

# Cover Letter



Franklin County  
Planning and Community Development  
1255 Franklin Street  
Suite 103  
Rocky Mount, Virginia 24151

Edwards Solar Farm, LLC  
2202 W. Broad St, Suite 200  
Tel: 804-789-4040  
Email: paul.cozens@cepsolar.com

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**To:** Franklin County Planning & Community Development  
**From:** CEP Solar

CEP Solar is pleased to present the following Special Use Permit (SUP) and Comprehensive Plan Conformance Review applications, on behalf of Edwards Solar Farm, LLC (the “Applicant”), for the Edwards Solar Farm (the “Project”). The applications are for a distribution-scale solar energy facility located on portions of two parcels in the Union Hall District of Franklin County. The Project will be capable of generating up to 5-megawatts alternating current (MWac) of clean energy delivered to the local distribution system within Appalachian Power Company’s service territory. This is enough power to meet the energy needs of about 560 Virginia homes, based on U.S. Energy Information Administration (EIA) data. The Project will not require the construction of a new substation or a battery storage system.

The Project will be developed on land that is currently used for transmission towers and was partially developed as part of the Mountain Valley Pipeline. Additionally, the Project adjoins an active quarry to the south. The Project will utilize approximately 35 percent of the total acreage of the properties, allowing it to exceed the county's setback standards. The Project is not expected to be seen or heard once operational. The Project will utilize less than one one-hundredth of a percent (0.01%) of the total land area of Franklin County.

Edwards Solar Farm is substantially in accord with the Franklin County Comprehensive Plan. The Project will be fully screened from public rights-of-way and adjacent properties and will not visually impact scenic and cultural resources. It is also not located in a Designated Growth Area of Franklin County. The Project meets the County’s objective of promoting the use of solar facilities while minimizing impacts on the County’s natural, agricultural, scenic, tourism, and cultural resources.

The Project will provide a substantial increase in economic benefit to Franklin County compared to the current revenues generated by the project parcels. It will also not place a burden on public services or infrastructure, while generating environmental and economic benefits to the community through emission-free and affordable energy generation.

We look forward to working with Franklin County on this project and developing Edwards Solar Farm in a manner that benefits the County’s citizens and preserves land use options for future generations. If you have questions or require additional information, please do not hesitate to contact me.

*Paul Cozens*

Paul Cozens  
paul.cozens@cepsolar.com  
804-789-4040 ext.715

Edwards Solar Farm  
Franklin County, Virginia  
Special Use Permit



**FRANKLIN COUNTY  
REQUIREMENTS FOR COMPREHENSIVE PLAN CONFORMANCE REVIEW**

**Consultation with planning staff** is strongly recommended prior to the filing of a Comprehensive Plan conformance review request, identify specific information that may need to be submitted, and discuss procedures. In addition to discussing the proposal with planning staff, it is recommended that the applicant contact neighboring property owners to review the request.

**Filing Deadline:** Applications must be received by 4:30 P.M. on the deadline date listed on the schedule at the back of this packet in order to be processed and considered for public hearing. Applications must contain specific information, as detailed below and all fees paid by 4:30 P.M. on the advertised deadline date.

**APPLICANT MUST SUBMIT A COMPLETE APPLICATION  
CONSISTING OF APPLICATION, LETTER OF APPLICATION,  
CONCEPT PLAN, AND ANY OTHER PERTINENT  
INFORMATION NEEDING TO GO BEFORE THE BOARDS**

**Application Requirements:**

1. **Completed application form**, typed or printed in ink and signed by applicant, including property owner's consent and signature.
2. **Letter of application** stating in general terms:
  - (a) the proposed use of the property,
  - (b) the effect of the changes on the surrounding area,
  - (c) the reason for the request
3. **Concept Plan** for property showing existing site features and any proposed development additions or improvements. See attached information for recommended contents of concept plans for residential, business and industrial district requests.

**Payment of Fees:**

Planned Developments	\$300.00 + \$5.00 per acre
Residential/Agricultural	\$250.00 + \$5.00 per acre
Commercial & Industrial	\$250.00 + \$5.00 per acre

## **Posting of the Subject Property prior to Public Hearings:**

Franklin County Department of Planning and Community Development will post a “Notice of Public Hearing” sign along any road that is adjacent to the property for which a special use permit is requested. The notice will be posted by the county at least fourteen days prior to the scheduled Planning Commission and the Board of Supervisors public hearings. If no public road abuts the property, then notice signs shall be erected on at least 2 boundaries of the property abutting land not owned by the applicant.

The signs are property of Franklin County and must not be removed by the applicant.

## **Legal Advertisement Costs:**

Each comprehensive plan conformance review request must be legally advertised in a newspaper of general circulation in accordance with established state and local regulations. Franklin County advertises in the Franklin News Post. The Department of Planning and Community Development shall prepare the legal ad and shall send the ad to the newspaper for publication.

**The cost of publishing the legal ad is the responsibility of the applicant. The newspaper will send an invoice to the Planning Department and staff will forward the invoice to the applicant. It is important that the invoice be paid upon receipt. Payments should be sent to the Franklin County Planning and Community Development office, all checks should be made out to the Franklin County Treasurer’s Office. If the invoice is not paid by the applicant to the Planning Department prior to the date of the scheduled public hearing, the public hearing will be delayed for at least one month or until the cost of the ad is paid.**

**If an applicant requests that a public hearing be delayed after publication of a legal ad, the applicant shall be responsible for all costs of re-advertisement.**

## **Considerations for Granting Comprehensive Plan Conformance Review:**

The Planning Commission and the Board of Supervisors consider the following in reviewing requests for comprehensive plan conformance review:

- The effect of the proposed use on adjacent property
- The effect of the proposed use on the character of the existing zoning district
- The effect of the proposed use on public health, safety, and welfare
- The goals, objectives, and policies in the Comprehensive plan

## **For Further Information:**

Department of Planning and Community Development  
1255 Franklin Street, Suite 103  
Rocky Mount, Virginia 24151

Phone: (540) 483-3027

Office Hours: Monday thru Friday, 8:00 AM to 4:30 PM

## FRANKLIN COUNTY COMPREHENSIVE PLAN COMFORMANCE REVIEW PROCESS

### ***STEP 1 – PRE-APPLICATION MEETING***

- Applicant meets with planning staff to discuss request, obtain forms, review process, and identify required materials to appropriately process and review the request. An application for a Comprehensive Plan Conformance review must be filed by the property owner or with the property owner's written consent.

### ***STEP 2 – APPLICATION***

- Application: Applicant submits complete application packet to the Department of Planning and Community Development. Application and plans are available for public review.
- Posting of Property: Applicant is provided with sign(s) for posting the property when the application is received. The property must be posted by the applicant in a clearly visible location at least fourteen days before the required public hearings.
- Notification of Property Owners: Planning staff notifies adjoining property owners of the comprehensive plan conformance review request and the date of the public hearing.
- Public Notice/Legal Advertisement: Planning staff prepares required legal advertising and publishes in local newspaper. The applicant is responsible for the cost of BOTH the Planning Commission Legal ad, as well as the Board of Supervisors legal ad. (Notification of requests and public hearing schedule must appear in a local newspaper two times in two consecutive weeks before each public hearing.)

### ***STEP 3 – STAFF REVIEW***

Staff visits site and coordinates application with other County departments, as well as public agencies that may be affected. Staff prepares a written report for the Planning Commission and Board of Supervisors that considers the application and pertinent sections of the Comprehensive Plan.

### ***STEP 4 – PLANNING COMMISSION REVIEW AND RECOMMENDATION***

- Planning Commission visits each site prior to the scheduled public hearing.
- The applicant or a designated agent must attend the public hearing.
- Public comment is received at the hearing.
- Planning Commission must make a recommendation to the Board of Supervisors within 60 days of its first meeting date. The recommendation may include conditions on the use of the property to address specific issues of concern. **Any conditions that are proposed by the developer must be submitted to the Planning Office no later than 4:30 pm six (6) days prior to the Board of Supervisors Meeting.**
- After action is taken by the Planning Commission, the request is scheduled for public hearing before the Board of Supervisors. Planning staff immediately prepares legal advertisements and proceeds with newspaper publication. *Please note that any request to withdraw or postpone an application must be requested in writing within two (2) days after the Planning Commission hearing in order to coordinate public notice requirements.*

### ***STEP 5 – BOARD OF SUPERVISORS DECISION***

- Planning Commission recommendation is forwarded in writing to the Board of Supervisors
- Applicant or their agent must attend the public hearing
- Board of Supervisors may override the Commission by a majority vote.
- The Board may impose conditions upon any Comprehensive Plan conformance review.
- Comprehensive Plan conformance review is effective immediately after their action by the Board of Supervisors.

**FRANKLIN COUNTY  
PETITION/APPLICATION FOR COMPREHENSIVE PLAN CONFORMANCE  
REVIEW  
(Type or Print)**

I/We, Edwards Solar Farm, LLC, as Owner(s), Contract Purchasers, or Owner's Authorized Agent of the property described below, hereby apply to the Franklin County Board of Supervisors for a Comprehensive Plan conformance review on the property as described below:

1. Petitioners Name: Edwards Solar Farm, LLC

2. Property Owner's Name: Penny Edwards Blue, Ronald B Edwards, and Ruby E Penn

Phone Number: 804-789-4040 Ext. 715

Address: 300 Edwardsway Road Union Hall  
Union Hall, VA Zip: 24176

3. Exact Directions to Property from Rocky Mount: Take VA-40 East for 10.5 miles, Turn Right on to State Rte 794, in .2 miles Turn Right on to Jacks Creek Rd (State Rte 662), Destination is on the right in .5 miles

4. Tax Map and Parcel Number: 0660010100

5. Election District: Union Hall

6. Property Information:

A. Size of Property: Approximately 66.19 Acres

B. Existing Zoning: A1

C. Existing Land Use: Silviculture and Pasture Land

D. Is property located within any of the following overlay zoning districts:

Corridor District  Westlake Overlay District  Smith Mountain Lake Surface District

E. Is any land submerged under water or part of a lake? Yes  No  If yes, explain.

\_\_\_\_\_

\_\_\_\_\_

7. Proposed Comprehensive Plan conformance review information:

A. Proposed Land Use: Distribution Scale Solar Power Generation Facility

B. Size of Proposed Use: Approximately 36.5 Acres

C. Other Details of Proposed Use: Please see attached project narrative

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**Checklist for completed items:**

- \_\_\_\_\_ Application Form
- \_\_\_\_\_ Letter of Application
- \_\_\_\_\_ Concept Plan
- \_\_\_\_\_ Application Fee

**\*\*I certify that this application for a Comprehensive Plan conformance review and the information submitted herein is correct and accurate. I authorize County staff to access this property for purposes related to the review and processing of this application.**

Petitioner's Name (Print): \_\_\_\_\_

Signature of Petitioner: \_\_\_\_\_

Date: \_\_\_\_\_

Mailing Address: \_\_\_\_\_

\_\_\_\_\_

Telephone: \_\_\_\_\_

Email Address: \_\_\_\_\_

Owner's consent, if petitioner is not property owner:

Owner's Name (Print): Penny E. Blue, Ronald B. Edwards, Ruby E. Penn

Signature of Owner: Penny E. Blue, Ronald B. Edwards, Ruby E. Penn

Date: 2/26/25

**FRANKLIN COUNTY  
PETITION/APPLICATION FOR COMPREHENSIVE PLAN CONFORMANCE  
REVIEW  
(Type or Print)**

I/We, Edwards Solar Farm, LLC, as Owner(s), Contract Purchasers, or Owner's Authorized Agent of the property described below, hereby apply to the Franklin County Board of Supervisors for a Comprehensive Plan conformance review on the property as described below:

1. Petitioners Name: Edwards Solar Farm, LLC
  
2. Property Owner's Name: Penny Edwards Blue, Ronald B Edwards, and Ruby E Penn (Parcel 0660010100) ; Ronald B Edwards (Parcel 0660003900)  
  
Phone Number: 804-789-4040 Ext. 715  
  
Address: 300 Edwardsway Road Union Hall  
Union Hall, VA Zip: 24176
  
3. Exact Directions to Property from Rocky Mount: Take VA-40 East for 10.5 miles, Turn Right on to State Rte 794, in .2 miles Turn Right on to Jacks Creek Rd (State Rte 662), Destination is on the right in .5 miles
  
4. Tax Map and Parcel Number: 0660010100 ; 0660003900
  
5. Election District: Union Hall
  
6. Property Information:
  - A. Size of Property: Approximately 109 Acres
  - B. Existing Zoning: A1
  - C. Existing Land Use: Silviculture and Pasture Land
  - D. Is property located within any of the following overlay zoning districts:  
\_\_\_ Corridor District \_\_\_ Westlake Overlay District \_\_\_ Smith Mountain Lake Surface District
  - E. Is any land submerged under water or part of a lake? Yes  No  If yes, explain.  
  
\_\_\_\_\_  
\_\_\_\_\_
  
7. Proposed Comprehensive Plan conformance review information:
  - A. Proposed Land Use: Distribution Scale Solar Power Generation Facility
  - B. Size of Proposed Use: Approximately 36.5 Acres
  - C. Other Details of Proposed Use: Please see attached project narrative  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_



**Checklist for completed items:**

- \_\_\_\_\_ Application Form
- \_\_\_\_\_ Letter of Application
- \_\_\_\_\_ Concept Plan
- \_\_\_\_\_ Application Fee

**\*\*I certify that this application for a Comprehensive Plan conformance review and the information submitted herein is correct and accurate. I authorize County staff to access this property for purposes related to the review and processing of this application.**

Petitioner's Name (Print): \_\_\_\_\_

Signature of Petitioner: \_\_\_\_\_

Date: \_\_\_\_\_

Mailing Address: \_\_\_\_\_

\_\_\_\_\_

Telephone: \_\_\_\_\_

Email Address: \_\_\_\_\_

Owner's consent, if petitioner is not property owner:

Owner's Name (Print): Ronald B. Edwards

Signature of Owner: Ronald B. Edwards

Date: 2/26/25

**CONCEPT PLANS  
RESIDENTIAL, BUSINESS, AND INDUSTRIAL DISTRICTS  
NECESSARY CONTENTS**

***Purpose of a Concept Plan:***

A concept plan is necessary for all Comprehensive Plan conformance reviews. The purpose of the concept plan is to provide applicable information on site conditions and a general understanding of the proposed use of a property. Typically, a concept plan contains information on the property such as the property address, parcel boundaries, adjacent roads, natural features (including water courses) and neighboring properties. A concept plan also includes the locations of any proposed buildings, parking, streets, community facilities, buffering or screening, boat docks, signs, and lighting, as well as the proposed densities of development.

***Concept Plan versus Site Development Plan:***

A concept plan is not the same as a site development plan, which is more detailed to ensure compliance with development regulations and obtain construction permits. A concept plan may be the first step in creating a site development plan. It is important to note that approval of a special use permit with a concept plan does not mean that a site development plan is or will be approved.

***Concept Plan Necessary Contents:***

- Project title, name of applicant, project engineer/architect/surveyor/planner
- Plan date
- North arrow and graphic scale
- Size of entire parcel and, if applicable, size of portion of parcel requested for rezoning, accompanied by meets and bounds description
- Adjacent streets, railroads, natural features, historic sites, streams or bodies of water, floodplains, and other information that may help describe site conditions
- Locations, dimensions, and heights of all existing structures and those proposed
- Location and dimensions of proposed pedestrian and vehicular access points, driveways, parking areas/spaces and other facilities
- Natural areas or historic sites to be preserved
- Location and description of existing vegetation or any landscaping, screening or buffering proposed within the lot or along the perimeter of the development
- Location of proposed signs, including type, size and height
- Lighting information, if applicable
- Building elevations or renderings of the proposed development, if available



- Accessory use information such as the location of storage yards, recreation spaces, refuse collection areas, septic drain fields, wells, or water tank locations, etc.
- Number, type, and size of dwellings proposed, and the residential density per acre
- Number and square footage of retail and office uses proposed
- Location, size and type of recreational amenities, parking facilities, and utility information
- Other items that may be recommended by staff
- **Recommended plan size 8.5” x 11” minimum or 11” x 17” maximum. The plan must be legible.**

**NOTE: IF YOU ARE PLANNING A PRESENTATION AT THE PUBLIC HEARINGS FOR THE PLANNING COMMISSION AND BOARD OF SUPERVISORS, PLEASE BRING THE PRESENTATION ON A FLASH DRIVE, OR EMAIL TO PLANNING STAFF AT LEAST ONE (1) DAY BEFORE THE SCHEDULED HEARING.**

# Project Narrative

Supplement to Application for Special Use Permit

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## 1. Project Details

Edwards Solar Farm, LLC (the “Applicant”) is seeking approval of a Special Use Permit (SUP) to enable it to construct and operate a solar energy facility with a maximum nameplate capacity up to 5-Megawatts alternating current (MWac). The Edwards Solar Farm (the “Project”) will be situated on portions of two parcels owned by Ronald B Edwards, Penny Blue Edwards, and Ruby Edwards. The parcels numbers are 0660003900 and 0660010100. The land is currently used for pasture and timberland. The Project will be along Jacks Creek Road near Old Franklin Turnpike.

The two project parcels are approximately 108.87 acres combined. The Project’s buildable area is 38 acres, with approximately 25 acres of solar panels and Project infrastructure. Thus, while Edwards Solar is in operation, there will be approximately 84 acres of open green space, forestland, and other vegetation unused by the project. A portion of this land will be used for required setbacks and buffers, while the remainder will be retained and used by the landowner.

The Project site is approximately 13 miles east of Rocky Mount in the Union Hall District. Site control has been secured through an option to lease agreement as demonstrated in [Exhibit 8.10 Site Control](#). The Project will deliver clean and cost-competitive energy through a distribution circuit that crosses Jacks Creek Road next to the project site and connects to Appalachian Power Company’s Penhook substation.

The Project developer is CEP Solar, a Virginia-based renewable energy development company focused on providing sustainable energy solutions in the Commonwealth of Virginia. CEP Solar submits this Application, on behalf of Edwards Solar Farm, LLC, in compliance with the County Zoning Ordinance requirements for a utility-scale solar energy facility. We share the County’s commitment to ensure that the best practices in solar development are being implemented in Franklin County, and we look forward to demonstrating that commitment with this Project.

The Project’s final site plan will be completed after field studies and advanced engineering have been conducted, and it will be submitted to the County along with construction plans at the time of final site plan application.



Approximately 108.87 acres for two privately owned parcels



Approximately 25 acres for the solar field



Approximately 84 acres are reserved for setbacks, buffers and use by the landowners.

## 2.0 Planning Considerations

### 2.1 Current Use and Proposed Use

Of the approximately 108.87 acres of project land about 15 acres are used for pasture and hay production and the remaining approximately 89 acres are forested. The forest land was logged in 2011 and has grown back as mostly monoculture pine. American Electric Power has cleared and occupies about 6 acres as a right of way for transmission lines and the Mountain Valley Pipeline. The proposed land use is a solar farm consisting of photovoltaic (PV) panels. The PV panels produce clean and affordable energy that flows into the local grid, powering homes and businesses.

### 2.2 Conformity with Comprehensive Plan

Va. Code §15.2-2232 provides that the County’s Comprehensive Plan controls “the general or approximate location, character, and extent of each feature shown on the plan.” For any “public utility facility” that is proposed after the adoption of the Comprehensive Plan, the County’s Planning Commission is tasked with determining whether the “*general location or approximate location, character, and extent thereof [of the public utility facility] . . . is substantially in accord with the adopted comprehensive plan or part thereof*” Because the Project is considered a public utility facility pursuant to Va. Code § 56-232, the Planning Commission is called upon to determine if the proposed “general location or approximate location, character, and extent” of the Project is “substantially in accord” with the Plan.

This analysis can be found in [Exhibit 8.12 Edwards Solar 2232 Analysis](#)

## 3.0 General Development Considerations

### 3.1 Compatibility with the Community and Adjacent Properties

Due to the passive nature of solar energy facilities, there are no anticipated adverse impacts to the public health, safety, or welfare of the citizens of Franklin County. During operation and maintenance, the facility produces no vibration, emissions, odor, or fumes; during construction, there will be limited noise and equipment emissions, which will be mitigated as required by the ordinance, including limiting the hours of operation of post-driving and other construction equipment from sunrise to sunset. Because the Project does not use any public utilities, there is no impact on public infrastructure. The Project will be set back a minimum of 150 feet from public rights of way and 300 feet from residences.

Solar projects also make good neighbors – they generate minimal sound during operation and are screened effectively with vegetative buffers and existing vegetation given their minimal height.

Solar is a low-impact land use, providing benefits to the County and the community with

Edwards Solar Farm

Franklin County, Virginia

Special Use Permit

minimal-to-no impact on the County's resources. Other forms of development (commercial, residential housing, etc.) require additional services such as roads, utilities, schools, and law enforcement.

The Project is compatible with the existing use of the project land and the adjoining parcels. The project land is bisected by a cleared transmission line easement used by American Electric Power and the Mountain Valley Pipeline. There are three residential parcels that adjoin the project parcel to the northeast. One of those three parcels (0660010000) is owned by a landowner participating in the project. The project will be set back over 300 feet from these residences and will utilize the dense existing vegetation to screen the project from view. The parcels directly east and west of the project land (0660010106 and 0660004300) are owned by landowners participating in the project and their relatives. Other adjoining parcels (0660010700 and 0660004100) are vacant and used primarily for silviculture and pastureland. The parcel directly south (0690000100) is used as an active quarry by the Rockydale Corporation.

### 3.2 Glint and Glare / Airport Operations

The Federal Aviation Administration's ("FAA") Obstruction Evaluation / Airport Airspace Analysis Notice Criteria Tool was used to determine the impact of the project on airways. The notice criteria tool is a tool provided by the FAA to determine if the project needs to be filed for a hazard study with the FAA. If the tool determines that the project is eligible, the FAA will further evaluate the project for its impact on the surroundings. If the project is deemed ineligible by the criteria tool, no further steps are required by the FAA.

The tool determined that the Edwards Solar Project did not exceed the agency's criteria, and the project does not need any further FAA study. Therefore, the Edwards Solar Project poses no potential hazard for, and will not interfere with, airport operations. The notice criteria tool results are attached as [Exhibit 8.7 FAA Notice Criteria](#) in the application.

Additionally, to further demonstrate "that the panels will be sited, designed, and installed to eliminate glint and glare effects on airport operations" (Sec. 25-147. (b)(5) (i)), DARE Strategies LLC used ForgeSolar software to evaluate glint and glare on the final approach to Runway 05 at Smith Mountain Lake Airport, approximately 11 miles northeast of the site. The software results predict zero glint and glare effects on operations at the airfield.

This report can be found in [Exhibit 8.6 Glint and Glare Study](#).

### 3.3 Sound

During operation, the Edwards Solar Farm will not produce sound outside of the Project boundaries. Project components that produce sound, such as inverters, will be set back from the Project boundary so they will not be heard from adjacent properties. Additionally, the Project

will only be operating during the day, so there will be no sound produced at night. During construction, there will be a temporary increase in sound levels due to the operation of construction equipment. The construction period is expected to last 6 months or less, during which construction activities will be limited in accordance with permit conditions and applicable sections of the Franklin County Land Development Ordinance. Once the Project is constructed, the inverter sound shall not exceed 50 dBA from the fence line, which is equivalent to the normal operational sound of a consumer refrigerator.

### 3.4 Fire Safety

While electrical fires are an extremely rare occurrence at solar facilities, they may occur in the event of an improper connection. These concerns are addressed by testing and safety standards required of solar panels, inverters, and associated equipment. In addition, the Project will follow safety standards set in the National Electric Code (NEC) and National Fire Protection Association (NFPA) code to ensure safe design, construction, and operation of the facility.

The Project owner or operator will, in coordination with the Franklin County Public Safety, provide education and training on how to respond in the event of a fire or other emergency on the premises. Prior to construction, per the Franklin County Zoning Ordinance, a post-construction safety plan will be made available to public safety agencies and will include optional training on the equipment to be located on the site.

## 4.0 Economic Impacts

The Edwards Solar Farm will provide a substantial increase in economic benefit to Franklin County compared to the current revenues generated by the project parcels. The Project will also generate environmental and economic benefits to the community through emission-free and affordable energy generation.

Unlike other forms of development, the Edwards Solar Farm will not place a burden on the County's public services or infrastructure, limiting costs so that the revenues generated are added directly to Franklin County's bottom line for the benefit of the community.

Many corporations are beginning to require access to renewable energy when deciding where to locate their facilities. The adoption of this growing field can lead to direct economic boosts during construction, long-term economic gains by the local economy, and serve to attract further business development to the region. Funds raised from Project tax revenue will reduce the burden of the County to raise taxes on its citizens and support the County in making capital investments today.



## 5.0 Environmental and Cultural Considerations

Solar facilities are impermanent uses that maintain land use flexibility for the future. Unlike a subdivision or industrial facility, if the solar facility is permanently discontinued, it will be decommissioned, and the land returned to its previous state or transitioned to another use – residential, agricultural, industrial, or otherwise. This impermanence effectively banks the land for up to 40 years, at which point the land use needs of County may be different than today. During the land banking period, the County will benefit from the revenues produced by the Project while retaining long range land use flexibility.

Solar facilities conform to the physical characteristics of the land, including wetlands and topography. The Project will minimize impact to the County’s environmental resources – including wetlands and steep slopes.

### 5.1 Environmental Preservation

Compared to other forms of development, such as residential or commercial, solar is a low impact and temporary use of land. The footprint of the facility is limited to steel pilings in the ground to support the panels, limited instances of concrete pads for mounting inverters and substation equipment, fencing, and gravel access roads. Upon discontinuance of the use of the land for solar, these improvements will be removed, and the land can be returned to silvicultural or agricultural uses.

### 5.2 Considerations of Air Quality

Clean and renewable energy sources like solar farms produce emissions-free electricity and reduce dependence on carbon-based fuel sources. The reduction of airborne pollutants acts to preserve and improve the regional air quality. Additionally, as a passive solar generation facility, the Project will reduce land disturbance activities such as tree thinning and discing. Reducing these activities acts to regenerate the soil and the land overall.

### 5.3 Surface and Groundwater Quality

To protect Franklin County’s water and soil resources, the Applicant will comply with all applicable erosion and sediment control laws and regulations. Temporary and permanent best management practices on site will be designed to prevent the discharge of sediment and other pollutants into nearby waterways during construction and once the project is in operation. The Applicant will coordinate with Franklin County as well as an Erosion and Sediment Control program (“VESCP”) Authority for submission and review of the Project’s erosion and sediment control plans. The applicant is also required by the Ordinance to submit an Environmental Impact Report prior to construction. In this report, the applicant is required to address potential impacts on soil, including erosion, siltation, toxicity, productivity, and suitability for agriculture.

Additionally, the applicant must assess potential impacts on water, including quantity, quality, and flow of streams, and groundwater. The streams within the project footprint are part of the Pigg River / Leesville Lake watershed. The project is not anticipated to have any impact on the water quality of Smith Mountain Lake. A watershed exhibit is included as part of [Exhibit 8.3 Preliminary Site Exhibit](#) that shows the project area in relation to the Upper Pigg River Watershed. The exhibit also shows the flow distance from the project site to Leesville Lake, and the distance from the mouth of the Pigg River to the Smith Mountain Dam via Leesville Lake. The Applicant has met with the Water Quality Monitoring Program team at Ferrum College and intends to collaborate with them to create a water quality monitoring plan for the project prior to construction commencing.

The Project will minimize impact to wetlands and surface waters and will provide the required buffers for onsite wetlands and intermittent streams. The site will not require water during operation and no new wells or water connections will be required. There is no anticipated impact on groundwater recharge. The operation of the Project does not produce wastewater, nor is it expected to degrade the quantity or quality of surface water from sedimentation.

#### 5.4 Wildlife Resources

A desktop analysis of wildlife and wildlife habitats was conducted for the Edwards Solar Farm by the Timmons Group, an industry expert. A threatened and endangered species review was conducted to gain insight regarding the potential presence of Endangered Species Act (ESA) listed species as well as State listed species onsite or in the vicinity of the Site. According to the desktop analysis, there is no potential presence for federally endangered species to occur on site. If state or federal permits are necessary, the Applicant will coordinate with agencies to ensure the protection and avoidance of T&E species.

This report can be seen in [Exhibit 8.11 Edwards Solar Natural Heritage and Wildlife Management Study](#).

#### 5.5 Cultural and Historical Resource Analysis

The Timmons Group has also conducted a Virginia Department of Historic Resources (VDHR) database search that encompasses the Project site and one-half mile buffer surrounding the Project site. There is one known architectural resource (VDHR ID # 033-5310) within the parcel limits, and it has been determined to be not eligible for listing on the National Register of Historic Places (NRHP) or the Virginia Landmarks Register (VLR). If state or federal permits are necessary, the Applicant will coordinate with agencies to ensure the protection and avoidance of cultural and historical resources

This report can be seen in [Exhibit 8.11 Edwards Solar Natural Heritage and Wildlife Management Study](#).

## 6.0 Preliminary Site Plan and Project Design

### 6.1 Project Interconnection

The Applicant has submitted an application for interconnection to Appalachian Power Company's electrical grid, and the Project has been assigned a queue position. The Project will supply power to the existing Penhook substation located off of Liberty Road, north of Old Franklin Turnpike and will flow to Appalachian Power Company's electrical grid via distribution lines adjacent to the site. The Project will add up to 5 MWac of renewable energy to the grid, enough to meet the energy needs of about 560 Virginia homes, based on U.S. Energy Information Administration (EIA) data.

There will be one Point of Interconnection (POI), as indicated on [Exhibit 8.3 Preliminary Site Exhibit](#). Interconnection for the Project will not require the construction of a new electrical substation as is the case with larger-scale transmission interconnected projects. The Project is a smaller-scale distribution project and will be integrated into existing infrastructure and will require few modifications. Distribution projects interconnect at the distribution level which directly benefits the local grid by improving grid stability and reducing transmission losses.

### 6.2 Facility Construction

The Applicant estimates that construction could start as soon as 2026 and the Project may commence operations as early as 2026 or 2027. It is estimated that construction of the Project will require between 6-12 months, though the project may be required to align with the utility grid interconnection process. Construction and operational activities will conform to ordinance requirements and SUP conditions. The Project is expected to be in operation for at least 40 years and the electric solar system components will be Underwriters Laboratory (UL), listed or equivalent.

The solar panel area is approximately 25 acres and within that area, the Project will utilize approximately 12,037 solar panels. The current proposed equipment will be 540-watt photovoltaic (PV) modules or equivalent, but depending on advancements in technology, the panel rating may exceed 540 watts. The PV panels are anticipated to be secured to single axis trackers on a racking system. The axis of rotation is horizontal, usually orientated North-South with the modules facing toward the East in the morning and the West in the afternoon.

### 6.3 Panel Materials and Construction

Solar photovoltaic (PV) panels typically consist of glass, polymer, aluminum, copper, and semiconductor materials that can be recovered and recycled at the end of their useful life. There

are two PV technologies used in PV panels at utility-scale solar facilities, silicon, and thin film. Most panels used in Virginia use silicon technology. While there are differences in the components and manufacturing processes of these two types of solar technologies, many aspects of their PV panel construction are very similar. PV cells in PV panels are encapsulated from air and moisture between two layers of plastic. The encapsulation layers are protected on the top with a layer of tempered glass and on the backside with a polymer sheet.

Crystalline silicon technology consists of silicon wafers which are made into cells and assembled into panels. By weight, over 80% of the components of a crystalline silicon PV panels are tempered glass and aluminum. Most of the remaining portions are common plastics, including polyethylene terephthalate in the backsheet, EVA encapsulation of the PV cells, polyphenyl ether in the junction box, and polyethylene insulation on the wire leads. The active, working components of the system are the silicon photovoltaic cells, the small electrical leads connecting them together, and to the wires coming out of the back of the panel. The electricity generating and conducting components make up less than 5% of the weight of the panels. The PV cell itself is nearly 100% silicon. The refined silicon is converted to a PV cell by adding extremely small amounts of boron and phosphorus, both of which are common and of very low toxicity.

Thin film technologies consist of thin layers of semiconductor material deposited onto glass. The semiconductor layer in is generally composed of Cadmium Telluride (CdTe). The semiconductor layer is ~3% the thickness of a human hair and is encapsulated between heat strengthened front glass and tempered back glass and bonded together with an industrial laminate. CdTe is a stable, solid compound that is insoluble in water which limits its ability to leach in the event of breakage. There are no vapors or liquids that can leak even if panels break.

All panels, racking, and associated facilities will have a non-reflective finish or appearance.

## 6.4 Lighting

Lighting for the project will be limited to the minimum reasonably necessary for security purposes and will be designed to minimize off-site effects. All lighting on site will be dark sky compliant.

## 6.5 Setbacks and Buffers

A preliminary site plan is shown in [Exhibit 8.3 Preliminary Site Exhibit](#). The preliminary site plan design shows perimeter setbacks, buffers, and avoidance of wetlands. While the panel layouts in the development envelope are preliminary and may change based on further technical analysis and refinement, the development envelope in the site plan shows approximate boundaries for the solar facility installations. Additional clearing or grading may be required outside of the development envelope for ingress, egress, and other infrastructure. If existing trees

and vegetation are disturbed within the area required for buffer compliance, new plantings shall be provided for the buffer.

Setbacks will comply with the County's requirements for utility-scale solar energy facilities outlined in Sec. 25-147 (b). The facility area shall be set back a distance of at least a minimum 150 feet from all property lines and public right of way. Increased setbacks of over 150 feet and additional buffering may be included in the conditions for a permit as required to reduce the visual impact of the facility. Access, erosion and stormwater structures, and interconnection to the electrical grid may be made through setbacks area if such are generally perpendicular to the property line or underground."

## 6.6 Traffic and Site Access

A study was performed for the Project based on anticipated site entrance locations and can be found in [Exhibit 8.4 Anticipated Traffic Analysis and VDOT Correspondence](#). The study identifies preferred routes to the Project and concludes that they have sufficient capacity to accommodate the period of increased traffic during the construction period. Once the Project is in operation, site visits will be limited to a few times per month, resulting in a negligible impact on traffic in the area.

If it is determined during final site plan review that alternate points of ingress and egress are needed, the design will comply with applicable VDOT regulations. Moreover, a parking area for vehicles, construction equipment, staging, and other needs will be placed near the access point of the Project. The Project owner will be responsible for maintaining the Project's access roads.

The Ordinance requires written confirmation from the Virginia Department of Transportation (VDOT) that all entrances satisfy applicable VDOT required. The pertaining correspondence with VDOT can be found at the end of [Exhibit 8.4 Anticipated Traffic Analysis and VDOT Correspondence](#).

## 6.7 Decommissioning

A preliminary Decommissioning Plan has been developed to outline the decommissioning processes that will be used for the Project. The plan details the process for removing the solar energy facility equipment and restoring the land to its previous use and has been designed to comply with applicable state regulations and Franklin County ordinance.

As per County ordinance Sec. 25-147 (d) (2), the Applicant will provide "assurance of decommissioning in the form of certified funds, cash escrow, bond, letter of credit, or parent guarantee, based upon an estimate of a professional engineer licensed in the Commonwealth, who is engaged by the applicant, with experience in preparing decommissioning estimates and

approved by Franklin County.

The preliminary Decommissioning Plan can be found in [Exhibit 8.5](#). The final Decommissioning Plan will be submitted for review with the final site plan of the Project.

## 6.8 Landscaping and Screening Plan

Timmons Group has prepared a landscape and screening plan for the Edwards Solar Farm. The plan includes the location, size, and type of planting yards including the use of existing and newly installed vegetation to screen the facility. A significant portion of the setback areas surrounding the project will consist of retained dense natural buffer. A Solar Farm Seed Mix of low-growing clover and grasses and a Native Pollinator will be used beneath solar panels. Seasonal maintenance will maintain healthy growth and weed control. Wetlands and stream corridors will remain preserved, ensuring continued benefits for wildlife and pollinators. The landscape design aligns with county ordinances and prioritizes environmental sustainability. A detailed landscaping and screening plan with plant species, size, number, spacing, and height will be required at the time of Site Plan review.

## 7.0 Community Engagement

The Applicant has conducted community outreach and engagement in several ways. Mailers were sent out 14 days prior to the community meeting to all adjacent landowners, as shown in [Exhibit 8.2 List of Adjacent Parcels](#). Mailers included an invitation to the community meeting, an Edwards Solar Farm Project Overview, an informational company overview, frequently asked questions, and contact information.

The Edwards Solar Farm community meeting was held at Glade Hill Fire/EMS – Station 4 on January 22nd, 2025, from 6:00 to 8:00 PM. Sign-in cards with contact information were encouraged to be filled out upon entrance of the community meeting. The sign-in cards offered attendees an opportunity to request follow-up meetings with CEP Solar. During the community meeting, the Applicant provided posterboards of The Project. The posterboards included a preliminary site plan map, a county map depicting the location of The Project in Franklin County, and an existing buildings map. Informational sheets included in the mailed packet were also available at the community meeting along with a one pager describing the difference between distribution and transmission level projects for community members to take with them.

The Applicant continues community outreach efforts post community meeting and encourages community members to reach out with any questions. A Summary of the community meeting, the sign in sheet, and the mailed invitation can be seen in [Exhibits 8.9 Community Meeting Summary](#).



## 8.0 Exhibits

### 8.1 List of Project Parcels

Parcel Id	Owner Name	Acreage	Zoning
0660003900	EDWARDS RONALD B	42.68	A1
0660010100	BLUE PENNY EDWARDS & EDWARDS RONALD B & PENN RUBY E	66.19	A1

### 8.2 List of Adjacent Parcels

Parcel Id	Owner	Address	Zoning
0660010105A	MUSE PATRICIA ANN ARRINGTON & OTHERS	2336 JACKS CREEK RD UNION HALL, VA 24176	A1
0660004402	CLEMENTS ANN C	148 NEWTON AVE NORWALK, CT 06851	A1
0660010105B	MUSE PATRICIA ANN ARINGTON & OTHERS	2336 JACKS CREEK ROAD UNION HALL, VA 24176	A1
0660004403	CLEMENTS ANN C	148 NEWTON AVE NORWALK, CT 06851	A1
0660010102	CLEMENTS ANN C	148 NEWTON AVE NORWALK, CT 06851	A1
0660004400	HALL TAMEKA A	2473 ROOSEVELT AVE SPRINGFIELD, MA 01104	A1
0660004300	EDWARDS PROPERTIES LTD	9384 OLD FRANKLIN TURNPIKE UNION HALL, VA 24176	A1
0690000100	ROCKYDALE QUARRIES CORP	2343 HIGHLAND FARM RD NW ROANOKE, VA 24017	A1
0660004100	HAMBRICK RONALD & SANDRA	960 THREE QUARTER POINT RD WIRTZ, VA 24184	A1
0660010700	DAVIS MONDRAGO MINOR & TERESCITA M & SHEATUN WHITESIDE	4514 CHENWOOD LN LOUISVILLE, KY 40299	A1
660010106	BLUE PENNY EDWARDS & EDWARDS RONALD B & PENN RUBY E	300 EDWARDSWAY RD UNION HALL, VA 24176	A1

## 8.3 Preliminary Site Exhibits



# EDWARDS SOLAR

## 5 MWac SOLAR ELECTRIC POWER GENERATION FACILITY SPECIAL USE PERMIT FRANKLIN COUNTY, VIRGINIA

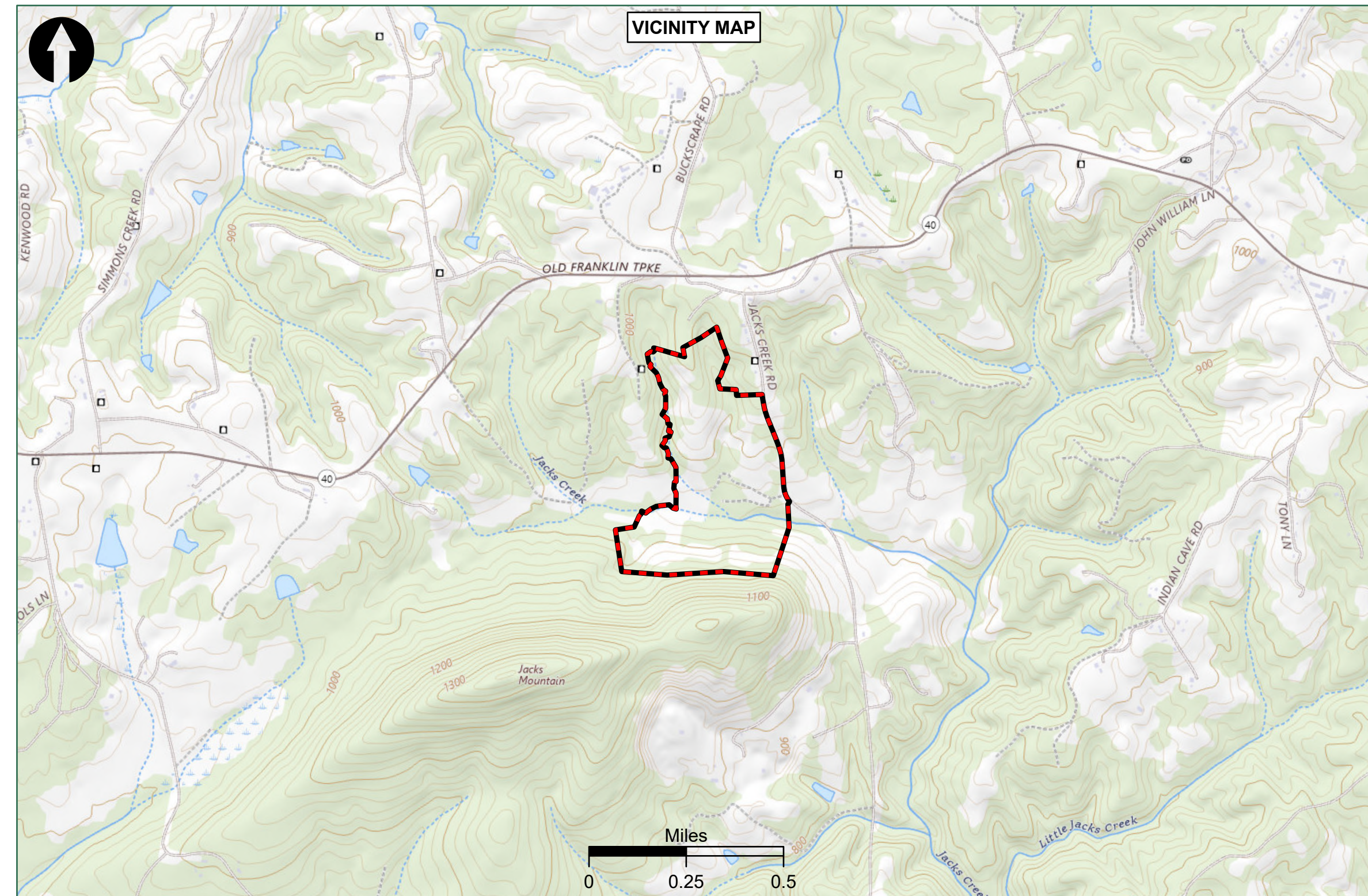


TABLE OF CONTENTS	
SHEET	DESCRIPTION
C1.0	COVER SHEET
C2.0	PARCEL AND ZONING MAP
C3.0	CONCEPTUAL SITE PLAN
C4.0	LANDSCAPING MAP
C4.1	LANDSCAPING NOTES AND DETAIL
C5.0	AREA MAP
C6.0	EXISTING BUILDINGS MAP
C7.0	EXISTING LAND USE MAP
C8.0	PRIME FARMLAND MAP
C9.0 - C9.1	WATERSHED MAP

### CEP SOLAR, LLC

#### DEVELOPER

2201 W BROAD STREET, SUITE 200  
RICHMOND, VA 23220  
TEL 804.789.4040  
WWW.CEPSOLAR.COM

### TIMMONS GROUP

#### ENGINEER

1001 BOULDERS PARKWAY, SUITE 300  
RICHMOND, VA 23225  
TEL 804.200.6500  
WWW.TIMMONS.COM

CONCEPTUAL SITE PLANS PREPARED BY TIMMONS GROUP

REVISED APRIL 9, 2025

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www.timmons.com

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COMMONWEALTH ENERGY PARTNERS  
2201 W Broad St., Suite 200  
Richmond, VA 23220

PROJECT NAME & LOCATION  
**EDWARDS SOLAR**  
FRANKLIN COUNTY,  
VIRGINIA

DATE: 12/11/2024  
PROJECT NUMBER: 47661.040  
PROJECT NAME: EDWARDS SOLAR  
DESIGNED BY / DRAWN BY: J. STICKLEY

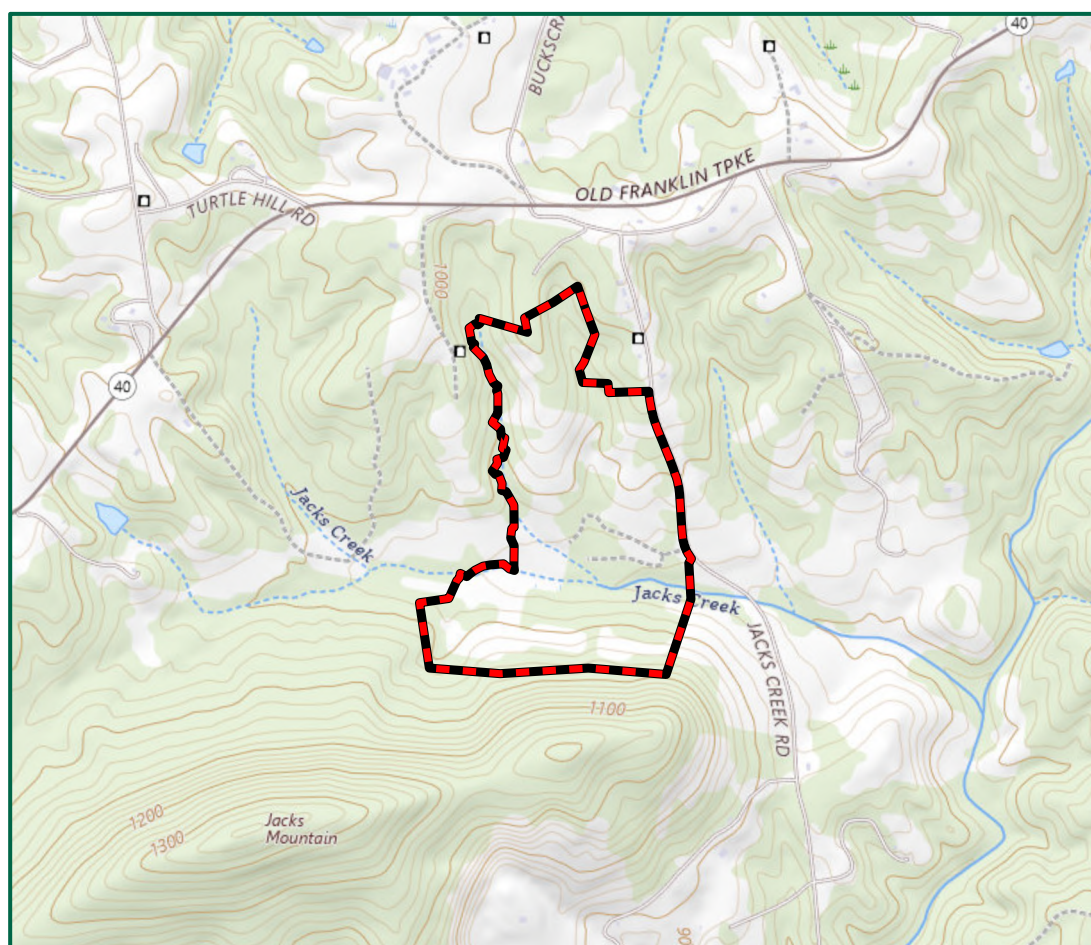
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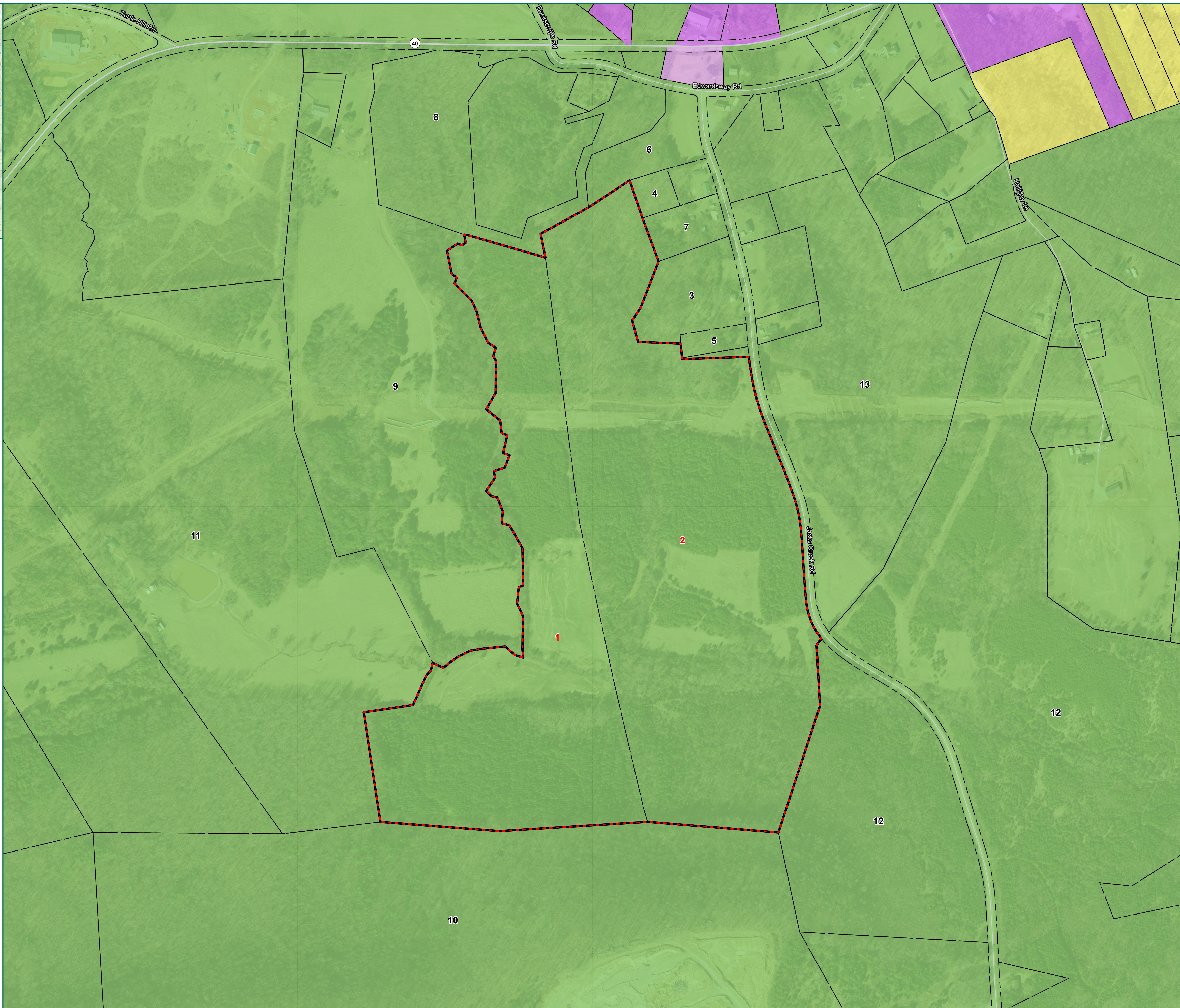
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COVER SHEET

PLANS PRINTED AS 11X17 ARE HALF SCALE  
SCALE SHEET NUMBER  
C1.0





- Legend**
- Project Limits - 108.87 Acres
  - Franklin County Tax Parcels
- Zoning Classification**
- A1: Agricultural
  - B1: Limited Business District
  - B2: General Business District
  - R1: Residential Suburban Subdivision



NOTES:  
 PARCEL AND ZONING DATA FROM FRANKLIN COUNTY GIS.  
 AERIAL IMAGERY FROM VGIN.

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**EDWARDS SOLAR**  
 FRANKLIN COUNTY,  
 VIRGINIA

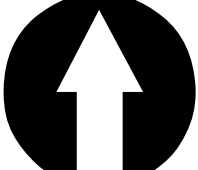
DATE	12/11/2024
PROJECT NUMBER	47661.040
PROJECT NAME	EDWARDS SOLAR
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#	MM/DD/YY	DESCRIPTION

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**PARCEL AND ZONING MAP**

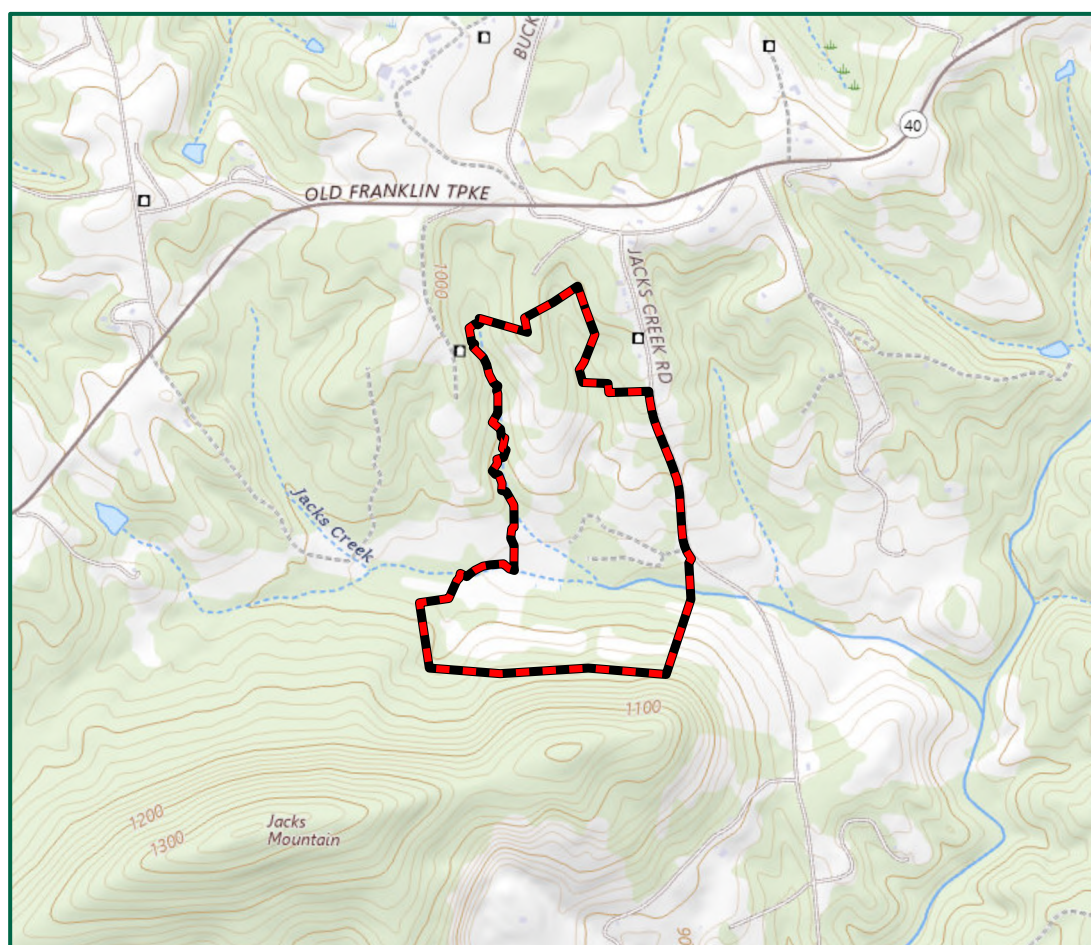
  
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PLANS PRINTED AS 11X17 ARE HALF SCALE  
 SCALE SHEET NUMBER  
 H: 1" = 250' C2.0



REVISIONS	
#	DESCRIPTION

PROJECT PARCEL INFORMATION						
MAP IDENTIFIER	PARCEL IDENTIFIER	OWNER	ADDRESS	CITY	STATE	ZIP CODE
1	0660003900	EDWARDS RONALD B	280 EDWARDSWAY ROAD	UNION HALL	VA	24176
2	0660010100	BLUE PENNY EDWARDS & EDWARDS RONALD B & PENN RUBY E	300 EDWARDSWAY RD	UNION HALL	VA	24177
ADJACENT PARCEL INFORMATION						
MAP IDENTIFIER	PARCEL IDENTIFIER	OWNER	ADDRESS	CITY	STATE	ZIP CODE
3	0660010105A	MUSE PATRICIA ANN ARRINGTON & OTHERS	2336 JACKS CREEK RD	UNION HALL	VA	24176
4	0660004402	CLEMENTS ANN C	148 NEWTON AVE	NORWALK	CT	06851
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7	0660010102	CLEMENTS ANN C	148 NEWTON AVE	NORWALK	CT	06851
8	0660004400	HALL TAMEKA A	2473 ROOSEVELT AVE	SPRINGFIELD	MA	01104
9	0660004300	EDWARDS PROPERTIES LTD	9384 OLD FRANKLIN TURNPIKE	UNION HALL	VA	24176
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11	0660004100	HAMBRICK RONALD & SANDRA	960 THREE QUARTER POINT RD	WIRTZ	VA	24184
12	0660010700	DAVIS MONDRAGO MINOR & TERESCITA M & SHEATUN WHITESIDE	4514 CHENWOOD LN	LOUISVILLE	KY	40299
13	660010106	BLUE PENNY EDWARDS & EDWARDS RONALD B & PENN RUBY E	300 EDWARDSWAY RD	UNION HALL	VA	24177





**Legend**

- Project Limits - 108.87 Acres
- Property Setbacks - 150'
- Buildable Area - 37.9 Acres
- ★ Entrance
- Point of Interconnection
- Inverters
- Mountain Valley Pipeline
- Electric Transmission Line
- Streams
- Internal Roads
- Panels - 25.4 Acres Under Panels
- Fence - 36.3 Acres
- Proposed Vegetative Buffer
- Retained Vegetative Buffer
- National Wetlands Inventory
- Wetland and Stream Buffer - 50'
- FEMA Flood Zone - Not Present
- Transmission Line Easement
- Mountain Valley Pipeline Easement
- Main Buildings
- Main Buildings Buffer - 300'
- Edwards Family Cemetery

**NOTES:**

1. SITE LAYOUT IS FOR DESIGN PURPOSES ONLY. NOT FOR CONSTRUCTION. LAYOUT SUBJECT TO CHANGE.
2. STREAM DATA FROM FRANKLIN COUNTY GIS.
3. FLOOD ZONE DATA FROM FEMA'S NATIONAL FLOOD HAZARD LAYER.
4. AERIAL IMAGERY FROM VGIN.
5. SETBACKS ARE BASED ON FRANKLIN COUNTY ORDINANCE.
6. SETBACKS ARE 150 FEET FROM ALL PUBLIC RIGHTS-OF-WAY, ADJACENT PROPERTY LINES, AND 300' MAIN BUILDINGS ON ADJOINING PARCELS.
7. VEGETATION ON THE PERIMETER OF ADJACENT RESIDENTIAL PARCELS WILL BE RETAINED AS BUFFER WHERE IT EXISTS.



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 www.timmons.com

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 2201 W Broad St, Suite 200  
 Richmond, VA 23220

**EDWARDS SOLAR**  
 FRANKLIN COUNTY,  
 VIRGINIA

DATE	12/11/2024
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PROJECT NAME	EDWARDS SOLAR
DESIGNED BY / DRAWN BY	J. STICKLEY

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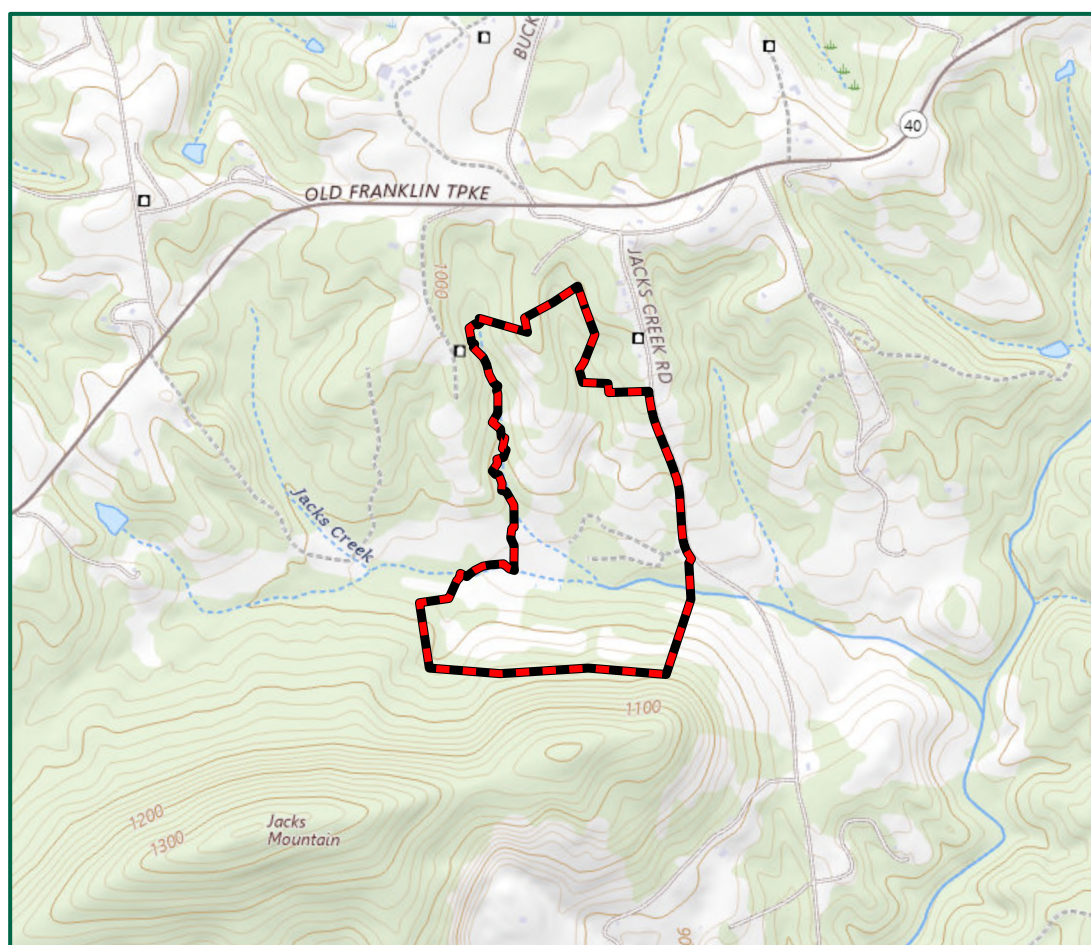
REVISIONS	
#	DESCRIPTION
1	04/09/25 Revised to reflect layout changes

**DRAWING DESCRIPTION**  
 CONCEPTUAL  
 SITE PLAN

**SCALE (FEET)**

0 200 400  
 PLANS PRINTED AS 11X17 ARE HALF SCALE  
 SCALE SHEET NUMBER  
 H: 1" = 200' C3.0





- Legend**
- Project Limits - 108.87 Acres
  - Property Setbacks - 150'
  - Streams
  - Panels - 25.4 Acres Under Panels
  - Fence - 36.3 Acres
  - Native Pollinator Seed Mix
  - Solar Farm Seed Mix
  - Proposed Vegetative Buffer
  - Retained Vegetative Buffer
  - Wetland and Stream Buffer - 50'
  - FEMA Flood Zone - Not Present



**NOTES:**

1. SEE SHEET 4.1 FOR LANDSCAPING NOTES AND DETAILS.
2. STREAM DATA FROM FRANKLIN COUNTY GIS.
3. FLOOD ZONE DATA FROM FEMA'S NATIONAL FLOOD HAZARD LAYER.
4. AERIAL IMAGERY FROM VGIN.

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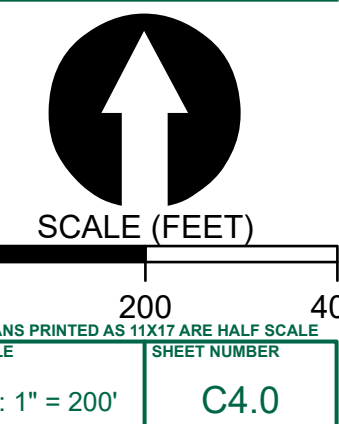
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REVISIONS	
#	DESCRIPTION
1	04/09/25 Revised to reflect layout changes

DRAWING DESCRIPTION:  
**LANDSCAPING  
 MAP**





## VEGETATIVE BUFFER NOTES

- PROVIDE A 30-FOOT WIDE LANDSCAPE BUFFER CONSISTING OF STAGGERED ROWS OF TREES AND OTHER VEGETATION PER ARTICLE II, SEC. 25-147(E) OF FRANKLIN COUNTY ORDINANCE.
- SEED POLLINATOR MEADOW WITH SOLAR POLLINATOR BUFFER MIX.
- NON-INVASIVE PLANT SPECIES AND POLLINATOR-FRIENDLY AND WILDLIFE-FRIENDLY NATIVE PLANTS, SHRUBS, TREES, GRASSES, FORBS, AND WILDFLOWERS MUST BE USED IN THE VEGETATIVE BUFFER FOLLOWING VIRGINIA POLLINATOR-SMART PROGRAM BEST PRACTICES.
- PRESERVE EXISTING WETLANDS AND WOODLANDS TO SERVE AS A MINIMUM 150' VEGETATIVE BUFFER. IF EXISTING TREES AND VEGETATION ARE DISTURBED, PROVIDE NEW BUFFER PLANTINGS. WHERE INTERMITTENT EXISTING TREES OR SHRUBS EXIST WITHIN A PROPOSED BUFFER LOCATION, PROPOSED SCREENING MUST BE FIELD-LOCATED AND PLANTED AS NEEDED TO SUPPLEMENT THE EXISTING VEGETATIVE SCREENING.
- ENSURE THAT ALL PLANT MATERIAL MEETS REQUIREMENTS IN THE FRANKLIN COUNTY ORDINANCE.
- TREES PLANTED IN THE BUFFER MUST BE AT LEAST SIX (6) FEET TALL AT TIME OF PLANTING. ALL TREES TO BE PLANTED SHALL MEET THE SPECIFICATIONS OF THE AMERICAN ASSOCIATION OF NURSERYMEN.
- VARY THE SPECIES USED EVERY 100 LINEAR FEET.
- FENCING MUST BE INSTALLED ON THE SOLAR PANEL SIDE OF THE BUFFER (SEE PLANTING TEMPLATE BELOW).
- FACILITY AREA SHALL BE SEEDED PROMPTLY WITH POLLINATOR-FRIENDLY VEGETATION FOLLOWING COMPLETION OF CONSTRUCTION.
- AT THE BEGINNING OF THE NEXT PLANTING SEASON THE FACILITY AREA, SETBACKS AND BUFFERS WILL BE OVERSEEDED WITH APPROPRIATE POLLINATOR-FRIENDLY NATIVE PLANTS, SHRUBS, TREES, GRASSES, FORBS, AND WILDFLOWERS FOLLOWING VIRGINIA POLLINATOR-SMART PROGRAM BEST PRACTICES.

## RECOMMENDED COVER CROPS (TEMPORARY SEEDING)

BOTANICAL NAME	COMMON NAME	SEEDS RATE: POUNDS PER ACRE
AVENA SATIVA	GRAIN OATS	50-100
SETARIA ITALICA	GERMAN MILLET	50
SECALE CEREALE	GRAIN RYE	50-100

## RECOMMENDED BUFFER PLANT LIST

### EVERGREEN TREES

#### BOTANICAL NAME / COMMON NAME

ILEX OPACA / AMERICAN HOLLY  
 JUNIPERUS VIRGINIANA / EASTERN RED CEDAR  
 PINUS VIRGINIANA / VIRGINIA PINE  
 PINUS TAEDA / LOBLOLLY PINE

### CANOPY DECIDUOUS TREES

#### BOTANICAL NAME / COMMON NAME

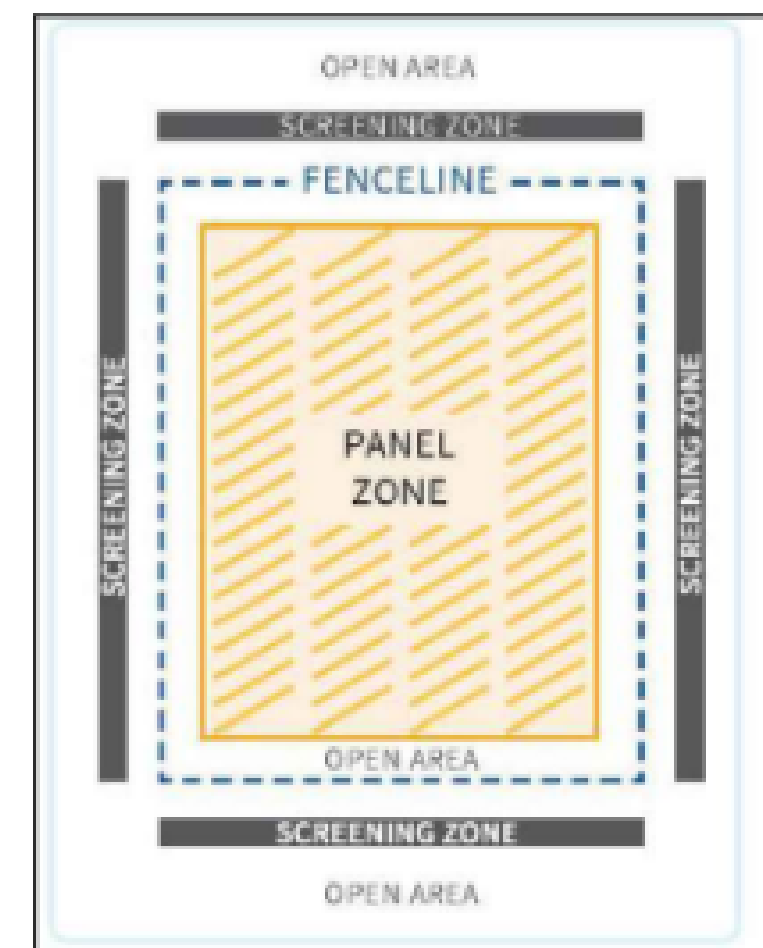
QUERCUS RUBRA / RED OAK  
 NYSSA SYLVATICA / BLACK GUM  
 QUERCUS PALUSTRIS/ PIN OAK

### UNDERSTORY DECIDUOUS TREES

#### BOTANICAL NAME / COMMON NAME

AMELANCHIER ARBOREA / DOWNY SERVICEBERRY  
 CERCIS CANADENSIS / EASTERN REDBUD  
 MAGNOLIA VIRGINIANA / SWEETBAY MAGNOLIA

## PROJECT AREA DIAGRAM



### DEFINITIONS

**Open Area:** Any area beyond the panel zone, within the property boundary.

**Panel Zone:** The area underneath the solar arrays, including inter-row spacing.

**Screening Zone:** A vegetated visual barrier.

**Solar Native Plant Finder:** The Virginia Solar Site Native Plant Finder ([link](#)), an online research tool developed by the DCR Natural Heritage Program.

**Used by Pollinators:** Plant species with a "pollinator" designation on the Virginia Solar Site Native Plant Finder.

SOURCE: VIRGINIA POLLINATOR-SMART COMPREHENSIVE PLAN

## RECOMMENDED GROUND COVER SEED MIXES

### SOLAR NATIVE POLLINATOR MIX

#### FOR USE IN PANEL ZONE

VA SOLAR POLLINATOR 3' MIX - ERNMX-622



### Ernst Conservation Seeds

8884 Mercer Pike  
 Meadville, PA 16335  
 (800) 873-3321 Fax (814) 336-5191  
[www.ernstseed.com](http://www.ernstseed.com)

Date: December 10, 2024

### VA Solar Pollinator 3' Mix - ERNMX-622

Botanical Name	Common Name	Price/Lb
91.00 % <i>Bouteloua gracilis</i> , Bad River	Blue Grama, Bad River	43.77
4.00 % <i>Asclepias tuberosa</i>	Butterfly Milkweed	432.00
2.50 % <i>Chamaecrista nictitans</i> , NC Ecotype	Sensitive Pea, NC Ecotype	57.60
2.00 % <i>Chamaecrista fasciculata</i> , PA Ecotype	Partridge Pea, PA Ecotype	12.00
0.50 % <i>Penstemon hirsutus</i>	Hairy Beardtongue	480.00
<b>100.00 %</b>	<b>Mix Price/Lb Bulk:</b>	<b>\$61.19</b>

**Seeding Rate:** Seed at 8 lbs/acre with 30 lbs/acre of a cover crop. For a cover crop use either grain oats (1 Jan to 31 Jul), brown top millet (10 lbs/acre; 1 May to 31 Aug) or grain rye (1 Aug to 31 Dec).

Grasses & Grass-like Species - Herbaceous Perennial; Herbaceous Flowering Species - Herbaceous Perennial; Pollinator Favorites; Solar Sites

APPLY THIS MIX AT 8 LBS PLS/ACRE WITH A COVER CROP.

FOR A COVER CROP USE ONE OF THE FOLLOWING: OATS (30 LBS/ACRE; 1 JAN TO 30 APR), BROWN TOP MILLET (10 LBS/ACRE; 1 MAY TO 31 AUG), OR GRAIN RYE (30 LBS/ACRE; 1 SEP TO 31 DEC).

### NATIVE POLLINATOR BUFFER MIX

#### FOR USE IN OPEN AREA AND BUFFER

ERNST SOLAR FARM SEED MIX



### Ernst Conservation Seeds

8884 Mercer Pike  
 Meadville, PA 16335  
 (800) 873-3321 Fax (814) 336-5191  
[www.ernstseed.com](http://www.ernstseed.com)

Date: December 10, 2024

### Ernst Solar Farm Seed Mix - ERNMX-186

Botanical Name	Common Name	Price/Lb
45.50 % <i>Festuca rubra</i>	Creeping Red Fescue	3.30
15.00 % <i>Festuca longifolia</i> , 'Sturgeon'	Hard Fescue, 'Sturgeon'	5.10
15.00 % <i>Festuca longifolia</i> , 'Sword II'	Hard Fescue, 'Sword II'	5.10
10.00 % <i>Festuca rubra</i> ssp. <i>commutata</i>	Chewings Fescue	3.78
5.00 % <i>Poa pratensis</i> , 'Navy'	Kentucky Bluegrass, 'Navy'	3.78
5.00 % <i>Poa pratensis</i> , 'Wildhorse'	Kentucky Bluegrass, 'Wildhorse'	3.78
4.50 % <i>Trifolium repens</i> , Dutch	White Clover, Dutch	8.40
<b>100.00 %</b>	<b>Mix Price/Lb Bulk:</b>	<b>\$4.17</b>

**Seeding Rate:** 4 lb per 1,000 sq ft

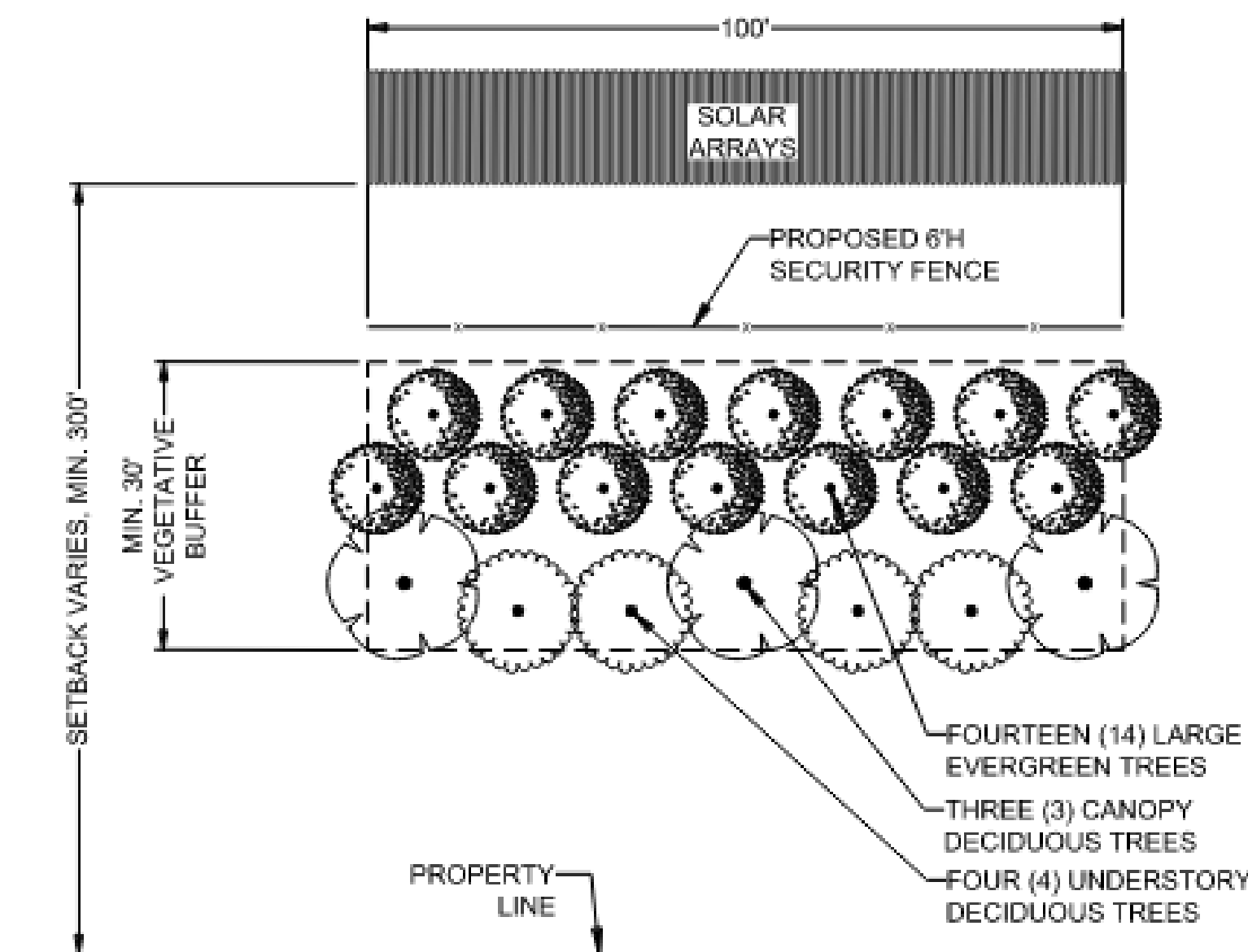
Grasses & Grass-like Species - Herbaceous Perennial; Lawn & Turfgrass Sites; Solar Sites

Provide a 2' clearance between the ground and the solar panels. Mix formulations are subject to change without notice depending on the availability of existing and new products. While the formula may change, the guiding philosophy and function of the mix will not.

APPLY THIS MIX AT 10 LBS PLS/ACRE WITH A COVER CROP.

FOR A COVER CROP USE ONE OF THE FOLLOWING: OATS (30 LBS/ACRE; 1 JAN TO 30 APR), BROWN TOP MILLET (10 LBS/ACRE; 1 MAY TO 31 AUG), OR GRAIN RYE (30 LBS/ACRE; 1 SEP TO 31 DEC).

## VEGETATIVE BUFFER PLANTING TEMPLATE



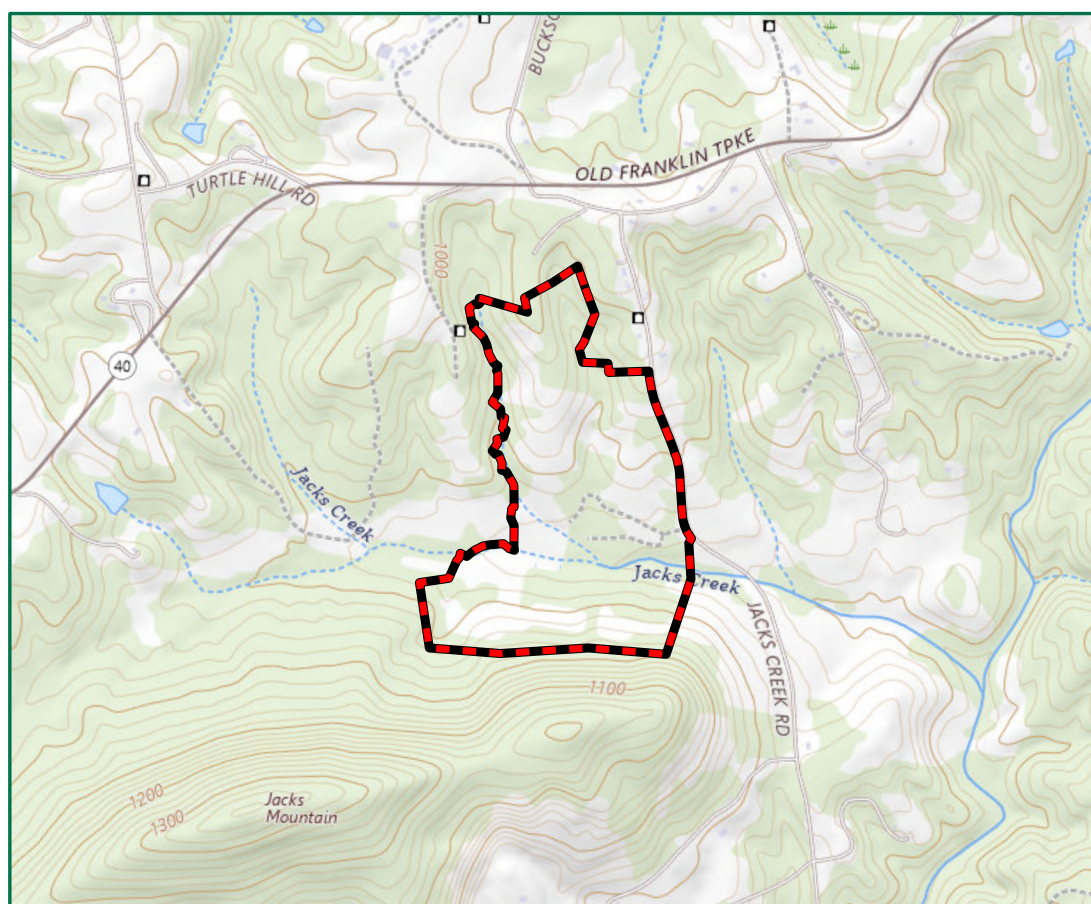
DATE	12/11/2024
PROJECT NUMBER	47661.040
PROJECT NAME	EDWARDS SOLAR
DESIGNED BY / DRAWN BY	J. STICKLEY

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REVISIONS	
#	DESCRIPTION

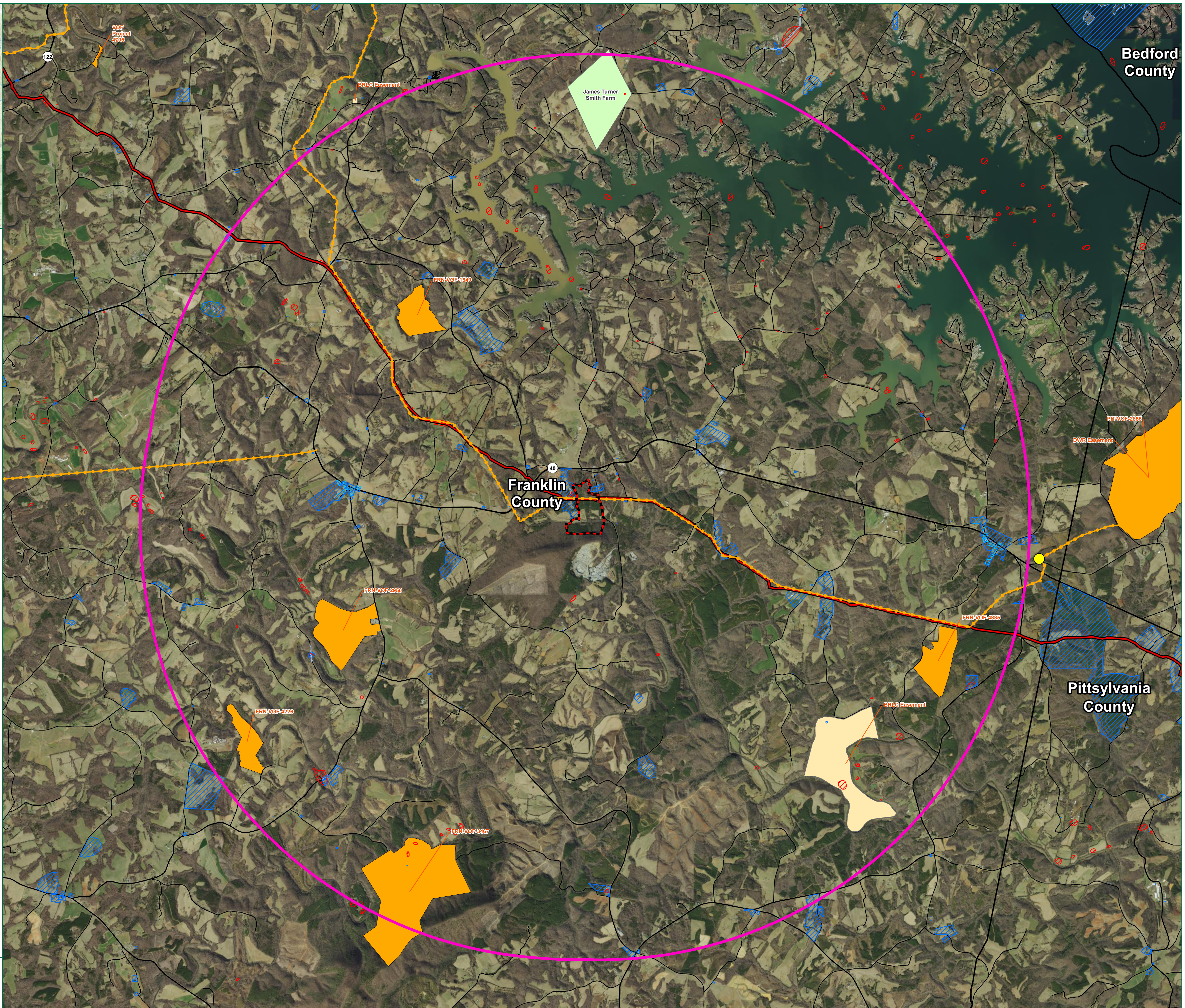
DRAWING DESCRIPTION  
 LANDSCAPING NOTES AND DETAILS





- Legend**
- Project Limits - 108.87 Acres
  - Five Mile Buffer
  - Designated Growth Areas - Not Present
  - Airports - Not Present
  - Electric Substations
  - Electric Transmission Line
  - Mountain Valley Pipeline
  - Virginia Counties
  - VCRIS Historical Resources**
  - Architecture Resources
  - Individual Historic District Properties
  - Archaeological Resources
  - DHR Easements - Not Present
  - Archaeology Phase 1 Survey
  - Local, State, Federal, and Other Protected Lands**
  - State
  - Private
  - Local Park
  - State and Federal Lands**
  - State Natural Area Preserve

NOTES:  
 PROJECT LIMITS ARE APPROXIMATE.  
 CULTURAL RESOURCE DATA FROM DHR.  
 PARKS DATA FROM DCR.  
 AIRPORT DATA FROM ESRI.  
 AERIAL IMAGERY FROM VGIN.



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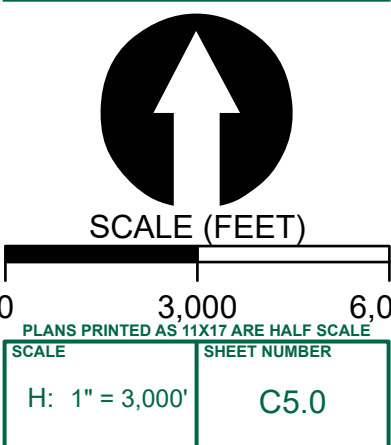
**EDWARDS SOLAR**  
 FRANKLIN COUNTY,  
 VIRGINIA

DATE: 12/11/2024  
 PROJECT NUMBER: 47661.040  
 PROJECT NAME: EDWARDS SOLAR  
 DESIGNED BY / DRAWN BY: J. STICKLEY

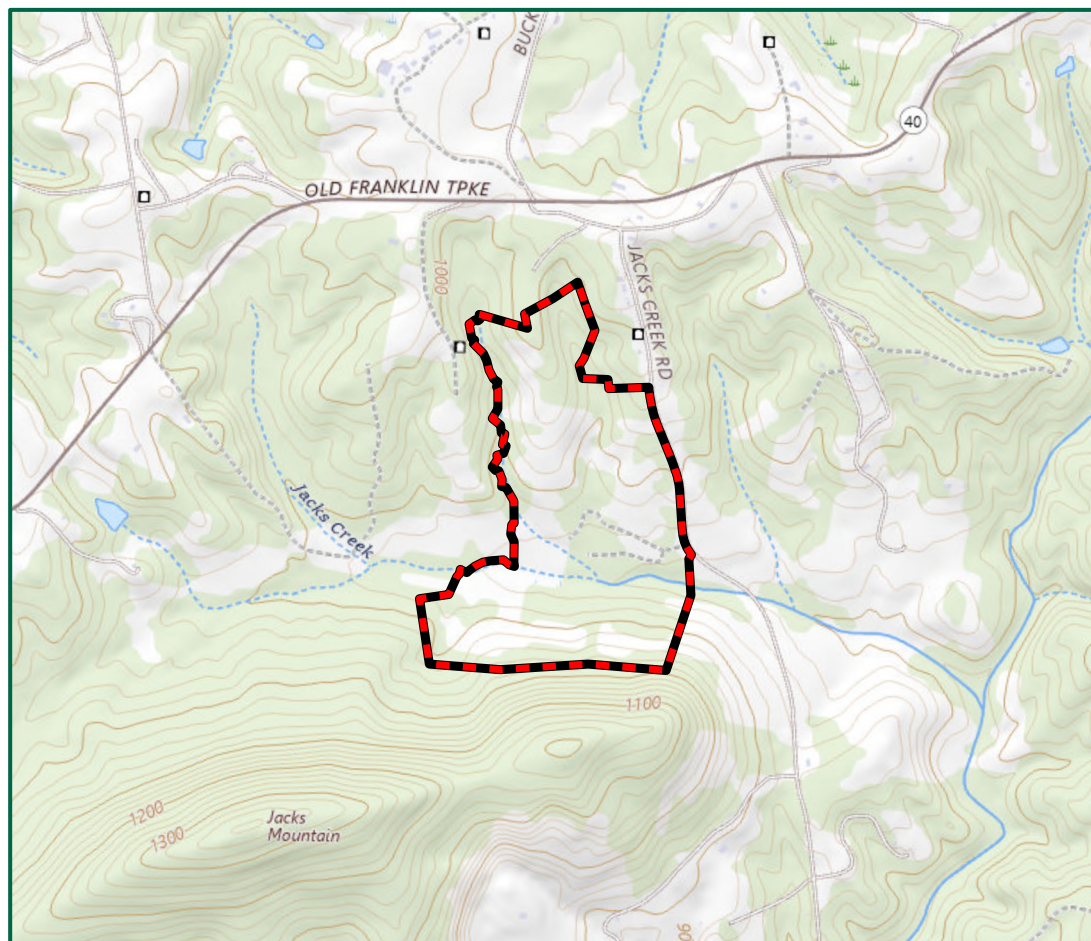
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REVISIONS	
#	DESCRIPTION

DRAWING DESCRIPTION:  
**AREA MAP**







**Legend**

- Project Limits - 108.87 Acres
  - Property Setbacks - 150'
  - Buildable Area - 37.9 Acres
  - Existing Buildings
- Distance from the Project Limits
- 100'
  - 200'
  - 300'



- NOTES:**
1. SETBACKS FROM FRANKLIN COUNTY SOLAR ORDINANCE.
  2. SETBACKS ARE 150' FROM ADJACENT PROPERTY LINES.
  3. VIRGINIA BUILDING FOOTPRINTS FROM VGIN.
  4. AERIAL IMAGERY FROM VGIN.

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**EDWARDS SOLAR**  
 FRANKLIN COUNTY,  
 VIRGINIA

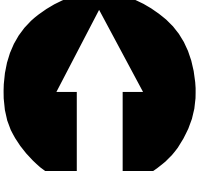
DATE	12/11/2024
PROJECT NUMBER	47661.040
PROJECT NAME	EDWARDS SOLAR
DESIGNED BY / DRAWN BY	J. STICKLEY

**NOTES**

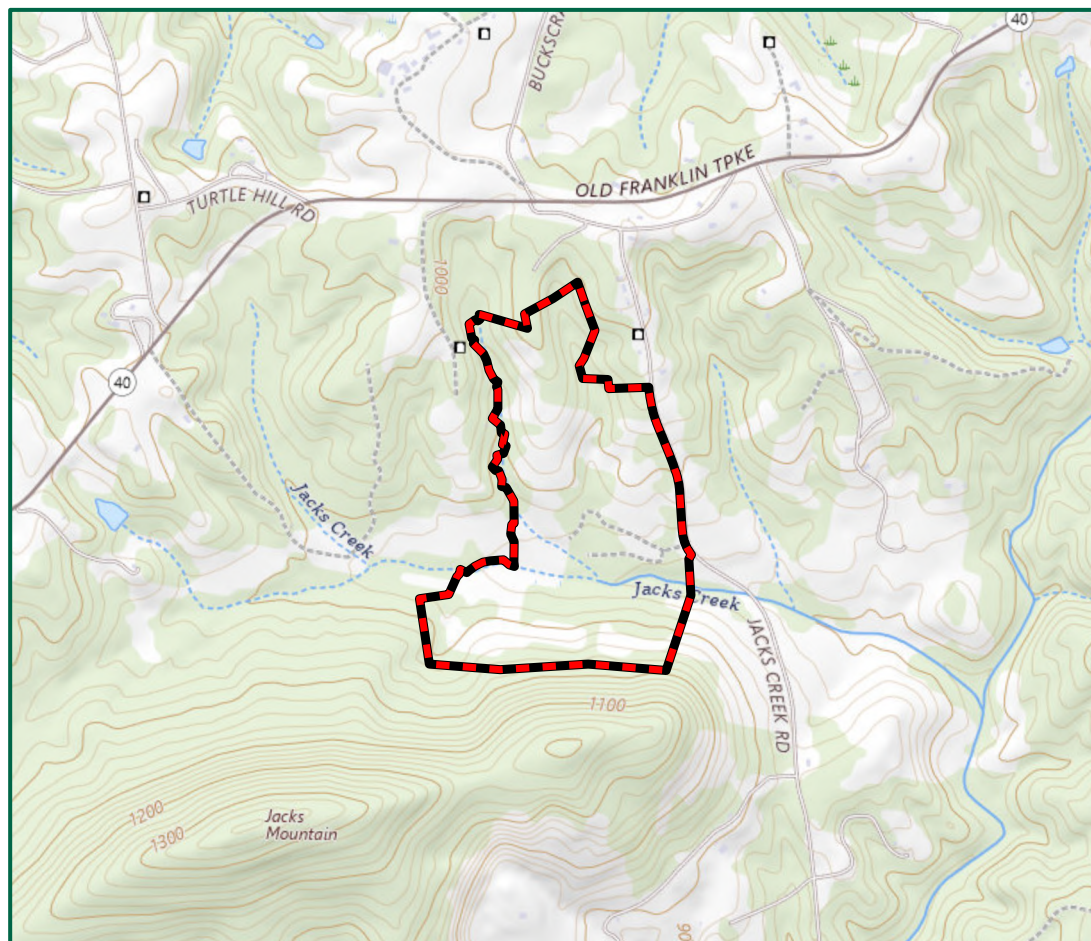
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#	MM/DD/YYYY	DESCRIPTION
1	04/09/25	Revised to reflect layout changes

**DRAWING DESCRIPTION**  
 EXISTING  
 BUILDINGS MAP

  
**SCALE (FEET)**  
 0 250 500  
PLANS PRINTED AS 11X17 ARE HALF SCALE  
SCALE SHEET NUMBER  
 H: 1" = 250'      C6.0





**Legend**

- Project Limits - 108.87 Acres
- Existing Forests - 88.7 Acres
- Cultivated Lands - 14.7 Acres
- Cleared Lands - 5.5 Acres



NOTES:  
 LAND USE GENERATED FROM AERIAL IMAGERY.  
 AERIAL IMAGERY FROM VGIN.

  
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**EDWARDS SOLAR**  
 FRANKLIN COUNTY,  
 VIRGINIA

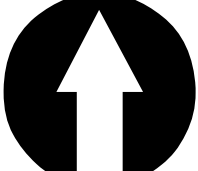
DATE	12/11/2024
PROJECT NUMBER	47661.040
PROJECT NAME	EDWARDS SOLAR
DESIGNED BY / DRAWN BY	J. STICKLEY

NOTES

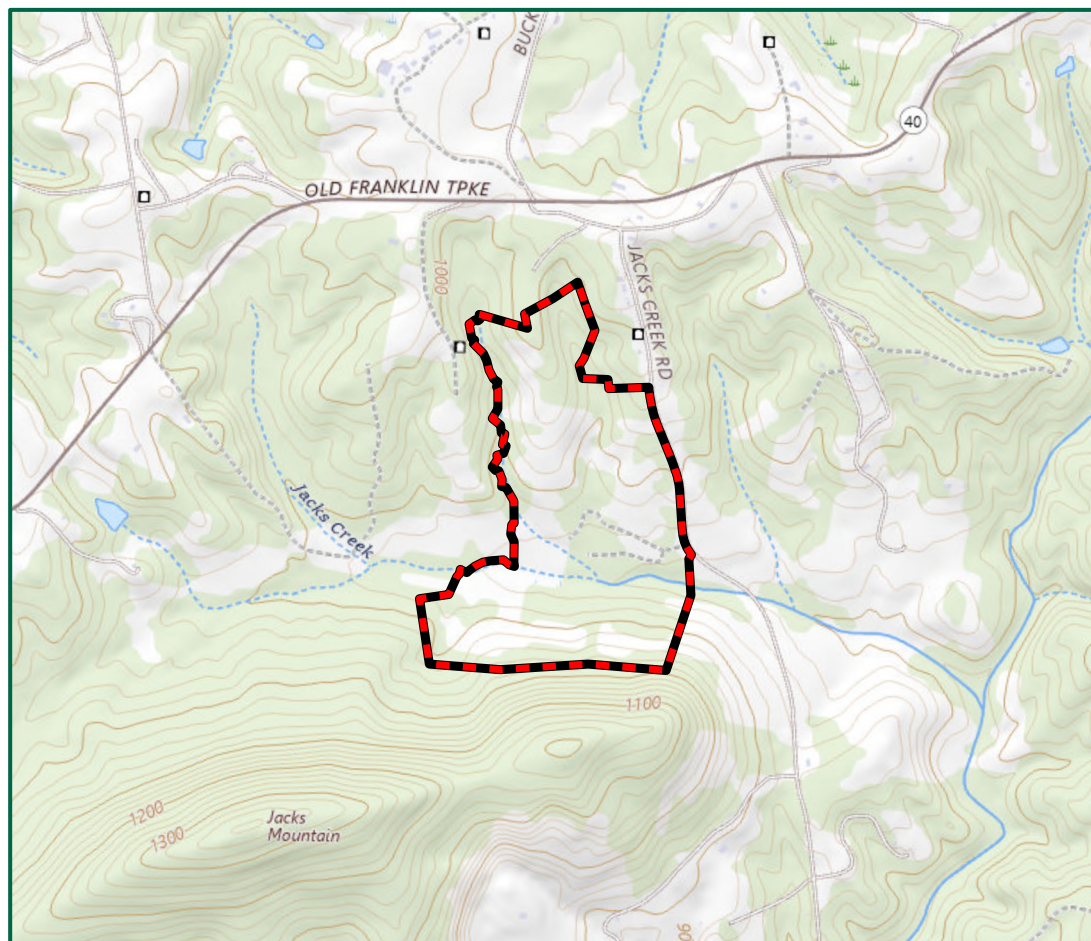
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#	DESCRIPTION

DRAWING DESCRIPTION  
**EXISTING LAND USE MAP**

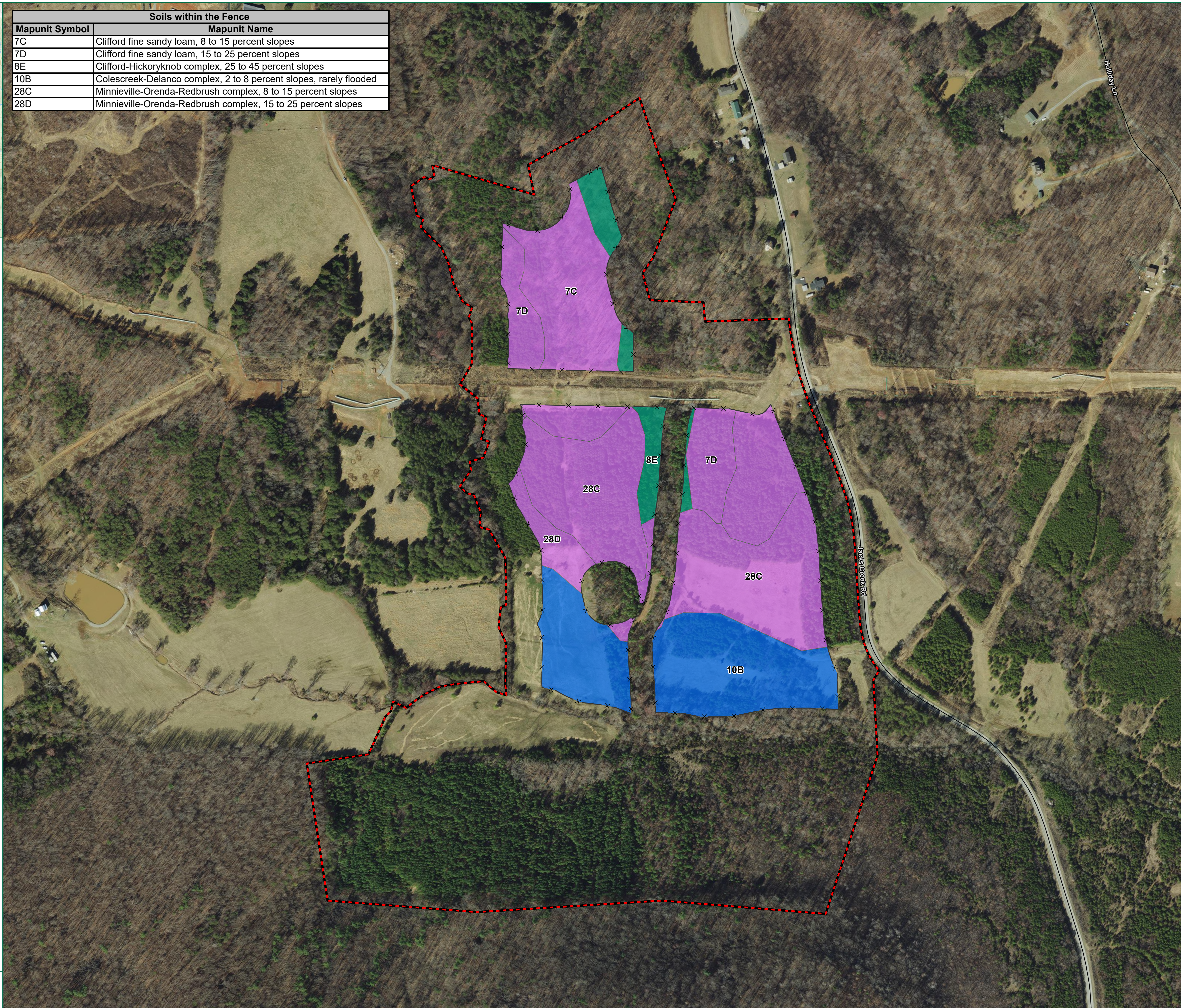
  
**SCALE (FEET)**  
 0 200 400  
PLANS PRINTED AS 11X17 ARE HALF SCALE  
SCALE SHEET NUMBER  
 H: 1" = 200'      C7.0





- Legend**
- Project Limits - 108.87 Acres
  - Fence - 36.3 acres
- Farmland Class**
- All Areas Are Prime Farmland - 9.2 Acres
  - Farmland of Statewide Importance - 25.0 Acres
  - Not Prime Farmland - 2.1 Acres

Soils within the Fence	
Mapunit Symbol	Mapunit Name
7C	Clifford fine sandy loam, 8 to 15 percent slopes
7D	Clifford fine sandy loam, 15 to 25 percent slopes
8E	Clifford-Hickoryknob complex, 25 to 45 percent slopes
10B	Colescreek-Delanco complex, 2 to 8 percent slopes, rarely flooded
28C	Minnieville-Orenda-Redbrush complex, 8 to 15 percent slopes
28D	Minnieville-Orenda-Redbrush complex, 15 to 25 percent slopes



**NOTES:**  
 1. SOILS DATA FROM SSURGO.  
 2. AERIAL IMAGERY FROM VGIN.

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**EDWARDS SOLAR**  
 FRANKLIN COUNTY,  
 VIRGINIA

DATE	12/11/2024
PROJECT NUMBER	47661.040
PROJECT NAME	EDWARDS SOLAR
DESIGNED BY / DRAWN BY	J. STICKLEY

**NOTES**

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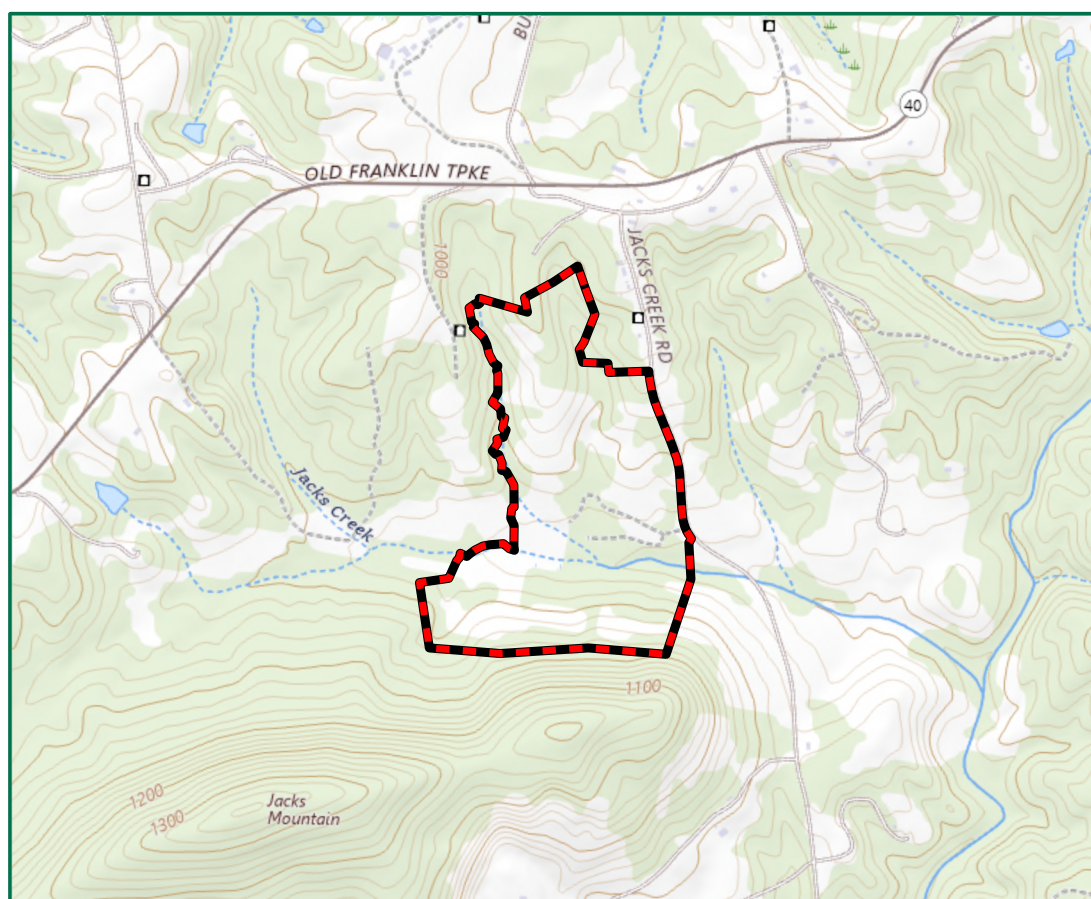
#	MM/DD/YYYY	DESCRIPTION
1	04/09/25	Revised to reflect layout changes

**PRIME FARMLAND MAP**

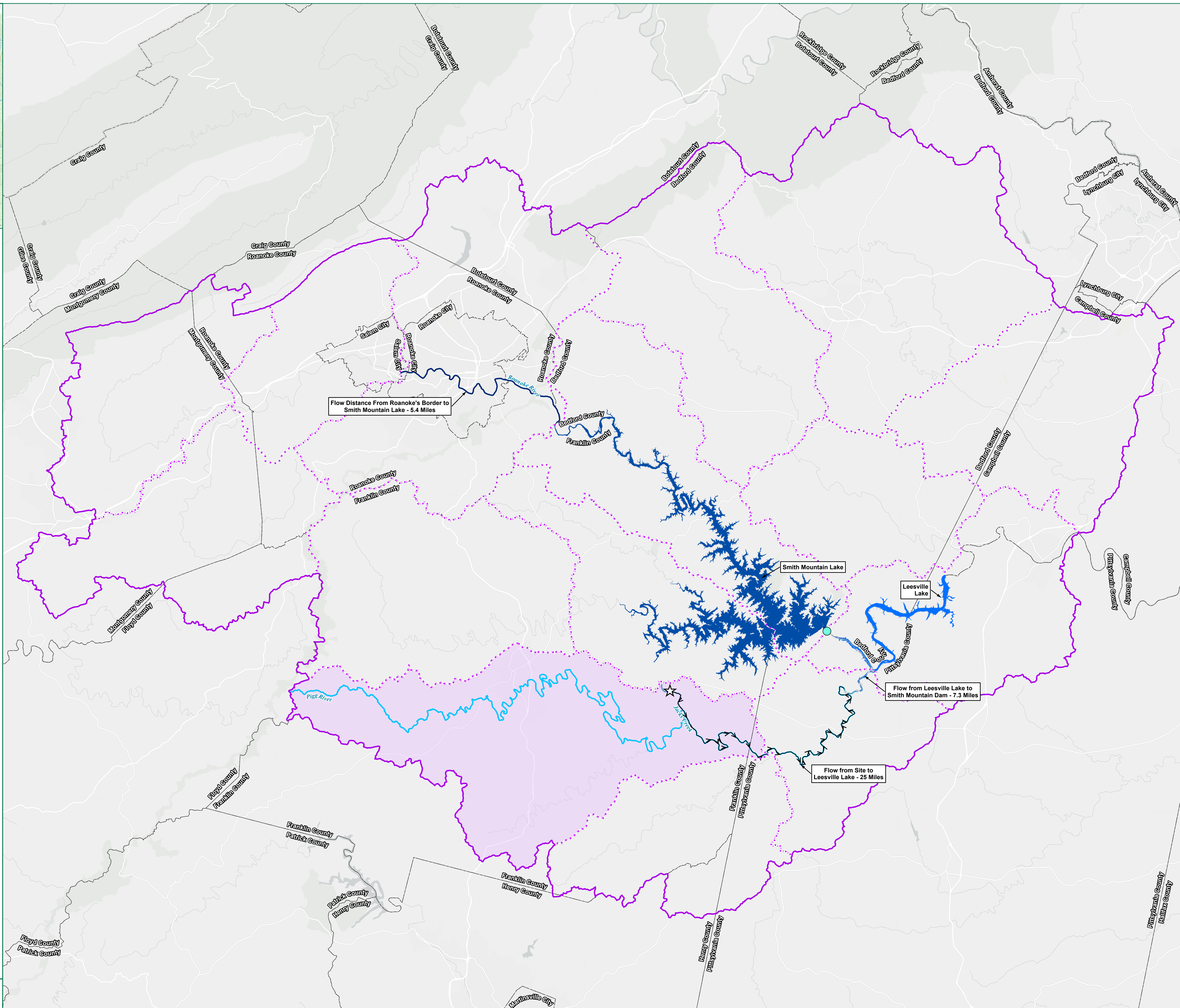
**SCALE (FEET)**

0 200 400  
 PLANS PRINTED AS 11X17 ARE HALF SCALE  
 SCALE SHEET NUMBER  
 H: 1" = 200' C8.0





- Legend**
- ☆ Approximate Site Location
  - Smith Mountain Dam
  - Riverflow from Site to Leesville Lake
  - ← Riverflow from Leesville Lake to Smith Mountain Dam
  - Jacks Creek
  - Pigg River
  - Roanoke River
  - Leesville Lake
  - Smith Mountain Lake
  - Hydrologic Unit Code 8 - Subbasin
  - Hydrologic Unit Code 10 - Watershed
  - Project Watershed - Upper Pigg River
  - County Boundary



NOTES:  
 1. HYDROLOGIC UNIT CODES AND NATIONAL HYDROGRAPHY DATASET FROM USGS.  
 2. DAM DATA FROM DCR.  
 3. BASEMAP FROM ESRI.

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**EDWARDS SOLAR**  
 FRANKLIN COUNTY,  
 VIRGINIA

PROJECT NAME & LOCATION

DATE	02/21/2025
PROJECT NUMBER	47661.040
PROJECT NAME	EDWARDS SOLAR
DESIGNED BY / DRAWN BY	M. HILL

REVISIONS

#	MMDDYY	DESCRIPTION

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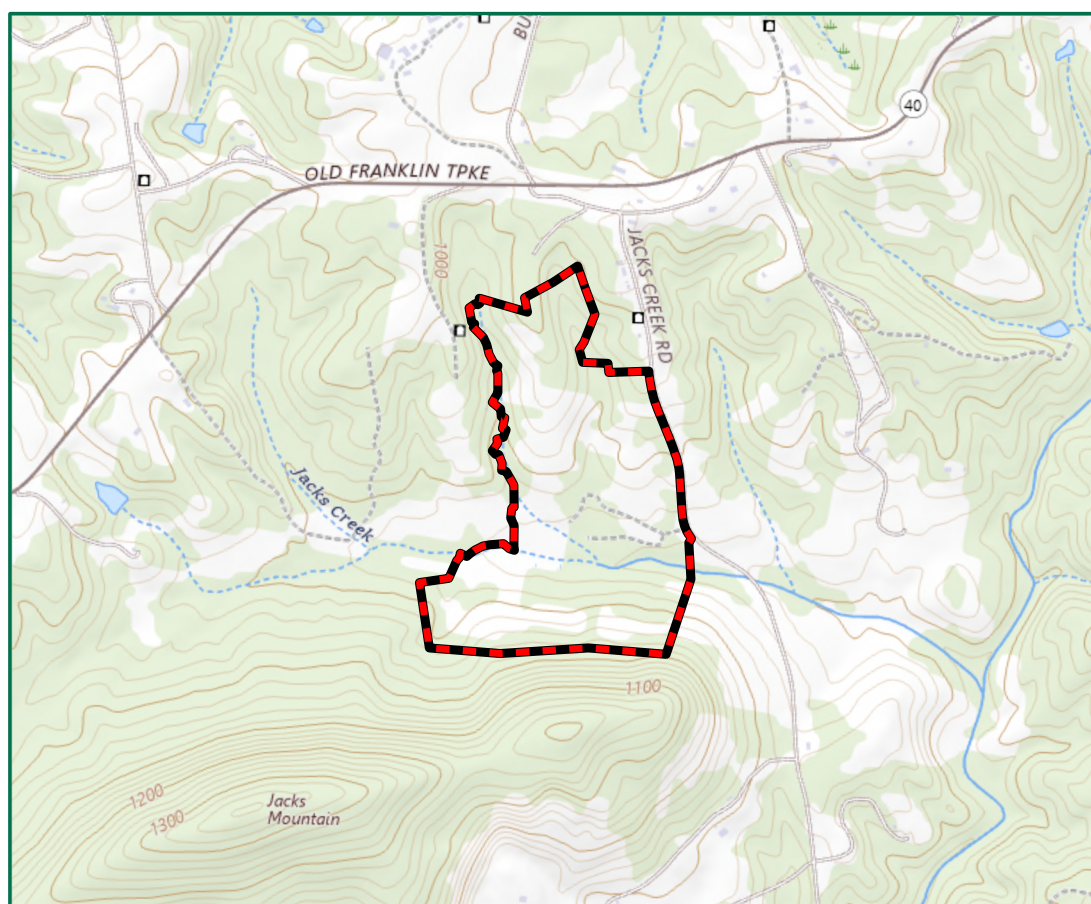
DRAWING DESCRIPTION

**WATERSHED MAP**

SCALE (MILES)

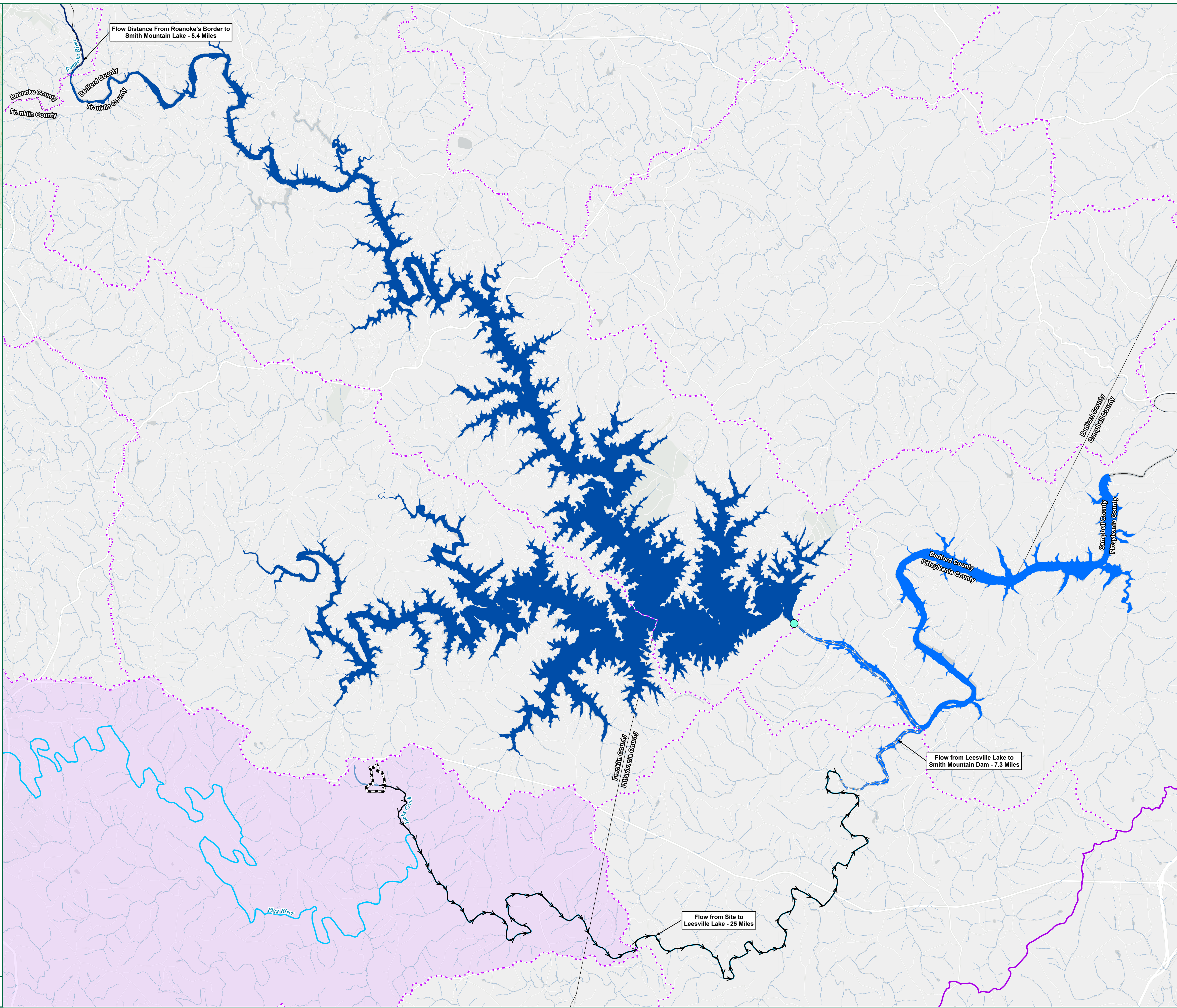
0 3 6  
 PLANS PRINTED AS 11X17 ARE HALF SCALE  
 SCALE SHEET NUMBER  
 H: 1" = 3 mi C9.0





- Legend**
- Project Limits - 108.87 Acres
  - Smith Mountain Dam
  - Riverflow from Site to Leesville Lake
  - Riverflow from Leesville Lake to Smith Mountain Dam
  - Jacks Creek
  - Pigg River
  - Roanoke River
  - National Hydrography Dataset - Streams
  - Leesville Lake
  - Smith Mountain Lake
  - Hydrologic Unit Code 8 - Subbasin
  - Hydrologic Unit Code 10 - Watershed
  - Project Watershed - Upper Pigg River
  - County Boundary

NOTES:  
 1. HYDROLOGIC UNIT CODES AND NATIONAL HYDROGRAPHY DATASET FROM USGS.  
 2. DAM DATA FROM DCR.  
 3. BASEMAP FROM ESRI.



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PROJECT NAME & LOCATION  
**EDWARDS SOLAR**  
 FRANKLIN COUNTY,  
 VIRGINIA

DATE	02/21/2025
PROJECT NUMBER	47661.040
PROJECT NAME	EDWARDS SOLAR
DESIGNED BY / DRAWN BY	M. HILL

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#	MM/DD/YYYY	DESCRIPTION

DRAWING DESCRIPTION  
**WATERSHED MAP**

SCALE (FEET)  
 0 6,000 12,000  
 PLANS PRINTED AS 11X17 ARE HALF SCALE  
 SCALE SHEET NUMBER  
 H: 1" = 6,000' C9.1



## 8.4 Anticipated Traffic Analysis and VDOT Correspondence

# Traffic & Route Evaluation Study

## Edwards Solar Project

Franklin County, Virginia

December 2024

Prepared For:

CEP Solar, LLC

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Contact: Scott Dunn, AICP, PTP

1001 Boulders Parkway, Suite 300 • Richmond, VA 23225  
(804) 200-6500 phone • (804) 560-1438 fax  
[www.timmons.com](http://www.timmons.com)

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# **Traffic & Route Evaluation Study**

## **Edwards Solar Project**

Franklin County, Virginia

Prepared For:

CEP Solar, LLC  
2201 W. Broad St.  
Suite 200  
Richmond, VA 23220

Prepared By:

Timmons Group  
1001 Boulders Parkway  
Suite 300  
Richmond, Virginia 23225  
(804) 200-6500

December 2024

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SITE ENTRANCES.....	3-1
TRAFFIC MITIGATION .....	3-1
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## **1 PROJECT OVERVIEW**

Timmons Group, at the request of CEP Solar, LLC completed a transportation assessment for the proposed Edwards Solar Project, located in Franklin County, Virginia. This work has been prepared in conjunction with the site's evaluation to identify any potential transportation issues and recommend solutions. The tasks associated with this assessment included:

- Review of data and documents provided by the Client relative to the project;
- Coordination with the Client on access, schedule, and other parameters that are reflected in the traffic assessment;
- Obtaining available geometric (roadway widths, intersection control, etc.) and speed limit data that is readily available via a review of available aerial imagery through Google Earth, Bing, or County GIS systems;
- Obtaining available VDOT traffic data for those roads adjacent to the site;
- Preparing a crash analysis history for the past five (5) years along the traffic route via available VDOT crash history; and
- Preparing a narrative summarizing existing intersection conditions, traffic along the adjacent roadway network, and anticipated impacts associated with the site-related traffic along with potential mitigation measures.

## 2 EXISTING CONDITIONS

Timmons Group compiled existing roadway conditions and crash data for facilities adjacent to the proposed Edwards Solar Project located in Franklin County, Virginia. The proposed site is located south of Smith Mountain Lake in Franklin, Virginia. Vehicles are anticipated to access the property via Route 40 (Old Franklin Turnpike), Route 794 (E Edwardsway Road), Route 622 (Jacks Creek Road).

The project location is shown on Figure 1 (all figures are located at the end of the report) and a preliminary site plan can be found in Figure 2.

For the purposes of this work, it was assumed that all vehicles will utilize the proposed haul route as shown in Figure 1.

### **EXISTING ROADWAYS**

Route 40 (Old Franklin Turnpike) is a two-lane, undivided minor arterial roadway with a posted speed limit of 55 mph. According to VDOT ADT data services, Route 40 has a current ADT of 6,100 vehicles per day (vpd).

Route 794 (E Edwardsway Road) is a two-lane, undivided local roadway with a posted speed limit of 25 mph and a current VDOT ADT of 490 vpd to the west of Jacks Creek Road and 60 vpd to the east of Jacks Creek Road.

Route 662 (Jacks Creek Road) is a two-lane, undivided local roadway with an unposted speed limit. The speed limit is assumed to be a statutory 55 mph. Route 662 has a current VDOT ADT of 240 vpd.

A summary of the available ADT volumes, heavy vehicle percentages and typical pavement widths along the haul route can be found in Figure 3.

### **Existing Structures**

The VDOT-maintained *Bridge and Culvert Database* indicated that there are no bridges or culverts present along the proposed haul route.

## **EXISTING INTERSECTIONS**

The following three (3) key intersections are located within the study area and shown on Figure 1:

1. Route 40 (Old Franklin Turnpike) and Route 794/819 (E Edwardsway Road/Bucksrape Road);
2. Route 794 (E Edwardsway Road) and Route 662 (Jacks Creek Road); and
3. Route 40 (Old Franklin Turnpike) and Route 794 E Edwardsway Road.

### Route 40 (Old Franklin Turnpike) and Route 794/819 (E Edwardsway Road/Bucksrape Road)

At the unsignalized intersection of the Route 40 (Old Franklin Turnpike) and E Edwardsway Road/Bucksrape Road, the eastbound and westbound approaches operate as free flow. The northbound and southbound approaches of E Edwardsway Road and Bucksrape Road are stop-controlled. The eastbound and westbound approaches both consists of one (1) dedicated left, one (1) through, and one (1) right turn lane. The northbound and southbound approaches both consist of a single lane approach that accommodates all left/through/right traffic movements. The travel lanes on Route 40 (Old Frankling Turnpike) are typically 11' wide. The travel lanes on E Edwardsway Road are typically 10' wide. Photos of the area can be found in Figure 4.

### Route 794 (E Edwardsway Road) and Route 662 (Jacks Creek Road)

At the unsignalized intersection of E Edwardsway Road and Jacks Creek Road, the eastbound and westbound approaches operate as free-flow while the northbound approach is stop-controlled. The eastbound approach on E Edwardsway Road and the northbound approach on Jacks Creek Road both consist of a single lane approach that accommodates all traffic movements; the westbound approach on E Edwardsway Road contains no pavement markings. The pavement width of E Edwardsway Road west of Jacks Creek Road is 19 – 20' wide, while pavement width to the east of Jacks Creek Road, is approximately 16', without pavement markings. The pavement width of Jacks Creek Road is approximately 18 – 19'. Photos of the intersection are shown in Figure 5.

### Route 40 (Old Franklin Turnpike) and Route 794 (E Edwardsway Road)

At the unsignalized intersection of Route 40 (Old Franklin Turnpike) and E Edwardsway Road, the eastbound and westbound approaches operate as free flow. The minor street approach of E Edwardsway Road is stop-controlled. The eastbound and westbound approaches consist of a single lane and operate as shared thru/right – left/thru approach lanes. The northbound approach on E Edwardsway Road is a single lane and unmarked; it accommodates all left/right movements. The travel lanes on Old Franklin Turnpike are approximately 11' wide and the pavement width on E Edwardsway Road is approximately 16' wide in the vicinity of the intersection. Photos of the intersection are shown on Figure 6.

**Crash Analysis**

Based on crash data obtained from VDOT for the past five (5) years, there have been eight (8) crashes along the proposed haul route and in the vicinity of the study intersections. Six (6) crashes resulted in property damage only (PDO), one (1) crash resulted in a visible injury and one (1) crash resulted in a severe injury.

Four (4) of the crashes (50%) were the result of a fixed object – off road, three (3) of the crashes (38%) were due to deer, and one (1) crash (13%) was caused by a rear end.

Overall, the crash history in this area is typical for the roadway types and surrounding area. The location and crash types are shown in Figure 7 and the crash severities are shown in Figure 8.

### **3 SITE ACCESS**

#### **SITE ENTRANCES**

Access to the site will be provided via two (2) driveways on Route 662 (Jacks Creek Road) as shown in Figure 1.

The northern access is located approximately 0.3 miles (1,580 feet) to the south of the intersection of E Edwardsway Road and Jacks Creek Road. This access driveway is not currently constructed.

The southern entrance is located approximately 0.5 miles (2,640 feet) to the south of the intersection of E Edwardsway Road and Jacks Creek Road. There is currently a gravel, fenced-off driveway at the location of the southern entrance.

There is approximately 1,350 feet between the two (2) proposed site access points. The pavement width on Jacks Creek Road is approximately 21' in the vicinity of both the north and south access points. The access points are shown in Figure 9.

#### **TRAFFIC MITIGATION**

Throughout construction of the site, CEP Solar, LLC will coordinate with the representatives from Franklin County and VDOT to determine appropriate transportation management procedures which may include, but are not limited to, traffic control, road access restrictions, truck restrictions, and temporary/short-term road closures.

Based on the existing roadway conditions, the locations for the proposed access point, and the available average daily traffic numbers for the agreed upon access roads, the anticipated construction traffic volumes will not exceed available roadway capacities.

It should be noted that the Rockydale – Jacks Mountain Quarry is located about 0.44 miles south of the proposed solar site and is an attractor/generator of heavy vehicle traffic. The haul route for the quarry is similar to that of the proposed site, therefore, the roadways in the vicinity already witness large/heavy vehicles; the roadways should not be significantly impacted by standard construction traffic. During operation and maintenance, the facility will not generate a significant volume of traffic with the anticipation of only a few pickup trucks each day.

Construction-related traffic will access the site via state-maintained roadways. Temporary traffic control (TTC) measures may be necessary considering the existing posted speeds and anticipated slower entering/exiting traffic. Pertinent signage should be installed prior to the site preparation work and removed when mechanical/electrical work/inspections begin. It is not anticipated that daily vehicular traffic following construction will disrupt local traffic flows during normal peak hours.

Outside of the previously noted mitigation efforts, should a traffic issue arise during construction, CEP Solar, LLC will work the County and VDOT appropriately address the specific concern.

## **4 CONCLUSIONS**

Based on our review of the available data relating to the site, existing conditions, and estimated traffic, the following is offered:

- The proposed Edwards Solar site is located south of Smith Mountain Lake in Franklin County, Virginia (see Figure 1).
- Access to the site will be provided via Route 40 (Old Franklin Turnpike), Route 794 (E Edwardsway Road), Route 622 (Jacks Creek Road).
- The Route 662 roadway facility has the available capacity to accommodate site generated traffic, both during construction and operations/maintenance activities based on existing ADT's.
- A review of available crash data indicated crashes are sparse and spread out along the higher speed/higher volume Route 40 corridor. A majority (75%) of the reported crashes resulted in property damage only; only two (2) crashes resulted in injury. No "hot spots" or patterns were readily identified by the available crash data.
- Assuming site-traffic is restricted to the Old Franklin Turnpike and E Edwardsways Road facilities, with optimal circulation patterns, no improvements are necessary/anticipated to accommodate site-generated traffic. However, the potential exists for temporary traffic control measures to be implemented for the duration of the site preparation/construction phase.



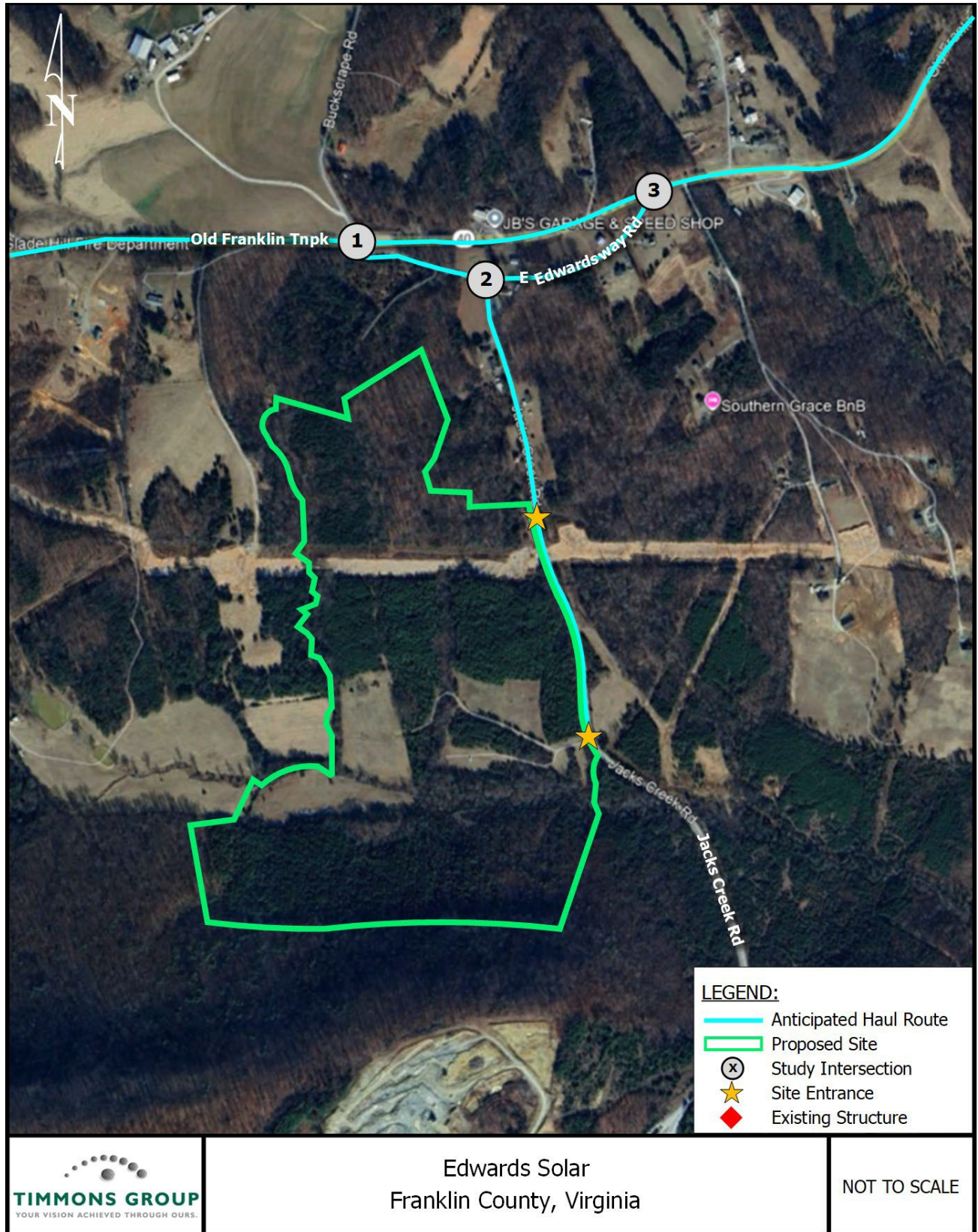
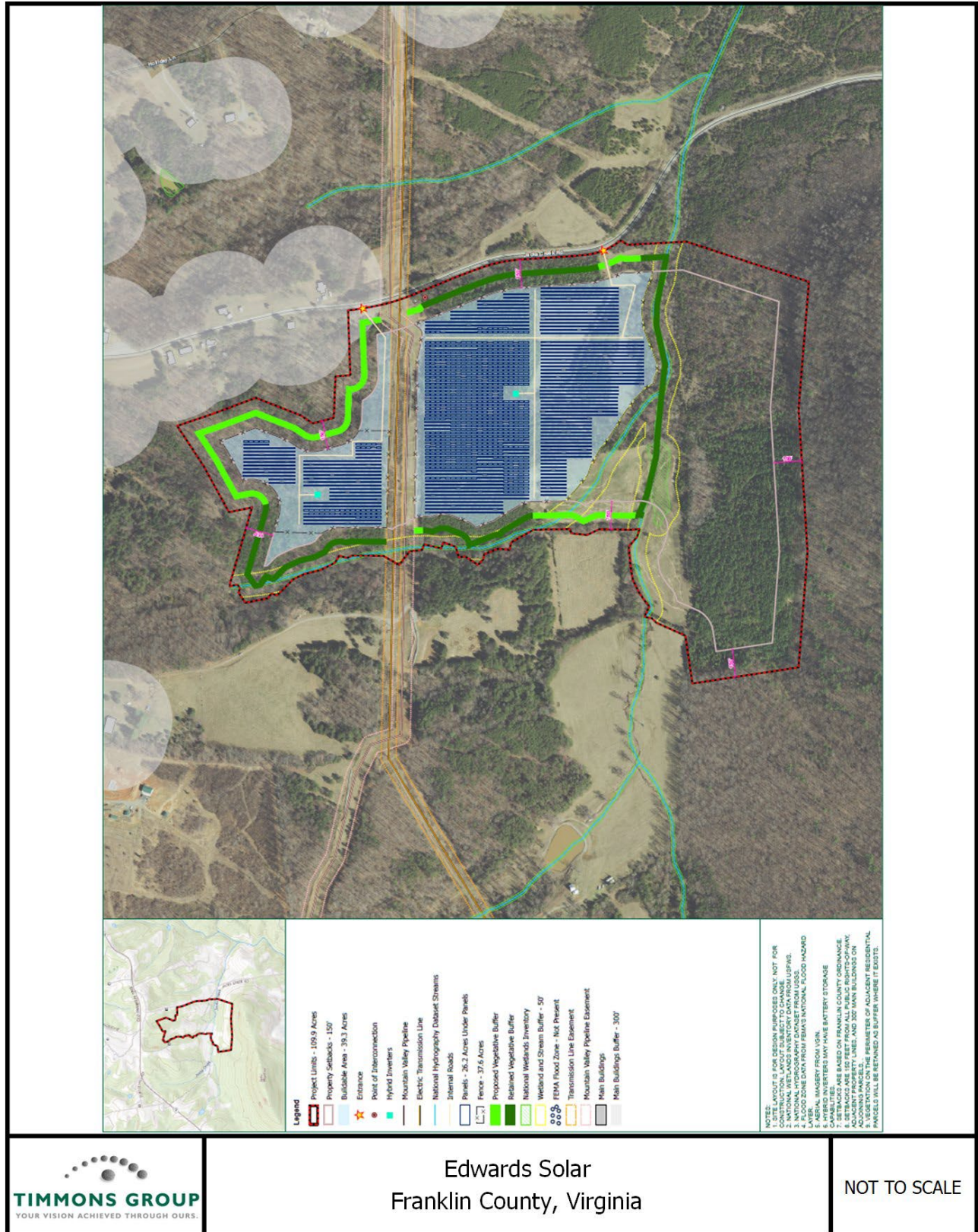


Figure 1: Study Area, Roadway Network & Haul Route





Edwards Solar  
Franklin County, Virginia

NOT TO SCALE

Figure 2: Preliminary Site Layout



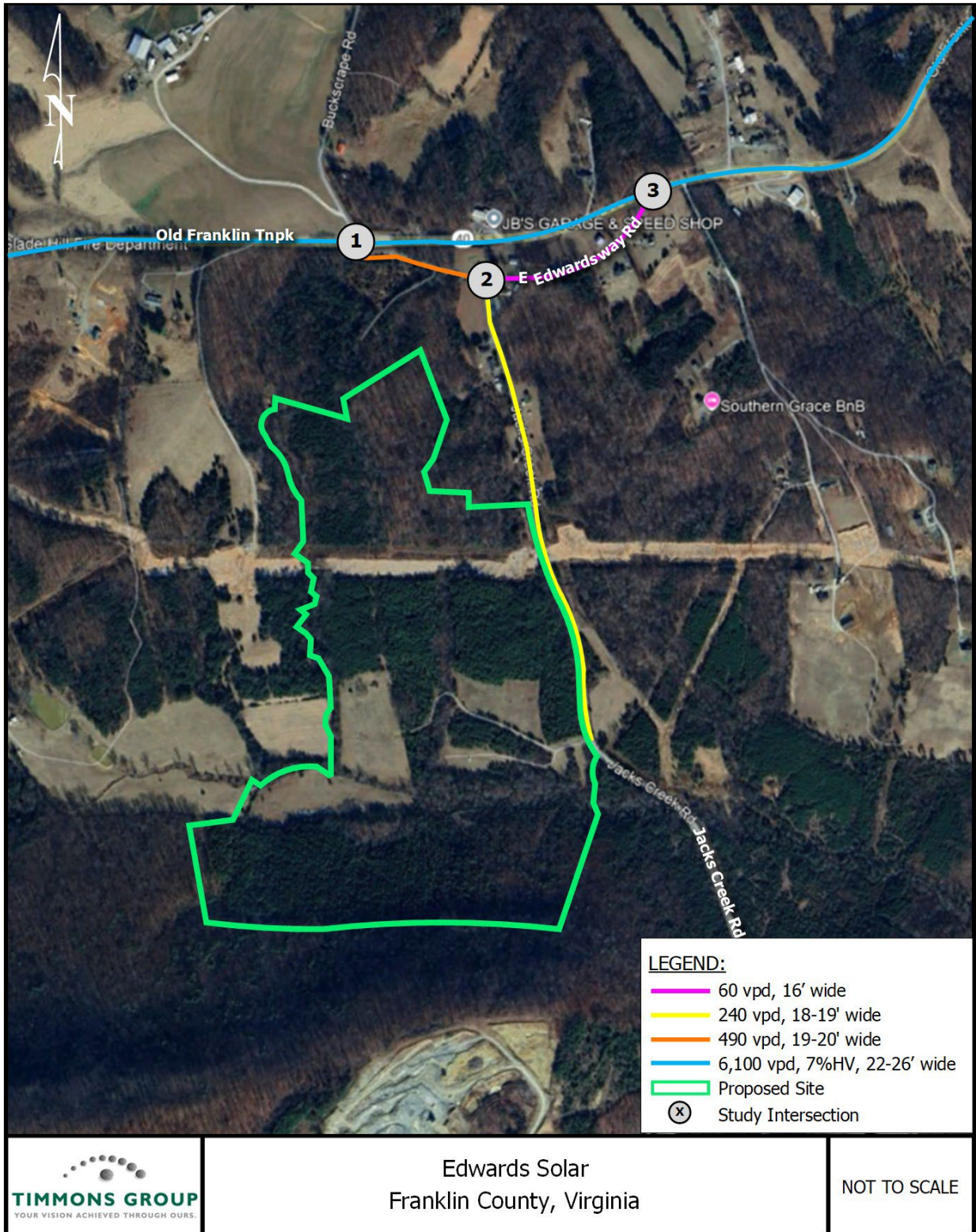
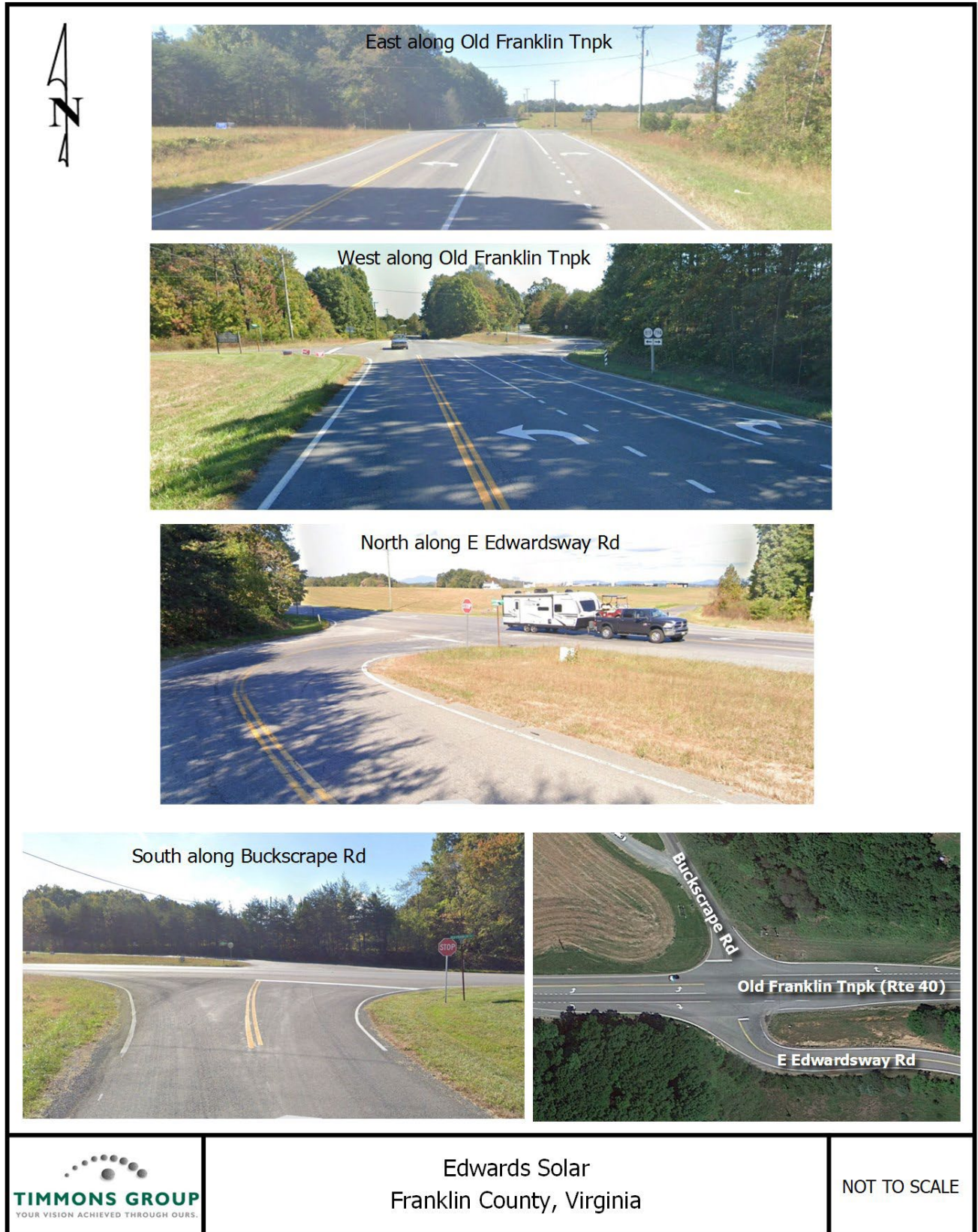


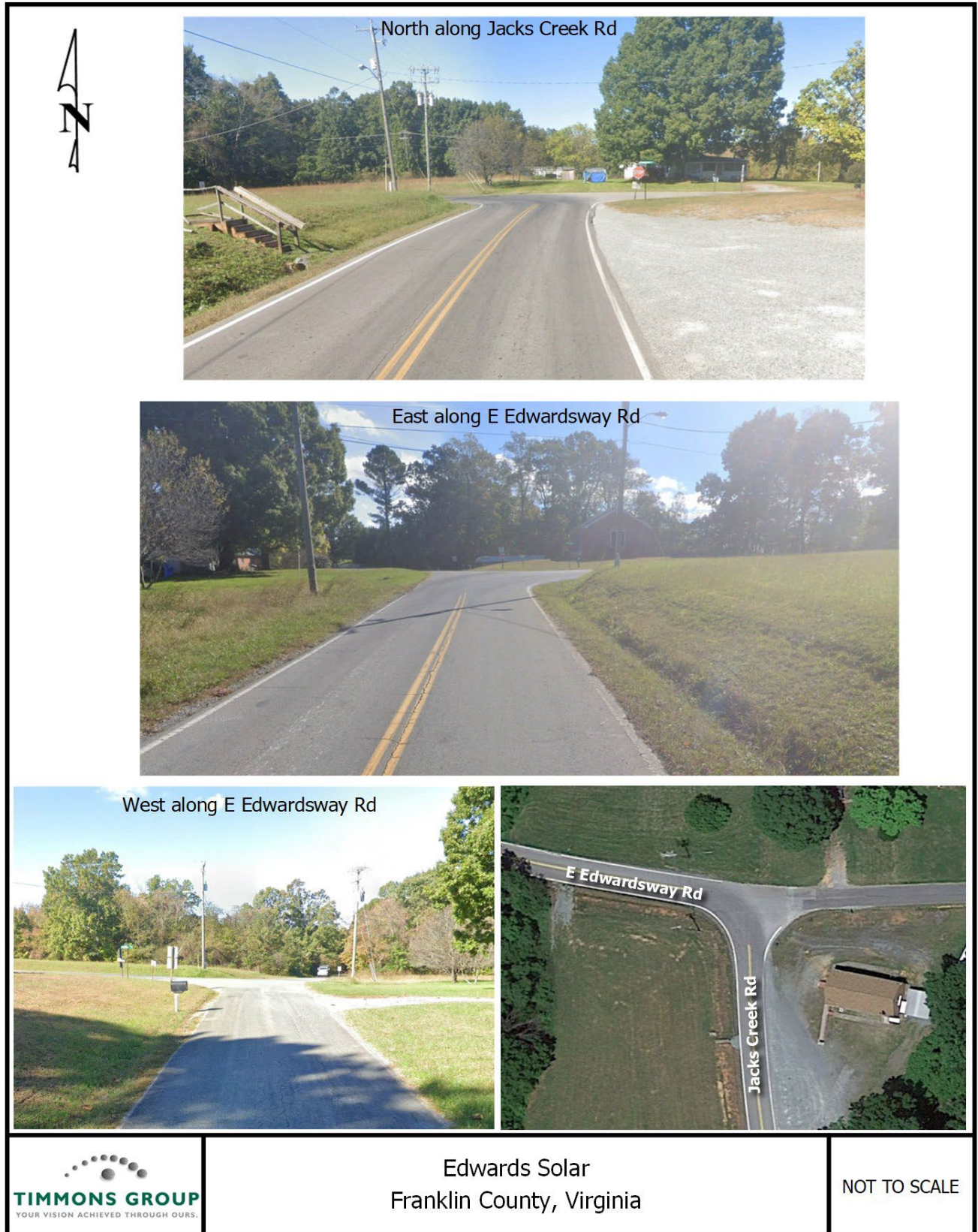
Figure 3: Traffic Conditions Map





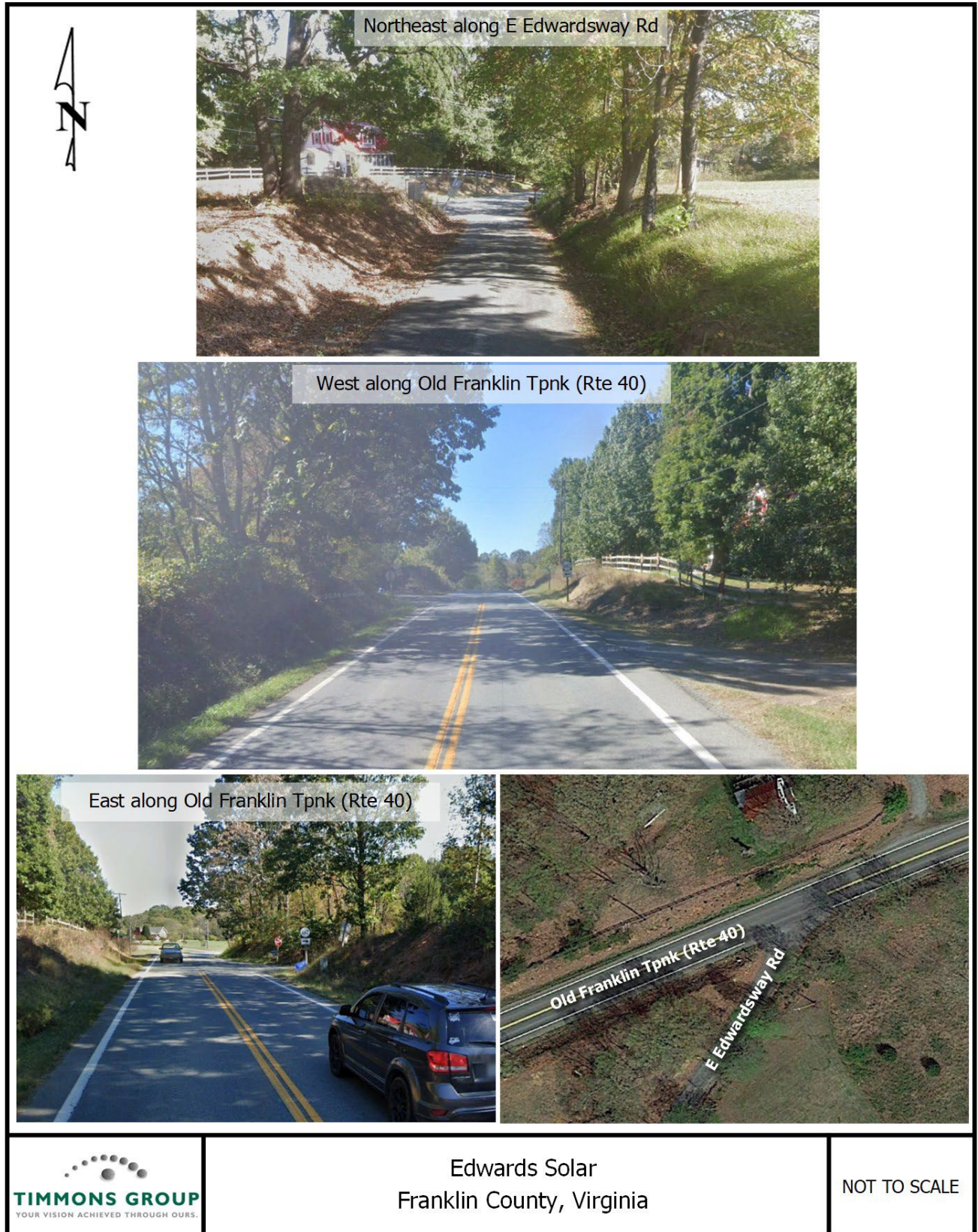
**Figure 4: Intersection of Old Franklin Turnpike (Route 40) and E Edwardsway Road/Buckscape Road**





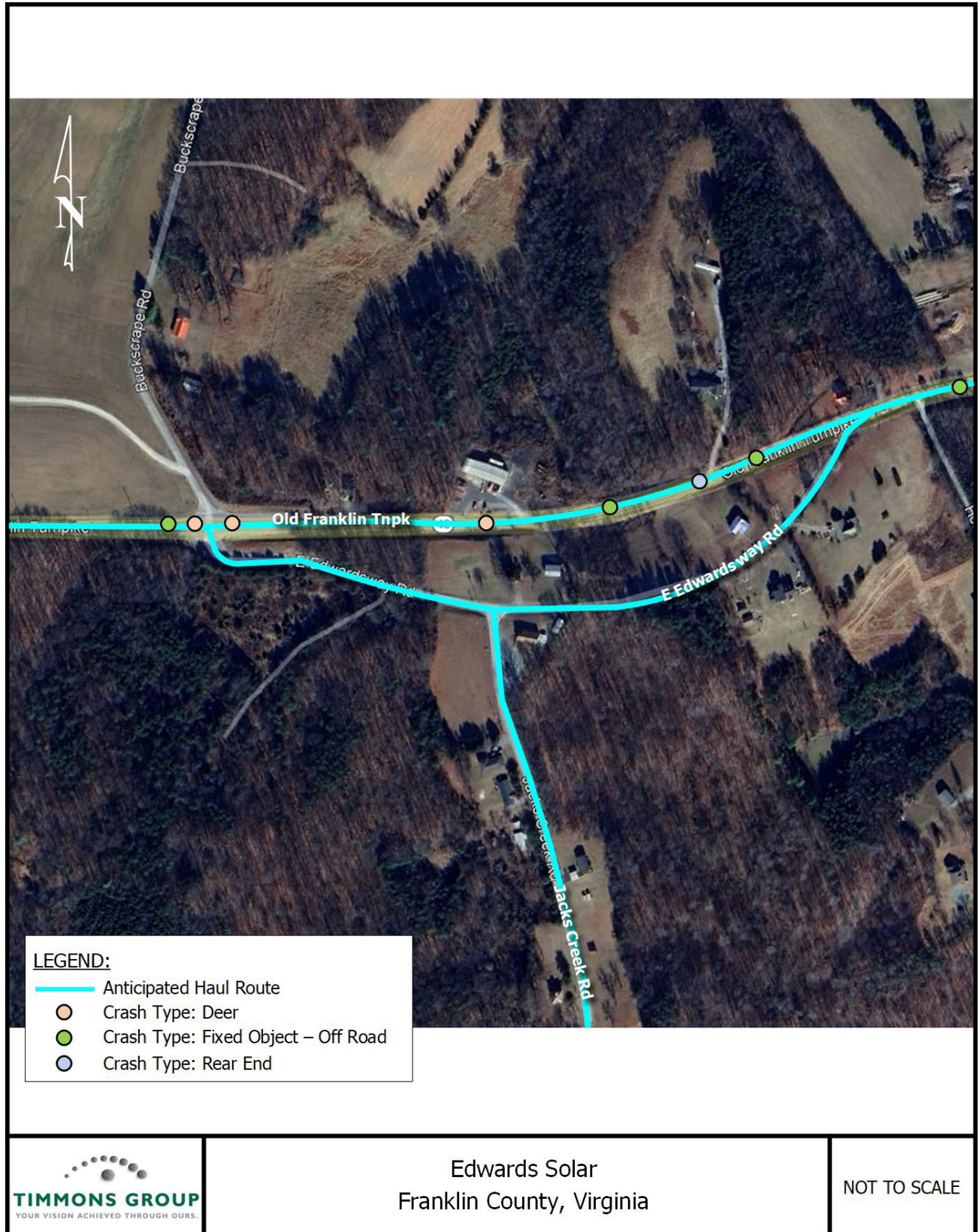
**Figure 5: Intersection of E Edwardsway Road and Jacks Creek Road**





**Figure 6: Intersection of Old Franklin Turnpike (Route 40) and E Edwardsway Road**





**Figure 7: Crashes by Type along Proposed Haul Route**



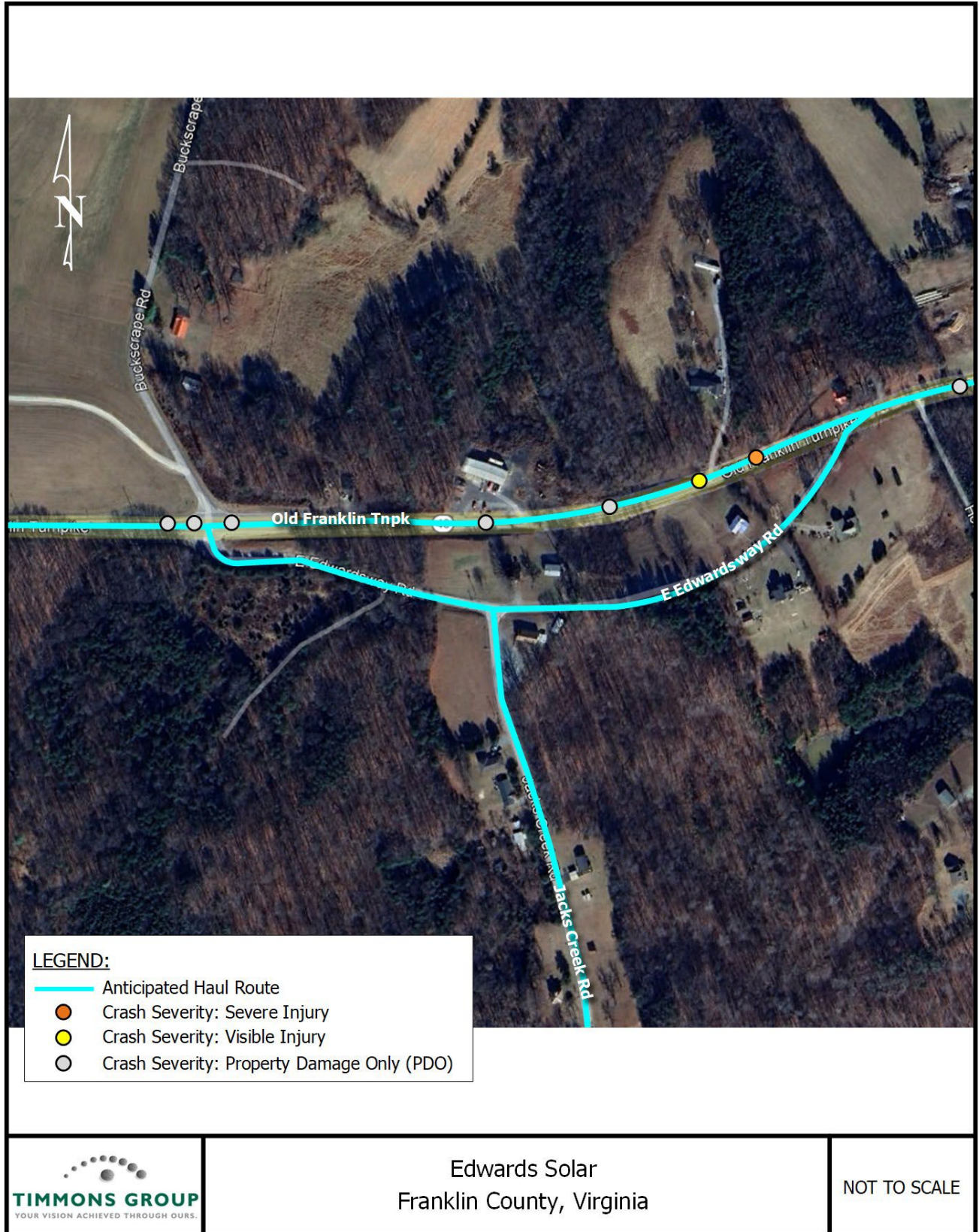


Figure 8: Crashes by Severity along Proposed Haul Route



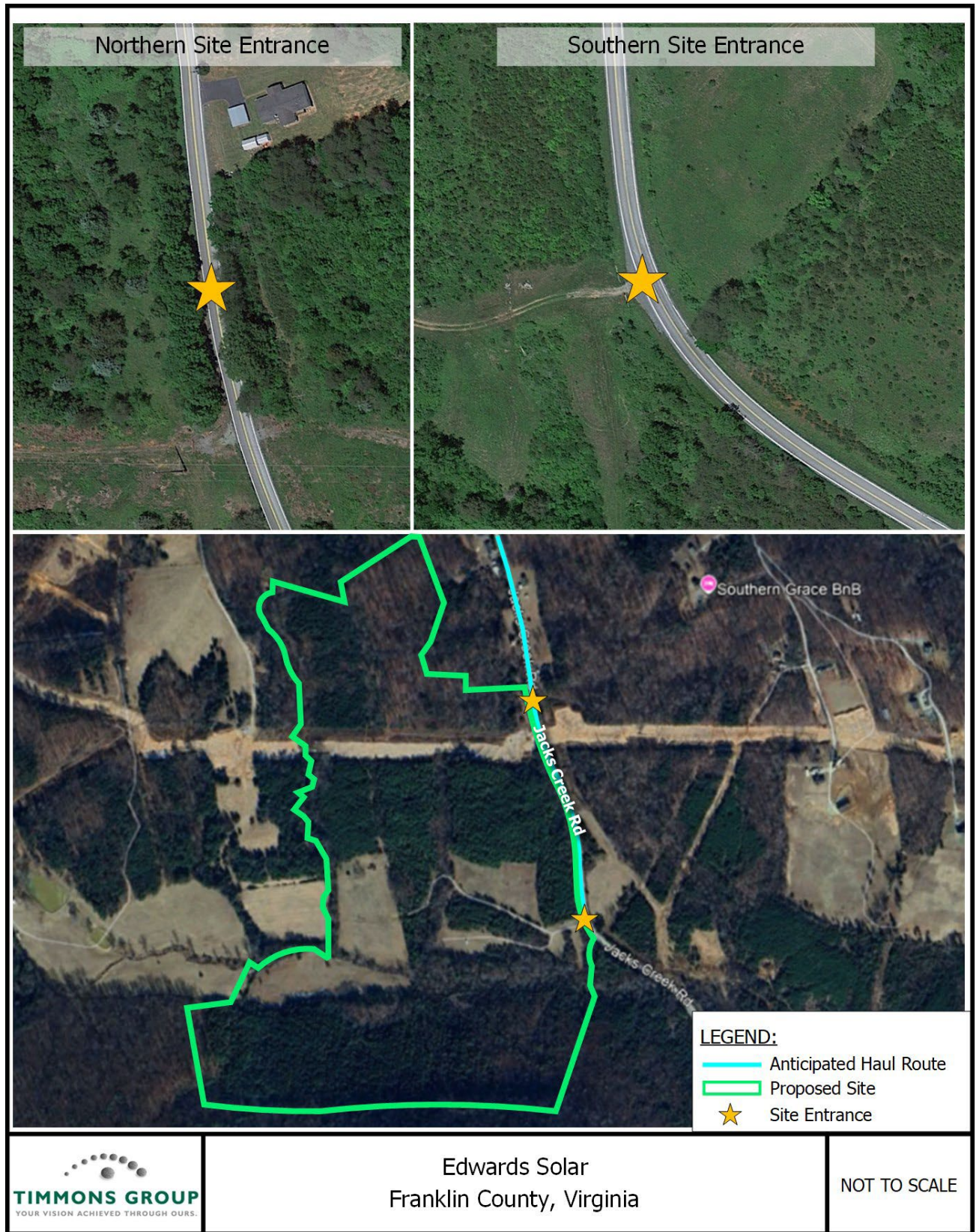


Figure 9: Site Access #1 and #2 – Jacks Creek Road

# VDOT Correspondence

Note from Scott below on Edwards!

**Lauren Wheeler**

GIS Analyst

**TIMMONS GROUP** | [www.timmons.com](http://www.timmons.com)

Office: 804.433.2996 | Fax: 804.560.1648 | Mobile: 732.859.6476

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---

**From:** Scott Dunn <[scott.dunn@timmons.com](mailto:scott.dunn@timmons.com)>

**Sent:** Friday, February 14, 2025 9:31 AM

**To:** Rick Thomas <[Rick.Thomas@timmons.com](mailto:Rick.Thomas@timmons.com)>; Lauren Wheeler <[Lauren.Wheeler@timmons.com](mailto:Lauren.Wheeler@timmons.com)>

**Cc:** Megan Lowther <[Megan.Lowther@timmons.com](mailto:Megan.Lowther@timmons.com)>

**Subject:** FW: Edwards Solar - VDOT Input for SUP Approval

Rick/Lauren,

Please share the email below as you feel necessary re: VDOT review of the proposed construction entrances.

Scott

**Scott Dunn, AICP, PTP**

**TIMMONS GROUP**

Office: 804.200.6955 | Mobile: 804.402.0830

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---

**From:** Lewis, Lisa D (VDOT) <[Lisa.Lewis@VDOT.Virginia.gov](mailto:Lisa.Lewis@VDOT.Virginia.gov)>

**Sent:** Friday, February 14, 2025 7:01 AM

**To:** Scott Dunn <[scott.dunn@timmons.com](mailto:scott.dunn@timmons.com)>

**Subject:** Re: Edwards Solar - VDOT Input for SUP Approval

I did not have any revisions or additions. I concur with your summary of our discussion.

---

**Lisa Lewis**



*Land Development Engineer*  
*Bedford Residency/Franklin County*  
Virginia Department of Transportation  
540-493-4127

[lisa.lewis@VDOT.Virginia.gov](mailto:lisa.lewis@VDOT.Virginia.gov)

---

**From:** Scott Dunn <[scott.dunn@timmons.com](mailto:scott.dunn@timmons.com)>

**Sent:** Thursday, February 13, 2025 5:25 PM

**To:** Lewis, Lisa D (VDOT) <[Lisa.Lewis@VDOT.Virginia.gov](mailto:Lisa.Lewis@VDOT.Virginia.gov)>

**Subject:** RE: Edwards Solar - VDOT Input for SUP Approval

Lisa – wanted to follow up on last week’s email to see if you had any revisions/additions or if everything was covered.

Thanks,  
Scott

**Scott Dunn, AICP, PTP**

**TIMMONS GROUP**

Office: 804.200.6955 | Mobile: 804.402.0830

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---

**From:** Scott Dunn

**Sent:** Tuesday, February 4, 2025 3:05 PM

**To:** Lewis, Lisa D (VDOT) <[Lisa.Lewis@VDOT.Virginia.gov](mailto:Lisa.Lewis@VDOT.Virginia.gov)>

**Cc:** Keeler, Robin M (VDOT) <[Robin.Keeler@VDOT.Virginia.gov](mailto:Robin.Keeler@VDOT.Virginia.gov)>; Casella, Brian , PE, LS (VDOT) <[Brian.Casella@vdot.virginia.gov](mailto:Brian.Casella@vdot.virginia.gov)>

**Subject:** RE: Edwards Solar - VDOT Input for SUP Approval

Lisa,

Thanks for your time last week to discuss the Edwards Solar project and steps moving forward.

Based on our conversation –

- Solar entrances are viewed as private in the Salem District.
- With this classification, it is not required that stopping sight distance (SSD) or intersection sight distance (ISD) is met.
- That being noted, it is preferred that sight distance is optimized at each proposed entrance:
  - Sight distance evaluation should be made on posted speed (assumed statutory 55 mph for Jacks Creek Road; SSD – 495’, ISD – 610’).
- The primary focus is during construction when traffic is heaviest:
  - In such cases where sight distance is not available, contractors are typically required to implement TTC 63.2 (logging operations) and post appropriate signage and flaggers.
- Proposed entrance locations are typically discussed with the County at regularly scheduled at Development Review Team (DRT) meetings.
- Per our discussion on the proposed entrances on Jack Creek Road:
  - Northern Entrance – Preliminary review indicates that sight distance is available and the entrance should be ok.
  - Southern Entrance – Located adjacent to a curve with vegetation on both sides. Sight distance in the area may be limited but that can be addressed through clearing and possibly signage to alert drivers to vehicles entering/exiting the site.
  - Jack Creek Road itself is suited for accommodate construction traffic and currently accommodates heavy vehicles due to the adjacent quarry.
  - It is not anticipated that the proposed entrances will be problematic.
- With respect to entrance plans, full design will be required at site plan stage including sight lines, profiles, drainage calcs, etc.
- Entrance plans will ultimately need VDOT approval.
- In addition to the entrance plans, the owner will provide a cost estimate for potential work within the ROW (associated with the entrance and truck traffic); this is anticipated to be in the \$20-25k range and serve as a basis for a bond to cover any potential roadway damage adjacent to the entrance.



Please review the information above and let me know if anything is incorrect or needs to be added. It is my intention to share this information with the Client to satisfy the County requirements.

Thanks again and I look forward to your response.

Scott

**Scott Dunn, AICP, PTP**

**TIMMONS GROUP**

Office: 804.200.6955 | Mobile: 804.402.0830

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**From:** Scott Dunn <[scott.dunn@timmons.com](mailto:scott.dunn@timmons.com)>  
**Sent:** Thursday, January 30, 2025 4:33 PM  
**To:** Casella, Brian , PE, LS (VDOT) <[Brian.Casella@vdot.virginia.gov](mailto:Brian.Casella@vdot.virginia.gov)>  
**Cc:** Lewis, Lisa D (VDOT) <[Lisa.Lewis@VDOT.Virginia.gov](mailto:Lisa.Lewis@VDOT.Virginia.gov)>; Keeler, Robin M (VDOT) <[Robin.Keeler@VDOT.Virginia.gov](mailto:Robin.Keeler@VDOT.Virginia.gov)>  
**Subject:** RE: Edwards Solar - VDOT Input for SUP Approval

Brian – Thanks for the quick response and sharing the information.

Lisa – regarding the southern entrance Brian noted below. The proposed entrance aligns with an exiting driveway. That being noted, we have not done a sight distance evaluation at this entrance. Based on available imagery (2024) there may be a need to trim some existing vegetation and or move the entrance.

I look forward to hearing from you.

Scott

Aerial View



Looking to the north



Looking to the south



**Scott Dunn, AICP, PTP**

**TIMMONS GROUP**

Office: 804.200.6955 | Mobile: 804.402.0830

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---

**From:** Casella, Brian , PE, LS (VDOT) <[Brian.Casella@vdot.virginia.gov](mailto:Brian.Casella@vdot.virginia.gov)>

**Sent:** Thursday, January 30, 2025 4:21 PM

**To:** Scott Dunn <[scott.dunn@timmons.com](mailto:scott.dunn@timmons.com)>

**Cc:** Lewis, Lisa D (VDOT) <[Lisa.Lewis@VDOT.Virginia.gov](mailto:Lisa.Lewis@VDOT.Virginia.gov)>; Keeler, Robin M (VDOT)

<[Robin.Keeler@VDOT.Virginia.gov](mailto:Robin.Keeler@VDOT.Virginia.gov)>

**Subject:** Re: Edwards Solar - VDOT Input for SUP Approval

**CAUTION:** This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Good afternoon Scott,

I am forwarding this information to Lisa Lewis and Robin Keeler but Lisa will be your primary point of contact. We can certainly take a look at what you have submitted and provide feedback. I quickly scanned the screen shot and noticed the southern entrance appears to be in a curve so we will want to check on the availability of sight distance.

Lisa and Robin are in our Rocky Mount office and cover Franklin County for our Residency. Let me know if you need any additional assistance.

Thanks,  
Brian



**Brian Casella, PE, LS**

*Resident Engineer*

*Bedford Residency*

Virginia Department of Transportation

540-682-7000 office

540-525-9240 cell

[brian.casella@VDOT.Virginia.gov](mailto:brian.casella@VDOT.Virginia.gov)

---

**From:** Scott Dunn <[scott.dunn@timmons.com](mailto:scott.dunn@timmons.com)>

**Sent:** Thursday, January 30, 2025 4:10 PM

**To:** Casella, Brian , PE, LS (VDOT) <[Brian.Casella@vdot.virginia.gov](mailto:Brian.Casella@vdot.virginia.gov)>

**Subject:** Edwards Solar - VDOT Input for SUP Approval

Brian,

Timmons Group is working with a client on a proposed utility scale solar project in Union Hall (Franklin County) along Route 622 (Jacks Creek Road). A screen shot of the parcel boundaries and two (2) proposed entrance locations are shown below. I have also attached a PDF of the preliminary site plan.

Based on Franklin County's Solar Ordinance, written confirmation is required from VDOT that all entrances satisfy applicable VDOT requirements. The ordinance language states – *"Existing and proposed access roads, permanent entrances, temporary construction entrances, drives, and other areas requiring access to parking, including written confirmation from the Virginia Department of Transportation (VDOT) that all entrances satisfy applicable VDOT requirements."*

Since we are currently working toward SUP approval, full entrance design has not been completed at this point. It is understood that VDOT will have full review and approval control at the site plan stage, at which time the entrance locations will need to be compliant with respect to design parameters (including sight distance).



Other VDOT residencies we've worked with have issued letters/emails indicating that the proposed entrances are generally compliant with respect to location and function and that final approval is contingent up site plan/entrance design review. I am unsure if you have done something similar for other projects in your area.

With all this being said, I'm hoping we can coordinate on a path forward so that we can provide you the information you need and keep the solar project moving forward. If you have any input you'd like to share via email, I would appreciate the feedback....or we can coordinate a time for a call next week to talk through next steps.

Thanks in advance for your assistance and I look forward to your reply.

Scott



**Scott Dunn, AICP, PTP**  
*Senior Project Manager*

**TIMMONS GROUP** | [www.timmons.com](http://www.timmons.com)  
1001 Boulders Parkway, Suite 300 | Richmond, VA 23225  
Office: 804.200.6955 | Fax: 804.560.1016  
Mobile 804.402.0830 | [scott.dunn@timmons.com](mailto:scott.dunn@timmons.com)  
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## 8.5 Decommissioning Plan



**Edwards Solar**  
Decommissioning Plan  
*Franklin County, VA*

Date: 12/13/2024

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.

Prepared For:



**Edwards Solar  
Decommissioning Plan**

<b>CLIENT NAME</b>	<b>CEP Solar, LLC</b>
<b>PROJECT NAME</b>	<b>Edwards Solar</b>
<b>LOCATION</b>	<b>2199 Jacks Creek Road, Union Hall, VA 24176 Franklin County, VA</b>
<b>PROJECT</b>	<b>Solar PV Electric Generating Facility</b>

Rev.	Date	Description	Prepared	Checked	Approved
0	12/13/2024	Released for Client Use	NBF	KJ	AC

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## **1 Introduction**

---

Edwards Solar referred to as “Edwards” is proposing to construct an up to 5 MWac solar photovoltaic (PV) electric generating facility at 2199 Jacks Creek Road, Union Hall, VA 24176, Franklin County, Virginia (Facility). The facility will span approximately 108.87 acres total area (36.5 acres fenced) and will connect to an existing medium voltage (15 kV) electrical transmission line located adjacent to project site. The interconnecting medium voltage transmission line or Point of Interconnection (POI), and any associate Utility modification/upgrade is owned and operated by the Interconnecting Utility will not be covered by this decommissioning report and will be left to Interconnecting Utility to address as needed.

The operational life of the Facility is anticipated to be approximately 40 years. This Decommissioning Methodology (Plan) describes the procedures associated with decommissioning the Facility and has been created to support the Facility’s application in seeking the Special Exception Permit (SEP).

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 described in the Appendix A.

## **2 Project Components**

---

Appendix A provides 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
- Electrical Collection System
- Access Roads
- Fencing, Gating, and Safety Features
- Weather Stations
- Data Accusation System (DAS) and Balance of Plan Control
- Gen-tie Transmission Line
- Interconnecting Transmission Facility

### **3 Regulatory Compliance**

---

Prior to the commencement of decommissioning, Edwards will perform the appropriate due diligence requirements and obtain the necessary Franklin County, state, and federal approvals to complete decommissioning activities. To mitigate any environmental impact from decommissioning, Edwards 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).
- Franklin 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. Once solar facility has been removed, it is expected that the site will be returned to as close to its original conditions 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.

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 utility poles
12. Remove access road
13. Remove all fencing
14. Fill/Grade/Seed as needed

For This Project all materials will be removed regardless of depth. However, some components may be left in place under certain circumstances. Electrical lines that will not impact future use of the Project Area 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. Edwards will obtain a written request from the landowner for a road or structure (such as the O&M building) 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: Edwards Solar is a 5 MWac at 2199 Jacks Creek Road, Union Hall, VA 24176, Franklin County, Virginia (Long, Lat): 36.9864224° -79.7117878°

Table 7-1: Estimated Decommissioning Cost:

PV Module Removal	QUANTITY	UNITS	Unit Cost	Total	Comment
# Solar Panels trina W540	12,037	EA	\$9	\$108,333	Disassembly, Haul off-site
SUBTOTAL				\$108,333	
Foundations Structural Removal	QUANTITY	UNITS	Unit Cost	Total	Comment
# Panel Support Steel Piles	2,229	EA	\$15	\$33,435	Disassembly, Haul off-site
# Panel Racks	446	EA	\$400	\$178,400	Disassembly, Haul off-site
SUBTOTAL				\$211,835	
Electrical Equipment Removal	QUANTITY	UNITS	Unit Cost	Total	Comment
Inverter, SMA Sunny Central 840 kW	6	EA	\$1,500	\$9,000	Disassembly, Haul off-site
MV Transformers, 2,750 kVA	2	EA	\$8,500	\$17,000	Disassembly, Haul off-site
Tracker Motor	45	EA	\$20	\$900	Disassembly, Haul off-site
SUBTOTAL				\$26,900	
Electrical Wires Removal	QUANTITY	UNITS	Unit Cost	Total	Comment
MV Conductor Overhead	200	FT	\$45	\$900	Removal, Excavation
MV Conductor Underground	6,080	FT	\$25	\$152,000	Removal, Excavation
DC/LC Conductor	38,900	FT	\$5	\$194,500	Removal, Non/+ Excavation
SUBTOTAL				\$347,400	
Interconnect Facility Removal	QUANTITY	UNITS	Unit Cost	Total	Comment
Circuit Breakers 15 kV Int, Facility	1	EA	\$9,500	\$9,500	Disassembly, Haul off-site
New Pole/Disconnect Switch Installation	1	EA	\$15,000	\$15,000	Disassembly, Haul off-site
Control Enclosure/Interface Facility /Fence/Foundation	1	LOT	\$25,000	\$25,000	Disassembly, Haul off-site
SUBTOTAL				\$49,500	
Fence/Land, Removal/Restoration	QUANTITY	UNITS	Unit Cost	Total	Comment
Fence Perimeter	8,123	FT	\$2	\$16,246	Disassembly, Haul off-site
Civil Site Remediation (disturbed area)	36.5	Acre	\$6,000	\$219,000	Restoration and Seeding
Storm Water Management Ponds	3	EA	\$4,000	\$12,000	Restoration
Mobilization, Engineering & Permitting				\$55,000	Budgeted
SUBTOTAL				\$302,246	



Summary of Estimate	
PV Module Removal	\$108,333
Foundations Structural Removal	\$211,835
Electrical Equipment Removal	\$26,900
Electrical Wires Removal	\$347,400
Collector Facility Removal	\$49,500
Fence/land, Removal/Restoration	\$302,246
<b>ESTIMATED GRAND TOTAL</b>	<b>\$1,046,214</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 DECOMMISSIONING ASSUMPTIONS

To develop a cost estimate for the decommissioning of the Edwards 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 the financial security. The projected life of the project is 40 years.
2. This Cost Estimate is based on the Timmons Group data request forwarded September 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. Subsoiling cost to decompact roadway areas is estimated as \$750 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 \$2,750 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 and 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. We assume a cost of \$15.00 per post to include hauling fees and contingencies.
11. A metal recycling facility (FEA Salvage and 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 rated 540 watts can easily be disconnected, removed, and packed by a three-person crew at a rate we estimate at 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 must be exercised, but removal assumes unskilled common labor under supervision.

If required a Salvage Value could be provided: he estimated salvage values will be 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.

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.

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.

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.

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>

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.

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>.

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 10% 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

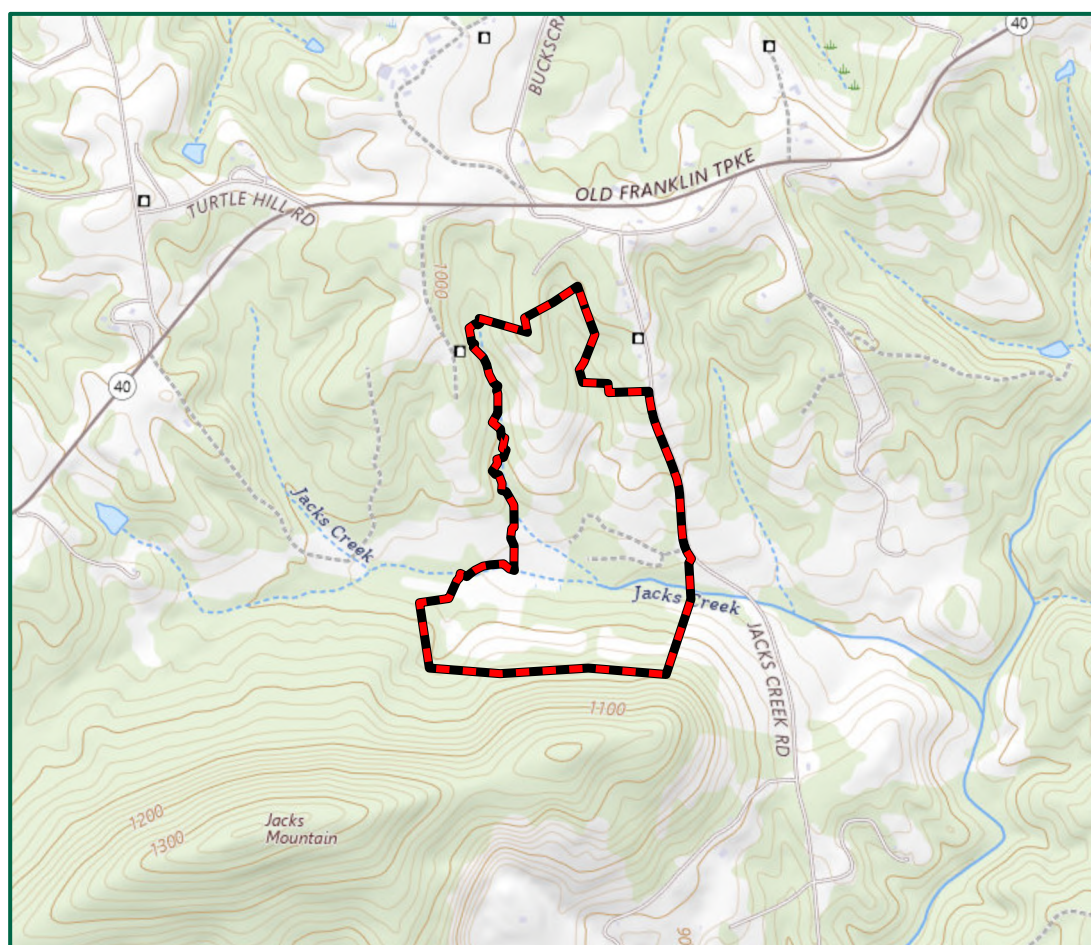
The full decommissioning cost, without salvage value, will be guaranteed by escrow at a federally insured financial institution, irrevocable letter of credit, or surety bond before a building permit is issued to the project. The decommissioning cost guarantee will remain valid until the solar energy 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





**Legend**

- Project Limits - 108.87 Acres
- Property Setbacks - 150'
- Buildable Area - 38.3 Acres
- ★ Entrance
- Point of Interconnection
- Hybrid Inverters
- Mountain Valley Pipeline
- Electric Transmission Line
- National Hydrography Dataset Streams
- Internal Roads
- Panels - 25.0 Acres Under Panels
- Fence - 36.5 Acres
- Proposed Vegetative Buffer
- Retained Vegetative Buffer
- National Wetlands Inventory
- Wetland and Stream Buffer - 50'
- FEMA Flood Zone - Not Present
- Transmission Line Easement
- Mountain Valley Pipeline Easement
- Main Buildings
- Main Buildings Buffer - 300'
- Edwards Family Cemetery

**NOTES:**

1. SITE LAYOUT IS FOR DESIGN PURPOSES ONLY. NOT FOR CONSTRUCTION. LAYOUT SUBJECT TO CHANGE.
2. NATIONAL WETLANDS INVENTORY DATA FROM USFWS.
3. NATIONAL HYDROGRAPHY DATASET FROM USGS.
4. FLOOD ZONE DATA FROM FEMA'S NATIONAL FLOOD HAZARD LAYER.
5. AERIAL IMAGERY FROM VGIN.
6. HYBRID INVERTERS MAY HAVE BATTERY STORAGE CAPABILITIES.
7. SETBACKS ARE BASED ON FRANKLIN COUNTY ORDINANCE.
8. SETBACKS ARE 150 FEET FROM ALL PUBLIC RIGHTS-OF-WAY, ADJACENT PROPERTY LINES, AND 300' MAIN BUILDINGS ON ADJOINING PARCELS.
9. VEGETATION ON THE PERIMETER OF ADJACENT RESIDENTIAL PARCELS WILL BE RETAINED AS BUFFER WHERE IT EXISTS.



**TIMMONS GROUP**  
YOUR VISION ACHIEVED THROUGH OURS.  
1001 Boulders Parkway, Suite 300  
Richmond, VA 23226  
TEL: 804.200.6800  
www.timmons.com

**CEPSOLAR**  
COMMONWEALTH ENERGY PARTNERS  
2201 W Broad St, Suite 200  
Richmond, VA 23220

**EDWARDS SOLAR**  
FRANKLIN COUNTY,  
VIRGINIA

DATE	12/11/2024
PROJECT NUMBER	47661.040
PROJECT NAME	EDWARDS SOLAR
DESIGNED BY / DRAWN BY	J. STICKLEY

NOTES	
#	DESCRIPTION

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REVISIONS	
#	DESCRIPTION

DRAWING DESCRIPTION  
**CONCEPTUAL  
SITE PLAN**

**SCALE (FEET)**  
 0      200      400  
PLANS PRINTED AS 11X17 ARE HALF SCALE  
SCALE      SHEET NUMBER  
 H: 1" = 200'      C3.0



## 8.6 Glint and Glare Study



# FORGESOLAR GLARE ANALYSIS

Project: **Edwards Solar**

Site configuration: **Edwards - Smith Mtn Lake**

Client: CEP Solar

Created 02 Jan, 2025

Updated 06 Jan, 2025

Time-step 1 minute

Timezone offset UTC-5

Minimum sun altitude 0.0 deg

DNI peaks at 1,000.0 W/m<sup>2</sup>

Category 1 MW to 5 MW

Site ID 137840.23351

Ocular transmission coefficient 0.5

Pupil diameter 0.002 m

Eye focal length 0.017 m

Sun subtended angle 9.3 mrad

PV analysis methodology V2



## Summary of Results No glare predicted

PV Array	Tilt °	Orient °	Annual Green Glare		Annual Yellow Glare		Energy kWh
			min	hr	min	hr	
PV array 1 - western	SA tracking	SA tracking	0	0.0	0	0.0	7,404,000.0
PV array 2 - eastern	SA tracking	SA tracking	0	0.0	0	0.0	7,175,000.0

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

Receptor	Annual Green Glare		Annual Yellow Glare	
	min	hr	min	hr
FP 1 - Rwy 05	0	0.0	0	0.0

CEP Solar, LLC, is proposing a 5 MW solar project in Franklin County, Virginia. To comply with local requirements to demonstrate "that the panels will be sited, designed, and installed to eliminate glint and glare effects on airport operations," DARE Strategies LLC used ForgeSolar software to evaluate glint/glare on the final approach to Runway 05 at Smith Mountain Lake Airport, approximately 11 miles northeast of the site. As shown in the charts above and below, the software predicts zero glint and glare effects on operations at the airfield.



# Component Data

## PV Arrays

**Name:** PV array 1 - western  
**Axis tracking:** Single-axis rotation  
**Backtracking:** Shade-slope  
**Tracking axis orientation:** 180.0°  
**Max tracking angle:** 60.0°  
**Resting angle:** 0.0°  
**Ground Coverage Ratio:** 0.5  
**Rated power:** 2500.0 kW  
**Panel material:** Smooth glass with AR coating  
**Reflectivity:** Vary with sun  
**Slope error:** correlate with material



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	36.990445	-79.715698	966.31	3.00	969.31
2	36.990153	-79.714046	1011.65	3.00	1014.65
3	36.985989	-79.713445	880.08	3.00	883.08
4	36.982149	-79.712158	1037.61	3.00	1040.61
5	36.982218	-79.714883	994.41	3.00	997.41
6	36.982338	-79.716750	926.74	3.00	929.74
7	36.983812	-79.717222	892.48	3.00	895.48
8	36.983846	-79.716278	873.76	3.00	876.76
9	36.984515	-79.715892	867.87	3.00	870.87
10	36.984652	-79.714668	859.14	3.00	862.14
11	36.984583	-79.714325	857.65	3.00	860.65
12	36.986074	-79.714347	879.95	3.00	882.95
13	36.987051	-79.715012	913.79	3.00	916.79
14	36.987840	-79.714754	918.45	3.00	921.45
15	36.989057	-79.714904	947.34	3.00	950.34



**Name:** PV array 2 - eastern  
**Axis tracking:** Single-axis rotation  
**Backtracking:** Shade-slope  
**Tracking axis orientation:** 180.0°  
**Max tracking angle:** 60.0°  
**Resting angle:** 0.0°  
**Ground Coverage Ratio:** 0.5  
**Rated power:** 2500.0 kW  
**Panel material:** Smooth glass with AR coating  
**Reflectivity:** Vary with sun  
**Slope error:** correlate with material



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	36.990496	-79.714046	1009.22	3.00	1012.22
2	36.991302	-79.712673	1027.91	3.00	1030.91
3	36.990119	-79.711922	1002.35	3.00	1005.35
4	36.989194	-79.712480	965.57	3.00	968.57
5	36.988868	-79.712372	950.80	3.00	953.80
6	36.988868	-79.711407	959.84	3.00	962.84
7	36.988680	-79.711342	954.26	3.00	957.26
8	36.988731	-79.710463	976.45	3.00	979.45
9	36.988097	-79.710227	948.42	3.00	951.42
10	36.986794	-79.709583	898.57	3.00	901.57
11	36.985097	-79.709411	846.13	3.00	849.13
12	36.984943	-79.709132	843.82	3.00	846.82
13	36.984772	-79.709197	842.84	3.00	845.84
14	36.983880	-79.708875	846.58	3.00	849.58
15	36.981995	-79.709390	1013.26	3.00	1016.26
16	36.982149	-79.712158	1037.61	3.00	1040.61
17	36.985989	-79.713402	880.49	3.00	883.49

## Flight Path Receptors

**Name:** FP 1 - Rwy 05 @ Smith Mtn Lake  
**Description:**  
**Threshold height:** 50 ft  
**Direction:** 45.0°  
**Glide slope:** 3.0°  
**Pilot view restricted?** Yes  
**Vertical view:** 30.0°  
**Azimuthal view:** 50.0°



Point	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
Threshold	37.105209	-79.595585	857.04	50.00	907.04
Two-mile	37.084764	-79.621250	797.24	663.22	1460.47



## Obstruction Components

Name: Fence - NE

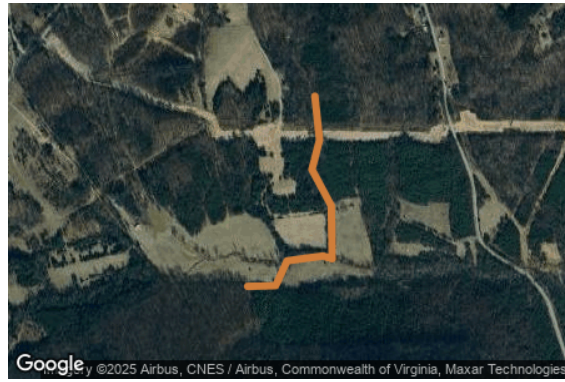
Top height: 8.0 ft



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)
1	36.988690	-79.711320	956.82
2	36.988889	-79.711375	962.13
3	36.988894	-79.712346	950.76
4	36.989202	-79.712448	965.13
5	36.990123	-79.711879	1002.14
6	36.991332	-79.712651	1028.52
7	36.990522	-79.714073	1009.48
8	36.990183	-79.714041	1010.77
9	36.990479	-79.715747	961.46
10	36.989048	-79.714937	948.16



**Name:** Fence - NW  
**Top height:** 8.0 ft



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)
1	36.989052	-79.714942	948.16
2	36.987853	-79.714781	917.88
3	36.987047	-79.715044	914.61
4	36.986057	-79.714379	880.33
5	36.984609	-79.714347	858.41
6	36.984682	-79.714663	860.36
7	36.984549	-79.715897	867.82
8	36.983872	-79.716288	873.34
9	36.983850	-79.717254	890.99

**Name:** Fence - SE  
**Top height:** 8.0 ft



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)
1	36.982128	-79.712158	1040.84
2	36.981978	-79.709379	1013.91
3	36.983885	-79.708843	846.23
4	36.984776	-79.709175	843.00
5	36.984947	-79.709089	844.24
6	36.985114	-79.709395	846.11
7	36.986803	-79.709567	898.52
8	36.988105	-79.710216	948.64
9	36.988757	-79.710441	977.45
10	36.988697	-79.711321	955.70



Name: Fence - SW  
Top height: 8.0 ft



Google ©2025 Airbus, CNES / Airbus, Commonwealth of Virginia, Maxar Technologies

Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)
1	36.983842	-79.717265	891.94
2	36.982312	-79.716787	942.33
3	36.982192	-79.714883	998.02
4	36.982136	-79.712163	1039.23



# Glare Analysis Results

## Summary of Results No glare predicted

PV Array	Tilt	Orient	Annual Green Glare		Annual Yellow Glare		Energy
	°	°	min	hr	min	hr	kWh
PV array 1 - western	SA tracking	SA tracking	0	0.0	0	0.0	7,404,000.0
PV array 2 - eastern	SA tracking	SA tracking	0	0.0	0	0.0	7,175,000.0

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

Receptor	Annual Green Glare		Annual Yellow Glare	
	min	hr	min	hr
FP 1	0	0.0	0	0.0

## PV: PV array 1 - western no glare found

Receptor results ordered by category of glare

Receptor	Annual Green Glare		Annual Yellow Glare	
	min	hr	min	hr
FP 1	0	0.0	0	0.0

## PV array 1 - western and FP: FP 1

No glare found

## PV: PV array 2 - eastern no glare found

Receptor results ordered by category of glare

Receptor	Annual Green Glare		Annual Yellow Glare	
	min	hr	min	hr
FP 1	0	0.0	0	0.0

## PV array 2 - eastern and FP: FP 1

No glare found



# Assumptions

---

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

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

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

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

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

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

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

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

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

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

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

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

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

Refer to the Help page at [www.forgesolar.com/help/](http://www.forgesolar.com/help/) for assumptions and limitations not listed here.

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

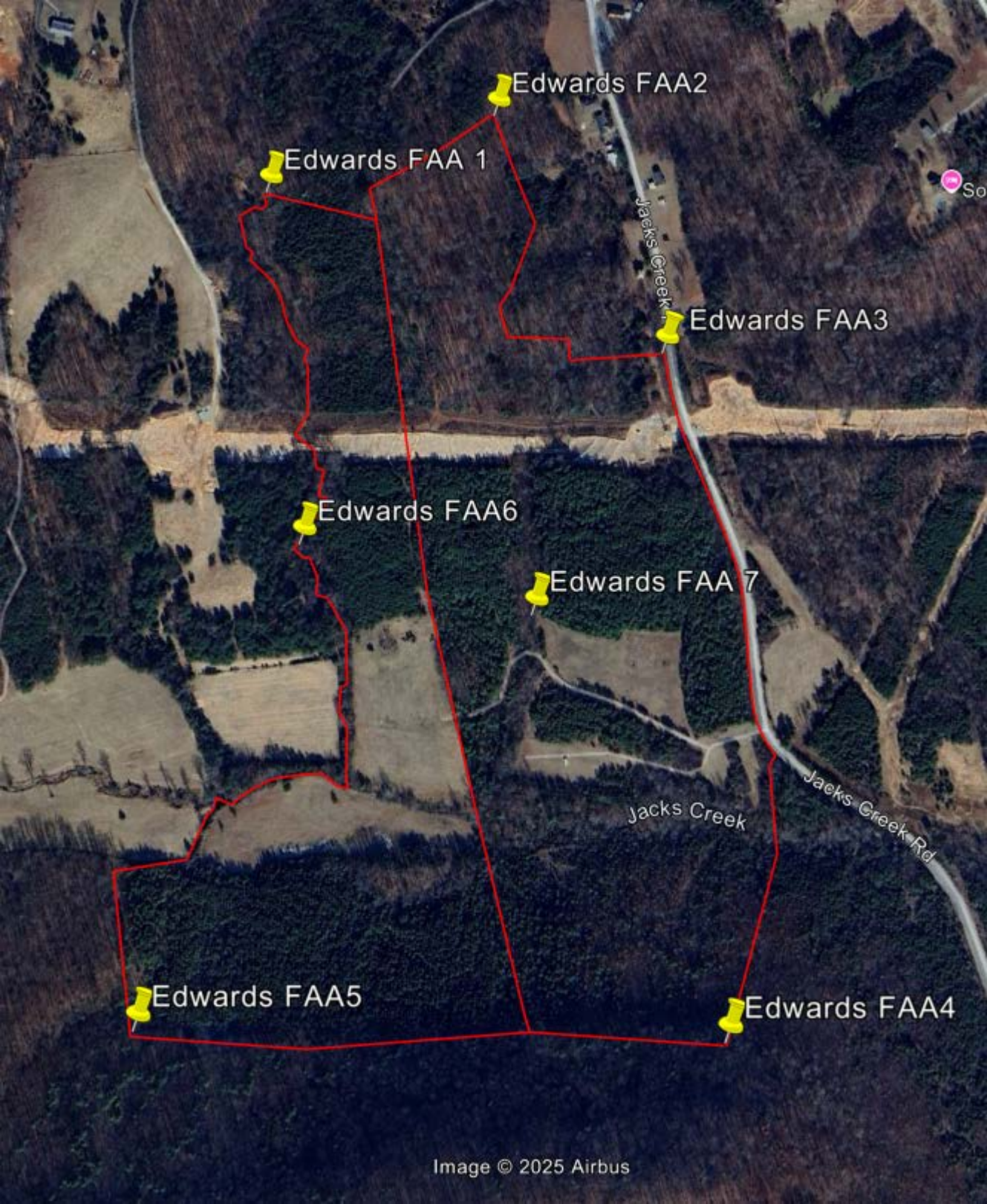
- Analysis time interval: 1 minute
- Ocular transmission coefficient: 0.5
- Pupil diameter: 0.002 meters
- Eye focal length: 0.017 meters
- Sun subtended angle: 9.3 milliradians

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## 8.7 FAA Notice Criteria





Edwards FAA2

Edwards FAA 1

Edwards FAA3

Edwards FAA6

Edwards FAA 7

Edwards FAA5

Edwards FAA4

Jacks Creek

Jacks Creek

Jacks Creek Rd





### 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.

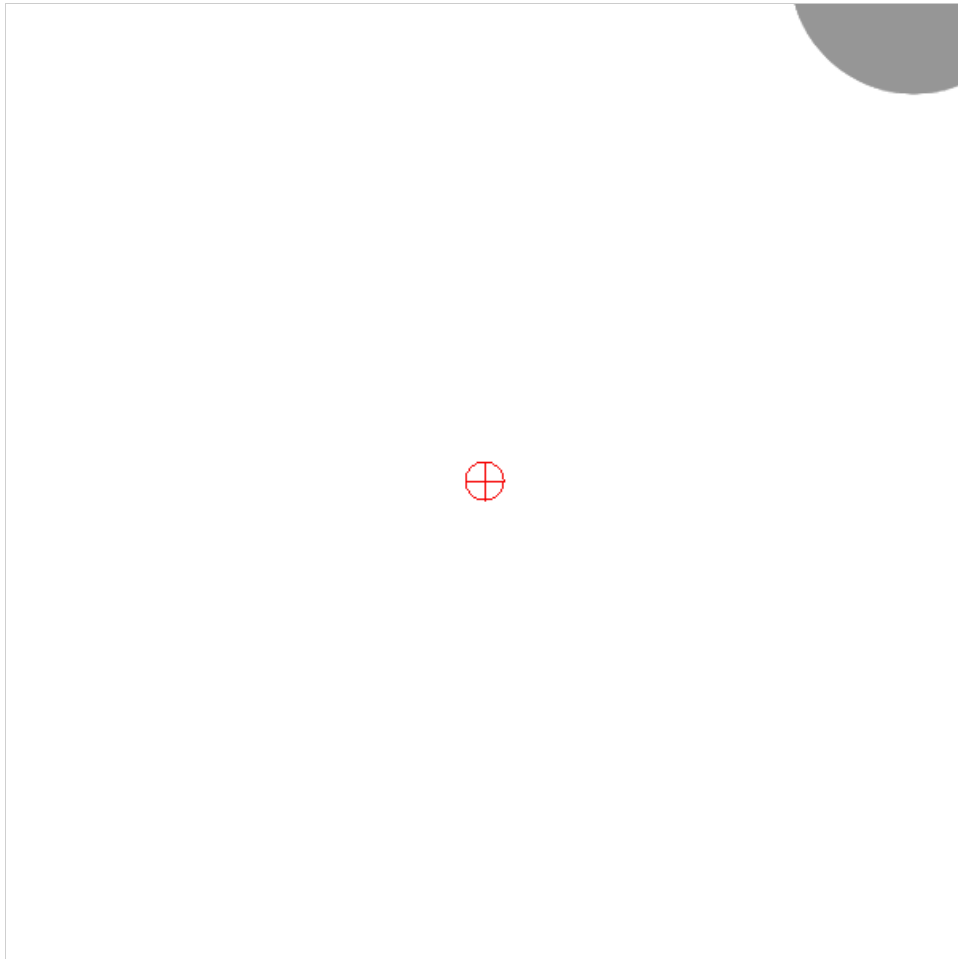
The tool below will assist in applying Part 77 Notice Criteria.

<b>* Structure Type:</b>	SOLAR   Solar Panel <input type="button" value="v"/>			
	Please select structure type and complete location point information.			
<b>Latitude:</b>	36 <input type="text"/> Deg	59 <input type="text"/> M	26.02 <input type="text"/> S	N <input type="button" value="v"/>
<b>Longitude:</b>	79 <input type="text"/> Deg	42 <input type="text"/> M	55.90 <input type="text"/> S	W <input type="button" value="v"/>
<b>Horizontal Datum:</b>	NAD83 <input type="button" value="v"/>			
<b>Site Elevation (SE):</b>	974 <input type="text"/> (nearest foot)			
<b>Structure Height :</b>	15 <input type="text"/> (nearest foot)			
<b>Is structure on airport:</b>	<input checked="" type="radio"/> No <input type="radio"/> Yes			

### Results

You do not exceed Notice Criteria.









### 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](#).

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- your structure will emit frequencies, and does not meet the conditions of the [FAA Co-location Policy](#)
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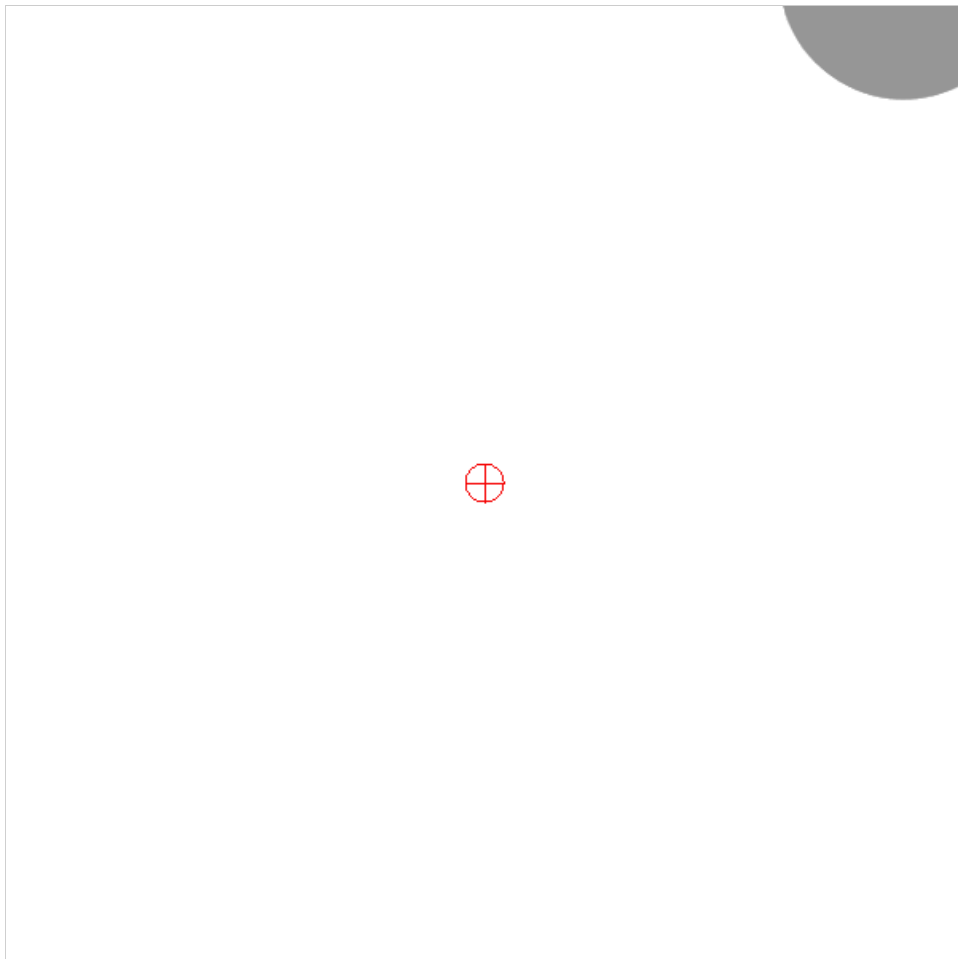
The tool below will assist in applying Part 77 Notice Criteria.

<b>* Structure Type:</b>	SOLAR   Solar Panel <span style="float:right">▼</span>			
	Please select structure type and complete location point information.			
<b>Latitude:</b>	36	Deg	59	M 28.76 S <span style="float:right">N ▼</span>
<b>Longitude:</b>	79	Deg	42	M 45.47 S <span style="float:right">W ▼</span>
<b>Horizontal Datum:</b>	NAD83 <span style="float:right">▼</span>			
<b>Site Elevation (SE):</b>	1031	(nearest foot)		
<b>Structure Height :</b>	15	(nearest foot)		
<b>Is structure on airport:</b>	<input checked="" type="radio"/> No <input type="radio"/> Yes			

### Results

You do not exceed Notice Criteria.









### 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](#)
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- your proposed structure will be in proximity to a navigation facility and may impact the assurance of navigation signal reception
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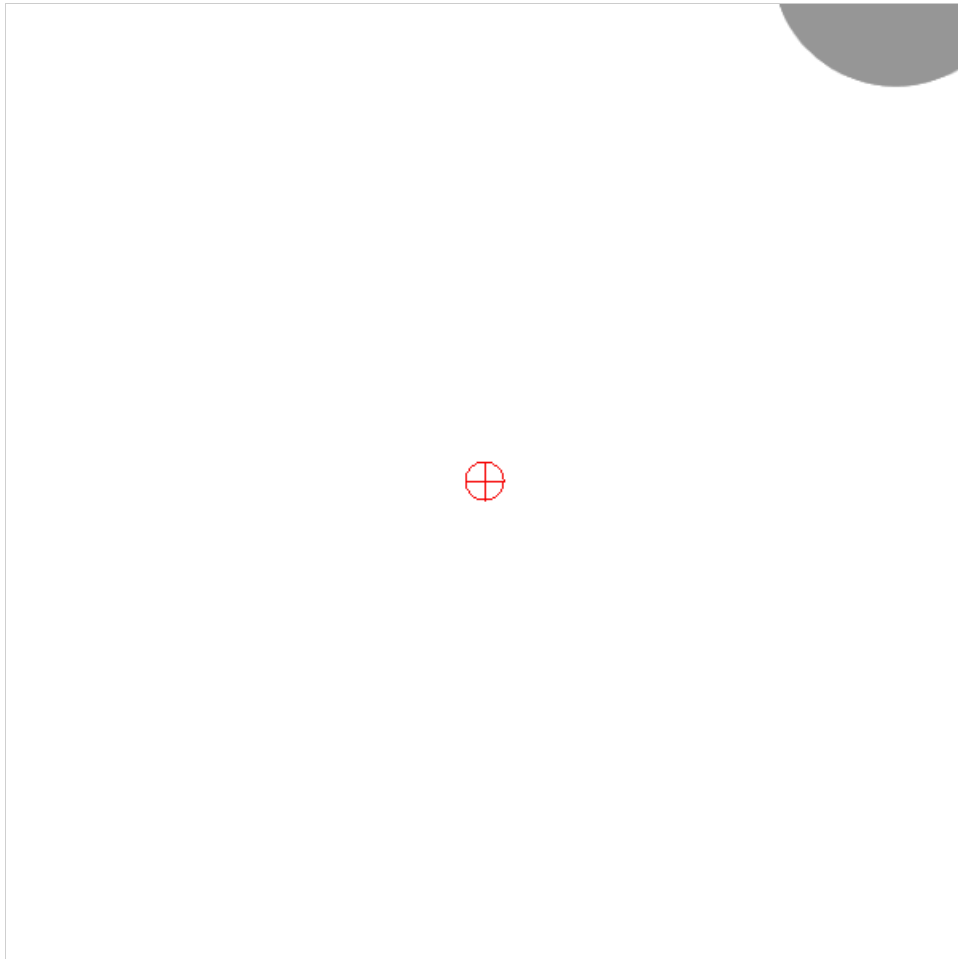
The tool below will assist in applying Part 77 Notice Criteria.

<b>* Structure Type:</b>	SOLAR   Solar Panel <input type="button" value="v"/>			
	Please select structure type and complete location point information.			
<b>Latitude:</b>	36 <input type="text"/> Deg	59 <input type="text"/> M	19.92 <input type="text"/> S	N <input type="button" value="v"/>
<b>Longitude:</b>	79 <input type="text"/> Deg	42 <input type="text"/> M	37.87 <input type="text"/> S	W <input type="button" value="v"/>
<b>Horizontal Datum:</b>	NAD83 <input type="button" value="v"/>			
<b>Site Elevation (SE):</b>	985 <input type="text"/> (nearest foot)			
<b>Structure Height :</b>	15 <input type="text"/> (nearest foot)			
<b>Is structure on airport:</b>	<input checked="" type="radio"/> No <input type="radio"/> Yes			

### Results

You do not exceed Notice Criteria.









### 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.

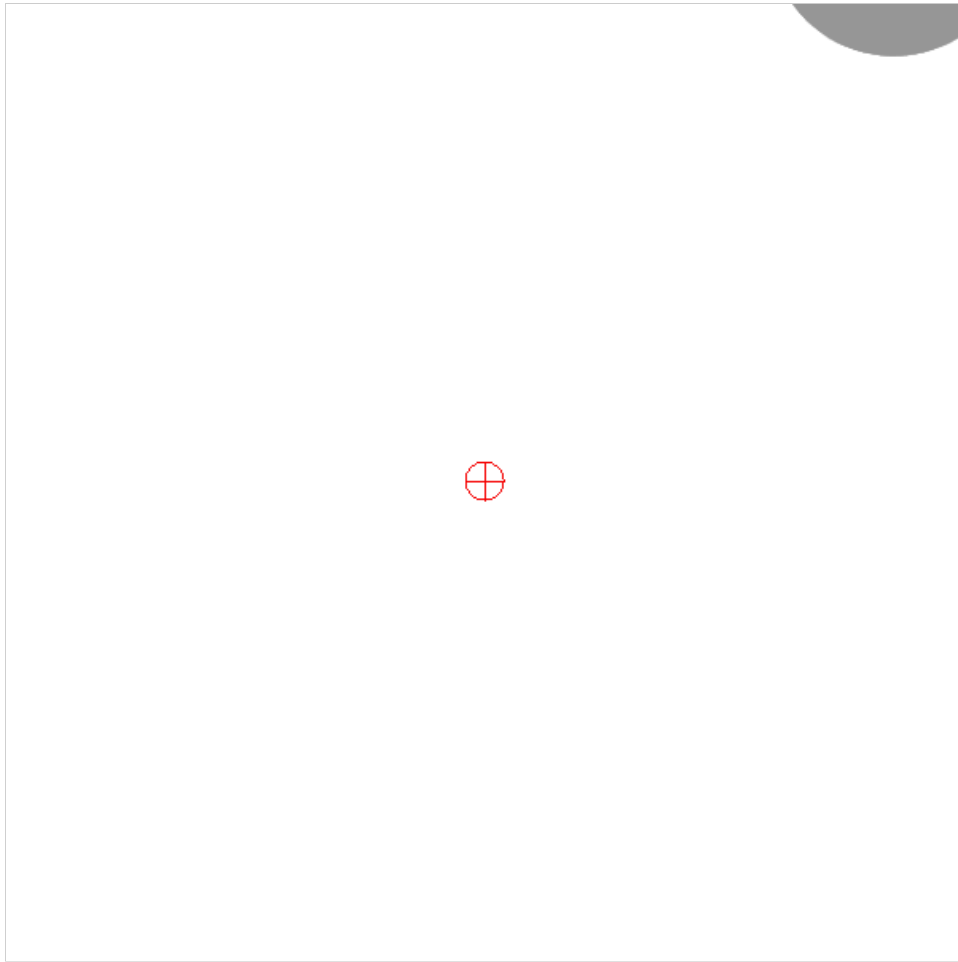
The tool below will assist in applying Part 77 Notice Criteria.

<b>* Structure Type:</b>	SOLAR   Solar Panel <input type="button" value="v"/>			
	Please select structure type and complete location point information.			
<b>Latitude:</b>	36 <input type="text"/> Deg	58 <input type="text"/> M	55.71 <input type="text"/> S	N <input type="button" value="v"/>
<b>Longitude:</b>	79 <input type="text"/> Deg	42 <input type="text"/> M	35.56 <input type="text"/> S	W <input type="button" value="v"/>
<b>Horizontal Datum:</b>	NAD83 <input type="button" value="v"/>			
<b>Site Elevation (SE):</b>	995 <input type="text"/> (nearest foot)			
<b>Structure Height :</b>	15 <input type="text"/> (nearest foot)			
<b>Is structure on airport:</b>	<input checked="" type="radio"/> No <input type="radio"/> Yes			

### Results

You do not exceed Notice Criteria.









### 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.

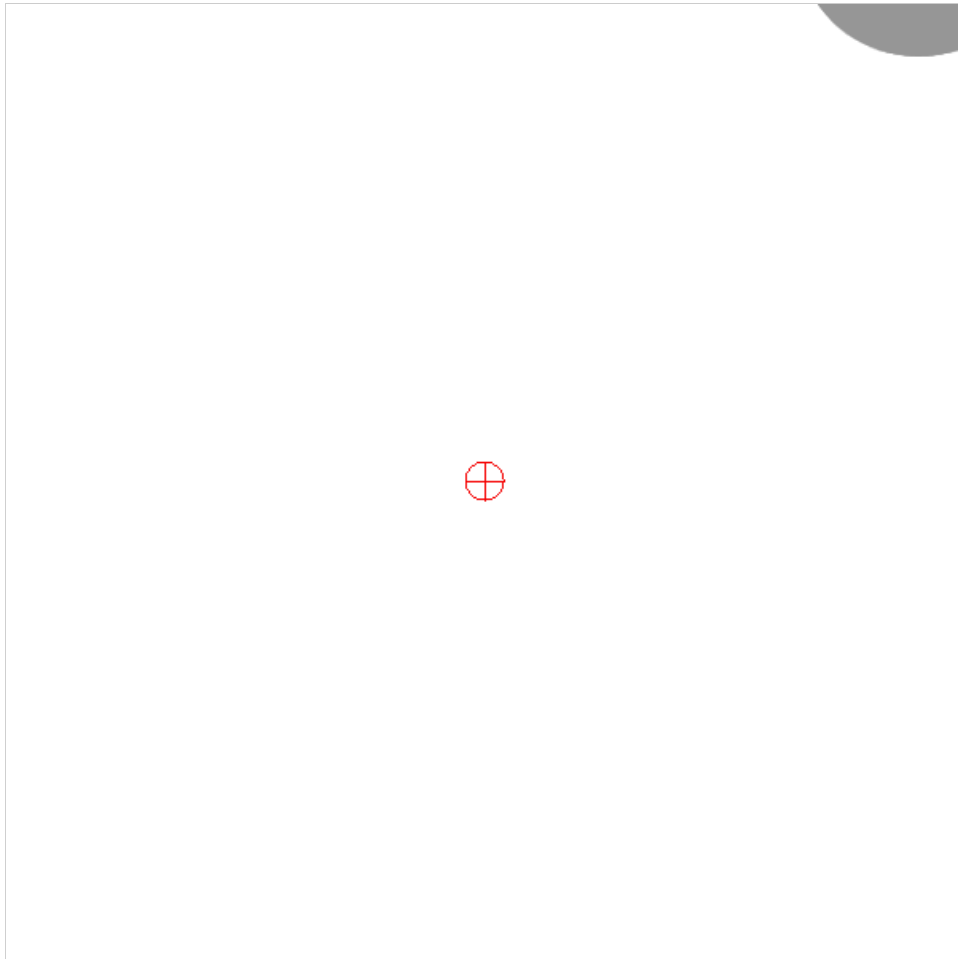
The tool below will assist in applying Part 77 Notice Criteria.

<b>* Structure Type:</b>	SOLAR   Solar Panel <span style="float:right">▼</span>			
	Please select structure type and complete location point information.			
<b>Latitude:</b>	36	Deg	58	M 56.07 S <span style="float:right">N ▼</span>
<b>Longitude:</b>	79	Deg	43	M 0.77 S <span style="float:right">W ▼</span>
<b>Horizontal Datum:</b>	NAD83 <span style="float:right">▼</span>			
<b>Site Elevation (SE):</b>	995	(nearest foot)		
<b>Structure Height :</b>	15	(nearest foot)		
<b>Is structure on airport:</b>	<input checked="" type="radio"/> No <input type="radio"/> Yes			

### Results

You do not exceed Notice Criteria.









### 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
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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.

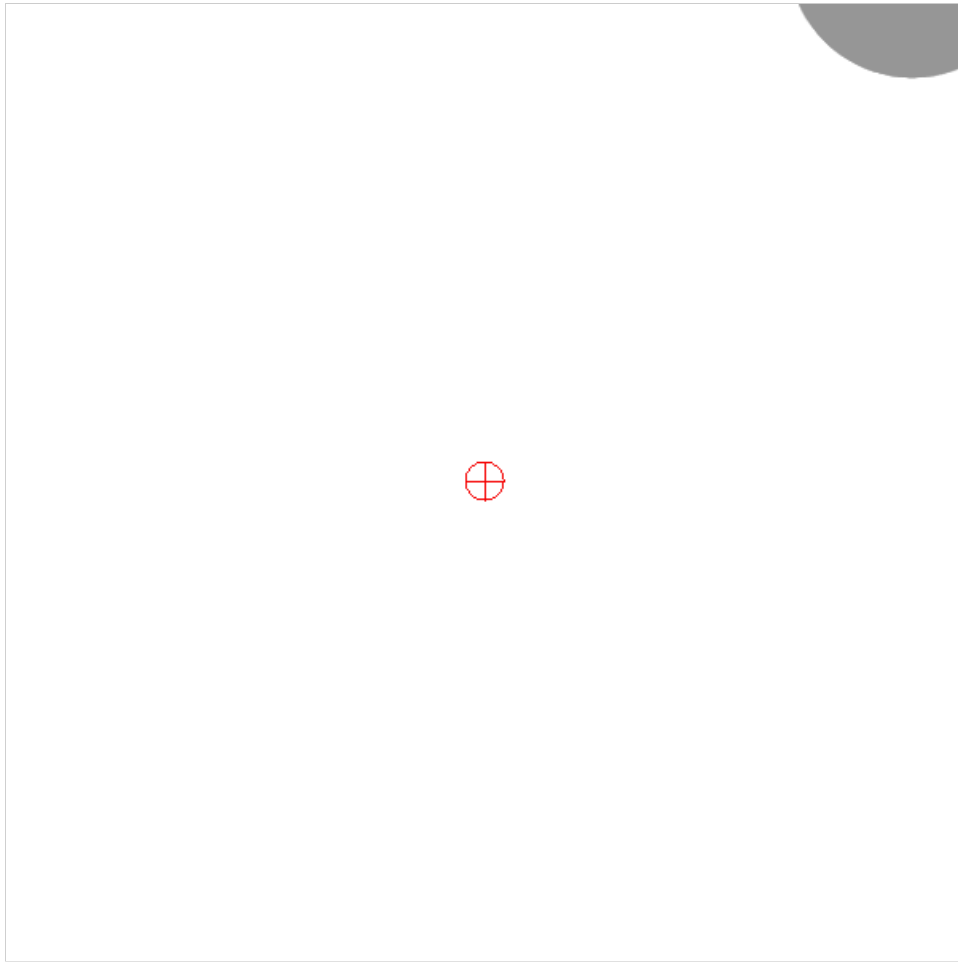
The tool below will assist in applying Part 77 Notice Criteria.

<b>* Structure Type:</b>	SOLAR   Solar Panel <input type="button" value="v"/>			
	Please select structure type and complete location point information.			
<b>Latitude:</b>	36 <input type="text"/> Deg	59 <input type="text"/> M	13.04 <input type="text"/> S	N <input type="button" value="v"/>
<b>Longitude:</b>	79 <input type="text"/> Deg	42 <input type="text"/> M	54.15 <input type="text"/> S	W <input type="button" value="v"/>
<b>Horizontal Datum:</b>	NAD83 <input type="button" value="v"/>			
<b>Site Elevation (SE):</b>	912 <input type="text"/> (nearest foot)			
<b>Structure Height :</b>	15 <input type="text"/> (nearest foot)			
<b>Is structure on airport:</b>	<input checked="" type="radio"/> No <input type="radio"/> Yes			

### Results

You do not exceed Notice Criteria.









### 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
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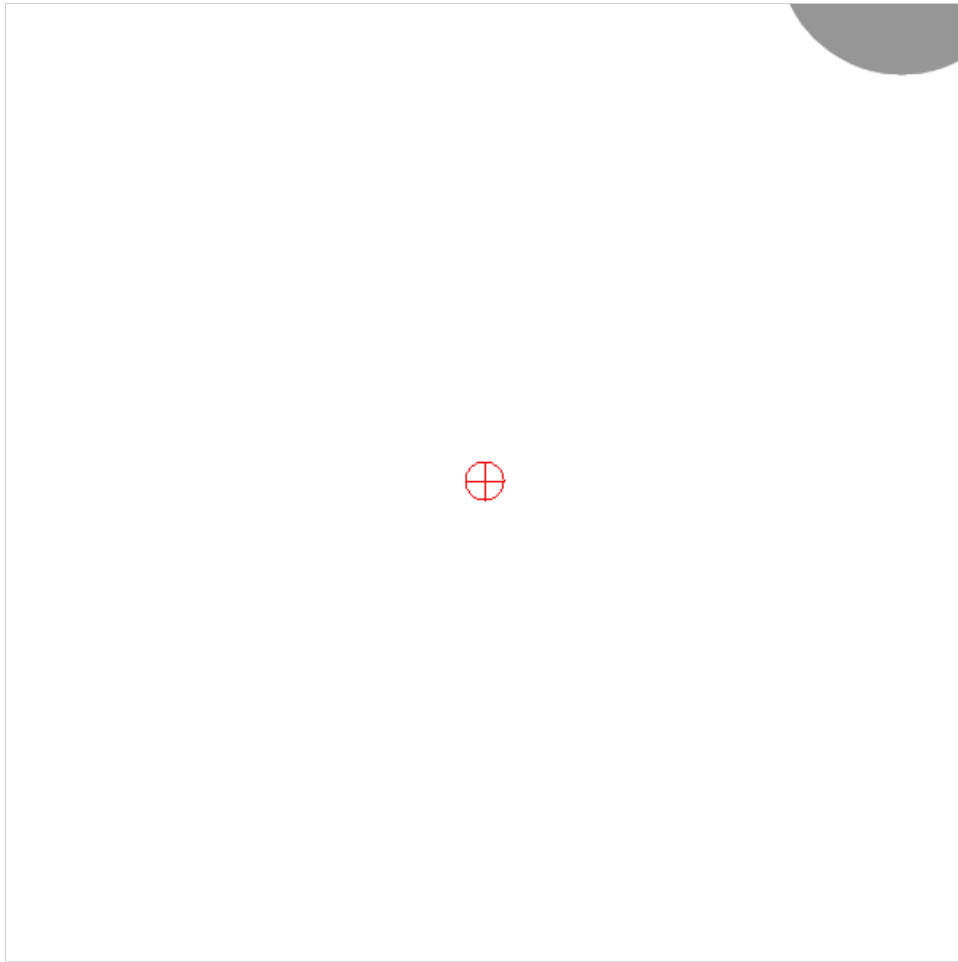
The tool below will assist in applying Part 77 Notice Criteria.

<b>* Structure Type:</b>	SOLAR   Solar Panel <input type="button" value="v"/>			
	Please select structure type and complete location point information.			
<b>Latitude:</b>	36 <input type="text"/> Deg	59 <input type="text"/> M	10.54 <input type="text"/> S	N <input type="button" value="v"/>
<b>Longitude:</b>	79 <input type="text"/> Deg	42 <input type="text"/> M	43.77 <input type="text"/> S	W <input type="button" value="v"/>
<b>Horizontal Datum:</b>	NAD83 <input type="button" value="v"/>			
<b>Site Elevation (SE):</b>	877 <input type="text"/> (nearest foot)			
<b>Structure Height :</b>	15 <input type="text"/> (nearest foot)			
<b>Is structure on airport:</b>	<input checked="" type="radio"/> No <input type="radio"/> Yes			

### Results

You do not exceed Notice Criteria.







## 8.8 Impact on Adjacent Property Values





# Kirkland Appraisals, LLC

Richard C. Kirkland, Jr., MAI  
9408 Northfield Court  
Raleigh, North Carolina 27603  
Phone (919) 414-8142  
[rkirkland2@gmail.com](mailto:rkirkland2@gmail.com)  
[www.kirklandappraisals.com](http://www.kirklandappraisals.com)

December 10, 2024

Mr. Paul Cozens  
CEP Solar  
2201 W. Broad Street, Suite 200  
Richmond, VA 23220

**RE: Edwards Solar, LLC, Franklin County, VA**

Mr. Cozens

At your request, I have considered the impact of a 5 MW solar farm proposed to be constructed on a portion of a 108.87-acre assemblage of land in Franklin County, Virginia. Specifically, I have been asked to give my professional opinion on whether the proposed solar farm will have any impact on adjoining property value 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 existing and proposed solar farms in Virginia as well as other states, researched articles through the Appraisal Institute and other studies, and discussed the likely impact with other real estate professionals. I have not been asked to assign any value to any specific property.

This letter is a limited report of a real property appraisal consulting assignment and subject to the limiting conditions attached to this letter. My client is CEP Solar, represented to me by Mr. Paul Cozens. My findings support the Application. The effective date of this consultation is December 10, 2024.

## **I. Conclusion**

The adjoining properties are well set back from the proposed solar panels and much of the site has good existing landscaping for screening the proposed solar farm. Where the landscaping is not mature it is proposed to be supplemented.

The matched pair 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 where the solar farm is properly screened and buffered. 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/residential transition areas and that it would function in a harmonious manner with this area.

Data from the university studies, broker commentary, and other appraisal studies support a finding of no impact on property value adjoining a solar farm with proper setbacks and landscaped buffers.

Very similar solar farms in very similar areas have been found by hundreds of towns and counties not to have a substantial negative effect to abutting or adjoining properties, and many of those findings of no impact have been upheld by appellate courts. Similar solar farms have been approved with adjoining agricultural uses, schools, churches, and residential developments.



Based on the data and analysis in this report, it is my professional opinion that the solar farm proposed at the subject property will have no impact on the value of adjoining or abutting properties and that the proposed use is in harmony with the area in which it is located. I note that 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 minimal traffic.

If you have any questions, please let me know.

Sincerely,



Richard C. Kirkland, Jr., MAI  
NC Certified General Appraiser #A4359  
VA Certified General Appraiser # 4001017291



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### III. Proposed Project and Adjoining Uses

#### Proposed Use Description

This 5 MW solar farm is proposed to be constructed on a portion of a 108.87-acre assemblage of land in Franklin County, Virginia.

#### Adjoining Properties

I have considered adjoining uses and included a map to identify each parcel's location. The closest adjoining home will be greater than 300 feet from the nearest panel based on the minimum adjoining home setback of 300 feet.

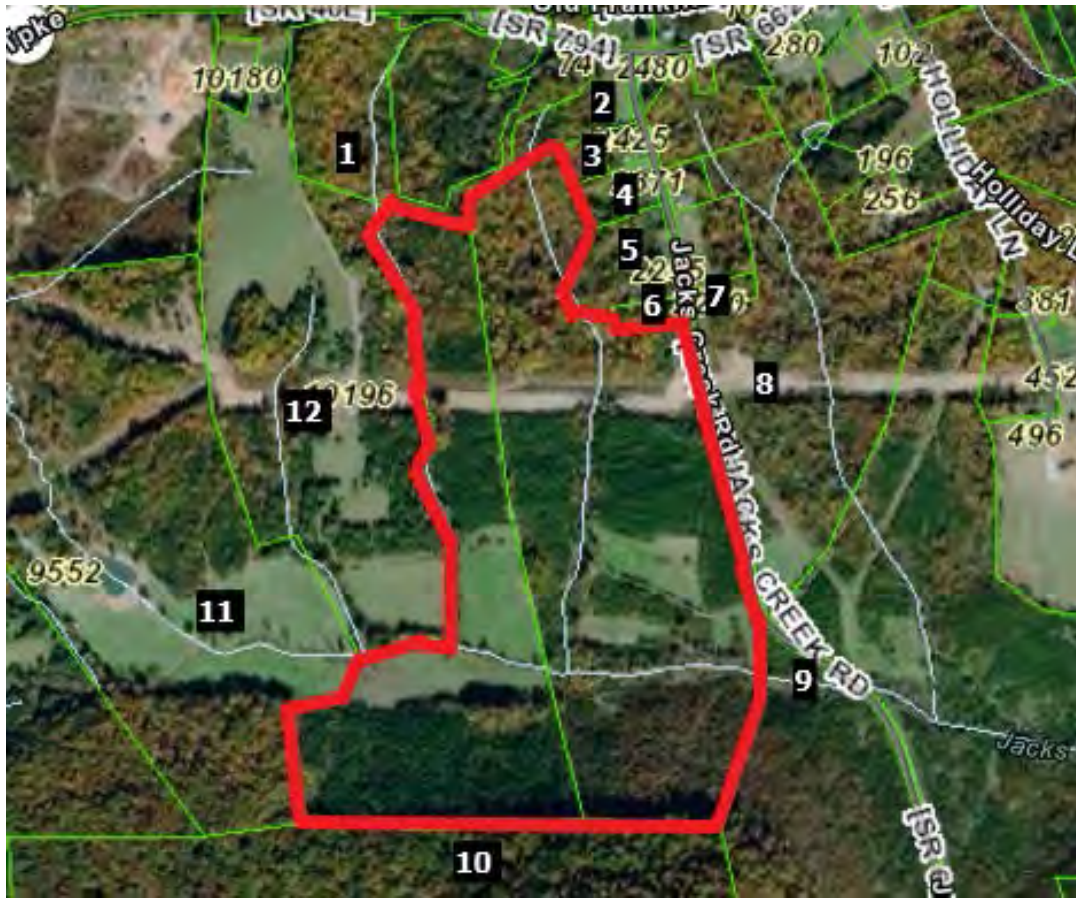
The breakdown of those uses by acreage and number of parcels is summarized below.

#### Adjoining Use Breakdown

	<b>Acreage</b>	<b>Parcels</b>
Residential	5.04%	58.33%
Agricultural	38.01%	25.00%
Industrial	42.97%	8.33%
Agri/Res	13.97%	8.33%
<b>Total</b>	<b>100.00%</b>	<b>100.00%</b>



### Aerial Map of Subject Property



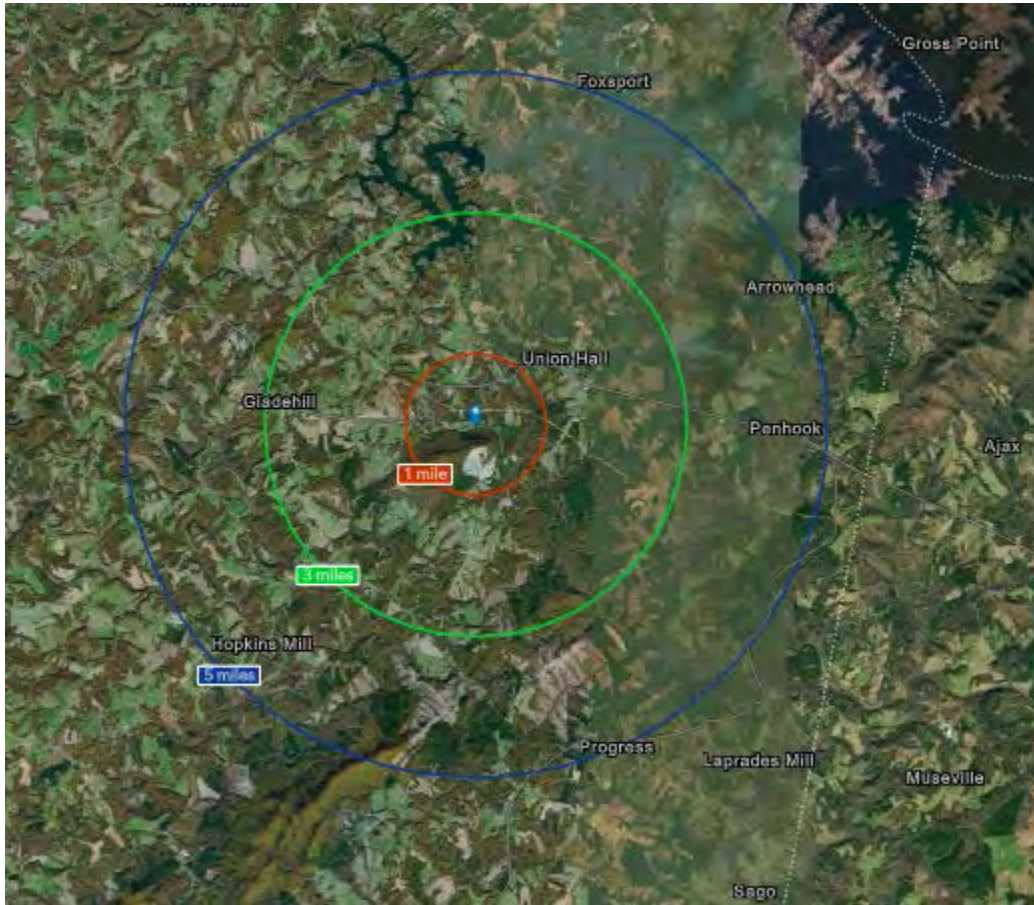
#### Surrounding Uses

#	MAP ID	Owner	GIS Data		Adjoin	Adjoin
			Acres	Present Use	Acres	Parcels
1	660004400	Hall	15.27	Residential	2.67%	8.33%
2	660004403	Clements	3.80	Residential	0.66%	8.33%
3	660004402	Clements	1.00	Residential	0.17%	8.33%
4	660010102	Clements	1.80	Residential	0.31%	8.33%
5	0660010105A	Muse	5.00	Residential	0.87%	8.33%
6	0660010105B	Muse	1.00	Residential	0.17%	8.33%
7	0660010105C	Arrington	1.00	Residential	0.17%	8.33%
8	660010106	Blue	33.85	Agricultural	5.91%	8.33%
9	660010700	Davis	125.11	Agricultural	21.85%	8.33%
10	690000100	Rockydale	246.00	Industrial	42.97%	8.33%
11	660004100	Hambrick	80.00	Agri/Res	13.97%	8.33%
12	660004300	Edwards	58.67	Agricultural	10.25%	8.33%
<b>Total</b>			<b>572.500</b>		<b>100.00%</b>	<b>100.00%</b>



### Demographics Around Subject Property

I have pulled demographic data around a 1-mile, 3-mile and 5-mile radius from the middle of the project as shown on the following pages.







## Housing Profile

24176  
24176, Union Hall, Virginia  
Ring: 1 mile radius

Prepared by Esri  
Latitude: 36.95329  
Longitude: -79.71267

Population		Households	
2020 Total Population	41	2024 Median Household Income	\$41,637
2024 Total Population	41	2029 Median Household Income	\$52,011
2029 Total Population	40	2024-2029 Annual Rate	4.55%
2024-2029 Annual Rate	-0.49%		

Housing Units by Occupancy Status and Tenure	Census 2020		2024		2029	
	Number	Percent	Number	Percent	Number	Percent
Total Housing Units	18	100.0%	18	100.0%	18	100.0%
Occupied	17	94.4%	18	100.0%	18	100.0%
Owner	14	77.8%	15	83.3%	15	83.3%
Renter	3	16.7%	3	16.7%	3	16.7%
Vacant	2	11.1%	0	0.0%	0	0.0%

Owner Occupied Housing Units by Value	2024		2029	
	Number	Percent	Number	Percent
Total	17	100.0%	14	100.0%
<\$50,000	7	41.2%	3	21.4%
\$50,000-\$99,999	1	5.9%	0	0.0%
\$100,000-\$149,999	1	5.9%	0	0.0%
\$150,000-\$199,999	2	11.8%	0	0.0%
\$200,000-\$249,999	1	5.9%	4	28.6%
\$250,000-\$299,999	1	5.9%	0	0.0%
\$300,000-\$399,999	2	11.8%	0	0.0%
\$400,000-\$499,999	1	5.9%	0	0.0%
\$500,000-\$749,999	0	0.0%	4	28.6%
\$750,000-\$999,999	1	5.9%	3	21.4%
\$1,000,000-\$1,499,999	0	0.0%	0	0.0%
\$1,500,000-\$1,999,999	0	0.0%	0	0.0%
\$2,000,000+	0	0.0%	0	0.0%

Median Value	\$125,000	\$375,000
Average Value	\$191,176	\$435,714

Census 2020 Housing Units	Number	Percent
Total	18	100.0%
Housing Units In Urbanized Areas	0	0.0%
Rural Housing Units	18	100.0%

Census 2020 Owner Occupied Housing Units by Mortgage Status	Number	Percent
Total	14	100.0%
Owned with a Mortgage/Loan	7	50.0%
Owned Free and Clear	7	50.0%

**Data Note:** Persons of Hispanic Origin may be of any race.

**Source:** Esri forecasts for 2024 and 2029, U.S. Census Bureau 2020 decennial Census data.

November 26, 2024

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## Housing Profile

24176  
24176, Union Hall, Virginia  
Ring: 3 mile radius

Prepared by Esri  
Latitude: 36.95329  
Longitude: -79.71267

Population		Households	
2020 Total Population	1,274	2024 Median Household Income	\$61,701
2024 Total Population	1,249	2029 Median Household Income	\$69,703
2029 Total Population	1,251	2024-2029 Annual Rate	2.47%
2024-2029 Annual Rate	0.03%		

Housing Units by Occupancy Status and Tenure	Census 2020		2024		2029	
	Number	Percent	Number	Percent	Number	Percent
Total Housing Units	634	100.0%	642	100.0%	642	100.0%
Occupied	478	75.4%	485	75.5%	488	76.0%
Owner	377	59.5%	393	61.2%	402	62.6%
Renter	101	15.9%	92	14.3%	86	13.4%
Vacant	141	22.2%	157	24.5%	154	24.0%

Owner Occupied Housing Units by Value	2024		2029	
	Number	Percent	Number	Percent
Total	392	100.0%	403	100.0%
<\$50,000	96	24.5%	38	9.4%
\$50,000-\$99,999	12	3.1%	2	0.5%
\$100,000-\$149,999	28	7.1%	5	1.2%
\$150,000-\$199,999	32	8.2%	9	2.2%
\$200,000-\$249,999	27	6.9%	64	15.9%
\$250,000-\$299,999	29	7.4%	6	1.5%
\$300,000-\$399,999	48	12.2%	10	2.5%
\$400,000-\$499,999	31	7.9%	8	2.0%
\$500,000-\$749,999	26	6.6%	76	18.9%
\$750,000-\$999,999	53	13.5%	147	36.5%
\$1,000,000-\$1,499,999	4	1.0%	14	3.5%
\$1,500,000-\$1,999,999	4	1.0%	17	4.2%
\$2,000,000+	2	0.5%	7	1.7%

Median Value	\$251,724	\$695,724
Average Value	\$347,768	\$658,995

Census 2020 Housing Units	Number	Percent
Total	634	100.0%
Housing Units In Urbanized Areas	0	0.0%
Rural Housing Units	634	100.0%

Census 2020 Owner Occupied Housing Units by Mortgage Status	Number	Percent
Total	376	100.0%
Owned with a Mortgage/Loan	209	55.6%
Owned Free and Clear	167	44.4%

**Data Note:** Persons of Hispanic Origin may be of any race.

**Source:** Esri forecasts for 2024 and 2029, U.S. Census Bureau 2020 decennial Census data.

November 26, 2024

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# Housing Profile

24176  
 24176, Union Hall, Virginia  
 Ring: 5 mile radius

Prepared by Esri  
 Latitude: 36.96329  
 Longitude: -79.71267

Population		Households	
2020 Total Population	4,399	2024 Median Household Income	\$78,719
2024 Total Population	4,469	2029 Median Household Income	\$89,608
2029 Total Population	4,492	2024-2029 Annual Rate	2.63%
2024-2029 Annual Rate	0.10%		

Housing Units by Occupancy Status and Tenure	Census 2020		2024		2029	
	Number	Percent	Number	Percent	Number	Percent
Total Housing Units	2,949	100.0%	3,019	100.0%	3,019	100.0%
Occupied	1,877	63.6%	1,923	63.7%	1,943	64.4%
Owner	1,531	51.9%	1,607	53.2%	1,647	54.6%
Renter	346	11.7%	316	10.5%	296	9.8%
Vacant	1,046	35.5%	1,096	36.3%	1,076	35.6%

Owner Occupied Housing Units by Value	2024		2029	
	Number	Percent	Number	Percent
Total	1,606	100.0%	1,646	100.0%
<\$50,000	174	10.8%	70	4.3%
\$50,000-\$99,999	27	1.7%	6	0.4%
\$100,000-\$149,999	83	5.2%	11	0.7%
\$150,000-\$199,999	87	5.4%	20	1.2%
\$200,000-\$249,999	84	5.2%	105	6.4%
\$250,000-\$299,999	94	5.9%	25	1.5%
\$300,000-\$399,999	202	12.6%	51	3.1%
\$400,000-\$499,999	134	8.3%	74	4.5%
\$500,000-\$749,999	266	16.6%	267	16.2%
\$750,000-\$999,999	325	20.2%	699	42.5%
\$1,000,000-\$1,499,999	69	4.3%	152	9.2%
\$1,500,000-\$1,999,999	43	2.7%	127	7.7%
\$2,000,000+	18	1.1%	39	2.4%
Median Value		\$438,806		\$819,385
Average Value		\$535,710		\$830,635

Census 2020 Housing Units	Number	Percent
Total	2,949	100.0%
Housing Units In Urbanized Areas	2	0.1%
Rural Housing Units	2,947	99.9%

Census 2020 Owner Occupied Housing Units by Mortgage Status	Number	Percent
Total	1,531	100.0%
Owned with a Mortgage/Loan	877	57.3%
Owned Free and Clear	654	42.7%

**Data Note:** Persons of Hispanic Origin may be of any race.  
**Source:** Esri forecasts for 2024 and 2029, U.S. Census Bureau 2020 decennial Census data.



## **IV. Methodology and Discussion of Issues**

### **Standards and Methodology**

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. 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. These standards and practices have also been accepted by the courts at the trial and appellate levels and by federal courts throughout the country as adequate to reach conclusions about the likely impact a use will have on adjoining or abutting properties.

The aforementioned standards compare property uses in the same market and generally within the same calendar year so that fluctuating markets do not alter study results. Although these standards do not require a linear study that examines adjoining property values before and after a new use (e.g. a solar farm) is developed, some of these studies do in fact employ this type of analysis. Comparative studies, as used in this report, are considered an industry standard.

The type of analysis employed is a Matched Pair Analysis or Paired Sales Analysis. This methodology is outlined in **The Appraisal of Real Estate**, Twelfth Edition by the Appraisal Institute pages 438-439. It is further detailed in **Real Estate Damages**, Third Edition, pages 33-36 by Randall Bell PhD, MAI. Paired sales analysis is used to support adjustments in appraisal work for factors ranging from the impact of having a garage, golf course view, or additional bedrooms. It is an appropriate methodology for addressing the question of impact of an adjoining solar farm. The paired sales analysis is based on the theory that when two properties are in all other respects equivalent, a single difference can be measured to indicate the difference in price between them. Dr. Bell describes it as comparing a test area to control areas. In the example provided by Dr. Bell he shows five paired sales in the test area compared to 1 to 3 sales in the control areas to determine a difference. I have used 3 sales in the control areas in my analysis for each sale developed into a matched pair.

### **Determining what is an External Obsolescence**

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 a study that isolates 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:

- 1) Traffic. Solar Farms are not traffic generators.
- 2) Odor. Solar farms do not produce odor.
- 3) Noise. Solar farms generate minimal noise and are even quieter at night typically with no noise above ambient sounds outside of the fence line.



- 4) Environmental. Solar farms do not produce toxic or hazardous waste. Grass is maintained underneath the panels so there is minimal impervious surface area.
- 5) Appearance/Viewshed. This is the one area that potentially applies to solar farms. However, solar farms are generally required to provide significant setbacks and landscaping buffers to address that concern. Furthermore, any consideration of appearance of viewshed impacts has to be considered in comparison with currently allowed uses on that site. For example if a residential subdivision is already an allowed use, the question becomes in what way does the appearance impact adjoining property owners above and beyond the appearance of that allowed subdivision or other similar allowed uses.
- 6) Other factors. I have observed and studied many solar farms and have never observed any characteristic about such facilities that prevents or impedes neighbors from fully using their homes or farms or businesses for the use intended.

### **Market Imperfection**

Throughout this analysis, I have specifically considered the influence of market imperfection on data analysis. Market imperfection is the term that refers to the fact that unlike a can of soup at the supermarket or in your online shopping cart, real estate cannot be comparison shopped for the best price and purchased at the best price for that same identical product. Real estate products are always similar and never identical. Even two adjacent lots that are identical in almost every way, have a slight difference in location. Once those lots are developed with homes, the number of differences begin to multiply, whether it is size of the home, landscaping, layout, age of interior upfit, quality of interior upfit, quality of maintenance and so on.

Neoclassical economics indicates a perfectly competitive market as having the following: A large number of buyers and sellers (no one person dominates the market), no barriers or transaction costs, homogeneous product, and perfect information about the product and pricing. Real estate is clearly not homogeneous. The number of buyers and sellers for a particular product in a particular location is limited by geography, financing, and the limited time period within a property is listed. There are significant barriers that limit the liquidity in terms of time, costs and financing. Finally, information on real estate is often incomplete or partial – especially at the time that offers are made and prices set, which is prior to appraisals and home inspections. So real estate is very imperfect based on this definition and the impact of this are readily apparent in the real estate market.

What appear to be near-identical homes that are in the same subdivision will often sell with slight variations in price. When multiple appraisers approach the same property, there is often a slight variation among all of those conclusions of value, due to differences in comparables used or analysis of those comparables. This is common and happens all of the time. In fact, within each appraisal, after making adjustments to the comparables, the appraiser will typically have a range of values that are supported that often vary more than +/-5% from the median or average adjusted value.

Based on this understanding of market imperfection, it is important to note that very minor differences in value within an impact study do not necessarily indicate either a negative or positive impact. When the impacts measured fall within that +/-5%, I consider this to be within typical market variation/imperfection. Therefore it may be that there is a negative or positive impact identified if the impact is within that range, but given that it is indistinguishable from what amounts to the background noise or static within the real estate data, I do not consider indications of +/-5% to support a finding of a negative or positive impact.

Impacts greater than that range are however, considered to be strong indications of impacts that fall outside of typical market imperfection. I have used this as a guideline while considering the impacts identified within this report.



### **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 one 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.

Larger solar farms are often set up in sections where any adjoining owner would only be able to see a small section of the project even if there were no landscaping screen. 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.

I have split out the data for the matched pairs adjoining larger solar farms only to illustrate the similarities later in this report.

### **Steps Involved in the Analysis**

The paired sales analysis employed in this report follows the following process:

1. Identify sales of property adjoining existing solar farms.
2. Compare those sales to similar property that does not adjoin an existing solar farm.
3. Confirmation of sales are noted in the analysis write ups.
4. Distances from the homes to panels are included as a measure of the setbacks.
5. Topographic differences across the solar farms themselves are likewise noted along with demographic data for comparing similar areas.

There are a number of Sale/Resale comparables included in the write ups, but most of the data shown is for sales of homes after a solar farm has been announced (where noted) or after a solar farm has been constructed.



## **V. Research on Solar Farms**

### **A. *Appraisal Market Studies***

I have also considered a number of impact studies completed by other appraisers as detailed below.

#### **CohnReznick – Property Value Impact Study: Adjacent Property Values Solar Impact Study: A Study of Eight Existing Solar Facilities, Michigan, 2020**

Patricia McGarr, MAI, CRE, FRICS, CRA and Andrew R. Lines, MAI with CohnReznick completed an impact study for a proposed solar farm in Cheboygan County, Michigan completed on June 10, 2020. I am familiar with this study as well as a number of similar such studies completed by CohnReznick. I have not included all of these studies but I submit this one as representative of those studies.

This study addresses impacts on value from eight different solar farms in Michigan, Minnesota, Indiana, Illinois, Virginia and North Carolina. These solar farms are 19.6 MW, 100 MW, 11.9 MW, 23 MW, 71 MW, 61 MW, 40 MW, and 19 MW for a range from 11.9 MW to 100 MW with an average of 31 MW and a median of 31.5 MW. They analyzed a total of 24 adjoining property sales in the Test Area and 81 comparable sales in the Control Area over a five-year period.

The conclusion of this study is that there is no evidence of any negative impact on adjoining property values based on sales prices, conditions of sales, overall marketability, potential for new development or rate of appreciation.

#### **Christian P. Kaila & Associates – Property Impact Analysis – Proposed Solar Power Plant Guthrie Road, Stuarts Draft, Augusta County, Virginia, 2020**

Christian P. Kaila, MAI, SRA and George J. Finley, MAI developed an impact study as referenced above dated June 16, 2020. This was for a proposed 83 MW facility on 886 acres.

Mr. Kaila interviewed appraisers who had conducted studies and reviewed university studies and discussed the comparable impacts of other development that was allowed in the area for a comparative analysis of other impacts that could impact viewshed based on existing allowed uses for the site. He also discussed in detail the various other impacts that could cause a negative impact and how solar farms do not have such characteristics.

Mr. Kaila also interviewed county planners and real estate assessors in eight different Virginia counties with none of the assessor's identifying any negative impacts observed for existing solar projects.

Mr. Kaila concludes on a finding of no impact on property values adjoining the indicated solar farm.

#### **Fred Beck, MAI, CCIM – Impact Analysis in Lincoln County, North Carolina, 2013**

Mr. Fred Beck, MAI, CCIM completed an impact analysis in 2013 for a proposed solar farm that concluded on a negative impact on value. That report relied on a single cancelled contract for an adjoining parcel where the contracted buyers indicated that the solar farm was the reason for the cancellation. It also relied on the activities of an assessment impact that was applied in a nearby county.

Mr. Beck was interviewed as part of the Christian Kalia study noted above. From that I quote “Mr. Beck concluded on no effect on moderate priced homes, and only a 5% change in his limited research of higher priced homes. His one sale that fell through is hardly a reliable sample.”



Also noted in the Christian Kalia interview notes is a response from Mr. Beck indicating that in his opinion “the homes were higher priced homes and had full view of the solar farm.” Mr. Beck indicated in the interview if landscaping screens were employed he would not see any drop in value.

**NorthStar Appraisal Company – Impact Analysis for Nichomus Run Solar, Pilesgrove, New Jersey, 2020**

Mr. William J. Sapio, MAI with NorthStar Appraisal Company considered a matched pair analysis for the potential impact on adjoining property values to this proposed 150 MW solar farm. Mr. Sapio considered sales activity in a subdivision known as Point of Woods in South Brunswick Township and identified two recent new homes that were constructed and sold adjoining a 13 MW solar farm and compared them to similar homes in that subdivision that did not adjoin the solar farm. These homes sold in the \$1,290,450 to \$1,336,613 price range and these homes were roughly 200 feet from the closest solar panel.

Based on this analysis, he concluded that the adjoining solar farm had no impact on adjoining property value.

**MR Valuation Consulting, LLC – The Kuhl Farm Solar Development and The Fischer Farm Solar Development – New Jersey, 2012**

Mr. Mark Pomykacz, MAI MRICS with MR Valuation Consulting, LLC considered a matched pair analysis for sales near these solar farms. The sales data presented supported a finding of no impact on property value for nearby and adjoining homes and concludes that there is no impact on marketing time and no additional risk involved with owning, building, or selling properties next to the solar farms.

**Mary McClinton Clay, MAI – McCracken County Solar Project Value Impact Report, Kentucky, 2021**

Ms. Mary Clay, MAI reviewed a report by Kirkland Appraisals in this case and also provided a differing opinion of impact. Having testified opposite Ms. Clay, she has stated that she does not confirm her data and does not use an appropriate method for time adjustments.

The comments throughout this study are heavy in adjectives, avoids stating facts contrary to the conclusion and shows a strong selection bias.

**Kevin T. Meeks, MAI – Corcoran Solar Impact Study, Minnesota, 2017**

Mr. Kevin Meeks, MAI reviewed a report by Kirkland Appraisals in this case and also provided additional research on the topic with additional paired sales. The sales he considered are well presented and show that they were confirmed by third parties and all of the broker commentary is aligned with the conclusion that the adjoining solar farms considered had no impact on the adjoining home values.

Mr. Meeks also researched a 100 MW project in Chisago County, known as North Star Solar Garden in MN. He interviewed local appraisers and a broker who was actively marketing homes adjoining that solar farm to likewise support a finding of no impact on property value.

**John Keefe, Chisago County Assessor, Chisago County Minnesota Assessor’s Office, 2017**

This study was completed by the Chisago County Minnesota Assessor’s Office on property prices adjacent to and in close vicinity of a 1,000-acre North Star solar farm in Minnesota. The study concluded that the North Star solar farm had “no adverse impact” on property values. Mr. Keefe further stated that, “It seems conclusive that valuation has not suffered.”

**Tim Connelly, MAI – Solar Impact Study of Proposed Solar Facility, New Mexico, 2023**



This study is a detailed review of an Impact Study completed by Kirkland Appraisals, LLC for Rancho Viejo Solar. It goes through all of the analysis and confirms the applicability and reliability of the methods and conclusions. Mr. Connelly, MAI concurs that “the proposed solar project will not have a negative impact on market value, marketability, or enjoyment of property in the immediate vicinity of the proposed project.”

**Donald Fisher, ARA, 2021**

Donald Fisher has completed a number of studies on solar farms and was quoted in February 15, 2021 stating, “Most of the locations were in either suburban or rural areas, and all of those studies found either a neutral impact or, ironically, a positive impact, where values on properties after the installation of solar farms went up higher than time trends.”

**Jennifer N. Pitts, MAI - Study of Residential Market Trends Surrounding Six Utility-Scale Solar Projects in Texas, 2023**

This study was completed by Real Property Analytics with Ms. Pitts along with Erin M. Kiella, PhD, and Chris Yost-Bremm, PhD. This analysis considered these solar farms through different stages of the market from announcement of the project, during construction, and after construction. They found no indication of a negative impact on sales price, the ratio of sales price to listing price, or the number of Days on Market. They also researched individual sales and interviewed local brokers who confirmed that market participants were knowledgeable of the solar projects and did not result in a negative impact on sales price or marketing time.

**Michael S. MaRous, MAI, CRE – Market Impact Analysis Langdon Mills Solar, Columbia County, Wisconsin, 2023**

This study was completed by MaRous & Company and signed by Michael S. MaRous. This analysis included consideration of solar projects in 13 states and including 7 solar projects in Wisconsin. This includes 22 matched pairs with a conclusion on Page 70 that states “there does not appear to have been any measurable negative impact on surrounding residential property values due to the proximity of a solar farm.”

This analysis was further supported by Assessor Surveys including assessors in Wisconsin which found no instance of an assessor in Wisconsin identifying any negative impacts from solar farms on adjoining property values.

**Conclusion of Impact Studies**

Of the 11 studies noted 9 included actual sales data to derive an opinion of no impact on value. The two studies to conclude on a negative impact includes the Fred Beck study based on no actual sales data, and he has since indicated that with landscaping screens he would not conclude on a negative impact. The other study by Mary Clay shows improper adjustments for time, a lack of confirmation of sales comparables, and exclusion of data that does not support her initial position.

I have relied on these studies as additional support for the findings in this impact analysis.

**B. Articles**

I have also considered a number of articles on this subject as well as conclusions and analysis as noted below.

**Farm Journal Guest Editor, March 22, 2021 – Solar’s Impact on Rural Property Values**

Andy Ames, ASFMR (American Society of Farm Managers and Rural Appraisers) published this article that includes a discussion of his survey of appraisers and studies on the question of property



value related to solar farms. He discusses the university studies that I have cited as well as Patricia McGarr, MAI.

He also discusses the findings of Donald A. Fisher, ARA, who served six years at the Chair of the ASFMRA's National Appraisal Review Committee. He is also the Executive Vice President of the CNY Pomeroy Appraiser and has conducted several market studies on solar farms and property impact. He is quoted in the article as saying, "Most of the locations were in either suburban or rural areas, and all of those studies found either a neutral impact, or ironically, a positive impact, where values on properties after installation of solar farms went up higher than time trends."

Howard Halderman, AFM, President and CEO of Halderman Real Estate and Farm Management attended the ASFMRA solar talk hosted by the Indiana Chapter of the ASFMRA and he concludes that other rural properties would likely see no impact and farmers and landowners shown even consider possible benefits. "In some cases, farmers who rent land to a solar company will insure the viability of their farming operation for a longer time period. This makes them better long-term tenants or land buyers so one can argue that higher rents and land values will follow due to the positive impact the solar leases offer."

More recently in August 2022, Donald Fisher, ARA, MAI and myself led a webinar on this topic for the ASFMRA discussing the issues, the university studies and specific examples of solar farms having no impact on adjoining property values.

#### **National Renewable Energy Laboratory – Top Five Large-Scale Solar Myths, February 3, 2016**

Megan Day reports from NREL regarding a number of concerns neighbors often express. Myth #4 regarding property value impacts addresses specifically the numerous studies on wind farms that show no impact on property value and that solar farms have a significantly reduced visual impact from wind farms. She highlights that the appearance can be addressed through mitigation measures to reduce visual impacts of solar farms through vegetative screening. Such mitigations are not available to wind farms given the height of the windmills and again, those studies show no impact on value adjoining wind farms.

#### **North Carolina State University: NC Clean Energy Technology Center White Paper: Balancing Agricultural Productivity with Ground-Based Solar Photovoltaic (PV) Development (Version 2), May 2019**

Tommy Cleveland and David Sarkisian wrote a white paper for NCSU NC Clean Energy Technology Center regarding the potential impacts to agricultural productivity from a solar farm use. I have interviewed Tommy Cleveland on numerous occasions and I have also heard him speak on these issues at length as well. He addresses many of the common questions regarding how solar farms work and a detailed explanation of how solar farms do not cause significant impacts on the soils, erosion and other such concerns. This is a heavily researched paper with the references included.

#### **North Carolina State University: NC Clean Energy Technology Center White Paper: Health and Safety Impacts of Solar Photovoltaics, May 2017**

Tommy Cleveland wrote a white paper for NCSU NC Clean Energy Technology Center regarding the health and safety impacts to address common questions and concerns related to solar farms. This is a heavily researched white paper addressing questions ranging from EMFs, fire safety, as well as vegetation control and the breakdown of how a solar farm works.

### **C. Broker Commentary**

In the process of working up the matched pairs used later in this report, I have collected comments from brokers who have actually sold homes adjoining solar farms indicating that the solar farm had no impact on the marketing, timing, or sales price for the adjoining homes. I have included



comments from brokers within this report where they discussed specific solar projects including brokers from Kentucky, Virginia, Tennessee, and North Carolina.

I have additional commentary from other states including New Jersey and Michigan that provide the same conclusion.



## VI. University Studies

I have also considered the following studies completed by four different universities related to solar farms and impacts on property values.

### A. *University of Texas at Austin, May 2018*

#### **An Exploration of Property-Value Impacts Near Utility-Scale Solar Installations**

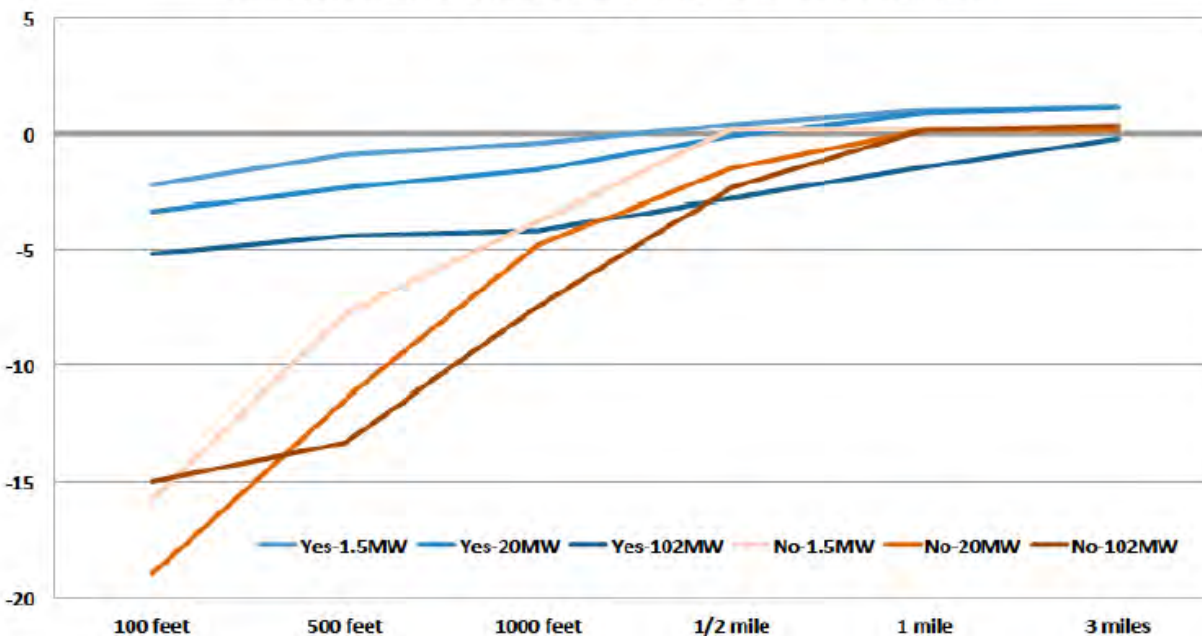
This study considers solar farms from two angles. First it looks at where solar farms are being located and concludes that they are being located primarily in low density residential areas where there are fewer homes than in urban or suburban areas.

The second part is more applicable in that they conducted a survey of appraisers/assessors on their opinions of the possible impacts of proximity to a solar farm. They consider the question in terms of size of the adjoining solar farm and how close the adjoining home is to the solar farm. I am very familiar with this part of the study as I was interviewed by the researchers multiple times as they were developing this. One very important question that they ask within the survey is very illustrative. They asked if the appraiser being surveyed had ever appraised a property next to a solar farm. There is a very noticeable divide in the answers provided by appraisers who have experience appraising property next to a solar farm versus appraisers who self-identify as having no experience or knowledge related to that use.

On Page 16 of that study they have a chart showing the responses from appraisers related to proximity to a facility and size of the facility, but they separate the answers as shown below with appraisers with experience in appraising properties next to a solar farm shown in blue and those inexperienced shown in brown. Even within 100 feet of a 102 MW facility the response from experienced appraisers were -5% at most on impact. While inexperienced appraisers came up with significantly higher impacts. This chart clearly shows that an uninformed response widely diverges from the sales data available on this subject.

**Chart B.2 - Estimates of Property Value Impacts (%) by Size of Facility, Distance, & Respondent Type**

Have you assessed a home near a utility-scale solar installation?





Furthermore, the question cited above does not consider any mitigating factors such as landscaping buffers or screens which would presumably reduce the minor impacts noted by experienced appraisers on this subject.

The conclusion of the researchers is shown on Page 23 indicated that “Results from our survey of residential home assessors show that the majority of respondents believe that proximity to a solar installation has either no impact or a positive impact on home values.”

This analysis supports the conclusion of this report that the data supports no impact on adjoining property values.

## ***B. University of Rhode Island, September 2020***

### **Property Value Impacts of Commercial-Scale Solar Energy in Massachusetts and Rhode Island**

The University of Rhode Island published a study entitled **Property Value Impacts of Commercial-Scale Solar Energy in Massachusetts and Rhode Island** on September 29, 2020 with lead researchers being Vasundhara Gaur and Corey Lang. I have read that study and interviewed Mr. Corey Lang related to that study. This study is often cited by opponents of solar farms but the findings of that study have some very specific caveats according to the report itself as well as Mr. Lang from the interview.

While that study does state in the Abstract that they found depreciation of homes within 1-mile of a solar farm, that impact is limited to non-rural locations. On Pages 16-18 of that study under Section 5.3 Heterogeneity in treatment effect they indicate that the impact that they found was limited to non-rural locations with the impact in rural locations effectively being zero. For the study they defined “rural” as a municipality/township with less than 850 population per square mile.

They further tested the robustness of that finding and even in areas up to 2,000 population per square mile they found no statistically significant data to suggest a negative impact. They have not specifically defined a point at which they found negative impacts to begin, as the sensitivity study stopped checking at the 2,000-population dataset.

Where they did find negative impacts was in high population density areas that was largely a factor of running the study in Massachusetts and Rhode Island which the study specifically cites as being the 2<sup>nd</sup> and 3<sup>rd</sup> most population dense states in the USA. Mr. Lang in conversation as well as in recorded presentations has indicated that the impact in these heavily populated areas may reflect a loss in value due to the scarce greenery in those areas and not specifically related to the solar farm itself. In other words, any development of that site might have a similar impact on property value.

Based on this study I have checked the population for Union Hall District of Franklin County, which has a population of 8,167 for 2024 based on SiteToDoBusiness.com and a total area of 94.97 square miles. This indicates a population density of 86 people per square mile which puts this well below the threshold indicated by the Rhode Island Study.

I therefore conclude that the Rhode Island Study supports a finding of no impact on adjoining properties for the proposed solar farm.



### Union Hall District Data & Demographics (As of July 1, 2024)

POPULATION		HOUSING	
Total Population	8,167 (100%)	Total HU (Housing Units)	5,176 (100%)
Population in Households	8,167 (100.0%)	Owner Occupied HU	2,915 (56.3%)
Population in Families	6,718 (82.3%)	Renter Occupied HU	610 (11.8%)
Population in Group Quarters <sup>1</sup>	0	Vacant Housing Units	1,651 (31.9%)
Population Density	86	Median Home Value	\$361,781
Diversity Index <sup>2</sup>	29	Average Home Value	\$500,309
		Housing Affordability Index <sup>3</sup>	90

INCOME		HOUSEHOLDS	
Median Household Income	\$79,032	Total Households	3,525
Average Household Income	\$115,658	Average Household Size	2.32000000000
% of Income for Mortgage <sup>4</sup>	29%	Family Households	2,403
Per Capita Income	\$49,920	Average Family Size	3
Wealth Index <sup>5</sup>	136		

#### C. **Georgia Institute of Technology, October 2020** **Utility-Scale Solar Farms and Agricultural Land Values**

This study was completed by Nino Abashidze as Post-Doctoral Research Associate of Health Economics and Analytics Lab (HEAL), School of Economics, Georgia Institute of Technology. This research was started at North Carolina State University and analyzes properties near 451 utility-scale ground-mount solar installations in NC that generate at least 1 MW of electric power. A total of 1,676 land sales within 5-miles of solar farms were considered in the analysis.

This analysis concludes on Page 21 of the study “Although there are no direct effects of solar farms on nearby agricultural land values, we do find evidence that suggests construction of a solar farm may create a small, positive, option -value for land owners that is capitalized into land prices. Specifically, after construction of a nearby solar farm, we find that agricultural land that is also located near transmission infrastructure may increase modestly in value.”

This study supports a finding of no impact on adjoining agricultural property values and in some cases could support a modest increase in value.

#### D. **Master’s Thesis: ECU by Zachary Dickerson July 2018**

##### **A Solar Farm in My Backyard? Resident Perspectives of Utility-Scale Solar in Eastern North Carolina**

This study was completed as part of a Master of Science in Geography Master’s Thesis by Zachary Dickerson in July 2018. This study sets out to address three questions:

1. Are there different aspects that affect resident satisfaction regarding solar farms?



2. Are there variations in satisfaction for residents among different geographic settings, e.g. neighborhoods adjacent to the solar farms or distances from the solar farms?
3. How can insight from both the utility and planning sectors, combined with knowledge gained from residents, fill gaps in communication and policy writing in regard to solar farms?

This was done through survey and interview with adjacent and nearby neighbors of existing solar farms. The positive to neutral comments regarding the solar farms were significantly higher than negative. The researcher specifically indicates on Page 46 “The results show that respondents generally do not believe the solar farms pose a threat to their property values.”

The most negative comments regarding the solar farms were about the lack of information about the approval process and the solar farm project prior to construction.

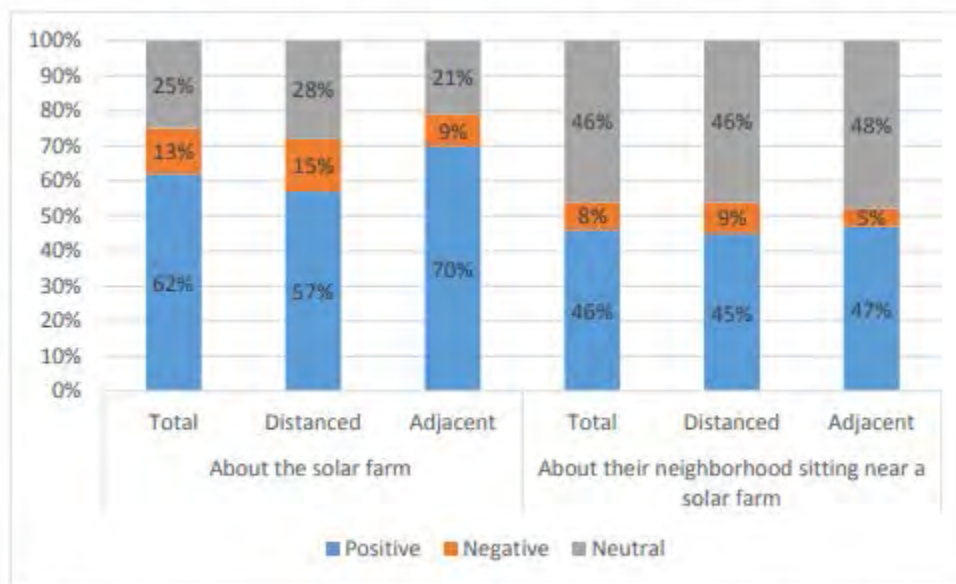


Figure 11: Residents' positive/negative word choices by geographic setting for both questions

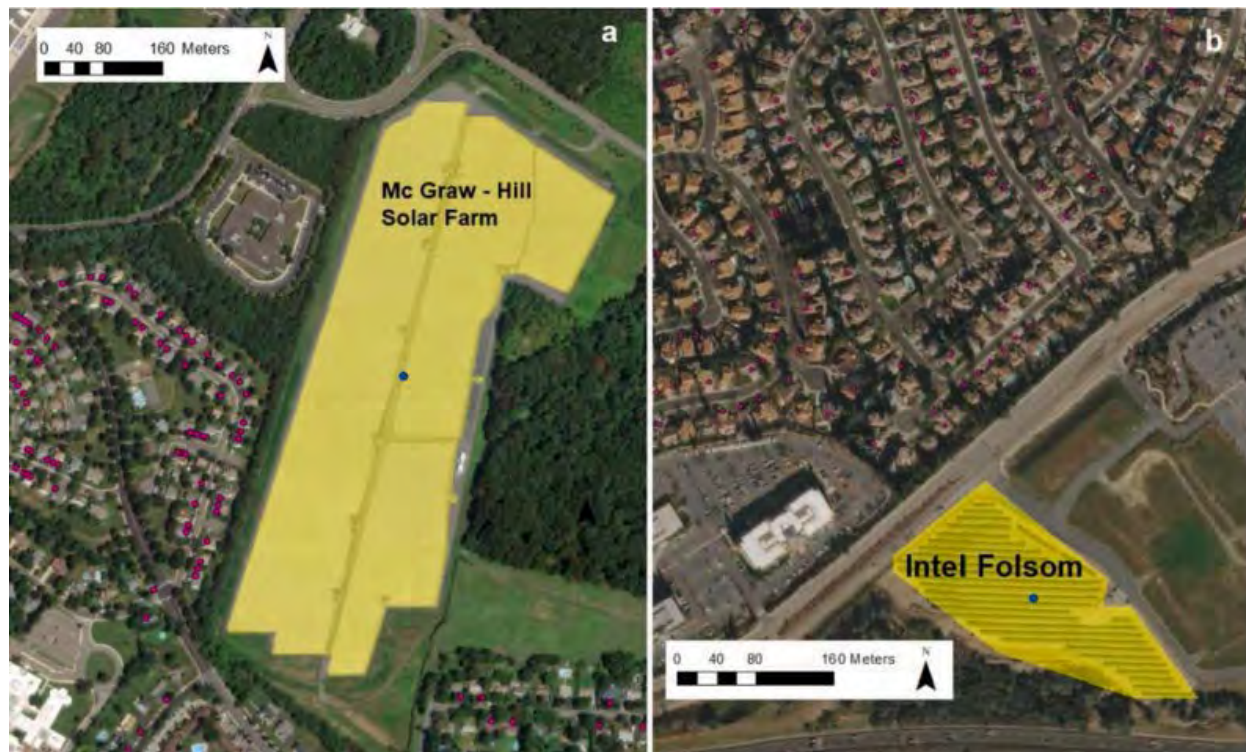
### ***E. Lawrence Berkeley National Lab, March 2023***

#### **Shedding light on large-scale solar impacts: An analysis of property values and proximity to photovoltaics across six U.S. states**

This study was completed by researchers including Salma Elmallah, Ben Hoen, K. Sydney Fujita, Dana Robson, and Eric Brunner. This analysis considers home sales before and after solar farms were installed within a 1 mile radius and compared them to home sales before and after the solar farms at a 2-4 mile radius. The conclusion found a 1.5% impact within 0.5 mile of a solar farm as compared to homes 2-4 miles from solar farms. This is the largest study of this kind on solar and addresses a number of issues, but also does not address a number of items that could potentially skew these results. First of all, the study found no impact in the three states with the most solar farm activity and only found impacts in smaller sets of data. The data does not in any way discuss actual visibility of solar farms or address existing vegetation screens. This lack of addressing this is highlighted by the fact that they suggest in the abstract that vegetative shading may be needed to address possible impacts. Another notable issue is the fact that they do not address other possible impacts within the radii being considered. This lack of consideration is well illustrated within the study on Figure A.1 where they show satellite images of McGraw Hill Solar Farm in NJ and Intel Folsom in CA. The Folsom image clearly shows large highways separating the solar farm from nearby housing, but with tower office buildings located closer to the housing being considered. In



no place do they address the presence of these towers that essentially block those homes from the solar farm in some places. An excerpt of Fig. A.1. is shown below.

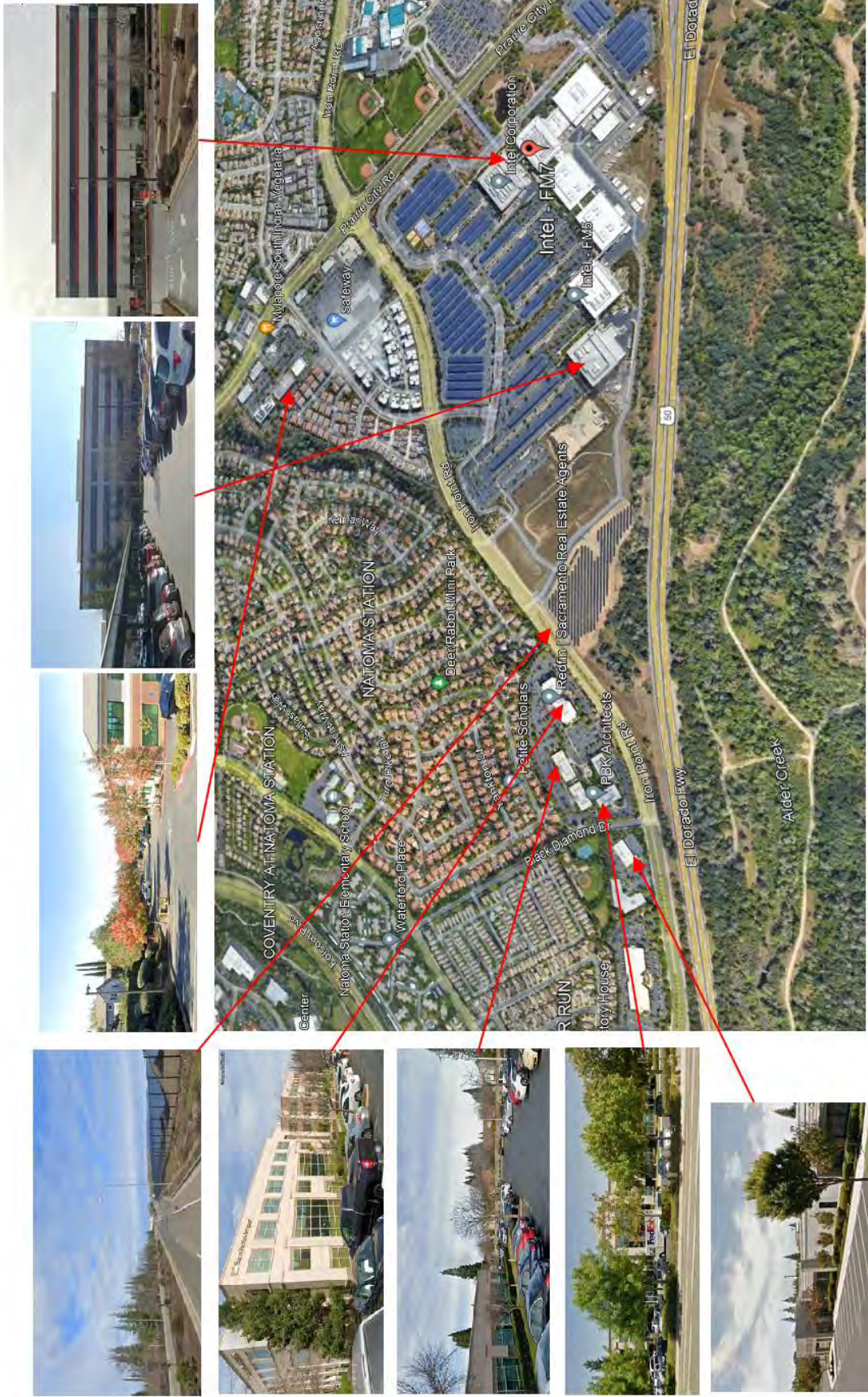


For each of these locations, I have panned out a little further on Google Earth to show the areas illustrated to more accurately reflect the general area. For the McGraw Hill Solar Farm you can see there is a large distribution warehouse to the west along with a large offices and other industrial uses. Further to the west is a large/older apartment complex (Princeton Arms). To the east there are more large industrial buildings. However, it is even more notable that 1.67 miles away to the west is Cranbury Golf Club. Given how this analysis was set up, these homes around the industrial buildings are being compared to homes within this country club to help establish impacts from the solar farm. Even considering the idea that each set is compared to itself before and after the solar farm, it is not a reasonable supposition that homes in each area would appreciate at the same rates even if no solar farm was included. Furthermore the site where the solar farm is located an all of the surrounding uses not improved with residential housing to the south is zoned Research Office (RO) which allows for: manufacturing, preparation, processing or fabrication of products, with all activities and product storage taking place within a completely enclosed building, scientific or research laboratories, warehousing, computer centers, pharmaceutical operations, office buildings, industrial office parks among others. Homes adjoining such a district would likely have impacts and influences not seen in areas zoned and surrounded by zoning strictly for residential uses.











On the Intel Folsom map I have shown the images of two of the Intel Campus buildings, but there are roughly 8 such buildings on that site with additional solar panels installed in the parking lot as shown in that image. I included two photos that show the nearby housing having clear and close views of adjoining office parking lots. This illustrates that the homes in that 0.5 mile radius are significantly more impacted by the adjoining office buildings than a solar farm located distantly that are not within the viewshed of those homes. Also, this solar farm is located on land adjoining the Intel Campus on a tract that is zoned M-1 PD, which is a Light Industrial/Manufacturing zoning. Furthermore, the street view at the solar farm shows not only the divided four-lane highway that separates the office buildings and homes from the solar farm, but also shows that there is no landscaping buffer at this location. All of these factors are ignored by this study. Below is another image of the Folsom Solar at the corner of Iron Point Road and Intel West Driveway which shows just how close and how unscreened this project is.



Compare that image from the McGraw Hill Street view facing south from County Rte 571. There is a distant view and much of the project is hidden by a mix of berms and landscaping. The analysis makes no distinction between these projects.



The third issue with this study is that it identifies impacts following development in areas where they note that “more adverse home price impacts might be found where LSPVPS (large-scale photovoltaic project) displace green space (consistent with results that show higher property values



near green space.” The problem with this statement is that it assumes that the greenspace is somehow guaranteed in these areas, when in fact, they could just as readily be developed as a residential subdivision and have the same impacts. They have made no effort to differentiate loss of greenspace through other development purposes such as schools, subdivisions, or other uses versus the impact of solar farms. In other words, they may have simply identified the impact of all forms of development on property value. This would in fact be consistent with the comments in the Rhode Island study where the researchers noted that the loss of greenspace in the highly urban areas was likely due to the loss of greenspace in particular and not due to the addition of solar panels.

Despite these three shortcomings in the analysis – the lack of differentiating landscape screening, the lack of consideration of other uses within the area that could be impacting property values, and the lack of consideration of alternative development impacts – the study still only found impacts between 0 and 5% with a conclusion of 1.5% within a 0.5-mile radius. As discussed later in this report, real estate is an imperfect market and real estate transactions typically sell for much wider variability than 5% even where there are no external factors operating on property value.

I therefore conclude that the minor impacts noted in this study support a finding of no impact on property value. Most appraisals show a variation between the highest and lowest comparable sale that is substantially greater than 1.5% and this measured impact for all its flaws would just be lost in the static of normal real estate transactions.

***F. Loyola University Chicago by Simeng Hao and Gilbert Michaud, 2024  
Assessing Property Value Impacts Near Utility-Scale Solar in the Midwest***

This was originally part of the Master’s Thesis by Simeng Hao in 2023 but updated for publication.

This study considered 70 utility-scale facilities built in the Midwest from 2009 to 2022 using data from the Lawrence Berkeley National Laboratory. Using the difference-in-differences, method he found that proximity to solar project increased property values by 0.5% to 2.0%.

Furthermore, the research in this project shows that solar farms tend to be located in places with lower average home values by 2 to 3% compared to other random adjoining zip codes. This is not to say those areas are depressed, but those rural areas on average have lower prices than more suburban or urban areas nearby. This highlights the problem with a number of the studies on this issue in that they compare home values near the solar project to homes further from the solar project, but they are largely identifying the difference between rural and less-rural areas. The impact range identified by the Berkeley Study for example is exactly in line with that random difference identified by Simeng Hao.

The original Master’s Thesis included a summary of seven other studies including many of those noted above that considered a total of 3,296 projects with results ranging from 1.7% decline in value to no impact. Only 2 of the studies identified found negative results that ranged from 0.82% to 1.7% impact on property value, while the other five studies found no consistent negative impact.

Given that 5 of the 7 studies identified show no negative impact and the analysis by Mr. Hao shows a positive relationship up to 2%, I consider this analysis to support my conclusions on no impact on property value. While statistical studies note impacts of +/- 2%, as noted earlier in this report, market imperfection is generally greater than that rate and supports a conclusion of no impact. Essentially, while the statistical studies are showing minor variation, applying that to any one particular property whether plus or minus, would be unsupported given that market imperfection is greater than that purported adjustment.



## **VII. Assessor Surveys**

I have been working on a survey of Virginia Assessors regarding property values related to solar farms and whether or not the local assessors have found any data to support any changes to value on property adjoining solar farms. In this process I have contacted every assessor's office by email and I have received responses by email and by phone from a number of these counties. Many of the counties in Virginia rely on outside firms to assist in gathering data for the assessments and where that is the case, we have contacted the outside firms regarding the question of whether or not the assessors are currently making any adjustments to properties adjoining solar farms.

I currently have response from 16 counties that have solar farms in them and of those 16 responses none of the assessors are currently applying a negative impact on property value. One response suggested that adjoining values may go up.

I also spoke with Randy Willis with Pearson Assessors. His company assists in the assessments in many of the counties south of Richmond. He indicated that they had found no data to suggest a negative impact on property value and they have looked as they were concerned about that issue. He indicated that they would make no negative impact adjustments and that he recognizes that there are a number of agricultural adjoining uses that have a greater impact on adjoining properties in terms of noise, dust and odor than a solar farm would have. He did indicate that there could be situations where an individual home might have a greater visual impact and those should be looked at on a case-by-case basis, but he also agreed that many allowed agricultural uses could have similar visual impacts on such properties as well.

### **VIRGINIA Commissioner of the Revenue**

<b>County</b>	<b>Assessor Name</b>	<b>Number of Farms in Operation</b>	<b>Change in adjacent property value</b>
Appomattox	Sara Henderson	1, plus one in process	No
Augusta	W. Jean Shrewsbury	no operational	No
Buckingham	Stephanie D. Love	1	No
Charlotte	Naisha Pridgen Carter	1, several others in the works	No
Clarke	Donna Peake	1	No
Frederick	Seth T. Thatcher	none, 2 approved for 2022	No, assuming compatible with rural area
Goochland	Mary Ann Davis		No
Hanover	Ed Burnett	1	No
Louisa	Stacey C. Fletcher	2 operational by end of year	No, only if supported by market data
Mecklenburg	Joseph E. "Ed" Taylor		No
Nottoway	Randy Willis with Pearson Assessors		No
Powhatan	Charles Everest	2 approved, 1 built	Likely increase in value
Rockingham	Dan Cullers	no operational	Likely no
Southampton	Amy B. Carr	1	Not normally
Surry	Jonathan F. Judkins	1	None at this time
Westmoreland	William K. Hoover	4	No

Responses: 16

Negative Impact on Adjoining Value = Yes: 0

Negative Impact on Adjoining Value = No: 16



I have completed similar surveys in a number of states and I have shown the breakdown of those responses below. I have not had any assessor indicate a negative adjustment due to adjacency to a solar farm in any state. These responses total 189 with 172 definitively indicating no negative adjustments are made to adjoining property values, 17 providing no response to the question, and 0 indicating that they do address a negative impact on adjoining property value.

#### Summary of Assessor Surveys

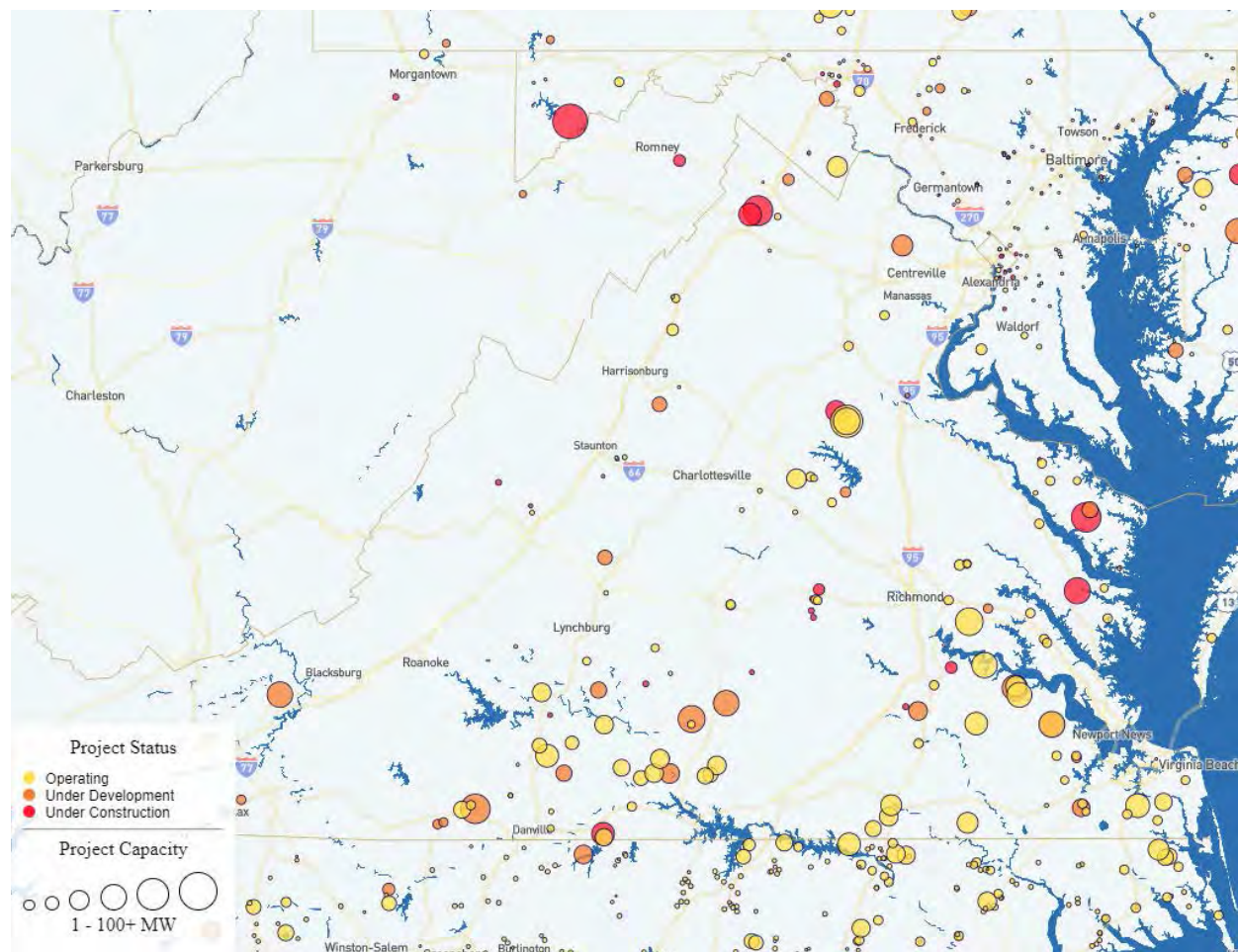
State	Responses	No Impact	Yes Impact	No Comment
North Carolina	39	39		
Virginia	17	17		
Indiana	31	31		
Colorado	15	8		7
Georgia	33	33		
Kentucky	10	6		4
Mississippi	4	2		2
New Mexico	5	5		
Ohio	24	20		4
South Carolina	11	11		
<b>Totals</b>	<b>189</b>	<b>172</b>	<b>0</b>	<b>17</b>



## VIII. Summary of Solar Projects In Virginia

I have researched the solar projects in Virginia. I identified the solar farms through the Solar Energy Industries Association (SEIA) Major Projects List and then excluded the roof mounted facilities. I focused on larger solar farms over 10 MW though I have included a couple of smaller solar farms as shown in the chart below.

Below I have an excerpt from that map showing the area around Virginia.



I was able to identify and research 85 additional solar farms in Virginia as shown below. These are primarily over 20 MW in size with adjoining homes as close as 100 feet and the mix of adjoining uses is primarily agricultural and residential. Many of the solar farms near the end of this list are still in the proposed process.



Solar #	Name	State	County	City	Output (MW)	Total Acres	Used Acres	Avg. Dist to home	Closest Home	Adjoining Use by Acre				
										Res	Agri	Agri/Res	Com	
115	Buckingham I	VA	Buckingham	Cumberland	19.8	481.18			N/A	N/A	8%	73%	18%	0%
121	Scott	VA	Powhatan	Powhatan	20	898.4		1,421	730	29%	28%	44%	0%	1
204	Walker-Correctional	VA	New Kent	Barhamsville	20	484.65		516	103	13%	68%	20%	0%	1
205	Sappony	VA	Sussex	Stony Creek	20	322.68				2%	98%	0%	0%	
216	Beetle	VA	Southampton	Boykins	40	422.19		1,169	310	0%	10%	90%	0%	1
222	Grasshopper	VA	Mecklenburg	Chase City	80	946.25				6%	87%	5%	1%	
226	Belcher/Desper	VA	Louisa	Louisa	88	1238.1			150	19%	53%	28%	0%	1
228	Bluestone Farm	VA	Mecklenburg	Chase City	4.99	332.5				0%	100%	0%	0%	
257	Nokesville	VA	Prince William	Nokesville		331.01				12%	49%	17%	23%	
261	Buckingham II	VA	Buckingham	Buckingham	19.8	460.05				6%	79%	15%	0%	
262	Mount Jackson	VA	Shenandoah	Mount Jackson	15.65	652.47				21%	51%	14%	13%	
263	Gloucester	VA	Gloucester	Gloucester	20	203.55		508	190	17%	55%	28%	0%	1
267	Scott II	VA	Powhatan	Powhatan		701				41%	25%	34%	0%	
270	TWE Myrtle	VA	Suffolk	Suffolk	15	258.97	120	1,115	150	34%	48%	17%	0%	1
272	Churchview	VA	Middlesex	Church View	20	567.91				9%	64%	27%	0%	
303	Turner	VA	Henrico	Henrico	20	463.12		N/A	N/A	21%	37%	0%	42%	
311	Sunnybrook Farm	VA	Halifax	Scottsburg		527.88	340	N/A	N/A	15%	59%	26%	0%	
312	Powell Creek	VA	Halifax	Alton		513		N/A	N/A	7%	71%	22%	0%	
339	Crystal Hill	VA	Halifax	Crystal Hill		628.67	218	1,570	140	6%	41%	35%	18%	1
353	Amazon East(ern st)	VA	Accomack	Oak Hall	80	1000		645	135	8%	75%	17%	0%	1
354	Alton Post	VA	Halifax	Alton		501.96		749	100	2%	58%	40%	0%	1
357	Water Strider	VA	Halifax	Nathalie		1134	960	821	250	7%	55%	38%	0%	1
363	Remington	VA	Fauquier	Remington	20	277.2	125	2,755	1,280	10%	41%	31%	18%	1
364	Greenwood	VA	Culpepper	Stevensburg	100	2266.6	1800	788	200	8%	62%	29%	0%	1
366	Culpeper Sr	VA	Culpeper	Culpeper		12.53		N/A	N/A	15%	0%	86%	0%	
369	Cherrydale	VA	Northampton	Kendall Grove	20	180.17		N/A	N/A	5%	0%	92%	3%	
370	Clarke	VA	Clarke	White Post	10	234.84		N/A	N/A	14%	39%	46%	1%	
371	Bedford	VA	Bedford	Bedford	3	101	20	N/A	N/A	8%	0%	66%	26%	
372	Woodland,VA	VA	Isle of Wight	Smithfield	19.7	211.12		606	190	9%	0%	91%	0%	1
373	Whitehouse	VA	Louisa	Louisa	20	499.52		1,195	110	24%	55%	18%	4%	1
406	Foxhound	VA	Halifax	Clover	91	1311.8		885	185	5%	61%	17%	18%	1
483	Essex Solar Center	VA	Essex	Center Cross	20	106.12		693	360	3%	70%	27%	0%	1
484	Southampton	VA	Southampton	Newsoms	100	3243.9		-	-	3%	78%	17%	3%	
494	Walnut	VA	King and Queen	Shacklefords	110	1700	1173	641	165	14%	72%	13%	1%	
496	Piney Creek	VA	Halifax	Clover	80	776.18	422	523	195	15%	62%	24%	0%	
500	Rappahannock	VA	Lancaster	White Stone	2	184	25	831	560	30%	0%	70%	0%	
510	UVA Puller	VA	Middlesex	Topping	15	120	120	1,095	185	59%	32%	0%	10%	
516	Dogwood	VA	Page	Stanley	20	360.7	110	2,207	225	12%	22%	65%	0%	
518	Fountain Creek	VA	Greensville	Emporia	80	798.3	595	862	300	6%	23%	71%	0%	
557	Winterpock 1	VA	Chesterfield	Chesterfield		518	308	2,106	350	4%	78%	18%	0%	
559	Wood Brothers	VA	Middlesex	Hartfield	5	60.61	38.67	878	205	12%	86%	0%	2%	
577	Windsor	VA	Isle of Wight	Windsor	85	760.87	760.87	459	160	8%	71%	21%	0%	
579	Spotsylvania	VA	Spotsylvania	Paytes	500	6412	3500			9%	52%	11%	27%	
586	Sweet Sue	VA	King William	Aylett	77	1262	576	1,617	680	7%	68%	25%	0%	
591	Warwick	VA	Prince George	Disputanta	26.5	1090.1	564.53	555	115	12%	67%	21%	0%	
621	Loblolly	VA	Surry	Spring Grove	150	2181.9	1000	1,860	110	7%	62%	31%	0%	
622	Woodridge	VA	Albemarle	Scottsville	138	2260.9	1000	1,106	215	9%	63%	28%	0%	
624	Reams	VA	Dinwiddie	Dinwiddie	5	64.1	37.8	873	270	28%	40%	32%	0%	
633	Brunswick	VA	Greensville	Emporia	150.2	2076.4	1387.3	1,091	240	4%	85%	11%	0%	
642	Belcher 3	VA	Louisa	Louisa		749.36	658.56	598	180	14%	71%	14%	1%	
649	Endless Caverns	VA	Rockingham	New Market	31.5	355	323.6	624	190	15%	27%	51%	7%	
664	Watlington	VA	Halifax	South Boston	20	240.09	137	536	215	24%	48%	28%	0%	
672	Spout Spring	VA	Appomattox	Appomattox	60	881.12	673.37	836	335	16%	30%	46%	8%	



Solar #	Name	County	City	Output (MW)	Total Acres	Used Acres	Avg. Dist to home	Closest Home	Adjoining Use by Acre			
									Res	Agri	Agri/Res	Com
704	Midway	Albemarle	Batesville	8	136	90	858	340	20%	46%	34%	0%
749	Martin	Goochland	Richmond	5	114.2	114.2	1,491	470	7%	54%	39%	0%
750	Palmer	Fluvanna	Zion Crossroads	5	57	41	525	165	31%	55%	0%	14%
755	Danville	Pittsylvania	Danville	6	72.08	72.08	616	135	22%	63%	15%	0%
756	Martin Trail	Halifax	Clover	6	43	37	254	115	6%	13%	81%	0%
757	Route 360	Halifax	Clover	5.65	110	40	1,957	1,275	6%	18%	76%	0%
769	Cavalier	Surry/Isle of Wigh	Elberon	240	5050	3323	1,231	215	2%	78%	20%	0%
772	Riverstone	Buckingham	Arvonnia	149.5	1939	1193	814	355	4%	90%	6%	0%
773	Sunfish	Orange	Culpeper	80	1131.5	679.5	1,121	120	4%	13%	38%	44%
776	West Lake	Franklin	Harrisburg	20	126.64	126.64	3,280	1,260	11%	18%	49%	22%
777	Aditya	Louisa	Louisa	11	94.67	60	614	350	15%	85%	0%	0%
781	Waller	Lancaster	Burgess		1400	1400	880	125	28%	72%	0%	0%
795	Harris Staunton	Halifax	South Boston	47	697	697	352	185	3%	89%	8%	0%
803	Hickory	Chesterfield	Chesterfield	4.7	95.21	22	1,286	325	8%	22%	70%	0%
809	Mountain Brook	Franklin	Wirtz	20			427	195	24%	21%	54%	1%
812	Prince Edward	Prince Edward		25	369.2	369.2	1,275	660	0%	55%	45%	0%
813	Redbud	Frederick	Winchester	30	262.99	262.99	529	150	29%	55%	17%	0%
829	OFW	Shenandoah	Mount Jackson	20	126.64	126.64	504	110	6%	57%	31%	6%
831	Knight	Rockingham	Shenandoah	70	461.59	461.59	833	240	0%	100%	0%	0%
833	Dayton Wayland	Rockingham	Dayton	4	50.7	50.7	684	100	45%	53%	2%	0%
834	Firefly	Pittsylvania			3143	3143	-	200	12%	73%	15%	0%
854	Reeve	Prince Edward	Pamplin	5	164.7	164.7	2,232	1,195	7%	71%	22%	0%
858	360 Solar Center	Chesterfield	Skinquarter	100	2000	410	2,036	235	1%	97%	2%	0%
864	Purdy	Greensville	Purdy	65	596	596	825	250	5%	66%	29%	0%
865	Clover Creek	Halifax	Clover	90	1472	1472	1,691	310	10%	89%	1%	0%
870	Pineside	Buckingham	Scottsville	74.9	2242	2242	2,484	500	22%	51%	27%	0%
872	Rosalind	Greensville	Emporia	160	1795	1795	654	500	8%	86%	7%	0%
879	Wheelhouse	Lunenburg	Victoria	912.47	60	60	2,071	900	7%	41%	51%	0%
880	Elam	Prince Edward	Pamplin	138.9	3	3	1,066	425	22%	66%	12%	0%
881	Helios	Pulaski	Pulaski	11.45	141.76	141.76	734	225	48%	28%	24%	0%
882	Enon	Stafford	Stafford	3	36.76	36.76	289	120	37%	63%	0%	0%
900	Land of Promise	Chesapeake	Chesapeake	5	134.66	134.66	1,338	785	44%	48%	8%	0%
901	Pocaty	Chesapeake	Chesapeake	2	27.22	27.22	632	445	21%	79%	0%	0%
936	Willow	Franklin	Rocky Mount	12	149	149	543	230	33%	58%	9%	0%
937	Carver	Isle of Wight	Windsor	71	1584.6	1584.6	857	130	5%	50%	45%	0%
938	Alameda	Fauquier	Beaeton	70	810	810	626	160	14%	47%	23%	16%
939	White Oak	Fluvanna	Kidds Store	43	434.7	347	724	400	7%	63%	30%	0%
940	Plank Road	Cumberland	Farmville	10	143.96	143.96	798	100	21%	69%	0%	11%
941	Skyline	Rockingham	Keezletown	73	733	733	596	155	10%	41%	48%	0%
947	Arvonnia 1	Buckingham	Arvonnia	79.8	538.74	538.74	659	135	13%	66%	21%	0%
948	Arvonnia 2	Buckingham	Arvonnia	47.5	339.42	339.42	475	140	21%	74%	5%	0%
951	Fork Union	Fluvanna	West Bottom	116	781.54	781.54	745	390	13%	68%	5%	14%
955	Piney River	Amherst	Piney River	50	431	431	985	350	9%	18%	62%	11%
967	Augusta	Augusta	Lyndhurst	100	1536.7	1536.7	585	280	10%	70%	13%	7%
968	Swalotail	Fluvanna	West Bottom	16	241.28	241.28	480	285	13%	68%	19%	0%
972	Moonlight	Isle of Wight	Smithfield	44	236.75	236.75	382	165	5%	92%	3%	0%
974	Confroy	Halifax	Halifax	5	226.91	226.91	2,171	1,125	25%	35%	40%	0%
980	Fisherville	Augusta	Fisherville	2	24.09	24.09	617	115	28%	72%	0%	0%
982	Solomons Creek	Powhatan	Powhatan	5	152.9	152.9	1,274	300	67%	13%	17%	3%
990	Perrin Creek	Halifax	South Boston	3	86.25	86.25	1,232	640	20%	47%	33%	0%
999	Sinai	Halifax	South Boston	9.9	104.93	43.8	546	220	25%	29%	0%	47%
1004	Beaeton	Fauquier	Beaeton	14	161.69	161.69	1,151	225	3%	33%	24%	40%
1010	Caledon	King George	Berthaville	22	1331.3	1331.3	4,668	585	7%	90%	4%	0%
1047	Elliott Energy	Tazewell	Elliott	5	157.17	157.17	1950	1950	28%	70%	0%	3%
1048	High Bridge	Prince Edward	Farmville	12	172.58	172.58	570	225	5%	26%	66%	3%



Solar #	Name	County	City	Output (MW)	Total Acres	Used Acres	Avg. Dist to home	Closest Home	Adjoining Use by Acre			
									Res	Agri	Agri/Res Com	
1049	Springfield	Hanover	Ashland	80	955.21	955.21	624	205	42%	58%	0%	0%
1050	Timber Creek	Prince Edward	Farmville	5	38.46	38.46	630	600	5%	87%	8%	0%
1051	Miller Lake	Prince Edward	Burkeville	4	43.6	43.6	930	635	2%	74%	24%	0%
1052	Piney Grove VA	Prince Edward	Burkeville	8	380.83	380.83	1394	185	9%	55%	36%	0%
1053	Peach Tree	Prince Edward	Green Bay	24	420.74	420.74	1011	500	48%	52%	0%	0%
1054	Gabriel	Prince Edward	Meherrin	80	1516.7	1516.7	1100	145	7%	82%	11%	0%
1058	Penick	Cumberland	Farmville	5	48	48	1222	455	20%	19%	62%	0%
1059	Orange Road	Orange	Orange	5	70.85	70.85	980	980	15%	74%	5%	6%
1060	White	Southampton	Franklin	20	305.85	305.85	1544	605	13%	66%	15%	6%
1076	Halifax	Halifax	Alton	142	1100	1100	353	100	8%	75%	17%	0%
1094	Reedy VA	Washington	Bristol	250	2433	2433	237	100	26%	60%	8%	6%

# Solar Farms	County	Average	Median	High	Low	Output (MW)	Total Acres	Used Acres	Avg. Dist to home	Closest Home	Adjoining Use by Acre			
											Res	Agri	Agri/Res Com	
120						58.1	737.7	591.3	1036	347	15%	55%	26%	4%
						20.0	431.0	323.6	832	225	11%	59%	20%	0%
						912.5	6412.0	3500.0	4668	1950	67%	100%	92%	47%
						2.0	3.0	3.0	237	100	0%	0%	0%	0%

I also specifically searched the following solar projects due to proximity to the subject property, but found no adjoining sales for analysis.

**Sadler Solar – 100 MW – Emporia, VA – Built in 2021**





**Greenville County Solar – 80 MW – South of Emporia – Built in 2020**



**Meherrin Solar – 59.6 MW – Southwest of Emporia – Built in 2022**





## **IX. Market Analysis of the Impact on Value from Solar Farms**

I have researched hundreds of solar farms in numerous states to determine the impact of these facilities on the value of adjoining property. This research has primarily been in North Carolina, but I have also conducted market impact analyses in Virginia, South Carolina, Tennessee, Texas, Oregon, Mississippi, Maryland, New York, California, Missouri, Florida, Montana, Georgia, Louisiana, and New Jersey.

Wherever I have looked at solar farms, I have derived a breakdown of the adjoining uses to show what adjoining uses are typical for solar farms and what uses would likely be considered consistent with a solar farm use similar to the breakdown that I've shown for the subject property on the previous page. A summary showing the results of compiling that data over hundreds of solar farms is shown later in the Scope of Research section of this report.

I also consider whether the properties adjoining a solar farm in one location have characteristics similar to the properties abutting or adjoining the proposed site so that I can make an assessment of market impact on each proposed site. Notably, in most cases solar farms are placed in areas very similar to the site in question, which is surrounded by low density residential and agricultural uses. In my over 1,000 studies, I have found a striking repetition of that same typical adjoining use mix in over 90% of the solar farms I have looked at. Matched pair results in multiple states are strikingly similar, and all indicate that solar farms – which generate very little traffic, and do not generate noise, dust or have other harmful effects – do not negatively impact the value of adjoining or abutting properties.

On the following pages I have considered matched pair data specific to Virginia and Kentucky.

In the next section I have considered matched pair data throughout the Southeast of the United States as being the most similar states that would most readily compare to Virginia. This includes data from Florida, Georgia, South Carolina, North Carolina, Tennessee, Virginia and Maryland. I focused on projects of 5 MW and larger though I have significant supplemental data on solar farms just smaller than that in North Carolina that show similar results. This data is available in my files.

I have additional supporting information from other states in my files that show a consistent pattern across the United States, but again, I have focused on the Southeast in this analysis.



**A. *Virginia Data***

I have identified matched pairs adjoining the solar farms noted above. I have also included data from a solar farm in Kentucky that does a good job of illustrating distant views of solar panels in relation to adjoining housing.

The following pages detail the matched pairs and how they were derived.



**1. Matched Pair – Clarke County Solar, Clarke County, VA**



This project is a 20 MW facility located on a 234-acre tract that was built in 2017.



I have considered two recent sales of Parcel 3. The home on this parcel is 1,230 feet from the closest panel as measured in the second map from Google Earth, which shows the solar farm under construction. This home sold in January 2017 for \$295,000 and again in August 2019 for \$385,000. I show each sale below and compare those to similar home sales in each time frame. The significant increase in price between 2017 and 2019 is due to a major kitchen remodel, new roof, and related upgrades as well as improvement in the market in general. The sale and later resale of the home with updates and improvements speaks to pride of ownership and increasing overall value as properties perceived as diminished are less likely to be renovated and sold for profit.

I note that 102 Tilthammer includes a number of barns that I did not attribute any value in the analysis. The market would typically give some value for those barns but even without that adjustment there is an indication of a positive impact on value due to the solar farm. The landscaping buffer from this home is considered light.

**Adjoining Residential Sales After Solar Farm Approved**

Parcel	Solar	Address	Acres	Date Sold	Sales Price	Built	GBA	\$/GLA	BR/BA	Park	Style	Other
3	Adjoins	833 Nations Spr	5.13	8/18/2019	\$385,000	1979	1,392	\$276.58	3/2	Det Gar	Ranch	UnBsmt
	Not	167 Leslie	5.00	8/19/2020	\$429,000	1980	1,665	\$257.66	3/2	Det2Gar	Ranch	
	Not	2393 Old Chapel	2.47	8/10/2020	\$330,000	1974	1,500	\$220.00	3/1.5	Det Gar	Ranch	
	Not	102 Tilthammer	6.70	5/7/2019	\$372,000	1970	1,548	\$240.31	3/1.5	Det Gar	Ranch	UnBsmt

**Adjoining Sales Adjusted**

Time	Site	YB	GLA	BR/BA	Park	Other	Total	% Diff	Avg % Diff	Distance
							\$385,000			1230
-\$13,268		-\$2,145	-\$56,272		-\$5,000	\$50,000	\$402,315	-4%		
-\$9,956	\$25,000	\$8,250	-\$19,008	\$5,000		\$50,000	\$389,286	-1%		
\$3,229		\$16,740	-\$29,991	\$5,000			\$366,978	5%		
									0%	

**Adjoining Residential Sales After Solar Farm Approved**

Parcel	Solar	Address	Acres	Date Sold	Sales Price	Built	GBA	\$/GLA	BR/BA	Park	Style	Other
3	Adjoins	833 Nations Spr	5.13	1/9/2017	\$295,000	1979	1,392	\$211.93	3/2	Det Gar	Ranch	UnBsmt
	Not	6801 Middle	2.00	12/12/2017	\$249,999	1981	1,584	\$157.83	3/2	Open	Ranch	
	Not	4174 Rockland	5.06	1/2/2017	\$300,000	1990	1,688	\$177.73	3/2	2 Gar	2-story	
	Not	400 Sugar Hill	1.00	6/7/2018	\$180,000	1975	1,008	\$178.57	3/1	Open	Ranch	

**Adjoining Sales Adjusted**

Time	Site	YB	GLA	BR/BA	Park	Other	Total	% Diff	Avg % Diff	Distance
							\$295,000			1230
-\$7,100	\$25,000	-\$2,500	-\$24,242		\$5,000	\$50,000	\$296,157	0%		
\$177		-\$16,500	-\$42,085		-\$10,000	\$50,000	\$281,592	5%		
-\$7,797		\$3,600	\$54,857	\$10,000	\$5,000	\$50,000	\$295,661	0%		
									1%	

Another home located at 3508 Front Royal Pike just west of this solar farm sold on July 10, 2023 for \$800,000 for this 3 BR, 2 BA, 1,394 s.f. home originally built in 1904 on 35 acres with a large barn and material shed. Given the age, renovations and the acreage I have not attempted to pair this sale out, but it does show a strong value for the location.



**2. Matched Pair – Walker-Correctional Solar, Barham Road, Barhamsville, VA**



This project was built in 2017 and located on 484.65 acres for a 20 MW with the closest home at 110 feet from the closest solar panel with an average distance of 500 feet.

I considered the recent sale identified on the map above as Parcel 19, which is directly across the street and based on the map shown on the following page is 250 feet from the closest panel. A



limited buffering remains along the road with natural growth being encouraged, but currently the panels are visible from the road. Alex Uminski, SRA with MGMiller Valuations in Richmond VA confirmed this sale with the buying and selling broker. The selling broker indicated that the solar farm was not a negative influence on this sale and in fact the buyer noticed the solar farm and then discovered the listing. The privacy being afforded by the solar farm was considered a benefit by the buyer. I used a matched pair analysis with a similar sale nearby as shown below and found no negative impact on the sales price. Property actually closed for more than the asking price. The landscaping buffer is considered light.

**Adjoining Residential Sales After Solar Farm Approved**

Solar	Address	Acres	Date Sold	Sales Price	Built	GBA	\$/GBA	BR/BA	Park	Style	Other
Adjoins	5241 Barham	2.65	10/18/2018	\$264,000	2007	1,660	\$159.04	3/2	Drive	Ranch	Modular
Not	17950 New Kent	5.00	9/5/2018	\$290,000	1987	1,756	\$165.15	3/2.5	3 Gar	Ranch	
Not	9252 Ordinary	4.00	6/13/2019	\$277,000	2001	1,610	\$172.05	3/2	1.5-Gar	Ranch	
Not	2416 W Miller	1.04	9/24/2018	\$299,000	1999	1,864	\$160.41	3/2.5	Gar	Ranch	

**Adjoining Sales Adjusted**

Solar	Address	Time	Ac/Loc	YB	GLA	BR/BA	Park	Other	Total	% Diff	Dist
Adjoins	5241 Barham								\$264,000		250
Not	17950 New Kent		-\$8,000	\$29,000	-\$4,756	-\$5,000	-\$20,000	-\$15,000	\$266,244	-1%	
Not	9252 Ordinary	-\$8,310	-\$8,000	\$8,310	\$2,581		-\$10,000	-\$15,000	\$246,581	7%	
Not	2416 W Miller		\$8,000	\$11,960	-\$9,817	-\$5,000	-\$10,000	-\$15,000	\$279,143	-6%	
<b>Average Diff</b>										0%	

I also spoke with Patrick W. McCrerey of Virginia Estates who was marketing a property that sold at 5300 Barham Road adjoining the Walker-Correctional Solar Farm. He indicated that this property was unique with a home built in 1882 and heavily renovated and updated on 16.02 acres. The solar farm was through the woods and couldn't be seen by this property and it had no impact on marketing this property. This home sold on April 26, 2017 for \$358,000. I did not set up any matched pairs for this property since it is a unique property that any such comparison would be difficult to rely on. The broker's comments do support the assertion that the adjoining solar farm had no impact on value. The home in this case was 510 feet from the closest panel.

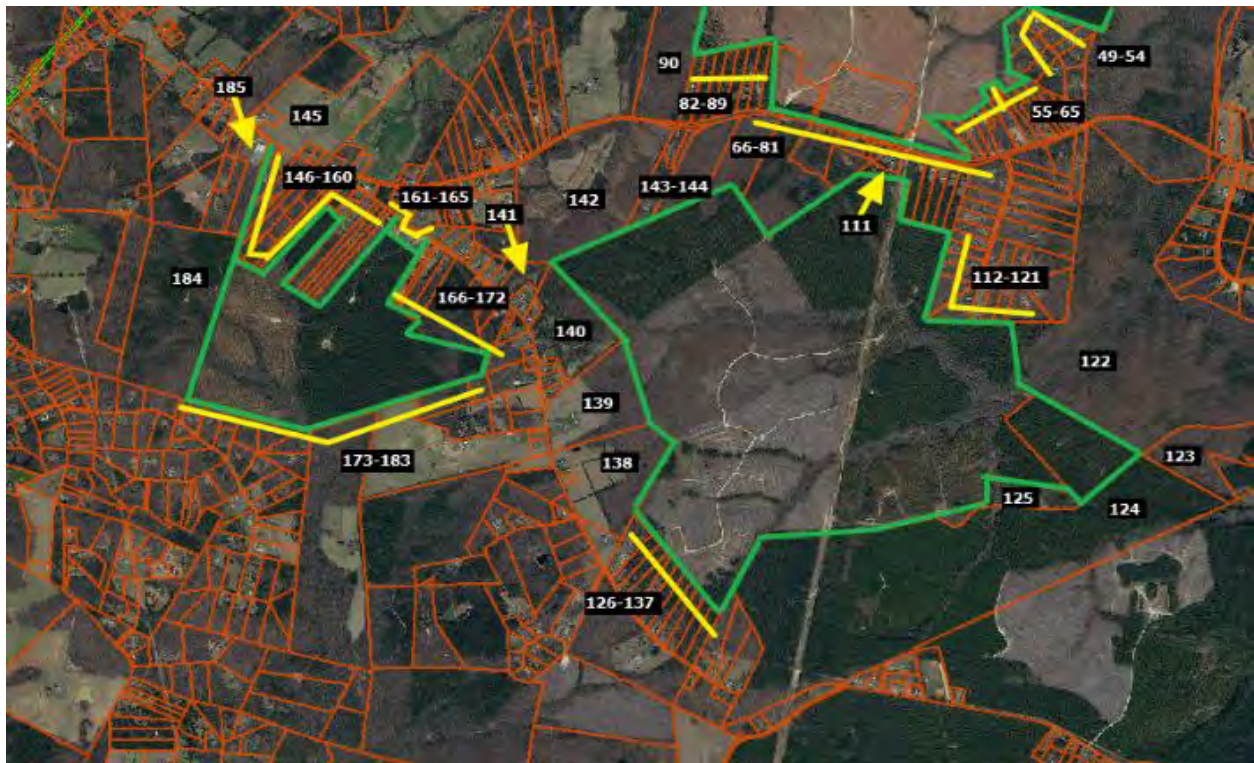
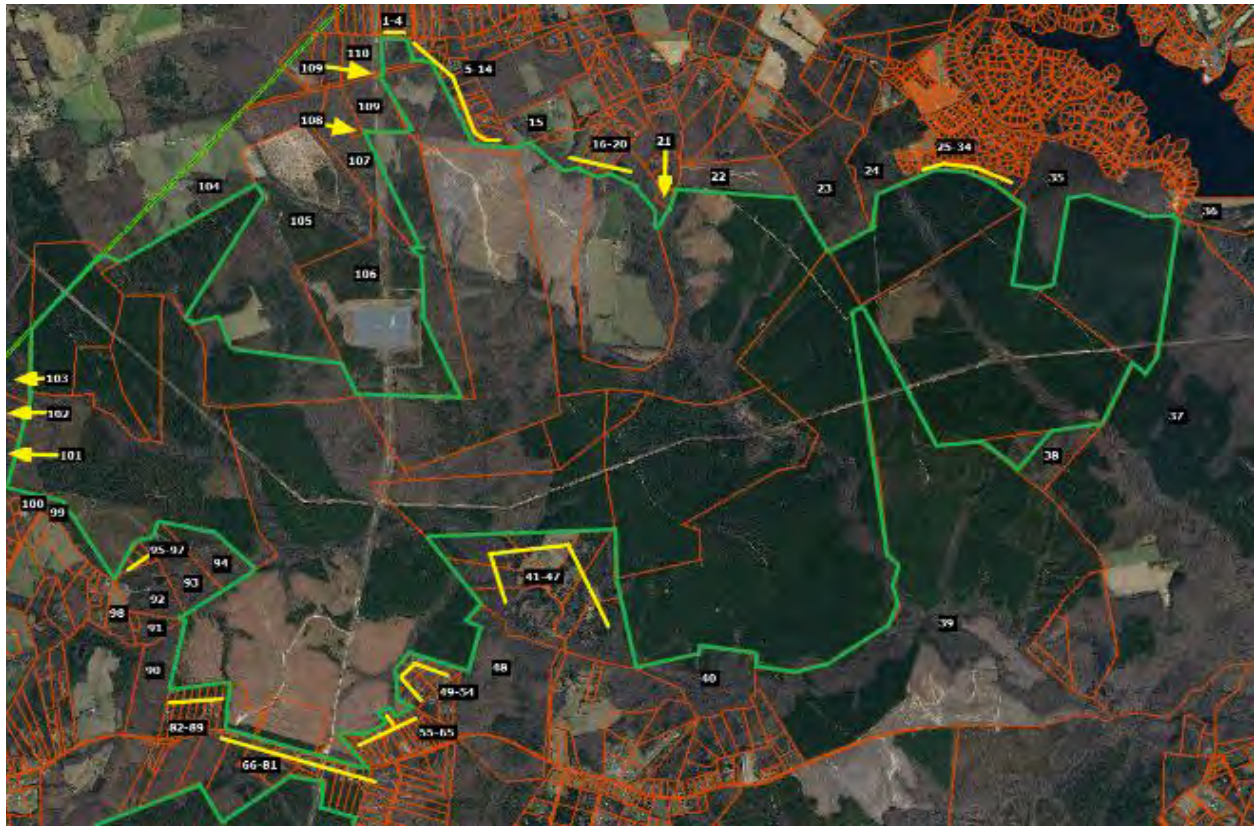
Another home located at 5600 Mount Nebo Road, Barhamsville sold on March 29, 2024 for \$338,500 for a 3 BR, 3 BA, 1,456 s.f. home built in 1945 on 2 acres. The home is heavily updated and includes a large outdoor shed/detached garage/workshop. The updates and stainless steel kitchen give this a very new look. I reached out to Holly Miller the sales broker about this home. The extensive home upfit makes it difficult to compare this home and it is 800 feet and well screened from the solar farm. I therefore have not delved deeper into this sale.



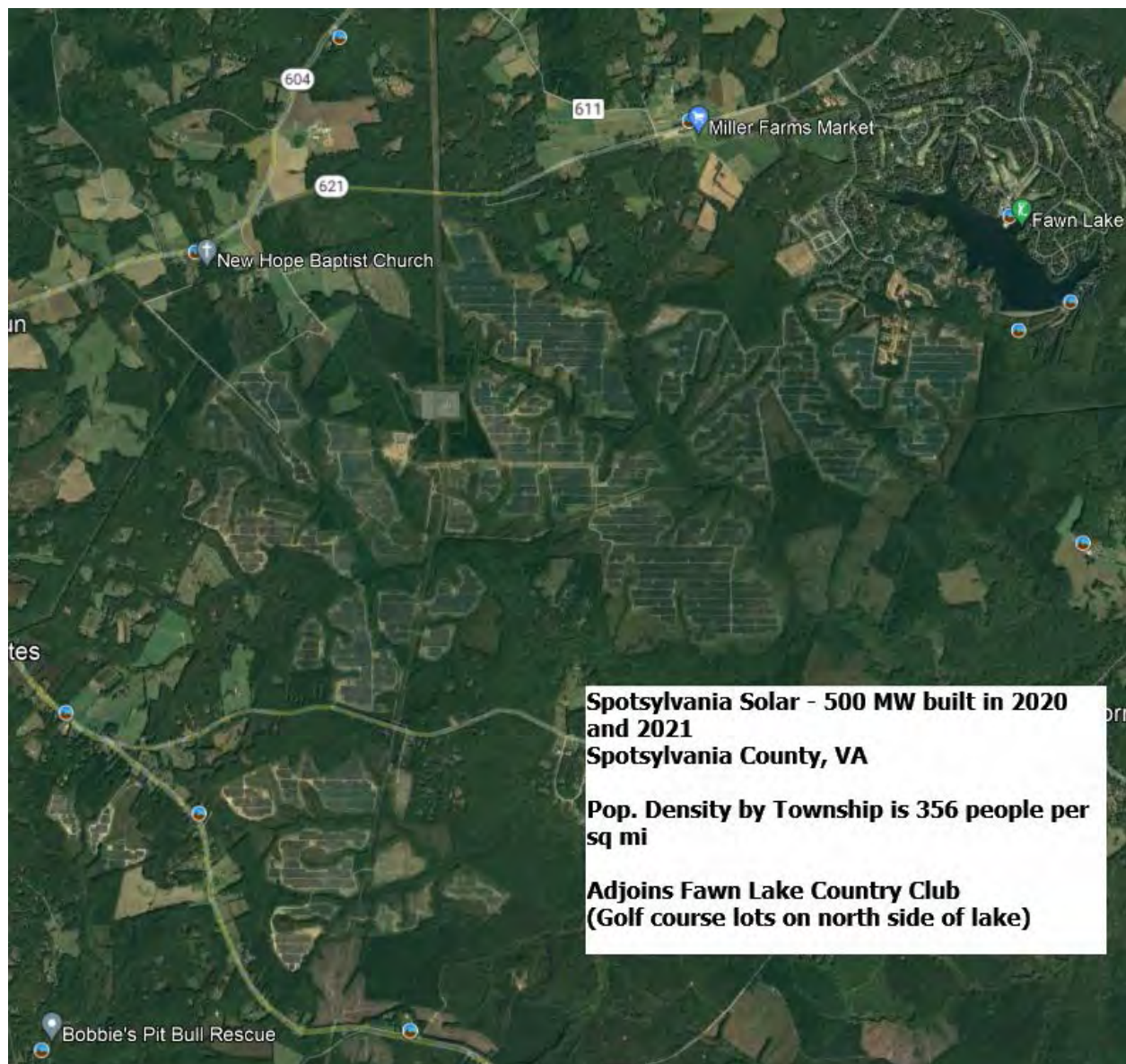




**4. Matched Pair – Spotsylvania Solar, Paytes, VA**







This solar farm is being built in four phases with the area known as Site C having completed construction in November 2020 after the entire project was approved in April 2019. Site C, also known as Pleinmont 1 Solar, includes 99.6 MW located in the southeast corner of the project and shown on the maps above with adjoining parcels 111 through 144. The entire Spotsylvania project totals 500 MW on 3500 acres out of a parent tract assemblage of 6,412 acres.

I have identified three adjoining home sales that occurred during construction and development of the site in 2020.

The first is located on the north side of Site A on Orange Plank Road. The second is located on Nottoway Lane just north of Catharpin Road on the south side of Site A and east of Site C. The third is located on Post Oak Road for a home that backs up to Site C that sold in September 2020 near the completion of construction for Site C.



**Spotsylvania Solar Farm**

Solar	Address	Acres	Date Sold	Sales Price	Built	GBA	\$/GBA	BR/BA	Park	Style	Other
Adjoins	12901 Orng Plnk	5.20	8/27/2020	\$319,900	1984	1,714	\$186.64	3/2	Drive	1.5	Un Bsmt
Not	8353 Gold Dale	3.00	1/27/2021	\$415,000	2004	2,064	\$201.07	3/2	3 Gar	Ranch	
Not	6488 Southfork	7.26	9/9/2020	\$375,000	2017	1,680	\$223.21	3/2	2 Gar	1.5	Barn/Patio
Not	12717 Flintlock	0.47	12/2/2020	\$290,000	1990	1,592	\$182.16	3/2.5	Det Gar	Ranch	

**Adjoining Sales Adjusted**

Address	Time	Ac/Loc	YB	GLA	BR/BA	Park	Other	Total	% Diff	Dist
12901 Orng Plnk								\$319,900		1270
8353 Gold Dale	-\$5,219	\$20,000	-\$41,500	-\$56,298		-\$20,000		\$311,983	2%	
6488 Southfork	-\$401	-\$20,000	-\$61,875	\$6,071		-\$15,000		\$283,796	11%	
12717 Flintlock	-\$2,312	\$40,000	-\$8,700	\$17,779	-\$5,000	-\$5,000		\$326,767	-2%	
<b>Average Diff</b>									4%	

Solar	Address	Acres	Date Sold	Sales Price	Built	GBA	\$/GBA	BR/BA	Park	Style	Other
Adjoins	9641 Nottoway	11.00	5/12/2020	\$449,900	2004	3,186	\$141.21	4/2.5	Garage	2-Story	Un Bsmt
Not	26123 Lafayette	1.00	8/3/2020	\$390,000	2006	3,142	\$124.12	3/3.5	Gar/DtG	2-Story	
Not	11626 Forest	5.00	8/10/2020	\$489,900	2017	3,350	\$146.24	4/3.5	2 Gar	2-Story	
Not	10304 Pny Brnch	6.00	7/27/2020	\$485,000	1998	3,076	\$157.67	4/4	2Gar/Dt2	Ranch	Fn Bsmt

**Adjoining Sales Adjusted**

Address	Time	Ac/Loc	YB	GLA	BR/BA	Park	Other	Total	% Diff	Dist
9641 Nottoway								\$449,900		1950
26123 Lafayette	-\$2,661	\$45,000	-\$3,900	\$4,369	-\$10,000	-\$5,000		\$417,809	7%	
11626 Forest	-\$3,624		-\$31,844	-\$19,187		-\$5,000		\$430,246	4%	
10304 Pny Brnch	-\$3,030		\$14,550	\$13,875	-\$15,000	-\$15,000	-\$10,000	\$470,396	-5%	
<b>Average Diff</b>									2%	

Solar	Address	Acres	Date Sold	Sales Price	Built	GBA	\$/GBA	BR/BA	Park	Style	Other
Adjoins	13353 Post Oak	5.20	9/21/2020	\$300,000	1992	2,400	\$125.00	4/3	Drive	2-Story	Fn Bsmt
Not	9609 Logan Hgt	5.86	7/4/2019	\$330,000	2004	2,352	\$140.31	3/2	2Gar	2-Story	
Not	12810 Catharpian	6.18	1/30/2020	\$280,000	2008	2,240	\$125.00	4/2.5	Drive	2-Story Bsmt/Nd Pnt	
Not	10725 Rbrt Lee	5.01	10/26/2020	\$295,000	1995	2,166	\$136.20	4/3	Gar	2-Story	Fn Bsmt

**Adjoining Sales Adjusted**

Address	Time	Ac/Loc	YB	GLA	BR/BA	Park	Other	Total	% Diff	Dist
13353 Post Oak								\$300,000		1171
9609 Logan Hgt	\$12,070		-\$19,800	\$5,388		-\$15,000	\$15,000	\$327,658	-9%	
12810 Catharpian	\$5,408		-\$22,400	\$16,000	\$5,000		\$15,000	\$299,008	0%	
10725 Rbrt Lee	-\$849		-\$4,425	\$25,496		-\$10,000		\$305,222	-2%	
<b>Average Diff</b>									-4%	

All three of these homes are well set back from the solar panels at distances over 1,000 feet and are well screened from the project. All three show no indication of any impact on property value.

There are a couple of recent lot sales located along Southview Court that have sold since the solar farm was approved. The most recent lot sales include 11700 Southview Court that sold on December 29, 2021 for \$140,000 for a 0.76-acre lot. This property was on the market for less than 2 months before closing within 6% of the asking price. This lot sold earlier in September 2019 for \$55,000 based on a liquidation sale from NTS to an investor.



A similar 0.68-acre lot at 11507 Stonewood Court within the same subdivision located away from the solar farm sold on March 9, 2021 for \$109,000. This lot sold for 18% over the asking price within 1 month of listing suggesting that this was priced too low. Adjusting this lot value upward by 12% for very strong growth in the market over 2021, the adjusted indicated value is \$122,080 for this lot. This is still showing a 15% premium for the lot backing up to the solar farm.

The lot at 11009 Southview Court sold on August 5, 2019 for \$65,000, which is significantly lower than the more recent sales. This lot was sold by NTS the original developer of this subdivision, who was in the process of liquidating lots in this subdivision with multiple lot sales in this time period throughout the subdivision being sold at discounted prices. The home was later improved by the buyer with a home built in 2020 with 2,430 square feet ranch, 3.5 bathrooms, with a full basement, and a current assessed value of \$492,300.

I spoke with Chris Kalia, MAI, Mark Doherty, local real estate investor, and Alex Doherty, broker, who are all three familiar with this subdivision and activity in this neighborhood. All three indicated that there was a deep sell off of lots in the neighborhood by NTS at discounted prices under \$100,000 each. Those lots since that time are being sold for up to \$140,000. The prices paid for the lots below \$100,000 were liquidation values and not indicative of market value. Homes are being built in the neighborhood on those lots with home prices ranging from \$600,000 to \$800,000 with no sign of impact on pricing due to the solar farm according to all three sources.







Fawn Lake Lot Sales

Parcel	Solar?	Address	Acres	Sale Date	Sale Price	Ad. For Time	% Diff
A	Adjoins	11700 Southview Ct	0.76	12/29/2021	\$140,000		
1	1 parcel away	11603 Southview Ct	0.44	3/31/2022	\$140,000	\$141,960	-1.4%
2	Not adjoin	11507 Stonewood Ct	0.68	3/9/2021	\$109,000	\$118,374	15.4%
3	Not adjoin	11312 Westgate Wy	0.83	10/15/2020	\$125,000	\$142,000	-1.4%
4	Not adjoin	11409 Darkstone Pl	0.589	9/23/2021	\$118,000	\$118,000	15.7%
						Average	7.1%
						Median	7.0%
						Least Adjusted	15.7%
						2nd Least Adjusted (Parcel 1 off solar farm)	-1.4%

Time Adjustments are based on the FHFA Housing Price Index



I have identified additional home sales after construction was complete. I looked at 11710 Southview Court that sold on May 5, 2022. I have compared that to three similar homes built and sold in the same time frame in the same community but not near the solar farm. The first two comparables are in close proximity to Fawn Lake and may have some mild enhancement from that proximity, but I made no adjustment for that factor.

Solar	Address	Acres	Date Sold	Sales Price	Built	GBA	\$/GLA	BR/BA	Park	Style	Other
Adjoins	11710 Soutview	0.89	5/5/2022	\$767,945	2022	3,740	\$205.33	5/4.5	2Gar	2-Story	UnBsmt
Not	11305 Hidden	0.57	2/18/2022	\$789,905	2022	3,750	\$210.64	4/3.5	2Gar	2-Story	PrtFinBsmt
Not	10501 Ridge Cv	0.57	12/30/2021	\$737,119	2021	3,535	\$208.52	6/4	2Gar	2-Story	UnBsmt
Not	10919 Grn Lf	0.39	6/16/2022	\$739,990	2022	3,768	\$196.39	4/4.5	2Gar	2-Story	UnBsmt

Adjoining Sales Adjusted											
Address	Time	Ac/Loc	YB	GLA	BR/BA	Park	Other	Total	% Diff	Dist	
11710 Soutview								\$767,945		435	
11305 Hidden	\$18,092		\$0	-\$843	\$15,000		-\$20,000	\$802,155	-4%		
10501 Ridge Cv	\$27,990		\$0	\$17,099	\$10,000			\$792,208	-3%		
10919 Grn Lf	-\$9,366		\$0	-\$2,200				\$728,424	5%		
									<b>Average Diff</b>	-1%	

I identified a sale at 11708 Southview Court that sold on September 1, 2021 for \$623,345. The first comparable required a significant adjustment for the unfinished basement, but otherwise required the least adjusting. In this time of rapid home value increase, I consider the sale closest in time to be the best indicator for this paired sale.

Solar	Address	Acres	Date Sold	Sales Price	Built	GBA	\$/GLA	BR/BA	Park	Style	Other
Adjoins	11606 Aprils	0.73	9/7/2023	\$711,400	2023	2,745	\$259.16	4/3	2Gar	2-Story	UnBsmt
Not	11701 Quail Rn	0.44	7/26/2023	\$650,000	2020	2,588	\$251.16	3/2.5	2Gar	2-Story	
Not	11809 Pheasant	0.36	10/3/2022	\$629,510	2022	2,612	\$241.01	3/2	2Gar	2-Story	UnBsmt
Not	10908 Grn Lf	0.43	2/16/2023	\$774,760	2023	2,927	\$264.69	5/4	2Gar	2-Story	UnBsmt

Adjoining Sales Adjusted											
Address	Time	Ac/Loc	YB	GLA	BR/BA	Park	Other	Total	% Diff	Dist	
11606 Aprils								\$711,400		410	
11701 Quail Rn	\$5,360		\$9,750	\$15,773	\$10,000		\$32,500	\$723,383	-2%		
11809 Pheasant	\$40,927		\$0	\$12,822	\$15,000			\$698,258	2%		
10908 Grn Lf	\$30,163		\$0	-\$19,270	-\$15,000			\$770,653	-8%		
									<b>Average Diff</b>	-3%	

I have considered a home sale at 9811 Deer Park Drive, Spotsylvania that sold on June 16, 2022 for \$455,000. This home is located to the south in a small neighborhood off W Catharpin Road. This home is within 1,252 feet of the nearest panel and is well screened from the site. This home is a 3 BR, 3 BA, 2,240 s.f. two-story home with an attached garage built in 1995 on 5 acres. It has a partially finished basement, detached workshop/garage and a decked-in above ground pool. The purchase price works out to \$203.13 per s.f.

I have compared this to 8109 Newton Lane, Spotsylvania that sold on March 1, 2022 for \$450,000. This home is to the south away from the solar farm. This home is a 3 BR, 2 BA, 2,090 s.f. ranch with two-car garage, built in 2005 on 10 acres. The kitchen was totally remodeled in 2021. The purchase price works out to \$215.31 per s.f. Adjusting the sales price upward by \$15,000 for the lack of a 3<sup>rd</sup> bathroom, upward by \$12,900 for the difference in square footage, downward by \$10,000 for the extra garage, downward by \$20,000 for the difference in age, I derive an adjusted indication of value for this home compared to the 9811 Deer Park Drive home of \$447,900, or \$199.96 per s.f. This is +2% lower than the home price near the solar farm and supports a finding



of no impact on property value. Especially when you note that I made no adjustment for the additional 5 acres at this comparable. Any adjustment for that would only increase the suggested positive impact of the solar farm from the comparable. As noted earlier this is within the typical market imperfection and supports a finding of no impact on property value.

I have considered a home sale at 13000 W Catharpin Road that sold on June 7, 2022 for \$450,000 for a 5 BR, 3 BA, 2,968 s.f. ranch built in 2000 on 5.06 acres. It includes a 2-car attached garage and a 2-car detached garage with an upstairs ready to be finished as well as another garage/workshop. The purchase price works out to \$151.61 per s.f. This home was listed for \$435,000 and sold for \$450,000 within 37 days of going to market. This home is 1,020 feet from the nearest panel and is well screened by the trees on this lot.

I have compared this home to 14207 Cedar Plantation Road, Spotsylvania that sold on July 24, 2023 for \$473,800 for a 5 BR, 3 BA, 2,800 s.f. ranch with finished basement built in 2023 on 5 acres. The purchase price works out to be \$169.21 per s.f. Adjusting this downward by 5% based on the FHFA HPI for this being a more recent sale, the adjusted indication of value is \$450,110. Adjusting this downward by 11% for the newer age of this home, the adjusted value is \$400,598. I adjusted this upward by 10% for half of the space being in daylight basement for an adjusted indication of value of \$440,658. Adjusting this upward by \$11,357 for the difference in size and upward by \$20,000 for the lack of garages, I derive an adjusted indication of value of \$472,015. This indicates an impact of -5% due to proximity to the solar farm. As noted earlier this is within typical market imperfection and supports a finding of no impact on property value. Furthermore, this paired sale required a significant amount of adjusting, which diminishes the reliability of this comparable.

I considered a sale at 12819 Faulconers Court, Spotsylvania that sold on October 12, 2023 for \$538,000 for a 4 BR, 3 BA, 2,364 s.f. 2-story home, with a 2-car garage built in 2023 on 3.7 acres. This home is 1,060 feet from the nearest solar panel. The purchase price works out to \$227.58 per s.f.

I have compared this to 9811 Catharpin Road, Spotsylvania that sold on November 30, 2023 for \$480,000 for a 4 BR, 3.5 BA, 2,696 s.f. 2-story home, with a 2-car garage built in 2017 on 2 acres. This includes 868 s.f. below ground. The purchase price works out to \$178.04 per s.f. Adjusting this upward by 3% for the difference in year built the comparable adjusts to \$494,400. Adjusting this upward for the inferior daylight basement space based on that space having a 25% reduction in value that works out to 32% of the property being valued at 75%, or an impact to be reversed of 8%. To reverse that impact, I divide the indicated value by 0.92 for an adjusted indication of value of \$537,391. Adjusting this downward by \$5,000 for the additional half-bathroom and downward by \$23,638 for the difference in size, I derive an adjusted indication of value of \$508,753. This indicates a market impact of +5%, which supports a finding of no impact due to adjacency to the solar farm.

I considered a sale at 11239 Chancellor Meadows Lane, Locust Grove sold on March 30, 2023 for \$499,900 for a 2-story, 4 BR, 2.5 BA, 2,542 s.f. with 2-car garage built in 2022 on 5.06 acres. The purchase price works out to \$196.66 per s.f. It has an unfinished walk-up basement. This home was built after the solar farm was developed. This home is 395 feet from the nearest solar panel.

I have compared this to 9651 Meadows Road, Mine Run on July 3, 2023 for \$515,000 for a ranch, 3 BR, 3 BA, 2,734 s.f. with 2 car garage built in 2017 on 3 acres. This home includes a full unfinished basement. The purchase price works out to \$188.36 per s.f. Adjusting this downward by \$10,000 for the difference in bathrooms, downward by \$14,438 for the difference in square footage, but upward by 3% for the difference in age (\$15,450), the total adjusted indication of value is \$506,012. I did not adjust for the difference between this being a ranch versus the Chancellor Meadows Lane being a 2-story structure. Typically, a ranch will sell for a slight premium over a 2-story structure so I would expect this to come in slightly higher than the 2-story dwelling. This



comes in at 1% less than the home next to the solar farm which strongly supports a finding of no impact on property value.



## 5. Matched Pair – Crittenden Solar, Crittenden, KY



This solar farm was built in December 2017 on a 181.70-acre tract but utilizing only 34.10 acres. This is a 2.7 MW facility with residential subdivisions to the north and south.

I have identified five home sales to the north of this solar farm on Clairborne Drive and one home sale to the south on Eagle Ridge Drive since the completion of this solar farm. The home sale on Eagle Drive is for a \$75,000 home and all of the homes along that street are similar in size and price range. According to local broker Steve Glacken with Cutler Real Estate these are the lowest price range/style home in the market. I have not analyzed that sale as it would unlikely provide significant data to other homes in the area.

Mr. Glacken has been selling lots at the west end of Clairborne for new home construction. He indicated in 2020 that the solar farm near the entrance of the development has been a complete non-factor and none of the home sales are showing any concern over the solar farm. Most of the homes are in the \$250,000 to \$280,000 price range. The vacant residential lots are being marketed for \$28,000 to \$29,000. The landscaping buffer is considered light, but the rolling terrain allows for distant views of the panels from the adjoining homes along Clairborne Drive.

The first home considered is a bit of an anomaly for this subdivision in that it is the only manufactured home that was allowed in the community. It sold on January 3, 2019. I compared that sale to three other manufactured home sales in the area making minor adjustments as shown on the next page to account for the differences. After all other factors are considered the adjustments show a -1% to +13% impact due to the adjacency of the solar farm. The best indicator is 1250 Cason, which shows a 3% impact. A 3% impact is within the normal static of real estate transactions and therefore not considered indicative of a positive impact on the property, but it strongly supports an indication of no negative impact.



**Adjoining Residential Sales After Solar Farm Approved**

Parcel	Solar	Address	Acres	Date Sold	Sales Price	Built	GBA	\$/GBA	BR/BA	Park	Style	Other
	Adjoins	250 Claiborne	0.96	1/3/2019	\$120,000	2000	2,016	\$59.52	3/2	Drive	Manuf	
	Not	1250 Cason	1.40	4/18/2018	\$95,000	1994	1,500	\$63.33	3/2	2-Det	Manuf	Carport
	Not	410 Reeves	1.02	11/27/2018	\$80,000	2000	1,456	\$54.95	3/2	Drive	Manuf	
	Not	315 N Fork	1.09	5/4/2019	\$107,000	1992	1,792	\$59.71	3/2	Drive	Manuf	

**Adjustments**

Solar	Address	Time	Site	YB	GLA	BR/BA	Park	Other	Total	% Diff	Avg % Diff	Distance
Adjoins	250 Claiborne								\$120,000			373
Not	1250 Cason	\$2,081		\$2,850	\$26,144		-\$5,000	-\$5,000	\$116,075	3%		
Not	410 Reeves	\$249		\$0	\$24,615				\$104,865	13%		
Not	315 N Fork	-\$1,091		\$4,280	\$10,700				\$120,889	-1%	5%	

I also looked at three other home sales on this street as shown below. These are stick-built homes and show a higher price range.

**Adjoining Residential Sales After Solar Farm Approved**

Parcel	Solar	Address	Acres	Date Sold	Sales Price	Built	GBA	\$/GBA	BR/BA	Park	Style	Other
	Adjoins	300 Claiborne	1.08	9/20/2018	\$212,720	2003	1,568	\$135.66	3/3	2-Car	Ranch	Brick
	Not	460 Claiborne	0.31	1/3/2019	\$229,000	2007	1,446	\$158.37	3/2	2-Car	Ranch	Brick
	Not	2160 Sherman	1.46	6/1/2019	\$265,000	2005	1,735	\$152.74	3/3	2-Car	Ranch	Brick
	Not	215 Lexington	1.00	7/27/2018	\$231,200	2000	1,590	\$145.41	5/4	2-Car	Ranch	Brick

**Adjustments**

Solar	Address	Time	Site	YB	GLA	BR/BA	Park	Other	Total	% Diff	Avg % Diff	Distance
Adjoins	300 Claiborne								\$213,000			488
Not	460 Claiborne	-\$2,026		-\$4,580	\$15,457	\$5,000			\$242,850	-14%		
Not	2160 Sherman	-\$5,672		-\$2,650	-\$20,406				\$236,272	-11%		
Not	215 Lexington	\$1,072		\$3,468	-\$2,559	-\$5,000			\$228,180	-7%	-11%	

This set of matched pairs shows a minor negative impact for this property. I was unable to confirm the sales price or conditions of this sale. The best indication of value is based on 215 Lexington, which required the least adjusting and supports a -7% impact.

**Adjoining Residential Sales After Solar Farm Approved**

Parcel	Solar	Address	Acres	Date Sold	Sales Price	Built	GBA	\$/GBA	BR/BA	Park	Style	Other
	Adjoins	350 Claiborne	1.00	7/20/2018	\$245,000	2002	1,688	\$145.14	3/3	2-Car	Ranch	Brick
	Not	460 Claiborne	0.31	1/3/2019	\$229,000	2007	1,446	\$158.37	3/2	2-Car	Ranch	Brick
	Not	2160 Sherman	1.46	6/1/2019	\$265,000	2005	1,735	\$152.74	3/3	2-Car	R/FBsmt	Brick
	Not	215 Lexington	1.00	7/27/2018	\$231,200	2000	1,590	\$145.41	5/4	2-Car	Ranch	Brick

**Adjustments**

Solar	Address	Time	Site	YB	GLA	BR/BA	Park	Other	Total	% Diff	Avg % Diff	Distance
Adjoins	350 Claiborne								\$245,000			720
Not	460 Claiborne	-\$3,223		-\$5,725	\$30,660	\$5,000			\$255,712	-4%		
Not	2160 Sherman	-\$7,057		-\$3,975	-\$5,743				\$248,225	-1%		
Not	215 Lexington	-\$136		\$2,312	\$11,400	-\$5,000			\$239,776	2%	-1%	

The following photograph shows the light landscaping buffer and the distant view of panels that was included as part of the marketing package for this property. The panels are visible somewhat on the left and somewhat through the trees in the center of the photograph. The first photograph is from the home, with the second photograph showing the view near the rear of the lot.





This set of matched pairs shows a no negative impact for this property. The range of adjusted impacts is -4% to +2%. The best indication is -1%, which as described above is within the typical market static and supports no impact on adjoining property value.



**Adjoining Residential Sales After Solar Farm Approved**

Parcel	Solar	Address	Acres	Date Sold	Sales Price	Built	GBA	\$/GBA	BR/BA	Park	Style	Other
	Adjoins	370 Claiborne	1.06	8/22/2019	\$273,000	2005	1,570	\$173.89	4/3	2-Car	2-Story	Brick
	Not	2160 Sherman	1.46	6/1/2019	\$265,000	2005	1,735	\$152.74	3/3	2-Car	R/FBsmt	Brick
	Not	2290 Dry	1.53	5/2/2019	\$239,400	1988	1,400	\$171.00	3/2.5	2-Car	R/FBsmt	Brick
	Not	125 Lexington	1.20	4/17/2018	\$240,000	2001	1,569	\$152.96	3/3	2-Car	Split	Brick

**Adjustments**

Solar	Address	Time	Site	YB	GLA	BR/BA	Park	Other	Total	% Diff	Avg % Diff	Distance
Adjoins	370 Claiborne								\$273,000			930
Not	2160 Sherman	\$1,831		\$0	-\$20,161				\$246,670	10%		
Not	2290 Dry	\$2,260		\$20,349	\$23,256	\$2,500			\$287,765	-5%		
Not	125 Lexington	\$9,951		\$4,800					\$254,751	7%	4%	

This set of matched pairs shows a general positive impact for this property. The range of adjusted impacts is -5% to +10%. The best indication is +7%. I typically consider measurements of +/-5% to be within the typical variation in real estate transactions. This indication is higher than that and suggests a positive relationship.

The photograph from the listing shows panels visible between the home and the trampoline shown in the picture.





**Adjoining Residential Sales After Solar Farm Approved**

Solar	Address	Acres	Date Sold	Sales Price	Built	GBA	\$/GBA	BR/BA	Park	Style	Other
Adjoins	330 Claiborne	1.00	12/10/2019	\$282,500	2003	1,768	\$159.79	3/3	2-Car	Ranch	Brick/pool
Not	895 Osborne	1.70	9/16/2019	\$249,900	2002	1,705	\$146.57	3/2	2-Car	Ranch	Brick/pool
Not	2160 Sherman	1.46	6/1/2019	\$265,000	2005	1,735	\$152.74	3/3	2-Car	R/FBsmt	Brick
Not	215 Lexington	1.00	7/27/2018	\$231,200	2000	1,590	\$145.41	5/4	2-Car	Ranch	Brick

Solar	Address	Time	Site	YB	GLA	BR/BA	Park	Other	Total	% Diff	Avg % Diff	Distance
Adjoins	330 Claiborne								\$282,500			665
Not	895 Osborne	\$1,790		\$1,250	\$7,387	\$5,000		\$0	\$265,327	6%		
Not	2160 Sherman	\$4,288		-\$2,650	\$4,032			\$20,000	\$290,670	-3%		
Not	215 Lexington	\$9,761		\$3,468	\$20,706	-\$5,000		\$20,000	\$280,135	1%		

1%

This set of matched pairs shows a general positive impact for this property. The range of adjusted impacts is -3% to +6%. The best indication is +6%. I typically consider measurements of +/-5% to be within the typical variation in real estate transactions. This indication is higher than that and suggests a positive relationship. The landscaping buffer on these is considered light with a fair visibility of the panels from most of these comparables and only thin landscaping buffers separating the homes from the solar panels.

I also looked at four sales that were during a rapid increase in home values around 2021, which required significant time adjustments based on the FHFA Housing Price Index. Sales in this time frame are less reliable for impact considerations as the peak buyer demand allowed for homes to sell with less worry over typical issues such as repairs.

The home at 250 Claiborne Drive sold with no impact from the solar farm according to the buyer's broker Lisa Ann Lay with Keller Williams Realty Service. As noted earlier, this is the only manufactured home in the community and is a bit of an anomaly. There was an impact on this sale due to an appraisal that came in low likely related to the manufactured nature of the home. Ms. Lay indicated that there was significant back and forth between both brokers and the appraiser to address the low appraisal, but ultimately, the buyers had to pay \$20,000 out of pocket to cover the difference in appraised value and the purchase price. The low appraisal was not attributed to the solar farm, but the difficulty in finding comparable sales and likely the manufactured housing.

**Adjoining Residential Sales After Solar Farm Built**

Solar	Address	Acres	Date Sold	Sales Price	Built	GBA	\$/GBA	BR/BA	Park	Style	Other
Adjoins	250 Claiborne	1.05	1/5/2022	\$210,000	2002	1,592	\$131.91	4/2	Drive	Ranch	Manuf
Not	255 Spillman	0.64	3/4/2022	\$166,000	1991	1,196	\$138.80	3/1	Drive	Ranch	Remodel
Not	546 Waterworks	0.28	4/29/2021	\$179,500	2007	1,046	\$171.61	4/2	Drive	Ranch	3/4 Fin B
Not	240 Shawnee	1.18	6/7/2021	\$180,000	1977	1,352	\$133.14	3/2	Gar	Ranch	N/A

Solar	Address	Time	YB	GLA	BR/BA	Park	Other	Total	% Diff	Avg % Diff	Distance
Adjoins	250 Claiborne							\$210,000			365
Not	255 Spillman	-\$379	\$9,130	\$43,971	\$10,000		-\$20,000	\$208,722	1%		
Not	546 Waterworks	\$1,772	-\$4,488	\$74,958			-\$67,313	\$184,429	12%		
Not	240 Shawnee	\$1,501	\$22,500	\$25,562		-\$10,000		\$219,563	-5%		

3%

The photograph of the rear view from the listing is shown below.





The home at 260 Claiborne Drive sold with no impact from the solar farm according to the buyer's broker Jim Dalton with Ashcraft Real Estate Services. He noted that there was significant wood rot and a heavy smoker smell about the house, but even that had no impact on the price due to high demand in the market.

**Adjoining Residential Sales After Solar Farm Built**

Solar	Address	Acres	Date Sold	Sales Price	Built	GBA	\$/GBA	BR/BA	Park	Style	Other
Adjoins	260 Claiborne	1.00	10/13/2021	\$175,000	2001	1,456	\$120.19	3/2	Drive	Ranch	N/A
Not	355 Oakwood	0.58	10/27/2020	\$186,000	2002	1,088	\$170.96	3/2	Gar	Ranch	3/4 Fin B
Not	30 Ellen Kay	0.50	1/30/2020	\$183,000	1988	1,950	\$93.85	3/2	Gar	2-Story	N/A
Not	546 Waterworks	0.28	4/29/2021	\$179,500	2007	1,046	\$171.61	4/2	Drive	Ranch	3/4 Fin B

Solar	Address	Time	YB	GLA	BR/BA	Park	Other	Total	% Diff	Avg % Diff	Distance
Adjoins	260 Claiborne							\$175,000			390
Not	355 Oakwood	\$18,339	-\$930	\$50,329		-\$10,000	-\$69,750	\$173,988	1%		
Not	30 Ellen Kay	\$31,974	\$11,895	-\$37,088		-\$10,000		\$179,781	-3%		
Not	546 Waterworks	\$8,420	-\$5,385	\$56,287			-\$67,313	\$171,510	2%	0%	

The photograph of the rear view from the listing is shown below.





These next two were brick and with unfinished basements which made them easier to compare and therefore more reliable. For 300 Claiborne I considered the sale of a home across the street that did not back up to the solar farm and it adjusted to well below the range of the other comparables. I have included it, but would not rely on that which means this next comparable strongly supports a range of 0 to +3% and not up to +19%.

**Joining Residential Sales After Solar Farm Built**

Solar	Address	Acres	Date Sold	Sales Price	Built	GBA	\$/GBA	BR/BA	Park	Style	Other
Adjoins	300 Claiborne	0.89	12/18/2021	\$290,000	2002	1,568	\$184.95	3/3	2-Car	Br Rnch	Bsmt
Not	405 Claiborne	0.41	2/1/2022	\$267,750	2004	1,787	\$149.83	3/2	2-Car	Br Rnch	Bsmt
Not	39 Pinhook	0.68	3/31/2022	\$299,000	1992	1,680	\$177.98	3/2	2-Car	Br Rnch	Bsmt
Not	5 Pinhook	0.70	4/7/2022	\$309,900	1992	1,680	\$184.46	3/2	2-Car	Br Rnch	Bsmt

Solar	Address	Time	YB	GLA	BR/BA	Park	Other	Total	% Diff	Avg % Diff	Distance
Adjoins	300 Claiborne							\$290,000			570
Not	405 Claiborne	-\$3,384	-\$2,678	-\$26,251				\$235,437	19%		
Not	39 Pinhook	-\$8,651	\$14,950	-\$15,947				\$289,352	0%		
Not	5 Pinhook	-\$9,576	\$15,495	-\$16,528				\$299,291	-3%		
										5%	

The photograph of the rear view from the listing is shown below.





This same home, 300 Claiborne sold again on October 14, 2022 for \$332,000, or \$42,000 higher or 15% higher than it had just 10 months earlier. The FHFA Home Price Index indicates an 8.3% increase over that time for the overall market, suggesting that this home is actually increasing in value faster than other properties in the area. An updated photo from the 2022 listing is shown below.





The home at 410 Claiborne included an inground pool with significant landscaping around it that was a challenge. Furthermore, two of the comparables had finished basements. I made no adjustment for the pool on those two comparables and considered the two factors to cancel out

**Adjoining Residential Sales After Solar Farm Built**

Solar	Address	Acres	Date Sold	Sales Price	Built	GBA	\$/GBA	BR/BA	Park	Style	Other
Adjoins	410 Claiborne	0.31	2/10/2021	\$275,000	2006	1,595	\$172.41	3/2	2-Car	Br Rnch	Esmt/Pool
Not	114 Austin	1.40	12/23/2020	\$248,000	1994	1,650	\$150.30	3/2	2-Car	Br Rnch	Bsmt
Not	125 Liza	0.29	6/25/2021	\$315,000	2005	1,913	\$164.66	4/3	2-Car	Br Rnch	Ktchn Bsmt
Not	130 Hannahs	0.42	2/9/2021	\$295,000	2007	1,918	\$153.81	3/3	2-Car	Br Rnch	Fin Bsmt

Solar	Address	Time	YB	GLA	BR/BA	Park	Other	Total	% Diff	Avg % Diff	Distance
Adjoins	410 Claiborne							\$275,000			1080
Not	114 Austin	\$3,413	\$14,880	-\$6,613			\$20,000	\$279,680	-2%		
Not	125 Liza	-\$11,945	\$1,575	-\$41,890	-\$10,000			\$252,740	8%		
Not	130 Hannahs	\$83	-\$1,475	-\$39,743	-\$10,000			\$243,864	11%		
										6%	

The nine matched pairs considered in this analysis includes five that show no impact on value, one that shows a negative impact on value, and three that show a positive impact. The negative indication supported by one matched pair is -7% and the positive impacts are +6% and +7%. The two neutral indications show impacts of -5% to +5%. The average indicated impact is +2% when all nine of these indicators are blended.

Furthermore, the comments of the local real estate brokers strongly support the data that shows no negative impact on value due to the proximity to the solar farm.



## **6. Matched Pair – White House Solar, Louisa, VA**



This project was built in 2016 for a solar project on a 499.52-acre tract for a 20 MW facility. The closest single-family home is 110 feet away from the closest solar panel. The average distance is 1,195 feet.

1 - I have identified one recent adjoining home sale to the north of this project that sold in 2020. I spoke with the broker, Stacie Chandler, who represented the buyer in that transaction. She indicated that the solar farm had no impact on the price that they negotiated on that home. That is supported by the matched pair shown below.

The adjustments shown below make no adjustment for the difference in acreage for the smaller parcels. One of these is on a smaller lot, but located in a golf course community with rear exposure to the golf course. The other is in Mineral and while the lots are not the same size, they are similarly valued. I also adjusted this property upward by \$50,000 for the condition/lack of renovation. This adjustment is based on the fact that this home was renovated following the 2020 purchase and then resold in 2021 for \$75,000 more than the 2020 value. Comparing the 2021 renovated price at \$144/s.f. to the subject property and adjusting on the same rates would require a downward adjustment to the comparable of \$10,400 for time, upward by \$8,325 for year built, and downward by \$5,000 for the extra half bathroom for an indicated adjusted value of \$252,925 which suggests a 5% reduction in value due to the solar farm. Either way this comparable requires significant adjustments and suggests a range of -5% to 0% impact. The Woodger comparable required less



adjustment and suggests an 11% enhancement due to proximity to the solar farm and that is without any consideration of this home having a superior exposure to a golf course which would typically increase that indication of enhancement.

#### Whitehouse Solar

Solar	Address	Acres	Date Sold	Sales Price	Built	GBA	\$/GBA	BR/BA	Park	Style	Other
Adjoins	127 Walnut Wds	4.09	3/27/2020	\$240,000	1984	1,824	\$131.58	3/2	2 Gar	Br Rnch	Reno
Not	126 Woodger	0.63	4/29/2019	\$240,000	1992	1,956	\$122.70	3/2+2	2 Gar	Br Rnch	Golf
Not	808 Virginia	0.51	3/16/2020	\$185,000	1975	1,806	\$102.44	3/2.5	2 Gar	Br Rnch	
Not	273 Carsons	3.94	9/29/2018	\$248,500	1985	2,224	\$111.74	4/3	Drive	Ranch	Not Brck

#### Adjoining Sales Adjusted

Address	Time	Ac/Loc	YB	GLA	BR/BA	Park	Other	Total	% Diff	Dist
127 Walnut Wds								\$240,000		1400
126 Woodger	\$6,569		-\$9,600	-\$12,957	-\$10,000			\$214,012	11%	
808 Virginia	\$167		\$8,325	\$1,475	-\$5,000		\$50,000	\$239,967	0%	
273 Carsons	\$11,131		-\$1,243	-\$35,755	-\$10,000	\$15,000	\$12,425	\$240,059	0%	

**Average Diff** 4%

These matched pairs are generally challenging in that one is shown before and after a renovation suggesting impacts of -5% to 0%. The comparable requiring the least adjustment is on a golf course but it also was not recently renovated which makes it less reliable. Finally, the Carsons property was similar, but older and is not brick. While I adjusted for those factors it really does not make for a great matched pair.

The best indication by the matched pairs is -5% to 0%. The broker involved in the transaction indicated that the solar farm had no impact on property value. Given those comments and the range of impacts shown, I conclude that this home sale near the White House solar project indicates no impact on property value.

2 - I have identified one recent nearby home sale to the north of this project located at 751 Chalklevel Road sold on April 22, 2024 for \$260,000 for a 4BR, 2BA, 1,248 s.f. built on 1994 on 0.99 acre lot. The home is 1,780 feet from the nearest solar panel. This comes to \$208. per s.f.

I have compared this to three other nearby sales as shown below with an average indicated impact of 0% and a range of -4% to +4%. This paired sale supports a finding of no impact on property value.

#### Whitehouse Solar

#### Adjoining Residential Sales After Solar Farm Built

Solar	Address	Acres	Date Sold	Price	Built	GLA	\$/GLA	BR/BA	Park	Style	Other
Nearby	751 Chalklevel	0.99	4/22/2024	\$260,000	1994	1,248	\$208.33	4/2	None	Rnch	
Not	110 Pine Ridge	0.40	7/22/2022	\$243,000	1989	1,056	\$230.11	3/2	None	Rnch	Barn
Not	2307 Davis Hwy	1.50	7/1/2024	\$330,000	2008	1,344	\$245.54	3/2	None	Rnch	Renov
Not	1404 Jefferson	2.39	5/10/2024	\$219,700	1992	1,040	\$211.25	3/1	None	Rnch	

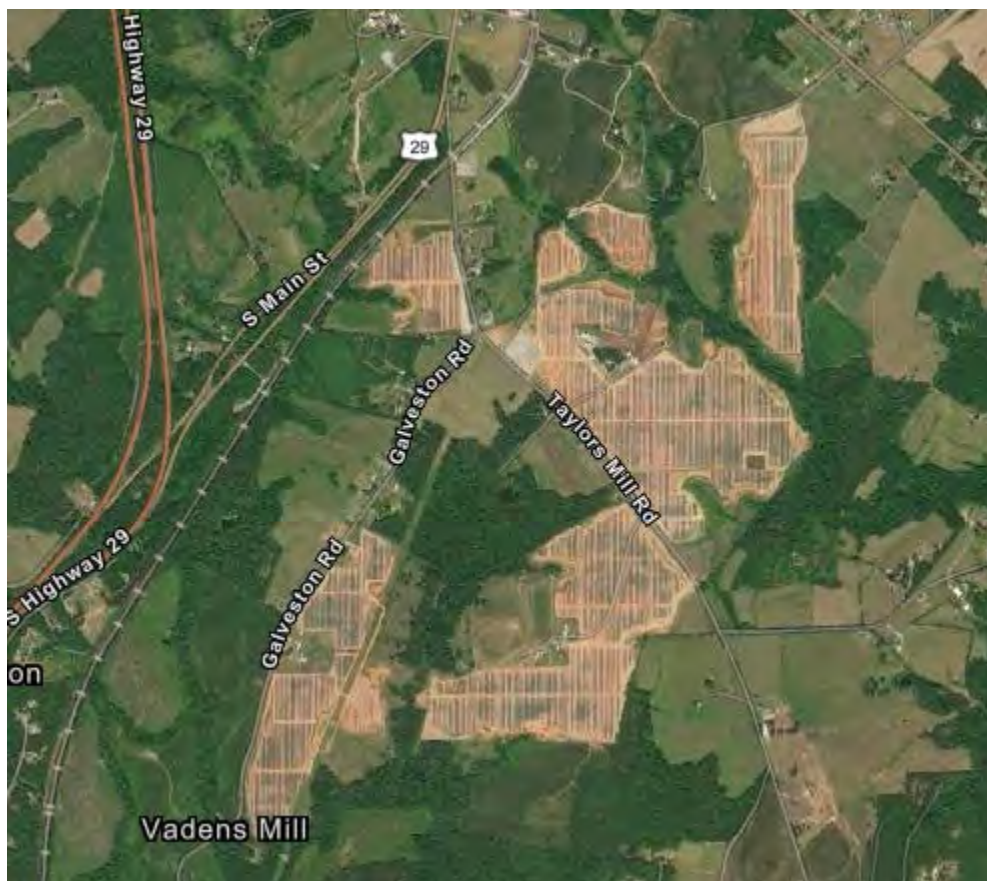
#### Adjoining Sales Adjusted

Address	Time	Site	YB	GLA	BR/BA	Park	Other	Total	% Diff	% Diff	Distance
751 Chalklevel								\$260,000			1,780
110 Pine Ridge	\$13,106		\$6,075	\$17,673			-\$10,000	\$269,853	-4%		
2307 Davis Hwy	-\$1,947		-\$23,100	-\$9,429			-\$33,000	\$262,525	-1%		
1404 Jefferson	-\$333	-\$5,000	\$2,197	\$17,576	\$15,000			\$249,140	4%		

0%



## **7. Matched Pair – Whitehorn Solar, Gretna, Pittsylvania, VA**



This project was built in 2021 for a solar project with 50 MW. Adjoining uses are residential and agricultural. There was a sale located at 1120 Taylors Mill Road that sold on December 20, 2021, which is about the time the solar farm was completed. This sold for \$224,000 for 2.02 acres with a 2,079 s.f. mobile home on it that was built in 2010. The property was listed for \$224,000 and sold for that same price within two months (went under contract almost exactly 30 days from listing). This sales price works out to \$108 per square foot. This home is 255 feet from the nearest panel.

I have compared this sale to an August 20, 2020 sale at 1000 Long Branch Drive that included 5.10 acres with a 1,980 s.f. mobile home that was built in 1993 and sold for \$162,000, or \$81.82 per square foot. Adjusting this upward for significant growth between this sale date and December 2021 relied on data provided by the FHFA House Pricing Index, which indicates that for homes in the Roanoke, VA MSA would be expected to appreciate from \$162,000 to \$191,000 over that period of time. Using \$191,000 as the effective value as of the date of comparison, the indicated value of this sale works out to \$96.46 per square foot. Adjusting this upward by 17% for the difference in year built, but downward by 5% for the much larger lot size at this comparable, I derive an adjusted indication of value of \$213,920, or \$108 per square foot.

This indicates no impact on value attributable to the new solar farm located across from the home on Taylors Mill Road.



## 8. Matched Pair – Altavista Solar, Altavista, Campbell County, VA



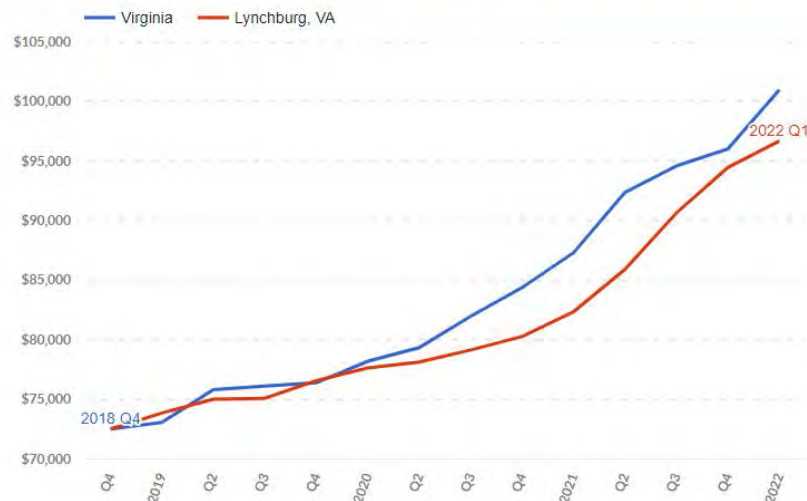
This project was mostly built in 2021 with final construction finished in 2022. This is an 80 MW facility on 720 acres just north of Roanoke River and west of Altavista. Adjoining uses are residential and agricultural.

I have done a Sale/Resale analysis of 3211 Leesville Road which is approximately 540 feet from the nearest solar panel. There was an existing row of trees between this home and the panels that was supplemented with additional screening for a narrow landscaped buffer between the home and the solar panels.

This home sold in December 2018 for \$72,500 for this 1,451 s.f. home built in 1940 with a number of additional outbuildings on 3.35 acres. This was before any announcement of a solar farm. This home sold again on March 28, 2022 for \$124,048 after the solar farm was constructed. This shows a 71% increase in value on this property since 2018. There was significant growth in the market between these dates and to accurately reflect that I have considered the FHFA House Price Index that is specific for the Lynchburg area of Virginia (the closest regional category), which shows an expected increase in home values over that same time period of 33.8%, which would suggest a normal growth in value up to \$97,000. The home sold for significantly more than this which certainly does not support a finding of a negative impact and in fact suggests a significant positive impact. However, I was not able to discuss this sale with the broker and it is possible that the home also was renovated between 2018 and 2022, which may account for that additional increase in value. Still give that the home increased in value so significantly over the initial amount there is no sign of any negative impact due to the solar farm adjacency.



Purchase Quarter	Valuation Quarter	Percentage Change
<b>2018 Quarter 4</b>	<b>2022 Quarter 1</b>	
Purchase Value	Estimated Value for MSA	
<b>\$72,500</b>	<b>\$97,000</b>	<b>33.8%</b>



Similarly, I looked at 3026 Bishop Creek Road that is approximately 600 feet from the nearest solar panel. This home sold on July 16, 2019 for \$120,000, which was before construction of the solar farm. This home sold again on February 23, 2022 for \$150,000. This shows a 25% increase in value over that time period. Using the same FHFA House Price Index Calculator, the expected increase in value was 29.2% for an indicated expected value of \$155,000. This is within 3% of the actual closed price, which supports a finding of no impact from the solar farm. This home has a dense wooded area between it and the adjoining solar farm.

Purchase Quarter	Valuation Quarter	Percentage Change
<b>2019 Quarter 2</b>	<b>2022 Quarter 1</b>	
Purchase Value	Estimated Value for MSA	
<b>\$120,000</b>	<b>\$155,000</b>	<b>29.2%</b>





I also considered 2049 Bishop Creek Road that sold on July 3, 2023. This home included a pool and in the analysis I made no consideration positive or negative for the pool among the comparables. The comparable at 3270 Wards has a partially finished basement instead of a fully finished basement, but I was unable to determine how much that partial indicated. I will focus on the other two paired sales which range from -5% to +4% impacts and support a finding of no impact on property value.

Solar	Address	Acres	Date Sold	Sales Price	Built	GBA	\$/GBA	BR/BA	Park	Style	Other
Nearby	2049 Bishop Crk	3.72	7/3/2023	\$375,000	1970	3,966	\$94.55	3/3	2Gar	Br Rnch FinBsmt/Pool	
Not	56 Whisper. Pn	1.02	2/29/2024	\$375,000	1988	3,548	\$105.69	5/3	2Gar	Br Rnch	FinBsmt
Not	1900 Woodhaven	1.90	8/31/2022	\$355,000	1969	3,643	\$97.45	3/2/2	2Gar	Br Rnch	FinBsmt
Not	3270 Wards	3.60	9/21/2023	\$325,000	1960	3,564	\$91.19	3/2.5	2Gar	Br Rnch	PrtFn Bsmt

#### Adjoining Sales Adjusted

Address	Time	Ac/Loc	YB	GLA	BR/BA	Park	Other	Total	% Diff	Dist
2049 Bishop Crk								\$375,000		745
56 Whisper. Pn	-\$17,332	\$20,000	-\$33,750	\$17,672				\$361,590	4%	
1900 Woodhaven	\$20,833	\$10,000	\$1,775	\$12,590	-\$5,000			\$395,198	-5%	
3270 Wards	-\$4,986		\$16,250	\$14,663	\$10,000			\$360,927	4%	
<b>Average Diff</b>									1%	



## **9. Matched Pair – Solidago Solar, Windsor, Isle of Wight County, VA**

This 20 MW solar farm was completed in March 2024. The closest adjoining home is 350 feet away.



The home located just north of this solar farm at 17479 Courthouse Highway, Windsor on December 28, 2023 for \$555,000 for this 4 BR, 2.5 BA with 2,775 s.f. built in 2001 on 3.62 acres with a 2-car garage. This also includes a 4 bay barn and large metal storage building, which complicates using this home for paired sales analysis. The purchase price works out to \$200 per s.f. The tax card allocates \$23,000 to the two outbuildings (assessed value), which I will use in adjusting the comparables. This home is 610 feet from the nearest solar panel.

I have compared this to 15414 Trump Town Road, Windsor that sold on September 22, 2023 for \$463,000 for a 4 BR, 2.5 BA home with 2,583 s.f. built in 1998 on 1.88 acres with a 2-car garage. The purchase price works out to \$179.25 per s.f. Adjusting the price upward by \$18,000 for the additional acreage and \$23,000 for the outbuildings, the indicated price becomes \$514,000, or \$198.99 per s.f. I made no adjustment for the difference in frontage but Courthouse Highway is a busier road than Trump Town Road, which is inferior. If I adjusted for that road frontage difference, the Trump Town Road sales price would go even lower. The adjusted sales price is 1% less than the price of the home next to the solar farm sold for and supports a finding of no impact on property value. Applying that per s.f. rate to the home size at Courthouse Highway indicates an adjusted value of \$552,197, which is also just 1% less than the sales price of the home adjoining the solar farm.

I also considered 11497 Dews Plantation Road, Ivor, which the broker Anna Boyer suggested was a good comparable. This home sold on October 19, 2023 for \$640,000 for a 3 BR, 2.5 BA with 2,684



s.f., built in 2003 with a 2-car garage on 15.20 acres. This home includes a powered horse barn with 4 stalls and a tack room, an additional 2-car detached garage with a finished room over it and fenced pasture. Adjusting the price downward by \$58,000 for the much larger acreage and \$41,000 for the outbuildings (difference in assessed value of relative outbuildings) the adjusted sales price is \$541,000, or \$201.56 per s.f. This is 1% more than the home at Courthouse Highway without making any adjustment for the difference in frontage, which supports a finding of no impact on property value. Applying that per s.f. rate to the home size at Courthouse Highway indicates an adjusted value of \$559,329, which is also just 1% more than the sales price of the home adjoining the solar farm. I consider both of these reasonable comparisons, but the Trump Town Road comparable is closer and required less adjusting, which makes it a more reliable comparable.

I reached out to Anna Boyer with Howard Hanna Smithfield as the listing broker for this home. She indicated that she believed that the solar farm was a big issue for a number of folks who came to look at this home and it could have impacted the sales price. However, she also indicated that while she initially listed the property for \$625,000, her internal analysis suggested a value of \$550,000 and she only listed it at the higher price due to the owner's insistence. She noted that \$550,000 was her opinion assuming no impact from the solar farm. When they later dropped the asking price to \$559,000, they received an offer quickly and the property appraised and sold for \$555,000. She noted that the appraiser indicated that the solar farm would not impact the value and assigned no impact on the appraisal. The closing price was slightly above the broker's opinion of value and supported by the appraisal with no impact from the adjoining solar farm.

Ms. Boyer indicated that she currently has a listing at 6568 Beechland Road, Elberon that is asking \$585,000 for a 4 BR, 3.5 BA with 2,800 s.f. built in 2000 on 9.33 acres with a 2-car garage and a detached garage with a workshop. This has been on the market for 55 days so far and she has had a number of potential buyers express concern over the adjoining solar farm. This illustrates that for some buyers the solar farm will be a deterrent, but she also noted that some potential buyers have indicated that the solar farm is protection from future development nearby.

The home located at 12256 Redhouse Road sold on February 8, 2024 for \$671,650 for this 2,640 s.f. home with 3 BR, 2 full BA and 2 half BA built in 2002 on 21 acres, or \$254.41 per s.f. Given that this home includes an updated kitchen, bar/entertainment room, 4-stall barn with feed and wash stalls and stable room with electrical fencing for pastures, riding ring and other horse features this becomes a difficult home to use for a paired sales analysis. I reached out to Anna Hansen with Surry Side Realty about this sale. She said that while she expected a certain amount of pushback from the solar farm she did not have any negative comments or impacts from the solar farm and it therefore did not impact the sales price or marketing of this home. This home is 640 feet from the nearest panel.

While it is challenging to find a good comparable, I considered 11497 Dews Plantation Road, Ivor, which has similar pasture and a horse features. This home sold on October 19, 2023 for \$640,000 for a 3 BR, 2.5 BA with 2,684 s.f., built in 2003 with a 2-car garage on 15.20 acres. This home includes a powered horse barn with 4 stalls and a tack room, an additional 2-car detached garage with a finished room over it and fenced pasture. Adjusting the price upward by \$25,000 for the smaller acreage and assuming that the horse features balance out, the adjusted sales price is \$665,000, or \$247.76 per s.f. This is 3% less than the home at Redhouse Road, which supports a finding of no impact on property value.

Interestingly, Ms. Anna Boyer indicated that she did bring a prospective buyer to view 12256 Redhouse Road. That buyer visited the site 3 times before deciding that the solar farm would be the reason she did not want to purchase that home. So while there clearly are purchasers in the market that would not purchase a home next to a solar farm, there are enough other buyers that do not see it as a negative to keep the prices stable as illustrated by the paired sales above.



**10. Matched Pair – Buckingham Solar, Cumberland, Buckingham County, VA**



Buckingham Solar is a 19.8 MW project east of 628 shown above, while Energix Buckingham is a 20 MW project west of 628 shown above.

The closest adjoining home is 125 feet from the nearest panel.

1 - I identified 24081 E James Anderson Highway sold on June 2, 2023 for \$160,000 for a 3 BR, 2BA, 1,248 s.f. manufactured home built in 1999 on 1 acre. This home is 380 feet from the solar panels south of US 60 and 760 feet from the solar panels to the north. The sales price works out to \$128.21 per s.f.

I compared that to 755 High School Road that sold on September 8, 2023 for \$190,000 for a 3 BR, 2BA, 1,296 s.f. manufactured home built in 2007 on 2.04 acres and including a detached workshop with power. Adjusting this sale downward by \$5,000 for the difference in lot size, \$7,600 for difference in building age (based on 0.5% per year difference in age), and \$15,000 for the detached workshop for an adjusted indication of value of \$162,400, or \$125.31 per s.f. This supports a finding of no impact on property value for the home at 24081 E James Anderson Highway due to the solar farm proximity.



2 - I also identified 23225 E James Anderson Highway that sold on June 30, 2023 for \$180,000 for a 2 BR, 1 BA, 1,076 s.f. home built in 1958 on 1.50 acres with a 2-car garage and a full unfinished basement. This home is 560 feet from the nearest solar panel.

I compared that to 17534 E James Anderson Highway that sold on January 24, 2024 for \$205,000 for a 3 BR, 2 BA, 1,218 s.f. home built in 1968 on 2 acres with a carport and detached 2 car garage and a full unfinished basement. Adjusting this sale downward by \$10,000 for the extra bathroom and \$9,560 for the larger size of this home (based on 40% of the per s.f. value for the difference in s.f.), the adjusted indication of value is \$185,440, which is within 3% of the property next to the solar farm. This difference is more likely attributable to the extra 0.50 acres at this site that I did not adjust for, but either way is within typical market imperfection and supports a finding of no impact on property value.



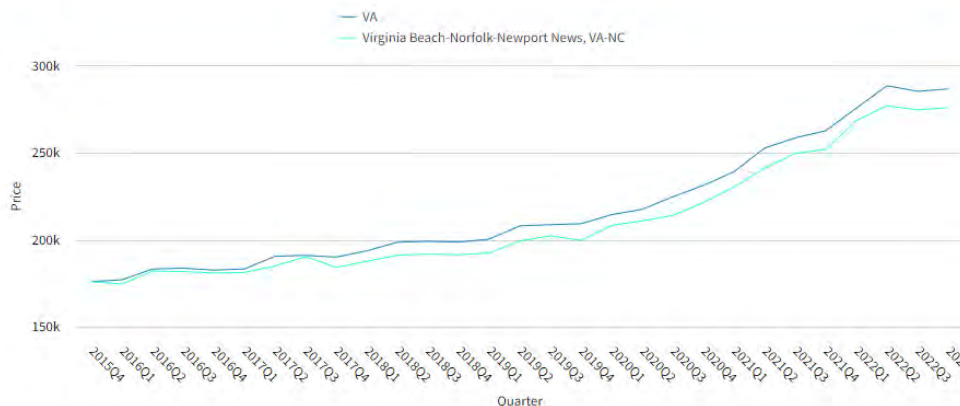
**11. Matched Pair – Bedford Solar, Chesapeake, Chesapeake County, VA**



This is a 70MW solar facility located in Chesapeake that went operational in 2021. The closest adjoining home is 390 feet from the nearest panel.

I identified 1407 Whittamore Road sold on December 22, 2022 for \$293,500 or \$214 per square foot, for a 3 BR, 2BA, 1,372 s.f. one-story, single family home built in 1962 on a 0.69 acre lot. This home is 560 feet from the closest panel. This home last sold on December 14, 2015 for \$176,000. Using the FHFA HPI to increase the earlier sale based on the typical appreciation, that home price was expected to appreciate to \$276,145. Based on this sale/resale analysis, the solar farm is showing no impact on the property value or appreciation of this home adjoining the solar project.

Estimated Value for MSA: \$276,145	Estimated Value for State: \$286,899	MSA Percentage Change: 56.9%
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**12. Matched Pair – Westmoreland Solar, Warsaw, Westmoreland County, VA**

This is 19.9MW solar facility located in Warsaw in Westmoreland County, went operational in 2021.

The closest adjoining home is 220 feet from the nearest panel.

I identified 232 Woodbine Road sold on August 26, 2022 for \$649,000 for a 3 BR, 3BA, 2,612 s.f. one-story, single-family home built in 1993 on a 91.55 acre. This home is 1,725 feet from the nearest solar panel. This comes to \$248 per square foot. The home sits on a 7-acre homesite and remaining acre is on conservation easement. I spoke with Jeff Brooks, listing agent for this property, who indicated that they did not take into account that the property is nearby a solar farm during the listing process. He also noted that the solar panel are visible from the house but this didn't affect the sale at all. The substation lies between the solar farm and the home.

Given the adjacent substation, I did not do further analysis on this home as the substation is closer to the home than the solar panels.



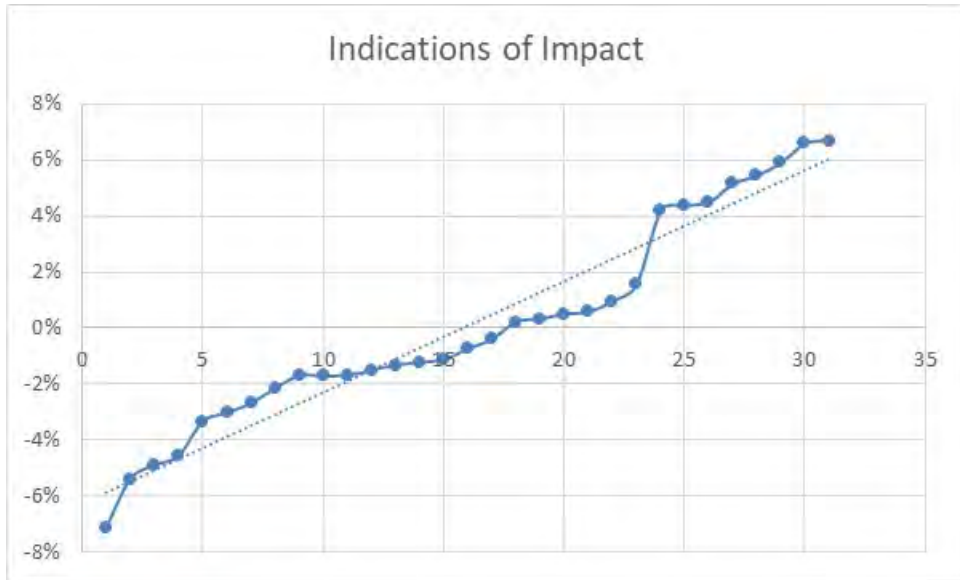
## Conclusion

The solar farm matched pairs shown above have similar characteristics to each other in terms of population, but with several outliers showing solar farms in far more urban areas. The predominate adjoining uses are residential and agricultural. These figures are in line with the larger set of solar farms that I have looked at with the predominant adjoining uses being residential and agricultural and similar to the solar farm breakdown shown for Virginia and adjoining states as well as the proposed subject property. Based on the similarity of adjoining uses and demographic data between these sites, I consider it reasonable to compare these sites to the subject property.

<b>Matched Pair Summary</b>				<b>Adj. Uses By Acreage</b>							<b>1 mile Radius (2010-2023 Data)</b>		
<b>Name</b>	<b>City</b>	<b>State</b>	<b>Acres</b>	<b>MW</b>	<b>Topo Shift</b>	<b>Res</b>	<b>Ag</b>	<b>Ag/Res</b>	<b>Com/Ind</b>	<b>Population</b>	<b>Med. Income</b>	<b>Avg. Housing Unit</b>	
<b>1</b>	Clarke Cnty	White Post	VA	234	20.00	70	14%	39%	46%	1%	578	\$81,022	\$374,453
<b>2</b>	Walker	Barhamsville	VA	485	20.00	N/A	12%	68%	20%	0%	203	\$80,773	\$320,076
<b>3</b>	Sappony	Stony Crk	VA	322	20.00	N/A	2%	98%	0%	0%	74	\$51,410	\$155,208
<b>4</b>	Spotsylvania	Paytes	VA	3,500	500.00	160	37%	52%	11%	0%	74	\$120,861	\$483,333
<b>5</b>	Crittenden	Crittenden	KY	34	2.70	40	22%	51%	27%	0%	1,419	\$60,198	\$178,643
<b>6</b>	White House	Louisa	VA	500	20.00	N/A	24%	55%	18%	3%	409	\$57,104	\$209,286
<b>7</b>	Whitehorn	Gretna	VA	N/A	50.00	N/A	N/A	N/A	N/A	N/A	166	\$43,179	\$168,750
<b>8</b>	Altavista	Altavista	VA	720	80.00	N/A	N/A	N/A	N/A	N/A	7	\$50,000	\$341,667
<b>9</b>	Solidago	Isle of Wight	VA	193	20.00	N/A	N/A	N/A	N/A	N/A	62	\$88,375	\$312,500
<b>10</b>	Buckingham	Cumberland	VA	240	39.80	50	4%	6%	90%	0%	120	\$59,445	\$251,562
<b>11</b>	Bedford	Chesapeake	VA	N/A	70.00	N/A	N/A	N/A	N/A	N/A	993	\$127,047	\$509,365
<b>Average</b>				692	76.59	80	16%	53%	30%	1%	373	\$74,492	\$300,440
<b>Median</b>				322	20.00	60	14%	52%	20%	0%	166	\$60,198	\$312,500
<b>High</b>				3,500	500.00	160	37%	98%	90%	3%	1,419	\$127,047	\$509,365
<b>Low</b>				34	2.70	40	2%	6%	0%	0%	7	\$43,179	\$155,208
<b>Augusta</b>													
<b>1 Mile Radius</b>				1,268	100.00	40	11%	72%	14%	3%	310	\$58,467	\$427,439
<b>3 Mile Radius</b>				1,268	100.00	40	11%	72%	14%	3%	10,065	\$62,094	\$318,177
<b>5 Mile Radius</b>				1,268	100.00	40	11%	72%	14%	3%	33,003	\$67,342	\$302,061

On the following page is a summary of the matched pairs for all of the solar farms noted above. They show a pattern of results from -7% to +7% with an average of 0% and a median finding of -1%. This variability is common with real estate and consistent with market "static." I therefore conclude that these results strongly support an indication of no impact on property value due to the adjacent solar farm. Only 1 of the 31 data points show a negative impact greater than the typical variability due to market imperfection, while 3 of the 31 data points show a positive impact. This leaves 27 of the 31 indications showing no impact and within the typical market variability/imperfection that would be expected for any property. This can also be expressed as 30 out of 31 data points show a neutral to positive indication of impact due to the proximity of a solar farm.





	MW	Avg. Distance		% Dif
<b>Average</b>	196.60	824	<b>Average</b>	0%
<b>Median</b>	20.00	630	<b>Median</b>	-1%
<b>High</b>	617.00	1,950	<b>High</b>	7%
<b>Low</b>	2.70	250	<b>Low</b>	-7%



## Residential Dwelling Matched Pairs Adjoining Solar Farms

Pair	Solar Farm	City	State	Area	MW	Approx		Sale			
						Distance	Tax ID/Address	Date	Sale Price	Adj. Price	% Diff
1	Spotsylvania	Paytes	VA	Rural	617	1270	12901 Orange Plnk	Aug-20	\$319,900		
							12717 Flintlock	Dec-20	\$290,000	\$326,767	-2%
2	Spotsylvania	Paytes	VA	Rural	617	1950	9641 Nottoway	May-20	\$449,900		
							11626 Forest	Aug-20	\$489,900	\$430,246	4%
3	Spotsylvania	Paytes	VA	Rural	617	1171	13353 Post Oak	Sep-20	\$300,000		
							12810 Catharpin	Jan-20	\$280,000	\$299,008	0%
4	Walker	Barhamsville	VA	Rural	20	250	5241 Barham	Oct-18	\$264,000		
							9252 Ordinary	Jun-19	\$277,000	\$246,581	7%
5	Clarke Cnty	White Post	VA	Rural	20	1230	833 Nations Spr	Jan-17	\$295,000		
							6801 Middle	Dec-17	\$249,999	\$296,157	0%
6	Clarke Cnty	White Post	VA	Rural	20	1230	833 Nations Spr	Aug-19	\$385,000		
							2393 Old Chapel	Aug-20	\$330,000	\$389,286	-1%
7	Sappony	Stony Creek	VA	Rural	20	1425	12511 Palestine	Jul-18	\$128,400		
							6494 Rocky Branch	Nov-18	\$100,000	\$131,842	-3%
8	Crittenden	Crittenden	KY	Suburban	2.7	373	250 Claiborne	Jan-19	\$120,000		
							315 N Fork	May-19	\$107,000	\$120,889	-1%
9	Crittenden	Crittenden	KY	Suburban	2.7	488	300 Claiborne	Sep-18	\$213,000		
							1795 Bay Valley	Dec-17	\$231,200	\$228,180	-7%
10	Crittenden	Crittenden	KY	Suburban	2.7	720	350 Claiborne	Jul-18	\$245,000		
							2160 Sherman	Jun-19	\$265,000	\$248,225	-1%
11	Crittenden	Crittenden	KY	Suburban	2.7	930	370 Claiborne	Aug-19	\$273,000		
							125 Lexington	Apr-18	\$240,000	\$254,751	7%
12	Crittenden	Crittenden	KY	Suburban	2.7	365	250 Claiborne	Jan-22	\$210,000		
							240 Shawnee	Jun-21	\$166,000	\$219,563	-5%
13	Crittenden	Crittenden	KY	Suburban	2.7	390	260 Claiborne	Oct-21	\$175,000		
							355 Oakwood	Oct-20	\$186,000	\$173,988	1%
14	Crittenden	Crittenden	KY	Suburban	2.7	570	300 Claiborne	Dec-21	\$290,000		
							39 Pinhook	Mar-22	\$299,000	\$289,352	0%
15	Crittenden	Crittenden	KY	Suburban	2.7	1080	410 Claiborne	Feb-21	\$275,000		
							114 Austin	Dec-20	\$248,000	\$279,680	-2%
16	Whitehouse	Louisa	VA	Rural	20	1400	126 Walnut	Mar-20	\$275,000		
							126 Woodger	Apr-19	\$248,000	\$279,680	-2%
17	Whitehorn	Gretna	VA	Rural	50	255	1120 Taylors Mill	Dec-21	\$224,000		
							100 Long Branch	Aug-20	\$162,000	\$213,920	5%
18	Altavista	Altavista	VA	Rural	80	600	3026 Bishop Crk	Feb-22	\$150,000		
							3026 Bishop Crk	Jul-19	\$120,000	\$155,000	-3%
19	Solidago	Windsor	VA	Rural	20	610	17479 Courthouse	Dec-23	\$555,000		
							15414 Trump Town	Sep-23	\$463,000	\$552,197	1%
20	Solidago	Windsor	VA	Rural	20	630	6568 Beechland	Feb-24	\$671,500		
							11497 Dews Plant.	Oct-23	\$640,000	\$665,000	1%
21	Spotsylvania	Spotsylvania	VA	Rural	617	435	11710 Southview	May-22	\$767,945		
							10919 Green Leaf	Jun-22	\$739,990	\$728,424	5%
22	Spotsylvania	Spotsylvania	VA	Rural	617	410	11606 Aprils	Sep-23	\$711,400		
							11701 Quail Run	Jul-23	\$650,000	\$723,383	-2%
23	Spotsylvania	Spotsylvania	VA	Rural	617	1252	9811 Deer Park	Jun-22	\$455,000		
							8109 Newton	Mar-22	\$450,000	\$447,900	2%
24	Spotsylvania	Spotsylvania	VA	Rural	617	1020	13000 W Catharpian	Jun-22	\$450,000		
							14207 Cedar Plant.	Jul-23	\$473,800	\$472,015	-5%
25	Spotsylvania	Spotsylvania	VA	Rural	617	1060	12819 Faulconers	Oct-23	\$538,000		
							9811 Cathrapin	Nov-23	\$480,000	\$508,753	5%
26	Spotsylvania	Spotsylvania	VA	Rural	617	395	11239 Chancellor M	Mar-23	\$499,900		
							9651 Meadows	Jul-23	\$515,000	\$506,012	-1%
27	Altavista	Altavista	VA	Rural	80	745	2049 Bishop Crk	Jul-23	\$375,000		
							1900 Woodhaven	Aug-22	\$355,000	\$395,198	-5%
28	Buckingham	Cumberland	VA	Rural	40	380	24081 E James And	Jun-23	\$160,000		
							755 High Sch	Sep-23	\$190,000	\$162,400	-2%
29	Buckingham	Cumberland	VA	Rural	40	560	23225 E James And	Jun-23	\$180,000		
							17534 E James And	Jan-24	\$205,000	\$185,440	-3%
30	White House	Louisa	VA	Rural	20	1780	751 Chalklevel	Apr-24	\$260,000		
							1404 Jefferson	May-24	\$219,700	\$249,140	4%
31	Bedford	Chesapeake	VA	Rural	70	560	1407 Whittamore	Dec-22	\$293,500		
							1407 Whittamore	Dec-15	\$176,000	\$276,145	6%



## Southeastern USA Data – Over 5 MW

### Conclusion – Southeast Over 5 MW

#### Southeast USA Over 5 MW

##### Matched Pair Summary

	Name	City	State	Acres	MW	Adj. Uses By Acreage					1 mile Radius (2010-2022 Data)		
						Topo Shift	Res	Ag	Ag/Res	Com/Ind	Pop.	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	Mariposa	Stanley	NC	36	5.00	96	48%	0%	52%	0%	1,716	\$36,439	\$137,884
10	Clarke Cnty	White Post	VA	234	20.00	70	14%	39%	46%	1%	578	\$81,022	\$374,453
11	Candace	Princeton	NC	54	5.00	22	76%	24%	0%	0%	448	\$51,002	\$107,171
12	Walker	Barhamsville	VA	485	20.00	N/A	12%	68%	20%	0%	203	\$80,773	\$320,076
13	Innov 46	Hope Mills	NC	532	78.50	0	17%	83%	0%	0%	2,247	\$58,688	\$183,435
14	Innov 42	Fayetteville	NC	414	71.00	0	41%	59%	0%	0%	568	\$60,037	\$276,347
15	Sunfish	Willow Spring	NC	50	6.40	30	35%	35%	30%	0%	1,515	\$63,652	\$253,138
16	Sappony	Stony Crk	VA	322	20.00	N/A	2%	98%	0%	0%	74	\$51,410	\$155,208
17	Camden Dam	Camden	NC	50	5.00	0	17%	72%	11%	0%	403	\$84,426	\$230,288
18	Grandy	Grandy	NC	121	20.00	10	55%	24%	0%	21%	949	\$50,355	\$231,408
19	Champion	Pelion	SC	100	10.00	N/A	4%	70%	8%	18%	1,336	\$46,867	\$171,939
20	Barefoot Bay	Barefoot Bay	FL	504	74.50	0	11%	87%	0%	3%	2,446	\$36,737	\$143,320
21	Miami-Dade	Miami	FL	347	74.50	0	26%	74%	0%	0%	127	\$90,909	\$403,571
22	Spotsylvania	Paytes	VA	3,500	617.00	160	37%	52%	11%	0%	74	\$120,861	\$483,333
23	Whitehorn	Gretna	VA	N/A	50.00	N/A	N/A	N/A	N/A	N/A	166	\$43,179	\$168,750
24	Altavista	Altavista	VA	720	80.00	N/A	N/A	N/A	N/A	N/A	7	\$50,000	\$341,667
25	Hattiesburg	Hattiesburg	MS	400	50.00	N/A	10%	85%	5%	0%	1,065	\$28,545	\$129,921
26	Solidago	Isle of Wight	VA	193	20.00	N/A	N/A	N/A	N/A	N/A	62	\$88,375	\$312,500
27	Buckingham	Cumberland	VA	240	39.80	50	4%	6%	90%	0%	120	\$59,445	\$251,562
28	Twiggs	Dry Branch	GA	N/A	200.00	N/A	N/A	N/A	N/A	N/A	15	\$55,000	\$50,000
29	Kings Bay	Kings Bay	GA	N/A	30.00	N/A	N/A	N/A	N/A	N/A	721	\$102,293	\$364,808
30	Dougherty	Albany	GA	N/A	120.00	N/A	N/A	N/A	N/A	N/A	30	\$60,354	\$204,167
31	Mustang	Robbins	NC	50	5.00	N/A	N/A	N/A	N/A	N/A	941	\$54,430	\$369,398
32	Bedford	Chesapeake	VA	N/A	70.00	N/A	N/A	N/A	N/A	N/A	993	\$127,047	\$509,365
	<b>Average</b>			464	60.83	37	23%	47%	24%	6%	786	\$64,484	\$246,854
	<b>Median</b>			234	25.00	20	17%	56%	11%	0%	458	\$59,067	\$241,485
	<b>High</b>			3,500	617.00	160	76%	98%	94%	44%	4,689	\$127,047	\$509,365
	<b>Low</b>			35	5.00	0	2%	0%	0%	0%	7	\$28,545	\$50,000

The solar farm matched pairs pulled from the solar farms shown above have similar characteristics to each other in terms of population, but with several outliers showing solar farms in more urban areas. The median income for the population within 1 mile of a solar farm is \$59,067 with a median housing unit value of \$241,485. Most of the comparables are under \$300,000 in the home price, with \$509,365 being the high end of the set, though I have matched pairs in multiple states over \$1,600,000 adjoining solar farms. The adjoining uses show that residential and agricultural uses are the predominant adjoining uses. These figures are in line with the larger set of solar farms that I have looked at with the predominant adjoining uses being residential and agricultural and similar to the solar farm breakdown shown for Virginia and adjoining states as well as the proposed subject property.

Based on the similarity of adjoining uses and demographic data between these sites and the subject property, I consider it reasonable to compare these sites to the subject property.

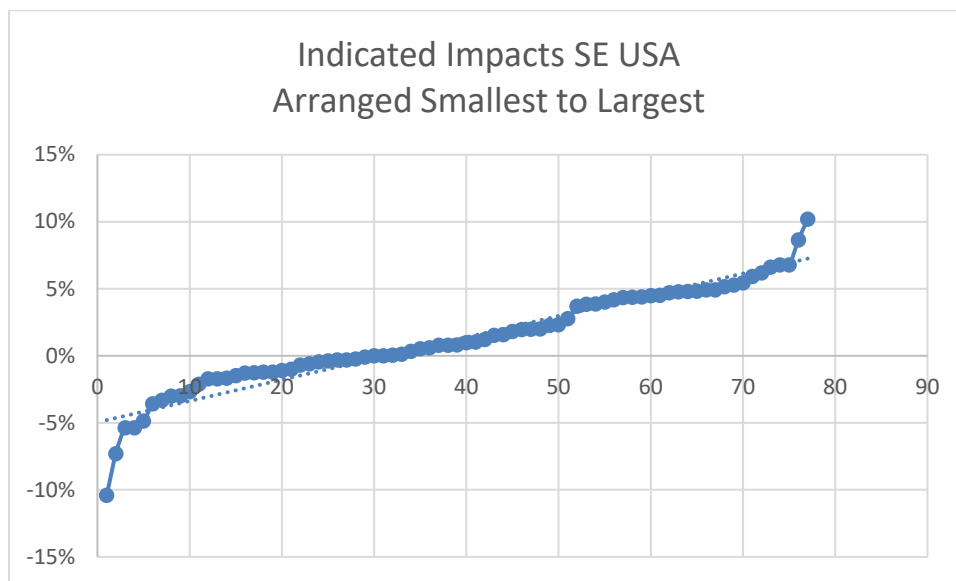
I have pulled 77 matched pairs from the above referenced solar farms to provide the following summary of home sale matched pairs and land sales next to solar farms. The summary shows that the range of differences is from -10% to +10% with an average of +1% and median of +1%.



While the range is seemingly wide, the graph below clearly shows that the vast majority of the data falls between -5% and +5% and most of those are clearly in the 0 to +5% range. As noted earlier in this report, real estate is an imperfect market and this 5% variability is typical in real estate. This data strongly supports an indication of no impact on adjoining residential uses to a solar farm.

Only 2 of the data points supports a negative impact on property value, while 7 support a positive impact. So out of 75 out of 77 data points support a finding of no impact or a positive impact on property value.

I therefore conclude that these matched pairs support a finding of no impact on value at the subject property for the proposed project, which as proposed will include a landscaped buffer to screen adjoining residential properties.





## B. Summary of National Data on Solar Farms

I have worked in over 25 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 38 solar farms over 5 MW studied with each one providing matched pair data supporting the findings of this report.

### Matched Pair Summary

						<u>Adj. Uses By Acreage</u>				
						Topo	Res	Ag	Ag/Res	Com/Ind
	Name	City	State	Acres	MW	Shift	Res	Ag	Ag/Res	Com/Ind
1	AM Best	Goldsboro	NC	38	5.00	2	38%	0%	23%	39%
2	Mulberry	Selmer	TN	160	5.00	60	13%	73%	10%	3%
3	Leonard	Hughesville	MD	47	5.00	20	18%	75%	0%	6%
4	Gastonia SC	Gastonia	NC	35	5.00	48	33%	0%	23%	44%
5	Summit	Moyock	NC	2,034	80.00	4	4%	0%	94%	2%
6	Tracy	Bailey	NC	50	5.00	10	29%	0%	71%	0%
7	Manatee	Parrish	FL	1,180	75.00	20	2%	97%	1%	0%
8	McBride	Midland	NC	627	75.00	140	12%	10%	78%	0%
9	Grand Ridge	Streator	IL	160	20.00	1	8%	87%	5%	0%
10	Dominion	Indianapolis	IN	134	8.60	20	3%	97%	0%	0%
11	Mariposa	Stanley	NC	36	5.00	96	48%	0%	52%	0%
12	Clarke Cnty	White Post	VA	234	20.00	70	14%	39%	46%	1%
13	Flemington	Flemington	NJ	120	9.36	N/A	13%	50%	28%	8%
14	Frenchtown	Frenchtown	NJ	139	7.90	N/A	37%	35%	29%	0%
15	McGraw	East Windsor	NJ	95	14.00	N/A	27%	44%	0%	29%
16	Tinton Falls	Tinton Falls	NJ	100	16.00	N/A	98%	0%	0%	2%
17	Simon	Social Circle	GA	237	30.00	71	1%	63%	36%	0%
18	Candace	Princeton	NC	54	5.00	22	76%	24%	0%	0%
19	Walker	Barhamsville	VA	485	20.00	N/A	12%	68%	20%	0%
20	Innov 46	Hope Mills	NC	532	78.50	0	17%	83%	0%	0%
21	Innov 42	Fayetteville	NC	414	71.00	0	41%	59%	0%	0%
22	Demille	Lapeer	MI	160	28.40	10	10%	68%	0%	22%
23	Turrill	Lapeer	MI	230	19.60	10	75%	59%	0%	25%
24	Sunfish	Willow Spring	NC	50	6.40	30	35%	35%	30%	0%
25	Picture Rocks	Tucson	AZ	182	20.00	N/A	6%	88%	6%	0%
26	Avra Valley	Tucson	AZ	246	25.00	N/A	3%	94%	3%	0%
27	Sappony	Stony Crk	VA	322	20.00	N/A	2%	98%	0%	0%
28	Camden Dam	Camden	NC	50	5.00	0	17%	72%	11%	0%
29	Grandy	Grandy	NC	121	20.00	10	55%	24%	0%	21%
30	Champion	Pelion	SC	100	10.00	N/A	4%	70%	8%	18%
31	Eddy II	Eddy	TX	93	10.00	N/A	15%	25%	58%	2%
32	Somerset	Somerset	TX	128	10.60	N/A	5%	95%	0%	0%
33	DG Amp Piqua	Piqua	OH	86	12.60	2	26%	16%	58%	0%
34	Barefoot Bay	Barefoot Bay	FL	504	74.50	0	11%	87%	0%	3%
35	Miami-Dade	Miami	FL	347	74.50	0	26%	74%	0%	0%
36	Spotsylvania	Paytes	VA	3,500	617.00	160	37%	52%	11%	0%
37	Whitehorn	Gretna	VA	N/A	50.00	N/A	N/A	N/A	N/A	N/A
38	Altavista	Altavista	VA	720	80.00	N/A	N/A	N/A	N/A	N/A
39	Hattiesburg	Hattiesburg	MS	400	50.00	N/A	10%	85%	5%	0%
40	Bremen	Bremen	IN	37	6.80	15	40%	60%	0%	0%



**Matched Pair Summary****Adj. Uses By Acreage**

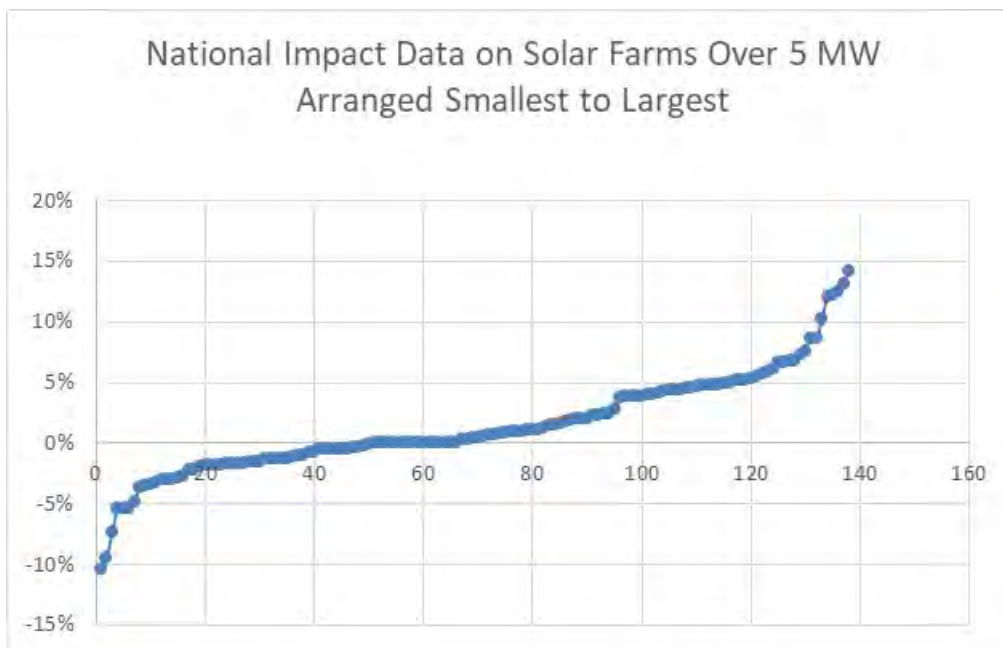
	<b>Name</b>	<b>City</b>	<b>State</b>	<b>Acres</b>	<b>MW</b>	<b>Topo Shift</b>	<b>Res</b>	<b>Ag</b>	<b>Ag/Res</b>	<b>Com/Ind</b>
<b>41</b>	North Rock	Fulton	WI	472	50.00	N/A	3%	40%	57%	0%
<b>42</b>	Wood County	Saratoga	WI	1,200	150.00	N/A	N/A	N/A	N/A	N/A
<b>43</b>	Solidago	Isle of Wight	VA	193	20.00	N/A	N/A	N/A	N/A	N/A
<b>44</b>	Buckingham	Cumberland	VA	240	39.80	50	4%	6%	90%	0%
<b>45</b>	Crane	Burns City	IN	182	24.30	100	N/A	N/A	N/A	N/A
<b>46</b>	Kokomo 1	Kokomo	IN	83	5.40	5	30%	36%	0%	34%
<b>47</b>	White Tail 1	Mowersville	PA	135	13.50	20	2%	73%	25%	0%
<b>48</b>	Twiggs	Dry Branch	GA	N/A	200.00	N/A	N/A	N/A	N/A	N/A
<b>49</b>	Kings Bay	Kings Bay	GA	N/A	30.00	N/A	N/A	N/A	N/A	N/A
<b>50</b>	Dougherty	Albany	GA	N/A	120.00	N/A	N/A	N/A	N/A	N/A
<b>51</b>	Whitetail 2	St Thomas	PA	293	20.00	N/A	N/A	N/A	N/A	N/A
<b>52</b>	Elk Hill 1	Mercersburg	PA	N/A	20.00	N/A	N/A	N/A	N/A	N/A
<b>53</b>	Elk Hill 2	Mercersburg	PA	N/A	15.00	N/A	N/A	N/A	N/A	N/A
<b>54</b>	Cottontail 1	York	PA	N/A	20.00	N/A	N/A	N/A	N/A	N/A
<b>55</b>	Cottontail 2	York	PA	N/A	20.00	N/A	N/A	N/A	N/A	N/A
<b>56</b>	Grazing Yak	Calhan	CO	272	35.00	N/A	0%	97%	3%	0%
<b>57</b>	San Luis Villy	Hooper	CO	308	35.00	N/A	5%	95%	0%	0%
<b>58</b>	SR Jenkins	Ft. Lupton	CO	142	13.00	N/A	2%	90%	8%	0%
<b>59</b>	Big Horn 1	Pueblo	CO	2,760	240.00	N/A	0%	44%	2%	54%
<b>60</b>	Bison/Raw	Wellington	CO	1,160	52.00	N/A	0%	93%	7%	0%
<b>61</b>	Alamosa	Mosca	CO	163	30.00	N/A	0%	87%	13%	0%
<b>62</b>	Pioneer	Bennett	CO	611	110.00	N/A	3%	81%	16%	0%
<b>63</b>	Sandhill/SunE	Mosca	CO	N/A	10.00	N/A	N/A	N/A	N/A	N/A
<b>64</b>	Bellflower 1	Lewisville	IN	N/A	152.50	N/A	N/A	N/A	N/A	N/A
<b>65</b>	Riverstart	Winchester	IN	N/A	200.00	N/A	N/A	N/A	N/A	N/A
<b>66</b>	Mustang	Robbins	NC	50	5.00	N/A	N/A	N/A	N/A	N/A
<b>67</b>	North Star	North Branch	MN	1,099	100.00	N/A	18%	73%	7%	2%
<b>68</b>	Logansport	Logansport	IN	N/A	6.80	N/A	N/A	N/A	N/A	N/A
<b>69</b>	Anderson 6	Anderson	IN	N/A	6.80	N/A	N/A	N/A	N/A	N/A
<b>70</b>	Dunns Brdge	Wheatfield	IN	N/A	435.00	N/A	N/A	N/A	N/A	N/A
<b>71</b>	Bedford	Chesapeake	VA	N/A	70.00	N/A	N/A	N/A	N/A	N/A
	<b>Average</b>			421	55.63	33	20%	56%	19%	6%
	<b>Median</b>			182	20.00	18	12%	66%	7%	0%
	<b>High</b>			3,500	617.00	160	98%	98%	94%	54%
	<b>Low</b>			35	5.00	0	0%	0%	0%	0%



From these 71 solar farms, I have derived 138 data points. The data shows no negative impact at distances as close as 145 feet between a solar panel and the nearest point on a home. The range of impacts is -10% to +14% with an average and median of +1%.

	MW	Avg. Distance		% Dif
<b>Average</b>	79.17	608	<b>Average</b>	1%
<b>Median</b>	20.00	440	<b>Median</b>	0%
<b>High</b>	617.00	2,020	<b>High</b>	14%
<b>Low</b>	5.00	145	<b>Low</b>	-10%

While the range is broad, the two charts below show the data points in range from lowest to highest. There are only 3 data points out of 130 that show a negative impact. The rest support either a finding of no impact or 17 of the data points suggest a positive impact due to adjacency to a solar farm. As discussed 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.





## **X. Distance Between Homes and Panels**

I have measured distances at matched pairs as close as 105 feet between panel and home to show no impact on value. This measurement goes from the closest point on the home to the closest solar panel. This is a strong indication that at this distance there is no impact on adjoining homes.

However, in tracking other approved solar farms across Virginia, North Carolina and other states, I have found that it is common for there to be homes within 100 to 150 feet of solar panels. Given the visual barriers in the form of privacy fencing or landscaping, there is no sign of negative impact.

I have also tracked a number of locations where solar panels are between 50 and 100 feet of single-family homes. In these cases the landscaping is typically a double row of more mature evergreens at time of planting. There are many examples of solar farms with one or two homes closer than 100-feet, but most of the adjoining homes are further than that distance.

## **XI. Scope of Research**

I have researched over 1,000 solar farms and sites on which solar farms are existing and proposed in Virginia, Illinois, Tennessee, North Carolina, Kentucky as well as other states to determine what uses are typically found in proximity with a solar farm. The data I have collected and provide in this report strongly supports the assertion that solar farms are having no negative consequences on adjoining agricultural and residential values.

Beyond these references, I have quantified the adjoining uses for a number of solar farm comparables to derive a breakdown of the adjoining uses for each solar farm. The chart below shows the breakdown of adjoining or abutting uses by total acreage.

<b>Percentage By Adjoining Acreage</b>									
	<b>Res</b>	<b>Ag</b>	<b>Res/AG</b>	<b>Comm</b>	<b>Ind</b>	<b>Avg Home</b>	<b>Closest Home</b>	<b>All Res Uses</b>	<b>All Comm Uses</b>
Average	19%	53%	20%	2%	6%	887	344	91%	8%
Median	11%	56%	11%	0%	0%	708	218	100%	0%
High	100%	100%	100%	93%	98%	5,210	4,670	100%	98%
Low	0%	0%	0%	0%	0%	90	25	0%	0%

**Res = Residential, Ag = Agriculture, Com = Commercial**

**Total Solar Farms Considered: 705**

I have also included a breakdown of each solar farm by number of adjoining parcels to the solar farm rather than based on adjoining acreage. Using both factors provide a more complete picture of the neighboring properties.



<b>Percentage By Number of Parcels Adjoining</b>									
	<b>Res</b>	<b>Ag</b>	<b>Res/AG</b>	<b>Comm</b>	<b>Ind</b>	<b>Avg Home</b>	<b>Closest Home</b>	<b>All Res Uses</b>	<b>All Comm Uses</b>
Average	61%	24%	9%	2%	4%	887	344	93%	6%
Median	65%	19%	5%	0%	0%	708	218	100%	0%
High	100%	100%	100%	60%	78%	5,210	4,670	105%	78%
Low	0%	0%	0%	0%	0%	90	25	0%	0%

**Res = Residential, Ag = Agriculture, Com = Commercial**

**Total Solar Farms Considered: 705**

Both of the above charts show a marked residential and agricultural adjoining use for most solar farms. Every single solar farm considered included an adjoining residential or residential/agricultural use.



## **XII. Specific Factors Related To Impacts on Value**

I have completed a number of Impact Studies related to a variety of uses and I have found that the most common areas for impact on adjoining values typically follow a hierarchy with descending levels of potential impact. I will discuss each of these categories and how they relate to a solar farm.

1. Hazardous material
2. Odor
3. Noise
4. Traffic
5. Stigma
6. Appearance

### **1. Hazardous material**

A solar farm presents no potential hazardous waste byproduct as part of normal operation. Any fertilizer, weed control, vehicular traffic, or construction will be significantly less than typically applied in a residential development and even most agricultural uses.

The various solar farms that I have inspected and identified in the addenda have no known environmental impacts associated with the development and operation.

### **2. Odor**

The various solar farms that I have inspected produced no odor.

### **3. Noise**

Whether discussing passive fixed solar panels, or single-axis trackers, there is no negative impact associated with noise from a solar farm. The transformer reportedly has a hum similar to an HVAC that can only be heard in close proximity to this transformer and the buffers on the property are sufficient to make emitted sounds inaudible from the adjoining properties. Even less sound is emitted from the facility at night.

The various solar farms that I have inspected were inaudible from the roadways.

### **4. Traffic**

The solar farm will have no onsite employee's or staff. The site requires only minimal maintenance. Relative to other potential uses of the site (such as a residential subdivision), the additional traffic generated by a solar farm use on this site is insignificant.

### **5. Stigma**

There is no stigma associated with solar farms and solar farms and people generally respond favorably towards such a use. While an individual may express concerns about proximity to a solar farm, there is no specific stigma associated with a solar farm. Stigma generally refers to things such as adult establishments, prisons, rehabilitation facilities, and so forth.

Solar panels have no associated stigma and in smaller collections are found in yards and roofs in many residential communities. Solar farms are adjoining elementary, middle and high schools as well as churches and subdivisions. I note that one of the solar farms in this report not only adjoins a church, but is actually located on land owned by the church. Solar panels on a roof are often cited as an enhancement to the property in marketing brochures.



I see no basis for an impact from stigma due to a solar farm.

## 6. Appearance

I note that larger solar farms using fixed or tracking panels are a passive use of the land that is in keeping with a rural/residential area. As shown below, solar farms are comparable to larger greenhouses. This is not surprising given that a greenhouse is essentially another method for collecting passive solar energy. The greenhouse use is well received in residential/rural areas and has a similar visual impact as a solar farm.



The solar panels are all less than 15 feet high, which means that the visual impact of the solar panels will be similar in height to a typical greenhouse and lower than a single-story residential dwelling. Were the subject property developed with single family housing, that development would have a much greater visual impact on the surrounding area given that a two-story home with attic could be three to four times as high as these proposed panels.

Whenever you consider the impact of a proposed project on viewshed or what the adjoining owners may see from their property it is important to distinguish whether or not they have a protected viewshed or not. Enhancements for scenic vistas are often measured when considering properties that adjoin preserved open space and parks. However, adjoining land with a preferred view today conveys no guarantee that the property will continue in the current use. Any consideration of the impact of the appearance requires a consideration of the wide variety of other uses a property already has the right to be put to, which for solar farms often includes subdivision development, agricultural business buildings such as poultry, or large greenhouses and the like.

Dr. Randall Bell, MAI, PhD, and author of the book **Real Estate Damages**, Third Edition, on Page 146 “Views of bodies of water, city lights, natural settings, parks, golf courses, and other amenities are considered desirable features, particularly for residential properties.” Dr. Bell continues on Page 147 that “View amenities may or may not be protected by law or regulation. It is sometimes argued that views have value only if they are protected by a view easement, a zoning ordinance, or covenants, conditions, and restrictions (CC&Rs), although such protections are relatively



uncommon as a practical matter. The market often assigns significant value to desirable views irrespective of whether or not such views are protected by law.”

Dr. Bell concludes that a view enhances adjacent property, even if the adjacent property has no legal right to that view. He then discusses a “borrowed” view where a home may enjoy a good view of vacant land or property beyond with a reasonable expectation that the view might be partly or completely obstructed upon development of the adjoining land. He follows that with “This same concept applies to potentially undesirable views of a new development when the development conforms to applicable zoning and other regulations. Arguing value diminution in such cases is difficult, since the possible development of the offending property should have been known.” In other words, if there is an allowable development on the site then arguing value diminution with such a development would be difficult. This further extends to developing the site with alternative uses that are less impactful on the view than currently allowed uses.

This gets back to the point that if a property has development rights and could currently be developed in such a way that removes the viewshed such as a residential subdivision, then a less intrusive use such as a solar farm that is easily screened by landscaping would not have a greater impact on the viewshed of any perceived value adjoining properties claim for viewshed. Essentially, if there are more impactful uses currently allowed, then how can you claim damages for a less impactful use.



### **XIII. Conclusion**

The matched pair analysis shows no negative impact in 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 support a finding of no impact on property value.

Very similar solar farms in very similar areas have been found by hundreds of towns and counties not to have a substantial injury to abutting or adjoining properties, and many of those findings of no impact have been upheld by appellate courts. Similar solar farms have been approved adjoining agricultural uses, schools, churches, and residential developments.

I have found no difference in the mix of adjoining uses or proximity to adjoining homes based on the size of a solar farm and I have found no significant difference in the matched pair data adjoining larger solar farms versus smaller solar farms. The data in the Southeast is consistent with the larger set of data that I have nationally, as is the more specific data located in and around Virginia.

Based on the data and analysis in this report, it is my professional opinion that the solar farm proposed at the subject property will have no negative impact on the value of adjoining or abutting property. I note that 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.



## **XIV. 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 are my 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 no personal interest with respect to the parties involved;
4. I have no bias with respect to the property that is the subject of this report or to the parties involved with this assignment;
5. My engagement in this assignment was not contingent upon developing or reporting predetermined results;
6. My compensation for completing this assignment is not contingent upon the development or reporting of a predetermined value or direction in value that favors the cause of the client, the amount of the value opinion, the attainment of a stipulated result, or the occurrence of a subsequent event directly related to the intended use of the appraisal;
7. 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 Standards of Professional Appraisal Practice of the Appraisal Institute;
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. The use of this report is subject to the requirements of the Appraisal Institute relating to review by its duly authorized representatives;
10. I have not made a personal inspection of the property that is the subject of this report, and;
11. No one provided significant real property appraisal assistance to the person signing this certification.
12. As of the date of this report I have completed the continuing education program for Designated Members of the Appraisal Institute;
13. I have not completed any other appraisal related assignments regarding this project within the three years prior to engagement in this current assignment.

Disclosure of the contents of this appraisal report is governed by the bylaws and regulations of the Appraisal Institute and the National Association of Realtors.

Neither all nor any part of the contents of this appraisal report shall be disseminated to the public through advertising media, public relations media, news media, or any other public means of communications without the prior written consent and approval of the undersigned.




Richard C. Kirkland, Jr., MAI  
State Certified General Appraiser



# Kirkland Appraisals, LLC

Richard C. Kirkland, Jr., MAI  
9408 Northfield Court  
Raleigh, North Carolina 27603  
Mobile (919) 414-8142  
[rkirkland2@gmail.com](mailto:rkirkland2@gmail.com)  
[www.kirklandappraisals.com](http://www.kirklandappraisals.com)

## ***Professional Experience***

<b>Kirkland Appraisals, LLC</b> , Raleigh, N.C. Commercial appraiser	2003 – Present
<b>Hester &amp; Company</b> , Raleigh, N.C. Commercial appraiser	1996 – 2003

## ***Professional Affiliations***

<b>MAI</b> (Member, Appraisal Institute) designation #11796	2001
<b>NC State Certified General Appraiser</b> # A4359	1999
<b>VA State Certified General Appraiser</b> # 4001017291	
<b>SC State Certified General Appraiser</b> # 6209	
<b>KY State Certified General Appraiser</b> # 5522	
<b>TN State Certified General Appraiser</b> # 6240	
<b>FL State Certified General Appraiser</b> # RZ3950	
<b>GA State Certified General Appraiser</b> # 321885	
<b>MI State Certified General Appraiser</b> # 1201076620	
<b>PA State Certified General Appraiser</b> # GA004598	
<b>OH State Certified General Appraiser</b> # 2021008689	
<b>IN State Certified General Appraiser</b> # CG42100052	
<b>IL State Certified General Appraiser</b> # 553.002633	
<b>LA State Certified General Appraiser</b> # APR.05049-CGA	
<b>TX State Certified General Appraiser</b> # 1380528 G	

## ***Education***

<b>Bachelor of Arts in English</b> , University of North Carolina, Chapel Hill	1993
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## ***Continuing Education***

Uniform Standards of Professional Appraisal Practice Update	2024
ASFMRA Integrated Approaches to Value (A360)	2024
ASFMRA Best in Business Ethics	2023
Appraising Natural Resources Series – Oil, Gas & Minerals	2023
Appraisal of Industrial and Flex Buildings	2023
Commercial Land Valuation	2023
Fair Housing, Bias and Discrimination	2023
Pennsylvania State Mandated Law for Appraisers	2023
What NOT to Do (NCDOT Course)	2023
The Income Approach – A Scope of Work Decision	2023
Valuation of Residential Solar	2022
Introduction to Commercial Appraisal Review	2022
Residential Property Measurement and ANSI	2022
Business Practices and Ethics	2022
Uniform Standards of Professional Appraisal Practice Update	2022
Sexual Harassment Prevention Training	2021



Appraisal of Land Subject to Ground Leases	2021
Florida Appraisal Laws and Regulations	2020
Michigan Appraisal Law	2020
Uniform Standards of Professional Appraisal Practice Update	2020
Uniform Appraisal Standards for Federal Land Acquisitions (Yellow Book)	2019
The Cost Approach	2019
Income Approach Case Studies for Commercial Appraisers	2018
Introduction to Expert Witness Testimony for Appraisers	2018
Appraising Small Apartment Properties	2018
Florida Appraisal Laws and Regulations	2018
Uniform Standards of Professional Appraisal Practice Update	2018
Appraisal of REO and Foreclosure Properties	2017
Appraisal of Self Storage Facilities	2017
Land and Site Valuation	2017
NCDOT Appraisal Principles and Procedures	2017
Uniform Standards of Professional Appraisal Practice Update	2016
Forecasting Revenue	2015
Wind Turbine Effect on Value	2015
Supervisor/Trainee Class	2015
Business Practices and Ethics	2014
Subdivision Valuation	2014
Uniform Standards of Professional Appraisal Practice Update	2014
Introduction to Vineyard and Winery Valuation	2013
Appraising Rural Residential Properties	2012
Uniform Standards of Professional Appraisal Practice Update	2012
Supervisors/Trainees	2011
Rates and Ratios: Making sense of GIMs, OARs, and DCFs	2011
Advanced Internet Search Strategies	2011
Analyzing Distressed Real Estate	2011
Uniform Standards of Professional Appraisal Practice Update	2011
Business Practices and Ethics	2011
Appraisal Curriculum Overview (2 Days – General)	2009
Appraisal Review - General	2009
Uniform Standards of Professional Appraisal Practice Update	2008
Subdivision Valuation: A Comprehensive Guide	2008
Office Building Valuation: A Contemporary Perspective	2008
Valuation of Detrimental Conditions in Real Estate	2007
The Appraisal of Small Subdivisions	2007
Uniform Standards of Professional Appraisal Practice Update	2006
Evaluating Commercial Construction	2005
Conservation Easements	2005
Uniform Standards of Professional Appraisal Practice Update	2004
Condemnation Appraising	2004
Land Valuation Adjustment Procedures	2004
Supporting Capitalization Rates	2004
Uniform Standards of Professional Appraisal Practice, C	2002
Wells and Septic Systems and Wastewater Irrigation Systems	2002
Appraisals 2002	2002
Analyzing Commercial Lease Clauses	2002
Conservation Easements	2000
Preparation for Litigation	2000
Appraisal of Nonconforming Uses	2000
Advanced Applications	2000
Highest and Best Use and Market Analysis	1999
Advanced Sales Comparison and Cost Approaches	1999
Advanced Income Capitalization	1998

Valuation of Detrimental Conditions in Real Estate	1999
Report Writing and Valuation Analysis	1999
Property Tax Values and Appeals	1997
Uniform Standards of Professional Appraisal Practice, A & B	1997
Basic Income Capitalization	1996



## 8.9 Community Meeting Summary

## Edwards Solar Community Meeting Summary

1/22/2025

A community meeting was held on Wednesday, January 22<sup>nd</sup>, 2025, at 6pm for the Edwards Solar Project. The meeting was held at the Glade Hill Fire and EMS Station which is roughly a half of a mile north of the proposed project location. Adjoining property owners were notified by mail, and the meeting was advertised in the Franklin News-Post seven days prior to the meeting. Per the Franklin County Zoning Ordinance, information about the materials and components for the construction, maintenance, and decommissioning of solar panels was available. Project maps and materials were on display along with informational flyers and a binder containing the proposed application materials. The meeting was well attended with roughly 30 guests. The project landowners as well as Union Hall District Supervisor Dan Quinn and Planning Commissioner Victor Evans were in attendance. Supervisors Mike Carter and Lorie Smith were also in attendance as well as four Franklin County staff members. There were members of the surrounding community in attendance. There were no adjacent landowners in attendance.

Included below is a summary of the topics discussed at the community meeting, the community meeting sign in sheet, the invitation that was mailed to adjoining landowners, and an affidavit for the advertisement of the community meeting.

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2.2 Community Meeting Invitation mailed to Adjoining Landowners .....	6
2.3 Affidavit for the Advertisement of the Community Meeting .....	7



Below is a summary of the discussions held and input received at the community meeting.

1. Will this project impact Smith Mountain Lake?

- The project is in the Leesville Lake watershed not Smith Mountain Lake. There are not anticipated impacts to Leesville Lake or Smith Mountain Lake
- Edwards solar will be designed to properly manage stormwater and control erosion. The project will be designed to meet current DEQ handbook standards.
- The project's stormwater and erosion control plans will be reviewed by a third party chosen by Franklin County prior to site plan approval
- The project is in the Leesville Lake watershed

2. Will the project be visible?

- The project will be fully screened from the public view.
- Due to the existing landscape, the majority of the project buffer will consist of existing dense evergreen natural buffer.

3. What is a distribution project and how is that profitable?

- A distribution scale project generates power at the distribution level of the grid. This means that the power is used locally.
- Distribution scale projects generally require minimal upgrades to the grid and do not require the developer to build a new substation.
- There are several ways of commercializing the project including selling the project to the utility, a power purchase agreement, or participating in Appalachian Power's upcoming shared solar program.

4. What will the construction timeline be?

- The duration of construction depends on the megawatt capacity and the acreage of the solar farm.
- A typical project construction will require between 6-12 months
- Construction may take place in a phased approach

5. How big is the project / how much land is needed?

- The project parcels total 108.87 acres.
- The proposed fenced area is 36.5 acres
- The proposed area under panels is 25 acres

6. Where are the panels produced?

- At this stage, the project does not have a panel supplier lined up. Per the zoning ordinance, the equipment used for the facility will be fully up to national standards. We will need to submit the panels and other equipment types to the county as part of our final site plan review before any construction can take place. Panel specifications and warranties are included in the site plan review submission.

7. How long will the project last?

- The life of the project will have an operational lifetime of approximately 40 years

8. What happens at the end of the project's life?

- As a condition of project permitting, a decommissioning bond or other form of financial security will be established to ensure timely removal of the project
- Upon removal of the equipment, the land will be returned to the landowner for whatever use they see fit.

9. Will there be any chemical runoff / leaching?

- There will be no chemical runoff or leaching from the panels. Solar panels contain inert materials encapsulated in hardened glass. If panels were to be damaged or malfunctioning, they would be removed and recycled or returned to the manufacturer.

10. What makes CEP different from other developers?

- CEP is a Virginia based company that only works in the Commonwealth. CEP prides itself on building strong relationships with community members and elected officials.

11. Has CEP constructed any projects?

- CEP has partnered with utilities to commercialize all of their projects to this point. However, CEP does plan to build, own and operate projects in the future. CEP's team



has over 70 years of combined experience of developing and constructing solar farms.

12. Will this project increase my power bill?

- No, developing and building this project will not increase your electric bill
- CEP Solar is developing and financing the project through private investment. CEP does not have control over how Appalachian Power Company sets their prices.

## 2.1 Community Meeting Sign in Sheet





2.2 Community Meeting  
Invitation Mailed to  
Adjoining Landowners



[Name]  
[Street Address]  
[City, State, Zip Code]

Dear Neighbor,

I am contacting you to introduce myself and to share information about Edwards Solar Farm, a project that we are proposing to develop in Franklin County.

The entrance to the project will be off of Jacks Creek Road between East Edwardsway Road and the Rockydale Jacks Mountain Quarry (Parcel IDs: 0660003900, 0660010100). I have included the following documents to provide more details about the project, who we are as a company, and general information about solar projects.

**Project Overview** – Provides basic project details including size, location, and community benefits.

**Company Overview** – Provides an overview of CEP Solar's purpose and mission.

**Frequently Asked Questions** – Provides answers to frequently asked questions about solar farms.

As the project manager, I am dedicated to ensuring that Edwards Solar Farm works in the best interest of the community. My colleagues and I will be hosting a community meeting to discuss the project with local landowners and other stakeholders. You are invited to attend, and your feedback and questions are appreciated.

**Edwards Solar Farm Community Meeting**  
Wednesday, January 22nd from 6:00-8:00PM  
Glade Hill Volunteer Fire Department  
9825 Old Franklin Turnpike, Union Hall, VA, 24176

If you have any questions or comments ahead of the meeting or if you are unable to attend, feel free to reach out to me by phone or email any time using the contact information below. I look forward to meeting with you.

Best,



Paul Cozens | Project Manager | CEP Solar, LLC  
804-398-0628 | [paul.cozens@cepsolar.com](mailto:paul.cozens@cepsolar.com)  
2201 W Broad St. Suite 200, Richmond, VA 23220  
[www.cepsolar.com](http://www.cepsolar.com)

## Edwards Solar

CEP Solar is a Virginia-based company that partners with landowners, communities, and customers to develop solar and storage projects across Virginia, delivering **long-term economic and environmental benefits** to the Commonwealth. We share Franklin County's commitment to ensure that the best practices in solar development are being implemented in the County and we look forward to demonstrating that commitment with this Project.



### Project Overview

- 5 MWac capacity, enough to power roughly **674 homes**
- Electrons generated will be sent to the **Penhook Substation**
- Located on two privately owned parcels of land
- The estimated project area is 36.5 acres.
- The entire panel area will have **minimal external visibility** from the public roads using existing and proposed vegetative buffers.



## Community Benefits

Solar farms generate **affordable and emission-free electricity**. At the end of the project's operational life, the solar panels are removed and the land will be **returned to its original use**.

Solar farms support agriculture-based communities and have **no material burden** on the county's resources.

Some benefits include:



**Local job** generation



**Significant investment** for local economy



**Increased tax revenue** for the county



**'Land Banking'** preserves parcels for future agriculture, silviculture, or another use



We partner with **landowners**, **communities**, and **customers** to develop solar and storage projects across Virginia, delivering long-term economic and environmental benefits to the Commonwealth.

---

## Our Purpose

CEP Solar develops solar farms to:

- **sustain** local communities
- **generate** carbon free electricity
- **deliver** local economic benefits
- **create** clean economy jobs

## Our Mission

to develop **responsibly** sited and designed solar projects that will quietly generate **economic and environmental benefits** for decades to come!



# Frequently Asked Questions

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## Why Solar Energy?

Solar Energy is the most **abundant** renewable energy resource available today. A solar farm produces **cost effective** and **emission free** electricity. It also contributes to our **energy independence**, and benefits host communities through **additional jobs** and revenues for new infrastructure projects and local government services.



## How are we protecting the community's rural character?

Solar farms generally do not exceed **fifteen feet in height** and are **easily screened from view** by vegetative buffers. A project site plan will include measures to add buffers to provide screening where there is not pre-existing vegetation.

## Who uses/buys the electricity?

Electricity produced by a solar farm is typically sold to a dedicated customer or utility, and as such can support **local demand** and **nearby communities**.



## How are solar sites selected?

Due to a variety of constraints, there are a **limited number** of viable locations for solar in any county or municipality. Some site-specific factors include accessibility, topography, wetland areas, and proximity to existing infrastructure. Broader considerations include minimizing impacts on environmental and historic resources.



## How long will construction take?

The duration of construction depends on the megawatt capacity and the acreage of the solar farm. A typical project construction will require between **6-12 months**, while some larger projects may take longer, and they are usually constructed in a phased approach.

## What will happen at the end of project life?

As a condition of project permitting, a decommissioning bond or other form of financial security will be established to ensure **timely removal** of the project at **no cost to taxpayers**. Upon removal of the equipment, the underlying ground will be available for its **original use**.





2.3 Affidavit for the  
Advertisement of the  
Community Meeting

**AFFIDAVIT OF PUBLICATION**

State of Florida, County of Broward, ss:

Rachel Cozart, being first duly sworn, deposes and says: That (s)he is a duly authorized signatory of Column Software, PBC, duly authorized agent of Franklin News-Post, a newspaper printed and published in the Town of Rocky Mount, County of Franklin, State of Virginia, and that this affidavit is Page 1 of 2 with the full text of the sworn-to notice set forth on the pages that follow, and the hereto attached:

**PUBLICATION DATES:**

Jan. 15, 2025

**NOTICE ID:** AasG8iyI563wTkxBcox7

**PUBLISHER ID:** COL-1500231

**NOTICE NAME:** Edwards Solar Public Notice

**Publication Fee:** 78.89

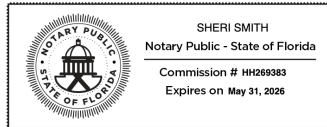
**Ad Size:** 2 X 13 L

**Category:** General Legal Notice

Under penalty of perjury, I, the undersigned affiant swear or affirm that the statements above are true and accurate to the best of my knowledge and belief.

*Rachel Cozart*

(Signed) \_\_\_\_\_



**VERIFICATION**

State of Florida  
County of Broward

Subscribed in my presence and sworn to before me on this: 01/15/2025

*S. Smith*

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

Notarized remotely online using communication technology via Proof.



## **Edwards Solar Community Meeting**

Edwards Solar Farm, LLC will hold a Community Meeting open house for the Edwards Solar Farm. The meeting will take place on Wednesday, January 22nd, 2025 from 6 to 8 PM at the new Glade Hill Fire / EMS Station located at 9825 Old Franklin Turnpike Union Hall, VA 24176. The purpose of the Community Meeting is to provide information and answer questions regarding the proposed Solar Farm. Edwards Solar is a 5 MWac distribution scale project. The project is located on Parcel IDs: 0660003900, 0660010100 off Jacks Creek Road in the Union Hall district of Franklin County. For more information on the meeting please call Paul Cozens at 804-789-4040 ext. 715 or send an e-mail to paul.cozens@cepsolar.com.  
COL-1500231

## 8.10 Site Control



## OPTION TO LEASE

This Option to Lease (this “**Agreement**”) is entered into as of the 29th day of August, 2022 (the “**Effective Date**”), by and between Penny E. Blue, Ruby E. Penn and Ronald B. Edwards (“**Landlord**”) and CEP Solar, LLC, a Virginia limited liability company (“**Tenant**”). Tenant and Landlord are sometimes referred to herein individually as a “**Party**” and collectively as the “**Parties.**”

### RECITALS:

- A. WHEREAS, Landlord is the owner of that certain real property located in Franklin County, Commonwealth of Virginia, as more particularly described in Exhibit A attached hereto and incorporated by reference herein (the “**Property**”); and
- B. WHEREAS, the Landlord is willing to enter into a definitive ground lease and easement agreement for the construction and operation of a Solar Energy System, as hereafter defined, on the Property under the terms agreed to in this Agreement.

NOW, THEREFORE, for good and valuable consideration, the receipt and sufficiency whereof are hereby mutually acknowledged, and in consideration of the mutual benefits and obligations of the parties hereunder, the parties agree as follows:

1. Lease and Easement Option. Landlord hereby grants Tenant an exclusive option (the “**Option**”) (i) to enter into a Ground Lease and Easement Agreement for the purpose of constructing, installing, and operating any equipment and facilities used to harness sunlight for photovoltaic or solar thermal energy generation and to store such energy, including but not limited to solar energy collection cells, panels, and mirrors, utility scale energy storage facilities and batteries, and any support structures, braces, wiring, plumbing, and related equipment (collectively “**Solar Facilities**”), (ii) to enter into easements on, over, and across the Property for electrical transmission facilities and unobstructed access to solar energy resources, and (iii) to enter into any other easements and rights necessary or useful in the construction and operation of the Solar Facilities. Such lease shall be in significant compliance with the terms set forth in Exhibit B attached hereto and made a part hereof, subject to modifications as contemplated herein or as agreed by the parties. Landlord understands that this Agreement is not an offer or commitment by Tenant to conclude any lease, and until such time as a definitive lease is executed between the Parties, this Agreement shall govern.
2. Option Period. The lease option period commences on the Effective Date and shall continue for a period of three (3) years (“**Option Period**”). Tenant may extend the Option Period for an additional one (1), one (1) year period (up to a maximum of four (4) years after the Effective Date) by providing notice to Landlord no later than prior to the expiration of each annual Option Period.
3. Execution of Documents; Exercise of Option. Concurrently with the execution and delivery of this Agreement, Landlord shall execute and deliver the Memorandum of Option to Lease attached hereto as Exhibit C (the “**Memorandum of Option**”). Tenant may record the Memorandum of Option at any time in its sole discretion. Tenant may exercise the Option at any time during the Option Term by delivering a Lease and Easement Agreement in a form prepared by Tenant (the “**Lease**”) substantially containing the terms set forth on Exhibit B attached hereto plus other commercially reasonable and customary terms for a solar energy lease. Landlord shall in a timely manner respond to Tenant with any objections or proposed modifications to the Lease, for which the Parties shall negotiate in good faith and in accordance with commercially reasonable and customary practices within the solar energy industry. The Lease shall

concurrently terminate the Option with respect to a portion of the Property pursuant to Section 7 below, at Tenant's sole discretion, by designating the Option Premises subject to the Lease, as defined below.

4. Exclusivity. Landlord grants Tenant exclusive rights, during the Option Term, to assess the feasibility of locating Solar Facilities on the Property. During the Option Term (defined below), Landlord shall not make the Property or any portion of the Property available for purchase, lease, or other encumbrance (collectively, "**Interfering Activity**") to any Party other than Tenant (or Tenant's successors and/or assigns), without the express written consent of Tenant, except to the extent that such Interfering Activity shall not materially affect the rights granted to Tenant upon execution of the Lease.

5. Studies and Testing. Tenant and its representatives, agents and contractors shall have the right to enter upon the Property to perform inspections and conduct such testing as Tenant may reasonably require for the purposes of determining the suitability of the Property for the Solar Facilities including, but not limited to, surveying, biological and cultural studies, and conducting soil and geotechnical testing of the Property. Tenant will provide prior notice of required site access and will coordinate scheduling and testing activities with Landlord. All data, analyses and other proceeds from such inspections and testing shall be the sole property of Tenant. Tenant shall restore the Property to its substantially original condition after any such inspections or testing performed by Tenant or its representatives, agents and contractors are completed, excepting reasonable wear and tear, including reimbursement for crop damage at market commodity rates.

If Tenant terminates this Agreement for any reason rather (other than Landlord's default), Tenant shall deliver to Landlord at no cost to Landlord all tests, surveys and/or studies undertaken by Tenant (excluding, however, any and all materials and information deemed privileged and confidential) (the "**Reports**"). Landlord specifically disclaims any reliance on the Reports, Landlord makes no warranty of any kind with respect to the Reports, express or implied, including any implied warranty of merchantability or fitness for a particular purpose. Landlord agrees that Tenant and its officers, directors, employees, agents or contractors are not liable for any indirect, incidental, special or consequential damages by Landlord's use of or access to the Reports, by you or any third party, whether in an action in contract or tort or based on a warranty.

Prior to any inspection being undertaken hereunder, Tenant shall deliver a certificate of insurance evidencing the existence of a general liability insurance policy naming Owner as an additional insured with policy limits of not less than One Million Dollars (\$1,000,000.00) in the aggregate. Notwithstanding the foregoing, Tenant shall indemnify and hold Landlord harmless from and against any and all claims, liabilities and/or obligations for injury to person or damage to property to the extent resulting from or arising out of the activities of Tenant, its representatives and agent on the Property, excluding, however, claims arising out of any loss, liability, cost or expense to the extent solely arising from or relating to the acts or omissions of Landlord or Landlord's representatives or agents. All of Buyer's obligations set forth in this Section 5, including, without limitation, indemnification and/or restoration obligations shall survive termination of this Agreement.

Tenant shall provide Landlord with periodic updates as to the status of its efforts to obtain all governmental authorization and approvals necessary for the Solar Facilities.

6. Compensation. [REDACTED]

7. Termination



- a. Tenant shall have the right to terminate this Agreement as to all or any part of the Property at any time, effective upon written notice to Landlord from Tenant. If such termination is as to only part of the Property, Tenant must contemporaneously deliver a site plan clearly delineating which portion of the Property remains subject to this Agreement (the “**Option Premises**”), and this Agreement shall remain in effect as to the Option Premises, and Tenant may record an amendment to the Memorandum of Option to provide for definition of the Option Premises which shall remain subject to the terms of this Agreement.
  - b. This Agreement shall terminate:
    - i. Upon Tenant’s delivery of written notice of termination to Landlord;
    - ii. If Tenant fails to deliver the Notice of Exercise on or before the expiration of the Option Period;
    - iii. If Tenant fails to make an Option Payment when due, and fails to cure such breach within thirty days after written notice from Landlord; or
    - iv. Upon the expiration of the Option Period, as extended.
8. Landlord’s Representations and Warranties. Landlord hereby represents and warrants that:
- a. Landlord holds 100% of the ownership interest in and to the Property, is the sole owner of the Property and holds fee simple title to the Property.
  - b. Landlord has listed all known mortgages, deeds of trust or other foreclosable instruments, leases, options to lease, purchase agreements, options to purchase, easements, security interests, licenses, liens and other encumbrances applicable to the Property on Exhibit D hereto (collectively, the “**Existing Encumbrances**”).
  - c. To Landlord’s reasonable knowledge, the Existing Encumbrances will not materially interfere with the rights granted to Tenant under this Agreement or with Tenant’s intended use of the Property for the generation, delivery, storage and sale of solar energy.
  - d. To Landlord’s reasonable knowledge, Landlord has provided to Tenant all information in its possession regarding the zoning classification of the Property.
  - e. To Landlord’s reasonable knowledge, the Property is not in violation of any federal, state or local law, rule or regulation, whether related to zoning, environmental matters, or otherwise. Landlord has not received any communication from any governmental authority that the Property may be in violation of any of the foregoing.
  - f. To Landlord’s knowledge, after due inquiry, there have been no releases of any hazardous materials (as defined by applicable law) on or affecting the Property.
9. Documentation Relating to the Property. Within thirty (30) days after the Effective Date, Landlord shall provide to Tenant copies of all title reports, environmental studies and reports, engineering reports, surveys, soil or geological tests, permits, contracts, agreements, and approvals from governmental authorities relating to the Property that are within Landlord’s possession or control.
10. No Commissions. No real estate commissions or any other commissions shall be paid in connection with this transaction.
11. Successors and Heirs. This Agreement shall run with the Property while the Agreement remains in effect and shall be binding upon the Landlord, its respective heirs, successors, assigns and personal representatives.
12. Notices. All notices under this Agreement shall be in writing and shall be deemed received: if hand-

delivered to the party to whose attention it is directed; three days after mailing if sent, postage prepaid by United States registered or certified mail, return receipt requested; or on the next business day when delivered via overnight delivery by a nationally recognized courier service, return receipt requested; and addressed as follows:

If intended for Tenant:

CEP Solar, LLC

Attn: Richard H. Wright

1310 Roseneath Rd, Suite 200

Richmond, VA 23230

Phone: (804) 912-7999

If intended for Landlord:

Penny E. Blue, Ruby E. Penn, & Ronald B. Edwards

Attn: Penny Edwards Blue

10440 Old Franklin Tpke

Union Hall, VA 24176

Or at such other address or to such other party as either party may designate in writing.

13. Assignment. Tenant may assign all or part of its interests in this Agreement to one or more assignees or sub assignees without the consent of Landlord.

14. Confidentiality. Landlord shall maintain in confidence all information pertaining to the financial terms of or payments under this Agreement. Landlord shall not publish or otherwise disclose such information to others except to accountants, lawyers, or other professionals who receive such information under an obligation of confidentiality; buyers of the Property; lenders that have a security interest in the Property; or family members who agree to keep such information confidential. The provisions of this Section 10 shall survive the termination or expiration of this Agreement.

15. Memorandum. Neither Tenant nor Landlord shall record this Agreement in its entirety. Tenant shall be responsible for the cost of preparing and recording the Memorandum of Option to be filed with the County Recorder in lieu of recording a full copy of this Agreement.

16. Entire Agreement. This Agreement contains the entire agreement between the parties relating to the subject matter hereof, and all prior or contemporaneous agreements are merged herein.

17. Amendment. This Agreement may not be amended, enlarged, modified, or altered except in writing signed by the parties hereto and identified as an amendment of this Agreement.

18. Specific Performance. In light of the unique nature of the Property, Tenant shall have the right to seek injunctive relief and specific performance of Landlord's obligations hereunder, including the obligation to enter into a Lease Agreement in accordance with Section 3.

19. Governing Law. This Agreement shall be construed and governed in accordance with the laws of the Commonwealth of Virginia, without regard to its conflict of laws principles.

20. Attorneys' Fees. If Landlord or Tenant institutes legal proceedings against the other arising out of the terms of this Agreement or the performance hereunder, the prevailing party may recover from the other all reasonable attorneys' fees, costs and expenses incurred in any such action.



21. Further Assurances. Landlord will, whenever reasonably requested by Tenant, execute, acknowledge and deliver, or cause to be executed, acknowledged and delivered, all instruments and documents as may be reasonably necessary in order to complete the transactions herein provided and to carry out the terms and provisions of this Agreement. In the event of any inaccuracy in the description of the Property (or any portion thereof), or in the description of the parties in whom title to the Property (or any portion thereof) is vested, Landlord and Tenant shall amend this Agreement to correct such inaccuracy in order to accomplish the intent of Landlord and Tenant.

22. Lease Controlling. In the event a conflict arises between the terms and conditions of the Lease (when executed) and this Agreement, the Lease shall control. Landlord acknowledges that this Agreement is not an offer or commitment by Tenant to execute any lease with Landlord, and until such time as a definitive lease is executed between the Parties, this Agreement shall govern.

23. Counterparts. This Agreement may be executed in any number of counterparts, each of which shall be an original and all of which, when taken together, shall constitute one and the same document. Transmission by facsimile or electronic transmission by pdf of an executed counterpart of this Agreement shall be deemed to constitute due and sufficient delivery of such counterpart.

24. Waiver. If either Party fails to require the other to perform any term of this Agreement, that failure does not prevent the Party from later enforcing that term. If either Party waives the other Party's breach of a term, that waiver is not treated as a continuing waiver or otherwise as waiving a later breach of that term.

25. Waiver of Consequential Damages. IN NO EVENT SHALL TENANT BE LIABLE TO LANDLORD FOR ANY SPECIAL, CONSEQUENTIAL, INCIDENTAL, OR INDIRECT DAMAGES OR LOST PROFITS, HOWEVER CAUSED, ON ANY THEORY OF LIABILITY EVEN IF ADVISED OF SUCH A POSSIBILITY.

26. Waiver of Jury Trial. TO THE EXTENT PERMITTED BY LAW, EACH OF THE PARTIES KNOWINGLY, VOLUNTARILY AND INTENTIONALLY WAIVES THE RIGHT TO A TRIAL BY JURY IN RESPECT OF ANY LITIGATION ARISING OUT OF, UNDER OR IN CONNECTION WITH THIS LEASE AND ANY OTHER AGREEMENT CONTEMPLATED TO BE EXECUTED IN CONJUNCTION HERewith. THIS PROVISION IS A MATERIAL INDUCEMENT TO EACH OF THE PARTIES FOR ENTERING INTO THIS AGREEMENT.

27. No Third Party Beneficiaries. No provision of this Agreement is intended to nor shall it in any way inure to the benefit of any third party so as to constitute any such person a third party beneficiary under this Agreement, or of any one or more of the terms of this Agreement, or otherwise give rise to any cause of action in any person not a party to this Agreement.

28. Rights and Remedies Cumulative. To the extent permitted by law, the rights and remedies in this Agreement are cumulative and not exclusive of any other right or remedy that might be available under this Agreement, at law or in equity.

[SIGNATURES FOLLOW]

IN WITNESS WHEREOF, the Parties have executed this Lease as of the date first written above, each intending the same to be a sealed instrument.

**LANDLORD:**

**PENNY E. BLUE**

By: \_\_\_\_\_

Name: \_\_\_\_\_

Title: \_\_\_\_\_

**RUBY E. PENN**

By: Ruby Penn

Name: Ruby Penn

Title: Co-Owner

**RONALD B. EDWARDS**

By: Ronald Brent Edwards

Name: Ronald Brent Edwards

Title: Co-Owner



**TENANT:**

**CEP SOLAR, LLC,**  
a Virginia limited liability company

By:  \_\_\_\_\_

Name: Richard H. Wright  
Title: Manager

**EXHIBIT A**

**LEGAL DESCRIPTION OF PROPERTY**

The Property is all of the following tracts or parcels of land, situated in Franklin County, Commonwealth of Virginia consisting of approximately 100.4 acres, more particularly described as follows:

Parcel Number(s) and acreage:

1. 0660010100 and approximately 100.4 acres

Most recent deed of record: Deed, Dated February 1, 2017, recorded in the Clerk's Office for Franklin County, Virginia in Deed Book 1118, at page 1083.

In the event of inaccuracies in the foregoing legal description, Landlord and Tenant shall amend this Lease to correct such inaccuracies.



## OPTION TO LEASE

This Option to Lease (this “**Agreement**”) is entered into as of the 29th day of August, 2022 (the “**Effective Date**”), by and between Ronald B. Edwards (“**Landlord**”) and CEP Solar, LLC, a Virginia limited liability company (“**Tenant**”). Tenant and Landlord are sometimes referred to herein individually as a “**Party**” and collectively as the “**Parties**.”

### RECITALS:

- A. WHEREAS, Landlord is the owner of that certain real property located in Franklin County, Commonwealth of Virginia, as more particularly described in Exhibit A attached hereto and incorporated by reference herein (the “**Property**”); and
- B. WHEREAS, the Landlord is willing to enter into a definitive ground lease and easement agreement for the construction and operation of a Solar Energy System, as hereafter defined, on the Property under the terms agreed to in this Agreement.

NOW, THEREFORE, for good and valuable consideration, the receipt and sufficiency whereof are hereby mutually acknowledged, and in consideration of the mutual benefits and obligations of the parties hereunder, the parties agree as follows:

1. Lease and Easement Option. Landlord hereby grants Tenant an exclusive option (the “**Option**”) (i) to enter into a Ground Lease and Easement Agreement for the purpose of constructing, installing, and operating any equipment and facilities used to harness sunlight for photovoltaic or solar thermal energy generation and to store such energy, including but not limited to solar energy collection cells, panels, and mirrors, utility scale energy storage facilities and batteries, and any support structures, braces, wiring, plumbing, and related equipment (collectively “**Solar Facilities**”), (ii) to enter into easements on, over, and across the Property for electrical transmission facilities and unobstructed access to solar energy resources, and (iii) to enter into any other easements and rights necessary or useful in the construction and operation of the Solar Facilities. Such lease shall be in significant compliance with the terms set forth in Exhibit B attached hereto and made a part hereof, subject to modifications as contemplated herein or as agreed by the parties. Landlord understands that this Agreement is not an offer or commitment by Tenant to conclude any lease, and until such time as a definitive lease is executed between the Parties, this Agreement shall govern.
2. Option Period. The lease option period commences on the Effective Date and shall continue for a period of three (3) years (“**Option Period**”). Tenant may extend the Option Period for an additional one (1), one (1) year period (up to a maximum of four (4) years after the Effective Date) by providing notice to Landlord no later than prior to the expiration of each annual Option Period.
3. Execution of Documents; Exercise of Option. Concurrently with the execution and delivery of this Agreement, Landlord shall execute and deliver the Memorandum of Option to Lease attached hereto as Exhibit C (the “**Memorandum of Option**”). Tenant may record the Memorandum of Option at any time in its sole discretion. Tenant may exercise the Option at any time during the Option Term by delivering a Lease and Easement Agreement in a form prepared by Tenant (the “**Lease**”) substantially containing the terms set forth on Exhibit B attached hereto plus other commercially reasonable and customary terms for a solar energy lease. Landlord shall in a timely manner respond to Tenant with any objections or proposed modifications to the Lease, for which the Parties shall negotiate in good faith and in accordance with commercially reasonable and customary practices within the solar energy industry. The Lease shall

concurrently terminate the Option with respect to a portion of the Property pursuant to Section 7 below, at Tenant's sole discretion, by designating the Option Premises subject to the Lease, as defined below.

4. Exclusivity. Landlord grants Tenant exclusive rights, during the Option Term, to assess the feasibility of locating Solar Facilities on the Property. During the Option Term (defined below), Landlord shall not make the Property or any portion of the Property available for purchase, lease, or other encumbrance (collectively, "**Interfering Activity**") to any Party other than Tenant (or Tenant's successors and/or assigns), without the express written consent of Tenant, except to the extent that such Interfering Activity shall not materially affect the rights granted to Tenant upon execution of the Lease.

5. Studies and Testing. Tenant and its representatives, agents and contractors shall have the right to enter upon the Property to perform inspections and conduct such testing as Tenant may reasonably require for the purposes of determining the suitability of the Property for the Solar Facilities including, but not limited to, surveying, biological and cultural studies, and conducting soil and geotechnical testing of the Property. Tenant will provide prior notice of required site access and will coordinate scheduling and testing activities with Landlord. All data, analyses and other proceeds from such inspections and testing shall be the sole property of Tenant. Tenant shall restore the Property to its substantially original condition after any such inspections or testing performed by Tenant or its representatives, agents and contractors are completed, excepting reasonable wear and tear, including reimbursement for crop damage at market commodity rates.

If Tenant terminates this Agreement for any reason rather (other than Landlord's default), Tenant shall deliver to Landlord at no cost to Landlord all tests, surveys and/or studies undertaken by Tenant (excluding, however, any and all materials and information deemed privileged and confidential) (the "**Reports**"). Landlord specifically disclaims any reliance on the Reports, Landlord makes no warranty of any kind with respect to the Reports, express or implied, including any implied warranty of merchantability or fitness for a particular purpose. Landlord agrees that Tenant and its officers, directors, employees, agents or contractors are not liable for any indirect, incidental, special or consequential damages by Landlord's use of or access to the Reports, by you or any third party, whether in an action in contract or tort or based on a warranty.

Prior to any inspection being undertaken hereunder, Tenant shall deliver a certificate of insurance evidencing the existence of a general liability insurance policy naming Owner as an additional insured with policy limits of not less than One Million Dollars (\$1,000,000.00) in the aggregate. Notwithstanding the foregoing, Tenant shall indemnify and hold Landlord harmless from and against any and all claims, liabilities and/or obligations for injury to person or damage to property to the extent resulting from or arising out of the activities of Tenant, its representatives and agent on the Property, excluding, however, claims arising out of any loss, liability, cost or expense to the extent solely arising from or relating to the acts or omissions of Landlord or Landlord's representatives or agents. All of Buyer's obligations set forth in this Section 5, including, without limitation, indemnification and/or restoration obligations shall survive termination of this Agreement.

Tenant shall provide Landlord with periodic updates as to the status of its efforts to obtain all governmental authorization and approvals necessary for the Solar Facilities.

6. Compensation. [REDACTED]

7. Termination



- a. Tenant shall have the right to terminate this Agreement as to all or any part of the Property at any time, effective upon written notice to Landlord from Tenant. If such termination is as to only part of the Property, Tenant must contemporaneously deliver a site plan clearly delineating which portion of the Property remains subject to this Agreement (the “**Option Premises**”), and this Agreement shall remain in effect as to the Option Premises, and Tenant may record an amendment to the Memorandum of Option to provide for definition of the Option Premises which shall remain subject to the terms of this Agreement.
  - b. This Agreement shall terminate:
    - i. Upon Tenant’s delivery of written notice of termination to Landlord;
    - ii. If Tenant fails to deliver the Notice of Exercise on or before the expiration of the Option Period;
    - iii. If Tenant fails to make an Option Payment when due, and fails to cure such breach within thirty days after written notice from Landlord; or
    - iv. Upon the expiration of the Option Period, as extended.
8. Landlord’s Representations and Warranties. Landlord hereby represents and warrants that:
  - a. Landlord holds 100% of the ownership interest in and to the Property, is the sole owner of the Property and holds fee simple title to the Property.
  - b. Landlord has listed all known mortgages, deeds of trust or other foreclosable instruments, leases, options to lease, purchase agreements, options to purchase, easements, security interests, licenses, liens and other encumbrances applicable to the Property on Exhibit D hereto (collectively, the “**Existing Encumbrances**”).
  - c. To Landlord’s reasonable knowledge, the Existing Encumbrances will not materially interfere with the rights granted to Tenant under this Agreement or with Tenant’s intended use of the Property for the generation, delivery, storage and sale of solar energy.
  - d. To Landlord’s reasonable knowledge, Landlord has provided to Tenant all information in its possession regarding the zoning classification of the Property.
  - e. To Landlord’s reasonable knowledge, the Property is not in violation of any federal, state or local law, rule or regulation, whether related to zoning, environmental matters, or otherwise. Landlord has not received any communication from any governmental authority that the Property may be in violation of any of the foregoing.
  - f. To Landlord’s knowledge, after due inquiry, there have been no releases of any hazardous materials (as defined by applicable law) on or affecting the Property.
9. Documentation Relating to the Property. Within thirty (30) days after the Effective Date, Landlord shall provide to Tenant copies of all title reports, environmental studies and reports, engineering reports, surveys, soil or geological tests, permits, contracts, agreements, and approvals from governmental authorities relating to the Property that are within Landlord’s possession or control.
10. No Commissions. No real estate commissions or any other commissions shall be paid in connection with this transaction.
11. Successors and Heirs. This Agreement shall run with the Property while the Agreement remains in effect and shall be binding upon the Landlord, its respective heirs, successors, assigns and personal representatives.
12. Notices. All notices under this Agreement shall be in writing and shall be deemed received: if hand-

delivered to the party to whose attention it is directed; three days after mailing if sent, postage prepaid by United States registered or certified mail, return receipt requested; or on the next business day when delivered via overnight delivery by a nationally recognized courier service, return receipt requested; and addressed as follows:

If intended for Tenant:

CEP Solar, LLC  
Attn: Richard H. Wright  
1310 Roseneath Rd, Suite 200  
Richmond, VA 23230  
Phone: (804) 912-7999

If intended for Landlord:

Ronald B. Edwards  
Attn: Ronald B. Edwards  
280 Edwards Way Road  
Union Hall, VA 24176

Or at such other address or to such other party as either party may designate in writing.

13. Assignment. Tenant may assign all or part of its interests in this Agreement to one or more assignees or sub assignees without the consent of Landlord.
14. Confidentiality. Landlord shall maintain in confidence all information pertaining to the financial terms of or payments under this Agreement. Landlord shall not publish or otherwise disclose such information to others except to accountants, lawyers, or other professionals who receive such information under an obligation of confidentiality; buyers of the Property; lenders that have a security interest in the Property; or family members who agree to keep such information confidential. The provisions of this Section 10 shall survive the termination or expiration of this Agreement.
15. Memorandum. Neither Tenant nor Landlord shall record this Agreement in its entirety. Tenant shall be responsible for the cost of preparing and recording the Memorandum of Option to be filed with the County Recorder in lieu of recording a full copy of this Agreement.
16. Entire Agreement. This Agreement contains the entire agreement between the parties relating to the subject matter hereof, and all prior or contemporaneous agreements are merged herein.
17. Amendment. This Agreement may not be amended, enlarged, modified, or altered except in writing signed by the parties hereto and identified as an amendment of this Agreement.
18. Specific Performance. In light of the unique nature of the Property, Tenant shall have the right to seek injunctive relief and specific performance of Landlord's obligations hereunder, including the obligation to enter into a Lease Agreement in accordance with Section 3.
19. Governing Law. This Agreement shall be construed and governed in accordance with the laws of the Commonwealth of Virginia, without regard to its conflict of laws principles.
20. Attorneys' Fees. If Landlord or Tenant institutes legal proceedings against the other arising out of the terms of this Agreement or the performance hereunder, the prevailing party may recover from the other all reasonable attorneys' fees, costs and expenses incurred in any such action.



21. Further Assurances. Landlord will, whenever reasonably requested by Tenant, execute, acknowledge and deliver, or cause to be executed, acknowledged and delivered, all instruments and documents as may be reasonably necessary in order to complete the transactions herein provided and to carry out the terms and provisions of this Agreement. In the event of any inaccuracy in the description of the Property (or any portion thereof), or in the description of the parties in whom title to the Property (or any portion thereof) is vested, Landlord and Tenant shall amend this Agreement to correct such inaccuracy in order to accomplish the intent of Landlord and Tenant.

22. Lease Controlling. In the event a conflict arises between the terms and conditions of the Lease (when executed) and this Agreement, the Lease shall control. Landlord acknowledges that this Agreement is not an offer or commitment by Tenant to execute any lease with Landlord, and until such time as a definitive lease is executed between the Parties, this Agreement shall govern.

23. Counterparts. This Agreement may be executed in any number of counterparts, each of which shall be an original and all of which, when taken together, shall constitute one and the same document. Transmission by facsimile or electronic transmission by pdf of an executed counterpart of this Agreement shall be deemed to constitute due and sufficient delivery of such counterpart.

24. Waiver. If either Party fails to require the other to perform any term of this Agreement, that failure does not prevent the Party from later enforcing that term. If either Party waives the other Party's breach of a term, that waiver is not treated as a continuing waiver or otherwise as waiving a later breach of that term.

25. Waiver of Consequential Damages. IN NO EVENT SHALL TENANT BE LIABLE TO LANDLORD FOR ANY SPECIAL, CONSEQUENTIAL, INCIDENTAL, OR INDIRECT DAMAGES OR LOST PROFITS, HOWEVER CAUSED, ON ANY THEORY OF LIABILITY EVEN IF ADVISED OF SUCH A POSSIBILITY.

26. Waiver of Jury Trial. TO THE EXTENT PERMITTED BY LAW, EACH OF THE PARTIES KNOWINGLY, VOLUNTARILY AND INTENTIONALLY WAIVES THE RIGHT TO A TRIAL BY JURY IN RESPECT OF ANY LITIGATION ARISING OUT OF, UNDER OR IN CONNECTION WITH THIS LEASE AND ANY OTHER AGREEMENT CONTEMPLATED TO BE EXECUTED IN CONJUNCTION HERewith. THIS PROVISION IS A MATERIAL INDUCEMENT TO EACH OF THE PARTIES FOR ENTERING INTO THIS AGREEMENT.

27. No Third Party Beneficiaries. No provision of this Agreement is intended to nor shall it in any way inure to the benefit of any third party so as to constitute any such person a third party beneficiary under this Agreement, or of any one or more of the terms of this Agreement, or otherwise give rise to any cause of action in any person not a party to this Agreement.

28. Rights and Remedies Cumulative. To the extent permitted by law, the rights and remedies in this Agreement are cumulative and not exclusive of any other right or remedy that might be available under this Agreement, at law or in equity.

[SIGNATURES FOLLOW]

IN WITNESS WHEREOF, the Parties have executed this Lease as of the date first written above, each intending the same to be a sealed instrument.

**LANDLORD:**

**RONALD B. EDWARDS**

By: Ronald B. Edwards

Name: Ronald Brent Edwards  
Title: owner



**TENANT:**

**CEP SOLAR, LLC,**  
a Virginia limited liability company

By:  \_\_\_\_\_

Name: Richard H. Wright  
Title: Manager

**EXHIBIT A**

**LEGAL DESCRIPTION OF PROPERTY**

The Property is all of the following tracts or parcels of land, situated in Franklin County, Commonwealth of Virginia consisting of approximately 42.68 acres, more particularly described as follows:

Parcel Number(s) and acreage:

1. 0660003900 and approximately 42.68 acres

Most recent deed of record: Deed, Dated \_\_\_\_\_, recorded in the Clerk's Office for Franklin County, Virginia in Deed Book \_\_\_\_, at page \_\_\_\_.

In the event of inaccuracies in the foregoing legal description, Landlord and Tenant shall amend this Lease to correct such inaccuracies.



## 8.11 Edwards Solar Natural Heritage and Wildlife Management Study

# MEMORANDUM

**TO:** Franklin County Planning and Zoning Department

**FROM:** Timmons Group on behalf of Edwards Solar

**DATE:** January 10, 2025

**RE:** Edwards Solar Natural Heritage and Wildlife Management Study

Timmons Group, on behalf of Edwards Solar, has conducted a limited environmental review of resources that may be present within a two-mile radius of the proposed project location. This environmental review includes wildlife management areas, threatened and endangered species, and cultural and historic resources.

## Threatened and Endangered Species

Timmons Group has conducted a threatened and endangered (T&E) species review of the Edwards Solar project. The following databases were reviewed for the potential presence of T&E species:

- Virginia Department of Conservation and Recreation (VDCR) – Natural Heritage Review Service
- Virginia Department of Wildlife Resources (VDWR) – Wildlife Environmental Review Map Service (WERMS)
- Virginia Department of Wildlife Resources (VDWR) – Virginia Fish and Wildlife Information Service (VaFWIS)
- US Fish and Wildlife Service (USFWS) – Information for Planning and Consultation (IPaC)

Based on the queried databases, there is the potential for three threatened and endangered species and one candidate species to occur near the project. See Table 1.

**Table 1.** Threatened and Endangered Species Potentially Present at Edwards Solar

Common Name	Scientific Name	Status	Agency Source
Tricolored Bat	<i>Perimyotis subflavus</i>	Federal Proposed Endangered State Endangered	USFWS
Roanoke Logperch	<i>Percina rex</i>	Federal Endangered State Endangered	VDWR
Orangefin Madtom	<i>Noturus gilberti</i>	State Threatened	VDWR
Monarch Butterfly	<i>Danaus plexippus</i>	Federal Proposed Threatened	USFWS

According to the USFWS IPaC results, the federal proposed and state endangered tricolored bat (*Perimyotis subflavus*) has the potential to occur on the Site. Based on the VDWR database search, this species has not been observed on the Site or within the two-mile buffer around the Site. There is potential



suitable habitat for the tricolored bat on the Site, as a portion of the land is forested. VDWR guidance provides that if the project area is outside of a documented hibernaculum or roost tree, project proponents may proceed with activities at their own discretion, though authorization of purposeful or incidental take of the species is not provided. The proposed reclassification may require USFWS consultation and/or a time of year restriction (TOYR) for tree clearing, unless a survey determines the likely absence of the species.

Based on VDWR search results, the federally and state endangered Roanoke logperch and the state threatened orangefin madtom have been observed within the Pigg River, which is located 1.2 miles south of the Site. The potential TOYR for instream work is March 15 – June 30. The Site will adhere to stormwater and erosion and sediment control guidelines, so adverse impacts to aquatic resources are not expected.

According to the USFWS IPaC results, the monarch butterfly (*Danaus plexippus*) has the potential to occur on the Site. Monarch butterflies are found across North America and are broken into two populations separated by the Rocky Mountains. Milkweed is the host plant of this species, and the monarch butterfly relies on this plant to complete its lifecycle. The species is proposed to be listed as threatened under the ESA. Currently, there is no TOYR for this species, but the USFWS recommends protective measures to enhance the butterfly habitat, including planting pollinator habitat. The USFWS may release additional guidance with the final ruling.

According to VDCR, the Jacks Creek Conservation Site is located with the project area. The natural heritage resources of concern at this site are the following: Southern Piedmont Ultramafic Barren, Piedmont fameflower, and Prairie dropseed. None of the species associated with the Southern Piedmont Ultramafic Barren are federally or state listed.

If state or federal permits are necessary, the Applicant will coordinate with agencies to ensure the protection and avoidance of T&E species.

#### Cultural and Historical Resources

There is one known architectural resource (VDHR ID # 033-5310) within the project, and it has been determined to be not eligible for listing on the National Register of Historic Places (NRHP) or the Virginia Landmarks Register (VLR). There is one known architectural resource located adjacent to the project. VDHR ID# 033-5340 has been determined to be not eligible for listing on the NRHP or VLR. There are ten architectural resources and five archaeological resources within one half mile of the project. These resources have either been determined not eligible or have not yet been evaluated for listing on the NRHP and VLR.

If state or federal permits are necessary, the Applicant will coordinate with agencies to ensure the protection and avoidance of cultural and historical resources.

#### Wetlands and Streams

Wetlands and streams are present on site. As the project progresses, more precise locations of wetlands and streams will be delineated and verified by the United States Army Corps of Engineers (USACE). If wetland or stream impacts are unavoidable, the Applicant will obtain the appropriate USACE permit for any impacts to USACE jurisdictional wetlands and streams.

#### Wildlife Corridors and VDWR Guidance

Guidance from the Virginia Department of Wildlife Resources<sup>1</sup> regarding wildlife corridors for solar facilities provides recommendations to protect and preserve the passage of wildlife species during development and operation of such facilities.

Wetlands and streams form a natural wildlife corridor and, as they will generally not be impacted by the project, will remain as interior corridors for wildlife utilization. Wetlands and streams are generally outside

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<sup>1</sup> <https://dwr.virginia.gov/wp-content/uploads/media/Solar-Energy-Facility-Guidance.pdf>

the fenced area so free passage of wildlife will be allowed for the duration of the project. The Virginia Department of Wildlife Resources advises that interior passages through solar projects helps reduce potential impacts to wildlife, to which this project will adhere.

These recommendations may be considered in site development.

Attachments

Attachment 1 T&E Species Database Reviews

Attachment 2 Cultural Resources Review



Attachment 1: Threatened and Endangered Species Database Reviews

Virginia Department of Wildlife Resources (VDWR) – Wildlife Environmental Review Map  
Service (WERMS)



Species Observed within Two Miles		
Common Name	Federal Status	State Status
Loggerch, Roanoke	Federal Endangered	State Endangered
Bass, largemouth	NT / NE	NT / NE
Bass, smallmouth	NT / NE	NT / NE
Bat, big brown	NT / NE	NT / NE
Bat, eastern red	NT / NE	NT / NE
Bluegill	NT / NE	NT / NE
Bullhead, flat	NT / NE	NT / NE
Carp, common	NT / NE	NT / NE
Catfish, channel	NT / NE	NT / NE
Catfish, white	NT / NE	NT / NE
Chub, bluehead	NT / NE	NT / NE
Chub, Genus = Nocomis	NT / NE	NT / NE
Crappie, black	NT / NE	NT / NE
Dace, mountain redbelly	NT / NE	NT / NE
Dace, rosyside	NT / NE	NT / NE
Darter, chainback	NT / NE	NT / NE
Darter, fantail	NT / NE	NT / NE
Darter, johnny	NT / NE	NT / NE
Darter, riverweed	NT / NE	NT / NE
Darter, Roanoke	NT / NE	NT / NE
Herring, alewife	NT / NE	NT / NE
Jumprock, black	NT / NE	NT / NE
Madtom, margined	NT / NE	NT / NE
Minnow, Genus = Notropis	NT / NE	NT / NE
Quillback	NT / NE	NT / NE
Ratsnake, eastern	NT / NE	NT / NE
Redhorse, notchlip	NT / NE	NT / NE
Redhorse, shorthhead	NT / NE	NT / NE
Redhorse, v-lip	NT / NE	NT / NE
Shad, gizzard	NT / NE	NT / NE
Shiner, crescent	NT / NE	NT / NE
Shiner, rosetin	NT / NE	NT / NE
Shiner, spottin	NT / NE	NT / NE
Shiner, spottail	NT / NE	NT / NE
Shiner, white	NT / NE	NT / NE
Stoneroller, central	NT / NE	NT / NE
Sucker, northern hog	NT / NE	NT / NE
Sucker, Roanoke hog	NT / NE	NT / NE
Sunfish, redbreast	NT / NE	NT / NE
Walleye	NT / NE	NT / NE

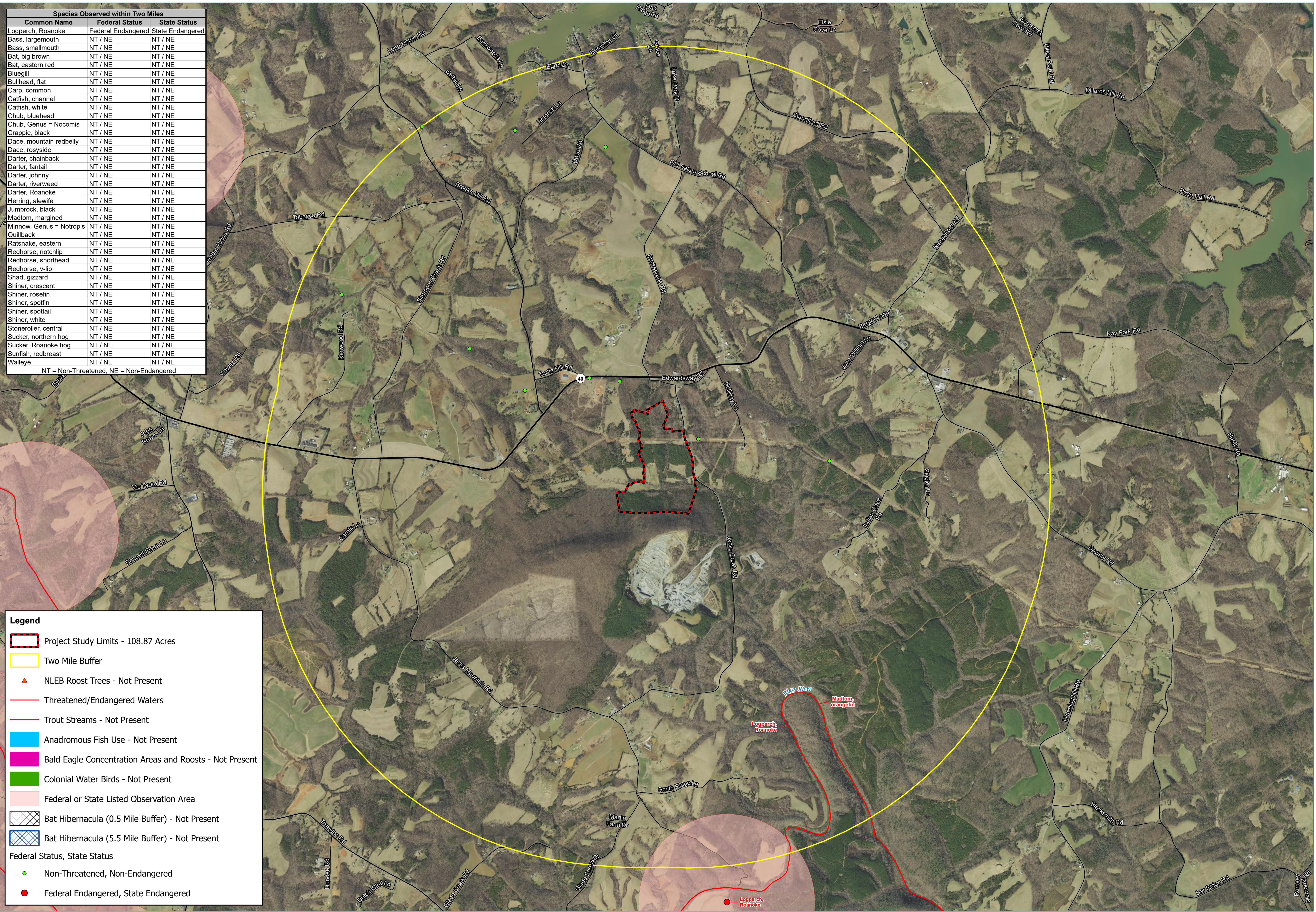
NT = Non-Threatened, NE = Non-Endangered

**Legend**

- Project Study Limits - 108.87 Acres
- Two Mile Buffer
- NLEB Roost Trees - Not Present
- Threatened/Endangered Waters
- Trout Streams - Not Present
- Anadromous Fish Use - Not Present
- Bald Eagle Concentration Areas and Roosts - Not Present
- Colonial Water Birds - Not Present
- Federal or State Listed Observation Area
- Bat Hibernacula (0.5 Mile Buffer) - Not Present
- Bat Hibernacula (5.5 Mile Buffer) - Not Present

**Federal Status, State Status**

- Non-Threatened, Non-Endangered
- Federal Endangered, State Endangered



**TIMMONS GROUP**  
 YOUR VISION ACHIEVED THROUGH OURS.  
 1001 Boulders Parkway, Suite 300  
 Richmond, VA 23226  
 www.timmons.com

**EDWARDS SOLAR**  
 FRANKLIN COUNTY - VIRGINIA

DATE: 12/13/2024  
 PROJECT NUMBER: 47661.040  
 PROJECT NAME: EDWARDS SOLAR  
 DESIGNED BY / DRAWN BY: M. HILL

**NOTES:**  
 WERMS data from DWR.  
 Bat hibernacula include identifications of Northern long-eared bat, Tri-colored bat, Little-brown bat, Virginia big-eared bat, Gray bat, and Indiana bat.  
 Aerial imagery from VGIN.

These plans and associated documents are the exclusive property of TIMMONS GROUP and may not be reproduced in whole or in part and shall not be used for any purpose whatsoever, inclusive, but not limited to construction, bidding, and/or construction staking without the express written consent of TIMMONS GROUP.

REVISIONS	
#	DESCRIPTION

**FORMING DESCRIPTION**  
 WILDLIFE ENVIRONMENTAL REVIEW MAP

SCALE (FEET)  
 0 1,300 2,600  
 PLANS PRINTED AS 11X17 ARE HALF SCALE  
 SCALE SHEET NUMBER  
 H: 1" = 1,300' 1



U.S. Fish and Wildlife Services (USFWS) – Information, Planning and Consultation system  
(IPaC)



# IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

## Location

Franklin County, Virginia



## Local office

Virginia Ecological Services Field Office

☎ (804) 693-6694

6669 Short Lane

Gloucester, VA 23061-4410

# Endangered species

**This resource list is for informational purposes only and does not constitute an analysis of project level impacts.**

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species<sup>1</sup> and their critical habitats are managed by the [Ecological Services Program](#) of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries<sup>2</sup>).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact [NOAA Fisheries](#) for [species under their jurisdiction](#).

- 
1. Species listed under the [Endangered Species Act](#) are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the [listing status page](#) for more information. IPaC only shows species that are regulated by USFWS (see FAQ).



2. [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.

The following species are potentially affected by activities in this location:

## Mammals

NAME	STATUS
Tricolored Bat <i>Perimyotis subflavus</i> Wherever found No critical habitat has been designated for this species. <a href="https://ecos.fws.gov/ecp/species/10515">https://ecos.fws.gov/ecp/species/10515</a>	Proposed Endangered

## Insects

NAME	STATUS
Monarch Butterfly <i>Danaus plexippus</i> Wherever found There is <b>proposed</b> critical habitat for this species. <a href="https://ecos.fws.gov/ecp/species/9743">https://ecos.fws.gov/ecp/species/9743</a>	Proposed Threatened

## Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

There are no critical habitats at this location.

You are still required to determine if your project(s) may have effects on all above listed species.

## 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"](#).

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>

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
<p><b>Bald Eagle</b> <i>Haliaeetus leucocephalus</i></p> <p>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.</p> <p><a href="https://ecos.fws.gov/ecp/species/1626">https://ecos.fws.gov/ecp/species/1626</a></p>	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 (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey



effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is  $0.25/0.25 = 1$ ; at week 20 it is  $0.05/0.25 = 0.2$ .
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

### Breeding Season (■)

Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

### Survey Effort (|)

Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

To see a bar's survey effort range, simply hover your mouse cursor over the bar.

### No Data (-)

A week is marked as having no data if there were no survey events for that week.

### Survey Timeframe

Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.



Bald Eagle  
Non-BCC  
Vulnerable



### What does IPaC use to generate the potential presence of bald and golden eagles in my specified location?

The potential for eagle presence is derived from data provided by the [Avian Knowledge Network \(AKN\)](#). The AKN data is based on a growing collection of [survey, banding, and citizen science datasets](#) and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle ([Eagle Act](#) requirements may apply). To see a list of all birds potentially present in your project area, please visit the [Rapid Avian Information Locator \(RAIL\) Tool](#).

### What does IPaC use to generate the probability of presence graphs of bald and golden eagles in my specified location?

The Migratory Bird Resource List is comprised of USFWS [Birds of Conservation Concern \(BCC\)](#) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the [Avian Knowledge Network \(AKN\)](#). The AKN data is based on a growing collection of [survey, banding, and citizen science datasets](#) and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle ([Eagle Act](#) requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the [Rapid Avian Information Locator \(RAIL\) Tool](#).

### What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the [Eagle Act](#) should such impacts occur. Please contact your local Fish and Wildlife Service Field Office if you have questions.

## 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.

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-incident-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>

The birds listed below are birds of particular concern either because they occur on the [USFWS Birds of Conservation Concern \(BCC\)](#) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ [below](#). This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the [E-bird data mapping tool](#) (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found [below](#).

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
<p><b>Bald Eagle</b> <i>Haliaeetus leucocephalus</i></p> <p>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.</p> <p><a href="https://ecos.fws.gov/ecp/species/1626">https://ecos.fws.gov/ecp/species/1626</a></p>	Breeds Sep 1 to Jul 31
<p><b>Black-billed Cuckoo</b> <i>Coccyzus erythrophthalmus</i></p> <p>This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.</p> <p><a href="https://ecos.fws.gov/ecp/species/9399">https://ecos.fws.gov/ecp/species/9399</a></p>	Breeds May 15 to Oct 10

**Chimney Swift** *Chaetura pelagica* Breeds Mar 15 to Aug 25  
 This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

**Grasshopper Sparrow** *Ammodramus savannarum perpallidus* Breeds Jun 1 to Aug 20  
 This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA  
<https://ecos.fws.gov/ecp/species/8329>

**Prairie Warbler** *Setophaga discolor* Breeds May 1 to Jul 31  
 This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

**Red-headed Woodpecker** *Melanerpes erythrocephalus* Breeds May 10 to Sep 10  
 This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

**Wood Thrush** *Hyllocichla mustelina* Breeds May 10 to Aug 31  
 This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

## 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 (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted



Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.

- To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is  $0.25/0.25 = 1$ ; at week 20 it is  $0.05/0.25 = 0.2$ .
- The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

### Breeding Season (■)

Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

### Survey Effort (|)

Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

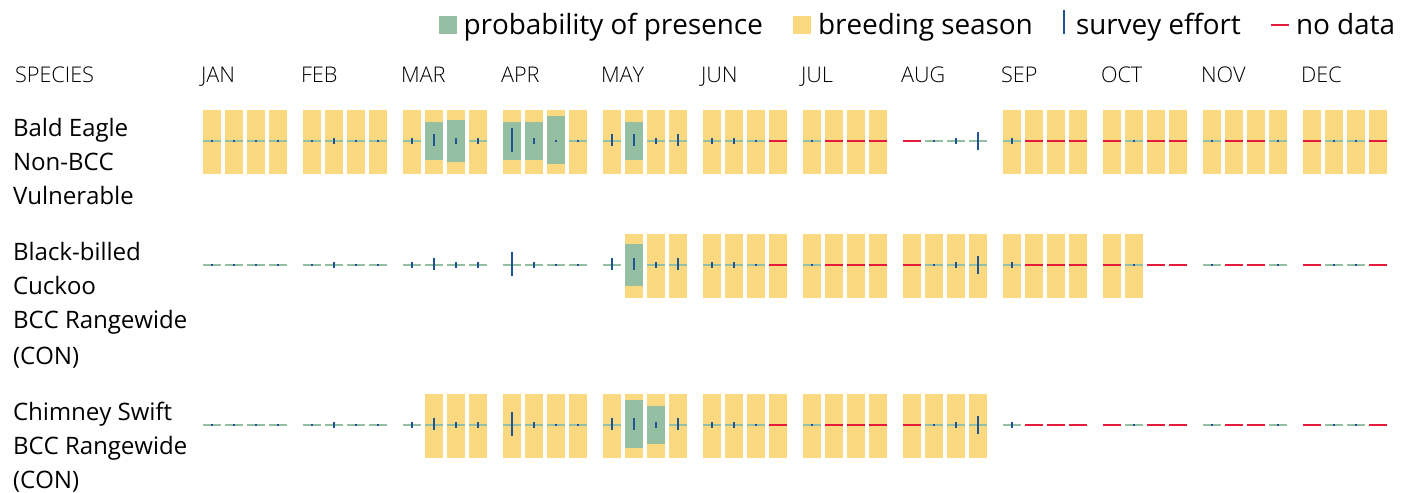
To see a bar's survey effort range, simply hover your mouse cursor over the bar.

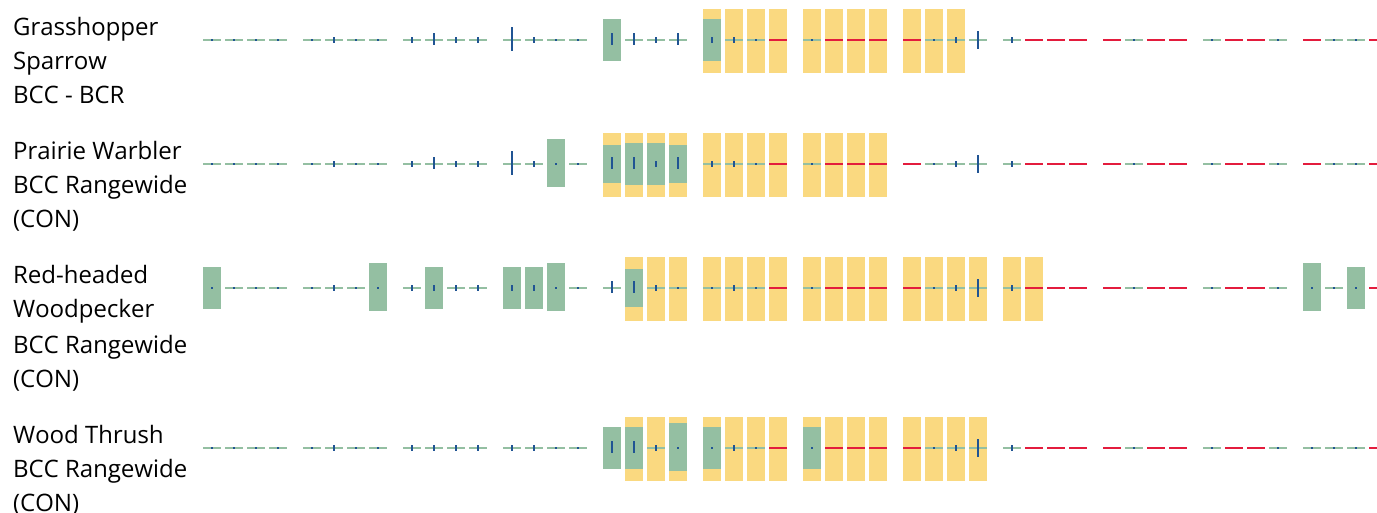
### No Data (-)

A week is marked as having no data if there were no survey events for that week.

### Survey Timeframe

Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.





### Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

[Nationwide Conservation Measures](#) describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. [Additional measures](#) or [permits](#) may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

### What does IPaC use to generate the list of migratory birds that potentially occur in my specified location?

The Migratory Bird Resource List is comprised of USFWS [Birds of Conservation Concern \(BCC\)](#) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the [Avian Knowledge Network \(AKN\)](#). The AKN data is based on a growing collection of [survey, banding, and citizen science datasets](#) and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle ([Eagle Act](#) requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the [Rapid Avian Information Locator \(RAIL\) Tool](#).

### What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the [Avian Knowledge Network \(AKN\)](#). This data is derived from a growing collection of [survey, banding, and citizen science datasets](#).



Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go to the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

### How do I know if a bird is breeding, wintering or migrating in my area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may query your location using the [RAIL Tool](#) and look at the range maps provided for birds in your area at the bottom of the profiles provided for each bird in your results. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

### What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are [Birds of Conservation Concern](#) (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the [Eagle Act](#) requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

### Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the [Northeast Ocean Data Portal](#). The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the [NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf](#) project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the [Diving Bird Study](#) and the [nanotag studies](#) or contact [Caleb Spiegel](#) or [Pam Loring](#).

### What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to [obtain a permit](#) to avoid violating the Eagle Act should such impacts occur.

## Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

## Facilities

### National Wildlife Refuge lands

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 at this location.

### Fish hatcheries

There are no fish hatcheries at this location.



# Wetlands in the National Wetlands Inventory (NWI)

Impacts to [NWI wetlands](#) and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local [U.S. Army Corps of Engineers District](#).

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

This location overlaps the following wetlands:

FRESHWATER EMERGENT WETLAND

[PEM1C](#)

RIVERINE

[R3UBH](#)

[R4SBC](#)

A full description for each wetland code can be found at the [National Wetlands Inventory website](#)

**NOTE:** This initial screening does **not** replace an on-site delineation to determine whether wetlands occur. Additional information on the NWI data is provided below.

## Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

## Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tubercid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

### **Data precautions**

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate Federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

NOT FOR CONSULTATION



Virginia Department of Wildlife Resources (VDWR) – Virginia Fish and Wildlife Information  
Service (VaFWIS)

**VAFWIS - Department of Wildlife Resources**

36.98672 -79.71312

is the Search Point

**Search Point**

- Change to "clicked" map point
- Fixed at 36.98672 -79.71312

**Show Position Rings**

- Yes  No
- 1 mile and 1/4 mile at the Search Point

**Show Search Area**

- Yes  No
- 2 Search distance miles buffer

Search Point is at map center

**Base Map Choices**

BW Aerial Photography

**Map Overlay Choices**

Current List: Anadromous, TEWaters, BAEANests, BECAR, Trout, TierII, Habitat, Search

**Map Overlay Legend**

**T & E Waters**

- Federal
- State

**Predicted Habitat WAP Tier I & II**

- Aquatic
- Terrestrial

**Trout Waters**

- Class I - IV
- Class V - VI

**Anadromous Fish Reach**

- Confirmed
- Potential

**Impediment**

- 2 mile radius Search Area

**Bald Eagle Concentration Areas and Roosts**

- Bald Eagle nests 660 and 330 foot management zones
- Data Observation Site



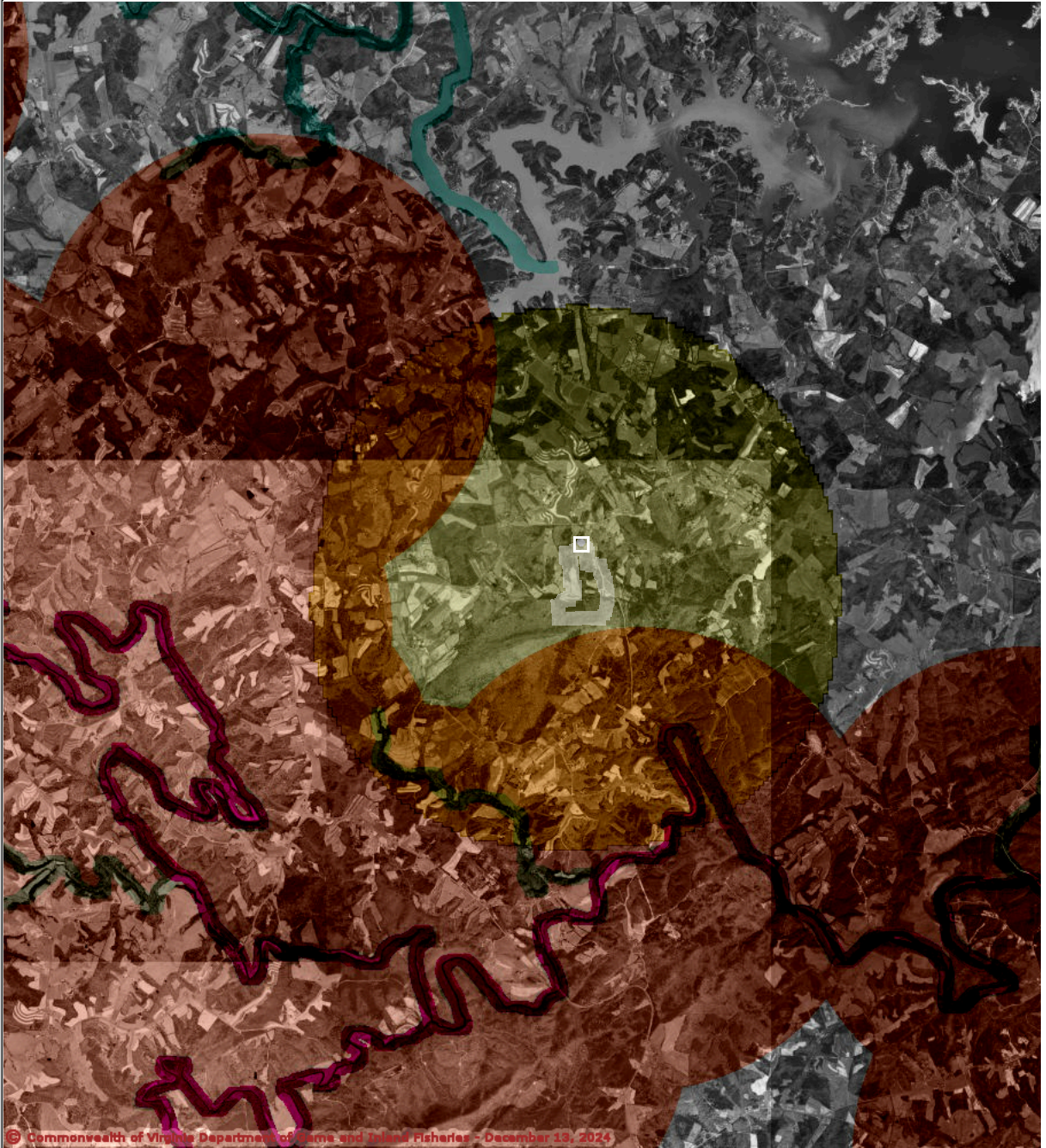
[back](#)

[Refresh Browser Page](#)

Map Click

Map Scale

Screen Size



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Point of Search 36.98672 -79.71312

Map Location 36.98672 -79.71312

Select Coordinate System:  Degrees,Minutes,Seconds Latitude - Longitude

Decimal Degrees Latitude - Longitude

Meters UTM NAD83 East North Zone

Meters UTM NAD27 East North Zone

Base Map source: Black & White USGS Aerial Photography (see [Microsoft terraserver-usa.com](https://microsoft.terraserver-usa.com) for details)



Map projection is UTM Zone 17 NAD 1983 with left 606524 and top 4102173. Pixel size is 12. . Coordinates displayed are decimal Degrees North and West. Map is currently displayed as 1000 columns by 1000 rows for a total of 1000000 pixels. The map display represents 16000 meters east to west by 16000 meters north to south for a total of 256.0 square kilometers. The map display represents 52502 feet east to west by 52502 feet north to south for a total of 98.8 square miles.

Topographic maps and Black and white aerial photography for year 1990+- are from the United States Department of the Interior, United States Geological Survey. Color aerial photography aquired 2002 is from Virginia Base Mapping Program, Virginia Geographic Information Network.

Shaded topographic maps are from TOPO! ©2006 National Geographic

<http://www.national.geographic.com/topo>

All other map products are from the Commonwealth of Virginia Department of Wildlife Resources.

map assembled 2024-12-13 11:09:15 (qa/qc March 21, 2016 12:20 - tn=3090153 dist=3218 I )  
\$poi=36.9908200 -79.7124000

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**VaFWIS Initial Project Assessment Report** Compiled on 12/13/2024,[Help](#)

11:10:47 AM

Known or likely to occur within a **2 mile buffer around polygon; center 36.9908200 -79.7123999**  
in **067 Franklin County, VA**

[View Map of  
Site Location](#)

433 Known or Likely Species ordered by Status Concern for Conservation  
(displaying first 20) (20 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
010214	FESE	IIa	<a href="#">Logperch, Roanoke</a>	Percina rex	<a href="#">Yes</a>	BOVA,TEWaters,Habitat,SppObs
030061	FTSE	Ia	<a href="#">Turtle, Bog</a>	Glyptemys muhlenbergii		BOVA
060173	FTST	Ia	<a href="#">Pigtoe, Atlantic</a>	Fusconaia masoni		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
040096	ST	Ia	<a href="#">Falcon, peregrine</a>	Falco peregrinus		BOVA
040293	ST	Ia	<a href="#">Shrike, loggerhead</a>	Lanius ludovicianus		BOVA
010127	ST	IIb	<a href="#">Madtom, orangefin</a>	Noturus gilberti	<a href="#">Yes</a>	BOVA,TEWaters,Habitat
040292	ST		<a href="#">Shrike, migrant loggerhead</a>	Lanius ludovicianus migrans		BOVA
030012	CC	IVa	<a href="#">Rattlesnake, timber</a>	Crotalus horridus		BOVA
010174		Ia	<a href="#">Bass, Roanoke</a>	Ambloplites cavifrons		BOVA,Habitat
010343		Ib	<a href="#">Darter, ashy</a>	Allohistium cinereum		BOVA
010341		IIa	<a href="#">Logperch, blotchside</a>	Percina burtoni		BOVA
040052		IIa	<a href="#">Duck, American black</a>	Anas rubripes		BOVA
040036		IIa	<a href="#">Night-heron, yellow-</a>	Nyctanassa violacea violacea		BOVA



			<a href="#">crowned</a>			
040320		Ia	<a href="#">Warbler, cerulean</a>	Setophaga cerulea		BOVA
040140		Ia	<a href="#">Woodcock, American</a>	Scolopax minor		BOVA
040203		Ib	<a href="#">Cuckoo, black-billed</a>	Coccyzus erythrophthalmus		BOVA
040105		Ib	<a href="#">Rail, king</a>	Rallus elegans		BOVA

To view **All 433 species** [View 433](#)

\*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.

Bat Colonies or Hibernacula: **Not Known**

**Anadromous Fish Use Streams**

N/A

**Colonial Water Bird Survey**

N/A

**Threatened and Endangered Waters ( 6 Reaches )**

[View Map of All Threatened and Endangered Waters](#)

Stream Name	T&E Waters Species						View Map
	Highest TE*	BOVA Code, Status*, Tier**, Common & Scientific Name					
<a href="#">Pigg River (0185452)</a>	FESE	010127	ST	Ib	<a href="#">Madtom, orangefin</a>	Noturus gilberti	<a href="#">Yes</a>
		010214	FESE	Ia	<a href="#">Logperch, Roanoke</a>	Percina rex	
<a href="#">Pigg River (0188979)</a>	FESE	010127	ST	Ib	<a href="#">Madtom, orangefin</a>	Noturus gilberti	<a href="#">Yes</a>
		010214	FESE	Ia	<a href="#">Logperch, Roanoke</a>	Percina rex	
<a href="#">Pigg River (0189853)</a>	FESE	010127	ST	Ib	<a href="#">Madtom, orangefin</a>	Noturus gilberti	<a href="#">Yes</a>
		010214	FESE	Ia	<a href="#">Logperch, Roanoke</a>	Percina rex	

<a href="#">Pigg River (0191756)</a>	FESE	010127	ST	I Ib	<a href="#">Madtom, orangefin</a>	Noturus gilberti	<a href="#">Yes</a>
		010214	FESE	I Ia	<a href="#">Logperch, Roanoke</a>	Percina rex	
<a href="#">Pigg River (0201321)</a>	FESE	010127	ST	I Ib	<a href="#">Madtom, orangefin</a>	Noturus gilberti	<a href="#">Yes</a>
		010214	FESE	I Ia	<a href="#">Logperch, Roanoke</a>	Percina rex	
<a href="#">Pigg River (0203820)</a>	FESE	010127	ST	I Ib	<a href="#">Madtom, orangefin</a>	Noturus gilberti	<a href="#">Yes</a>
		010214	FESE	I Ia	<a href="#">Logperch, Roanoke</a>	Percina rex	

**Managed Trout Streams**

N/A

**Bald Eagle Concentration Areas and Roosts**

N/A

**Bald Eagle Nests**

N/A

**Habitat Predicted for Aquatic WAP Tier I & II Species ( 2 Reaches )**

[View Map Combined Reaches from Below of Habitat Predicted for WAP Tier I & II Aquatic Species](#)

Stream Name	Tier Species						View Map
	Highest TE *	BOVA Code, Status *, Tier **, Common & Scientific Name					
Glade Creek (30101011)	FESE	010127	ST	I Ib	<a href="#">Madtom, orangefin</a>	Noturus gilberti	<a href="#">Yes</a>
		010214	FESE	I Ia	<a href="#">Logperch, Roanoke</a>	Percina rex	
Pigg River (30101011)	FESE	010127	ST	I Ib	<a href="#">Madtom, orangefin</a>	Noturus gilberti	<a href="#">Yes</a>
		010174		I Ia	<a href="#">Bass, Roanoke</a>	Ambloplites cavifrons	
		010214	FESE	I Ia	<a href="#">Logperch, Roanoke</a>	Percina rex	



Pigg River (30101011)	FESE	010127	ST	Iib	<a href="#">Madtom, orangefin</a>	Noturus gilberti	<a href="#">Yes</a>
		010174		Ia	<a href="#">Bass, Roanoke</a>	Ambloplites cavifrons	
		010214	FESE	Iia	<a href="#">Logperch, Roanoke</a>	Percina rex	

**Habitat Predicted for Terrestrial WAP Tier I & II Species**

N/A

**Public Holdings:**

N/A

Compiled on 12/13/2024, 11:10:47 AM I3090153.0 report=IPA searchType= P dist= 3218 poi= 36.9908200 -79.7123999 siteDD= 36.9908265 -79.7124017;36.9902143 -79.7121049;36.9895526 -79.7124148;36.9893725 -79.7125586;36.9890669 -79.7124521;36.9890504 -79.7116948;36.9888329 -79.7116696;36.9888778 -79.7104845;36.9887829 -79.7104711;36.9887153 -79.7104575;36.9886495 -79.7104433;36.9885838 -79.7104281;36.9885180 -79.7104120;36.9884528 -79.7103950;36.9884093 -79.7103826;36.9883672 -79.7103698;36.9883249 -79.7103560;36.9882833 -79.7103415;36.9882419 -79.7103264;36.9882003 -79.7103103;36.9881585 -79.7102932;36.9881171 -79.7102755;36.9880768 -79.7102573;36.9880362 -79.7102381;36.9879176 -79.7101805;36.9876939 -79.7100605;36.9875023 -79.7099610;36.9872894 -79.7098465;36.9870542 -79.7097312;36.9869013 -79.7096610;36.9868712 -79.7096477;36.9868411 -79.7096351;36.9868112 -79.7096233;36.9867498 -79.7096012;36.9867194 -79.7095914;36.9866887 -79.7095821;36.9866578 -79.7095736;36.9866268 -79.7095656;36.9865956 -79.7095584;36.9865643 -79.7095518;36.9864555 -79.7095309;36.9862786 -79.7095088;36.9857855 -79.7094631;36.9855946 -79.7094417;36.9854475 -79.7094247;36.9854223 -79.7094212;36.9853958 -79.7094167;36.9853456 -79.7094060;36.9852973 -79.7093929;36.9852950 -79.7093922;36.9852708 -79.7093845;36.9852222 -79.7093667;36.9851968 -79.7093563;36.9851735 -79.7093459;36.9851503 -79.7093349;36.9851250 -79.7093219;36.9851032 -79.7093100;36.9851005 -79.7093085;36.9850755 -79.7092922;36.9850305 -79.7092605;36.9850065 -79.7092422;36.9849851 -79.7092251;36.9849840 -79.7092243;36.9849418 -79.7091880;36.9849394 -79.7091858;36.9848973 -79.7091461;36.9847937 -79.7092241;36.9839343 -79.7091513;36.9821323 -79.7098570;36.9822600 -79.7121728;36.9821022 -79.7147885;36.9822109 -79.7168982;36.9837626 -79.7172181;36.9838754 -79.7163463;36.9843043 -79.7161147;36.9843696 -79.7160382;36.9844783 -79.7160112;36.9844065 -79.7158204;36.9844696 -79.7157323;36.9845588 -79.7155786;36.9846557 -79.7153445;36.9846881 -79.7151180;36.9847220 -79.7147334;36.9846016 -79.7145562;36.9845663 -79.7144091;36.9846814 -79.7144253;36.9851563 -79.7144243;36.9853350 -79.7145306;36.9855612 -79.7145055;36.9855920 -79.7144284;36.9861220 -79.7144484;36.9864423 -79.7146834;36.9864686 -79.7148189;36.9866393 -79.7148044;36.9868388 -79.7149082;36.9868494 -79.7150032;36.9869267 -79.7151050;36.9871150 -79.7149500;36.9872070 -79.7149716;36.9872585 -79.7147786;36.9874381 -79.7146965;36.9874669 -79.7148120;36.9877189 -79.7147413;36.9877478 -79.7148423;36.9879296 -79.7148711;36.9880838 -79.7151207;36.9883183 -79.7149578;36.9887771 -79.7149623;36.9888434 -79.7150093;36.9889591 -79.7149652;36.9890246 -79.7150985;36.9892353 -79.7152340;36.9894658 -79.7153097;36.9896300 -79.7154072;36.9898649 -79.7157090;36.9899468 -79.7156724;36.9899953 -79.7157607;36.9903263 -79.7158493;36.9904296 -79.7156670;36.9904074 -79.7155862;36.9904450 -79.7155207;36.9905599 -79.7155513;36.9905558 -79.7155024;36.9902480 -79.7141084;36.9905848 -79.7141982;36.9909666 -79.7133592;36.9913595 -79.7126363;36.9908265 -79.7124017;

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### 1 Species Observations where Loggerch, Roanoke (010214) observed

36.99082 -79.71239 is the Search Point

#### Show Position Rings

Yes  No  
1 mile and 1/4 mile at the Search Point

#### Show Search Area

Yes  No  
2 Search distance miles buffer

Display Search Point is not at center

#### Base Map Choices



BW Aerial Photography

#### Map Overlay Choices

Current List: Search, SppObs

#### Map Overlay Legend

-  2 mile radius Search Area
-  Data Observation Site

[back](#)

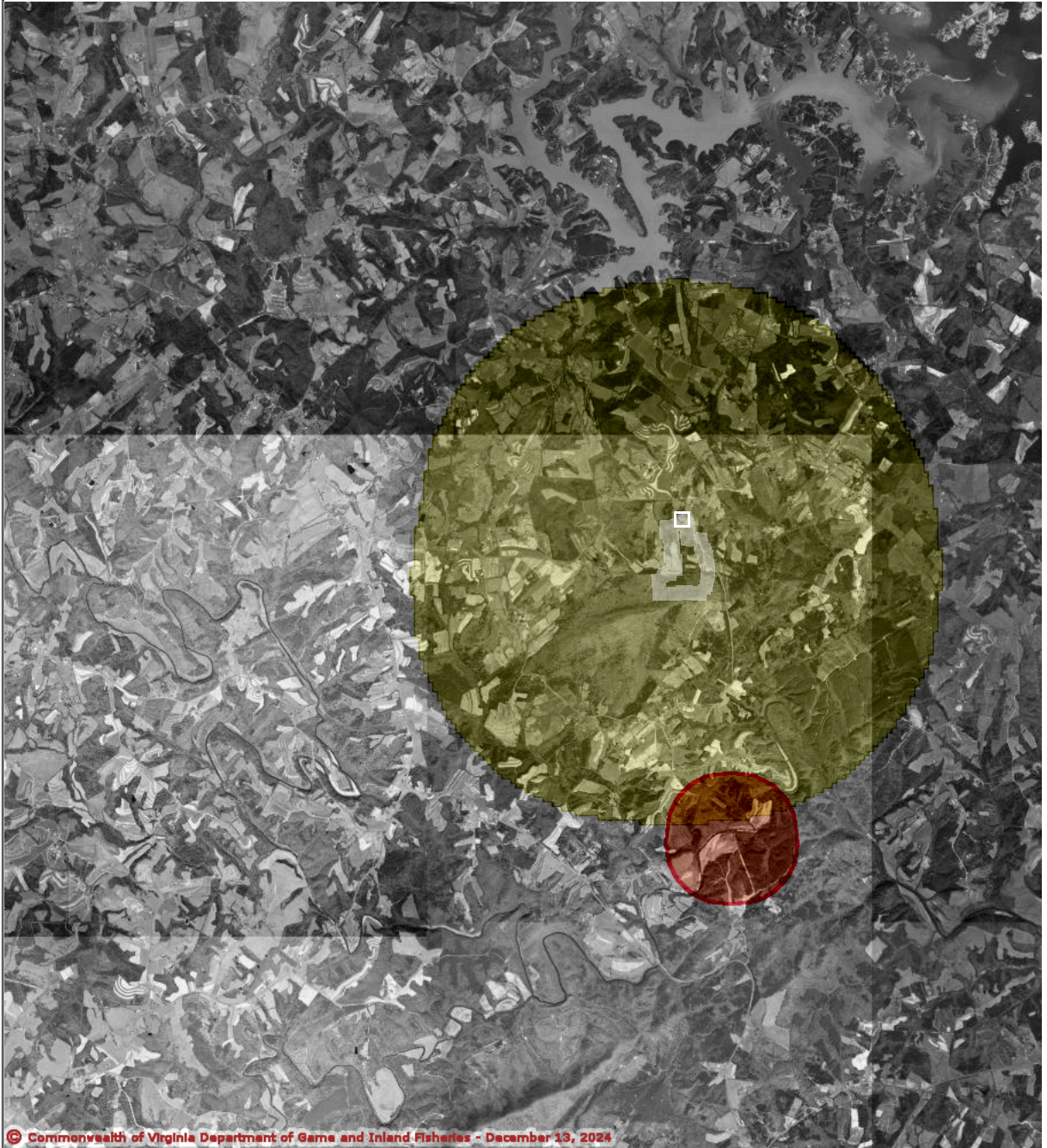
[Refresh Browser Page](#)

Map Click Pan Go M

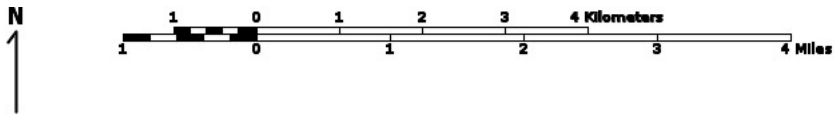
Map Scale In Zoom Out

Screen Size Small Size Big

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Point of Search 36.99082 -79.71239  
Map Location 36.98371 -79.72881

- Select **Coordinate System**:
- Degrees, Minutes, Seconds Latitude - Longitude
  - Decimal Degrees Latitude - Longitude
  - Meters UTM NAD83 East North Zone
  - Meters UTM NAD27 East North Zone

Base Map source: Black & White USGS Aerial Photography (see [Microsoft terraserver-usa.com](https://microsoft.terraserver-usa.com) for details)



Map projection is UTM Zone 17 NAD 1983 with left 605132 and top 4101821. Pixel size is 12. . Coordinates displayed are decimal Degrees North and West. Map is currently displayed as 1000 columns by 1000 rows for a total of 1000000 pixels. The map display represents 16000 meters east to west by 16000 meters north to south for a total of 256.0 square kilometers. The map display represents 52502 feet east to west by 52502 feet north to south for a total of 98.8 square miles.

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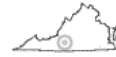
All other map products are from the Commonwealth of Virginia Department of Wildlife Resources.

map assembled 2024-12-13 11:12:47 (qa/qc March 21, 2016 12:20 - tn=3090153.1 dist=3218  
I)

\$poi=36.9908200 -79.7123999

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### Threatened and Endangered Waters where Logperch, Roanoke (010214) observed

36.99082 -79.71239 is the Search Point

#### Show Position Rings

Yes  No

1 mile and 1/4 mile at the Search Point

#### Show Search Area

Yes  No

2 Search distance miles buffer

Display	Search Point is not at center
	at map center

#### Base Map [Choices](#)

BW Aerial Photography

#### Map Overlay [Choices](#)

Current List: Search, TEWaters

#### Map Overlay Legend

##### T & E Waters

Federal

State

2 mile radius Search Area

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Map Click

Pan To M

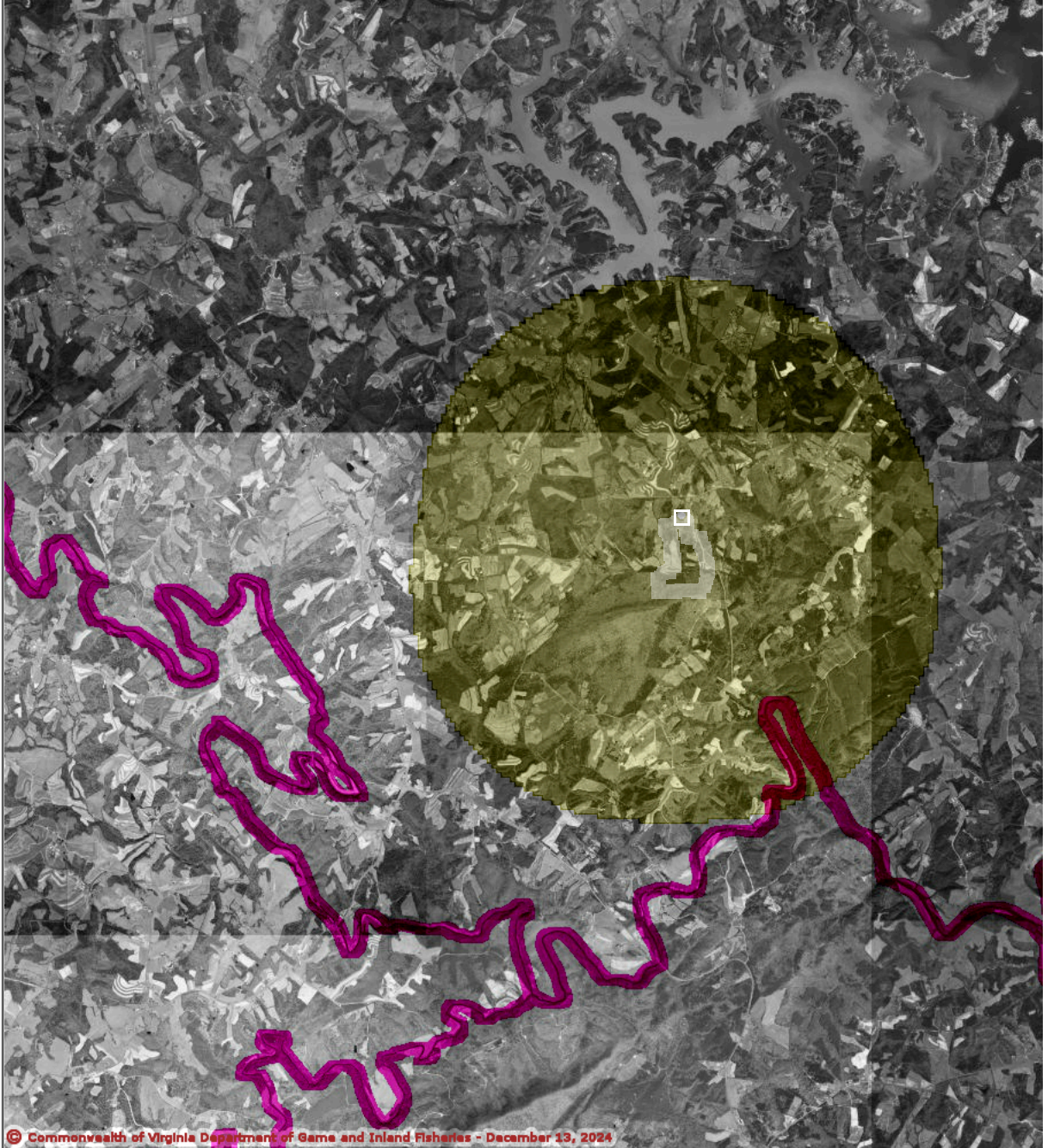
Map Scale

In Zoom Out

Screen Size

Small Size Big

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Point of Search 36.99082 -79.71239

Map Location 36.98357 -79.72863

Select **Coordinate System**:  Degrees,Minutes,Seconds Latitude - Longitude

Decimal Degrees Latitude - Longitude

Meters UTM NAD83 East North Zone

Meters UTM NAD27 East North Zone

Base Map source: Black & White USGS Aerial Photography (see [Microsoft terraserver-usa.com](https://microsoft.terraserver-usa.com) for details)



Map projection is UTM Zone 17 NAD 1983 with left 605148 and top 4101805. Pixel size is 12. . Coordinates displayed are decimal Degrees North and West. Map is currently displayed as 1000 columns by 1000 rows for a total of 1000000 pixels. The map display represents 16000 meters east to west by 16000 meters north to south for a total of 256.0 square kilometers. The map display represents 52502 feet east to west by 52502 feet north to south for a total of 98.8 square miles.

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map assembled 2024-12-13 11:12:05 (qa/qc March 21, 2016 12:20 - tn=3090153.1 dist=3218  
I )  
\$poi=36.9908200 -79.7123999

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# Virginia Department of Wildlife Resources

12/13/2024 11:11:04 AM

## Fish and Wildlife Information Service

**VaFWIS Search Report** Compiled on 12/13/2024, 11:11:04 AM

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Known or likely to occur within a **2 mile buffer around polygon; center 36.9908200 -79.7123999**  
 in **067 Franklin County, VA**  
 where (010214) [Logperch, Roanoke](#) observed.

[View Map of Site Location](#)

### Threatened and Endangered Waters where Logperch, Roanoke (010214) observed

( 6 Reaches )

[View Map of All Threatened and Endangered Waters](#)

Stream Name	T&E Waters Species						View Map
	Highest TE*	BOVA Code, Status*, Tier**, Common & Scientific Name					
<a href="#">Pigg River (0185452.)</a>	FESE	010127	ST	IIb	<a href="#">Madtom, orangefin</a>	Noturus gilberti	<a href="#">Yes</a>
		010214	FESE	IIa	<a href="#">Logperch, Roanoke</a>	Percina rex	
<a href="#">Pigg River (0188979.)</a>	FESE	010127	ST	IIb	<a href="#">Madtom, orangefin</a>	Noturus gilberti	<a href="#">Yes</a>
		010214	FESE	IIa	<a href="#">Logperch, Roanoke</a>	Percina rex	
<a href="#">Pigg River (0189853.)</a>	FESE	010127	ST	IIb	<a href="#">Madtom, orangefin</a>	Noturus gilberti	<a href="#">Yes</a>
		010214	FESE	IIa	<a href="#">Logperch, Roanoke</a>	Percina rex	
<a href="#">Pigg River (0191756.)</a>	FESE	010127	ST	IIb	<a href="#">Madtom, orangefin</a>	Noturus gilberti	<a href="#">Yes</a>
		010214	FESE	IIa	<a href="#">Logperch, Roanoke</a>	Percina rex	
<a href="#">Pigg River (0201321.)</a>	FESE	010127	ST	IIb	<a href="#">Madtom, orangefin</a>	Noturus gilberti	<a href="#">Yes</a>
		010214	FESE	IIa	<a href="#">Logperch, Roanoke</a>	Percina rex	



<a href="#">Pigg River (0203820)</a>	FESE	010127	ST	I Ib	<a href="#">Madtom, orangefin</a>	Noturus gilberti	<a href="#">Yes</a>
		010214	FESE	I Ia	<a href="#">Logperch, Roanoke</a>	Percina rex	

\*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.

### Species Observations where Logperch, Roanoke (010214) observed

( 1 records , 1 Observation with Threatened or Endangered species )

[View Map of All Query Results](#)

[Species Observations where Logperch, Roanoke \(010214\) observed](#)

obsID	class	Date Observed	Observer	N Species			View Map
				Different Species	Highest TE *	Highest Tier **	
<a href="#">312879</a>	SppObs	Sep 7 2001	Angermeier & Rosenberger	10	FESE	II	<a href="#">Yes</a>

Displayed 1 Species Observations where Logperch, Roanoke (010214) observed

### Habitat Predicted for Aquatic WAP Tier I & II Species where Logperch, Roanoke (010214) observed

( 2 Reaches )

[View Map Combined Reaches from Below of Habitat Predicted for WAP Tier I & II Aquatic Species](#)

Stream Name	Highest TE *	Tier Species					View Map
		BOVA Code, Status *, Tier **, Common & Scientific Name					
Glade Creek (30101011)	FESE	010127	ST	I Ib	<a href="#">Madtom, orangefin</a>	Noturus gilberti	<a href="#">Yes</a>
		010214	FESE	I Ia	<a href="#">Logperch, Roanoke</a>	Percina rex	
Pigg River (30101011)	FESE	010127	ST	I Ib	<a href="#">Madtom, orangefin</a>	Noturus gilberti	<a href="#">Yes</a>
		010174		I Ia	<a href="#">Bass, Roanoke</a>	Ambloplites cavifrons	
		010214	FESE	I Ia	<a href="#">Logperch, Roanoke</a>	Percina rex	

Pigg River (30101011)	FESE	010127	ST	Iib	<a href="#">Madtom, orangeфин</a>	Noturus gilberti	<a href="#">Yes</a>
		010174		Ia	<a href="#">Bass, Roanoke</a>	Ambloplites cavifrons	
		010214	FESE	Iia	<a href="#">Logperch, Roanoke</a>	Percina rex	

### Habitat Predicted for Terrestrial WAP Tier I & II Species where Logperch, Roanoke (010214) observed

N/A

Compiled on 12/13/2024, 11:11:04 AM I3090153.1 report=BOVA searchType= P dist= 3218 poi= 36.9908200 -79.7123999

audit no. 3090153 12/13/2024 11:11:04 AM Virginia Fish and Wildlife Information Service  
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### Threatened and Endangered Waters where Madtom, orangefin (010127) observed

36.99082 -79.71239 is the Search Point

#### Show Position Rings

Yes  No

1 mile and 1/4 mile at the Search Point

#### Show Search Area

Yes  No

2 Search distance miles buffer

Display Search Point is not at center

#### Base Map Choices

BW Aerial Photography

#### Map Overlay Choices

Current List: Search, TEWaters

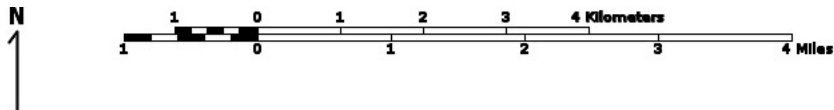
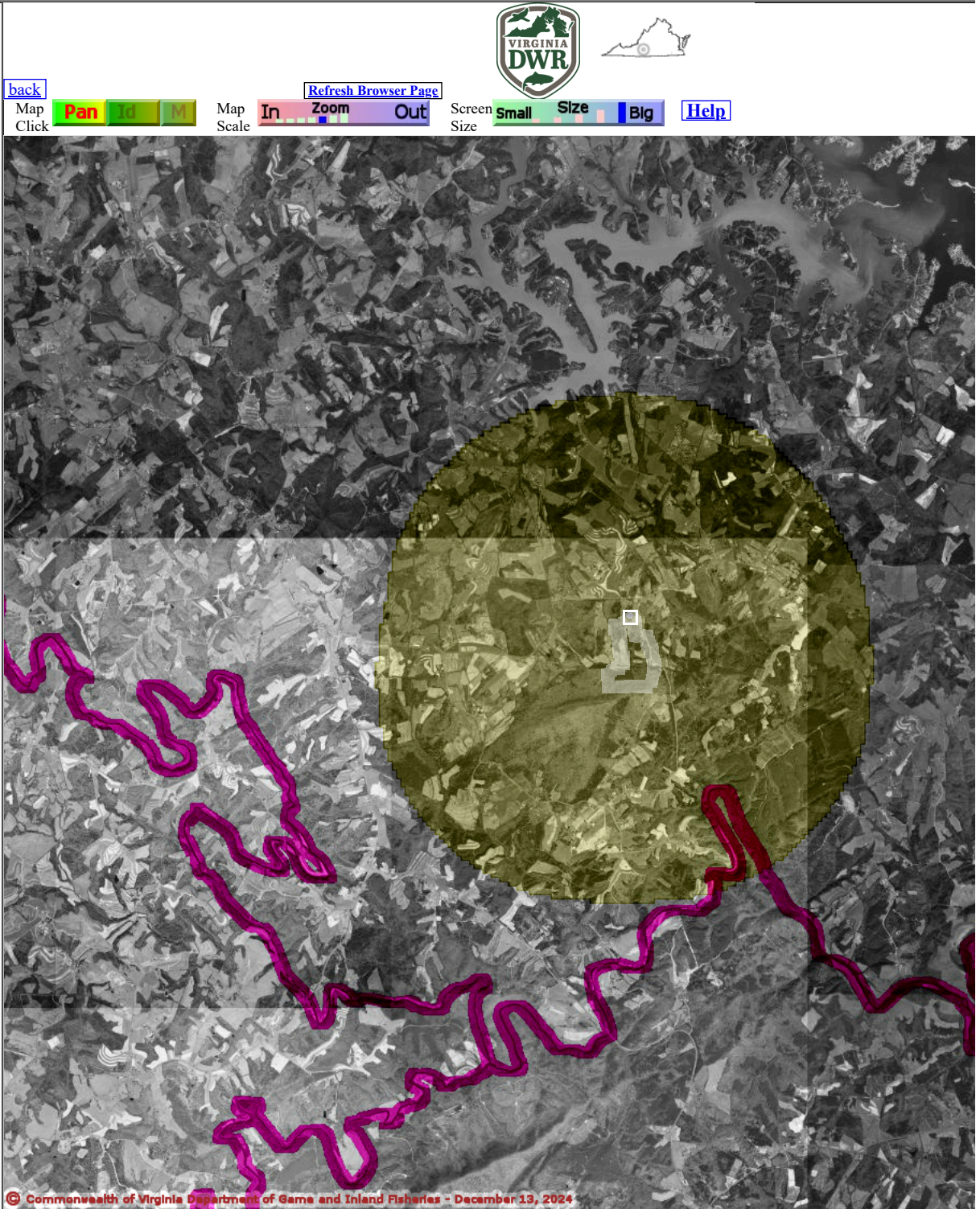
#### Map Overlay Legend

##### T & E Waters

Federal

State

2 mile radius Search Area



Point of Search 36.99082 -79.71239

Map Location 36.98326 -79.72738

Select Coordinate System:  Degrees,Minutes,Seconds Latitude - Longitude

Decimal Degrees Latitude - Longitude

Meters UTM NAD83 East North Zone

Meters UTM NAD27 East North Zone

Base Map source: Black & White USGS Aerial Photography (see [Microsoft terraserver-usa.com](https://terraserver-usa.com) for details)

Map projection is UTM Zone 17 NAD 1983 with left 605260 and top 4101773. Pixel size is 12. . Coordinates displayed are decimal Degrees North and West. Map is currently displayed as 1000 columns by 1000 rows for a total of 1000000 pixels. The map display represents 16000 meters east to west by 16000 meters north to south for a total of 256.0 square kilometers. The map display represents 52502 feet east to west by 52502 feet north to south for a total of 98.8 square miles.

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All other map products are from the Commonwealth of Virginia Department of Wildlife Resources.

map assembled 2024-12-13 11:13:41 (qa/qc March 21, 2016 12:20 - tn=3090153.1 dist=3218  
I)

\$poi=36.9908200 -79.7123999

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# Virginia Department of Wildlife Resources

12/13/2024 11:13:27 AM

## Fish and Wildlife Information Service

**VaFWIS Search Report** Compiled on 12/13/2024, 11:13:27 AM

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Known or likely to occur within a **2 mile buffer around polygon; center 36.9908200 -79.7123999**  
 in **067 Franklin County, VA**  
 where (010127) [Madtom, orangefin](#) observed.

[View Map of Site Location](#)

### Threatened and Endangered Waters where Madtom, orangefin (010127) observed

( 6 Reaches )

[View Map of All Threatened and Endangered Waters](#)

Stream Name	T&E Waters Species						View Map
	Highest TE*	BOVA Code, Status*, Tier**, Common & Scientific Name					
<a href="#">Pigg River (0185452.)</a>	FESE	010127	ST	IIb	<a href="#">Madtom, orangefin</a>	Noturus gilberti	<a href="#">Yes</a>
		010214	FESE	IIa	<a href="#">Logperch, Roanoke</a>	Percina rex	
<a href="#">Pigg River (0188979.)</a>	FESE	010127	ST	IIb	<a href="#">Madtom, orangefin</a>	Noturus gilberti	<a href="#">Yes</a>
		010214	FESE	IIa	<a href="#">Logperch, Roanoke</a>	Percina rex	
<a href="#">Pigg River (0189853.)</a>	FESE	010127	ST	IIb	<a href="#">Madtom, orangefin</a>	Noturus gilberti	<a href="#">Yes</a>
		010214	FESE	IIa	<a href="#">Logperch, Roanoke</a>	Percina rex	
<a href="#">Pigg River (0191756.)</a>	FESE	010127	ST	IIb	<a href="#">Madtom, orangefin</a>	Noturus gilberti	<a href="#">Yes</a>
		010214	FESE	IIa	<a href="#">Logperch, Roanoke</a>	Percina rex	
<a href="#">Pigg River (0201321.)</a>	FESE	010127	ST	IIb	<a href="#">Madtom, orangefin</a>	Noturus gilberti	<a href="#">Yes</a>
		010214	FESE	IIa	<a href="#">Logperch, Roanoke</a>	Percina rex	

<a href="#">Pigg River (0203820)</a>	FESE	010127	ST	I Ib	<a href="#">Madtom, orangefin</a>	Noturus gilberti	<a href="#">Yes</a>
		010214	FESE	I Ia	<a href="#">Logperch, Roanoke</a>	Percina rex	

\*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.

### Species Observations where Madtom, orangefin (010127) observed

N/A

### Habitat Predicted for Aquatic WAP Tier I & II Species where Madtom, orangefin (010127) observed

( 2 Reaches )

#### [View Map Combined Reaches from Below of Habitat Predicted for WAP Tier I & II Aquatic Species](#)

Stream Name	Tier Species						View Map
	Highest TE *	BOVA Code, Status *, Tier **, Common & Scientific Name					
Glade Creek (30101011)	FESE	010127	ST	I Ib	<a href="#">Madtom, orangefin</a>	Noturus gilberti	<a href="#">Yes</a>
		010214	FESE	I Ia	<a href="#">Logperch, Roanoke</a>	Percina rex	
Pigg River (30101011)	FESE	010127	ST	I Ib	<a href="#">Madtom, orangefin</a>	Noturus gilberti	<a href="#">Yes</a>
		010174		I Ia	<a href="#">Bass, Roanoke</a>	Ambloplites cavifrons	
		010214	FESE	I Ia	<a href="#">Logperch, Roanoke</a>	Percina rex	
Pigg River (30101011)	FESE	010127	ST	I Ib	<a href="#">Madtom, orangefin</a>	Noturus gilberti	<a href="#">Yes</a>
		010174		I Ia	<a href="#">Bass, Roanoke</a>	Ambloplites cavifrons	
		010214	FESE	I Ia	<a href="#">Logperch, Roanoke</a>	Percina rex	



## Habitat Predicted for Terrestrial WAP Tier I & II Species where Madtom, orangefin (010127) observed

N/A

Compiled on 12/13/2024, 11:13:28 AM I3090153.1 report=BOVA searchType=P dist= 3218 poi= 36.9908200 -79.7123999

**audit no. 3090153 12/13/2024 11:13:28 AM Virginia Fish and Wildlife Information Service**  
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Virginia Department of Conservation and Recreation (VDNR) – Natural Heritage Data Explorer  
(NHDE)



# Natural Heritage Screen Layer

## Jacks Creek Conservation Site



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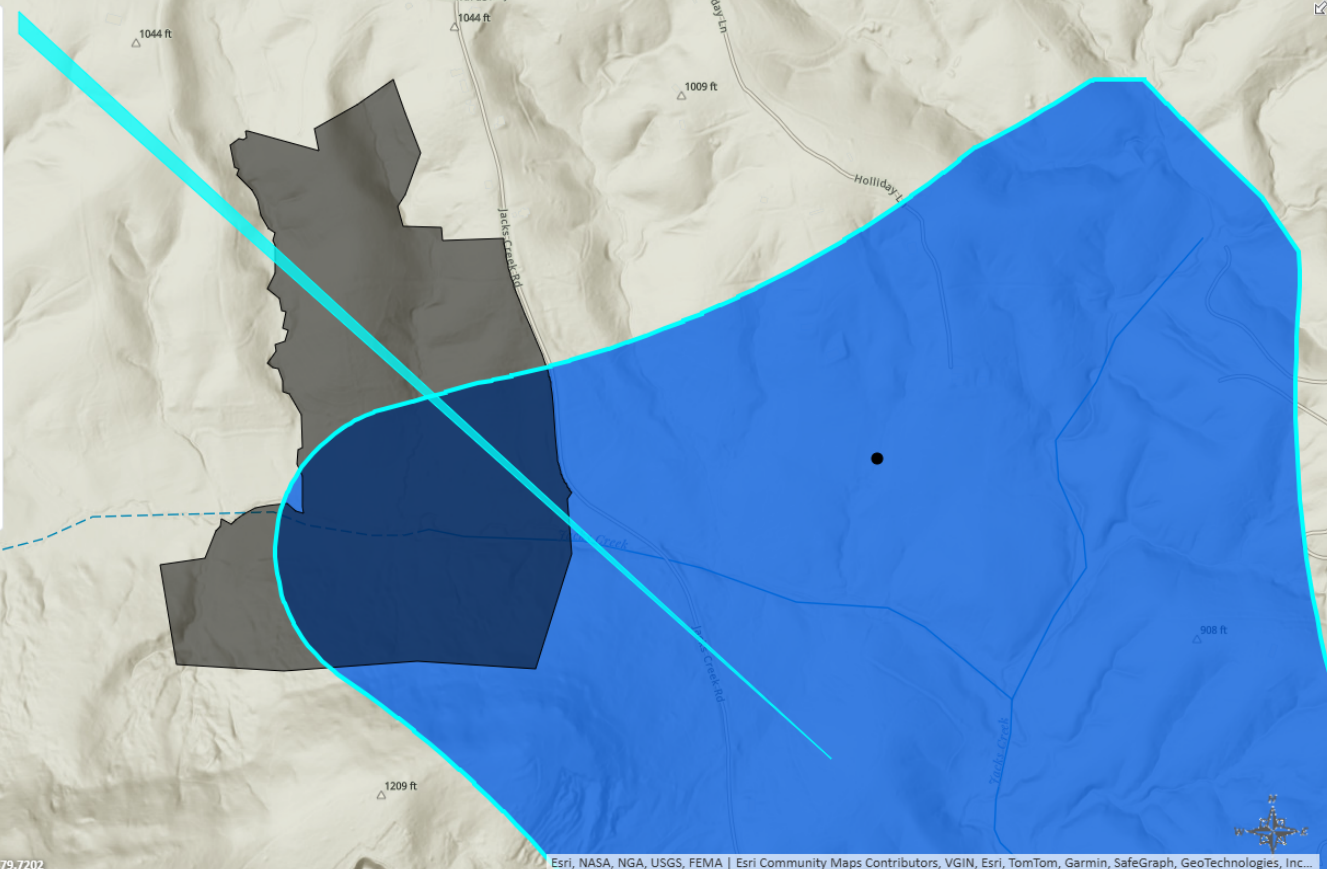
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- Make a Map
- Feature Search
- Natural Heritage Resources
  - Documented NH Screening Layer
- Predicted Habitats
  - Predicted Suitable Habitats Summary
  - Diabase Screening Layer
  - Karst Spelaea Screening Layer
  - Predicted Suitable Habitats By Taxa
- Managed Conservation Lands
  - Managed Conservation Lands
- ConserveVirginia v3.0
  - ConserveVirginia v3.0
- Wildlife Corridor Action Plan
  - Wildlife Corridor Action Plan
- Conservation Planning
  - Potential Freshwater Mussel Richness
  - Potential Rare Species Richness
  - Ecological Cores
  - Natural Land Network
  - Forest Conservation Values
  - Watershed Impact Model
  - Nature-based Recreation Access Model
  - Cultural Resource Preservation Index
  - Agricultural Model
  - Development Vulnerability Model
- Karst Research
  - Dye Inputs
  - Monitor Points
  - Dye Trace Vectors

**Details (1 of 1): Documented NH Screening Layer - Conservation Site**

Layer: Documented NH Screening Layer  
Conservation Site ID: 338  
Conservation Site Name: JACKS CREEK  
Biodiversity Rank: B2  
Legal Status: NL  
Acres: 680  
Description: This "Irreplaceable" conservation site delineates an area that provides habitat and buffer for one or more natural heritage resources (NHRs = rare plants, animals, animal assemblages, significant natural communities or geologic features) including: 1 Irreplaceable NHR and 1 High Priority NHR.  
Type: Conservation Site  
Essential Conservation Site?: YES - Irreplaceable

Zoom Flash < >  
1 / 1 Tasks

200m 600ft Scale: 1 : 9,028 Latitude: 36.9915, Longitude: -79.7202



# Predicted Suitable Habitat Model

## Piedmont Fameflower



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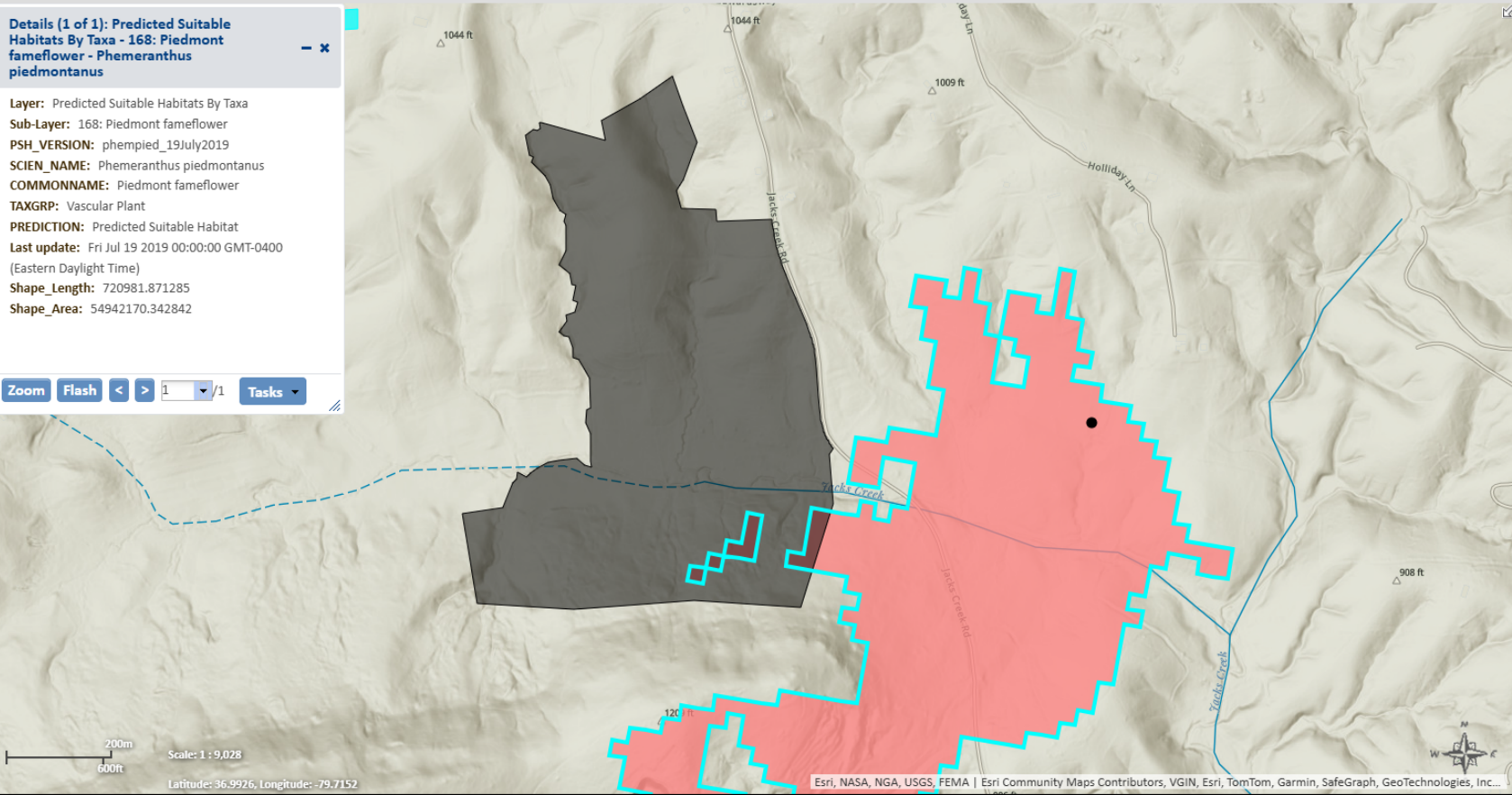
Switch Basemap Add Resources Create Project

- Layers Make a Map Feature Search
- A violet - *Viola tenuisecta*
  - Addison's Leatherflower
  - Appalachian Hedge-nettle
  - Basil Mountain-mint
  - Bentley's coralroot
  - Blue Panic Grass
  - Cape Fear Spatterdock
  - Eastern Prairie White-fringed Orchid
  - Fogg's goosefoot
  - Fraser Fir
  - Harper's Fimbry
  - Harperella
  - Juniper sedge
  - Lance-leaf Goldenrod
  - Long Beach Seedbox
  - Long-stalked Holly
  - Michaux's Sumac
  - Millboro Leatherflower
  - Mountain Doll's-daisy
  - New Jersey Rush
  - Northeastern Bulrush
  - Peters Mountain mallow
  - Piedmont fameflower
  - Raven's Seedbox
  - Reclining Bulrush
  - Roan mountain bluet
  - Running Glade Clover
  - sandhills bog lily
  - Seabeach Amaranth
  - Seaside Thoroughwort
  - Sensitive Joint-vetch
  - Shale barren rock cress
  - Shriver's frilly orchid
  - Small Whorled Pogonia
  - Small-anthered Bittercress
  - Smooth Coneflower

**Details (1 of 1): Predicted Suitable Habitats By Taxa - 168: Piedmont fameflower - PheMERanthus piedmontanus**

Layer: Predicted Suitable Habitats By Taxa  
Sub-Layer: 168: Piedmont fameflower  
PSH\_VERSION: phempied\_19July2019  
SCIENTIFIC\_NAME: PheMERanthus piedmontanus  
COMMONNAME: Piedmont fameflower  
TAXGRP: Vascular Plant  
PREDICTION: Predicted Suitable Habitat  
Last update: Fri Jul 19 2019 00:00:00 GMT-0400 (Eastern Daylight Time)  
Shape\_Length: 720981.871285  
Shape\_Area: 54942170.342842

Zoom Flash < > 1 / 1 Tasks





Attachment 2: Cultural Resources Review



Edwards Solar Cultural Resources				
Architectural Resources				
DHR ID	Property Names	Location	Evaluation Status	Description
033-5310	House, Jacks Creek Road	Onsite	DHR Staff: Not Eligible	Abandoned and deteriorated Log House
033-5340	House and Tobacco Barns Ruins, 9200 Old Franklin Turnpike	Adjacent	DHR Staff: Not Eligible	Ruins of a Dwelling and Tobacco Barn
033-0172	Log House, Jacks Creek Road	Nearby	Not Evaluated	One-story Log Cabin
033-0261	Primitive Baptist Ephesus Church	Nearby	Not Evaluated	Church/Chapel
033-0171	Ephesus School (Historic), Rosenwald School, Rt 662	Nearby	Not Evaluated	One-story Abandoned School House
033-0132	Fralin Place	Nearby	Not Evaluated	Single Dwelling
033-0262	New Primitive Baptist Ephesus Church	Nearby	Not Evaluated	Church/Chapel
033-0263	Duran, Martha, House	Nearby	Not Evaluated	Single Dwelling
033-5308	House, Holliday Lane	Nearby	DHR Staff: Not Eligible	Abandoned and deteriorated Log House
033-5342	Barn Ruins, Old Franklin Turnpike (Route 40)	Nearby	DHR Staff: Not Eligible	Ruins of a Dwelling, Shed, and Tobacco Barn
033-5403	Edwards Cemetery, Holliday Lane	Nearby	DHR Staff: Not Eligible	0.13-Acre Family Cemetery
033-5627	Arrington House (Historic), House, 2295 Jacks Creek Road	Nearby	Not Evaluated	Single Dwelling

Archaeological Resources				
DHR ID	Site Name	Location	Evaluation Status	Description
44FR0358	Open Air Terrestrial	Nearby	Not Evaluated	Artifact scatter
44FR0359	Open Air Terrestrial	Nearby	Not Evaluated	Lithic scatter
44FR0389	Open Air Terrestrial	Nearby	Not Evaluated	Lithic scatter
44FR0494	Edwards Family Cemetery North	Nearby	Not Evaluated	Cemetery
44FR0495	Edwards Family Cemetery South	Nearby	Not Evaluated	Cemetery



**Legend**

- Project Study Limits - 108.87 Acres
- Half Mile Buffer
- Architecture Resources
- Archaeological Resources

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 Richmond, VA 23226  
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**EDWARDS SOLAR**  
 FRANKLIN COUNTY - VIRGINIA

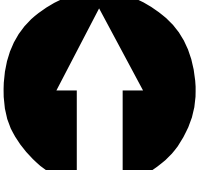
DATE	12/13/2024
PROJECT NUMBER	47661.040
PROJECT NAME	EDWARDS SOLAR
DESIGNED BY / DRAWN BY	M. HILL

**NOTES:**  
 Cultural resource data from VDHR.  
 Aerial imagery from VGIN.

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REVISIONS	
#	DESCRIPTION

DRAWING DESCRIPTION  
**CULTURAL RESOURCE MAP**

  
 SCALE (FEET)  
 0 600 1,200  
PLANS PRINTED AS 11X17 ARE HALF SCALE  
 SCALE SHEET NUMBER  
 H: 1" = 60' 1



### Property Information

#### Property Names

Name Explanation	Name
Function/Location	House, Jacks Creek Road

#### Property Evaluation Status

DHR Staff: Not Eligible

#### Property Addresses

Current - Jacks Creek Road Route 662

County/Independent City(s):	Franklin (County)
Incorporated Town(s):	No Data
Zip Code(s):	24176
Magisterial District(s):	Union Hall
Tax Parcel(s):	0660010100
USGS Quad(s):	PENHOOK

### Additional Property Information

Architecture Setting: Rural

Acreage: 100

#### Site Description:

May 2015: This abandoned and deteriorated log house is located on a 100-acre parcel on both sides of Jackson Creek Road. The circa 1890 house faces west and is surrounded by encroaching vegetation except on the north side. It is immediately adjacent to a power line transmission corridor on its north side. There are no outbuildings.

#### Surveyor Assessment:

May 2015: This is a common vernacular house that is in poor condition with low integrity. The resource is recommended not eligible for the NRHP under Criteria A, B, or C.

Surveyor Recommendation: Recommended Not Eligible

#### Ownership

Ownership Category	Ownership Entity
Private	No Data

### Primary Resource Information

Resource Category:	Domestic
Resource Type:	Single Dwelling
NR Resource Type:	Building
Historic District Status:	No Data
Date of Construction:	Ca 1890
Date Source:	Site Visit
Historic Time Period:	Reconstruction and Growth (1866 - 1916)
Historic Context(s):	Domestic
Other ID Number:	No Data
Architectural Style:	Vernacular
Form:	Rectangular
Number of Stories:	2.0
Condition:	Poor
Threats to Resource:	Neglect, Structural Failure, Vacant
Cultural Affiliations:	No Data
Cultural Affiliation Details:	No Data

#### Architectural Description:

May 2015: This is a two-story log house with a side gable metal roof and log walls. The foundation is not visible. The roof is partially collapsed

and there is vertical plank siding in the gable ends. There is a one-story rear metal shed addition on the west elevation. There are no visible doors or windows.

**Exterior Components**

Component	Component Type	Material	Material Treatment
Structural System and Exterior Treatment	Horizontal Log	Log	Not Visible
Structural System and Exterior Treatment	Other	Other	Siding
Roof	Side Gable	Metal	No Data

**Secondary Resource Information**

**Historic District Information**

**Historic District Name:** No Data  
**Local Historic District Name:** No Data  
**Historic District Significance:** No Data

**CRM Events**

**Event Type: DHR Staff: Not Eligible**

**DHR ID:** 033-5310  
**Staff Name:** Marc Holma  
**Event Date:** 1/6/2016  
**Staff Comment**

VDHR File #2014-1194.

**Event Type: Survey:Phase I/Reconnaissance**

**Project Review File Number:** 2014-1194  
**Investigator:** Ellen Turco  
**Organization/Company:** New South Associates  
**Photographic Media:** Digital  
**Survey Date:** 5/19/2015  
**Dhr Library Report Number:** FR-041

**Project Staff/Notes:**

Ellen Turco, David Price, Robbie Jones  
Phase I Reconnaissance Architectural Survey for the Mountain Valley Pipeline, Franklin County, Virginia  
New South Associates, Inc.  
September 2015  
2014-1194  
FR-041

**Bibliographic Information**

**Bibliography:**

No Data

**Property Notes:**

No Data



### Property Information

#### Property Names

Name Explanation	Name
Function/Location	House and Tobacco Barns Ruins, 9200 Old Franklin Turnpike

#### Property Evaluation Status

DHR Staff: Not Eligible

#### Property Addresses

Current - 9200 Old Franklin Turnpike Route 40

County/Independent City(s): Franklin (County)

Incorporated Town(s): *No Data*

Zip Code(s): 24176

Magisterial District(s): *No Data*

Tax Parcel(s): *No Data*

USGS Quad(s): PENHOOK

### Additional Property Information

Architecture Setting: Rural

Acreage: 58

#### Site Description:

May 2015: Located off the south side of Old Franklin Turnpike (Route 20), this resource consists of the ruins of a house and tobacco barns. The 58-acre parcel includes the remnants of five buildings, including the poured concrete foundation of a dwelling, and the collapsed ruins of three circa 1900 log tobacco barns.

#### Surveyor Assessment:

May 2015: The resource consists of the ruins of a dwelling and tobacco barns. These buildings are no longer standing therefore lack distinctive architecture and materials integrity. The resource is recommended not eligible for the NRHP under Criteria A, B, or C.

Surveyor Recommendation: Recommended Not Eligible

#### Ownership

Ownership Category	Ownership Entity
Private	<i>No Data</i>

### Primary Resource Information

Resource Category: Agriculture/Subsistence

Resource Type: Tobacco Barn

NR Resource Type: Building

Historic District Status: *No Data*

Date of Construction: Ca 1900

Date Source: Site Visit

Historic Time Period: Reconstruction and Growth (1866 - 1916)

Historic Context(s): Subsistence/Agriculture

Other ID Number: *No Data*

Architectural Style: No discernible style

Form: *No Data*

Number of Stories: 1.0

Condition: Ruinous

Threats to Resource: None Known

Cultural Affiliations: *No Data*

#### Cultural Affiliation Details:

*No Data*

#### Architectural Description:

May 2015: Barn 1: A ruinous log tobacco barn consisting of no more than a pile of logs, cedar posts and some concrete.

**Exterior Components**

Component	Component Type	Material	Material Treatment
Structural System and Exterior Treatment	Horizontal Log	Log	Not Visible

**Secondary Resource Information**

**Secondary Resource #1**

**Resource Category:** Agriculture/Subsistence  
**Resource Type:** Tobacco Barn  
**Date of Construction:** 1900Ca  
**Date Source:** Site Visit  
**Historic Time Period:** Reconstruction and Growth (1866 - 1916)  
**Historic Context(s):** Subsistence/Agriculture  
**Architectural Style:** No discernible style  
**Form:** *No Data*  
**Condition:** Ruinous  
**Threats to Resource:** Neglect, Structural Failure  
**Cultural Affiliations:** *No Data*  
**Cultural Affiliation Details:**  
*No Data*

**Architectural Description:**

May 2015: Barn 3: A ruinous log tobacco barn consisting of a pile of cut framing limber and some stones.

**Number of Stories:** 1

**Exterior Components**

Component	Component Type	Material	Material Treatment
Structural System and Exterior Treatment	Horizontal Log	Log	Not Visible

**Secondary Resource #2**

**Resource Category:** Agriculture/Subsistence  
**Resource Type:** Tobacco Barn  
**Date of Construction:** 1900Ca  
**Date Source:** Site Visit  
**Historic Time Period:** Reconstruction and Growth (1866 - 1916)  
**Historic Context(s):** Subsistence/Agriculture  
**Architectural Style:** No discernible style  
**Form:** *No Data*  
**Condition:** Ruinous  
**Threats to Resource:** Neglect, Structural Failure  
**Cultural Affiliations:** *No Data*  
**Cultural Affiliation Details:**  
*No Data*

**Architectural Description:**

May 2015: Barn 2: This collapsed tobacco barn was built of saddle notched logs and mud daubing. On top of the debris pile is a metal roof.

**Number of Stories:** 1

**Exterior Components**

Component	Component Type	Material	Material Treatment
Structural System and Exterior Treatment	Horizontal Log	Log	Other
Roof	Front Gable	Metal	<i>No Data</i>



### Secondary Resource #3

**Resource Category:** Domestic  
**Resource Type:** Single Dwelling  
**Date of Construction:** 1900Ca  
**Date Source:** Site Visit  
**Historic Time Period:** Reconstruction and Growth (1866 - 1916)  
**Historic Context(s):** Architecture/Landscape  
**Architectural Style:** No discernible style  
**Form:** *No Data*  
**Condition:** Ruinous  
**Threats to Resource:** Demolition, Neglect, Structural Failure  
**Cultural Affiliations:** *No Data*

**Cultural Affiliation Details:**  
*No Data*

**Architectural Description:**

May 2015: This ruin consists of a rectangular concrete foundation. No framing members or building materials remain to discern the construction techniques materials, style or form.

**Number of Stories:** *No Data*

### Secondary Resource #4

**Resource Category:** Agriculture/Subsistence  
**Resource Type:** Agricultural Bldg.  
**Date of Construction:** 1900Ca  
**Date Source:** Site Visit  
**Historic Time Period:** Reconstruction and Growth (1866 - 1916)  
**Historic Context(s):** Subsistence/Agriculture  
**Architectural Style:** No discernible style  
**Form:** *No Data*  
**Condition:** Ruinous  
**Threats to Resource:** Demolition, Neglect, Structural Failure  
**Cultural Affiliations:** *No Data*

**Cultural Affiliation Details:**  
*No Data*

**Architectural Description:**

May 2015: This ruin consists of a small foundation of uncut stones.

**Number of Stories:** *No Data*

### Historic District Information

**Historic District Name:** *No Data*  
**Local Historic District Name:** *No Data*  
**Historic District Significance:** *No Data*

### CRM Events

**Event Type: DHR Staff: Not Eligible**

**DHR ID:** 033-5340  
**Staff Name:** Marc Holma  
**Event Date:** 1/6/2016  
**Staff Comment**

VDHR File #2014-1194.

**Event Type: Survey:Phase I/Reconnaissance**

**Project Review File Number:** 2014-1194  
**Investigator:** James Marine  
**Organization/Company:** New South Associates  
**Photographic Media:** Digital  
**Survey Date:** 6/1/2015  
**Dhr Library Report Number:** FR-041

**Project Staff/Notes:**

Historic resources identified by TetraTech archaeological staff

Ellen Turco, David Price, Robbie Jones  
Phase I Reconnaissance Architectural Survey for the Mountain Valley Pipeline, Franklin County, Virginia  
New South Associates, Inc.  
September 2015  
2014-1194  
FR-041

**Bibliographic Information**

**Bibliography:**

No Data

**Property Notes:**

May 2015: The resource is not accessible from the public right-of-way and was documented by Tetra Tech during the archaeological survey.



**Property Information**

**Property Names**

<b>Name Explanation</b>	<b>Name</b>
Function/Location	Log House, Jacks Creek Road

**Property Evaluation Status**

Not Evaluated

**Property Addresses**

Current - Jacks Creek Road Route 662

**County/Independent City(s):** Franklin (County)

**Incorporated Town(s):** *No Data*

**Zip Code(s):** 24176

**Magisterial District(s):** *No Data*

**Tax Parcel(s):** *No Data*

**USGS Quad(s):** PENHOOK

**Additional Property Information**

**Architecture Setting:** Rural

**Acreage:** *No Data*

**Site Description:**

April 2023: The house is located on the east side of Jacks Creek Road/State Route 662 in east Franklin County. The house is set back approximately 20 feet from Jacks Creek Road and stands on a grassy, gently sloping parcel. There are no secondary resources associated with this property.

**Surveyor Assessment:**

April 2023: This ca. 1964 house on Jacks Creek Road does not conform to an established architectural style. The building retains its historic form, log construction, and a historic window. The house is in fair condition and retains moderate integrity. This house does not possess remarkable architectural features and is not the work of an architect. Therefore, it is not recommended individually eligible for the NRHP under Criterion C. The house has no known association with a significant event or person and is not recommended individually eligible for listing to the NRHP under Criteria A or B. As an architectural resource, this property was not evaluated under Criterion D. Based on the above criteria, the resource does not appear to possess sufficient architectural or historical significance for individual listing and does not appear to contribute to a potential historic district.

**Surveyor Recommendation:** Recommended Not Eligible

**Ownership**

<b>Ownership Category</b>	<b>Ownership Entity</b>
Private	<i>No Data</i>

**Primary Resource Information**

**Resource Category:** Domestic

**Resource Type:** Single Dwelling

**NR Resource Type:** Building

**Historic District Status:** *No Data*

**Date of Construction:** Ca 1966

**Date Source:** Site Visit

**Historic Time Period:** The New Dominion (1946 - 1991)

**Historic Context(s):** Domestic

**Other ID Number:** *No Data*

**Architectural Style:** Other

**Form:** Rectangular

**Number of Stories:** 1.0

**Condition:** Good

**Threats to Resource:** Neglect, Vacant

**Cultural Affiliations:** Indeterminate

**Cultural Affiliation Details:**

No Data

**Architectural Description:**

Architecture Summary, 1970: One-story log cabin. Logs chinked with lime mortar. Weatherboard in the gable ends. Door and windows have wood surrounds.

April 2023: This one-story house is rectangular in form with a front gable roof. The exterior walls are constructed of saddle-notched, hewn logs. The roofing is corrugated metal. The double-hung wood sash windows are 4/1 and feature wood trim and wood sills. The central front entrance and window openings are covered with plywood. A double-hung 6/6 wood sash window remains intact on the north side elevation.

**Exterior Components**

Component	Component Type	Material	Material Treatment
Structural System and Exterior Treatment	Log	Wood	Other
Roof	Gable, Front	Metal	Standing Seam
Windows	Sash, Double-Hung	Wood	6/6
Foundation	Solid/Continuous	Concrete	Block

**Secondary Resource Information**

**Historic District Information**

**Historic District Name:** *No Data*  
**Local Historic District Name:** *No Data*  
**Historic District Significance:** *No Data*

**CRM Events**

**Event Type: Survey:Phase I/Reconnaissance**

**Project Review File Number:** *No Data*  
**Investigator:** Kate Kronau  
**Organization/Company:** Hill Studio  
**Photographic Media:** Digital  
**Survey Date:** 4/18/2023  
**Dhr Library Report Number:** *No Data*  
**Project Staff/Notes:**  
*No Data*

**Event Type: Survey:Phase I/Reconnaissance**

**Project Review File Number:** *No Data*  
**Investigator:** Lee, M.  
**Organization/Company:** Unknown (DSS)  
**Photographic Media:** *No Data*  
**Survey Date:** 10/1/1970  
**Dhr Library Report Number:** *No Data*  
**Project Staff/Notes:**  
*No Data*

**Bibliographic Information**

**Bibliography:**  
*No Data*



**Property Notes:**

No Data

**Property Information**

**Property Names**

<b>Name Explanation</b>	<b>Name</b>
Current	Primitive Baptist Ephesus Church

**Property Evaluation Status**

Not Evaluated

**Property Addresses**

Current - Gladehill & Union Hall, Between.

<b>County/Independent City(s):</b>	Franklin (County)
<b>Incorporated Town(s):</b>	No Data
<b>Zip Code(s):</b>	No Data
<b>Magisterial District(s):</b>	No Data
<b>Tax Parcel(s):</b>	No Data
<b>USGS Quad(s):</b>	PENHOOK

**Additional Property Information**

**Architecture Setting:** No Data

**Acreage:** No Data

**Site Description:**

No Data

**Surveyor Assessment:**

No Data

**Surveyor Recommendation:** No Data

**Primary Resource Information**

<b>Resource Category:</b>	Religion
<b>Resource Type:</b>	Church/Chapel
<b>NR Resource Type:</b>	Building
<b>Historic District Status:</b>	No Data
<b>Date of Construction:</b>	
<b>Date Source:</b>	No Data
<b>Historic Time Period:</b>	No Data
<b>Historic Context(s):</b>	Religion
<b>Other ID Number:</b>	No Data
<b>Architectural Style:</b>	No Data
<b>Form:</b>	No Data
<b>Number of Stories:</b>	1.0
<b>Condition:</b>	Fair
<b>Threats to Resource:</b>	Deterioration
<b>Cultural Affiliations:</b>	No Data

**Cultural Affiliation Details:**

No Data

**Architectural Description:**

Architecture Summary: 3-bay nave

**Exterior Components**

Component	Component Type	Material	Material Treatment
Structural System and Exterior Treatment	Frame	Wood	Other
Windows	Sash, Double-Hung	Wood	6/6
Chimneys	Other	Brick	Other



Roof	Gable, Front	Metal	Standing Seam
------	--------------	-------	---------------

**Secondary Resource Information**

**Historic District Information**

**Historic District Name:** *No Data*  
**Local Historic District Name:** *No Data*  
**Historic District Significance:** *No Data*

**CRM Events**

**Event Type: Survey:Phase I/Reconnaissance**

**Project Review File Number:** *No Data*  
**Investigator:** Lee, Margaret  
**Organization/Company:** Unknown (DSS)  
**Photographic Media:** *No Data*  
**Survey Date:** 10/1/1970  
**Dhr Library Report Number:** *No Data*  
**Project Staff/Notes:**  
*No Data*

**Bibliographic Information**

**Bibliography:**  
*No Data*  
**Property Notes:**  
*No Data*

**Property Information**

**Property Names**

<b>Name Explanation</b>	<b>Name</b>
Function/Location	Rosenwald School, Rt 662
Historic	Ephesus School

**Property Evaluation Status**

Not Evaluated

**Property Addresses**

Alternate - Route 662

**County/Independent City(s):** Franklin (County)

**Incorporated Town(s):** *No Data*

**Zip Code(s):** *No Data*

**Magisterial District(s):** *No Data*

**Tax Parcel(s):** *No Data*

**USGS Quad(s):** PENHOOK

**Additional Property Information**

**Architecture Setting:** *No Data*

**Acreage:** *No Data*

**Site Description:**

*No Data*

**Surveyor Assessment:**

*No Data*

**Surveyor Recommendation:** *No Data*

**Primary Resource Information**

**Resource Category:** Education

**Resource Type:** School

**NR Resource Type:** Building

**Historic District Status:** *No Data*

**Date of Construction:** Ca 1917

**Date Source:** Site Visit

**Historic Time Period:** World War I to World War II (1917 - 1945)

**Historic Context(s):** Education

**Other ID Number:** *No Data*

**Architectural Style:** Other

**Form:** *No Data*

**Number of Stories:** 1.0

**Condition:** Poor

**Threats to Resource:** None Known

**Cultural Affiliations:** *No Data*

**Cultural Affiliation Details:**

*No Data*

**Architectural Description:**

Architecture Summary: One-story abandoned school house. Roof has overhanging eaves; small rectangular louvered vents in the gable peaks. Cornerboards and wood surrounds around the door and window openings. Central entrance marked by shed roof hood with exposed rafter tails. Doors are missing; windows are boarded over. Window openings vary; some are 9/9 sash, others appear to be 2/2 sash. Off-center rear entrance with shed roof hood similar to the front. Paneled wood entrance door.

**Exterior Components**

Component	Component Type	Material	Material Treatment
-----------	----------------	----------	--------------------



Foundation Roof Structural System and Exterior Treatment	Piers Gable, Front Frame	Stone Metal Wood	Not Visible Standing Seam Weatherboard
---	--------------------------------	------------------------	--

**Secondary Resource Information**

**Historic District Information**

**Historic District Name:** *No Data*  
**Local Historic District Name:** *No Data*  
**Historic District Significance:** *No Data*

**CRM Events**

**Event Type: Survey:Phase I/Reconnaissance**

**Project Review File Number:** *No Data*  
**Investigator:** Lee, M.  
**Organization/Company:** Unknown (DSS)  
**Photographic Media:** *No Data*  
**Survey Date:** 10/1/1970  
**Dhr Library Report Number:** *No Data*  
**Project Staff/Notes:**  
*No Data*

**Bibliographic Information**

**Bibliography:**  
*No Data*  
**Property Notes:**  
*No Data*

**Property Information**

**Property Names**

<b>Name Explanation</b>	<b>Name</b>
Current	Fralin Place

**Property Evaluation Status**

Not Evaluated

**Property Addresses**

Current - Route 40

**County/Independent City(s):** Franklin (County)

**Incorporated Town(s):** No Data

**Zip Code(s):** No Data

**Magisterial District(s):** No Data

**Tax Parcel(s):** No Data

**USGS Quad(s):** PENHOOK

**Additional Property Information**

**Architecture Setting:** No Data

**Acreage:** No Data

**Site Description:**

No Data

**Surveyor Assessment:**

No Data

**Surveyor Recommendation:** No Data

**Primary Resource Information**

**Resource Category:** Domestic

**Resource Type:** Single Dwelling

**NR Resource Type:** Building

**Historic District Status:** No Data

**Date of Construction:** 1845

**Date Source:** No Data

**Historic Time Period:** Antebellum Period (1830 - 1860)

**Historic Context(s):** Domestic

**Other ID Number:** No Data

**Architectural Style:** No Data

**Form:** No Data

**Number of Stories:** 1.0

**Condition:** No Data

**Threats to Resource:** No Data

**Cultural Affiliations:** No Data

**Cultural Affiliation Details:**

No Data

**Architectural Description:**

No Data

**Exterior Components**

<b>Component</b>	<b>Component Type</b>	<b>Material</b>	<b>Material Treatment</b>
Roof	Gable	Metal	Standing Seam
Foundation	Solid/Continuous	Stone	Not Visible
Porch	1-story, 3-bay	Wood	Posts, Turned
Chimneys	Other	Stone	Other



Structural System and Exterior Treatment	Log	Wood	Weatherboard
Windows	Sash, Double-Hung	Wood	Other

**Secondary Resource Information**

**Historic District Information**

**Historic District Name:** *No Data*  
**Local Historic District Name:** *No Data*  
**Historic District Significance:** *No Data*

**CRM Events**

**Event Type: Survey:Phase I/Reconnaissance**

**Project Review File Number:** *No Data*  
**Investigator:** WPA of Virginia  
**Organization/Company:** Unknown (DSS)  
**Photographic Media:** *No Data*  
**Survey Date:** 1/1/1937  
**Dhr Library Report Number:** *No Data*  
**Project Staff/Notes:**  
*No Data*

**Event Type: Survey:Phase I/Reconnaissance**

**Project Review File Number:** *No Data*  
**Investigator:** *No Data*  
**Organization/Company:** Unknown (DSS)  
**Photographic Media:** *No Data*  
**Survey Date:** *No Data*  
**Dhr Library Report Number:** *No Data*  
**Project Staff/Notes:**  
VHLC - Architectural Survey Form

**Bibliographic Information**

**Bibliography:**  
*No Data*

**Property Notes:**  
*No Data*

**Property Information**

**Property Names**

<b>Name Explanation</b>	<b>Name</b>
Current	New Primitive Baptist Ephesus Church

**Property Evaluation Status**

Not Evaluated

**Property Addresses**

Current - Between Gladehill & Union Hall

<b>County/Independent City(s):</b>	Franklin (County)
<b>Incorporated Town(s):</b>	No Data
<b>Zip Code(s):</b>	No Data
<b>Magisterial District(s):</b>	No Data
<b>Tax Parcel(s):</b>	No Data
<b>USGS Quad(s):</b>	PENHOOK

**Additional Property Information**

**Architecture Setting:** No Data

**Acreage:** No Data

**Site Description:**

No Data

**Surveyor Assessment:**

No Data

**Surveyor Recommendation:** No Data

**Primary Resource Information**

<b>Resource Category:</b>	Religion
<b>Resource Type:</b>	Church/Chapel
<b>NR Resource Type:</b>	Building
<b>Historic District Status:</b>	No Data
<b>Date of Construction:</b>	1970
<b>Date Source:</b>	No Data
<b>Historic Time Period:</b>	The New Dominion (1946 - 1991)
<b>Historic Context(s):</b>	Religion
<b>Other ID Number:</b>	No Data
<b>Architectural Style:</b>	No Data
<b>Form:</b>	No Data
<b>Number of Stories:</b>	1.0
<b>Condition:</b>	Good
<b>Threats to Resource:</b>	None
<b>Cultural Affiliations:</b>	No Data

**Cultural Affiliation Details:**

No Data

**Architectural Description:**

Architecture Summary: --being built at time of survey.

**Exterior Components**

Component	Component Type	Material	Material Treatment
Roof	Gable	Asphalt	Shingle
Foundation	Solid/Continuous	Concrete	Block
Chimneys	Other	Brick	Other
Windows	Casement	Unknown	Other



Structural System and Exterior Treatment	Masonry	Brick	Bond, Stretcher
Windows	Sash, Double-Hung	Unknown	Other

### Secondary Resource Information

### Historic District Information

**Historic District Name:** *No Data*  
**Local Historic District Name:** *No Data*  
**Historic District Significance:** *No Data*

### CRM Events

#### Event Type: Survey:Phase I/Reconnaissance

**Project Review File Number:** *No Data*  
**Investigator:** Lee, A.C.  
**Organization/Company:** Unknown (DSS)  
**Photographic Media:** *No Data*  
**Survey Date:** 10/1/1970  
**Dhr Library Report Number:** *No Data*  
**Project Staff/Notes:**  
*No Data*

### Bibliographic Information

**Bibliography:**  
*No Data*  
**Property Notes:**  
*No Data*

**Property Information**

**Property Names**

<b>Name Explanation</b>	<b>Name</b>
Current	Duran, Martha, House

**Property Evaluation Status**

Not Evaluated

**Property Addresses**

- No Address Provided.

<b>County/Independent City(s):</b>	Franklin (County)
<b>Incorporated Town(s):</b>	No Data
<b>Zip Code(s):</b>	No Data
<b>Magisterial District(s):</b>	No Data
<b>Tax Parcel(s):</b>	No Data
<b>USGS Quad(s):</b>	PENHOOK

**Additional Property Information**

**Architecture Setting:** No Data

**Acreage:** No Data

**Site Description:**

Secondary resource is an outbuilding.

**Surveyor Assessment:**

No Data

**Surveyor Recommendation:** No Data

**Primary Resource Information**

<b>Resource Category:</b>	Domestic
<b>Resource Type:</b>	Single Dwelling
<b>NR Resource Type:</b>	Building
<b>Historic District Status:</b>	No Data
<b>Date of Construction:</b>	Ca 1800
<b>Date Source:</b>	Site Visit/Photograph
<b>Historic Time Period:</b>	Early National Period (1790 - 1829)
<b>Historic Context(s):</b>	Domestic
<b>Other ID Number:</b>	No Data
<b>Architectural Style:</b>	No Data
<b>Form:</b>	No Data
<b>Number of Stories:</b>	2.0
<b>Condition:</b>	Fair
<b>Threats to Resource:</b>	Deterioration
<b>Cultural Affiliations:</b>	No Data

**Cultural Affiliation Details:**

No Data

**Architectural Description:**

Architecture Summary: 3-bay facade

**Exterior Components**

Component	Component Type	Material	Material Treatment
Roof	Gable, Side	Metal	Standing Seam
Porch	1-story, 3-bay	Brick	Other
Chimneys	Exterior End	Stone	Other
Windows	Sash, Double-Hung	Wood	6/6



Foundation Structural System and Exterior Treatment	Solid/Continuous Log	Stone Wood	Not Visible Weatherboard
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### Secondary Resource Information

#### Secondary Resource #1

**Resource Category:** Other  
**Resource Type:** Other  
**Date of Construction:** Ca  
**Date Source:** *No Data*  
**Historic Time Period:** Early National Period (1790 - 1829)  
**Historic Context(s):** Domestic  
**Architectural Style:** *No Data*  
**Form:** *No Data*  
**Condition:** Poor  
**Threats to Resource:** Deterioration  
**Cultural Affiliations:** *No Data*  
**Cultural Affiliation Details:**  
*No Data*  
**Architectural Description:**  
Architecture Summary: V-notch log outbuilding with gable shake roof.

### Historic District Information

**Historic District Name:** *No Data*  
**Local Historic District Name:** *No Data*  
**Historic District Significance:** *No Data*

### CRM Events

#### Event Type: Survey:Phase I/Reconnaissance

**Project Review File Number:** *No Data*  
**Investigator:** Lee, Margaret  
**Organization/Company:** Unknown (DSS)  
**Photographic Media:** *No Data*  
**Survey Date:** 10/1/1970  
**Dhr Library Report Number:** *No Data*  
**Project Staff/Notes:**  
No date of construction provided on survey.

### Bibliographic Information

**Bibliography:**  
*No Data*  
**Property Notes:**  
*No Data*

### Property Information

#### Property Names

Name Explanation	Name
Function/Location	House, Holliday Lane

#### Property Evaluation Status

DHR Staff: Not Eligible

#### Property Addresses

Current - Holliday Lane

**County/Independent City(s):** Franklin (County)

**Incorporated Town(s):** *No Data*

**Zip Code(s):** 24176

**Magisterial District(s):** Union Hall

**Tax Parcel(s):** 0660010500

**USGS Quad(s):** PENHOOK

### Additional Property Information

**Architecture Setting:** Rural

**Acreage:** 1.8

#### Site Description:

May 2015: Located on the west side of Holliday Lane is this 1.8-acre parcel that contains an abandoned and deteriorated log house. Overgrown by woods, the circa 1890 house faces east and is located on a sloping hillside immediately next to a power line corridor and clearing. There is a modern farmstead immediately south that includes a mobile home, barn, and farm fields.

#### Surveyor Assessment:

May 2015: This is a common vernacular farmhouse that is in poor condition with low integrity. The resource is recommended not eligible for the NRHP under Criteria A, B, or C.

**Surveyor Recommendation:** Recommended Not Eligible

#### Ownership

Ownership Category	Ownership Entity
Private	<i>No Data</i>

### Primary Resource Information

**Resource Category:** Domestic

**Resource Type:** Single Dwelling

**NR Resource Type:** Building

**Historic District Status:** *No Data*

**Date of Construction:** Ca 1890

**Date Source:** Site Visit

**Historic Time Period:** Reconstruction and Growth (1866 - 1916)

**Historic Context(s):** Domestic

**Other ID Number:** *No Data*

**Architectural Style:** Vernacular

**Form:** Rectangular

**Number of Stories:** 1.0

**Condition:** Poor

**Threats to Resource:** Neglect, Structural Failure, Vacant

**Cultural Affiliations:** *No Data*

#### Cultural Affiliation Details:

*No Data*

#### Architectural Description:

May 2015: This is a one-story log farmhouse with a metal gable roof and asphalt siding over weatherboard siding. The foundation is not visible.



There is an interior central brick chimney and there are no remaining doors or windows. There are no outbuildings or other associated resources.

**Exterior Components**

Component	Component Type	Material	Material Treatment
Chimneys	Interior Central	Brick	Not Visible
Structural System and Exterior Treatment	Horizontal Log	Log	Other
Structural System and Exterior Treatment	Other	Asphalt	Siding
Roof	Front Gable	Metal	No Data

**Secondary Resource Information**

**Historic District Information**

**Historic District Name:** No Data  
**Local Historic District Name:** No Data  
**Historic District Significance:** No Data

**CRM Events**

**Event Type: DHR Staff: Not Eligible**

**DHR ID:** 033-5308  
**Staff Name:** Marc Holma  
**Event Date:** 1/6/2016  
**Staff Comment**

VDHR File #2014-1194.

**Event Type: Survey:Phase I/Reconnaissance**

**Project Review File Number:** 2014-1194  
**Investigator:** Ellen Turco  
**Organization/Company:** New South Associates  
**Photographic Media:** Digital  
**Survey Date:** 5/19/2015  
**Dhr Library Report Number:** FR-041

**Project Staff/Notes:**

Ellen Turco, David Price, Robbie Jones  
Phase I Reconnaissance Architectural Survey for the Mountain Valley Pipeline, Franklin County, Virginia  
New South Associates, Inc.  
September 2015  
2014-1194  
FR-041

**Bibliographic Information**

**Bibliography:**

No Data

**Property Notes:**

No Data

### Property Information

#### Property Names

Name Explanation	Name
Function/Location	Barn Ruins, Old Franklin Turnpike (Route 40)

#### Property Evaluation Status

DHR Staff: Not Eligible

#### Property Addresses

Current - Old Franklin Turnpike Route 40

**County/Independent City(s):** Franklin (County)

**Incorporated Town(s):** *No Data*

**Zip Code(s):** 24176

**Magisterial District(s):** *No Data*

**Tax Parcel(s):** *No Data*

**USGS Quad(s):** PENHOOK

### Additional Property Information

**Architecture Setting:** Rural

**Acreage:** 80

#### Site Description:

May 2015: Located on an 80-acre parcel on the south side of Old Franklin Turnpike (Route 40) at the intersection with Brooks Mill Road (Route 834), this property contains three 20th c. ruins: a house ruin, a stone tobacco barn foundation, and a shed ruin.

#### Surveyor Assessment:

May 2015: The resource consists of the ruins of three buildings. The buildings do not possess enough physical integrity for evaluation under NRHP Criteria A, B, or C.

**Surveyor Recommendation:** Recommended Not Eligible

#### Ownership

Ownership Category	Ownership Entity
Private	<i>No Data</i>

### Primary Resource Information

**Resource Category:** Domestic

**Resource Type:** Single Dwelling

**NR Resource Type:** Building

**Historic District Status:** *No Data*

**Date of Construction:** Ca 1900

**Date Source:** Site Visit

**Historic Time Period:** Reconstruction and Growth (1866 - 1916)

**Historic Context(s):** Domestic

**Other ID Number:** *No Data*

**Architectural Style:** No discernible style

**Form:** Rectangular

**Number of Stories:** 1.0

**Condition:** Ruinous

**Interior Plan:** Other

**Threats to Resource:** Neglect, Structural Failure

**Cultural Affiliations:** *No Data*

#### Cultural Affiliation Details:

*No Data*

#### Architectural Description:

May 2015: The house ruin consists of a standing stone chimney, stone piers, and hand-hewn, notched timber beams. An ell is indicated by



foundation stones and the remains of a second chimney.

**Exterior Components**

Component	Component Type	Material	Material Treatment
Foundation	Piers	Stone	Uncoursed

**Secondary Resource Information**

**Secondary Resource #1**

<b>Resource Category:</b>	Agriculture/Subsistence
<b>Resource Type:</b>	Agricultural Bldg.
<b>Date of Construction:</b>	1900Ca
<b>Date Source:</b>	Site Visit
<b>Historic Time Period:</b>	Reconstruction and Growth (1866 - 1916)
<b>Historic Context(s):</b>	Subsistence/Agriculture
<b>Architectural Style:</b>	No discernible style
<b>Form:</b>	Square
<b>Condition:</b>	Ruinous
<b>Threats to Resource:</b>	Neglect, Structural Failure
<b>Cultural Affiliations:</b>	<i>No Data</i>
<b>Cultural Affiliation Details:</b>	<i>No Data</i>

**Architectural Description:**

May 2015: The tobacco barn foundation consists of an uncut stone foundation with a furnace opening.

**Number of Stories:** 1

**Exterior Components**

Component	Component Type	Material	Material Treatment
Foundation	Solid/Continuous	Stone	Uncoursed

**Secondary Resource #2**

<b>Resource Category:</b>	Agriculture/Subsistence
<b>Resource Type:</b>	Shed
<b>Date of Construction:</b>	1900Ca
<b>Date Source:</b>	Site Visit
<b>Historic Time Period:</b>	Reconstruction and Growth (1866 - 1916)
<b>Historic Context(s):</b>	Subsistence/Agriculture
<b>Architectural Style:</b>	No discernible style
<b>Form:</b>	Rectangular
<b>Condition:</b>	Ruinous
<b>Threats to Resource:</b>	Neglect, Structural Failure
<b>Cultural Affiliations:</b>	<i>No Data</i>
<b>Cultural Affiliation Details:</b>	<i>No Data</i>

*No Data*

**Architectural Description:**

May 2015: The shed ruin is a log structure with an intact roof with metal over skip sheathing and weatherboarded gable ends

**Number of Stories:** 1

**Exterior Components**

Component	Component Type	Material	Material Treatment
Roof	Front Gable	Metal	<i>No Data</i>
Structural System and Exterior Treatment	Horizontal Log	Wood	Weatherboard

### Historic District Information

**Historic District Name:** *No Data*  
**Local Historic District Name:** *No Data*  
**Historic District Significance:** *No Data*

### CRM Events

#### Event Type: DHR Staff: Not Eligible

**DHR ID:** 033-5342  
**Staff Name:** Marc Holma  
**Event Date:** 1/6/2016  
**Staff Comment**  
VDHR File #2014-1194.

#### Event Type: Survey:Phase I/Reconnaissance

**Project Review File Number:** 2014-1194  
**Investigator:** James Marine  
**Organization/Company:** New South Associates  
**Photographic Media:** Digital  
**Survey Date:** 6/1/2015  
**Dhr Library Report Number:** FR-041

**Project Staff/Notes:**

Historic resources identified by TetraTech archaeological staff

Ellen Turco, David Price, Robbie Jones  
Phase I Reconnaissance Architectural Survey for the Mountain Valley Pipeline, Franklin County, Virginia  
New South Associates, Inc.  
September 2015  
2014-1194  
FR-041

### Bibliographic Information

**Bibliography:**

New South Associates Phase I Architecture Survey for Mountain Valley Pipeline. 2015.

**Property Notes:**

May 2015: This resource is not accessible from the public right-of-way and was documented by Tetra Tech during the archaeological survey.



### Property Information

#### Property Names

Name Explanation	Name
Function/Location	Edwards Cemetery, Holliday Lane

#### Property Evaluation Status

DHR Staff: Not Eligible

#### Property Addresses

Current - Holliday Lane

**County/Independent City(s):** Franklin (County)

**Incorporated Town(s):** *No Data*

**Zip Code(s):** 24176

**Magisterial District(s):** *No Data*

**Tax Parcel(s):** 660009502

**USGS Quad(s):** PENHOOK

### Additional Property Information

**Architecture Setting:** Rural

**Acreage:** .13

#### Site Description:

Jan. 2017: This 0.13-acre family cemetery is in a cleared field on the south side of Holliday Lane.

#### Surveyor Assessment:

Jan. 2017: The cemetery does not exhibit distinctive funerary artistic work or design features nor is it known to be associated with a particular historic event or persons of transcendent importance. Therefore, the cemetery does not meet NRHP Criterion Consideration D and is recommended not eligible for the NRHP under Criteria A, B or C.

**Surveyor Recommendation:** Recommended Not Eligible

#### Ownership

Ownership Category	Ownership Entity
Private	<i>No Data</i>

### Primary Resource Information

**Resource Category:** Funerary

**Resource Type:** Cemetery

**NR Resource Type:** Site

**Historic District Status:** *No Data*

**Date of Construction:** 1960

**Date Source:** Site Visit

**Historic Time Period:** The New Dominion (1946 - 1991)

**Historic Context(s):** Funerary

**Other ID Number:** *No Data*

**Architectural Style:** No discernible style

**Form:** *No Data*

**Number of Stories:** *No Data*

**Condition:** Fair

**Threats to Resource:** Public Utility Expansion

**Cultural Affiliations:** *No Data*

#### Cultural Affiliation Details:

*No Data*

#### Architectural Description:

Jan. 2017: Four graves were observed in this small family cemetery, dating between 1960 and 2005. Two of the graves are marked with two commercially produced upright inscribed markers and four flush footstones. The inscriptions read as follows.

Edwards: Edmon King Edwards; Feb. 15 1886-June 23, 1960; Sallie M; April 18, 1894-May 15, 1975.  
Edwards: Charles Abron Sr.; Nov. 20, 1912; Helen Marie Holladay: May 16, 1919-Janaury 17, 2004.

One metal temporary funeral home marker was observed. The cemetery lacks any borders or enclosures.

#### Cemetery Information

<b>Current Use:</b>	Family
<b>Historic Religious Affiliation:</b>	unknown
<b>Ethnic Affiliation:</b>	<i>No Data</i>
<b>Has Marked Graves:</b>	True
<b>Has Unmarked Graves:</b>	False
<b>Enclosure Type:</b>	None
<b>Number Of Gravestones:</b>	0 - 5
<b>Earliest Marked Death Year:</b>	1960
<b>Latest Marked Death Year:</b>	2005

#### Secondary Resource Information

#### Historic District Information

<b>Historic District Name:</b>	<i>No Data</i>
<b>Local Historic District Name:</b>	<i>No Data</i>
<b>Historic District Significance:</b>	<i>No Data</i>

#### CRM Events

##### Event Type: DHR Staff: Not Eligible

<b>DHR ID:</b>	033-5403
<b>Staff Name:</b>	Roger Kirchen
<b>Event Date:</b>	6/27/2017
<b>Staff Comment</b>	

DHR File No.: 2014-1194

##### Event Type: Survey:Phase I/Reconnaissance

<b>Project Review File Number:</b>	2014-1194
<b>Investigator:</b>	Gail Hellman
<b>Organization/Company:</b>	New South Associates
<b>Photographic Media:</b>	Digital
<b>Survey Date:</b>	3/16/2016
<b>Dhr Library Report Number:</b>	VA-136

##### Project Staff/Notes:

Turco, Ellen  
Addendum to the Phase I Reconnaissance Architectural Survey for the Mountain Valley Pipeline: Summary Report, Pittsylvania, Franklin, Roanoke, Montgomery, Craig, and Giles Counties, Virginia -- April 2017  
New South Associates, Inc.  
DHR Report No. VA-136

##### Project Bibliographic Information:

Phase I Reconnaissance Historic Architecture Survey for the Mountain Valley Pipeline, 2016



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### **Bibliographic Information**

**Bibliography:**

Phase I Historic Survey For Mountain Valley Pipeline, 2016

**Property Notes:**

This resource was not visible from the public right-of-way and was recorded by Tetra Tech's archaeological field crew. This record has been supplement with information from the archaeological field crew, Google Earth maps, and county tax assessor's website, when available.

### Property Information

#### Property Names

Name Explanation	Name
Function/Location Historic	House, 2295 Jacks Creek Road Arrington House

#### Property Evaluation Status

Not Evaluated

#### Property Addresses

Current - 2295 Jacks Creek Road

County/Independent City(s): Franklin (County)

Incorporated Town(s): No Data

Zip Code(s): 24176

Magisterial District(s): No Data

Tax Parcel(s): No Data

USGS Quad(s): PENHOOK

### Additional Property Information

Architecture Setting: Rural

Acreage: No Data

#### Site Description:

April 2023: The house is located on the west side of Jacks Creek Road/State Route 662 in east Franklin County. The house is set back approximately 55 feet from Jacks Creek Road and is oriented north. The house stands on a relatively flat, heavily wooded parcel. A semi-circular gravel driveway is located east of the house. A small cemetery stands in front of the house at the north end of the parcel. A shed stands behind the house.

#### Surveyor Assessment:

April 2023: This ca. 1910 house at 2295 Jacks Creek Road is an example of the American Foursquare form. The house is owned, and was likely built, by the Arrington family. The house retains a relatively high level of integrity with all most of its historic materials and features remaining intact. The house is in fair condition with some of its windows missing. This house does not possess remarkable architectural features and is not the work of an architect. Therefore, it is not recommended individually eligible for the NRHP under Criterion C. The house has no known association with a significant event or person and is not recommended individually eligible for listing to the NRHP under Criteria A or B. As an architectural resource, this property was not evaluated under Criterion D. Based on the above criteria, the resource does not appear to possess sufficient architectural or historical significance for individual listing and does not appear to contribute to a potential historic district.

Surveyor Recommendation: Recommended Not Eligible

#### Ownership

Ownership Category	Ownership Entity
Private	No Data

### Primary Resource Information

Resource Category: Domestic

Resource Type: Single Dwelling

NR Resource Type: Building

Historic District Status: No Data

Date of Construction: Ca 1910

Date Source: Site Visit

Historic Time Period: Reconstruction and Growth (1866 - 1916)

Historic Context(s): Domestic

Other ID Number: No Data

Architectural Style: No discernible style

Form: American Four-Square

Number of Stories: 2.0

Condition: Fair

Threats to Resource: Neglect, Vacant



**Cultural Affiliations:** Euro-American

**Cultural Affiliation Details:**

No Data

**Architectural Description:**

April 2023: This two-story house is rectangular in form with a hipped roof. The house stands on a concrete block foundation. Weatherboard siding sheathes the exterior walls. The roofing is standing-seam metal. A hipped dormer protrudes from the front roof plane. The dormer features a paired window opening, which is empty. An interior brick chimney and an exterior concrete block chimney extend above the roof. A one-story, full-width porch spans the front elevation. The hipped roof is supported by Tuscan columns, one of which is missing. The double-hung wood sash windows are 4/1 and feature wood trim and wood sills.

**Exterior Components**

Component	Component Type	Material	Material Treatment
Roof	Hipped	Metal	No Data
Structural System and Exterior Treatment	Wood Frame	Wood	Weatherboard
Foundation	Solid/Continuous	Concrete	Block
Dormer	Hipped	Wood	No Data
Chimneys	Interior Slope	Brick	Coursed
Chimneys	Exterior End	Concrete	Block
Porch	1-Story Full-Width	Wood	Tuscan
Windows	Double-hung	Wood	No Data

**Secondary Resource Information**

**Secondary Resource #1**

**Resource Category:** Domestic  
**Resource Type:** Shed  
**Date of Construction:** 1950Ca  
**Date Source:** Site Visit  
**Historic Time Period:** The New Dominion (1946 - 1991)  
**Historic Context(s):** Domestic  
**Architectural Style:** No discernible style  
**Form:** Rectangular  
**Condition:** Fair  
**Threats to Resource:** Neglect, Vacant  
**Cultural Affiliations:** Indeterminate

**Cultural Affiliation Details:**

No Data

**Architectural Description:**

April 2023: The one-story shed has a front gable roof covered with standing-seam metal. The concrete block walls are painted. The shed is in fair condition.

**Number of Stories:** 1

**Exterior Components**

Component	Component Type	Material	Material Treatment
Roof	Front Gable	Metal	No Data
Structural System and Exterior Treatment	Masonry	Concrete	Block

**Secondary Resource #2**

**Resource Category:** Funerary  
**Resource Type:** Cemetery  
**Date of Construction:** 1960Ca  
**Date Source:** Plaque/Sign  
**Historic Time Period:** The New Dominion (1946 - 1991)  
**Historic Context(s):** Domestic, Funerary  
**Architectural Style:** No discernible style  
**Form:** No Data  
**Condition:** Good

**Threats to Resource:** None Known  
**Cultural Affiliations:** Euro-American  
**Cultural Affiliation Details:**

No Data

**Architectural Description:**

April 2023: The Arrington family cemetery contains 6 graves. The cemetery is located north of the house with granite markers. The cemetery is in good condition.

**Current Use:** Family  
**Historic Religious Affiliation:** NA  
**Ethnic Affiliation:** European Descent  
**Has Marked Graves:** True  
**Has Unmarked Graves:** False  
**Enclosure Type:** None  
**Number Of Gravestones:** 6 - 10  
**Earliest Marked Death Year:** No Data  
**Latest Marked Death Year:** No Data

**Historic District Information**

**Historic District Name:** No Data  
**Local Historic District Name:** No Data  
**Historic District Significance:** No Data

**CRM Events**

**Event Type: Survey:Phase I/Reconnaissance**

**Project Review File Number:** No Data  
**Investigator:** Kate Kronau  
**Organization/Company:** Hill Studio  
**Photographic Media:** Digital  
**Survey Date:** 4/18/2023  
**Dhr Library Report Number:** No Data  
**Project Staff/Notes:**

No Data

**Bibliographic Information**

**Bibliography:**

No Data

**Property Notes:**

No Data



**Snapshot**

Date Generated: December 05, 2024

**Site Name:** No Data  
**Site Classification:** Terrestrial, open air  
**Year(s):** No Data  
**Site Type(s):** Artifact scatter  
**Other DHR ID:** No Data  
**Temporary Designation:** VA-FR-007\_VA-FR-006

**Site Evaluation Status**

DHR Staff: Not Eligible

**Locational Information**

**USGS Quad:** PENHOOK  
**County/Independent City:** Franklin (County)  
**Physiographic Province:** No Data  
**Elevation:** No Data  
**Aspect:** No Data  
**Drainage:** Roanoke  
**Slope:** No Data  
**Acreage:** 0.700  
**Landform:** Sideslope  
**Ownership Status:** Private  
**Government Entity Name:** No Data

**Site Components**

**Component 1**

**Category:** Domestic  
**Site Type:** Artifact scatter  
**Cultural Affiliation:** Indeterminate  
**Cultural Affiliation Details:** No Data  
**DHR Time Period:** Reconstruction and Growth, World War I to World War II  
**Start Year:** No Data  
**End Year:** No Data  
**Comments:** No Data

**Bibliographic Information**

**Bibliography:**

No Data

**Informant Data:**

No Data

## CRM Events

### Event Type: DHR Staff: Not Eligible

**DHR ID:** 44FR0358  
**Staff Name:** Roger Kirchen  
**Event Date:** 12/30/2015  
**Staff Comment:** 2014-1194

### Event Type: Survey:Phase I

#### Project Staff/Notes:

Site Noted during shovel tests along pipeline survey area

**Project Review File Number:** 2014-1192  
**Sponsoring Organization:** No Data  
**Organization/Company:** Tetra Tech, Inc.  
**Investigator:** Robert Jacoby  
**Survey Date:** 5/4/2015

#### Survey Description:

Archaeological sites surveyed along a pipeline route through Franklin County, Virginia

Current Land Use	Date of Use	Comments
Agricultural field	5/12/2015 12:00:00 AM	Abandoned
<b>Threats to Resource:</b>	Development	
<b>Site Conditions:</b>	Subsurface Integrity	
<b>Survey Strategies:</b>	Subsurface Testing, Surface Testing	
<b>Specimens Collected:</b>	Yes	
<b>Specimens Observed, Not Collected:</b>	No	

#### Artifacts Summary and Diagnostics:

Glass window shards, nails (wire and cut), wood screw, glass vessel body shards, glass jar lid, semi-porcelain candy dish sherds (base, body, molded rim), stoneware sherds, whiteware sherds, whiteware cup base, whiteware bowl base sherd, Kaolin pipe bowl sherds, plastic 4 hole button, quartz primary flake.

#### Summary of Specimens Observed, Not Collected:

No Data

**Current Curation Repository:** Tetra Tech  
**Permanent Curation Repository:** Virginia Museum of Natural History  
**Field Notes:** No  
**Field Notes Repository:** No Data  
**Photographic Media:** Digital  
**Survey Reports:** Yes  
**Survey Report Information:**  
Mountain Valley Pipeline Project Phase 1 B Archaeological Survey - Franklin County  
**Survey Report Repository:** VDHR  
**DHR Library Reference Number:** FR-040  
**Significance Statement:** No Data  
**Surveyor's Eligibility Recommendations:** No Data  
**Surveyor's NR Criteria Recommendations, :** No Data  
**Surveyor's NR Criteria Considerations:** No Data



**Snapshot**

Date Generated: December 05, 2024

**Site Name:** No Data  
**Site Classification:** Terrestrial, open air  
**Year(s):** No Data  
**Site Type(s):** Lithic scatter  
**Other DHR ID:** No Data  
**Temporary Designation:** VA-FR-011VA-FR-007

**Site Evaluation Status**

DHR Staff: Not Eligible

**Locational Information**

**USGS Quad:** PENHOOK  
**County/Independent City:** Franklin (County)  
**Physiographic Province:** Piedmont  
**Elevation:** No Data  
**Aspect:** No Data  
**Drainage:** Roanoke  
**Slope:** No Data  
**Acreage:** 0.040  
**Landform:** Sideslope  
**Ownership Status:** Private  
**Government Entity Name:** No Data

**Site Components**

**Component 1**

**Category:** Industry/Processing/Extraction  
**Site Type:** Lithic scatter  
**Cultural Affiliation:** Native American  
**Cultural Affiliation Details:** No Data  
**DHR Time Period:** Pre-Contact  
**Start Year:** No Data  
**End Year:** No Data  
**Comments:** dense woodlot with high sensitivity in proximity to wetland and stream.

**Bibliographic Information**

**Bibliography:**

No Data

**Informant Data:**

No Data

## CRM Events

### Event Type: DHR Staff: Not Eligible

**DHR ID:** 44FR0359  
**Staff Name:** Roger Kirchen  
**Event Date:** 12/30/2015  
**Staff Comment** 2014-1194

### Event Type: Survey:Phase I

**Project Staff/Notes:**

Site Noted during shovel tests along pipeline survey area

**Project Review File Number:** 2014-1192  
**Sponsoring Organization:** No Data  
**Organization/Company:** Tetra Tech, Inc.  
**Investigator:** Robert Jacoby  
**Survey Date:** 5/4/2015

**Survey Description:**

Archaeological sites surveyed along a pipeline route through Franklin County, Virginia

<b>Current Land Use</b>	<b>Date of Use</b>	<b>Comments</b>
Forest	5/14/2015 12:00:00 AM	No Data
<b>Threats to Resource:</b>	Development	
<b>Site Conditions:</b>	Subsurface Integrity	
<b>Survey Strategies:</b>	Subsurface Testing, Surface Testing	
<b>Specimens Collected:</b>	Yes	
<b>Specimens Observed, Not Collected:</b>	No	
<b>Artifacts Summary and Diagnostics:</b>		
	Quartz tertiary flakes, secondary scatter and biface	
<b>Summary of Specimens Observed, Not Collected:</b>		
	No Data	
<b>Current Curation Repository:</b>	Tetra Tech	
<b>Permanent Curation Repository:</b>	Virginia Museum of Natural History	
<b>Field Notes:</b>	No	
<b>Field Notes Repository:</b>	No Data	
<b>Photographic Media:</b>	Digital	
<b>Survey Reports:</b>	Yes	
<b>Survey Report Information:</b>		
	Mountain Valley Pipeline Project Phase 1 B Archaeological Survey - Franklin County	
<b>Survey Report Repository:</b>	VDHR	
<b>DHR Library Reference Number:</b>	FR-040	
<b>Significance Statement:</b>	No Data	
<b>Surveyor's Eligibility Recommendations:</b>	No Data	
<b>Surveyor's NR Criteria Recommendations, :</b>	No Data	
<b>Surveyor's NR Criteria Considerations:</b>	No Data	



**Snapshot**

Date Generated: December 05, 2024

**Site Name:** No Data  
**Site Classification:** Terrestrial, open air  
**Year(s):** No Data  
**Site Type(s):** Lithic scatter  
**Other DHR ID:** No Data  
**Temporary Designation:** VA-FR-039

**Site Evaluation Status**

Not Evaluated

**Locational Information**

**USGS Quad:** PENHOOK  
**County/Independent City:** Franklin (County)  
**Physiographic Province:** Piedmont  
**Elevation:** No Data  
**Aspect:** No Data  
**Drainage:** Roanoke  
**Slope:** No Data  
**Acreage:** 0.100  
**Landform:** Terrace  
**Ownership Status:** Private  
**Government Entity Name:** No Data

**Site Components**

**Component 1**

**Category:** Industry/Processing/Extraction  
**Site Type:** Lithic scatter  
**Cultural Affiliation:** Native American  
**Cultural Affiliation Details:** No Data  
**DHR Time Period:** Pre-Contact  
**Start Year:** No Data  
**End Year:** No Data  
**Comments:** No Data

**Bibliographic Information**

**Bibliography:**

No Data

**Informant Data:**

No Data

## CRM Events

### Event Type: Survey:Phase I

**Project Staff/Notes:**

Sites Noted along Phase IB work in Montgomery County

**Project Review File Number:** 2014-1194  
**Sponsoring Organization:** No Data  
**Organization/Company:** Tetra Tech, Inc.  
**Investigator:** Gail Hellman  
**Survey Date:** 4/16/2016

**Survey Description:**

Phase IB Archaeological Survey in Franklin County Virginia

Current Land Use	Date of Use	Comments
Forest	4/11/2016 12:00:00 AM	No Data

**Threats to Resource:** Development, Other  
**Site Conditions:** Site Condition Unknown  
**Survey Strategies:** Subsurface Testing, Surface Testing  
**Specimens Collected:** Yes  
**Specimens Observed, Not Collected:** No

**Artifacts Summary and Diagnostics:**

Quartz: 20 flakes, 5 shatter  
Quartzite: 1 flake  
Fire Cracked Rock: 1

**Summary of Specimens Observed, Not Collected:**

No Data

**Current Curation Repository:** Tetra Tech  
**Permanent Curation Repository:** Virginia Museum of Natural History  
**Field Notes:** No  
**Field Notes Repository:** No Data  
**Photographic Media:** Digital  
**Survey Reports:** Yes  
**Survey Report Information:**  
Mountain Valley Pipeline Project Archaeological Survey, Franklin County Phase IB - Addendum 1  
**Survey Report Repository:** VDHR  
**DHR Library Reference Number:** No Data  
**Significance Statement:** No Data  
**Surveyor's Eligibility Recommendations:** No Data  
**Surveyor's NR Criteria Recommendations, :** No Data  
**Surveyor's NR Criteria Considerations:** No Data



**Snapshot**

Date Generated: December 05, 2024

**Site Name:** Edwards Family Cemetery North  
**Site Classification:** Terrestrial, open air  
**Year(s):** 1960 - 2021  
**Site Type(s):** Cemetery  
**Other DHR ID:** No Data  
**Temporary Designation:** Edwards Family Cemetery North

**Site Evaluation Status**

Not Evaluated

**Locational Information**

**USGS Quad:** PENHOOK  
**County/Independent City:** Franklin (County)  
**Physiographic Province:** Piedmont  
**Elevation:** 990  
**Aspect:** Flat  
**Drainage:** Roanoke  
**Slope:** 2 - 6  
**Acreage:** 0.020  
**Landform:** Bench  
**Ownership Status:** Private  
**Government Entity Name:** No Data

**Site Components**

**Component 1**

**Category:** Funerary  
**Site Type:** Cemetery  
**Cultural Affiliation:** African American  
**Cultural Affiliation Details:** No Data  
**DHR Time Period:** Post Cold War, The New Dominion  
**Start Year:** 1960  
**End Year:** 2021  
**Comments:** 2023: Start and end years based on observed headstone inscriptions. Further survey is needed.

**Bibliographic Information**

**Bibliography:**

No Data

**Informant Data:**

No Data

**CRM Events**

**Event Type: Survey:Phase I**

**Project Staff/Notes:**

2023: DHR archaeologist Thomas Klatka

**Project Review File Number:** No Data

**Sponsoring Organization:** No Data

**Organization/Company:** DHR

**Investigator:** Tom Klatka

**Survey Date:** 8/23/2023

**Survey Description:**

2023: Field identification and documentation of sites based informant reports and recognized surface evidence. Surface collection and subsurface testing not conducted. Field methods relied by visual inspection and images.

Current Land Use	Date of Use	Comments
Cemetery	8/23/2023 12:00:00 AM	No Data
Dwelling, single	8/23/2023 12:00:00 AM	2023: Lawn and residence borders the north side of the cemetery.

**Threats to Resource:** None Known

**Site Conditions:** Intact Cultural Level, Surface Deposits, Surface Deposits Present But Subsurface Not Tested, Surface Features

**Survey Strategies:** Observation

**Specimens Collected:** No

**Specimens Observed, Not Collected:** No

**Artifacts Summary and Diagnostics:**

No Data

**Summary of Specimens Observed, Not Collected:**

No Data

**Current Curation Repository:** No Data

**Permanent Curation Repository:** No Data

**Field Notes:** No

**Field Notes Repository:** No Data

**Photographic Media:** Digital

**Survey Reports:** No

**Survey Report Information:**

No Data

**Survey Report Repository:** No Data

**DHR Library Reference Number:** No Data

**Significance Statement:**

2023: the location of this cemetery was provided by a descendant of the Edwards family. The Edwards Family Cemetery North is a small family cemetery bordering the southwest side of Holliday Lane (Private), and it is registered in the Franklin County real estate records as a 0.13 acre parcel with parcel ID 0660009502. This parcel is located between two other Franklin County parcels - ID 0660009501A and ID 0660009503. Interested readers should review the site record and description for the neighboring cemetery named the Edward Family Cemetery South.

Existing surface evidence suggests there are seven graves oriented to the east and orderly aligned in two rows. Death dates on the markers range from 1960 through 2021. Observed grave markers include two granite double markers, one single polished black granite marker, one military tablet markers and one grave marked with plastic flowers and what appears to be a deteriorated wood cross. The cemetery is covered with mowed grass that merges with the lawn of the adjacent parcel (Tax Ma # 066 000 9501A). White wooden fences marker the northeast and southeast corners of the cemetery.

According to the family descendant, this cemetery (Edwards Family Cemetery North) and the cemetery on the neighboring parcel to the south (Edwards Family Cemetery South) were once a single cemetery, but land grading pushed away a series of graves to create the appearance of two separate cemeteries. The descendant said the area between the two cemeteries once held a group of graves marked with uninscribed fieldstones. Two attempts to speak with the owner of the neighboring parcel were unsuccessful.

Non-intrusive geophysical survey of this cemetery, augmented by professional archaeological testing of a sample or all detected subsurface soil anomalies is needed to evaluate the internal structure of the Edwards Family Cemetery North, to review the validity of its boundaries and to assess the possibility of other graves may exist between the Edwards Family Cemetery North and the ,Edwards Family Cemetery South,



<b>Surveyor's Eligibility Recommendations:</b>	Recommended for Further Survey
<b>Surveyor's NR Criteria Recommendations, :</b>	No Data
<b>Surveyor's NR Criteria Considerations:</b>	No Data

**Snapshot**

Date Generated: December 05, 2024

**Site Name:** Edwards Family Cemetery South  
**Site Classification:** Terrestrial, open air  
**Year(s):** 1938 - 2022  
**Site Type(s):** Cemetery  
**Other DHR ID:** No Data  
**Temporary Designation:** Edwards Family Cemetery South

**Site Evaluation Status**

Not Evaluated

**Locational Information**

**USGS Quad:** PENHOOK  
**County/Independent City:** Franklin (County)  
**Physiographic Province:** Piedmont  
**Elevation:** 1000  
**Aspect:** Flat  
**Drainage:** Roanoke  
**Slope:** 2 - 6  
**Acreage:** 0.020  
**Landform:** Bench  
**Ownership Status:** Private  
**Government Entity Name:** No Data

**Site Components**

**Component 1**

**Category:** Funerary  
**Site Type:** Cemetery  
**Cultural Affiliation:** African American  
**Cultural Affiliation Details:** No Data  
**DHR Time Period:** Post Cold War, The New Dominion, World War I to World War II  
**Start Year:** 1938  
**End Year:** 2022  
**Comments:** 2023: Start and end years based on observed headstone inscription. Additional research is needed.

**Bibliographic Information**

**Bibliography:**

No Data

**Informant Data:**

No Data



**CRM Events**

**Event Type: Survey:Phase I**

**Project Staff/Notes:**

2023: DHR archaeologist Thomas Klatka

**Project Review File Number:** No Data

**Sponsoring Organization:** No Data

**Organization/Company:** DHR

**Investigator:** Tom Klatka

**Survey Date:** 8/23/2023

**Survey Description:**

2023: Field identification and documentation of sites based informant reports and recognized surface evidence. Surface collection and subsurface testing not conducted. Field methods relied by visual inspection and images.

Current Land Use	Date of Use	Comments
Cemetery	8/24/2023 12:00:00 AM	No Data
Forest	8/24/2023 12:00:00 AM	2023: Small cemetery is in a woodlot with young deciduous and pine trees.

**Threats to Resource:** Neglect, Other

**Site Conditions:** Intact Cultural Level, Surface Deposits, Surface Deposits Present But Subsurface Not Tested, Surface Features

**Survey Strategies:** Observation

**Specimens Collected:** No

**Specimens Observed, Not Collected:** No

**Artifacts Summary and Diagnostics:**

No Data

**Summary of Specimens Observed, Not Collected:**

No Data

**Current Curation Repository:** No Data

**Permanent Curation Repository:** No Data

**Field Notes:** No

**Field Notes Repository:** No Data

**Photographic Media:** Digital

**Survey Reports:** No

**Survey Report Information:**

No Data

**Survey Report Repository:** No Data

**DHR Library Reference Number:** No Data

**Significance Statement:**

2023: The location of this small family cemetery was provided by family descendant. Surface evidence consists of markers for two graves in a wooded area; however, other unmarked graves reportedly exist. The central part of the cemetery is an open area covered with low grasses surrounded on four sides by a narrow band of deciduous and pine tree saplings with the light to moderate understory of scrub brush. Two small push piles of earth and tree debris in the southwest part of the cemetery suggest the central part of the cemetery was cleared with machinery in the recent past. The two documented graves consist of the grave of Bob O'Neal (1960-1922) marked by a temporary marker issued by Flora Funeral Home and four posts of cut PVC pipe driven into the ground at the corners of a rectangular area, and a metal marker nearby that was issued by "Kimball Undertaking Co." for the grave of Andrew Edwards (1887 – 1938). The Andrew Edwards marker is affixed to the ground by a thin metal rod. This marker appears to be displaced from it associated grave and reset in the ground.

According to the family descendant, this cemetery (Edwards Family Cemetery South) and the cemetery on the neighboring parcel to the north (Edwards Family Cemetery North) were once a single cemetery, but land grading pushed away a series of graves to create the appearance of two separate cemeteries. The descendant said the area between the two cemeteries once held a group of graves marked with uninscribed fieldstones. Furthermore, the land grading continued into the Edwards Family Cemetery South, cleared vegetation and, in the process, disturbed a group of marked and unmarked graves that were in the central and northern part of this cemetery. Two attempts to speak with the owner of the neighboring parcel were unsuccessful.

Nonintrusive geophysical survey of this cemetery, augmented by professional archaeological testing of a sample or all detected subsurface soil anomalies is needed to evaluate the internal structure of the Edwards Family Cemetery South to review the validity

of its boundaries and to assess the possibility of other graves between the two cemeteries.

**Surveyor's Eligibility Recommendations:**

Recommended for Further Survey

**Surveyor's NR Criteria Recommendations, :**

No Data

**Surveyor's NR Criteria Considerations:**

No Data



## 8.12 Edwards Solar 2232 Analysis

## I. Va. Code §15.2-2232 “Substantially in Accord” Determination

Va. Code §15.2-2232 provides that the County’s Comprehensive Plan controls “the general or approximate location, character, and extent of each feature shown on the plan.” For any “public utility facility” that is proposed after the adoption of the Comprehensive Plan, the County’s Planning Commission is tasked with determining whether the “*general location or approximate location, character, and extent thereof [of the public utility facility] . . . is substantially in accord with the adopted comprehensive plan or part thereof* (emphasis added).” Because the Project is considered a public utility facility pursuant to Va. Code § 56-232, the Planning Commission is called upon to determine if the proposed “general location or approximate location, character, and extent” of the Project is “substantially in accord” with the Plan. In this context, “substantially in accord” is interpreted to mean “largely, but not wholly.”<sup>1</sup>

## II. The Project’s Location is in Conformity with the Plan

### The Project Complies with the Zoning Ordinance

The Franklin County Zoning Ordinance (the “Ordinance”) is the primary tool used to implement the Plan. As a result, when evaluating a solar facility for conformity with the Plan, a foundational question to consider is how and whether the facility is permitted within the zoning district where it is proposed. The Ordinance defines a “utility-scale solar generation facility” as a “renewable energy project that generates electricity from sunlight, consisting of one (1) or more photovoltaic systems and other appurtenant structures and facilities within the boundaries of the site, and is designed to interconnect with the electrical grid and/or to serve facilities that are not adjacent or under common use, ownership, or control.”<sup>2</sup> Importantly, the Ordinance permits utility-scale solar generation facilities on land zoned in the Agricultural District (“A-1”) with a Special Use Permit (“SUP”).<sup>3</sup>

Here, the Project would meet the utility-scale solar generation facility definition due to its planned interconnection with the electrical grid to serve facilities that are not adjacent or under common use, ownership, or control. The Project parcels are currently zoned A-1. Consequently, pursuant to the negotiated terms of a Special Use Permit, constructing and utilizing a utility-scale solar generation facility is an acceptable use of the parcels within the A-1 zoning district and therefore, conforms to the Ordinance and, by extension, the Plan.

### The Project is not Located in a Town, Village or Growth Area

Here, the Project is not located in a Town, Village or Designated Growth Area, which is a requirement of the Plan.<sup>4</sup> By avoiding these areas, the Project will not occupy area the County has reserved for concentration of future growth.

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<sup>1</sup> The Albemarle County Land Use Law Handbook Kamptner/June 2016, p. H-2.

<sup>2</sup> See, Franklin County, Va., Code of Ordinances Ch. 25, § 25-40 (further stating that in the context of this ordinance, the acreage and boundary representing a utility scale solar generation facility includes the entirety of the area leased for use as a solar generating site).

<sup>3</sup> Franklin County, Va., Code of Ordinances Ch. 25, § 25-179.

<sup>4</sup> Franklin County 2025 Comprehensive Plan at Chapter 11 (as amended by Franklin County Board of Supervisors Resolutions #19-07-2022 and #10-02-2023).



The Project will not adversely affect the County's soil, water or air

One goal the Plan provides is preserving and improving the quality of the County's soil, water and air.<sup>5</sup> Strategically, the County aims to fully evaluate any new development proposal that intends to introduce hazardous waste into the atmosphere, soil or water, and ensure appropriate protective measures are incorporated into the construction process.<sup>6</sup>

Importantly, the Project will not introduce any hazardous wastes into the atmosphere, soil or water. Except for second hand vehicle air emissions created during the construction phase of the Project, the Project will not create any airborne emissions nor will it utilize any ground or surface water. Regarding soil, the Project effectively 'saves' or 'banks' the underlying land by allowing it to lie fallow for the full life of the Project. This time allows the soil, and the microbes within it, to replenish, which ultimately improves the soil quality. The Project will also utilize the planting of native grasses and pollinator habitat under the panels and within the Project area to help improve rainwater absorption rates and improve local water quality. Pursuant to the stormwater management strategy in the Plan, the Project will have a stormwater management plan that includes low impact development techniques to equate pre- and post- development runoff, and the permit for the project will contain specific stormwater management terms and procedures.<sup>7</sup>

The Project meets the County's Goals, Objectives and Strategies for Renewable Energy

The County's amendments to Chapter 11 of the Plan provides goals, objectives and strategies for utility scale renewable energy in the County.<sup>8</sup> The main objective is to promote the use of utility scale solar generating facilities, while simultaneously minimizing the impact of those facilities on the County's natural, agricultural, scenic, tourism and cultural resources.<sup>9</sup> Some strategies for implementing that objective are: (I) avoiding impact of solar facilities on available farmland, including prime farmland and farmland of statewide significance; (II) screening facilities from public rights-of-way and adjacent properties; (III) avoiding visual impacts from the facilities on scenic and cultural resources; (IV) promoting agrivoltaics for farmers to still use certain areas of their land where solar facilities are located and (V) avoid allowing solar facilities in Designated Growth Areas.<sup>10</sup>

As previously mentioned, the Project is not located within any of the three Designated Growth areas. The Project will also have 150 foot setbacks from roads and 300 foot setbacks from

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<sup>5</sup> Franklin County 2025 Comprehensive Plan at 11-9.

<sup>6</sup> Franklin County 2025 Comprehensive Plan at 11-9.

<sup>7</sup> Franklin County 2025 Comprehensive Plan at 11-9.

<sup>8</sup> Franklin County 2025 Comprehensive Plan at Chapter 11 (as amended by Franklin County Board of Supervisors Resolutions #19-07-2022 and #10-02-2023).

<sup>9</sup> Franklin County 2025 Comprehensive Plan at Chapter 11 (as amended by Franklin County Board of Supervisors Resolutions #19-07-2022 and #10-02-2023).

<sup>10</sup> Franklin County 2025 Comprehensive Plan at Chapter 11 (as amended by Franklin County Board of Supervisors Resolutions #19-07-2022 and #10-02-2023).

all adjacent residences. A buffer will also be planted around the Project where there is no existing vegetation. These setbacks and buffers will provide adequate screening which will reduce visual impacts from the Project on the surrounding landscape. The Project land is not currently being used for agricultural purposes. Only a small fraction of the Project area includes prime farmland (9.2 acres). An additional 25 acres of land classified as farmland of statewide importance are within the project area. The total Project area considered prime farmland and farmland of statewide importance is 34.2 acres which is approximately 0.013% of the land under those designations in Franklin County<sup>11</sup>.

### **The Project's Character, and Extent are in Conformity with the Plan.**

#### The Project will not Contribute to the County's Solid or Hazardous Waste

The Plan makes note that the County must ensure long term capability to dispose of solid and hazardous waste.<sup>12</sup> Here, the Project will not create any solid or hazardous waste until decommissioning. Recycling and disposal of the decommissioned Project are outlined in the decommissioning section.

#### The Project will Provide Direct and Indirect Economic Benefit to the County

A major goal for the County is promoting a County economy that is expanding, diverse, environmentally sensitive and that creates more and better jobs and business opportunities for local residents.<sup>13</sup> Here, the Project would contribute to the local tax base and would support local workers through construction jobs and ongoing operations and maintenance jobs without any offsetting demands for County services like schools or public utilities. The Project will provide significant revenue to the County both via local taxation and voluntary payments by the Applicant, which can be used to support core County services or other economic development efforts, as the Board of Supervisors may direct.

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<sup>11</sup> Hazler, K.R. and T.Tien. 2015. Virginia ConservationVision: Agricultural Model, 2015 Edition. Natural Heritage Technical Report 15-13. Virginia Department of Conservation and Recreation, Division of Natural Heritage, Richmond, Virginia. 43 pp

<sup>12</sup> Franklin County 2025 Comprehensive Plan at 11-15.

<sup>13</sup> Franklin County 2025 Comprehensive Plan at 11-6.





# MEMORANDUM

## Community Development Division

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To: Lisa Cooper, Director of Planning  
Franklin County, VA

From: Michael Zehner, AICP, CFM, ENV SP, Director of Planning and  
Community Development  
Linds Edwards, ENV SP, Planner II

Date: March 26, 2025

Subject: Zoning Completeness Review – Edwards Solar, 5 MW

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### OVERVIEW AND SUMMARY

As requested, on behalf of Franklin County we are providing a review to determine whether the application submitted by Edwards Solar Farm, LLC, Commonwealth Energy Partners (“the Applicant”) for a 5 MW solar facility located along Jacks Creek Road near Old Franklin Turnpike (cover letter dated February 26, 2025; “the Application”) is complete, as well as compliant, with respect to applicable requirements of the Franklin County Zoning Ordinance (“FCZO”). Additionally, as requested, we are providing our review of the Special Use Permit Application to offer our opinion as to whether the Application meets the requisite findings allowing for the issuance of a Special Use Permit.

### ZONING COMPLETENESS AND COMPLIANCE REVIEW

The Application has been reviewed for completeness and compliance with respect to the sections and subsections of the FCZO identified below. **Based upon our review, and detailed below, it is our opinion that the Application is complete and compliant. The Application may proceed to consideration of the Application by the County’s Planning Commission.**

Please note, this review has been performed to determine whether the Application includes all required materials and information, as well as materials and information necessary to conduct a complete review pursuant to § 15.2-2232, Legal status of plan, of the Code of Virginia and the FCZO, and to determine that the project meets applicable and objective requirements and standards of the FCZO.

Regulations applicable to the Application, as set forth in the FCZO and relevant to the completeness and compliance of the Application, are as follows, with the Berkley Group’s interpretation of application completeness and/or compliance noted in **bold underlined type**:

**Sec. 25-147. - Utility-scale solar generation facility.**

(a) Commencing on July 19, 2022, and continuing until amended by the board of supervisors utility-scale solar generation facility may be allowed in Franklin County by issuance of a special use permit by the board of supervisors in the A-1, M-1, M-2, PCD, and REP.

(1) The cumulative acreage for all Utility-Scale Solar Generation Facility located in the zoned areas of Franklin County shall be 1,500 acres.

**Compliance anticipated; the Applicant has submitted an application for a solar facility as a primary use, and the subject property is zoned A-1.**

(b) Application. An application for a utility-scale solar generation facility shall contain:

(1) *Project narrative.* A narrative identifying the applicant, facility owner, site owner, proposed operator, and describing the proposed facility including an overview of the facility and its location; the size of the site and the facility area; the current use of the site; the estimated time for construction and proposed date for commencement of operations; the planned maximum generated capacity of the facility identified as AC and/or DC; the approximate number, representative types and expected footprint of solar equipment to be constructed, including, without limitation, photovoltaic panels; ancillary facilities, if applicable; and how and where the electricity generated at the facility will be transmitted, including the location of the proposed electric grid interconnection; and a statement that addresses how the facility will be in compliance with the comprehensive plan. The statement shall address the following:

**Complete; a Project Narrative has been provided and addresses all required information.**

(2) *Concept plan.* The concept plan shall include the following information:



**Complete; a Concept Plan has been provided, however, it does not address the following. With respect to written confirmation from VDOT regarding the compliance of proposed entrances, we understand that both the Applicant and the County have been in communication with VDOT and have received preliminary comments, but that it is not the practice of the VDOT Residency to submit Final written comments at this stage of review.**

- (3) *Generalized landscaping and screening plan.* The applicant must submit a landscaping and screening plan with the location, size, and type of planting yards including the use of existing and newly installed vegetation to screen the facility. A detailed landscaping and screening plan with plant species, size, number, spacing, and height will be required at the time of site plan review.

**Complete; a Landscaping and Screening Plan has been provided and includes all required information.**

- (4) *Identification of environmental and cultural resources.* The applicant must submit the following:

**Complete and Compliant; environmental and cultural resources have been identified and analysis includes all required information.**

- (5) *Performance standards.* The application shall comply with the following criteria:

**Complete and compliant; the Application meets required performance standards.**

- (a) *Visual impacts.* The solar facility shall minimize impacts on view sheds, including from residential areas and areas of scenic, historical, cultural, archeological, and recreational significance. The facility shall utilize only panels that employ anti-glare technology, antireflective coatings, and other available mitigation techniques, all that meet or exceed industry standards, to reduce glint and glare.

**Complete and Compliant; a visual impacts analysis was provided and includes all required information.**

(b) *National standards.* Facilities shall comply with generally accepted national environmental protection and product safety standards for the use of solar panels and battery technologies for solar photovoltaic (electric energy) facilities, such as those developed for existing product certifications and standards including the National Sanitation Foundation/American National Standards Institute No. 457, International Electro Technical Commission No. 61215-2, Institute of Electrical and Electronics Engineers Standard 1547, and Underwriters Laboratories No. 61730-2. A site development plan shall refer to the specific safety and environmental standards being met.

**Complete and Compliant; the Application includes the specification of panels and equipment to be used in the Project.**

(c) *Setbacks.* The facility area shall be set back a distance of at least a minimum one hundred fifty (150) feet from all property lines and public rights of way. A minimum setback of 300 feet is required from above ground solar infrastructure to any adjacent off-site residential structure. Exceptions to this distance may be made for adjoining parcels owned by the applicant. Increased setbacks over one hundred fifty (150) feet and additional buffering may be included in the conditions for a permit as required to reduce the visual impact of the facility. Access, erosion and stormwater structures, and interconnection to the electrical grid may be made through setback areas if such are generally perpendicular to the property line or underground.

**Complete and Compliant; setbacks are identified with dimensions on the Concept Plan and all required information is provided.**

(d) *Fencing.* The facility area shall be enclosed by security fencing not less than eight (8) feet in height and equipped with appropriate anticlimbing device such as strands of barbed wire on top of the fence. The height and/or location of the fence may be altered in the conditions for a particular permit. Fencing must be installed on the interior of the



vegetative buffer required so that it is screened from the ground level view of adjacent property owners. The fencing shall always be maintained while the facility is in operation, and posted with appropriate safety messaging. Fencing height and design shall be coordinated with the department of wildlife resources regarding wildlife fencing that would allow ingress and egress.

**Complete and Compliant; all fencing requirements are addressed, and Plans include all required information.**

- (e) *Vegetative buffer.* A vegetative buffer sufficient to mitigate the visual impact of the facility as approved by the zoning administrator is required. The buffer shall consist of a landscaping strip at least thirty (30) feet wide, shall be located within the setbacks required under subsection (3) above, and shall run around the entirety of the area proposed for development. The buffer shall consist of existing vegetation and as needed, an installed landscaped strip consisting of multiple rows of staggered trees and other vegetation. This buffer should include vegetation a minimum of six (6) feet high at planting and reasonably expected to grow to full maturity within three (3) years. The planning commission or board of supervisors may require increased setbacks and additional or taller vegetative buffering in situations where the height of structures or topography affects the visual impact of the facility. Non-invasive plant species and pollinator-friendly and wildlife-friendly native plants, shrubs, trees, grasses, forbs, and wildflowers must be used in the vegetative buffer following Virginia Pollinator-Smart Program best practices. Screening and/or buffer creation requirements may be waived or altered for alternative designs such as landscaped berms, existing wetlands, or woodlands, if the berms, wetlands, or woodlands are permanently protected and maintained for use as a buffer. Existing trees and vegetation must be maintained within such buffer areas except where dead, diseased, or as necessary for development or to promote healthy growth, and such trees and vegetation may supplement or satisfy landscaping requirements as applicable and approved by the zoning administrator. If existing trees and vegetation are disturbed, new plantings shall be provided for the buffer at least six (6)

feet tall at planting. The vegetative buffer shall be maintained for the life of the facility.

**Complete and Compliant; all vegetative buffer requirements and landscaping renderings include all required information.**

- (f) *Pollinator habitats.* The facility area shall be seeded promptly with pollinator-friendly vegetation following completion of construction in such a manner as to reduce invasive weed growth and trap sediment within the facility area. At the beginning of the next planting season the facility area, setbacks and buffers will be overseeded with appropriate pollinator-friendly native plants, shrubs, trees, grasses, forbs, and wildflowers following Virginia Pollinator-Smart Program best practices. Once these pollinator habits are established, maintenance of the site shall follow Virginia Pollinator-Smart Program best practices unless Agrivoltaics (APV) are employed.

**Complete and Compliant; the vegetation will meet all the pollinator-friendly requirements as outlined by the ordinance. The Project will have an agrivoltaics component and sheep grazing information has been provided.**

- (g) *Height.* Ground-mounted solar energy generation facilities shall not exceed a height of fifteen (15) feet, which shall be measured from the highest natural grade below each solar panel. This limit shall not apply to utility poles and the interconnection to the overhead electric utility grid that meet state corporation commission requirements.

**Complete and Compliant; equipment will not exceed 15 feet from the highest grade and at maximum panel tilt.**

- (h) *Lighting.* Lighting shall be limited to the minimum reasonably necessary for security purposes and shall be designed to minimize off-site effects. Lighting on the site shall be dark sky compliant.

**Compliance anticipated; lighting is planned only where necessary for security and shall be dark sky compliant.**



- (i) Density; location. Solar facilities shall not be located within one (1) mile of an airport unless the applicant submits, as part of its application, written certification from the Federal Aviation Administration that the location of the facility poses no hazard for, and will not interfere with, airport operations. The applicant must also provide a glint and glare study that demonstrates that the panels will be sited, designed, and installed to eliminate glint and glare effects on airport operations. The study must be conducted by qualified individuals using appropriate and commonly accepted software and procedures.

**Complete and Compliant; FAA certifications and a glint and glare study have been provided and include all required information.**

- (j) Panel materials. Applications shall describe all materials included in the proposed solar panels for the facility. All solar energy facility structures, racks and associated facilities shall have a non-reflective finish or appearance.



**Complete and Compliant; specific solar panel materials and technology are provided and include all required information.**

*(c) Processing and approval standards.*

- (1) *Community meeting.* A public meeting shall be held prior to the public hearing with the planning commission to give the community an opportunity to hear from the applicant and ask questions regarding the proposed facility. The meeting shall be held under the following guidelines:

**Compliance presumed; the reviewer is not aware of the date of the pre-application meeting, but presumes that the required meeting was held.**

- (3) Designated growth areas. Utility-scale solar generation facilities shall be excluded from designated growth areas (DGA).

**Compliant; the Project is not located within designated growth areas.**

*Staff talked to applicant pre-app mtg. Community meeting was held (date)*

### **SPECIAL USE PERMIT REVIEW**

The Application has been reviewed relative to the requisite findings contained in the FCZO allowing for the issuance of a Special Use Permit. Specifically, pursuant to Section 25-638, Issuances reserved for board of supervisors, "Special use permits for uses as provided in this chapter may be issued upon a finding by the Franklin County Board of Supervisors that such use will not be of substantial detriment to adjacent property, that the character of the zoning district will not be changed thereby, and that such use will be in harmony with the purpose and intent of this chapter, with the uses permitted by right in the zoning district, with additional regulations provided in sections 25-111 through 25-137, supplementary regulations, and amendments, of this chapter, and with the public health, safety and general welfare."

Further, since the project constitutes a public utility subject to Section 15.2-2232 of the Code of Virginia, Section 25-645, Review of public used for compliance with the Comprehensive Plan, of the FCZO is relevant with respect to the review of the Application. Section 25-645 states, in part, that "No...public utility...shall be constructed, established, or authorized, unless or until the general location or approximate location, character and extent thereof has been submitted to and approved by the commission as being substantially in accord with the adopted Comprehensive Plan or part thereof. In connection with any such determination, the commission may establish such conditions of approval as deemed necessary to ensure compliance with the comprehensive plan."

### **Relevant Comprehensive Plan Citations**

- Chapter 11 (Utilities)
  - Goals:
    - "This plan will also be consistent with the County's plan for environmental quality and the Commonwealth's goals for renewable energy."
  - Objectives:
    - 36.0 - To promote the use of residential, commercial, and utility scale renewable energy in the way of solar generator facilities and wind turbines while minimizing the impact of such facilities on Franklin County's viewshed and the County's natural, agricultural, scenic, tourism, and cultural resources.
  - Strategies:
    - a) Avoiding impact of solar facilities and wind turbines on available farmland, including prime farmland and farmland and statewide significance. To help minimize the impact, the County desires to have no more than 1,500 cumulative acres



of leased area occupied by utility scale solar projects throughout the County.

- b) Solar facility should be screened from all public rights of way and all adjacent properties.
- c) Solar facilities should not visually impact scenic and cultural resources including the viewshed from residential areas and event venue spaces.
- d) Promote sustainable building design and management practices to serve current and future generations.
- e) Assist local business to lower financial and regulatory risks and improve their economic, community, and environmental sustainability.
- f) Promote Agrivoltaics (APV) for farmers to still use the area of their land where solar facilities are located.
- g) Solar facilities should not generally be located within designated growth areas (DGAs).
- h) Proposed project shall be evaluated for compliance with the most recently adopted Solar Energy Facility Siting Policy document to assist the county in making substantial accord determinations under section 15.2-2232 of the Code of Virginia. This policy shall serve as guidance for County staff, the Planning Commission, and the Board of Supervisors to evaluate whether the proposal is in substantial accord with the Comprehensive Plan.

### **Analysis and Comments**

The reviewers have reviewed and analyzed the Application and the above referenced Comprehensive Plan citations to determine whether the project is substantially in accord with the Comprehensive Plan. Please consider the following:

- With respect to the Utilities policy area, the reviewers are of the opinion that the proposed facility can be characterized as safe development that generally minimizes, or will minimize through reasonable conditions, impacts to land uses, properties, and the environments.
- With respect to the Chapter 11, Objectives, the reviewers are of the opinion that significant areas of the project will remain undeveloped, and the project is designed to minimize environmental impacts, to coexist with the natural environment, and/or such impacts will be minimized through reasonable conditions.

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- With respect to Chapter 11 Strategies, (a), the reviewers are of the opinion that the project will avoid impacts to prime agricultural soil through revegetation, and is not currently farmed, however a small portion of the project area includes prime farmland (6.2 acres). An additional 26.6 acres of land classified as farmland of statewide importance are within the project area. The total project area considered prime farmland and farmland of statewide importance is 32.8 acres, which is 0.012% of the land under those designations in Franklin County. Additionally, the Project does not result in the leased area, occupied by utility scale solar projects throughout the County, exceeding 1,500 cumulative acres.
- With respect to Chapter 11 Strategies, (b, c), screening is proposed, and the reviewers are of the opinion that the topography of the site and the project design provides sufficient mitigation for any adverse visual impacts to public rights-of-way, adjacent properties, natural and historic resources, and scenic viewshed from the project. The reviewers have included a recommended condition that is intended to reinforce this (Condition # 6). There are 17 known Architectural and Archaeological resources located within 1 mile of the project area, including the Edwards Family Cemetery. It is important to note that the project will entirely encompass a Historic House, Jacks Creek Road (DHR ID 033-5310) and is directly adjacent to Historic House and Tobacco Barns Ruins, Old Franklin Turnpike (DHR ID 033-5340).
- With respect to Chapter 11 Strategies, (d, e, f), the proposed project will generate renewable energy for future generations. Additionally, the project will generate revenue for the County and increase the community's environmental sustainability.
- With respect to Chapter 11 Strategies (g), the proposed solar facility is not located within a Designated Growth Area.
- With respect to Chapter 11 Strategies (h), the proposed solar facility has been evaluated to determine if the location, extent, surrounding uses, and benefits are substantially in accord with the County's Comprehensive Plan.

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Additionally, the reviewers have reviewed and analyzed the Application relative to the findings for Special Use Permits. The reviewers are of the opinion, that with the imposition of reasonable conditions and current adjacent land uses, the proposed use may not be of substantial detriment to adjacent property, that the character of the subject zoning district may not be changed by the



proposed use, and that such use may be in harmony with the purpose and intent of the FCZO and with the uses permitted by right in the zoning district, and that the use complies with applicable supplementary regulations. Open questions relate to whether the Applicant has sufficiently accounted for ESC and stormwater management in the design of the Project, given the exclusion of these features from the Concept Plan. While the County's Ordinance does not explicitly require the inclusion of ESC and stormwater management information as part of plans and information submitted for an SUP application, Sec. 25-147.(b)(2)(k) allows for additional information to be required as determined by the Zoning Administrator, planning commission, or board of supervisors. It would seem prudent to require additional information, especially plan elements, given concerns regarding viability of the design without . . . anticipated features and practices depicted.

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**Special Use Permit Recommended Conditions**

The reviewers recommend consideration of the following conditions if the Application is to be approved:

1. The project Applicant shall develop, construct, operate, and maintain the site in substantial conformance with the conceptual plans (titled "Edwards Solar Land, LLC, Preliminary Site Layout C3.0, dated December 11, 2024), all assurances and commitments made within the Application materials, and the conditions imposed on the issued special use permit, as determined by the Zoning Administrator. Substantial conformance will be determined by the Zoning Administrator based on their review of the record. Deviations determined not to be in substantial conformance with the conceptual plans shall require review and approval as an amendment to the special use permit, following the process for the granting of a special use permit. As used in these conditions, the term "Applicant" shall include the terms "Applicant, Owner, Developer, or Operator," and the successors and assigns thereof, and the term "Zoning Administrator" shall include the designee of Zoning Administrator.
2. Project capacity shall be limited to a maximum of 5 MW.
3. The active developed area of the site, within the fenceline, shall be limited to 36.5 acres; inverters, along with panels, shall be within the fenceline.
4. The Applicant shall give the County written notice of any change in ownership or entities responsible for operations or asset management of the project within thirty (30) days after the change.

5. Prior to or in conjunction with site plan review, the Applicant shall submit details on the utility connections between noncontiguous portions of the project, including secured easements, to the Zoning Administrator for approval. Approval of the site plan or subsequent permits shall not be granted without prior approval of these connections by the Zoning Administrator, or without the existence of executed easements for the connections.
6. Prior to or in conjunction with the site plan review, the Applicant shall submit an additional viewshed analysis depicting visibility of developed site conditions along Jacks Creek Road, near Old Franklin Turnpike. Where installed equipment or portions thereof are anticipated to be visible above required buffer plantings based upon site topography, the Applicant shall submit an alternative buffer plan for these areas that accommodates additional screening and/or berming to reasonably screen equipment from view, as determined by the Zoning Administrator.
7. A separate security shall be posted for the ongoing maintenance of the project's land cover and vegetative buffers in an amount deemed sufficient by the Zoning Administrator as set forth on Schedule A attached hereto, and provided by an issuer in a form and amount, acceptable to the Zoning Administrator (who may rely on the opinion of a third-party).
8. As part of the site plan review, the Applicant shall be required to submit a construction management/construction mitigation plan, to be reviewed and approved by VDOT and the Zoning Administrator. At a minimum this plan shall address and/or include:
  - a. Traffic control methods for all public roads to be used for ingress/egress (in coordination with the VDOT prior to initiation of construction) shall include, at a minimum, plans and procedures for lane closures, signage, and flagging.
  - b. Coordination with VDOT prior to initiation of construction on the appropriateness of the speed limit on any public access road and support a speed limit reduction, if necessary.
  - c. Site access planning, including procedures for directing and coordinating employee and delivery traffic. Construction Traffic shall be limited to 7:00 am to 9:00 pm, Monday through



Saturday, or as may be approved by the Zoning Administrator upon good cause shown by the Applicant.

- d. Site security.
  - e. Lighting; during construction of the facility, any temporary construction lighting shall be positioned downward, inward, and shielded to eliminate glare from all adjacent properties. Emergency and/or safety lighting shall be exempt from this construction lighting condition.
  - f. Hours of construction.
  - g. Coordination with erosion and sediment plans to mitigate dust and dirt on the roadways.
  - h. Mitigation of burning operations. Issuance of permits by Franklin County Fire Marshal.
  - i. Plans for staging and storage of materials and parking. During construction, the setback may be used for staging of materials and parking. No material and equipment laydown area, construction staging area, or construction trailer shall be located within 200 feet of any property containing a residential dwelling.
9. The Applicant shall submit a traffic management plan to include entrances and comply with all Virginia Department of Transportation conditions for the traffic management plan during construction and decommissioning of the Solar Facility.
10. The Applicant shall be responsible for repairing any damage to roadways occurring during development/construction or following commissioning of the project, or any portion thereof. Prior to the commencement of development/construction activities, VDOT, the County, and the Applicant shall agree to the existing state of applicable roadways, to be documented by video furnished by the Applicant in coordination with VDOT. During development/construction, the roadways shall be monitored for damage, and the Applicant, once notified by VDOT of damages, shall make repairs caused by construction traffic at the direction of VDOT. After construction activities are completed, the roadways will be evaluated for damage as measured against the condition prior to construction activity; the Applicant will be required to

restore such roadways to equivalent or better condition as existed prior to commencement of construction activity.

11. The Applicant shall coordinate with the County's Sheriff Department prior to initiation of construction on speed monitoring plans and devices.
12. As part of the site plan review, the Applicant shall be required to submit a grading plan, to be reviewed and approved by the Zoning Administrator. A bond or other security, from an issuer and in a form approved by the Zoning Administrator, will be posted for the grading operations. The Project shall be constructed in compliance with the Grading Plan. At a minimum this plan shall address:
  - a. Clearly show existing and proposed contours;
  - b. Note the locations and amounts of topsoil to be removed (if any) and the percent of the site to be graded;
  - c. Limit grading to the greatest extent practicable by avoiding steep slopes;
  - d. An earthwork balance will be achieved on-site with no import or export of soil except for importing specific quality soils required for construction;
  - e. In areas proposed to be permanent access roads which will receive gravel or in any areas where more than a few inches of cut are required, topsoil will first be stripped and stockpiled on-site to be used to increase the fertility of areas intended to be seeded;
  - f. Take advantage of natural flow patterns in drainage design and keep the amount of impervious surface as low as possible to reduce storm water storage needs; and
  - g. Provide for the installation of all stormwater and erosion and sediment control infrastructure ("Stormwater Infrastructure") at the outset of the project to ensure protection of water quality. Once all Stormwater Infrastructure is complete and approved by the VESCP authority, no more than 50% of the land disturbance areas as reflected on the Site Plan shall be disturbed without soil stabilization at any one time. Stabilization, for purposes of erosion and sediment



control, shall mean the application of seed and straw to disturbed areas, which shall be determined by the VESCP authority.

13. The Erosion and Sediment Control plan shall comply with the most recent version of the Virginia Erosion and Sediment Control Handbook at the time of construction. The County will have a third-party review with corrections completed prior to the County review and approval. The owner or operator shall construct, maintain, and operate the project in compliance with the approved plan. An E&S bond (or other security) shall be posted for the construction portion of the project, to be provided by an issuer in a form and amount acceptable to the Zoning Administrator (who may rely on the opinion of a third-party) as set forth on Schedule A attached hereto.
  - a. To the maximum extent practicable, trees and stumps removed during the course of development shall be mulched on site, with such mulch to be used to mitigate and control stormwater runoff during construction.
  - b. To the maximum extent practicable, topsoil from the site should be maintained on site for areas where grading occurs that exposes unsuitable soils where erosion and sediment control vegetation will not take; soil analysis shall be performed to assess the adequate seed mix for exposed soils.
14. The stormwater control plan shall comply with the most recent State policies and regulations at the time of design and construction. The County will have a third-party review with corrections completed prior to submittal for DEQ review and approval. The owner or operator shall construct, maintain, and operate the project in compliance with the approved plan. A storm water control bond (or other security) provided by an issuer in a form and amount acceptable to the Zoning Administrator or Program Administrator (who may rely on the opinion of a third-party) shall, be posted as set forth on Schedule A attached hereto.
15. Ground cover shall be native vegetation where compatible with site conditions and, in all cases, shall be approved by the Zoning Administrator, who may rely on the assistance of a third-party reviewer.
16. Only EPA approved herbicides shall be used for vegetative and weed control at the solar energy facility by a licensed applicator. No herbicides shall be used within 150 feet of the location of an approved ground water

well. The Applicant shall submit an herbicide land application plan prior to approval of the certificate of occupancy (or equivalent). The plan shall specify the type of herbicides to be used, the frequency of land application, the identification of approved groundwater wells, wetlands, streams, and the distances from land application areas to features such as wells, wetlands, streams, and other bodies of water. The operator shall notify the County prior to application of pesticides and fertilizers. The County reserves the right to request soil and ground and/or surface water testing.

17. For permanent security fencing, a performance bond reflecting the costs anticipated for fence maintenance shall be posted as set forth on Schedule A attached hereto, provided by an issuer in a form and amount acceptable to the Zoning Administrator (who may rely on the opinion of a third-party).
18. No fence or similar barrier shall cross the main channel of any stream or through a wetland flagged by County staff on a site plan.
19. Permanent entrance roads and parking areas, as designated in the erosion and sediment and stormwater management plan, will be stabilized with gravel, asphalt, or concrete to minimize dust, and impacts to adjacent properties. Roads internal to the site that are not part of ingress/egress to the site may be compacted dirt.
20. All physically damaged panels or any portion or debris thereof shall be collected by the solar 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; the County must be notified of damaged panels and/ or debris and storage of damaged panels or portion or debris thereof shall not exceed thirty (30) days.
21. Subject to the requirement that the County provide the Applicant with an estimate of the third-party costs prior the expense being incurred (when applicable County permit fees do not cover assumed costs), the Applicant shall reimburse the County its reasonable costs in obtaining independent third-party reviews as required by these conditions and for the review of the site plan (including all specific plans thereof), Erosion and Sediment Control plan, decommissioning cost estimates, and bi-annual inspections during operations to verify compliance with all permits and approvals. The Applicant shall also fully fund any temporary or



permanent signage as requested or required by the County or the Virginia Department of Transportation (“VDOT”), as well as any costs associated with traffic planning or traffic mitigation.

22. The design, installation, maintenance, and repair of the Solar Facility shall be in accordance with the most current National Electric Code (NFPA 70) available (2014 version or later as applicable) and State Building Code at the time of construction.

23. Inspections.

- a. The Applicant will allow designated County representatives or employees access to the facility at any time during and after construction and for inspection purposes during normal business hours with 24-hour notice.
- b. The Applicant shall reimburse the County its reasonable costs in obtaining an independent third-party to conduct inspections required by local and state laws and regulations when those costs exceed the Applicant's building permit fee.

24. Emergency Access, Response, and Training.

- a. 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 immediately 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, as well as information on how the facility will be designed, constructed, operated, and maintained to allow for access by County emergency response staff in the event of an emergency.
- b. Prior to the end of construction of the Project Site, the Applicant, shall hold training classes with the County's first responders (Fire and Rescue) to provide materials, education, and training on responding to on-site emergencies, to include the provision of information and any necessary equipment to allow first responders to gain access to any part of the facility in the event of an emergency. The training classes shall be scheduled with the assistance of the County's Public Safety Coordinator or designee.

- c. The Applicant shall provide on-going training as deemed necessary by the Public Safety Coordinator or designee.
  - d. In the event any upgrades or changes in technology associated with the Solar Facilities results in any change in emergency procedure, including the manner of access to the facility, the Applicant will notify the County Public Safety Coordinator, who may, at their discretion, schedule an additional training on the new equipment.
25. Compliance. The Solar Facilities shall be designed, constructed, and tested to meet relevant local, state, and federal standards as applicable. The Applicant must provide document(s) that the Project has met all national standards.
26. The Special Use Permit shall be terminated if the solar facility does not receive a building permit within 24 months after the Applicant receives any approvals of the regional transmission organization for interconnection to the power grid. The Board of Supervisors, with a written request from the Applicant detailing the reasons for a requested extension, may approve a one-time extension of the 24 months to 36 months.
27. If the Solar Facilities are declared to be unsafe, due to a violation of building or electrical codes, as determined by the fire marshal or building official, and the Applicant of the Facilities fails to respond in writing to such official within seven (7) days, the County may revoke the right for the Facilities to continue operation until the unsafe condition is brought into compliance with the applicable building or electrical code. If the unsafe condition cannot be remedied within six (6) months, the Conditional Use Permit shall be terminated, and the Solar Facilities shall be decommissioned.
28. The Applicant shall provide the County with a list of capital equipment, including but not limited to solar photovoltaic equipment proposed to be installed, whether or not it has yet been certified as pollution control equipment by the State Corporation Commission or Virginia Department of Environmental Quality, and lists of all other taxable tangible property. Thereafter, on an annual basis, the Applicant shall provide the County with any updates to this information. Further, any information that is provided to the Virginia State Corporation Commission in the future, for



the Commission's use in valuing such property for taxation purposes, shall also be provided to the County in a timely manner.

29. The County may engage a professional construction project manager with demonstrated experience in the development of utility-scale solar facilities during the construction/development of the project, with the requirement that reasonable costs of such engagement shall be reimbursed by the Applicant. The role of this project manager will be to serve as a primary point of contact between the County and the Applicant with respect to all aspects of the construction and development of the facility and to assist the County and its staff and any associated third-party consultants in coordinating the compliant development of the facility consistent with all applicable local, state, and federal permits, ordinances, codes, regulations.

Schedule A

Security of Performance - Summary of Securities

Condition Reference	Performance Being Secured	Duration
12	Grading	Construction phase
13	Erosion & Sediment Control	
14	Stormwater Management	
7	Land cover & vegetative buffer maintenance	Full lifecycle
17	Security fencing	

Posting and release of bonds shall be in accordance with the procedures set forth in the applicable County Ordinances and Code.