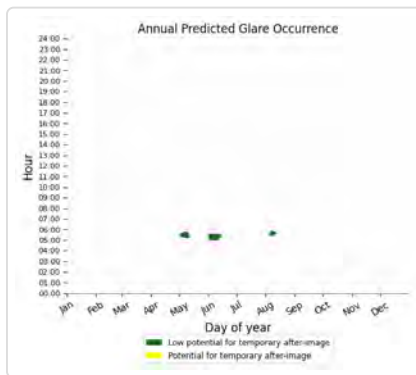
- 359 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## C01: OP 110

PV array is expected to produce the following glare for this receptor:

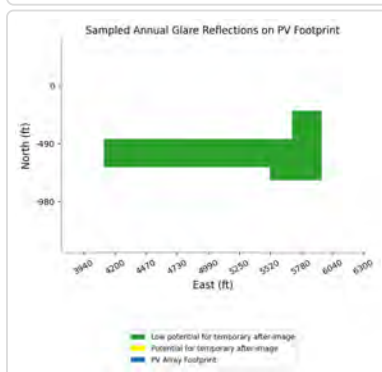
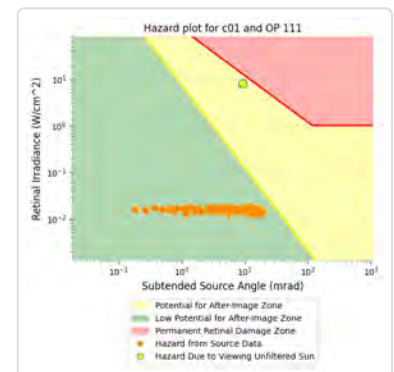
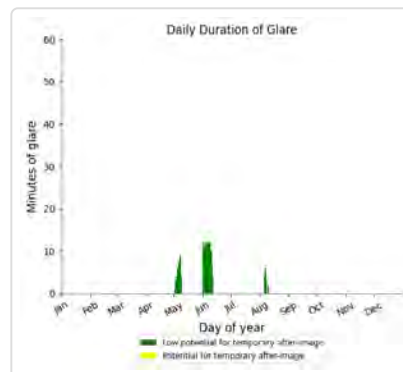
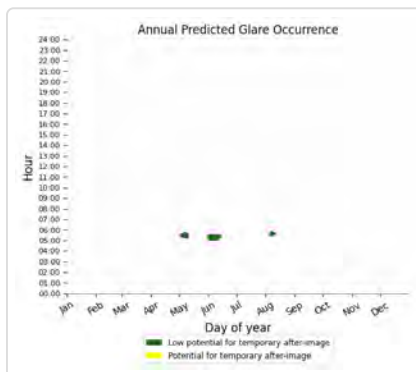
- 172 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## C01: OP 111

PV array is expected to produce the following glare for this receptor:

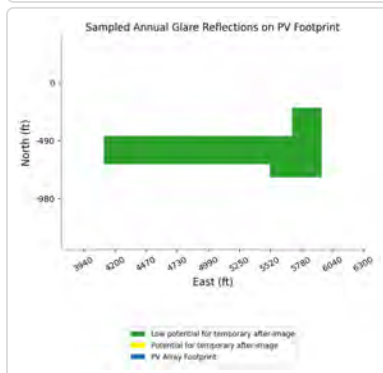
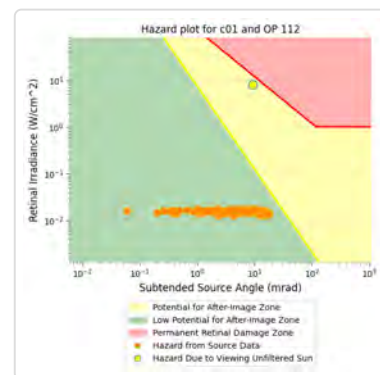
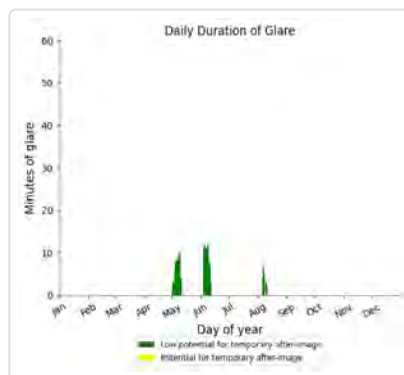
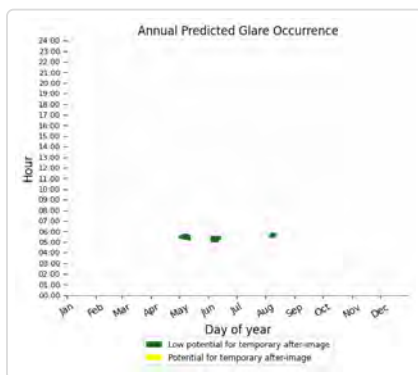
- 184 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## C01: OP 112

PV array is expected to produce the following glare for this receptor:

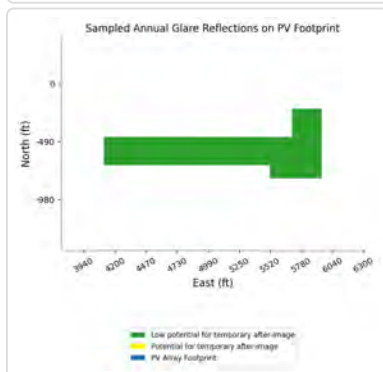
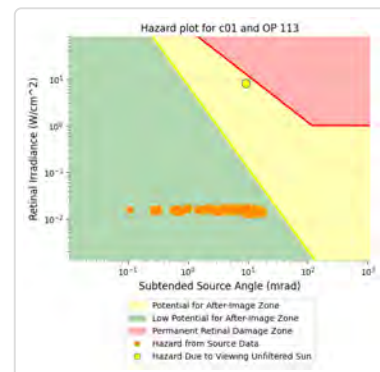
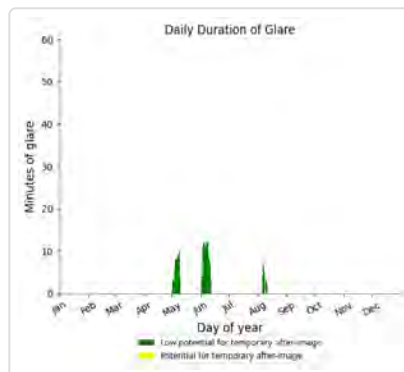
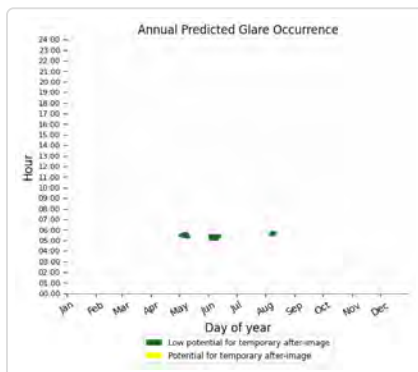
- 179 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## C01: OP 113

PV array is expected to produce the following glare for this receptor:

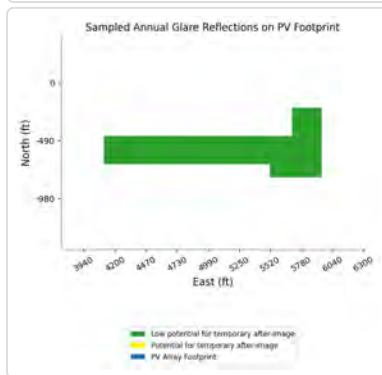
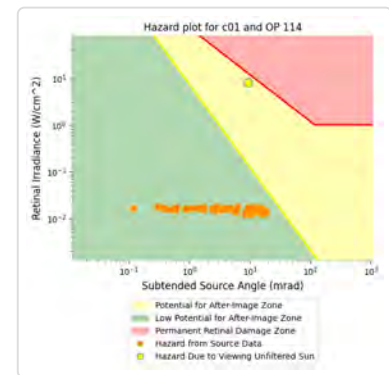
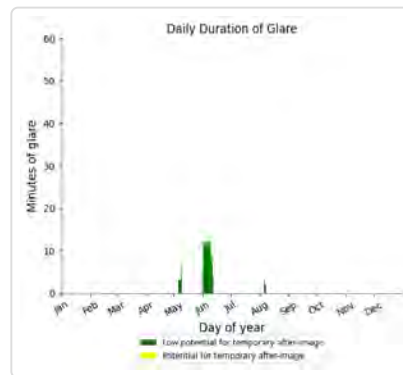
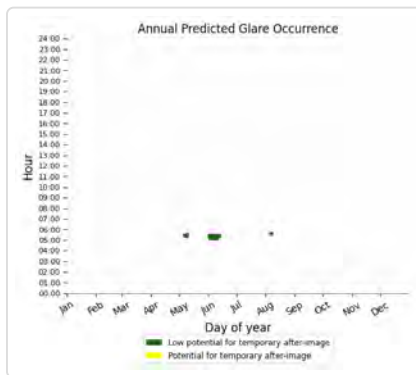
- 186 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## C01: OP 114

PV array is expected to produce the following glare for this receptor:

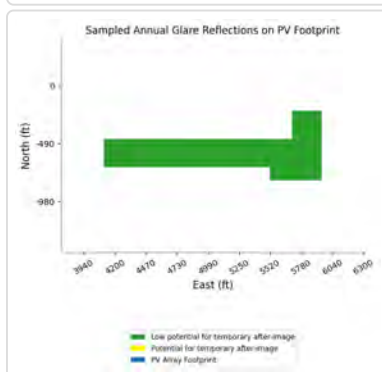
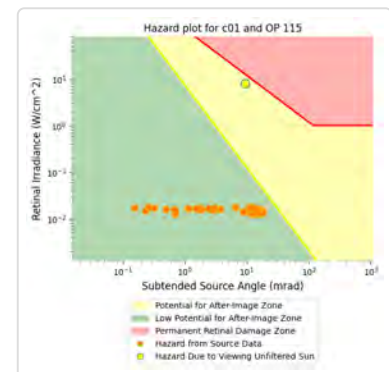
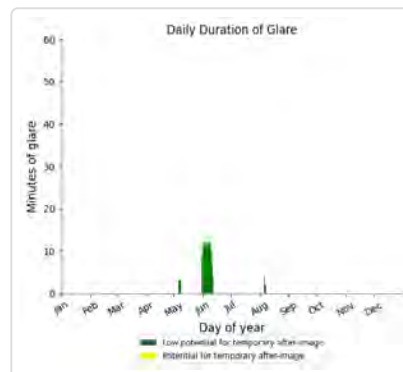
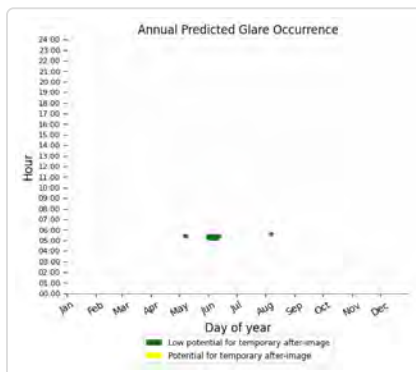
- 140 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## C01: OP 115

PV array is expected to produce the following glare for this receptor:

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



## C01: OP 116

No glare found

## C01: OP 117

No glare found

## C01: Collins Dr

No glare found

## C01: Country Dr Seg 1

No glare found

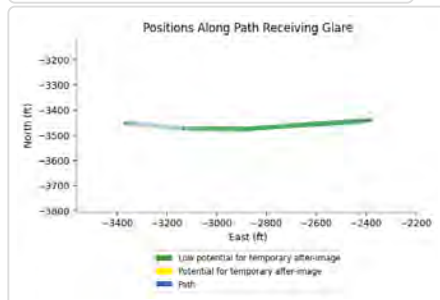
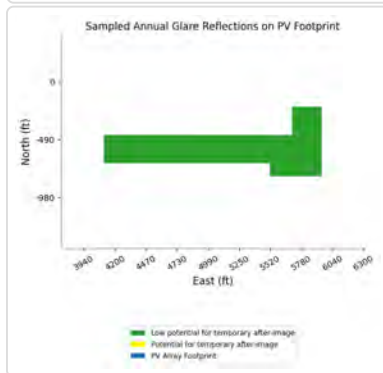
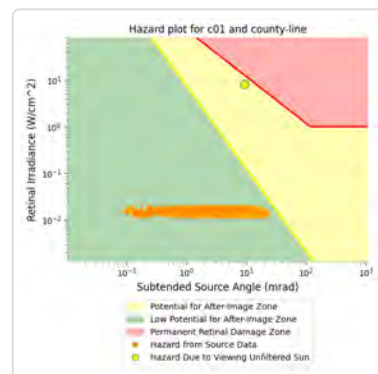
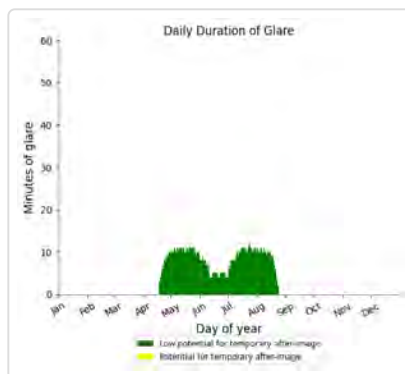
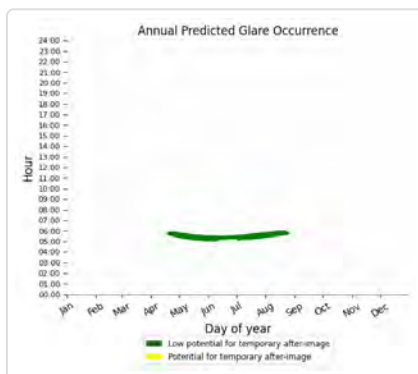
## C01: Country Dr Seg 2

No glare found

## C01: County Line Rd

PV array is expected to produce the following glare for this receptor:

- 1,090 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## C01: Dempseys Rd

No glare found

## C01: Harley Ln

No glare found

## C01: Henderson Rd

No glare found

## C01: Hillside Dr

No glare found

## C01: Ole Briery Station Rd Seg 1

No glare found

## C01: Ole Briery Station Rd Seg 2

No glare found

## C01: Thistle Knob Ln

No glare found

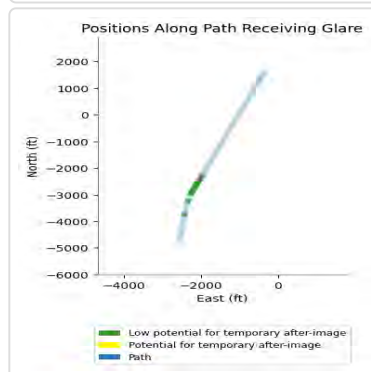
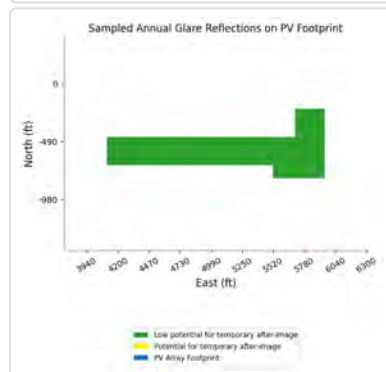
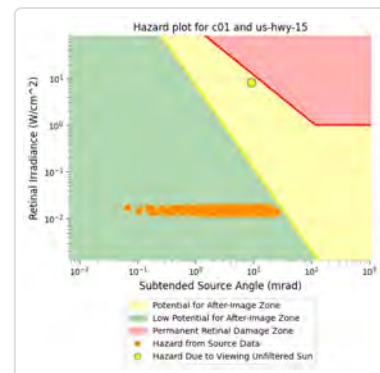
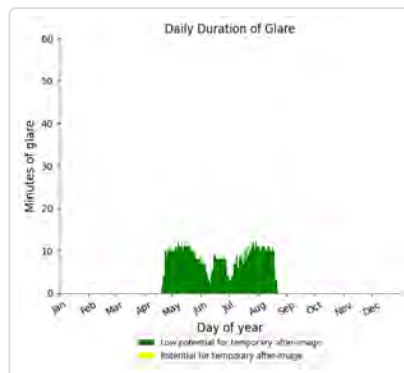
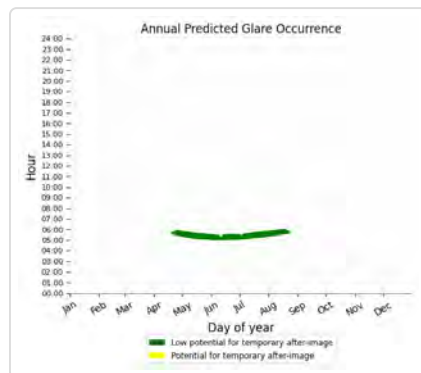
## C01: Tobacco Heritage Trail

No glare found

## C01: US Hwy 15

PV array is expected to produce the following glare for this receptor:

- 1,065 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## C01: US Hwy 360

No glare found

## C02 low potential for temporary after-image

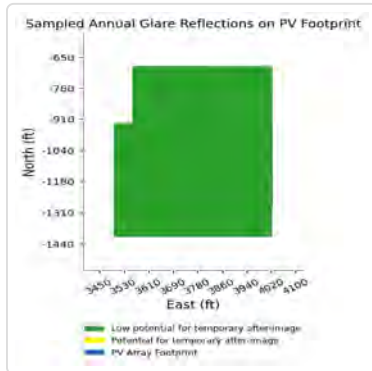
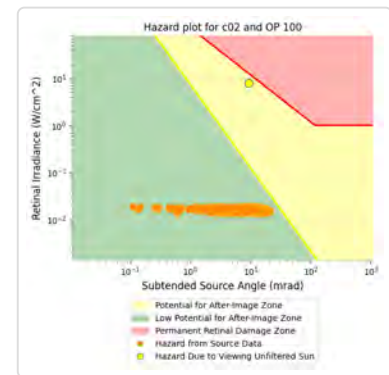
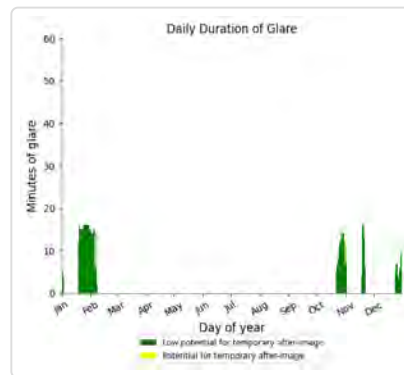
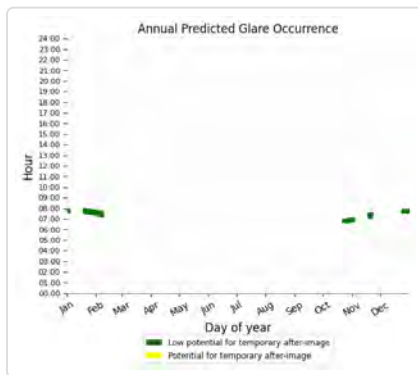


Component	Green glare (min)	Yellow glare (min)
OP: OP 100	538	0
OP: OP 101	553	0
OP: OP 102	370	0
OP: OP 103	367	0
OP: OP 104	286	0
OP: OP 105	298	0
OP: OP 106	0	0
OP: OP 107	0	0
OP: OP 108	0	0
OP: OP 109	0	0
OP: OP 110	0	0
OP: OP 111	0	0
OP: OP 112	0	0
OP: OP 113	0	0
OP: OP 114	0	0
OP: OP 115	0	0
OP: OP 116	0	0
OP: OP 117	0	0
Route: Collins Dr	0	0
Route: Country Dr Seg 1	0	0
Route: Country Dr Seg 2	0	0
Route: County Line Rd	0	0
Route: Dempseys Rd	0	0
Route: Harley Ln	0	0
Route: Henderson Rd	1616	0
Route: Hillside Dr	0	0
Route: Ole Briery Station Rd Seg 1	0	0
Route: Ole Briery Station Rd Seg 2	0	0
Route: Thistle Knob Ln	0	0
Route: Tobacco Heritage Trail	0	0
Route: US Hwy 15	0	0
Route: US Hwy 360	0	0

## C02: OP 100

PV array is expected to produce the following glare for this receptor:

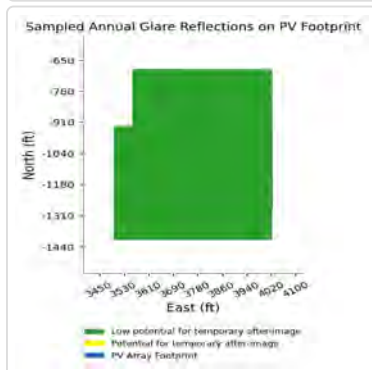
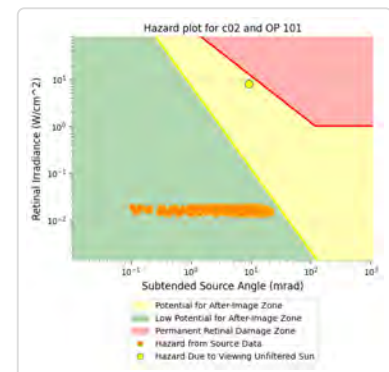
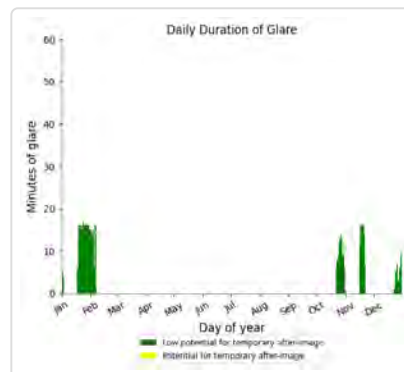
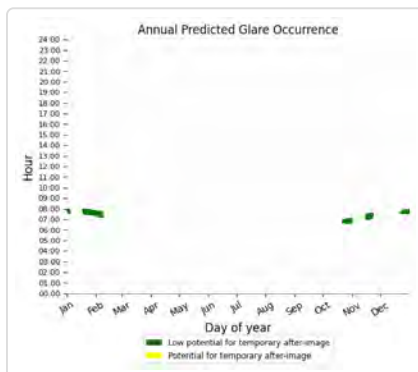
- 538 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## C02: OP 101

PV array is expected to produce the following glare for this receptor:

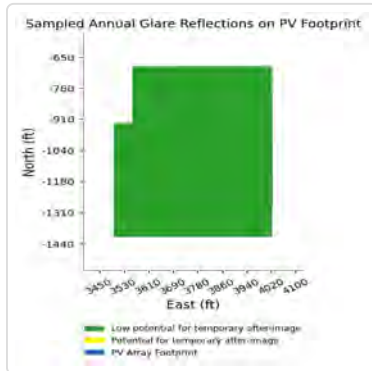
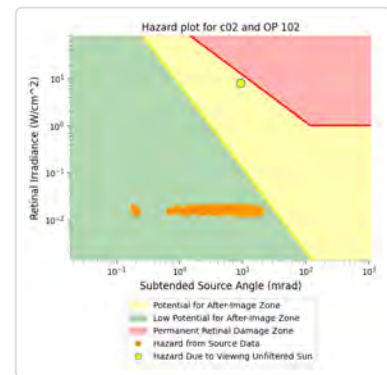
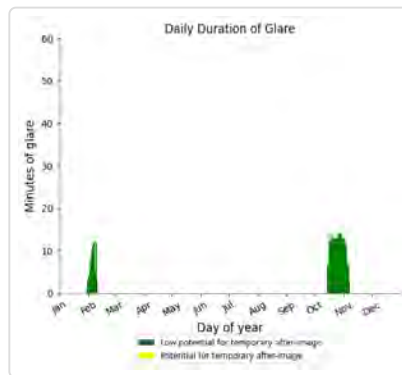
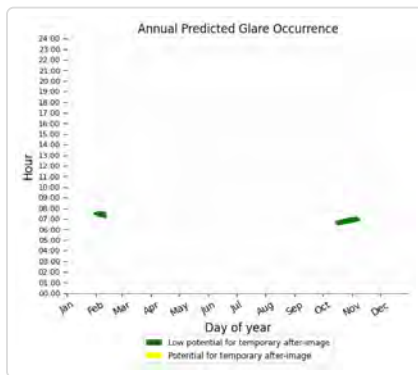
- 553 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## C02: OP 102

PV array is expected to produce the following glare for this receptor:

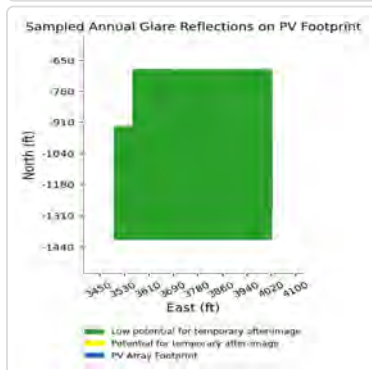
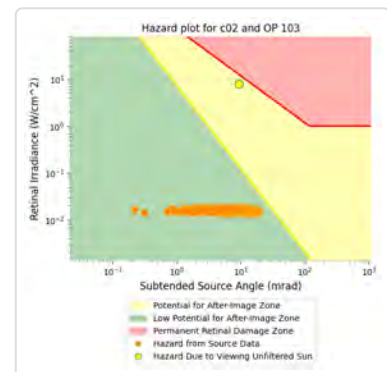
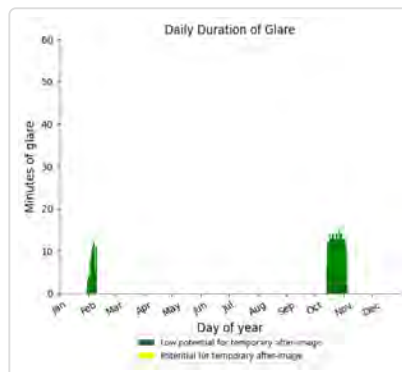
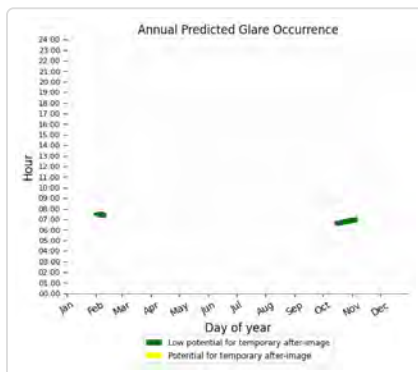
- 370 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## C02: OP 103

PV array is expected to produce the following glare for this receptor:

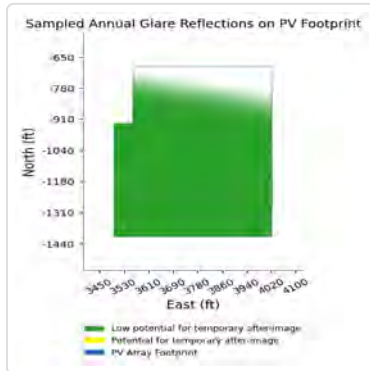
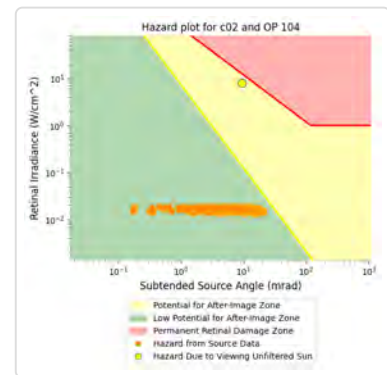
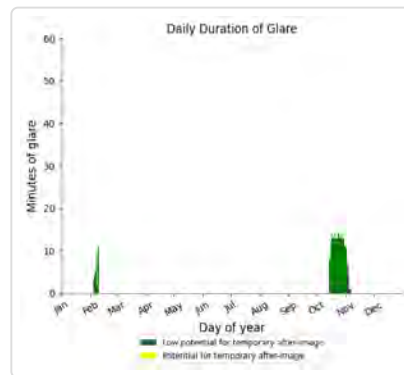
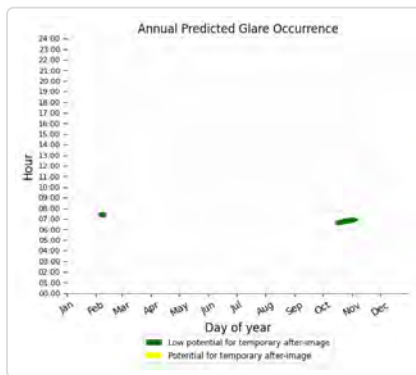
- 367 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## C02: OP 104

PV array is expected to produce the following glare for this receptor:

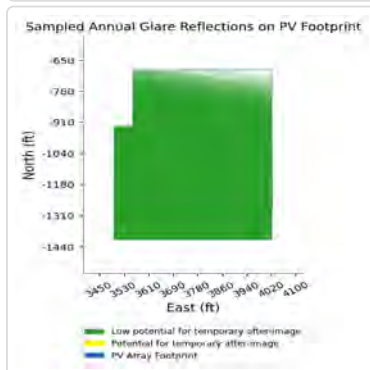
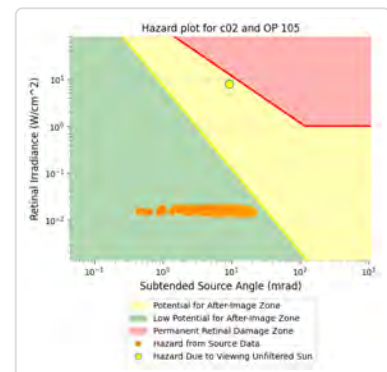
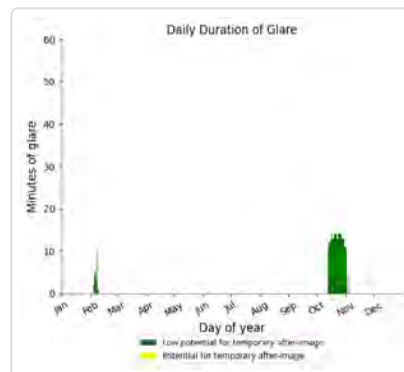
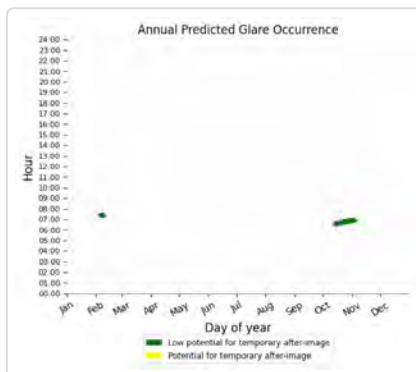
- 286 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## C02: OP 105

PV array is expected to produce the following glare for this receptor:

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



**C02: OP 106**

*No glare found*

**C02: OP 107**

*No glare found*

**C02: OP 108**

*No glare found*

**C02: OP 109**

*No glare found*

**C02: OP 110**

*No glare found*

**C02: OP 111**

*No glare found*

**C02: OP 112**

*No glare found*

**C02: OP 113**

*No glare found*

**C02: OP 114**

*No glare found*

**C02: OP 115**

*No glare found*

**C02: OP 116**

*No glare found*

**C02: OP 117**

*No glare found*

**C02: Collins Dr**

*No glare found*

**C02: Country Dr Seg 1**

*No glare found*

**C02: Country Dr Seg 2**

*No glare found*

## C02: County Line Rd

No glare found

## C02: Dempseys Rd

No glare found

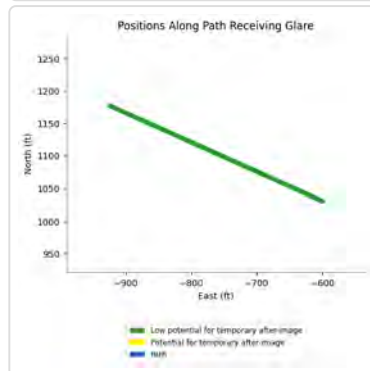
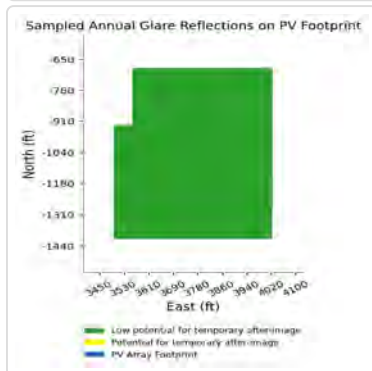
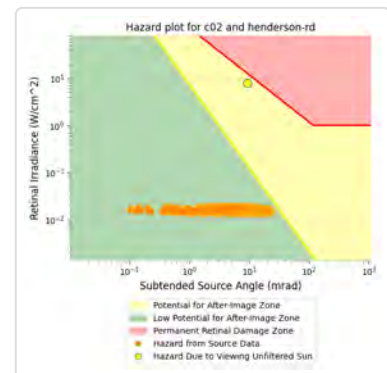
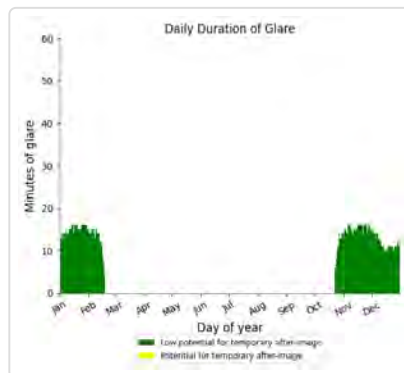
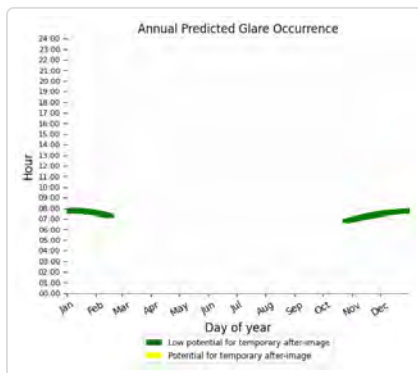
## C02: Harley Ln

No glare found

## C02: Henderson Rd

PV array is expected to produce the following glare for this receptor:

- 1,616 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## C02: Hillside Dr

No glare found

## C02: Ole Briery Station Rd Seg 1

No glare found

## C02: Ole Briery Station Rd Seg 2

No glare found

## C02: Thistle Knob Ln

No glare found

## C02: Tobacco Heritage Trail

No glare found



## C02: US Hwy 15

*No glare found*

## C02: US Hwy 360

*No glare found*

## C03 low potential for temporary after-image

Component	Green glare (min)	Yellow glare (min)
OP: OP 100	0	0
OP: OP 101	0	0
OP: OP 102	0	0
OP: OP 103	0	0
OP: OP 104	0	0
OP: OP 105	0	0
OP: OP 106	0	0
OP: OP 107	0	0
OP: OP 108	0	0
OP: OP 109	0	0
OP: OP 110	0	0
OP: OP 111	0	0
OP: OP 112	0	0
OP: OP 113	0	0
OP: OP 114	0	0
OP: OP 115	0	0
OP: OP 116	0	0
OP: OP 117	0	0
Route: Collins Dr	0	0
Route: Country Dr Seg 1	0	0
Route: Country Dr Seg 2	0	0
Route: County Line Rd	85	0
Route: Dempseys Rd	0	0
Route: Harley Ln	0	0
Route: Henderson Rd	0	0
Route: Hillside Dr	0	0
Route: Ole Briery Station Rd Seg 1	0	0
Route: Ole Briery Station Rd Seg 2	0	0
Route: Thistle Knob Ln	0	0
Route: Tobacco Heritage Trail	0	0
Route: US Hwy 15	0	0
Route: US Hwy 360	0	0

## C03: OP 100

*No glare found*

## C03: OP 101

*No glare found*

**C03: OP 102**

*No glare found*

**C03: OP 103**

*No glare found*

**C03: OP 104**

*No glare found*

**C03: OP 105**

*No glare found*

**C03: OP 106**

*No glare found*

**C03: OP 107**

*No glare found*

**C03: OP 108**

*No glare found*

**C03: OP 109**

*No glare found*

**C03: OP 110**

*No glare found*

**C03: OP 111**

*No glare found*

**C03: OP 112**

*No glare found*

**C03: OP 113**

*No glare found*

**C03: OP 114**

*No glare found*

**C03: OP 115**

*No glare found*

**C03: OP 116**

*No glare found*

### C03: OP 117

No glare found

### C03: Collins Dr

No glare found

### C03: Country Dr Seg 1

No glare found

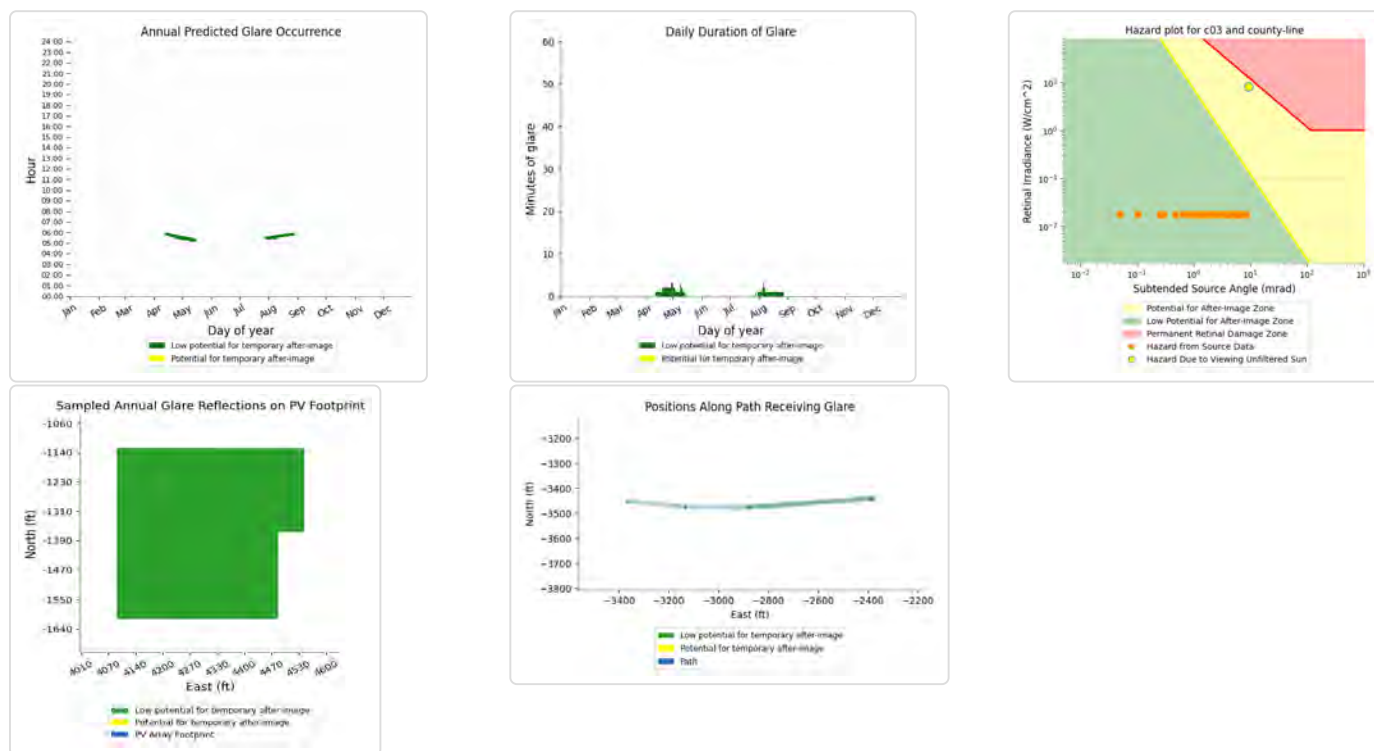
### C03: Country Dr Seg 2

No glare found

### C03: County Line Rd

PV array is expected to produce the following glare for this receptor:

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



### C03: Dempseys Rd

No glare found

### C03: Harley Ln

No glare found

### C03: Henderson Rd

No glare found

### C03: Hillside Dr

*No glare found*

### C03: Ole Briery Station Rd Seg 1

*No glare found*

### C03: Ole Briery Station Rd Seg 2

*No glare found*

### C03: Thistle Knob Ln

*No glare found*

### C03: Tobacco Heritage Trail

*No glare found*

### C03: US Hwy 15

*No glare found*

### C03: US Hwy 360

*No glare found*

### C04 low potential for temporary after-image

Component	Green glare (min)	Yellow glare (min)
OP: OP 100	0	0
OP: OP 101	0	0
OP: OP 102	0	0
OP: OP 103	0	0
OP: OP 104	0	0
OP: OP 105	0	0
OP: OP 106	130	0
OP: OP 107	122	0
OP: OP 108	62	0
OP: OP 109	105	0
OP: OP 110	225	0
OP: OP 111	244	0
OP: OP 112	204	0
OP: OP 113	199	0
OP: OP 114	274	0
OP: OP 115	278	0
OP: OP 116	0	0
OP: OP 117	0	0
Route: Collins Dr	0	0
Route: Country Dr Seg 1	69	0
Route: Country Dr Seg 2	578	0
Route: County Line Rd	457	0
Route: Dempseys Rd	0	0
Route: Harley Ln	0	0

Route: Henderson Rd	0	0
Route: Hillside Dr	413	0
Route: Ole Briery Station Rd Seg 1	0	0
Route: Ole Briery Station Rd Seg 2	0	0
Route: Thistle Knob Ln	0	0
Route: Tobacco Heritage Trail	577	0
Route: US Hwy 15	38	0
Route: US Hwy 360	0	0

#### **C04: OP 100**

*No glare found*

#### **C04: OP 101**

*No glare found*

#### **C04: OP 102**

*No glare found*

#### **C04: OP 103**

*No glare found*

#### **C04: OP 104**

*No glare found*

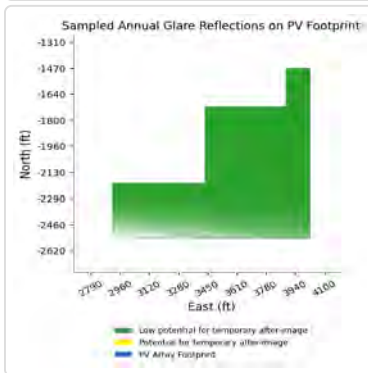
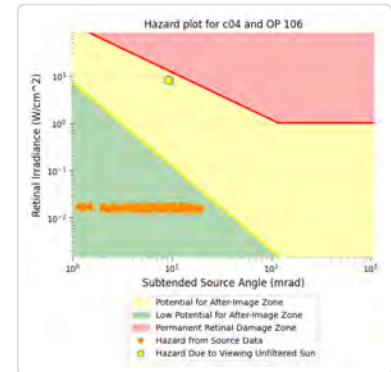
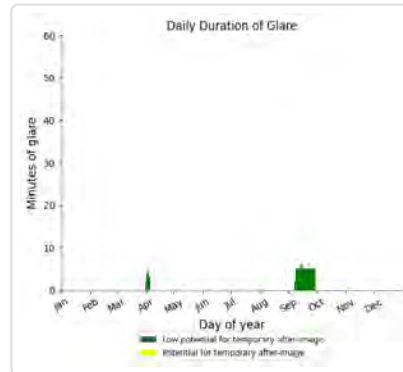
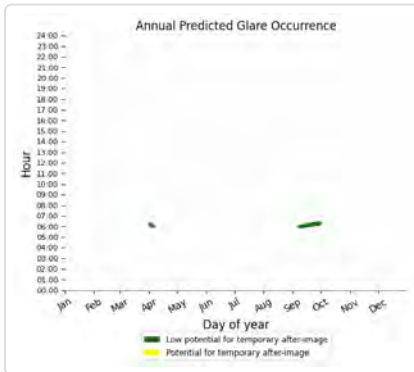
#### **C04: OP 105**

*No glare found*

## C04: OP 106

PV array is expected to produce the following glare for this receptor:

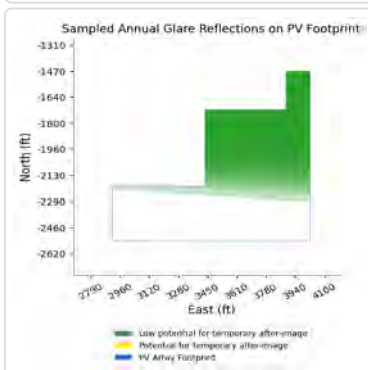
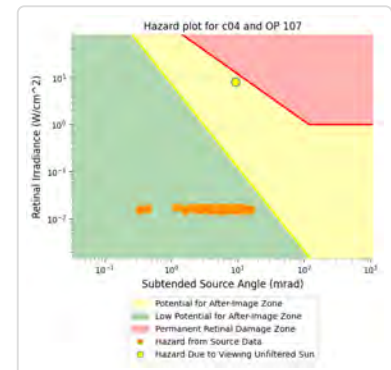
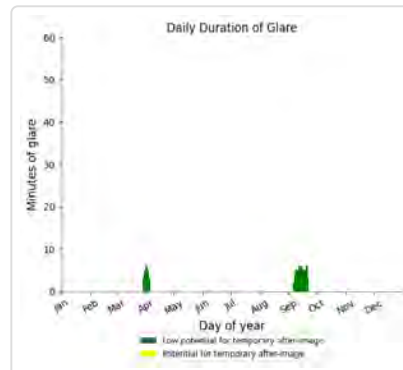
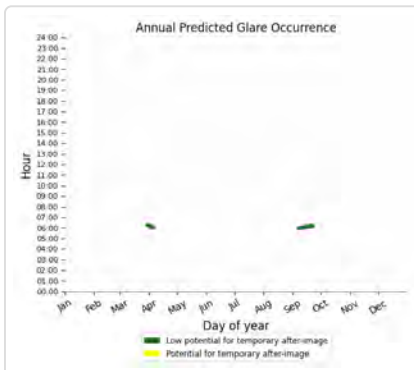
- 130 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## C04: OP 107

PV array is expected to produce the following glare for this receptor:

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

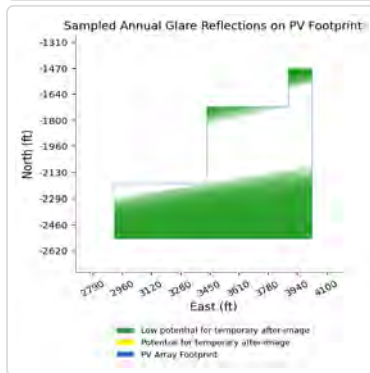
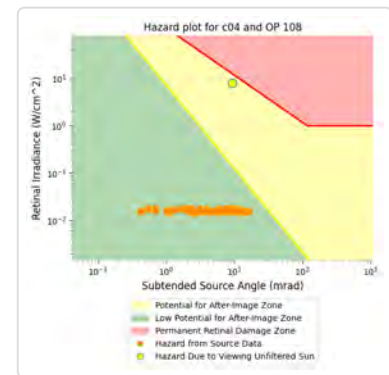
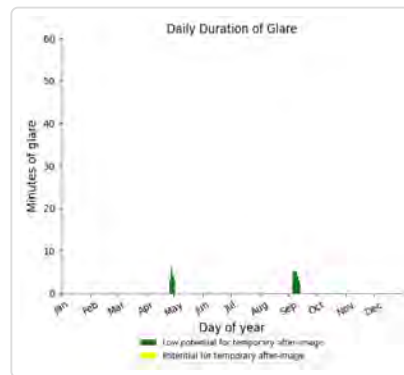
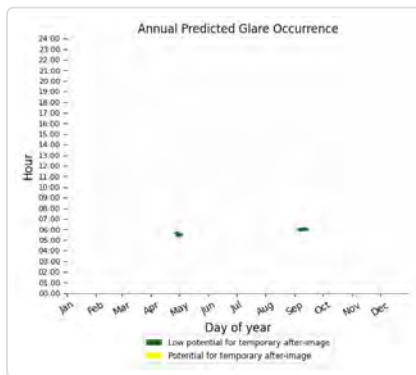




## C04: OP 108

PV array is expected to produce the following glare for this receptor:

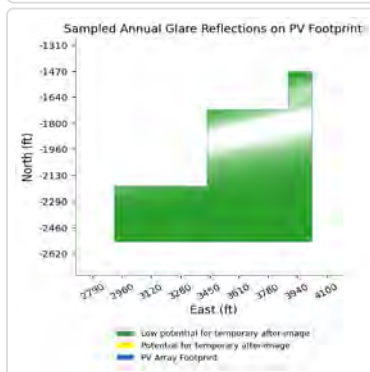
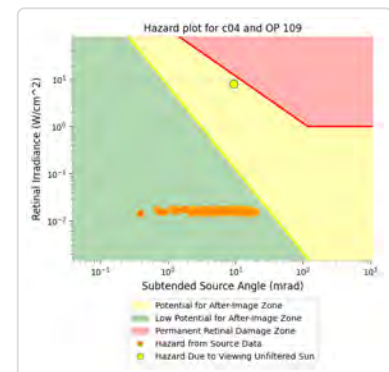
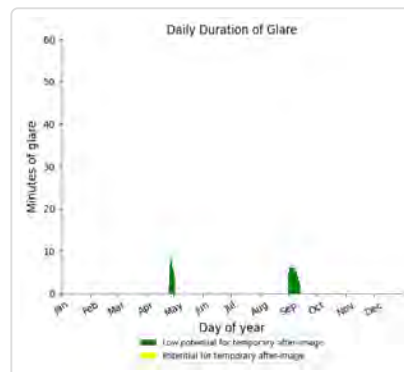
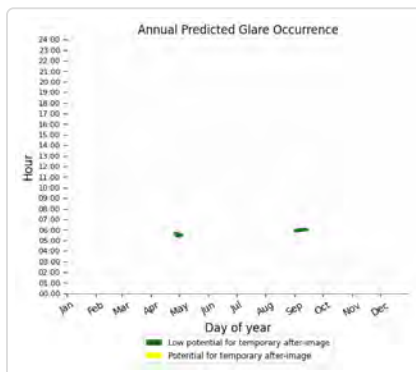
- 62 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## C04: OP 109

PV array is expected to produce the following glare for this receptor:

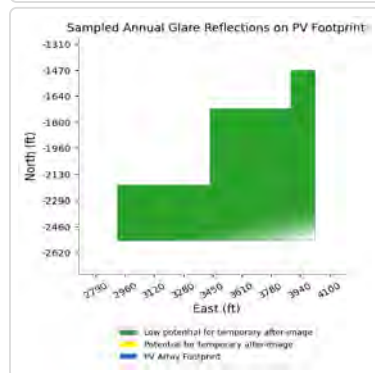
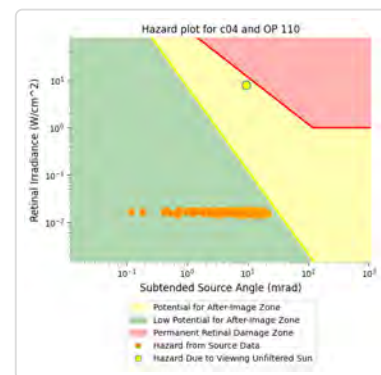
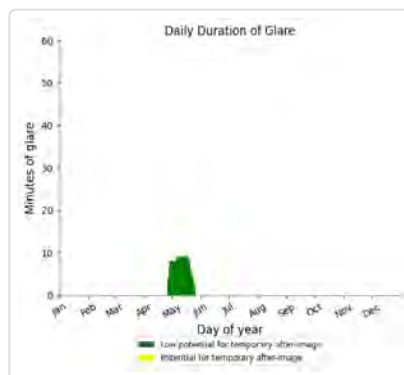
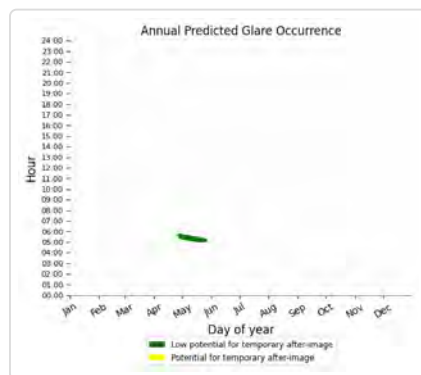
- 105 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## C04: OP 110

PV array is expected to produce the following glare for this receptor:

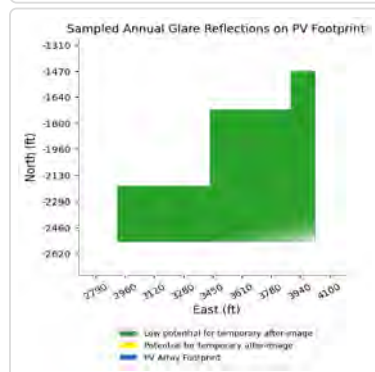
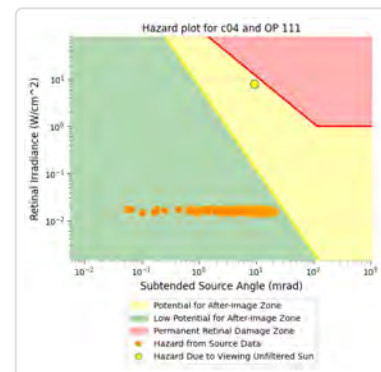
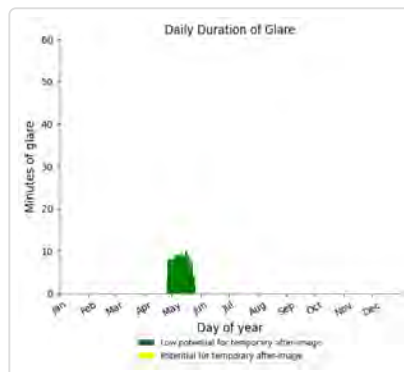
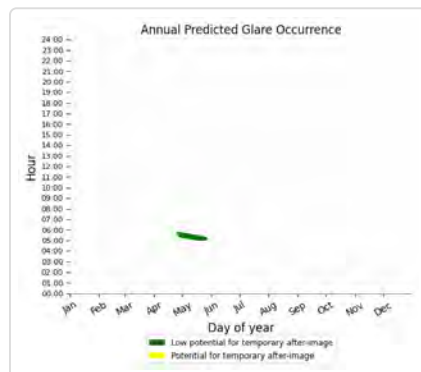
- 225 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## C04: OP 111

PV array is expected to produce the following glare for this receptor:

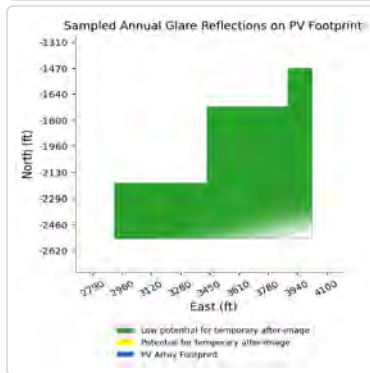
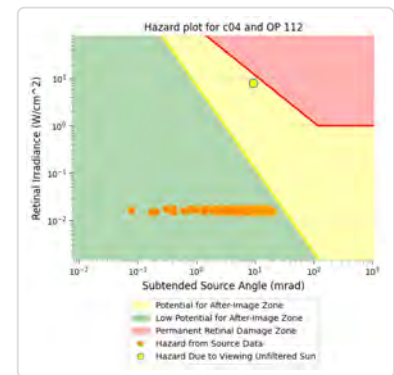
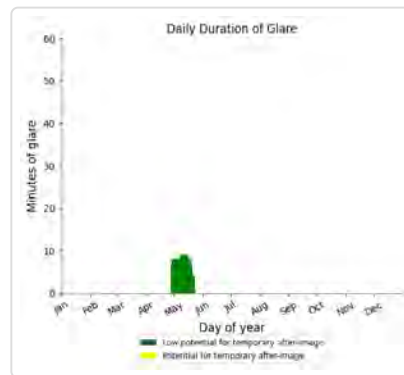
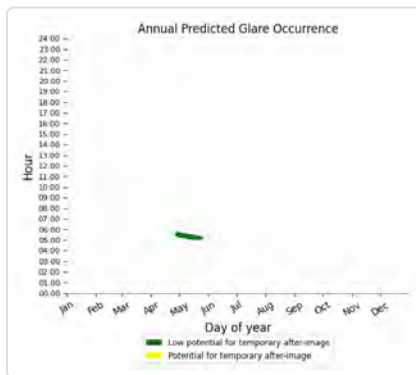
- 244 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## C04: OP 112

PV array is expected to produce the following glare for this receptor:

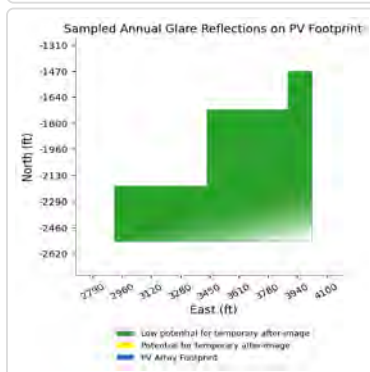
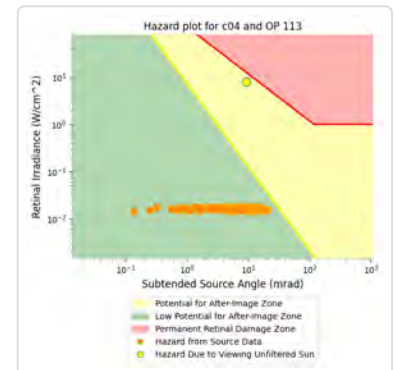
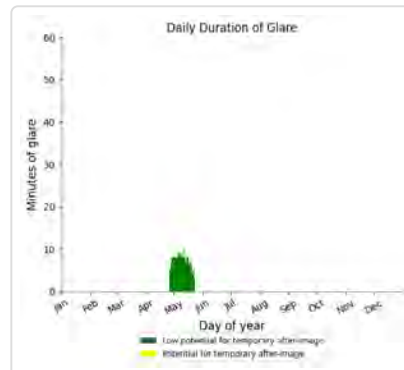
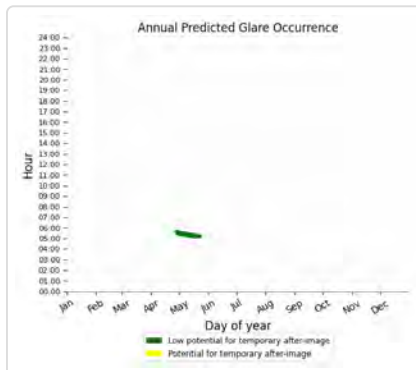
- 204 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## C04: OP 113

PV array is expected to produce the following glare for this receptor:

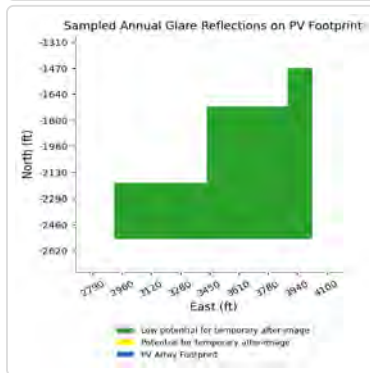
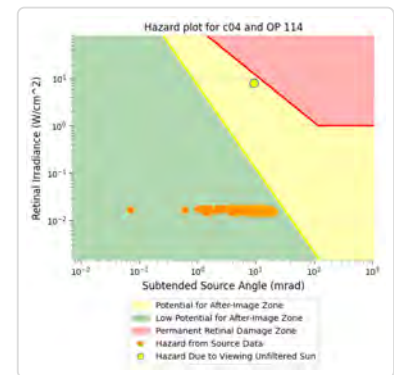
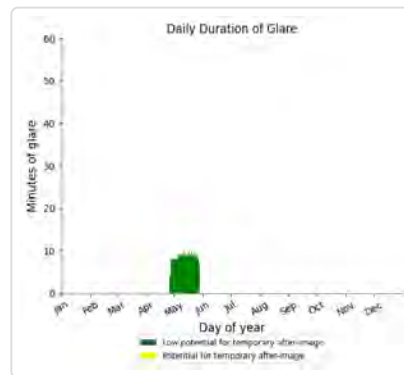
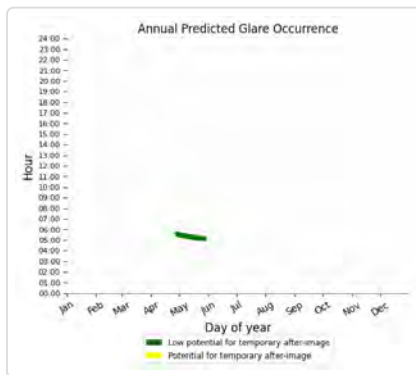
- 199 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## C04: OP 114

PV array is expected to produce the following glare for this receptor:

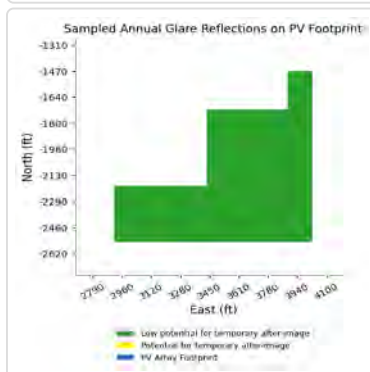
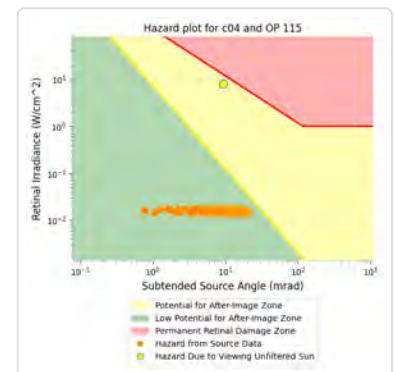
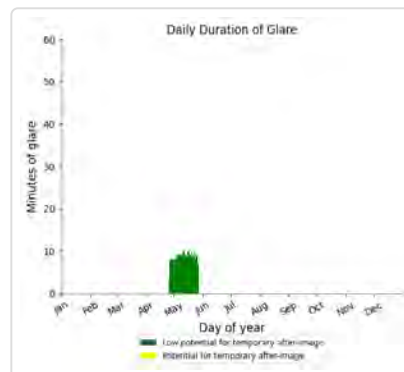
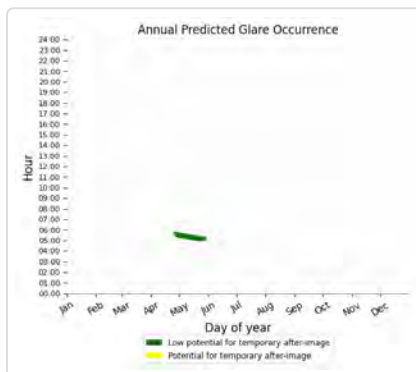
- 274 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## C04: OP 115

PV array is expected to produce the following glare for this receptor:

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



## C04: OP 116

No glare found

## C04: OP 117

No glare found

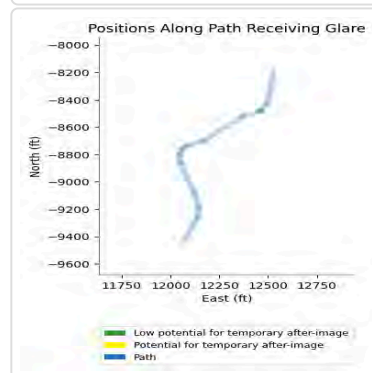
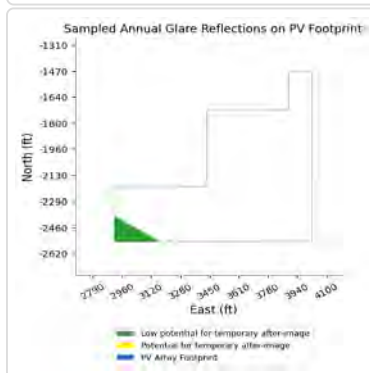
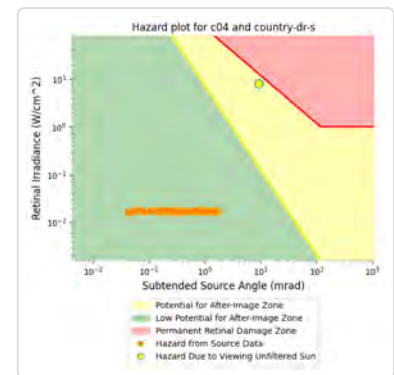
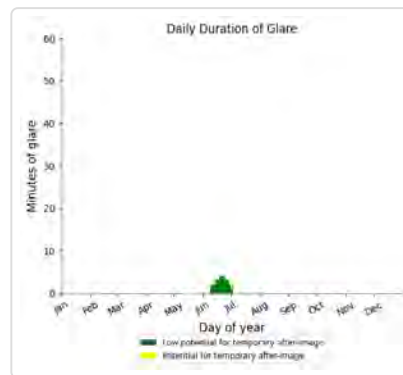
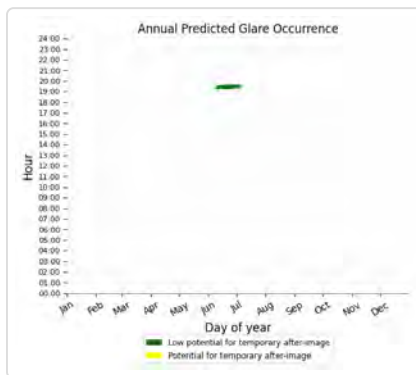
## C04: Collins Dr

No glare found

## C04: Country Dr Seg 1

PV array is expected to produce the following glare for this receptor:

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

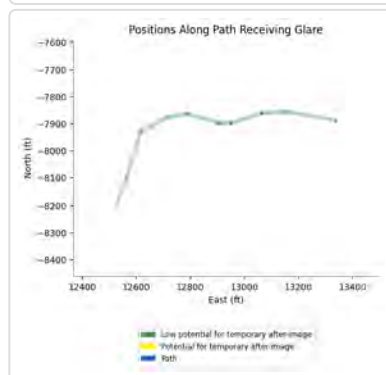
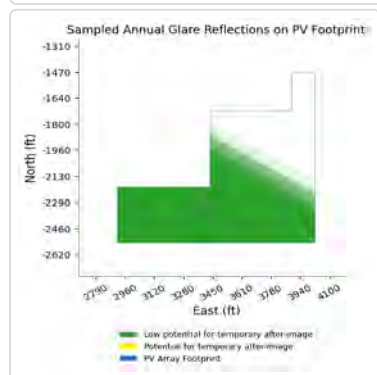
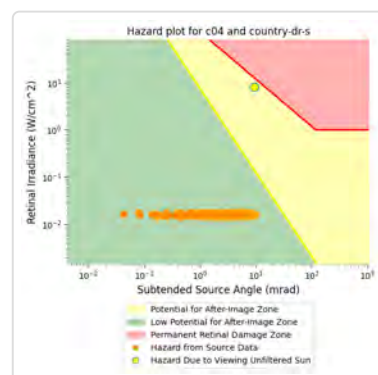
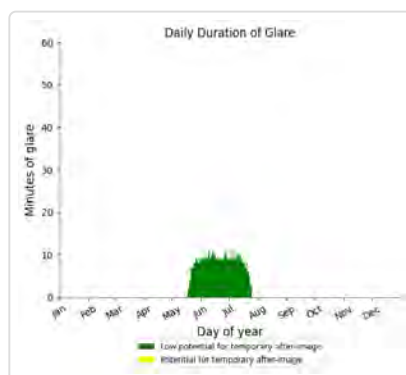
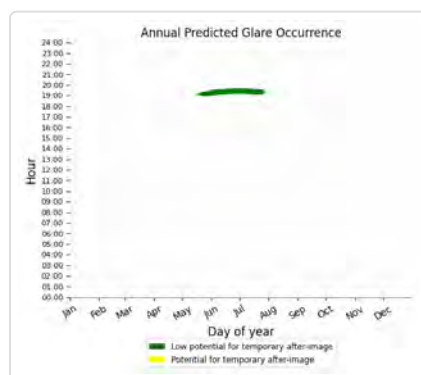




## C04: Country Dr Seg 2

PV array is expected to produce the following glare for this receptor:

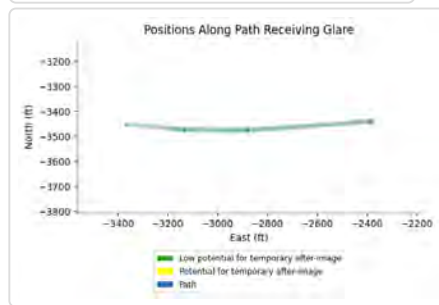
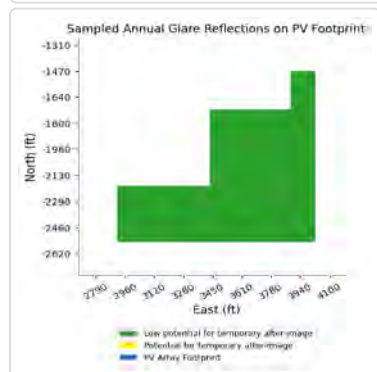
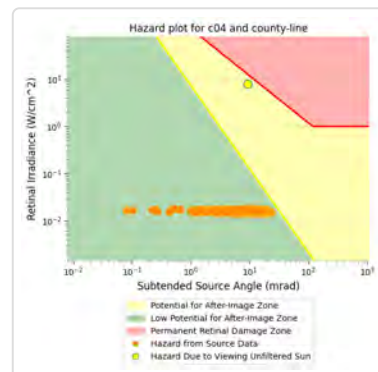
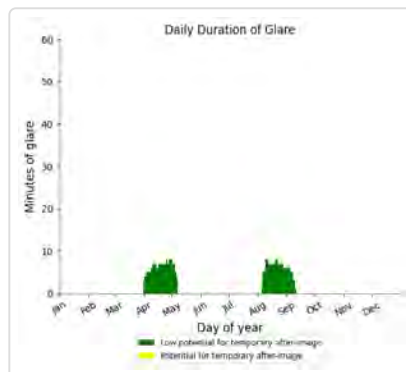
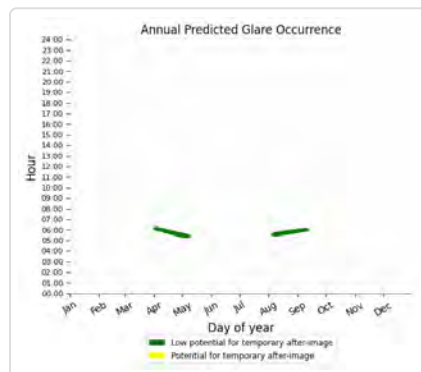
- 578 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## C04: County Line Rd

PV array is expected to produce the following glare for this receptor:

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





## C04: Dempseys Rd

No glare found

## C04: Harley Ln

No glare found

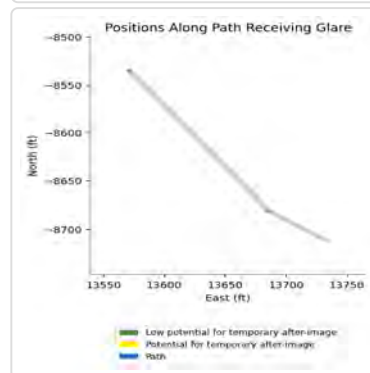
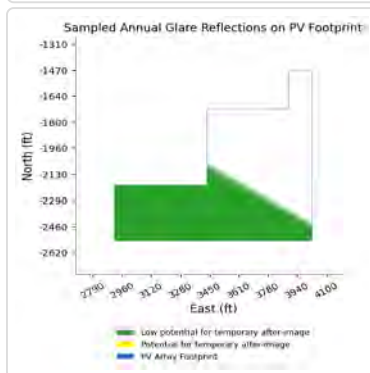
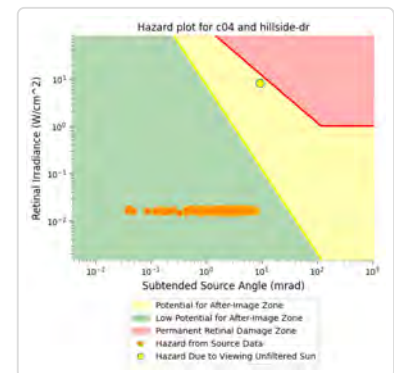
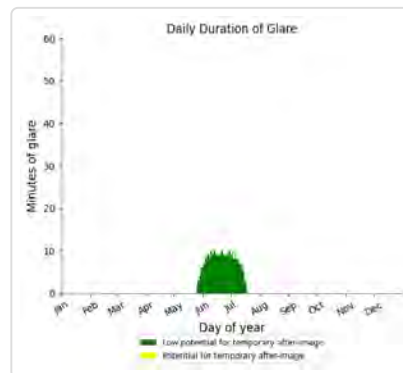
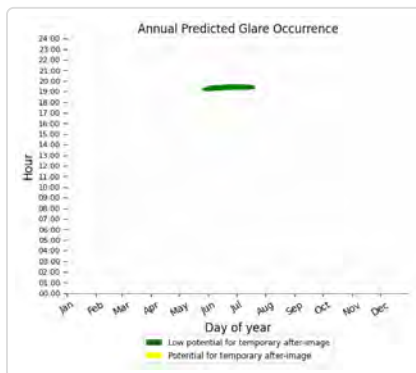
## C04: Henderson Rd

No glare found

## C04: Hillside Dr

PV array is expected to produce the following glare for this receptor:

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



## C04: Ole Briery Station Rd Seg 1

No glare found

## C04: Ole Briery Station Rd Seg 2

No glare found

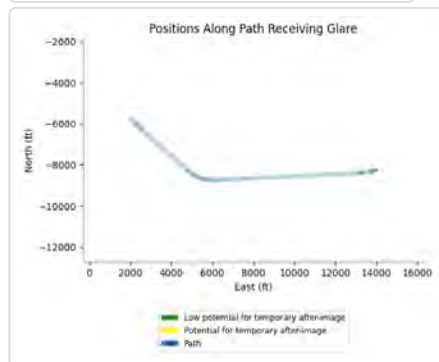
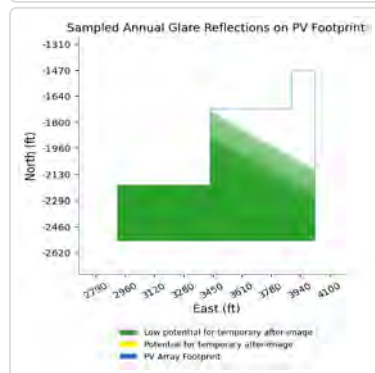
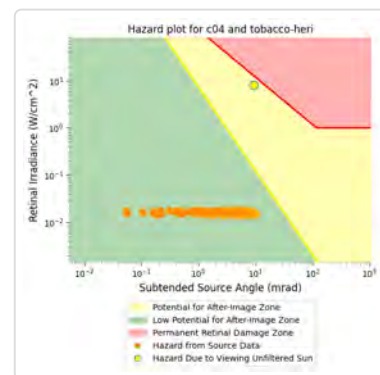
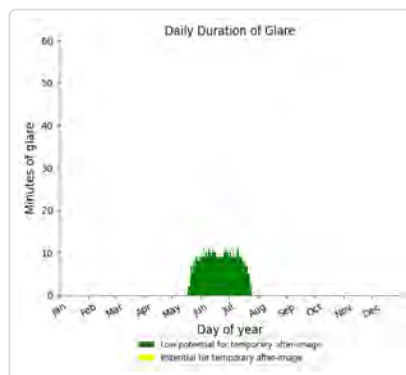
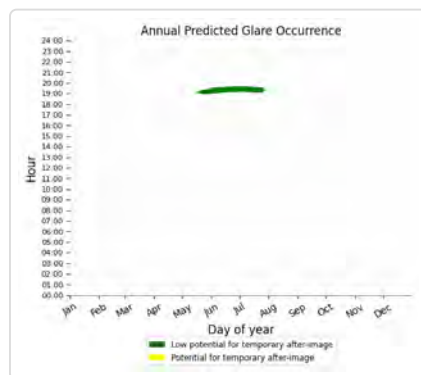
## C04: Thistle Knob Ln

No glare found

## C04: Tobacco Heritage Trail

PV array is expected to produce the following glare for this receptor:

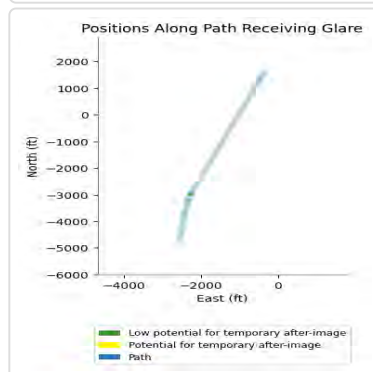
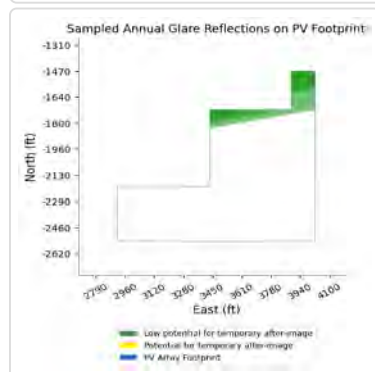
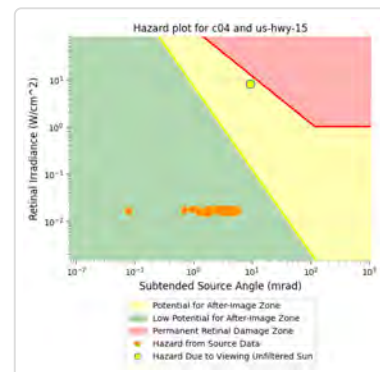
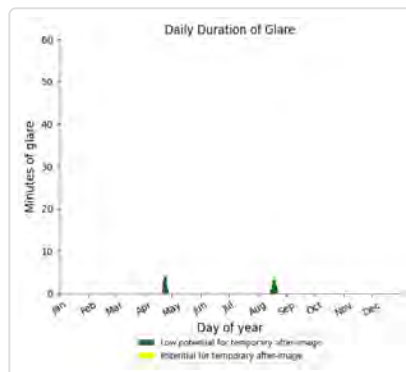
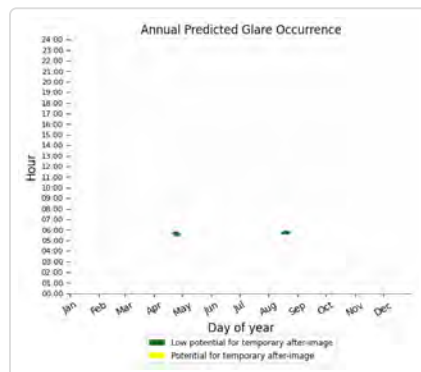
- 577 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## C04: US Hwy 15

PV array is expected to produce the following glare for this receptor:

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



## C04: US Hwy 360

*No glare found*

## C05 low potential for temporary after-image

Component	Green glare (min)	Yellow glare (min)
OP: OP 100	0	0
OP: OP 101	0	0
OP: OP 102	0	0
OP: OP 103	0	0
OP: OP 104	0	0
OP: OP 105	0	0
OP: OP 106	87	0
OP: OP 107	93	0
OP: OP 108	96	0
OP: OP 109	98	0
OP: OP 110	54	0
OP: OP 111	63	0
OP: OP 112	38	0
OP: OP 113	51	0
OP: OP 114	61	0
OP: OP 115	76	0
OP: OP 116	26	0
OP: OP 117	28	0
Route: Collins Dr	0	0
Route: Country Dr Seg 1	0	0
Route: Country Dr Seg 2	0	0
Route: County Line Rd	214	0
Route: Dempseys Rd	0	0
Route: Harley Ln	0	0
Route: Henderson Rd	286	0
Route: Hillside Dr	0	0
Route: Ole Briery Station Rd Seg 1	0	0
Route: Ole Briery Station Rd Seg 2	0	0
Route: Thistle Knob Ln	0	0
Route: Tobacco Heritage Trail	0	0
Route: US Hwy 15	0	0
Route: US Hwy 360	0	0

## C05: OP 100

*No glare found*

## C05: OP 101

*No glare found*

## C05: OP 102

*No glare found*

C05: OP 103

No glare found

C05: OP 104

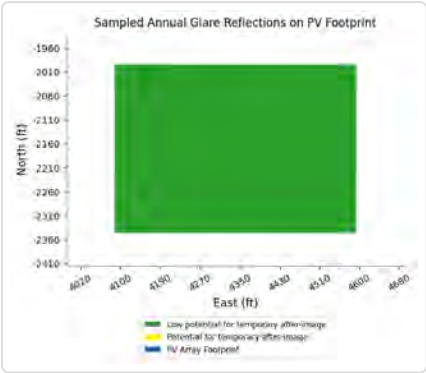
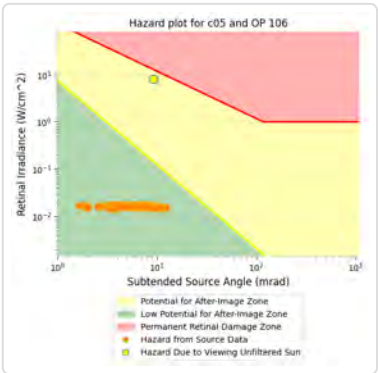
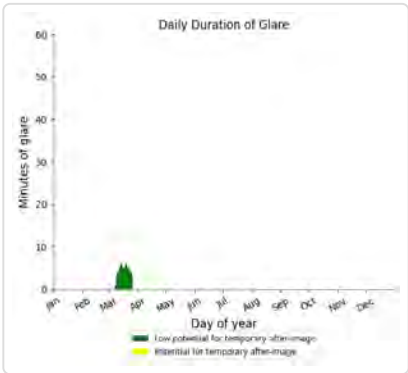
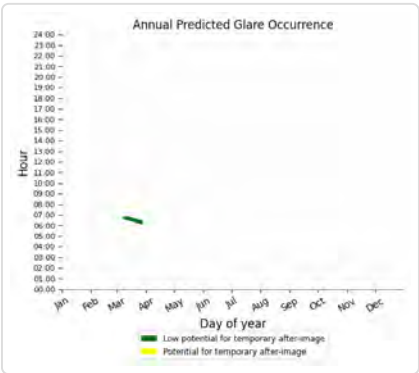
No glare found

C05: OP 105

No glare found

C05: OP 106

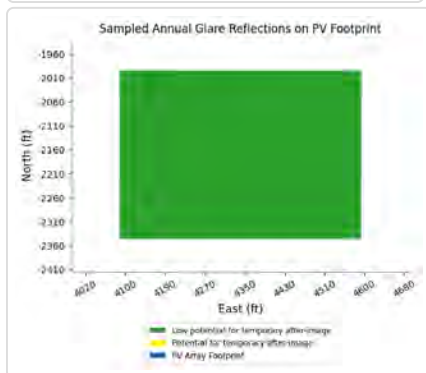
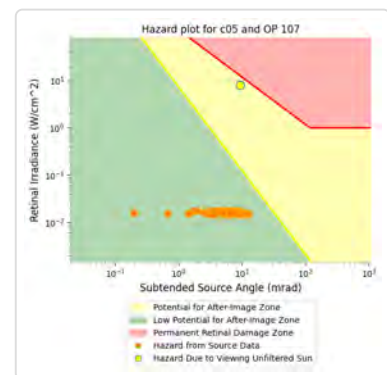
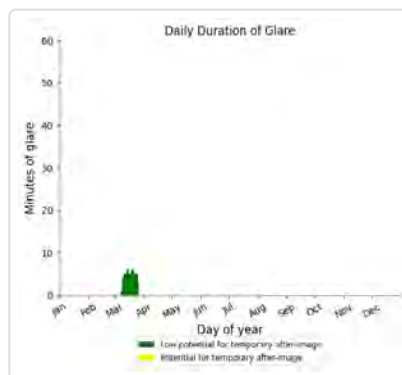
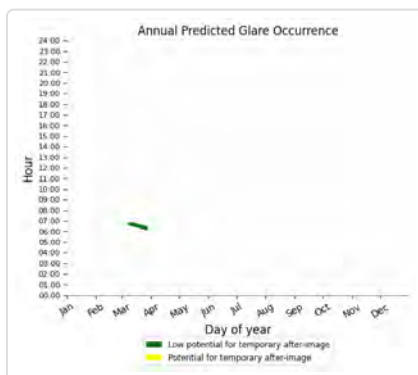
- PV array is expected to produce the following glare for this receptor:
- 87 minutes of "green" glare with low potential to cause temporary after-image.
  - 0 minutes of "yellow" glare with potential to cause temporary after-image.



## C05: OP 107

PV array is expected to produce the following glare for this receptor:

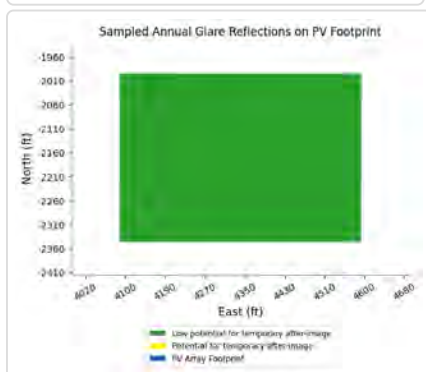
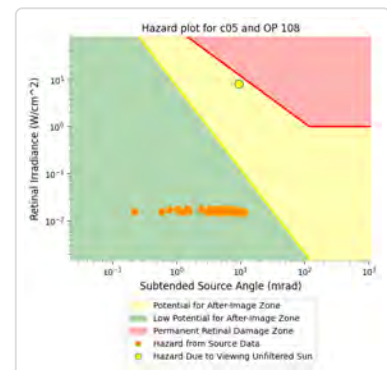
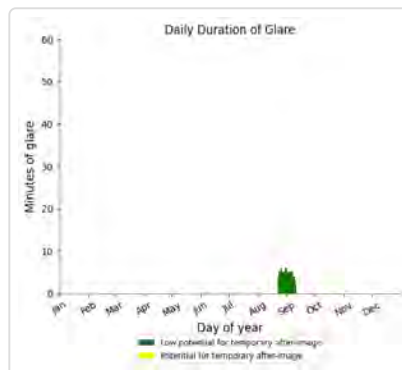
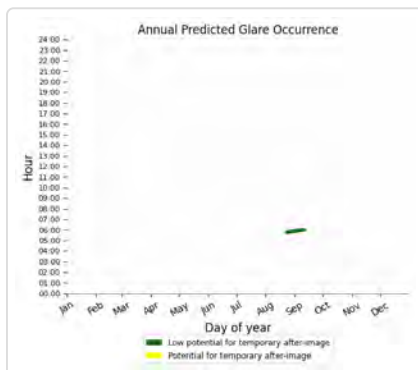
- 93 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## C05: OP 108

PV array is expected to produce the following glare for this receptor:

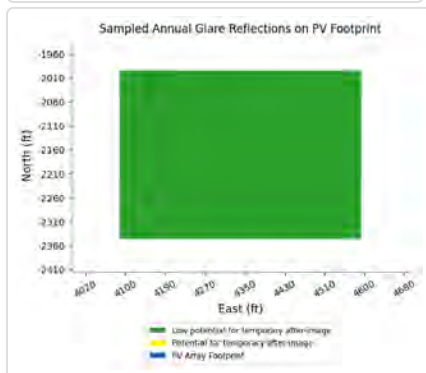
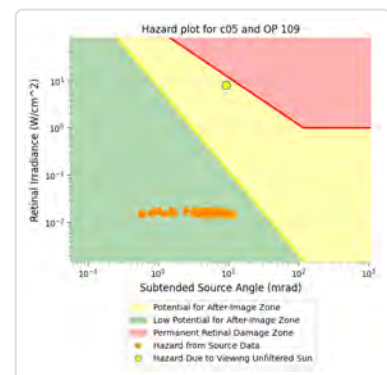
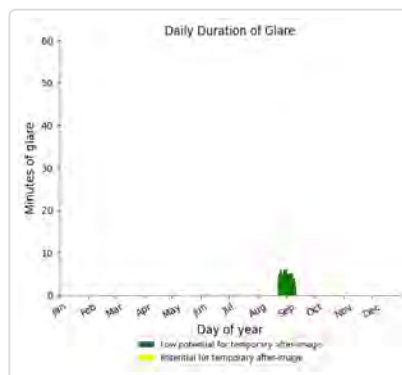
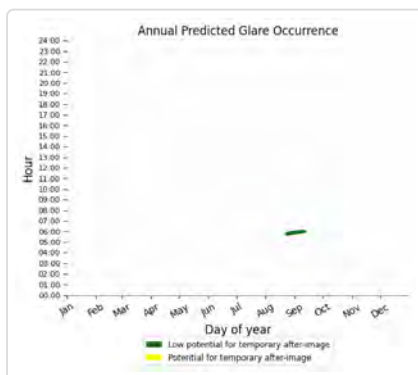
- 96 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## C05: OP 109

PV array is expected to produce the following glare for this receptor:

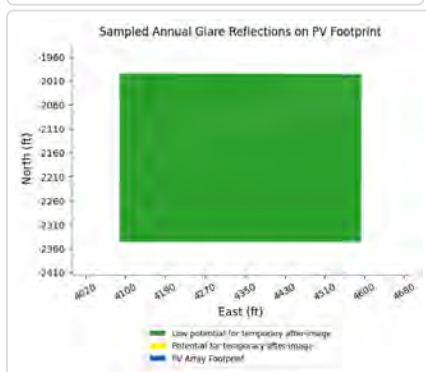
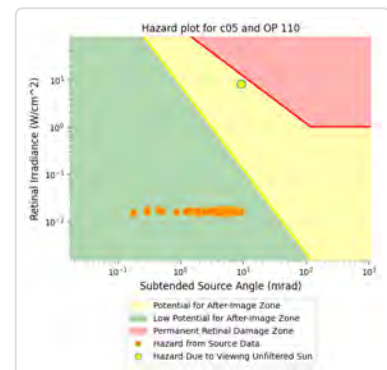
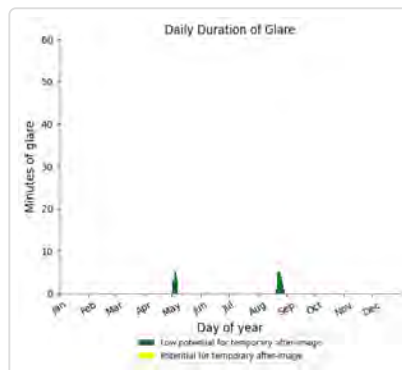
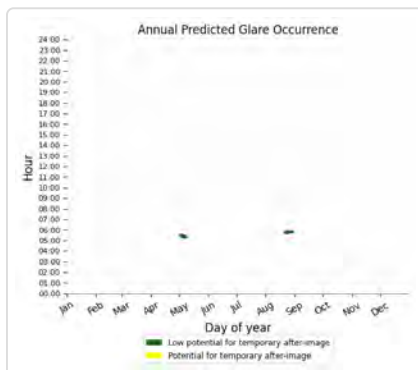
- 98 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## C05: OP 110

PV array is expected to produce the following glare for this receptor:

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

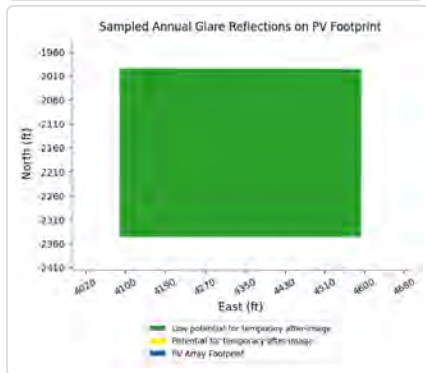
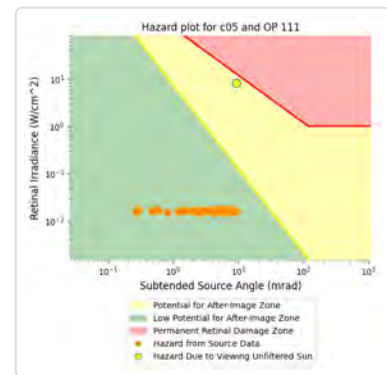
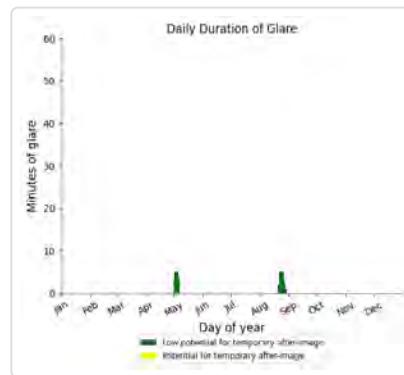
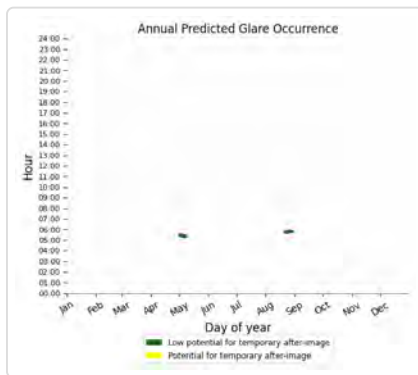




## C05: OP 111

PV array is expected to produce the following glare for this receptor:

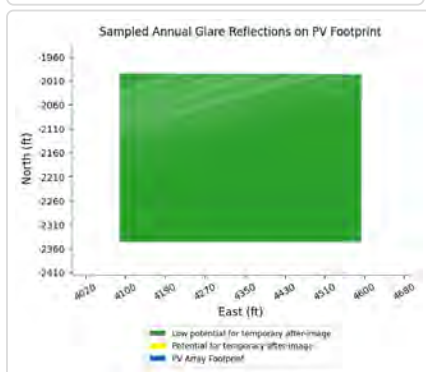
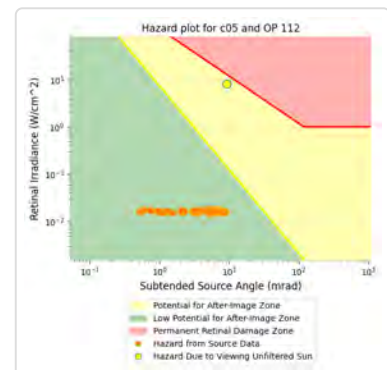
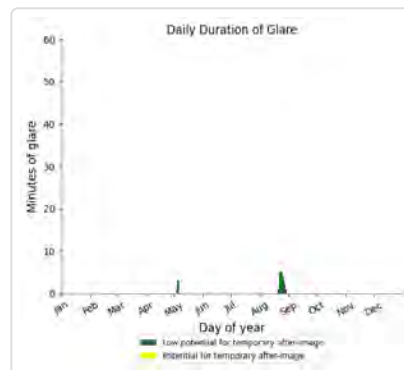
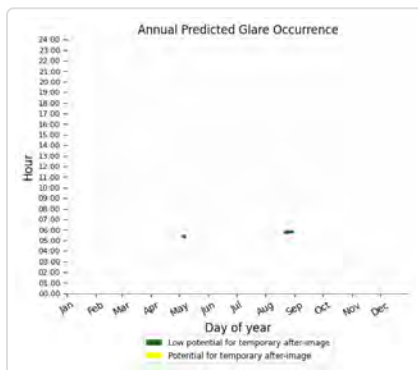
- 63 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## C05: OP 112

PV array is expected to produce the following glare for this receptor:

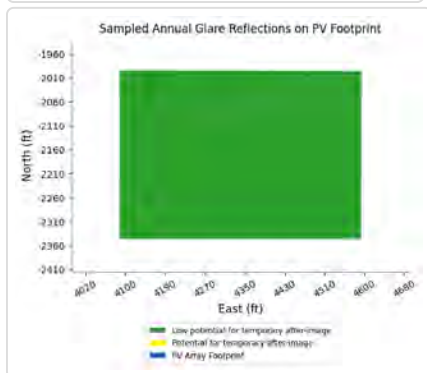
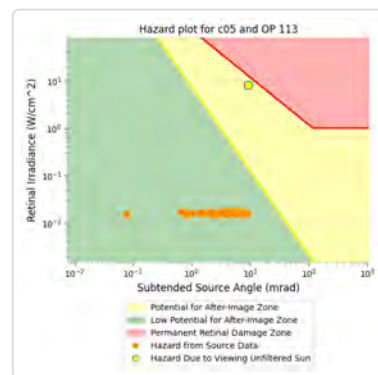
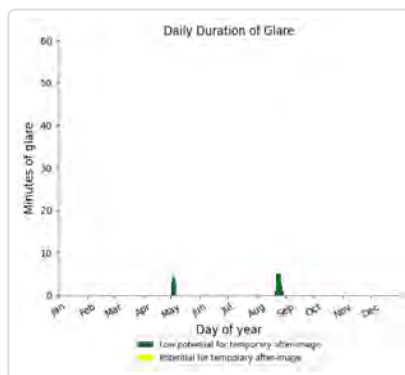
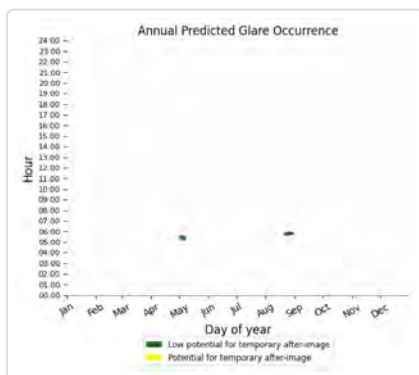
- 38 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## C05: OP 113

PV array is expected to produce the following glare for this receptor:

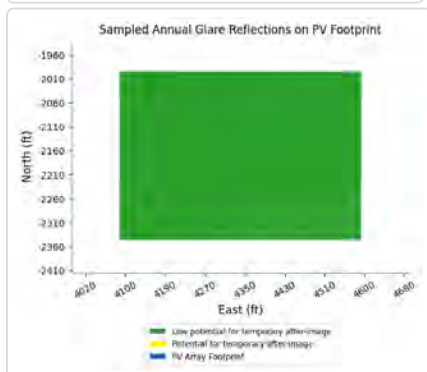
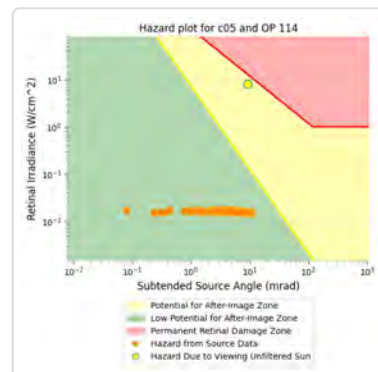
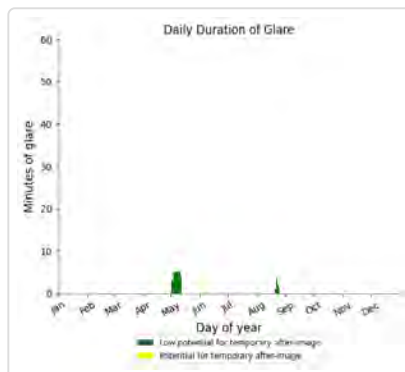
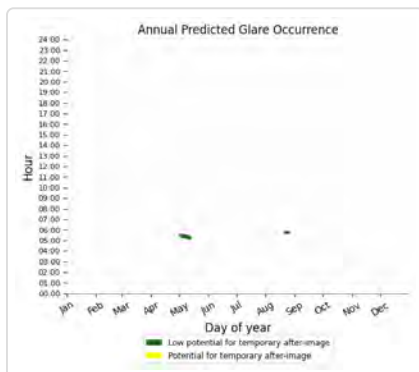
- 51 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## C05: OP 114

PV array is expected to produce the following glare for this receptor:

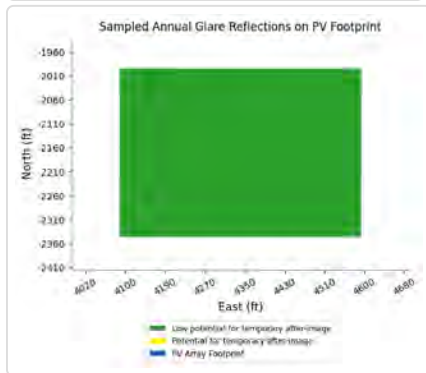
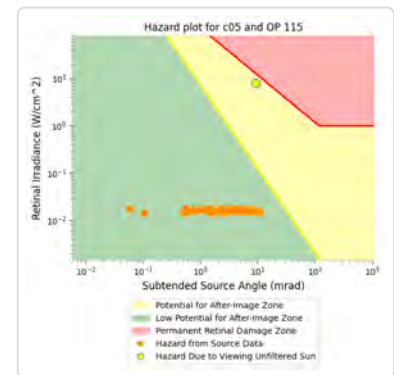
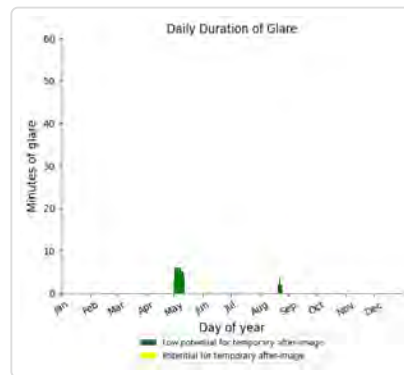
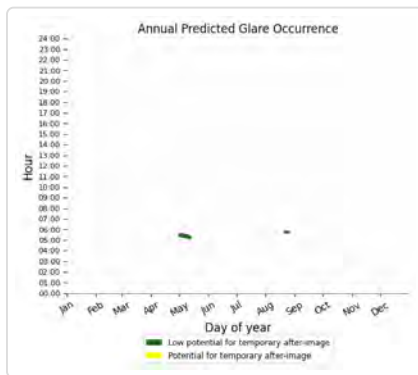
- 61 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## C05: OP 115

PV array is expected to produce the following glare for this receptor:

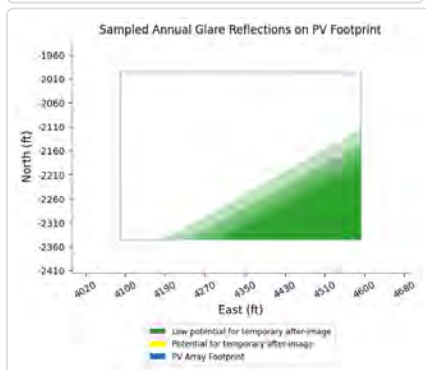
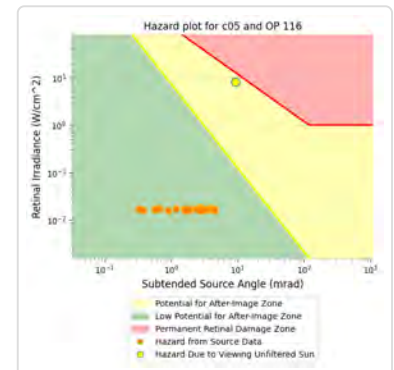
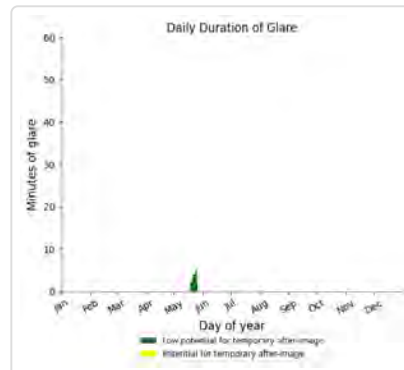
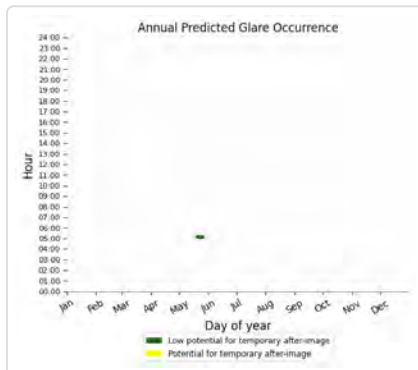
- 76 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## C05: OP 116

PV array is expected to produce the following glare for this receptor:

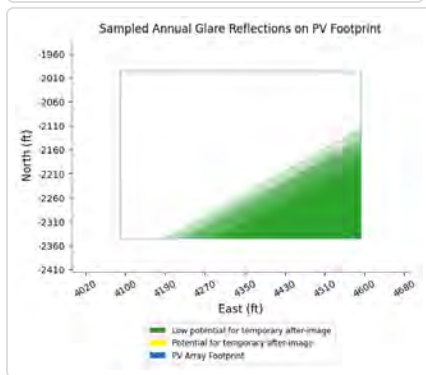
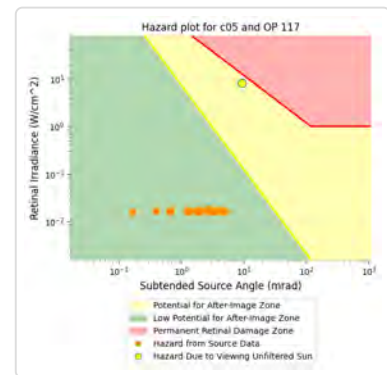
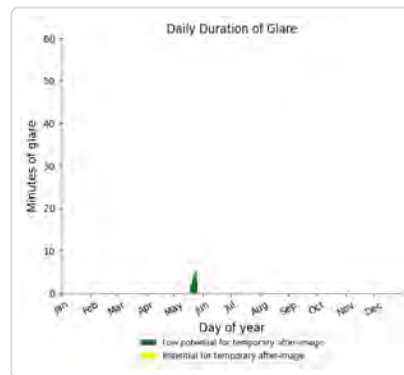
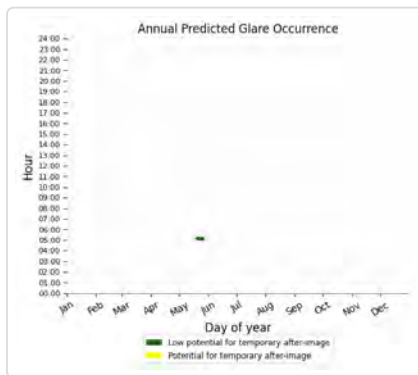
- 26 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## C05: OP 117

PV array is expected to produce the following glare for this receptor:

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



## C05: Collins Dr

No glare found

## C05: Country Dr Seg 1

No glare found

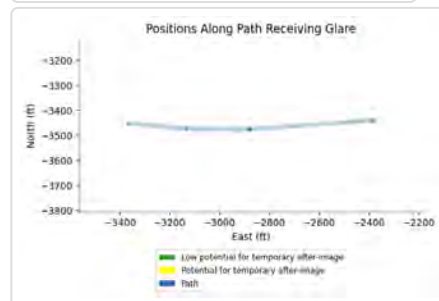
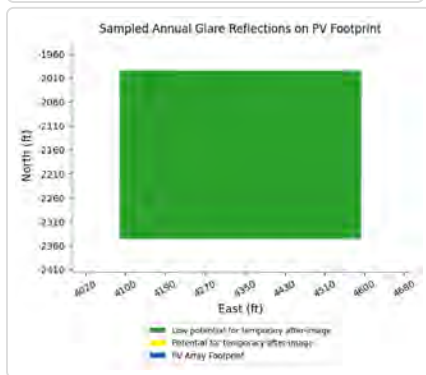
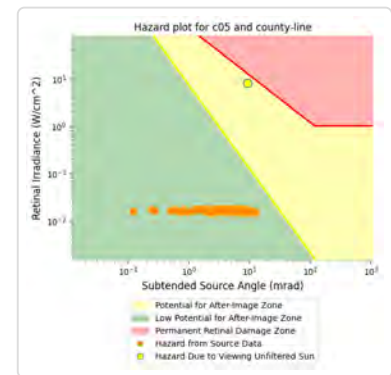
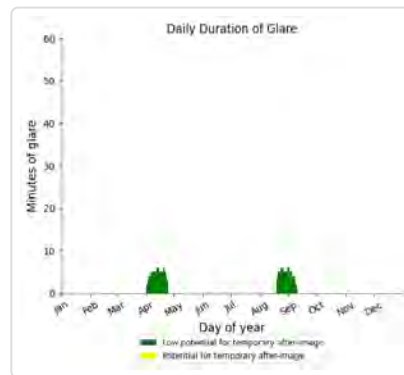
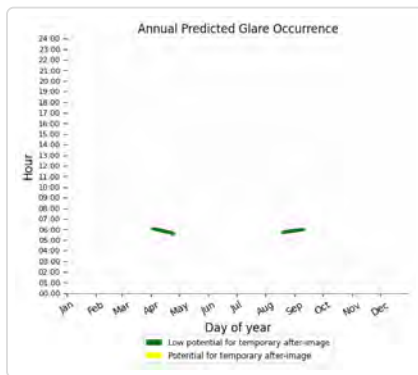
## C05: Country Dr Seg 2

No glare found

## C05: County Line Rd

PV array is expected to produce the following glare for this receptor:

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



## C05: Dempseys Rd

No glare found

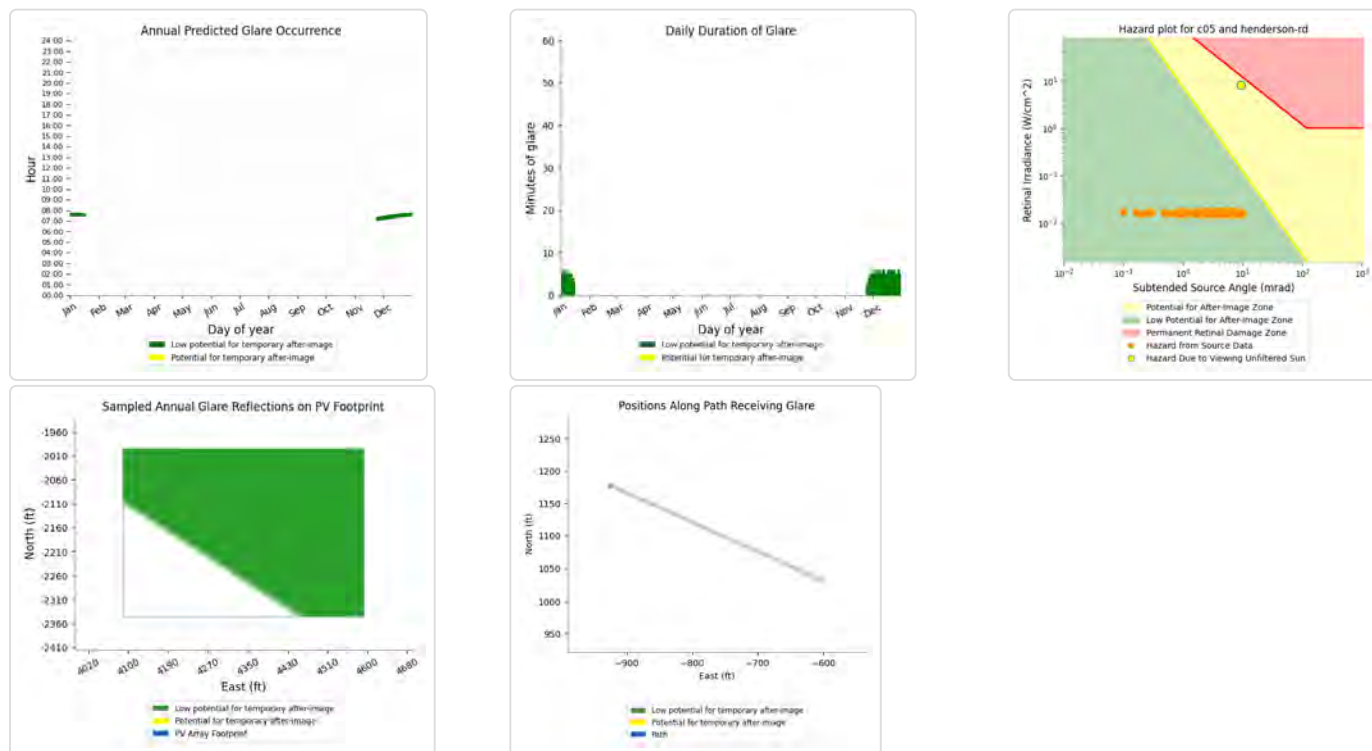
## C05: Harley Ln

No glare found

## C05: Henderson Rd

PV array is expected to produce the following glare for this receptor:

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



## C05: Hillside Dr

No glare found

## C05: Ole Briery Station Rd Seg 1

No glare found

## C05: Ole Briery Station Rd Seg 2

No glare found

## C05: Thistle Knob Ln

No glare found

## C05: Tobacco Heritage Trail

No glare found

## C05: US Hwy 15

No glare found

## C05: US Hwy 360

No glare found

## C06 low potential for temporary after-image



Component	Green glare (min)	Yellow glare (min)
OP: OP 100	0	0
OP: OP 101	0	0
OP: OP 102	0	0
OP: OP 103	0	0
OP: OP 104	0	0
OP: OP 105	0	0
OP: OP 106	0	0
OP: OP 107	0	0
OP: OP 108	0	0
OP: OP 109	0	0
OP: OP 110	0	0
OP: OP 111	0	0
OP: OP 112	0	0
OP: OP 113	0	0
OP: OP 114	42	0
OP: OP 115	49	0
OP: OP 116	174	0
OP: OP 117	192	0
Route: Collins Dr	0	0
Route: Country Dr Seg 1	0	0
Route: Country Dr Seg 2	22	0
Route: County Line Rd	0	0
Route: Dempseys Rd	0	0
Route: Harley Ln	0	0
Route: Henderson Rd	0	0
Route: Hillside Dr	0	0
Route: Ole Briery Station Rd Seg 1	0	0
Route: Ole Briery Station Rd Seg 2	0	0
Route: Thistle Knob Ln	0	0
Route: Tobacco Heritage Trail	39	0
Route: US Hwy 15	0	0
Route: US Hwy 360	0	0

#### C06: OP 100

*No glare found*

#### C06: OP 101

*No glare found*

#### C06: OP 102

*No glare found*

#### C06: OP 103

*No glare found*

**C06: OP 104**

*No glare found*

**C06: OP 105**

*No glare found*

**C06: OP 106**

*No glare found*

**C06: OP 107**

*No glare found*

**C06: OP 108**

*No glare found*

**C06: OP 109**

*No glare found*

**C06: OP 110**

*No glare found*

**C06: OP 111**

*No glare found*

**C06: OP 112**

*No glare found*

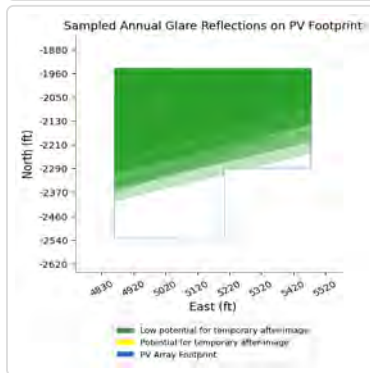
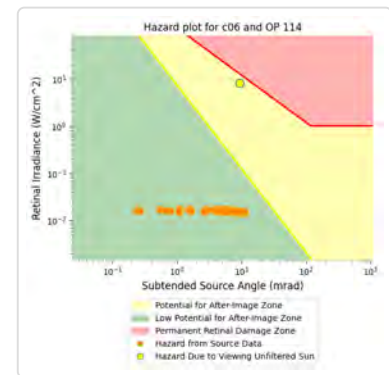
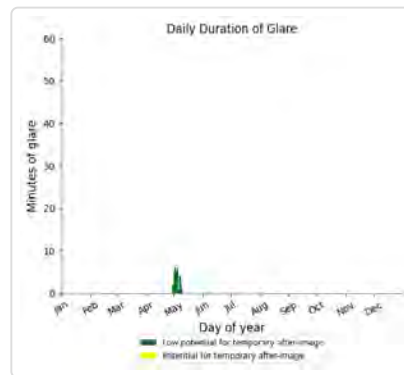
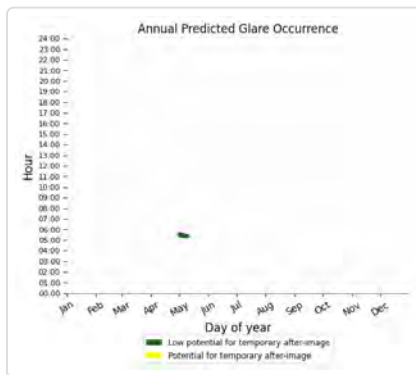
**C06: OP 113**

*No glare found*

## C06: OP 114

PV array is expected to produce the following glare for this receptor:

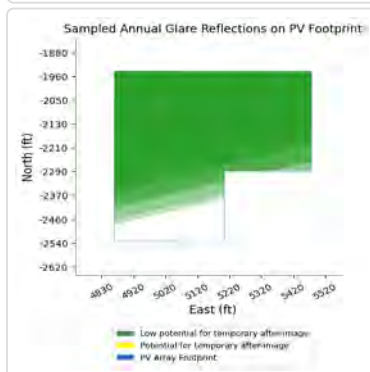
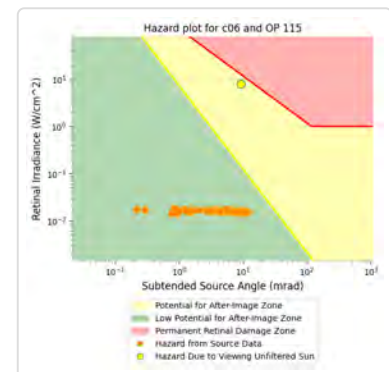
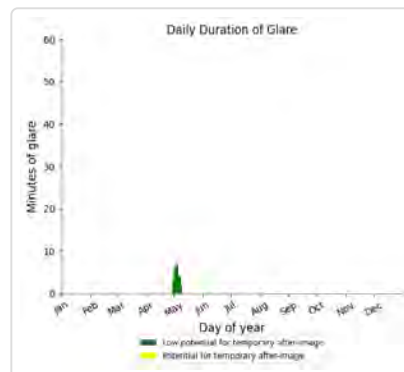
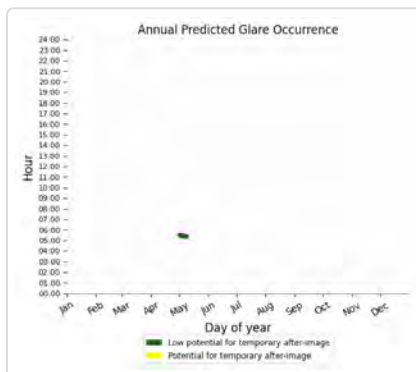
- 42 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## C06: OP 115

PV array is expected to produce the following glare for this receptor:

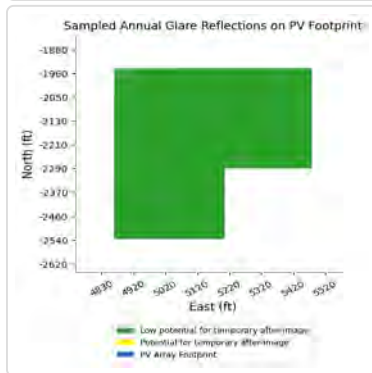
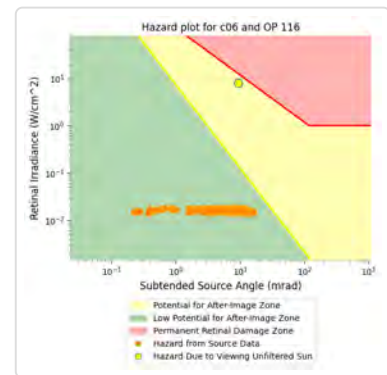
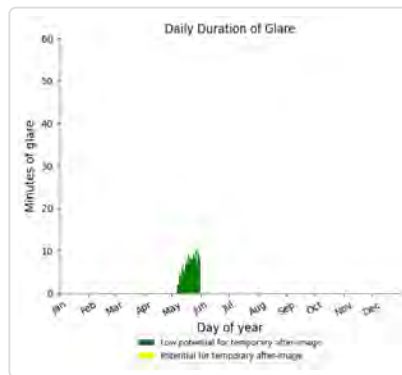
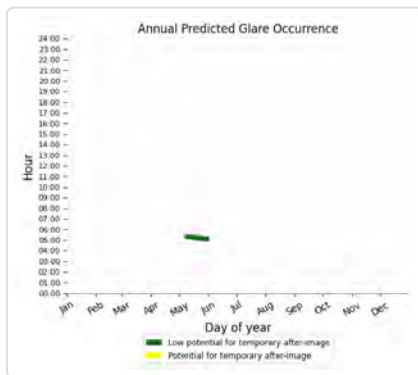
- 49 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## C06: OP 116

PV array is expected to produce the following glare for this receptor:

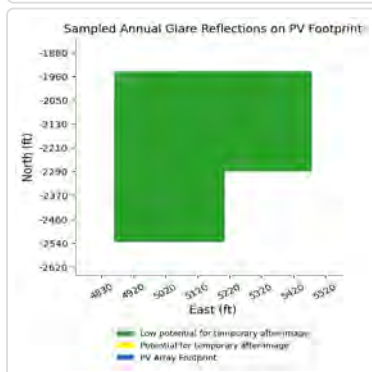
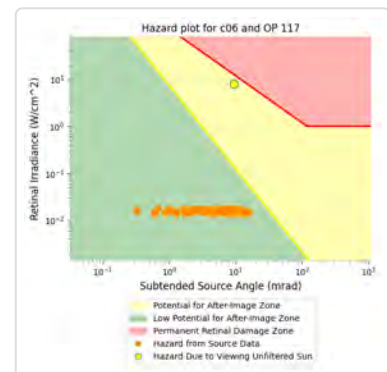
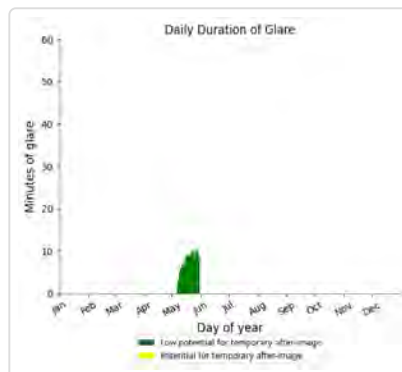
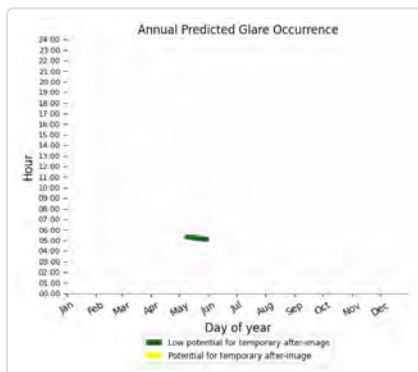
- 174 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## C06: OP 117

PV array is expected to produce the following glare for this receptor:

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



## C06: Collins Dr

No glare found

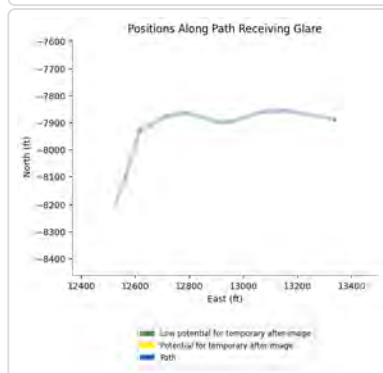
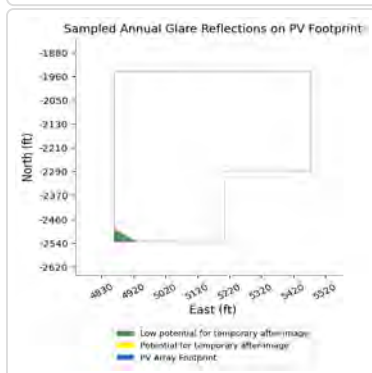
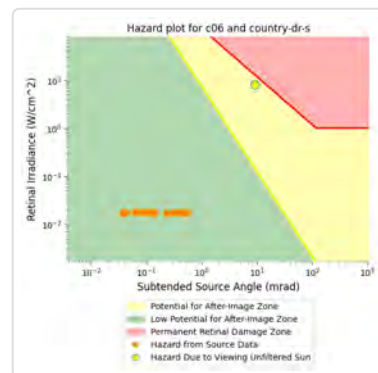
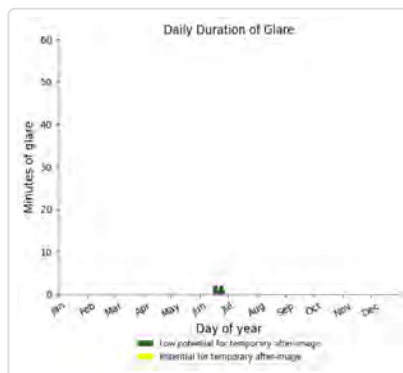
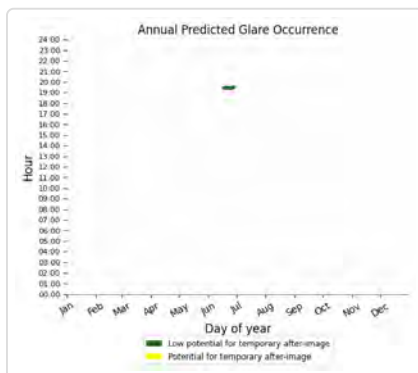
## C06: Country Dr Seg 1

No glare found

## C06: Country Dr Seg 2

PV array is expected to produce the following glare for this receptor:

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



## C06: County Line Rd

No glare found

## C06: Dempseys Rd

No glare found

## C06: Harley Ln

No glare found

## C06: Henderson Rd

No glare found

## C06: Hillside Dr

No glare found

## C06: Ole Briery Station Rd Seg 1

No glare found

C06: Ole Briery Station Rd Seg 2

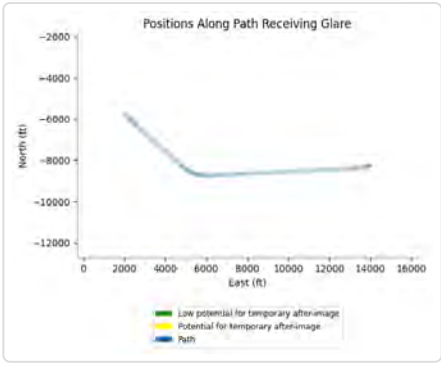
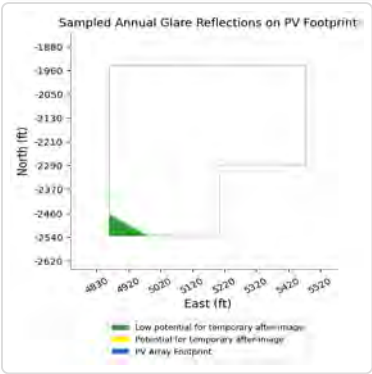
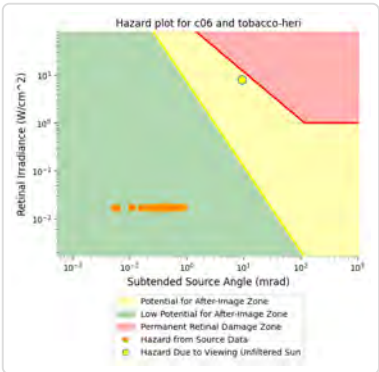
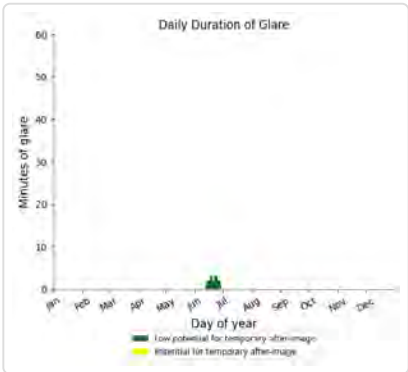
No glare found

C06: Thistle Knob Ln

No glare found

C06: Tobacco Heritage Trail

- PV array is expected to produce the following glare for this receptor:
- 39 minutes of "green" glare with low potential to cause temporary after-image.
  - 0 minutes of "yellow" glare with potential to cause temporary after-image.



C06: US Hwy 15

No glare found

C06: US Hwy 360

No glare found

Summary of Vertical Surface Glare Analysis

Assumptions

- Times associated with glare are denoted in Standard time. For Daylight Savings, add one hour.
- Glare analyses do not automatically account for physical obstructions between reflectors and receptors. This includes buildings, tree cover and geographical obstructions.
- Detailed system geometry is not rigorously simulated.
- The glare hazard determination relies on several approximations including observer eye characteristics, angle of view, and typical blink response time. Actual values and results may vary.
- The system output calculation is a DNI-based approximation that assumes clear, sunny skies year-round. It should not be used in place of more rigorous modeling methods.



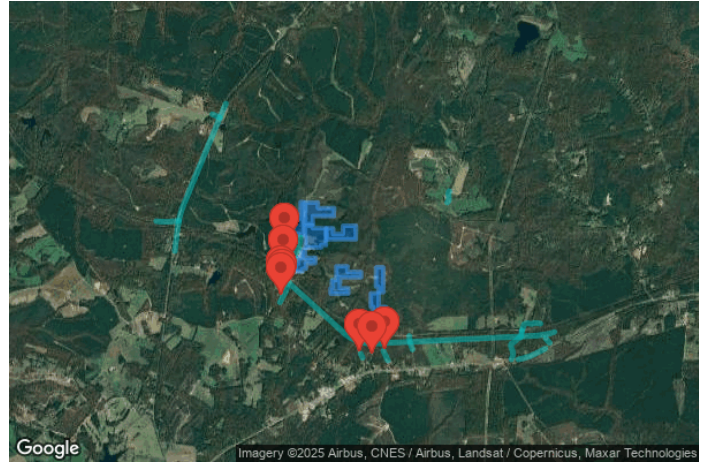
- Several V1 calculations utilize the PV array centroid, rather than the actual glare spot location, due to algorithm limitations. This may affect results for large PV footprints. Additional analyses of array sub-sections can provide additional information on expected glare.
- The subtended source angle (glare spot size) is constrained by the PV array footprint size. Partitioning large arrays into smaller sections will reduce the maximum potential subtended angle, potentially impacting results if actual glare spots are larger than the sub-array size. Additional analyses of the combined area of adjacent sub-arrays can provide more information on potential glare hazards. (See previous point on related limitations.)
- Hazard zone boundaries shown in the Glare Hazard plot are an approximation and visual aid. Actual ocular impact outcomes encompass a continuous, not discrete, spectrum.
- Glare locations displayed on receptor plots are approximate. Actual glare-spot locations may differ.
- Refer to the **Help page** for detailed assumptions and limitations not listed here.

# Tobacco Trail Solar

## TT\_D01-E04\_9fA\_\_0DRA\_SGARC

**Created** Oct 02, 2025  
**Updated** Oct 02, 2025  
**Time-step** 1 minute  
**Timezone offset** UTC-5  
**Minimum sun altitude** 0.0 deg  
**Site ID** 160927.26911

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



### Misc. Analysis Settings

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

**PV Analysis Methodology:** Version 2  
**Enhanced subtended angle calculation:** On

### 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
D01	SA tracking	SA tracking	419	0	-
D02	SA tracking	SA tracking	2,102	0	-
D03	SA tracking	SA tracking	2,388	126	-
D04	SA tracking	SA tracking	2,278	0	-
D05	SA tracking	SA tracking	7,476	4,572	-
E01	SA tracking	SA tracking	4,806	93	-
E02	SA tracking	SA tracking	3,007	0	-
E03	SA tracking	SA tracking	8,359	586	-
E04	SA tracking	SA tracking	5,823	0	-

Component Data

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## PV Array(s)

Total PV footprint area: 103.0 acres

Name: D01

Footprint area: 11.1 acres

Axis tracking: Single-axis rotation

Backtracking: Shade

Tracking axis orientation: 180.0 deg

Maximum tracking angle: 60.0 deg

Resting angle: 0.0 deg

Ground Coverage Ratio: 0.5

Rated power: -

Panel material: Smooth glass with AR coating

Vary reflectivity with sun position? Yes

Correlate slope error with surface type? Yes

Slope error: 8.43 mrad



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	37.097618	-78.457021	553.16	9.00	562.16
2	37.097617	-78.455131	548.99	9.00	557.99
3	37.099556	-78.455130	540.36	9.00	549.36
4	37.099557	-78.454730	547.45	9.00	556.45
5	37.095705	-78.454727	564.97	9.00	573.97
6	37.095705	-78.456374	561.68	9.00	570.68
7	37.096675	-78.456374	558.04	9.00	567.04
8	37.096675	-78.457022	548.13	9.00	557.13

Name: D02

Footprint area: 15.5 acres

Axis tracking: Single-axis rotation

Backtracking: Shade

Tracking axis orientation: 180.0 deg

Maximum tracking angle: 60.0 deg

Resting angle: 0.0 deg

Ground Coverage Ratio: 0.5

Rated power: -

Panel material: Smooth glass with AR coating

Vary reflectivity with sun position? Yes

Correlate slope error with surface type? Yes

Slope error: 8.43 mrad



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	37.099507	-78.454428	548.47	9.00	557.47
2	37.099506	-78.452565	537.56	9.00	546.56
3	37.098841	-78.452566	539.73	9.00	548.73
4	37.098840	-78.450136	523.98	9.00	532.98
5	37.097898	-78.450136	523.46	9.00	532.46
6	37.097899	-78.453322	540.90	9.00	549.90
7	37.096930	-78.453323	540.82	9.00	549.82
8	37.096930	-78.454430	552.31	9.00	561.31

**Name:** D03

**Footprint area:** 17.4 acres

**Axis tracking:** Single-axis rotation

**Backtracking:** Shade

**Tracking axis orientation:** 180.0 deg

**Maximum tracking angle:** 60.0 deg

**Resting angle:** 0.0 deg

**Ground Coverage Ratio:** 0.5

**Rated power:** -

**Panel material:** Smooth glass with AR coating

**Vary reflectivity with sun position?** Yes

**Correlate slope error with surface type?** Yes

**Slope error:** 8.43 mrad



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	37.096738	-78.454430	550.00	9.00	559.00
2	37.096737	-78.453323	546.71	9.00	555.71
3	37.096435	-78.453323	554.76	9.00	563.76
4	37.096431	-78.451325	530.87	9.00	539.87
5	37.094465	-78.451327	520.06	9.00	529.06
6	37.094466	-78.452082	532.23	9.00	541.23
7	37.094160	-78.452083	535.04	9.00	544.04
8	37.094159	-78.454434	563.04	9.00	572.04

**Name:** D04

**Footprint area:** 12.6 acres

**Axis tracking:** Single-axis rotation

**Backtracking:** Shade

**Tracking axis orientation:** 180.0 deg

**Maximum tracking angle:** 60.0 deg

**Resting angle:** 0.0 deg

**Ground Coverage Ratio:** 0.5

**Rated power:** -

**Panel material:** Smooth glass with AR coating

**Vary reflectivity with sun position?** Yes

**Correlate slope error with surface type?** Yes

**Slope error:** 8.43 mrad



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	37.096431	-78.451298	530.30	9.00	539.30
2	37.096431	-78.450299	520.81	9.00	529.81
3	37.095766	-78.450300	530.12	9.00	539.12
4	37.095766	-78.448815	536.76	9.00	545.76
5	37.096735	-78.448814	512.98	9.00	521.98
6	37.096735	-78.446897	550.58	9.00	559.58
7	37.095131	-78.446895	532.79	9.00	541.79
8	37.095130	-78.451272	531.62	9.00	540.62

**Name:** D05

**Footprint area:** 8.2 acres

**Axis tracking:** Single-axis rotation

**Backtracking:** Shade

**Tracking axis orientation:** 180.0 deg

**Maximum tracking angle:** 60.0 deg

**Resting angle:** 0.0 deg

**Ground Coverage Ratio:** 0.5

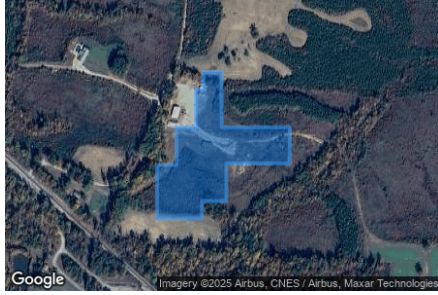
**Rated power:** -

**Panel material:** Smooth glass with AR coating

**Vary reflectivity with sun position?** Yes

**Correlate slope error with surface type?** Yes

**Slope error:** 8.43 mrad



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	37.093894	-78.454867	563.86	9.00	572.86
2	37.093894	-78.454463	560.69	9.00	569.69
3	37.092924	-78.454463	559.25	9.00	568.25
4	37.092924	-78.452951	547.56	9.00	556.56
5	37.092287	-78.452952	534.49	9.00	543.49
6	37.092287	-78.454356	558.74	9.00	567.74
7	37.091623	-78.454356	547.24	9.00	556.24
8	37.091625	-78.454896	549.71	9.00	558.71
9	37.091318	-78.454896	550.00	9.00	559.00
10	37.091318	-78.455895	569.82	9.00	578.82
11	37.092260	-78.455894	577.02	9.00	586.02
12	37.092260	-78.455462	565.92	9.00	574.92
13	37.092925	-78.455462	571.77	9.00	580.77
14	37.092924	-78.455030	565.87	9.00	574.87
15	37.093589	-78.455030	565.77	9.00	574.77
16	37.093589	-78.454868	563.71	9.00	572.71

**Name:** E01

**Footprint area:** 15.3 acres

**Axis tracking:** Single-axis rotation

**Backtracking:** Shade

**Tracking axis orientation:** 180.0 deg

**Maximum tracking angle:** 60.0 deg

**Resting angle:** 0.0 deg

**Ground Coverage Ratio:** 0.5

**Rated power:** -

**Panel material:** Smooth glass with AR coating

**Vary reflectivity with sun position?** Yes

**Correlate slope error with surface type?** Yes

**Slope error:** 8.43 mrad



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	37.091916	-78.449801	547.42	9.00	556.42
2	37.091915	-78.448154	538.33	9.00	547.33
3	37.091250	-78.448154	554.93	9.00	563.93
4	37.091249	-78.446103	519.61	9.00	528.61
5	37.090612	-78.446103	507.62	9.00	516.62
6	37.090615	-78.449289	553.75	9.00	562.75
7	37.089311	-78.449290	550.56	9.00	559.56
8	37.089311	-78.448048	536.66	9.00	545.66
9	37.088674	-78.448048	523.82	9.00	532.82
10	37.088675	-78.450667	557.80	9.00	566.80
11	37.089312	-78.450666	562.67	9.00	571.67
12	37.089312	-78.450450	561.40	9.00	570.40
13	37.090284	-78.450450	556.80	9.00	565.80
14	37.090281	-78.449802	547.90	9.00	556.90



Name: E02

Footprint area: 7.3 acres

Axis tracking: Single-axis rotation

Backtracking: Shade

Tracking axis orientation: 180.0 deg

Maximum tracking angle: 60.0 deg

Resting angle: 0.0 deg

Ground Coverage Ratio: 0.5

Rated power: -

Panel material: Smooth glass with AR coating

Vary reflectivity with sun position? Yes

Correlate slope error with surface type? Yes

Slope error: 8.43 mrad



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	37.091791	-78.443896	517.36	9.00	526.36
2	37.091790	-78.442790	516.73	9.00	525.73
3	37.088854	-78.442792	538.47	9.00	547.47
4	37.088855	-78.443521	534.59	9.00	543.59
5	37.089519	-78.443520	533.55	9.00	542.55
6	37.089519	-78.443898	532.04	9.00	541.04

Name: E03

Footprint area: 14.1 acres

Axis tracking: Single-axis rotation

Backtracking: Shade

Tracking axis orientation: 180.0 deg

Maximum tracking angle: 60.0 deg

Resting angle: 0.0 deg

Ground Coverage Ratio: 0.5

Rated power: -

Panel material: Smooth glass with AR coating

Vary reflectivity with sun position? Yes

Correlate slope error with surface type? Yes

Slope error: 8.43 mrad



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	37.088714	-78.444654	531.46	9.00	540.46
2	37.088714	-78.443494	538.11	9.00	547.11
3	37.087080	-78.443495	551.46	9.00	560.46
4	37.087079	-78.442415	552.28	9.00	561.28
5	37.086415	-78.442416	554.77	9.00	563.77
6	37.086414	-78.441984	549.74	9.00	558.74
7	37.085777	-78.441984	541.92	9.00	550.92
8	37.085778	-78.442470	551.96	9.00	560.96
9	37.084808	-78.442471	557.37	9.00	566.37
10	37.084808	-78.443998	563.20	9.00	572.20
11	37.086443	-78.444008	551.03	9.00	560.03
12	37.086443	-78.444278	545.19	9.00	554.19
13	37.087107	-78.444278	546.26	9.00	555.26
14	37.087104	-78.444657	534.39	9.00	543.39

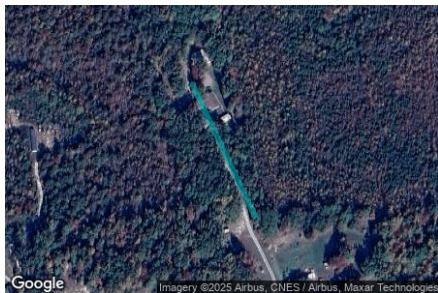
**Name:** E04  
**Footprint area:** 1.6 acres  
**Axis tracking:** Single-axis rotation  
**Backtracking:** Shade  
**Tracking axis orientation:** 180.0 deg  
**Maximum tracking angle:** 60.0 deg  
**Resting angle:** 0.0 deg  
**Ground Coverage Ratio:** 0.5  
**Rated power:** -  
**Panel material:** Smooth glass with AR coating  
**Vary reflectivity with sun position?** Yes  
**Correlate slope error with surface type?** Yes  
**Slope error:** 8.43 mrad



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	37.086184	-78.446238	550.37	9.00	559.37
2	37.086184	-78.445239	548.39	9.00	557.39
3	37.085547	-78.445239	555.76	9.00	564.76
4	37.085547	-78.446238	560.62	9.00	569.62

## Route Receptor(s)

**Name:** Collins Dr  
**Route type** Two-way  
**Azimuthal view angle:** 50.0 deg  
**Downward view angle:** 90.0 deg



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	37.081871	-78.442797	585.46	3.50	588.96
2	37.080705	-78.442104	593.95	3.50	597.45

**Name:** Country Dr Seg 1  
**Route type** Two-way  
**Azimuthal view angle:** 50.0 deg  
**Downward view angle:** 90.0 deg



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	37.080860	-78.423727	596.22	3.50	599.72
2	37.081335	-78.423484	593.74	3.50	597.24
3	37.081523	-78.423466	592.70	3.50	596.20
4	37.081829	-78.423540	592.79	3.50	596.29
5	37.082428	-78.423782	598.80	3.50	602.30
6	37.082611	-78.423798	598.76	3.50	602.26
7	37.082719	-78.423744	598.06	3.50	601.56
8	37.082768	-78.423668	597.93	3.50	601.43
9	37.082867	-78.423382	593.53	3.50	597.03
10	37.083365	-78.422690	575.99	3.50	579.49
11	37.083472	-78.422377	574.16	3.50	577.66
12	37.083628	-78.422257	574.14	3.50	577.64
13	37.084267	-78.422150	573.40	3.50	576.90

**Name:** Country Dr Seg 2  
**Route type** Two-way  
**Azimuthal view angle:** 50.0 deg  
**Downward view angle:** 90.0 deg



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	37.084267	-78.422150	573.40	3.50	576.90
2	37.084508	-78.422031	569.83	3.50	573.33
3	37.084996	-78.421843	569.58	3.50	573.08
4	37.085142	-78.421494	566.57	3.50	570.07
5	37.085170	-78.421251	561.04	3.50	564.54
6	37.085078	-78.420854	551.39	3.50	554.89
7	37.085078	-78.420700	547.34	3.50	550.84
8	37.085178	-78.420314	542.35	3.50	545.85
9	37.085193	-78.420005	540.85	3.50	544.35
10	37.085107	-78.419377	548.13	3.50	551.63

**Name:** County Line Rd  
**Route type** Two-way  
**Azimuthal view angle:** 50.0 deg  
**Downward view angle:** 90.0 deg



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	37.097280	-78.476651	594.54	3.50	598.04
2	37.097219	-78.475855	598.80	3.50	602.30
3	37.097213	-78.474994	607.28	3.50	610.78
4	37.097309	-78.473270	621.37	3.50	624.87

**Name:** Dempseys Rd  
**Route type** Two-way  
**Azimuthal view angle:** 50.0 deg  
**Downward view angle:** 90.0 deg



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	37.100853	-78.432978	553.09	3.50	556.59
2	37.100660	-78.433062	555.40	3.50	558.90
3	37.100457	-78.433086	558.88	3.50	562.38
4	37.099830	-78.433036	562.04	3.50	565.54
5	37.099719	-78.433062	562.51	3.50	566.01
6	37.099499	-78.433266	563.93	3.50	567.43

**Name:** Harley Ln  
**Route type** Two-way  
**Azimuthal view angle:** 50.0 deg  
**Downward view angle:** 90.0 deg



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	37.081527	-78.446166	585.61	3.50	589.11
2	37.081071	-78.445886	588.43	3.50	591.93

**Name:** Henderson Rd  
**Route type** Two-way  
**Azimuthal view angle:** 50.0 deg  
**Downward view angle:** 90.0 deg



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	37.109995	-78.468285	603.05	3.50	606.55
2	37.109590	-78.467164	592.11	3.50	595.61



**Name:** Hillside Dr  
**Route type** Two-way  
**Azimuthal view angle:** 50.0 deg  
**Downward view angle:** 90.0 deg



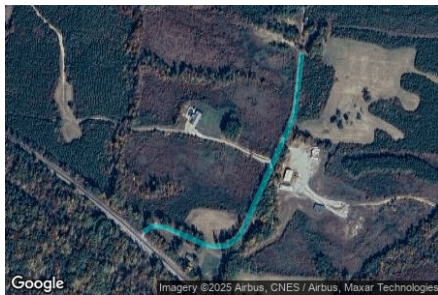
Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	37.083329	-78.418574	583.61	3.50	587.11
2	37.082929	-78.418183	584.69	3.50	588.19
3	37.082844	-78.418020	580.23	3.50	583.73

**Name:** Ole Briery Station Rd Seg 1  
**Route type** Two-way  
**Azimuthal view angle:** 50.0 deg  
**Downward view angle:** 90.0 deg



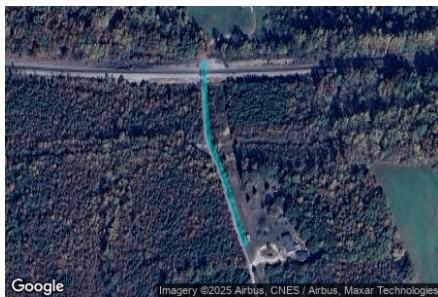
Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	37.092208	-78.458646	563.15	3.50	566.65
2	37.092090	-78.458691	563.42	3.50	566.92
3	37.091871	-78.458666	558.97	3.50	562.47
4	37.090953	-78.457951	563.80	3.50	567.30
5	37.090854	-78.457956	564.22	3.50	567.72
6	37.090611	-78.458144	565.23	3.50	568.73
7	37.090481	-78.458117	566.86	3.50	570.36
8	37.089856	-78.457250	576.52	3.50	580.02
9	37.089653	-78.457170	576.31	3.50	579.81
10	37.089216	-78.457209	577.01	3.50	580.51
11	37.088870	-78.457369	579.14	3.50	582.64
12	37.087648	-78.458228	575.44	3.50	578.94

**Name:** Ole Briery Station Rd Seg 2  
**Route type** Two-way  
**Azimuthal view angle:** 50.0 deg  
**Downward view angle:** 90.0 deg



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	37.095314	-78.455184	559.55	3.50	563.05
2	37.094405	-78.455316	561.00	3.50	564.50
3	37.094194	-78.455375	562.46	3.50	565.96
4	37.092243	-78.456468	580.33	3.50	583.83
5	37.092079	-78.456596	579.50	3.50	583.00
6	37.091937	-78.456866	578.09	3.50	581.59
7	37.091938	-78.457261	579.65	3.50	583.15
8	37.092266	-78.458188	570.75	3.50	574.25
9	37.092288	-78.458480	566.19	3.50	569.69
10	37.092208	-78.458646	563.15	3.50	566.65

**Name:** Thistle Knob Ln  
**Route type** Two-way  
**Azimuthal view angle:** 50.0 deg  
**Downward view angle:** 90.0 deg



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	37.083651	-78.438932	566.14	3.50	569.64
2	37.083055	-78.438885	572.01	3.50	575.51
3	37.082951	-78.438866	573.45	3.50	576.95
4	37.082709	-78.438732	575.45	3.50	578.95
5	37.082049	-78.438472	587.03	3.50	590.53

**Name:** Tobacco Heritage Trail  
**Route type** Two-way  
**Azimuthal view angle:** 50.0 deg  
**Downward view angle:** 90.0 deg



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	37.090771	-78.458017	565.05	5.00	570.05
2	37.090288	-78.457220	565.24	5.00	570.24
3	37.089770	-78.456642	564.98	5.00	569.98
4	37.083905	-78.448547	568.62	5.00	573.62
5	37.083402	-78.447640	568.23	5.00	573.23
6	37.083141	-78.446961	569.57	5.00	574.57
7	37.082894	-78.446050	570.13	5.00	575.13
8	37.082777	-78.445198	569.37	5.00	574.37
9	37.082731	-78.443998	572.72	5.00	577.72
10	37.082823	-78.442329	570.64	5.00	575.64
11	37.082941	-78.438861	573.48	5.00	578.48
12	37.083691	-78.419842	572.55	5.00	577.55
13	37.083938	-78.417972	572.02	5.00	577.02
14	37.084121	-78.417318	571.54	5.00	576.54

**Name:** US Hwy 15  
**Route type** Two-way  
**Azimuthal view angle:** 50.0 deg  
**Downward view angle:** 90.0 deg



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	37.093744	-78.473877	626.72	3.50	630.22
2	37.096495	-78.473451	577.75	3.50	581.25
3	37.097894	-78.473140	622.81	3.50	626.31
4	37.098651	-78.472866	621.89	3.50	625.39
5	37.110506	-78.466686	589.30	3.50	592.80
6	37.111238	-78.466281	586.17	3.50	589.67

**Name:** US Hwy 360  
**Route type** Two-way  
**Azimuthal view angle:** 50.0 deg  
**Downward view angle:** 90.0 deg



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	37.080860	-78.422670	595.41	3.50	598.91
2	37.080926	-78.422273	593.85	3.50	597.35
3	37.081051	-78.421682	591.95	3.50	595.45
4	37.081265	-78.420884	589.00	3.50	592.50
5	37.081528	-78.420136	586.19	3.50	589.69
6	37.082144	-78.418682	579.73	3.50	583.23



## Discrete Observation Receptors

Number	Latitude	Longitude	Ground elevation	Height above ground	Total Elevation
	deg	deg	ft	ft	ft
OP 118	37.094368	-78.457405	565.89	5.00	570.89
OP 119	37.094368	-78.457405	565.89	15.00	580.89
OP 120	37.091807	-78.457647	578.98	5.00	583.98
OP 121	37.091807	-78.457647	578.98	15.00	593.98
OP 122	37.089328	-78.458024	583.45	5.00	588.45
OP 123	37.089328	-78.458024	583.45	15.00	598.45
OP 124	37.088922	-78.457770	584.21	5.00	589.21
OP 125	37.088922	-78.457770	584.21	15.00	599.21
OP 126	37.088434	-78.457979	582.71	5.00	587.71
OP 127	37.088434	-78.457979	582.71	15.00	597.71
OP 128	37.081725	-78.446397	584.39	5.00	589.39
OP 129	37.081725	-78.446397	584.39	15.00	599.39
OP 130	37.081517	-78.444528	584.70	5.00	589.70
OP 131	37.081517	-78.444528	584.70	15.00	599.70
OP 132	37.081957	-78.442580	584.64	5.00	589.64
OP 133	37.081957	-78.442580	584.64	15.00	599.64

# 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	
D01	SA tracking	SA tracking	419	0	-	-
D02	SA tracking	SA tracking	2,102	0	-	-
D03	SA tracking	SA tracking	2,388	126	-	-
D04	SA tracking	SA tracking	2,278	0	-	-
D05	SA tracking	SA tracking	7,476	4,572	-	-
E01	SA tracking	SA tracking	4,806	93	-	-
E02	SA tracking	SA tracking	3,007	0	-	-
E03	SA tracking	SA tracking	8,359	586	-	-
E04	SA tracking	SA tracking	5,823	0	-	-

## 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
d01 (green)	0	0	143	67	0	0	0	15	156	38	0	0
d01 (yellow)	0	0	0	0	0	0	0	0	0	0	0	0
d02 (green)	0	9	104	6	119	162	160	25	59	59	0	0
d02 (yellow)	0	0	0	0	0	0	0	0	0	0	0	0
d03 (green)	57	164	93	24	122	128	125	61	25	192	116	0
d03 (yellow)	0	0	0	26	40	2	21	37	0	0	0	0
d04 (green)	345	354	267	0	0	0	0	0	113	425	285	489
d04 (yellow)	0	0	0	0	0	0	0	0	0	0	0	0
d05 (green)	0	13	38	234	441	495	477	366	46	27	0	0
d05 (yellow)	0	29	244	388	604	573	607	481	311	95	0	0
e01 (green)	10	5	16	162	320	352	358	264	36	19	0	31
e01 (yellow)	0	0	23	22	0	0	0	7	41	0	0	0
e02 (green)	33	216	177	127	24	0	0	92	156	213	83	0
e02 (yellow)	0	0	0	0	0	0	0	0	0	0	0	0
e03 (green)	387	209	17	43	1	0	0	41	10	125	367	401
e03 (yellow)	0	70	170	57	0	0	0	8	149	132	0	0
e04 (green)	353	224	49	85	12	0	0	47	75	161	323	371
e04 (yellow)	0	0	0	0	0	0	0	0	0	0	0	0

## PV & Receptor Analysis Results

Results for each PV array and receptor

D01 low potential for temporary after-image

Component	Green glare (min)	Yellow glare (min)
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OP: OP 118	0	0
OP: OP 119	0	0
OP: OP 120	0	0
OP: OP 121	0	0
OP: OP 122	0	0
OP: OP 123	0	0
OP: OP 124	0	0
OP: OP 125	0	0
OP: OP 126	0	0
OP: OP 127	0	0
OP: OP 128	0	0
OP: OP 129	0	0
OP: OP 130	0	0
OP: OP 131	0	0
OP: OP 132	0	0
OP: OP 133	0	0
Route: Collins Dr	0	0
Route: Country Dr Seg 1	0	0
Route: Country Dr Seg 2	0	0
Route: County Line Rd	419	0
Route: Dempseys Rd	0	0
Route: Harley Ln	0	0
Route: Henderson Rd	0	0
Route: Hillside Dr	0	0
Route: Ole Briery Station Rd Seg 1	0	0
Route: Ole Briery Station Rd Seg 2	0	0
Route: Thistle Knob Ln	0	0
Route: Tobacco Heritage Trail	0	0
Route: US Hwy 15	0	0
Route: US Hwy 360	0	0

#### D01: OP 118

*No glare found*

#### D01: OP 119

*No glare found*

#### D01: OP 120

*No glare found*

#### D01: OP 121

*No glare found*

#### D01: OP 122

*No glare found*

**D01: OP 123**

*No glare found*

**D01: OP 124**

*No glare found*

**D01: OP 125**

*No glare found*

**D01: OP 126**

*No glare found*

**D01: OP 127**

*No glare found*

**D01: OP 128**

*No glare found*

**D01: OP 129**

*No glare found*

**D01: OP 130**

*No glare found*

**D01: OP 131**

*No glare found*

**D01: OP 132**

*No glare found*

**D01: OP 133**

*No glare found*

**D01: Collins Dr**

*No glare found*

**D01: Country Dr Seg 1**

*No glare found*

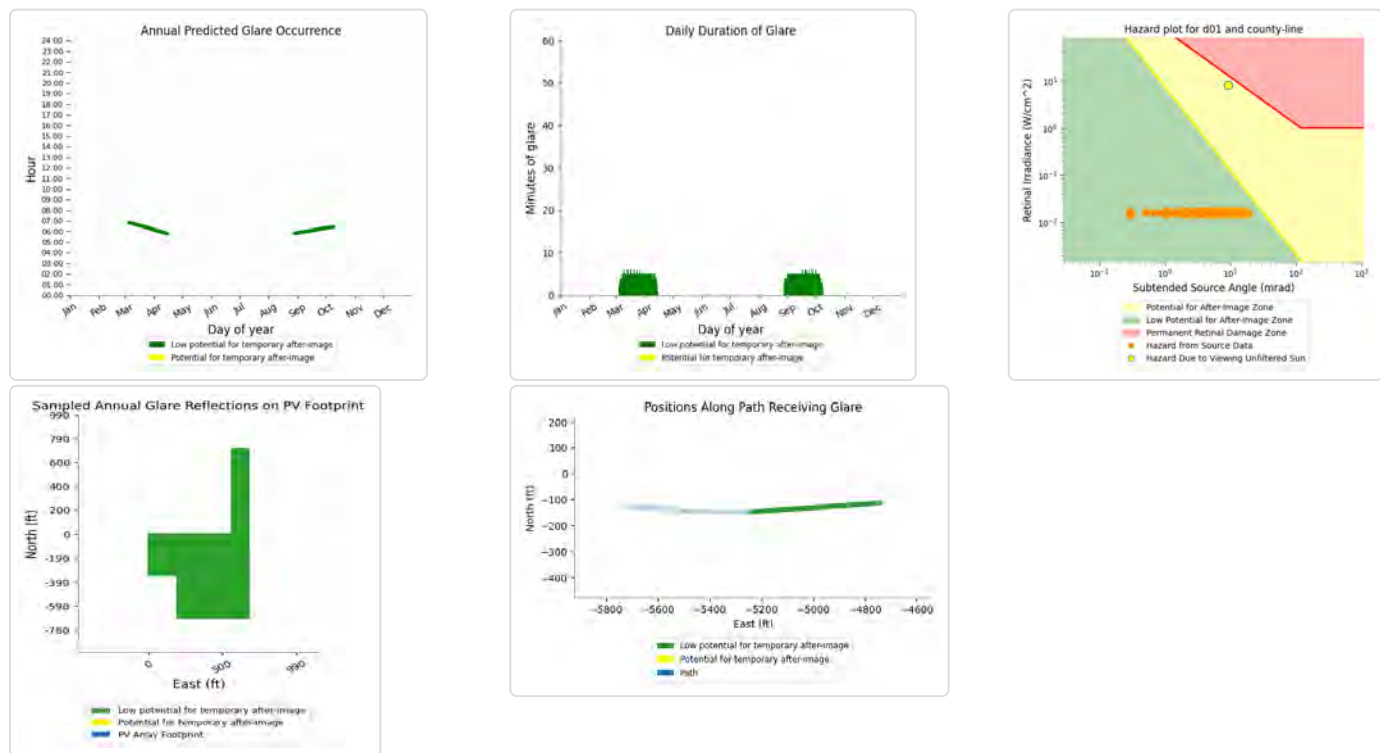
**D01: Country Dr Seg 2**

*No glare found*

## D01: County Line Rd

PV array is expected to produce the following glare for this receptor:

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



## D01: Dempseys Rd

No glare found

## D01: Harley Ln

No glare found

## D01: Henderson Rd

No glare found

## D01: Hillside Dr

No glare found

## D01: Ole Briery Station Rd Seg 1

No glare found

## D01: Ole Briery Station Rd Seg 2

No glare found

## D01: Thistle Knob Ln

No glare found

## D01: Tobacco Heritage Trail

No glare found

## D01: US Hwy 15

*No glare found*

## D01: US Hwy 360

*No glare found*

## D02 low potential for temporary after-image

Component	Green glare (min)	Yellow glare (min)
OP: OP 118	0	0
OP: OP 119	0	0
OP: OP 120	0	0
OP: OP 121	0	0
OP: OP 122	0	0
OP: OP 123	0	0
OP: OP 124	0	0
OP: OP 125	0	0
OP: OP 126	0	0
OP: OP 127	0	0
OP: OP 128	0	0
OP: OP 129	0	0
OP: OP 130	0	0
OP: OP 131	0	0
OP: OP 132	0	0
OP: OP 133	0	0
Route: Collins Dr	0	0
Route: Country Dr Seg 1	307	0
Route: Country Dr Seg 2	454	0
Route: County Line Rd	29	0
Route: Dempseys Rd	212	0
Route: Harley Ln	0	0
Route: Henderson Rd	0	0
Route: Hillside Dr	398	0
Route: Ole Briery Station Rd Seg 1	0	0
Route: Ole Briery Station Rd Seg 2	0	0
Route: Thistle Knob Ln	0	0
Route: Tobacco Heritage Trail	455	0
Route: US Hwy 15	0	0
Route: US Hwy 360	247	0

## D02: OP 118

*No glare found*

## D02: OP 119

*No glare found*



**D02: OP 120**

*No glare found*

**D02: OP 121**

*No glare found*

**D02: OP 122**

*No glare found*

**D02: OP 123**

*No glare found*

**D02: OP 124**

*No glare found*

**D02: OP 125**

*No glare found*

**D02: OP 126**

*No glare found*

**D02: OP 127**

*No glare found*

**D02: OP 128**

*No glare found*

**D02: OP 129**

*No glare found*

**D02: OP 130**

*No glare found*

**D02: OP 131**

*No glare found*

**D02: OP 132**

*No glare found*

**D02: OP 133**

*No glare found*

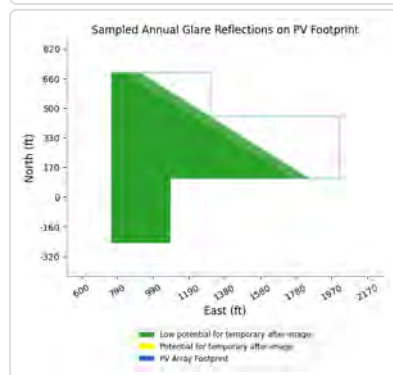
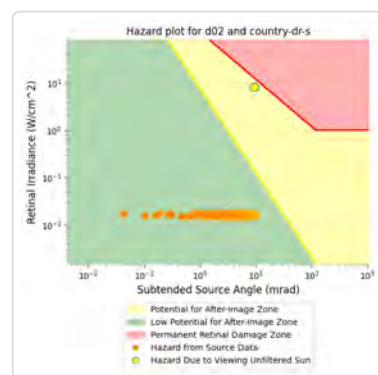
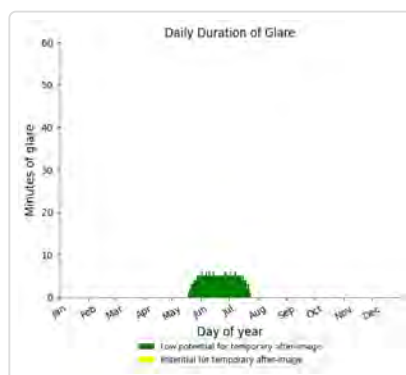
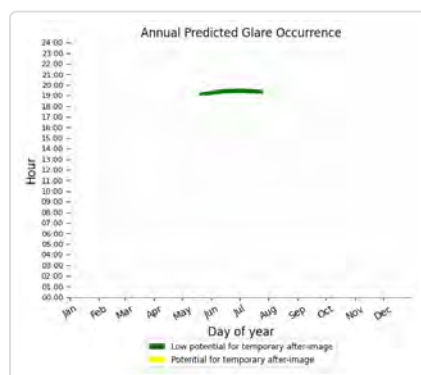
**D02: Collins Dr**

*No glare found*

## D02: Country Dr Seg 1

PV array is expected to produce the following glare for this receptor:

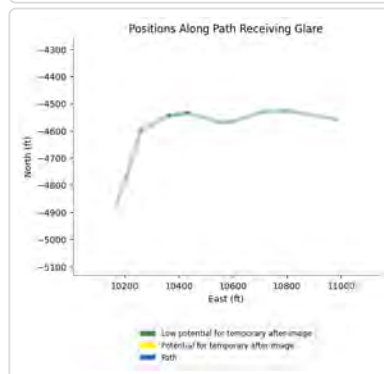
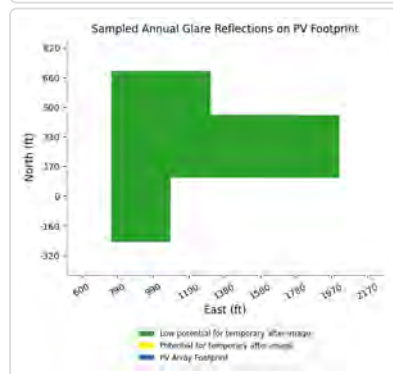
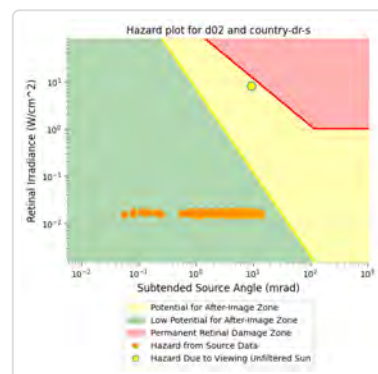
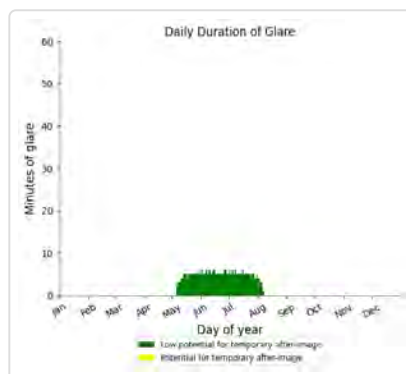
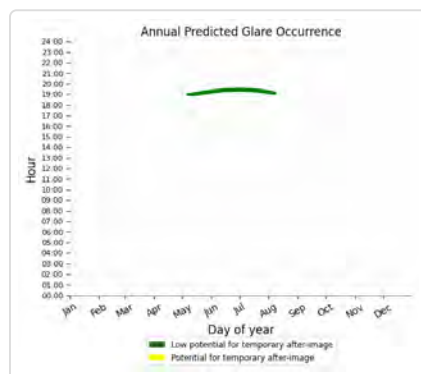
- 307 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## D02: Country Dr Seg 2

PV array is expected to produce the following glare for this receptor:

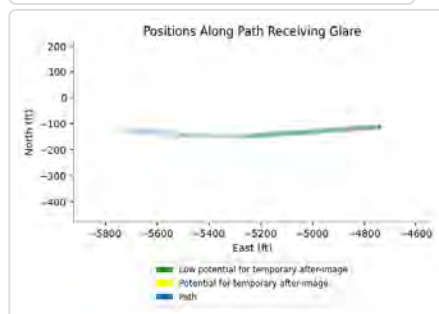
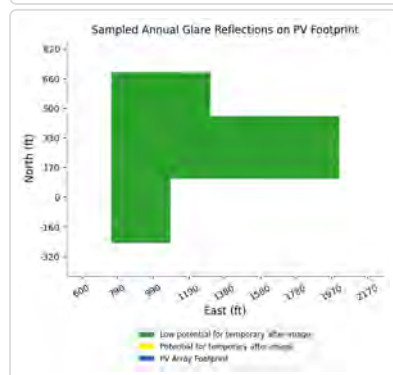
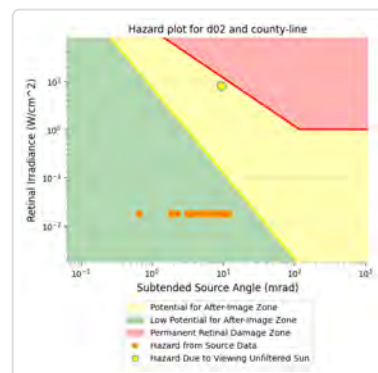
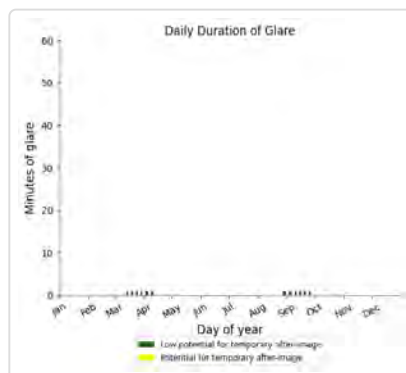
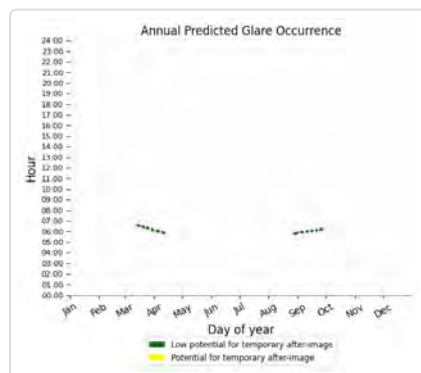
- 454 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## D02: County Line Rd

PV array is expected to produce the following glare for this receptor:

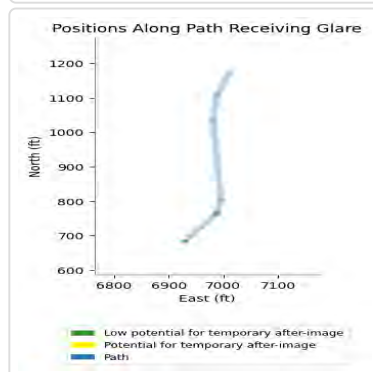
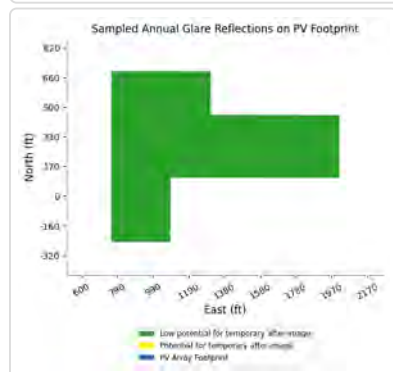
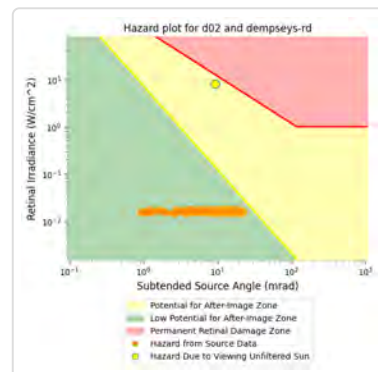
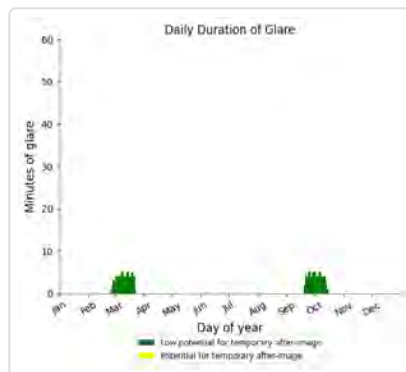
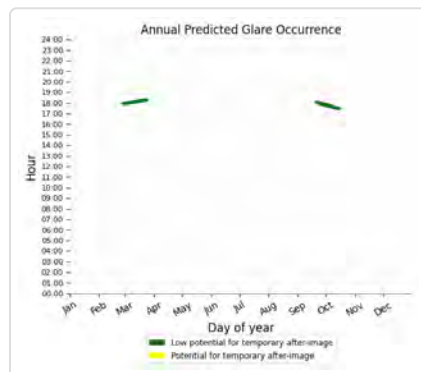
- 29 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## D02: Dempseys Rd

PV array is expected to produce the following glare for this receptor:

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



D02: Harley Ln

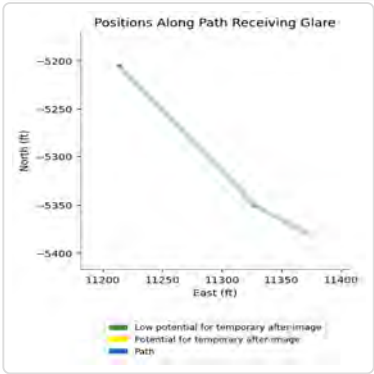
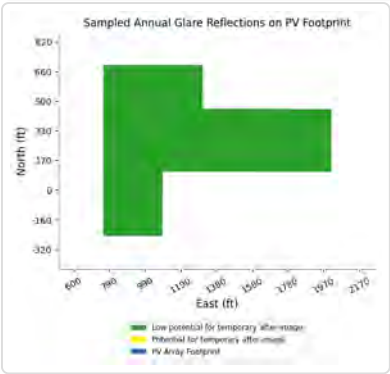
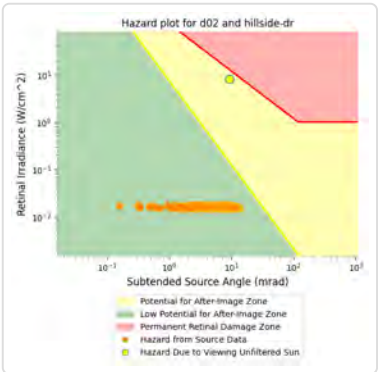
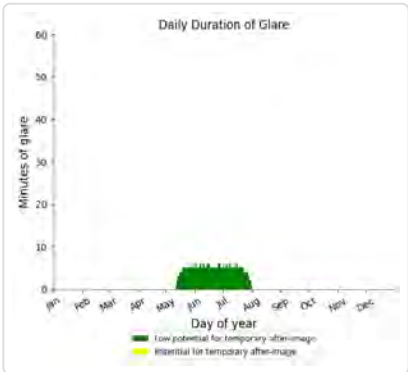
No glare found

D02: Henderson Rd

No glare found

D02: Hillside Dr

- PV array is expected to produce the following glare for this receptor:
- 398 minutes of "green" glare with low potential to cause temporary after-image.
  - 0 minutes of "yellow" glare with potential to cause temporary after-image.



D02: Ole Briery Station Rd Seg 1

No glare found

D02: Ole Briery Station Rd Seg 2

No glare found

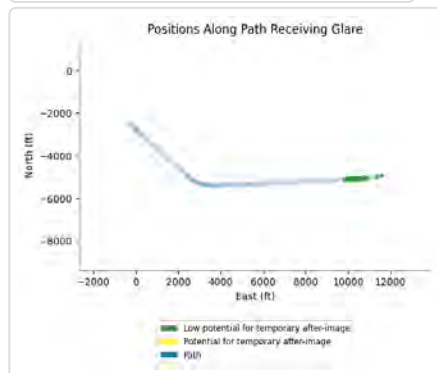
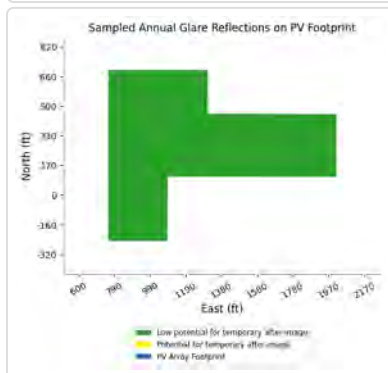
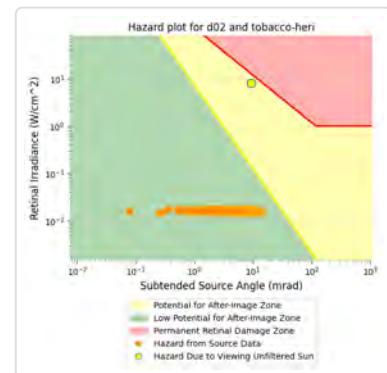
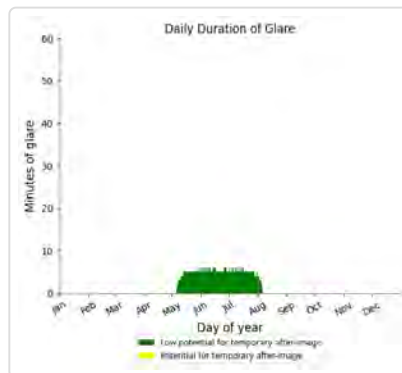
D02: Thistle Knob Ln

No glare found

## D02: Tobacco Heritage Trail

PV array is expected to produce the following glare for this receptor:

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



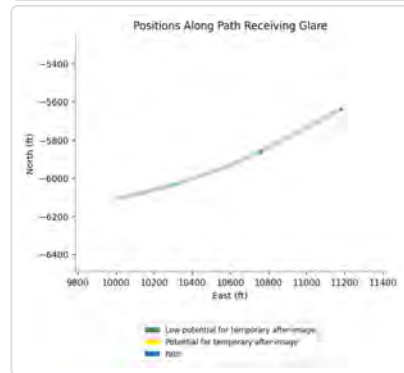
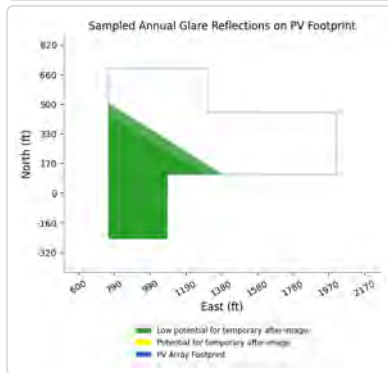
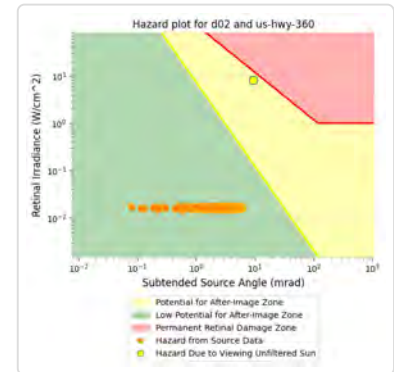
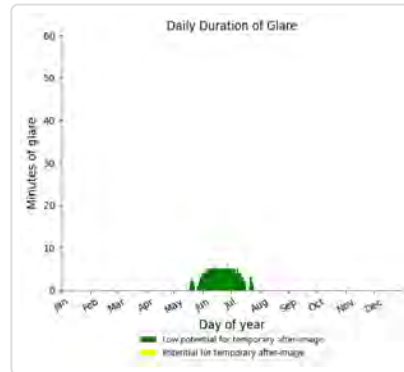
## D02: US Hwy 15

No glare found

## D02: US Hwy 360

PV array is expected to produce the following glare for this receptor:

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



## D03 potential temporary after-image

Component	Green glare (min)	Yellow glare (min)
OP: OP 118	0	0
OP: OP 119	0	0
OP: OP 120	0	0
OP: OP 121	0	0
OP: OP 122	0	0
OP: OP 123	0	0
OP: OP 124	0	0
OP: OP 125	0	0
OP: OP 126	0	0
OP: OP 127	0	0
OP: OP 128	0	0
OP: OP 129	0	0
OP: OP 130	0	0
OP: OP 131	0	0
OP: OP 132	0	0
OP: OP 133	0	0
Route: Collins Dr	0	0
Route: Country Dr Seg 1	336	0
Route: Country Dr Seg 2	262	0
Route: County Line Rd	137	0
Route: Dempseys Rd	510	0
Route: Harley Ln	0	0



Route: Henderson Rd	0	0
Route: Hillside Dr	297	0
Route: Ole Briery Station Rd Seg 1	85	0
Route: Ole Briery Station Rd Seg 2	26	126
Route: Thistle Knob Ln	0	0
Route: Tobacco Heritage Trail	410	0
Route: US Hwy 15	0	0
Route: US Hwy 360	325	0

### D03: OP 118

*No glare found*

### D03: OP 119

*No glare found*

### D03: OP 120

*No glare found*

### D03: OP 121

*No glare found*

### D03: OP 122

*No glare found*

### D03: OP 123

*No glare found*

### D03: OP 124

*No glare found*

### D03: OP 125

*No glare found*

### D03: OP 126

*No glare found*

### D03: OP 127

*No glare found*

### D03: OP 128

*No glare found*

### D03: OP 129

*No glare found*

### D03: OP 130

No glare found

### D03: OP 131

No glare found

### D03: OP 132

No glare found

### D03: OP 133

No glare found

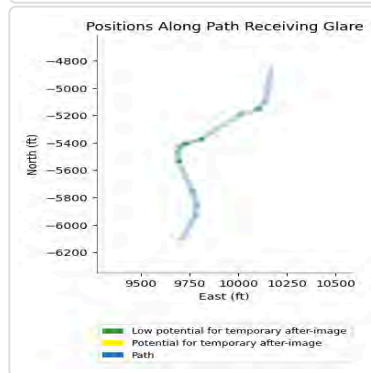
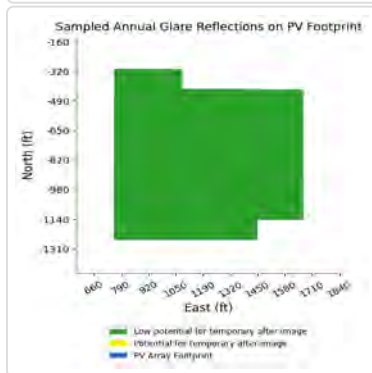
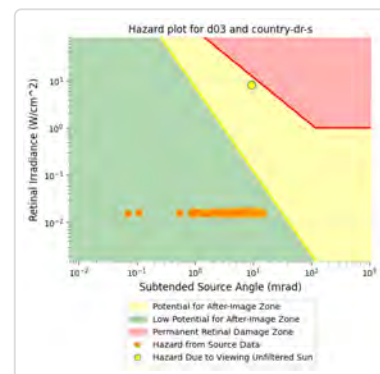
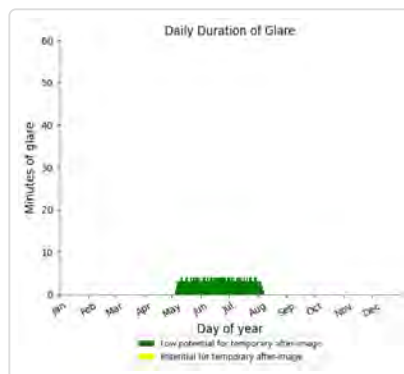
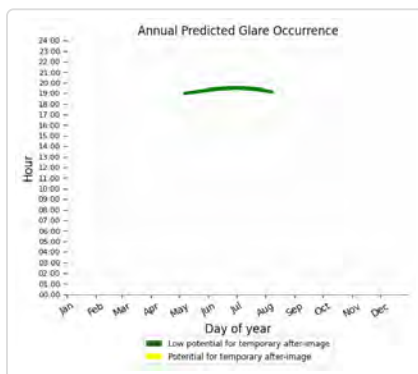
### D03: Collins Dr

No glare found

### D03: Country Dr Seg 1

PV array is expected to produce the following glare for this receptor:

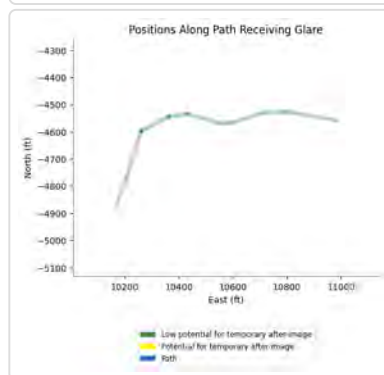
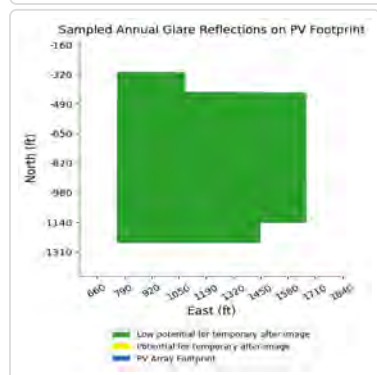
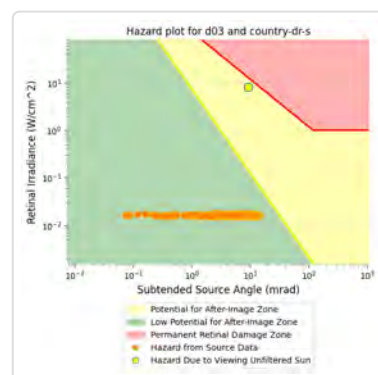
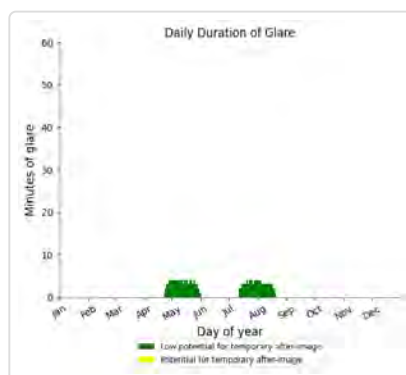
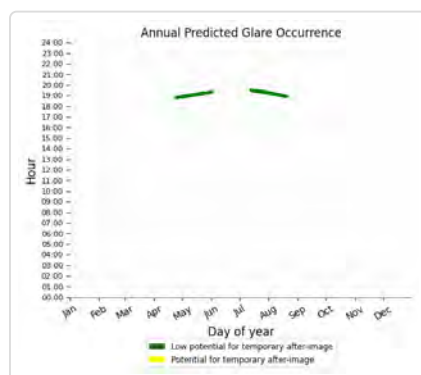
- 336 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## D03: Country Dr Seg 2

PV array is expected to produce the following glare for this receptor:

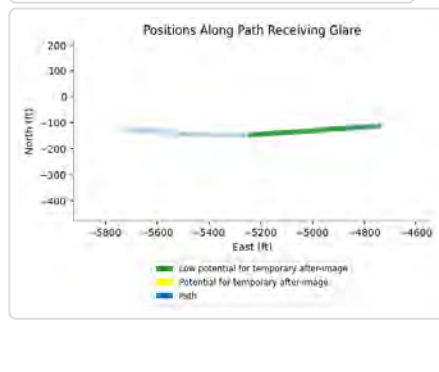
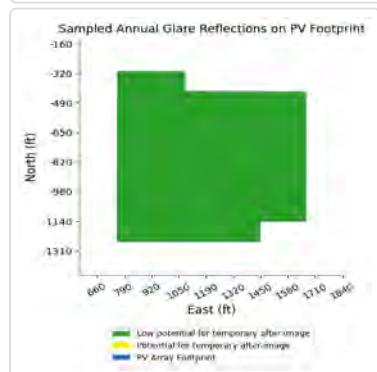
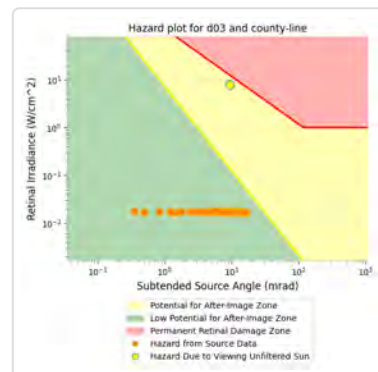
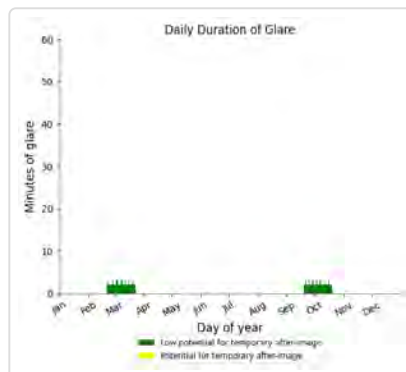
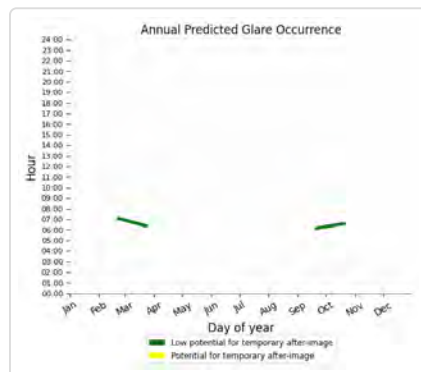
- 262 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## D03: County Line Rd

PV array is expected to produce the following glare for this receptor:

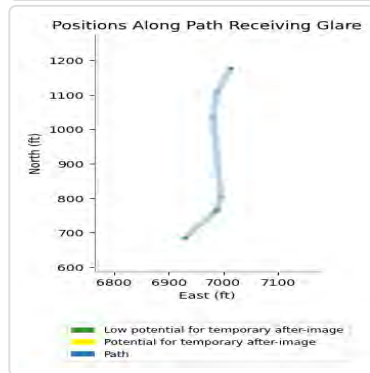
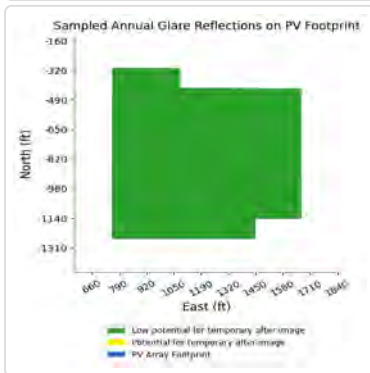
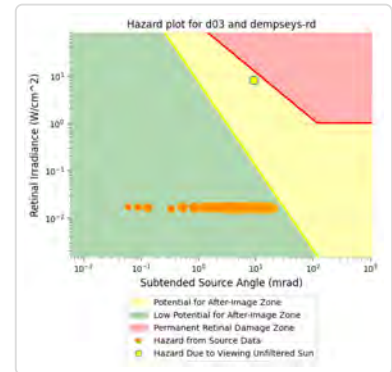
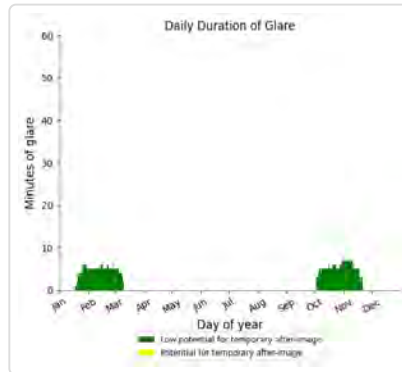
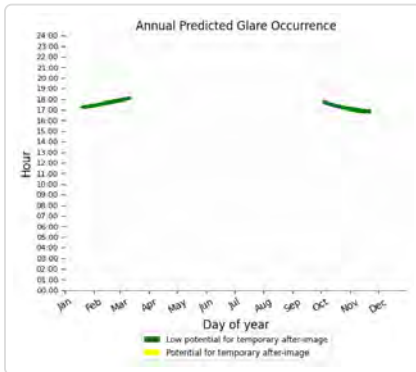
- 137 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



### D03: Dempseys Rd

PV array is expected to produce the following glare for this receptor:

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



### D03: Harley Ln

No glare found

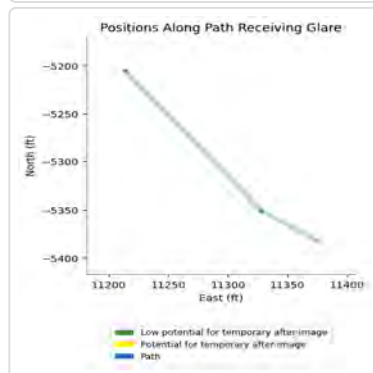
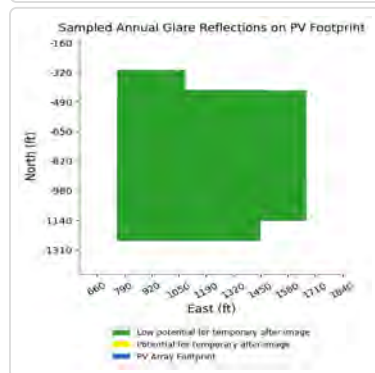
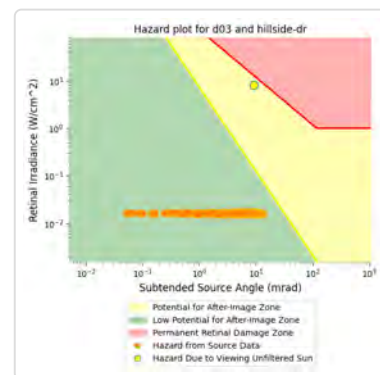
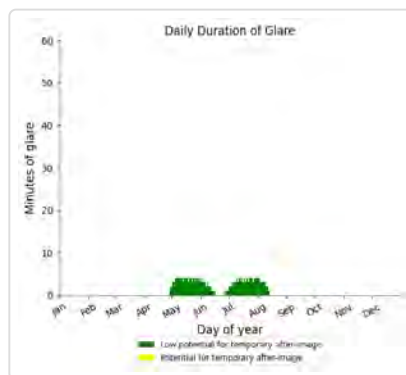
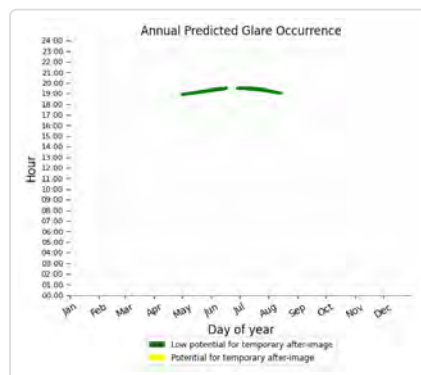
### D03: Henderson Rd

No glare found

### D03: Hillside Dr

PV array is expected to produce the following glare for this receptor:

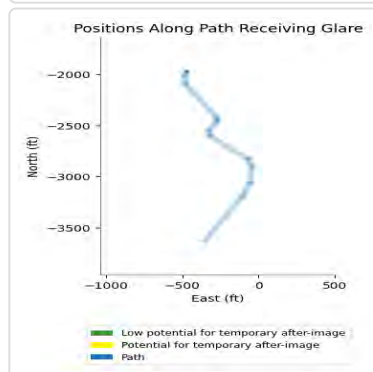
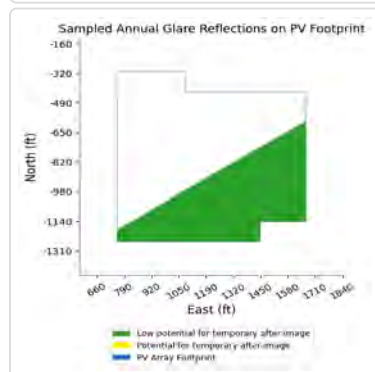
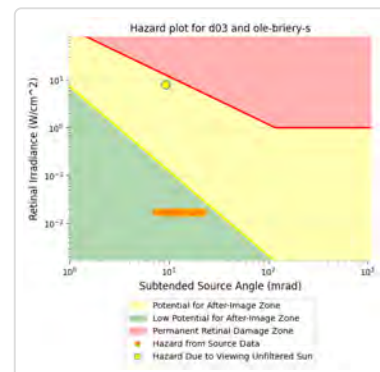
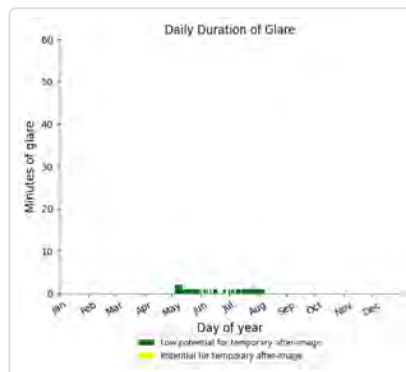
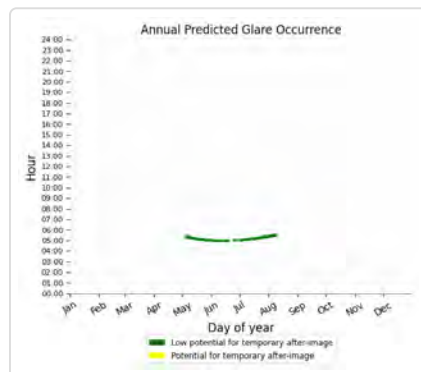
- 297 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



### D03: Ole Briery Station Rd Seg 1

PV array is expected to produce the following glare for this receptor:

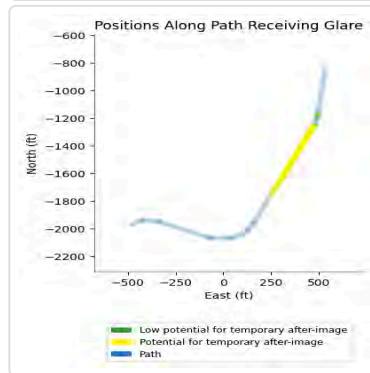
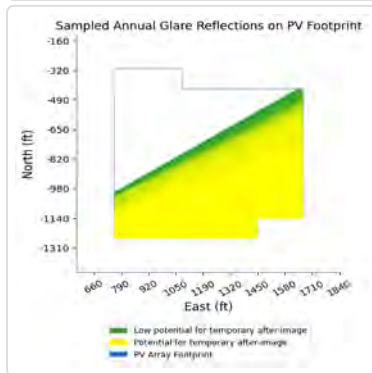
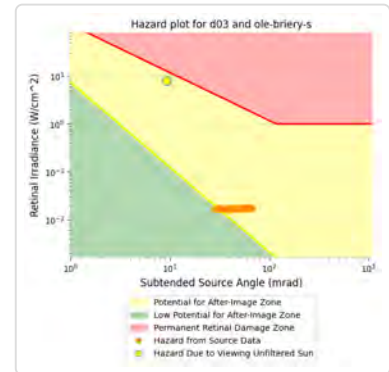
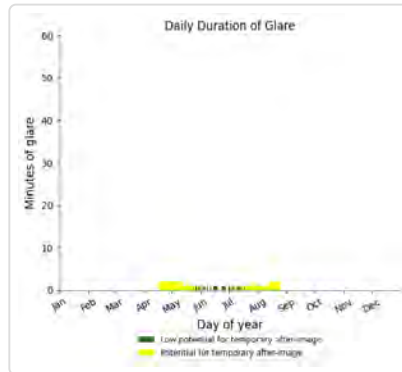
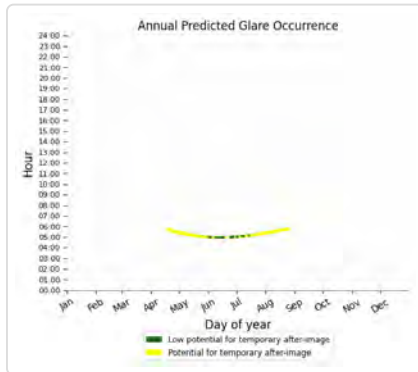
- 85 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



### D03: Ole Briery Station Rd Seg 2

PV array is expected to produce the following glare for this receptor:

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



### D03: Thistle Knob Ln

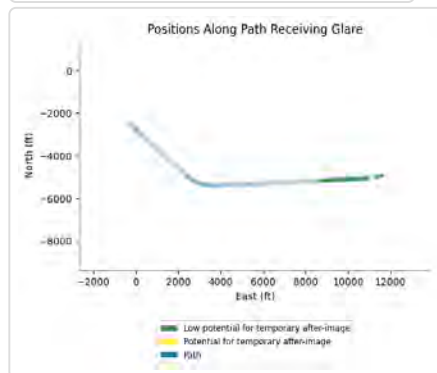
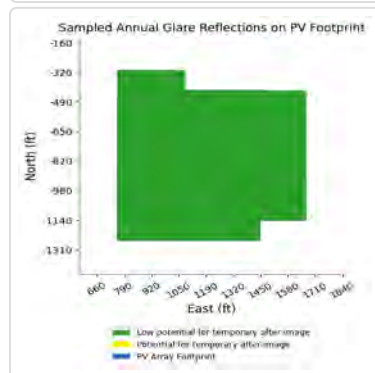
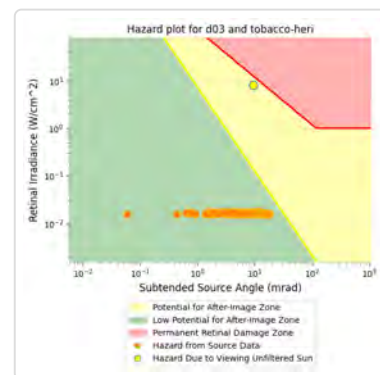
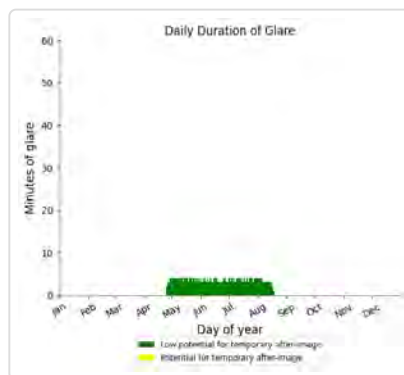
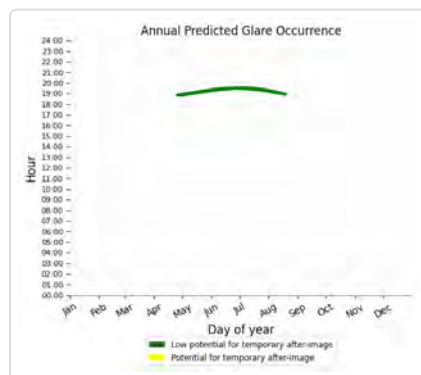
No glare found



## D03: Tobacco Heritage Trail

PV array is expected to produce the following glare for this receptor:

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

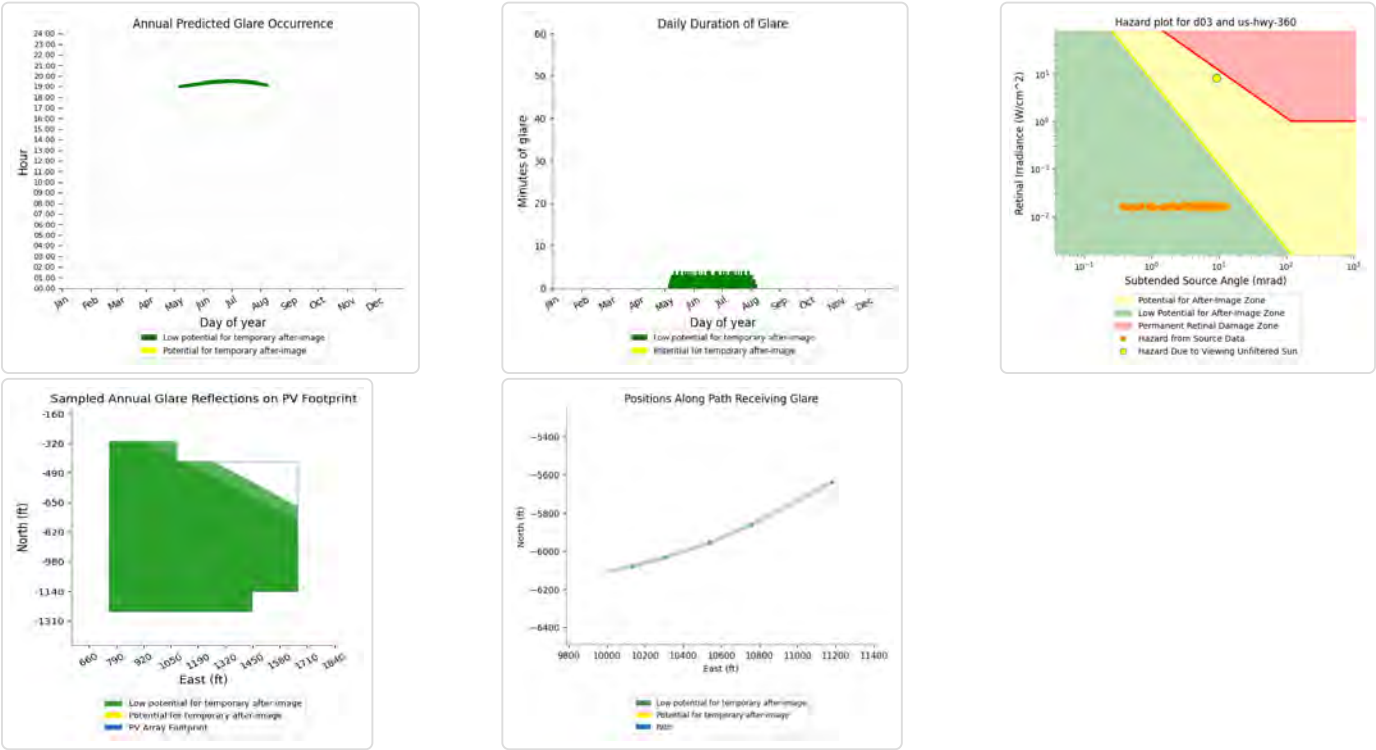


## D03: US Hwy 15

No glare found

D03: US Hwy 360

- PV array is expected to produce the following glare for this receptor:
- 325 minutes of "green" glare with low potential to cause temporary after-image.
  - 0 minutes of "yellow" glare with potential to cause temporary after-image.



D04 low potential for temporary after-image

Component	Green glare (min)	Yellow glare (min)
OP: OP 118	0	0
OP: OP 119	0	0
OP: OP 120	0	0
OP: OP 121	0	0
OP: OP 122	0	0
OP: OP 123	0	0
OP: OP 124	0	0
OP: OP 125	0	0
OP: OP 126	0	0
OP: OP 127	0	0
OP: OP 128	0	0
OP: OP 129	0	0
OP: OP 130	0	0
OP: OP 131	0	0
OP: OP 132	0	0
OP: OP 133	0	0
Route: Collins Dr	0	0
Route: Country Dr Seg 1	0	0
Route: Country Dr Seg 2	0	0
Route: County Line Rd	315	0
Route: Dempseys Rd	991	0
Route: Harley Ln	0	0

Route: Henderson Rd	972	0
Route: Hillside Dr	0	0
Route: Ole Briery Station Rd Seg 1	0	0
Route: Ole Briery Station Rd Seg 2	0	0
Route: Thistle Knob Ln	0	0
Route: Tobacco Heritage Trail	0	0
Route: US Hwy 15	0	0
Route: US Hwy 360	0	0

#### **D04: OP 118**

*No glare found*

#### **D04: OP 119**

*No glare found*

#### **D04: OP 120**

*No glare found*

#### **D04: OP 121**

*No glare found*

#### **D04: OP 122**

*No glare found*

#### **D04: OP 123**

*No glare found*

#### **D04: OP 124**

*No glare found*

#### **D04: OP 125**

*No glare found*

#### **D04: OP 126**

*No glare found*

#### **D04: OP 127**

*No glare found*

#### **D04: OP 128**

*No glare found*

#### **D04: OP 129**

*No glare found*

#### D04: OP 130

No glare found

#### D04: OP 131

No glare found

#### D04: OP 132

No glare found

#### D04: OP 133

No glare found

#### D04: Collins Dr

No glare found

#### D04: Country Dr Seg 1

No glare found

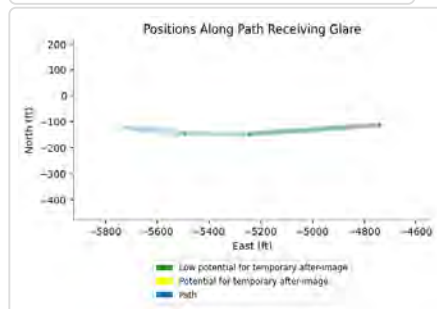
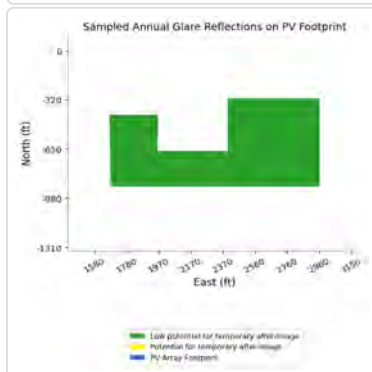
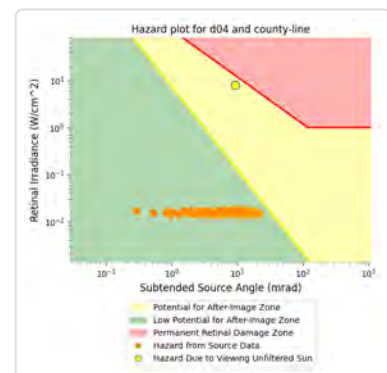
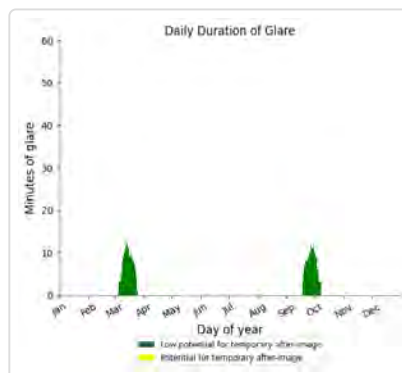
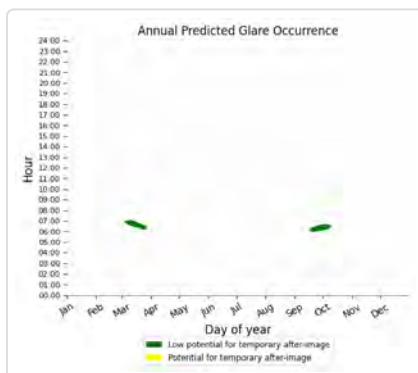
#### D04: Country Dr Seg 2

No glare found

#### D04: County Line Rd

PV array is expected to produce the following glare for this receptor:

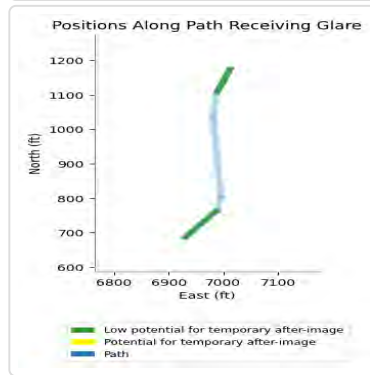
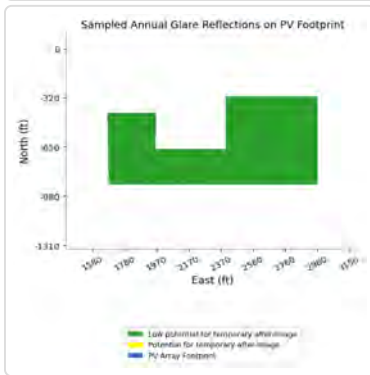
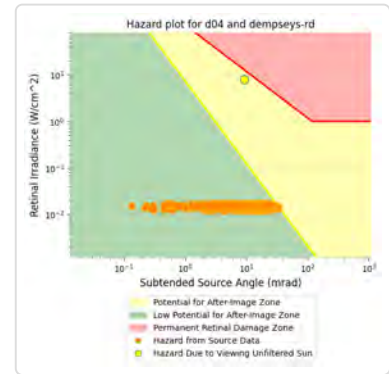
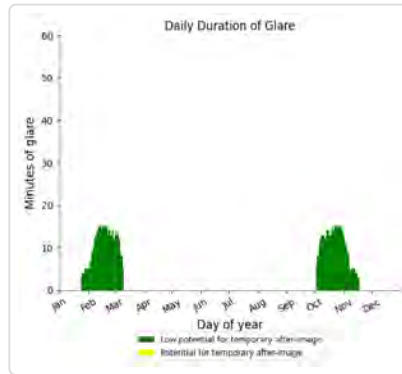
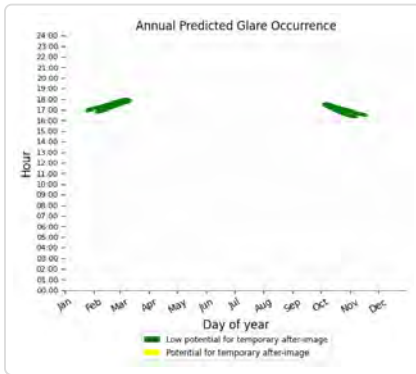
- 315 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## D04: Dempseys Rd

PV array is expected to produce the following glare for this receptor:

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



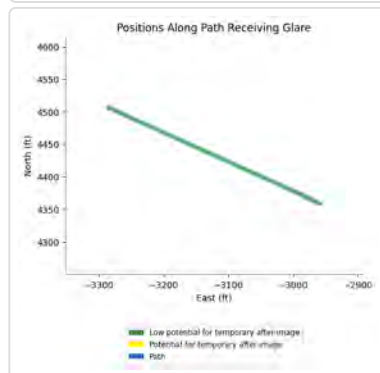
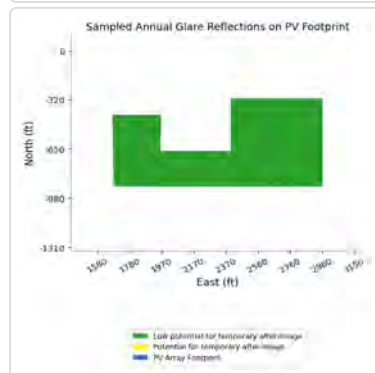
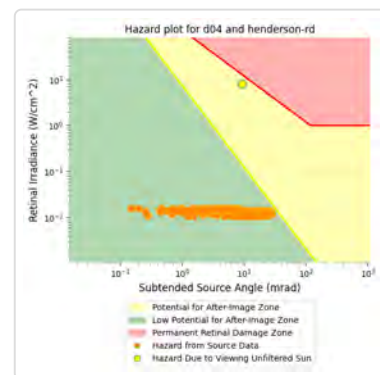
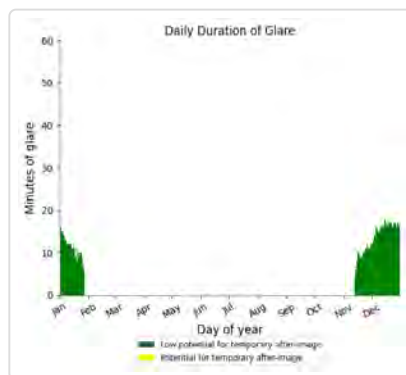
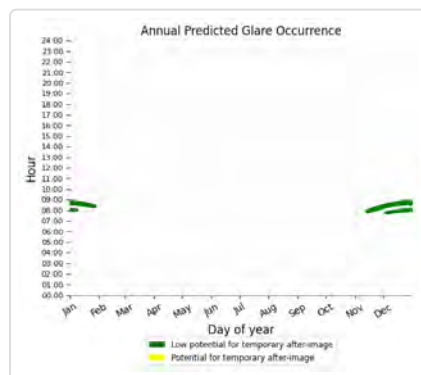
## D04: Harley Ln

No glare found

## D04: Henderson Rd

PV array is expected to produce the following glare for this receptor:

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



## D04: Hillside Dr

No glare found

## D04: Ole Briery Station Rd Seg 1

No glare found

## D04: Ole Briery Station Rd Seg 2

No glare found

## D04: Thistle Knob Ln

No glare found

## D04: Tobacco Heritage Trail

No glare found

## D04: US Hwy 15

No glare found

## D04: US Hwy 360

No glare found

## D05 potential temporary after-image



Component	Green glare (min)	Yellow glare (min)
OP: OP 118	0	0
OP: OP 119	0	0
OP: OP 120	0	0
OP: OP 121	308	355
OP: OP 122	0	0
OP: OP 123	0	0
OP: OP 124	0	0
OP: OP 125	0	0
OP: OP 126	0	0
OP: OP 127	0	0
OP: OP 128	0	0
OP: OP 129	0	0
OP: OP 130	0	0
OP: OP 131	0	0
OP: OP 132	0	0
OP: OP 133	0	0
Route: Collins Dr	0	0
Route: Country Dr Seg 1	1589	0
Route: Country Dr Seg 2	659	0
Route: County Line Rd	0	0
Route: Dempseys Rd	0	0
Route: Harley Ln	0	0
Route: Henderson Rd	0	0
Route: Hillside Dr	734	0
Route: Ole Briery Station Rd Seg 1	285	727
Route: Ole Briery Station Rd Seg 2	395	3486
Route: Thistle Knob Ln	0	0
Route: Tobacco Heritage Trail	1937	4
Route: US Hwy 15	0	0
Route: US Hwy 360	1569	0

## D05: OP 118

*No glare found*

## D05: OP 119

*No glare found*

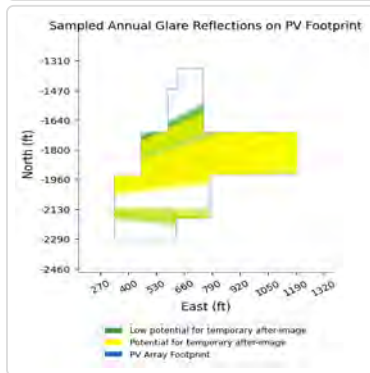
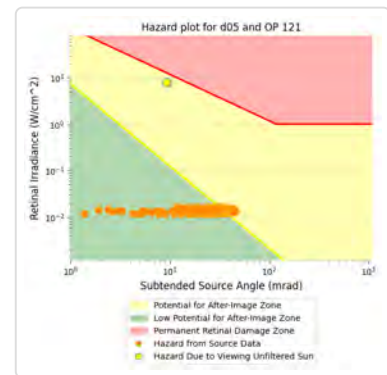
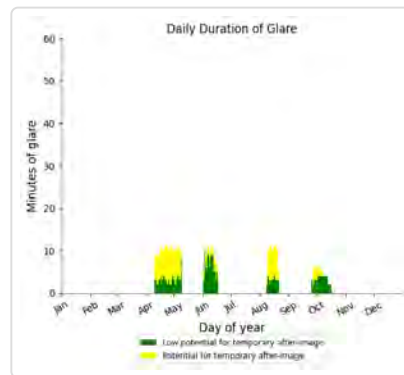
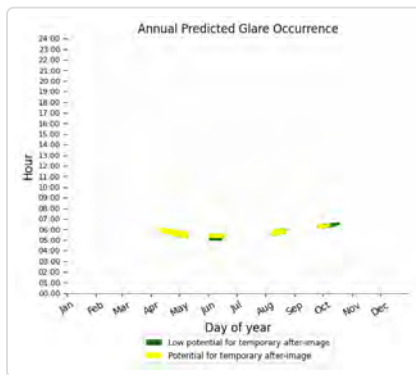
## D05: OP 120

*No glare found*

## D05: OP 121

PV array is expected to produce the following glare for this receptor:

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



## D05: OP 122

No glare found

## D05: OP 123

No glare found

## D05: OP 124

No glare found

## D05: OP 125

No glare found

## D05: OP 126

No glare found

## D05: OP 127

No glare found

## D05: OP 128

No glare found

## D05: OP 129

No glare found

## D05: OP 130

No glare found

## D05: OP 131

No glare found

## D05: OP 132

No glare found

## D05: OP 133

No glare found

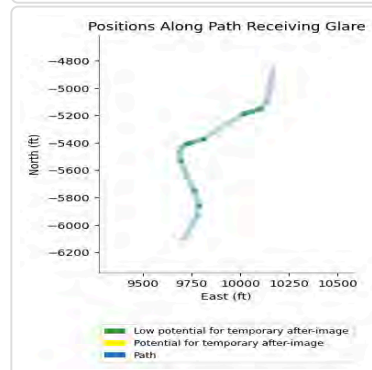
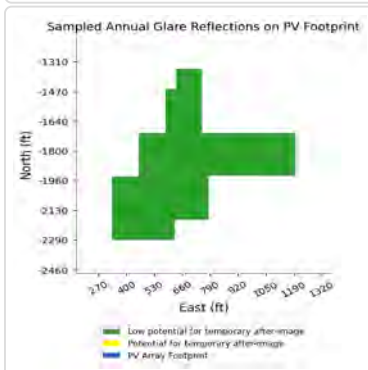
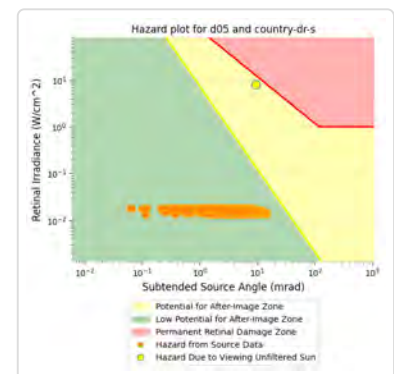
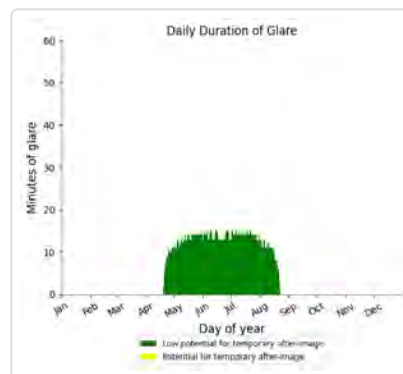
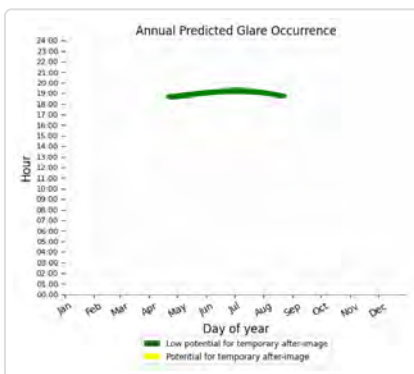
## D05: Collins Dr

No glare found

## D05: Country Dr Seg 1

PV array is expected to produce the following glare for this receptor:

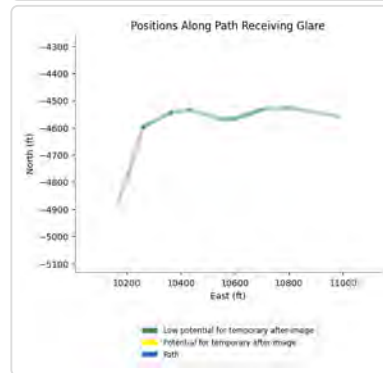
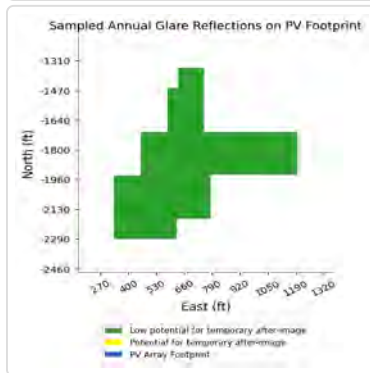
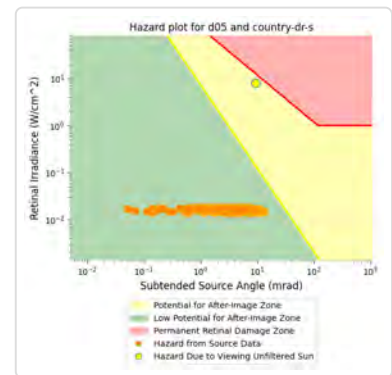
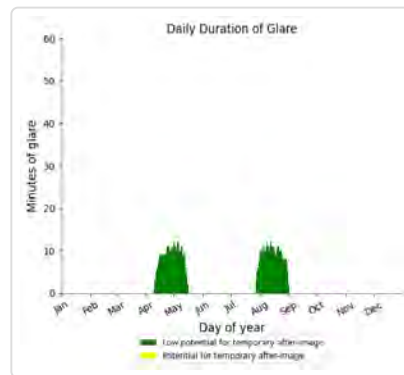
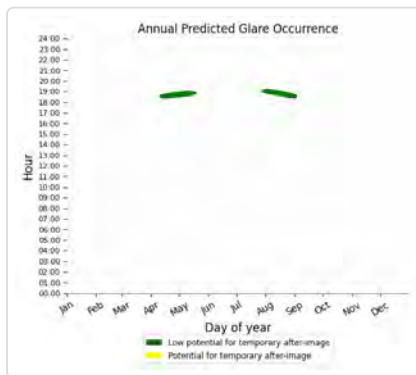
- 1,589 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## D05: Country Dr Seg 2

PV array is expected to produce the following glare for this receptor:

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



## D05: County Line Rd

No glare found

## D05: Dempseys Rd

No glare found

## D05: Harley Ln

No glare found

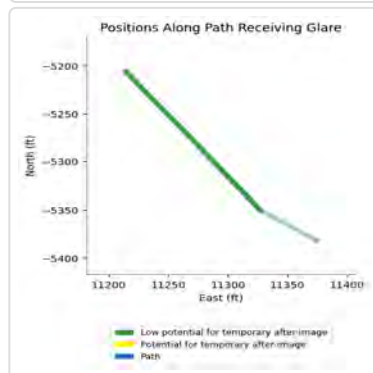
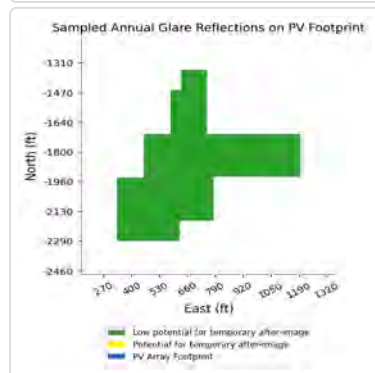
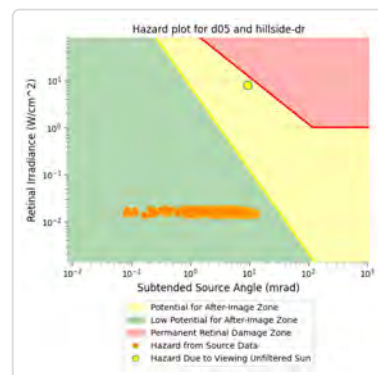
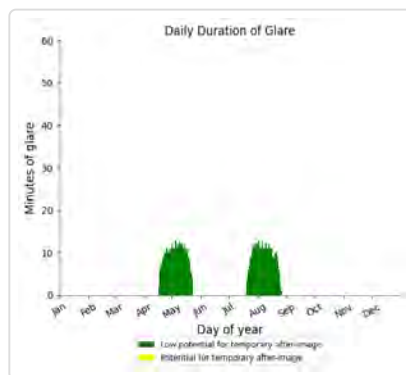
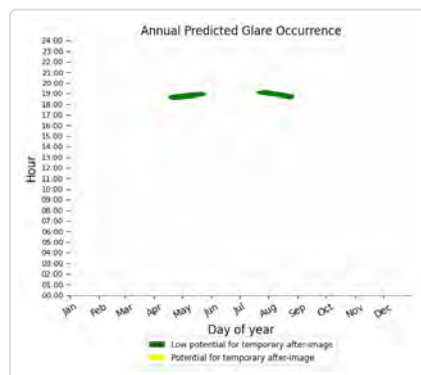
## D05: Henderson Rd

No glare found

## D05: Hillside Dr

PV array is expected to produce the following glare for this receptor:

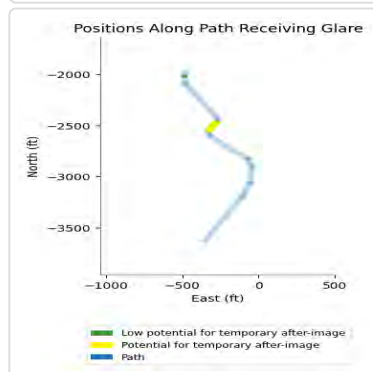
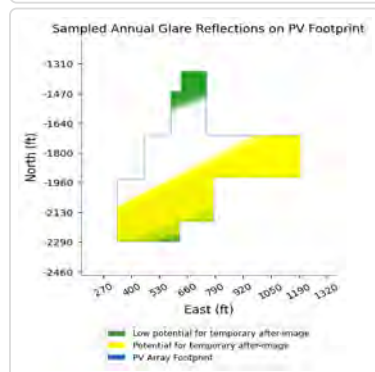
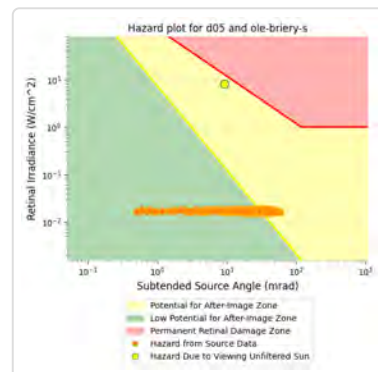
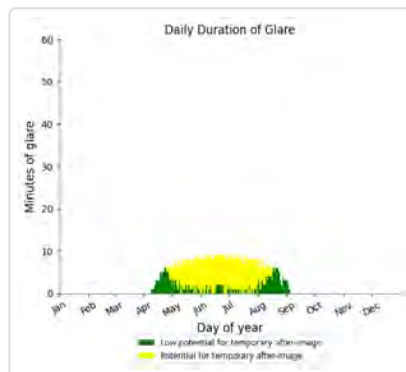
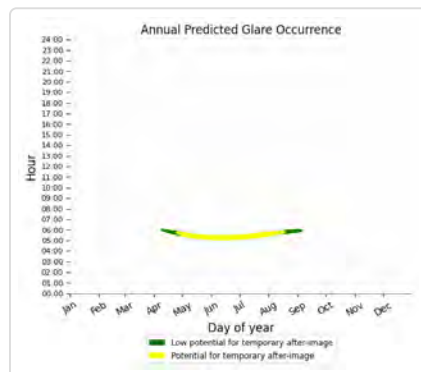
- 734 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## D05: Ole Briery Station Rd Seg 1

PV array is expected to produce the following glare for this receptor:

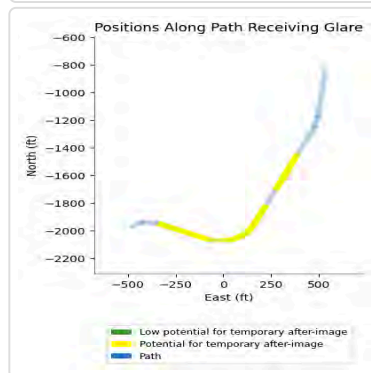
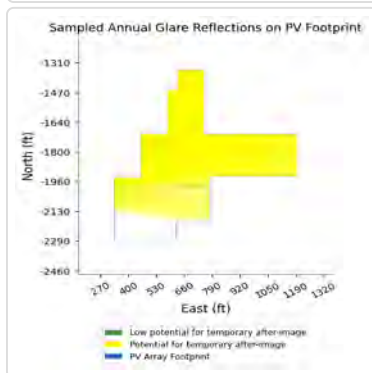
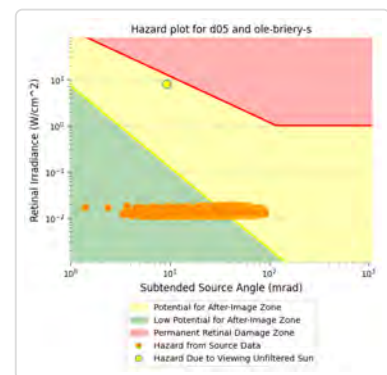
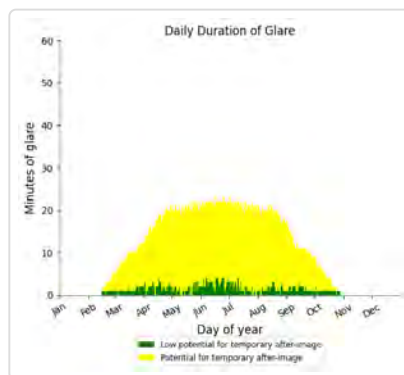
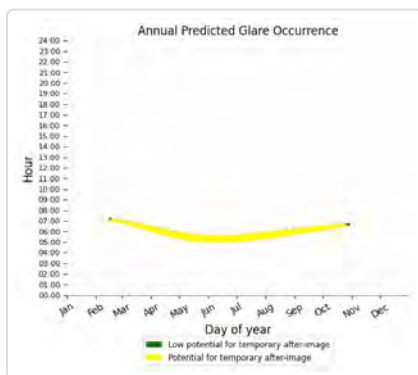
- 285 minutes of "green" glare with low potential to cause temporary after-image.
- 727 minutes of "yellow" glare with potential to cause temporary after-image.



## D05: Ole Briery Station Rd Seg 2

PV array is expected to produce the following glare for this receptor:

- 395 minutes of "green" glare with low potential to cause temporary after-image.
- 3,486 minutes of "yellow" glare with potential to cause temporary after-image.



## D05: Thistle Knob Ln

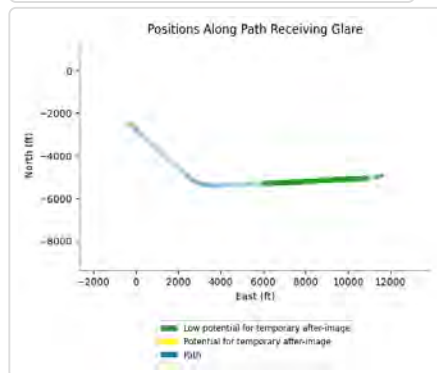
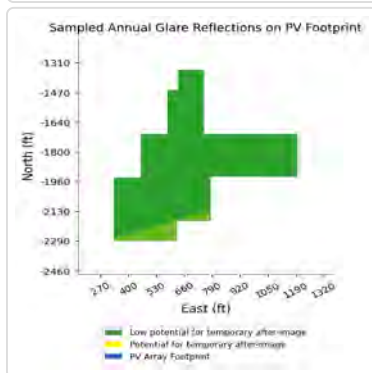
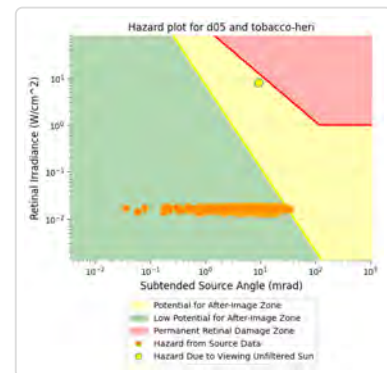
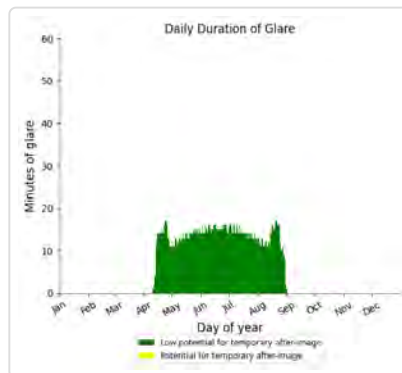
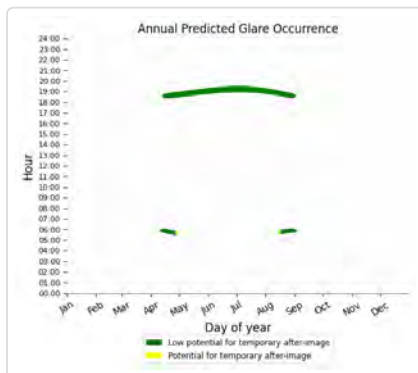
No glare found



## D05: Tobacco Heritage Trail

PV array is expected to produce the following glare for this receptor:

- 1,937 minutes of "green" glare with low potential to cause temporary after-image.
- 4 minutes of "yellow" glare with potential to cause temporary after-image.



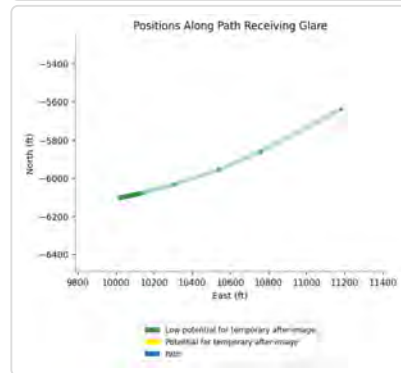
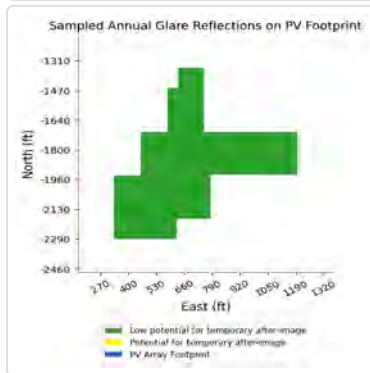
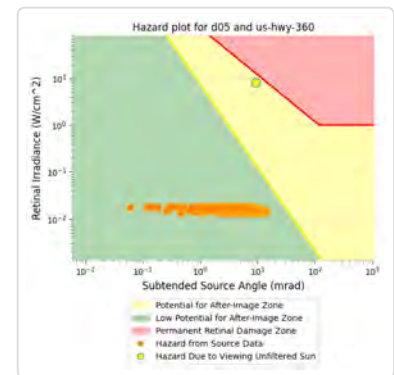
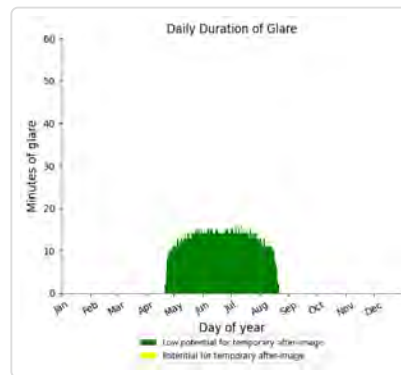
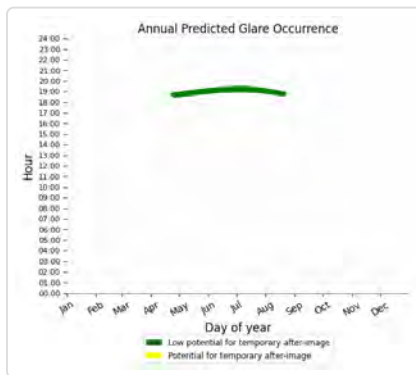
## D05: US Hwy 15

No glare found

## D05: US Hwy 360

PV array is expected to produce the following glare for this receptor:

- 1,569 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## E01 potential temporary after-image

Component	Green glare (min)	Yellow glare (min)
OP: OP 118	0	0
OP: OP 119	0	0
OP: OP 120	0	0
OP: OP 121	0	0
OP: OP 122	0	0
OP: OP 123	0	0
OP: OP 124	0	0
OP: OP 125	0	0
OP: OP 126	0	0
OP: OP 127	0	0
OP: OP 128	0	0
OP: OP 129	0	0
OP: OP 130	0	0
OP: OP 131	0	0
OP: OP 132	0	0
OP: OP 133	0	0
Route: Collins Dr	0	0
Route: Country Dr Seg 1	1057	0
Route: Country Dr Seg 2	378	0
Route: County Line Rd	0	0
Route: Dempseys Rd	41	0
Route: Harley Ln	0	0

Route: Henderson Rd	0	0
Route: Hillside Dr	424	0
Route: Ole Briery Station Rd Seg 1	462	0
Route: Ole Briery Station Rd Seg 2	57	0
Route: Thistle Knob Ln	184	0
Route: Tobacco Heritage Trail	1193	93
Route: US Hwy 15	0	0
Route: US Hwy 360	1010	0

#### **E01: OP 118**

*No glare found*

#### **E01: OP 119**

*No glare found*

#### **E01: OP 120**

*No glare found*

#### **E01: OP 121**

*No glare found*

#### **E01: OP 122**

*No glare found*

#### **E01: OP 123**

*No glare found*

#### **E01: OP 124**

*No glare found*

#### **E01: OP 125**

*No glare found*

#### **E01: OP 126**

*No glare found*

#### **E01: OP 127**

*No glare found*

#### **E01: OP 128**

*No glare found*

#### **E01: OP 129**

*No glare found*

## E01: OP 130

No glare found

## E01: OP 131

No glare found

## E01: OP 132

No glare found

## E01: OP 133

No glare found

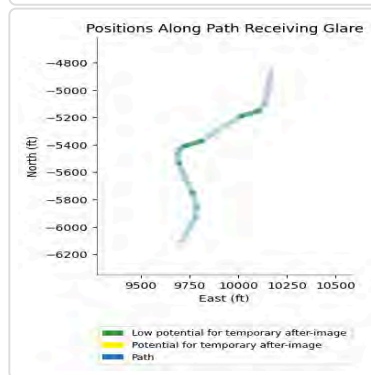
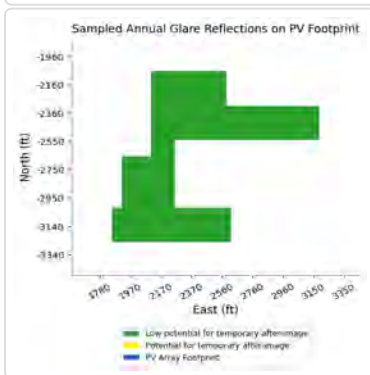
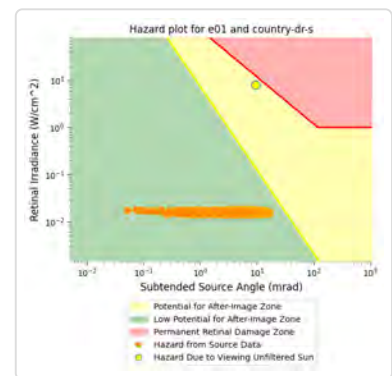
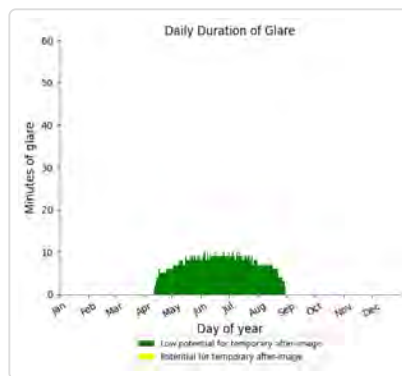
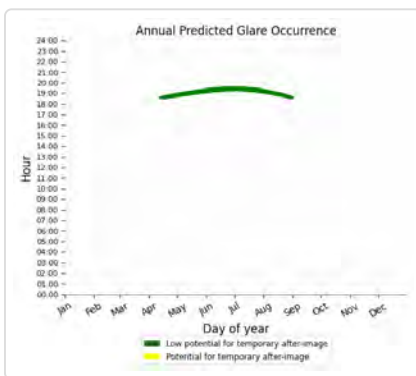
## E01: Collins Dr

No glare found

## E01: Country Dr Seg 1

PV array is expected to produce the following glare for this receptor:

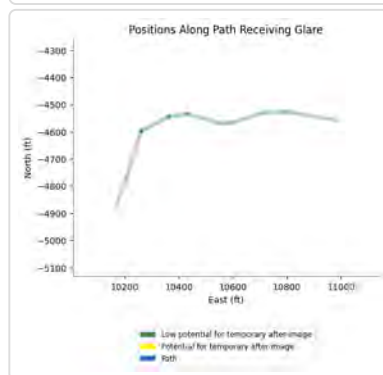
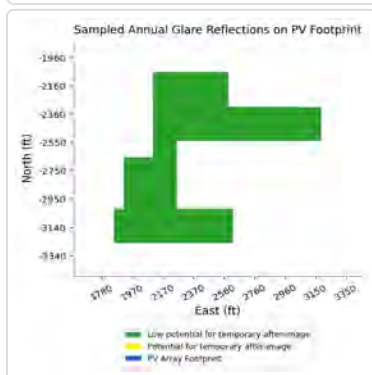
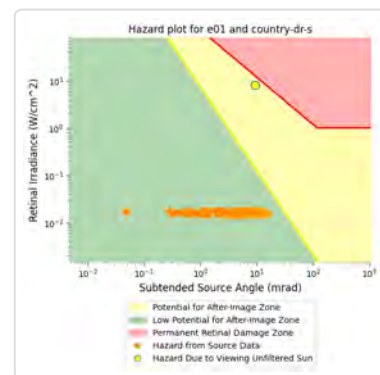
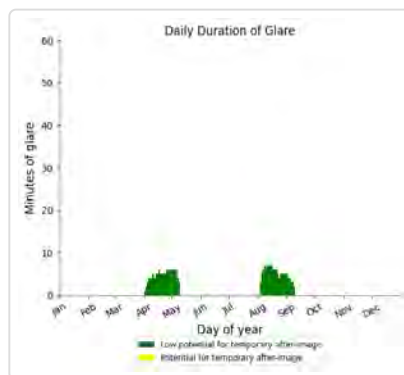
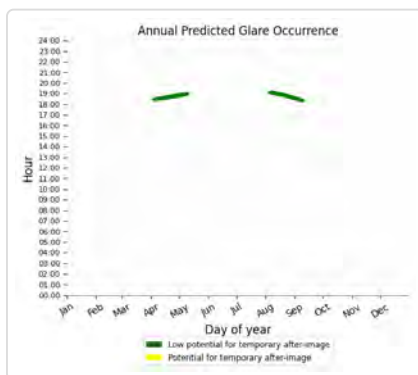
- 1,057 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## E01: Country Dr Seg 2

PV array is expected to produce the following glare for this receptor:

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



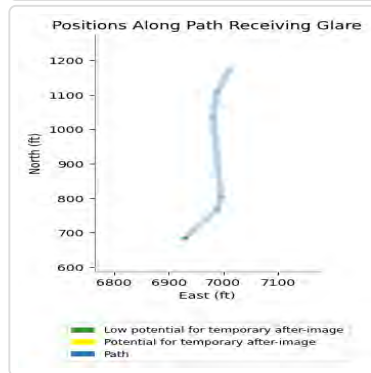
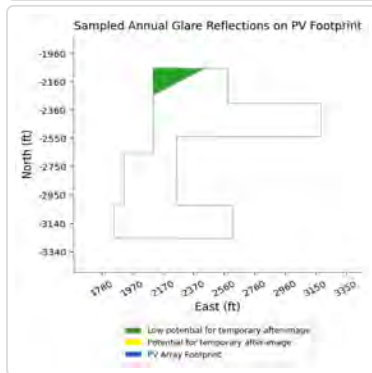
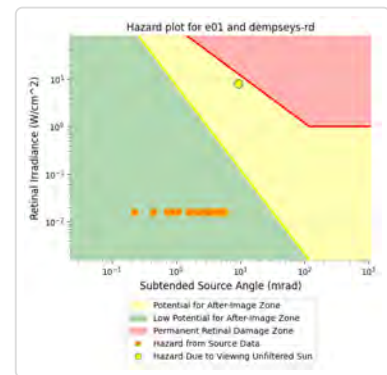
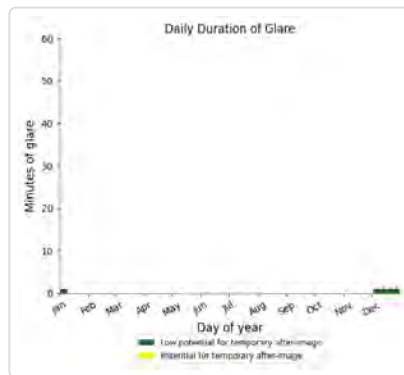
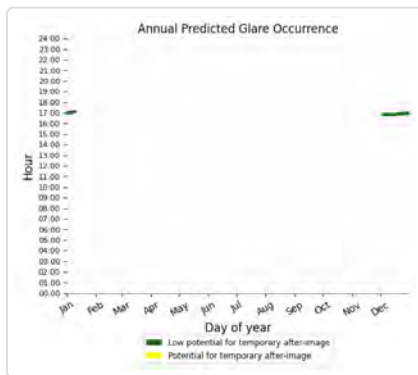
## E01: County Line Rd

No glare found

## E01: Dempseys Rd

PV array is expected to produce the following glare for this receptor:

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



## E01: Harley Ln

No glare found

## E01: Henderson Rd

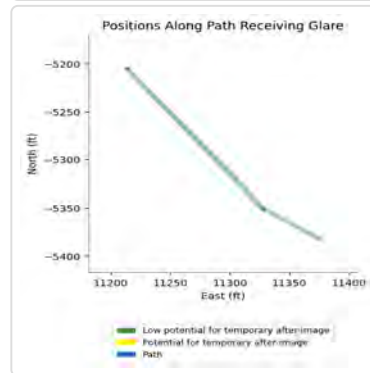
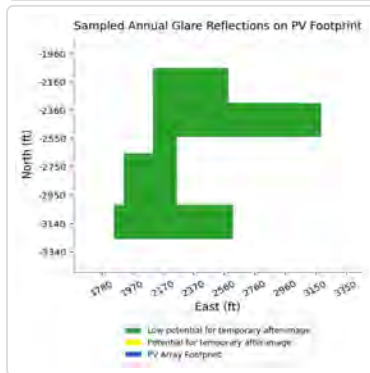
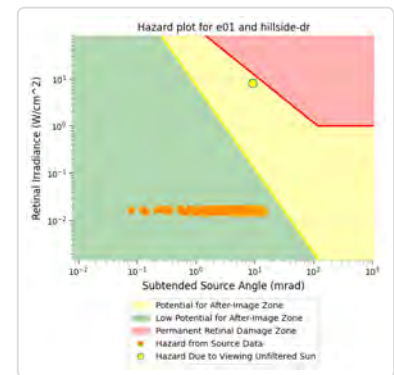
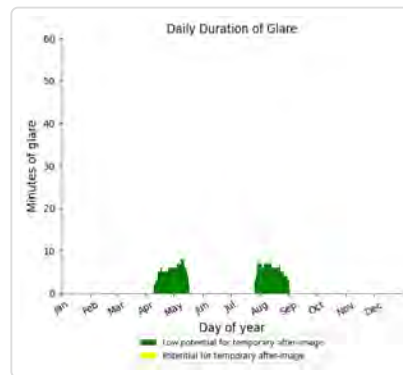
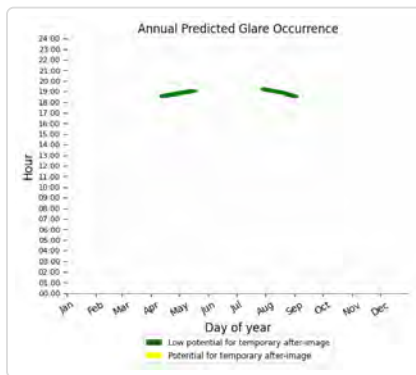
No glare found



## E01: Hillside Dr

PV array is expected to produce the following glare for this receptor:

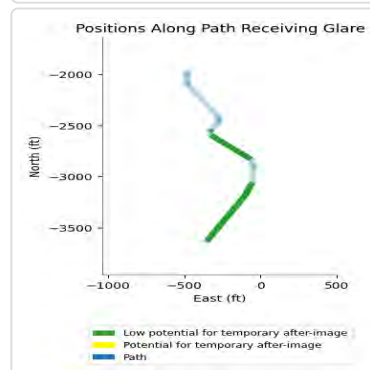
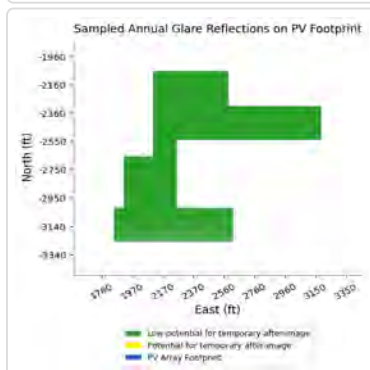
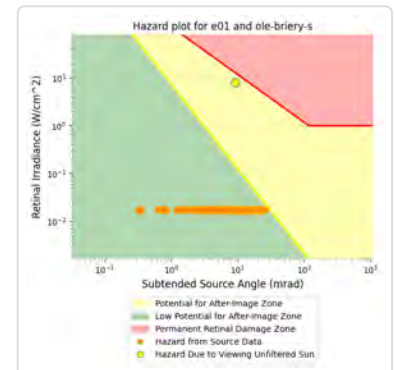
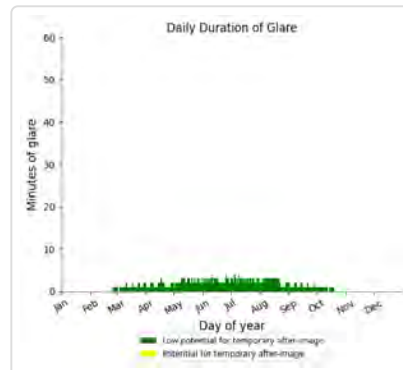
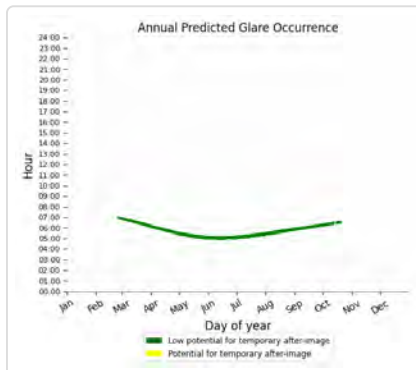
- 424 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## E01: Ole Briery Station Rd Seg 1

PV array is expected to produce the following glare for this receptor:

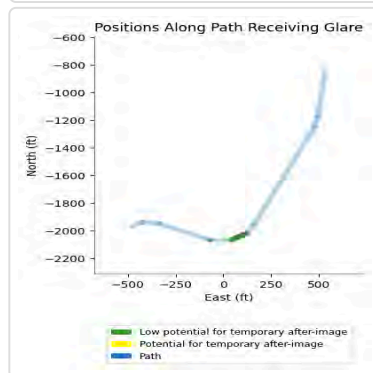
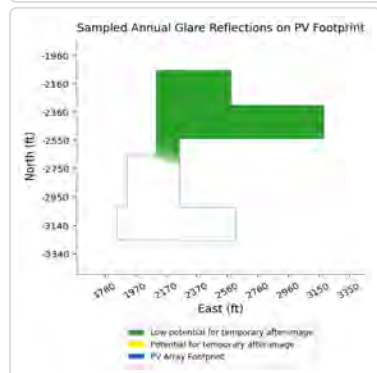
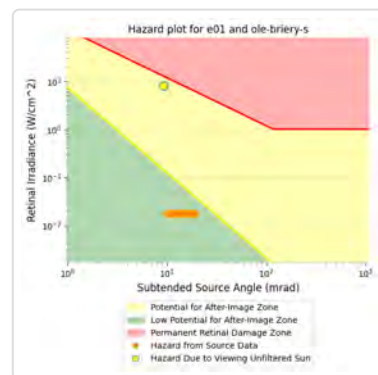
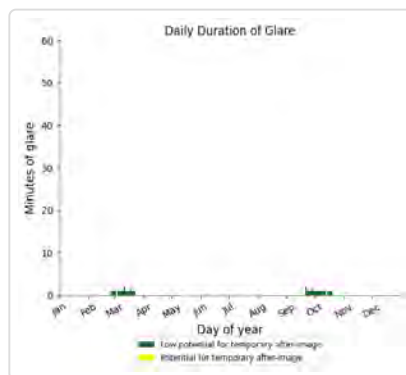
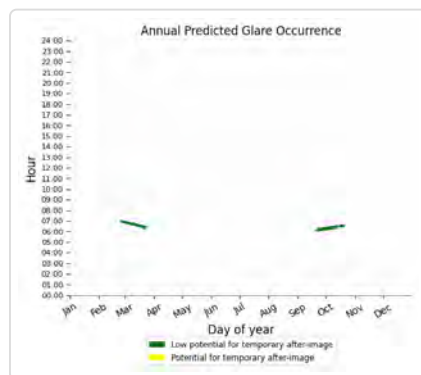
- 462 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## E01: Ole Briery Station Rd Seg 2

PV array is expected to produce the following glare for this receptor:

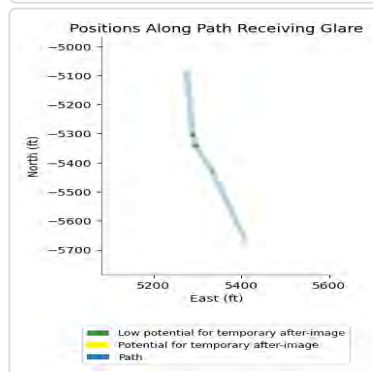
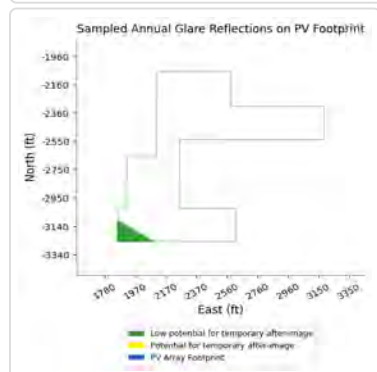
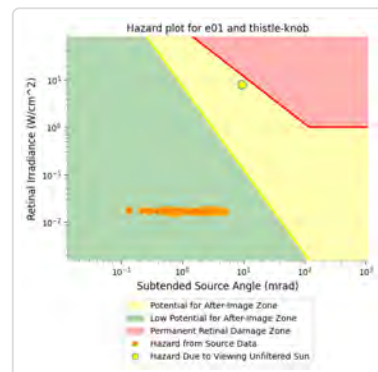
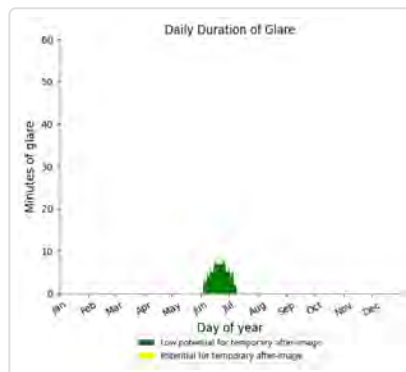
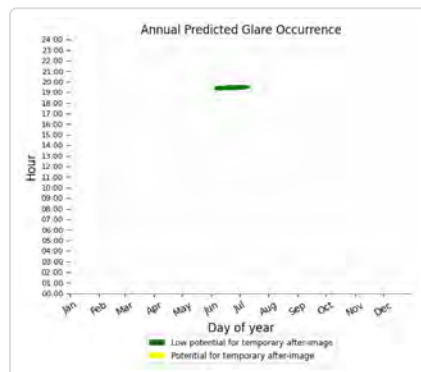
- 57 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## E01: Thistle Knob Ln

PV array is expected to produce the following glare for this receptor:

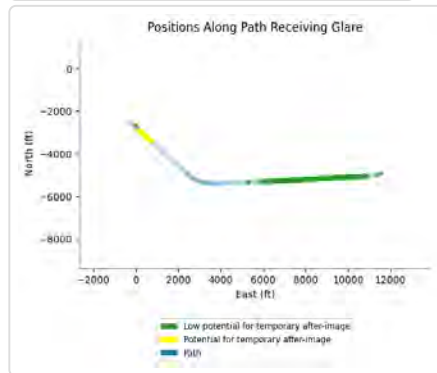
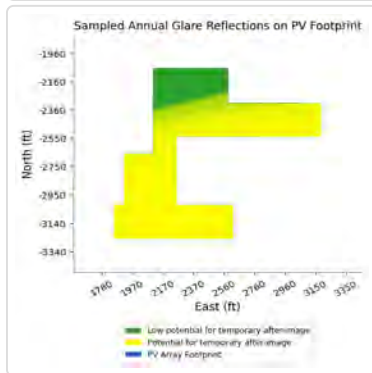
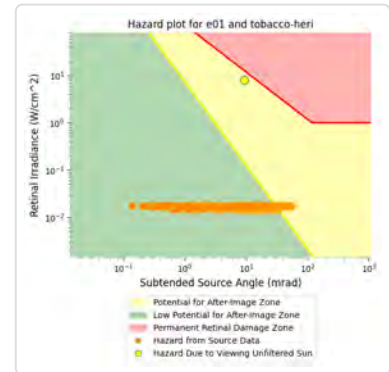
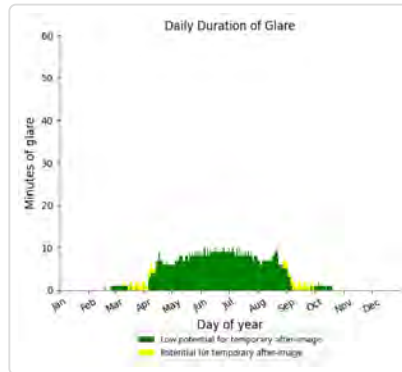
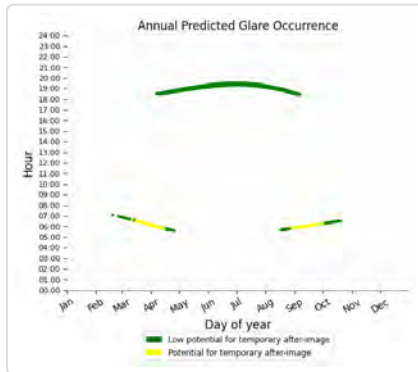
- 184 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## E01: Tobacco Heritage Trail

PV array is expected to produce the following glare for this receptor:

- 1,193 minutes of "green" glare with low potential to cause temporary after-image.
- 93 minutes of "yellow" glare with potential to cause temporary after-image.



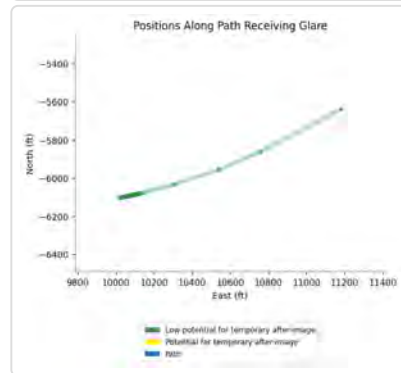
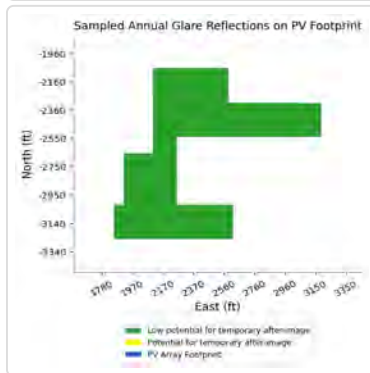
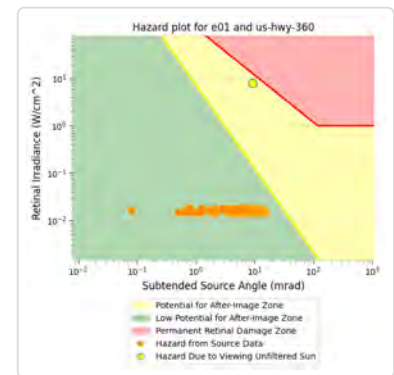
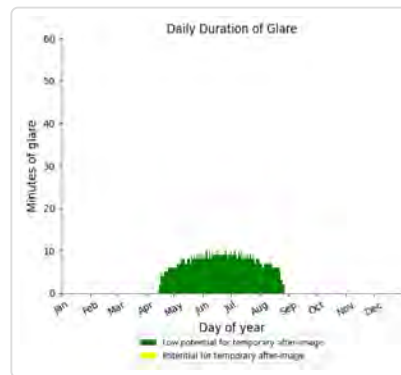
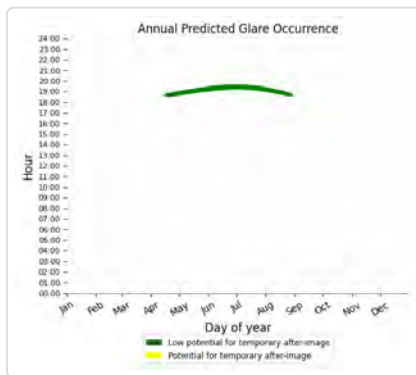
## E01: US Hwy 15

No glare found

## E01: US Hwy 360

PV array is expected to produce the following glare for this receptor:

- 1,010 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## E02 low potential for temporary after-image

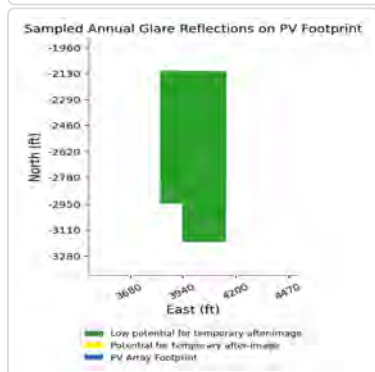
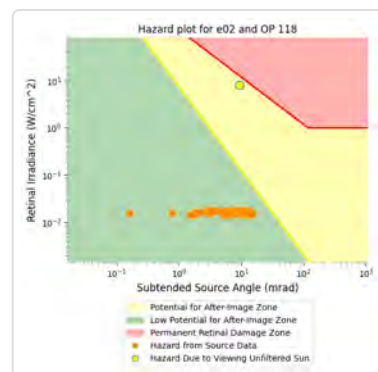
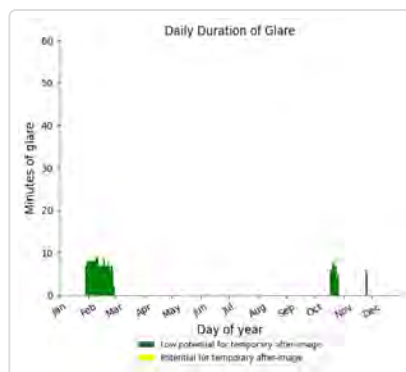
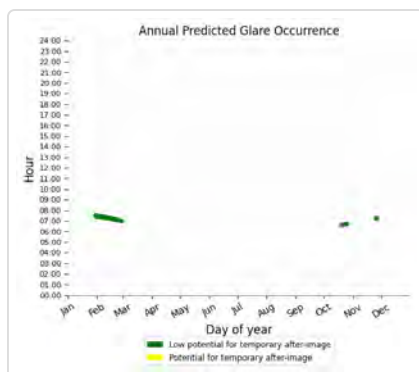
Component	Green glare (min)	Yellow glare (min)
OP: OP 118	298	0
OP: OP 119	317	0
OP: OP 120	121	0
OP: OP 121	119	0
OP: OP 122	0	0
OP: OP 123	0	0
OP: OP 124	0	0
OP: OP 125	0	0
OP: OP 126	0	0
OP: OP 127	0	0
OP: OP 128	0	0
OP: OP 129	0	0
OP: OP 130	0	0
OP: OP 131	0	0
OP: OP 132	0	0
OP: OP 133	0	0
Route: Collins Dr	0	0
Route: Country Dr Seg 1	0	0
Route: Country Dr Seg 2	0	0
Route: County Line Rd	434	0
Route: Dempseys Rd	0	0
Route: Harley Ln	0	0

Route: Henderson Rd	0	0
Route: Hillside Dr	0	0
Route: Ole Briery Station Rd Seg 1	734	0
Route: Ole Briery Station Rd Seg 2	532	0
Route: Thistle Knob Ln	0	0
Route: Tobacco Heritage Trail	452	0
Route: US Hwy 15	0	0
Route: US Hwy 360	0	0

## E02: OP 118

PV array is expected to produce the following glare for this receptor:

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

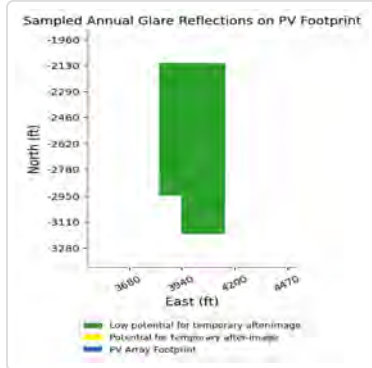
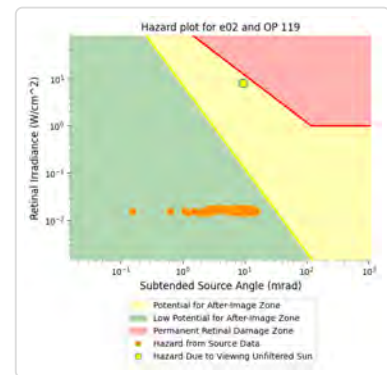
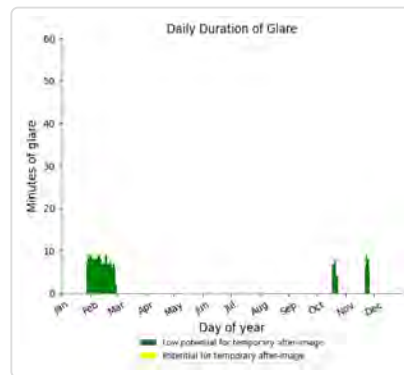
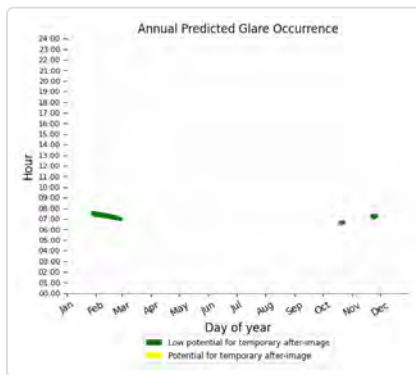




## E02: OP 119

PV array is expected to produce the following glare for this receptor:

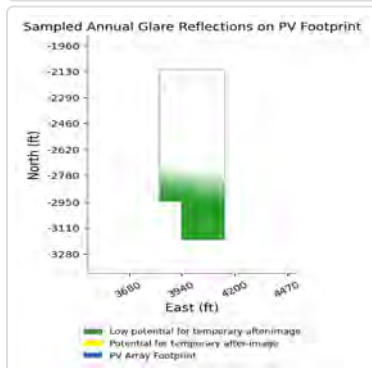
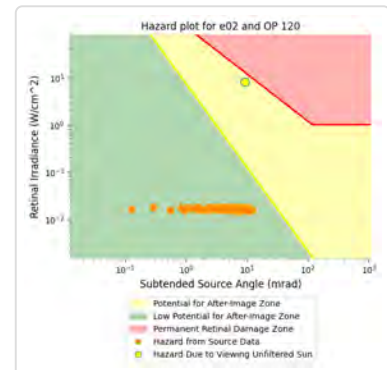
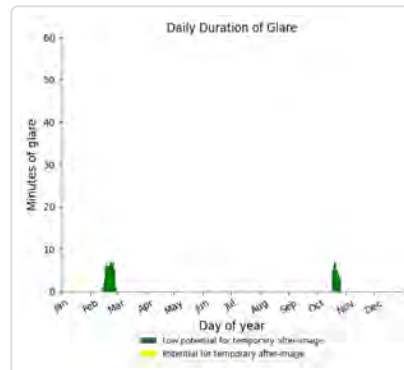
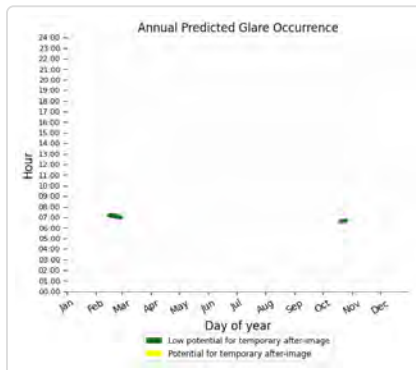
- 317 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## E02: OP 120

PV array is expected to produce the following glare for this receptor:

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

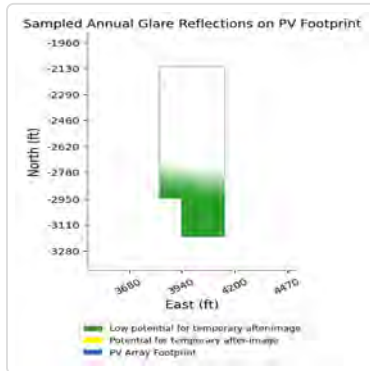
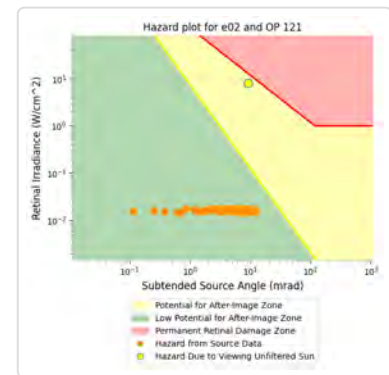
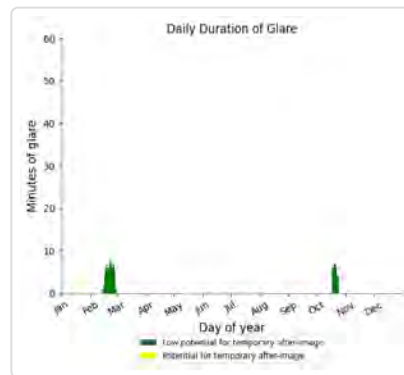
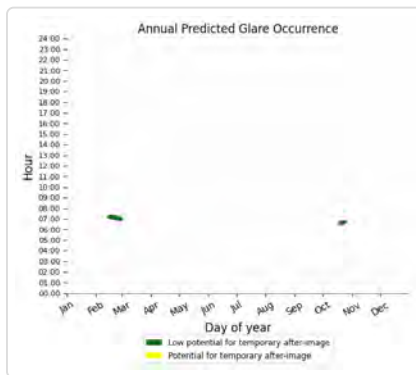




## E02: OP 121

PV array is expected to produce the following glare for this receptor:

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



## E02: OP 122

No glare found

## E02: OP 123

No glare found

## E02: OP 124

No glare found

## E02: OP 125

No glare found

## E02: OP 126

No glare found

## E02: OP 127

No glare found

## E02: OP 128

No glare found

## E02: OP 129

No glare found

E02: OP 130

No glare found

E02: OP 131

No glare found

E02: OP 132

No glare found

E02: OP 133

No glare found

E02: Collins Dr

No glare found

E02: Country Dr Seg 1

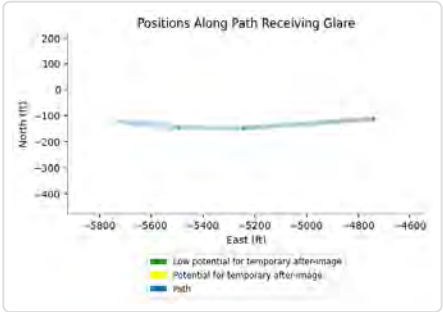
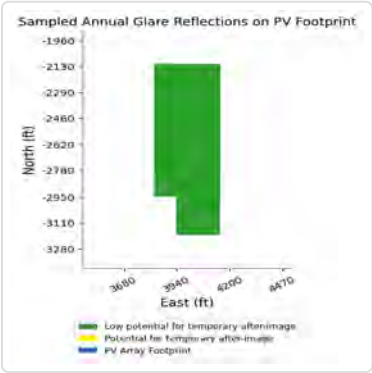
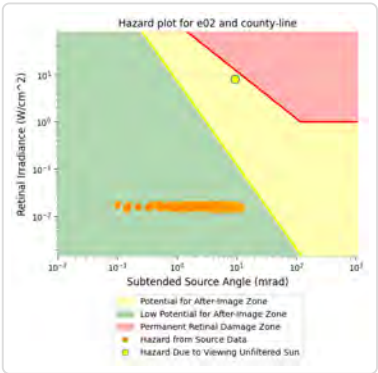
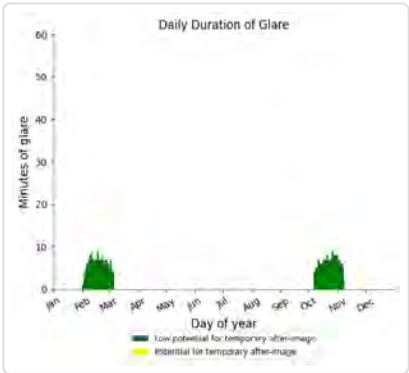
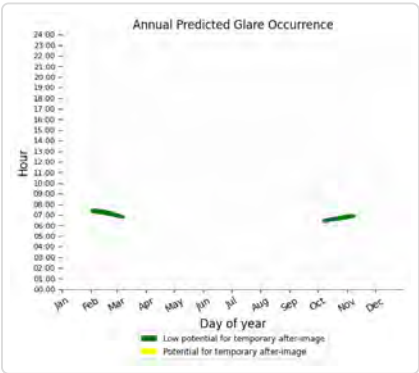
No glare found

E02: Country Dr Seg 2

No glare found

E02: County Line Rd

- PV array is expected to produce the following glare for this receptor:
- 434 minutes of "green" glare with low potential to cause temporary after-image.
  - 0 minutes of "yellow" glare with potential to cause temporary after-image.



E02: Dempseys Rd

No glare found

E02: Harley Ln

No glare found

E02: Henderson Rd

No glare found

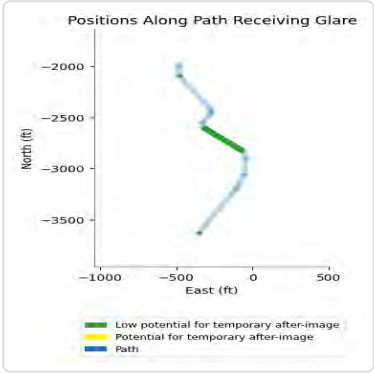
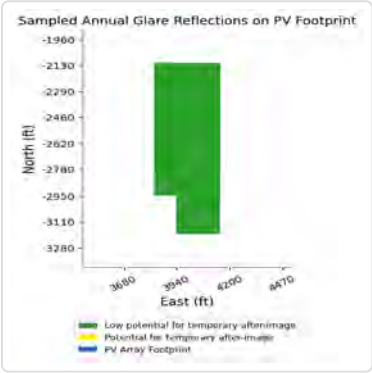
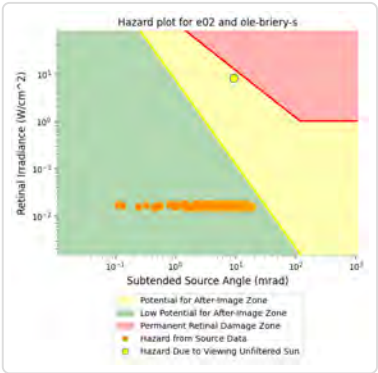
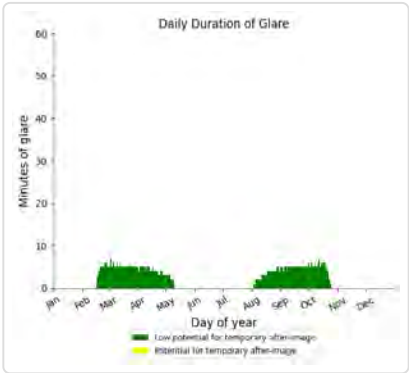
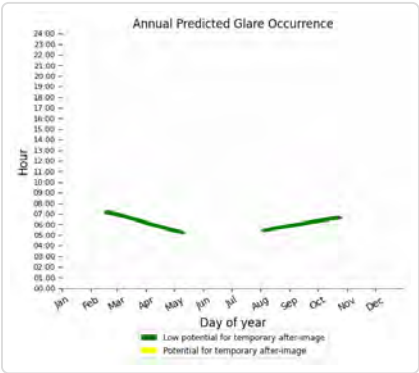
E02: Hillside Dr

No glare found

E02: Ole Briery Station Rd Seg 1

PV array is expected to produce the following glare for this receptor:

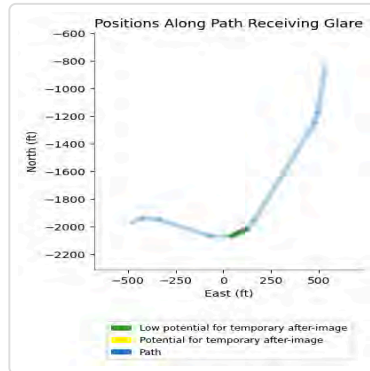
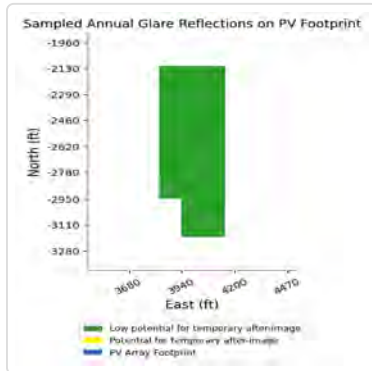
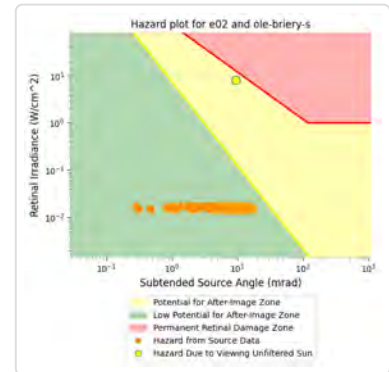
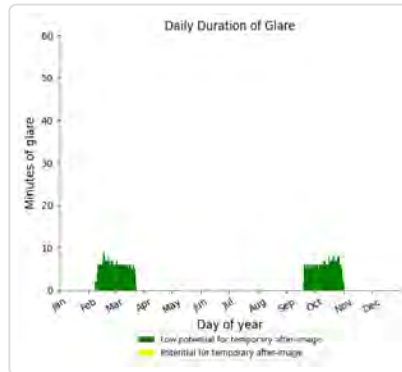
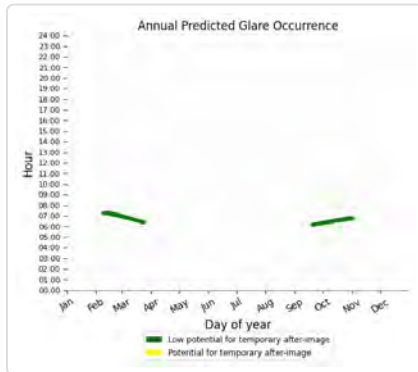
- 734 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## E02: Ole Briery Station Rd Seg 2

PV array is expected to produce the following glare for this receptor:

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

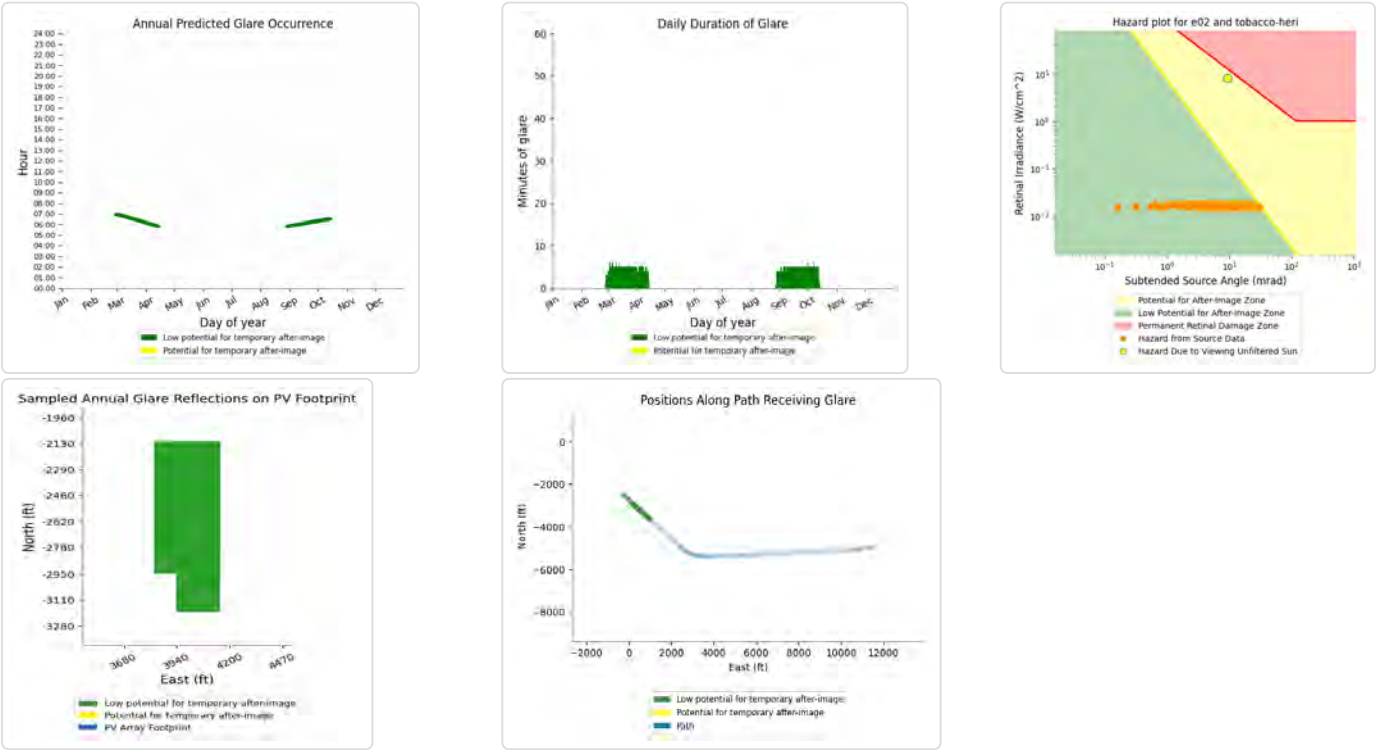


## E02: Thistle Knob Ln

No glare found

E02: Tobacco Heritage Trail

- PV array is expected to produce the following glare for this receptor:
- 452 minutes of "green" glare with low potential to cause temporary after-image.
  - 0 minutes of "yellow" glare with potential to cause temporary after-image.



E02: US Hwy 15

No glare found

E02: US Hwy 360

No glare found

E03 potential temporary after-image

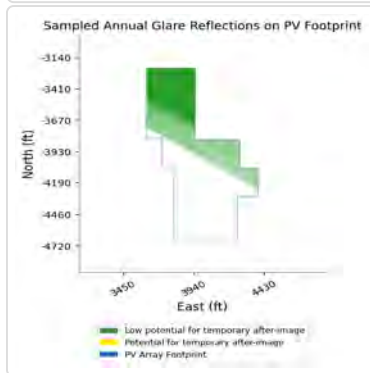
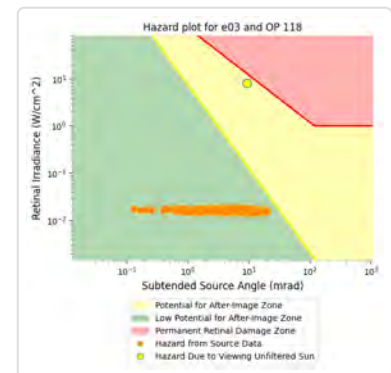
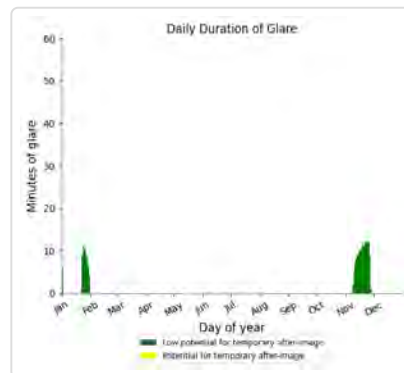
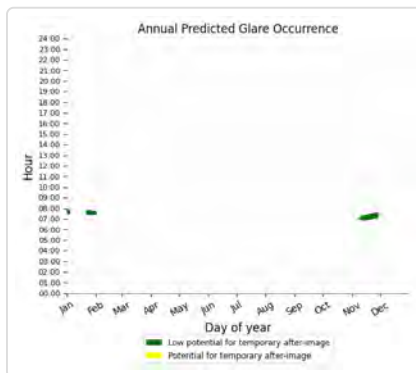
Component	Green glare (min)	Yellow glare (min)
OP: OP 118	275	0
OP: OP 119	279	0
OP: OP 120	571	0
OP: OP 121	581	0
OP: OP 122	277	0
OP: OP 123	296	0
OP: OP 124	190	0
OP: OP 125	199	0
OP: OP 126	81	0
OP: OP 127	71	0
OP: OP 128	0	0
OP: OP 129	0	0
OP: OP 130	0	0
OP: OP 131	0	0
OP: OP 132	0	0

OP: OP 133	0	0
Route: Collins Dr	0	0
Route: Country Dr Seg 1	0	0
Route: Country Dr Seg 2	0	0
Route: County Line Rd	1119	0
Route: Dempseys Rd	0	0
Route: Harley Ln	0	0
Route: Henderson Rd	0	0
Route: Hillside Dr	0	0
Route: Ole Briery Station Rd Seg 1	1712	0
Route: Ole Briery Station Rd Seg 2	1534	0
Route: Thistle Knob Ln	0	0
Route: Tobacco Heritage Trail	1174	586
Route: US Hwy 15	0	0
Route: US Hwy 360	0	0

### E03: OP 118

PV array is expected to produce the following glare for this receptor:

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

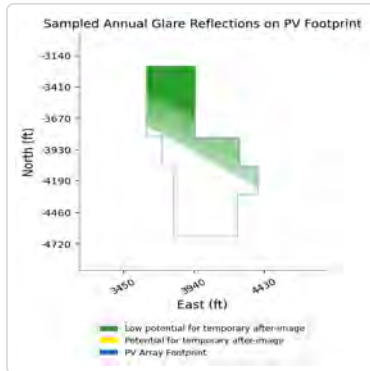
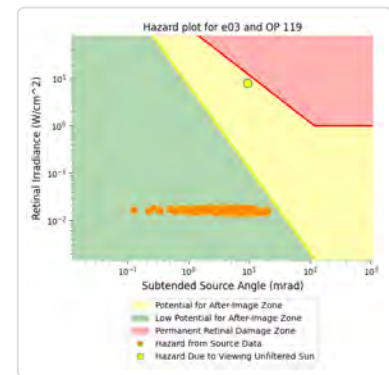
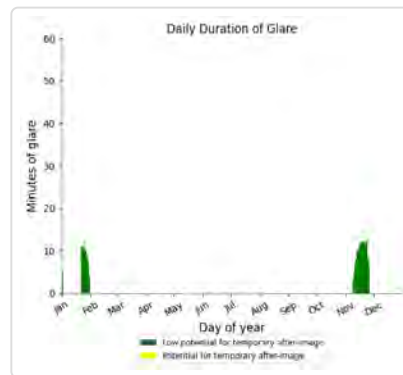
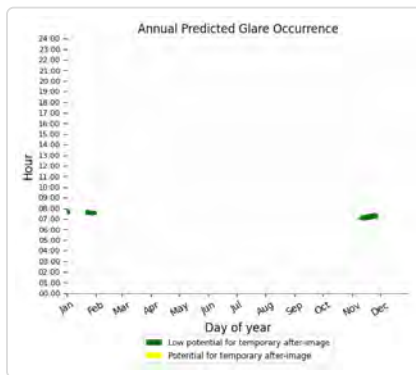




### E03: OP 119

PV array is expected to produce the following glare for this receptor:

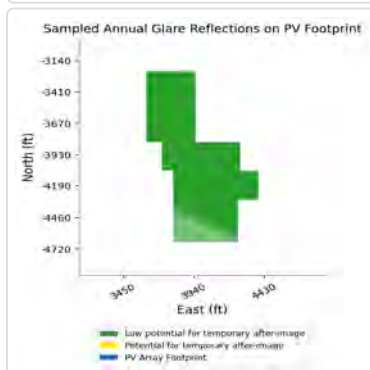
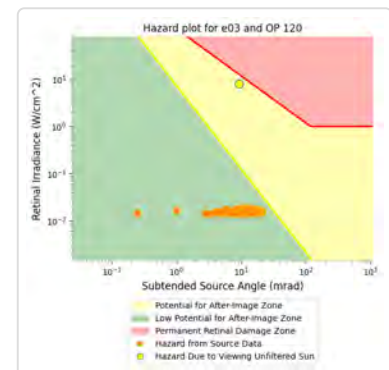
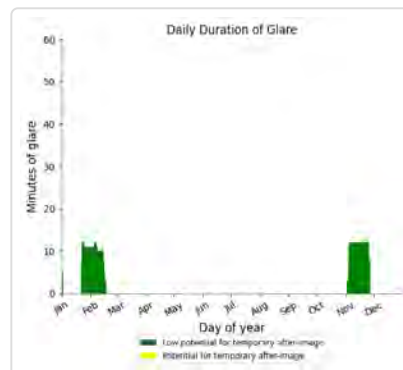
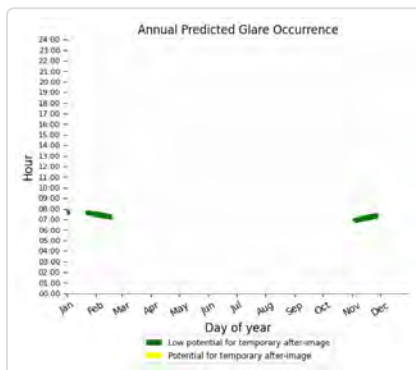
- 279 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



### E03: OP 120

PV array is expected to produce the following glare for this receptor:

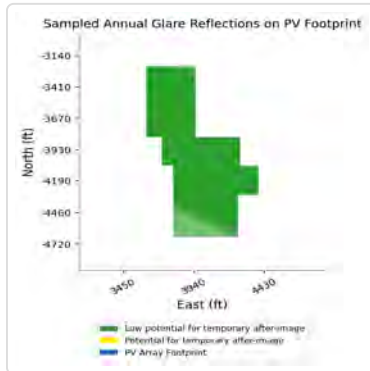
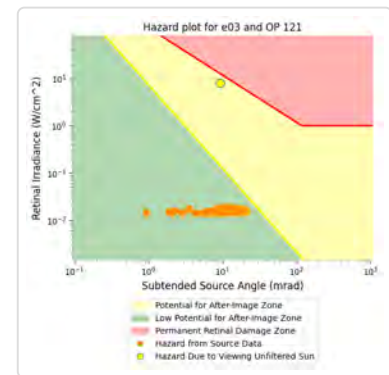
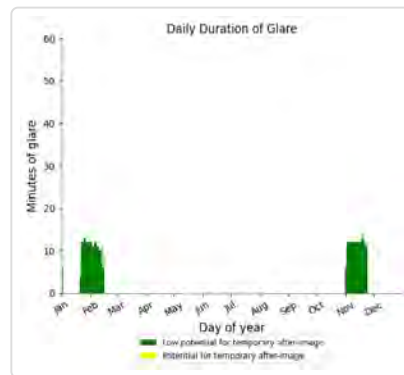
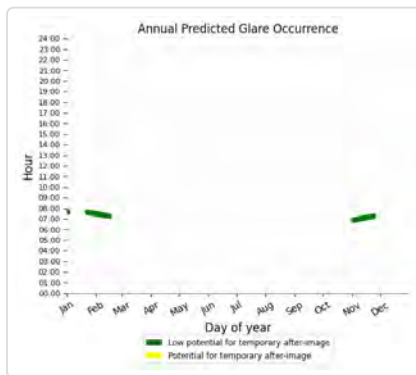
- 571 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



### E03: OP 121

PV array is expected to produce the following glare for this receptor:

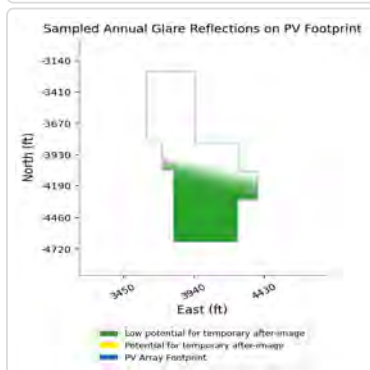
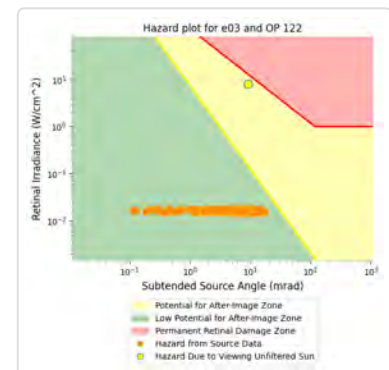
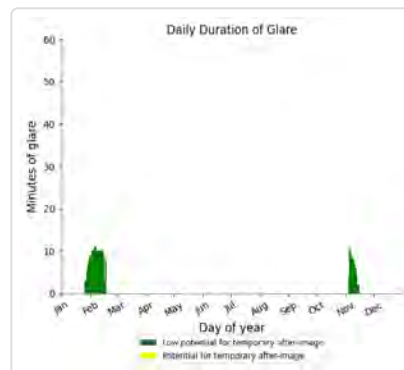
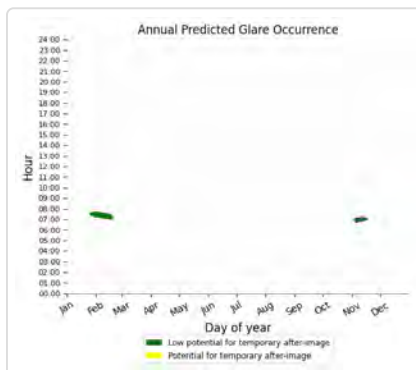
- 581 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



### E03: OP 122

PV array is expected to produce the following glare for this receptor:

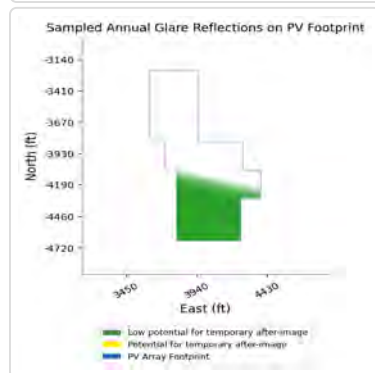
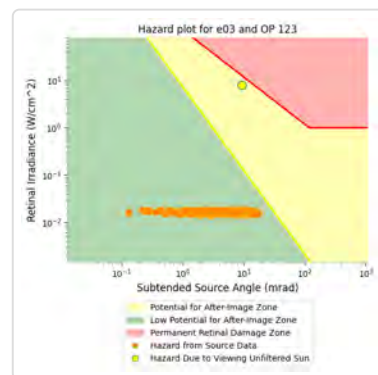
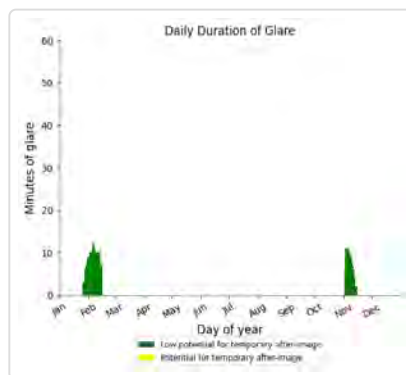
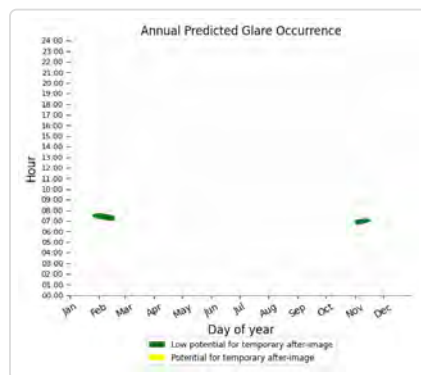
- 277 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



### E03: OP 123

PV array is expected to produce the following glare for this receptor:

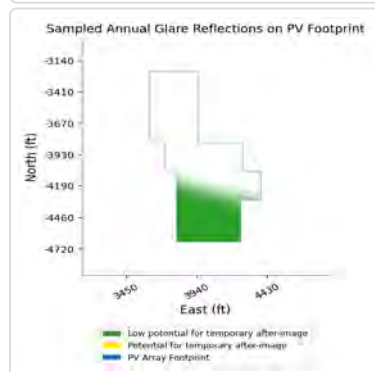
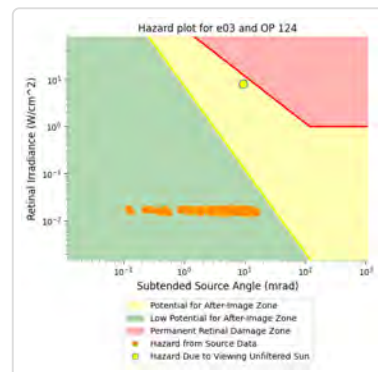
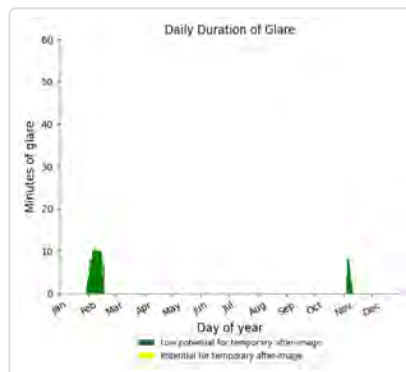
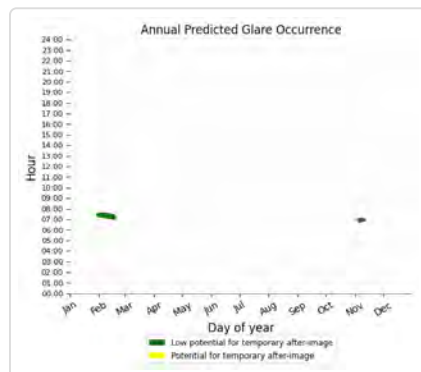
- 296 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



### E03: OP 124

PV array is expected to produce the following glare for this receptor:

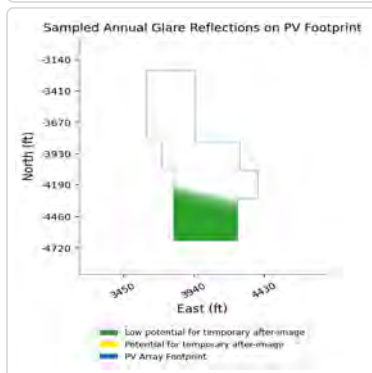
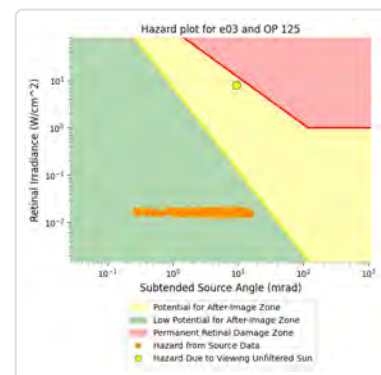
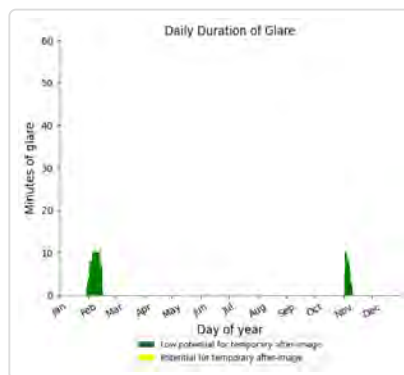
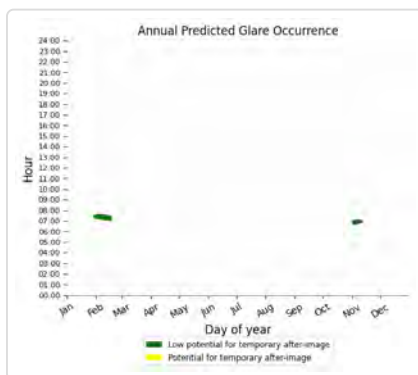
- 190 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



### E03: OP 125

PV array is expected to produce the following glare for this receptor:

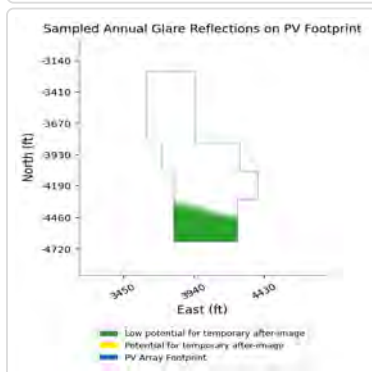
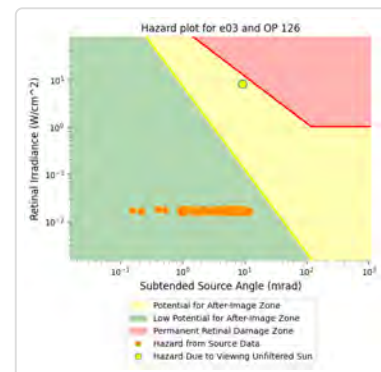
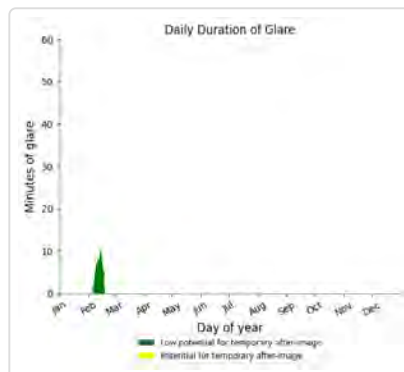
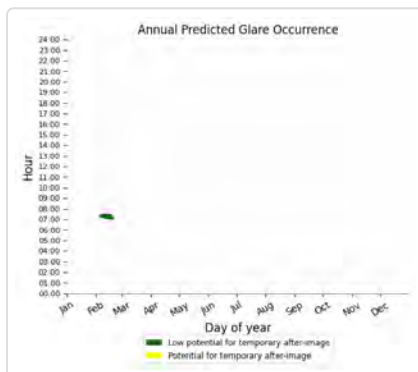
- 199 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



### E03: OP 126

PV array is expected to produce the following glare for this receptor:

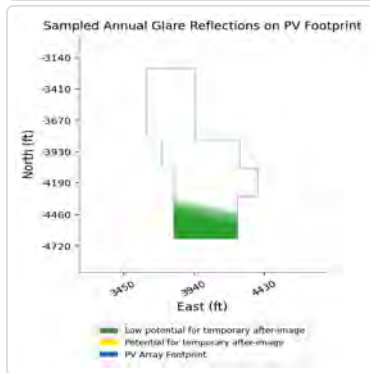
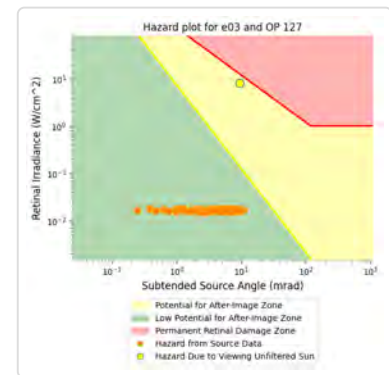
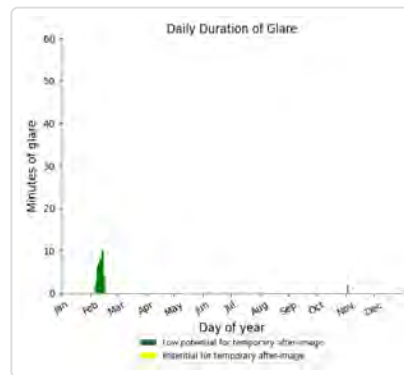
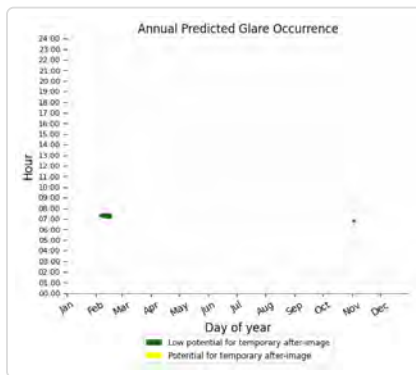
- 81 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



### E03: OP 127

PV array is expected to produce the following glare for this receptor:

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



### E03: OP 128

No glare found

### E03: OP 129

No glare found

### E03: OP 130

No glare found

### E03: OP 131

No glare found

### E03: OP 132

No glare found

### E03: OP 133

No glare found

### E03: Collins Dr

No glare found

### E03: Country Dr Seg 1

No glare found

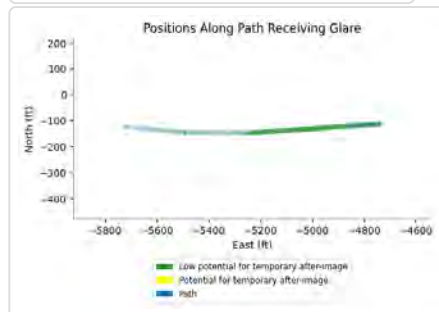
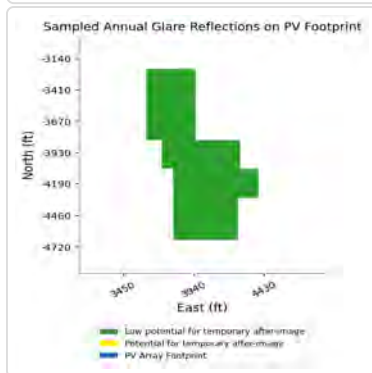
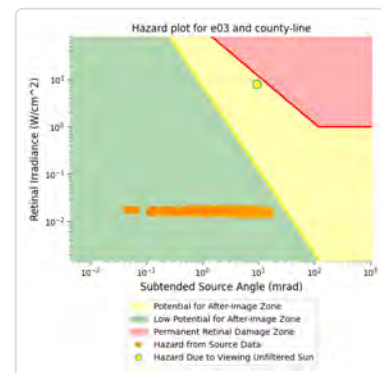
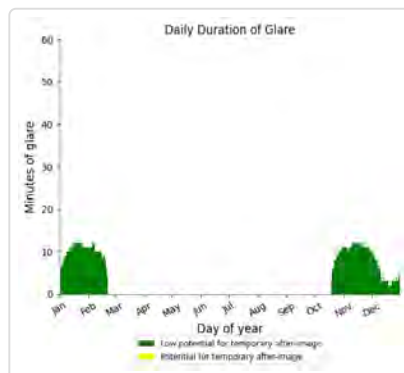
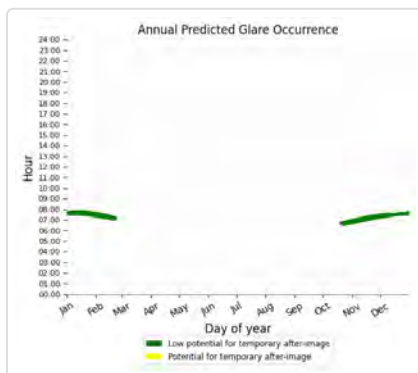
### E03: Country Dr Seg 2

No glare found

### E03: County Line Rd

PV array is expected to produce the following glare for this receptor:

- 1,119 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



### E03: Dempseys Rd

No glare found

### E03: Harley Ln

No glare found

### E03: Henderson Rd

No glare found

### E03: Hillside Dr

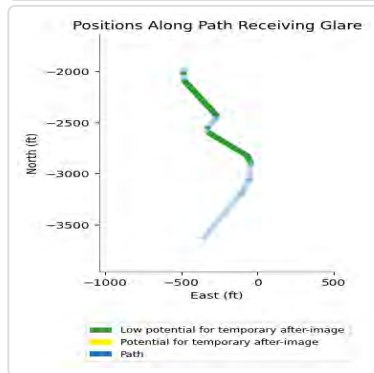
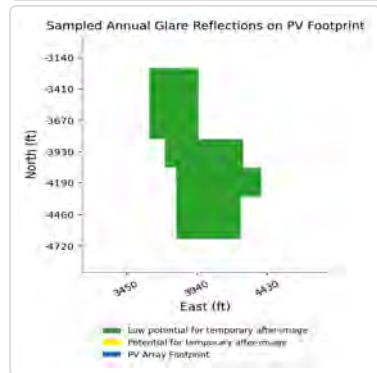
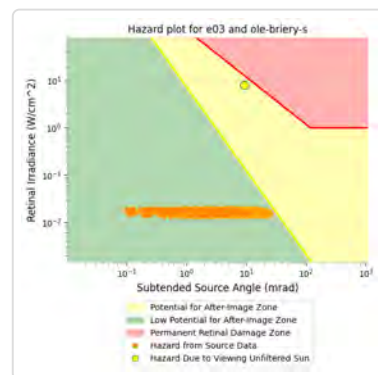
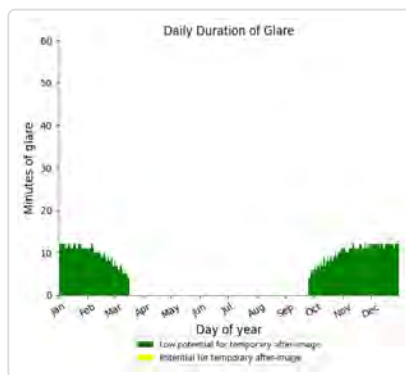
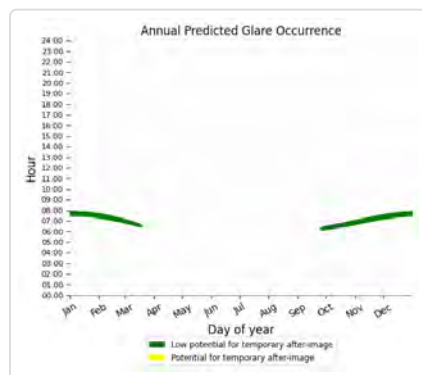
No glare found



### E03: Ole Briery Station Rd Seg 1

PV array is expected to produce the following glare for this receptor:

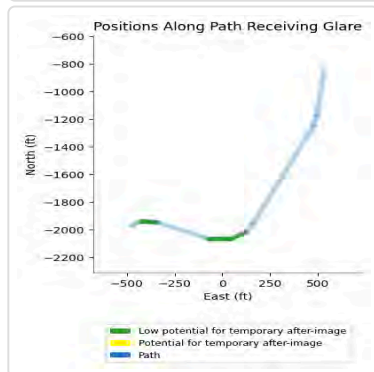
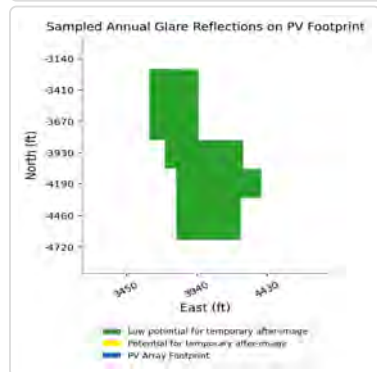
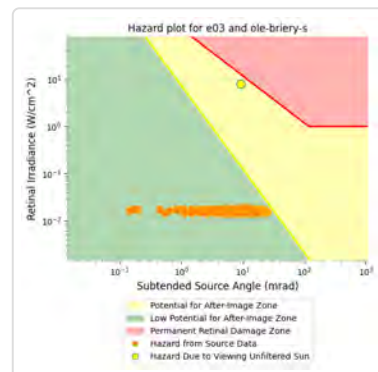
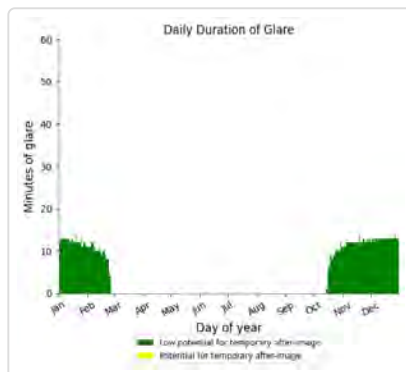
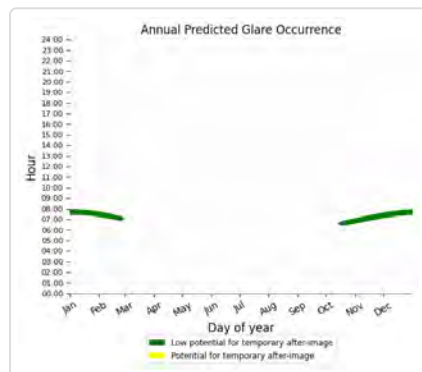
- 1,712 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



### E03: Ole Briery Station Rd Seg 2

PV array is expected to produce the following glare for this receptor:

- 1,534 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



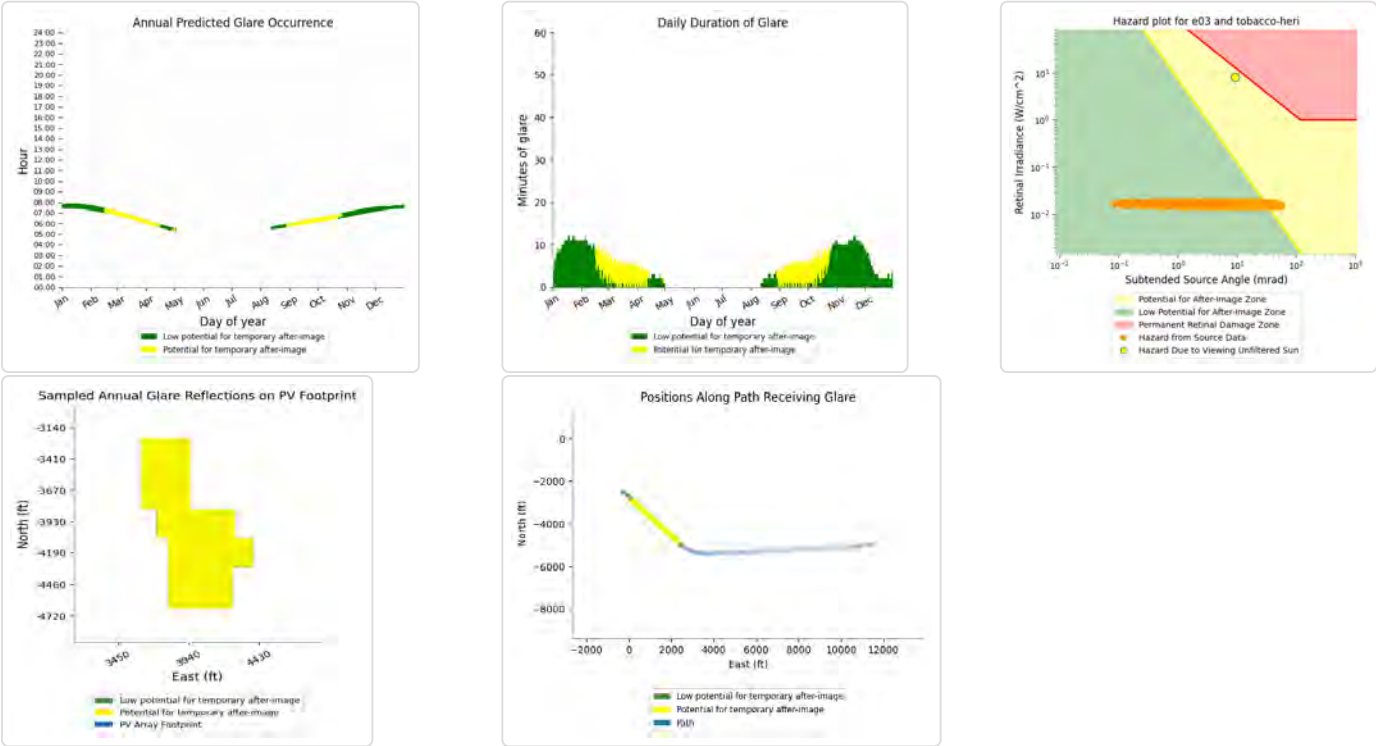
E03: Thistle Knob Ln

No glare found

E03: Tobacco Heritage Trail

PV array is expected to produce the following glare for this receptor:

- 1,174 minutes of "green" glare with low potential to cause temporary after-image.
- 586 minutes of "yellow" glare with potential to cause temporary after-image.



E03: US Hwy 15

No glare found

E03: US Hwy 360

No glare found

E04 low potential for temporary after-image

Component	Green glare (min)	Yellow glare (min)
OP: OP 118	0	0
OP: OP 119	0	0
OP: OP 120	171	0
OP: OP 121	132	0
OP: OP 122	204	0
OP: OP 123	253	0
OP: OP 124	158	0
OP: OP 125	191	0
OP: OP 126	152	0
OP: OP 127	141	0
OP: OP 128	0	0
OP: OP 129	0	0

OP: OP 130	0	0
OP: OP 131	0	0
OP: OP 132	0	0
OP: OP 133	0	0
Route: Collins Dr	0	0
Route: Country Dr Seg 1	129	0
Route: Country Dr Seg 2	93	0
Route: County Line Rd	875	0
Route: Dempseys Rd	0	0
Route: Harley Ln	0	0
Route: Henderson Rd	0	0
Route: Hillside Dr	107	0
Route: Ole Briery Station Rd Seg 1	1093	0
Route: Ole Briery Station Rd Seg 2	666	0
Route: Thistle Knob Ln	0	0
Route: Tobacco Heritage Trail	1333	0
Route: US Hwy 15	0	0
Route: US Hwy 360	125	0

#### E04: OP 118

No glare found

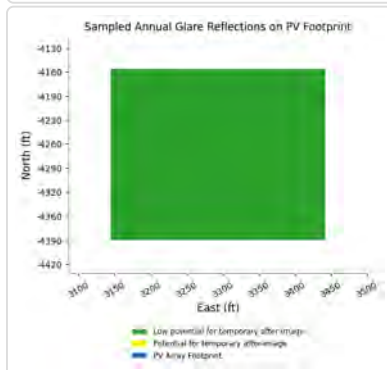
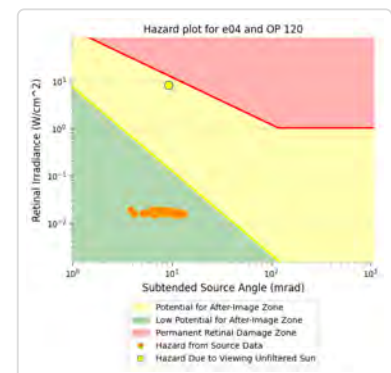
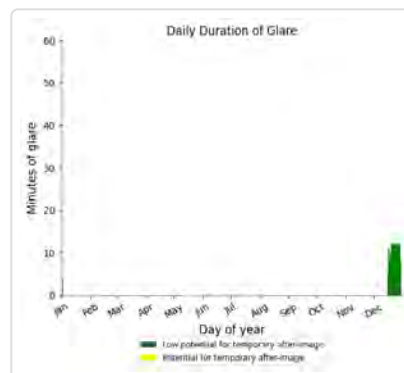
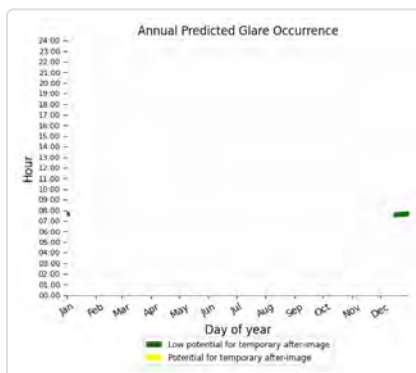
#### E04: OP 119

No glare found

#### E04: OP 120

PV array is expected to produce the following glare for this receptor:

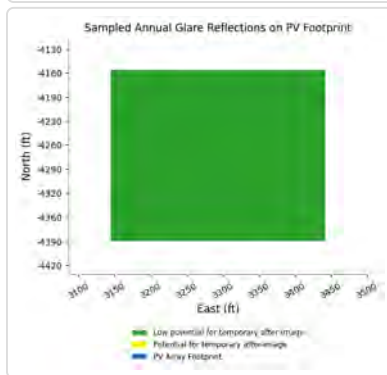
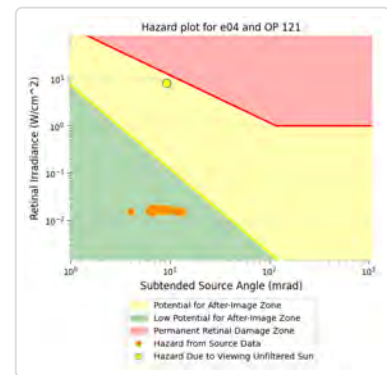
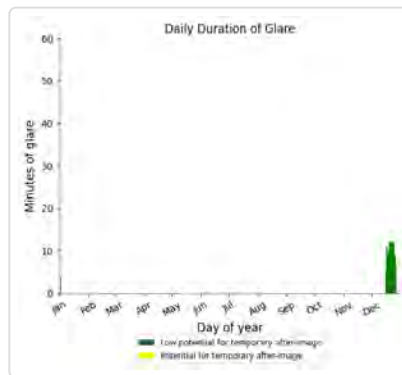
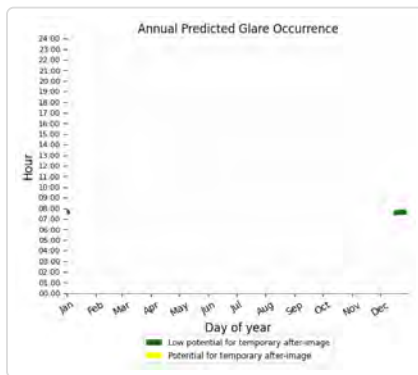
- 171 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## E04: OP 121

PV array is expected to produce the following glare for this receptor:

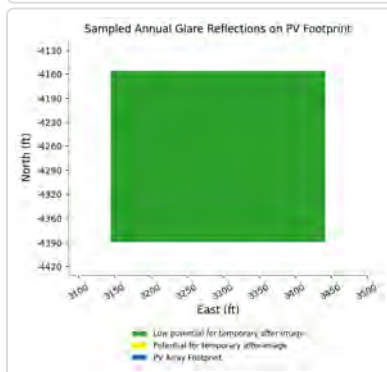
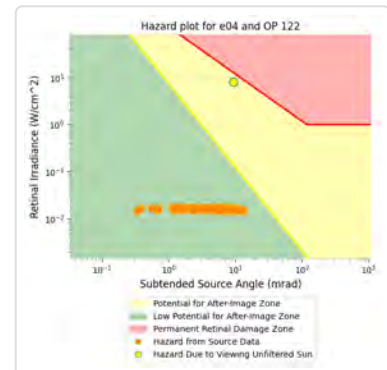
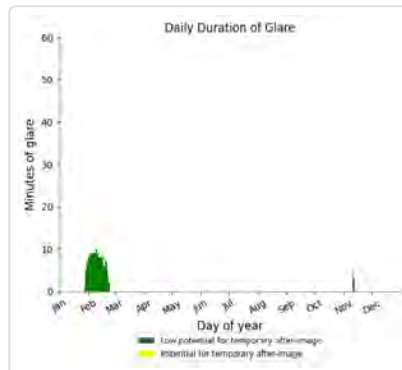
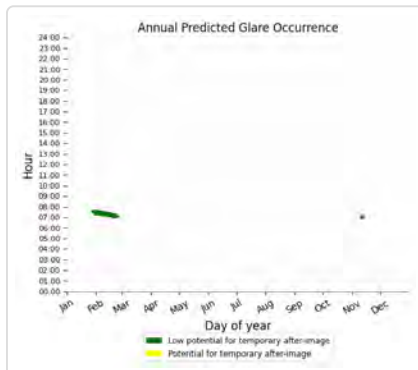
- 132 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## E04: OP 122

PV array is expected to produce the following glare for this receptor:

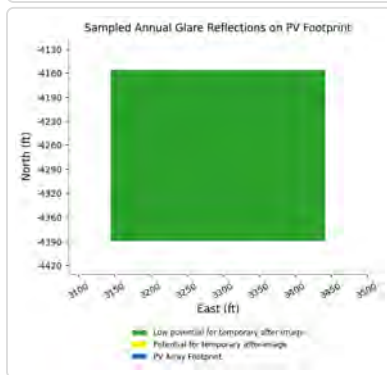
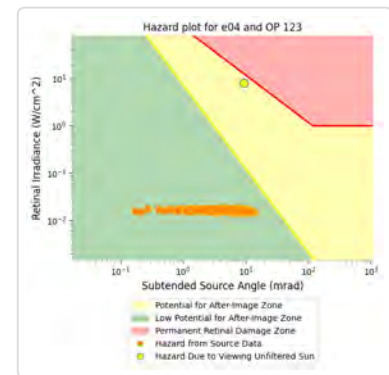
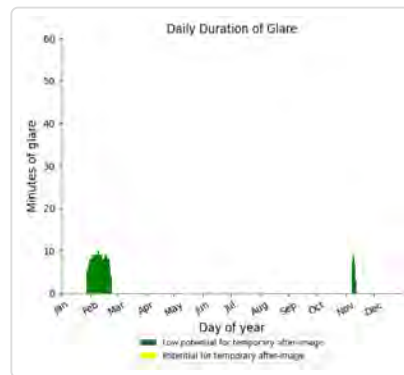
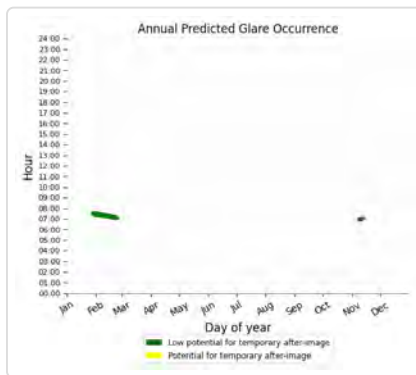
- 204 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## E04: OP 123

PV array is expected to produce the following glare for this receptor:

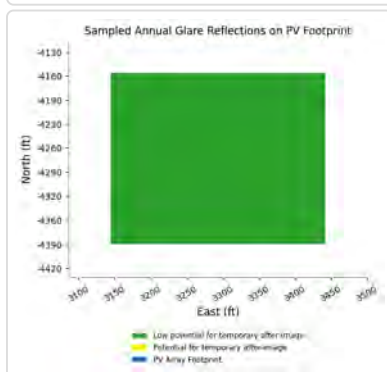
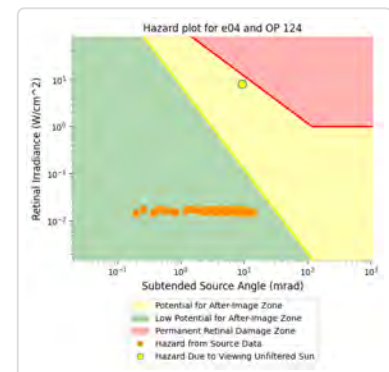
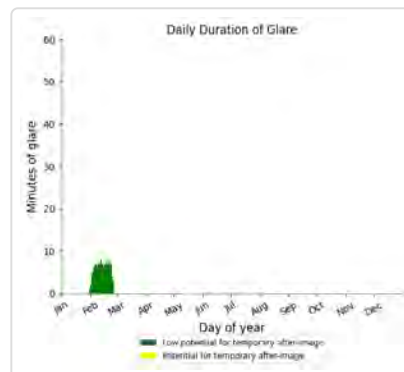
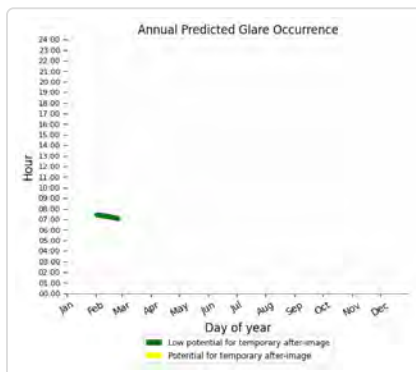
- 253 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## E04: OP 124

PV array is expected to produce the following glare for this receptor:

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

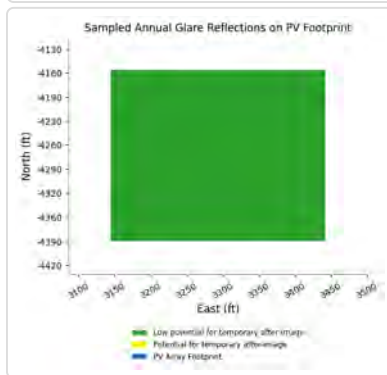
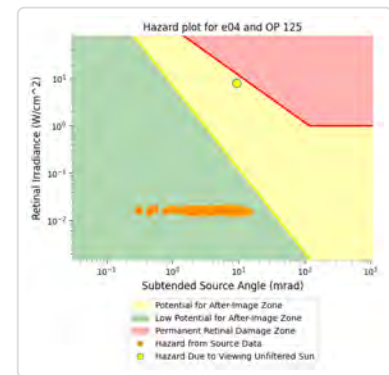
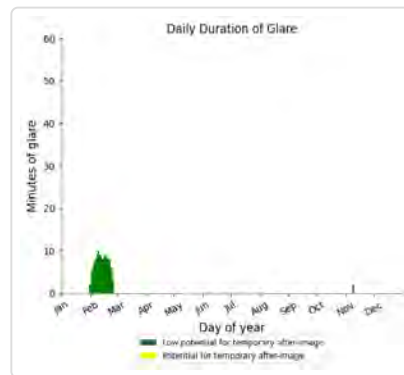
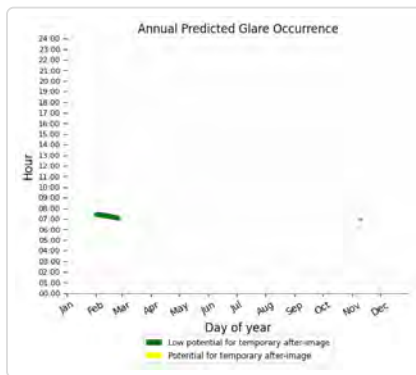




## E04: OP 125

PV array is expected to produce the following glare for this receptor:

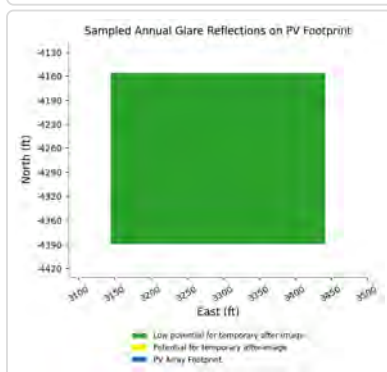
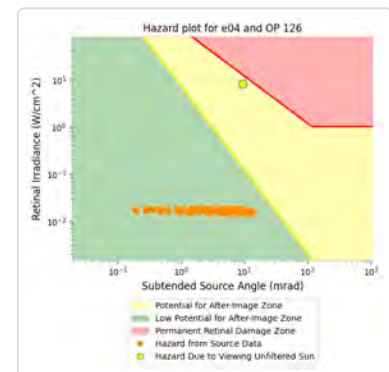
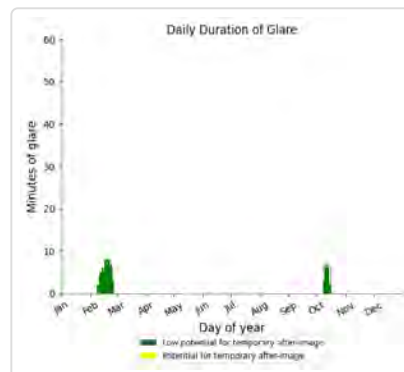
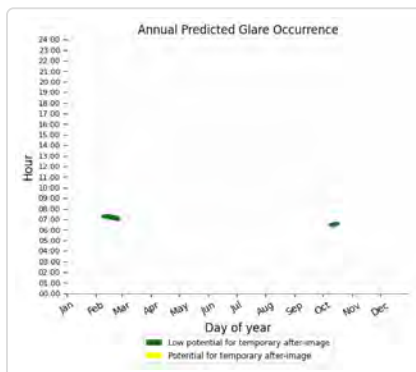
- 191 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## E04: OP 126

PV array is expected to produce the following glare for this receptor:

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

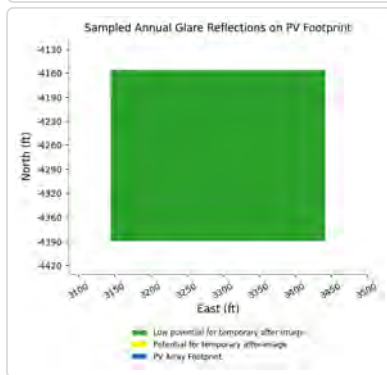
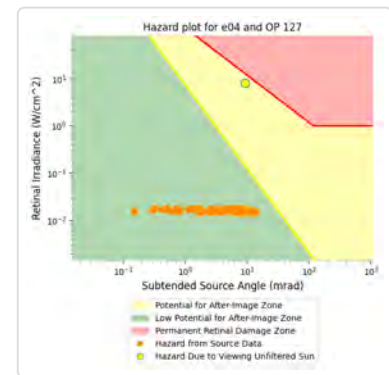
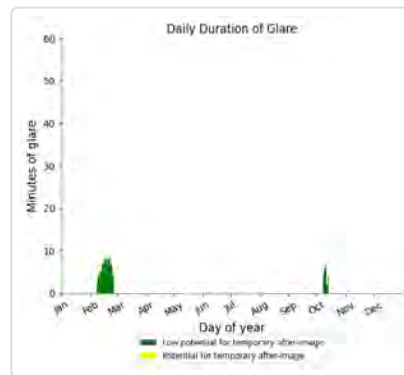
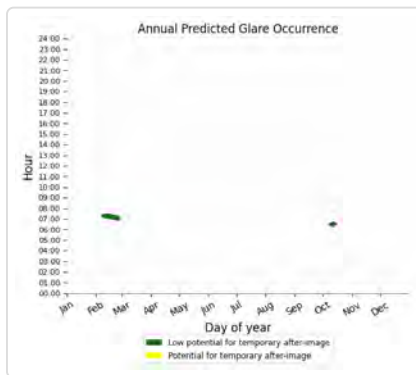




#### E04: OP 127

PV array is expected to produce the following glare for this receptor:

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



#### E04: OP 128

No glare found

#### E04: OP 129

No glare found

#### E04: OP 130

No glare found

#### E04: OP 131

No glare found

#### E04: OP 132

No glare found

#### E04: OP 133

No glare found

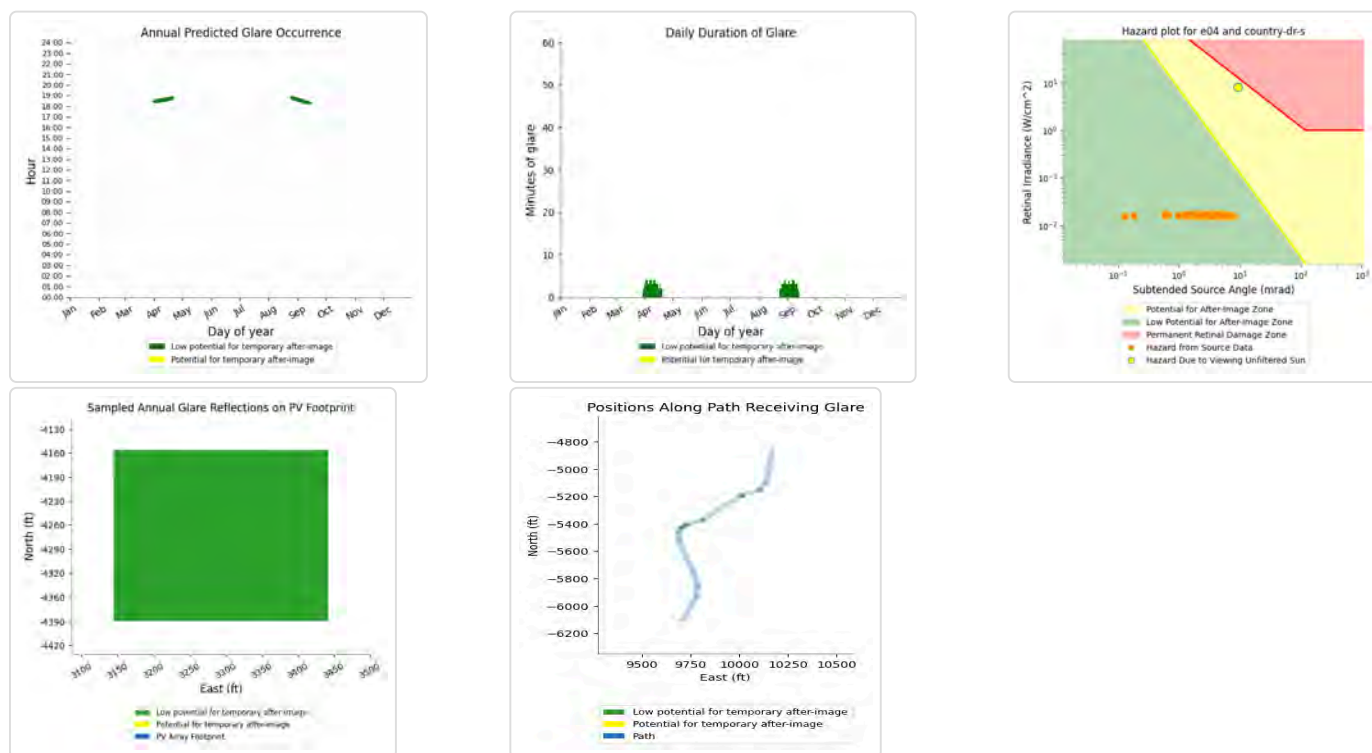
#### E04: Collins Dr

No glare found

## E04: Country Dr Seg 1

PV array is expected to produce the following glare for this receptor:

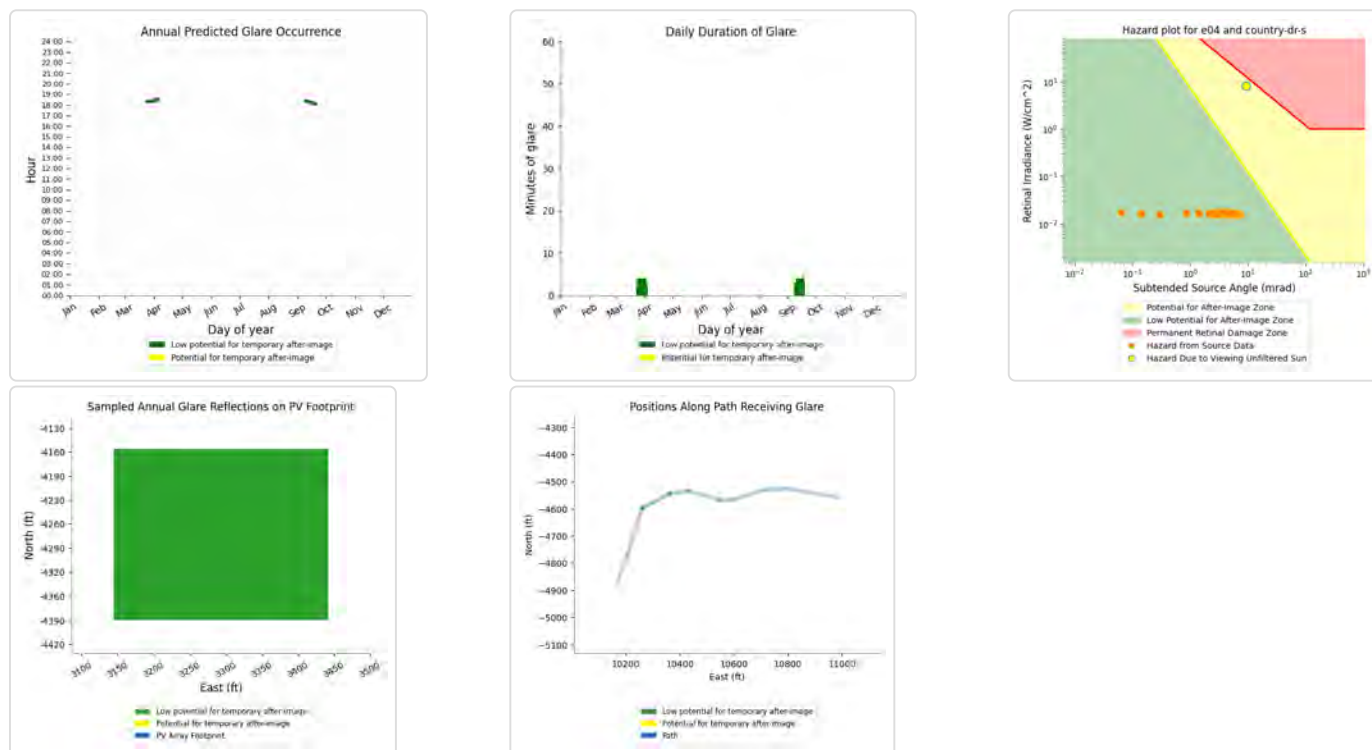
- 129 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## E04: Country Dr Seg 2

PV array is expected to produce the following glare for this receptor:

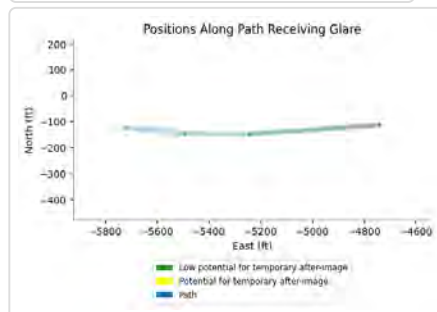
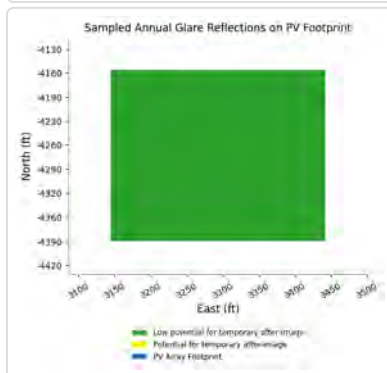
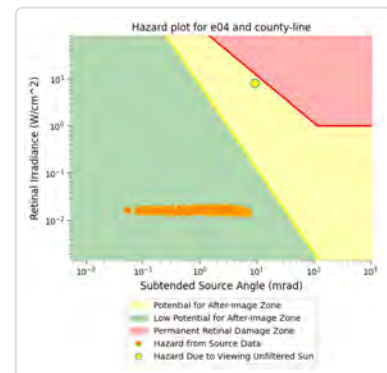
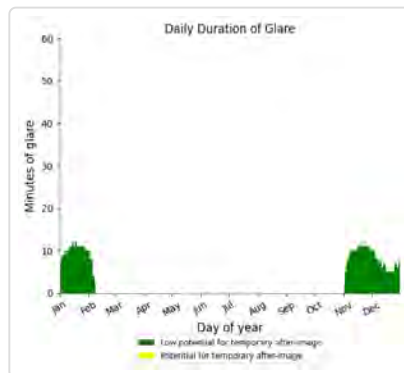
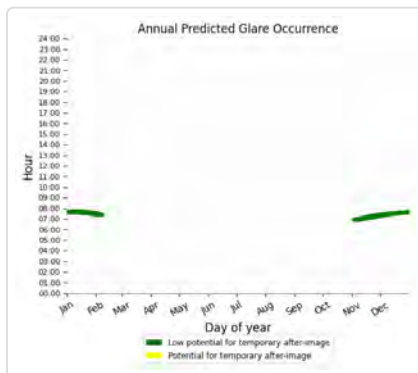
- 93 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## E04: County Line Rd

PV array is expected to produce the following glare for this receptor:

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



## E04: Dempseys Rd

No glare found

## E04: Harley Ln

No glare found

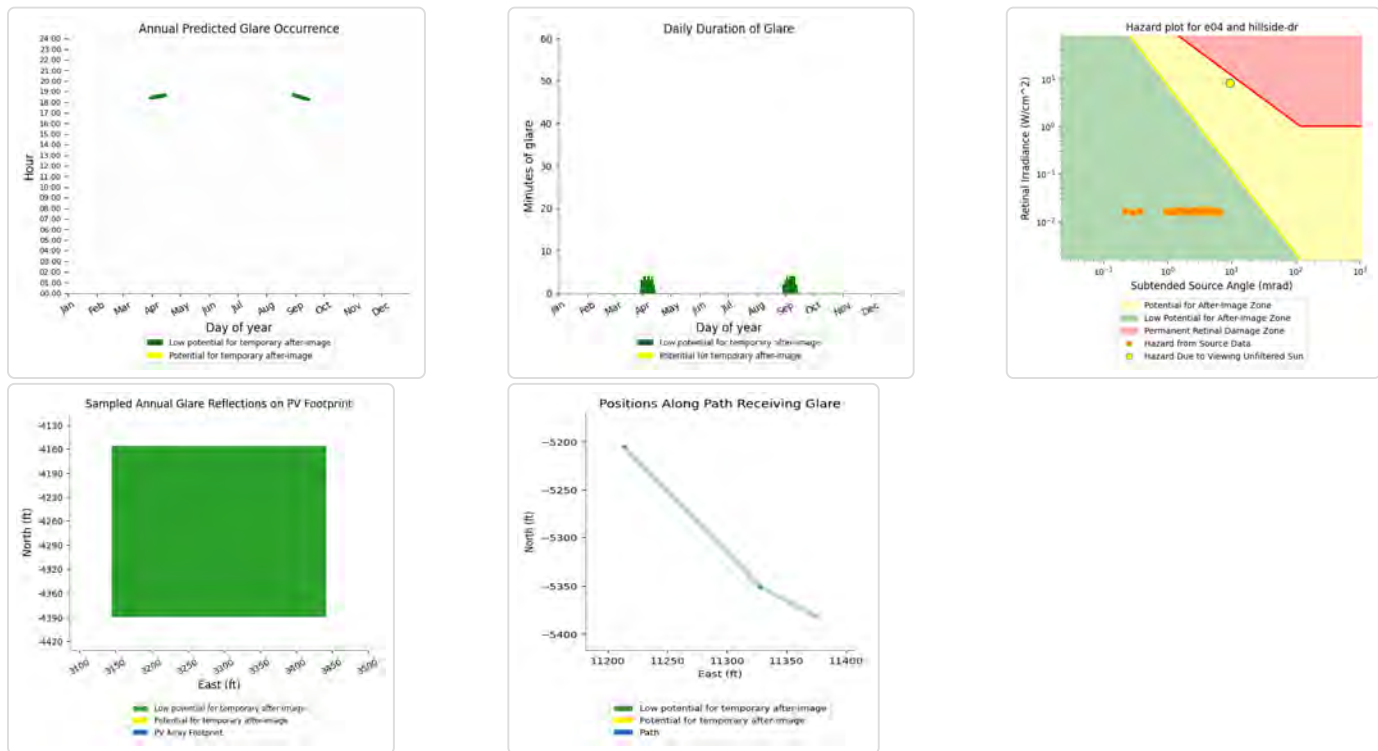
## E04: Henderson Rd

No glare found

## E04: Hillside Dr

PV array is expected to produce the following glare for this receptor:

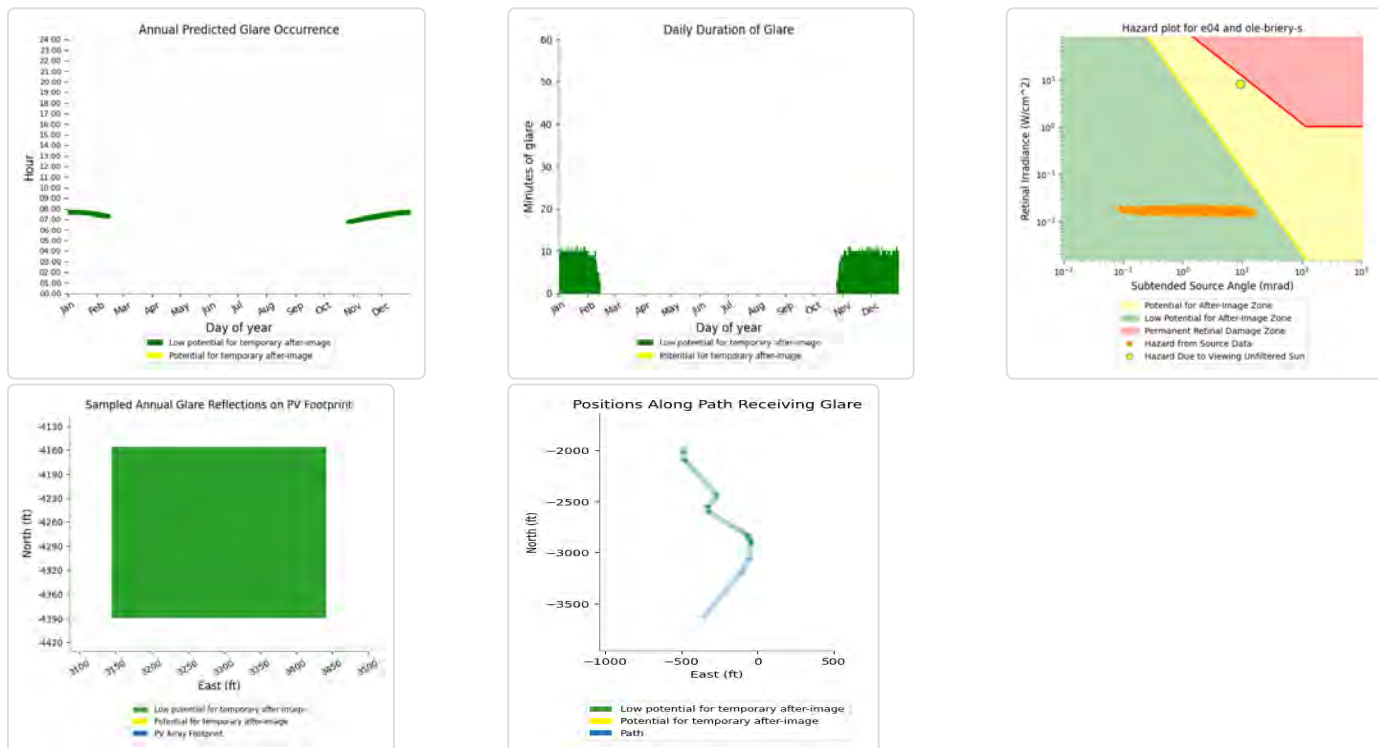
- 107 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## E04: Ole Briery Station Rd Seg 1

PV array is expected to produce the following glare for this receptor:

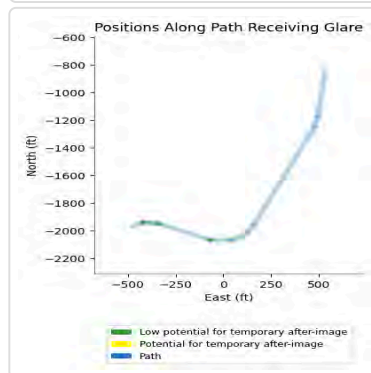
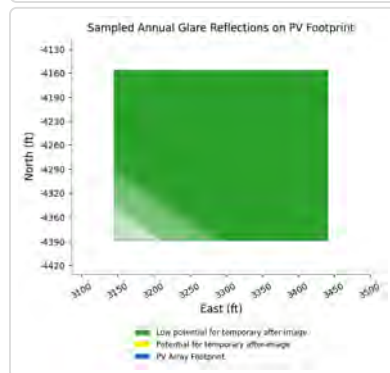
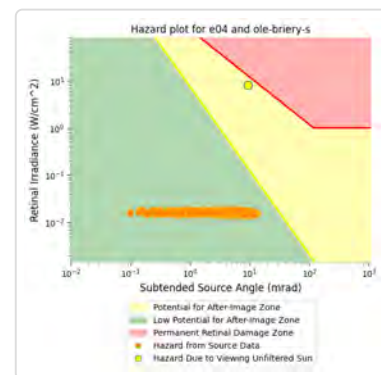
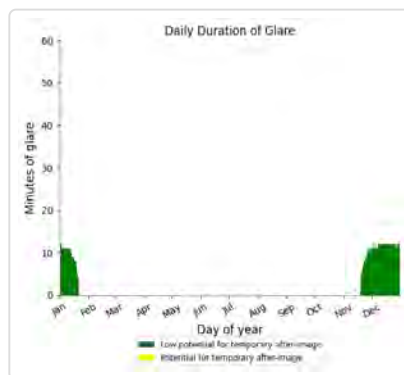
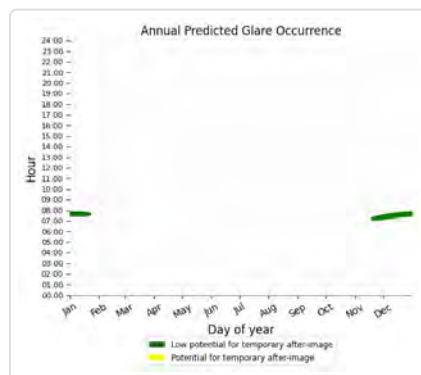
- 1,093 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## E04: Ole Briery Station Rd Seg 2

PV array is expected to produce the following glare for this receptor:

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



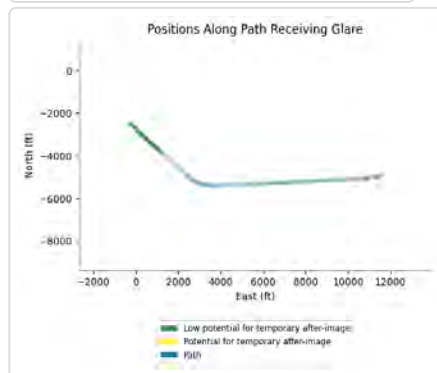
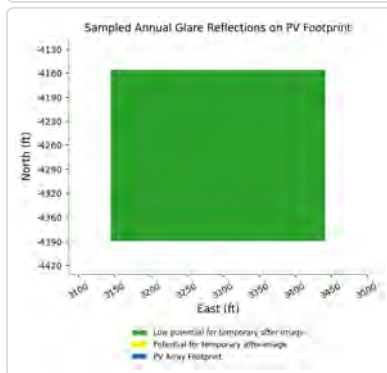
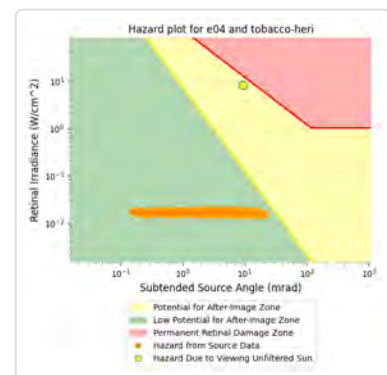
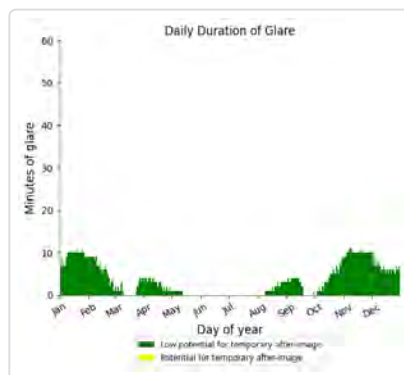
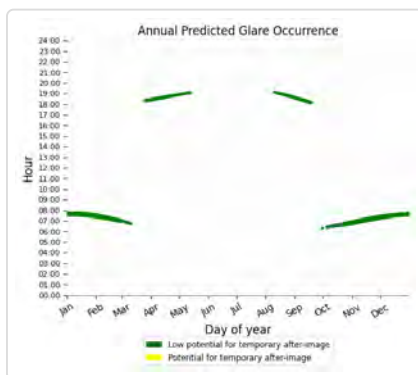
## E04: Thistle Knob Ln

No glare found

## E04: Tobacco Heritage Trail

PV array is expected to produce the following glare for this receptor:

- 1,333 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## E04: US Hwy 15

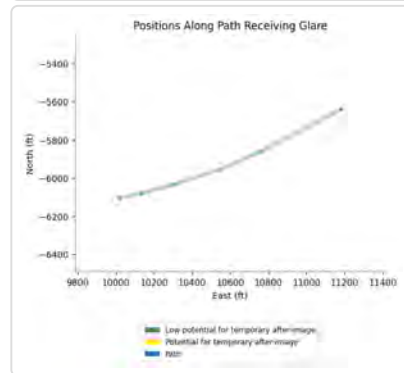
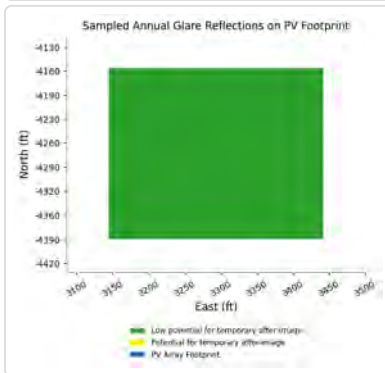
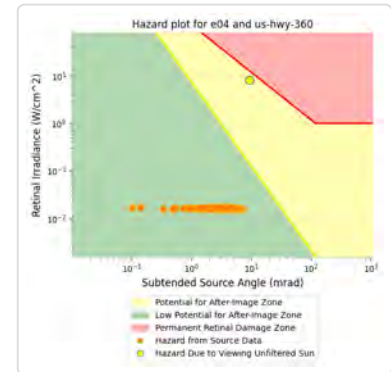
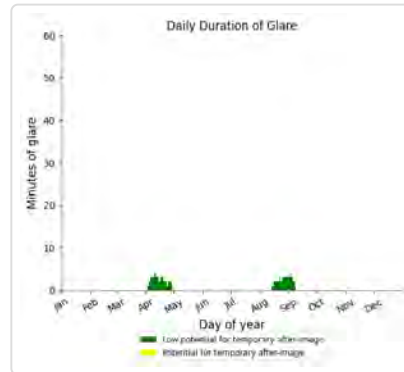
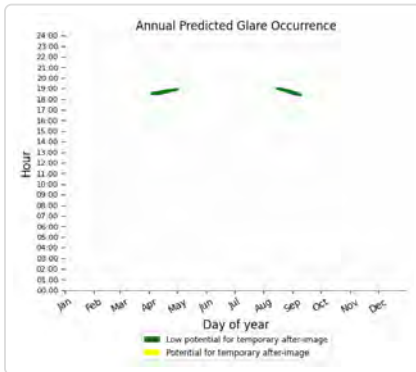
No glare found



## E04: US Hwy 360

PV array is expected to produce the following glare for this receptor:

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



## Summary of Vertical Surface Glare Analysis

### Assumptions

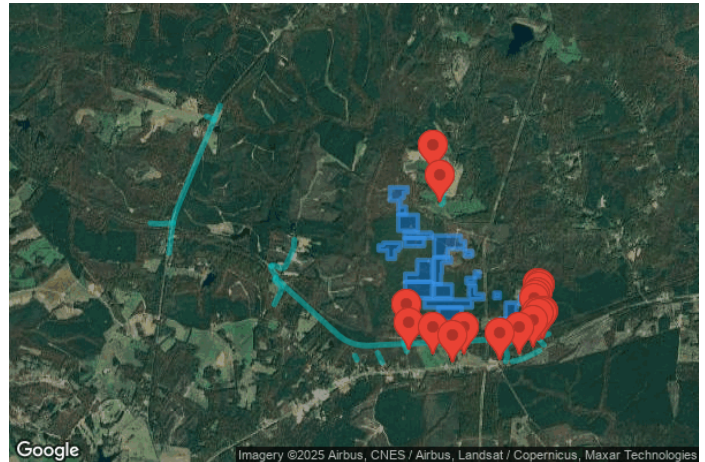
- Times associated with glare are denoted in Standard time. For Daylight Savings, add one hour.
- Glare analyses do not automatically account for physical obstructions between reflectors and receptors. This includes buildings, tree cover and geographical obstructions.
- Detailed system geometry is not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

# Tobacco Trail Solar

## TT\_F01-H03\_9fA\_0DRA\_SGARC

**Created** Oct 02, 2025  
**Updated** Oct 03, 2025  
**Time-step** 1 minute  
**Timezone offset** UTC-5  
**Minimum sun altitude** 0.0 deg  
**Site ID** 160936.26911

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



### Misc. Analysis Settings

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

**PV Analysis Methodology:** Version 2  
**Enhanced subtended angle calculation:** On

### 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
F01	SA tracking	SA tracking	2,075	228	-
F02	SA tracking	SA tracking	2,382	1,028	-
F03	SA tracking	SA tracking	1,698	0	-
F04	SA tracking	SA tracking	2,690	0	-
F05	SA tracking	SA tracking	3,106	23	-
G01	SA tracking	SA tracking	570	0	-
G02	SA tracking	SA tracking	472	0	-
G03	SA tracking	SA tracking	1,503	0	-
G04	SA tracking	SA tracking	468	0	-
G05	SA tracking	SA tracking	391	0	-
G06	SA tracking	SA tracking	0	0	-
G07	SA tracking	SA tracking	1,486	7	-
G08	SA tracking	SA tracking	3,914	0	-
G09	SA tracking	SA tracking	6,295	0	-
G10	SA tracking	SA tracking	17,424	2,090	-
G11	SA tracking	SA tracking	5,422	1,947	-
H01	SA tracking	SA tracking	1,897	0	-
H02	SA tracking	SA tracking	3,105	2	-
H03	SA tracking	SA tracking	2,527	0	-
H04	SA tracking	SA tracking	1,838	0	-

Component Data

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## PV Array(s)

Total PV footprint area: 201.9 acres

Name: F01

Footprint area: 11.9 acres

Axis tracking: Single-axis rotation

Backtracking: Shade

Tracking axis orientation: 180.0 deg

Maximum tracking angle: 60.0 deg

Resting angle: 0.0 deg

Ground Coverage Ratio: 0.5

Rated power: -

Panel material: Smooth glass with AR coating

Vary reflectivity with sun position? Yes

Correlate slope error with surface type? Yes

Slope error: 8.43 mrad



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	37.101558	-78.440986	533.25	9.00	542.25
2	37.101557	-78.438313	532.86	9.00	541.86
3	37.100920	-78.438314	540.18	9.00	549.18
4	37.100920	-78.438908	531.18	9.00	540.18
5	37.100256	-78.438908	526.11	9.00	535.11
6	37.100256	-78.439313	534.95	9.00	543.95
7	37.099258	-78.439314	541.05	9.00	550.05
8	37.099256	-78.438554	520.56	9.00	529.56
9	37.098316	-78.438559	542.33	9.00	551.33
10	37.098316	-78.439720	525.80	9.00	534.80
11	37.099951	-78.439718	546.29	9.00	555.29
12	37.099951	-78.440987	535.96	9.00	544.96

Name: F02

Footprint area: 13.7 acres

Axis tracking: Single-axis rotation

Backtracking: Shade

Tracking axis orientation: 180.0 deg

Maximum tracking angle: 60.0 deg

Resting angle: 0.0 deg

Ground Coverage Ratio: 0.5

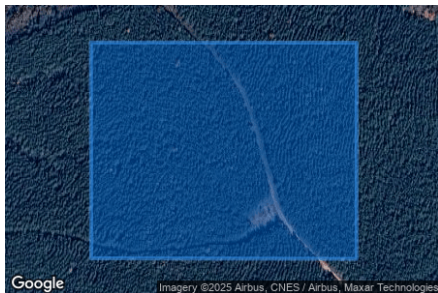
Rated power: -

Panel material: Smooth glass with AR coating

Vary reflectivity with sun position? Yes

Correlate slope error with surface type? Yes

Slope error: 8.43 mrad



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	37.098291	-78.439720	524.68	9.00	533.68
2	37.098289	-78.436778	522.65	9.00	531.65
3	37.096375	-78.436779	547.49	9.00	556.49
4	37.096379	-78.439718	531.77	9.00	540.77

**Name:** F03

**Footprint area:** 6.3 acres

**Axis tracking:** Single-axis rotation

**Backtracking:** Shade

**Tracking axis orientation:** 180.0 deg

**Maximum tracking angle:** 60.0 deg

**Resting angle:** 0.0 deg

**Ground Coverage Ratio:** 0.5

**Rated power:** -

**Panel material:** Smooth glass with AR coating

**Vary reflectivity with sun position?** Yes

**Correlate slope error with surface type?** Yes

**Slope error:** 8.43 mrad



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	37.096157	-78.438803	538.96	9.00	547.96
2	37.096154	-78.434727	550.98	9.00	559.98
3	37.095517	-78.434728	559.71	9.00	568.71
4	37.095520	-78.438804	525.43	9.00	534.43

**Name:** F04

**Footprint area:** 6.7 acres

**Axis tracking:** Single-axis rotation

**Backtracking:** Shade

**Tracking axis orientation:** 180.0 deg

**Maximum tracking angle:** 60.0 deg

**Resting angle:** 0.0 deg

**Ground Coverage Ratio:** 0.5

**Rated power:** -

**Panel material:** Smooth glass with AR coating

**Vary reflectivity with sun position?** Yes

**Correlate slope error with surface type?** Yes

**Slope error:** 8.43 mrad



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	37.095492	-78.438804	525.63	9.00	534.63
2	37.095491	-78.435861	569.70	9.00	578.70
3	37.094552	-78.435862	543.60	9.00	552.60
4	37.094549	-78.438804	536.91	9.00	545.91



**Name:** F05

**Footprint area:** 9.2 acres

**Axis tracking:** Single-axis rotation

**Backtracking:** Shade

**Tracking axis orientation:** 180.0 deg

**Maximum tracking angle:** 60.0 deg

**Resting angle:** 0.0 deg

**Ground Coverage Ratio:** 0.5

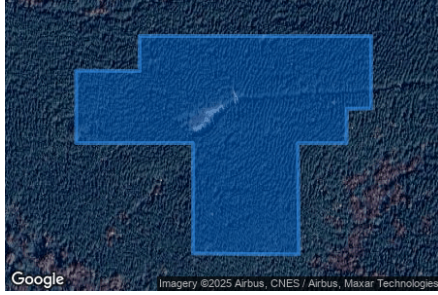
**Rated power:** -

**Panel material:** Smooth glass with AR coating

**Vary reflectivity with sun position?** Yes

**Correlate slope error with surface type?** Yes

**Slope error:** 8.43 mrad



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	37.094672	-78.442652	498.30	9.00	507.30
2	37.094669	-78.441950	512.61	9.00	521.61
3	37.094977	-78.441950	495.98	9.00	504.98
4	37.094976	-78.439385	529.15	9.00	538.15
5	37.094339	-78.439386	542.26	9.00	551.26
6	37.094337	-78.439656	549.92	9.00	558.92
7	37.094034	-78.439656	544.07	9.00	553.07
8	37.094034	-78.440196	543.71	9.00	552.71
9	37.093056	-78.440185	507.92	9.00	516.92
10	37.093065	-78.441357	513.30	9.00	522.30
11	37.094035	-78.441357	526.84	9.00	535.84
12	37.094035	-78.442652	503.07	9.00	512.07

**Name:** G01

**Footprint area:** 21.4 acres

**Axis tracking:** Single-axis rotation

**Backtracking:** Shade

**Tracking axis orientation:** 180.0 deg

**Maximum tracking angle:** 60.0 deg

**Resting angle:** 0.0 deg

**Ground Coverage Ratio:** 0.5

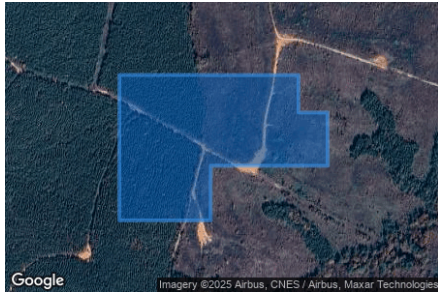
**Rated power:** -

**Panel material:** Smooth glass with AR coating

**Vary reflectivity with sun position?** Yes

**Correlate slope error with surface type?** Yes

**Slope error:** 8.43 mrad



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	37.095821	-78.434367	563.52	9.00	572.52
2	37.095819	-78.430399	562.47	9.00	571.47
3	37.095155	-78.430400	564.69	9.00	573.69
4	37.095156	-78.429758	550.72	9.00	559.72
5	37.094212	-78.429752	541.54	9.00	550.54
6	37.094213	-78.432344	581.74	9.00	590.74
7	37.093244	-78.432345	574.34	9.00	583.34
8	37.093245	-78.434370	578.40	9.00	587.40

**Name:** G02

**Footprint area:** 1.8 acres

**Axis tracking:** Single-axis rotation

**Backtracking:** Shade

**Tracking axis orientation:** 180.0 deg

**Maximum tracking angle:** 60.0 deg

**Resting angle:** 0.0 deg

**Ground Coverage Ratio:** 0.5

**Rated power:** -

**Panel material:** Smooth glass with AR coating

**Vary reflectivity with sun position?** Yes

**Correlate slope error with surface type?** Yes

**Slope error:** 8.43 mrad



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	37.093984	-78.429835	552.80	9.00	561.80
2	37.093983	-78.428675	538.39	9.00	547.39
3	37.093346	-78.428675	527.75	9.00	536.75
4	37.093347	-78.429836	543.11	9.00	552.11

**Name:** G03

**Footprint area:** 18.1 acres

**Axis tracking:** Single-axis rotation

**Backtracking:** Shade

**Tracking axis orientation:** 180.0 deg

**Maximum tracking angle:** 60.0 deg

**Resting angle:** 0.0 deg

**Ground Coverage Ratio:** 0.5

**Rated power:** -

**Panel material:** Smooth glass with AR coating

**Vary reflectivity with sun position?** Yes

**Correlate slope error with surface type?** Yes

**Slope error:** 8.43 mrad



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	37.092913	-78.436908	552.29	9.00	561.29
2	37.092912	-78.434667	576.83	9.00	585.83
3	37.090336	-78.434669	576.74	9.00	585.74
4	37.090338	-78.438692	563.80	9.00	572.80
5	37.091285	-78.438686	545.17	9.00	554.17
6	37.091279	-78.436909	550.53	9.00	559.53

**Name:** G04

**Footprint area:** 10.7 acres

**Axis tracking:** Single-axis rotation

**Backtracking:** Shade

**Tracking axis orientation:** 180.0 deg

**Maximum tracking angle:** 60.0 deg

**Resting angle:** 0.0 deg

**Ground Coverage Ratio:** 0.5

**Rated power:** -

**Panel material:** Smooth glass with AR coating

**Vary reflectivity with sun position?** Yes

**Correlate slope error with surface type?** Yes

**Slope error:** 8.43 mrad



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	37.093217	-78.434370	578.71	9.00	587.71
2	37.093216	-78.431859	570.11	9.00	579.11
3	37.092579	-78.431860	569.96	9.00	578.96
4	37.092577	-78.433210	567.63	9.00	576.63
5	37.091303	-78.433194	567.71	9.00	576.71
6	37.091305	-78.433319	567.31	9.00	576.31
7	37.090025	-78.433326	581.31	9.00	590.31
8	37.090024	-78.434371	573.92	9.00	582.92

**Name:** G05

**Footprint area:** 2.0 acres

**Axis tracking:** Single-axis rotation

**Backtracking:** Shade

**Tracking axis orientation:** 180.0 deg

**Maximum tracking angle:** 60.0 deg

**Resting angle:** 0.0 deg

**Ground Coverage Ratio:** 0.5

**Rated power:** -

**Panel material:** Smooth glass with AR coating

**Vary reflectivity with sun position?** Yes

**Correlate slope error with surface type?** Yes

**Slope error:** 8.43 mrad



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	37.090777	-78.429567	558.57	9.00	567.57
2	37.090776	-78.428298	554.21	9.00	563.21
3	37.090139	-78.428299	560.91	9.00	569.91
4	37.090140	-78.429568	564.47	9.00	573.47

**Name:** G06

**Footprint area:** 1.1 acres

**Axis tracking:** Single-axis rotation

**Backtracking:** Shade

**Tracking axis orientation:** 180.0 deg

**Maximum tracking angle:** 60.0 deg

**Resting angle:** 0.0 deg

**Ground Coverage Ratio:** 0.5

**Rated power:** -

**Panel material:** Smooth glass with AR coating

**Vary reflectivity with sun position?** Yes

**Correlate slope error with surface type?** Yes

**Slope error:** 8.43 mrad



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	37.091529	-78.428324	546.09	9.00	555.09
2	37.091529	-78.427596	550.81	9.00	559.81
3	37.090892	-78.427596	545.60	9.00	554.60
4	37.090892	-78.428325	552.53	9.00	561.53

**Name:** G07

**Footprint area:** 18.7 acres

**Axis tracking:** Single-axis rotation

**Backtracking:** Shade

**Tracking axis orientation:** 180.0 deg

**Maximum tracking angle:** 60.0 deg

**Resting angle:** 0.0 deg

**Ground Coverage Ratio:** 0.5

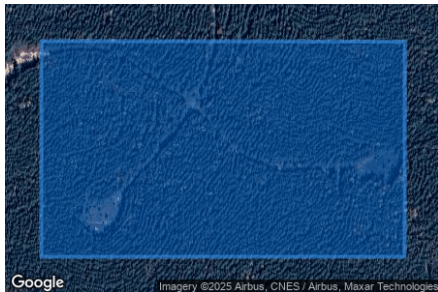
**Rated power:** -

**Panel material:** Smooth glass with AR coating

**Vary reflectivity with sun position?** Yes

**Correlate slope error with surface type?** Yes

**Slope error:** 8.43 mrad



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	37.090310	-78.438692	564.15	9.00	573.15
2	37.090306	-78.434666	576.26	9.00	585.26
3	37.088399	-78.434668	576.78	9.00	585.78
4	37.088398	-78.438693	559.76	9.00	568.76

**Name:** G08

**Footprint area:** 10.5 acres

**Axis tracking:** Single-axis rotation

**Backtracking:** Shade

**Tracking axis orientation:** 180.0 deg

**Maximum tracking angle:** 60.0 deg

**Resting angle:** 0.0 deg

**Ground Coverage Ratio:** 0.5

**Rated power:** -

**Panel material:** Smooth glass with AR coating

**Vary reflectivity with sun position?** Yes

**Correlate slope error with surface type?** Yes

**Slope error:** 8.43 mrad



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	37.090003	-78.434372	573.54	9.00	582.54
2	37.090001	-78.431704	578.96	9.00	587.96
3	37.088394	-78.431702	568.10	9.00	577.10
4	37.088397	-78.434380	579.09	9.00	588.09

**Name:** G09

**Footprint area:** 3.2 acres

**Axis tracking:** Single-axis rotation

**Backtracking:** Shade

**Tracking axis orientation:** 180.0 deg

**Maximum tracking angle:** 60.0 deg

**Resting angle:** 0.0 deg

**Ground Coverage Ratio:** 0.5

**Rated power:** -

**Panel material:** Smooth glass with AR coating

**Vary reflectivity with sun position?** Yes

**Correlate slope error with surface type?** Yes

**Slope error:** 8.43 mrad



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	37.088206	-78.438369	561.82	9.00	570.82
2	37.088205	-78.436993	565.62	9.00	574.62
3	37.087267	-78.436995	552.40	9.00	561.40
4	37.087258	-78.438366	542.13	9.00	551.13



**Name:** G10

**Footprint area:** 21.6 acres

**Axis tracking:** Single-axis rotation

**Backtracking:** Shade

**Tracking axis orientation:** 180.0 deg

**Maximum tracking angle:** 60.0 deg

**Resting angle:** 0.0 deg

**Ground Coverage Ratio:** 0.5

**Rated power:** -

**Panel material:** Smooth glass with AR coating

**Vary reflectivity with sun position?** Yes

**Correlate slope error with surface type?** Yes

**Slope error:** 8.43 mrad



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	37.088204	-78.435832	562.74	9.00	571.74
2	37.088201	-78.429191	557.58	9.00	566.58
3	37.089835	-78.429190	567.10	9.00	576.10
4	37.089829	-78.428193	559.65	9.00	568.65
5	37.088864	-78.428192	557.35	9.00	566.35
6	37.088864	-78.427058	538.40	9.00	547.40
7	37.088227	-78.427059	530.42	9.00	539.42
8	37.088228	-78.428733	555.65	9.00	564.65
9	37.087258	-78.428734	553.52	9.00	562.52
10	37.087262	-78.435833	556.48	9.00	565.48

**Name:** G11

**Footprint area:** 24.4 acres

**Axis tracking:** Single-axis rotation

**Backtracking:** Shade

**Tracking axis orientation:** 180.0 deg

**Maximum tracking angle:** 60.0 deg

**Resting angle:** 0.0 deg

**Ground Coverage Ratio:** 0.5

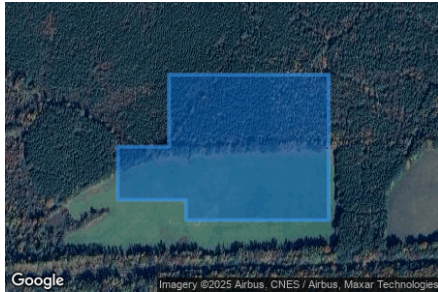
**Rated power:** -

**Panel material:** Smooth glass with AR coating

**Vary reflectivity with sun position?** Yes

**Correlate slope error with surface type?** Yes

**Slope error:** 8.43 mrad



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	37.087233	-78.433786	566.34	9.00	575.34
2	37.087231	-78.430245	585.89	9.00	594.89
3	37.084655	-78.430248	574.84	9.00	583.84
4	37.084657	-78.433406	565.89	9.00	574.89
5	37.085016	-78.433405	574.35	9.00	583.35
6	37.085017	-78.434917	569.03	9.00	578.03
7	37.085959	-78.434917	569.16	9.00	578.16
8	37.085958	-78.433783	579.10	9.00	588.10



**Name:** H01

**Footprint area:** 1.3 acres

**Axis tracking:** Single-axis rotation

**Backtracking:** Shade

**Tracking axis orientation:** 180.0 deg

**Maximum tracking angle:** 60.0 deg

**Resting angle:** 0.0 deg

**Ground Coverage Ratio:** 0.5

**Rated power:** -

**Panel material:** Smooth glass with AR coating

**Vary reflectivity with sun position?** Yes

**Correlate slope error with surface type?** Yes

**Slope error:** 8.43 mrad



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	37.089019	-78.425405	541.86	9.00	550.86
2	37.089019	-78.424569	551.43	9.00	560.43
3	37.088382	-78.424569	556.56	9.00	565.56
4	37.088382	-78.425406	545.60	9.00	554.60

**Name:** H02

**Footprint area:** 7.6 acres

**Axis tracking:** Single-axis rotation

**Backtracking:** Shade

**Tracking axis orientation:** 180.0 deg

**Maximum tracking angle:** 60.0 deg

**Resting angle:** 0.0 deg

**Ground Coverage Ratio:** 0.5

**Rated power:** -

**Panel material:** Smooth glass with AR coating

**Vary reflectivity with sun position?** Yes

**Correlate slope error with surface type?** Yes

**Slope error:** 8.43 mrad



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	37.087862	-78.423704	563.75	9.00	572.75
2	37.087861	-78.422084	555.03	9.00	564.03
3	37.085949	-78.422086	552.57	9.00	561.57
4	37.085950	-78.423733	570.47	9.00	579.47

**Name:** H03

**Footprint area:** 5.0 acres

**Axis tracking:** Single-axis rotation

**Backtracking:** Shade

**Tracking axis orientation:** 180.0 deg

**Maximum tracking angle:** 60.0 deg

**Resting angle:** 0.0 deg

**Ground Coverage Ratio:** 0.5

**Rated power:** -

**Panel material:** Smooth glass with AR coating

**Vary reflectivity with sun position?** Yes

**Correlate slope error with surface type?** Yes

**Slope error:** 8.43 mrad



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	37.085923	-78.424597	553.32	9.00	562.32
2	37.085921	-78.422248	555.36	9.00	564.36
3	37.084978	-78.422251	560.13	9.00	569.13
4	37.084980	-78.424112	572.60	9.00	581.60
5	37.085296	-78.424111	570.01	9.00	579.01
6	37.085286	-78.424597	563.77	9.00	572.77

**Name:** H04

**Footprint area:** 6.5 acres

**Axis tracking:** Single-axis rotation

**Backtracking:** Shade

**Tracking axis orientation:** 180.0 deg

**Maximum tracking angle:** 60.0 deg

**Resting angle:** 0.0 deg

**Ground Coverage Ratio:** 0.5

**Rated power:** -

**Panel material:** Smooth glass with AR coating

**Vary reflectivity with sun position?** Yes

**Correlate slope error with surface type?** Yes

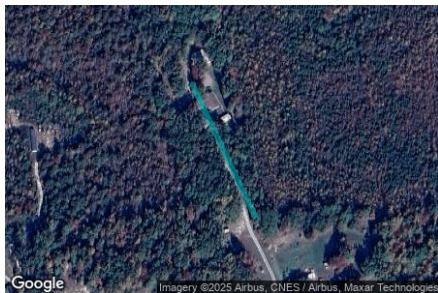
**Slope error:** 8.43 mrad



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	37.089292	-78.421002	542.19	9.00	551.19
2	37.089291	-78.419571	547.89	9.00	556.89
3	37.087990	-78.419573	539.30	9.00	548.30
4	37.087990	-78.420166	552.08	9.00	561.08
5	37.087685	-78.420167	549.21	9.00	558.21
6	37.087686	-78.421597	552.80	9.00	561.80
7	37.088631	-78.421600	531.80	9.00	540.80
8	37.088628	-78.421002	543.67	9.00	552.67

## Route Receptor(s)

**Name:** Collins Dr  
**Route type** Two-way  
**Azimuthal view angle:** 50.0 deg  
**Downward view angle:** 90.0 deg



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	37.081871	-78.442797	585.46	3.50	588.96
2	37.080705	-78.442104	593.95	3.50	597.45

**Name:** Country Dr Seg 1  
**Route type** Two-way  
**Azimuthal view angle:** 50.0 deg  
**Downward view angle:** 90.0 deg



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	37.080860	-78.423727	596.22	3.50	599.72
2	37.081335	-78.423484	593.74	3.50	597.24
3	37.081523	-78.423466	592.70	3.50	596.20
4	37.081829	-78.423540	592.79	3.50	596.29
5	37.082428	-78.423782	598.80	3.50	602.30
6	37.082611	-78.423798	598.76	3.50	602.26
7	37.082719	-78.423744	598.06	3.50	601.56
8	37.082768	-78.423668	597.93	3.50	601.43
9	37.082867	-78.423382	593.53	3.50	597.03
10	37.083365	-78.422690	575.99	3.50	579.49
11	37.083472	-78.422377	574.16	3.50	577.66
12	37.083628	-78.422257	574.14	3.50	577.64
13	37.084267	-78.422150	573.40	3.50	576.90

**Name:** Country Dr Seg 2  
**Route type** Two-way  
**Azimuthal view angle:** 50.0 deg  
**Downward view angle:** 90.0 deg



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	37.084267	-78.422150	573.40	3.50	576.90
2	37.084508	-78.422031	569.83	3.50	573.33
3	37.084996	-78.421843	569.58	3.50	573.08
4	37.085142	-78.421494	566.57	3.50	570.07
5	37.085170	-78.421251	561.04	3.50	564.54
6	37.085078	-78.420854	551.39	3.50	554.89
7	37.085078	-78.420700	547.34	3.50	550.84
8	37.085178	-78.420314	542.35	3.50	545.85
9	37.085193	-78.420005	540.85	3.50	544.35
10	37.085107	-78.419377	548.13	3.50	551.63

**Name:** County Line Rd  
**Route type** Two-way  
**Azimuthal view angle:** 50.0 deg  
**Downward view angle:** 90.0 deg



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	37.097280	-78.476651	594.54	3.50	598.04
2	37.097219	-78.475855	598.80	3.50	602.30
3	37.097213	-78.474994	607.28	3.50	610.78
4	37.097309	-78.473270	621.37	3.50	624.87

**Name:** Dempseys Rd  
**Route type** Two-way  
**Azimuthal view angle:** 50.0 deg  
**Downward view angle:** 90.0 deg



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	37.100853	-78.432978	553.09	3.50	556.59
2	37.100660	-78.433062	555.40	3.50	558.90
3	37.100457	-78.433086	558.88	3.50	562.38
4	37.099830	-78.433036	562.04	3.50	565.54
5	37.099719	-78.433062	562.51	3.50	566.01
6	37.099499	-78.433266	563.93	3.50	567.43

**Name:** Harley Ln  
**Route type** Two-way  
**Azimuthal view angle:** 50.0 deg  
**Downward view angle:** 90.0 deg



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	37.081527	-78.446166	585.61	3.50	589.11
2	37.081071	-78.445886	588.43	3.50	591.93

**Name:** Henderson Rd  
**Route type** Two-way  
**Azimuthal view angle:** 50.0 deg  
**Downward view angle:** 90.0 deg



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	37.109995	-78.468285	603.05	3.50	606.55
2	37.109590	-78.467164	592.11	3.50	595.61



**Name:** Hillside Dr  
**Route type** Two-way  
**Azimuthal view angle:** 50.0 deg  
**Downward view angle:** 90.0 deg



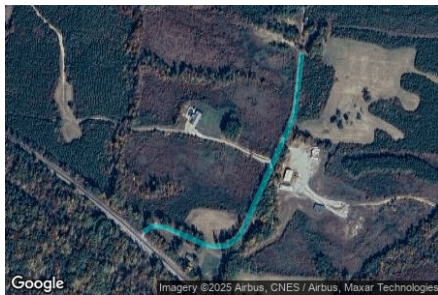
Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	37.083329	-78.418574	583.61	3.50	587.11
2	37.082929	-78.418183	584.69	3.50	588.19
3	37.082844	-78.418020	580.23	3.50	583.73

**Name:** Ole Briery Station Rd Seg 1  
**Route type** Two-way  
**Azimuthal view angle:** 50.0 deg  
**Downward view angle:** 90.0 deg



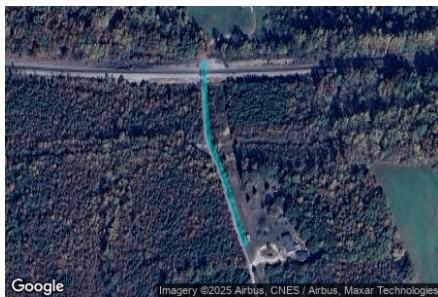
Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	37.092208	-78.458646	563.15	3.50	566.65
2	37.092090	-78.458691	563.42	3.50	566.92
3	37.091871	-78.458666	558.97	3.50	562.47
4	37.090953	-78.457951	563.80	3.50	567.30
5	37.090854	-78.457956	564.22	3.50	567.72
6	37.090611	-78.458144	565.23	3.50	568.73
7	37.090481	-78.458117	566.86	3.50	570.36
8	37.089856	-78.457249	576.52	3.50	580.02
9	37.089653	-78.457170	576.31	3.50	579.81
10	37.089216	-78.457209	577.01	3.50	580.51
11	37.088870	-78.457369	579.14	3.50	582.64
12	37.087648	-78.458228	575.44	3.50	578.94

**Name:** Ole Briery Station Rd Seg 2  
**Route type** Two-way  
**Azimuthal view angle:** 50.0 deg  
**Downward view angle:** 90.0 deg



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	37.095314	-78.455184	559.55	3.50	563.05
2	37.094405	-78.455316	561.00	3.50	564.50
3	37.094194	-78.455375	562.46	3.50	565.96
4	37.092243	-78.456468	580.33	3.50	583.83
5	37.092079	-78.456596	579.50	3.50	583.00
6	37.091937	-78.456866	578.09	3.50	581.59
7	37.091938	-78.457261	579.65	3.50	583.15
8	37.092266	-78.458188	570.75	3.50	574.25
9	37.092288	-78.458480	566.19	3.50	569.69
10	37.092208	-78.458646	563.15	3.50	566.65

**Name:** Thistle Knob Ln  
**Route type** Two-way  
**Azimuthal view angle:** 50.0 deg  
**Downward view angle:** 90.0 deg



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	37.083651	-78.438932	566.14	3.50	569.64
2	37.083055	-78.438885	572.01	3.50	575.51
3	37.082951	-78.438866	573.45	3.50	576.95
4	37.082709	-78.438732	575.45	3.50	578.95
5	37.082049	-78.438472	587.03	3.50	590.53

**Name:** Tobacco Heritage Trail  
**Route type** Two-way  
**Azimuthal view angle:** 50.0 deg  
**Downward view angle:** 90.0 deg



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	37.090771	-78.458017	565.05	5.00	570.05
2	37.090288	-78.457220	565.24	5.00	570.24
3	37.089770	-78.456642	564.98	5.00	569.98
4	37.083905	-78.448547	568.62	5.00	573.62
5	37.083402	-78.447640	568.23	5.00	573.23
6	37.083141	-78.446961	569.57	5.00	574.57
7	37.082894	-78.446050	570.13	5.00	575.13
8	37.082777	-78.445198	569.37	5.00	574.37
9	37.082731	-78.443998	572.72	5.00	577.72
10	37.082823	-78.442329	570.64	5.00	575.64
11	37.082941	-78.438861	573.48	5.00	578.48
12	37.083691	-78.419842	572.55	5.00	577.55
13	37.083938	-78.417972	572.02	5.00	577.02
14	37.084121	-78.417318	571.54	5.00	576.54

**Name:** US Hwy 15  
**Route type** Two-way  
**Azimuthal view angle:** 50.0 deg  
**Downward view angle:** 90.0 deg



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	37.093744	-78.473877	626.72	3.50	630.22
2	37.096495	-78.473451	577.75	3.50	581.25
3	37.097894	-78.473140	622.81	3.50	626.31
4	37.098651	-78.472866	621.89	3.50	625.39
5	37.110506	-78.466686	589.30	3.50	592.80
6	37.111238	-78.466281	586.17	3.50	589.67

**Name:** US Hwy 360  
**Route type** Two-way  
**Azimuthal view angle:** 50.0 deg  
**Downward view angle:** 90.0 deg



Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	37.080860	-78.422670	595.41	3.50	598.91
2	37.080926	-78.422273	593.85	3.50	597.35
3	37.081051	-78.421682	591.95	3.50	595.45
4	37.081265	-78.420884	589.00	3.50	592.50
5	37.081528	-78.420136	586.19	3.50	589.69
6	37.082144	-78.418682	579.73	3.50	583.23



## Discrete Observation Receptors

Number	Latitude	Longitude	Ground elevation	Height above ground	Total Elevation
	deg	deg	ft	ft	ft
OP 134	37.082188	-78.438018	590.88	5.00	595.88
OP 135	37.082188	-78.438018	590.88	15.00	605.88
OP 136	37.084329	-78.438463	563.03	5.00	568.03
OP 137	37.084329	-78.438463	563.03	15.00	578.03
OP 138	37.081646	-78.434442	594.29	5.00	599.29
OP 139	37.081646	-78.434442	594.29	15.00	609.29
OP 140	37.080695	-78.431575	599.81	5.00	604.81
OP 141	37.080695	-78.431575	599.81	15.00	614.81
OP 142	37.081663	-78.429872	606.67	5.00	611.67
OP 143	37.081663	-78.429872	606.67	15.00	621.67
OP 144	37.080989	-78.424564	600.37	5.00	605.37
OP 145	37.080989	-78.424564	600.37	15.00	615.37
OP 146	37.081652	-78.421567	589.41	5.00	594.41
OP 147	37.081652	-78.421567	589.41	15.00	604.41
OP 148	37.082481	-78.419503	595.96	5.00	600.96
OP 149	37.082481	-78.419503	595.96	15.00	610.96
OP 150	37.099626	-78.433371	565.51	5.00	570.51
OP 151	37.099626	-78.433371	565.51	15.00	580.51
OP 152	37.103234	-78.434570	553.42	5.00	558.42
OP 153	37.103234	-78.434570	553.42	15.00	568.42
OP 154	37.083420	-78.419096	583.66	5.00	588.66
OP 155	37.083278	-78.418742	586.57	5.00	591.57
OP 156	37.083574	-78.418356	579.34	5.00	584.34
OP 157	37.083335	-78.418120	580.66	5.00	585.66
OP 158	37.083471	-78.418062	577.76	5.00	582.76
OP 159	37.085092	-78.419321	548.70	5.00	553.70
OP 160	37.085471	-78.419281	542.12	5.00	547.12
OP 161	37.085751	-78.418884	539.36	5.00	544.36
OP 162	37.086392	-78.418679	536.27	5.00	541.27
OP 163	37.086630	-78.418545	532.47	5.00	537.47
OP 164	37.086756	-78.418840	531.28	5.00	536.28

# 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	
F01	SA tracking	SA tracking	2,075	228	-	-
F02	SA tracking	SA tracking	2,382	1,028	-	-
F03	SA tracking	SA tracking	1,698	0	-	-
F04	SA tracking	SA tracking	2,690	0	-	-
F05	SA tracking	SA tracking	3,106	23	-	-
G01	SA tracking	SA tracking	570	0	-	-
G02	SA tracking	SA tracking	472	0	-	-
G03	SA tracking	SA tracking	1,503	0	-	-
G04	SA tracking	SA tracking	468	0	-	-
G05	SA tracking	SA tracking	391	0	-	-
G06	SA tracking	SA tracking	0	0	-	-
G07	SA tracking	SA tracking	1,486	7	-	-
G08	SA tracking	SA tracking	3,914	0	-	-
G09	SA tracking	SA tracking	6,295	0	-	-
G10	SA tracking	SA tracking	17,424	2,090	-	-
G11	SA tracking	SA tracking	5,422	1,947	-	-
H01	SA tracking	SA tracking	1,897	0	-	-
H02	SA tracking	SA tracking	3,105	2	-	-
H03	SA tracking	SA tracking	2,527	0	-	-
H04	SA tracking	SA tracking	1,838	0	-	-

## 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
f01 (green)	366	512	172	12	0	0	0	0	51	256	492	162
f01 (yellow)	53	0	0	0	0	0	0	0	0	0	32	143
f02 (green)	396	184	93	52	67	25	42	74	85	140	322	419
f02 (yellow)	249	85	0	0	0	0	0	0	0	32	224	267
f03 (green)	30	0	53	121	237	296	273	194	64	7	14	37
f03 (yellow)	0	0	0	0	0	0	0	0	0	0	0	0
f04 (green)	0	0	64	198	310	346	387	233	91	25	0	0
f04 (yellow)	0	0	0	0	0	0	0	0	0	0	0	0
f05 (green)	652	3	215	5	0	0	0	0	98	127	351	998
f05 (yellow)	2	0	0	0	0	0	0	0	0	0	0	21
g01 (green)	164	19	26	0	0	0	0	0	11	19	134	197
g01 (yellow)	0	0	0	0	0	0	0	0	0	0	0	0
g02 (green)	0	0	57	105	6	0	0	69	66	17	0	0
g02 (yellow)	0	0	0	0	0	0	0	0	0	0	0	0
g03 (green)	68	77	149	92	1	0	0	49	131	137	2	274
g03 (yellow)	0	0	0	0	0	0	0	0	0	0	0	0
g04 (green)	100	21	62	0	0	0	0	0	8	74	47	156
g04 (yellow)	0	0	0	0	0	0	0	0	0	0	0	0
g05 (green)	101	0	0	0	0	0	0	0	0	0	28	262
g05 (yellow)	0	0	0	0	0	0	0	0	0	0	0	0
g07 (green)	0	92	129	61	66	132	119	17	124	138	6	0
g07 (yellow)	0	0	0	3	0	0	0	3	1	0	0	0
g08 (green)	0	0	0	29	171	206	195	82	0	0	0	0
g08 (yellow)	0	0	0	0	0	0	0	0	0	0	0	0
g09 (green)	0	16	115	160	534	680	654	226	138	42	0	0
g09 (yellow)	0	0	0	0	0	0	0	0	0	0	0	0
g10 (green)	0	0	10	344	689	578	651	531	76	0	0	0
g10 (yellow)	0	0	0	8	50	13	30	29	0	0	0	0
g11 (green)	0	4	101	270	289	214	228	294	129	40	0	0
g11 (yellow)	0	0	6	9	285	414	389	70	13	0	0	0
h01 (green)	96	47	140	133	136	93	117	133	127	99	26	245
h01 (yellow)	0	0	0	0	0	0	0	0	0	0	0	0
h02 (green)	12	19	34	74	186	201	202	126	68	33	3	28
h02 (yellow)	0	0	0	0	0	1	1	0	0	0	0	0
h03 (green)	196	192	190	11	0	0	0	0	104	286	111	496
h03 (yellow)	0	0	0	0	0	0	0	0	0	0	0	0
h04 (green)	319	76	169	26	0	0	0	2	111	161	198	315
h04 (yellow)	0	0	0	0	0	0	0	0	0	0	0	0

## PV & Receptor Analysis Results

Results for each PV array and receptor

### F01 potential temporary after-image

Component	Green glare (min)	Yellow glare (min)
OP: OP 134	0	0

OP: OP 135	0	0
OP: OP 136	0	0
OP: OP 137	0	0
OP: OP 138	0	0
OP: OP 139	0	0
OP: OP 140	0	0
OP: OP 141	0	0
OP: OP 142	0	0
OP: OP 143	0	0
OP: OP 144	0	0
OP: OP 145	0	0
OP: OP 146	0	0
OP: OP 147	0	0
OP: OP 148	0	0
OP: OP 149	0	0
OP: OP 150	0	0
OP: OP 151	322	0
OP: OP 152	0	0
OP: OP 153	277	228
OP: OP 154	0	0
OP: OP 155	0	0
OP: OP 156	0	0
OP: OP 157	0	0
OP: OP 158	0	0
OP: OP 159	0	0
OP: OP 160	0	0
OP: OP 161	0	0
OP: OP 162	0	0
OP: OP 163	0	0
OP: OP 164	0	0
Route: Collins Dr	0	0
Route: Country Dr Seg 1	0	0
Route: Country Dr Seg 2	0	0
Route: County Line Rd	84	0
Route: Dempseys Rd	581	0
Route: Harley Ln	0	0
Route: Henderson Rd	811	0
Route: Hillside Dr	0	0
Route: Ole Briery Station Rd Seg 1	0	0
Route: Ole Briery Station Rd Seg 2	0	0
Route: Thistle Knob Ln	0	0
Route: Tobacco Heritage Trail	0	0
Route: US Hwy 15	0	0
Route: US Hwy 360	0	0

## F01: OP 134

*No glare found*

**F01: OP 135**

*No glare found*

**F01: OP 136**

*No glare found*

**F01: OP 137**

*No glare found*

**F01: OP 138**

*No glare found*

**F01: OP 139**

*No glare found*

**F01: OP 140**

*No glare found*

**F01: OP 141**

*No glare found*

**F01: OP 142**

*No glare found*

**F01: OP 143**

*No glare found*

**F01: OP 144**

*No glare found*

**F01: OP 145**

*No glare found*

**F01: OP 146**

*No glare found*

**F01: OP 147**

*No glare found*

**F01: OP 148**

*No glare found*

**F01: OP 149**

*No glare found*

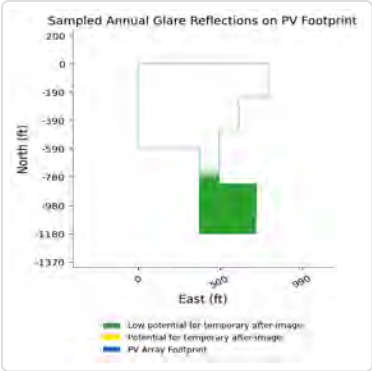
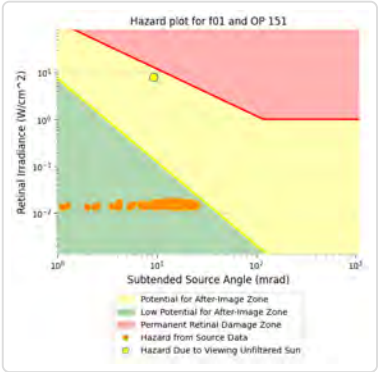
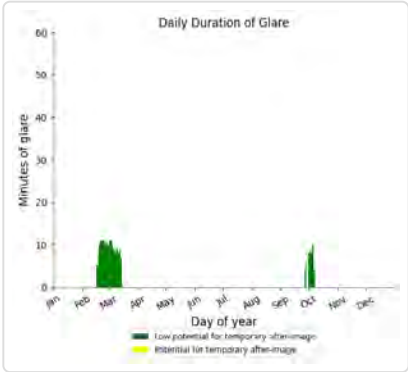
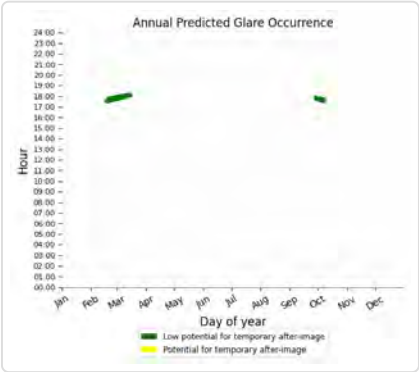
F01: OP 150

No glare found

F01: OP 151

PV array is expected to produce the following glare for this receptor:

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



F01: OP 152

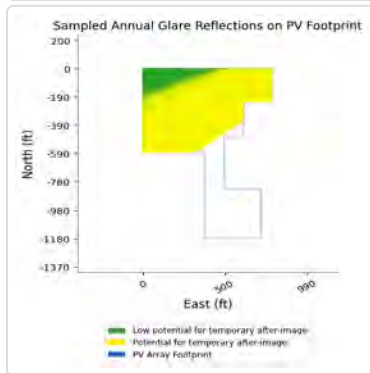
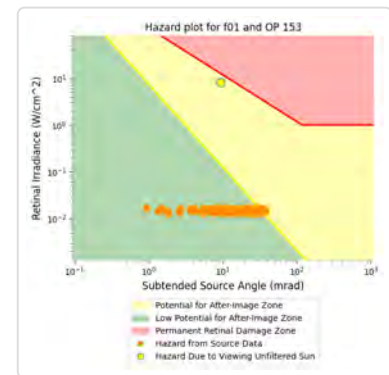
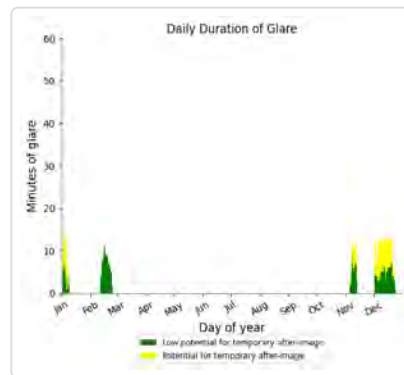
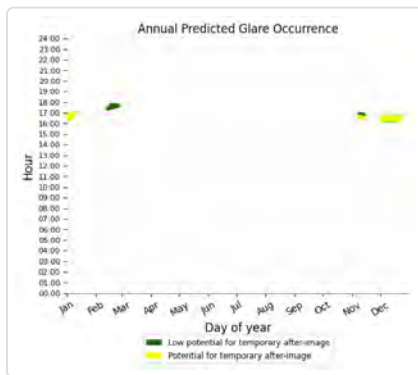
No glare found



## F01: OP 153

PV array is expected to produce the following glare for this receptor:

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



## F01: OP 154

No glare found

## F01: OP 155

No glare found

## F01: OP 156

No glare found

## F01: OP 157

No glare found

## F01: OP 158

No glare found

## F01: OP 159

No glare found

## F01: OP 160

No glare found

## F01: OP 161

No glare found

F01: OP 162

No glare found

F01: OP 163

No glare found

F01: OP 164

No glare found

F01: Collins Dr

No glare found

F01: Country Dr Seg 1

No glare found

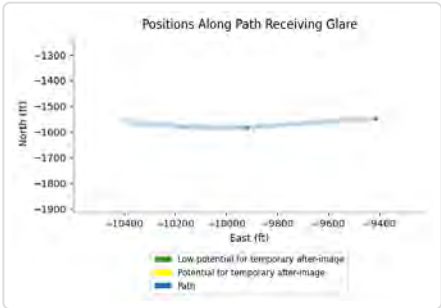
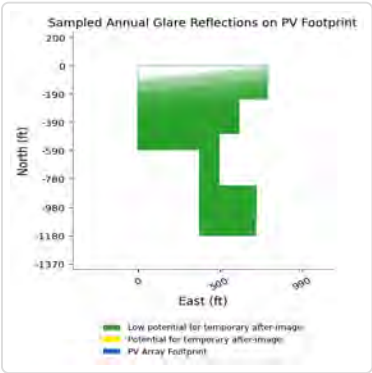
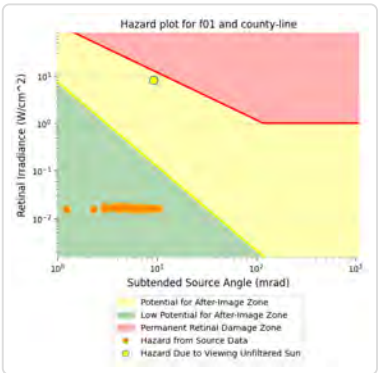
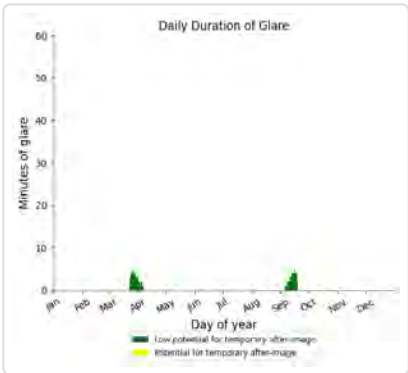
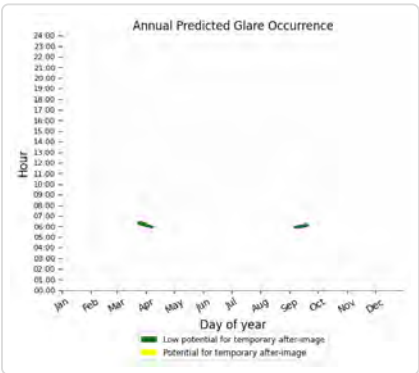
F01: Country Dr Seg 2

No glare found

F01: County Line Rd

PV array is expected to produce the following glare for this receptor:

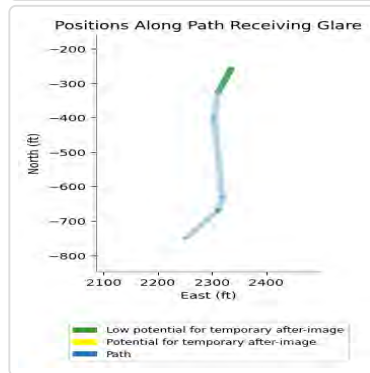
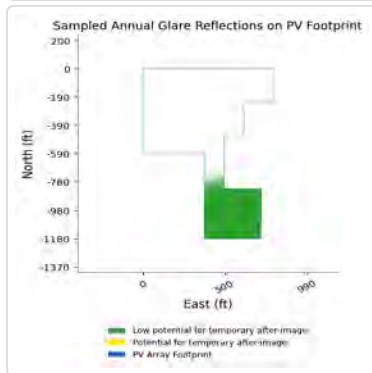
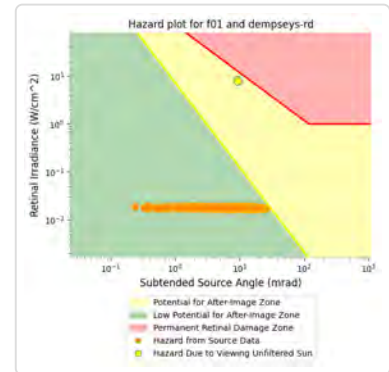
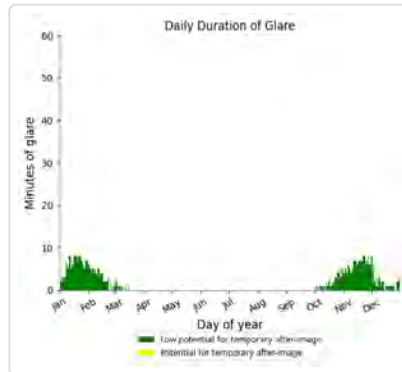
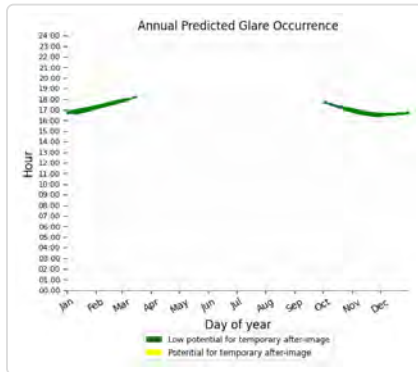
- 84 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## F01: Dempseys Rd

PV array is expected to produce the following glare for this receptor:

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



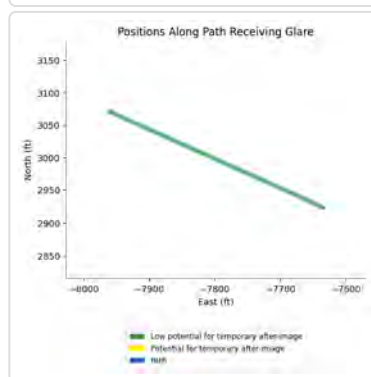
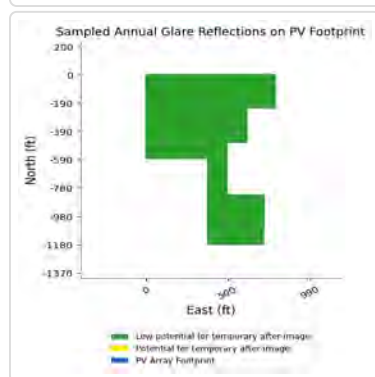
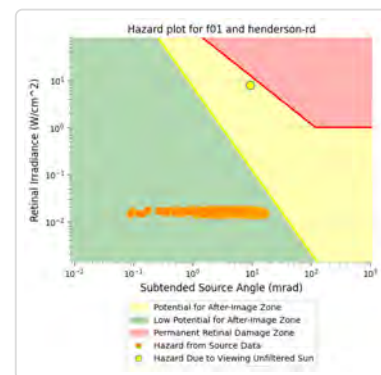
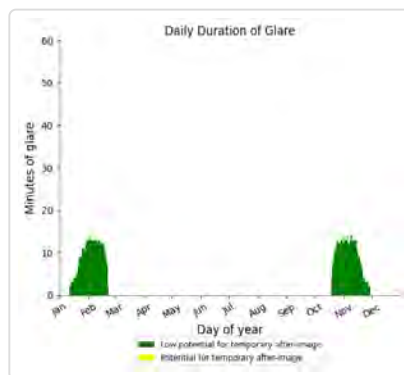
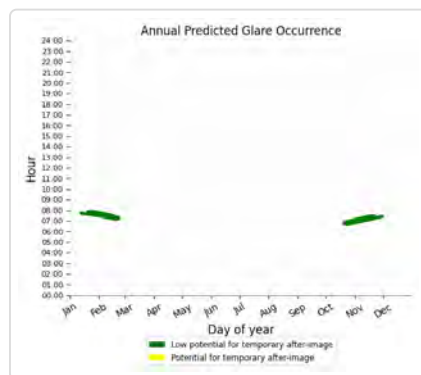
## F01: Harley Ln

No glare found

## F01: Henderson Rd

PV array is expected to produce the following glare for this receptor:

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



## F01: Hillside Dr

No glare found

## F01: Ole Briery Station Rd Seg 1

No glare found

## F01: Ole Briery Station Rd Seg 2

No glare found

## F01: Thistle Knob Ln

No glare found

## F01: Tobacco Heritage Trail

No glare found

## F01: US Hwy 15

No glare found

## F01: US Hwy 360

No glare found

## F02 potential temporary after-image

Component	Green glare (min)	Yellow glare (min)
OP: OP 134	0	0
OP: OP 135	0	0
OP: OP 136	0	0
OP: OP 137	0	0
OP: OP 138	0	0
OP: OP 139	0	0
OP: OP 140	0	0
OP: OP 141	0	0
OP: OP 142	0	0
OP: OP 143	0	0
OP: OP 144	0	0
OP: OP 145	0	0
OP: OP 146	0	0
OP: OP 147	0	0
OP: OP 148	0	0
OP: OP 149	0	0
OP: OP 150	194	74
OP: OP 151	235	97
OP: OP 152	0	0
OP: OP 153	0	0
OP: OP 154	0	0
OP: OP 155	0	0
OP: OP 156	0	0
OP: OP 157	0	0
OP: OP 158	0	0
OP: OP 159	0	0
OP: OP 160	0	0
OP: OP 161	0	0
OP: OP 162	0	0
OP: OP 163	0	0
OP: OP 164	0	0
Route: Collins Dr	0	0
Route: Country Dr Seg 1	0	0
Route: Country Dr Seg 2	0	0
Route: County Line Rd	171	0
Route: Dempseys Rd	587	857
Route: Harley Ln	0	0
Route: Henderson Rd	852	0
Route: Hillside Dr	0	0
Route: Ole Briery Station Rd Seg 1	138	0
Route: Ole Briery Station Rd Seg 2	205	0
Route: Thistle Knob Ln	0	0
Route: Tobacco Heritage Trail	0	0
Route: US Hwy 15	0	0
Route: US Hwy 360	0	0

**F02: OP 134**

*No glare found*

**F02: OP 135**

*No glare found*

**F02: OP 136**

*No glare found*

**F02: OP 137**

*No glare found*

**F02: OP 138**

*No glare found*

**F02: OP 139**

*No glare found*

**F02: OP 140**

*No glare found*

**F02: OP 141**

*No glare found*

**F02: OP 142**

*No glare found*

**F02: OP 143**

*No glare found*

**F02: OP 144**

*No glare found*

**F02: OP 145**

*No glare found*

**F02: OP 146**

*No glare found*

**F02: OP 147**

*No glare found*

**F02: OP 148**

*No glare found*



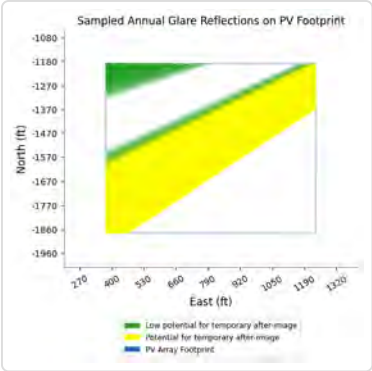
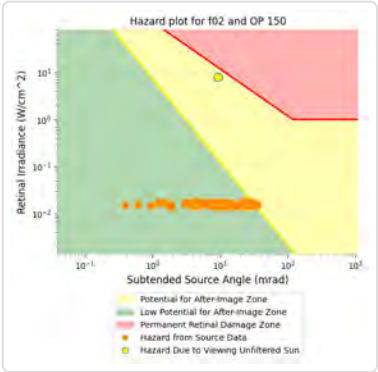
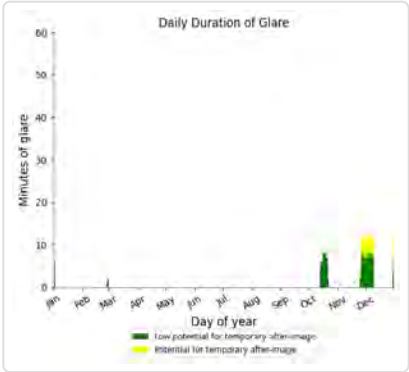
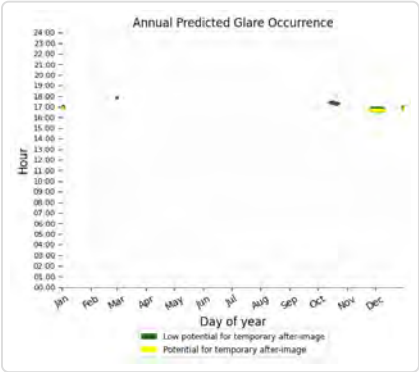
F02: OP 149

No glare found

F02: OP 150

PV array is expected to produce the following glare for this receptor:

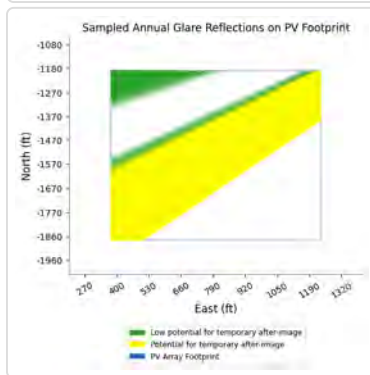
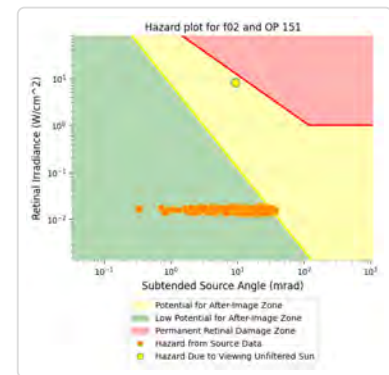
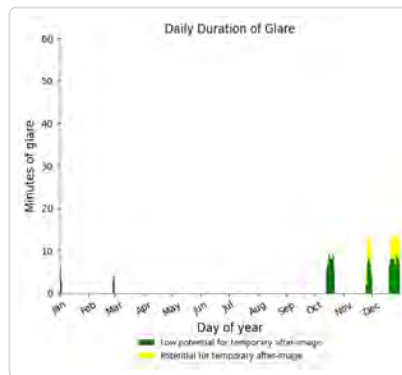
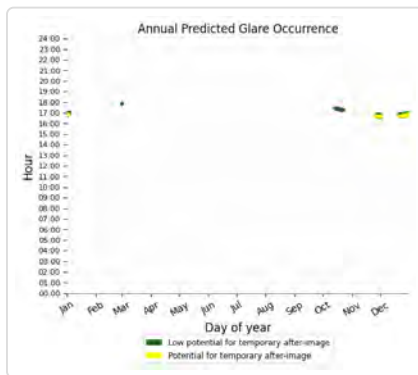
- 194 minutes of "green" glare with low potential to cause temporary after-image.
- 74 minutes of "yellow" glare with potential to cause temporary after-image.



## F02: OP 151

PV array is expected to produce the following glare for this receptor:

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



## F02: OP 152

No glare found

## F02: OP 153

No glare found

## F02: OP 154

No glare found

## F02: OP 155

No glare found

## F02: OP 156

No glare found

## F02: OP 157

No glare found

## F02: OP 158

No glare found

## F02: OP 159

No glare found

**F02: OP 160**

*No glare found*

**F02: OP 161**

*No glare found*

**F02: OP 162**

*No glare found*

**F02: OP 163**

*No glare found*

**F02: OP 164**

*No glare found*

**F02: Collins Dr**

*No glare found*

**F02: Country Dr Seg 1**

*No glare found*

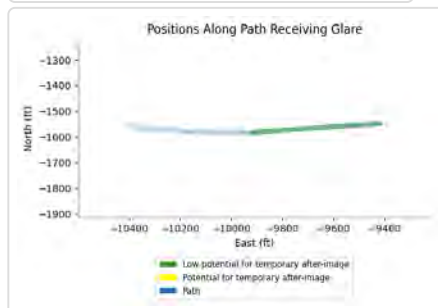
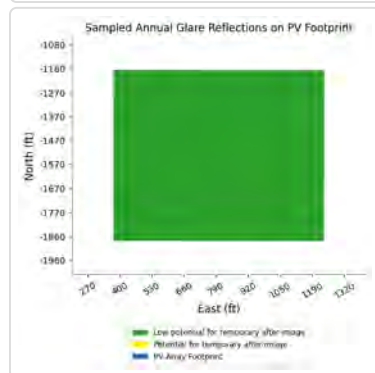
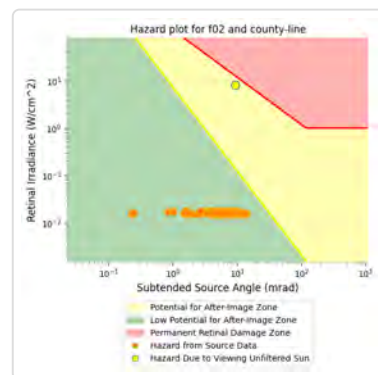
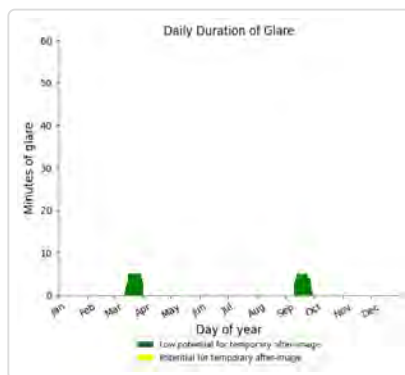
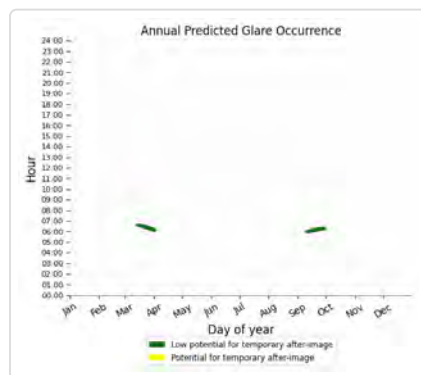
**F02: Country Dr Seg 2**

*No glare found*

## F02: County Line Rd

PV array is expected to produce the following glare for this receptor:

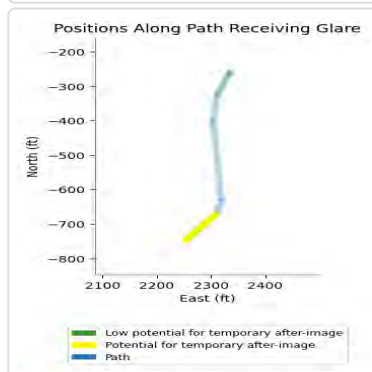
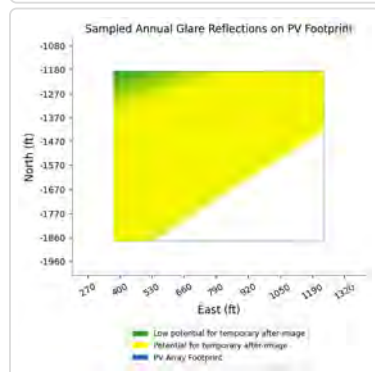
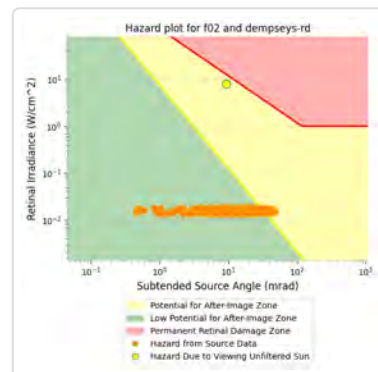
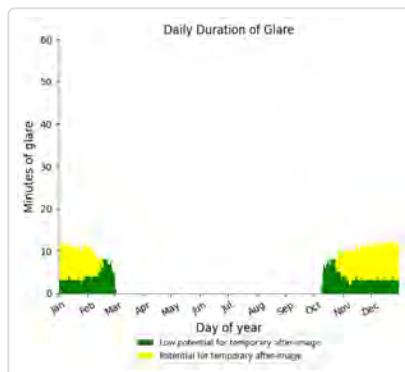
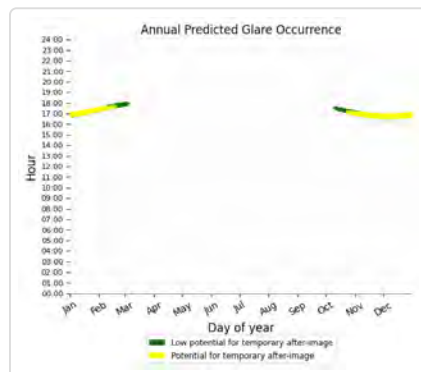
- 171 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## F02: Dempseys Rd

PV array is expected to produce the following glare for this receptor:

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



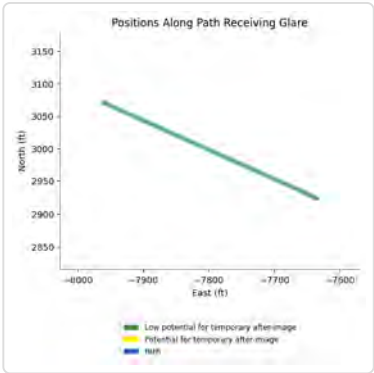
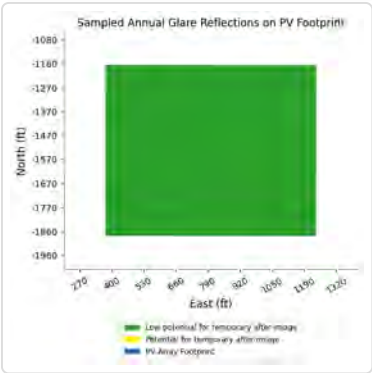
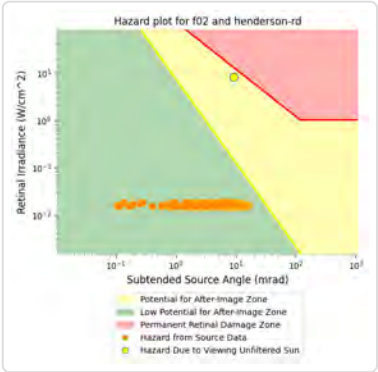
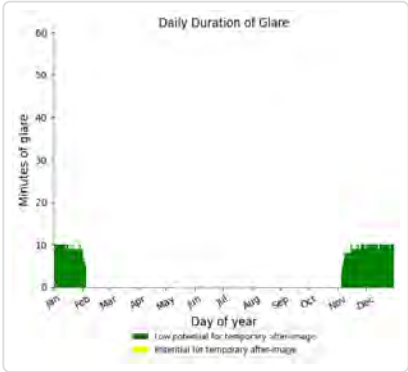
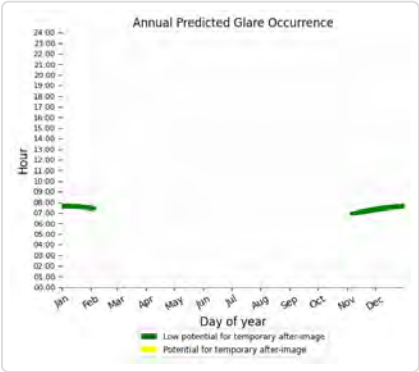
F02: Harley Ln

No glare found

F02: Henderson Rd

PV array is expected to produce the following glare for this receptor:

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



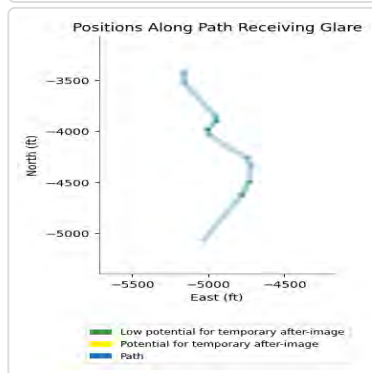
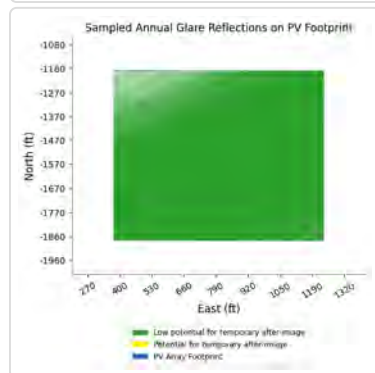
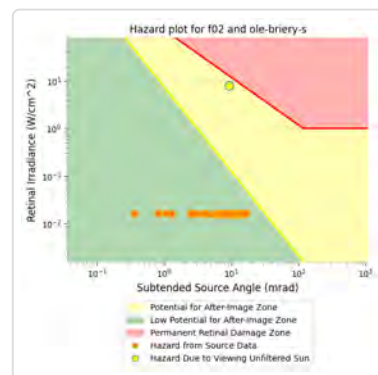
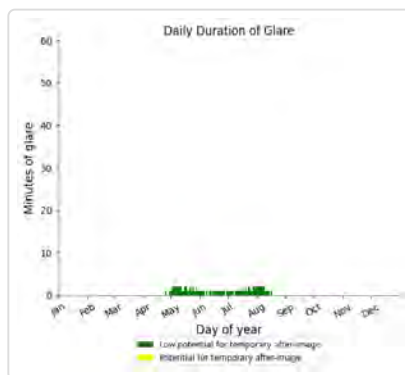
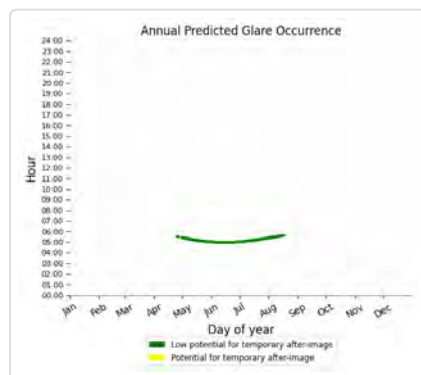
F02: Hillside Dr

No glare found

## F02: Ole Briery Station Rd Seg 1

PV array is expected to produce the following glare for this receptor:

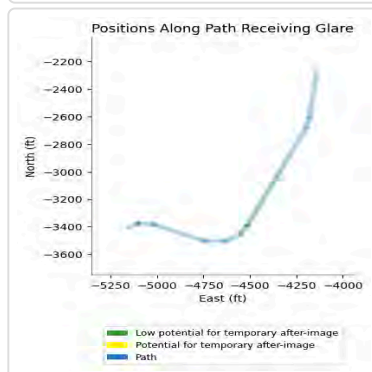
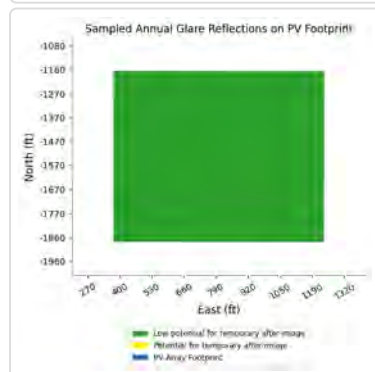
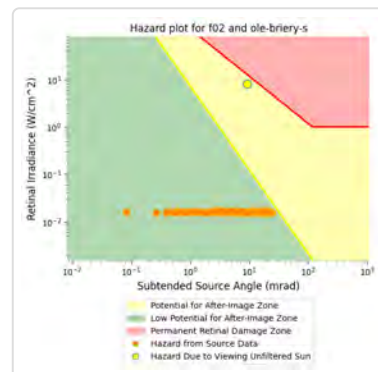
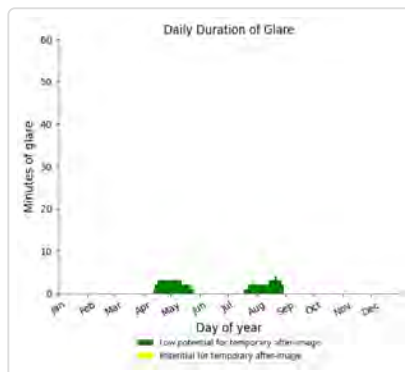
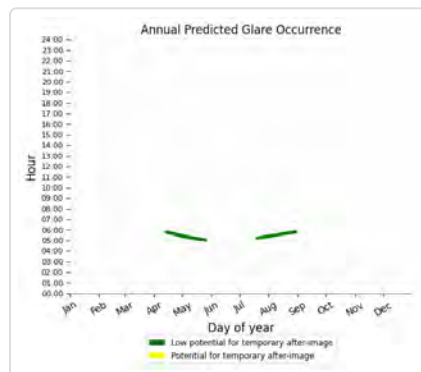
- 138 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## F02: Ole Briery Station Rd Seg 2

PV array is expected to produce the following glare for this receptor:

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





## F02: Thistle Knob Ln

*No glare found*

## F02: Tobacco Heritage Trail

*No glare found*

## F02: US Hwy 15

*No glare found*

## F02: US Hwy 360

*No glare found*

## F03 low potential for temporary after-image

Component	Green glare (min)	Yellow glare (min)
OP: OP 134	0	0
OP: OP 135	0	0
OP: OP 136	0	0
OP: OP 137	0	0
OP: OP 138	0	0
OP: OP 139	0	0
OP: OP 140	0	0
OP: OP 141	0	0
OP: OP 142	0	0
OP: OP 143	0	0
OP: OP 144	0	0
OP: OP 145	0	0
OP: OP 146	0	0
OP: OP 147	0	0
OP: OP 148	0	0
OP: OP 149	0	0
OP: OP 150	0	0
OP: OP 151	0	0
OP: OP 152	0	0
OP: OP 153	0	0
OP: OP 154	0	0
OP: OP 155	0	0
OP: OP 156	0	0
OP: OP 157	0	0
OP: OP 158	0	0
OP: OP 159	0	0
OP: OP 160	0	0
OP: OP 161	0	0
OP: OP 162	40	0
OP: OP 163	40	0
OP: OP 164	43	0
Route: Collins Dr	0	0
Route: Country Dr Seg 1	0	0

Route: Country Dr Seg 2	0	0
Route: County Line Rd	107	0
Route: Dempseys Rd	0	0
Route: Harley Ln	0	0
Route: Henderson Rd	81	0
Route: Hillside Dr	0	0
Route: Ole Briery Station Rd Seg 1	995	0
Route: Ole Briery Station Rd Seg 2	293	0
Route: Thistle Knob Ln	0	0
Route: Tobacco Heritage Trail	99	0
Route: US Hwy 15	0	0
Route: US Hwy 360	0	0

### F03: OP 134

*No glare found*

### F03: OP 135

*No glare found*

### F03: OP 136

*No glare found*

### F03: OP 137

*No glare found*

### F03: OP 138

*No glare found*

### F03: OP 139

*No glare found*

### F03: OP 140

*No glare found*

### F03: OP 141

*No glare found*

### F03: OP 142

*No glare found*

### F03: OP 143

*No glare found*

### F03: OP 144

*No glare found*

**F03: OP 145**

*No glare found*

**F03: OP 146**

*No glare found*

**F03: OP 147**

*No glare found*

**F03: OP 148**

*No glare found*

**F03: OP 149**

*No glare found*

**F03: OP 150**

*No glare found*

**F03: OP 151**

*No glare found*

**F03: OP 152**

*No glare found*

**F03: OP 153**

*No glare found*

**F03: OP 154**

*No glare found*

**F03: OP 155**

*No glare found*

**F03: OP 156**

*No glare found*

**F03: OP 157**

*No glare found*

**F03: OP 158**

*No glare found*

**F03: OP 159**

*No glare found*

F03: OP 160

No glare found

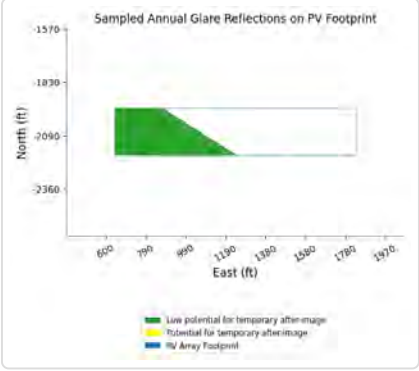
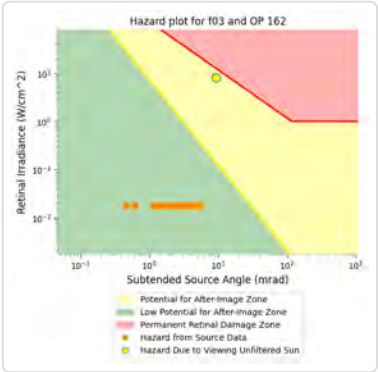
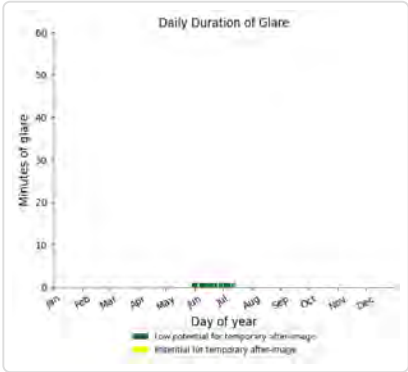
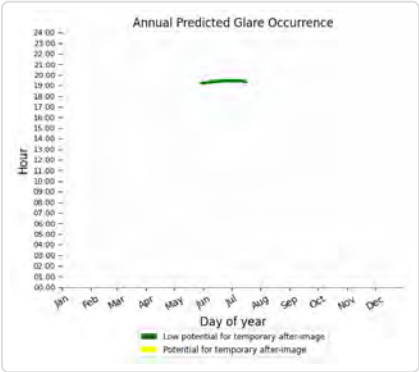
F03: OP 161

No glare found

F03: OP 162

PV array is expected to produce the following glare for this receptor:

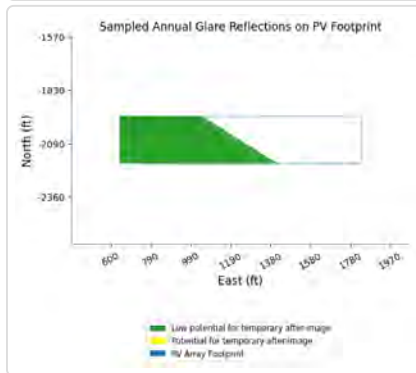
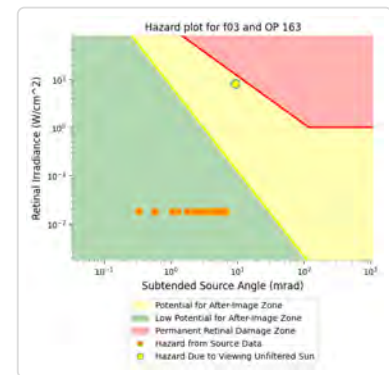
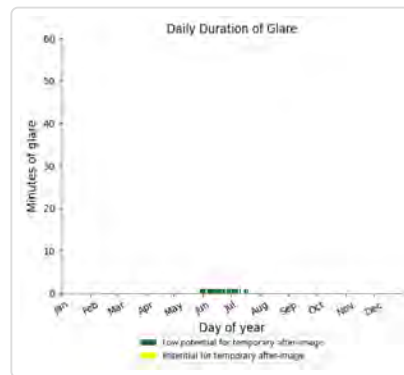
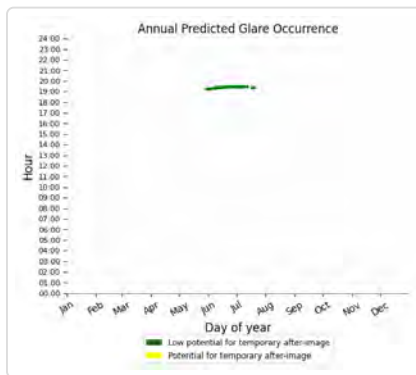
- 40 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



### F03: OP 163

PV array is expected to produce the following glare for this receptor:

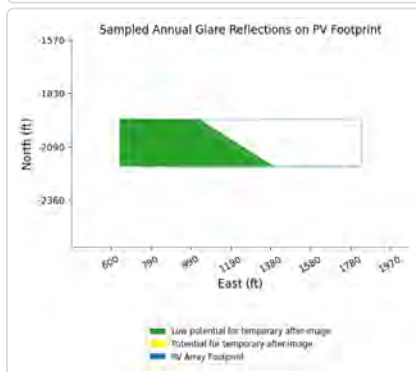
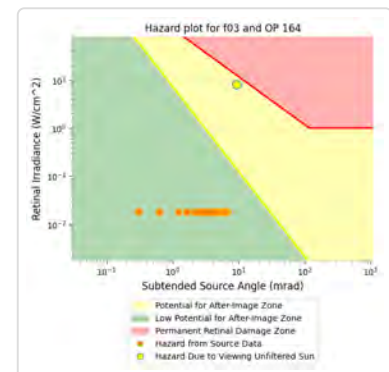
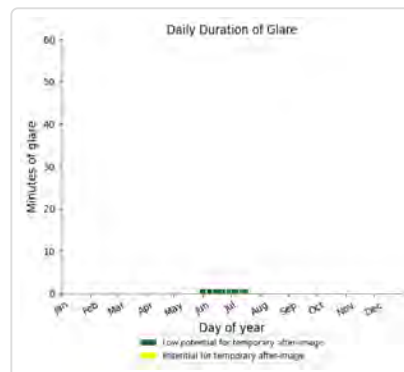
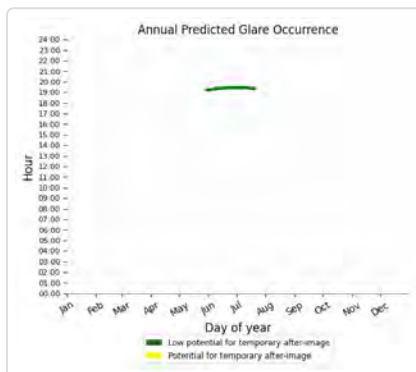
- 40 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



### F03: OP 164

PV array is expected to produce the following glare for this receptor:

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



F03: Collins Dr

No glare found

F03: Country Dr Seg 1

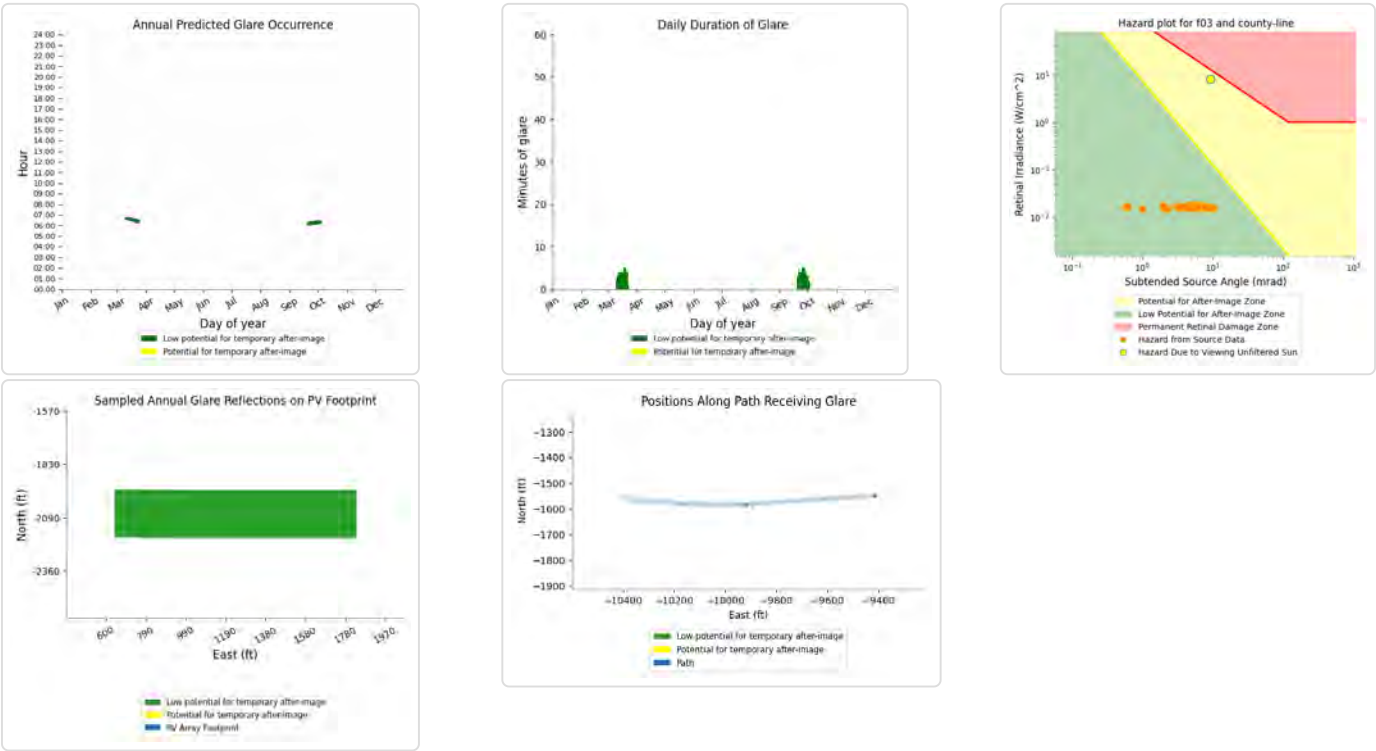
No glare found

F03: Country Dr Seg 2

No glare found

F03: County Line Rd

- PV array is expected to produce the following glare for this receptor:
- 107 minutes of "green" glare with low potential to cause temporary after-image.
  - 0 minutes of "yellow" glare with potential to cause temporary after-image.



F03: Dempseys Rd

No glare found

F03: Harley Ln

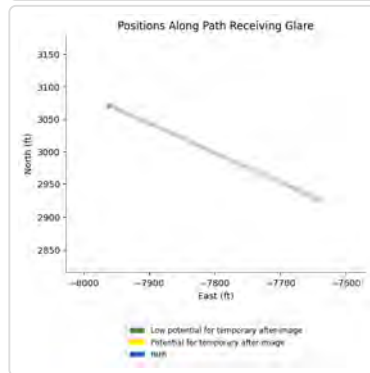
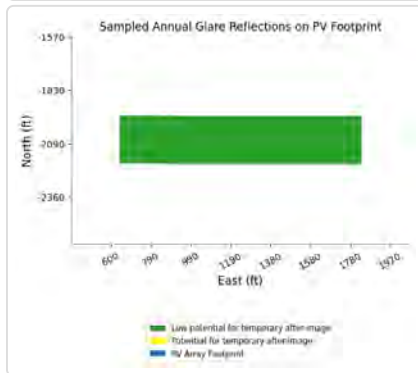
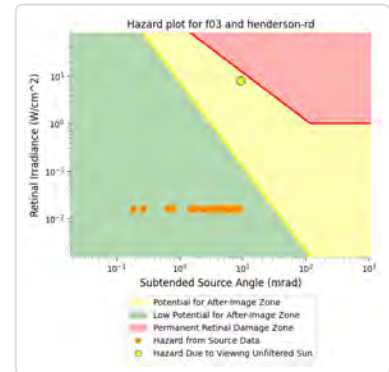
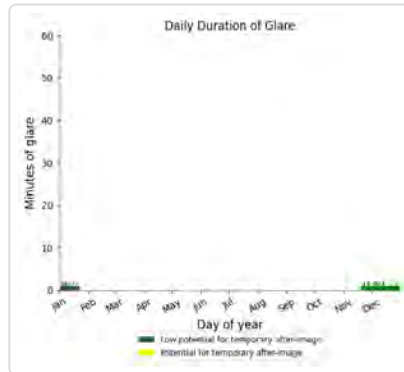
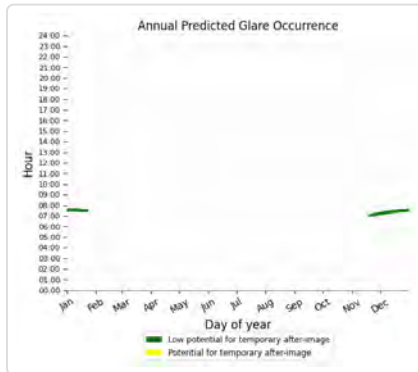
No glare found



### F03: Henderson Rd

PV array is expected to produce the following glare for this receptor:

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



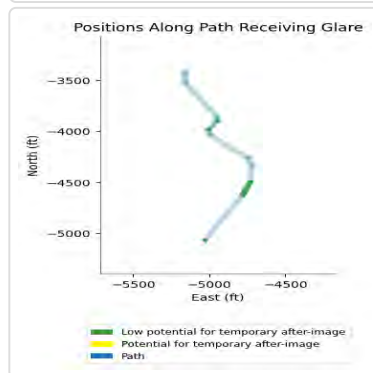
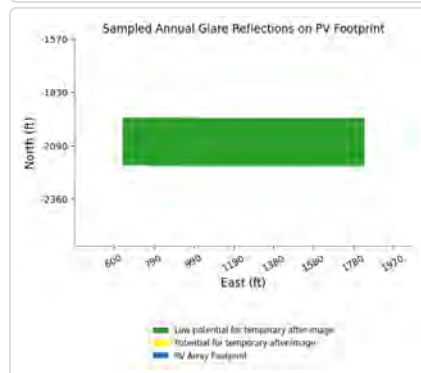
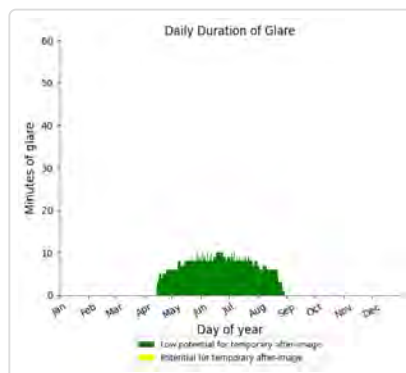
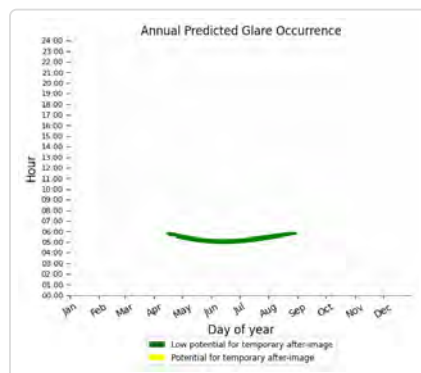
### F03: Hillside Dr

No glare found

### F03: Ole Briery Station Rd Seg 1

PV array is expected to produce the following glare for this receptor:

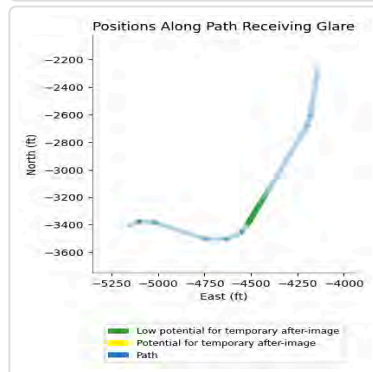
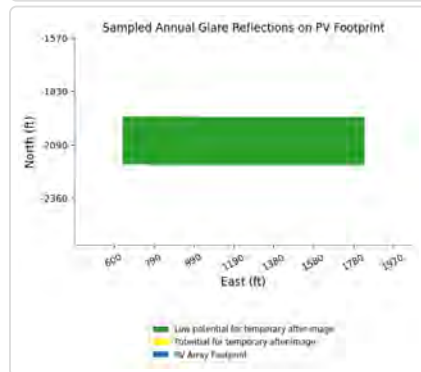
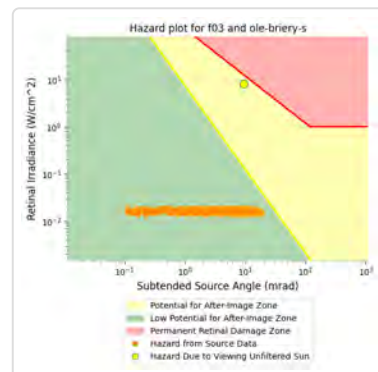
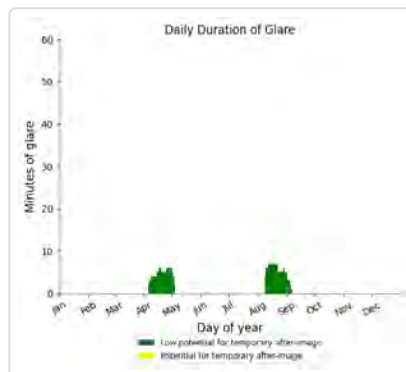
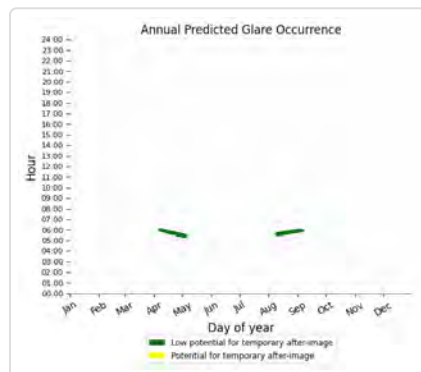
- 995 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



### F03: Ole Briery Station Rd Seg 2

PV array is expected to produce the following glare for this receptor:

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



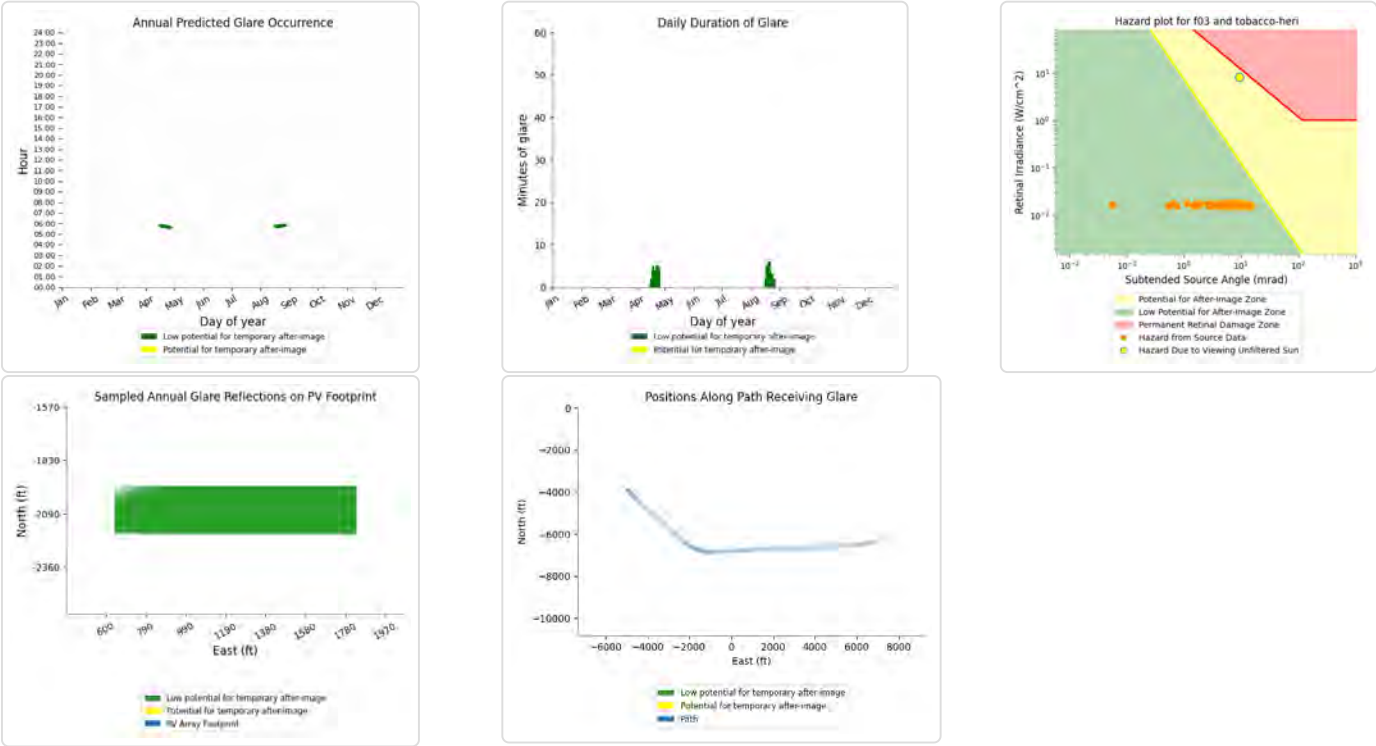
F03: Thistle Knob Ln

No glare found

F03: Tobacco Heritage Trail

PV array is expected to produce the following glare for this receptor:

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



F03: US Hwy 15

No glare found

F03: US Hwy 360

No glare found

F04 low potential for temporary after-image

Component	Green glare (min)	Yellow glare (min)
OP: OP 134	0	0
OP: OP 135	0	0
OP: OP 136	0	0
OP: OP 137	0	0
OP: OP 138	0	0
OP: OP 139	0	0
OP: OP 140	0	0
OP: OP 141	0	0
OP: OP 142	0	0
OP: OP 143	0	0
OP: OP 144	0	0
OP: OP 145	0	0

OP: OP 146	0	0
OP: OP 147	0	0
OP: OP 148	0	0
OP: OP 149	0	0
OP: OP 150	0	0
OP: OP 151	0	0
OP: OP 152	0	0
OP: OP 153	0	0
OP: OP 154	0	0
OP: OP 155	0	0
OP: OP 156	0	0
OP: OP 157	0	0
OP: OP 158	0	0
OP: OP 159	68	0
OP: OP 160	93	0
OP: OP 161	110	0
OP: OP 162	128	0
OP: OP 163	134	0
OP: OP 164	134	0
Route: Collins Dr	0	0
Route: Country Dr Seg 1	0	0
Route: Country Dr Seg 2	38	0
Route: County Line Rd	130	0
Route: Dempseys Rd	0	0
Route: Harley Ln	0	0
Route: Henderson Rd	0	0
Route: Hillside Dr	0	0
Route: Ole Briery Station Rd Seg 1	1278	0
Route: Ole Briery Station Rd Seg 2	324	0
Route: Thistle Knob Ln	0	0
Route: Tobacco Heritage Trail	253	0
Route: US Hwy 15	0	0
Route: US Hwy 360	0	0

#### F04: OP 134

*No glare found*

#### F04: OP 135

*No glare found*

#### F04: OP 136

*No glare found*

#### F04: OP 137

*No glare found*

#### F04: OP 138

*No glare found*

**F04: OP 139**

*No glare found*

**F04: OP 140**

*No glare found*

**F04: OP 141**

*No glare found*

**F04: OP 142**

*No glare found*

**F04: OP 143**

*No glare found*

**F04: OP 144**

*No glare found*

**F04: OP 145**

*No glare found*

**F04: OP 146**

*No glare found*

**F04: OP 147**

*No glare found*

**F04: OP 148**

*No glare found*

**F04: OP 149**

*No glare found*

**F04: OP 150**

*No glare found*

**F04: OP 151**

*No glare found*

**F04: OP 152**

*No glare found*

**F04: OP 153**

*No glare found*

F04: OP 154

No glare found

F04: OP 155

No glare found

F04: OP 156

No glare found

F04: OP 157

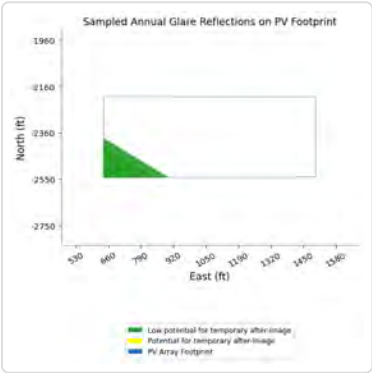
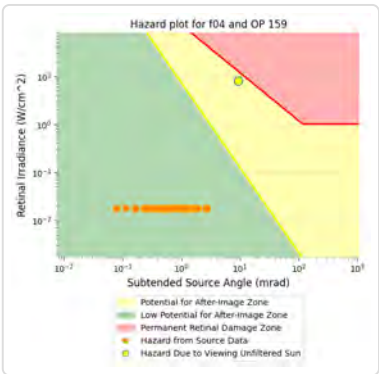
No glare found

F04: OP 158

No glare found

F04: OP 159

- PV array is expected to produce the following glare for this receptor:
- 68 minutes of "green" glare with low potential to cause temporary after-image.
  - 0 minutes of "yellow" glare with potential to cause temporary after-image.

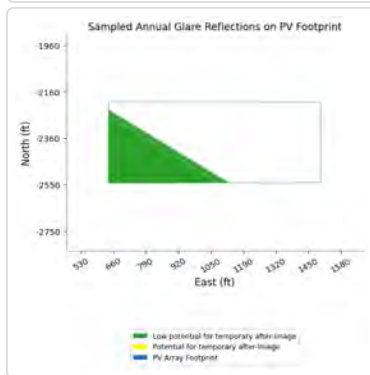
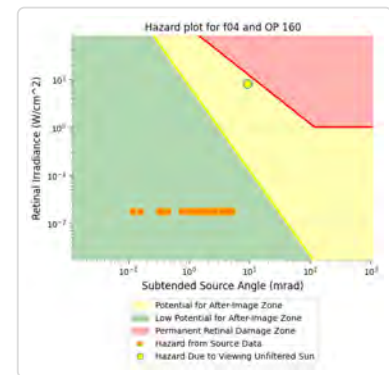
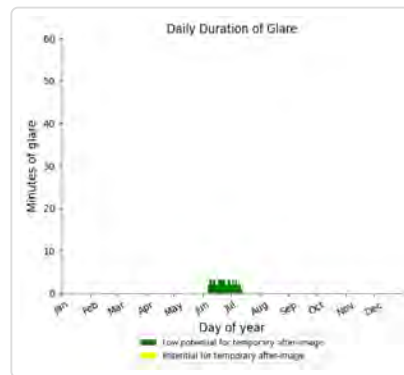
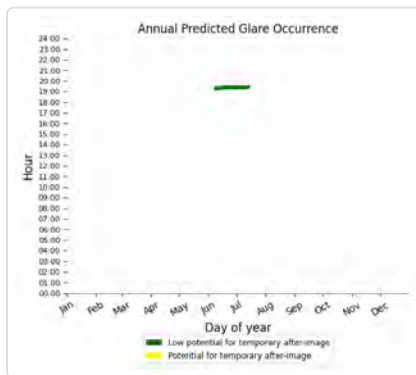




#### F04: OP 160

PV array is expected to produce the following glare for this receptor:

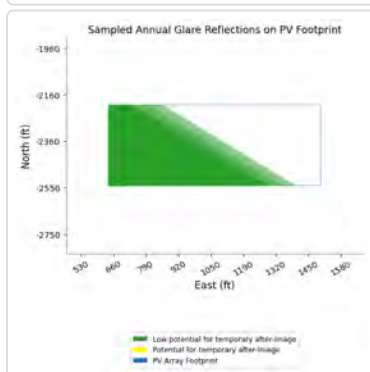
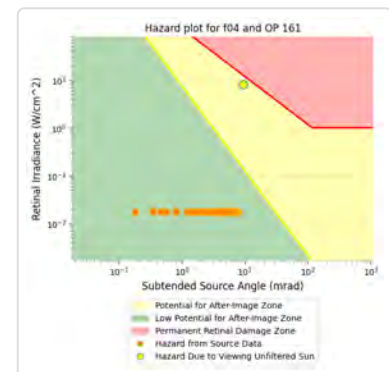
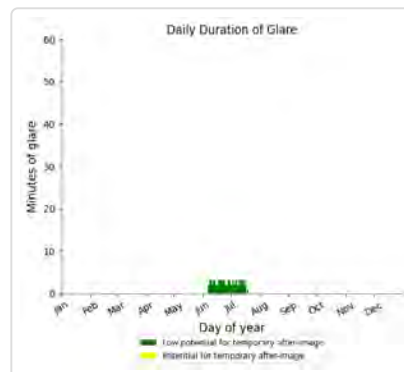
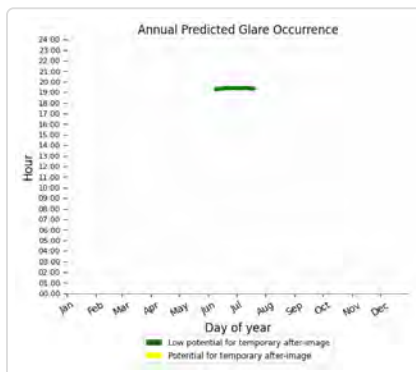
- 93 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



#### F04: OP 161

PV array is expected to produce the following glare for this receptor:

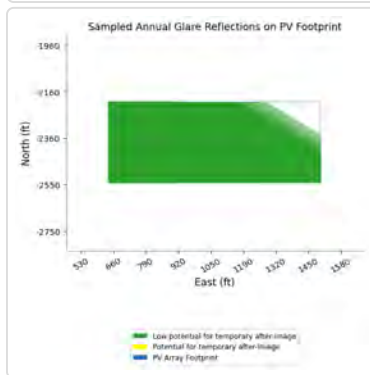
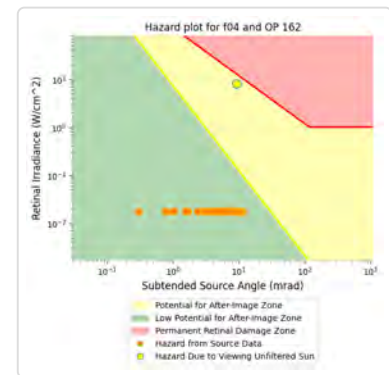
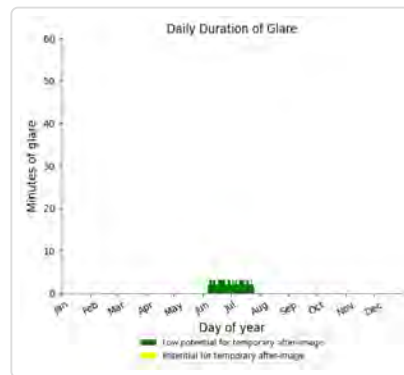
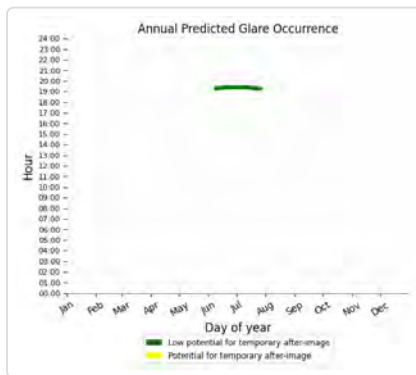
- 110 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## F04: OP 162

PV array is expected to produce the following glare for this receptor:

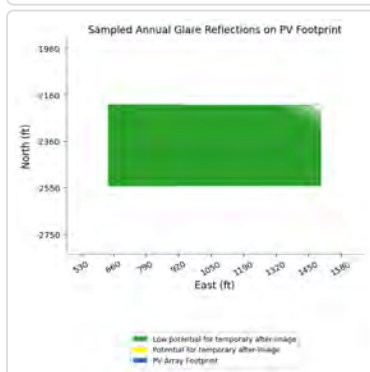
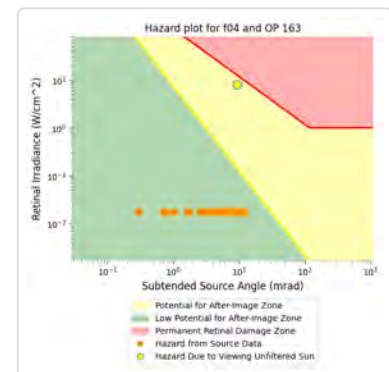
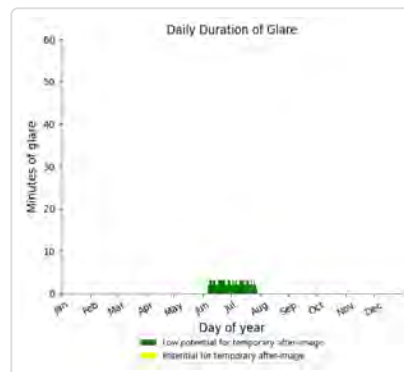
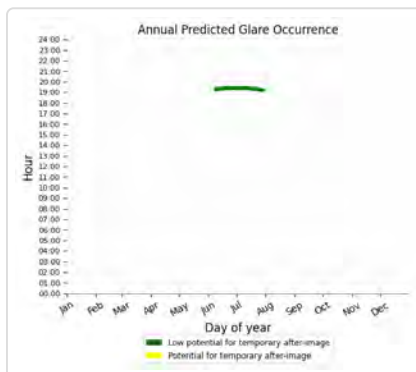
- 128 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## F04: OP 163

PV array is expected to produce the following glare for this receptor:

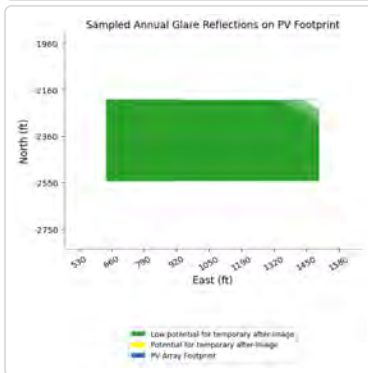
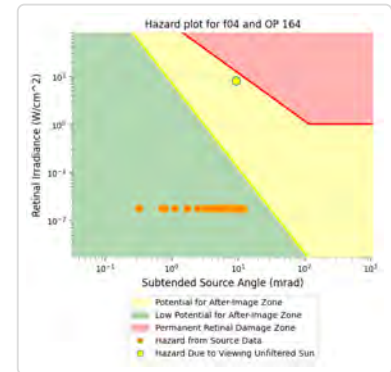
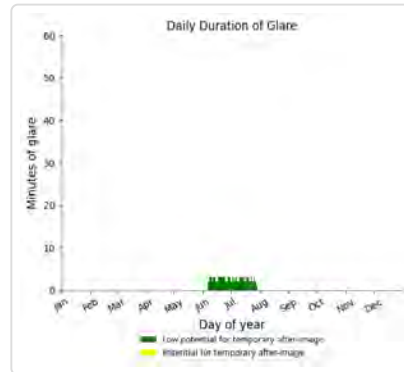
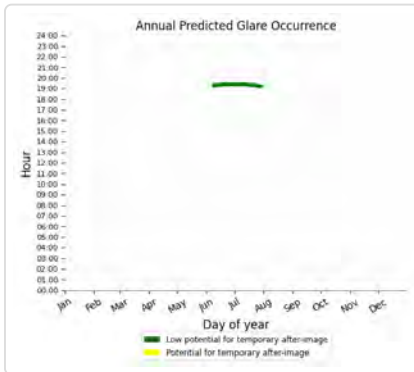
- 134 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## F04: OP 164

PV array is expected to produce the following glare for this receptor:

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



## F04: Collins Dr

No glare found

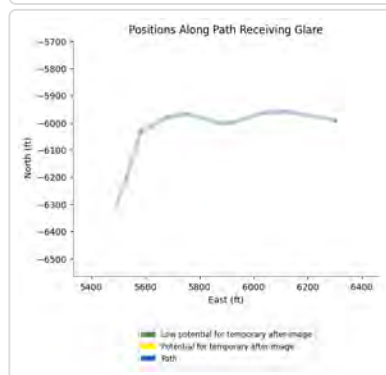
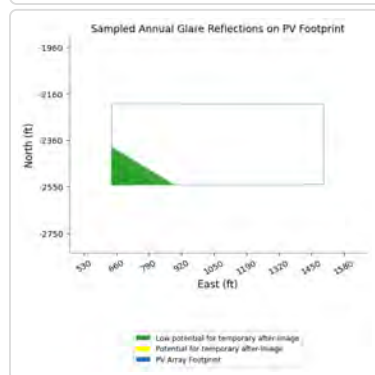
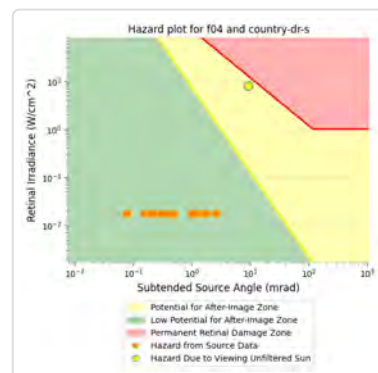
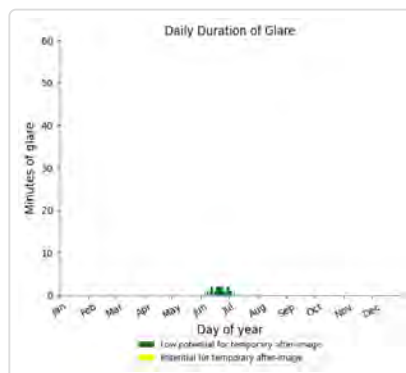
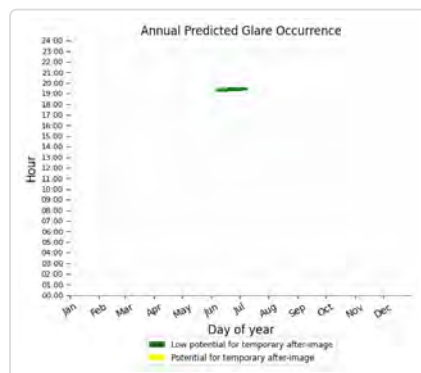
## F04: Country Dr Seg 1

No glare found

## F04: Country Dr Seg 2

PV array is expected to produce the following glare for this receptor:

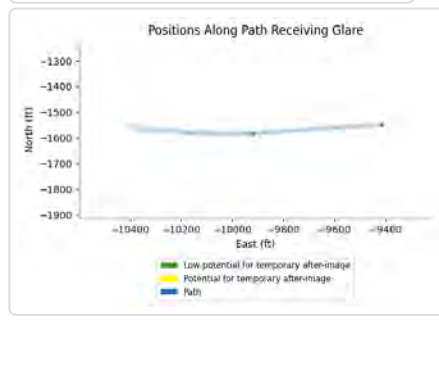
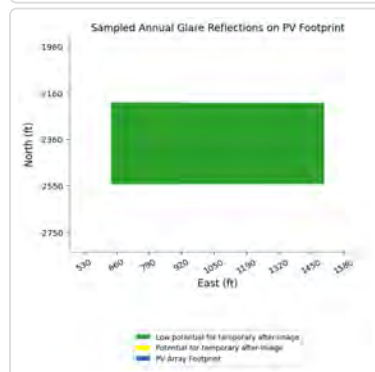
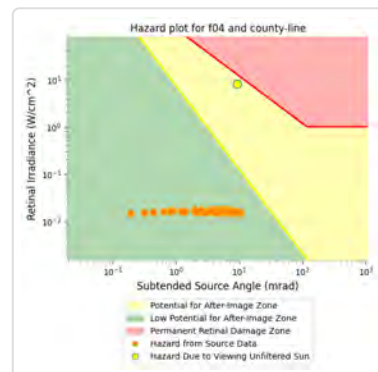
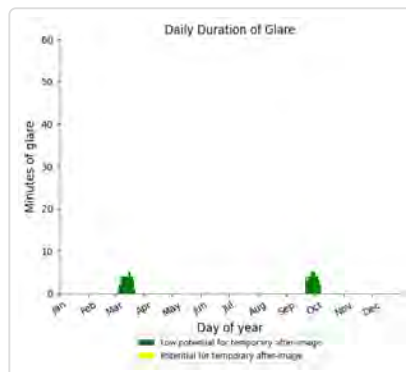
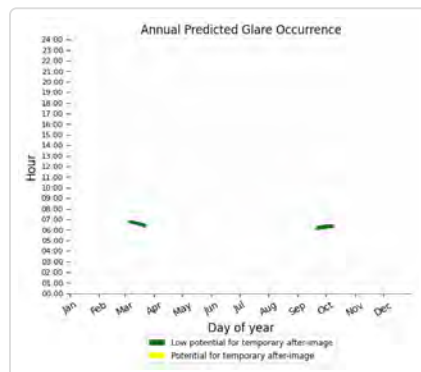
- 38 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## F04: County Line Rd

PV array is expected to produce the following glare for this receptor:

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



F04: Dempseys Rd

No glare found

F04: Harley Ln

No glare found

F04: Henderson Rd

No glare found

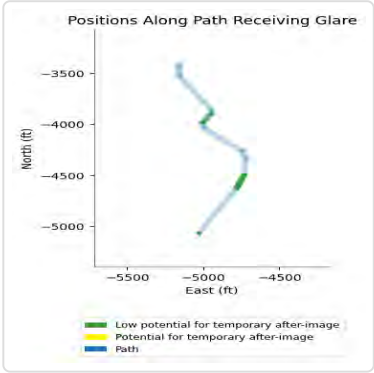
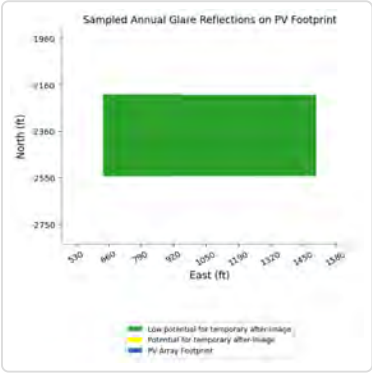
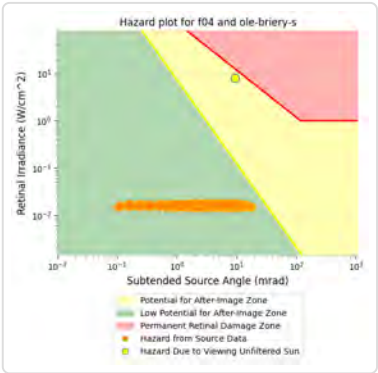
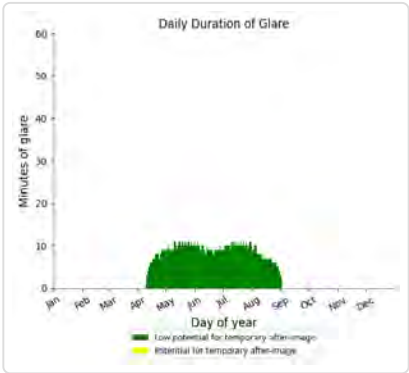
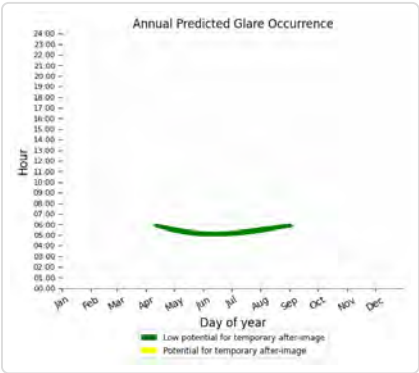
F04: Hillside Dr

No glare found

F04: Ole Briery Station Rd Seg 1

PV array is expected to produce the following glare for this receptor:

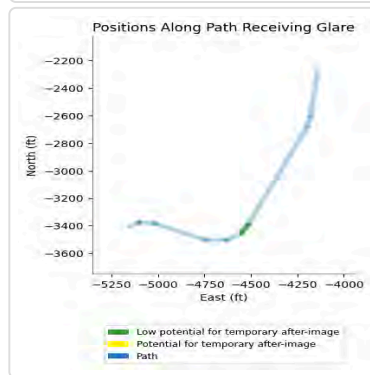
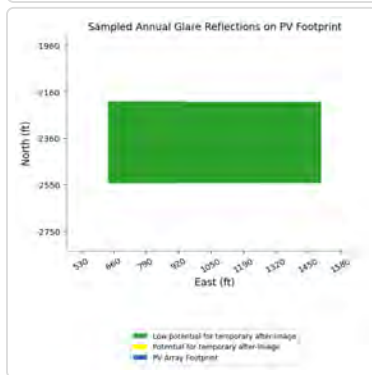
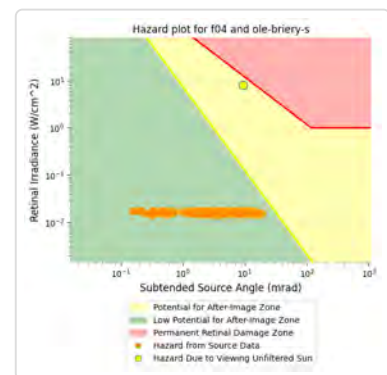
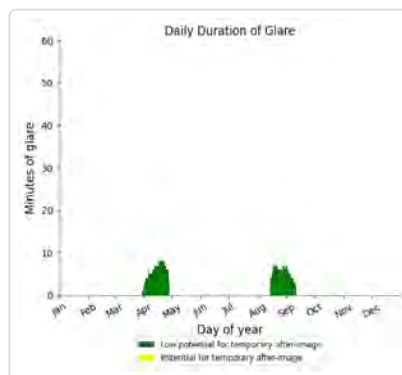
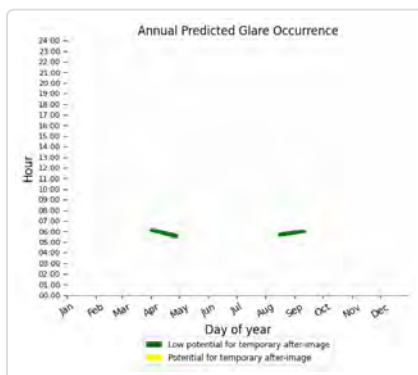
- 1,278 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## F04: Ole Briery Station Rd Seg 2

PV array is expected to produce the following glare for this receptor:

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



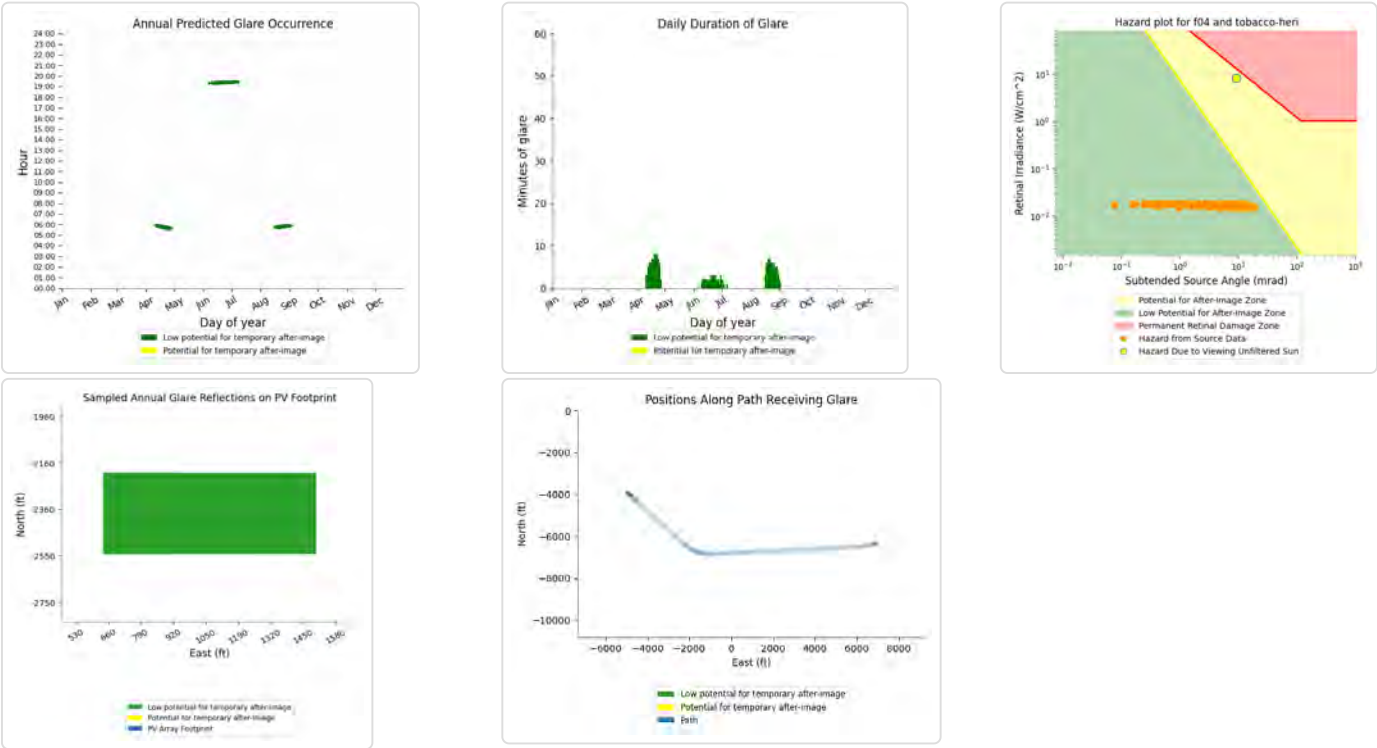
## F04: Thistle Knob Ln

No glare found



F04: Tobacco Heritage Trail

- PV array is expected to produce the following glare for this receptor:
- 253 minutes of "green" glare with low potential to cause temporary after-image.
  - 0 minutes of "yellow" glare with potential to cause temporary after-image.



F04: US Hwy 15

No glare found

F04: US Hwy 360

No glare found

F05 potential temporary after-image

Component	Green glare (min)	Yellow glare (min)
OP: OP 134	0	0
OP: OP 135	0	0
OP: OP 136	0	0
OP: OP 137	0	0
OP: OP 138	0	0
OP: OP 139	0	0
OP: OP 140	0	0
OP: OP 141	0	0
OP: OP 142	0	0
OP: OP 143	0	0
OP: OP 144	0	0
OP: OP 145	0	0
OP: OP 146	0	0
OP: OP 147	0	0
OP: OP 148	0	0

OP: OP 149	0	0
OP: OP 150	347	0
OP: OP 151	385	0
OP: OP 152	0	0
OP: OP 153	0	0
OP: OP 154	0	0
OP: OP 155	0	0
OP: OP 156	0	0
OP: OP 157	0	0
OP: OP 158	0	0
OP: OP 159	0	0
OP: OP 160	0	0
OP: OP 161	0	0
OP: OP 162	0	0
OP: OP 163	0	0
OP: OP 164	0	0
Route: Collins Dr	0	0
Route: Country Dr Seg 1	0	0
Route: Country Dr Seg 2	0	0
Route: County Line Rd	389	0
Route: Dempseys Rd	679	23
Route: Harley Ln	0	0
Route: Henderson Rd	1247	0
Route: Hillside Dr	0	0
Route: Ole Briery Station Rd Seg 1	0	0
Route: Ole Briery Station Rd Seg 2	59	0
Route: Thistle Knob Ln	0	0
Route: Tobacco Heritage Trail	0	0
Route: US Hwy 15	0	0
Route: US Hwy 360	0	0

#### **F05: OP 134**

*No glare found*

#### **F05: OP 135**

*No glare found*

#### **F05: OP 136**

*No glare found*

#### **F05: OP 137**

*No glare found*

#### **F05: OP 138**

*No glare found*

**F05: OP 139**

*No glare found*

**F05: OP 140**

*No glare found*

**F05: OP 141**

*No glare found*

**F05: OP 142**

*No glare found*

**F05: OP 143**

*No glare found*

**F05: OP 144**

*No glare found*

**F05: OP 145**

*No glare found*

**F05: OP 146**

*No glare found*

**F05: OP 147**

*No glare found*

**F05: OP 148**

*No glare found*

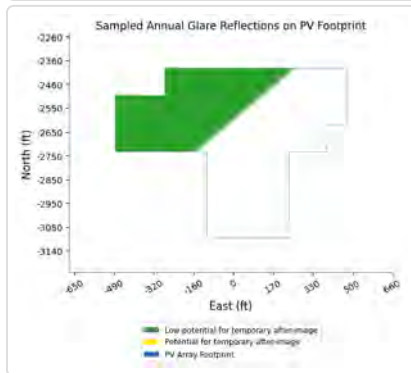
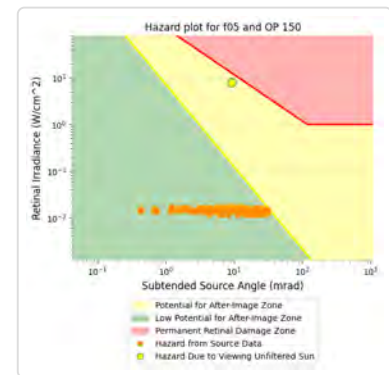
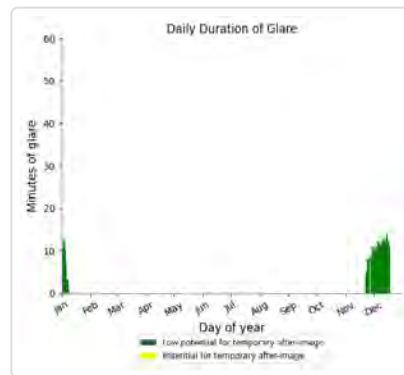
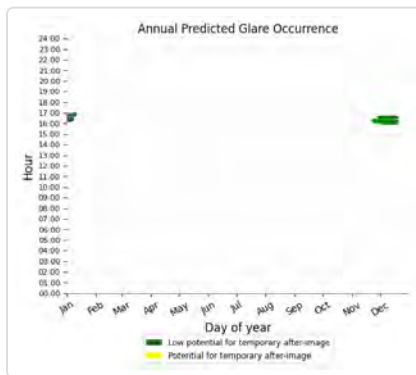
**F05: OP 149**

*No glare found*

## F05: OP 150

PV array is expected to produce the following glare for this receptor:

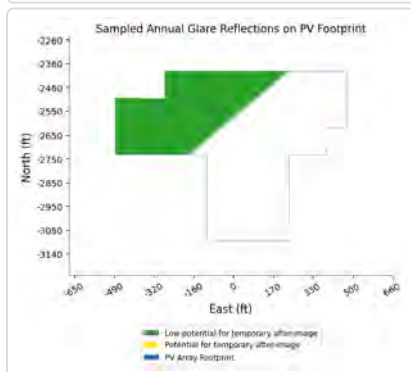
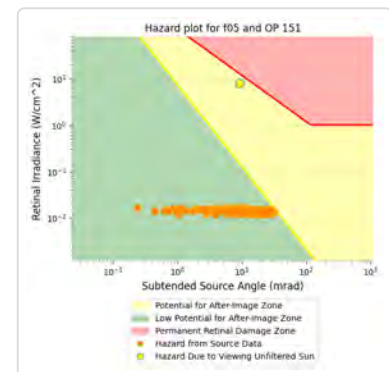
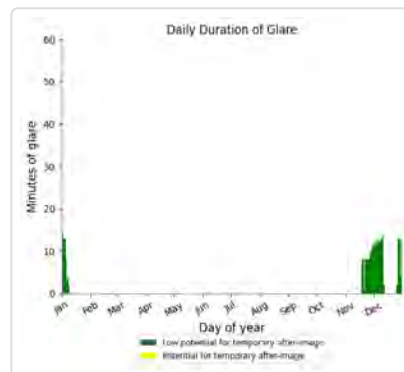
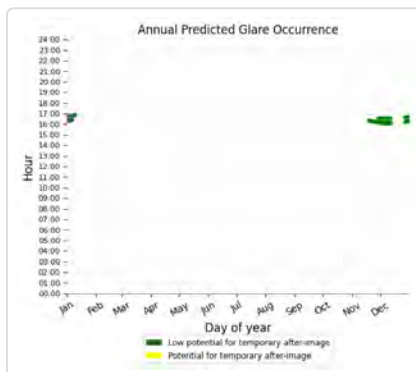
- 347 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## F05: OP 151

PV array is expected to produce the following glare for this receptor:

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



**F05: OP 152**

*No glare found*

**F05: OP 153**

*No glare found*

**F05: OP 154**

*No glare found*

**F05: OP 155**

*No glare found*

**F05: OP 156**

*No glare found*

**F05: OP 157**

*No glare found*

**F05: OP 158**

*No glare found*

**F05: OP 159**

*No glare found*

**F05: OP 160**

*No glare found*

**F05: OP 161**

*No glare found*

**F05: OP 162**

*No glare found*

**F05: OP 163**

*No glare found*

**F05: OP 164**

*No glare found*

**F05: Collins Dr**

*No glare found*

**F05: Country Dr Seg 1**

*No glare found*

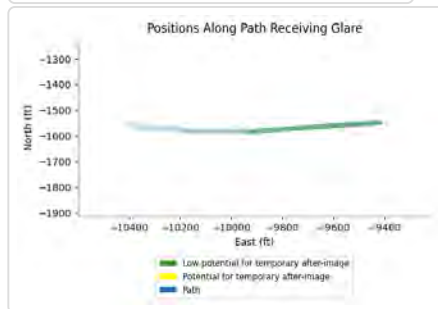
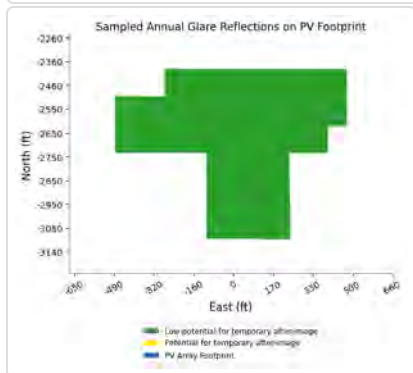
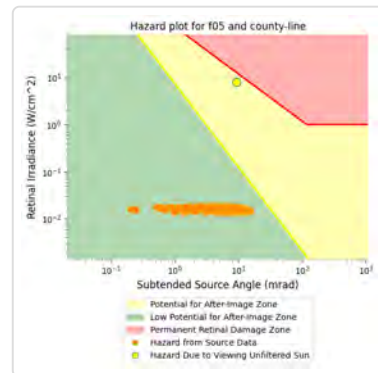
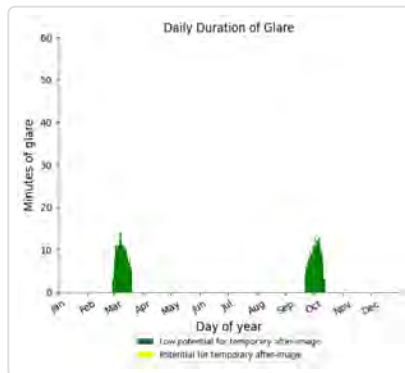
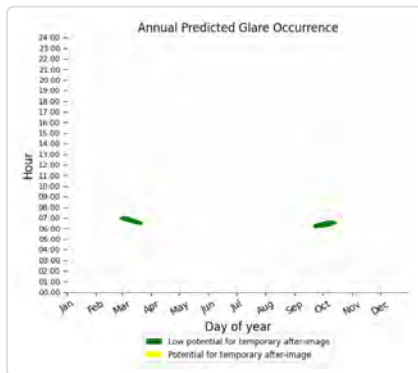
## F05: Country Dr Seg 2

No glare found

## F05: County Line Rd

PV array is expected to produce the following glare for this receptor:

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

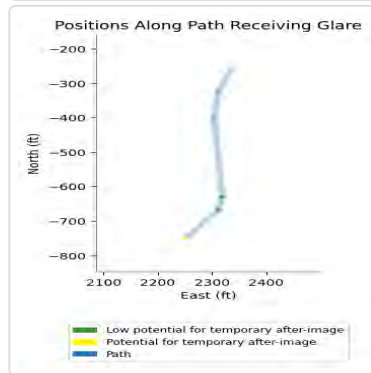
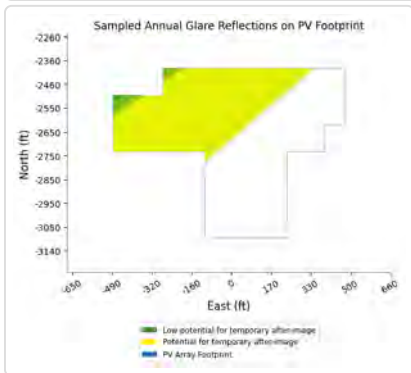
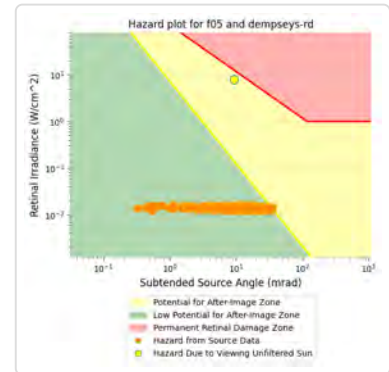
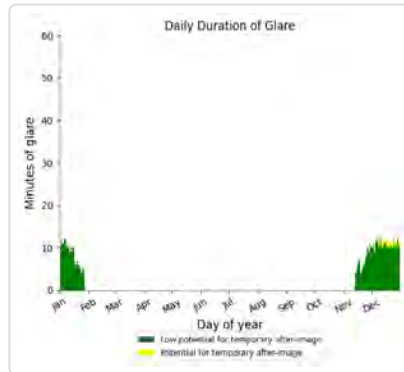
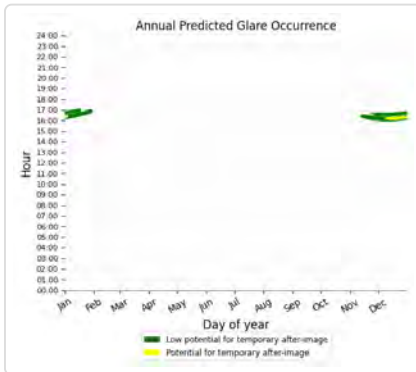




## F05: Dempseys Rd

PV array is expected to produce the following glare for this receptor:

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



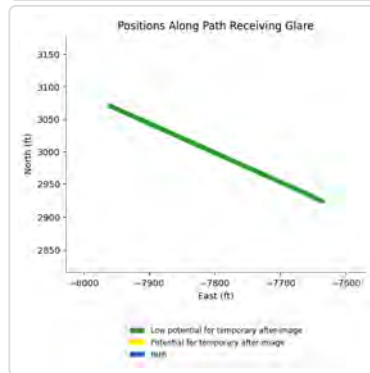
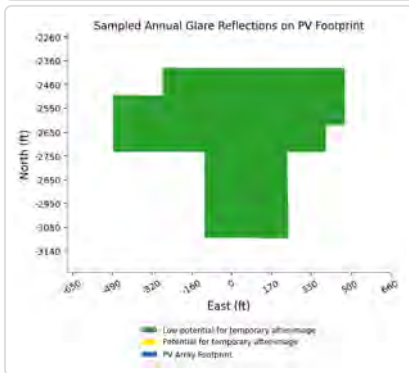
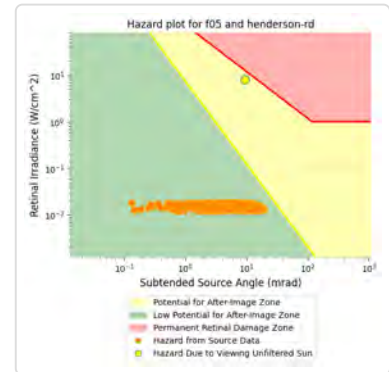
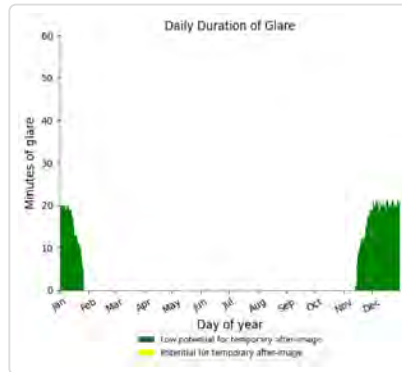
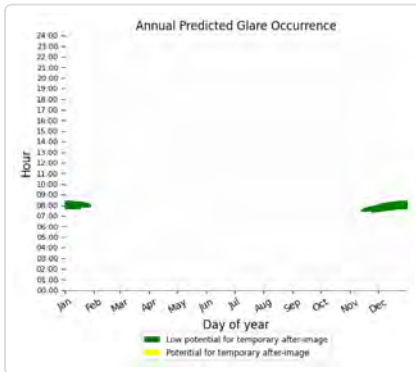
## F05: Harley Ln

No glare found

## F05: Henderson Rd

PV array is expected to produce the following glare for this receptor:

- 1,247 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## F05: Hillside Dr

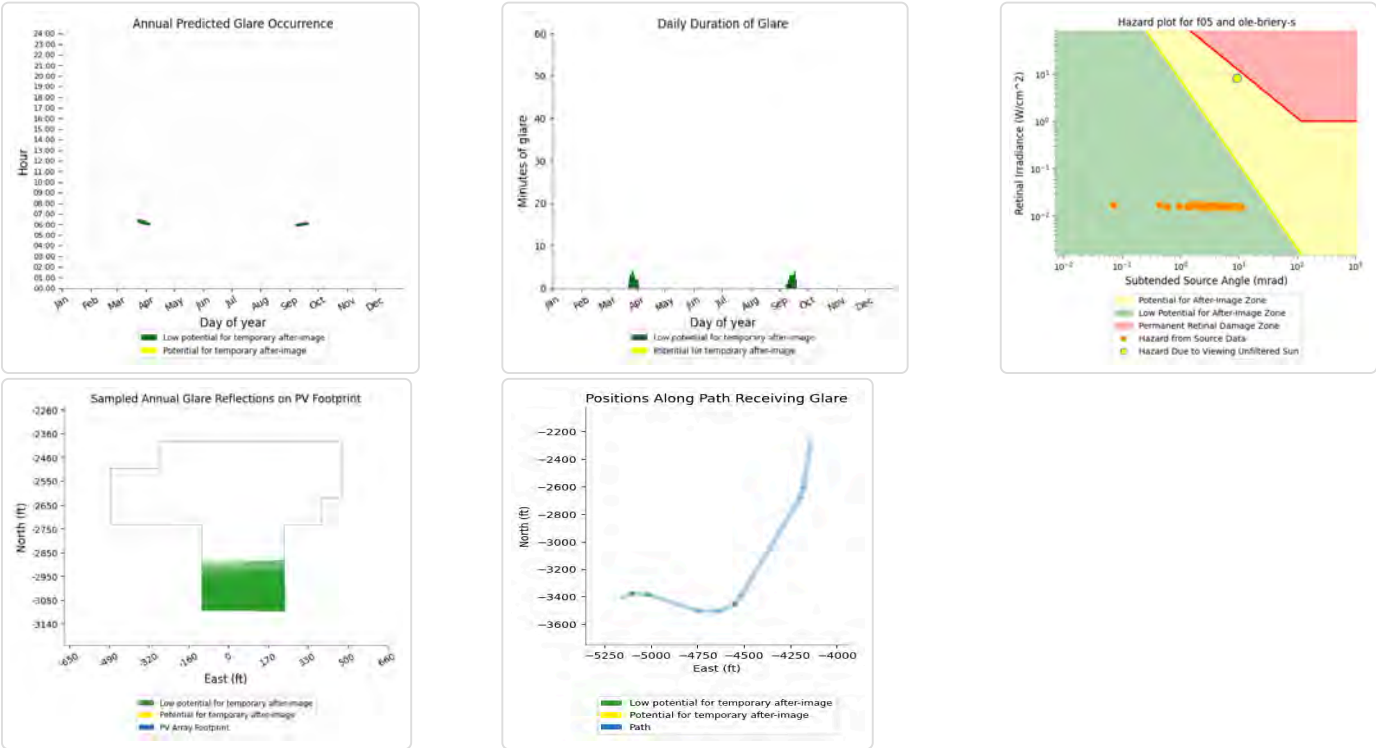
No glare found

## F05: Ole Briery Station Rd Seg 1

No glare found

F05: Ole Briery Station Rd Seg 2

- PV array is expected to produce the following glare for this receptor:
- 59 minutes of "green" glare with low potential to cause temporary after-image.
  - 0 minutes of "yellow" glare with potential to cause temporary after-image.



F05: Thistle Knob Ln

No glare found

F05: Tobacco Heritage Trail

No glare found

F05: US Hwy 15

No glare found

F05: US Hwy 360

No glare found

G01 low potential for temporary after-image

Component	Green glare (min)	Yellow glare (min)
OP: OP 134	0	0
OP: OP 135	0	0
OP: OP 136	0	0
OP: OP 137	0	0
OP: OP 138	0	0
OP: OP 139	0	0
OP: OP 140	0	0
OP: OP 141	0	0
OP: OP 142	0	0

OP: OP 143	0	0
OP: OP 144	0	0
OP: OP 145	0	0
OP: OP 146	0	0
OP: OP 147	0	0
OP: OP 148	0	0
OP: OP 149	0	0
OP: OP 150	0	0
OP: OP 151	0	0
OP: OP 152	0	0
OP: OP 153	0	0
OP: OP 154	0	0
OP: OP 155	0	0
OP: OP 156	0	0
OP: OP 157	0	0
OP: OP 158	0	0
OP: OP 159	0	0
OP: OP 160	0	0
OP: OP 161	0	0
OP: OP 162	0	0
OP: OP 163	0	0
OP: OP 164	0	0
Route: Collins Dr	0	0
Route: Country Dr Seg 1	0	0
Route: Country Dr Seg 2	0	0
Route: County Line Rd	56	0
Route: Dempseys Rd	0	0
Route: Harley Ln	0	0
Route: Henderson Rd	514	0
Route: Hillside Dr	0	0
Route: Ole Briery Station Rd Seg 1	0	0
Route: Ole Briery Station Rd Seg 2	0	0
Route: Thistle Knob Ln	0	0
Route: Tobacco Heritage Trail	0	0
Route: US Hwy 15	0	0
Route: US Hwy 360	0	0

#### G01: OP 134

*No glare found*

#### G01: OP 135

*No glare found*

#### G01: OP 136

*No glare found*

#### G01: OP 137

*No glare found*

**G01: OP 138**

*No glare found*

**G01: OP 139**

*No glare found*

**G01: OP 140**

*No glare found*

**G01: OP 141**

*No glare found*

**G01: OP 142**

*No glare found*

**G01: OP 143**

*No glare found*

**G01: OP 144**

*No glare found*

**G01: OP 145**

*No glare found*

**G01: OP 146**

*No glare found*

**G01: OP 147**

*No glare found*

**G01: OP 148**

*No glare found*

**G01: OP 149**

*No glare found*

**G01: OP 150**

*No glare found*

**G01: OP 151**

*No glare found*

**G01: OP 152**

*No glare found*

**G01: OP 153**

*No glare found*

**G01: OP 154**

*No glare found*

**G01: OP 155**

*No glare found*

**G01: OP 156**

*No glare found*

**G01: OP 157**

*No glare found*

**G01: OP 158**

*No glare found*

**G01: OP 159**

*No glare found*

**G01: OP 160**

*No glare found*

**G01: OP 161**

*No glare found*

**G01: OP 162**

*No glare found*

**G01: OP 163**

*No glare found*

**G01: OP 164**

*No glare found*

**G01: Collins Dr**

*No glare found*

**G01: Country Dr Seg 1**

*No glare found*

**G01: Country Dr Seg 2**

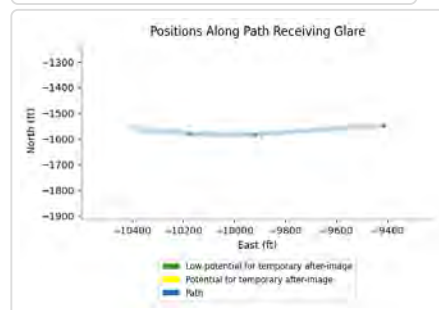
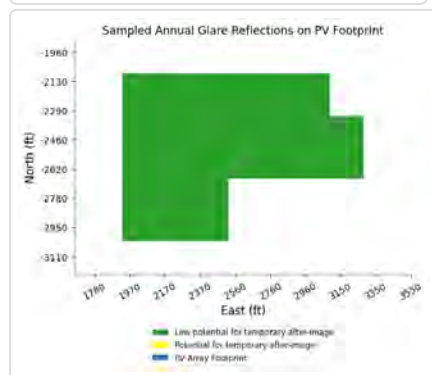
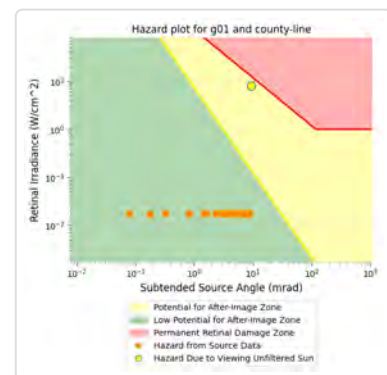
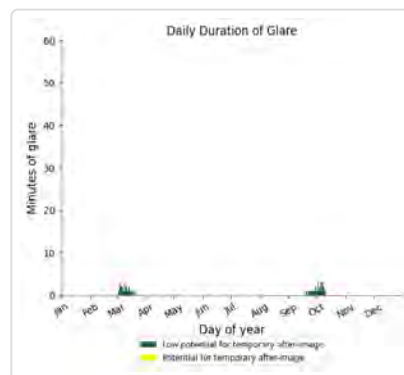
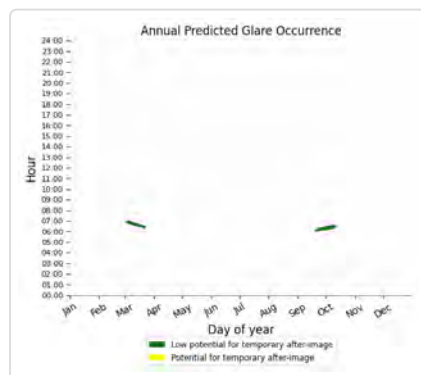
*No glare found*



## G01: County Line Rd

PV array is expected to produce the following glare for this receptor:

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



## G01: Dempseys Rd

No glare found

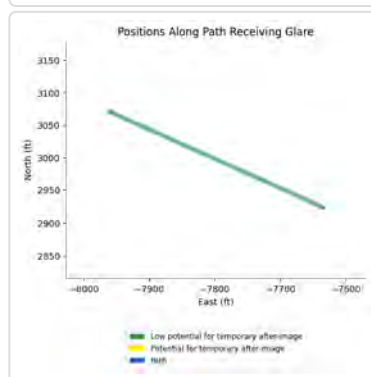
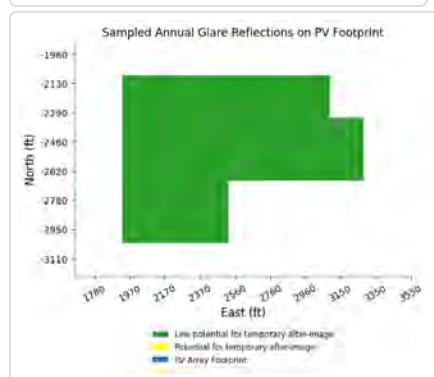
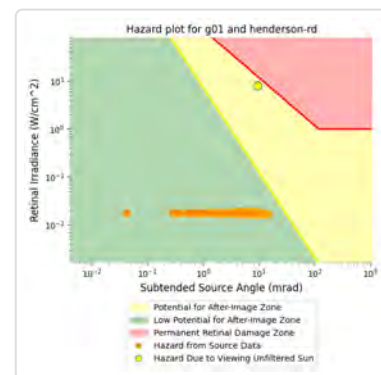
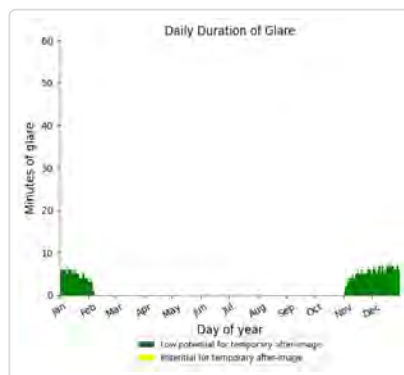
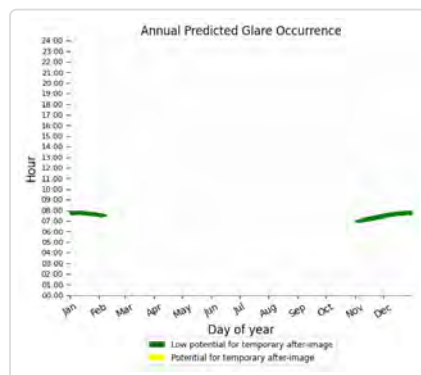
## G01: Harley Ln

No glare found

## G01: Henderson Rd

PV array is expected to produce the following glare for this receptor:

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



## G01: Hillside Dr

No glare found

## G01: Ole Briery Station Rd Seg 1

No glare found

## G01: Ole Briery Station Rd Seg 2

No glare found

## G01: Thistle Knob Ln

No glare found

## G01: Tobacco Heritage Trail

No glare found

## G01: US Hwy 15

No glare found

## G01: US Hwy 360

No glare found

## G02 low potential for temporary after-image

Component	Green glare (min)	Yellow glare (min)
OP: OP 134	0	0
OP: OP 135	0	0
OP: OP 136	0	0
OP: OP 137	0	0
OP: OP 138	0	0
OP: OP 139	0	0
OP: OP 140	0	0
OP: OP 141	0	0
OP: OP 142	0	0
OP: OP 143	0	0
OP: OP 144	0	0
OP: OP 145	0	0
OP: OP 146	0	0
OP: OP 147	0	0
OP: OP 148	0	0
OP: OP 149	0	0
OP: OP 150	0	0
OP: OP 151	0	0
OP: OP 152	0	0
OP: OP 153	0	0
OP: OP 154	0	0
OP: OP 155	0	0
OP: OP 156	0	0
OP: OP 157	0	0
OP: OP 158	0	0
OP: OP 159	0	0
OP: OP 160	0	0
OP: OP 161	0	0
OP: OP 162	0	0
OP: OP 163	0	0
OP: OP 164	0	0
Route: Collins Dr	0	0
Route: Country Dr Seg 1	0	0
Route: Country Dr Seg 2	0	0
Route: County Line Rd	66	0
Route: Dempseys Rd	0	0
Route: Harley Ln	0	0
Route: Henderson Rd	0	0
Route: Hillside Dr	0	0
Route: Ole Briery Station Rd Seg 1	210	0
Route: Ole Briery Station Rd Seg 2	90	0
Route: Thistle Knob Ln	0	0
Route: Tobacco Heritage Trail	106	0
Route: US Hwy 15	0	0
Route: US Hwy 360	0	0

**G02: OP 134**

*No glare found*

**G02: OP 135**

*No glare found*

**G02: OP 136**

*No glare found*

**G02: OP 137**

*No glare found*

**G02: OP 138**

*No glare found*

**G02: OP 139**

*No glare found*

**G02: OP 140**

*No glare found*

**G02: OP 141**

*No glare found*

**G02: OP 142**

*No glare found*

**G02: OP 143**

*No glare found*

**G02: OP 144**

*No glare found*

**G02: OP 145**

*No glare found*

**G02: OP 146**

*No glare found*

**G02: OP 147**

*No glare found*

**G02: OP 148**

*No glare found*

**G02: OP 149**

*No glare found*

**G02: OP 150**

*No glare found*

**G02: OP 151**

*No glare found*

**G02: OP 152**

*No glare found*

**G02: OP 153**

*No glare found*

**G02: OP 154**

*No glare found*

**G02: OP 155**

*No glare found*

**G02: OP 156**

*No glare found*

**G02: OP 157**

*No glare found*

**G02: OP 158**

*No glare found*

**G02: OP 159**

*No glare found*

**G02: OP 160**

*No glare found*

**G02: OP 161**

*No glare found*

**G02: OP 162**

*No glare found*

**G02: OP 163**

*No glare found*

## G02: OP 164

No glare found

## G02: Collins Dr

No glare found

## G02: Country Dr Seg 1

No glare found

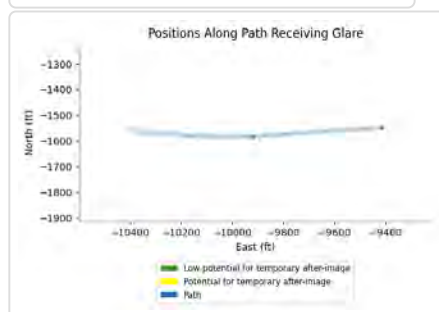
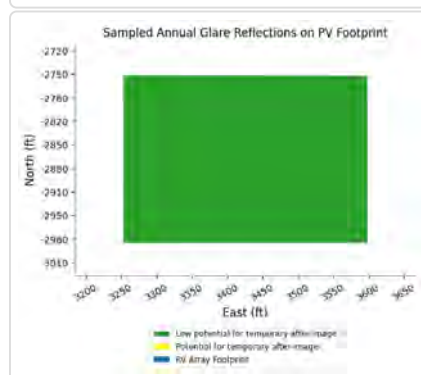
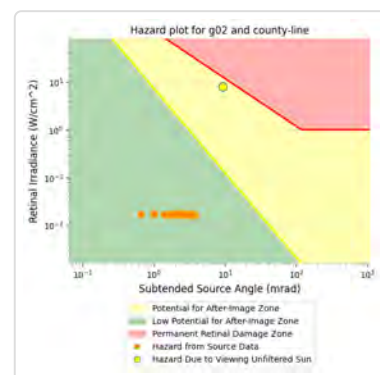
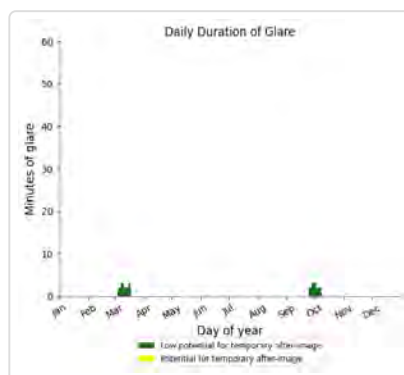
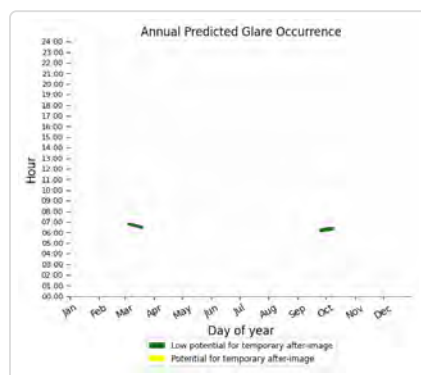
## G02: Country Dr Seg 2

No glare found

## G02: County Line Rd

PV array is expected to produce the following glare for this receptor:

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



## G02: Dempseys Rd

No glare found

## G02: Harley Ln

No glare found

## G02: Henderson Rd

No glare found



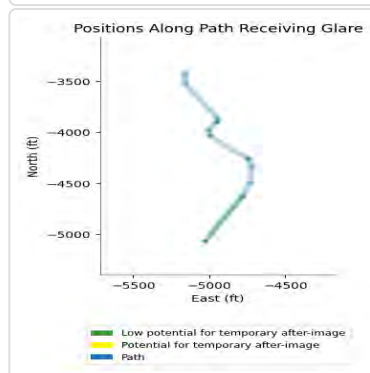
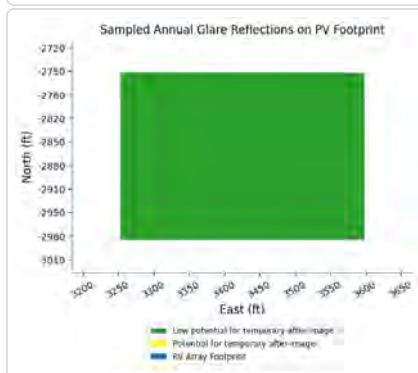
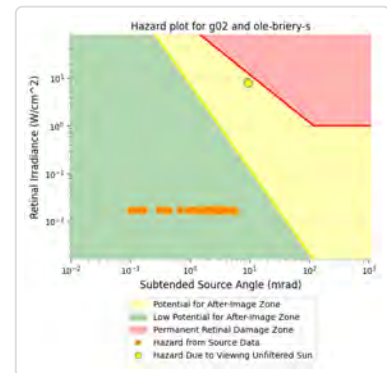
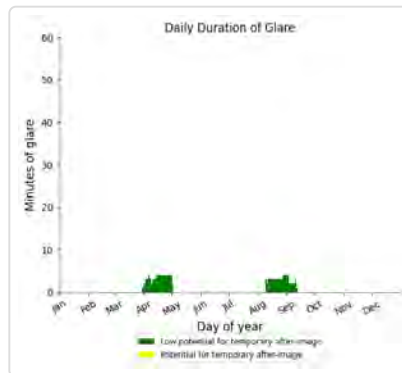
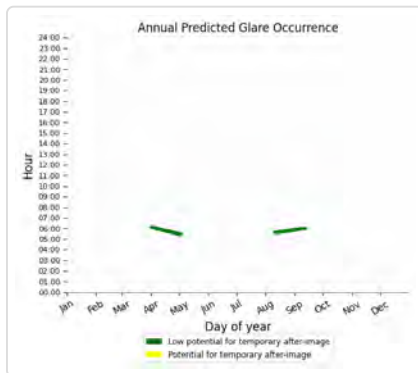
## G02: Hillside Dr

No glare found

## G02: Ole Briery Station Rd Seg 1

PV array is expected to produce the following glare for this receptor:

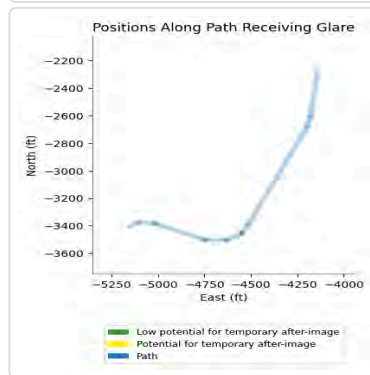
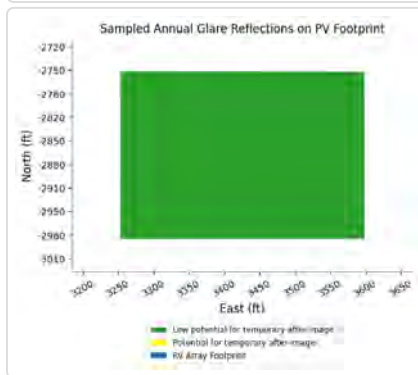
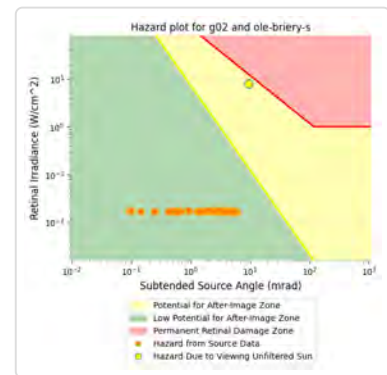
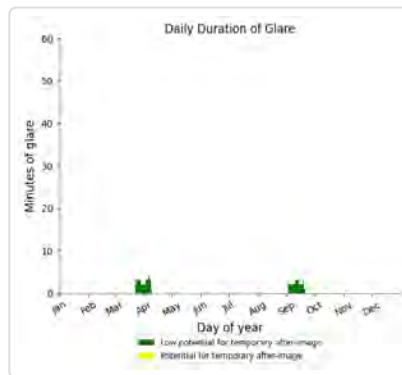
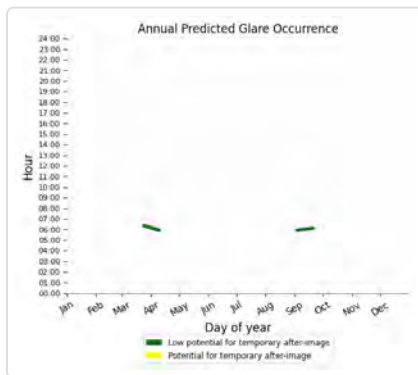
- 210 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## G02: Ole Briery Station Rd Seg 2

PV array is expected to produce the following glare for this receptor:

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

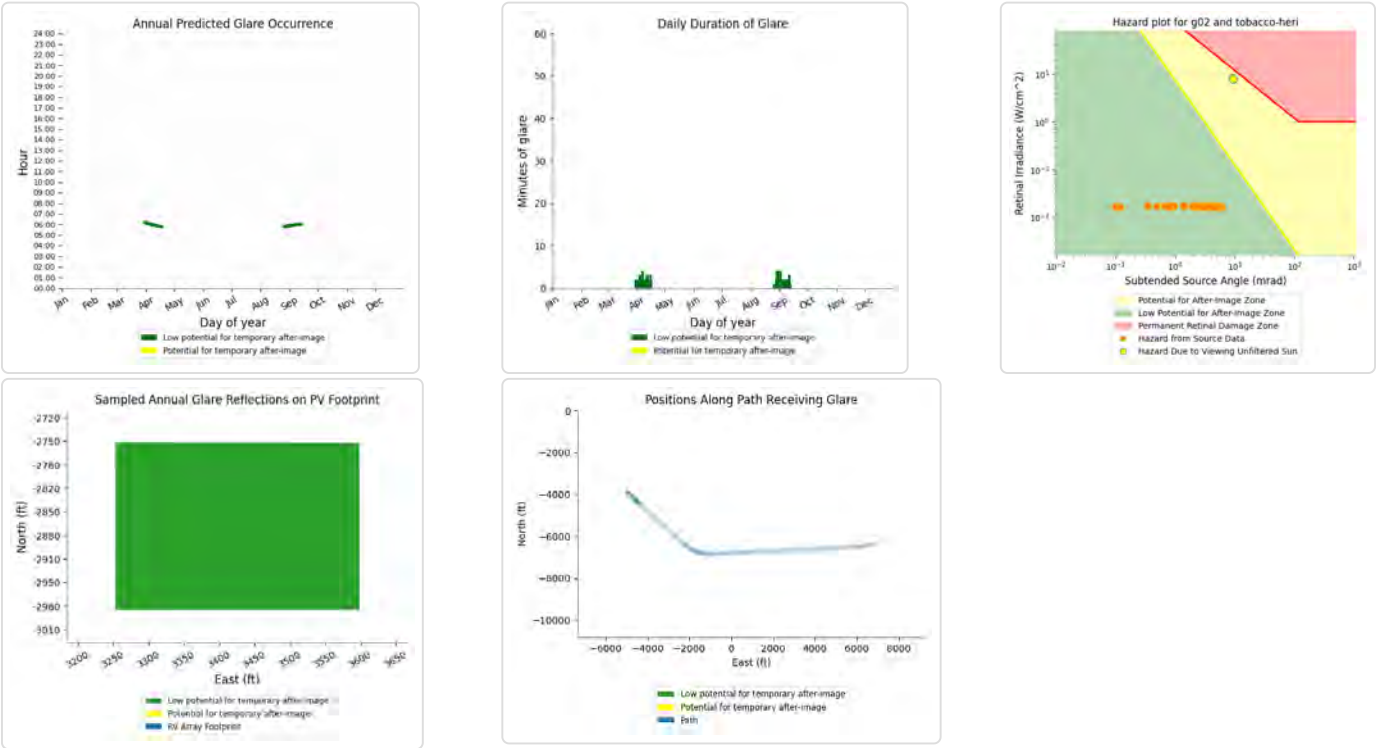


## G02: Thistle Knob Ln

No glare found

G02: Tobacco Heritage Trail

- PV array is expected to produce the following glare for this receptor:
- 106 minutes of "green" glare with low potential to cause temporary after-image.
  - 0 minutes of "yellow" glare with potential to cause temporary after-image.



G02: US Hwy 15

No glare found

G02: US Hwy 360

No glare found

G03 low potential for temporary after-image

Component	Green glare (min)	Yellow glare (min)
OP: OP 134	0	0
OP: OP 135	0	0
OP: OP 136	0	0
OP: OP 137	0	0
OP: OP 138	0	0
OP: OP 139	0	0
OP: OP 140	0	0
OP: OP 141	0	0
OP: OP 142	0	0
OP: OP 143	0	0
OP: OP 144	0	0
OP: OP 145	0	0
OP: OP 146	0	0
OP: OP 147	0	0
OP: OP 148	0	0

OP: OP 149	0	0
OP: OP 150	0	0
OP: OP 151	0	0
OP: OP 152	0	0
OP: OP 153	0	0
OP: OP 154	0	0
OP: OP 155	0	0
OP: OP 156	0	0
OP: OP 157	0	0
OP: OP 158	0	0
OP: OP 159	0	0
OP: OP 160	0	0
OP: OP 161	0	0
OP: OP 162	0	0
OP: OP 163	0	0
OP: OP 164	0	0
Route: Collins Dr	0	0
Route: Country Dr Seg 1	0	0
Route: Country Dr Seg 2	0	0
Route: County Line Rd	288	0
Route: Dempseys Rd	0	0
Route: Harley Ln	0	0
Route: Henderson Rd	344	0
Route: Hillside Dr	0	0
Route: Ole Briery Station Rd Seg 1	350	0
Route: Ole Briery Station Rd Seg 2	274	0
Route: Thistle Knob Ln	0	0
Route: Tobacco Heritage Trail	247	0
Route: US Hwy 15	0	0
Route: US Hwy 360	0	0

### G03: OP 134

*No glare found*

### G03: OP 135

*No glare found*

### G03: OP 136

*No glare found*

### G03: OP 137

*No glare found*

### G03: OP 138

*No glare found*

**G03: OP 139**

*No glare found*

**G03: OP 140**

*No glare found*

**G03: OP 141**

*No glare found*

**G03: OP 142**

*No glare found*

**G03: OP 143**

*No glare found*

**G03: OP 144**

*No glare found*

**G03: OP 145**

*No glare found*

**G03: OP 146**

*No glare found*

**G03: OP 147**

*No glare found*

**G03: OP 148**

*No glare found*

**G03: OP 149**

*No glare found*

**G03: OP 150**

*No glare found*

**G03: OP 151**

*No glare found*

**G03: OP 152**

*No glare found*

**G03: OP 153**

*No glare found*

**G03: OP 154**

*No glare found*

**G03: OP 155**

*No glare found*

**G03: OP 156**

*No glare found*

**G03: OP 157**

*No glare found*

**G03: OP 158**

*No glare found*

**G03: OP 159**

*No glare found*

**G03: OP 160**

*No glare found*

**G03: OP 161**

*No glare found*

**G03: OP 162**

*No glare found*

**G03: OP 163**

*No glare found*

**G03: OP 164**

*No glare found*

**G03: Collins Dr**

*No glare found*

**G03: Country Dr Seg 1**

*No glare found*

**G03: Country Dr Seg 2**

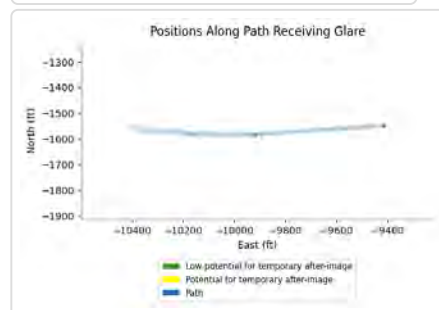
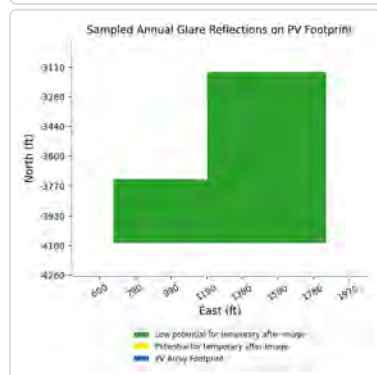
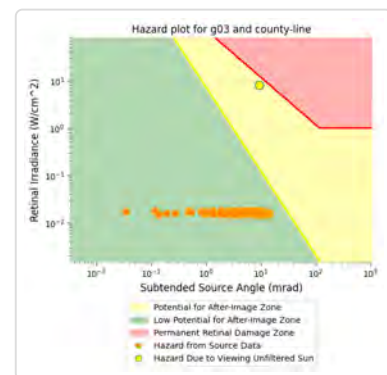
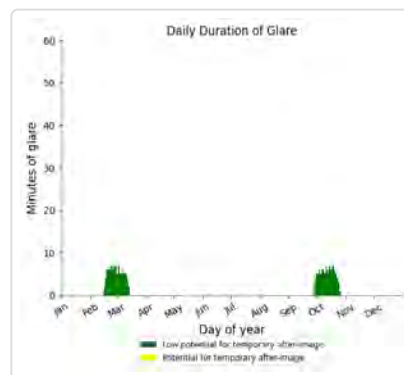
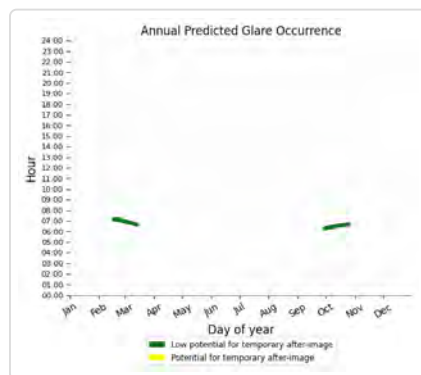
*No glare found*



### G03: County Line Rd

PV array is expected to produce the following glare for this receptor:

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



### G03: Dempseys Rd

No glare found

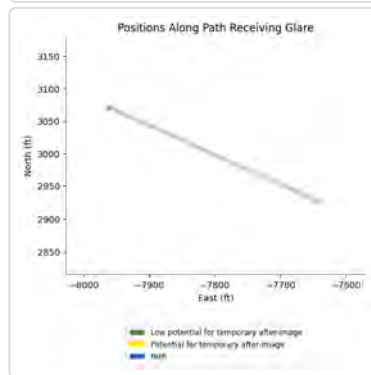
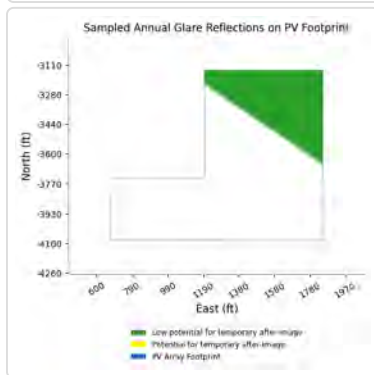
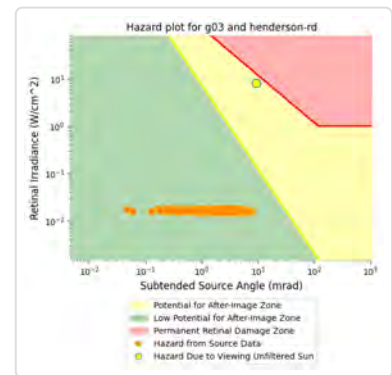
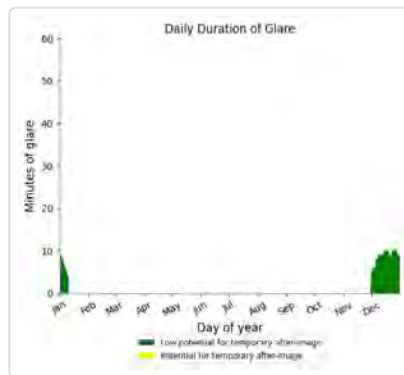
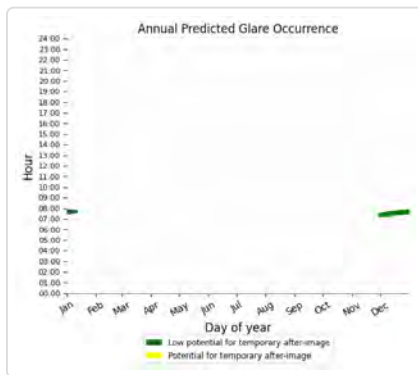
### G03: Harley Ln

No glare found

## G03: Henderson Rd

PV array is expected to produce the following glare for this receptor:

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



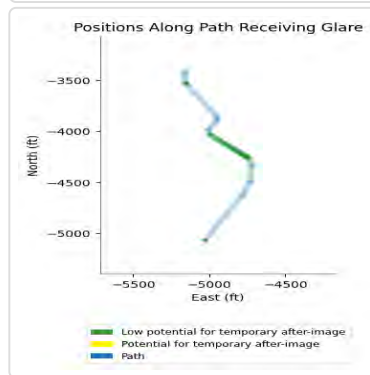
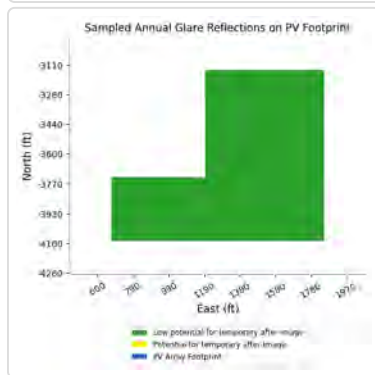
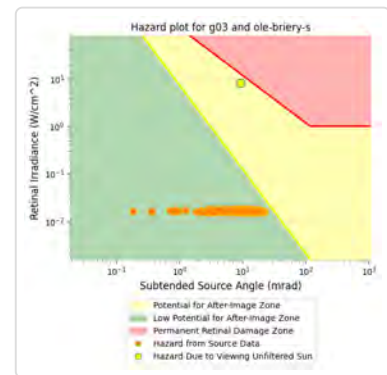
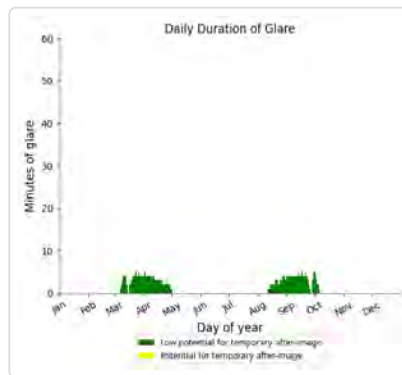
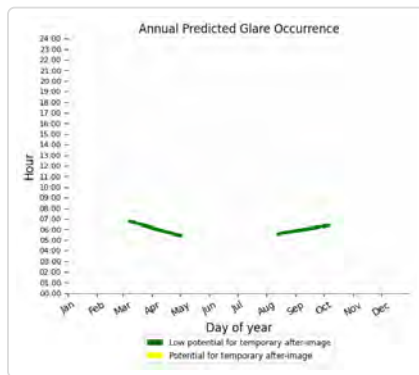
## G03: Hillside Dr

No glare found

### G03: Ole Briery Station Rd Seg 1

PV array is expected to produce the following glare for this receptor:

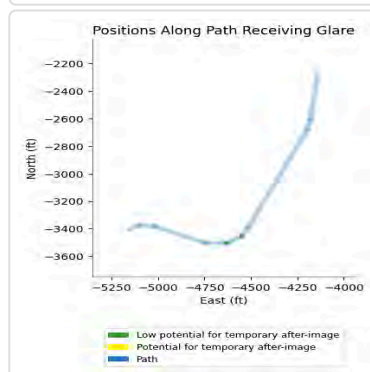
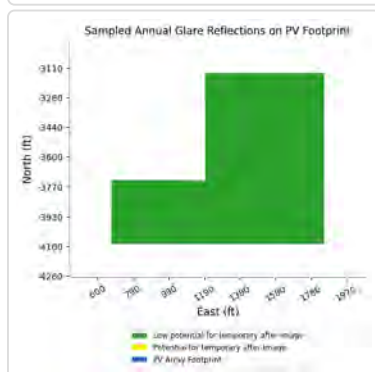
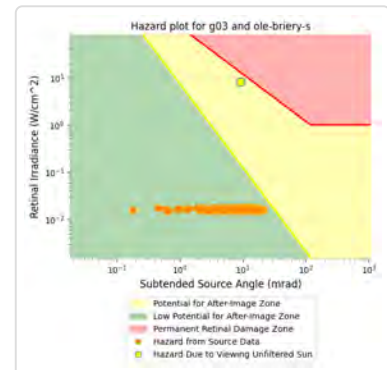
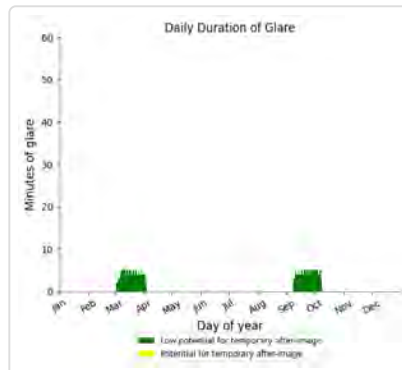
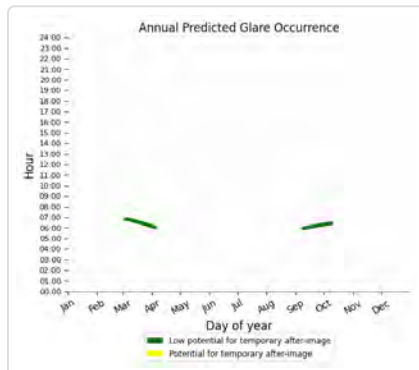
- 350 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



### G03: Ole Briery Station Rd Seg 2

PV array is expected to produce the following glare for this receptor:

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



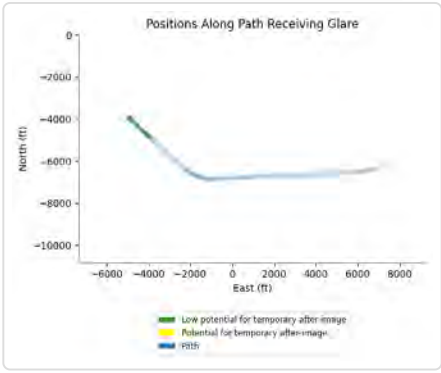
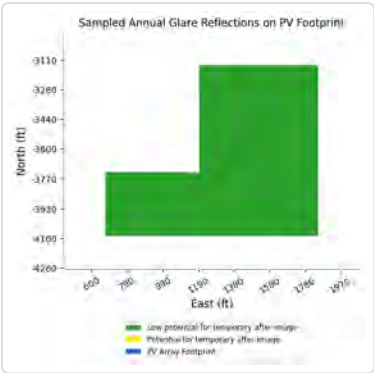
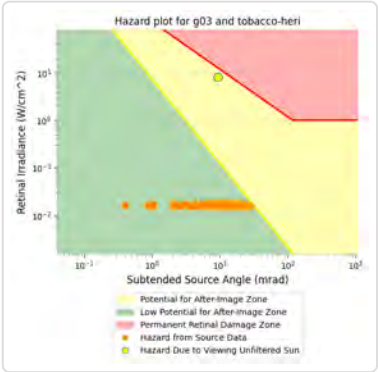
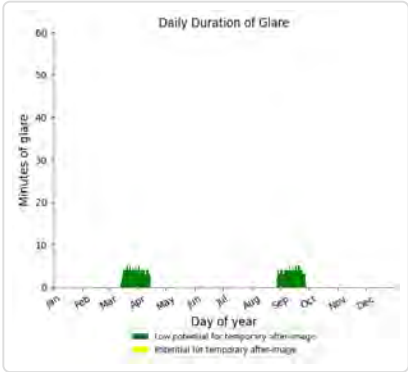
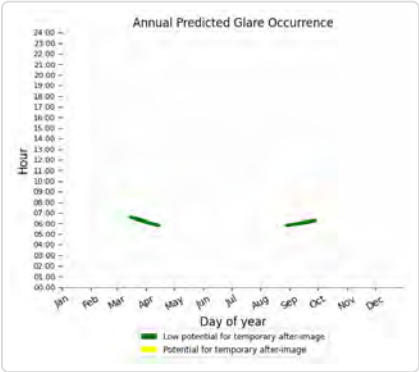
G03: Thistle Knob Ln

No glare found

G03: Tobacco Heritage Trail

PV array is expected to produce the following glare for this receptor:

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



G03: US Hwy 15

No glare found

G03: US Hwy 360

No glare found

G04 low potential for temporary after-image

Component	Green glare (min)	Yellow glare (min)
OP: OP 134	0	0
OP: OP 135	0	0
OP: OP 136	0	0
OP: OP 137	0	0
OP: OP 138	0	0
OP: OP 139	0	0
OP: OP 140	0	0
OP: OP 141	0	0
OP: OP 142	0	0
OP: OP 143	0	0
OP: OP 144	0	0
OP: OP 145	0	0

OP: OP 146	0	0
OP: OP 147	0	0
OP: OP 148	0	0
OP: OP 149	0	0
OP: OP 150	0	0
OP: OP 151	0	0
OP: OP 152	0	0
OP: OP 153	0	0
OP: OP 154	0	0
OP: OP 155	0	0
OP: OP 156	0	0
OP: OP 157	0	0
OP: OP 158	0	0
OP: OP 159	0	0
OP: OP 160	0	0
OP: OP 161	0	0
OP: OP 162	0	0
OP: OP 163	0	0
OP: OP 164	0	0
Route: Collins Dr	0	0
Route: Country Dr Seg 1	0	0
Route: Country Dr Seg 2	0	0
Route: County Line Rd	165	0
Route: Dempseys Rd	0	0
Route: Harley Ln	0	0
Route: Henderson Rd	303	0
Route: Hillside Dr	0	0
Route: Ole Briery Station Rd Seg 1	0	0
Route: Ole Briery Station Rd Seg 2	0	0
Route: Thistle Knob Ln	0	0
Route: Tobacco Heritage Trail	0	0
Route: US Hwy 15	0	0
Route: US Hwy 360	0	0

#### G04: OP 134

*No glare found*

#### G04: OP 135

*No glare found*

#### G04: OP 136

*No glare found*

#### G04: OP 137

*No glare found*

#### G04: OP 138

*No glare found*

**G04: OP 139**

*No glare found*

**G04: OP 140**

*No glare found*

**G04: OP 141**

*No glare found*

**G04: OP 142**

*No glare found*

**G04: OP 143**

*No glare found*

**G04: OP 144**

*No glare found*

**G04: OP 145**

*No glare found*

**G04: OP 146**

*No glare found*

**G04: OP 147**

*No glare found*

**G04: OP 148**

*No glare found*

**G04: OP 149**

*No glare found*

**G04: OP 150**

*No glare found*

**G04: OP 151**

*No glare found*

**G04: OP 152**

*No glare found*

**G04: OP 153**

*No glare found*



**G04: OP 154**

*No glare found*

**G04: OP 155**

*No glare found*

**G04: OP 156**

*No glare found*

**G04: OP 157**

*No glare found*

**G04: OP 158**

*No glare found*

**G04: OP 159**

*No glare found*

**G04: OP 160**

*No glare found*

**G04: OP 161**

*No glare found*

**G04: OP 162**

*No glare found*

**G04: OP 163**

*No glare found*

**G04: OP 164**

*No glare found*

**G04: Collins Dr**

*No glare found*

**G04: Country Dr Seg 1**

*No glare found*

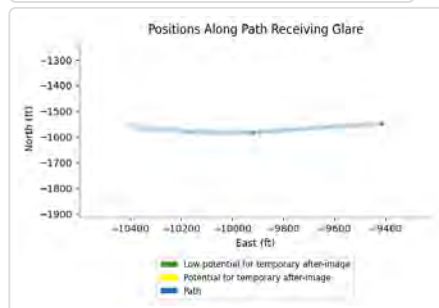
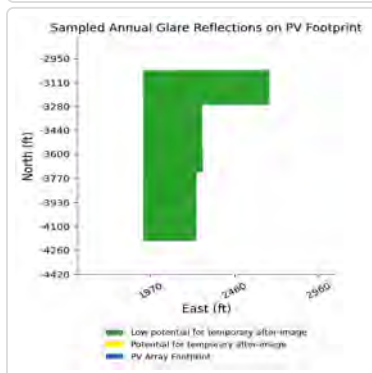
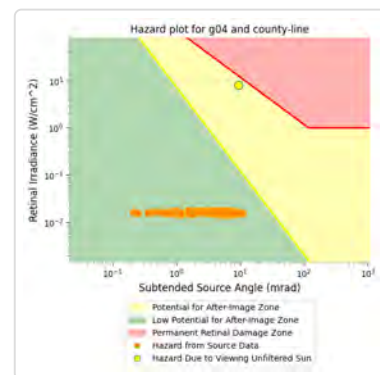
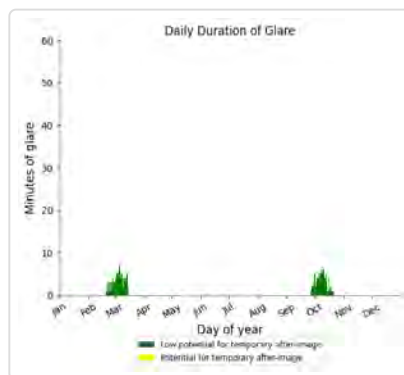
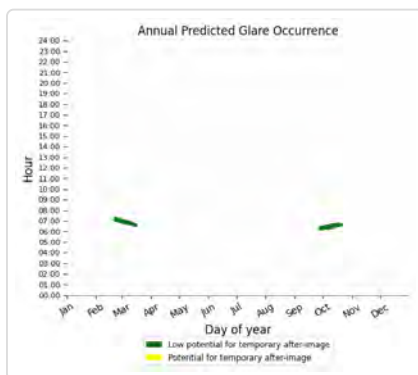
**G04: Country Dr Seg 2**

*No glare found*

## G04: County Line Rd

PV array is expected to produce the following glare for this receptor:

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



## G04: Dempseys Rd

No glare found

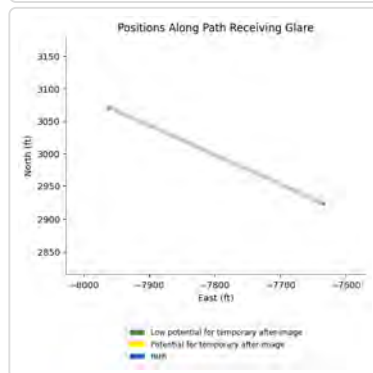
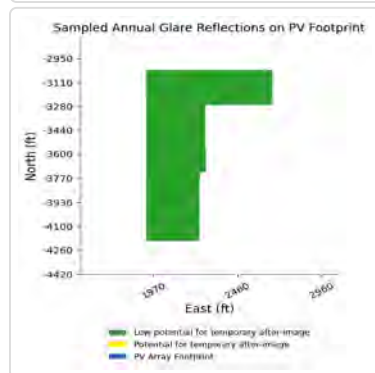
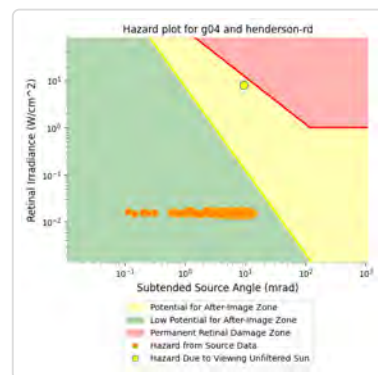
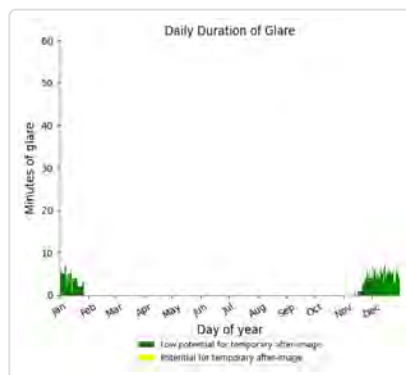
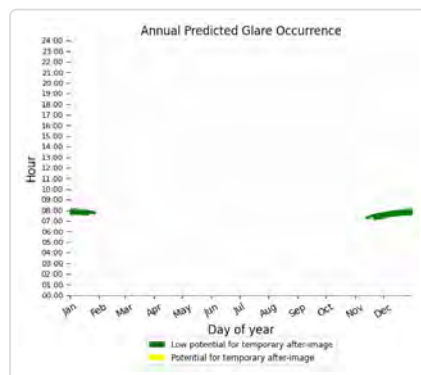
## G04: Harley Ln

No glare found

## G04: Henderson Rd

PV array is expected to produce the following glare for this receptor:

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



## G04: Hillside Dr

No glare found

## G04: Ole Briery Station Rd Seg 1

No glare found

## G04: Ole Briery Station Rd Seg 2

No glare found

## G04: Thistle Knob Ln

No glare found

## G04: Tobacco Heritage Trail

No glare found

## G04: US Hwy 15

No glare found

## G04: US Hwy 360

No glare found

## G05 low potential for temporary after-image

Component	Green glare (min)	Yellow glare (min)
OP: OP 134	0	0
OP: OP 135	0	0
OP: OP 136	0	0
OP: OP 137	0	0
OP: OP 138	0	0
OP: OP 139	0	0
OP: OP 140	0	0
OP: OP 141	0	0
OP: OP 142	0	0
OP: OP 143	0	0
OP: OP 144	0	0
OP: OP 145	0	0
OP: OP 146	0	0
OP: OP 147	0	0
OP: OP 148	0	0
OP: OP 149	0	0
OP: OP 150	0	0
OP: OP 151	0	0
OP: OP 152	0	0
OP: OP 153	0	0
OP: OP 154	0	0
OP: OP 155	0	0
OP: OP 156	0	0
OP: OP 157	0	0
OP: OP 158	0	0
OP: OP 159	0	0
OP: OP 160	0	0
OP: OP 161	0	0
OP: OP 162	0	0
OP: OP 163	0	0
OP: OP 164	0	0
Route: Collins Dr	0	0
Route: Country Dr Seg 1	0	0
Route: Country Dr Seg 2	0	0
Route: County Line Rd	0	0
Route: Dempseys Rd	0	0
Route: Harley Ln	0	0
Route: Henderson Rd	391	0
Route: Hillside Dr	0	0
Route: Ole Briery Station Rd Seg 1	0	0
Route: Ole Briery Station Rd Seg 2	0	0
Route: Thistle Knob Ln	0	0
Route: Tobacco Heritage Trail	0	0
Route: US Hwy 15	0	0
Route: US Hwy 360	0	0

**G05: OP 134**

*No glare found*

**G05: OP 135**

*No glare found*

**G05: OP 136**

*No glare found*

**G05: OP 137**

*No glare found*

**G05: OP 138**

*No glare found*

**G05: OP 139**

*No glare found*

**G05: OP 140**

*No glare found*

**G05: OP 141**

*No glare found*

**G05: OP 142**

*No glare found*

**G05: OP 143**

*No glare found*

**G05: OP 144**

*No glare found*

**G05: OP 145**

*No glare found*

**G05: OP 146**

*No glare found*

**G05: OP 147**

*No glare found*

**G05: OP 148**

*No glare found*

**G05: OP 149**

*No glare found*

**G05: OP 150**

*No glare found*

**G05: OP 151**

*No glare found*

**G05: OP 152**

*No glare found*

**G05: OP 153**

*No glare found*

**G05: OP 154**

*No glare found*

**G05: OP 155**

*No glare found*

**G05: OP 156**

*No glare found*

**G05: OP 157**

*No glare found*

**G05: OP 158**

*No glare found*

**G05: OP 159**

*No glare found*

**G05: OP 160**

*No glare found*

**G05: OP 161**

*No glare found*

**G05: OP 162**

*No glare found*

**G05: OP 163**

*No glare found*



## G05: OP 164

No glare found

## G05: Collins Dr

No glare found

## G05: Country Dr Seg 1

No glare found

## G05: Country Dr Seg 2

No glare found

## G05: County Line Rd

No glare found

## G05: Dempseys Rd

No glare found

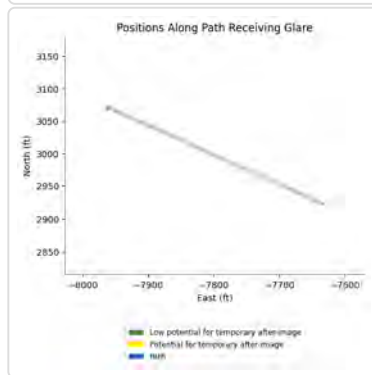
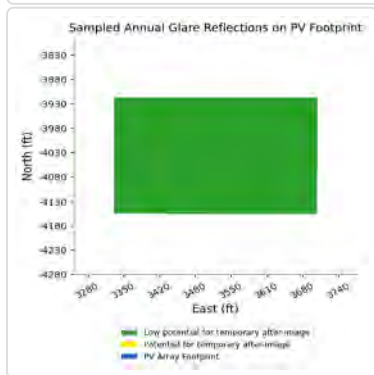
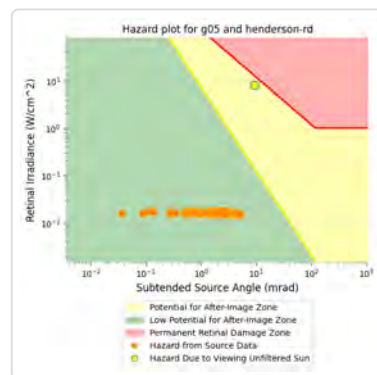
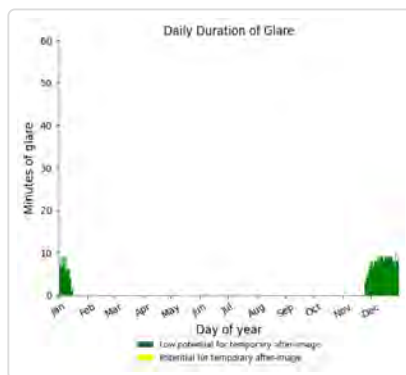
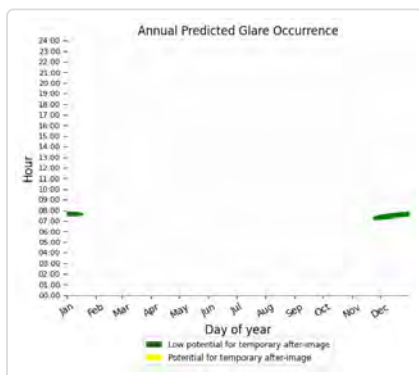
## G05: Harley Ln

No glare found

## G05: Henderson Rd

PV array is expected to produce the following glare for this receptor:

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



**G05: Hillside Dr**

*No glare found*

**G05: Ole Briery Station Rd Seg 1**

*No glare found*

**G05: Ole Briery Station Rd Seg 2**

*No glare found*

**G05: Thistle Knob Ln**

*No glare found*

**G05: Tobacco Heritage Trail**

*No glare found*

**G05: US Hwy 15**

*No glare found*

**G05: US Hwy 360**

*No glare found*

**G06** no glare found

Component	Green glare (min)	Yellow glare (min)
OP: OP 134	0	0
OP: OP 135	0	0
OP: OP 136	0	0
OP: OP 137	0	0
OP: OP 138	0	0
OP: OP 139	0	0
OP: OP 140	0	0
OP: OP 141	0	0
OP: OP 142	0	0
OP: OP 143	0	0
OP: OP 144	0	0
OP: OP 145	0	0
OP: OP 146	0	0
OP: OP 147	0	0
OP: OP 148	0	0
OP: OP 149	0	0
OP: OP 150	0	0
OP: OP 151	0	0
OP: OP 152	0	0
OP: OP 153	0	0
OP: OP 154	0	0
OP: OP 155	0	0
OP: OP 156	0	0
OP: OP 157	0	0
OP: OP 158	0	0
OP: OP 159	0	0
OP: OP 160	0	0
OP: OP 161	0	0
OP: OP 162	0	0
OP: OP 163	0	0
OP: OP 164	0	0
Route: Collins Dr	0	0
Route: Country Dr Seg 1	0	0
Route: Country Dr Seg 2	0	0
Route: County Line Rd	0	0
Route: Dempseys Rd	0	0
Route: Harley Ln	0	0
Route: Henderson Rd	0	0
Route: Hillside Dr	0	0
Route: Ole Briery Station Rd Seg 1	0	0
Route: Ole Briery Station Rd Seg 2	0	0
Route: Thistle Knob Ln	0	0
Route: Tobacco Heritage Trail	0	0
Route: US Hwy 15	0	0
Route: US Hwy 360	0	0

No glare found

**G07** potential temporary after-image

<b>Component</b>	<b>Green glare (min)</b>	<b>Yellow glare (min)</b>
OP: OP 134	0	0
OP: OP 135	0	0
OP: OP 136	0	0
OP: OP 137	0	0
OP: OP 138	0	0
OP: OP 139	0	0
OP: OP 140	0	0
OP: OP 141	0	0
OP: OP 142	0	0
OP: OP 143	0	0
OP: OP 144	0	0
OP: OP 145	0	0
OP: OP 146	0	0
OP: OP 147	0	0
OP: OP 148	0	0
OP: OP 149	0	0
OP: OP 150	0	0
OP: OP 151	0	0
OP: OP 152	0	0
OP: OP 153	0	0
OP: OP 154	0	0
OP: OP 155	0	0
OP: OP 156	0	0
OP: OP 157	0	0
OP: OP 158	0	0
OP: OP 159	0	0
OP: OP 160	0	0
OP: OP 161	0	0
OP: OP 162	0	0
OP: OP 163	0	0
OP: OP 164	0	0
Route: Collins Dr	0	0
Route: Country Dr Seg 1	0	0
Route: Country Dr Seg 2	0	0
Route: County Line Rd	216	0
Route: Dempseys Rd	0	0
Route: Harley Ln	0	0
Route: Henderson Rd	0	0
Route: Hillside Dr	0	0
Route: Ole Briery Station Rd Seg 1	354	0
Route: Ole Briery Station Rd Seg 2	242	0
Route: Thistle Knob Ln	0	0
Route: Tobacco Heritage Trail	674	7
Route: US Hwy 15	0	0
Route: US Hwy 360	0	0

**G07: OP 134**

*No glare found*

**G07: OP 135**

*No glare found*

**G07: OP 136**

*No glare found*

**G07: OP 137**

*No glare found*

**G07: OP 138**

*No glare found*

**G07: OP 139**

*No glare found*

**G07: OP 140**

*No glare found*

**G07: OP 141**

*No glare found*

**G07: OP 142**

*No glare found*

**G07: OP 143**

*No glare found*

**G07: OP 144**

*No glare found*

**G07: OP 145**

*No glare found*

**G07: OP 146**

*No glare found*

**G07: OP 147**

*No glare found*

**G07: OP 148**

*No glare found*

**G07: OP 149**

*No glare found*

**G07: OP 150**

*No glare found*

**G07: OP 151**

*No glare found*

**G07: OP 152**

*No glare found*

**G07: OP 153**

*No glare found*

**G07: OP 154**

*No glare found*

**G07: OP 155**

*No glare found*

**G07: OP 156**

*No glare found*

**G07: OP 157**

*No glare found*

**G07: OP 158**

*No glare found*

**G07: OP 159**

*No glare found*

**G07: OP 160**

*No glare found*

**G07: OP 161**

*No glare found*

**G07: OP 162**

*No glare found*

**G07: OP 163**

*No glare found*



## G07: OP 164

No glare found

## G07: Collins Dr

No glare found

## G07: Country Dr Seg 1

No glare found

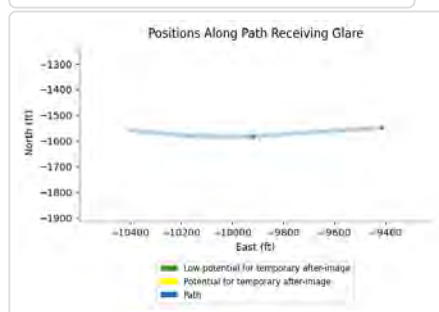
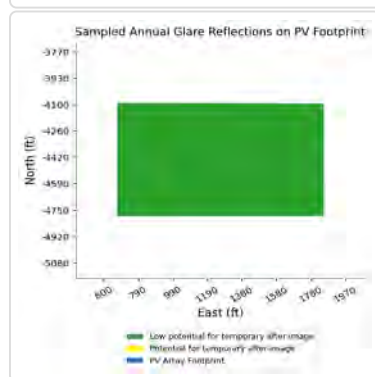
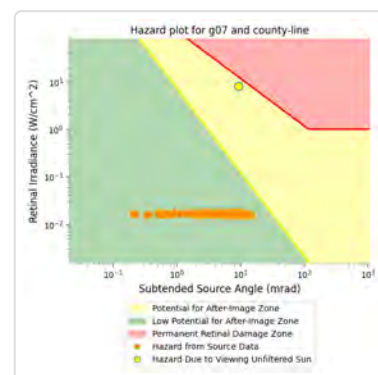
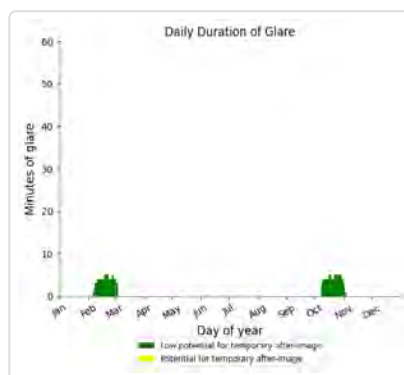
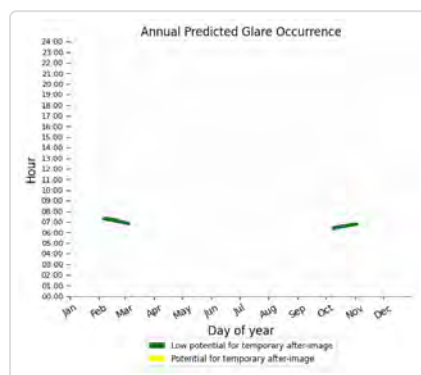
## G07: Country Dr Seg 2

No glare found

## G07: County Line Rd

PV array is expected to produce the following glare for this receptor:

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



## G07: Dempseys Rd

No glare found

## G07: Harley Ln

No glare found

## G07: Henderson Rd

No glare found

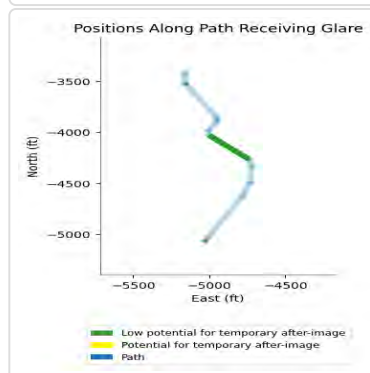
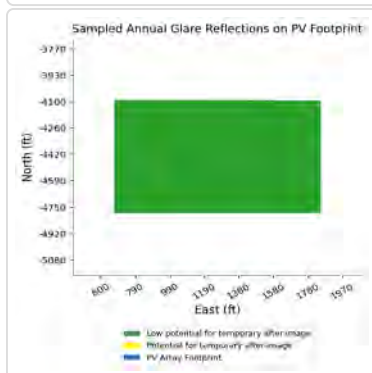
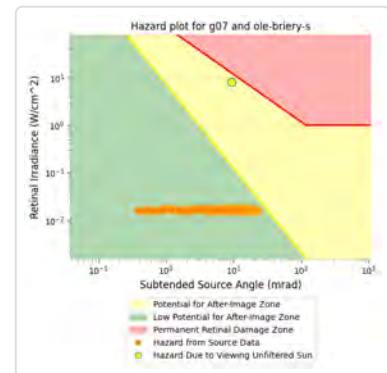
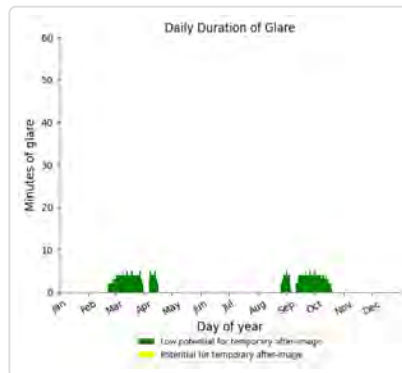
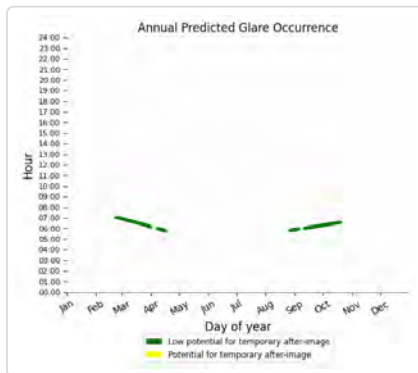
## G07: Hillside Dr

No glare found

## G07: Ole Briery Station Rd Seg 1

PV array is expected to produce the following glare for this receptor:

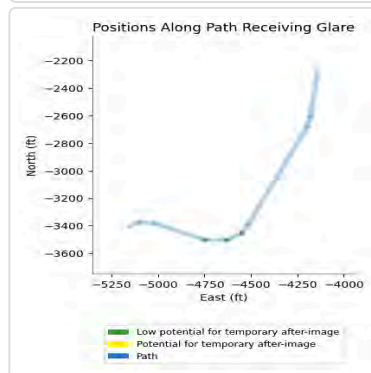
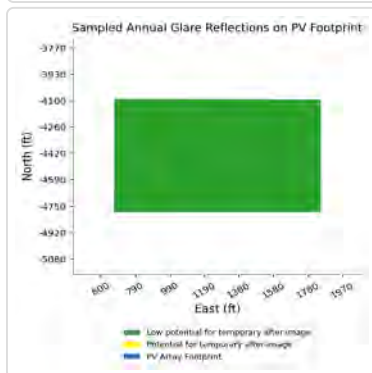
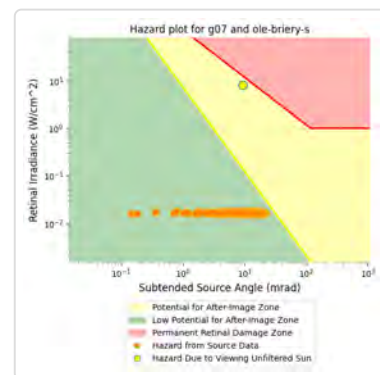
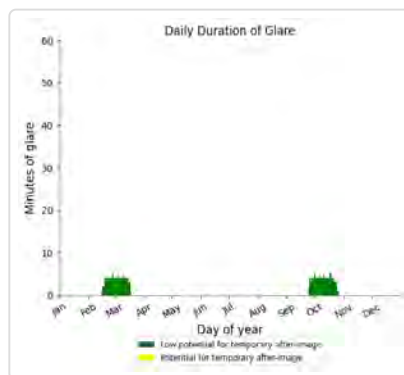
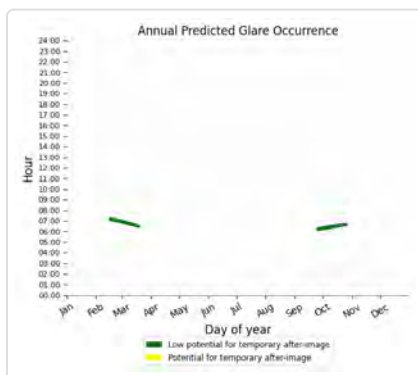
- 354 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## G07: Ole Briery Station Rd Seg 2

PV array is expected to produce the following glare for this receptor:

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



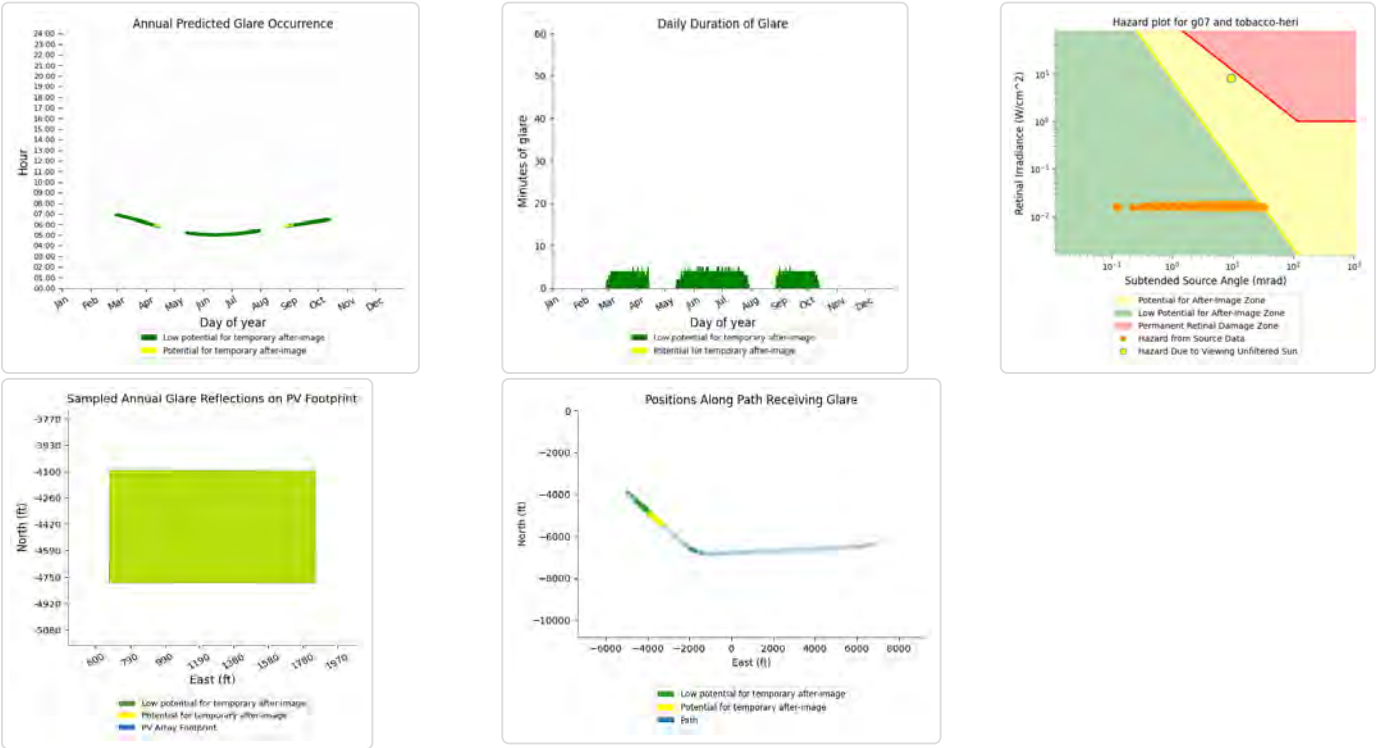
## G07: Thistle Knob Ln

No glare found

G07: Tobacco Heritage Trail

PV array is expected to produce the following glare for this receptor:

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



G07: US Hwy 15

No glare found

G07: US Hwy 360

No glare found

G08 low potential for temporary after-image

Component	Green glare (min)	Yellow glare (min)
OP: OP 134	0	0
OP: OP 135	0	0
OP: OP 136	0	0
OP: OP 137	0	0
OP: OP 138	0	0
OP: OP 139	0	0
OP: OP 140	0	0
OP: OP 141	0	0
OP: OP 142	0	0
OP: OP 143	0	0
OP: OP 144	0	0
OP: OP 145	0	0
OP: OP 146	0	0
OP: OP 147	0	0
OP: OP 148	277	0

OP: OP 149	275	0
OP: OP 150	0	0
OP: OP 151	0	0
OP: OP 152	0	0
OP: OP 153	0	0
OP: OP 154	272	0
OP: OP 155	269	0
OP: OP 156	259	0
OP: OP 157	284	0
OP: OP 158	273	0
OP: OP 159	0	0
OP: OP 160	0	0
OP: OP 161	0	0
OP: OP 162	0	0
OP: OP 163	0	0
OP: OP 164	0	0
Route: Collins Dr	0	0
Route: Country Dr Seg 1	248	0
Route: Country Dr Seg 2	486	0
Route: County Line Rd	0	0
Route: Dempseys Rd	0	0
Route: Harley Ln	0	0
Route: Henderson Rd	0	0
Route: Hillside Dr	545	0
Route: Ole Briery Station Rd Seg 1	0	0
Route: Ole Briery Station Rd Seg 2	0	0
Route: Thistle Knob Ln	0	0
Route: Tobacco Heritage Trail	626	0
Route: US Hwy 15	0	0
Route: US Hwy 360	100	0

#### **G08: OP 134**

*No glare found*

#### **G08: OP 135**

*No glare found*

#### **G08: OP 136**

*No glare found*

#### **G08: OP 137**

*No glare found*

#### **G08: OP 138**

*No glare found*

**G08: OP 139**

*No glare found*

**G08: OP 140**

*No glare found*

**G08: OP 141**

*No glare found*

**G08: OP 142**

*No glare found*

**G08: OP 143**

*No glare found*

**G08: OP 144**

*No glare found*

**G08: OP 145**

*No glare found*

**G08: OP 146**

*No glare found*

**G08: OP 147**

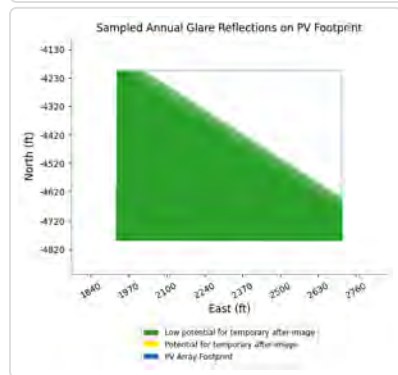
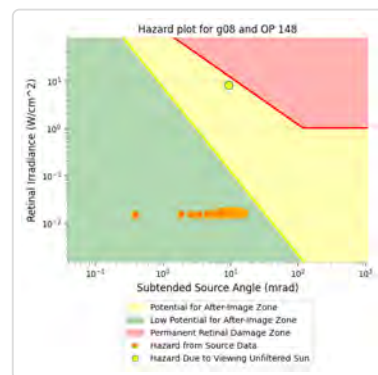
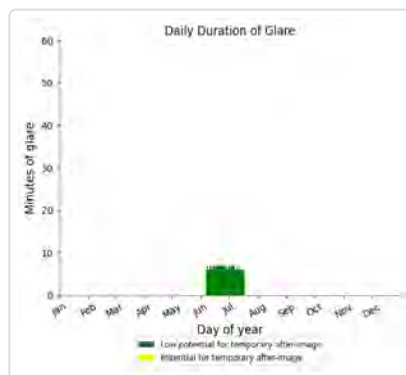
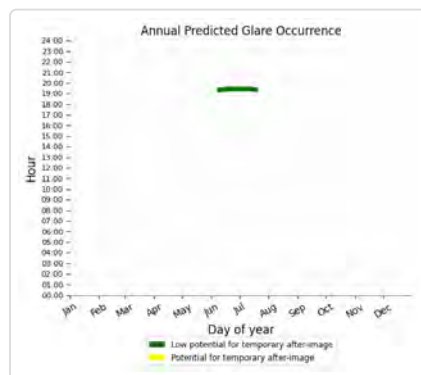
*No glare found*



## G08: OP 148

PV array is expected to produce the following glare for this receptor:

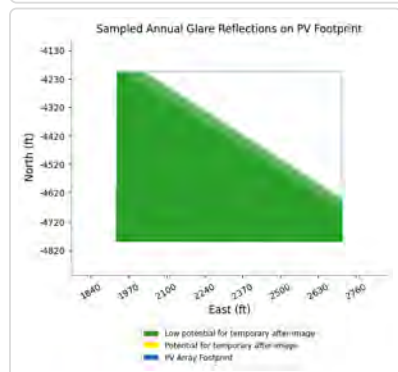
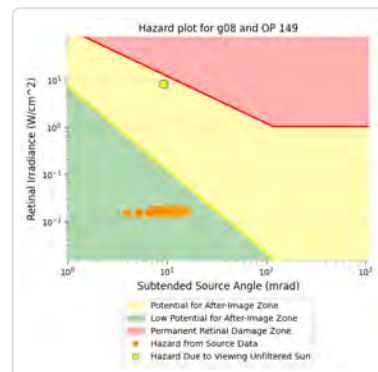
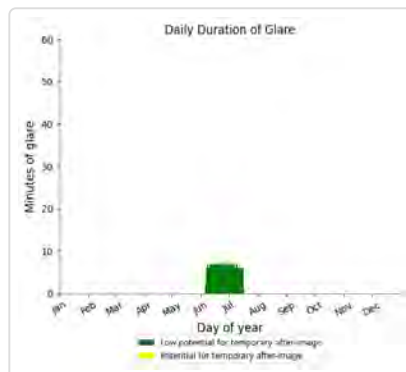
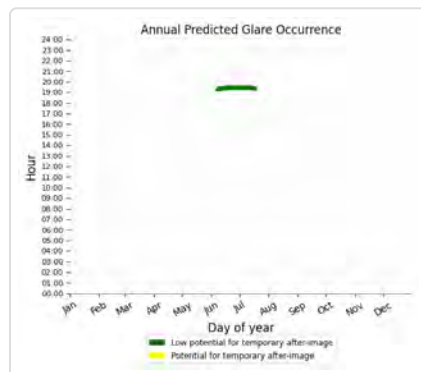
- 277 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## G08: OP 149

PV array is expected to produce the following glare for this receptor:

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



## G08: OP 150

No glare found

## G08: OP 151

No glare found

## G08: OP 152

No glare found

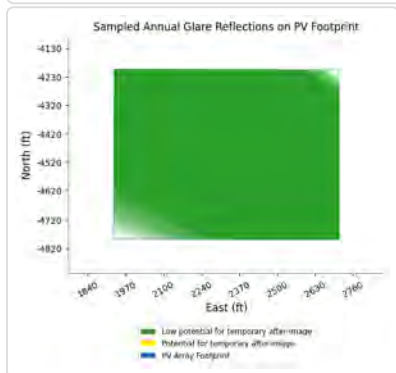
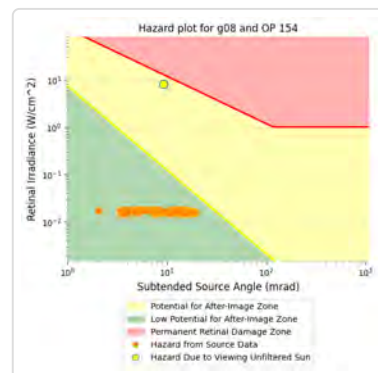
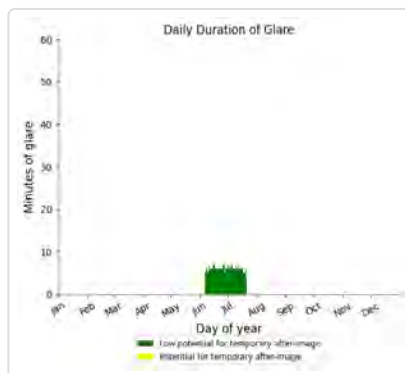
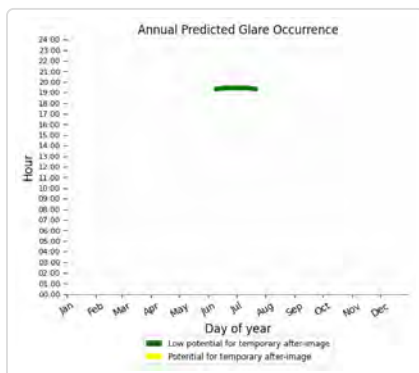
## G08: OP 153

No glare found

## G08: OP 154

PV array is expected to produce the following glare for this receptor:

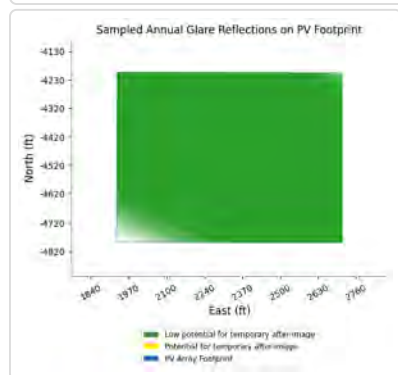
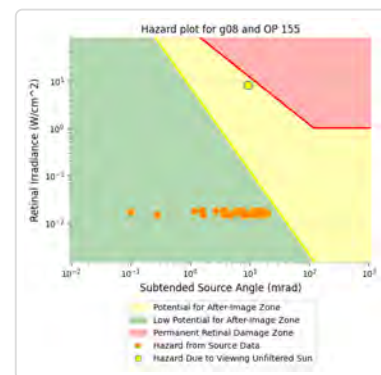
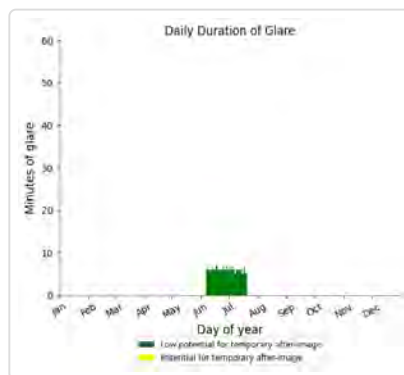
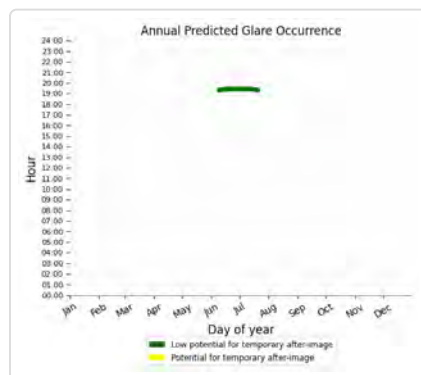
- 272 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## G08: OP 155

PV array is expected to produce the following glare for this receptor:

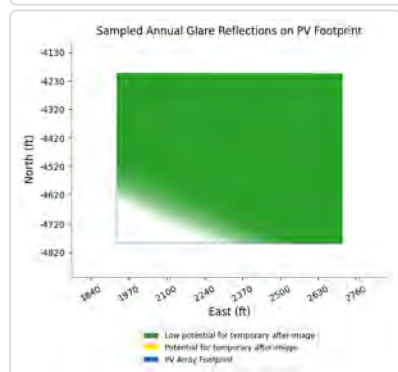
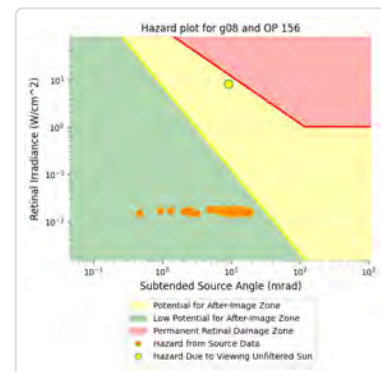
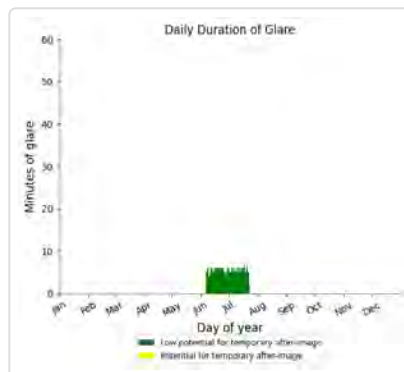
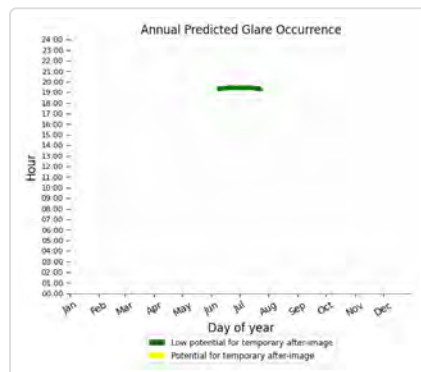
- 269 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## G08: OP 156

PV array is expected to produce the following glare for this receptor:

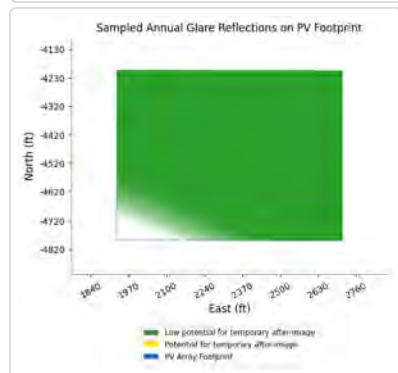
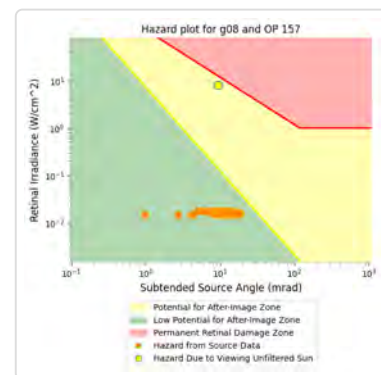
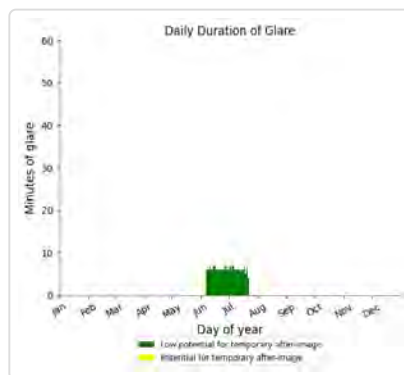
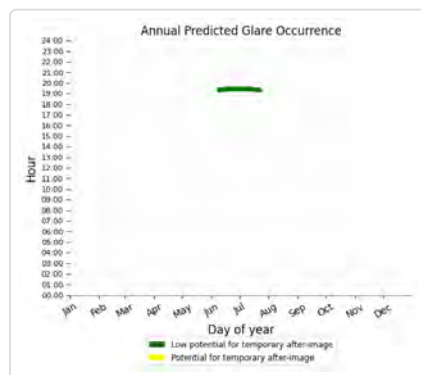
- 259 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## G08: OP 157

PV array is expected to produce the following glare for this receptor:

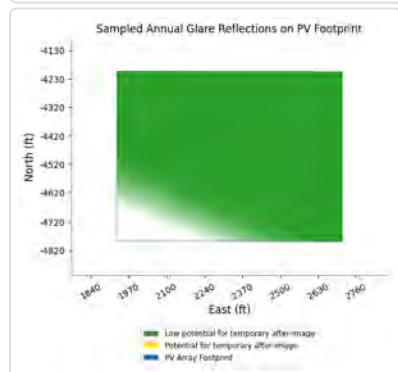
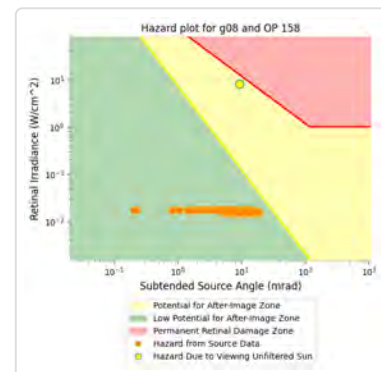
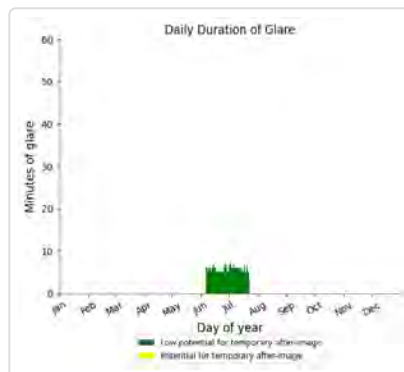
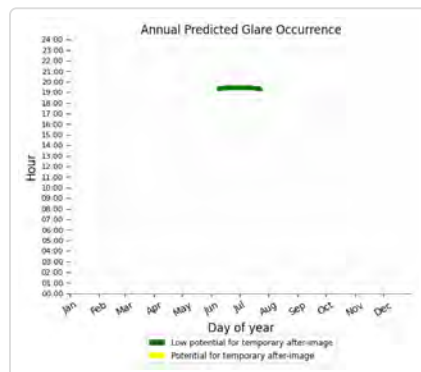
- 284 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## G08: OP 158

PV array is expected to produce the following glare for this receptor:

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



G08: OP 159

No glare found

G08: OP 160

No glare found

G08: OP 161

No glare found

G08: OP 162

No glare found

G08: OP 163

No glare found

G08: OP 164

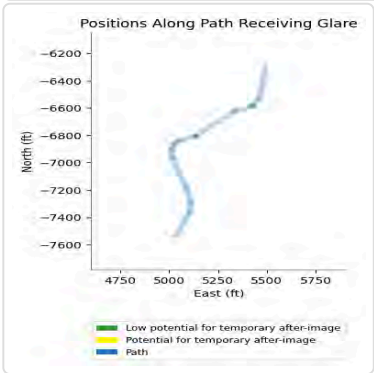
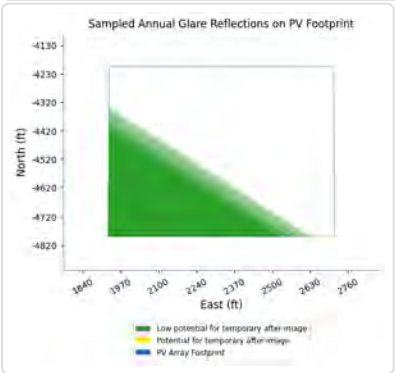
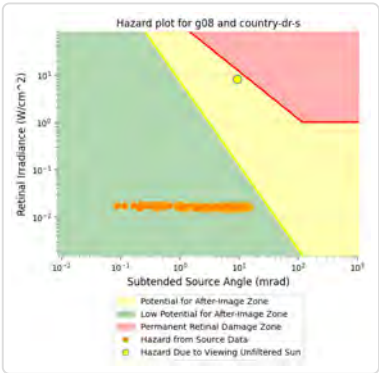
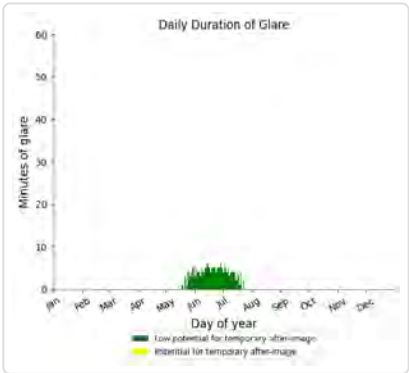
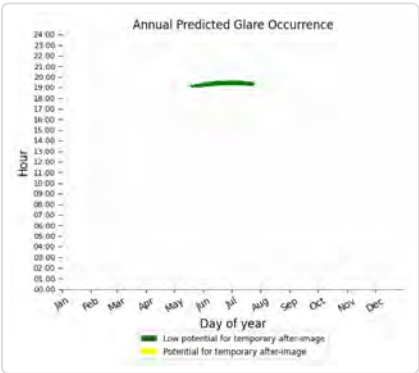
No glare found

G08: Collins Dr

No glare found

G08: Country Dr Seg 1

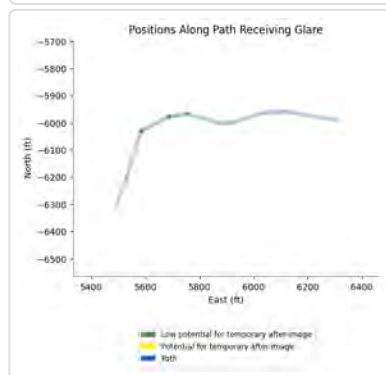
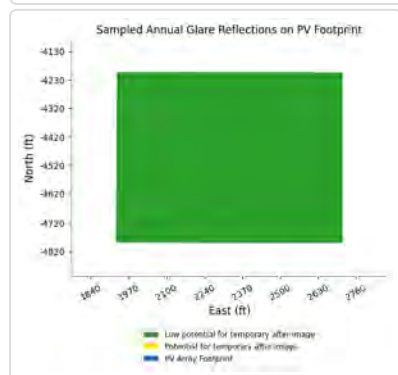
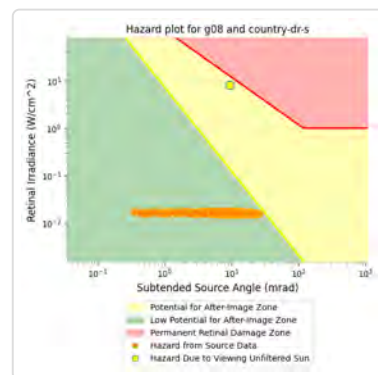
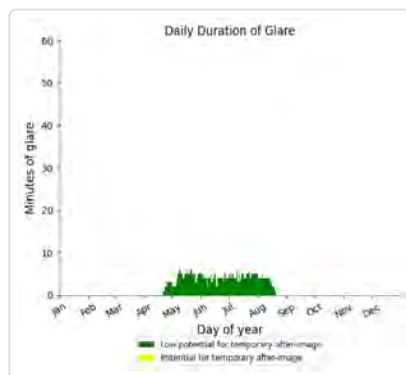
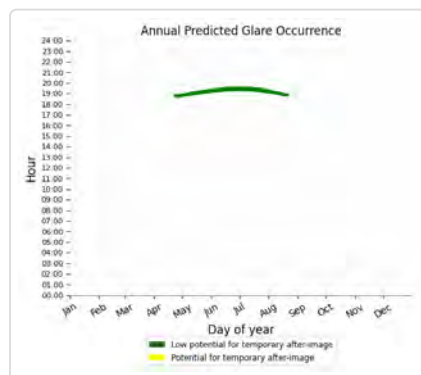
- PV array is expected to produce the following glare for this receptor:
- 248 minutes of "green" glare with low potential to cause temporary after-image.
  - 0 minutes of "yellow" glare with potential to cause temporary after-image.



## G08: Country Dr Seg 2

PV array is expected to produce the following glare for this receptor:

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



## G08: County Line Rd

No glare found

## G08: Dempseys Rd

No glare found

## G08: Harley Ln

No glare found

## G08: Henderson Rd

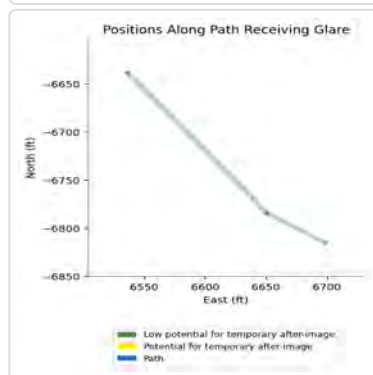
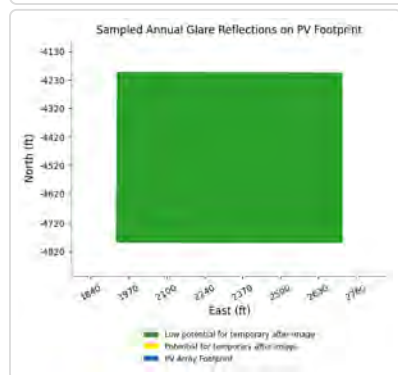
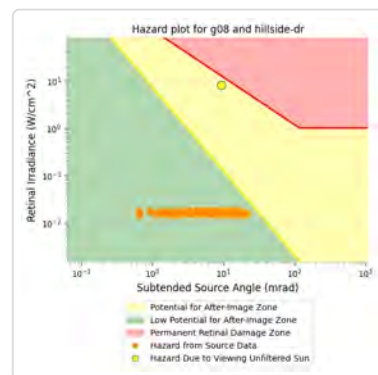
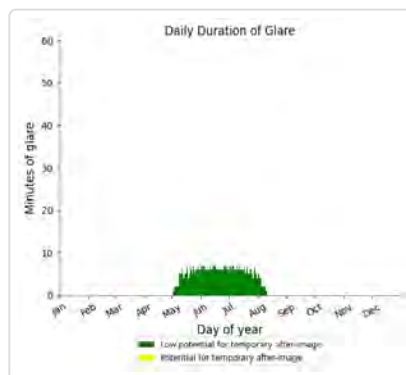
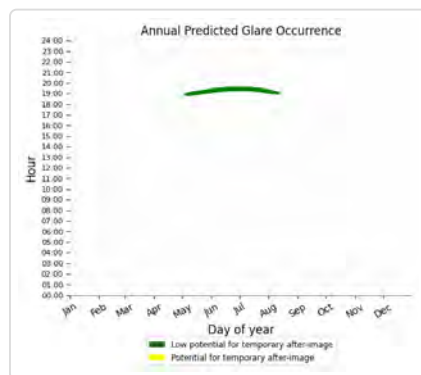
No glare found



## G08: Hillside Dr

PV array is expected to produce the following glare for this receptor:

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



## G08: Ole Briery Station Rd Seg 1

No glare found

## G08: Ole Briery Station Rd Seg 2

No glare found

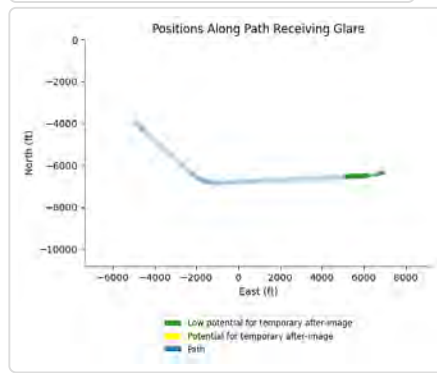
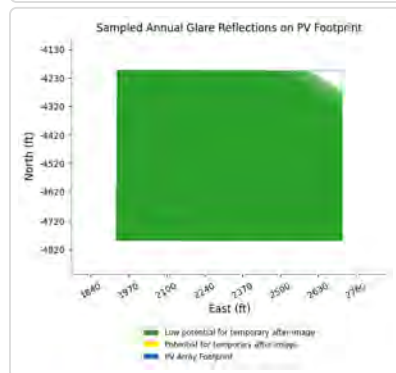
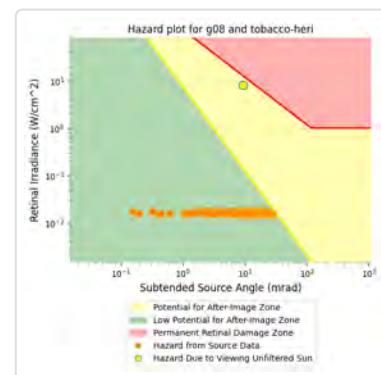
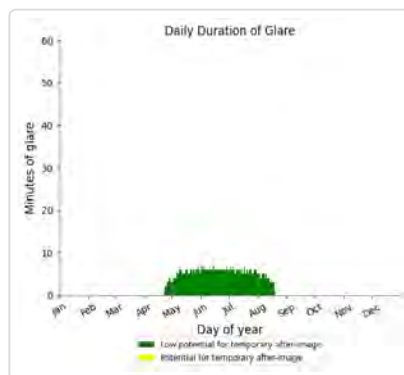
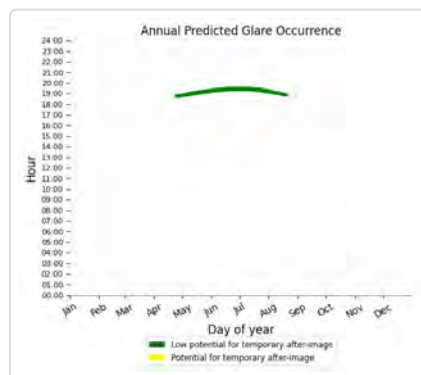
## G08: Thistle Knob Ln

No glare found

## G08: Tobacco Heritage Trail

PV array is expected to produce the following glare for this receptor:

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



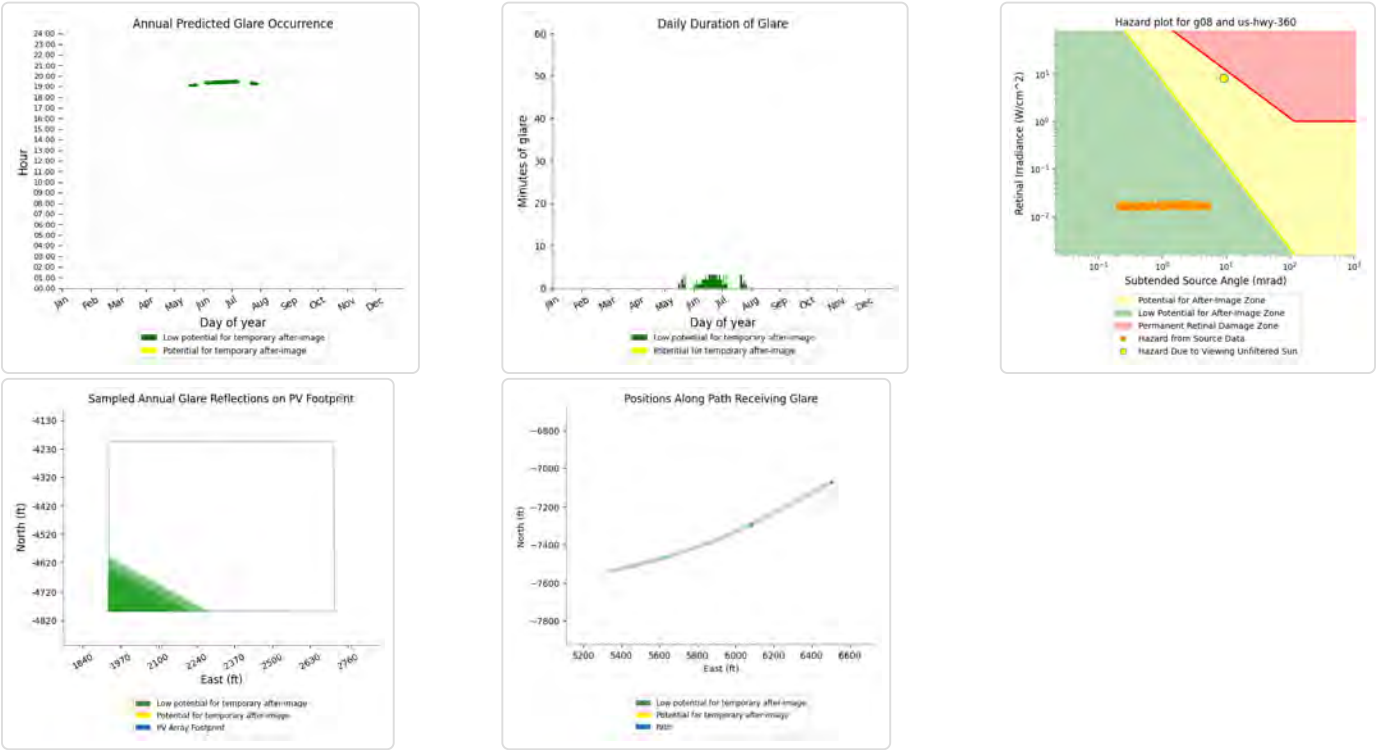
## G08: US Hwy 15

No glare found

G08: US Hwy 360

PV array is expected to produce the following glare for this receptor:

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



G09 low potential for temporary after-image

Component	Green glare (min)	Yellow glare (min)
OP: OP 134	0	0
OP: OP 135	0	0
OP: OP 136	0	0
OP: OP 137	0	0
OP: OP 138	0	0
OP: OP 139	0	0
OP: OP 140	0	0
OP: OP 141	0	0
OP: OP 142	0	0
OP: OP 143	0	0
OP: OP 144	202	0
OP: OP 145	215	0
OP: OP 146	417	0
OP: OP 147	438	0
OP: OP 148	84	0
OP: OP 149	91	0
OP: OP 150	0	0
OP: OP 151	0	0
OP: OP 152	0	0
OP: OP 153	0	0
OP: OP 154	0	0
OP: OP 155	0	0

OP: OP 156	0	0
OP: OP 157	0	0
OP: OP 158	0	0
OP: OP 159	0	0
OP: OP 160	0	0
OP: OP 161	0	0
OP: OP 162	0	0
OP: OP 163	0	0
OP: OP 164	0	0
Route: Collins Dr	0	0
Route: Country Dr Seg 1	1152	0
Route: Country Dr Seg 2	0	0
Route: County Line Rd	0	0
Route: Dempseys Rd	0	0
Route: Harley Ln	0	0
Route: Henderson Rd	0	0
Route: Hillside Dr	0	0
Route: Ole Briery Station Rd Seg 1	114	0
Route: Ole Briery Station Rd Seg 2	20	0
Route: Thistle Knob Ln	0	0
Route: Tobacco Heritage Trail	2433	0
Route: US Hwy 15	0	0
Route: US Hwy 360	1129	0

#### **G09: OP 134**

*No glare found*

#### **G09: OP 135**

*No glare found*

#### **G09: OP 136**

*No glare found*

#### **G09: OP 137**

*No glare found*

#### **G09: OP 138**

*No glare found*

#### **G09: OP 139**

*No glare found*

#### **G09: OP 140**

*No glare found*

#### **G09: OP 141**

*No glare found*

G09: OP 142

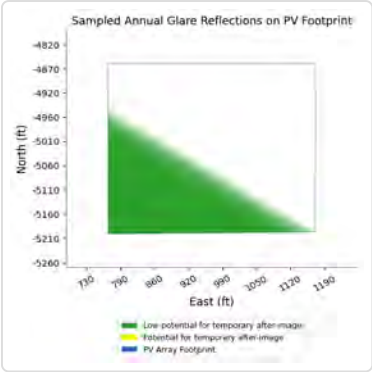
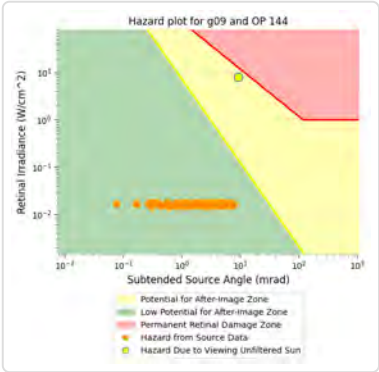
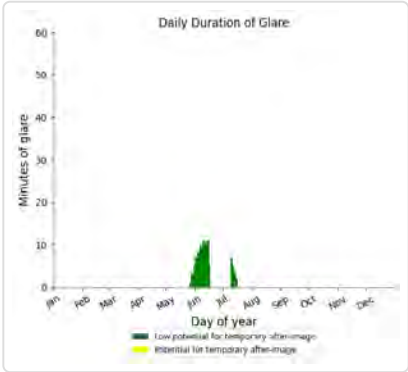
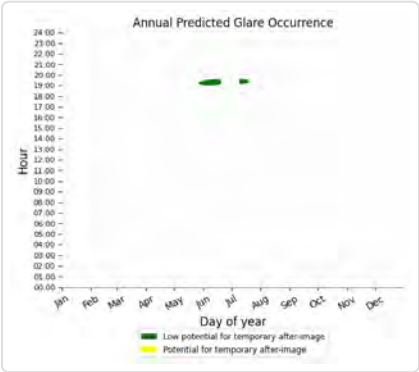
No glare found

G09: OP 143

No glare found

G09: OP 144

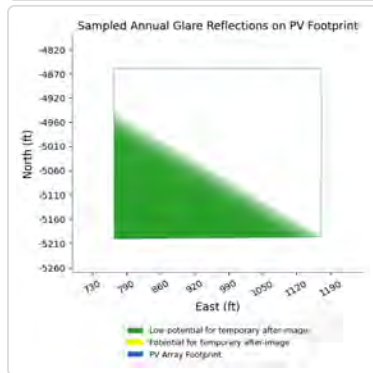
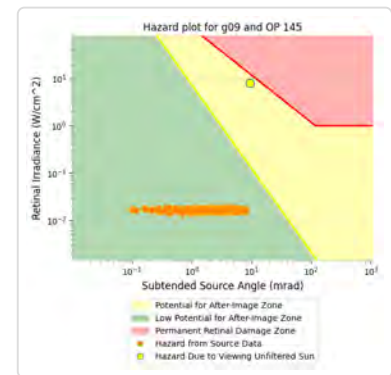
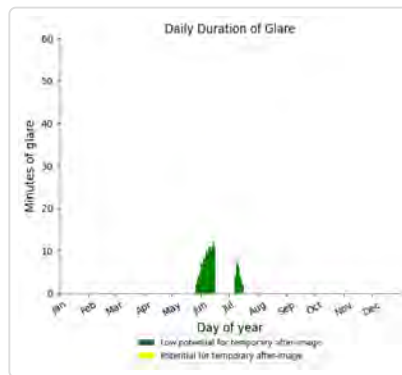
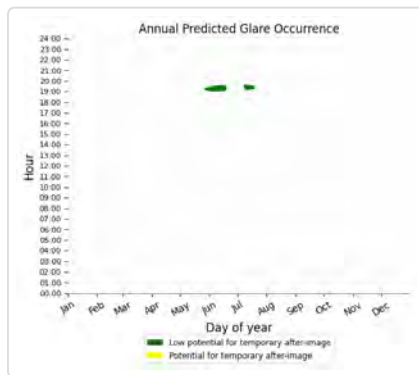
- PV array is expected to produce the following glare for this receptor:
- 202 minutes of "green" glare with low potential to cause temporary after-image.
  - 0 minutes of "yellow" glare with potential to cause temporary after-image.



## G09: OP 145

PV array is expected to produce the following glare for this receptor:

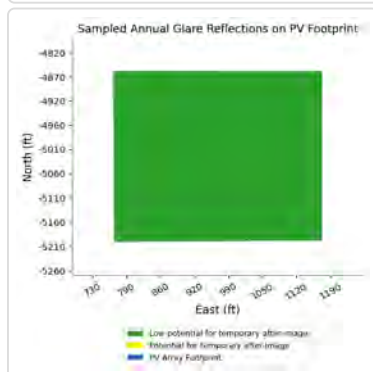
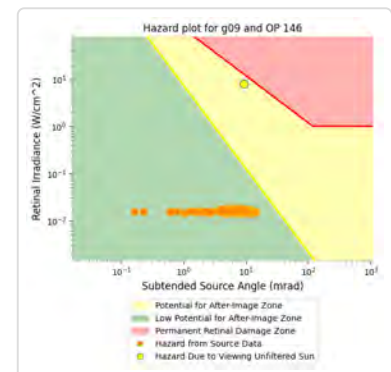
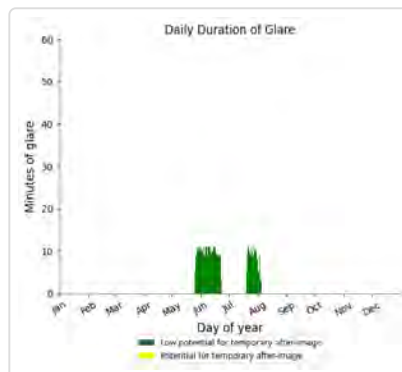
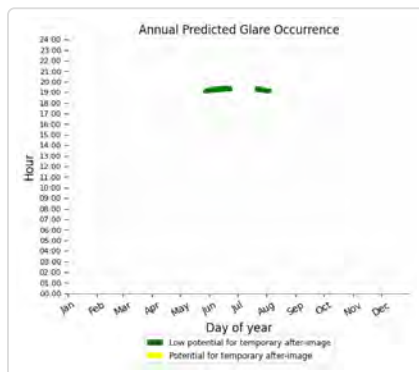
- 215 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## G09: OP 146

PV array is expected to produce the following glare for this receptor:

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

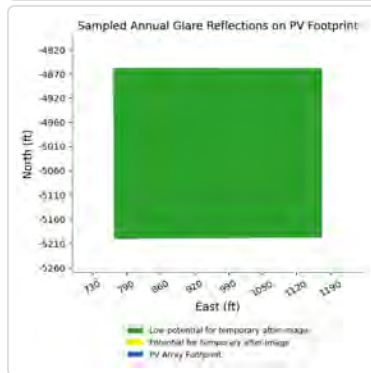
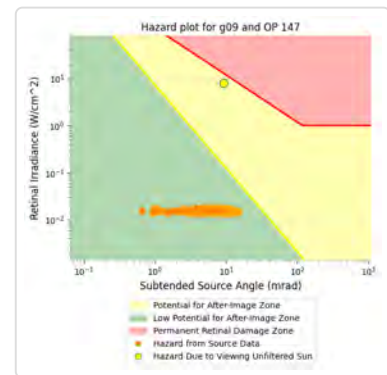
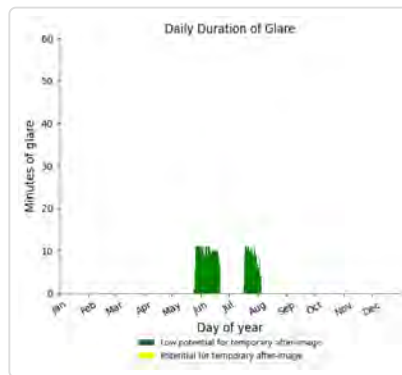
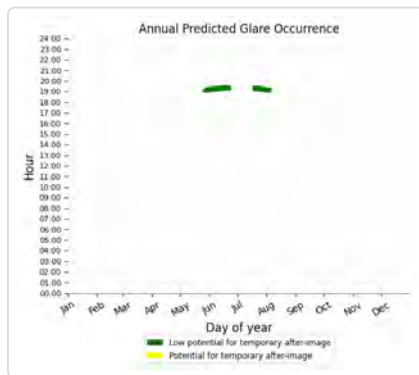




## G09: OP 147

PV array is expected to produce the following glare for this receptor:

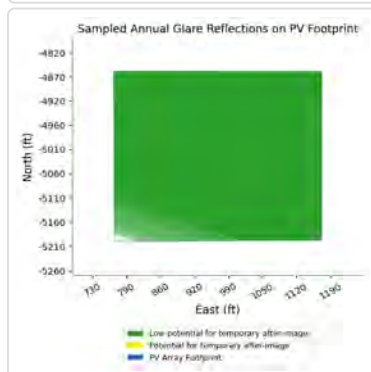
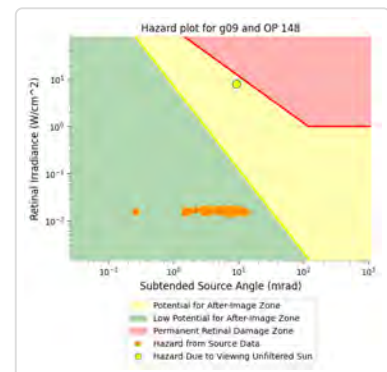
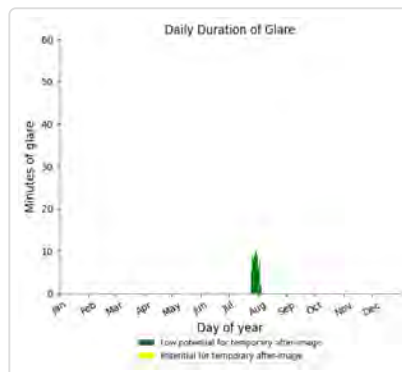
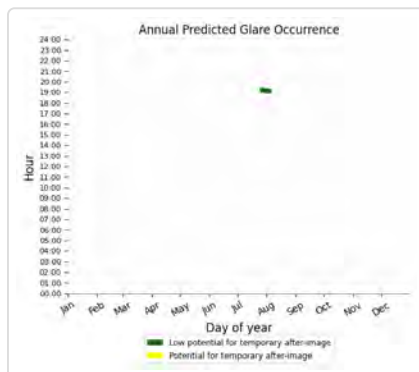
- 438 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## G09: OP 148

PV array is expected to produce the following glare for this receptor:

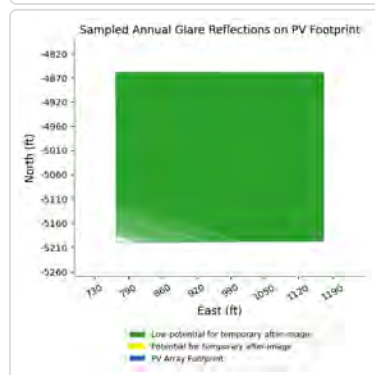
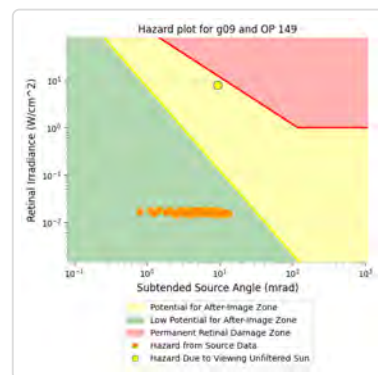
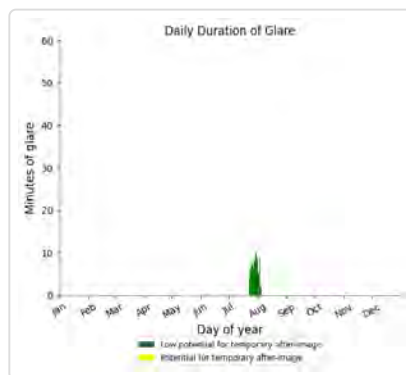
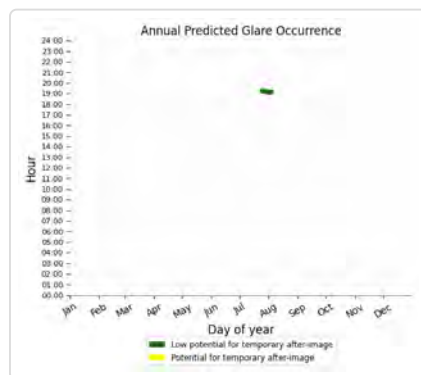
- 84 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## G09: OP 149

PV array is expected to produce the following glare for this receptor:

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



## G09: OP 150

No glare found

## G09: OP 151

No glare found

## G09: OP 152

No glare found

## G09: OP 153

No glare found

## G09: OP 154

No glare found

## G09: OP 155

No glare found

## G09: OP 156

No glare found

## G09: OP 157

No glare found

**G09: OP 158**

*No glare found*

**G09: OP 159**

*No glare found*

**G09: OP 160**

*No glare found*

**G09: OP 161**

*No glare found*

**G09: OP 162**

*No glare found*

**G09: OP 163**

*No glare found*

**G09: OP 164**

*No glare found*

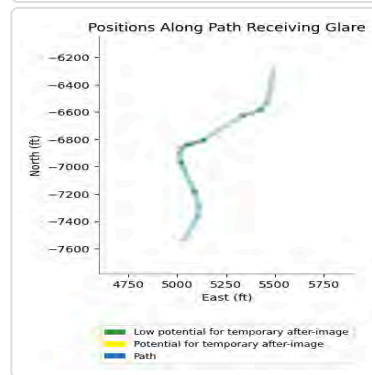
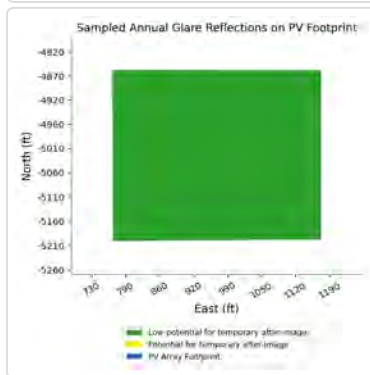
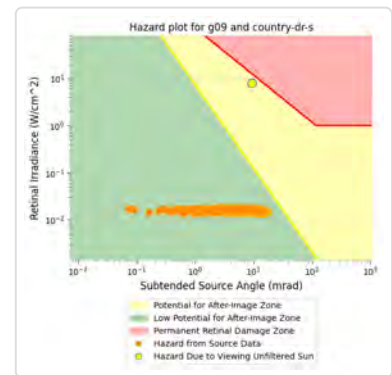
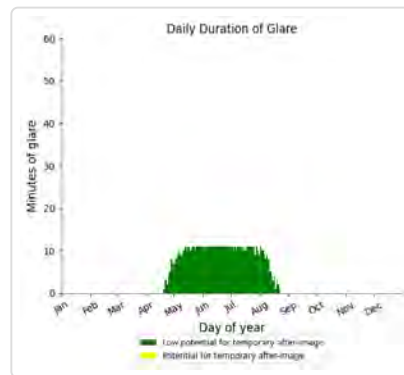
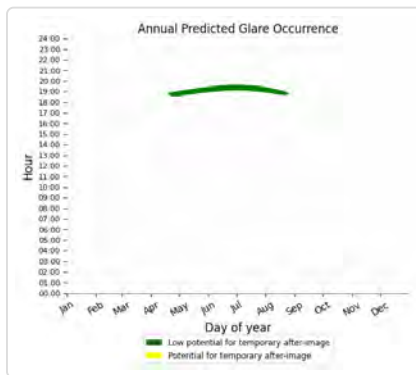
**G09: Collins Dr**

*No glare found*

## G09: Country Dr Seg 1

PV array is expected to produce the following glare for this receptor:

- 1,152 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## G09: Country Dr Seg 2

No glare found

## G09: County Line Rd

No glare found

## G09: Dempseys Rd

No glare found

## G09: Harley Ln

No glare found

## G09: Henderson Rd

No glare found

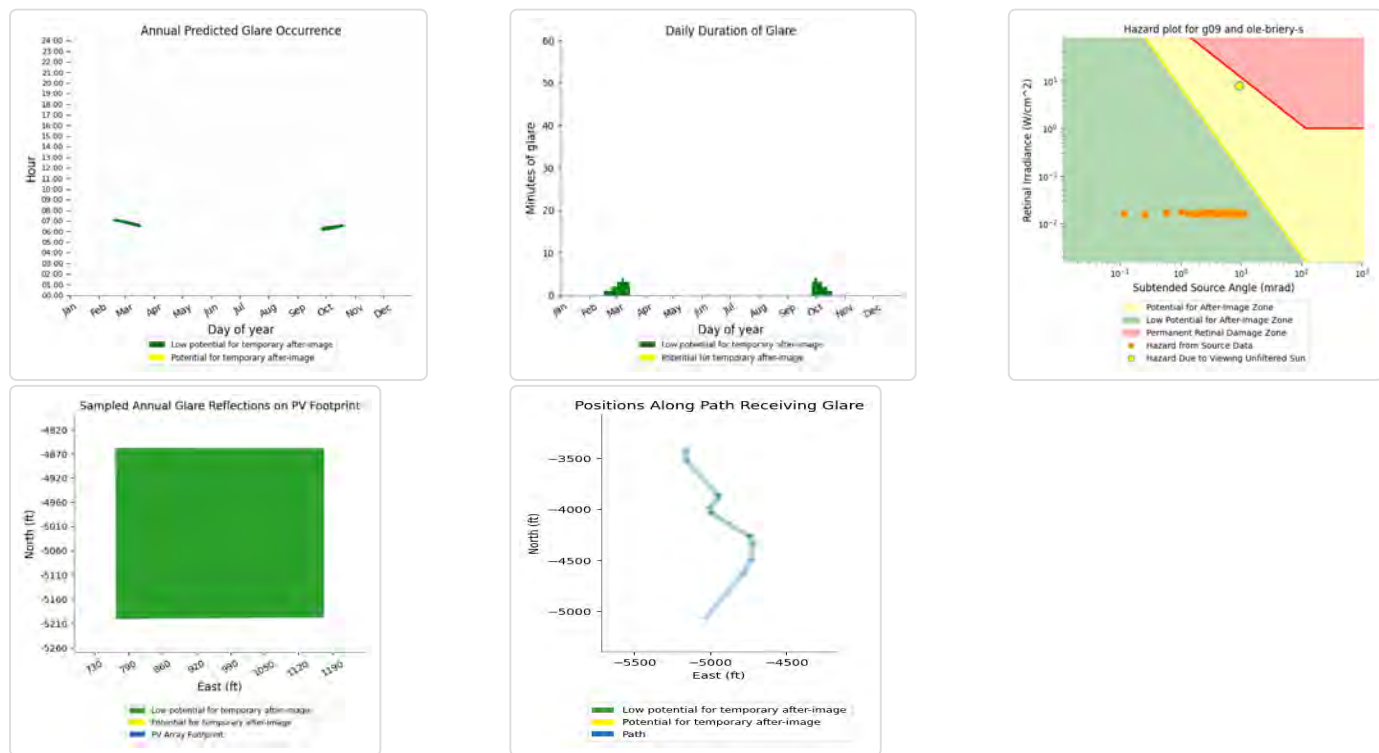
## G09: Hillside Dr

No glare found

## G09: Ole Briery Station Rd Seg 1

PV array is expected to produce the following glare for this receptor:

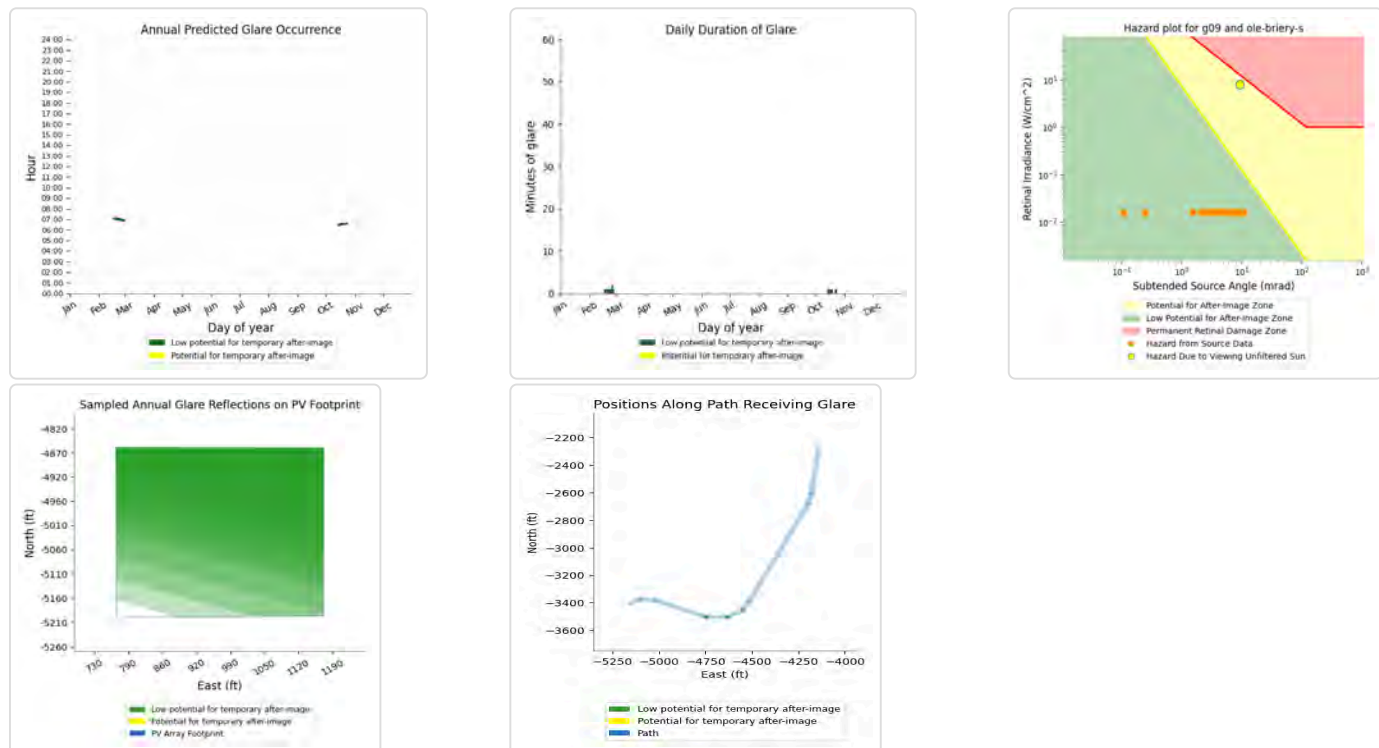
- 114 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## G09: Ole Briery Station Rd Seg 2

PV array is expected to produce the following glare for this receptor:

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



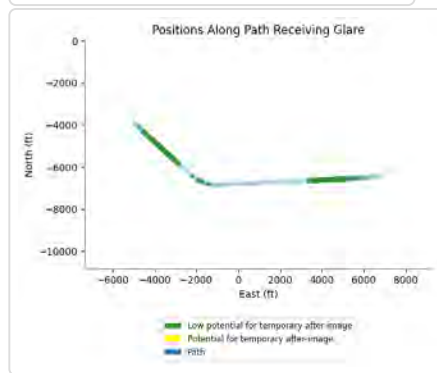
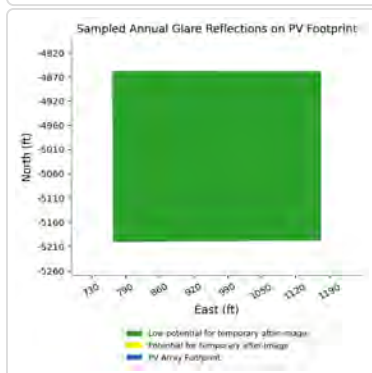
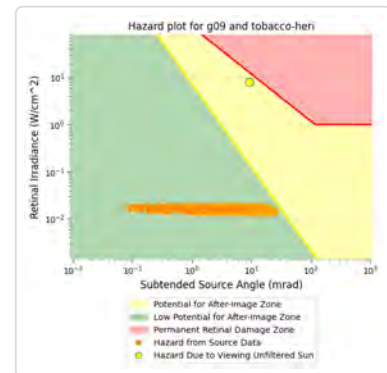
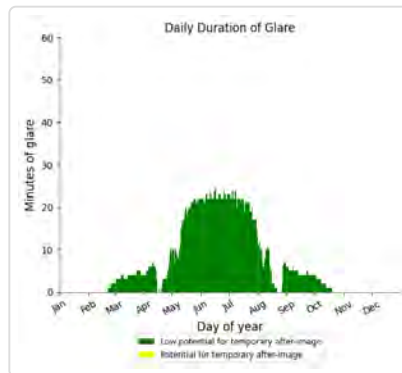
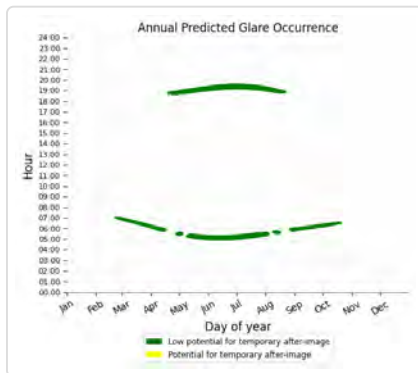
## G09: Thistle Knob Ln

No glare found

## G09: Tobacco Heritage Trail

PV array is expected to produce the following glare for this receptor:

- 2,433 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## G09: US Hwy 15

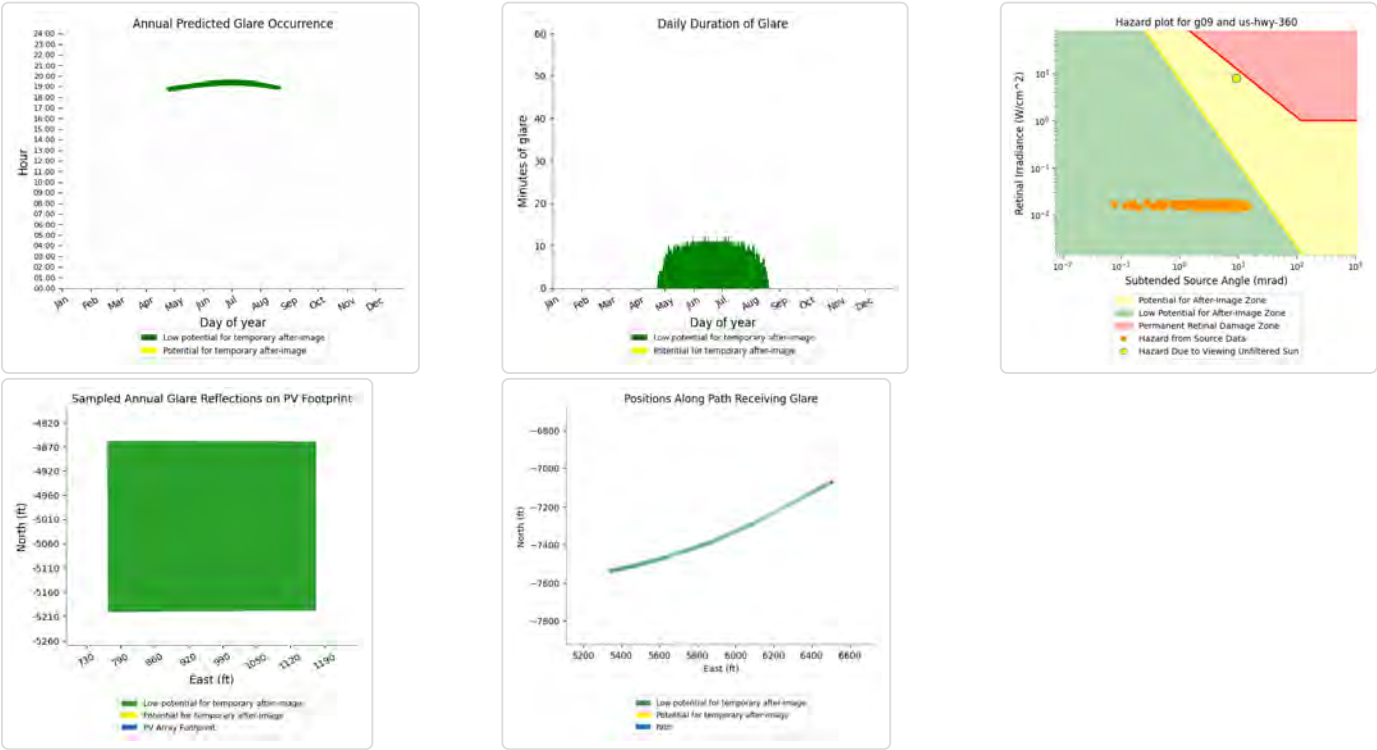
No glare found



G09: US Hwy 360

PV array is expected to produce the following glare for this receptor:

- 1,129 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



G10 potential temporary after-image

Component	Green glare (min)	Yellow glare (min)
OP: OP 134	0	0
OP: OP 135	0	0
OP: OP 136	201	36
OP: OP 137	221	68
OP: OP 138	0	0
OP: OP 139	0	0
OP: OP 140	0	0
OP: OP 141	0	0
OP: OP 142	0	0
OP: OP 143	0	0
OP: OP 144	0	0
OP: OP 145	0	0
OP: OP 146	416	0
OP: OP 147	423	0
OP: OP 148	629	0
OP: OP 149	626	0
OP: OP 150	0	0
OP: OP 151	0	0
OP: OP 152	0	0
OP: OP 153	0	0
OP: OP 154	682	0
OP: OP 155	686	0

OP: OP 156	698	0
OP: OP 157	701	0
OP: OP 158	700	0
OP: OP 159	665	0
OP: OP 160	610	0
OP: OP 161	554	0
OP: OP 162	447	0
OP: OP 163	254	0
OP: OP 164	240	0
Route: Collins Dr	0	0
Route: Country Dr Seg 1	1299	184
Route: Country Dr Seg 2	1673	516
Route: County Line Rd	0	0
Route: Dempseys Rd	0	0
Route: Harley Ln	0	0
Route: Henderson Rd	0	0
Route: Hillside Dr	1609	199
Route: Ole Briery Station Rd Seg 1	0	0
Route: Ole Briery Station Rd Seg 2	0	0
Route: Thistle Knob Ln	0	0
Route: Tobacco Heritage Trail	2725	1087
Route: US Hwy 15	0	0
Route: US Hwy 360	1365	0

#### **G10: OP 134**

*No glare found*

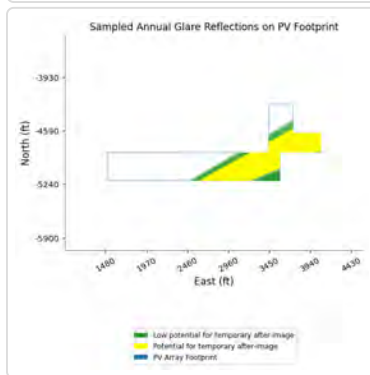
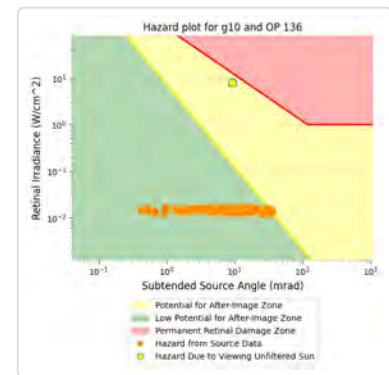
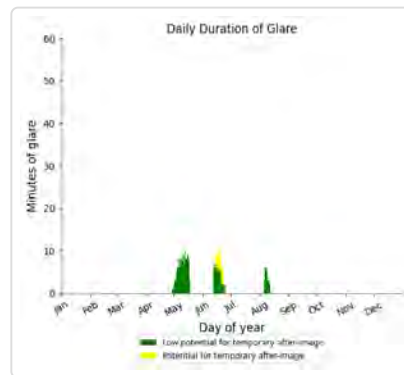
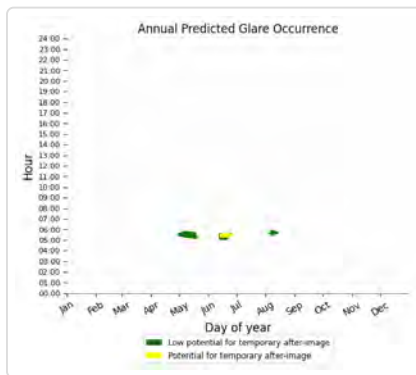
#### **G10: OP 135**

*No glare found*

## G10: OP 136

PV array is expected to produce the following glare for this receptor:

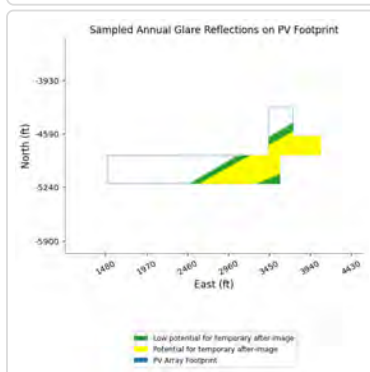
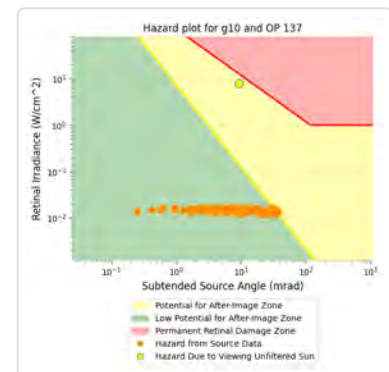
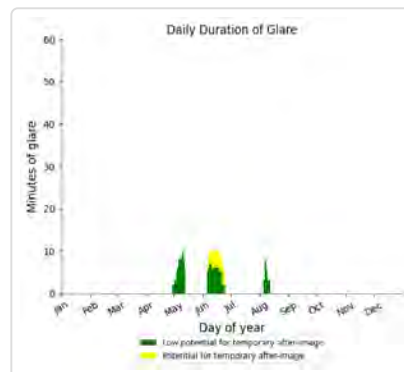
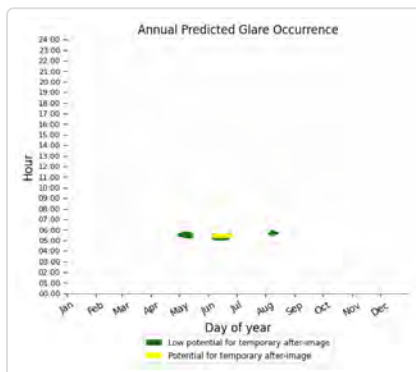
- 201 minutes of "green" glare with low potential to cause temporary after-image.
- 36 minutes of "yellow" glare with potential to cause temporary after-image.



## G10: OP 137

PV array is expected to produce the following glare for this receptor:

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



G10: OP 138

No glare found

G10: OP 139

No glare found

G10: OP 140

No glare found

G10: OP 141

No glare found

G10: OP 142

No glare found

G10: OP 143

No glare found

G10: OP 144

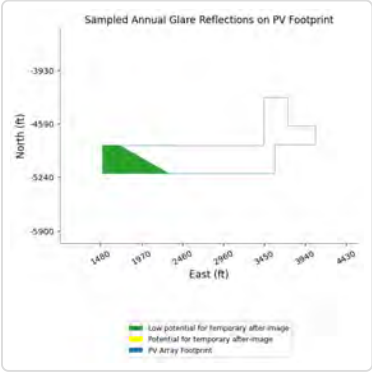
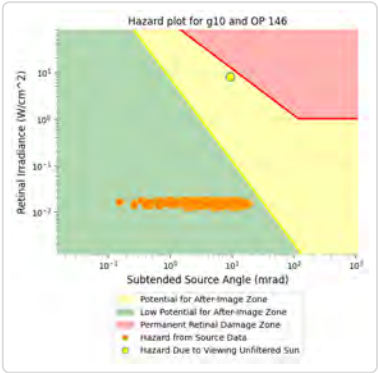
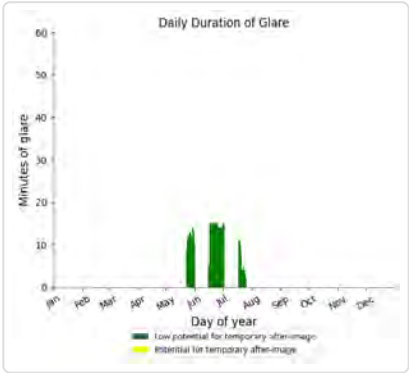
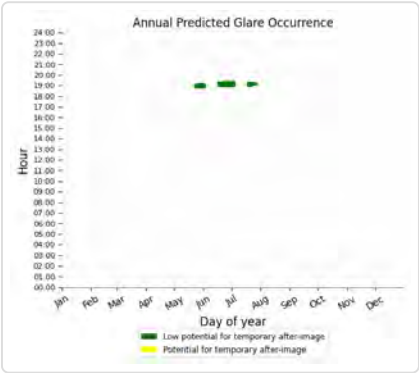
No glare found

G10: OP 145

No glare found

G10: OP 146

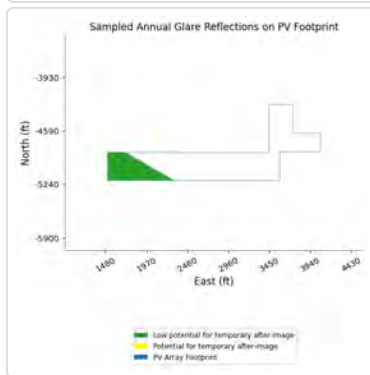
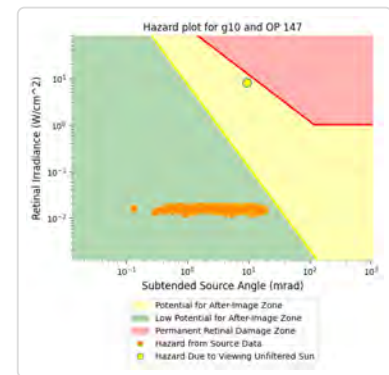
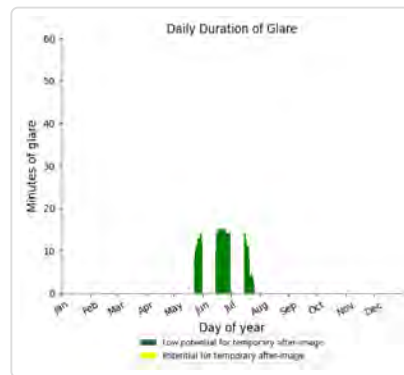
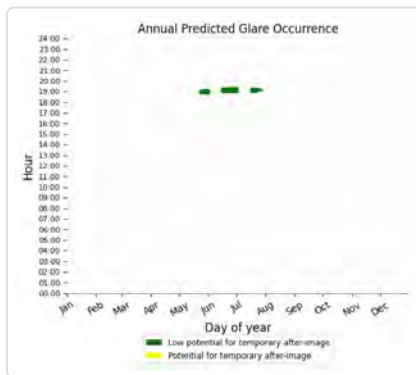
- PV array is expected to produce the following glare for this receptor:
- 416 minutes of "green" glare with low potential to cause temporary after-image.
  - 0 minutes of "yellow" glare with potential to cause temporary after-image.



## G10: OP 147

PV array is expected to produce the following glare for this receptor:

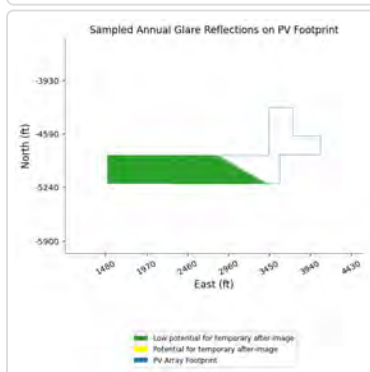
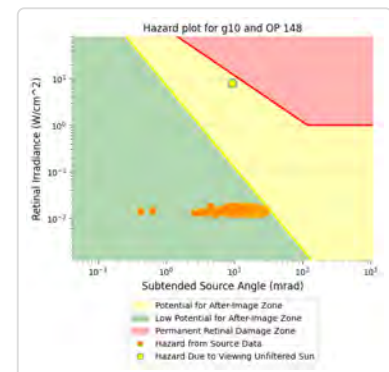
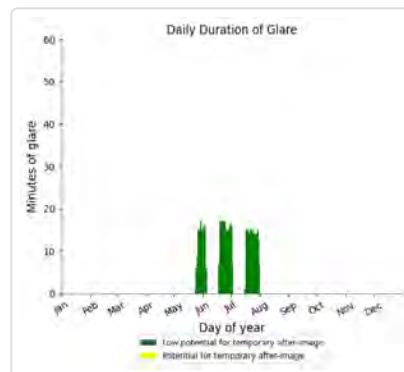
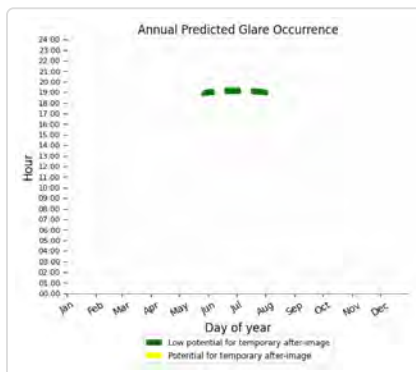
- 423 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## G10: OP 148

PV array is expected to produce the following glare for this receptor:

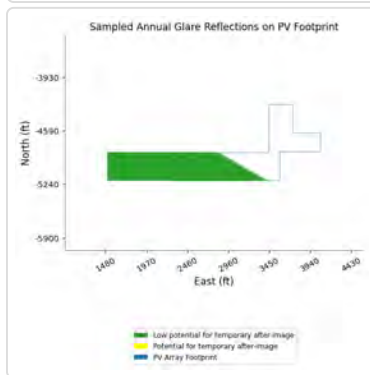
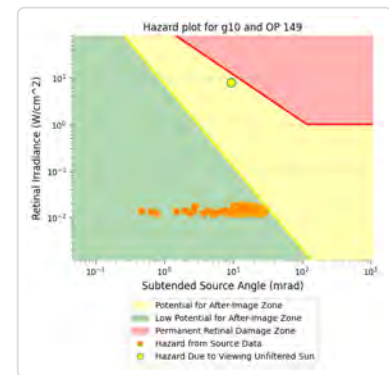
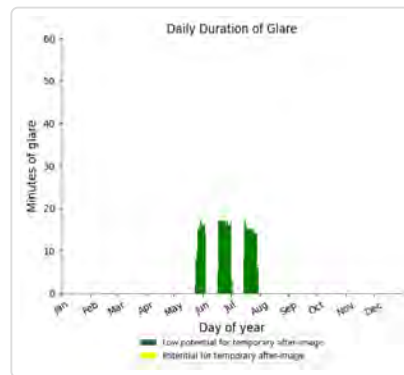
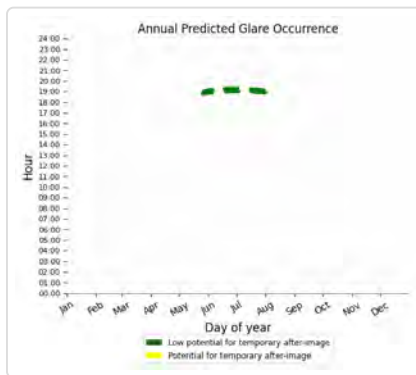
- 629 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## G10: OP 149

PV array is expected to produce the following glare for this receptor:

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



## G10: OP 150

No glare found

## G10: OP 151

No glare found

## G10: OP 152

No glare found

## G10: OP 153

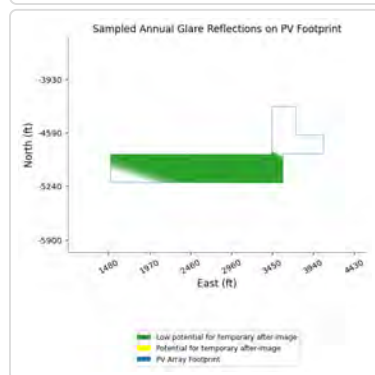
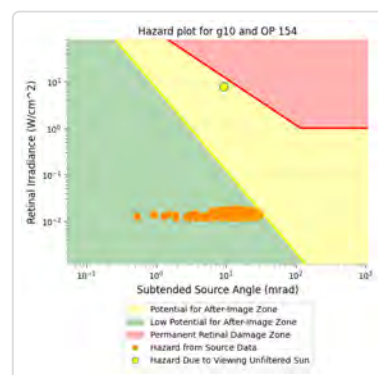
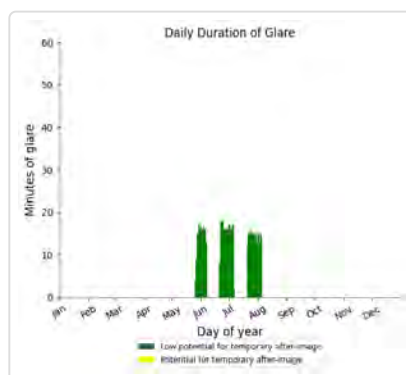
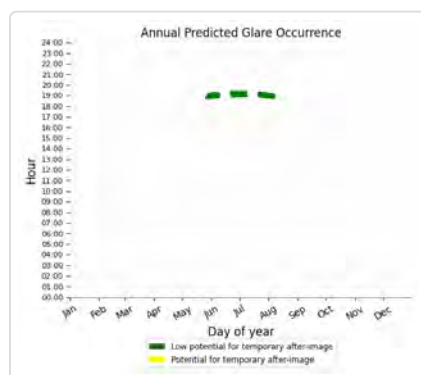
No glare found



## G10: OP 154

PV array is expected to produce the following glare for this receptor:

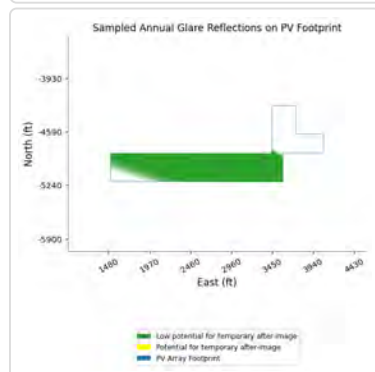
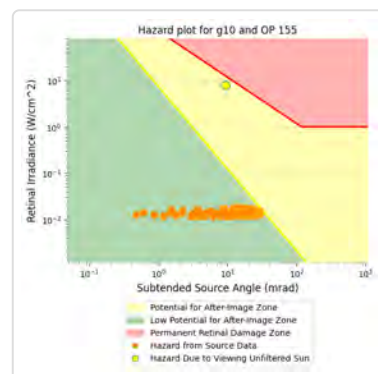
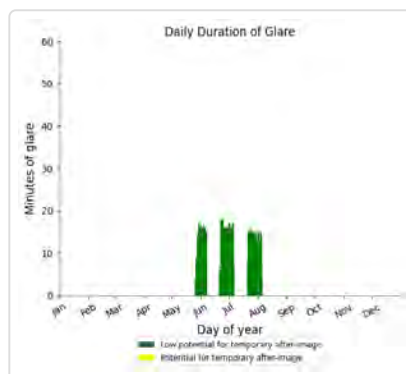
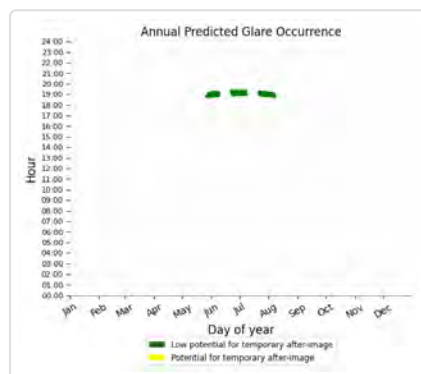
- 682 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## G10: OP 155

PV array is expected to produce the following glare for this receptor:

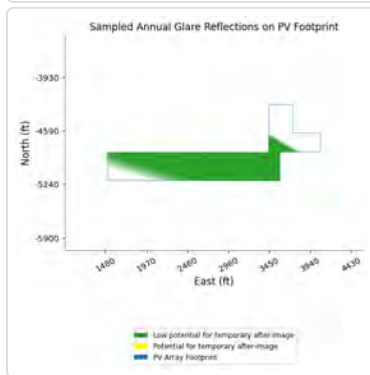
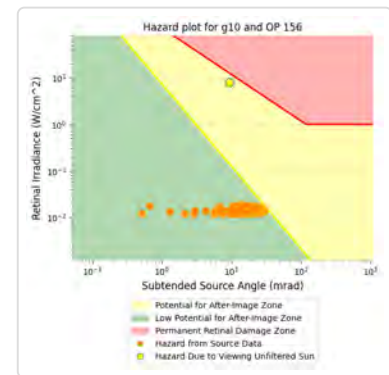
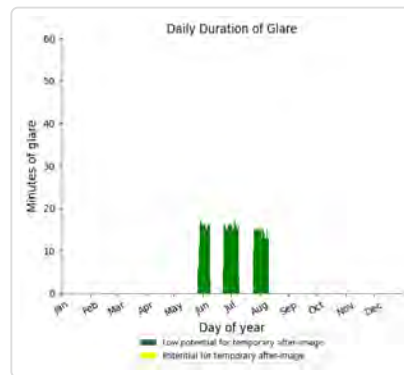
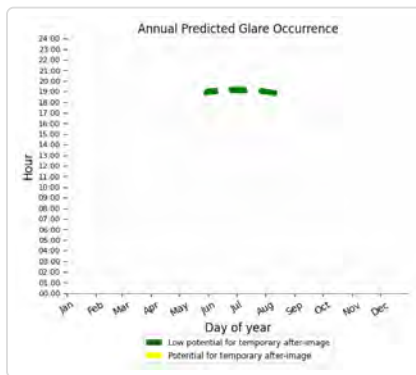
- 686 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## G10: OP 156

PV array is expected to produce the following glare for this receptor:

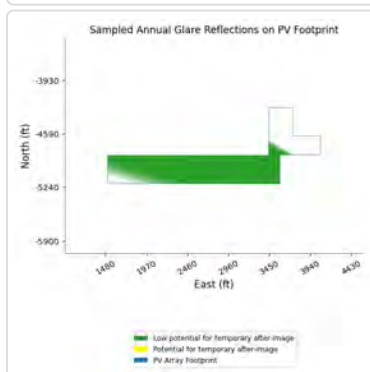
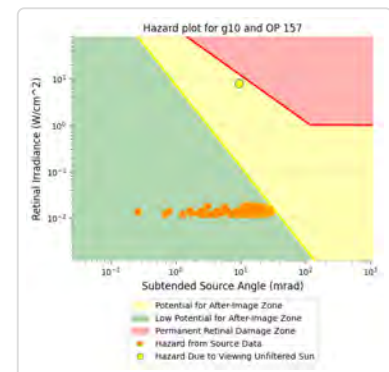
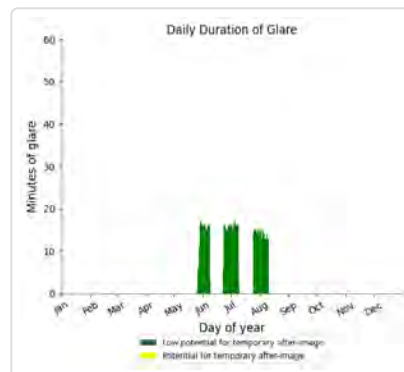
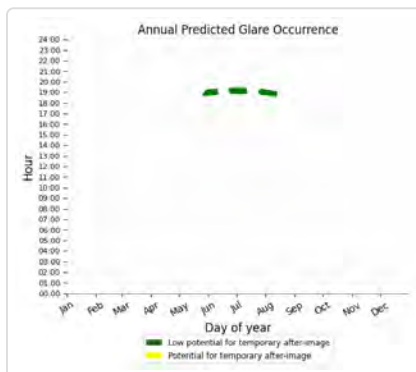
- 698 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## G10: OP 157

PV array is expected to produce the following glare for this receptor:

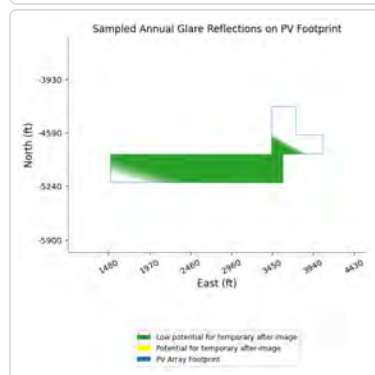
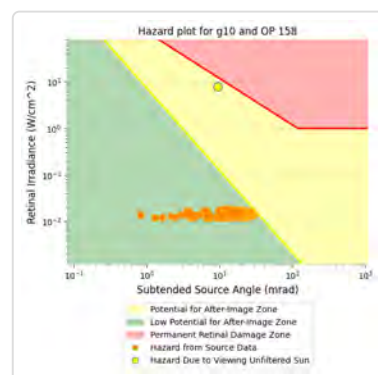
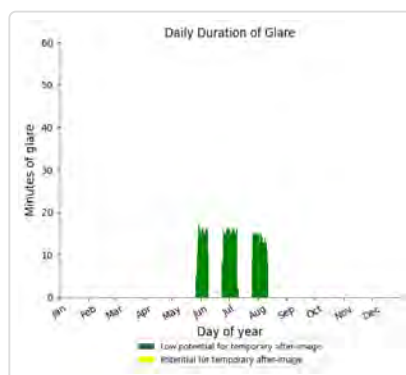
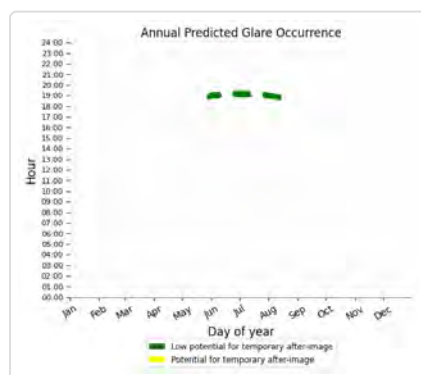
- 701 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## G10: OP 158

PV array is expected to produce the following glare for this receptor:

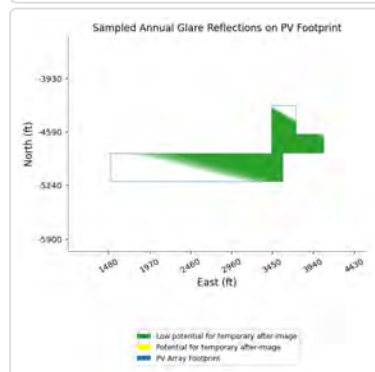
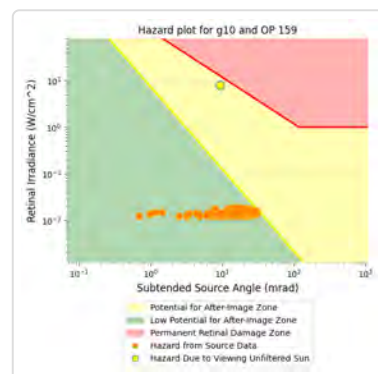
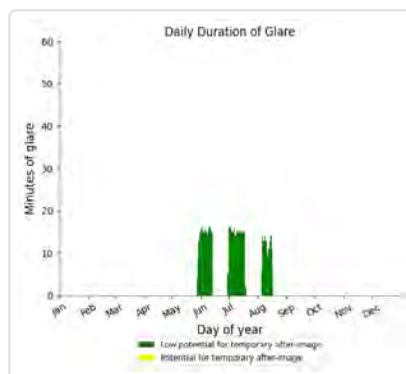
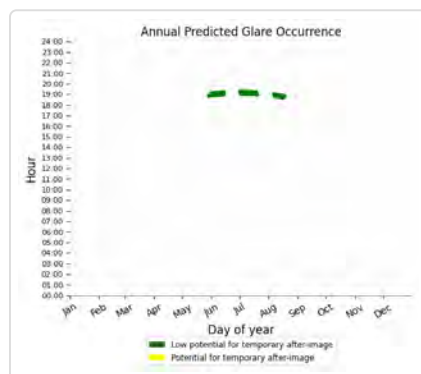
- 700 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## G10: OP 159

PV array is expected to produce the following glare for this receptor:

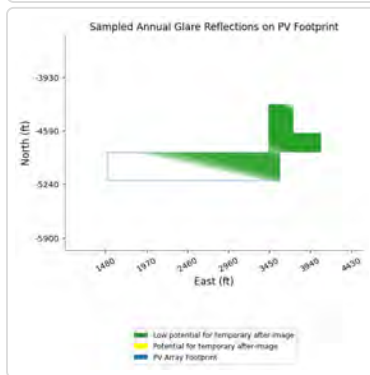
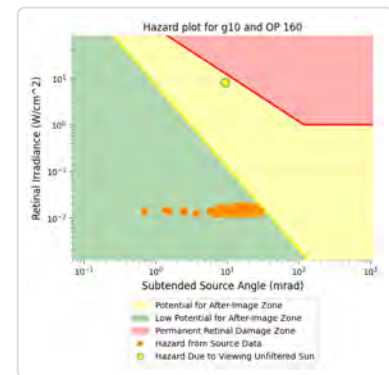
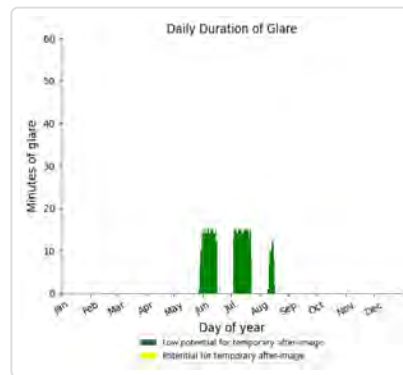
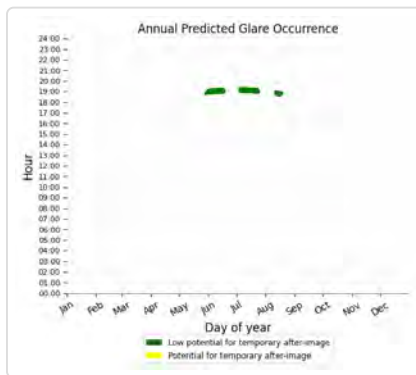
- 665 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## G10: OP 160

PV array is expected to produce the following glare for this receptor:

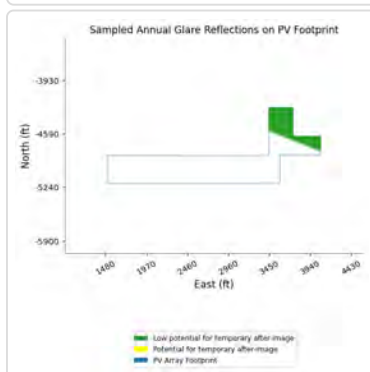
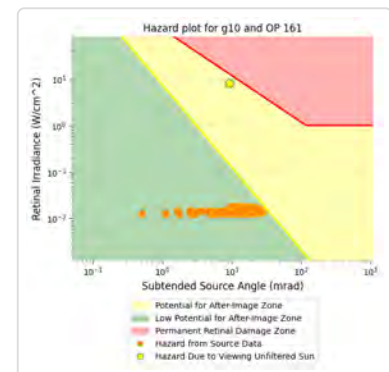
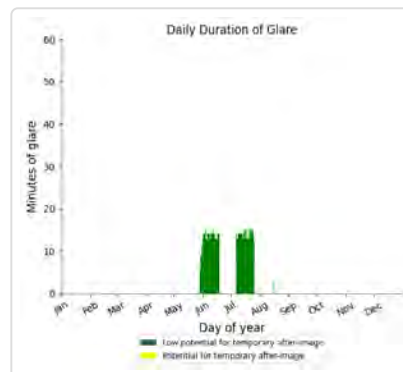
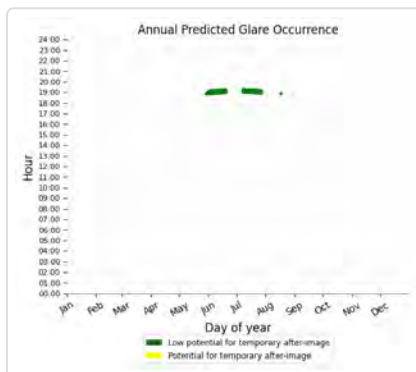
- 610 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## G10: OP 161

PV array is expected to produce the following glare for this receptor:

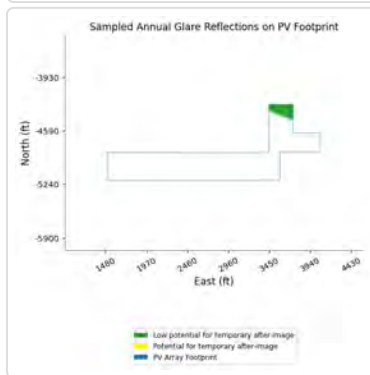
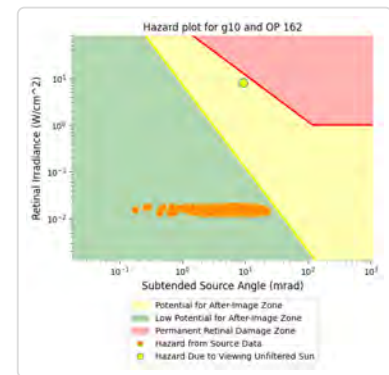
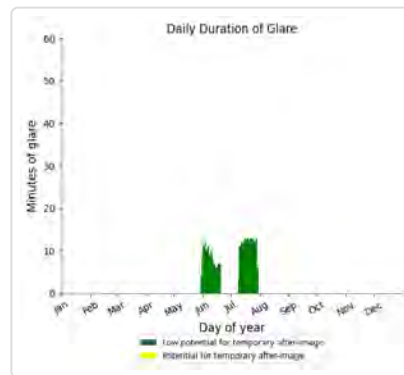
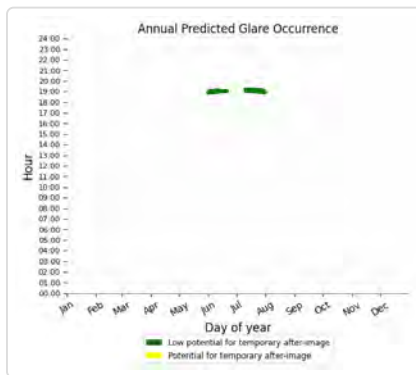
- 554 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## G10: OP 162

PV array is expected to produce the following glare for this receptor:

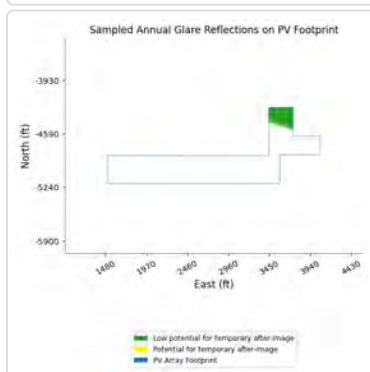
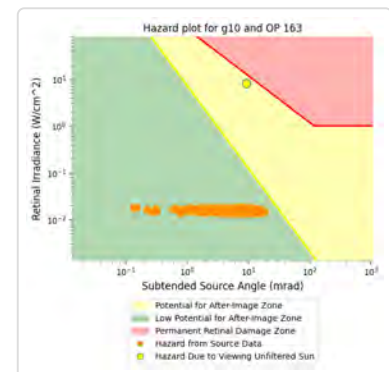
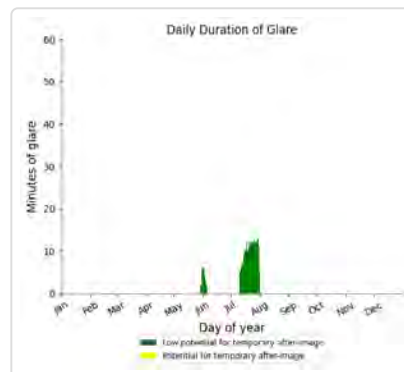
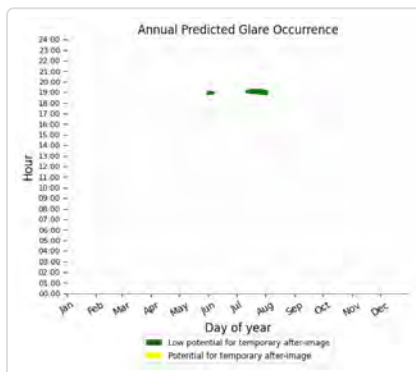
- 447 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## G10: OP 163

PV array is expected to produce the following glare for this receptor:

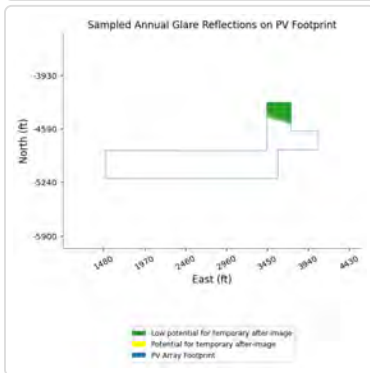
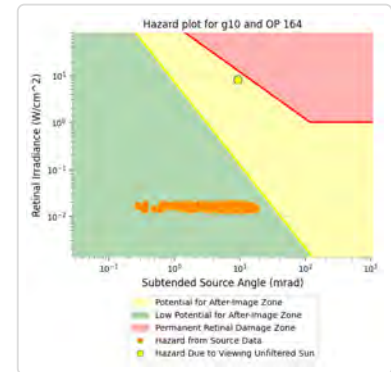
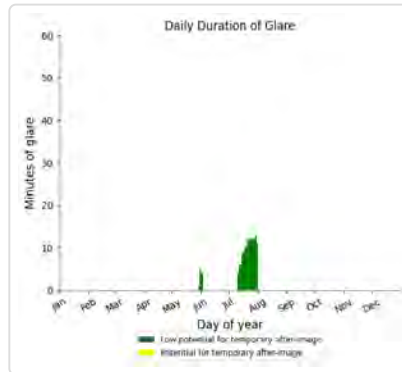
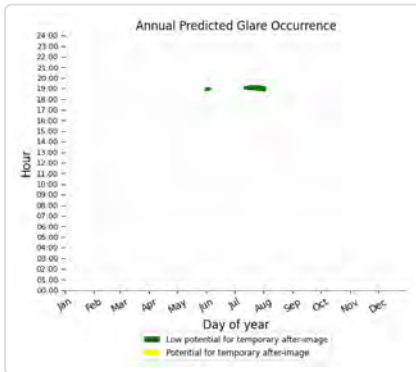
- 254 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## G10: OP 164

PV array is expected to produce the following glare for this receptor:

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



## G10: Collins Dr

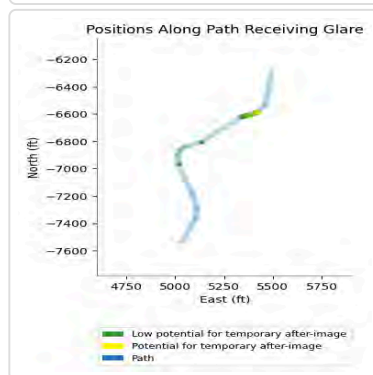
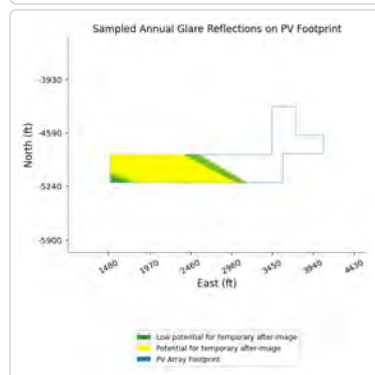
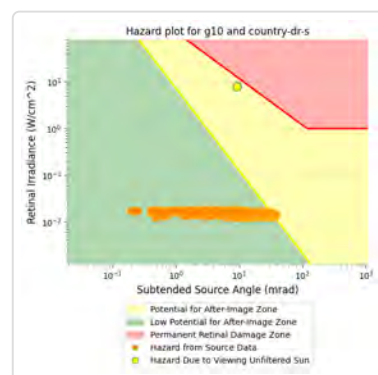
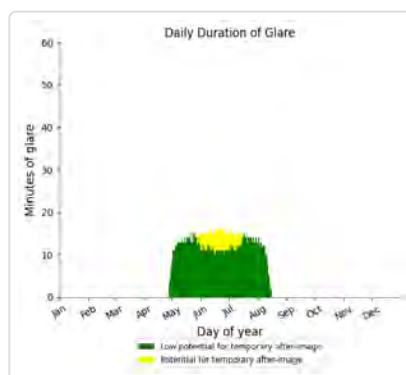
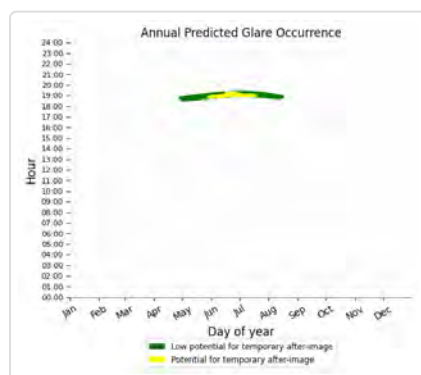
No glare found



## G10: Country Dr Seg 1

PV array is expected to produce the following glare for this receptor:

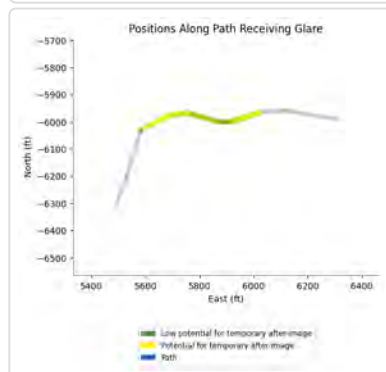
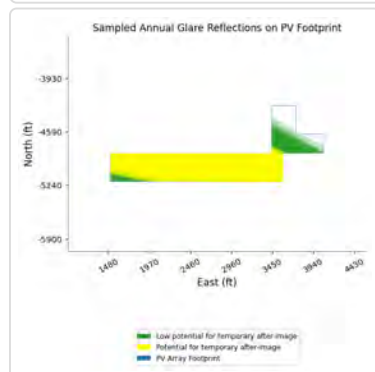
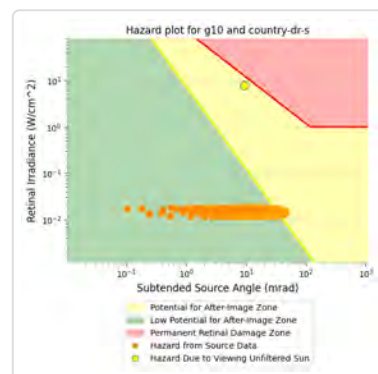
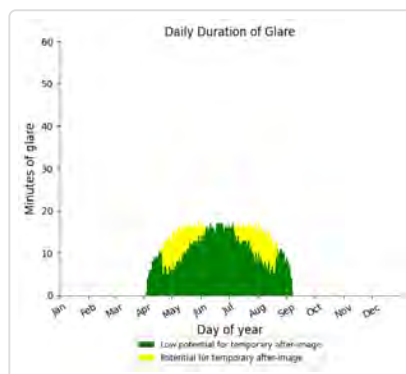
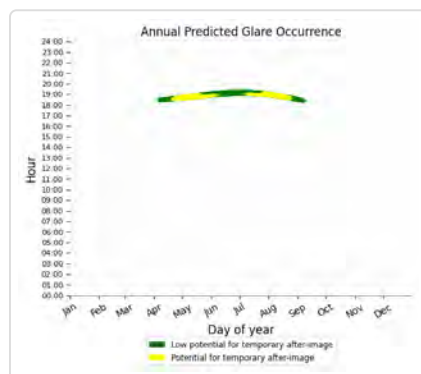
- 1,299 minutes of "green" glare with low potential to cause temporary after-image.
- 184 minutes of "yellow" glare with potential to cause temporary after-image.



## G10: Country Dr Seg 2

PV array is expected to produce the following glare for this receptor:

- 1,673 minutes of "green" glare with low potential to cause temporary after-image.
- 516 minutes of "yellow" glare with potential to cause temporary after-image.



## G10: County Line Rd

No glare found

## G10: Dempseys Rd

No glare found

## G10: Harley Ln

No glare found

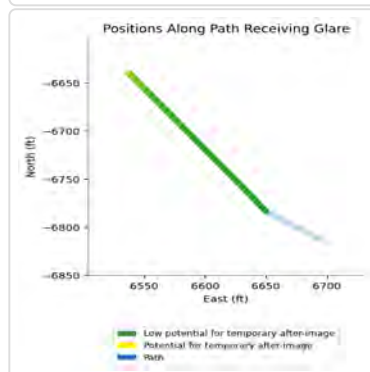
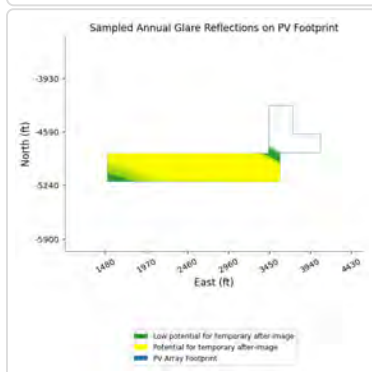
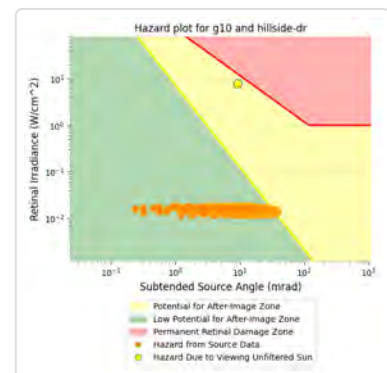
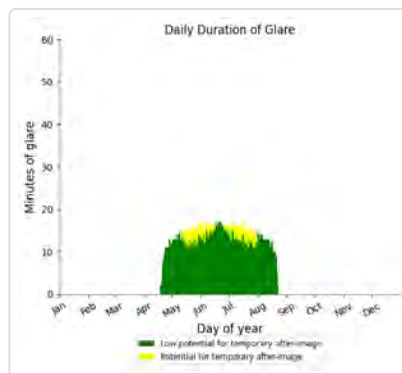
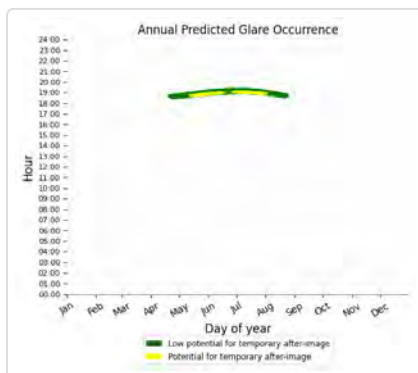
## G10: Henderson Rd

No glare found

## G10: Hillside Dr

PV array is expected to produce the following glare for this receptor:

- 1,609 minutes of "green" glare with low potential to cause temporary after-image.
- 199 minutes of "yellow" glare with potential to cause temporary after-image.



## G10: Ole Briery Station Rd Seg 1

No glare found

## G10: Ole Briery Station Rd Seg 2

No glare found

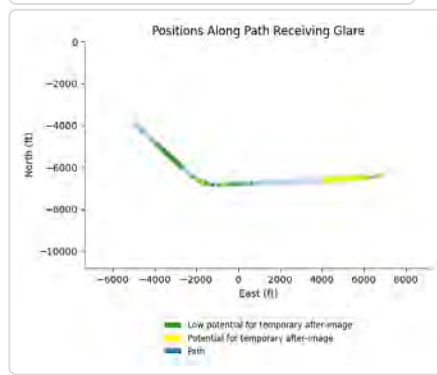
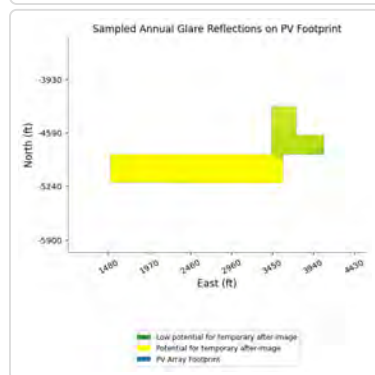
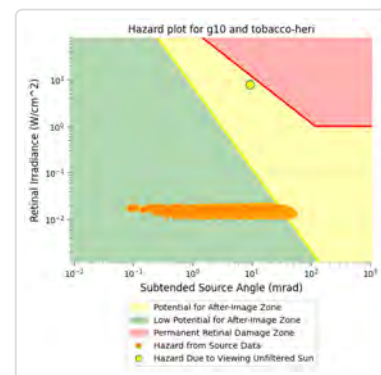
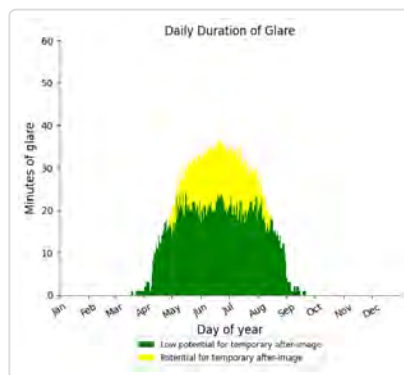
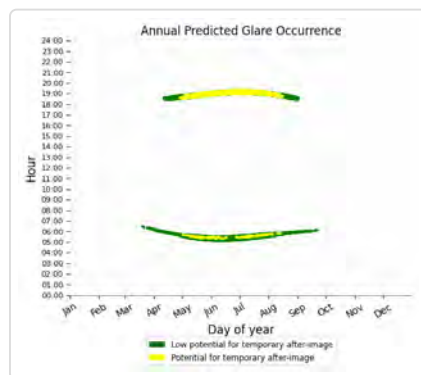
## G10: Thistle Knob Ln

No glare found

## G10: Tobacco Heritage Trail

PV array is expected to produce the following glare for this receptor:

- 2,725 minutes of "green" glare with low potential to cause temporary after-image.
- 1,087 minutes of "yellow" glare with potential to cause temporary after-image.



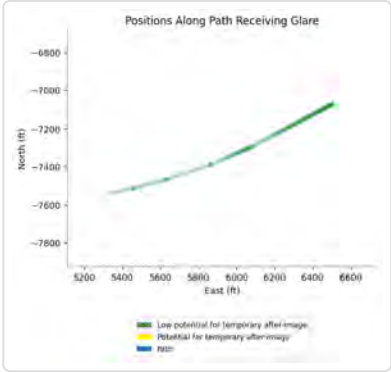
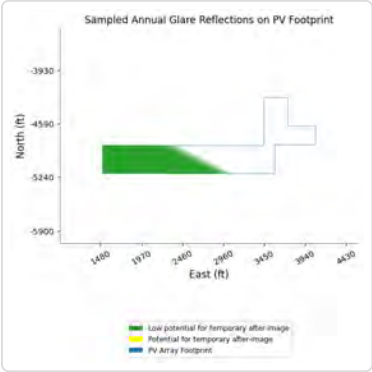
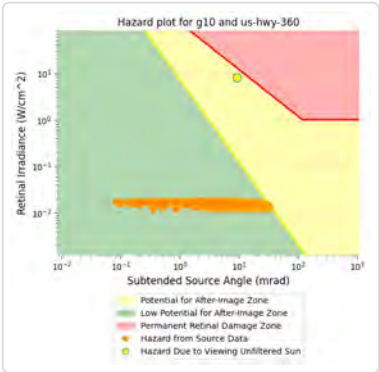
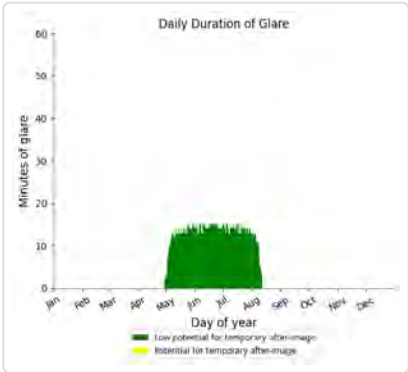
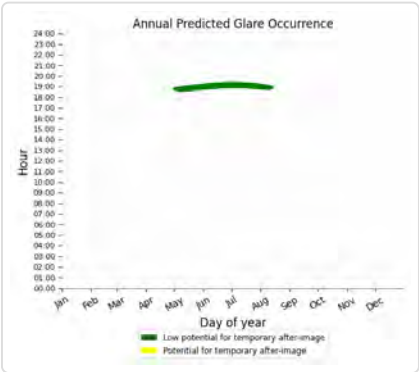
## G10: US Hwy 15

No glare found

G10: US Hwy 360

PV array is expected to produce the following glare for this receptor:

- 1,365 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



G11 potential temporary after-image

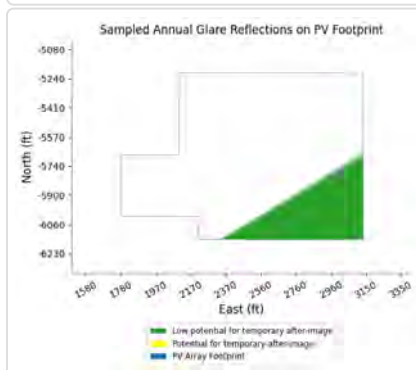
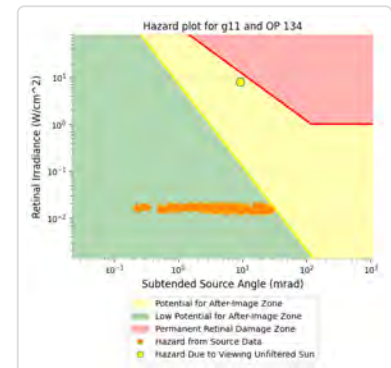
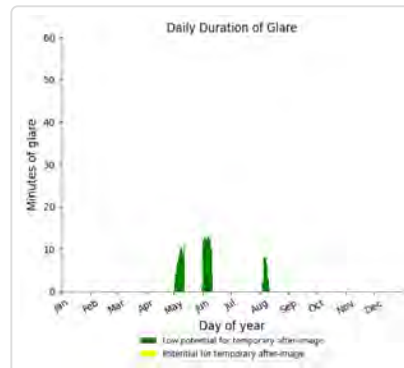
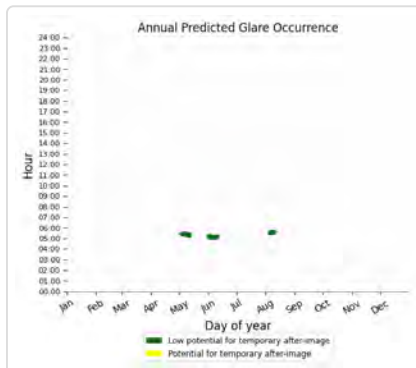
Component	Green glare (min)	Yellow glare (min)
OP: OP 134	257	0
OP: OP 135	291	0
OP: OP 136	342	107
OP: OP 137	386	170
OP: OP 138	0	0
OP: OP 139	0	0
OP: OP 140	0	0
OP: OP 141	0	0
OP: OP 142	0	0
OP: OP 143	0	0
OP: OP 144	301	0
OP: OP 145	340	0
OP: OP 146	89	0
OP: OP 147	0	0
OP: OP 148	125	0
OP: OP 149	0	0
OP: OP 150	0	0
OP: OP 151	0	0
OP: OP 152	0	0
OP: OP 153	0	0
OP: OP 154	42	0
OP: OP 155	42	0

OP: OP 156	24	0
OP: OP 157	30	0
OP: OP 158	25	0
OP: OP 159	0	0
OP: OP 160	0	0
OP: OP 161	0	0
OP: OP 162	0	0
OP: OP 163	0	0
OP: OP 164	0	0
Route: Collins Dr	0	0
Route: Country Dr Seg 1	973	214
Route: Country Dr Seg 2	58	0
Route: County Line Rd	0	0
Route: Dempseys Rd	0	0
Route: Harley Ln	0	0
Route: Henderson Rd	0	0
Route: Hillside Dr	149	0
Route: Ole Briery Station Rd Seg 1	72	0
Route: Ole Briery Station Rd Seg 2	0	0
Route: Thistle Knob Ln	0	0
Route: Tobacco Heritage Trail	1260	1451
Route: US Hwy 15	0	0
Route: US Hwy 360	616	5

## G11: OP 134

PV array is expected to produce the following glare for this receptor:

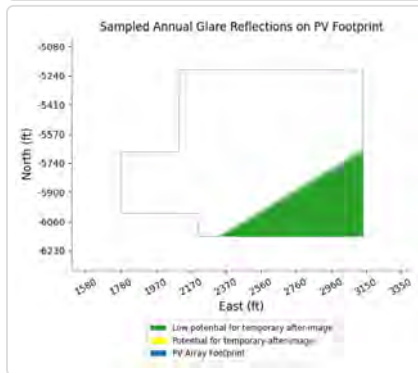
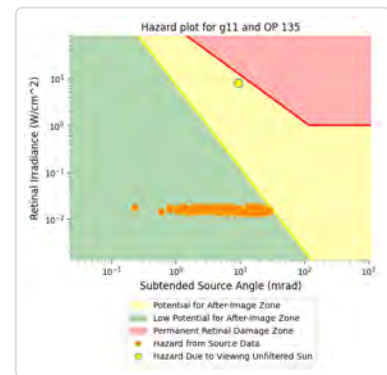
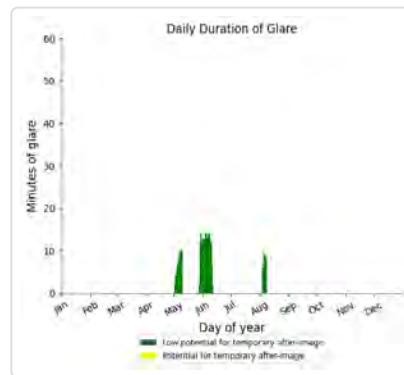
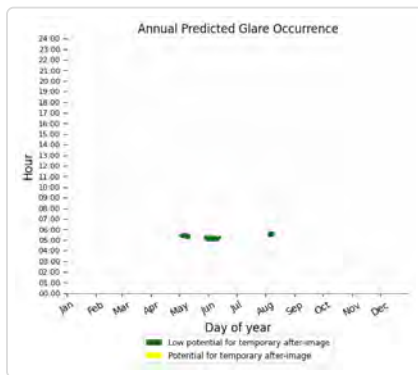
- 257 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## G11: OP 135

PV array is expected to produce the following glare for this receptor:

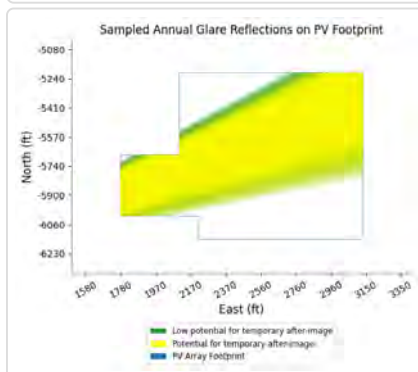
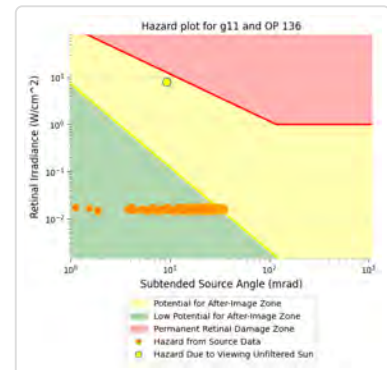
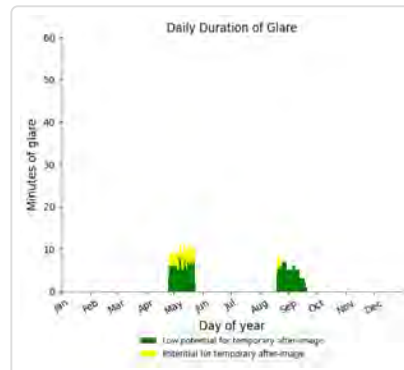
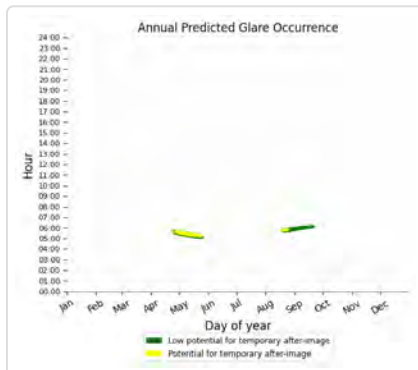
- 291 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## G11: OP 136

PV array is expected to produce the following glare for this receptor:

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

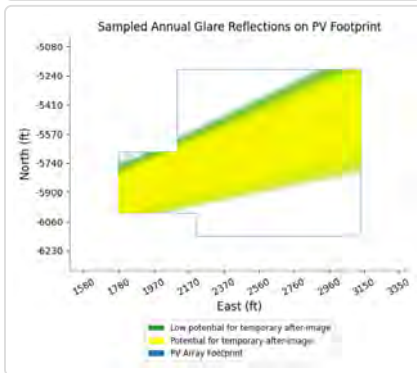
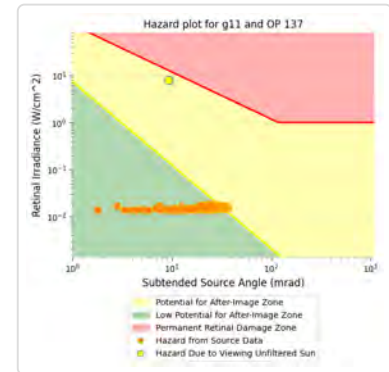
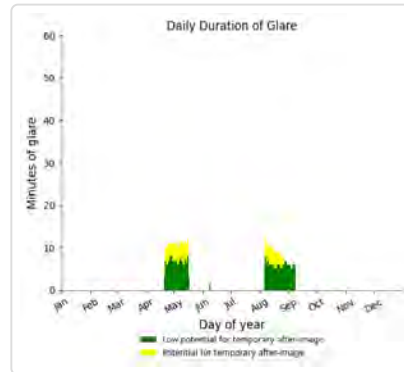
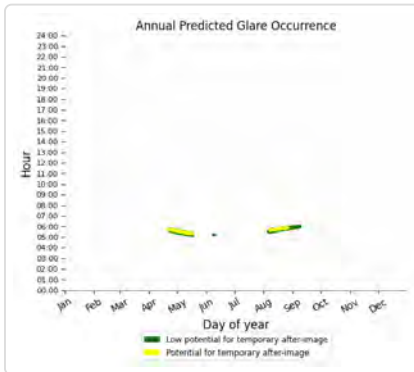




## G11: OP 137

PV array is expected to produce the following glare for this receptor:

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



## G11: OP 138

No glare found

## G11: OP 139

No glare found

## G11: OP 140

No glare found

## G11: OP 141

No glare found

## G11: OP 142

No glare found

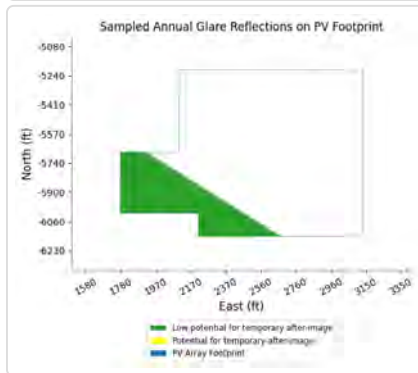
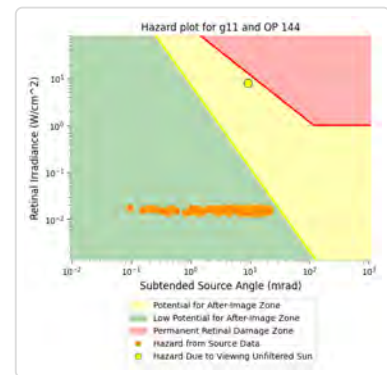
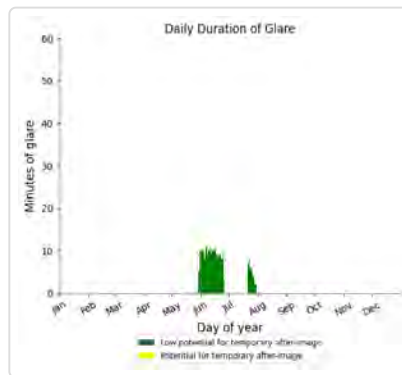
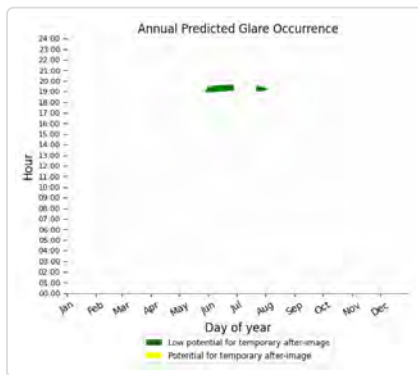
## G11: OP 143

No glare found

## G11: OP 144

PV array is expected to produce the following glare for this receptor:

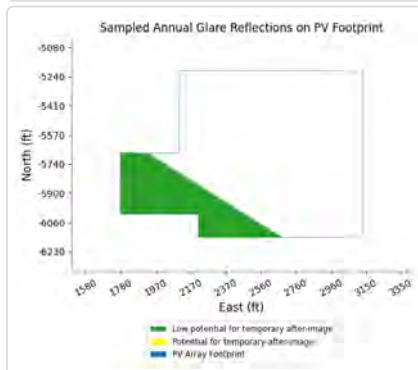
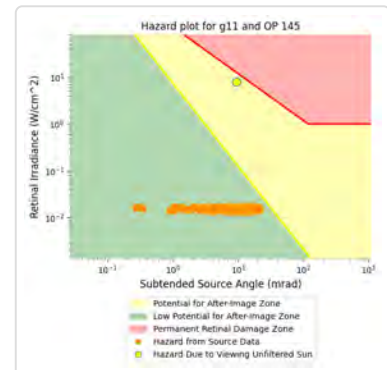
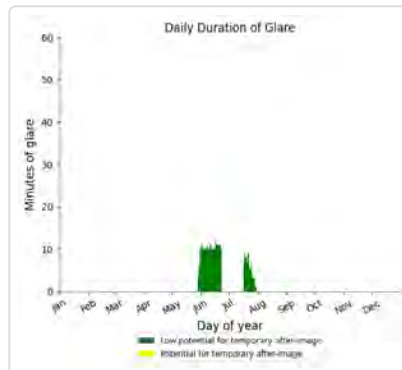
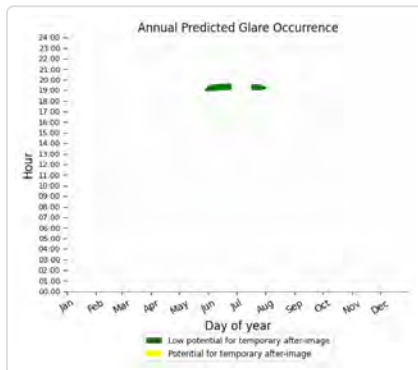
- 301 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## G11: OP 145

PV array is expected to produce the following glare for this receptor:

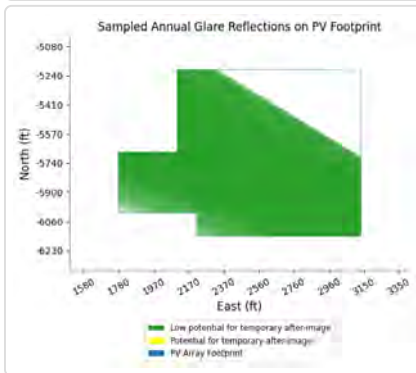
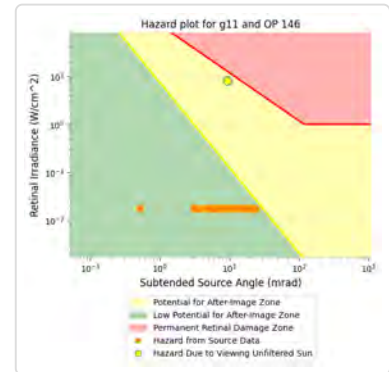
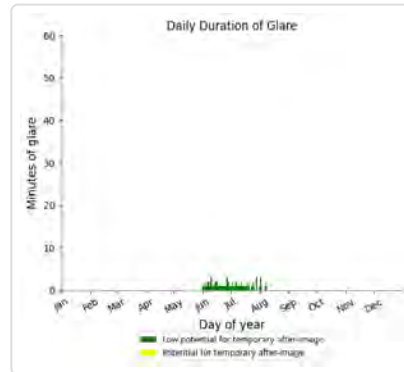
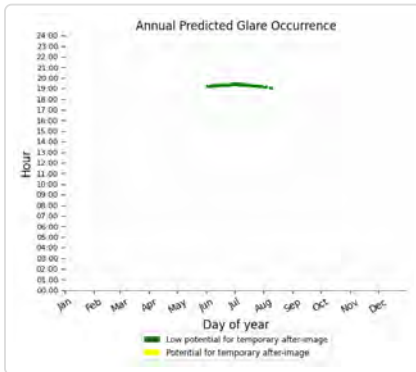
- 340 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## G11: OP 146

PV array is expected to produce the following glare for this receptor:

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



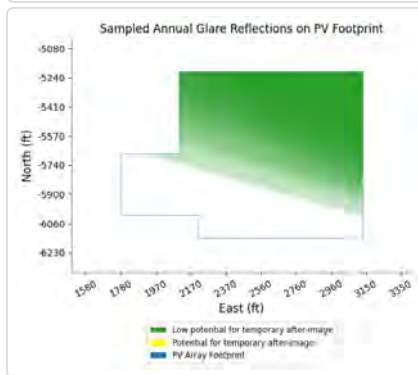
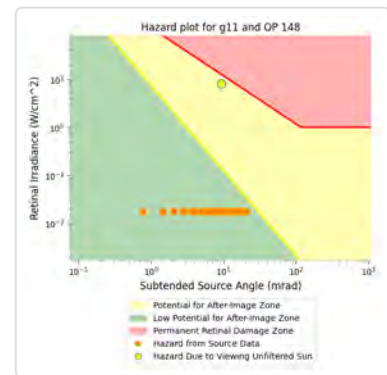
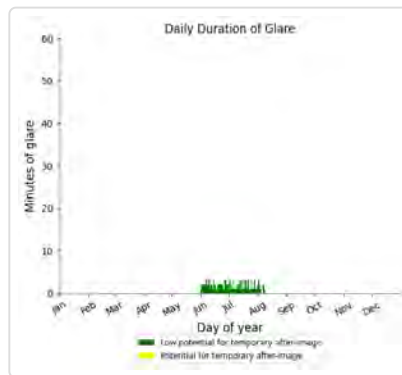
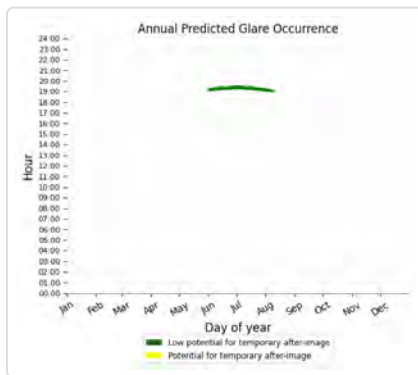
## G11: OP 147

No glare found

## G11: OP 148

PV array is expected to produce the following glare for this receptor:

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



## G11: OP 149

No glare found

## G11: OP 150

No glare found

## G11: OP 151

No glare found

## G11: OP 152

No glare found

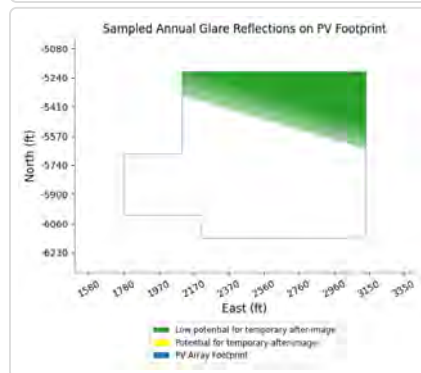
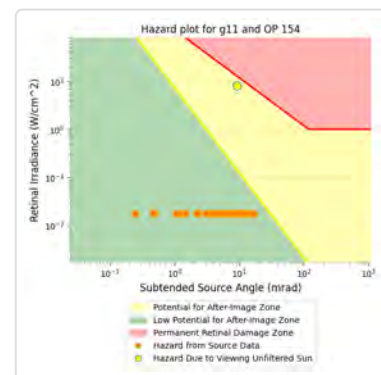
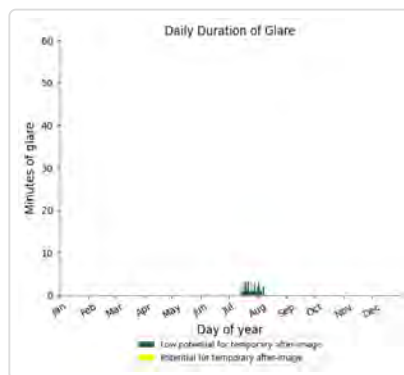
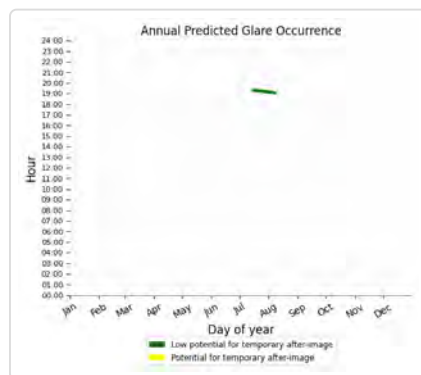
## G11: OP 153

No glare found

## G11: OP 154

PV array is expected to produce the following glare for this receptor:

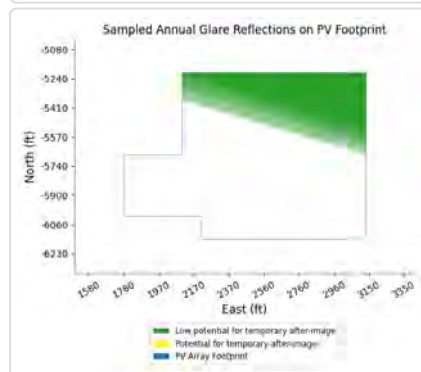
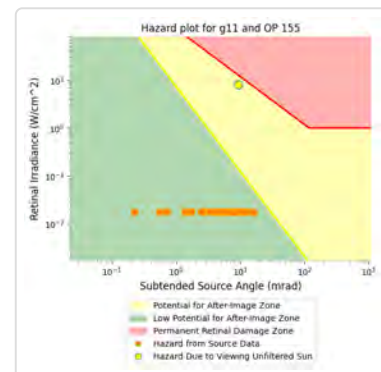
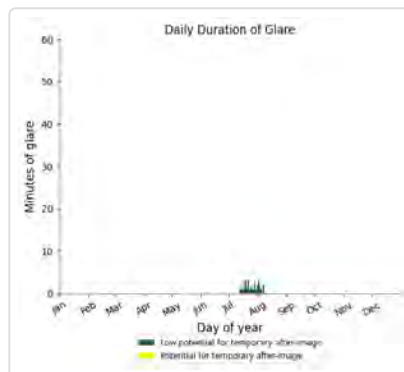
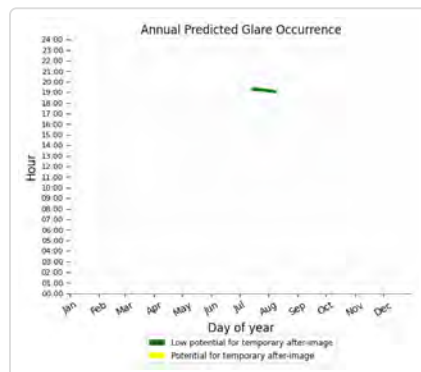
- 42 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## G11: OP 155

PV array is expected to produce the following glare for this receptor:

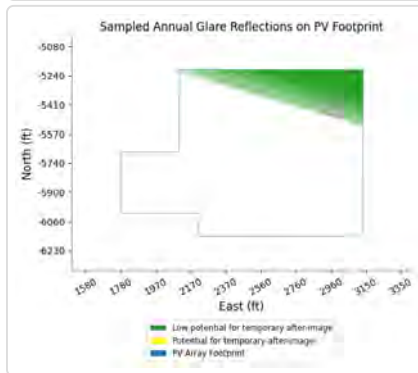
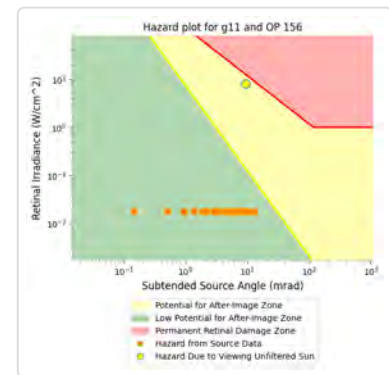
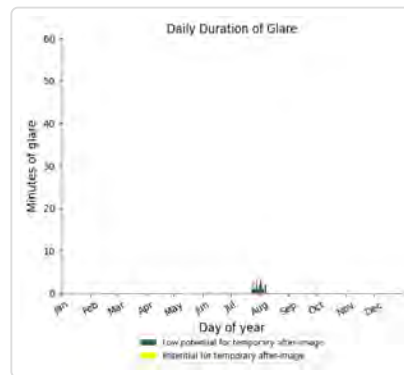
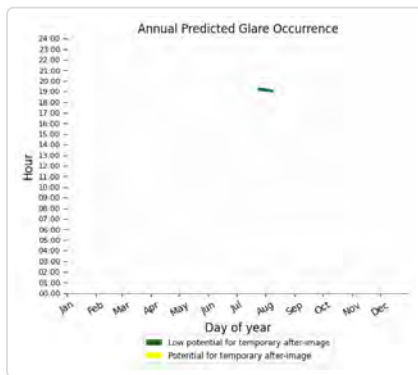
- 42 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## G11: OP 156

PV array is expected to produce the following glare for this receptor:

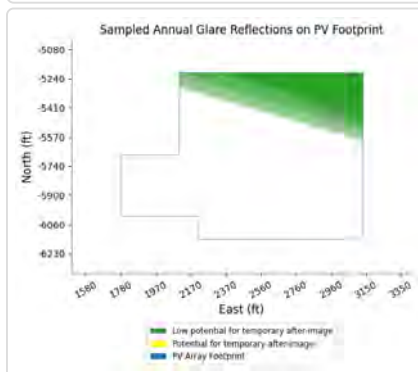
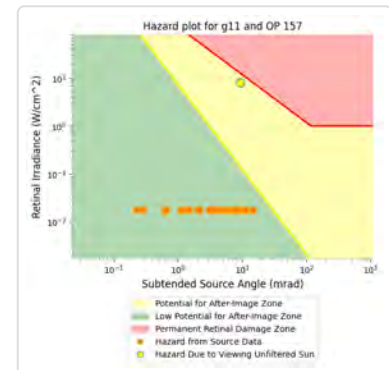
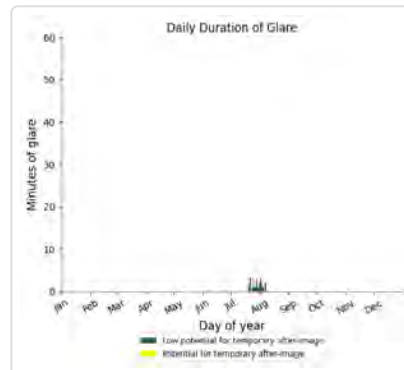
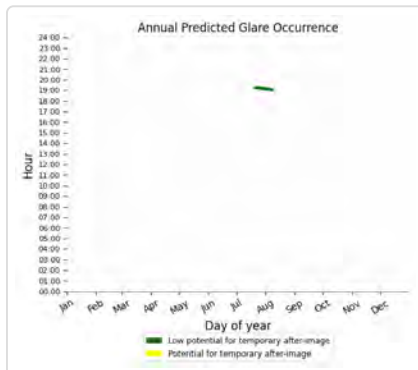
- 24 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## G11: OP 157

PV array is expected to produce the following glare for this receptor:

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

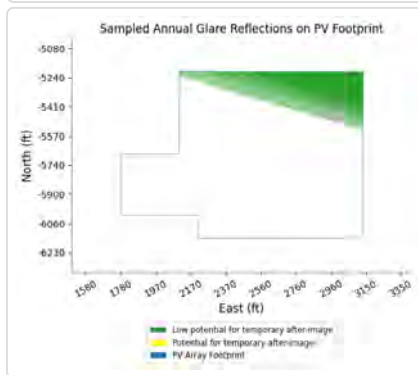
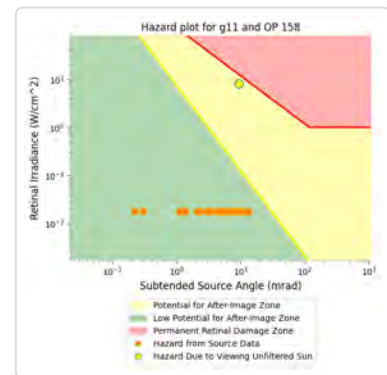
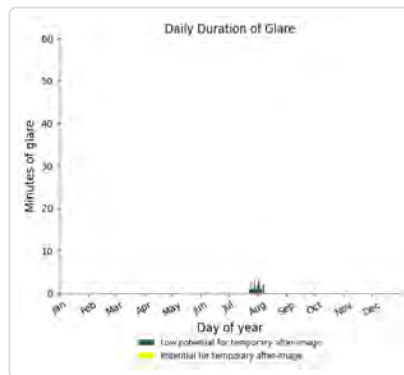
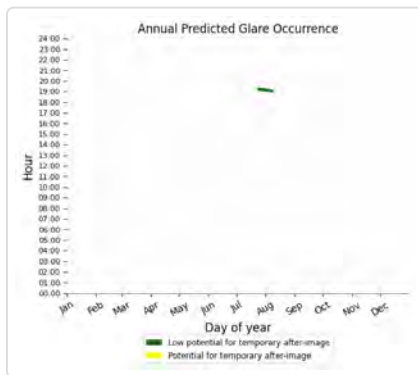




## G11: OP 158

PV array is expected to produce the following glare for this receptor:

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



## G11: OP 159

No glare found

## G11: OP 160

No glare found

## G11: OP 161

No glare found

## G11: OP 162

No glare found

## G11: OP 163

No glare found

## G11: OP 164

No glare found

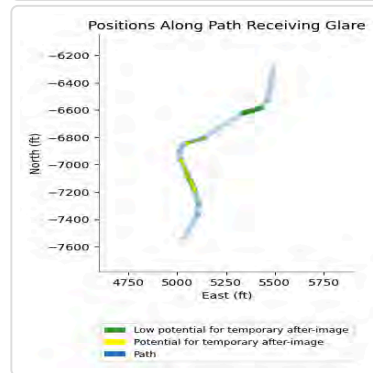
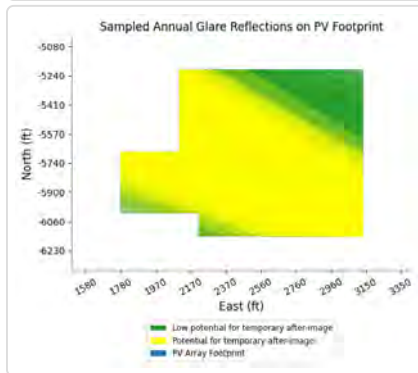
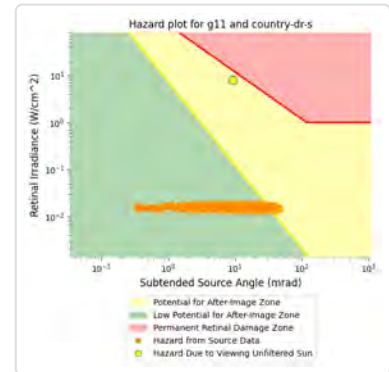
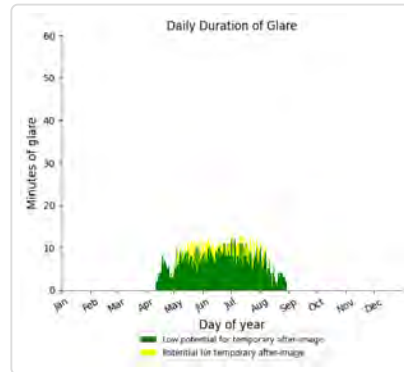
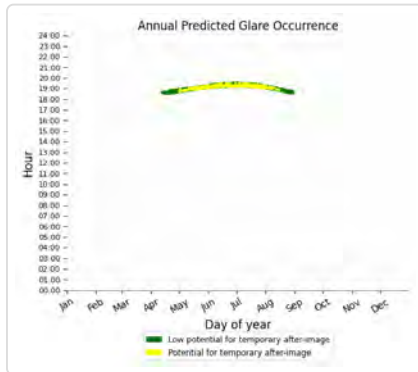
## G11: Collins Dr

No glare found

## G11: Country Dr Seg 1

PV array is expected to produce the following glare for this receptor:

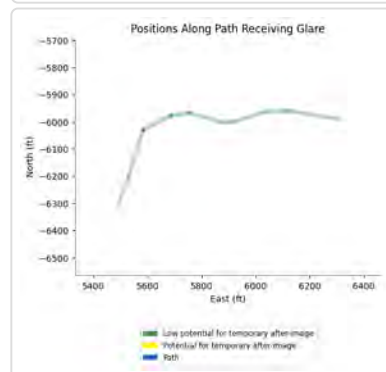
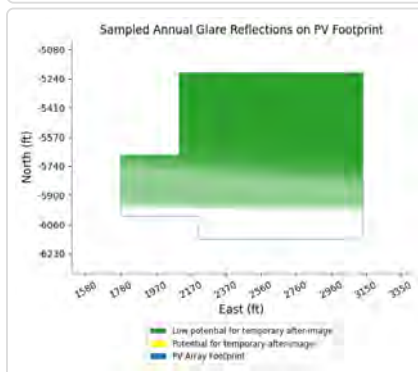
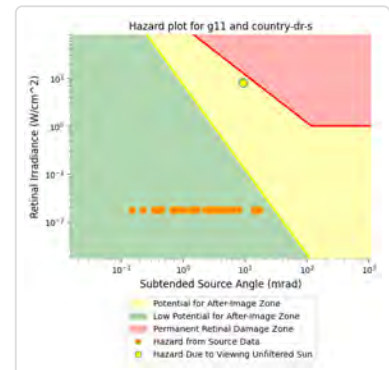
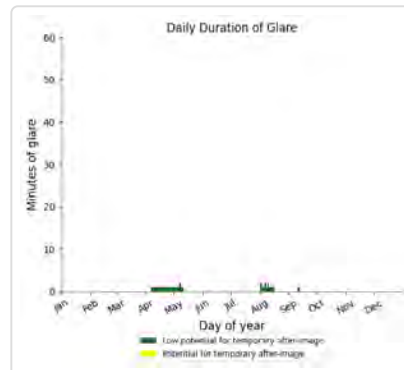
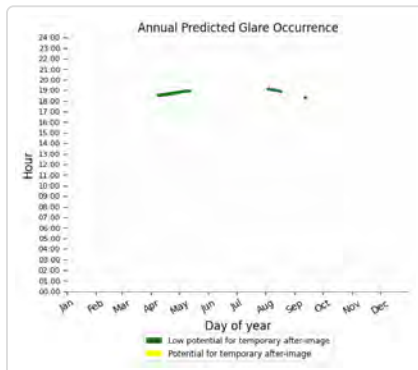
- 973 minutes of "green" glare with low potential to cause temporary after-image.
- 214 minutes of "yellow" glare with potential to cause temporary after-image.



## G11: Country Dr Seg 2

PV array is expected to produce the following glare for this receptor:

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



## G11: County Line Rd

No glare found

## G11: Dempseys Rd

No glare found

## G11: Harley Ln

No glare found

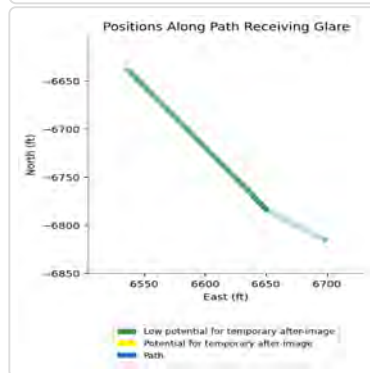
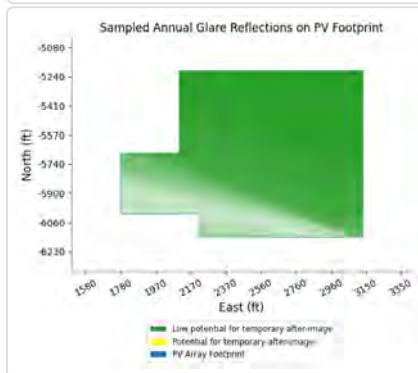
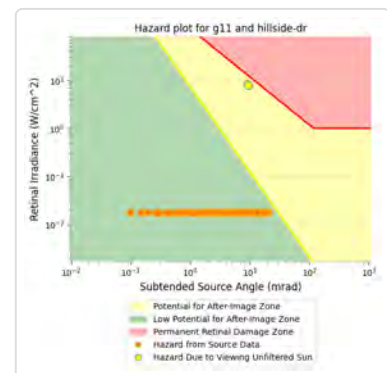
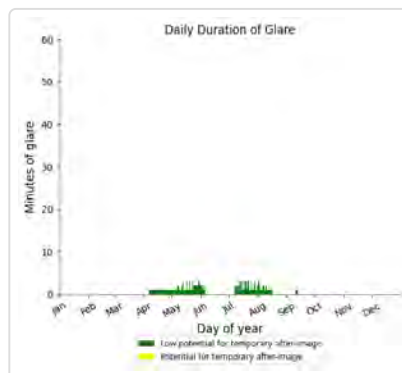
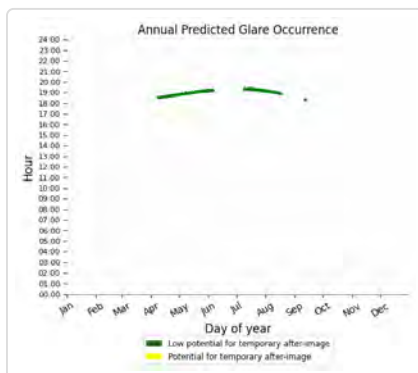
## G11: Henderson Rd

No glare found

## G11: Hillside Dr

PV array is expected to produce the following glare for this receptor:

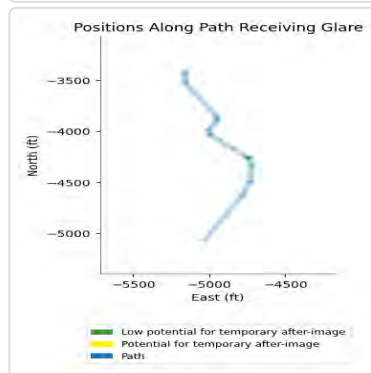
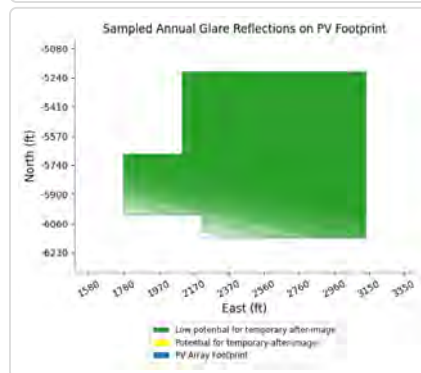
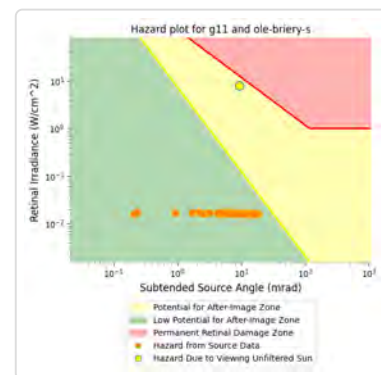
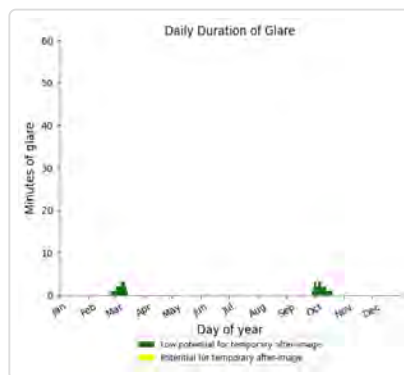
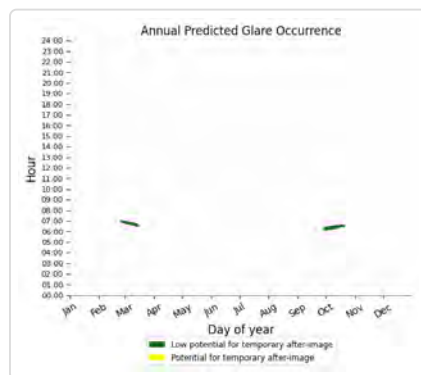
- 149 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## G11: Ole Briery Station Rd Seg 1

PV array is expected to produce the following glare for this receptor:

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



## G11: Ole Briery Station Rd Seg 2

No glare found

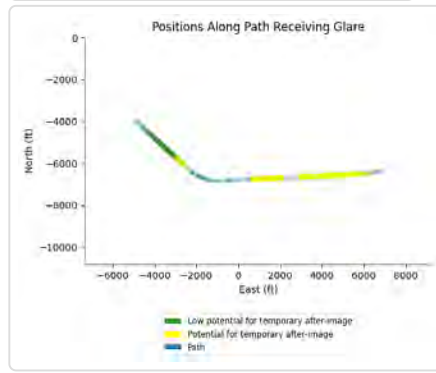
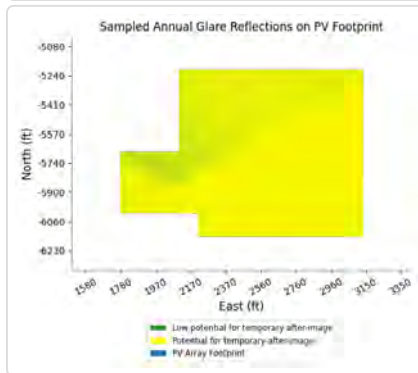
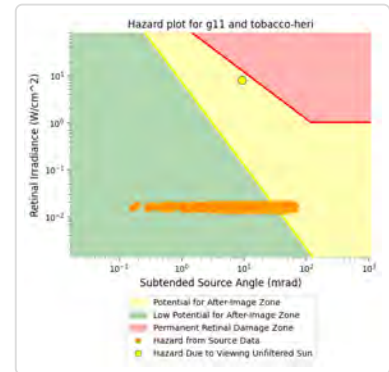
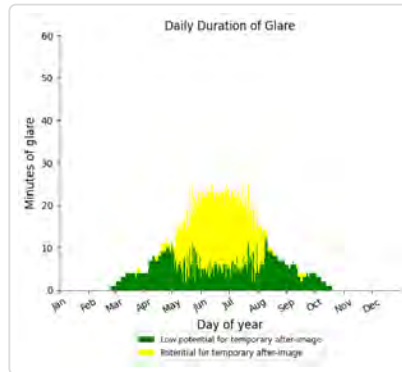
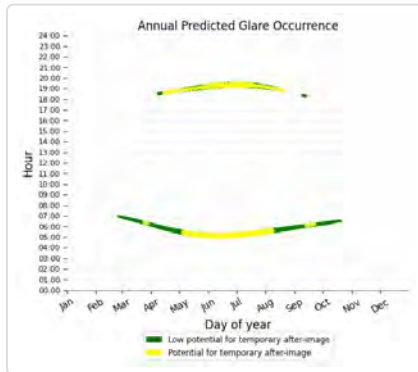
## G11: Thistle Knob Ln

No glare found

## G11: Tobacco Heritage Trail

PV array is expected to produce the following glare for this receptor:

- 1,260 minutes of "green" glare with low potential to cause temporary after-image.
- 1,451 minutes of "yellow" glare with potential to cause temporary after-image.

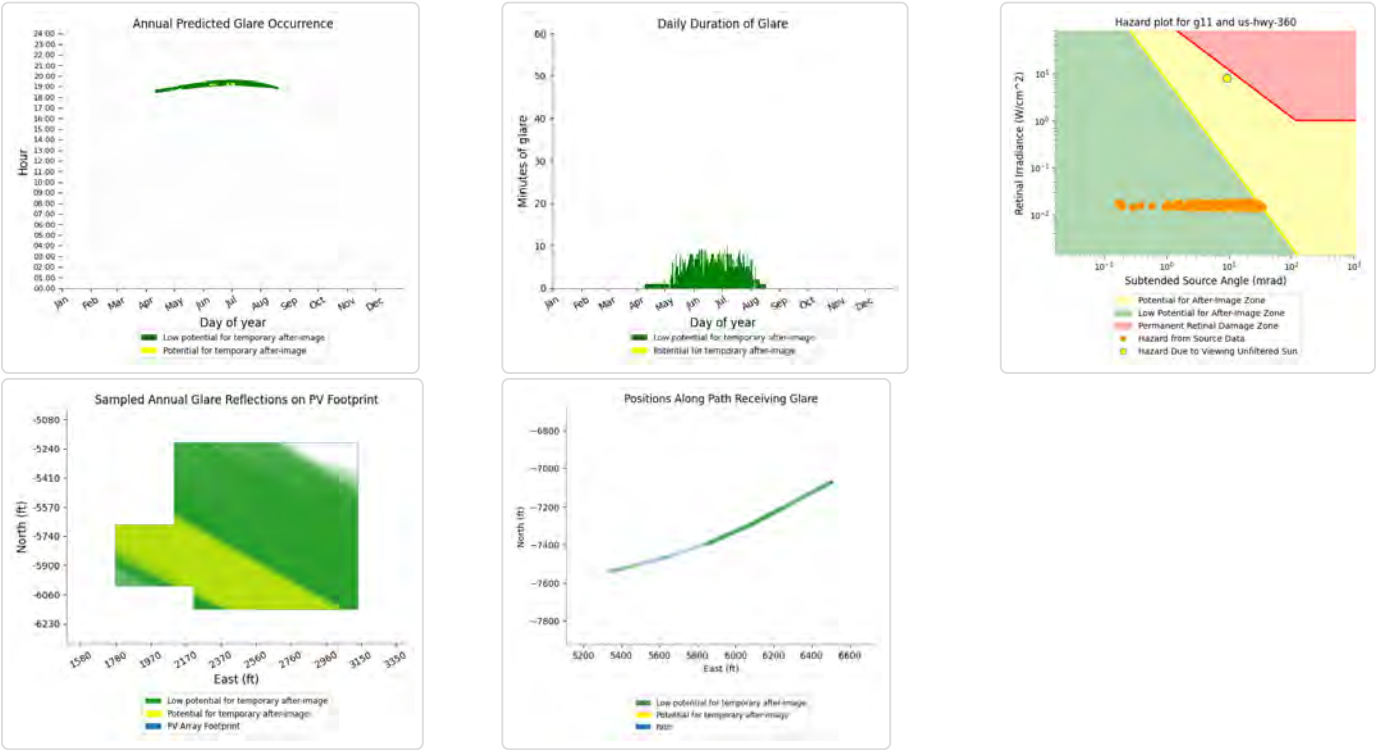


## G11: US Hwy 15

No glare found

G11: US Hwy 360

- PV array is expected to produce the following glare for this receptor:
- 616 minutes of "green" glare with low potential to cause temporary after-image.
  - 5 minutes of "yellow" glare with potential to cause temporary after-image.



H01 low potential for temporary after-image

Component	Green glare (min)	Yellow glare (min)
OP: OP 134	0	0
OP: OP 135	0	0
OP: OP 136	0	0
OP: OP 137	0	0
OP: OP 138	0	0
OP: OP 139	0	0
OP: OP 140	0	0
OP: OP 141	0	0
OP: OP 142	0	0
OP: OP 143	0	0
OP: OP 144	0	0
OP: OP 145	0	0
OP: OP 146	0	0
OP: OP 147	0	0
OP: OP 148	0	0
OP: OP 149	0	0
OP: OP 150	0	0
OP: OP 151	0	0
OP: OP 152	0	0
OP: OP 153	0	0
OP: OP 154	0	0
OP: OP 155	0	0



OP: OP 156	0	0
OP: OP 157	0	0
OP: OP 158	0	0
OP: OP 159	0	0
OP: OP 160	15	0
OP: OP 161	49	0
OP: OP 162	100	0
OP: OP 163	98	0
OP: OP 164	99	0
Route: Collins Dr	0	0
Route: Country Dr Seg 1	0	0
Route: Country Dr Seg 2	0	0
Route: County Line Rd	142	0
Route: Dempseys Rd	0	0
Route: Harley Ln	0	0
Route: Henderson Rd	367	0
Route: Hillside Dr	0	0
Route: Ole Briery Station Rd Seg 1	170	0
Route: Ole Briery Station Rd Seg 2	128	0
Route: Thistle Knob Ln	0	0
Route: Tobacco Heritage Trail	729	0
Route: US Hwy 15	0	0
Route: US Hwy 360	0	0

#### H01: OP 134

*No glare found*

#### H01: OP 135

*No glare found*

#### H01: OP 136

*No glare found*

#### H01: OP 137

*No glare found*

#### H01: OP 138

*No glare found*

#### H01: OP 139

*No glare found*

#### H01: OP 140

*No glare found*

#### H01: OP 141

*No glare found*

**H01: OP 142**

*No glare found*

**H01: OP 143**

*No glare found*

**H01: OP 144**

*No glare found*

**H01: OP 145**

*No glare found*

**H01: OP 146**

*No glare found*

**H01: OP 147**

*No glare found*

**H01: OP 148**

*No glare found*

**H01: OP 149**

*No glare found*

**H01: OP 150**

*No glare found*

**H01: OP 151**

*No glare found*

**H01: OP 152**

*No glare found*

**H01: OP 153**

*No glare found*

**H01: OP 154**

*No glare found*

**H01: OP 155**

*No glare found*

**H01: OP 156**

*No glare found*

H01: OP 157

No glare found

H01: OP 158

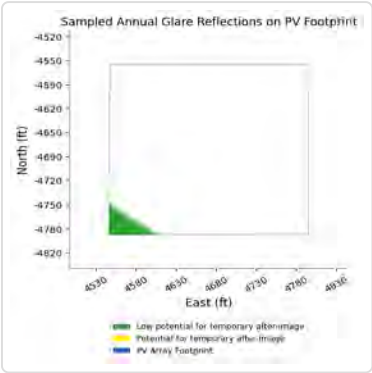
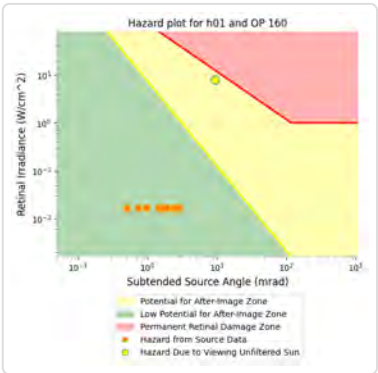
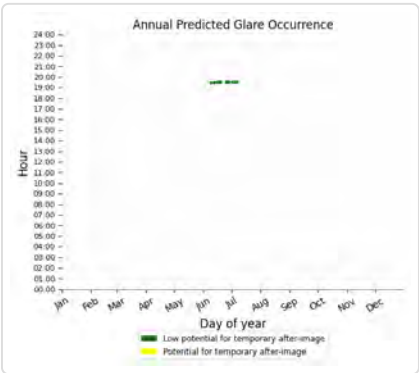
No glare found

H01: OP 159

No glare found

H01: OP 160

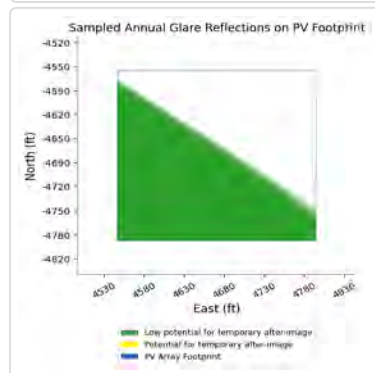
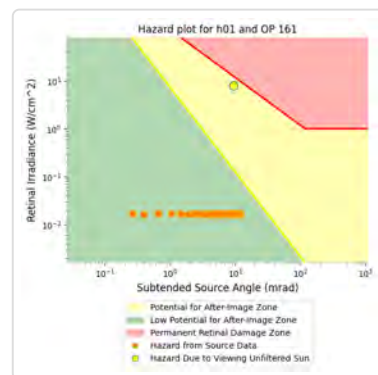
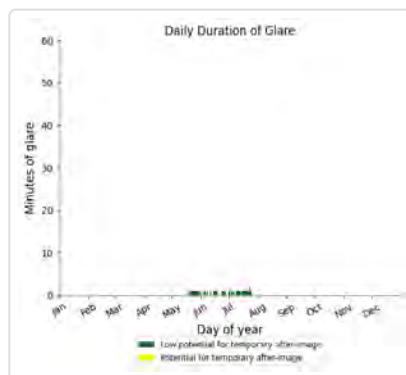
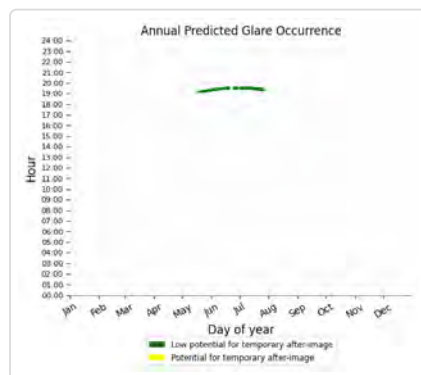
- PV array is expected to produce the following glare for this receptor:
- 15 minutes of "green" glare with low potential to cause temporary after-image.
  - 0 minutes of "yellow" glare with potential to cause temporary after-image.



## H01: OP 161

PV array is expected to produce the following glare for this receptor:

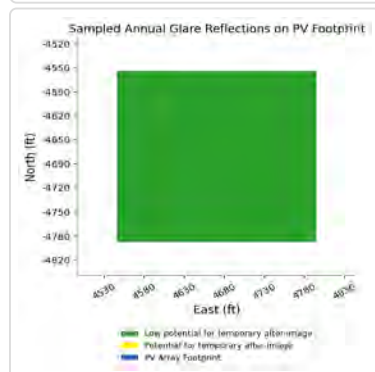
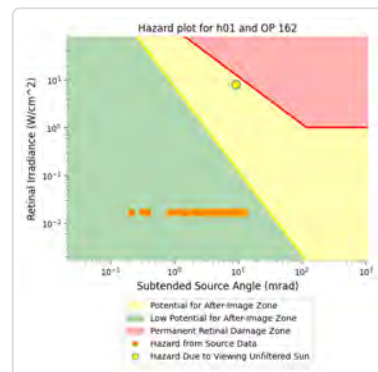
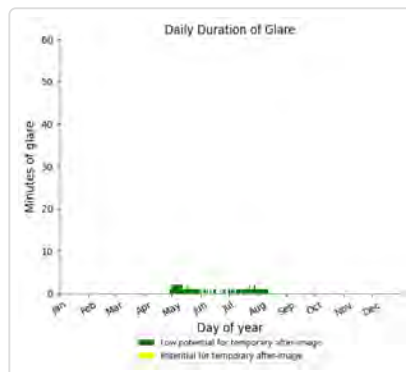
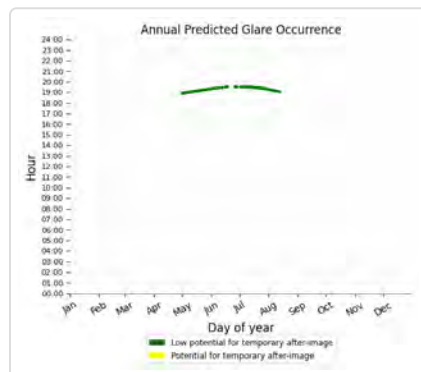
- 49 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## H01: OP 162

PV array is expected to produce the following glare for this receptor:

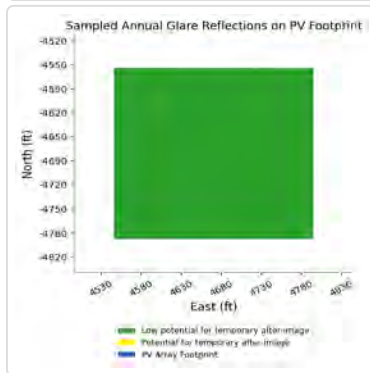
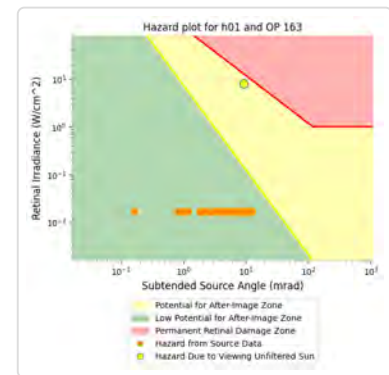
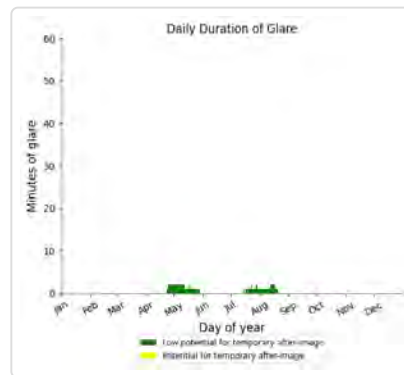
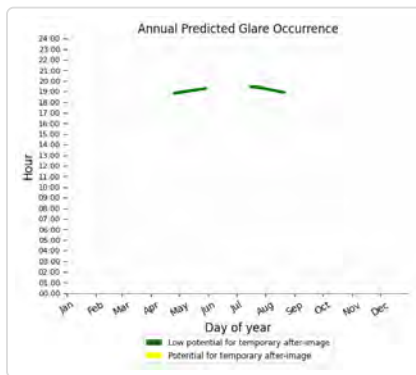
- 100 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## H01: OP 163

PV array is expected to produce the following glare for this receptor:

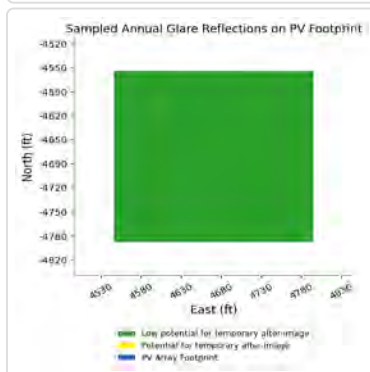
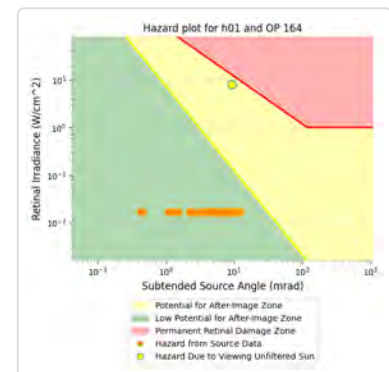
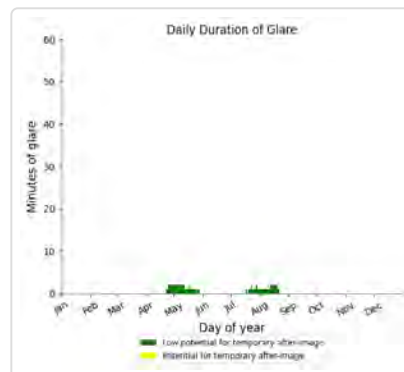
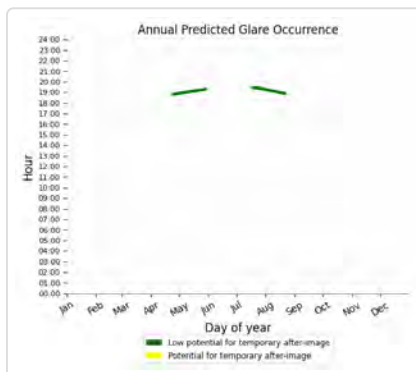
- 98 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## H01: OP 164

PV array is expected to produce the following glare for this receptor:

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



H01: Collins Dr

No glare found

H01: Country Dr Seg 1

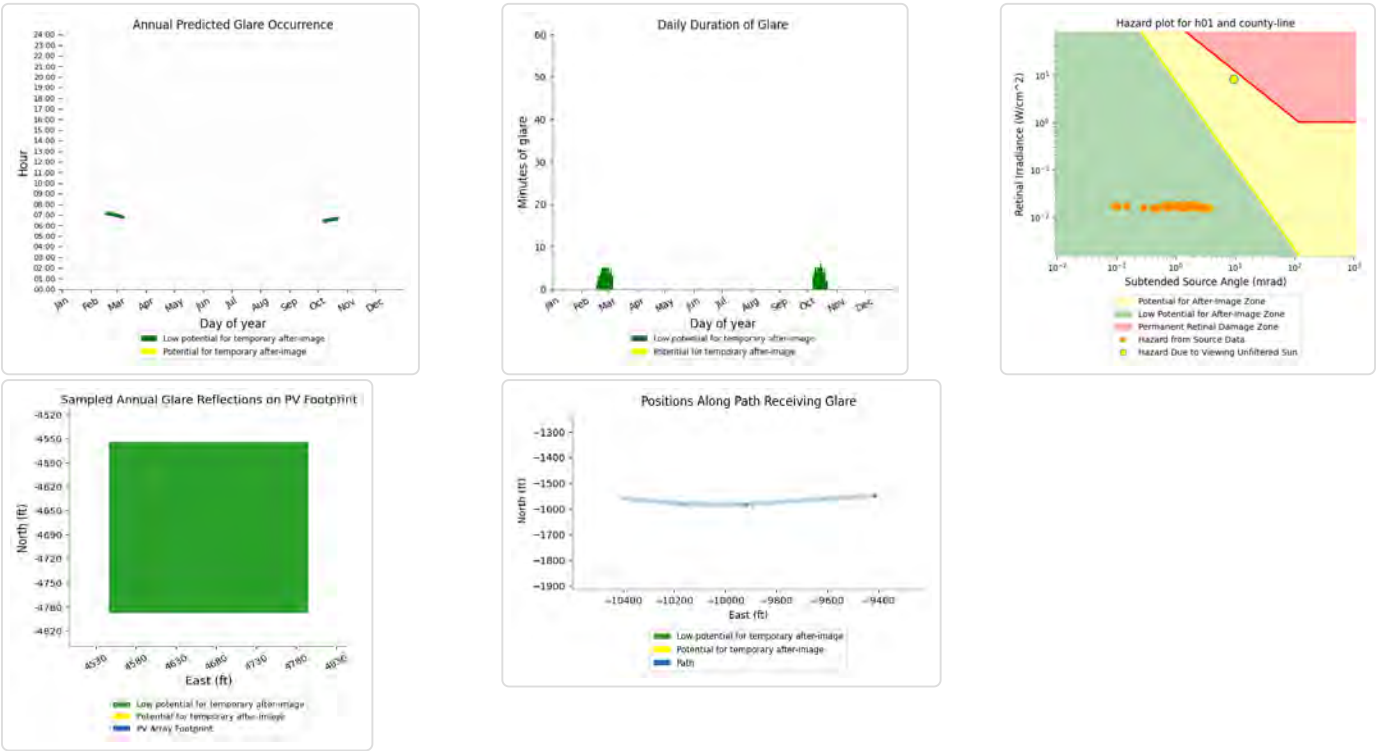
No glare found

H01: Country Dr Seg 2

No glare found

H01: County Line Rd

- PV array is expected to produce the following glare for this receptor:
- 142 minutes of "green" glare with low potential to cause temporary after-image.
  - 0 minutes of "yellow" glare with potential to cause temporary after-image.



H01: Dempseys Rd

No glare found

H01: Harley Ln

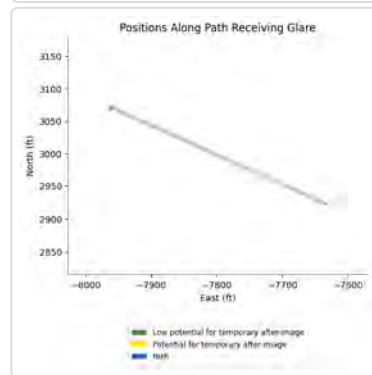
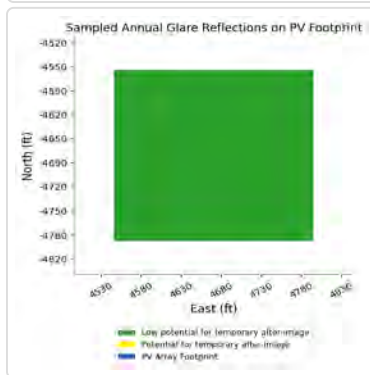
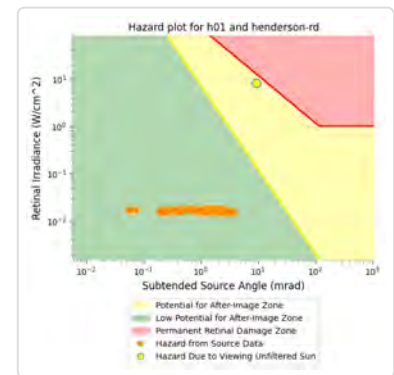
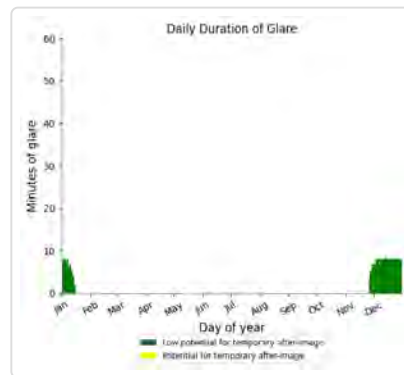
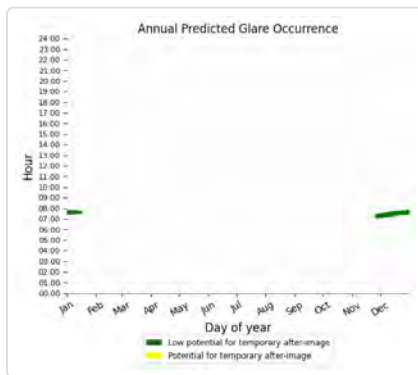
No glare found



## H01: Henderson Rd

PV array is expected to produce the following glare for this receptor:

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



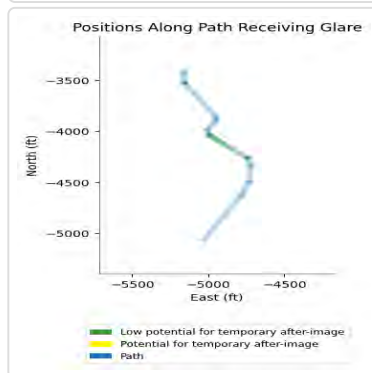
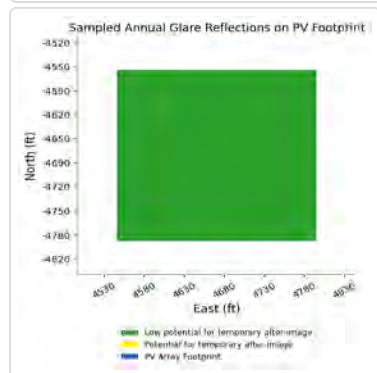
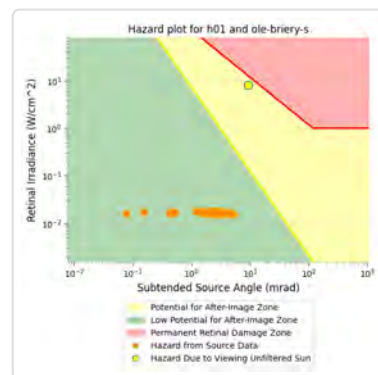
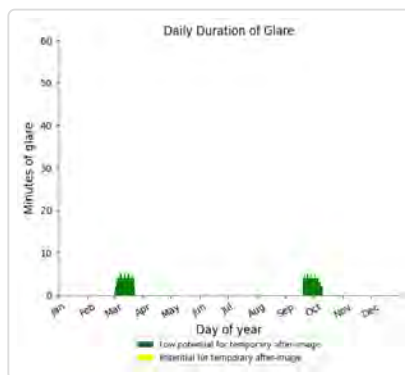
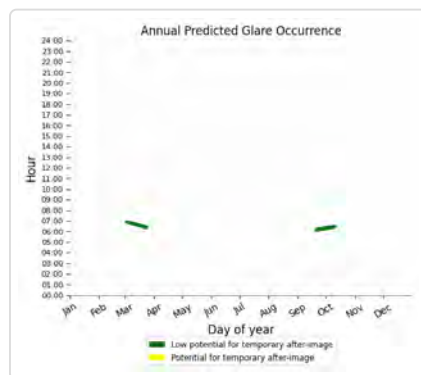
## H01: Hillside Dr

No glare found

## H01: Ole Briery Station Rd Seg 1

PV array is expected to produce the following glare for this receptor:

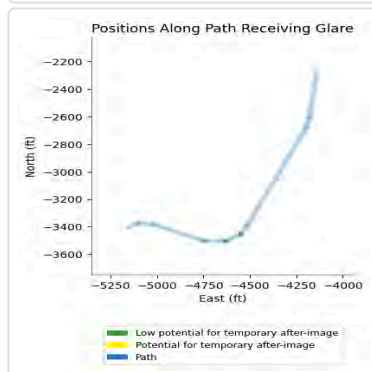
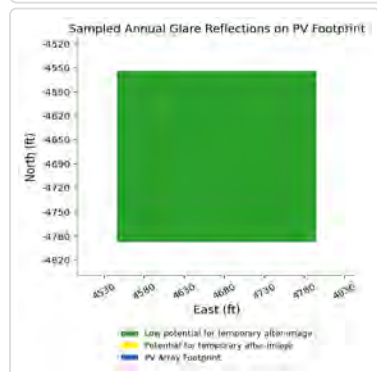
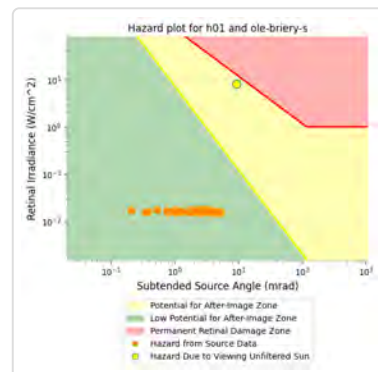
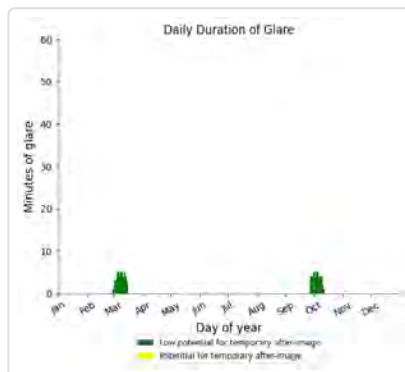
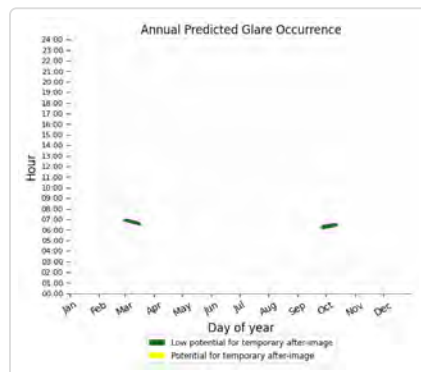
- 170 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## H01: Ole Briery Station Rd Seg 2

PV array is expected to produce the following glare for this receptor:

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



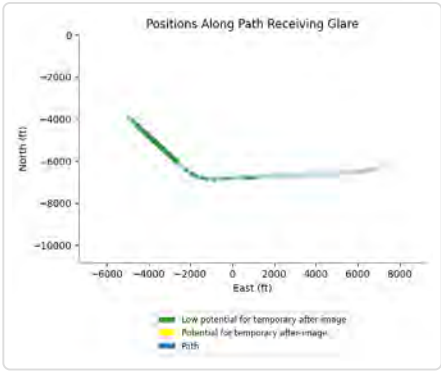
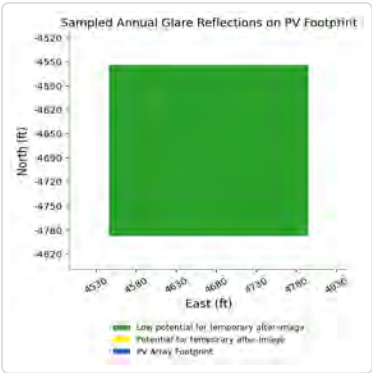
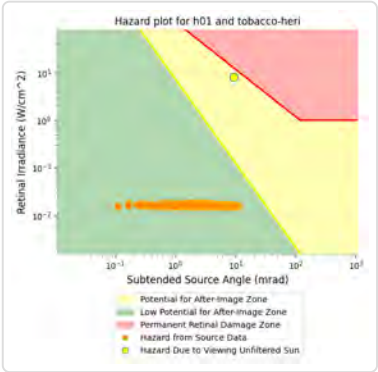
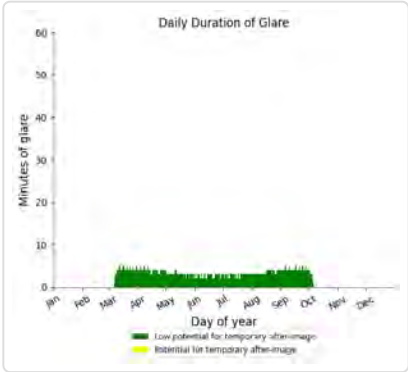
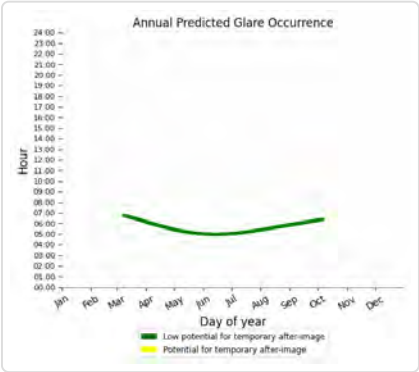
H01: Thistle Knob Ln

No glare found

H01: Tobacco Heritage Trail

PV array is expected to produce the following glare for this receptor:

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



H01: US Hwy 15

No glare found

H01: US Hwy 360

No glare found

H02 potential temporary after-image

Component	Green glare (min)	Yellow glare (min)
OP: OP 134	0	0
OP: OP 135	0	0
OP: OP 136	0	0
OP: OP 137	0	0
OP: OP 138	0	0
OP: OP 139	0	0
OP: OP 140	0	0
OP: OP 141	0	0
OP: OP 142	0	0
OP: OP 143	0	0
OP: OP 144	0	0
OP: OP 145	0	0

OP: OP 146	0	0
OP: OP 147	0	0
OP: OP 148	0	0
OP: OP 149	0	0
OP: OP 150	0	0
OP: OP 151	0	0
OP: OP 152	0	0
OP: OP 153	0	0
OP: OP 154	0	0
OP: OP 155	0	0
OP: OP 156	136	0
OP: OP 157	106	0
OP: OP 158	149	0
OP: OP 159	261	0
OP: OP 160	262	0
OP: OP 161	269	0
OP: OP 162	259	0
OP: OP 163	115	0
OP: OP 164	82	0
Route: Collins Dr	0	0
Route: Country Dr Seg 1	0	0
Route: Country Dr Seg 2	450	0
Route: County Line Rd	47	0
Route: Dempseys Rd	0	0
Route: Harley Ln	0	0
Route: Henderson Rd	43	0
Route: Hillside Dr	0	0
Route: Ole Briery Station Rd Seg 1	62	0
Route: Ole Briery Station Rd Seg 2	51	0
Route: Thistle Knob Ln	0	0
Route: Tobacco Heritage Trail	813	2
Route: US Hwy 15	0	0
Route: US Hwy 360	0	0

## H02: OP 134

*No glare found*

## H02: OP 135

*No glare found*

## H02: OP 136

*No glare found*

## H02: OP 137

*No glare found*

## H02: OP 138

*No glare found*

**H02: OP 139**

*No glare found*

**H02: OP 140**

*No glare found*

**H02: OP 141**

*No glare found*

**H02: OP 142**

*No glare found*

**H02: OP 143**

*No glare found*

**H02: OP 144**

*No glare found*

**H02: OP 145**

*No glare found*

**H02: OP 146**

*No glare found*

**H02: OP 147**

*No glare found*

**H02: OP 148**

*No glare found*

**H02: OP 149**

*No glare found*

**H02: OP 150**

*No glare found*

**H02: OP 151**

*No glare found*

**H02: OP 152**

*No glare found*

**H02: OP 153**

*No glare found*

H02: OP 154

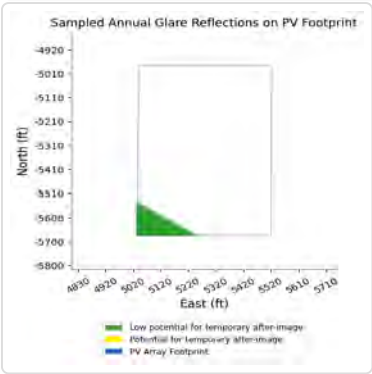
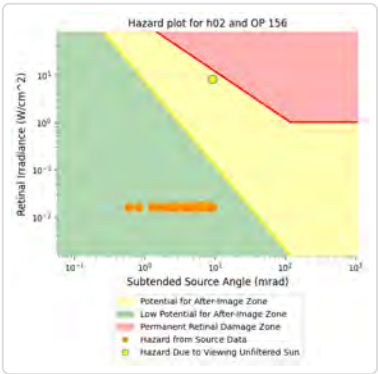
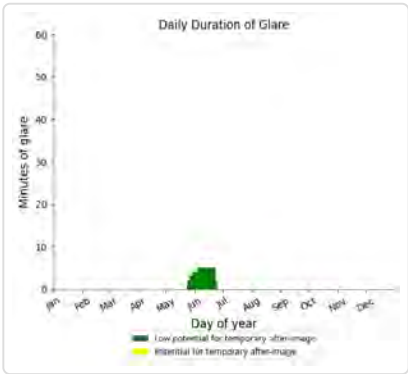
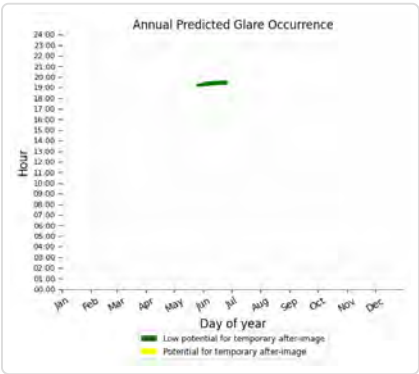
No glare found

H02: OP 155

No glare found

H02: OP 156

- PV array is expected to produce the following glare for this receptor:
- 136 minutes of "green" glare with low potential to cause temporary after-image.
  - 0 minutes of "yellow" glare with potential to cause temporary after-image.

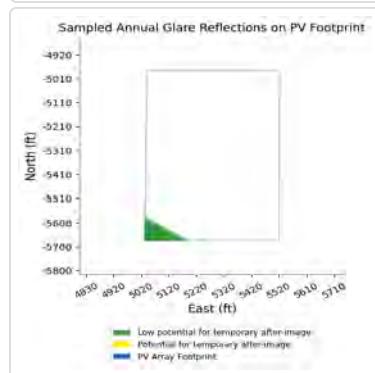
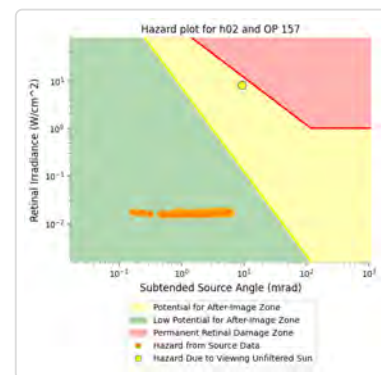
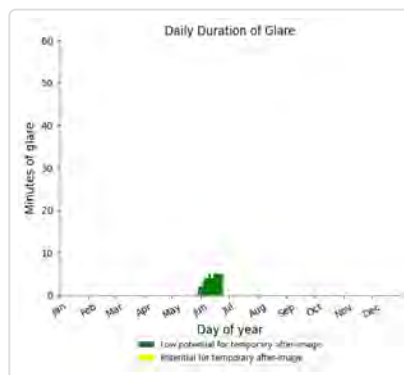
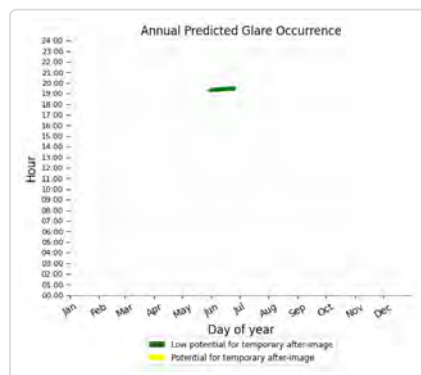




## H02: OP 157

PV array is expected to produce the following glare for this receptor:

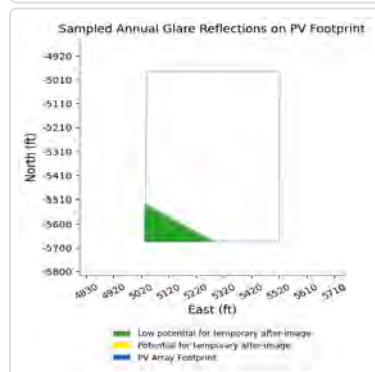
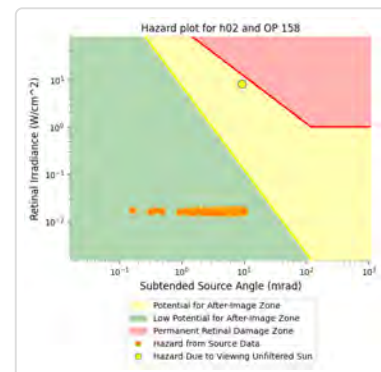
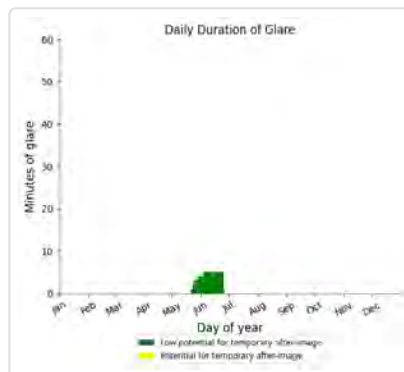
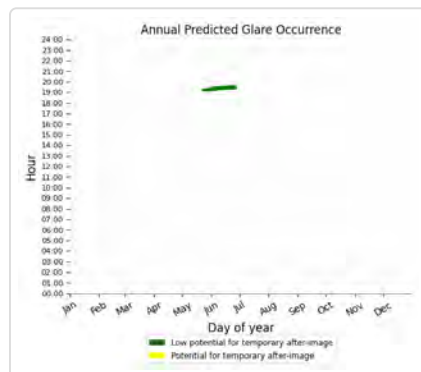
- 106 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## H02: OP 158

PV array is expected to produce the following glare for this receptor:

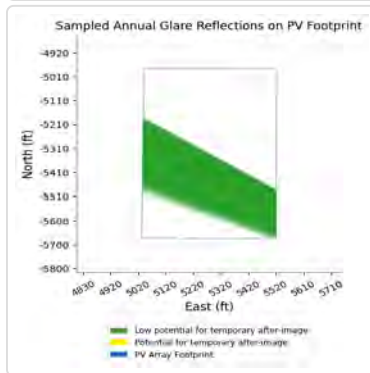
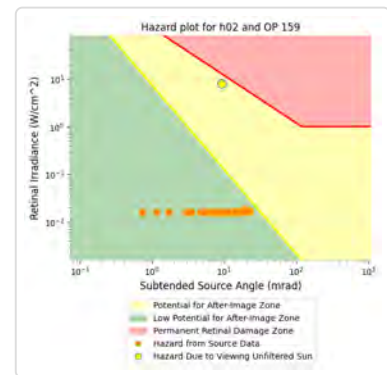
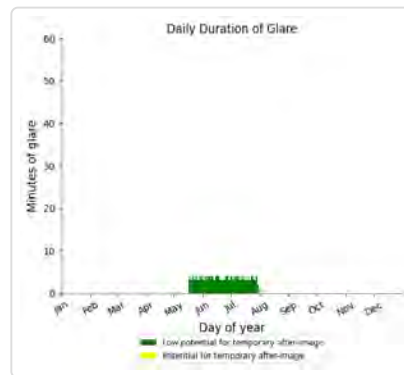
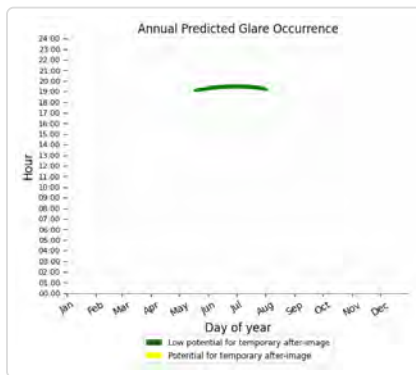
- 149 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## H02: OP 159

PV array is expected to produce the following glare for this receptor:

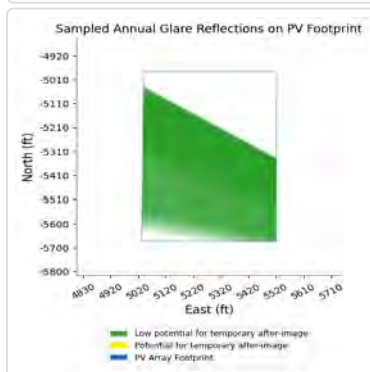
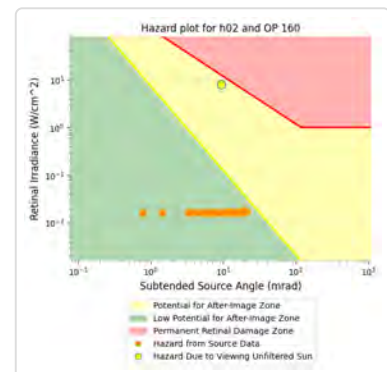
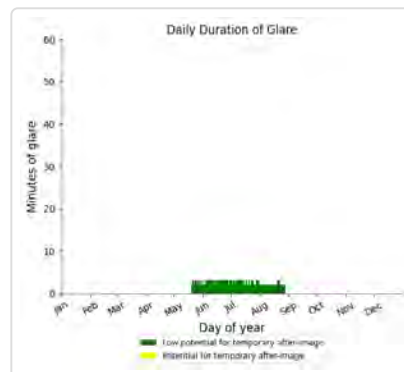
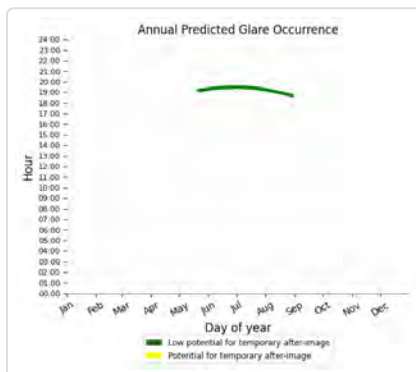
- 261 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## H02: OP 160

PV array is expected to produce the following glare for this receptor:

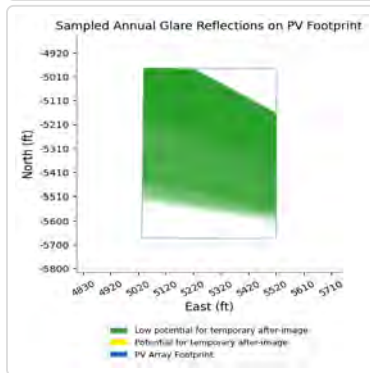
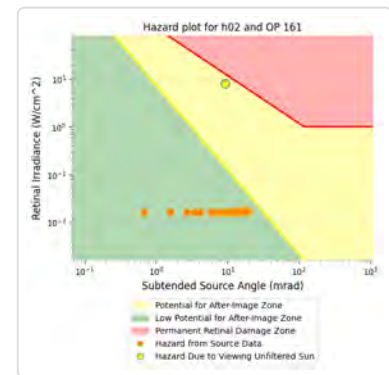
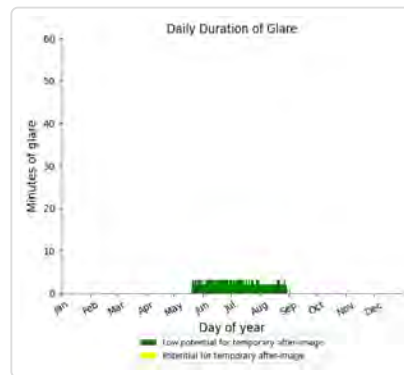
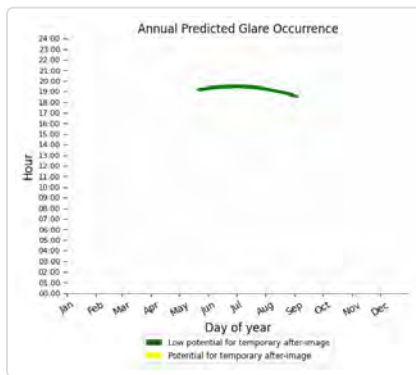
- 262 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## H02: OP 161

PV array is expected to produce the following glare for this receptor:

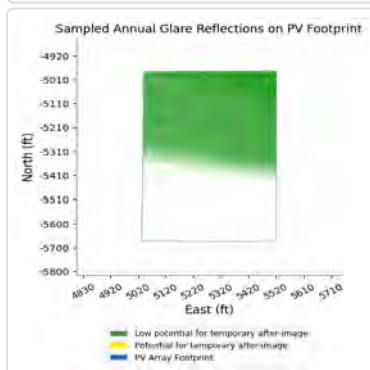
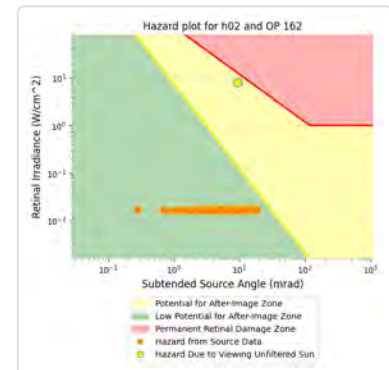
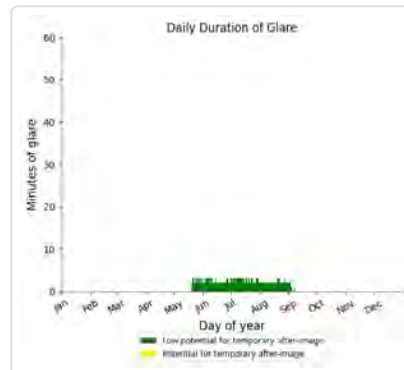
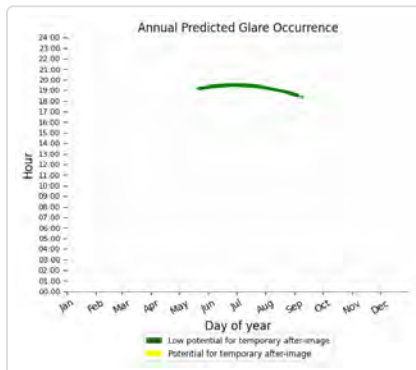
- 269 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## H02: OP 162

PV array is expected to produce the following glare for this receptor:

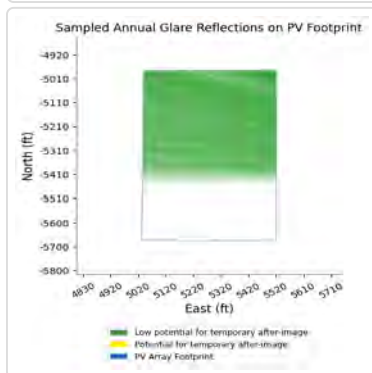
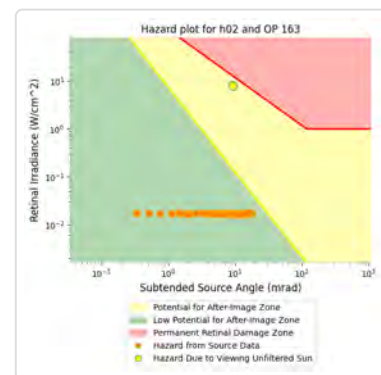
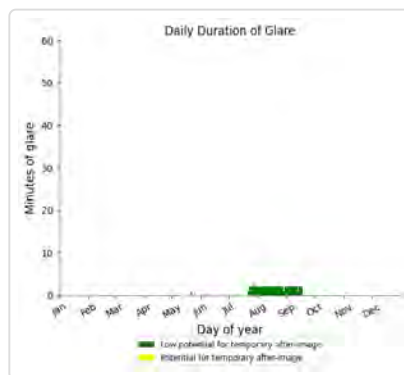
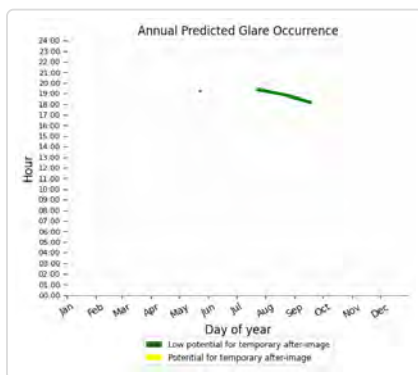
- 259 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## H02: OP 163

PV array is expected to produce the following glare for this receptor:

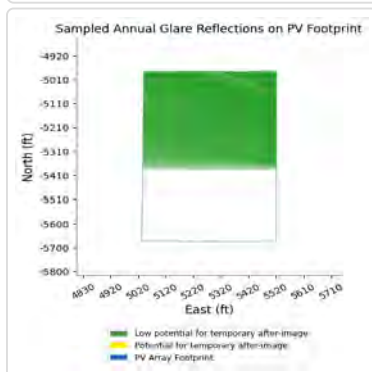
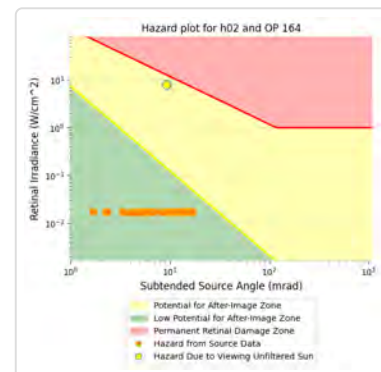
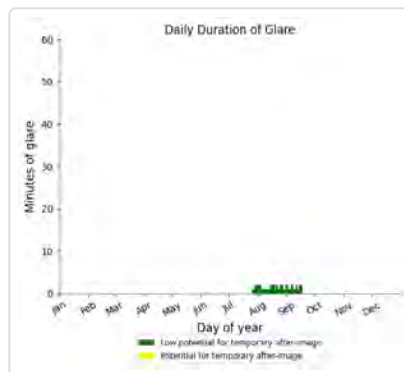
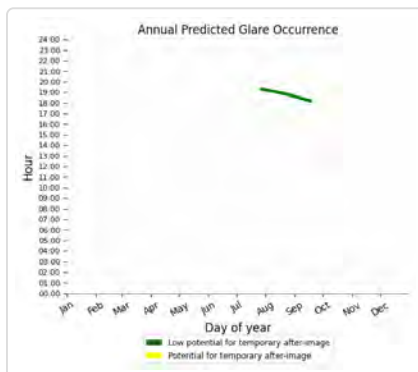
- 115 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## H02: OP 164

PV array is expected to produce the following glare for this receptor:

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



## H02: Collins Dr

No glare found

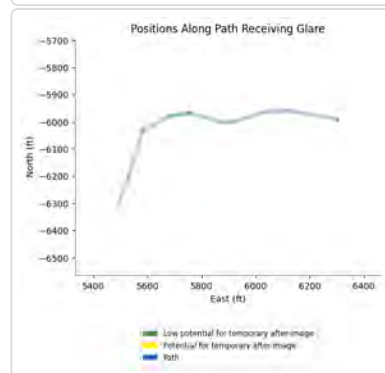
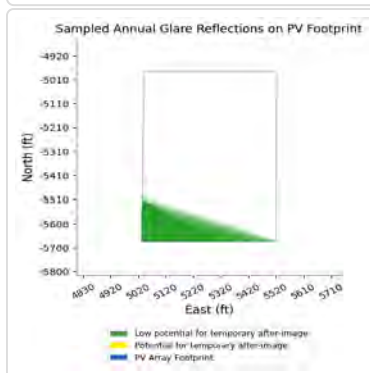
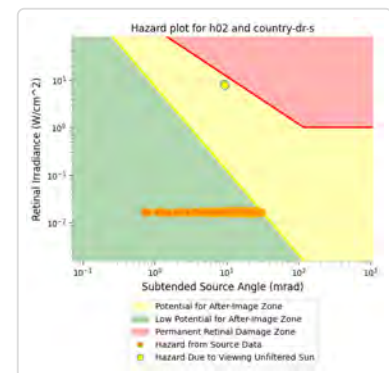
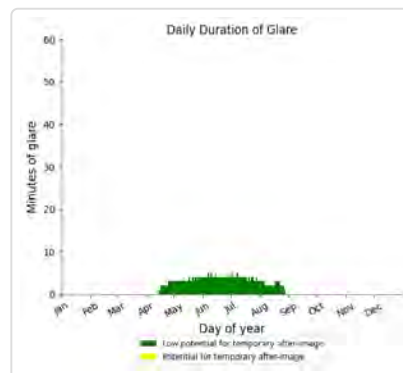
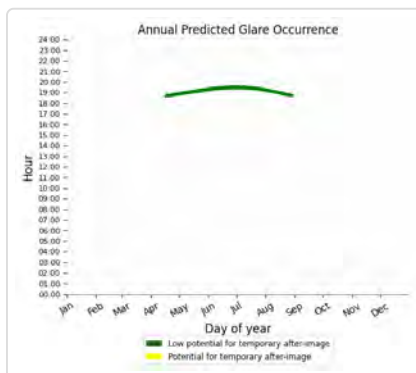
## H02: Country Dr Seg 1

No glare found

## H02: Country Dr Seg 2

PV array is expected to produce the following glare for this receptor:

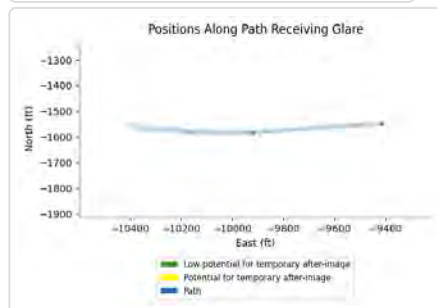
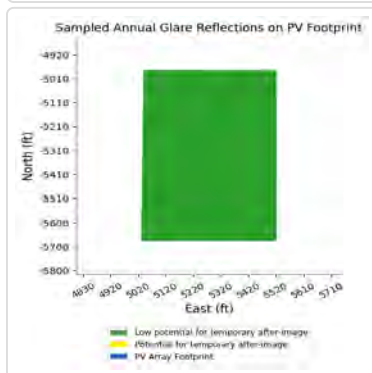
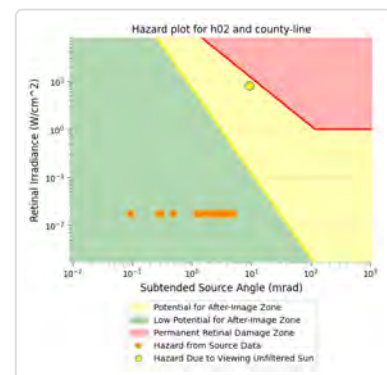
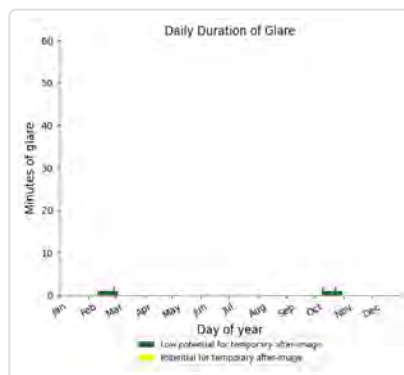
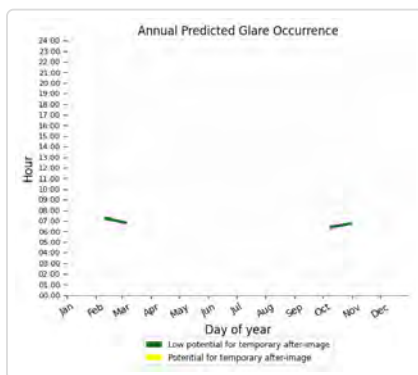
- 450 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## H02: County Line Rd

PV array is expected to produce the following glare for this receptor:

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



## H02: Dempseys Rd

No glare found

## H02: Harley Ln

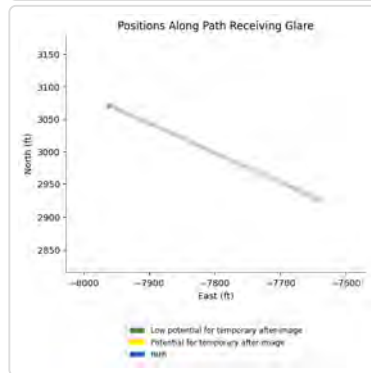
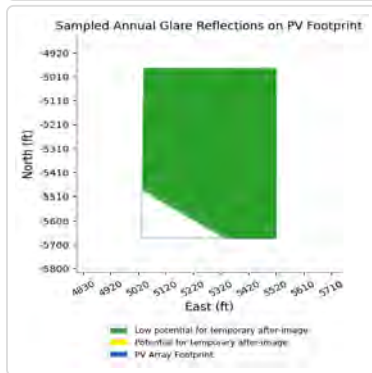
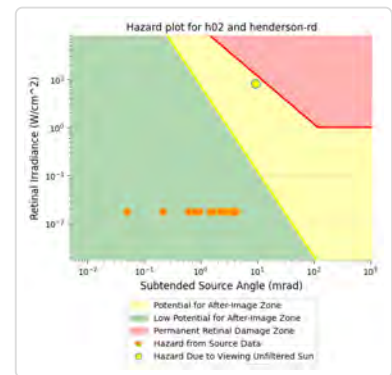
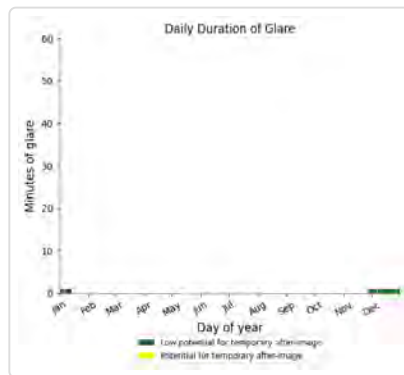
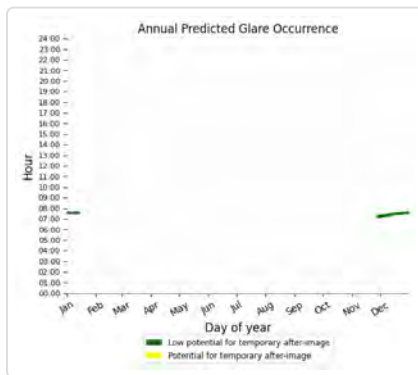
No glare found



## H02: Henderson Rd

PV array is expected to produce the following glare for this receptor:

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



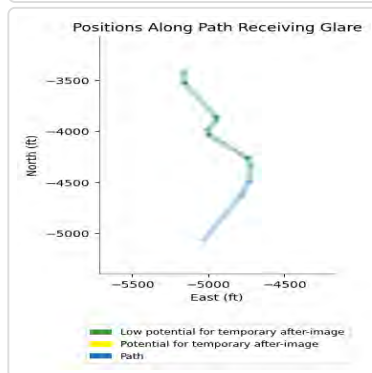
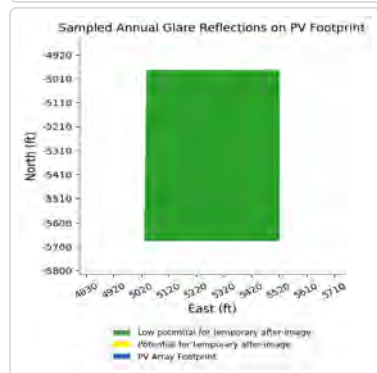
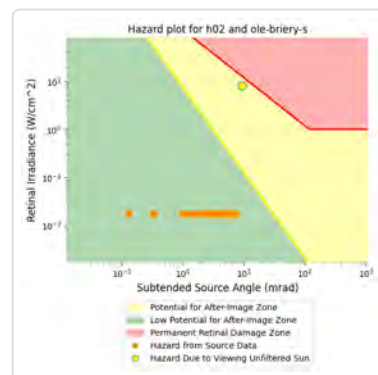
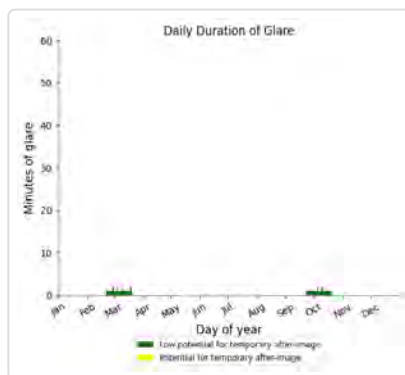
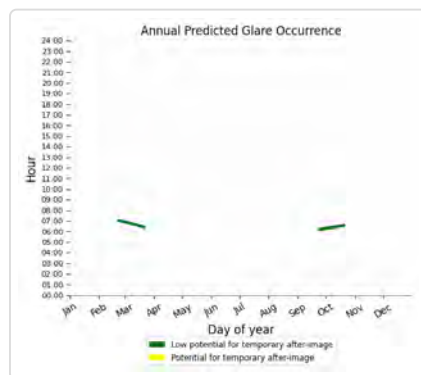
## H02: Hillside Dr

No glare found

## H02: Ole Briery Station Rd Seg 1

PV array is expected to produce the following glare for this receptor:

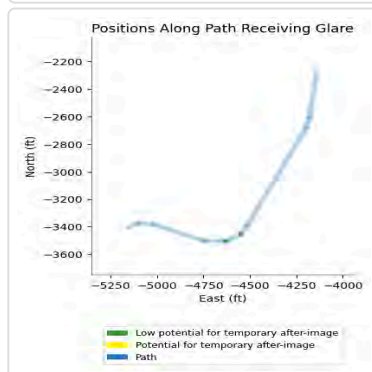
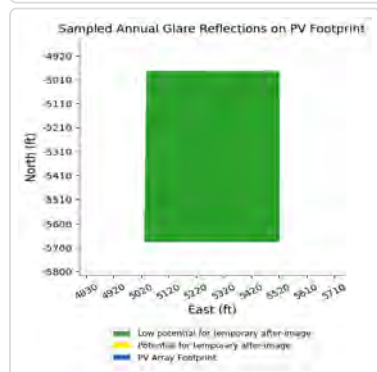
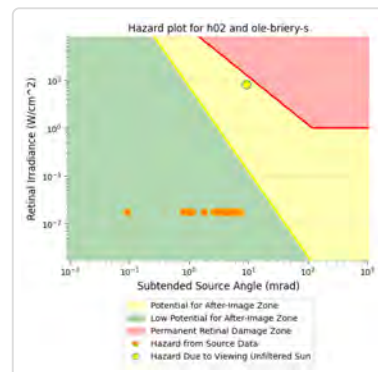
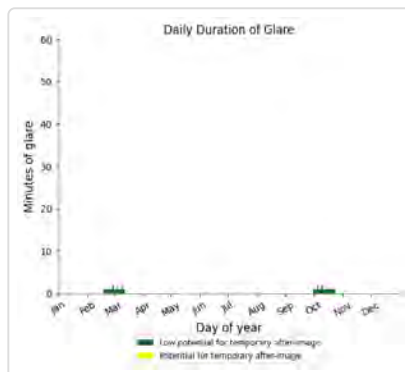
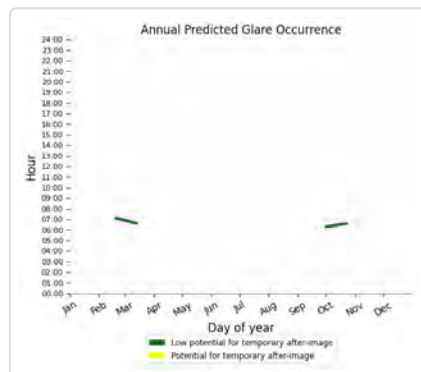
- 62 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## H02: Ole Briery Station Rd Seg 2

PV array is expected to produce the following glare for this receptor:

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

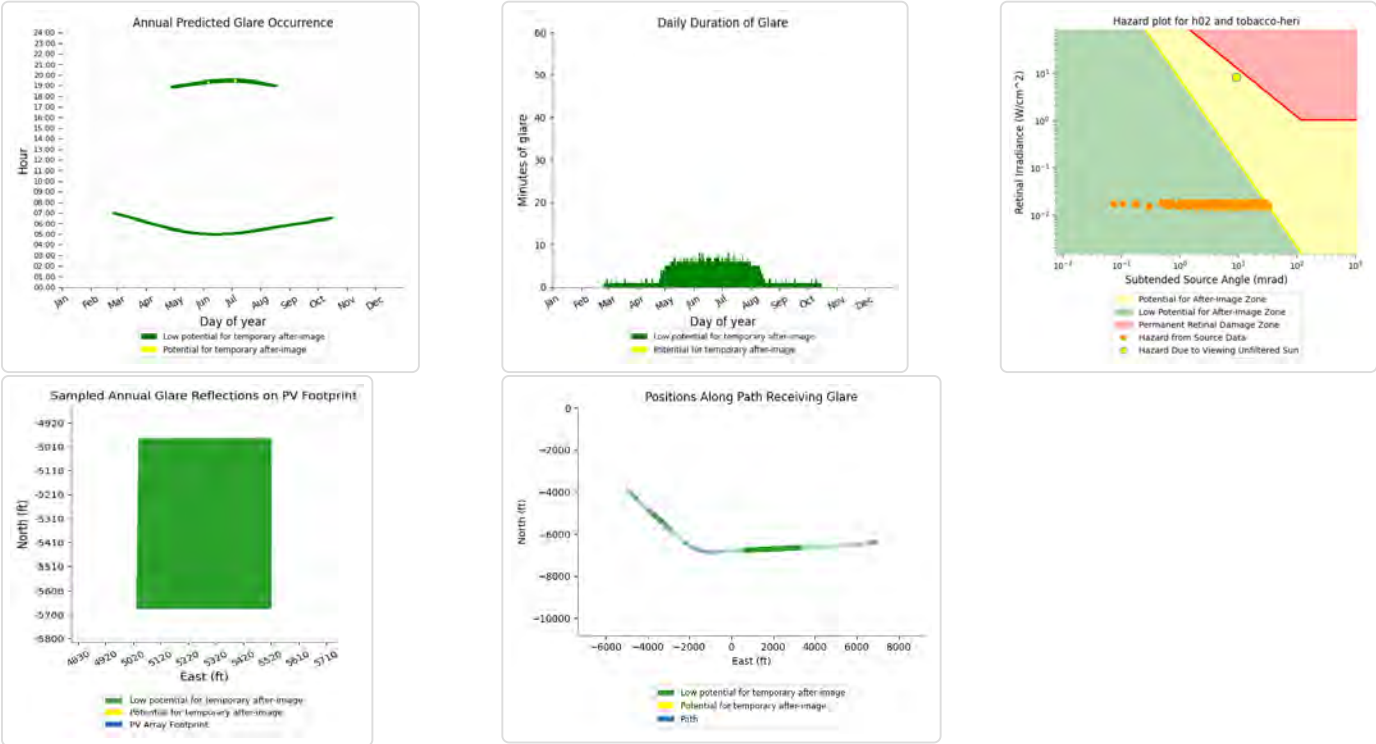


H02: Thistle Knob Ln

No glare found

H02: Tobacco Heritage Trail

- PV array is expected to produce the following glare for this receptor:
- 813 minutes of "green" glare with low potential to cause temporary after-image.
  - 2 minutes of "yellow" glare with potential to cause temporary after-image.



H02: US Hwy 15

No glare found

H02: US Hwy 360

No glare found

H03 low potential for temporary after-image

Component	Green glare (min)	Yellow glare (min)
OP: OP 134	0	0
OP: OP 135	0	0
OP: OP 136	0	0
OP: OP 137	0	0
OP: OP 138	0	0
OP: OP 139	0	0
OP: OP 140	0	0
OP: OP 141	0	0
OP: OP 142	0	0
OP: OP 143	0	0
OP: OP 144	0	0
OP: OP 145	0	0

OP: OP 146	0	0
OP: OP 147	0	0
OP: OP 148	0	0
OP: OP 149	0	0
OP: OP 150	0	0
OP: OP 151	0	0
OP: OP 152	0	0
OP: OP 153	0	0
OP: OP 154	0	0
OP: OP 155	0	0
OP: OP 156	0	0
OP: OP 157	0	0
OP: OP 158	0	0
OP: OP 159	0	0
OP: OP 160	0	0
OP: OP 161	0	0
OP: OP 162	34	0
OP: OP 163	74	0
OP: OP 164	90	0
Route: Collins Dr	0	0
Route: Country Dr Seg 1	0	0
Route: Country Dr Seg 2	0	0
Route: County Line Rd	374	0
Route: Dempseys Rd	0	0
Route: Harley Ln	0	0
Route: Henderson Rd	717	0
Route: Hillside Dr	0	0
Route: Ole Briery Station Rd Seg 1	400	0
Route: Ole Briery Station Rd Seg 2	338	0
Route: Thistle Knob Ln	0	0
Route: Tobacco Heritage Trail	500	0
Route: US Hwy 15	0	0
Route: US Hwy 360	0	0

### H03: OP 134

*No glare found*

### H03: OP 135

*No glare found*

### H03: OP 136

*No glare found*

### H03: OP 137

*No glare found*

### H03: OP 138

*No glare found*

**H03: OP 139**

*No glare found*

**H03: OP 140**

*No glare found*

**H03: OP 141**

*No glare found*

**H03: OP 142**

*No glare found*

**H03: OP 143**

*No glare found*

**H03: OP 144**

*No glare found*

**H03: OP 145**

*No glare found*

**H03: OP 146**

*No glare found*

**H03: OP 147**

*No glare found*

**H03: OP 148**

*No glare found*

**H03: OP 149**

*No glare found*

**H03: OP 150**

*No glare found*

**H03: OP 151**

*No glare found*

**H03: OP 152**

*No glare found*

**H03: OP 153**

*No glare found*

H03: OP 154

No glare found

H03: OP 155

No glare found

H03: OP 156

No glare found

H03: OP 157

No glare found

H03: OP 158

No glare found

H03: OP 159

No glare found

H03: OP 160

No glare found

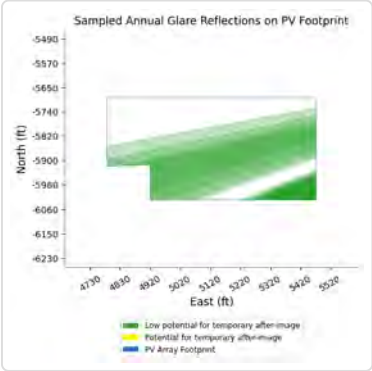
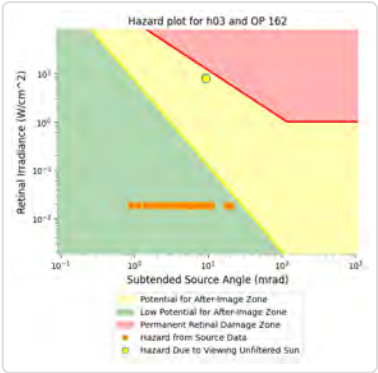
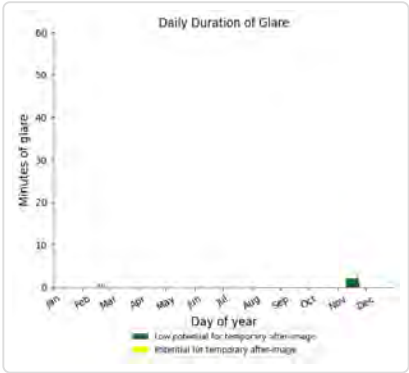
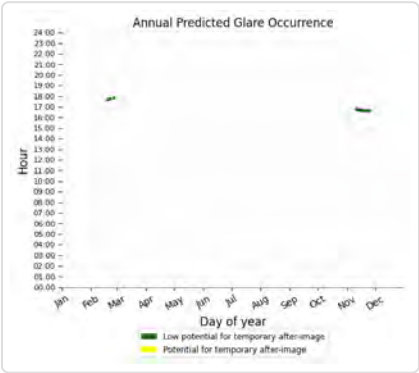
H03: OP 161

No glare found

H03: OP 162

PV array is expected to produce the following glare for this receptor:

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

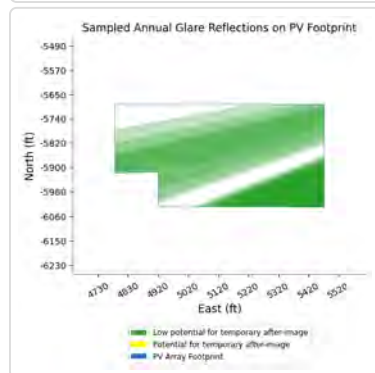
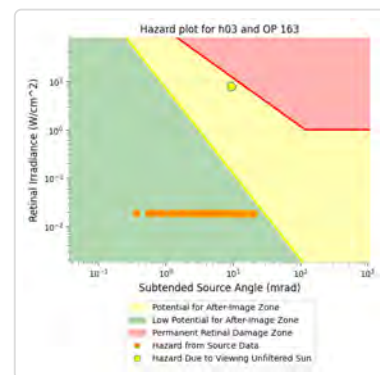
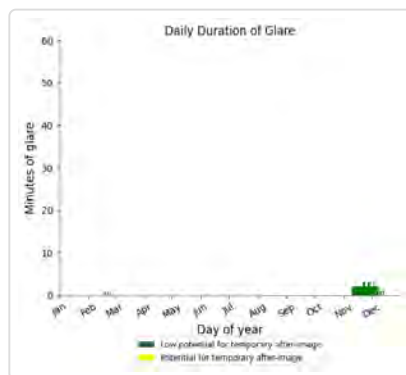
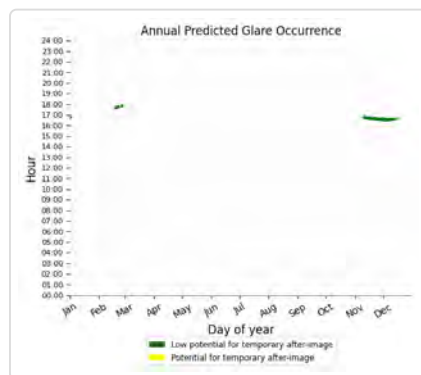




### H03: OP 163

PV array is expected to produce the following glare for this receptor:

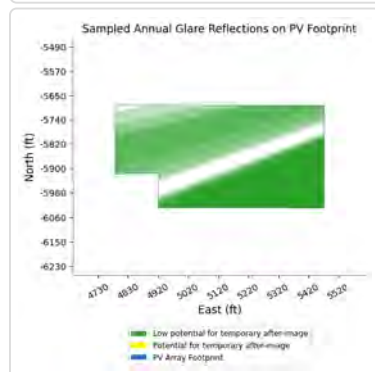
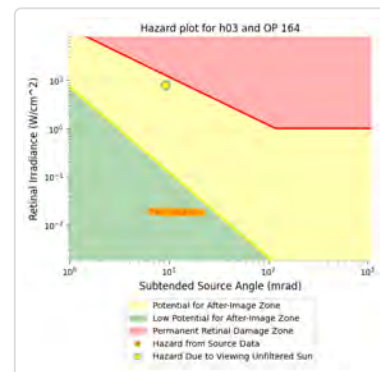
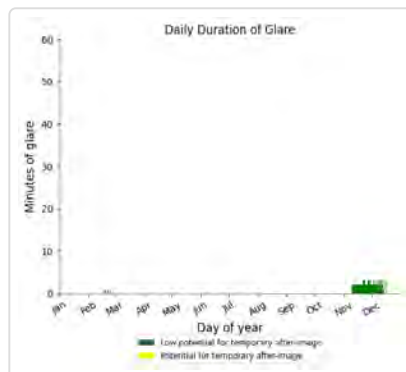
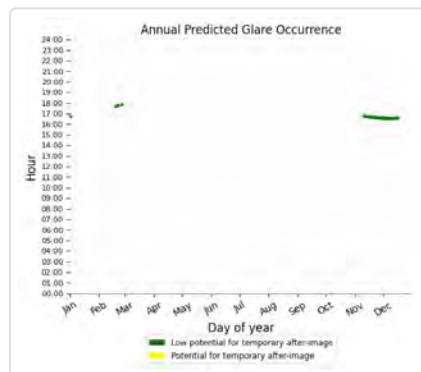
- 74 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



### H03: OP 164

PV array is expected to produce the following glare for this receptor:

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



H03: Collins Dr

No glare found

H03: Country Dr Seg 1

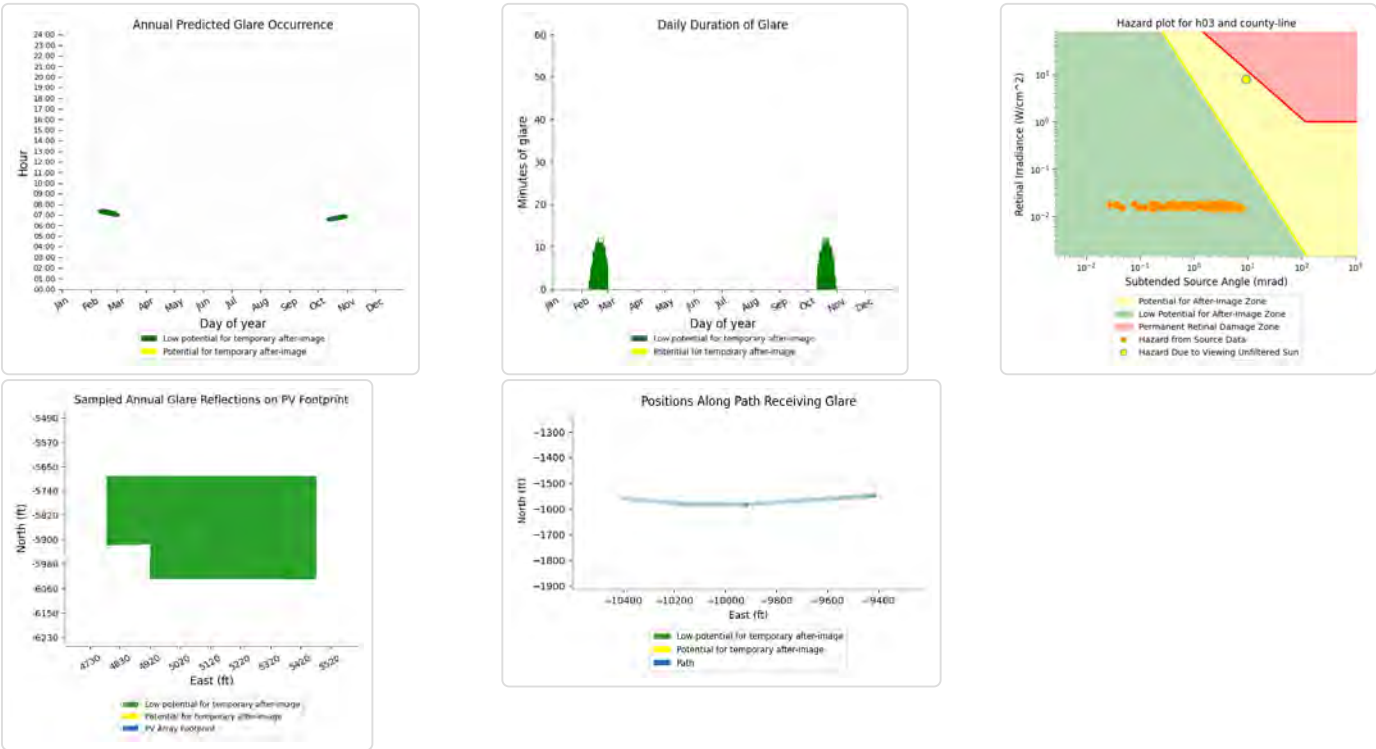
No glare found

H03: Country Dr Seg 2

No glare found

H03: County Line Rd

- PV array is expected to produce the following glare for this receptor:
- 374 minutes of "green" glare with low potential to cause temporary after-image.
  - 0 minutes of "yellow" glare with potential to cause temporary after-image.



H03: Dempseys Rd

No glare found

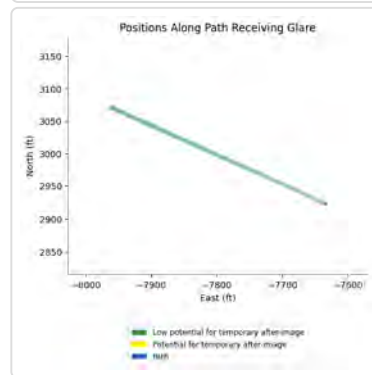
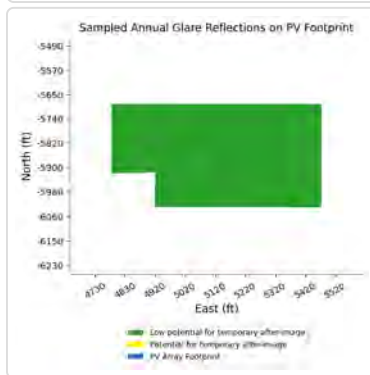
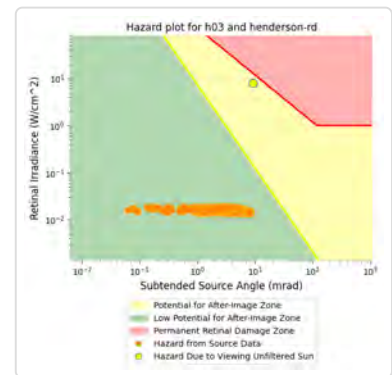
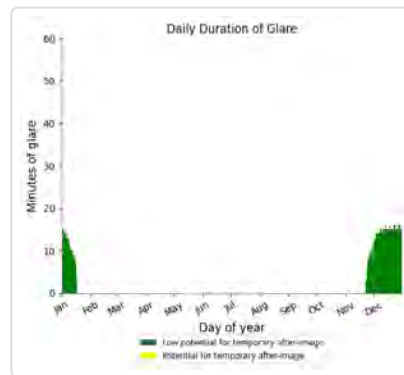
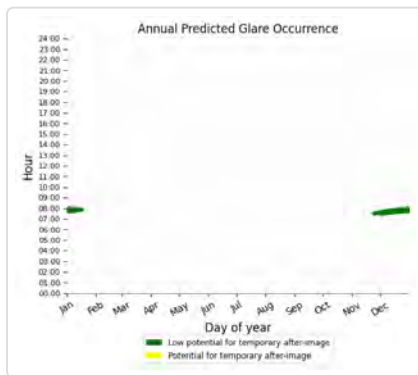
H03: Harley Ln

No glare found

### H03: Henderson Rd

PV array is expected to produce the following glare for this receptor:

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



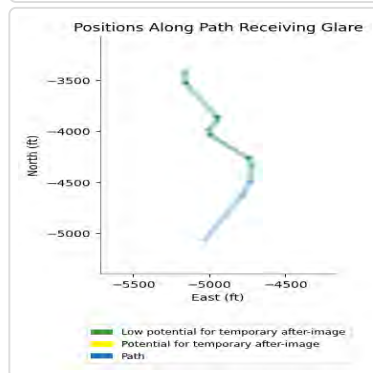
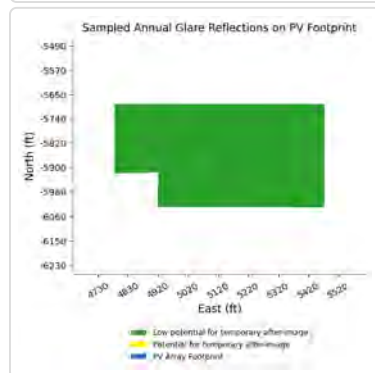
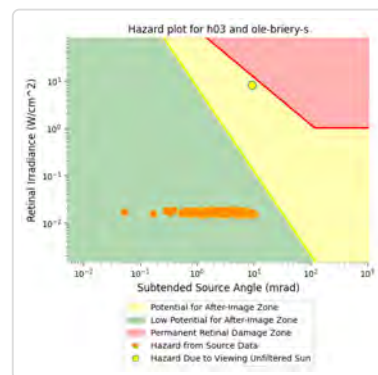
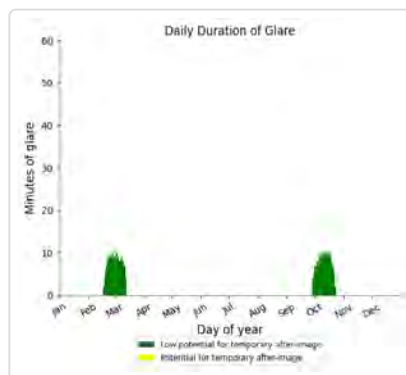
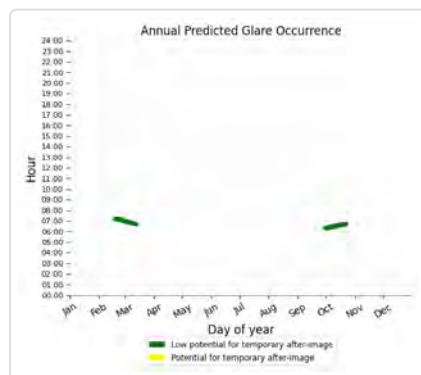
### H03: Hillside Dr

No glare found

### H03: Ole Briery Station Rd Seg 1

PV array is expected to produce the following glare for this receptor:

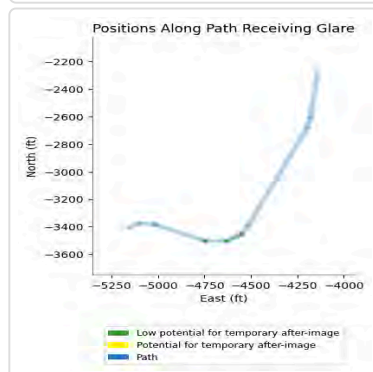
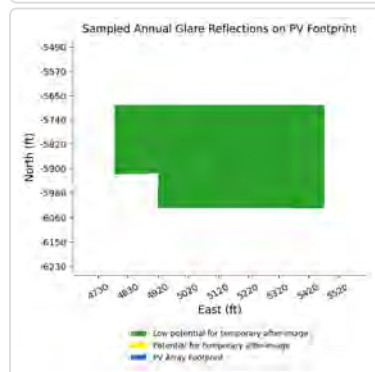
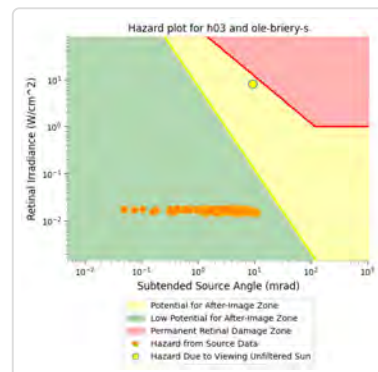
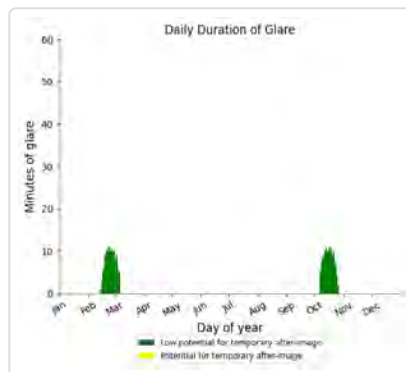
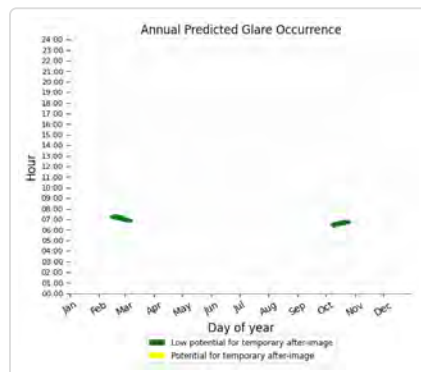
- 400 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



### H03: Ole Briery Station Rd Seg 2

PV array is expected to produce the following glare for this receptor:

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



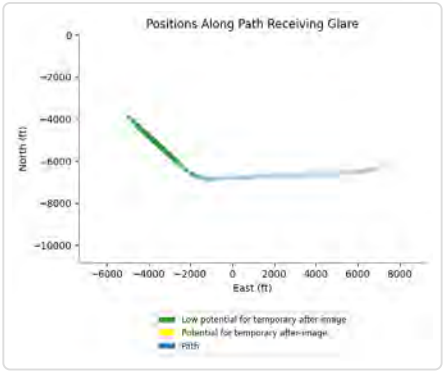
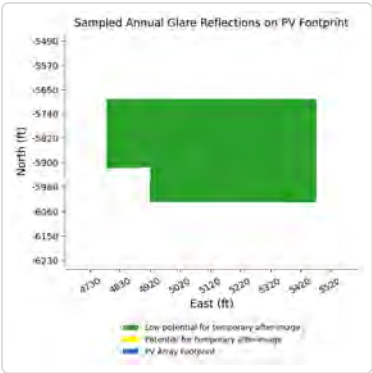
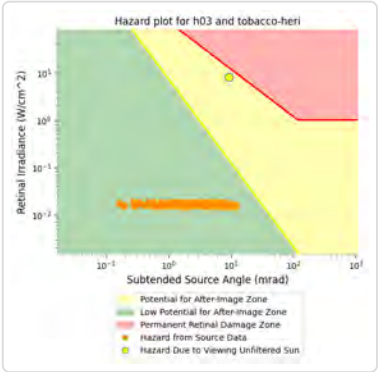
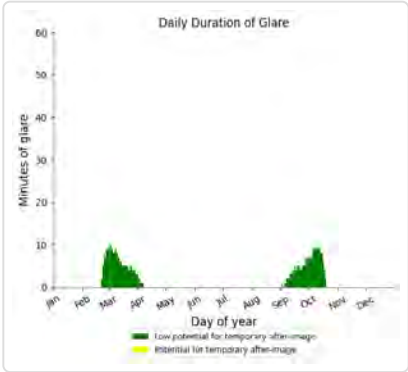
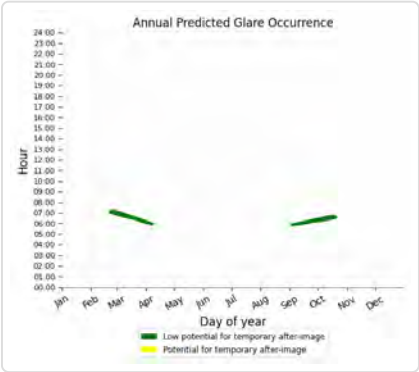
H03: Thistle Knob Ln

No glare found

H03: Tobacco Heritage Trail

PV array is expected to produce the following glare for this receptor:

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



H03: US Hwy 15

No glare found

H03: US Hwy 360

No glare found

H04 low potential for temporary after-image

Component	Green glare (min)	Yellow glare (min)
OP: OP 134	0	0
OP: OP 135	0	0
OP: OP 136	0	0
OP: OP 137	0	0
OP: OP 138	0	0
OP: OP 139	0	0
OP: OP 140	0	0
OP: OP 141	0	0
OP: OP 142	0	0
OP: OP 143	0	0
OP: OP 144	0	0
OP: OP 145	0	0

OP: OP 146	0	0
OP: OP 147	0	0
OP: OP 148	0	0
OP: OP 149	0	0
OP: OP 150	0	0
OP: OP 151	0	0
OP: OP 152	0	0
OP: OP 153	0	0
OP: OP 154	0	0
OP: OP 155	0	0
OP: OP 156	0	0
OP: OP 157	0	0
OP: OP 158	0	0
OP: OP 159	0	0
OP: OP 160	0	0
OP: OP 161	0	0
OP: OP 162	0	0
OP: OP 163	0	0
OP: OP 164	0	0
Route: Collins Dr	0	0
Route: Country Dr Seg 1	0	0
Route: Country Dr Seg 2	0	0
Route: County Line Rd	284	0
Route: Dempseys Rd	0	0
Route: Harley Ln	0	0
Route: Henderson Rd	832	0
Route: Hillside Dr	0	0
Route: Ole Briery Station Rd Seg 1	224	0
Route: Ole Briery Station Rd Seg 2	216	0
Route: Thistle Knob Ln	0	0
Route: Tobacco Heritage Trail	282	0
Route: US Hwy 15	0	0
Route: US Hwy 360	0	0

#### H04: OP 134

*No glare found*

#### H04: OP 135

*No glare found*

#### H04: OP 136

*No glare found*

#### H04: OP 137

*No glare found*

#### H04: OP 138

*No glare found*



**H04: OP 139**

*No glare found*

**H04: OP 140**

*No glare found*

**H04: OP 141**

*No glare found*

**H04: OP 142**

*No glare found*

**H04: OP 143**

*No glare found*

**H04: OP 144**

*No glare found*

**H04: OP 145**

*No glare found*

**H04: OP 146**

*No glare found*

**H04: OP 147**

*No glare found*

**H04: OP 148**

*No glare found*

**H04: OP 149**

*No glare found*

**H04: OP 150**

*No glare found*

**H04: OP 151**

*No glare found*

**H04: OP 152**

*No glare found*

**H04: OP 153**

*No glare found*

**H04: OP 154**

*No glare found*

**H04: OP 155**

*No glare found*

**H04: OP 156**

*No glare found*

**H04: OP 157**

*No glare found*

**H04: OP 158**

*No glare found*

**H04: OP 159**

*No glare found*

**H04: OP 160**

*No glare found*

**H04: OP 161**

*No glare found*

**H04: OP 162**

*No glare found*

**H04: OP 163**

*No glare found*

**H04: OP 164**

*No glare found*

**H04: Collins Dr**

*No glare found*

**H04: Country Dr Seg 1**

*No glare found*

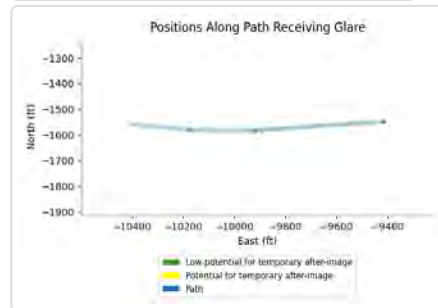
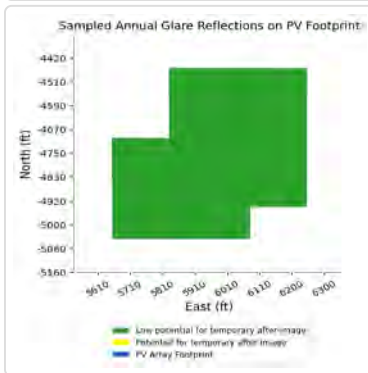
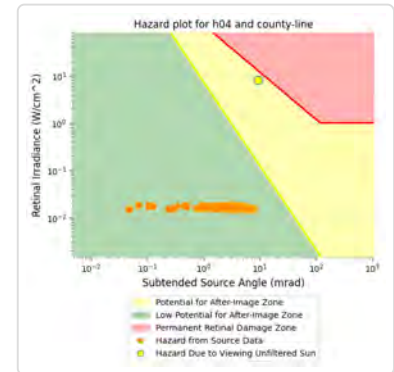
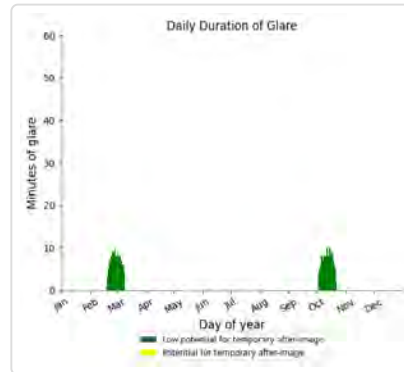
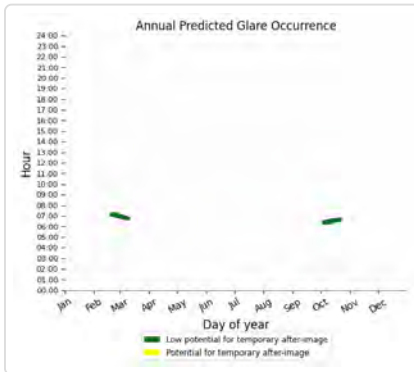
**H04: Country Dr Seg 2**

*No glare found*

## H04: County Line Rd

PV array is expected to produce the following glare for this receptor:

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



## H04: Dempseys Rd

No glare found

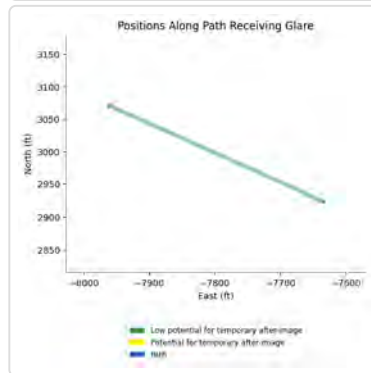
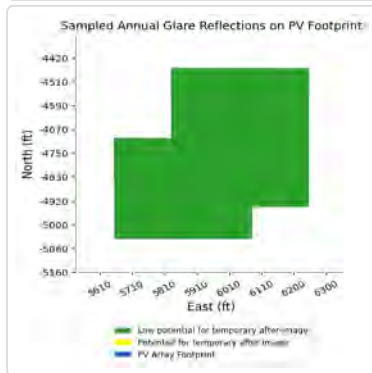
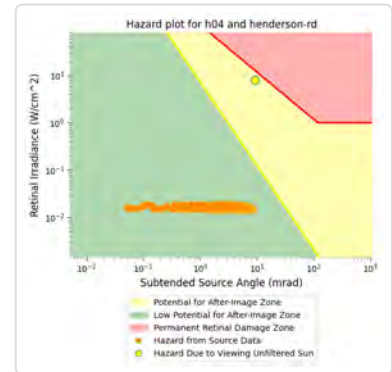
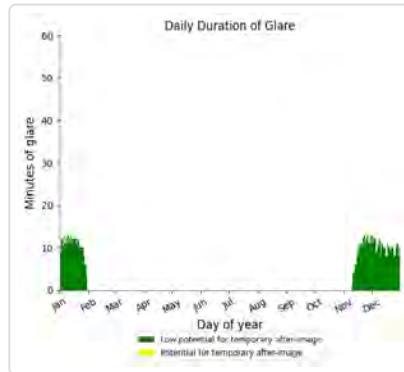
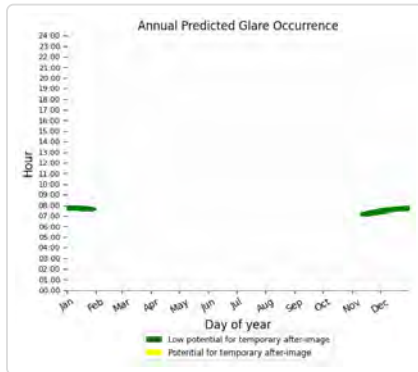
## H04: Harley Ln

No glare found

## H04: Henderson Rd

PV array is expected to produce the following glare for this receptor:

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



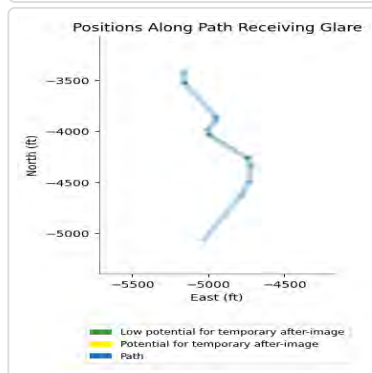
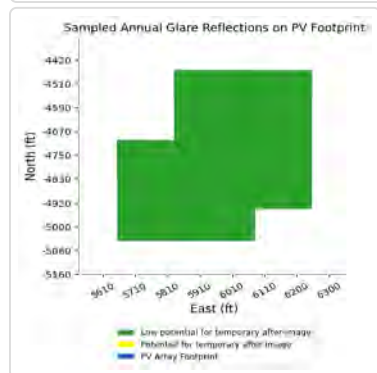
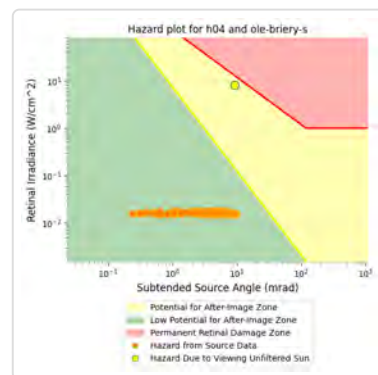
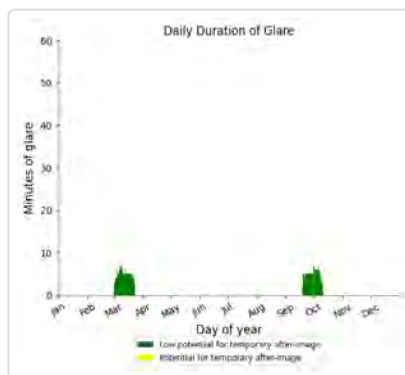
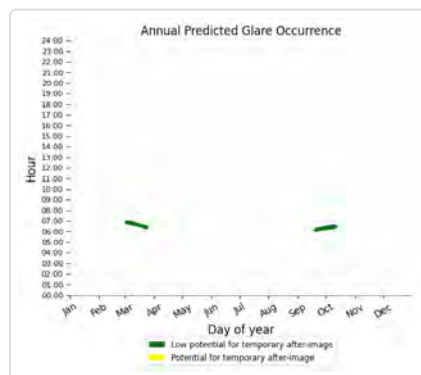
## H04: Hillside Dr

No glare found

## H04: Ole Briery Station Rd Seg 1

PV array is expected to produce the following glare for this receptor:

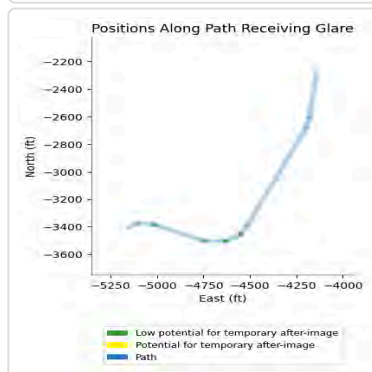
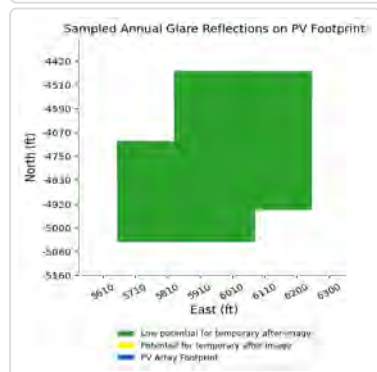
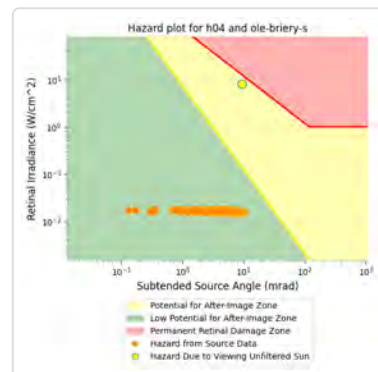
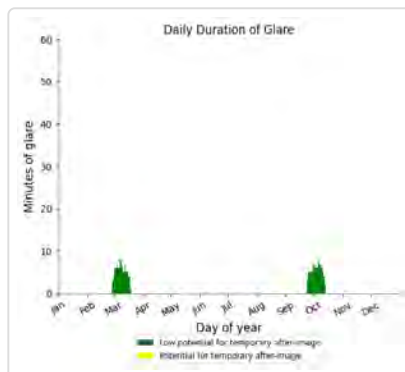
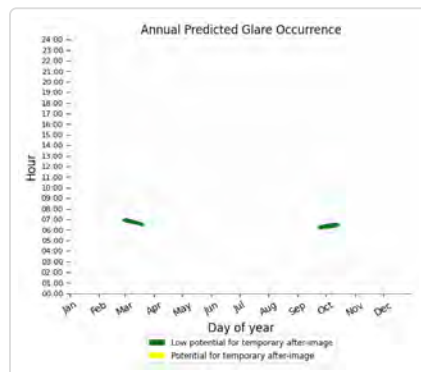
- 224 minutes of "green" glare with low potential to cause temporary after-image.
- 0 minutes of "yellow" glare with potential to cause temporary after-image.



## H04: Ole Briery Station Rd Seg 2

PV array is expected to produce the following glare for this receptor:

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



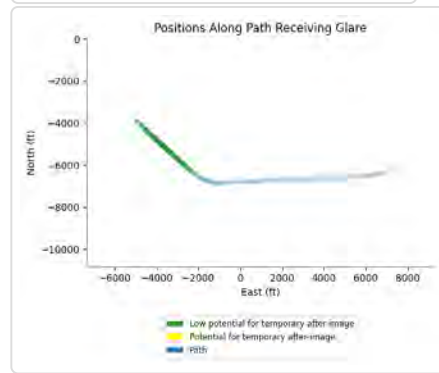
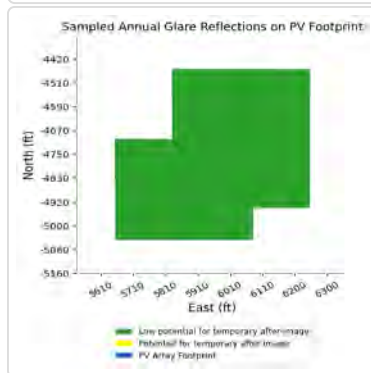
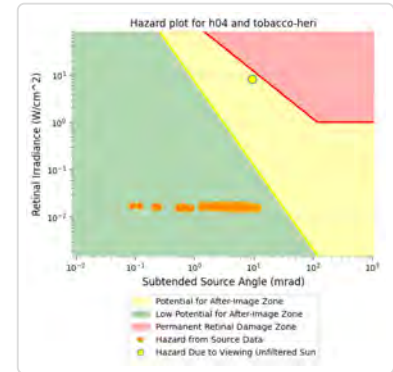
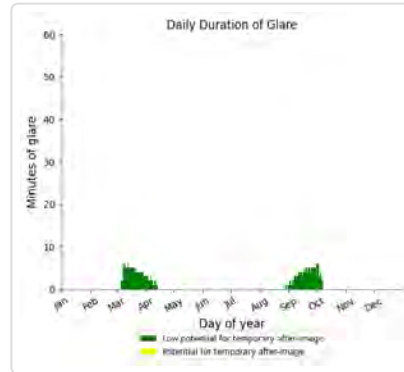
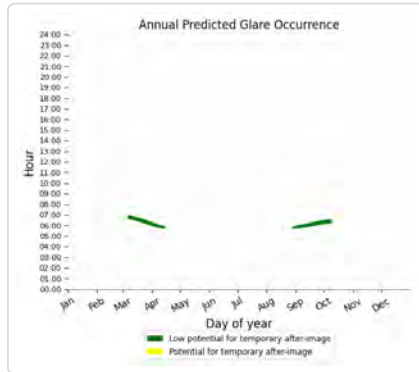
## H04: Thistle Knob Ln

No glare found

## H04: Tobacco Heritage Trail

PV array is expected to produce the following glare for this receptor:

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



## H04: US Hwy 15

No glare found

## H04: US Hwy 360

No glare found

## Summary of Vertical Surface Glare Analysis

### Assumptions

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



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

**Appendix C**  
**Impact of Glare from Solar Modules**

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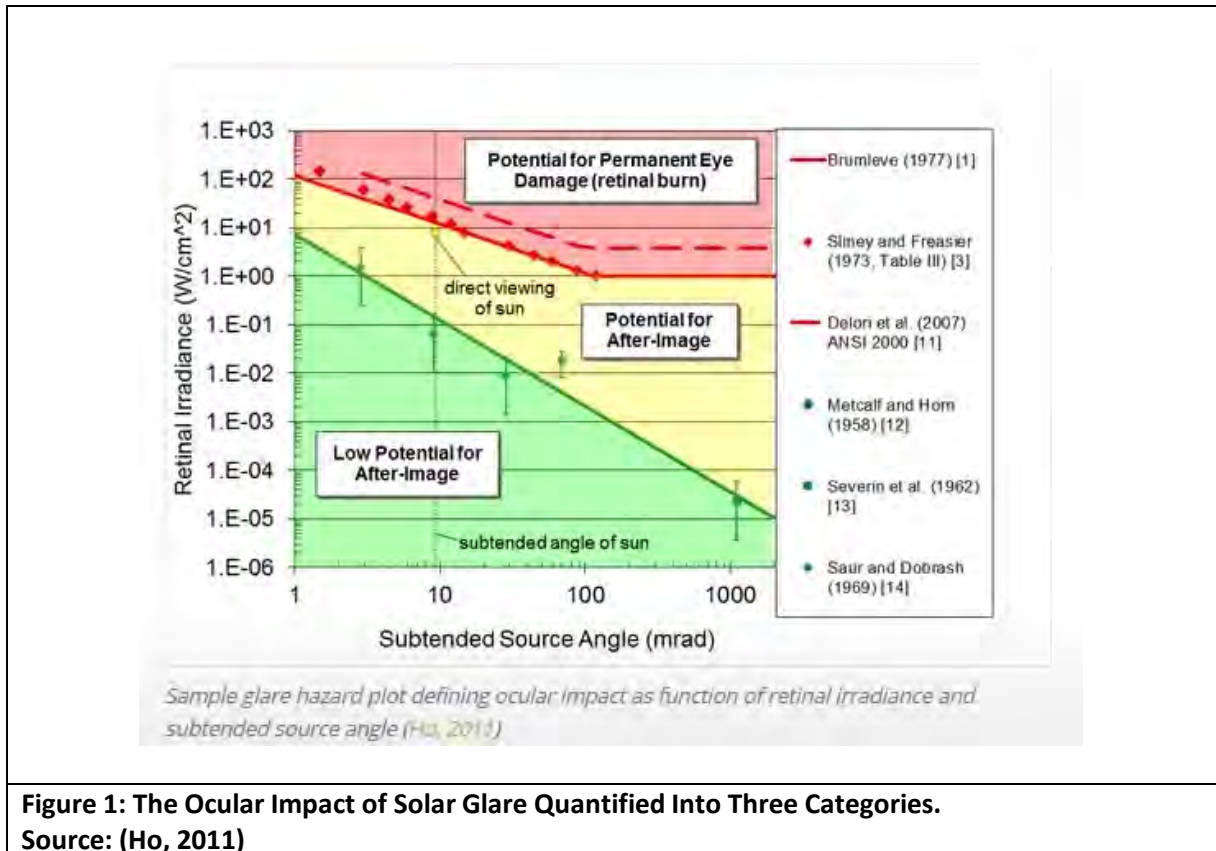
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# 1.0 Impact of Glare from Solar Modules

## 1.1 The Ocular Impact of Solar Glare

The ocular impact of glare is visualized with the Glare Hazard Plot (**Figure 1**). This chart displays the ocular impact as a function of glare subtended source angle and retinal irradiance. Each minute of glare is displayed on the chart as a small circle in its respective hazard zone. For convenience, a reference point is provided which illustrates the hazard from direct viewing of the sun. Each plot includes predicted glare for one PV array and one receptor.



**Figure 1: The Ocular Impact of Solar Glare Quantified Into Three Categories.**  
Source: (Ho, 2011)

## 1.2 General Discussion of Reflection

With increasing numbers of solar energy facilities being proposed and installed throughout the United States, the potential impact of sunlight reflection (the return of light from a solar module surface) producing glint (momentary flash of reflected sunlight) and glare (long duration of reflected sunlight) from PV modules is receiving increased attention as a potential nuisance to neighboring residential properties or as potential hazards or distractions for vehicle drivers.

A common misconception about PV modules is that they inherently cause or create problematic amounts of glare which poses a nuisance to neighbors. In certain situations, the glass surfaces of PV modules can produce glare, however, light absorption rather than reflection is central to the function of a PV module. PV modules absorb solar radiation that is converted to electricity. PV modules are constructed from high-transmission, low-iron glass and are covered with an anti-

reflective (AR) coating. Modern PV modules reflect as little as two percent of incoming sunlight, about the same as water and less than soil or even wood shingles (Ho C. K., 2019).

### 1.3 Reflection Type from Solar Modules

Smooth surfaces such as glass and still water exhibit specular reflection. Specular reflection is propagated when light hits a surface at an angle and is reflected in another, like a mirror. In contrast, diffuse reflection occurs when light reflects off rough surfaces and scatters. Diffuse reflection is what happens when light hits virtually everything in our field of vision. The difference between the two types of reflections is illustrated in **Figure 2**. Since PV modules are flat and have a relatively smooth surface, most of the light reflected is specular, meaning that incident light from a specific direction is reradiated in a different direction.

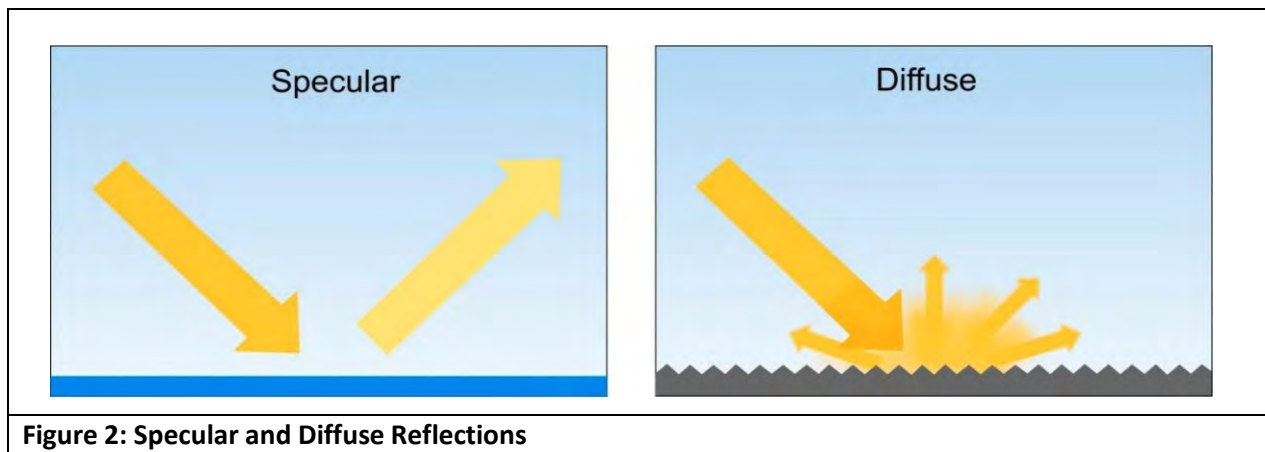
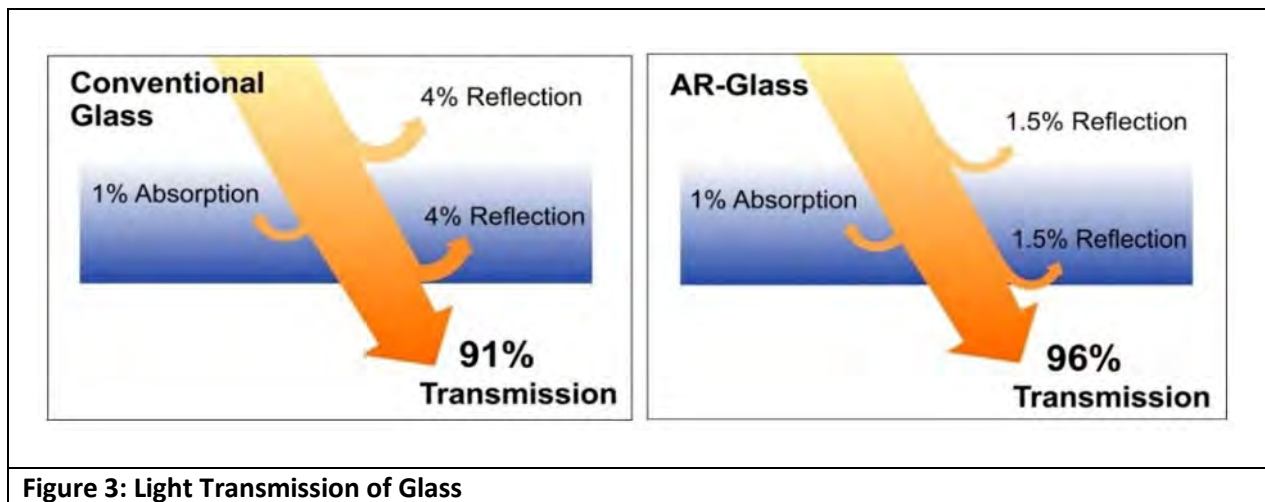


Figure 2: Specular and Diffuse Reflections

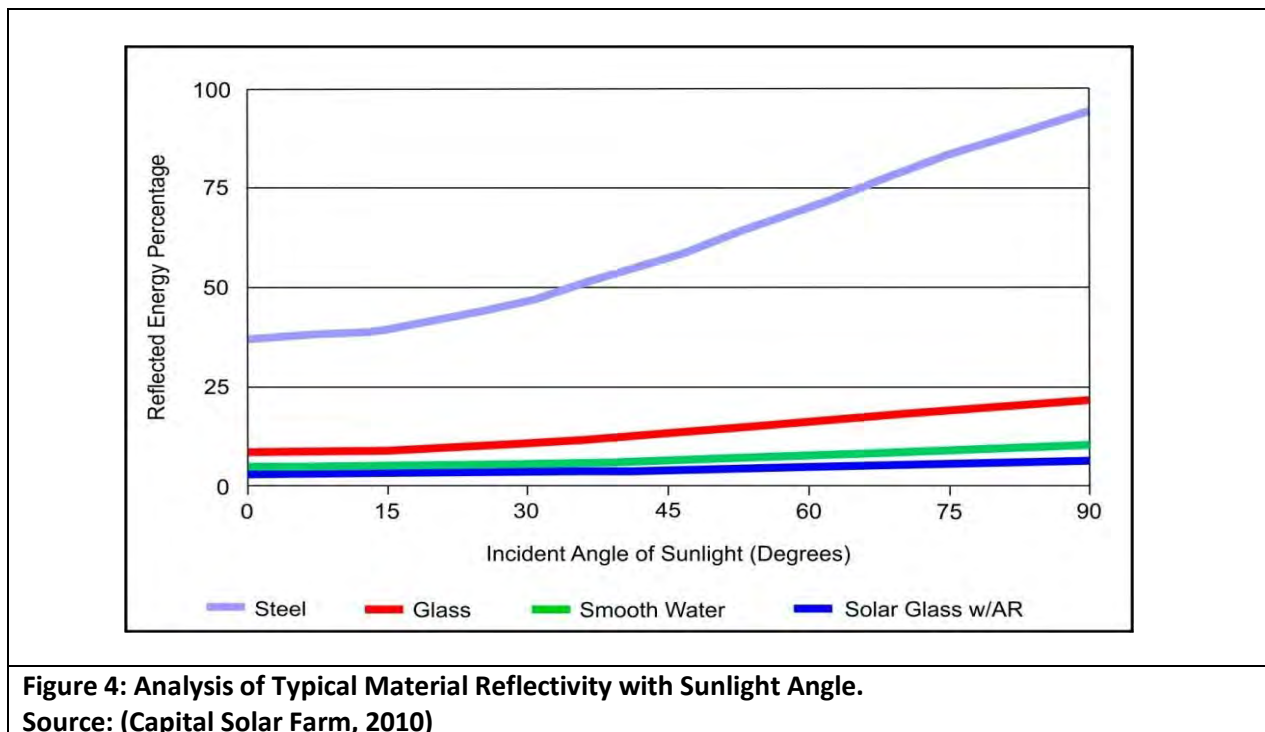
When sunlight is reflected on a smooth surface, it can result in glare for those who are on the receiving angle. In both cases, the light reflected is diminished by having first hit the substrate that reflected it—unless that surface is a perfect mirror. When the sun is the original source of the light reflected off a reflective surface, the time and position at which glare might occur depends on the original position of the sun in the sky, the angle of the reflective surface, and its relation to the location of the viewer.

### 1.4 Relative Reflectance of Modules Compared to Other Surfaces

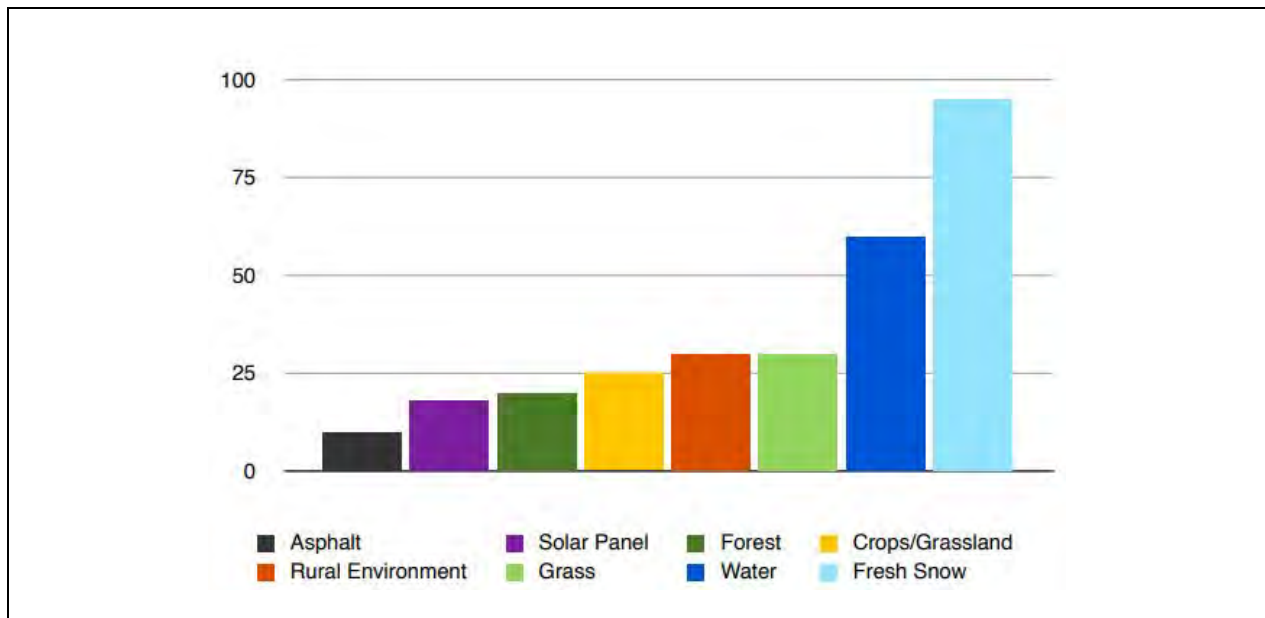
PV modules are designed to absorb light. They reflect only a small amount of the sunlight that falls on them. Most notably, PV modules reflect significantly less light than flat water like lakes and ponds, or standard window glass. To increase PV module efficiency and power output, most PV modules are treated with an AR coating. Standard low-iron glass reflects approximately eight percent of light, whereas high-transmission, low-iron AR glass modules reflect a total of approximately two to three percent of the light (**Figure 3**).



Studies measuring the intensity of reflections from PV modules, with respect to other naturally occurring and manmade surfaces, have been conducted. The results of the studies show that reflections of the sun from PV modules are possible. However, the reflections produced will be of an intensity like or less than those produced from still water and significantly less than reflections from glass and steel. The reflectivity of solar modules relative to other natural or manmade surfaces are provided in **Figures 4 and 5**.







**Figure 5: Albedo for Various Common Surfaces.**

**Source: (*Capital Solar Farm, 2010*)**

One measure of reflectivity is albedo, the ratio of solar radiation across the visible and invisible light spectrum reflected by a surface. Albedo values vary between zero, a surface that reflects no light, and one, a mirror-like surface that reflects all incoming light. PV modules with a single AR coating have a reflectivity of between 0.03 and 0.18. Common sand has an albedo between 0.15 and 0.45 and agricultural vegetation has an albedo between 0.18 and 0.25. This diffuse reflectivity measure is consistent with the intent of PV modules to absorb most of solar energy it is exposed to for conversion into electricity.

### 1.5 Overview of Sun Movements and Relative Reflections

The basic concept to understand in any discussion of glare elevation is that the angle of incidence is always equal to the angle of reflectance. The empirical inquiry is then whether the potential observer is within the elevation of reflection given the distance of the observer from the PV module. At any angle of reflectance, as a potential observer is farther and farther away from the PV module, the elevation of the reflected sunlight (i.e., any glare) is more likely to be above the observer and, thus, not seen. In contrast, at a high angle of reflectance, the elevation of reflected sunlight will likely be above the observer—even at short distances.

Given the basic principle of light reflectivity, evaluating the angle of reflectance from a PV module must begin with a determination of the solar elevation (in degrees) relative to the ground. The “solar altitude” or elevation is the angle of the sun in degrees above or below the horizon. As such, the most important consideration when calculating light reflectivity is not the horizon, but the angle at which the PV module is mounted relative to the horizon.

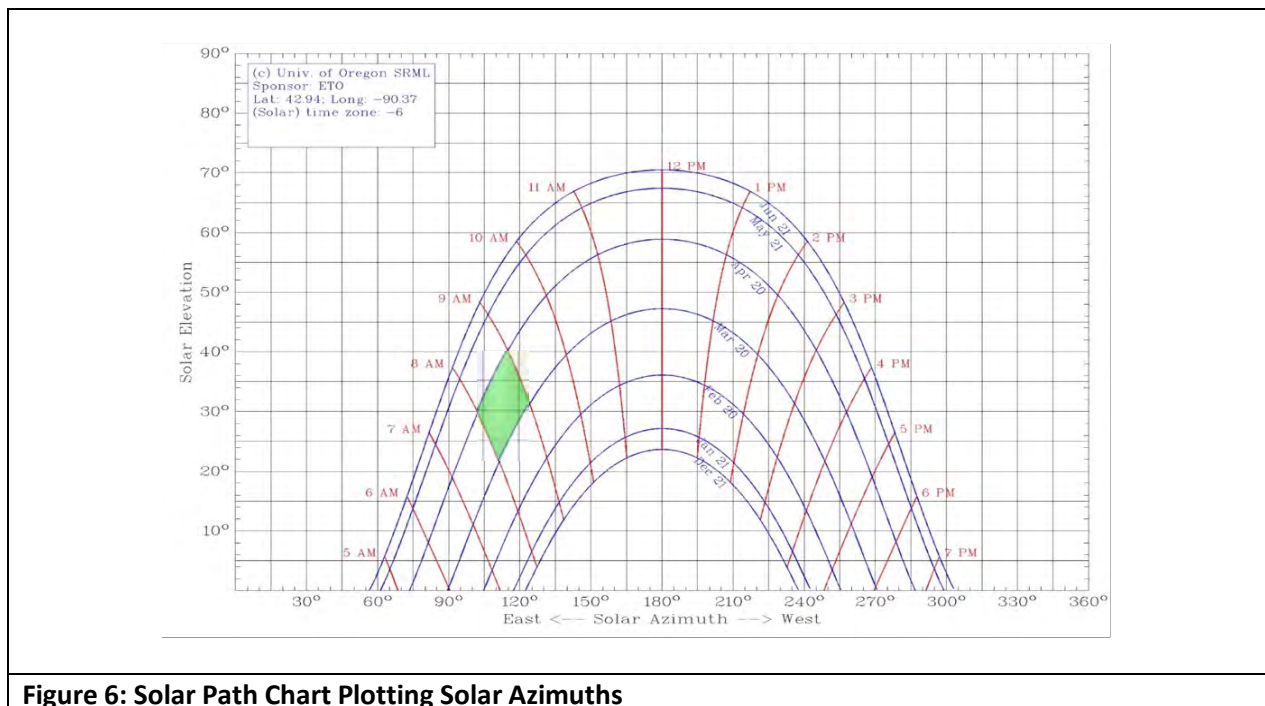
As the angle of the sun in relation to the PV module increases, the angle of reflection will decrease, and the elevation of reflection will increase. The elevation of the sun differs based multiple factors: the time of day, the season of the year, and the latitude at which the PV module is located.

## 1.6 Determining the Vector Location of Incident Sunlight

The sun's apparent path across the sky changes slightly every day in known and predictable ways. The location of the subject area on the earth and date are the most important factors affecting this. At any given instant, the sun's position in the sky can be described by a directional vector characterized by an azimuth and an elevation. An azimuth is defined as the angle of the sun's position from due north in a clockwise direction. For example, if the sun rose exactly in the east and set exactly in the west, the azimuth of the sunrise would be  $90^\circ$  from north, and the sunset would occur at  $270^\circ$  from the north. The sun's elevation is defined as the degrees of the sun's orb above the horizon at any instant in time. Other azimuth conventions consider azimuth from north to south along the east half as ranging from  $0^\circ$  to  $180^\circ$ , and along the west half as ranging from  $0^\circ$  to  $-180^\circ$ .

Sun path chart diagrams plot the azimuth and elevation of the sun at any instant in time for any location on the earth. A sun path chart for the latitude and longitude of the proposed Project is shown in **Figure 6**. The sun's path for a given date is shown in blue and the time during which the sun is at a specific location in the sky is shown in red. For the location of a given receptor such as a residence, the solar elevation and azimuth where reflections would be received at the receptor can be calculated and plotted on the solar chart. For example, for the hypothetical receptor shown in green, reflected light would only be received when the sun is between approximately  $75^\circ$  and  $90^\circ$  azimuth (from north) and at an elevation between  $22^\circ$  and  $40^\circ$ . From the chart, this would occur between 8 AM and 9 AM between the dates of March 20 to April 20.

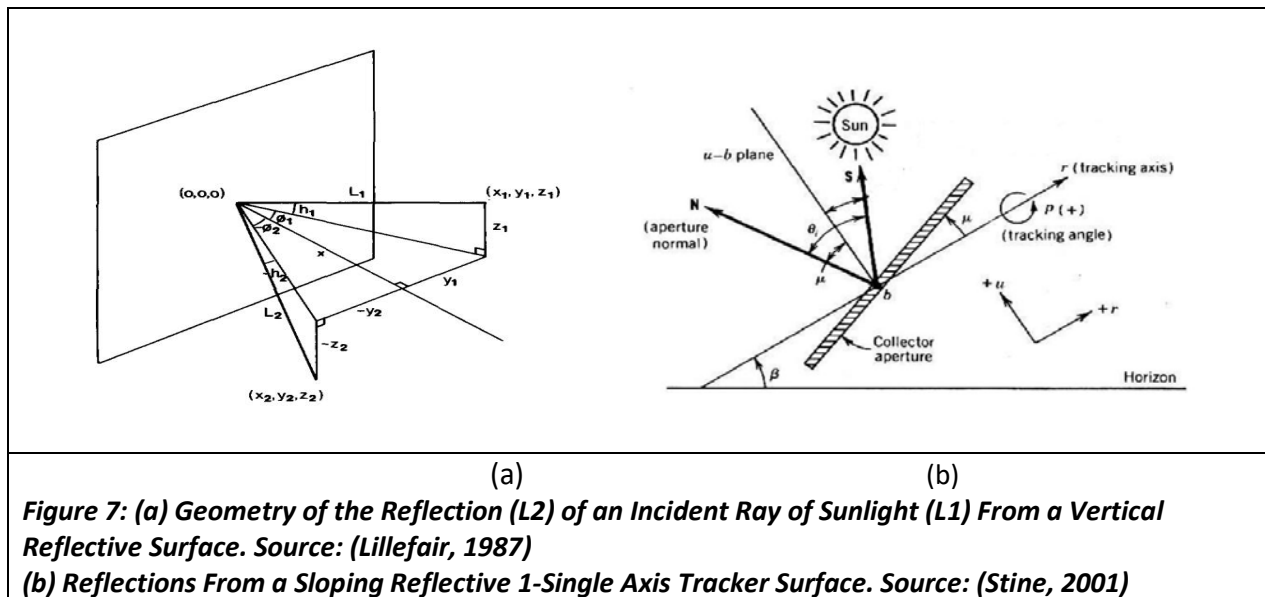
Due to minimum elevation changes between OPs and the angle of the sun in relation to the PV arrays, glare will occur at lower elevations during the spring and fall equinox to the west and south of the Project during morning hours, and during the winter solstice in the east during evening hours.



**Figure 6: Solar Path Chart Plotting Solar Azimuths**

## 1.7 Sunlight Geometry

The determination and characterization of the geometry of incident and reflected light is a mathematical process that is based on angles and vectors in three-dimensional coordinate systems. Light reflected from a surface is described in **Figure 7a** and **b** and shows that reflected light is symmetrical about the normal of the surface. All methods used to calculate the path of reflected rays assume this symmetric condition.



## 1.8 Characteristics of PV Module Configuration and Perceived Glare

With respect to assessing the impacts of reflected sunlight associated with PV modules for the proposed Project, the following assumptions apply:

Perceived glare is based on a line of sight from the reflective surface *without accounting for any existing or planned visual screening from vegetation or buildings* (worst case scenario). The magnitude and duration of glare reflections are related to the height of the observer. An average eye height of 5- and 15-feet were used for observers at a first floor and second floor residence (residential OPs) respectively; for non-residential OPs, an average eye height of 5-feet was used; and an average eye height of 3.5-feet was used for observers in passenger vehicles along evaluated routes. When the height of the observer is less than the module height and the landscape is flat, only one reflecting row of PV modules will be visible at a time.

Stationary receptors that are below the top height of the PV modules will only see glare from those modules when the reflective surfaces are visible from that location. The glare will move as the sun moves until the azimuth and elevation of the sun's rays are such that reflections are no longer received at the stationary receptor.

When the orientation of each row of PV modules is the same, each row will reflect glare at the same angle for the same time increment, given azimuth, and elevation angle of the sun. Thus, if a car with the observer at a height below the highest point of the PV row observes a solar reflection,

the same reflection at the same relative location will be observed as the car proceeds parallel to the PV row.

As the height of the stationary receptor rises above the height of the PV row, progressively more of adjacent PV rows' reflective surfaces will be observed. At low heights, most of the PV module area of successive rows are blocked, but as receptor heights increase progressively more of the reflective area of the full array contributes to overall sunlight reflection.

## 1.9 Definitions of Common Terms Used in Glare Analysis

*Eye Level Height Above Ground* – User input to modify or correct an observer's (receptor's) elevation above ground.

*Glare and Glint* – Glare is defined as a harsh bright light. Glare is generally associated with stationary objects, which, due to the slow relative movement of the sun, reflect sunlight for a longer duration. Glint is defined as a momentary flash of light reflected off a moving source. A common example of glint is a flash of light reflected to your eye from a passing car (Forge Solar, 2022).

The difference between glare and glint is duration. Industry-standard glare analysis tools evaluate the occurrence of glare on a minute-by-minute basis; accordingly, they generally refer to solar hazards as 'glare.'

*Ground Elevation* – Elevation of vertices above sea level. Values are entered into the table once the vertex is located. This is considered the point's base elevation. This value is used to shape the reflective plane used to estimate glare.

*Height Above Ground* – User input to modify or correct vertex elevation above ground. This is defined as 'PV array installation height above ground.' Since this Project will use a single axis tracker system the height varies.

*Latitude and Longitude* – The geographic coordinates of the PV array boundary vertices were used to define the area covered by the proposed PV array. **Appendix B** provides the coordinates of the perimeter and their map image which also corresponds to PV arrays. GlareGauge creates a reflective plane using elevation values of the array for the glare assessment.

*Maximum Tracking Angle* – The maximum angle the module will rotate in both the clockwise and counterclockwise directions from the zenith (upward) position. The maximum rotation limit currently under consideration is approximately  $\pm 60^\circ$ .

*Module Surface Material* – Types of material and surface finish of a PV module. According to specifications from the module manufacturers, it was determined that the input light textured Glass with an AR coating would be the most representative option.

*Offset Angle of Module* – The vertical offset angle between the tracking axis and the module. No offset was selected for the single axis tracker.

*Observation Points* (OPs) – The eye levels of human observers. They have height parameters calculated using GIS software and aerial photographs of the Project. For residences, a five-foot eye height above ground was used for a person in a first-floor residence and a 15-foot height

above ground was used for a person's eye level on a second floor. For non-residences, a 5-foot height above ground was used.

*Orientation of Tracking Axis* – Orientation of the tracking axis in degrees, measured clockwise from true north. In this case the value was determined to be 180°.

*Rated Power (kilowatts [kW])* – kW power of solar PV plant. No rated power was selected for the proposed size of the solar arrays because the area of module coverage relating to glare potential is the primary measure for this study.

*Reflectivity of PV Module* – The near-normal specular reflectance of PV glass (e.g., with AR coating) can be as low as two percent. The reflectance can increase as the incidence angle of the sunlight increases (glancing angles). This number is based in part on the array parameters.

*Routes* – Segments of public roads modeled for glare. The receptor is a person in a passenger vehicle on the route with a 3.5-foot eye height above ground. This eye-height measurement is based upon U.S. Department of Transportation, Federal Highway Administration guidelines (AASHTO, 2018). These parameter units are in feet (**Appendix B**).

*Slope Error* – Mirror-like surfaces that produce specular reflections will have a slope error closer to zero, while rough surfaces that produce more scattered (diffuse) reflections have higher slope errors. Based on typical values for the module types under consideration, a value of 8.43 milliradian was used.

*Tilt of Tracking Axis* – Elevation angle of the tracking axis in degrees, where 0° is facing skyward and 90° is facing horizontally. The modules rotate about the tracking axis. For this report, 0° was selected as the modules will be facing up.

*Total Elevation* – Calculated by adding 'Ground Elevation' and 'Height above Ground.' All units are in feet.

## 2.0 References

- AASHTO. (2018, June). *A Policy on Geometric Design of Highways and Streets*. Washington DC: AASHTO. Retrieved from A Policy on Geometric Design of Highways and Streets: <https://mutcd.fhwa.dot.gov/rpt/tcstoll/chapter514.htm>
- Capital Solar Farm. (2010). *Visual Impact Assessment*. Retrieved from [https://majorprojects.affinitylive.com/public/a56f5113529f7061acb6de0cb400a52e/Capital%20EA%20Final%201.0%20Appendix%20F\\_compressed-\\_Part4%20.pdf](https://majorprojects.affinitylive.com/public/a56f5113529f7061acb6de0cb400a52e/Capital%20EA%20Final%201.0%20Appendix%20F_compressed-_Part4%20.pdf)
- FAA. (2021, 05 11). 86 FR 25802. Retrieved from <https://www.govinfo.gov/content/pkg/FR-2021-05-11/pdf/2021-09862.pdf>
- Forge Solar. (2022, 01 03). *Forge Solar Help*. Retrieved from Forge Solar.com: <https://www.forgesolar.com/help/#ref-ho-2011-method>
- Geyer, W. B. (2010). *Power From The Sun*. Retrieved from <https://www.loc.gov/item/lcwaN0004585/>.

- Ho, C. K. (2011). Methodology to Assess Potential Glint and Glare Hazards From Concentrating Solar Power Plants: Analytical Models and Experimental Validation,. *ASME J. Sol. Energy Eng.*, , 133. Retrieved from ASME J. Sol. Energy Eng., 133.
- Ho, C. K. (2019). *Understanding and Mitigating Visual Glare Impacts from Solar Energy Systems*. Retrieved from Osti.gov: <https://www.osti.gov/servlets/purl/1645499>
- Lillefair, P. (1987). *Prediction of reflected solar dazzle from sloping facades*. 22(4):285-291). Garston: Building and environment .
- Stine, W. a. (2001). *Power from the Sun*. Retrieved from E-book Power from the Sun.net.: <https://www.powerfromthesun.net/>



# **Attachment U**

# **Vegetative Management**

# **Plan**



# **TOBACCO TRAIL SOLAR**

## **VEGETATIVE MANAGEMENT PLAN**

**OCTOBER 17, 2025**

**Prepared by: Tobacco Trail Solar, LLC**  
800 Taylor Street  
Suite 200  
Durham, NC 27701

## Introduction

Tobacco Trail Solar, LLC ("Tobacco Trail") plans to construct and operate the Tobacco Trail solar project ("Project"), generating up to 150 megawatts (MW) of electricity annually in Prince Edward County, Virginia. The total Project area consists of +/-2324 acres, of which approximately 1,000+ acres will be managed to preserve existing vegetation, including buffers and wildlife corridors. The Project will consist of solar panels, a substation, associated infrastructure, roads, fencing, and stormwater best management practices ("BMP"). In order to address state and local requirements around vegetation within the Project, Tobacco Trail prepared this Vegetative Management Plan ("VMP"). Three primary areas of focus for the VMP include: Screening and Buffers, Pollinator and Native Plantings, and Erosion Control and Stormwater Management within the Project.

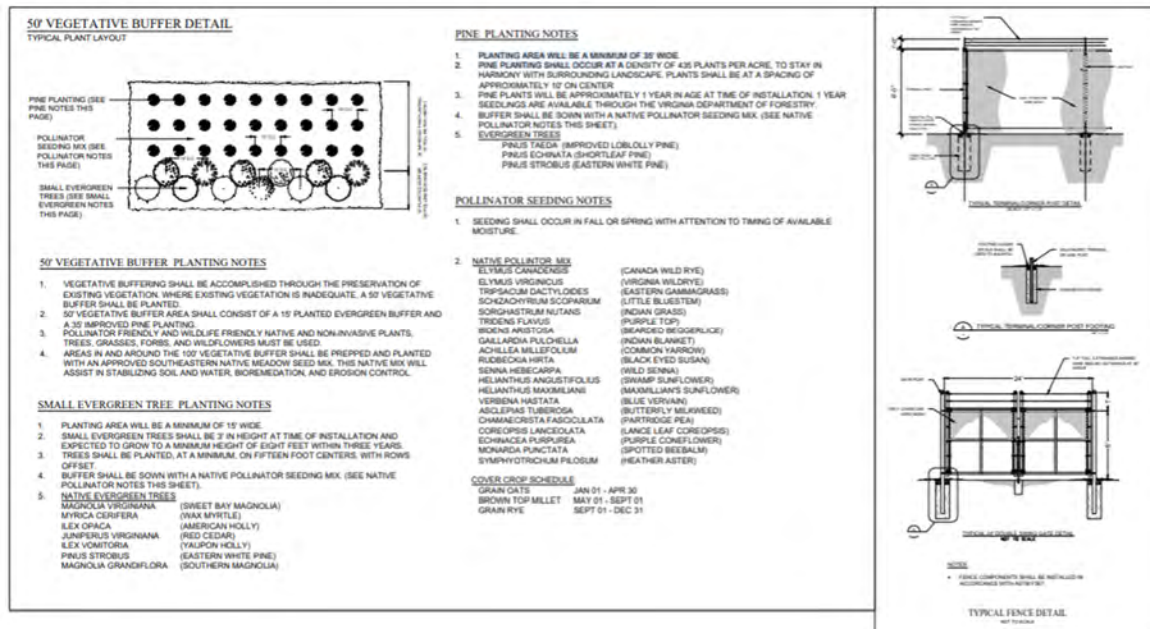
## Screening and Buffers

The Project was designed to maintain existing vegetation along the Project boundaries; in areas where existing vegetation doesn't effectively screen the Project, Tobacco Trail commits to planting supplemental vegetation to ensure consistent screening.

In the Project's submitted Zoning Site Plan (*Attachment B; see also Image 1 below*), Tobacco Trail demonstrates compliance with the County's 50-foot vegetative buffer and as stated above, a commitment to additional plantings, where needed, will be installed. These plantings consist of establishing/maintaining a minimum 50' buffer, which includes a minimum of 15' evergreen buffer and 35' pine buffer. Pollinator friendly and native plantings will be prioritized, and invasive species will be avoided.

To further support existing, rural viewshed around the Project, areas adjacent to the railroad (south) and highway (west), the effective buffer will often exceed 150 feet, aligning with best practice recommendations preserving the rural character and providing environmental benefits. The Project is designed to be completely screened from the view of major corridors and scenic byways, ensuring that it does not detract from the scenic and rural character of the area.

Image 1: Preliminary Planting Plan Detail: 50' Vegetative Buffer Detail



Additionally, beyond the screening, the Project was carefully sited to avoid impacts to areas of environmental significance, including a minimum 50' buffer from streams/wetlands, maintaining connectivity and biodiversity through protection of wildlife corridors, and minimization of impacts to existing vegetation along Project boundaries.

## Pollinator Habitat and Native Vegetation

The Project will prioritize pollinator, native seed mix applications to support habits for native and critical species such as bees, butterflies, monarchs, and other wildlife. Pollinator seed mixes will be planted in accordance with the Landscape Buffer & Fence Detail Sheet (see *Attachment B*, C02.009; or Image 1 above) of the Zoning Site Plan.

Large land-disturbing activities in Virginia are required to meet Erosion and Sediment Control ("ESC") standards and Virginia Stormwater Management ("SWM") Regulations, which include both temporary and permanent seeding best management practices. Often in application, pollinator seed mixes can only germinate in limited windows and at a slower rate. In order to prevent erosive conditions and meet state/local standards,

the Project area must be stabilized in accordance with the ESC requirements to establish permanent vegetative cover, which requires flexibility in pollinator only planting restrictions. Tobacco Trail commits to planting non-invasive, native species throughout the Project construction and operation to protect the environment and inhibit erosion and will also prioritize providing pollinator-specific seeding in areas that allow for low maintenance and successful germination.

## **Erosion & Sediment Control and Stormwater Management**

Tobacco Trail will use native plantings which have deep root systems that promote stormwater infiltration. Limited impermeable materials will be used as pad sites for inverters. Access roads will be stabilized and be either gravel or paved. The Virginia Department of Environmental Quality (“DEQ”) has implemented stringent stormwater management policies for solar projects, considering solar panels as disconnected impervious surfaces. Because of the spacing between rows of panels and the frequent angle of orientation, rainwater is allowed to reach the maintained grasses between and below the panels. This results in stormwater management systems that are overengineered, providing even greater protection for local water bodies. As construction starts, continues, and finishes all denuded areas will be seeded and stabilized per the approved ESC and SWM plans.

## **Conclusion**

This VMP was prepared as a preliminary approach to demonstrate Tobacco Trail’s commitments to meeting the County’s development standards, protect the environment through application of buffers and BMPs, protect the rural viewshed of the County, and is intended to be revisited and updated based on the County’s recommendations and as Project development continues forward. The Project will protect wildlife habitat and the quality of streams in the vicinity through vegetative management, planting of native species, establishment of pollinator habitats, screening, and protection of a wildlife corridor to allow for movement and connection along the Project boundary.