



Town of Farmville Planning Commission

Town Council Chambers of the Town Hall
116 North Main Street, Farmville, Virginia

Agenda Wednesday, April 17, 2024 @ 7:00pm

- 1. Call to Order** (please silence devices)
- 2. Roll Call**
- 3. Approval of Agenda**
- 4. Consideration of Minutes-** Regular Planning Commission Meeting – **January 17, 2024**
- 5. Public Participation – Speakers have three (3) minutes to make statements on non-agenda items.**
- 6. Request Adoption of Resolution No. RES24-001-**Initiating Amendments to the Farmville Town Code, Chapter 29, Zoning and Subdivision to add fences.
- 7. Request Adoption of Resolution No. RES24-002-**Initiating Amendments to the Farmville Town Code, Chapter 29, Zoning and Subdivision to add Sidewalks for residential districts.
- 8. Public Hearing-ZTA24-001-Fences-** Public hearing for Planning Commission recommendation to amend the zoning ordinance by adding Section 29-25.b.5 – Fences. This will regulate the location and height of fences in residential districts.
 - a. Staff Report
 - b. Public Participation-Speakers have three (3) minutes to make statements.
 - c. Planning Commission Deliberation
- 9. Public Hearing-ZTA24-002-Sidewalks-** Public hearing for Planning Commission recommendation to amend regulations contained in *Section 29-62.d.9.d – Sidewalks* to require dedication of land construction of sidewalks in residential districts, R-1, R-2, and R-3. And to amend Section 29-13.e.4.c to require the construction of sidewalks for projects that must submit a site plan.
 - a. Staff Report
 - b. Public Participation-Speakers have three (3) minutes to make statements.
 - c. Planning Commission Deliberation
- 10. Public Hearing-CUP24-001-** High Bridge Solar, LLC's request for a conditional use permit to allow for a utility service, major (utility scale solar facility) per Town Code Section 29.22.a. The 131 acre site is located at the terminus of Cedar Avenue, northeast of its

intersection with East Second Street on Parcel 0024000(0A)00-006. This property is zoned R-3 High Density Residential.

- a. Staff Report
- b. Applicant Presentation
- c. Public Participation-Speakers have three (3) minutes to make statements.
- d. Planning Commission Deliberation/Vote

11. Old Business

12. New Business

- a. Staff and Department updates
- b. Commission Items
- c. Other Items of Interest

13. Adjournment

**Town of Farmville Planning Commission
Town Council Chamber of the Town Hall
116 North Main Street, Farmville, VA 23901
Wednesday, January 17, 2024**

Planning Commission Members Present: Chairperson Cameron Patterson, Secretary Jerry Davenport, Dr. John Miller, Rhett Weiss, Abigail O'Connor, and Patrick Crute.

Planning Commission Members Absent: Vice-Chair Jayne Johnson

Staff Present: Director of Community Development Ashley Atkins-Austin, and Administrative Assistant II Michelle Watkins.

CALL TO ORDER

Chairperson Patterson called the Planning Commission meeting to order at 7:00 PM.

APPROVAL OF AGENDA

Chairperson Patterson noted the agenda was distributed and asked if there were any corrections. On a motion by Mr. Crute, seconded by Ms. O'Connor, with all present members voting "aye", the agenda was adopted with no corrections.

ANNUAL ORGANIZATION MEETING-ELECTIONS OF OFFICERS

Chairperson Patterson opened the floor to accept nominations for officers.

Nomination and Election of Chairperson

Mr. Patterson was nominated by Mr. Crute, seconded by Mr. Davenport, and with no further nominations, Mr. Patterson was elected by acclamation. On a motion by Dr. Miller, seconded by Mr. Davenport, the election for Chairperson was closed.

Nomination of Vice-Chairperson

Mr. Davenport was nominated by Chairperson Patterson, seconded by Ms. O'Connor, and with no further nominations, Mr. Davenport was elected by acclamation. On a motion by Mr. Weiss, seconded by Mr. Crute, the election for Vice-Chairperson was closed.

Nomination of Secretary

Ms. O'Connor was nominated by Chairperson Patterson, seconded by Dr. Miller, and with no further nominations, Ms. O'Connor was elected by acclamation. On a motion by Mr. Weiss, seconded by Mr. Crute, the election for Secretary was closed.

CONSIDERATION OF MINUTES

Minutes of Regular Planning Commission Meeting -November 15, 2023

Chairperson Patterson noted that the minutes had been likewise distributed and asked if there were any corrections or revisions. On a motion by Mr. Weiss, seconded by Mr. Crute, and with all present members voting "aye," the minutes from November 15, 2023, were approved as presented.

PUBLIC PARTICIPATION

There was no public participation.

PUBLIC HEARING

There were no public hearings scheduled.

OLD BUSINESS

There was no old business before the Commission.

NEW BUSINESS

Consideration and Adoption of 2023 Annual report and 2024 goals

Chairperson Patterson noted the Annual Report was distributed and asked if there were any corrections or additions. He noted a minor correction under the 2024 proposed actions, to the first bullet point item to change "request" to "requests". Chairperson Pattern recounted items from 2023 that the Commission had worked on and expressed his appreciation to everyone. On a motion by Mr. Weiss, seconded by Mr. Davenport, and with all present members voting "aye", the agenda was adopted with the noted correction.

Consideration and Adoption of 2024 Meeting Dates

Chairperson Patterson noted that the meeting dates have been distributed and asked if there were any questions. On a motion by Mr. Davenport, Seconded by Ms. O'Connor, and with all present member voting "aye", the 2024 Meeting dates were adopted.

STAFF UPDATES

Chairperson Patterson offered congratulations to Ashley Atkins-Austin on her new position as the Director of the Community Development Department.

Ms. Atkins-Austin said that she looks forward to working with the Planning Commission for many years to come. She shared that VCU's next Virtual certified Planning Commission Program is March 14 through May 10, 2024. If anyone is interested to reach out to Michelle Watkins to be registered. There are no upcoming major cases to bring to the Planning Commission. The next Planning commission meeting will be held on February 21, 2024 at 7:00 pm. The Board of Zoning Appeals will meet on January 25, 2024 at 3:00 pm to hear a variance case.

COMMISSION UPDATES

There were no updates from the Commissioners.

ADJOURNMENT

With no further business, Chairperson Patterson called for a motion to adjourn the meeting. On a motion by Mr. Crute, seconded by Ms. O'Connor and with all present members voting "aye", the meeting was adjourned at 7:14 PM.

Respectfully submitted by Michelle D. Watkins, Administrative Assistant II

Cameron Patterson, Chairperson

Abigail O'Connor, Secretary

A Resolution Initiating Amendments
to the Farmville Town Code, Chapter 29, Zoning and Subdivision
To Add Fences

WHEREAS, from time to time, amendments to ordinances are needed to recognize current conditions and land use practices; and

WHEREAS, the Farmville Department of Community Development has found the need for standards for use of fences in residential districts; and

WHEREAS, Section 29-14.a.2.a.1.B of the Farmville Town Code and §15.2-2286(7) of the Code of Virginia allow the Planning Commission to initiate amendments to the zoning ordinance;

NOW THEREFORE BE IT RESOLVED that the Farmville Planning Commission hereby initiates the ordinance amendment process pursuant to the appropriate local ordinance and statutory authority for Zoning Text Amendments ZTA24-001 for the amendment of Section 29-35.b of the Town Code for standards for specific uses.

Approved by the Farmville Planning Commission on this 17th day of April, 2024.

Approved: _____
Planning Commission Chair

Attest: _____
Secretary



MEETING DATE: Wednesday, April 17, 2024 (Planning Commission)

ITEM NO. 6

REQUEST: **RES24-001**, Adoption of resolution initiating Amendments to the Farmville Town Code, Chapter 29, Zoning and Subdivision to add Fences.

BACKGROUND: Written staff report and other supporting materials and verbal report by Ashley Atkins-Austin, Director of Community Development.

RECOMMENDATION: That Planning Commission adopt the resolution to initiate the ordinance amendment process for ZTA24-001.

MOTION: _____

SECONDED: _____

Commissioner	Yes	No
O'Connor		
Weiss		
Davenport		
Patterson		
Crute		
Miller		

A Resolution Initiating Amendments
to the Farmville Town Code, Chapter 29, Zoning and Subdivision
To Add Sidewalks for Residential Districts

WHEREAS, from time to time, amendments to ordinances are needed to recognize current conditions and land use practices; and

WHEREAS, the Farmville Comprehensive Plan, adopted June 10, 2020, maintains that low and moderate density residential areas should support transportation by both car and on foot; and

WHEREAS, Section 29-14.a.2.a.1.B of the Farmville Town Code and §15.2-2286(7) of the Code of Virginia allow the Planning Commission to initiate amendments to the zoning ordinance;

NOW THEREFORE BE IT RESOLVED that the Farmville Planning Commission hereby initiates the ordinance amendment process pursuant to the appropriate local ordinance and statutory authority for Zoning Text Amendment ZTA24-002 for the amendment of Section 29-62.d.9.d of the Town Code for specific sidewalk construction regulations and Section 29-13.e.4.c of the Town Code to add sidewalk construction regulations to the site plan requirements.

Approved by the Farmville Planning Commission on this 17th day of April, 2024.

Approved: _____
Planning Commission Chair

Attest: _____
Secretary



MEETING DATE: Wednesday, April 17, 2024 (Planning Commission)

ITEM NO. 7

REQUEST: **RES24-002**, Adoption of resolution initiating Amendments to the Farmville Town Code, Chapter 29, Zoning and Subdivision to add Sidewalks.

BACKGROUND: Written staff report and other supporting materials and verbal report by Ashley Atkins-Austin, Director of Community Development.

RECOMMENDATION: That Planning Commission adopt the resolution to initiate the ordinance amendment process for ZTA24-002.

MOTION: _____

SECONDED: _____

Commissioner	Yes	No
O'Connor		
Weiss		
Davenport		
Patterson		
Crute		
Miller		



Background

In 2020, after several months of input and deliberation, the Town of Farmville adopted new zoning and subdivision ordinances (Chapter 29 of the Farmville Town Code) and a comprehensive plan. With this new ordinance came landscaping requirements that were specifically for developments or redevelopments that required approved site plans, properties that were seeking rezoning to R-3, B-1, B-2, or B-3 districts, and for properties seeking a conditional use permit in a R-3, B-1, B-2, or B-3 zoning district. Walls and fences were listed in this code section with requirements for location and maintenance. Over the last few years, staff has received numerous calls questioning height and placement standards for fencing in the R-1 and R-2 zoning districts. In a comparison of other jurisdictions' fence regulations, the Staff determined that the lack of standards for height and location of fences was undesirable and therefore included standards that would be relevant to residential zoning districts.

To more clearly state this, the Staff proposes amendments to **Article IV, Section 29-35.b.** of the zoning ordinance to add more specific regulations regarding the height and placement of fences. The amendment adds Section 29-35.b.5, *Fences*. **Attachment 1** is a redlined version of the ordinance showing these amendments.

Recommendations

- ☐ The Staff recommends **approval** of the proposed ordinance text amendments listed in **Attachment 1.**

Additional Information

None

Attachments

Proposed ordinance language is in **Attachment 1.**

Staff Contact

Ashley Atkins-Austin, CZA, Director of Community Development
Phone: 434-392-8465 | Email: aaustin@farmvilleva.com

Add the following under the above referenced article where no regulation exists currently:

Sec. 29-35.b. Residential uses.

(1) Accessory dwelling.

- a. Such structures shall comply with all setback requirements that apply to the primary structure.
- b. Only one (1) accessory dwelling shall be allowed on a lot or parcel of land.
- c. No recreational vehicle may be used as an accessory dwelling.
- d. Prior to installing an accessory dwelling, a permit must be obtained from the town and associated fees paid.
- e. Any accessory dwelling shall comply with all applicable requirements of the state department of health and the Virginia Uniform Statewide Building Code.
- f. No signage advertising or promoting the existence of the structure shall be permitted on the exterior of the structure or anywhere on the property.
- g. The town may revoke the permit if the permit holder violates any provision of this section.

(2) Dish antennas.

- a. Additional standards in all residential districts.
- b. Communication antennas, commonly called "dish" antennas, which do not comply with the restrictions listed below may be allowed with conditional use permits, subject to the applicant's ability to satisfactorily mitigate negative aesthetic impacts on adjoining properties. Dish antennas shall be permitted in all districts but shall be limited to one (1) exterior antenna per parcel except with conditional use permit.
- c. Ground-mounted antennas shall be limited to the rear yard and no closer than five (5) feet to any side or rear lot line, and in the case of a corner lot, no antenna shall be nearer than twenty-five (25) feet to the side street adjacent to the property or within five (5) feet of an adjoining lot.
- d. No ground-mounted antenna shall exceed sixteen (16) feet in height measured vertically from the highest point of the signal receiving apparatus, when positioned for operation, to the bottom of the base which supports the satellite antenna.
- e. Roof-mounted antennas, when designated for that purpose, shall be permitted, except that a roof-mounted antenna shall not be more than forty-eight (48) inches in diameter and shall not be visible from any street.
- f. Antennas shall be permanently and securely installed.

(3) Multi-family dwellings.

- a. Multi-family dwellings shall be designed with special attention to the compatibility of adjacent land uses, topography, existing vegetation, building height, orientation, and other similar factors.
- b. Multi-family dwellings shall incorporate an attractive building layout which retains, relates to, and enhances the natural vegetation and terrain of the site or incorporates natural design features such as preservation of scenic vistas, natural areas, or other unique elements of the site.

(4) Townhouse and single family attached dwellings.

- a. No more than eight (8) townhouses shall be constructed contiguously.
- b. The facades of individual townhouses within any contiguous row of townhouses shall be sufficiently varied in their materials, design, or appearance as to visually distinguish them as individual dwelling units.
- c. Any townhouse shall front on, or be accessed by, a public street.
- d. Any provided open space shall be owned and maintained by the developer, until such time as it is turned over to the ownership and maintenance of an approved homeowners' association.

(5) Fences

- a. **Fences between a street and front building line shall not be more than four (4) feet in height except as required in specific zoning district regulations.**

(1) For the purpose of determining the required front yard setback for fences, the required front yard shall be the established front yard setback for the applicable district, or the actual setback of the primary building wall of the structure in the case of a nonconforming front yard setback.

- b. **Fences along the rear lot line or along a side lot line to the rear of the required front setback line may be erected to a height not exceeding eight (8) feet.**
- c. **Fences shall not impair vehicular or pedestrian visibility. In the case of corner lots in all districts, no fence shall be erected that blocks or otherwise impedes the view of streets or traffic.**
- d. **Finished sides of any fence shall face the street and/or adjoining properties.**



MEETING DATE: Wednesday, April 17, 2024 (Planning Commission)

ITEM NO. 8

REQUEST: **ZTA24-001**, for Planning Commission recommendation to amend the zoning ordinance by adding Section 29-25.b.5 – Fences. This will regulate the location and height of fences in residential districts.

BACKGROUND: Written staff report and other supporting materials and verbal report by Ashley Atkins-Austin, Director of Community Development.

RECOMMENDATION: That the Planning Commission recommend approval of ZTA24-001 to the Town Council.

MOTION: _____

SECONDED: _____

Commissioner	Yes	No
O'Connor		
Weiss		
Davenport		
Patterson		
Crute		
Miller		



Background

On **June 10, 2020**, after several months of input and deliberation, the Town of Farmville adopted new zoning and subdivision ordinances (Chapter 29 of the Farmville Town Code) and a comprehensive plan. With this new ordinance sidewalks were required for properties being subdivided in the B-1, B-2, and B-3 zoning districts. In keeping with the Comprehensive Plan recommendation that “major streets should be redesigned with sidewalks and other pedestrian amenities over the long term”¹ and “provide full pedestrian connections”², staff proposes amending **Article VI, Section 29-62.d.9.d** to require 5’ sidewalks for R-1, R-2, and R-3 districts in addition to the B-1, B-2, and B-3 districts when subdividing. In addition, all projects that require a site plan per Sec. 29-13.e.2.a, Staff proposes amending **Article II, Section 29-13.e.4.c.** to require the construction of a 5’ sidewalk along the street or roadway leading to the facility.

Recommendations

- ☐ The Staff recommends **approval** of the proposed ordinance text amendments listed in **Attachment 1.**

Additional Information

None

Attachments

Proposed ordinance language is in **Attachment 1.**

Staff Contact

Ashley Atkins-Austin, CZA, Director of Community Development
Phone: 434-392-8465 | Email: aaustin@farmvilleva.com

¹ Page 55 of the Comprehensive Plan

² Page 56 of the Comprehensive Plan

Amend Section 29-62. Platting requirements and design standards with the following.

Sec. 29-62 (d) *Lots*.

- (1) *Minimum size*. The minimum lot size in any area shall be in accordance with the zoning ordinance for those subdivisions within the corporate limits.
- (2) *Shape*. The lot arrangement, design and shape shall be such that lots shall provide satisfactory and desirable sites for buildings, be properly related to topography and conform to requirements of this chapter. Lots shall not contain peculiarly shaped elongations solely to provide necessary square footage of area but which would be unusable for normal purposes. Pipestem lots, also known as flag lots, are prohibited.
- (3) *Location*. Each lot shall abut on a street dedicated by the subdivision plat or on an existing publicly dedicated street or on a street which has become public by right of use. If the existing streets are not fifty (50) feet in width, the subdivider shall make provisions in the subdivision plat for the dedication of additional road right-of-way to equal one-half (½) the width set out in section 29-62 platting requirements and design standards, from the existing Code. This dedication will be deeded to the town prior to the final approval of the subdivision.
- (4) *Corner lots*. Corner lots shall have extra width sufficient for maintenance of any required building lines on both streets as determined by the agent.
- (5) *Side lines*. Side lines of lots shall be approximately at right angles, or radial to the street line.
- (6) *Remnants*. All remnants of lots below minimum size left over after subdividing a tract shall be added to adjacent lots or otherwise disposed of rather than allowed to remain as unusable parcels.
- (7) *Separate ownership*. Where the land covered by a subdivision includes two (2) or more parcels in separate ownership and lot arrangement is such that a property ownership line divides one (1) or more lots, the land in each lot so divided shall be transferred by deed to single ownership simultaneously with the recording of the final plat. Such deed is to be deposited with the clerk of the court and held with the final plat until the subdivider is ready to record same and they both shall then be recorded together.
- (8) Incorporation of two (2) contiguous parcels of land.
 - a. With the approval of the agent, two (2) contiguous parcels of land may be incorporated into one (1) lot.
 - b. The town council may make an exception to this section, if they feel the compliance with this section would cause an undue hardship on the property owner or cause a waste of land. Any exception made shall not violate any provisions of the zoning ordinance or other regulation in the town.
- (9) *Water and sewer*.
 - a. *Public water*. Where public water is available, the service, including fire hydrants, shall be extended to all lots within a subdivision by the subdivider in accordance

with the design standards and specifications for water, construction and improvements in the town and meeting the approval of the agent.

- b. *Sewerage facilities.* Where public sewerage facilities are available, the service shall be extended to all lots within a subdivision and septic tanks shall not be permitted. Every subdivision shall be provided by the subdivider with a satisfactory and sanitary means of sewage collection and disposal in accordance with the design standards and specifications for sewerage construction and improvements in the town and meeting the approval of the agent.
- c. *Improvements; pro-rata share.* As allowed by Code of Virginia, §§ 15.2-2243 and 15.2-2242(5), the town may require a subdivider or developer of land to pay his pro rata share of the cost of providing reasonable and necessary road improvements, sewerage, water and drainage facilities, located outside the property limits of the land owned or controlled by him but necessitated or required, at least in part, by the construction or improvement of his subdivision or development as per town water and sewer regulations.
- d. *Sidewalks.* As allowed by Code of Virginia, § 15.2-2242(9), the town requires the dedication of land and construction of a **5'** sidewalk on the property in the B-1, B-2, ~~and~~ B-3, **R-1, R-2, and R-3** zoning districts being subdivided or developed when one (1) of the following applies:
 - 1. The land fronts on an existing street;
 - 2. Is adjacent to an existing sidewalk;
 - 3. Is reasonably required by the proposed development, or
 - 4. Is in the adopted comprehensive plan.

Nothing in this section shall alter VDOT's authority to require sidewalks.

Add the following to Section 29-13 (e) (4) (c)

16. Construction of a 5' sidewalk along the street or roadway and leading to the facility.



MEETING DATE: Wednesday, April 17, 2024 (Planning Commission)

ITEM NO. 9

REQUEST: **ZTA24-002**, for Planning Commission recommendation to amend regulations contained in Section 29-62.d.9.d – Sidewalks to require dedication of land construction of sidewalks in residential districts, R-1, R-2, and R-3. And to amend Section 29-13.e.4.c to require the construction of sidewalks for projects that must submit a site plan.

BACKGROUND: Written staff report and other supporting materials and verbal report by Ashley Atkins-Austin, Interim Director of Community Development.

RECOMMENDATION: That the Planning Commission recommend approval of ZTA24-002 to the Town Council.

MOTION: _____

SECONDED: _____

Commissioner	Yes	No
O'Connor		
Weiss		
Davenport		
Patterson		
Crute		
Miller		



116 North Main Street
Farmville, Virginia 23901
434-392-8465
www.farmvilleva.com

Department of Community Development
CUP24-001
High Bridge Solar – Utility Scale Solar Facility
Staff Report for 4/17/2024 Planning Commission Meeting

Identification and Location Information

Applicant	Alexandria Walling representing High Bridge Solar, LLC
Property Owner	Johns W. Bailey
Location	521 Cedar Avenue, Tax Map # 0024000(OA)00-006
Ward	E
Acreage	131 acres
Zoning	R3 High Density Residential
Density	Not Applicable
Future Land Use Recommendation	Urban Residential
Overlays	None
Adjacent Zoning	Adjacent Town properties are zoning R1 and R3. Adjacent Prince Edward County property, zoned A2. The Appomattox River borders the property to the north.
Adjacent Uses	Surrounding area includes wastewater treatment facility, Farmville Area Bus, Prince Edward Rescue Squad, apartment complexes, and single-family residential.
Staff Contact	Ashley Atkins-Austin, CZA, Director of Community Development Phone: 434-392-8465 Email: aaustin@farmvilleva.com

Background and Existing Conditions

The Town of Farmville has received a conditional use permit request for a twelve (12) megawatt (MW) solar energy facility proposed to be located in residential district, R-3. This is the first request the town has received for this type of facility. The Town of Farmville’s zoning ordinance does not establish specific standards for solar energy facilities. Staff has referenced the Prince Edward County code, Appendix B, Article VII – Alternative Energy Facilities to guide conditions and applicant submittals.

The 131-acre site is located at the end of Cedar Avenue northeast of its intersection with East Second Street on parcel number 0024000(OA)00-006. The site is currently privately owned with one residence and is mainly forested terrain. The parcel contains a powerline easement and an access road for this utility.

The applicant proposes the solar use to be limited to approximately 79 acres of the 131-acre site with the remaining unused parcel consisting of the existing transmission line easement, existing residence with access, floodplain, wetlands, streams, forested land, and setbacks.

Zoning Ordinance Considerations

A *Utility service, major* is permitted by **Conditional Use Permit** in the R3 High Density District pursuant to the zoning use matrix in Section 29-22.a (Table 1, Zoning Use Matrix).

A *Utility service, major* is defined in Section 29-81- Definitions as the following:



- *Service of a regional nature which normally entails the construction of new buildings or structures such as generating plants and sources, electrical switching facilities and stations or substations, community wastewater treatment plants, and similar facilities. Included in this definition are also electric, gas, and other utility transmission lines of a regional nature which are not otherwise reviewed and approved by the Virginia State Corporation Commission. All overhead service, distribution and transmission lines are included in this definition.*

The R3 District's purpose and intent is as follows:

- *High density Residential district, R-3, encompasses high-density residential areas, both existing and planned, as well as certain compatible public, semipublic, and very limited commercial land uses. This district should provide a suitable environment for persons desiring the amenities of apartment living and the convenience of being closest to shopping and employment centers and other community facilities.*

Comprehensive Plan Considerations

The current land use of the parcel is R-3 Residential (High-Density Neighborhood). The Future Land Use Map in the comprehensive plan shows this area as Urban Residential. The comprehensive plan does not specifically address solar facilities.

Utilities

No structures requiring connection to Town water and sewer systems are proposed with the proposed solar facility.

Transportation/Streets

Traffic impacts will be most noticeable during construction of the facility. According to the applicant, the types of vehicles expected to be accessing the site during construction include equipment hauling trucks, passenger vehicles, fuel delivery vehicles, and material delivery trucks. No oversize or overweight loads are anticipated. Staff has discussed best routes to the site and provided the applicant with contact information for the Department of Public Works.

Environmental

The site does include areas within the floodplain, wetlands, and streams. On the preliminary site plan, the applicant shows a 100' buffer around these areas. Stormwater and Erosion and Sedimentation Control plans will be required as conditions to the Conditional Use Permit.

Economic and Fiscal Impact

The applicant has submitted an Economic & Fiscal Impact Report that is included in the attachments.

Findings and Recommendations

Staff's Findings



116 North Main Street
Farmville, Virginia 23901
434-392-8465
www.farmvilleva.com

Department of Community Development
CUP24-001
High Bridge Solar – Utility Scale Solar Facility
Staff Report for 4/17/2024 Planning Commission Meeting

- The application appears to meet the standards of review for Conditional Use Permits set forth in Section 29-13.c.1 of the Town Zoning Ordinance.

Staff's Recommendations

The Staff recommends Planning Commission submit a recommendation of **approval** to Town Council of the Conditional Use Permit for a utility service, major (utility scale solar facility) with the following conditions. *See Attachment 1 for conditions.

Attachments

1. Conditions of Conditional Use Permit
2. Vicinity and aerial maps
3. Images
4. Applicant narrative
5. High Bridge Solar Preliminary Site Plan
6. High Bridge Solar Impact Analysis
7. High Bridge Economic Analysis
8. Proposed Decommissioning Plan

List of conditions to be placed on High Bridge Solar, LLC's Conditional Use Permit for a utility service, major located at the terminus of Cedar Avenue.

- (A) *Project narrative.* A narrative identifying the applicant, facility owner, site owner, and operator, if known at the time of the application, and describing the proposed energy facility, including an overview of the project and its location; the size of the site and the project area; the current use of the site; the estimated time for construction and proposed date for commencement of operations; the planned maximum-rated capacity of the facility; the approximate number, representative types and expected footprint of the equipment to be constructed, including without limitation photovoltaic panels; any 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.
- (B) *Site plan.* Regulated under Section 29-13.e. of the Town Code.
- (C) *Documentation of right to use property for the proposed facility.* Documentation shall include proof of control over the proposed site or possession of the right to use the proposed site in the manner requested. The applicant may redact sensitive financial or confidential information.
- (D) *Decommissioning plan; security.*
 - (1) The applicant shall provide a detailed decommissioning plan that provides procedures and requirements for removal of all parts of the energy generation facility and its various structures at the end of the useful life of the facility or if it is deemed abandoned pursuant to section 53-160. The plan shall include the anticipated life of the facility, the estimated overall cost of decommissioning the facility in current dollars, the methodology for determining such estimate, and the manner in which the project will be decommissioned. The decommissioning plan and the estimated decommissioning cost will be updated upon the request of the zoning administrator, provided the update shall be no more frequently than once every five years and no less frequently than once every ten years.
 - (2) Prior to operation, the applicant must provide security in the amount of the estimated cost of the decommissioning. Options for security include a cash escrow, a performance surety bond, a certified check, an irrevocable letter of credit, or other security acceptable to the town in an amount equal to the estimated decommissioning cost developed and updated in accordance with the decommissioning plan acceptable to the town. The security must remain valid until the decommissioning obligations have been met. The security may be adjusted up or down by the town if the estimated cost of decommissioning the facility changes. The security must be renewed or replaced if necessary, to account for any changes in the total estimated overall decommissioning cost in accordance with the periodic updated estimates required by the

decommissioning plan. At a minimum the decommissioning cost estimate shall be recalculated every five years and the surety increased when the recalculated estimate exceeds the guarantee by ten percent. Obtaining and maintaining the requisite security will be a mandatory condition of the special use permit. The security shall be in favor of the town and shall be obtained and delivered to the town before any construction commences.

- (3) The decommissioning plan, cost estimates, and all updates of those plans and estimates shall be sealed by a professional engineer.
- (E) *Liability insurance.* The applicant shall propose a reasonable amount of liability insurance that the applicant deems adequate to cover operations at the large and utility scale energy facility prior to the issuance of a building permit. Obtaining and maintaining the requisite liability insurance will be a mandatory condition of the special use permit.
- (F) *Landscaping and screening plan.* The applicant must submit a landscaping and screening plan that addresses the vegetative buffering required in this article, including the use of existing and newly installed vegetation to screen the facility. The plan also must address the use of pollinator-friendly and wildlife-friendly native plants, shrubs, trees, grasses, forbs and wildflowers in the project area and in the setbacks and vegetative buffering as required in this article.
- (G) *Erosion and sediment control plan.* An erosion and sediment control plan must be approved prior to any land disturbing activity.
- (H) *Stormwater management plan.* A stormwater management plan must be approved prior to any land disturbing activity exceeding one acre.
- (I) *Virginia Cultural Resource Information System report.* A report by the Virginia Department of Historic Resources Virginia Cultural Resource Information System must be submitted to identify historical, architectural, archeological, or other cultural resources on or near the proposed facility.
- (J) *Additional information.*
 - (1) The applicant shall submit a construction plan, including a proposed construction schedule and hours of operation, before obtaining a building permit.
 - (2) The identification and location of any existing large or utility scale energy facilities and any known proposed large or utility scale energy facilities within a five-mile radius of the proposed site.
 - (3) A report of impact on adjacent property values prepared by a qualified third party, such as a licensed real estate appraiser.

- (4) An economic impact analysis prepared by a qualified third party that reports any expected change in the value of the subject property, expected employment during the construction of the facility, any expected impact on the town's tax revenues, the estimated costs to the town associated with the facility in the form of additional services, and the information on any our economic benefits or burdens from the facility that may be requested by the zoning administrator.
 - (5) A copy of the cultural resources review conducted in conjunction with the state department of historic resources for the permit by rule process shall be submitted by the applicant prior to the issuance of a building permit. This report shall be in addition to the report required in subsection (J)(1) and shall further identify historical, architectural, archeological, or other cultural resources on or near the proposed facility.
 - (6) A report on the potential impacts on wildlife and wildlife habitats at the site and within a two-mile radius of the proposed facility using information provided by the state department of game and inland fisheries or a report prepared by a qualified third party.
 - (7) A report on potential impacts on pollinators and pollinator habitats at the site, including but not necessarily limited to the submission of a completed site pollinator habitat assessment form as required by the zoning administrator.
 - (8) A glint and glare study that demonstrates either that the panels will be sited, designed, and installed to eliminate glint and glare effects on roadway users, nearby residences, commercial areas, and other sensitive viewing locations, or that the applicant will use all reasonably available mitigation techniques to reduce glint and glare to the lowest achievable levels. The study will assess and quantify potential glint and glare effects and address the potential health, safety, and visual impacts associated with glint and glare. Any such assessment must be conducted by qualified individuals using appropriate and commonly accepted software and procedures.
- (K) *Review fees.* The town may retain qualified third parties to review portions of a permit application that are outside the town's areas of expertise and do not have adequate state and federal review. Any out-of-pocket costs incurred by the town for such review by qualified third parties shall be paid by the applicant. The third-party reviewers and their estimated costs will be submitted to applicant for approval before the costs incurred. The town may, in the alternative, accept such review by qualified third parties selected, retained and paid by the applicant.
- (L) *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 adhere to the following:

- (1) The applicant shall inform the zoning administrator and adjacent property owners in writing of the date, time and location of the meeting, at least seven but no more than 14 days, in advance of the meeting date;
 - (2) The date, time and location of the meeting shall be advertised in a newspaper of record in the town by the applicant, at least seven but no more than 14 days, in advance of the meeting date;
 - (3) The meeting shall be held within the town, at a location open to the general public with adequate parking and seating facilities that will accommodate persons with disabilities;
 - (4) The meeting shall give members of the public the opportunity to review application materials, ask questions of the applicant and provide feedback; and
 - (5) The applicant shall provide to the zoning administrator with a summary of any input received from members of the public at the meeting.
- (M) *Post-application documentation and approvals.* All documentation required to be submitted to and approvals required from the town after the issuance of the permit shall, unless otherwise stated in the conditions attached to the conditional use permit, be submitted or obtained no later than the date of any application for a building permit for the facility. The failure or refusal to submit required documentation or obtain required approvals following the issuance of a conditional use permit shall result in the suspension of the conditional use permit and the denial of the building permit.

Location, appearance, and operational requirements.

The following requirements apply to large and utility scale energy facilities:

- (A) *Visual impacts.* The applicant shall demonstrate through project siting and proposed mitigation, if necessary, that the project minimizes impacts on viewsheds, including from residential areas and areas of scenic, historical, cultural, archaeological, and recreational significance. The facility shall utilize only panels that employ anti-glare technology, anti-reflective coatings, and other available mitigation techniques, all that meet or exceed industry standards, to reduce glint and glare. The applicant shall provide written certification from a qualified expert acceptable to the town that the facility's panels incorporate and utilize anti-glare technology and anti-reflective coatings and reduce glint and glare to levels that meet or exceed industry standards.
- (B) *Road Repairs and Maintenance.* All aspects of road construction, repairs and maintenance will be addressed during site plan review. However, it shall be understood that the applicant shall work with the Town of Farmville Department of Public Works on the best routes to and from the site for the construction phase. Any damage to streets, curbs or gutters will be repaired back to pre-project conditions.

- (C) *Signage.* All signage on the site shall comply with the town sign ordinance, as adopted and from time to time amended. Appropriate warning signage and a 911 address sign shall be posted in a clearly visible manner. Warning signage must identify the owner and include a 24-hour emergency contact phone number.
- (D) *Noise.* Noise levels from the facility at the property line shall not exceed 50 dB.
- (E) *Setbacks.* The project area shall be set back a distance of at least 75 feet from all public rights-of-way and main buildings on adjoining parcels, and a distance of at least 75 feet from adjacent property lines. Exceptions may be made for adjoining parcels that are owned by the applicant. Increased setbacks up to 100 feet and additional buffering may be included in the conditions for a particular permit. Energy facilities also shall meet all setback requirements for primary structures for the zoning district in which the facility is located in addition to the requirements set forth above. Access, erosion and stormwater structures, and interconnection to the electrical grid may be made through setback areas provided that such are generally perpendicular to the property line.
- (E) *Fencing.* The project area shall be enclosed by security fencing not less than six feet in height and equipped with an appropriate anti-climbing 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 in this section so that it is screened from the ground level view of adjacent property owners. The fencing shall be maintained at all times while the facility is in operation.
- (G) *Vegetative buffer.* A vegetative buffer sufficient to mitigate the visual impact of the facility is required. The buffer shall consist of a landscaped strip at least 15 feet wide, shall be located within the setbacks required under subsection (d), and shall run around the entire perimeter of the property. The buffer shall consist of existing vegetation and, if deemed necessary for the issuance of a special use permit, an installed landscaped strip consisting of multiple rows of staggered trees and other vegetation. This buffer should be made up of plant materials at least three feet tall at the time of planting and that are reasonably expected to grow to a minimum height of eight feet within three years. The planning commission or town council may require increased setbacks and additional or taller vegetative buffering in situations where the height of structures or the topography affects the visual impact of the facility. Noninvasive plant species and pollinator-friendly and wildlife-friendly native plants, shrubs, trees, grasses, forbs and wildflowers must be used in the vegetative buffer. Fencing must be installed on the interior of the buffer. A recommendation that the screening and/or buffer creation requirement be waived or altered may be made by the planning commission when the applicant proposes to use existing wetlands or woodlands, as long as the wetlands or woodlands are permanently protected for use as a buffer. Existing trees and vegetation may 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. If existing trees and vegetation are disturbed,

new plantings shall be provided for the buffer. The buffer shall be maintained for the life of the facility.

- (H) *Pollinator habitats.* The project area will be seeded with appropriate pollinator-friendly native plants, shrubs, trees, grasses, forbs and wildflowers. The project area will be seeded promptly following completion of construction in such a manner as to reduce invasive weed growth and sediment in the project area. The owners and operator also are required to install pollinator-friendly native plants, shrubs, trees, grasses, forbs and wildflowers in the setbacks and vegetative buffering.
- (I) *Height.* Ground-mounted solar energy generation facilities shall not exceed a height of 20 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. Roof mounted systems shall not exceed the maximum height requirements for the applicable zoning district by more than four feet.
- (J) *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 comply with any dark skies ordinance the town council may adopt or, from time to time, amend.
- (K) *Density; location, size.* Large and utility scale energy facilities shall not be located within one 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. In addition, no more than 5.5 percent of the land in a five-mile radius of the project area of any existing large or utility scale energy facility shall be approved for use as the project area for a new large or utility scale energy facility. In no case shall any energy facility exceed 2,513 acres. Projects consisting of multiple parcels shall be contiguous in order to be part of the same project.
- (L) *Utility connection.* No large or utility scale generation system shall be installed until evidence has been provided to the town that the owner has been approved by the appropriate electrical provider to interconnect.
- (M) *Repair of facility.* Solar panels and equipment shall be repaired or replaced when in visible disrepair. Such repairs include the restoration of non-reflective finish per manufacturer specifications.
- (N) *Entry and inspection.* The owners and/or operator will allow designated town officials access to the facility for inspection purposes, provided such inspectors will be subject to the owners' and/or operator's safety requirements and protocols while within the facility.

Unsafe or abandoned projects; decommissioning.

- (A) If an energy facility has been determined to be unsafe by the town building official, the facility shall be required to be repaired by the facility owner, site owner, or operator to meet federal, state, and local safety standards, or to be removed by the owners or operator. The owners or operator must complete the repair or removal of the facility, as directed by the building official, within the time period allowed by the building official. If directed to do so by the building official, the owners or operator will remove the energy facility in compliance with the decommissioning plan established for the facility.
- (B) If any energy generation facility is not operated for a continuous period of 12 months, the town may notify the facility owner by registered mail and provide 45 days for a response. In its response, the facility owner shall set forth reasons for the operational difficulty and provide a reasonable timetable for corrective action. If the town deems the timetable for corrective action unreasonable, it may notify the facility owner, and the facility owner shall ensure removal of the facility in compliance with the decommissioning plan established for the facility.
- (C) At such time as an energy facility is scheduled to be abandoned or cease operation, the facility owner shall ensure the zoning administrator is notified in writing.
- (D) Within 365 days of the date of abandonment or non-operation, whether as declared by the town under subsection (B) or as scheduled by the owners or operator under subsection (C), the facility owner shall ensure the physical removal of the energy facility in compliance with the decommissioning plan established for such facility. This period may be extended at the request of the owners upon approval of the town council.
- (E) When the facility owner, site owner, operator or other responsible parties decommission an energy facility, he shall handle and dispose of the equipment and other facility components in conformance with federal, state and local requirements. All equipment both above and below ground must be removed as part of the decommissioning plan. This shall include but not be limited to above and below ground tanks, cables, fencing, debris, structures or equipment to include foundations and pads and the restoration of the land and related disturbed areas to a natural condition or other approved state.
- (F) "Natural condition" shall mean the stabilization of soil to a depth of three feet and restoration of site vegetation and topography to pre-existing condition, provided that the exact method and final site restoration plan shall be subject to site plan review and approval giving, among other items, consideration to impact upon future site use, environmental and adjacent property impacts. The zoning administrator may approve a request by the landowner to allow internal paths, roads, travel ways, landscaping, pads or other items which will serve a future permitted site use to remain. Where applicable, if the zoning administrator determines the restoration plan significantly

deviates from the description and conditions approved by the council such plan shall require amendment of conditions through the zoning process.

- (G) If the facility owner, site owner, or operator fails to remove or repair any unsafe abandoned or non-operating energy facility after written notice, the town may pursue legal action to have the facility removed at the expense of the facility owner, site owner or operator, each of whom shall be jointly and severally liable for the expense of removing or repairing the facility. The town may call upon the decommissioning security to remove the facility.

Legend



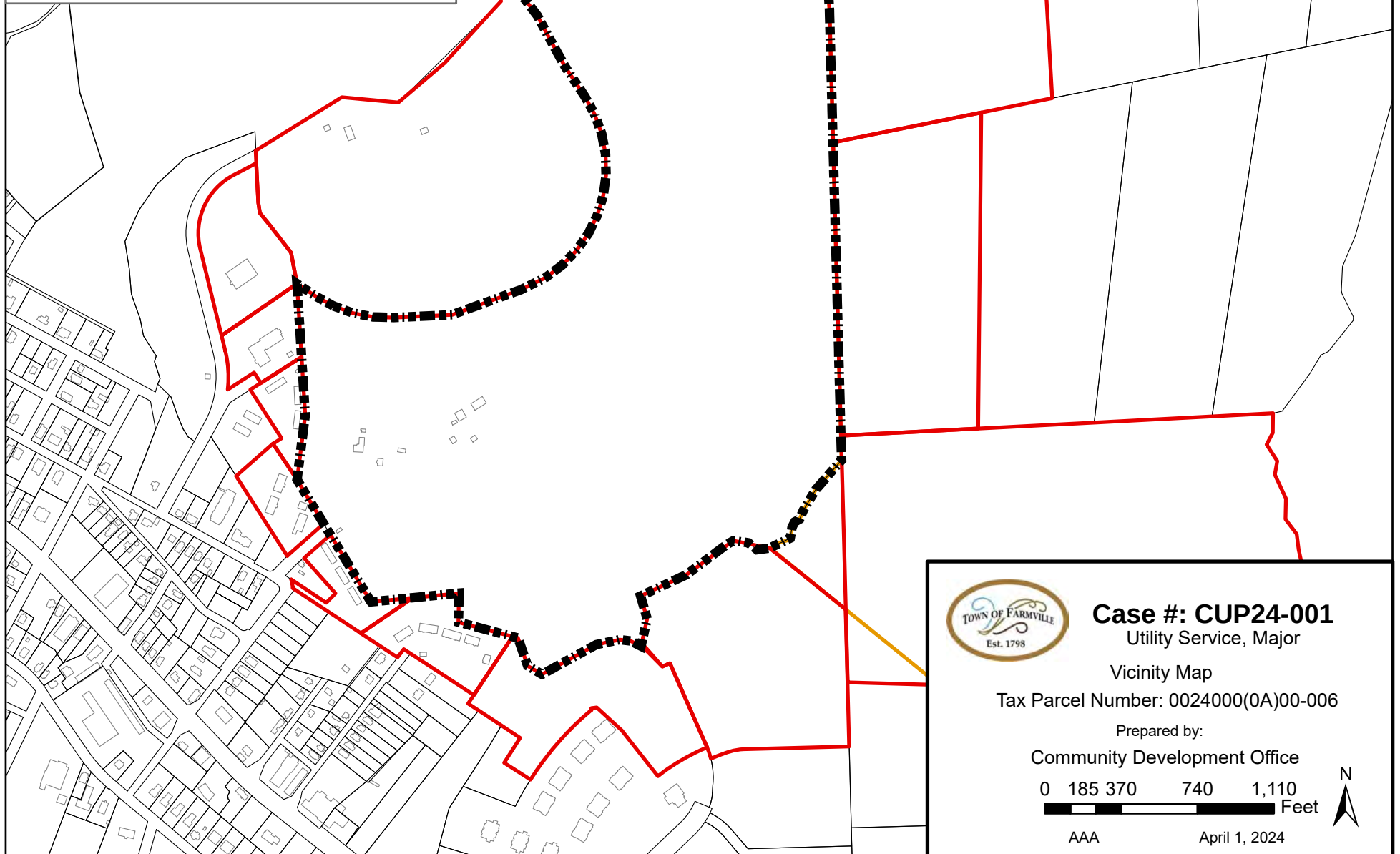
Subject Site



Adjacent Land Owners



Adjacent Land Owners - P. E. County



Case #: CUP24-001

Utility Service, Major

Vicinity Map

Tax Parcel Number: 0024000(0A)00-006

Prepared by:

Community Development Office

0 185 370 740 1,110 Feet

AAA

April 1, 2024



Legend



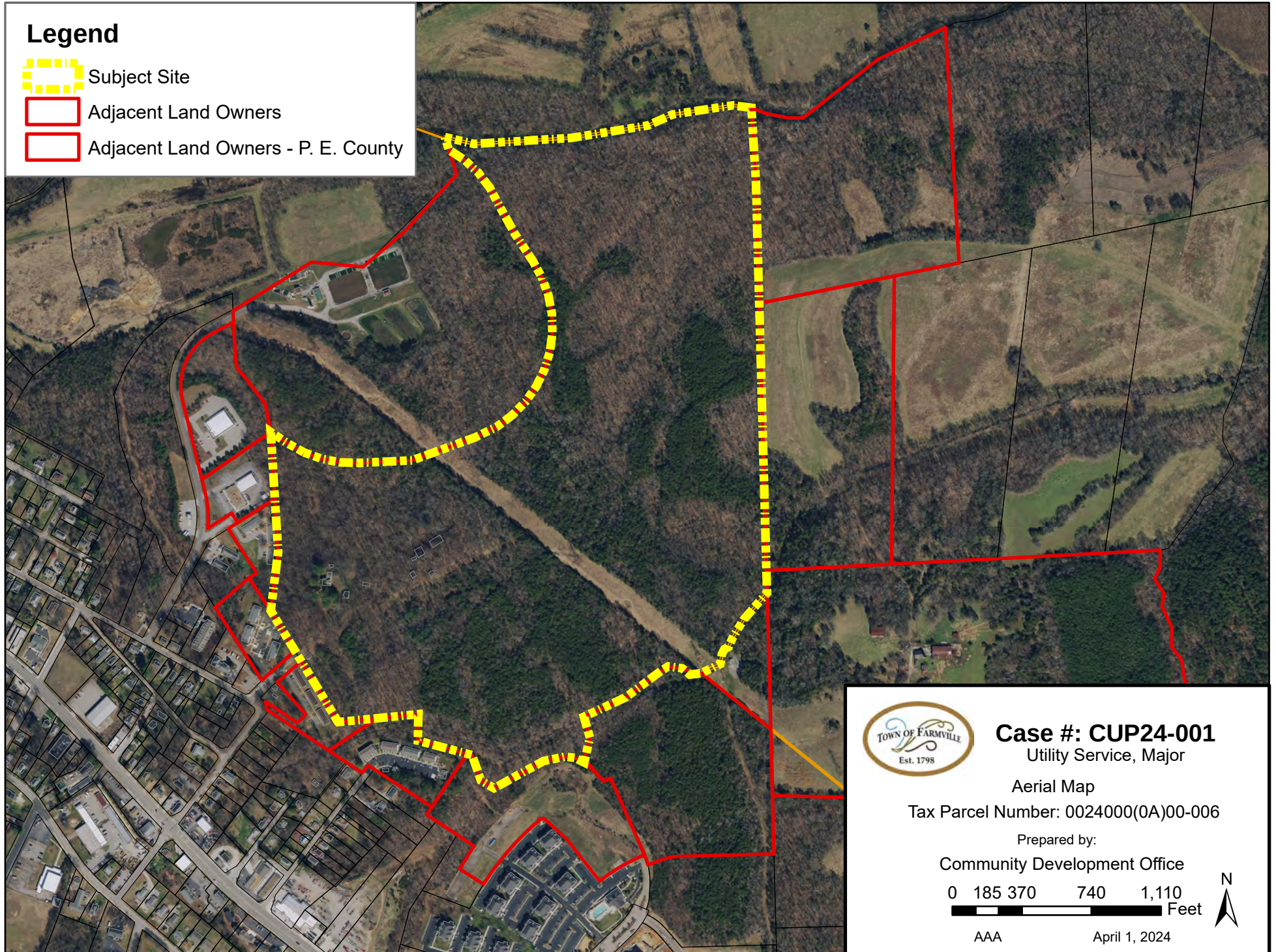
Subject Site



Adjacent Land Owners



Adjacent Land Owners - P. E. County



Case #: CUP24-001

Utility Service, Major

Aerial Map

Tax Parcel Number: 0024000(0A)00-006

Prepared by:

Community Development Office

0 185 370 740 1,110 Feet

AAA

April 1, 2024



CONDITIONAL USE PERMIT APPLICATION

HIGH BRIDGE SOLAR, LLC
FARMVILLE, VIRGINIA

PROPERTY OWNER:
JOHNS W. BAILEY
3131 MAIDENS ROAD
POWHATAN, VA 23139

APPLICANT:
HIGH BRIDGE SOLAR, LLC
19890 STATE LINE ROAD
SOUTH BEND, IN 46637

PREPARED BY:
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MARCH 2024

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Attachments

Attachment A – Copy of the Conditional Use Permit Application Form

Attachment B – Town of Farmville, VA Parcel Details

Attachment C – Farmville Herald Ad Proof

Attachment D – Preliminary Site Plan

Attachment E – Property Impact Analysis

Attachment F – Fiscal & Economic Analysis

I. EXECUTIVE SUMMARY

High Bridge Solar, LLC (represented by “Inovateus Solar” or the “Applicant”) seeks the issuance of a Conditional Use Permit for a 12 megawatt (MW) solar energy facility (High Bridge Solar or “Project”).

The Project site is located within the Farmville, VA city limits. The eastern and northern-most boundary of the property is along the city line of Farmville and the northern property line is along the Appomattox River. The property is accessible using Cedar Avenue within Farmville, VA. The Project is to be located on a 131-acre tract of land comprised of one parcel, 0024000(OA)00-006, zoned R-3. The site is currently privately owned and mainly forested terrain. The current resident will remain. The parcel contains a powerline easement as well as an access road for this utility. The surrounding area contains wastewater treatment facilities, public services, apartment complexes, and single-family residential. Parcel details obtained from the Town of Farmville Interactive GIS Map are provided in Attachment B.

The total development area will be approximately 79 acres located within the 131-acre parent parcel. The remaining unused parcel area consists of existing transmission line easement, existing residence with access, floodplain, wetlands, streams, forested land, and setbacks. The Project will interconnect to the grid via overhead electric poles to the existing overhead lines located on the project parcel within the existing transmission easement running NW to SE. Ancillary project facilities will include electrical equipment pads, utility infrastructure and erosion control/stormwater management facilities. Native, pollinator-friendly vegetation will be maintained across the site to minimize erosion and promote a diverse ecological habitat. The project area shall be enclosed by agricultural square knot fencing comprised of metal with a height of at least 7ft. 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 so that it is screened from the ground level view of adjacent property owners. The fencing shall be maintained at all times while the facility is in operation.

Inovateus Solar designed the Project and crafted this application to be consistent with the Zoning Ordinance of the Town of Farmville as well as the Special Use Permit Zoning Ordinance of Prince Edward County, Virginia Zoning Ordinance. The Project is compliant with the Applications and Procedures for Large and Utility Scale Energy Facilities as demonstrated by the Preliminary Site Plan and this application.

Solar energy is clean and efficient, and a properly sited solar facility such as this Project can be a safe, quiet, and unobtrusive neighbor. Solar development can bring significant benefits to Prince Edward County and the Town of Farmville. This Project also directly supports both goals relating

to Community Facilities and Environment as described in the Town of Farmville Comprehensive plan that was adopted 6-10-20. The Project can also complement the Town's existing industry, diversify incomes for landowners and revenues for the Town, and become an overall positive force in the community. The Project can also be the Town's contribution toward advancing the Commonwealth's Energy Policy Plan.

II. PROJECT DESCRIPTION

A. Proposed Use

This Application for a Conditional Use Permit is submitted to the Town of Farmville pursuant to the Town of Farmville's Comprehensive Plan and Article VII. – Alternative Energy Facilities of the Prince Edward County Code to construct and operate the 12 megawatts (MW) High Bridge Solar Project.

Attachment A is a copy of the completed Conditional Use Permit Application Form for the Project.

B. The Applicant

The Applicant, High Bridge Solar, LLC is leasing the property for the intended use of constructing and operating a distribution level solar generating facility from the current property owner for the life of the proposed project and decommissioning. The Project is being developed and will be constructed by Inovateus Solar.

1. High Bridge Supporting Parties

a. Inovateus Solar – Developer & EPC - Since its founding in 2008, Inovateus Solar has been guided by a commitment to invest in the energy future of its customers by providing affordable, reliable and sustainable energy solutions. Headquartered in South Bend, Indiana, with offices across the United States including Virginia, Inovateus has established itself as the top Midwest Solar EPC and Developer through the execution of commercial and utility scale PV projects for a diverse portfolio of clients, including utilities, electric cooperatives, municipalities, schools, Fortune 500 firms, and industrial entities. Through origination, development, engineering, design build, and finance capabilities, Inovateus seeks to serve the growing demands of the solar energy marketplace and the communities that it serves. Inovateus has completed over 700 MW of solar installations throughout the USA and the Caribbean, and has delivered services in over 15 countries.

Inovateus Solar has made a commitment to actively reduce its customers' carbon footprint and landfilled waste. Their Environmental Management System (EMS) provides a mechanism for environmental management throughout all areas and departments designed to cover

environmental aspects that the company can control and directly manage, as well as those it does not control or directly manage but can be expected to have an influence on. Inovateus Solar is committed to protecting the local and global environment of the earth with the primary goals of advancing sustainability and positive community stewardship. To minimize environmental impacts concerning all activities, products and services, we shall:

- Comply with all applicable environmental legislation and sustainability commitments;
- Include the consideration of environmental issues in all business strategies and initiatives;
- Prevent pollution and reduce consumption of resources through waste management strategies that promote waste minimization reuse, recovery and recycling as appropriate;
- Adopt a procurement program that takes into account the environmental impact of products and services, and supports the purchase of energy-efficient products;
- Encourage environmental protection among suppliers and subcontractors;
- Pursue a program of continuous improvement (PDCA – Plan, Do, Check, Act) by reviewing our EMS and related objectives and targets, policies and practices;
- Develop and maintain environmental management programs with objectives and targets to minimize adverse environmental or community impacts;
- Provide all team members with the knowledge and tools needed to meet the goals of this policy and to actively participate in efforts to prevent negative environmental or community impacts;
- Develop environmental goals and targets relevant to project fulfillment, and taking actions to achieve those goals and targets;
- Continually improve the effectiveness and efficiency of environmental management through assessments, performance and cost metrics;
- Advance environmental justice efforts in communities we work in;
- Utilize seeding that promotes pollinator habitats on our sites; and
- Specific to this project, we shall conserve the existing forested areas outside of our project limits.

C. Community Outreach

The Applicant held a Community Meeting on March 6, 2024 at the Prince Edward – Farmville Community Library. Eleven adjacent and nearby landowners were invited by mail to attend the meeting and a Public Notice was posted in The Farmville Herald on February 28, 2024. A copy of the public notice is provided in Attachment C.

D. Project Location and Site Description

The Project site is located in north-eastern Farmville, VA in the northern section of Prince Edward

County. The east and north edges of the parcel line up with the border of the Town of Farmville and the north side is aligned with the Appomattox River. At its closest border, the parcel is over half a mile away from S Main Street/State Route 45.

The site is comprised of one approximately 131-acre parcel, 0024000(OA)00-006. Only the approximate 79 acres of solar development area will be leased for the life of the Project by High Bridge Solar, LLC, while the remaining acreage will be owned and maintained by the property owner. The parcel is zoned High Density Residential (R-3) and currently undeveloped except for the existing residence and access drive at the entrance of the parcel. The solar development area will be in the centralized areas of the parcel and on either side of the existing transmission easement running approximately NW to SE down the center of the parcel. Adjacent parcels are zoned Agricultural Residential District (A-2), Low Density Residential (R-1), and High Density Residential (R-3). There is a 100-year FEMA Floodplain present on the northern extents of the parcel. Wetlands and streams are also present throughout the parcel.

E. Project Components

The Project will include the following key components:

- Rows of photovoltaic (PV) panels mounted on steel posts principally driven into the ground. Panels will not exceed 15' in height. Rows of panels are typically spaced 15-25 feet apart.
- The steel posts are placed individually in an effort to minimize the amount of on-site grading and are engineered to be driven to a depth in the ground that does not require concrete reinforcement.
- Solar PV panels will be mounted on fixed tilt racks running east/west with a south-facing orientation to maximize exposure to sunlight.
- Like most technology, equipment improves continuously, and markets fluctuate, so the specific manufacturer and models of equipment will not be known until late in the engineering design process
- Inverters and transformers will be located within pad-mounted modular metal cabinets. This equipment converts electricity from direct current (DC) to alternating current (AC) and increases its voltage to deliver the energy to the existing utility's distribution grid.
- Electrical collection and communications lines either mounted on the racking, buried in conduits, or located on overhead utility poles.
- Gravel onsite access roads, grass cover driving aisles, and gravel entrances from public roads.
- Agricultural square knot fencing comprised of metal with a height of at least 7ft.
- Stormwater and erosion and sedimentation control features designed to meet town

and state requirements.

- A storage container placed on a gravel pad for spare parts and maintenance materials, if necessary

A Preliminary Site Plan showing the proposed Project layout is provided as Attachment D. The developed Project footprint is approximately 79 acres of the total 131-acre site. All disturbed and developed areas will be planted and maintained with grass to stabilize the site and prevent erosion. The remaining site area includes stormwater control features, erosion buffer areas, and property setbacks with an existing vegetative buffer.

F. Setbacks and Screening

1. Setbacks

The proposed Preliminary Site Plan incorporates proposed setbacks from the Project's property line or road reservation line. Per Location, Appearance, and Operational Requirements of Alternative Energy Facilities Requirements (Section 7-110) in the Prince Edward County Ordinance all solar equipment will be set back 75' from the property boundary and 75' from any existing residences. Given the agricultural and low-density residential developments on neighboring properties, the proposed setbacks are considered adequate for the project.

Note that no solar facilities will be located within these setback areas. Some stormwater and erosion and sediment control facilities may be located within certain setback areas to connect them hydrologically to existing downstream systems, per state requirements.

2. Buffering

The solar development area is in the center of the project parcel, which is surrounded by the following adjacent developments: a wastewater treatment facility, public services, apartment complexes, and some single-family residences. The solar area is set back from the public right of way and not located near residential houses. The nearest residence is over 125 feet from the Project's solar arrays, the nearest state highway is about 1.50 miles from the Project's solar arrays, and the nearest county road is over 0.25 miles from the Project's solar arrays. Existing mature trees are present along the northern, southern, and western property lines providing screening to the site.

Furthermore, a 200' buffer will be maintained from the stream on the southern border of the parcel, a 300' buffer will be maintained from the Appomattox River on the northern border of the parcel, and a 100' buffer will be maintained around the wetlands and

intermittent streams.

G. Supplemental Studies

1. Property Impact Analysis

The Applicant contracted Kirkland Appraisals, LLC to evaluate the Project's impact on abutting or adjacent properties. The report concluded that the Project has no impact to these properties due to the lack of noise, odor, and traffic generated by a solar facility. See Attachment E for the full report.

2. Economic and Fiscal Contribution

The Applicant contracted Magnum Economics to assess the economic and fiscal contribution that the Project is forecasted to make to the Town of Farmville. Overall, the report concluded the Project will have favorable economic and fiscal contributions to the Town, such as creating jobs and generating tax revenue. See Attachment F for the full report.

III. POTENTIAL IMPACTS AND MITIGATION

A. Construction

The project will be constructed in three phases; 1) site work, 2) structure installation, and 3) electrical installation. The first phase consists of installing initial erosion control features (i.e. perimeter silt fence, sediment ponds, etc.), the site access road, and the perimeter security fence. The second phase consists of driving the support piles into the ground, connecting the racking system to the piles, attaching the solar panels to the racking system, and installing the concrete pad for the transformer and electrical pad. The third phase consists of trenching for the underground electrical conduits, installing the electrical components, and directional boring or trenching the Medium Voltage Line ("MVL") to the POI, erecting the tie-in poles, and connecting the system to the existing grid. Complete construction of the solar array will take approximately 6 to 8 months from breaking ground to commercial operation. Approximately 60 workers will be onsite during the peak of the construction phase.

1. Stormwater and Erosion and Sedimentation Control

The proposed project will comply with all requirements of the County and State stormwater management regulations and erosion & sediment control provisions, as well as NPDES permit

requirements, as applicable. This site may require minimal grading the existing topography to allow for the solar infrastructure to properly function on the site.

Full stormwater management design will be a part of civil design plans and will include all necessary stormwater control structures to ensure no excess stormwater leaves the site during construction or post- development.

Land disturbing activities will be minimized as much as practical to reduce the potential for environmental and off-site impacts. Currently, the site consists of forested land. With the proposed site design, the entire site will be stabilized and maintained with vegetative cover; areas beneath the solar arrays will be planted with grass to stabilize the site. Disturbances within the site area will be seeded with native grasses and pollinator-friendly seed mixes appropriate for the region. Seeded vegetation will establish a deep root system that will stabilize the soil and promote stormwater ground infiltration similar to the existing vegetation on site.

The proposed site design will protect against soil erosion and sedimentation, as all such facilities must develop erosion and sediment control and stormwater management plans that satisfy applicable state and town or county requirements during the site plan process.

2. Traffic

Due to the passive nature of the proposed facility, traffic impacts will be minimal. Trip generation is one of the first steps in a traffic impact analysis for a proposed land use. For this project site, there are no on-site personnel required for day-to-day operations and the site will not be open to the public. Consequently, trip generations and impacts to the transportation network are negligible. Traffic impacts will be most noticeable during construction of the facility, which will last approximately 6 to 8 months. The types of vehicles expected to be accessing the site during construction include equipment hauling trucks, passenger vehicles, fuel delivery vehicles, and material delivery trucks. No oversize or overweight loads are anticipated.

3. Noise

The project is considered a “passive” power generation facility and noise levels will not exceed 60 decibels; this represents a level just above a conversational talking volume. The transformers and inverters are the loudest components of the system. Noise levels at the property line will be in accordance with Location, Appearance, and Operational Requirements of Alternative Energy Facilities (Section 7-110) and will not exceed 50 decibels.

B. Operations

1. Health and Safety

Solar facilities do not endanger public health or safety. The facility will be designed and built to all applicable electrical, construction, and environmental codes and regulations. Fencing will be provided around all equipment to prevent unauthorized entry.

All equipment must comply with FCC rules to limit any radio frequency power that is emitted by electronic devices.

Solar projects do not contain hazardous materials which are leachable and pose no threat of soil, groundwater, nor surface water contamination when properly maintained. The facility will not produce any air emissions.

The photovoltaic (PV) solar panels that will be installed with this project are coated with non-reflective materials designed to maximize light absorption and significantly minimize glare. PV solar panels are designed to absorb as much light as possible since any reflected light is energy lost from the system; therefore, glare or reflected sun light is not an issue with PV solar projects.

The solar facility will be remotely monitored and will not have on-site personnel for normal day-to-day operations. Standard operation and maintenance of the facility requires personnel to be on-site approximately 7-10 days during a calendar year.

2. Visual Impact

The Applicant is proposing to preserve the existing mature tree line within the 75' property line setback along the entire perimeter of the project in an effort to provide a robust visual screen of the Project. Therefore, in accordance with the Comprehensive Plan, the Project will encourage environmental conservation of the area and maintain the scenic qualities of the surrounding parcels. The solar development area is strategically placed away from public rights of way and residential houses. The nearest residence is over 125 feet from the project's solar arrays, the nearest state highway is over 1.50 miles from the project's solar arrays, and the nearest county road is over 0.25 miles from the project's solar arrays.

C. Decommissioning of the Project

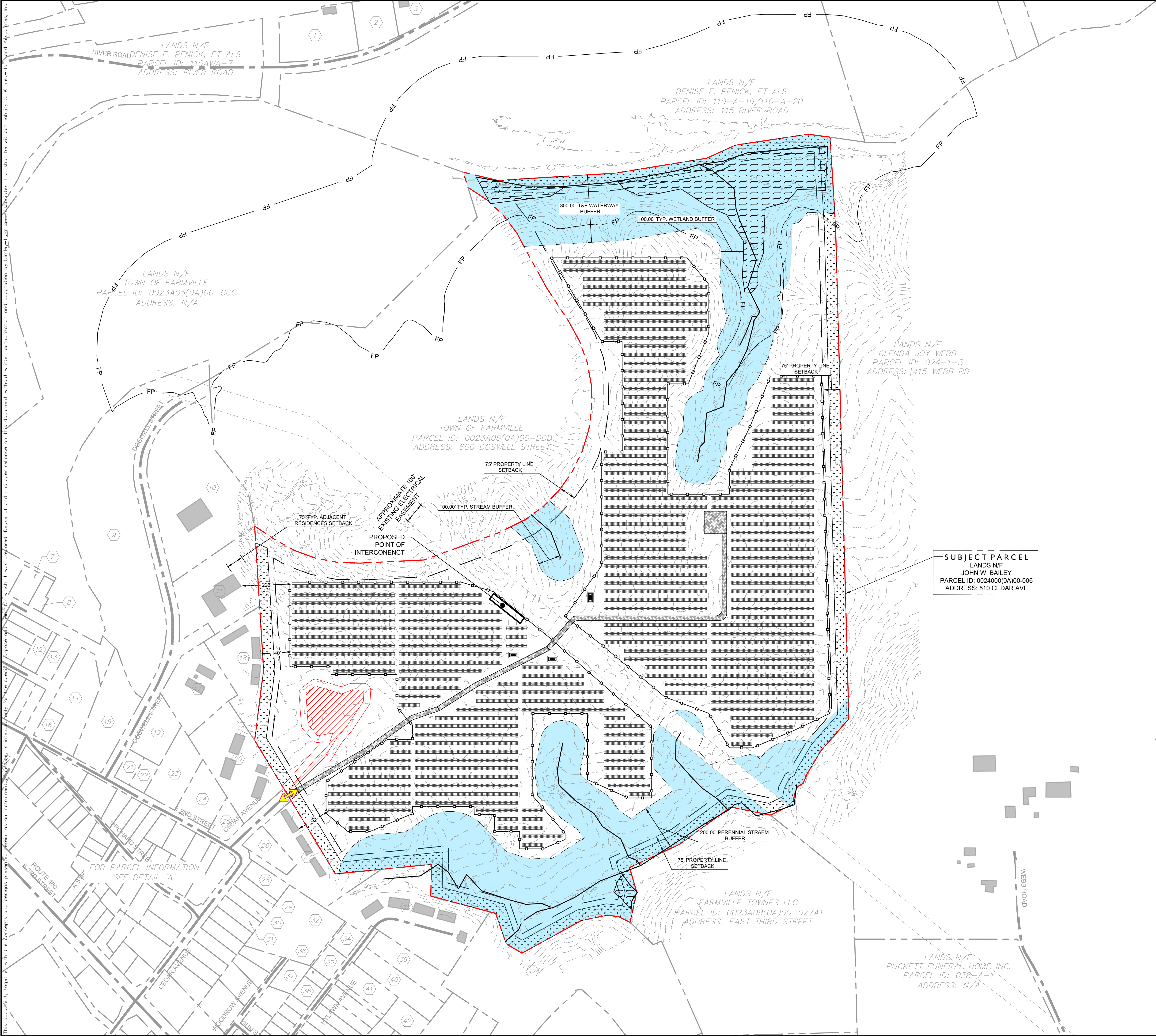
The solar facility is anticipated to have a lifespan of at least 25 years with a goal of 40 years. The purpose of site decommissioning is to return the original property to pre-development conditions to the greatest extent possible after the project lifespan has elapsed.

Decommissioning of the solar facility will be in accordance with Prince Edward Zoning Ordinance Sec. 7-108 and include the disconnection of the solar facility from the electrical grid and the removal of all solar facility components, including solar collectors, cabling, electrical components, fencing and any other associated equipment, facilities, and structures to a depth of at least 36 inches and restoration of site vegetation and topography to pre-existing conditions. Permits for decommissioning will be obtained as required and notification will be given to stakeholders prior to decommissioning the project. The owner and operator of the solar facility shall completely decommission the facility within 12 months if the facility stops generating electricity for a period of 12 months. In the case of abandonment of the project during construction or before its maturity, the same decommissioning procedures will be undertaken.

A finalized decommissioning plan will be submitted with the Site Plan application. The plan will include the anticipated life of the project, the estimated decommissioning cost, how the estimate was determined, and the manner in which the project will be decommissioned. The full estimate of decommissioning will be guaranteed by escrow at a federally insured financial institution, irrevocable letter of credit, or surety bond prior to a building permit being issued. The cost estimate will be updated every five years and the surety increased when the recalculation of the estimate exceeds the guarantee amount by 10% and provided to the town.

IV. Conclusion

The Applicant respectfully requests approval of a Conditional Use Permit for the proposed Project. The Project plan as described above, and the Preliminary Site Plan in Attachment C demonstrate a well-conceived Project that conforms to the Comprehensive Plan and latest Zoning Ordinance and provides substantial benefits to the Town of Farmville and Prince Edward County.



HIGH BRIDGE SOLAR	
APPLICANT	HIGH BRIDGE SOLAR, LLC
PARCEL ID	0024000(0A)00-006
EXISTING AND PROPOSED ZONING	R3 HIGH DENSITY RESIDENTIAL DISTRICT
EXISTING USE	RESIDENTIAL
PROPOSED USE	SOLAR ENERGY FACILITY
TOTAL POWER TO BE GENERATED	12 MEGAWATTS AC (MWac)
TOTAL PARCEL AREA	± 131 ACRES
TOTAL DEVELOPMENT AREA	± 78.45 ACRES
TOTAL AREA UNDER PANELS	± 17.94 ACRES
SOLAR SETBACKS	ADJACENT PROPERTY: 75'
	ROW: 75'
	ADJACENT STRUCTURES: 75'

- NOTES:
- LAYOUT SHOWN WITHIN THESE PLANS IS CONCEPTUAL AND MAY CHANGE DURING FINAL ENGINEERING DESIGN.
 - ACCESS POINTS SHOWN WITHIN THESE PLANS ARE CONCEPTUAL AND MAY CHANGE DURING FINAL ENGINEERING DESIGN AND VDOT APPROVAL.
 - LIDAR TOPOGRAPHY DATAT SHOWN WITHIN THESE PLANS OBTAINED FROM INOVATEUS SOLAR 07/19/2023.
 - ONSITE WETLAND DATA SHOWN WITHIN THESE PLANS OBTAINED FROM FIELD DELINEATION REPORT DATED 08/01/2023.
 - PARCEL AND ROAD DATA OBTAINED FROM TOWN OF FARMVILLE PUBLIC DATA.
 - STRUCTURES DATA OBTAINED FROM AERIAL IMAGERY
 - FLOODPLAIN DATA OBTAINED FROM FEMA PUBLIC DATA

NORTH

GRAPHIC SCALE IN FEET

0 100 200 400

LEGEND:

	PARCEL BOUNDARY
	PARCEL EXCLUSION AREA
	75' PROPERTY LINE SETBACK
	PRESERVED 50' LANDSCAPED BUFFER
	PUBLIC RIGHT OF WAY CENTERLINE
	PROPOSED ACCESS ROAD ENTRANCE
	PROPOSED ELECTRICAL EQUIPMENT PAD
	PROPOSED SOLAR EQUIPMENT
	PROPOSED SECURITY FENCE
	APPROXIMATE LOCATIONS OF EXISTING STRUCTURES
	DELINEATED WETLANDS WITH 100' BUFFER
	DELINEATED STREAMS WITH 100' BUFFER
	100YR FEMA FLOODPLAIN
	PROPOSED PRIMARY GRAVEL ACCESS ROAD (20' WIDE)
	MAJOR CONTOURS (5-FOOT)
	PROPOSED CONSERVATION AREAS

REV	DATE
△	02/21/2024
△	02/27/2024
△	03/05/2024
© 2023 KIMLEY-HORN AND ASSOCIATES, INC. 11400 COMMERCE PARK DR., SUITE 400 RESTON, VA 20191 PHONE: 703-674-1300 WWW.KIMLEY-HORN.COM	
KHA PROJECT	110929004
DATE	04/11/2024
SCALE	AS SHOWN
DESIGNED BY	MCN
DRAWN BY	JLT
CHECKED BY	SAH
HIGH BRIDGE SOLAR PREPARED FOR INOVATEUS SOLAR	
PRELIMINARY SITE PLAN	
SHEET NUMBER EX-1	



Kirkland Appraisals, LLC

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www.kirklandappraisals.com

November 27, 2023

Lauren Parker
High Bridge Solar, LLC
c/o Inovateus Solar
19890 State Line Road
South Bend, IN 46637

RE: High Bridge Solar, LLC Impact Analysis, near Farmville, Prince Edward County, VA

Ms. Parker

At your request, I have considered the impact of a 5 MW solar farm proposed to be constructed on a portion of a 172.58-acre tract of land on Cedar Avenue, near Farmville, Prince Edward 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 High Bridge Solar, LLC, c/o Inovateus Solar, represented to me by Ms. Lauren Parker. My findings support the Application. The effective date of this consultation is November 27, 2023.

Conclusion

The adjoining properties are well set back from the proposed solar panels and most of the site has good existing landscaping for screening the proposed solar farm.

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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I. Proposed Project and Adjoining Uses

Proposed Use Description

This 12 MW solar farm proposed to be constructed on a portion of a 172.58-acre tract of land on Cedar Avenue, near Farmville, Prince Edward 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 270 feet from the closest solar panel and the average distance to adjoining homes will be 592 feet to the nearest solar panel.

Adjoining land is a mix of residential and agricultural uses with some commercial uses to the west.

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

Adjoining Use Breakdown

	Acreage	Parcels
Residential	4.75%	45.45%
Agricultural	25.63%	27.27%
Agri/Res	66.33%	9.09%
Commercial	3.29%	18.18%
Total	100.00%	100.00%





Surrounding Uses

#	MAP ID	Owner	GIS Data		Adjoin		Distance (ft)
			Acres	Present Use	Acres	Parcels	
1	110-A-19	Penick	47.91	Agricultural	13.49%	9.09%	N/A
2	24-A-7	Unknown	235.55	Agri/Res	66.33%	9.09%	1,235
3	24-A-3	Unknown	1.52	Residential	0.43%	9.09%	N/A
4	24-A-3E	Meadows	5.20	Residential	1.46%	9.09%	270
5	24-A-3D	Residential	2.53	Residential	0.71%	9.09%	N/A
6	24-A-3A	Country	4.01	Residential	1.13%	9.09%	270
7	24-A-3I	Housing	6.06	Commercial	1.71%	9.09%	N/A
8	24-A-3B1	Prince	5.64	Commercial	1.59%	9.09%	N/A
9	24-A-3B	Farmville	3.59	Residential	1.01%	9.09%	N/A
10	24-A-2	Farmville	22.00	Agricultural	6.20%	9.09%	N/A
11	24-A-1	Farmville	21.10	Agricultural	5.94%	9.09%	N/A
Total			355.110		100.00%	100.00%	592

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.

I note that the census projects a decline in population in all 3 rings included in the demographic profile.





Housing Profile

Farmville
Farmville, Virginia
Ring: 1 mile radius

Prepared by Esri
Latitude: 37.30199
Longitude: -76.37506

Population		Households	
2020 Total Population	2,540	2023 Median Household Income	\$36,865
2023 Total Population	2,449	2028 Median Household Income	\$38,382
2028 Total Population	2,409	2023-2028 Annual Rate	0.81%
2023-2028 Annual Rate	-0.33%		

Housing Units by Occupancy Status and Tenure	Census 2020		2023		2028	
	Number	Percent	Number	Percent	Number	Percent
Total Housing Units	886	100.0%	880	100.0%	862	100.0%
Occupied	791	89.3%	783	89.0%	776	90.0%
Owner	317	35.8%	368	41.8%	372	43.2%
Renter	474	53.5%	415	47.2%	404	46.9%
Vacant	115	13.0%	97	11.0%	86	10.0%

Owner Occupied Housing Units by Value	2023		2028	
	Number	Percent	Number	Percent
Total	370	100.0%	372	100.0%
<\$50,000	8	2.2%	6	1.6%
\$50,000-\$99,999	45	12.2%	34	9.1%
\$100,000-\$149,999	92	24.9%	85	22.8%
\$150,000-\$199,999	92	24.9%	97	26.1%
\$200,000-\$249,999	43	11.6%	49	13.2%
\$250,000-\$299,999	68	18.4%	80	21.5%
\$300,000-\$399,999	7	1.9%	7	1.9%
\$400,000-\$499,999	12	3.2%	12	3.2%
\$500,000-\$749,999	2	0.5%	1	0.3%
\$750,000-\$999,999	1	0.3%	1	0.3%
\$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	\$171,739		\$181,443	
Average Value	\$187,905		\$195,363	

Census 2020 Housing Units	Number	Percent
Total	886	100.0%
Housing Units In Urbanized Areas	791	89.3%
Rural Housing Units	95	10.7%

Census 2020 Owner Occupied Housing Units by Mortgage Status	Number	Percent
Total	316	100.0%
Owned with a Mortgage/Loan	194	61.4%
Owned Free and Clear	122	38.6%

Data Note: Persons of Hispanic Origin may be of any race.
Source: Esri forecasts for 2023 and 2028. U.S. Census Bureau 2020 decennial Census data.

November 27, 2023



Housing Profile

Farmville
Farmville, Virginia
Ring: 3 mile radius

Prepared by Esri
Latitude: 37.30199
Longitude: -78.37506

Population		Households	
2020 Total Population	9,642	2023 Median Household Income	\$39,228
2023 Total Population	9,642	2028 Median Household Income	\$41,811
2028 Total Population	9,552	2023-2028 Annual Rate	1.28%
2023-2028 Annual Rate	-0.19%		

Housing Units by Occupancy Status and Tenure	Census 2020		2023		2028	
	Number	Percent	Number	Percent	Number	Percent
Total Housing Units	3,592	100.0%	3,601	100.0%	3,584	100.0%
Occupied	3,028	84.3%	3,017	83.8%	3,012	84.0%
Owner	1,496	41.6%	1,695	47.1%	1,731	48.3%
Renter	1,532	42.7%	1,322	36.7%	1,281	35.7%
Vacant	555	15.5%	584	16.2%	572	16.0%

Owner Occupied Housing Units by Value	2023		2028	
	Number	Percent	Number	Percent
Total	1,693	100.0%	1,731	100.0%
<\$50,000	42	2.5%	32	1.8%
\$50,000-\$99,999	131	7.7%	99	5.7%
\$100,000-\$149,999	274	16.2%	250	14.4%
\$150,000-\$199,999	351	20.7%	362	20.9%
\$200,000-\$249,999	282	16.7%	313	18.1%
\$250,000-\$299,999	440	26.0%	496	28.7%
\$300,000-\$399,999	90	5.3%	99	5.7%
\$400,000-\$499,999	64	3.8%	63	3.6%
\$500,000-\$749,999	9	0.5%	7	0.4%
\$750,000-\$999,999	5	0.3%	5	0.3%
\$1,000,000-\$1,499,999	1	0.1%	1	0.1%
\$1,500,000-\$1,999,999	3	0.2%	3	0.2%
\$2,000,000+	1	0.1%	1	0.1%
Median Value	\$208,599		\$219,569	
Average Value	\$218,576		\$225,390	

Census 2020 Housing Units	Number	Percent
Total	3,592	100.0%
Housing Units In Urbanized Areas	2,823	78.6%
Rural Housing Units	769	21.4%

Census 2020 Owner Occupied Housing Units by Mortgage Status	Number	Percent
Total	1,496	100.0%
Owned with a Mortgage/Loan	887	59.3%
Owned Free and Clear	609	40.7%

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

Source: Esri forecasts for 2023 and 2028. U.S. Census Bureau 2020 decennial Census data.

November 27, 2023



Housing Profile

Farmville
Farmville, Virginia
Ring: 5 mile radius

Prepared by Esri
Latitude: 37.30199
Longitude: -78.37506

Population		Households	
2020 Total Population	12,275	2023 Median Household Income	\$41,378
2023 Total Population	12,172	2028 Median Household Income	\$44,730
2028 Total Population	12,043	2023-2028 Annual Rate	1.57%
2023-2028 Annual Rate	-0.21%		

Housing Units by Occupancy Status and Tenure	Census 2020		2023		2028	
	Number	Percent	Number	Percent	Number	Percent
Total Housing Units	4,757	100.0%	4,761	100.0%	4,745	100.0%
Occupied	4,065	85.5%	4,048	85.0%	4,036	85.1%
Owner	2,149	45.2%	2,380	50.0%	2,424	51.1%
Renter	1,916	40.3%	1,668	35.0%	1,612	34.0%
Vacant	677	14.2%	713	15.0%	708	14.9%

Owner Occupied Housing Units by Value	2023		2028	
	Number	Percent	Number	Percent
Total	2,380	100.0%	2,423	100.0%
<\$50,000	78	3.3%	58	2.4%
\$50,000-\$99,999	210	8.8%	160	6.6%
\$100,000-\$149,999	399	16.8%	361	14.9%
\$150,000-\$199,999	445	18.7%	459	18.9%
\$200,000-\$249,999	362	15.2%	405	16.7%
\$250,000-\$299,999	601	25.3%	681	28.1%
\$300,000-\$399,999	133	5.6%	148	6.1%
\$400,000-\$499,999	81	3.4%	80	3.3%
\$500,000-\$749,999	12	0.5%	10	0.4%
\$750,000-\$999,999	24	1.0%	22	0.9%
\$1,000,000-\$1,499,999	7	0.3%	8	0.3%
\$1,500,000-\$1,999,999	17	0.7%	20	0.8%
\$2,000,000+	11	0.5%	11	0.5%
Median Value	\$208,011		\$221,420	
Average Value	\$238,204		\$247,771	

Census 2020 Housing Units	Number	Percent
Total	4,757	100.0%
Housing Units In Urbanized Areas	2,959	62.2%
Rural Housing Units	1,798	37.8%

Census 2020 Owner Occupied Housing Units by Mortgage Status	Number	Percent
Total	2,150	100.0%
Owned with a Mortgage/Loan	1,253	58.3%
Owned Free and Clear	897	41.7%

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

Source: Esri forecasts for 2023 and 2028. U.S. Census Bureau 2020 decennial Census data.

November 27, 2023

II. 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.

III. 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. It also was misleading on Mr. Beck's part to report the lower re-assessments since the primary cause of the

re-assessments were based on the County Official, who lived adjacent to the solar farm, appeal to the assessor for reductions with his own home.” In that Clay County Case study the noted lack of lot sales after announcement of the solar farm also coincided with the recession in 2008/2009 and lack of lot sales effectively defined that area during that time.

I further note, that I was present at the hearing where Mr. Beck presented these findings and the predominance of his argument before the Lincoln County Board of Commissioner’s was based on the one cancelled sale as well as a matched pair analysis of high-end homes adjoining a four-story call center. He hypothesized that a similar impact from that example could be compared to being adjacent solar farm without explaining the significant difference in view, setbacks, landscaping, traffic, light, and noise. Furthermore, Mr. Beck did have matched pairs adjoining a solar farm in his study that he put in the back of his report and then ignored as they showed no impact on property value.

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.” Based on a description of screening so that “the solar farm would not be in full view to adjoining property owners. Mr. Beck said in that case, he would not see any drop in property value.”

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. She cites a number of other appraisal studies and interestingly finds fault with heavily researched opinions, while praising the results of poorly researched studies that found the opposing view.

Her analysis includes details from solar farms that show no impact on value, but she dismisses those.

She cites the University of Texas study noted later in this report, but she cites only isolated portions of that study to conclude the opposite of what that study specifically concludes.

She cites the University of Rhode Island study noted alter in this report, but specifically excludes the conclusion of that study that in rural areas they found no impact on property value.

She cites lot sales near Spotsylvania Solar without confirming the purchase prices with brokers as indicative of market impact and has made no attempt to compare lot prices that are contemporaneous. In her 5 lot sales that she identifies, all of the lot prices decline with time from 2015 through 2019. This includes the 3 lot sales prior to the approval of the solar farm. The decrease in lot values shown in this chart are more indicative of the trend in the market, than of any impact related to the solar farm. Otherwise, how does she explain the drop in price from 2015 to 2017 prior to the solar farm approval.

She considers data at McBride Place Solar Farm and does a sale/resale analysis based on Zillow Home Value Index, which is not a reliable indication for appreciation in the market. She then adjusted her initial sales prior to the solar farm over 7 years to determine what she believes the home should have appreciated by and then compares that to an actual sale. She has run no tests or any analysis to show that the appreciation rates she is using are consistent with the market but more importantly she has not attempted to confirm any of these sales with market participants. I have spoken with brokers active in the sales that she cites and they have all indicated that the solar farm was not a negative factor in marketing or selling those homes.

She has considered lot sales at Sunshine Farms in Grandy, NC. She indicates that the lots next to the solar farm are selling for less than lots not near the solar farm, but she is actually using lot sales next to the solar farm prior to the solar farm being approved. She also ignores recent home sales adjoining this solar farm after it was built that show no impact on property value.

She also notes a couple of situations where solar developers have purchased adjoining homes and resold them or where a neighbor agreement was paid as proof of a negative impact on property value. Given that there are over 2,500 solar farms in the USA as of 2018 according to the U.S. Energy Information Administration and there are only a handful of such examples, this is clearly not an industry standard but a business decision. Furthermore, solar developers are not in the business of flipping homes and are in a position very similar to a bank that acquires a home as OREO (Other Real Estate Owned), where homes are frequently sold at discounted prices, not because of any drop in value, but because they are not a typically motivated seller. Market value requires an analysis of a typically motivated buyer and seller. So these are not good indicators of market value impacts.

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.

Conclusion of Impact Studies

Of the ten studies noted eight 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, ASFMRA (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.

IV. 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

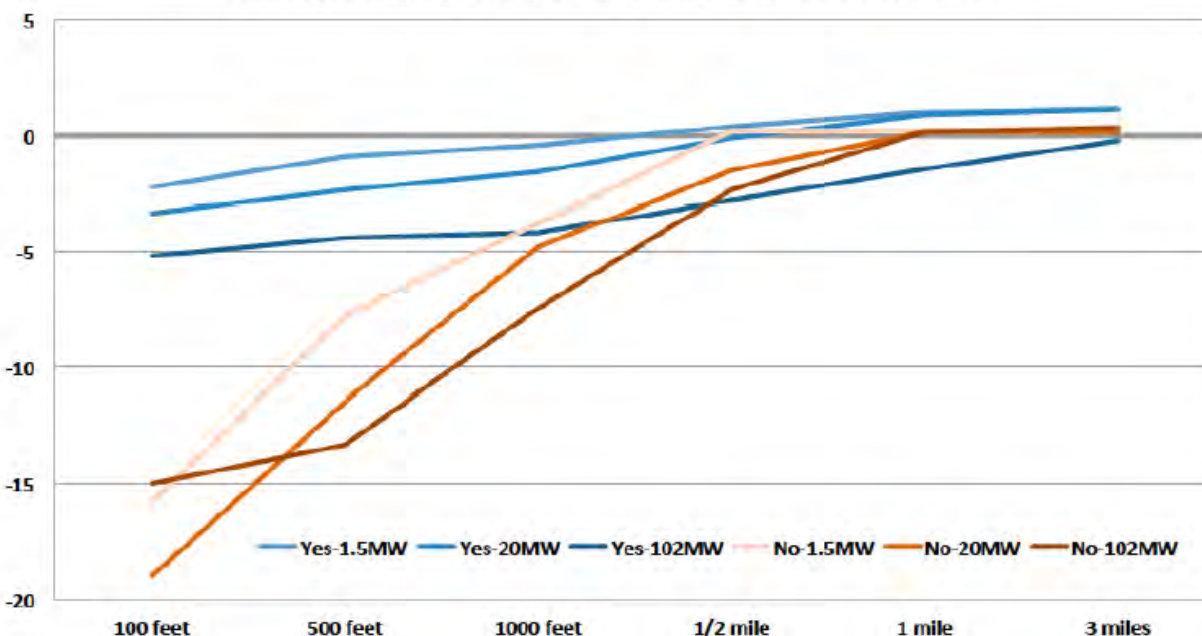
This study considers solar farms from two angles. First it looks at where solar farms are being located and concludes that they are being located primarily in low density residential areas where there are fewer homes than in urban or suburban areas.

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 2nd and 3rd 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 District 201 of Prince Edward County, which has a population of 2,750 for 2023 based on SiteToDoBusiness.com and a total area of 61.9 square miles. This indicates a population density of 44 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.

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.

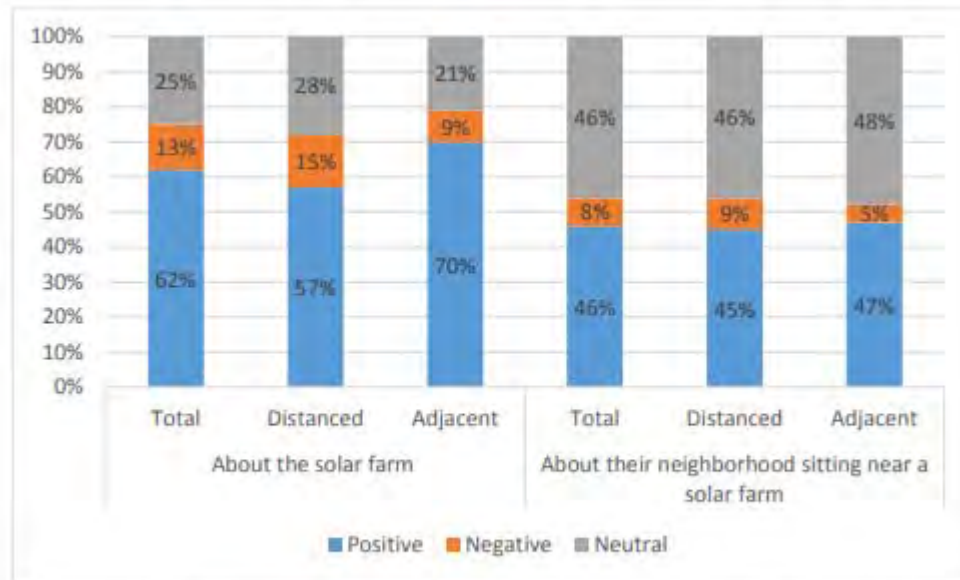
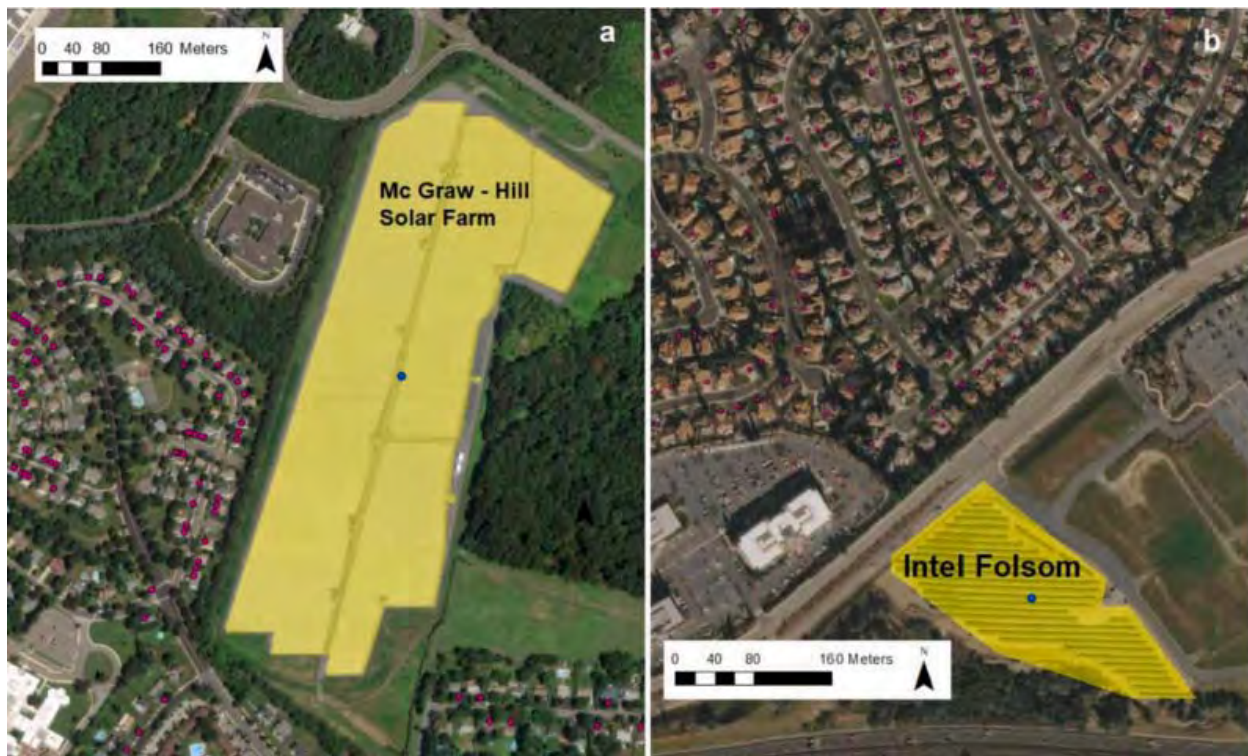


Figure 11: Residents' positive/negative word choices by geographic setting for both questions

E. Lawrence Berkeley National Lab, March 2023

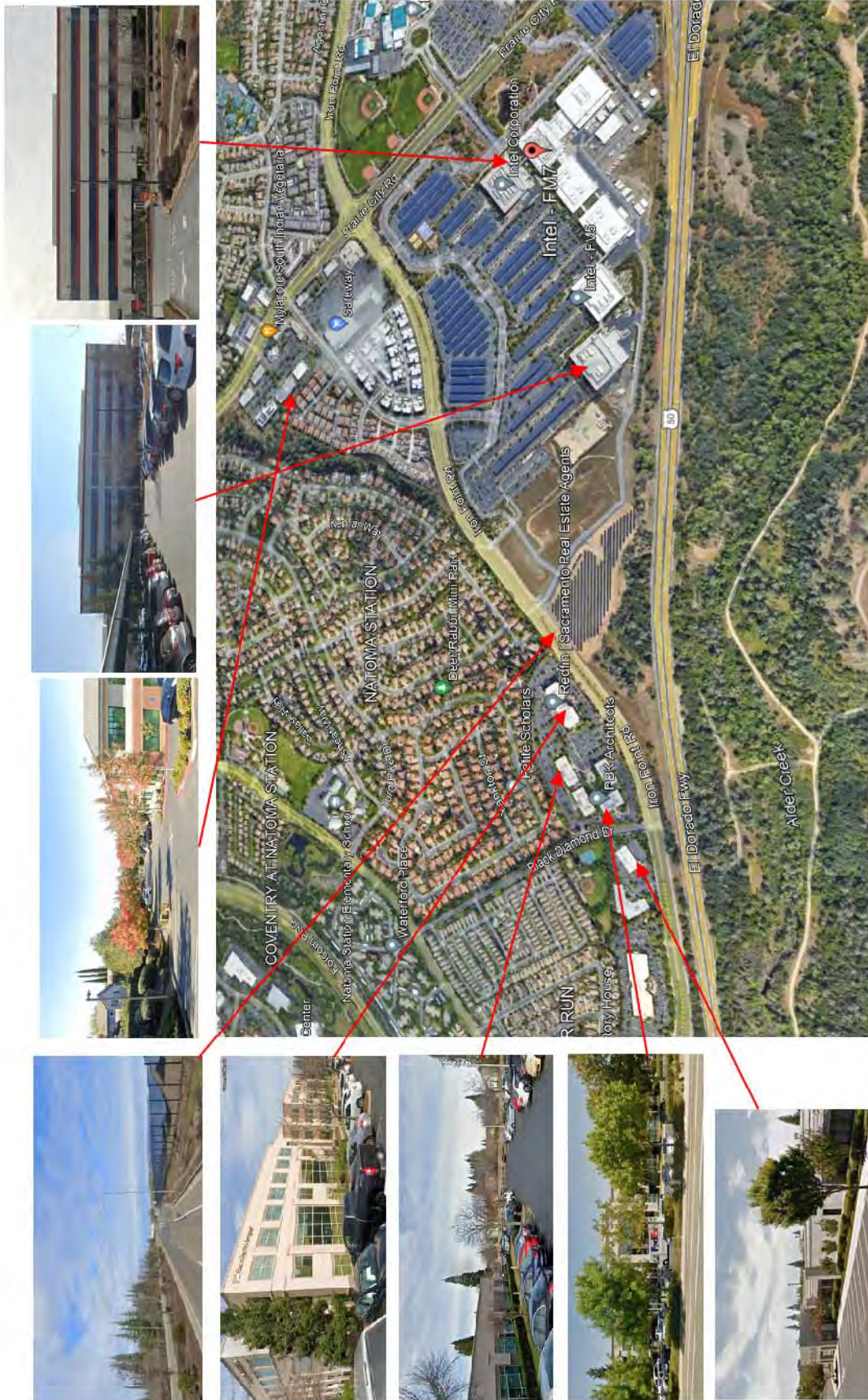
Shedding light on large-scale solar impacts: An analysis of property values and proximity to photovoltaics across six U.S. states

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 1 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 1 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 1-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. Masters Thesis: Loyola University Chicago by Simeng Hao May 2023
Assessing Property Value Impacts Near Utility-Scale Solar in the Midwest

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

Included in this study is 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 unsupportable given that market imperfection is greater than that purported adjustment.

V. 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

County	Assessor Name	Number of Farms in Operation	Change in adjacent property value
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

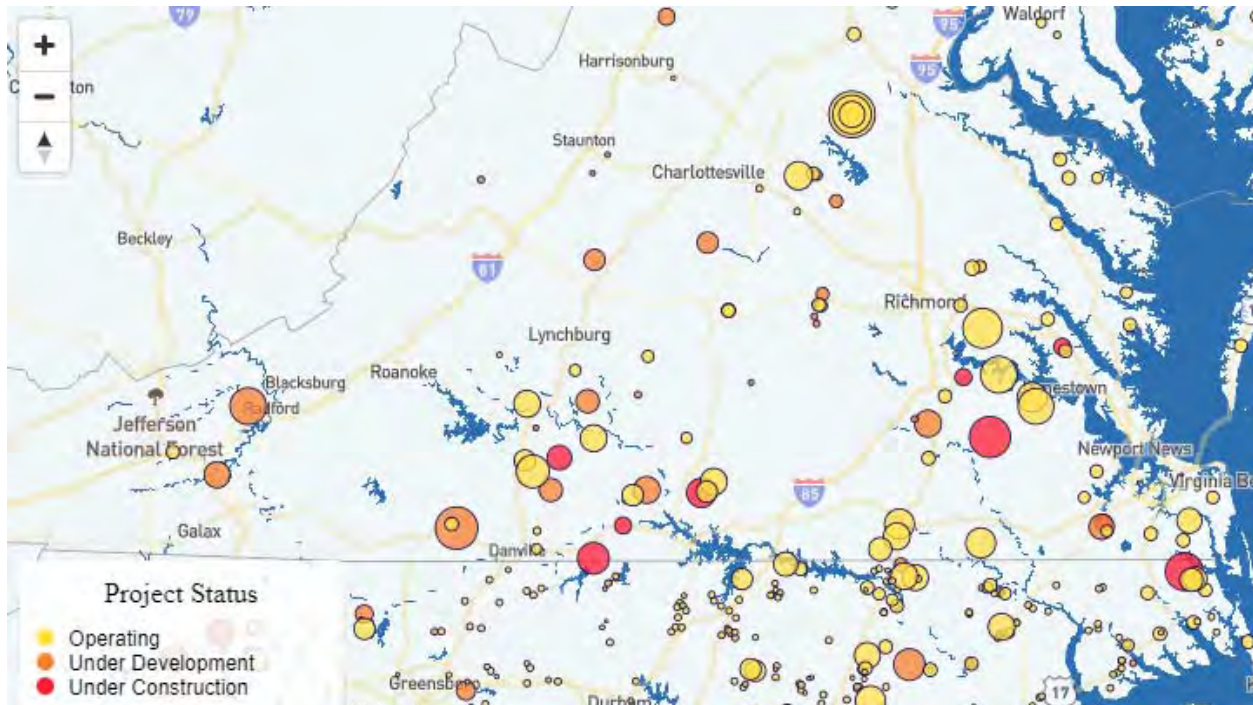
I have a breakdown of assessor surveys from other states as well and those responses are below. I have not had any assessor indicate a negative adjustment due to adjacency to a solar farm in any state. These responses total 188 with 170 definitively indicating no negative adjustments are made to adjoining property values, 18 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	16	16		
Indiana	31	31		
Colorado	15	7		8
Georgia	33	33		
Kentucky	10	6		4
Mississippi	4	2		2
New Mexico	5	5		
Ohio	24	20		4
South Carolina	11	11		
Totals	188	170		18

VI. 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.

Solar #	Name	State	County	City	Output (MW)	Total	Used	Avg. Dist	Closest	Adjoining Use by Acre			
						Acres	Acres	to home	Home	Res	Agri	Agri/Res	Com
115	Buckingham I	VA	Buckingham	Cumberland	19.8	481.18			N/A	N/A	8%	73%	18%
121	Scott	VA	Powhatan	Powhatan	20	898.4		1,421	730	29%	28%	44%	0%
204	Walker-Correctional	VA	New Kent	Barhamsville	20	484.65		516	103	13%	68%	20%	0%
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%
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%
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%
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%
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%
353	Amazon East(ern st)	VA	Accomack	Oak Hall	80	1000		645	135	8%	75%	17%	0%
354	Alton Post	VA	Halifax	Alton		501.96		749	100	2%	58%	40%	0%
357	Water Strider	VA	Halifax	Nathalie		1134	960	821	250	7%	55%	38%	0%
363	Remington	VA	Fauquier	Remington	20	277.2	125	2,755	1,280	10%	41%	31%	18%
364	Greenwood	VA	Culpepper	Stevensburg	100	2266.6	1800	788	200	8%	62%	29%	0%
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%
373	Whitehouse	VA	Louisa	Louisa	20	499.52		1,195	110	24%	55%	18%	4%
406	Foxhound	VA	Halifax	Clover	91	1311.8		885	185	5%	61%	17%	18%
483	Essex Solar Center	VA	Essex	Center Cross	20	106.12		693	360	3%	70%	27%	0%
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	State	County	City	Output (MW)	Total	Used	Avg. Dist	Closest	Adjoining Use by Acre			
						Acres	Acres	to home	Home	Res	Agri	Agri/Res	Com
703	Lily Pond	VA	Dinwiddie	Carson	80	1107.5	600	628	110	13%	75%	12%	0%
704	Midway	VA	Albemarle	Batesville	8	136	90	858	340	20%	46%	34%	0%
749	Martin	VA	Goochland	Richmond	5	114.2	114.2	1,491	470	7%	54%	39%	0%
750	Palmer	VA	Fluvanna	Zion Crossroads	5	57	41	525	165	31%	55%	0%	14%
755	Danville	VA	Pittsylvania	Danville	6	72.08	72.08	616	135	22%	63%	15%	0%
756	Martin Trail	VA	Halifax	Clover	6	43	37	254	115	6%	13%	81%	0%
757	Route 360	VA	Halifax	Clover	5.65	110	40	1,957	1,275	6%	18%	76%	0%
769	Cavalier	VA	Surry/Isle of Wight	Elberon	240	5050	3323	1,231	215	2%	78%	20%	0%
772	Riverstone	VA	Buckingham	Arvonnia	149.5	1939	1193	814	355	4%	90%	6%	0%
773	Sunfish	VA	Orange	Culpeper	80	1131.5	679.5	1,121	120	4%	13%	38%	44%
776	West Lake	VA	Franklin	Harrisburg	20	592.82	592.82	3,280	1,260	11%	18%	49%	22%
777	Aditya	VA	Louisa	Louisa	11	94.67	60	614	350	15%	85%	0%	0%
781	Waller	VA	Lancaster	Burgess		1400	1400	880	125	28%	72%	0%	0%
795	Harris Staunton	VA	Halifax	South Boston	47	697	697	352	185	3%	89%	8%	0%
803	Hickory	VA	Chesterfield	Chesterfield	4.7	95.21	22	1,286	325	8%	22%	70%	0%
809	Mountain Brook	VA	Franklin	Wirtz	20			427	195	24%	21%	54%	1%
812	Prince Edward	VA	Prince Edward		25	369.2	369.2	1,275	660	0%	55%	45%	0%
813	Redbud	VA	Frederick	Winchester	30	262.99	262.99	529	150	29%	55%	17%	0%
829	OFW	VA	Shenandoah	Mount Jackson	20	126.64	126.64	504	110	6%	57%	31%	6%
831	Knight	VA	Rockingham	Shenandoah	70	461.59	461.59	833	240	0%	100%	0%	0%
833	Dayton Wayland	VA	Rockingham	Dayton	4	50.7	50.7	684	100	45%	53%	2%	0%
834	Firefly	VA	Pittsylvania			3143	3143	-	200	12%	73%	15%	0%
854	Reeve	VA	Prince Edward	Pamplin	5	164.7	164.7	2,232	1,195	7%	71%	22%	0%
858	360 Solar Center	VA	Chesterfield	Skinquarter	100	2000	410	2,036	235	1%	97%	2%	0%
864	Purdy	VA	Greensville	Purdy	65	596	596	825	250	5%	66%	29%	0%
865	Clover Creek	VA	Halifax	Clover	90	1472	1472	1,691	310	10%	89%	1%	0%
870	Pineside	VA	Buckingham	Scottsville	74.9	2242	2242	2,484	500	22%	51%	27%	0%
872	Rosalind	VA	Greensville	Emporia	160	1795	1795	654	500	8%	86%	7%	0%
879	Wheelhouse	VA	Lunenburg	Victoria	912.47	60	60	2,071	900	7%	41%	51%	0%
880	Elam	VA	Prince Edward	Pamplin	138.9	3	3	1,066	425	22%	66%	12%	0%
881	Helios	VA	Pulaski	Pulaski	11.45	141.76	141.76	734	225	48%	28%	24%	0%
882	Enon	VA	Stafford	Stafford	3	36.76	36.76	289	120	37%	63%	0%	0%
900	Land of Promise	VA	Chesapeake	Chesapeake	5	134.66	134.66	1,338	785	44%	48%	8%	0%
901	Pocaty	VA	Chesapeake	Chesapeake	2	27.22	27.22	632	445	21%	79%	0%	0%

	Output (MW)	Total	Used	Avg. Dist	Closest	Adjoining Use by Acre			
		Acres	Acres	to home	Home	Res	Agri	Agri/Res	Com
Average	64.6	815.0	624.2	1059	327	14%	54%	28%	4%
Median	20.0	482.9	331.8	836	215	10%	57%	22%	0%
High	912.5	6412.0	3500.0	3280	1280	59%	100%	92%	44%
Low	2.0	3.0	3.0	254	100	0%	0%	0%	0%

VII. 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 Tiltthammer	6.70	5/7/2019	\$372,000	1970	1,548	\$240.31	3/1.5	Det Gar	Ranch	UnBsmt

Adjoining Sales Adjusted

[illegible]

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

[illegible]

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	

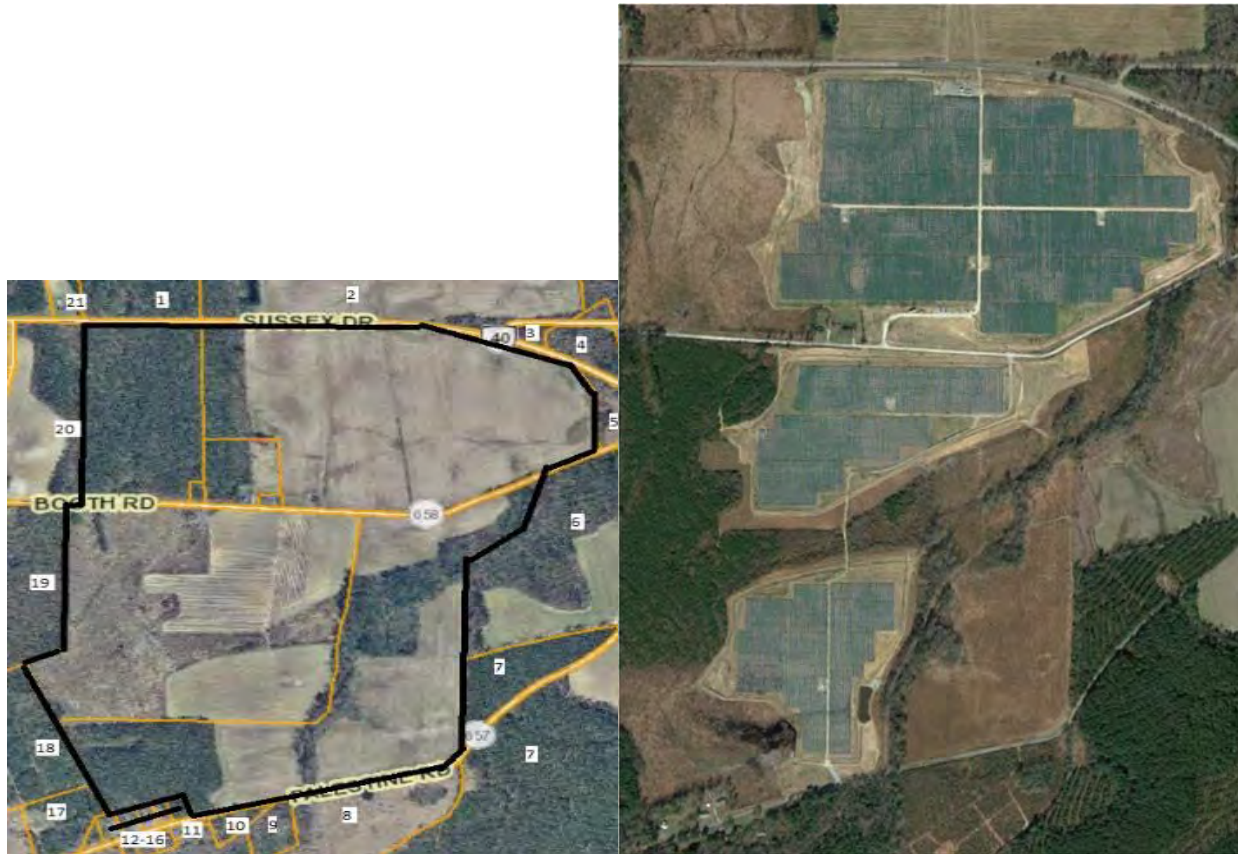
Adjoining Sales Adjusted

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%	

Average Diff 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.

3. Matched Pair – Sappony Solar, Sussex County, VA



This project is a 30 MW facility located on a 322.68-acre tract that was built in the fourth quarter of 2017.

I have considered the 2018 sale of Parcel 17 as shown below. This was a 1,900 s.f. manufactured home on a 6.00-acre lot that sold in 2018. I have compared that to three other nearby manufactured homes as shown below. The range of impacts is within typical market variation with an average of -1%, which supports a conclusion of no impact on property value. The landscaping buffer is considered medium.

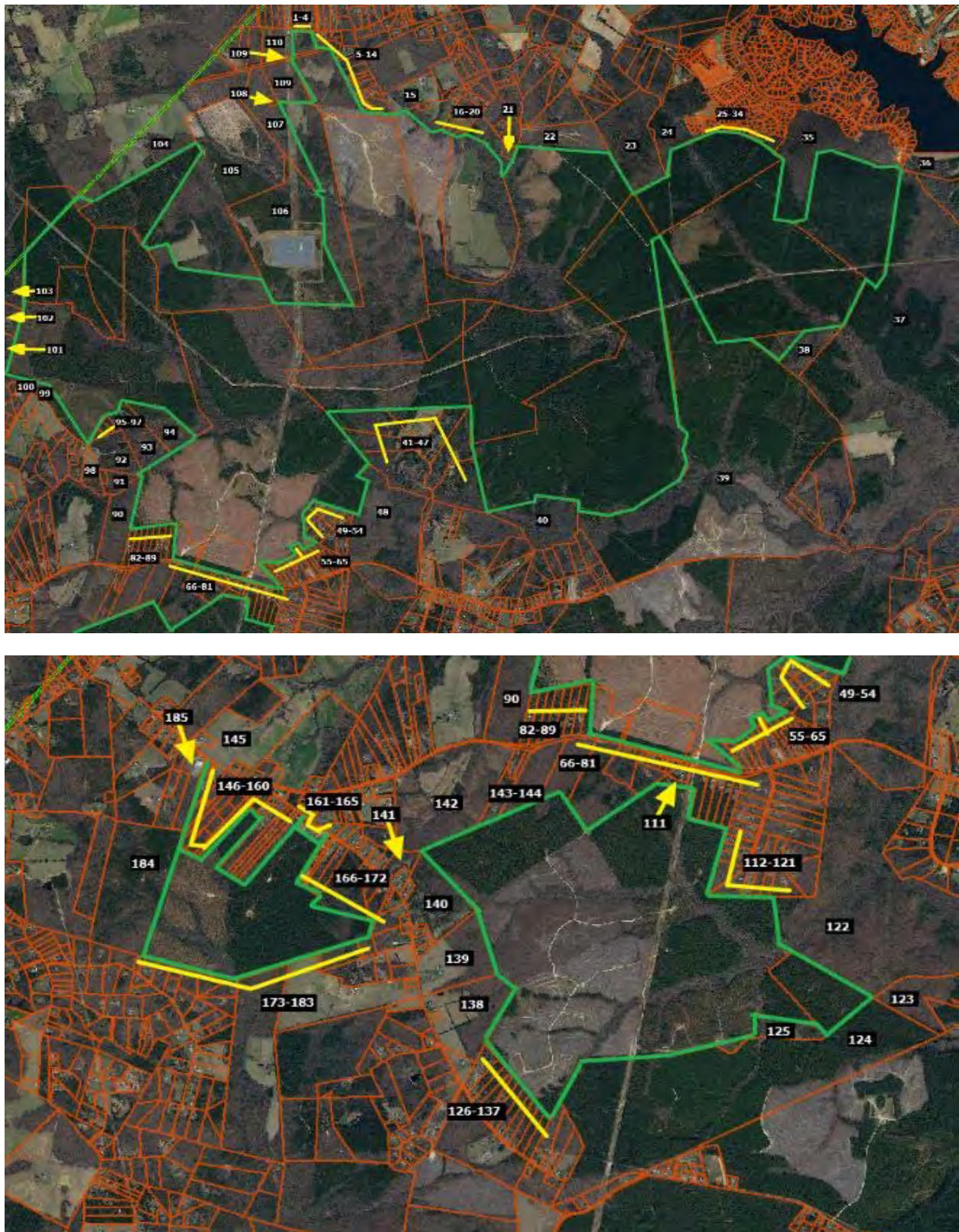
Adjoining Residential Sales After Solar Farm Approved

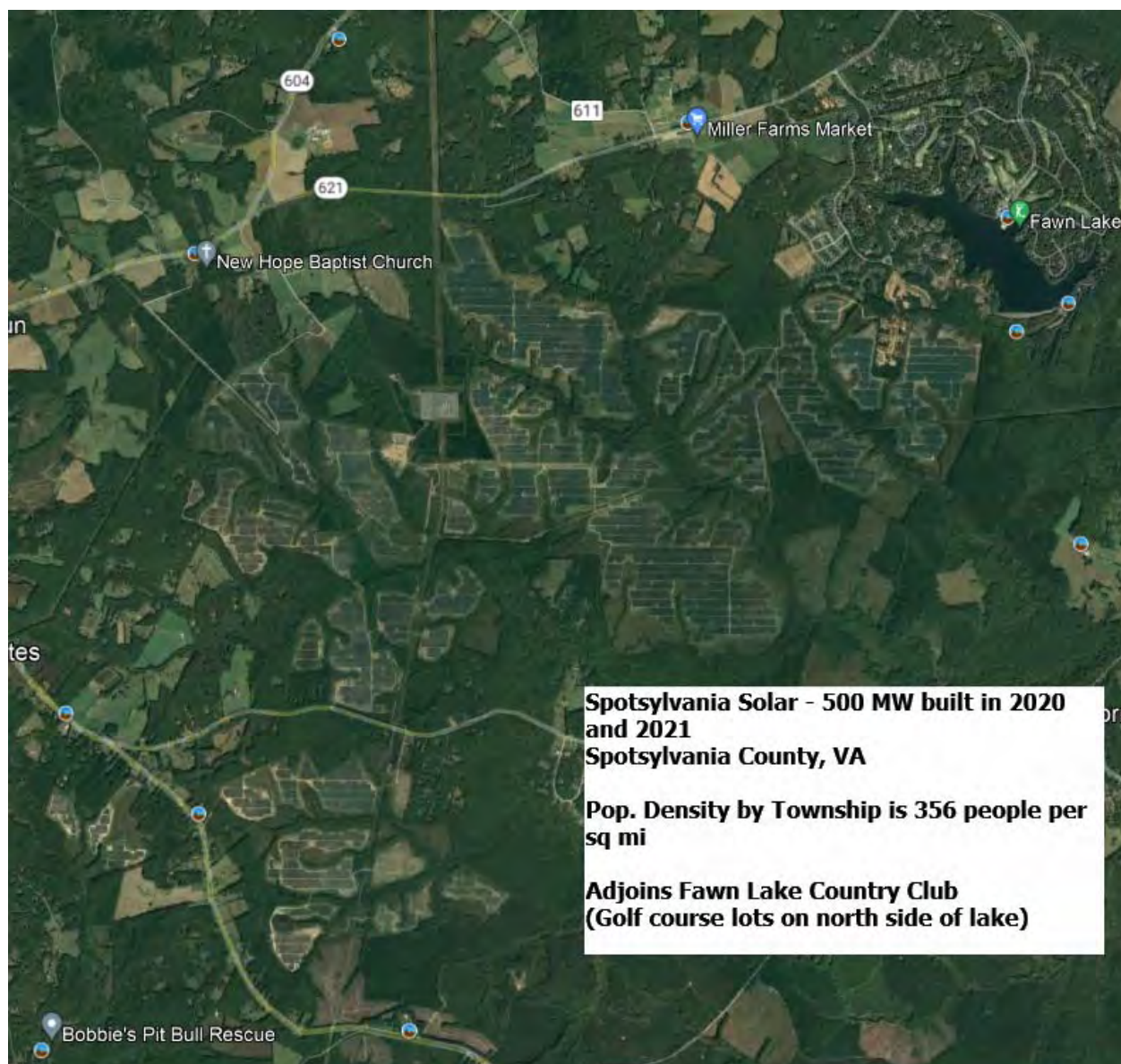
Parcel	Solar	Address	Acres	Date Sold	Sales Price	Built	GBA	\$/GLA	BR/BA	Park	Style	Other
	Adjoins	12511 Palestine	6.00	7/31/2018	\$128,400	2013	1,900	\$67.58	4/2.5	Open	Manuf	
	Not	15698 Concord	3.92	7/31/2018	\$150,000	2010	2,310	\$64.94	4/2	Open	Manuf	Fence
	Not	23209 Sussex	1.03	7/7/2020	\$95,000	2005	1,675	\$56.72	3/2	Det Crpt	Manuf	
	Not	6494 Rocky Br	4.07	11/8/2018	\$100,000	2004	1,405	\$71.17	3/2	Open	Manuf	

Adjoining Sales Adjusted

[illegible]

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%	

Average Diff 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%	

Average Diff 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%	

Average Diff -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							-1.4%
(Parcel 1 off solar farm)							

Time Adjustments are based on the FHFA Housing Price Index

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/FBsmnt	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	Bsmt/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.

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.

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

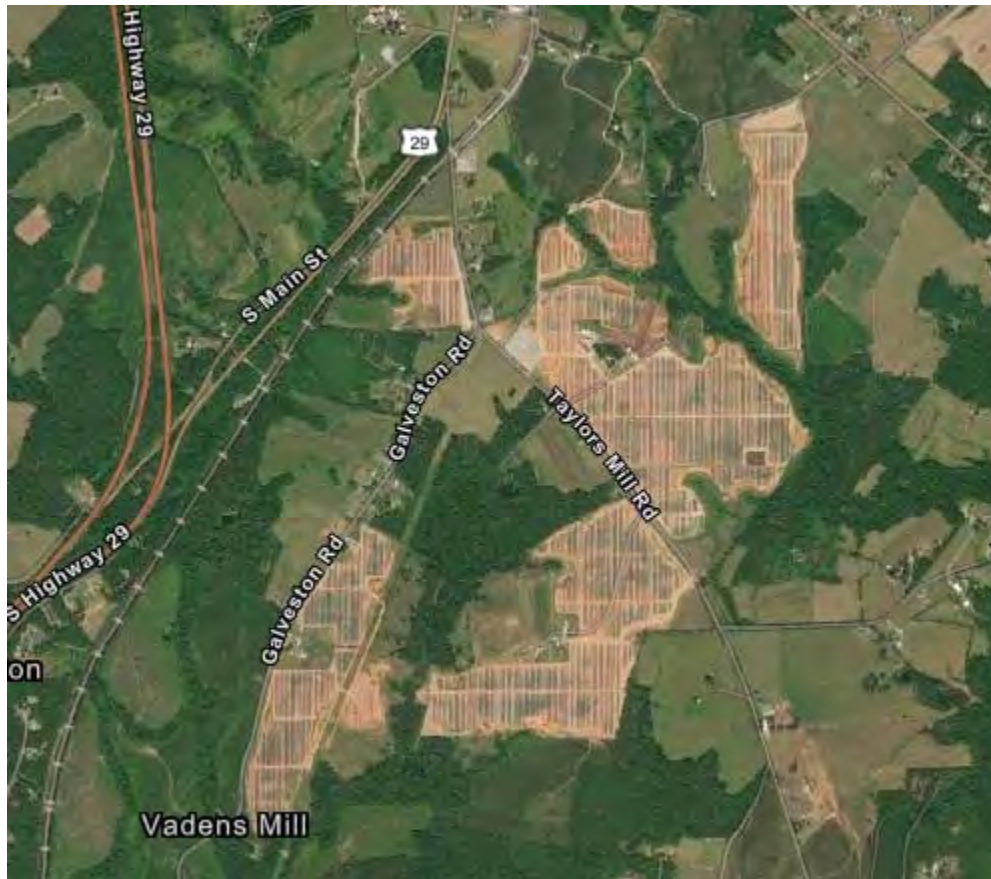
Address	Time	Ac/Loc	YB	GLA	BR/BA	Park	Other	Total	% Diff	Dist
127 Walnut Wds								\$240,000		1400
126 Woodger	\$6,569		-\$9,600	-\$12,957	-\$10,000			\$214,012	11%	
808 Virginia	\$167		\$8,325	\$1,475	-\$5,000		\$50,000	\$239,967	0%	
273 Carsons	\$11,131		-\$1,243	-\$35,755	-\$10,000	\$15,000	\$12,425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

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

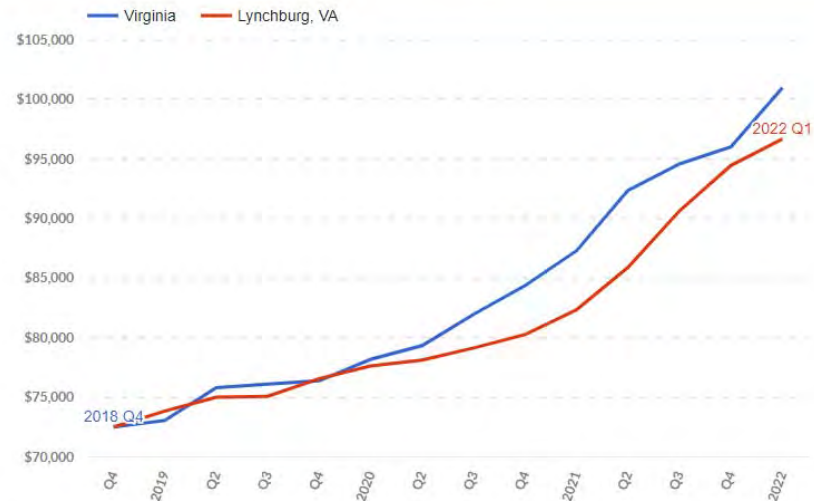


This project was mostly built in 2021 with final construction finished in 2022. This is an 80 MW facility on 720 acres just north of Roanoke River and west of Altavista. Adjoining uses are residential and agricultural.

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
2018 Quarter 4	2022 Quarter 1	
Purchase Value	Estimated Value for MSA	
\$72,500	\$97,000	33.8%



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
2019 Quarter 2	2022 Quarter 1	
Purchase Value	Estimated Value for MSA	
\$120,000	\$155,000	29.2%



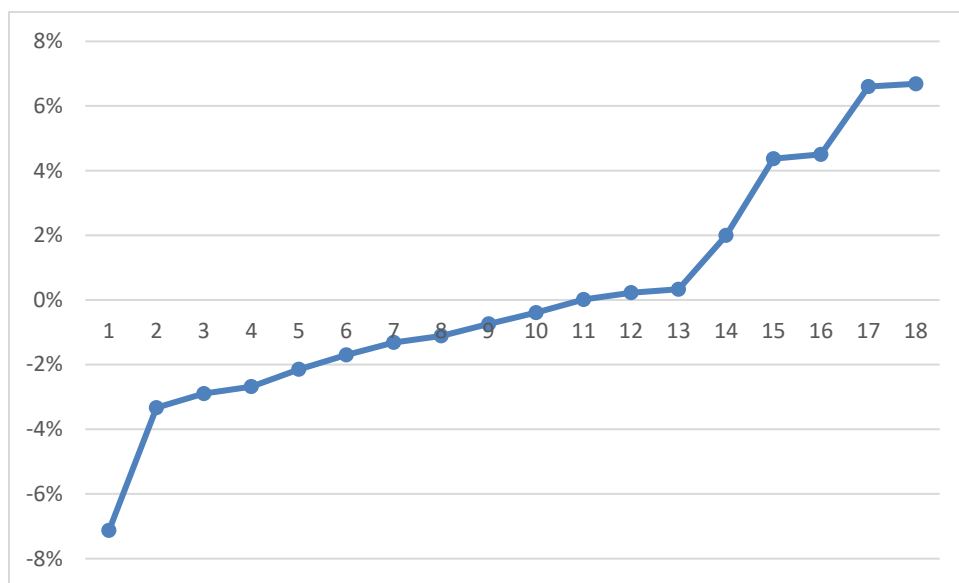
Conclusion

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 median income for the population within 1 mile of a solar farm among this subset of matched pairs is \$58,651 with a median housing unit value of \$264,681. Most of the comparables are under \$500,000 in the home price, with \$483,333 being the high end of the set, though I have matched pairs in other states over \$1,600,000 in price adjoining large solar farms. 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 and the subject property, I consider it reasonable to compare these sites to the subject property.

Matched Pair Summary						Adj. Uses By Acreage					1 mile Radius (2010-2023 Data)			
	Name	City	State	Acres	MW	Topo Shift	Res	Ag	Ag/Res	Com/Ind	Population	Med. Income	Avg. Housing Unit	Veg. Buffer
1	Clarke Cnty	White Post	VA	234	20.00	70	14%	39%	46%	1%	578	\$81,022	\$374,453	Light
2	Walker	Barhamsville	VA	485	20.00	N/A	12%	68%	20%	0%	203	\$80,773	\$320,076	Light
3	Sappony	Stony Crk	VA	322	20.00	N/A	2%	98%	0%	0%	74	\$51,410	\$155,208	Medium
4	Spotsylvania	Paytes	VA	3,500	500.00	160	37%	52%	11%	0%	74	\$120,861	\$483,333	Med to Hvy
5	Crittenden	Crittenden	KY	34	2.70	40	22%	51%	27%	0%	1,419	\$60,198	\$178,643	Light
6	White House	Louisa	VA	500	20.00	N/A	24%	55%	18%	3%	409	\$57,104	\$209,286	Medium
7	Whitehorn	Gretna	VA	N/A	50.00	N/A	N/A	N/A	N/A	N/A	166	\$43,179	\$168,750	None to Lgt
8	Altavista	Altavista	VA	720	80.00	N/A	N/A	N/A	N/A	N/A	7	\$50,000	\$341,667	Light
Average				828	89.09	90	19%	61%	20%	1%	366	\$68,068	\$278,927	
Median				485	20.00	70	18%	54%	19%	0%	185	\$58,651	\$264,681	
High				3,500	500.00	160	37%	98%	46%	3%	1,419	\$120,861	\$483,333	
Low				34	2.70	40	2%	39%	0%	0%	7	\$43,179	\$155,208	
High Bridge														
1 Mile Radius				173	12.00	100	5%	26%	66%	3%	2,449	\$36,865	\$187,905	
3 Mile Radius				173	12.00	100	5%	26%	66%	3%	9,642	\$39,228	\$218,576	
5 Mile Radius				173	12.00	100	5%	26%	66%	3%	12,172	\$41,378	\$238,204	

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%. As can be seen in the chart of those results below, most of the data points are between -3% and +2%. 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 18 data points show a negative impact greater than the typical variability due to market imperfection, while 2 of the 17 data points show a positive impact. This leaves 15 of the 18 indications showing no impact and within the typical market variability/imperfection that would be expected for any property.



Residential Dwelling Matched Pairs Adjoining Solar Farms

Pair	Solar Farm	City	State	Area	MW	Approx		Date	Adj. Sale		Veg.
						Distance	Tax ID/Address		Sale Price	Price	% Diff Buffer
1	Clarke Cnty	White Post	VA	Rural	20	1230	833 Nations Spr	Jan-17	\$295,000		Light
							6801 Middle	Dec-17	\$249,999	\$296,157	0%
2	Walker	Barhamsville	VA	Rural	20	250	5241 Barham	Oct-18	\$264,000		Light
							9252 Ordinary	Jun-19	\$277,000	\$246,581	7%
3	Clarke Cnty	White Post	VA	Rural	20	1230	833 Nations Spr	Aug-19	\$385,000		Light
							2393 Old Chapel	Aug-20	\$330,000	\$389,286	-1%
4	Sappony	Stony Creek	VA	Rural	20	1425	12511 Palestine	Jul-18	\$128,400		Medium
							6494 Rocky Branch	Nov-18	\$100,000	\$131,842	-3%
5	Spotsylvania	Paytes	VA	Rural	617	1270	12901 Orange Plnk	Aug-20	\$319,900		Medium
							12717 Flintlock	Dec-20	\$290,000	\$326,767	-2%
6	Spotsylvania	Paytes	VA	Rural	617	1950	9641 Nottoway	May-20	\$449,900		Medium
							11626 Forest	Aug-20	\$489,900	\$430,246	4%
7	Spotsylvania	Paytes	VA	Rural	617	1171	13353 Post Oak	Sep-20	\$300,000		Heavy
							12810 Catharpin	Jan-20	\$280,000	\$299,008	0%
8	Crittenden	Crittenden	KY	Suburban	2.7	373	250 Claiborne	Jan-19	\$120,000		Light
							315 N Fork	May-19	\$107,000	\$120,889	-1%
9	Crittenden	Crittenden	KY	Suburban	2.7	488	300 Claiborne	Sep-18	\$213,000		Light
							1795 Bay Valley	Dec-17	\$231,200	\$228,180	-7%
10	Crittenden	Crittenden	KY	Suburban	2.7	720	350 Claiborne	Jul-18	\$245,000		Light
							2160 Sherman	Jun-19	\$265,000	\$248,225	-1%
11	Crittenden	Crittenden	KY	Suburban	2.7	930	370 Claiborne	Aug-19	\$273,000		Light
							125 Lexington	Apr-18	\$240,000	\$254,751	7%
12	Crittenden	Crittenden	KY	Suburban	2.7	665	330 Claiborne	Dec-19	\$282,500		Light
							2160 Sherman	Jun-19	\$265,000	\$290,680	-3%
13	Crittenden	Crittenden	KY	Suburban	2.7	390	260 Claiborne	Oct-21	\$175,000		Light
							546 Waterworks	Apr-21	\$179,500	\$171,510	2%
14	Crittenden	Crittenden	KY	Suburban	2.7	570	300 Claiborne	Dec-21	\$290,000		Light
							39 Pinhook	Mar-22	\$299,000	\$289,352	0%
15	Crittenden	Crittenden	KY	Suburban	2.7	1080	410 Claiborne	Feb-21	\$275,000		Light
							114 Austin	Dec-20	\$248,000	\$279,680	-2%
16	White House	Louisa	VA	Rural	20	1400	127 Walnut	Mar-20	\$240,000		Light
							126 Woodger	Apr-19	\$240,000	\$239,967	0%
17	Whitehorn	Gretna	VA	Rural	50	255	1120 Taylors Mill	Dec-21	\$224,000		Light
							1000 Long Branch	Aug-20	\$162,000	\$213,920	5%
18	Altavista	Altavista	VA	Rural	80	600	3026 Bishop Crk	Feb-22	\$150,000		Heavy
							3026 Bishop Crk	Jul-19	\$120,000	\$155,000	-3%

	Avg.			Indicated	
	MW	Distance		Impact	
Average	116.81	889	Average	0%	
Median	20.00	825	Median	-1%	
High	617.00	1,950	High	7%	
Low	2.70	250	Low	-7%	

B. Southeastern USA Data – Over 5 MW

Conclusion – SouthEast Over 5 MW

Southeast USA Over 5 MW Matched Pair Summary

Matched Pair Summary						Adj. Uses By Acreage					1 mile Radius (2010-2020 Data)			
	Name	City	State	Acres	MW	Topo Shift	Res	Ag	Ag/Res	Com/Ind	Pop.	Med. Income	Avg. Housing Unit	Veg. Buffer
1	AM Best	Goldsboro	NC	38	5.00	2	38%	0%	23%	39%	1,523	\$37,358	\$148,375	Light
2	Mulberry	Selmer	TN	160	5.00	60	13%	73%	10%	3%	467	\$40,936	\$171,746	Lt to Med
3	Leonard	Hughesville	MD	47	5.00	20	18%	75%	0%	6%	525	\$106,550	\$350,000	Light
4	Gastonia SC	Gastonia	NC	35	5.00	48	33%	0%	23%	44%	4,689	\$35,057	\$126,562	Light
5	Summit	Moyock	NC	2,034	80.00	4	4%	0%	94%	2%	382	\$79,114	\$281,731	Light
6	Tracy	Bailey	NC	50	5.00	10	29%	0%	71%	0%	312	\$43,940	\$99,219	Heavy
7	Manatee	Parrish	FL	1,180	75.00	20	2%	97%	1%	0%	48	\$75,000	\$291,667	Heavy
8	McBride	Midland	NC	627	75.00	140	12%	10%	78%	0%	398	\$63,678	\$256,306	Lt to Med
9	Mariposa	Stanley	NC	36	5.00	96	48%	0%	52%	0%	1,716	\$36,439	\$137,884	Light
10	Clarke Cnty	White Post	VA	234	20.00	70	14%	39%	46%	1%	578	\$81,022	\$374,453	Light
11	Simon	Social Circle	GA	237	30.00	71	1%	63%	36%	0%	203	\$76,155	\$269,922	Medium
12	Candace	Princeton	NC	54	5.00	22	76%	24%	0%	0%	448	\$51,002	\$107,171	Medium
13	Walker	Barhamsville	VA	485	20.00	N/A	12%	68%	20%	0%	203	\$80,773	\$320,076	Light
14	Innov 46	Hope Mills	NC	532	78.50	0	17%	83%	0%	0%	2,247	\$58,688	\$183,435	Light
15	Innov 42	Fayetteville	NC	414	71.00	0	41%	59%	0%	0%	568	\$60,037	\$276,347	Light
16	Sunfish	Willow Spring	NC	50	6.40	30	35%	35%	30%	0%	1,515	\$63,652	\$253,138	Light
17	Sappony	Stony Crk	VA	322	20.00	N/A	2%	98%	0%	0%	74	\$51,410	\$155,208	Light
18	Camden Dam	Camden	NC	50	5.00	0	17%	72%	11%	0%	403	\$84,426	\$230,288	Light
19	Grandy	Grandy	NC	121	20.00	10	55%	24%	0%	21%	949	\$50,355	\$231,408	Light
20	Champion	Pelion	SC	100	10.00	N/A	4%	70%	8%	18%	1,336	\$46,867	\$171,939	Light
21	Barefoot Bay	Barefoot Bay	FL	504	74.50	0	11%	87%	0%	3%	2,446	\$36,737	\$143,320	Lt to Med
22	Miami-Dade	Miami	FL	347	74.50	0	26%	74%	0%	0%	127	\$90,909	\$403,571	Light
23	Spotsylvania	Paytes	VA	3,500	617.00	160	37%	52%	11%	0%	74	\$120,861	\$483,333	Md to Hvy
Average				485	57.04	38	24%	48%	22%	6%	923	\$63,955	\$237,700	
Median				234	20.00	20	17%	59%	11%	0%	467	\$60,037	\$231,408	
High				3,500	617.00	160	76%	98%	94%	44%	4,689	\$120,861	\$483,333	
Low				35	5.00	0	1%	0%	0%	0%	48	\$35,057	\$99,219	

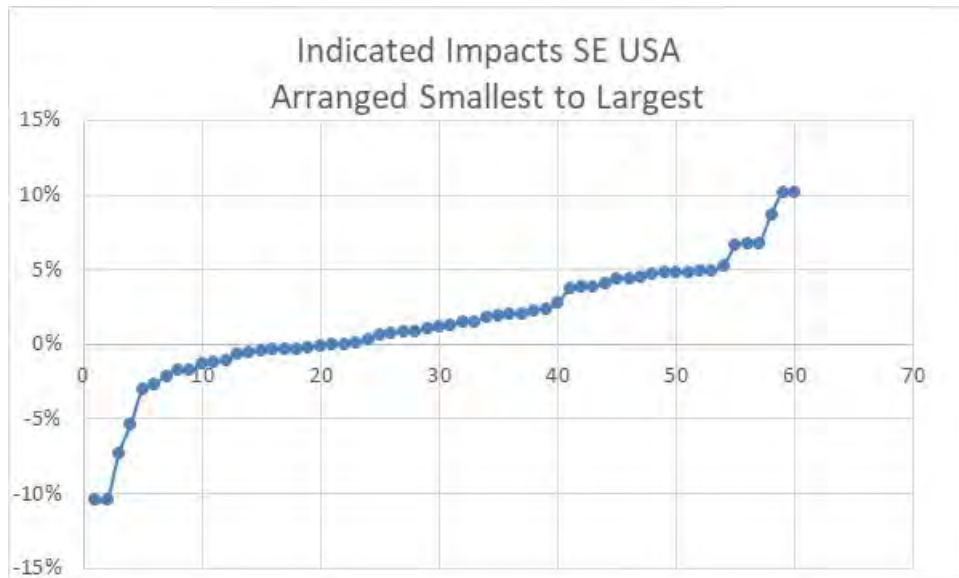
The solar farm matched pairs shown above have similar characteristics to each other in terms of population, but with several outliers showing solar farms in farm more urban areas. The median income for the population within 1 mile of a solar farm is \$60,037 with a median housing unit value of \$231,408. Most of the comparables are under \$300,000 in the home price, with \$483,333 being the high end of the set, though I have matched pairs in multiple states over \$1,000,000 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 56 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%. This means that the average and median impact is for a slight positive impact due to adjacency to a solar farm. However, this +1 to rate is within the typical variability I would expect from real estate. I therefore conclude that this data shows no negative or positive impact due to adjacency to a solar farm.

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. This data strongly supports an indication of no impact on adjoining residential uses to a solar farm.

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.



C. Summary of National Data on Solar Farms

I have worked in 24 states related to solar farms and I have been tracking matched pairs in most of those states. On the following pages I provide a brief summary of those findings showing 36 solar farms over 5 MW studied with each one providing matched pair data supporting the findings of this report.

The solar farms summary is shown below with a summary of the matched pair data shown on the following page.

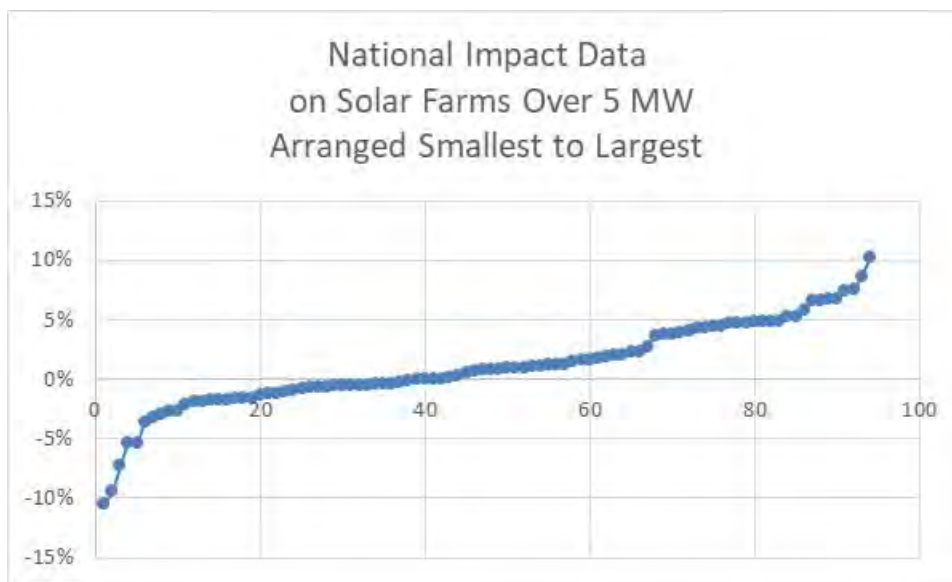
Matched Pair Summary						Adj. Uses By Acreage					1 mile Radius (2020 Data)		
	Name	City	State	Acres	MW	Topo Shift	Res	Ag	Ag/Res	Com/Ind	Population	Med. Income	Avg. Housing Unit
1	AM Best	Goldsboro	NC	38	5.00	2	38%	0%	23%	39%	1,523	\$37,358	\$148,375
2	Mulberry	Selmer	TN	160	5.00	60	13%	73%	10%	3%	467	\$40,936	\$171,746
3	Leonard	Hughesville	MD	47	5.00	20	18%	75%	0%	6%	525	\$106,550	\$350,000
4	Gastonia SC	Gastonia	NC	35	5.00	48	33%	0%	23%	44%	4,689	\$35,057	\$126,562
5	Summit	Moyock	NC	2,034	80.00	4	4%	0%	94%	2%	382	\$79,114	\$281,731
6	Tracy	Bailey	NC	50	5.00	10	29%	0%	71%	0%	312	\$43,940	\$99,219
7	Manatee	Parrish	FL	1,180	75.00	20	2%	97%	1%	0%	48	\$75,000	\$291,667
8	McBride	Midland	NC	627	75.00	140	12%	10%	78%	0%	398	\$63,678	\$256,306
9	Grand Ridge	Streator	IL	160	20.00	1	8%	87%	5%	0%	96	\$70,158	\$187,037
10	Dominion	Indianapolis	IN	134	8.60	20	3%	97%	0%	0%	3,774	\$61,115	\$167,515
11	Mariposa	Stanley	NC	36	5.00	96	48%	0%	52%	0%	1,716	\$36,439	\$137,884
12	Clarke Cnty	White Post	VA	234	20.00	70	14%	39%	46%	1%	578	\$81,022	\$374,453
13	Flemington	Flemington	NJ	120	9.36	N/A	13%	50%	28%	8%	3,477	\$105,714	\$444,696
14	Frenchtown	Frenchtown	NJ	139	7.90	N/A	37%	35%	29%	0%	457	\$111,562	\$515,399
15	McGraw	East Windsor	NJ	95	14.00	N/A	27%	44%	0%	29%	7,684	\$78,417	\$362,428
16	Tinton Falls	Tinton Falls	NJ	100	16.00	N/A	98%	0%	0%	2%	4,667	\$92,346	\$343,492
17	Simon	Social Circle	GA	237	30.00	71	1%	63%	36%	0%	203	\$76,155	\$269,922
18	Candace	Princeton	NC	54	5.00	22	76%	24%	0%	0%	448	\$51,002	\$107,171
19	Walker	Barhamsville	VA	485	20.00	N/A	12%	68%	20%	0%	203	\$80,773	\$320,076
20	Innov 46	Hope Mills	NC	532	78.50	0	17%	83%	0%	0%	2,247	\$58,688	\$183,435
21	Innov 42	Fayetteville	NC	414	71.00	0	41%	59%	0%	0%	568	\$60,037	\$276,347
22	Demille	Lapeer	MI	160	28.40	10	10%	68%	0%	22%	2,010	\$47,208	\$187,214
23	Turrill	Lapeer	MI	230	19.60	10	75%	59%	0%	25%	2,390	\$46,839	\$110,361
24	Sunfish	Willow Spring	NC	50	6.40	30	35%	35%	30%	0%	1,515	\$63,652	\$253,138
25	Picture Rocks	Tucson	AZ	182	20.00	N/A	6%	88%	6%	0%	102	\$81,081	\$280,172
26	Avra Valley	Tucson	AZ	246	25.00	N/A	3%	94%	3%	0%	85	\$80,997	\$292,308
27	Sappony	Stony Crk	VA	322	20.00	N/A	2%	98%	0%	0%	74	\$51,410	\$155,208
28	Camden Dam	Camden	NC	50	5.00	0	17%	72%	11%	0%	403	\$84,426	\$230,288
29	Grandy	Grandy	NC	121	20.00	10	55%	24%	0%	21%	949	\$50,355	\$231,408
30	Champion	Pelion	SC	100	10.00	N/A	4%	70%	8%	18%	1,336	\$46,867	\$171,939
31	Eddy II	Eddy	TX	93	10.00	N/A	15%	25%	58%	2%	551	\$59,627	\$139,088
32	Somerset	Somerset	TX	128	10.60	N/A	5%	95%	0%	0%	1,293	\$41,574	\$135,490
33	DG Amp Piqua	Piqua	OH	86	12.60	2	26%	16%	58%	0%	6,735	\$38,919	\$96,555
34	Barefoot Bay	Barefoot Bay	FL	504	74.50	0	11%	87%	0%	3%	2,446	\$36,737	\$143,320
35	Miami-Dade	Miami	FL	347	74.50	0	26%	74%	0%	0%	127	\$90,909	\$403,571
36	Spotsylvania	Paytes	VA	3,500	500.00	160	37%	52%	11%	0%	74	\$120,861	\$483,333
Average				362	38.80	32	24%	52%	19%	6%	1,515	\$66,292	\$242,468
Median				150	17.80	10	16%	59%	7%	0%	560	\$62,384	\$230,848
High				3,500	500.00	160	98%	98%	94%	44%	7,684	\$120,861	\$515,399
Low				35	5.00	0	1%	0%	0%	0%	48	\$35,057	\$96,555

From these 36 solar farms, I have derived 94 matched pairs. The matched pairs show no negative impact at distances as close as 105 feet between a solar panel and the nearest point on a home. The range of impacts is -10% to +10% with an average and median of +1%.

	MW	Avg. Distance		Indicated Impact
Average	44.80	569	Average	1%
Median	14.00	400	Median	1%
High	617.00	1,950	High	10%
Low	5.00	145	Low	-10%

While the range is broad, the chart below shows the data points in range from lowest to highest. There are only 3 data points out of 94 that show a negative impact (-6% or more). The rest support either a finding of no impact or 9 of the data points suggest a positive impact (+6% or more) due to adjacency to a solar farm. As discussed earlier in this report, findings between +/-5% is typical market variation/imperfection and is not indicative of a positive or negative impact. If I were to consider impacts within that range as indicative of market impacts, then the majority of the impacts would suggest a positive impact on property value as indicated by the +1% average impact and +1% median impact.

However, based on the Market Imperfection discussion earlier in this report, I consider this data to strongly support a finding of no impact on value as most of the findings are within typical market variation and even within that, most are mildly positive findings.



VIII. 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.

IX. 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.

Percentage By Adjoining Acreage									
	Res	Ag	Res/AG	Comm	Ind	Avg Home	Closest Home	All Res Uses	All Comm Uses
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.

Percentage By Number of Parcels Adjoining									
	Res	Ag	Res/AG	Comm	Ind	Avg Home	Closest Home	All Res Uses	All Comm Uses
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.

X. 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.

XI. 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.

XII. 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

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Professional Experience

Kirkland Appraisals, LLC , Raleigh, N.C. Commercial appraiser	2003 – Present
Hester & Company , Raleigh, N.C. Commercial appraiser	1996 – 2003

Professional Affiliations

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

Education

Bachelor of Arts in English , University of North Carolina, Chapel Hill	1993
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Continuing Education

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

HIGH BRIDGE SOLAR, LLC

ECONOMIC & FISCAL CONTRIBUTION TO THE TOWN OF FARMVILLE, VIRGINIA



Prepared for

High Bridge Solar, LLC



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DECEMBER 2023

MANGUMECONOMICS.COM



About Mangum Economics, LLC

Mangum Economics is a Glen Allen, Virginia based firm that was founded in 2003. Since then, we have become known as a leader in industry analysis, economic impact assessment, policy and program evaluation, and economic and workforce strategy development. The Mangum Team specializes in producing objective and actionable quantitative economic research that our clients use for strategic decision making in a variety of industries and environments. We know that our clients are unique, and that one size does not fit all. As a result, we have a well-earned reputation for tailoring our analyses to meet the specific needs of specific clients, with a specific audience.

Most of our research falls into four general categories:

- **Information Technology:** Working with some of the largest names in the industry, to date the Mangum Team has produced analyses of the economic and fiscal impact of data centers at the state and local level across the country.
- **Energy:** The Mangum Team has produced analyses of the economic and fiscal impact of over 23 GW of proposed solar, wind, battery energy storage, and hydro projects spanning twenty states. Among those projects was Dominion Energy's 2.6 GW Coastal Virginia Offshore Wind project off of Virginia Beach. In addition, the Mangum Team has also performed economic and fiscal impact analyses for the natural gas, nuclear, oil, and pipeline industries.
- **Economic Development and Special Projects:** The Mangum Team has performed hundreds of analyses of proposed economic development projects. Most recently, we were called upon by Henrico County to provide an analysis of the proposed \$2.3 billion Green City "net-zero eco district." The Mangum Team has also authored multiple economic development plans, including identifying industries that were likely recruitment targets because of the high-speed MAREA and BRUSA sub-sea cable landings in Virginia Beach.
- **Policy Analysis:** The Mangum Team also has extensive experience in identifying and quantifying the intended and unintended economic consequences of proposed legislative and regulatory initiatives.

The Project Team

Martina Arel, M.B.A.

Director – Economic Development & Energy Research

Rebecca Kyle

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Founder and CEO

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Executive Summary

This report assesses the economic and fiscal contribution that the proposed High Bridge Solar project would make to the Town of Farmville and to Prince Edward County, Virginia. The primary findings from that assessment are as follows:

- 1) High Bridge Solar is a proposed 12-megawatt (MW) alternating current (AC) solar photovoltaic power generating facility. The project would be located off of Cedar Avenue in the town of Farmville in Prince Edward County, Virginia. The total acreage for the project encompasses approximately 125 acres of leased land. The actively used, fenced-in solar site would be approximately 58.8 acres.**
- 2) The proposed High Bridge Solar project would make an economic contribution to the town of Farmville and to Prince Edward County:**
 - The proposed High Bridge Solar project would employ approximately 26 full-time equivalent construction workers.¹
 - The proposed High Bridge Solar project would provide an estimated one-time pulse of economic activity to the town of Farmville and Prince Edward County during its construction phase supporting approximately:
 - 19 direct, indirect, and induced job years.
 - \$0.9 million in associated wages and benefits.
 - \$3.6 million in economic output.
 - The proposed High Bridge Solar project would provide an estimated annual economic impact to the town of Farmville and Prince Edward County during its ongoing operational phase supporting approximately:
 - 1 direct, indirect, and induced job.
 - \$49,700 in associated wages and benefits.
 - \$0.2 million in economic output.
- 3) The proposed High Bridge Solar would also make a fiscal contribution to the town of Farmville. The proposed project would generate approximately:**
 - \$0.2 million in state, county, and town tax revenue from the one-time pulse of economic activity associated with the project's construction.
 - \$0.4 million in cumulative town revenue over the facility's anticipated 40-year operational life assuming revenues are generated from the reassessment of the real property and from taxation of the capital investments in machinery and tools (Scenario 1); or

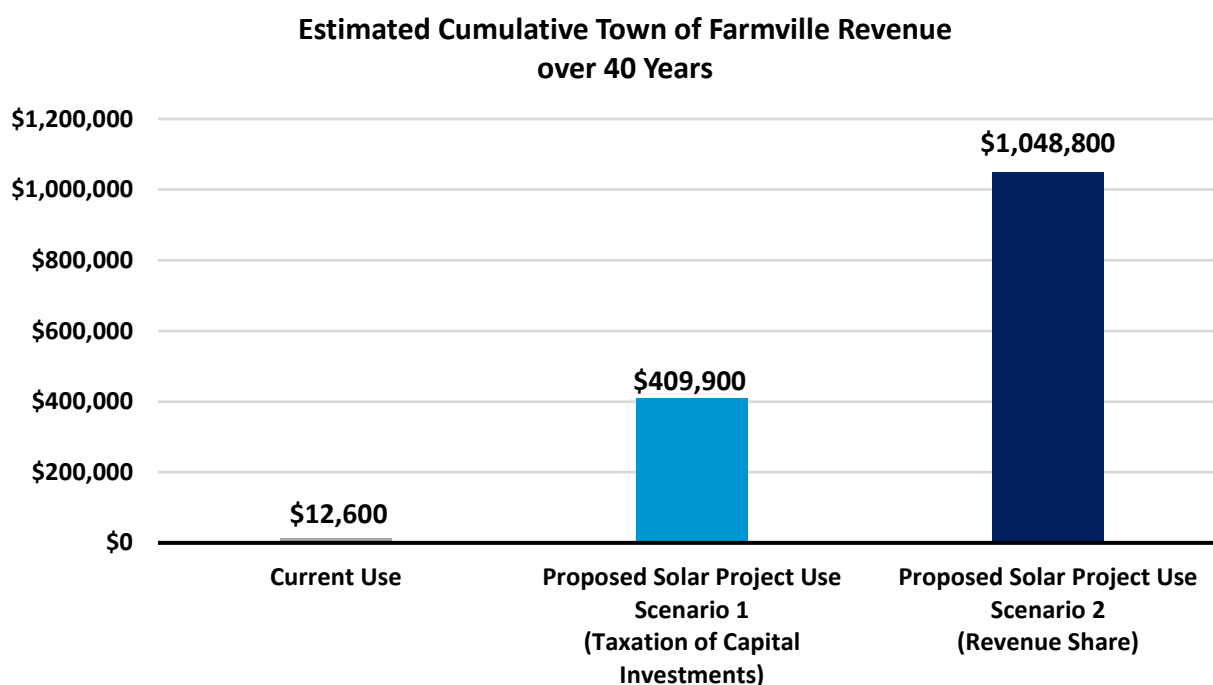
¹ Please note that for ease of explication the analysis is modeled based on full-time equivalent jobs over a 12-month period. Actual construction is anticipated to take approximately five months with approximately 63 construction workers, which is equivalent to 26 full-time workers.



- \$1.0 million in cumulative town revenue over the facility’s anticipated 40-year operational life assuming revenues are generated from the reassessment of the real property and payments associated with a locally adopted revenue share ordinance. The payments would be based on the project’s generation capacity and include a 10 percent escalator every five years (Scenario 2).

4) The proposed High Bridge Solar would have a significantly greater fiscal impact on the town of Farmville than the property generates in its current use:

- The proposed High Bridge Solar would generate approximately between \$0.4 million in cumulative town revenue under Scenario 1 and approximately \$1.0 million in cumulative town revenue under Scenario 2 over the facility’s anticipated 40-year operational life, as compared to approximately \$12,600 in cumulative town revenue in the property’s current use – this constitutes a 33- to 83-fold increase respectively over current revenues.



The estimates provided in this report are based on the best information available and all reasonable care has been taken in assessing the quality of that information. However, because these estimates attempt to foresee the consequences of circumstances that have not yet occurred, it is not possible to be certain that they will be representative of actual events. These estimates are intended to provide a good indication of likely future outcomes and should not be construed to represent a precise measure of those outcomes.

Introduction

This report assesses the economic and fiscal contribution that the proposed High Bridge Solar project would make to the town of Farmville and to Prince Edward County, Virginia. This report was commissioned by High Bridge Solar, LLC and produced by Mangum Economics.

The Project

High Bridge Solar is a proposed 12-megawatt (MW) alternating current (AC) solar photovoltaic power generating facility. The project would be located off of Cedar Avenue in the town of Farmville in Prince Edward County, Virginia. The total acreage for the project encompasses approximately 125 acres of leased land. The actively used, fenced-in solar site would be approximately 58.8 acres.

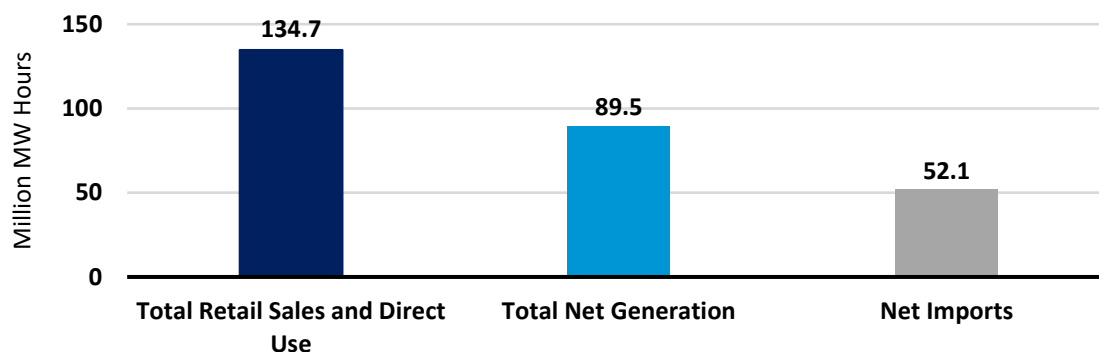
Electricity Production in Virginia

This section provides a backdrop for the proposed High Bridge Solar project by profiling Virginia's electricity production sector and the role that solar energy could play in that sector.

Overall Market

As shown in Figure 1, in 2022 electricity sales and direct use in Virginia totaled 134.7 million megawatt hours. However, only 66 percent of that demand was met by in-state utilities, independent producers, and other sources. As a result, Virginia had to import the remaining electricity it consumed from producers in other states. As with all imports, this means that the jobs, wages, and economic output created by that production went to localities in those states, not to localities in Virginia.

Figure 1: Demand and Supply of Electricity in Virginia in 2022 (in millions of megawatt-hours)²

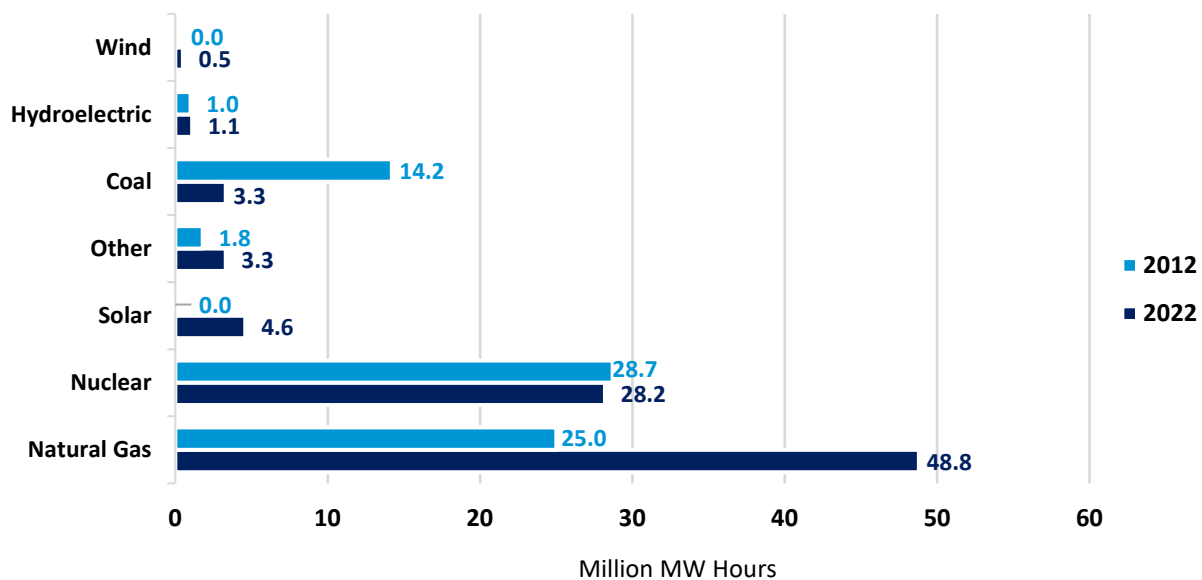


² Data Source: U.S. Energy Information Administration. In this chart, "Net Imports" also takes into account losses during transmission. As a result, it does not directly equal the residual of "Total Net Generation" minus "Total Retail Sales and Direct Use."

Sources of Production

Between 2012 and 2022, the total amount of electricity produced in Virginia increased from 70.7 to 89.5 million megawatt hours, while retail and direct consumption of electricity increased from 109.9 to 134.7 million megawatt hours. Consequently, imports of electricity increased by 5.3 million megawatt hours (or 11.3 percent) during this time.³ Figure 2 provides a comparison of the energy sources that were used to produce electricity in Virginia in each of those years. As these data show, the most significant change between 2012 and 2022 was a decrease in the use of coal and an increase in the use of natural gas. Where coal was the state's third largest source of electricity in 2012, accounting for 14.2 million megawatt hours (or 20.0 percent) of production, by 2022 production had fallen by 10.8 million megawatt hours, making coal a fourth-place source of electricity with only 3.7 percent of production. Where natural gas accounted for 25.0 million megawatt hours (or 35.4 percent) of Virginia's electricity production in 2012, by 2022 that proportion had increased to 48.8 million megawatt hours (or 54.5 percent of production), making natural gas the state's largest source of electricity. In addition, solar, which entered the Virginia electricity production market in 2016, increased its share to 4.6 million megawatt hours in 2022.

Figure 2: Electricity Generation in Virginia by Energy Source in 2012 and 2022
(in millions of megawatt-hours)⁴

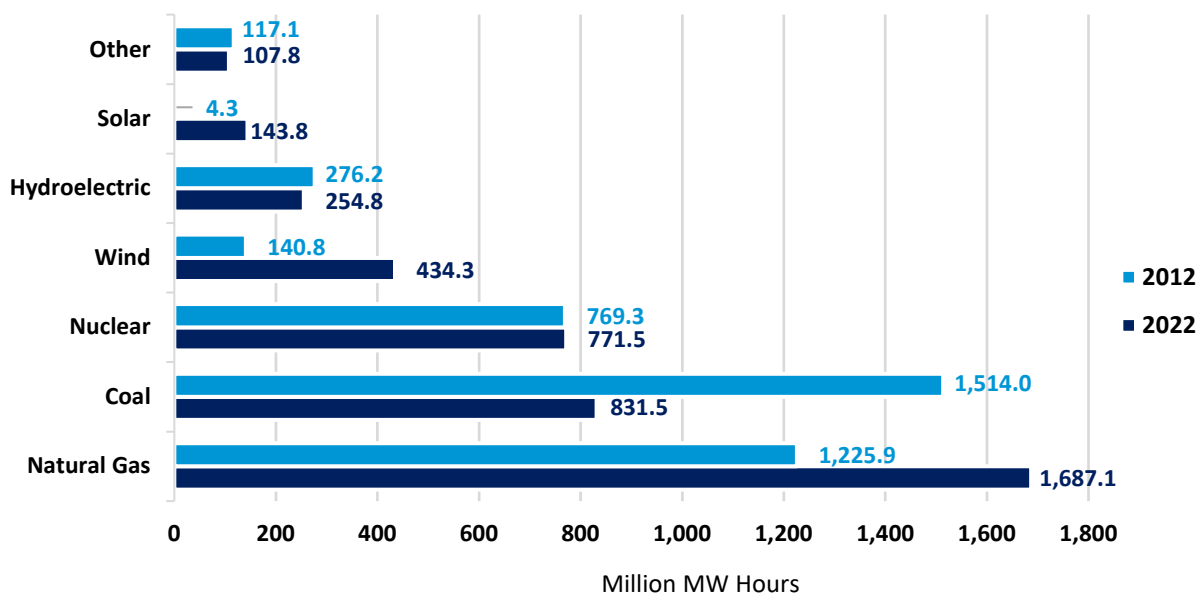


³ Imports also takes into account losses during transmission. As a result, totals do not equal sum of components.

⁴ Data Source: U.S. Energy Information Administration. The "Other" category includes battery, wood, petroleum, other biomass, "other", and pumped storage.

Figure 3 provides similar data for the U.S. as a whole. A quick comparison of Figures 2 and 3 shows that although the degree of reliance on specific energy sources for electricity production is quite different between the U.S. and Virginia, the trend toward lower-emissions energy sources is the same. Nationally, between 2012 and 2022 the amount of electricity produced using coal declined by 682.5 million megawatt hours from 37.4 to 19.7 percent of production, while in contrast the amount of electricity produced using natural gas increased by 461.2 million megawatt hours from 30.3 to 39.9 percent of production. Nationwide, as in Virginia, the reliance on renewable energy sources such as solar increased during this time but at a slower pace than in Virginia. Between 2012 and 2022, the amount of electricity produced using solar increased by 139.5 million megawatt hours to 3.4 percent of total electricity production in the nation compared to 5.2 percent of total electricity production in Virginia.

Figure 3: Electricity Generation in the United States by Energy Source in 2012 and 2022
(in millions of megawatt-hours)⁵

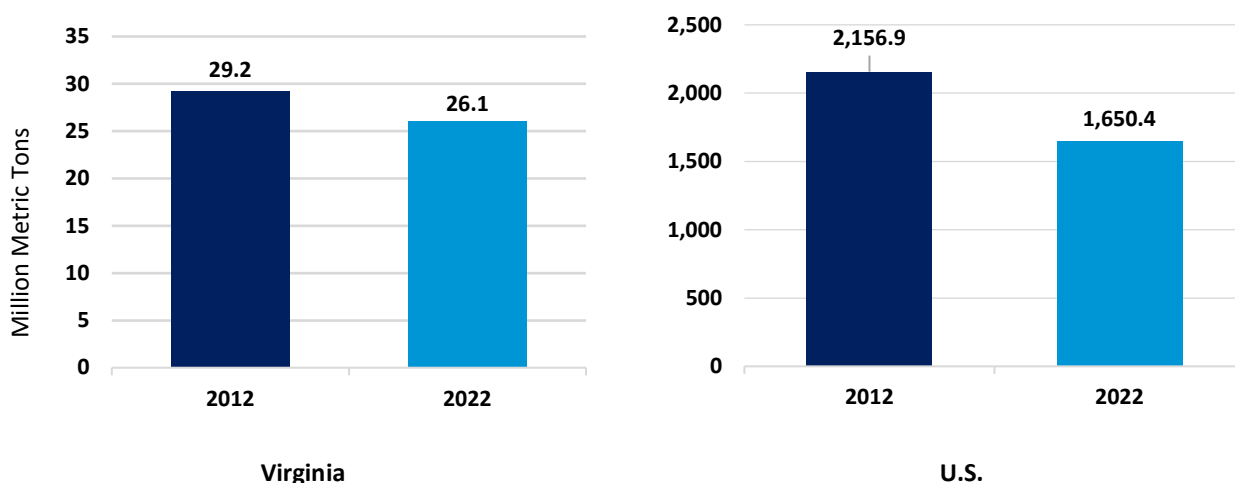


Impact on the Environment

In discussing the impact of these trends on the environment, it is important to realize that electricity production is one of the U.S.'s largest sources of greenhouse gas emissions. Figure 4 depicts carbon dioxide emissions from electricity production in 2012 and 2022 for both Virginia and the U.S. As these data indicate, between 2012 and 2022, as the share of electricity produced in Virginia by coal fell from 20.0 to 3.7 percent, carbon dioxide emissions from electricity production fell from 29.2 to 26.1 million metric tons. Where at the national level, as the share of electricity produced by coal fell from 37.4 to 19.7 percent, carbon dioxide emissions from electricity production fell from 2,156.9 to 1,650.4 million metric tons.

⁵ Data Source: U.S. Energy Information Administration. "Other" includes battery, geothermal, other, other biomass, other gas, petroleum, pumped storage, and wood.

Figure 4: Carbon Dioxide Emissions from Electricity Production (millions of metric tons)⁶

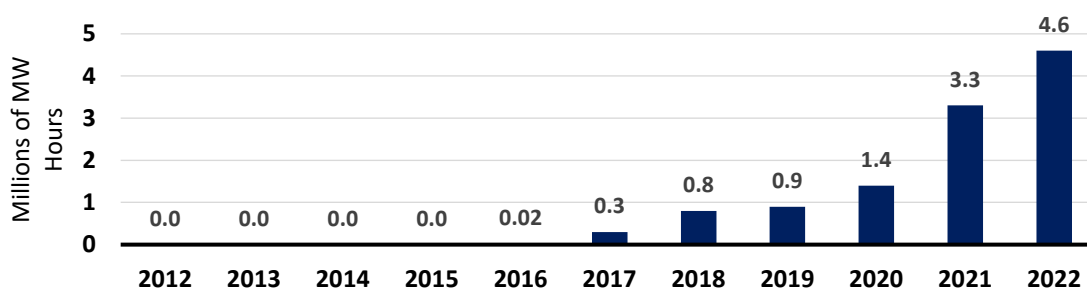


Virginia Solar Industry Trends

As of the second quarter of 2023, Virginia was ranked 10th in the nation for its total installed solar capacity. Over the next five years, Virginia is projected to add almost seven thousand megawatts of solar to its portfolio, ranking it 9th in the nation for projected growth. Total investment into the solar industry in Virginia as of the second quarter of 2023 amounts to \$5.1 billion.⁷

Figure 5 depicts the progression of solar energy generation in Virginia from 2012 to 2022 expressed in millions of megawatt-hours. Solar entered the electricity market in Virginia in 2016 with 0.02 million megawatt hours. Generation has continued to grow throughout the period, reaching its peak, so far, in 2022, with solar generation totaling 4.6 million megawatt-hours. This chart demonstrates Virginia's growing engagement with solar energy, culminating in a noteworthy expansion by the end of the period shown.⁸

Figure 5: Solar Generation in Virginia (in millions of megawatt-hours) – 2012 to 2022⁹



⁶ Data Source: U.S. Energy Information Administration.

⁷ Data Source: Solar Energy Industries Association.

⁸ Data Source: Solar Energy Industries Association.

⁹ Data Source: U.S. Energy Information Administration.

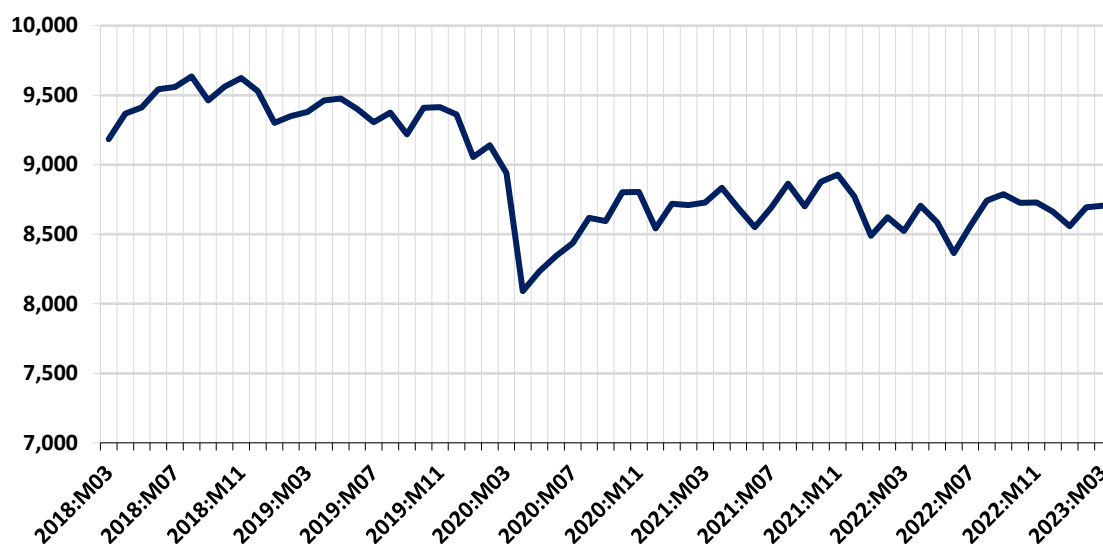
Local Economic Profile

This section provides context for the economic and fiscal impact assessments to follow by profiling the local economy of Prince Edward County.¹⁰

Total Employment

Figure 6 depicts the trend in total employment in Prince Edward County during the five-year period from March 2018 through March 2023. Aside from seasonal fluctuations, employment in the county was generally stable throughout the period until April 2020, when employment declined significantly in response to a decrease in economic activity associated with the COVID-19 pandemic. Total employment has rebounded but has not reached pre-pandemic levels. As of March 2023, total employment in the county stood at 8,705 jobs, which represents an overall decrease in employment of 5.2 percent (or 480 jobs) over the five-year period. To put this number in perspective, over this same period, total statewide employment in Virginia increased by 3.9 percent.¹¹

Figure 6: Total Employment in Prince Edward County – March 2018 to March 2023¹²



To control for seasonality and provide a point of reference, Figure 7 compares the year-over-year change in total employment in Prince Edward County to that of the state of Virginia over the same five-year period. Any point above the zero line in this graph indicates an increase in employment, while any point below the zero line indicates a decline in employment. As these data show, Prince Edward County underperformed the statewide average for most of the period. As of March 2023, the year-over-year

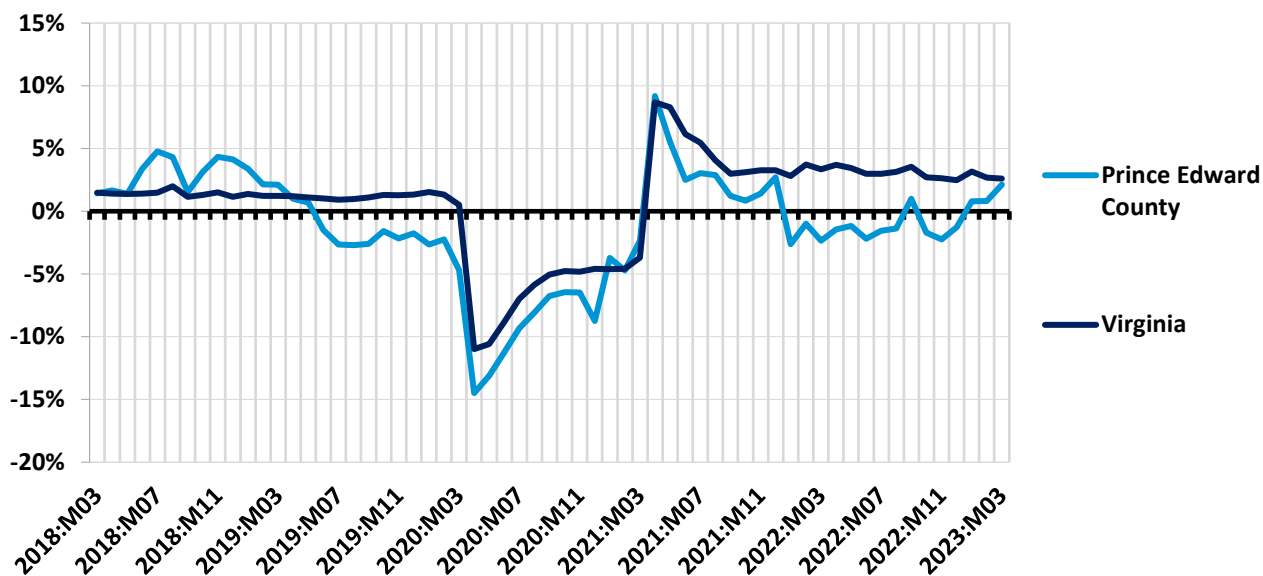
¹⁰ Because the town of Farmville is not an independent city, its employment and wage data is not reported separately by the U.S. Bureau of Labor Statistics. Instead, they are included in data reported for Prince Edward County.

¹¹ Data Source: U.S. Bureau of Labor Statistics.

¹² Data Source: U.S. Bureau of Labor Statistics.

change in total employment in Prince Edward County was 2.1 percent as compared to 2.6 percent statewide in Virginia.

Figure 7: Year-Over-Year Change in Total Employment – March 2018 to March 2023¹³



Employment and Wages by Industry Supersector

To provide a better understanding of the underlying factors motivating the total employment trends depicted in Figures 6 and 7, Figures 8 through 10 provide data on private employment and wages in Prince Edward County by industry supersector.¹⁴

Figure 8 provides an indication of the distribution of private sector employment across industry supersectors in Prince Edward County in the first quarter of 2023. As these data indicate, the county's largest industry sectors that quarter were Education and Health Services (2,274 jobs), followed by Trade, Transportation and Utilities (1,603 jobs), and Leisure and Hospitality (1,118 jobs).

Figure 9 provides a similar ranking for average private sector weekly wages by industry supersector in Prince Edward County in the first quarter of 2023. As these data show, the highest paying industry sectors that quarter were Construction (\$1,341 per week), Financial Activities (\$1,112 per week), and Natural Resources and Mining (\$1,037 per week). To provide a point of reference, the average private sector weekly wage across all industry sectors in Prince Edward County that quarter was \$848 per week.

¹³ Data Source: U.S. Bureau of Labor Statistics.

¹⁴ A "supersector" is the highest level of aggregation in the coding system that the Bureau of Labor Statistics uses to classify industries.

Figure 8: Private Employment by Industry Supersector in Prince Edward County – Q1 2023¹⁵

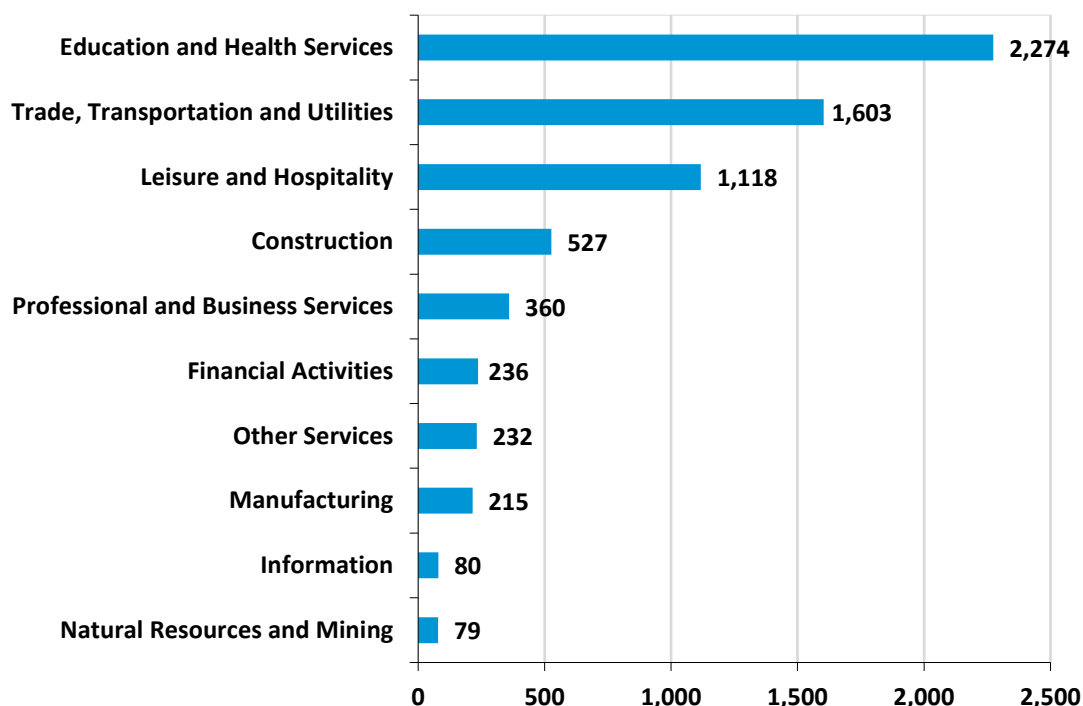
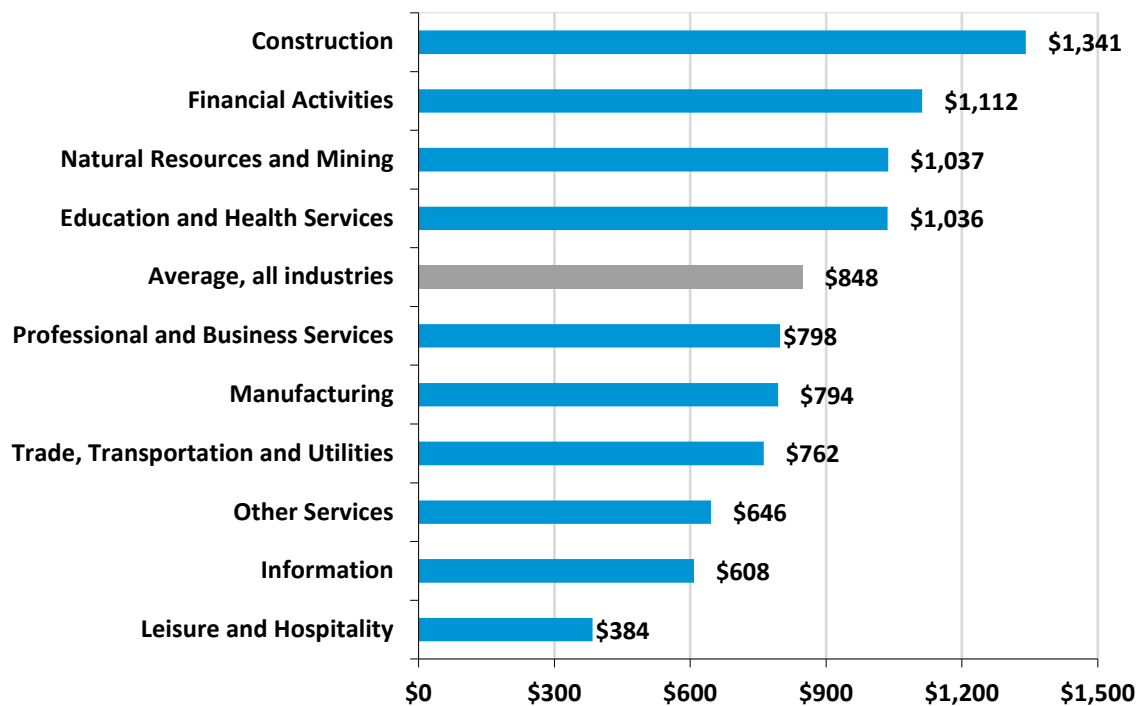


Figure 9: Average Private Weekly Wages by Industry Supersector in Prince Edward County – Q1 2023¹⁶

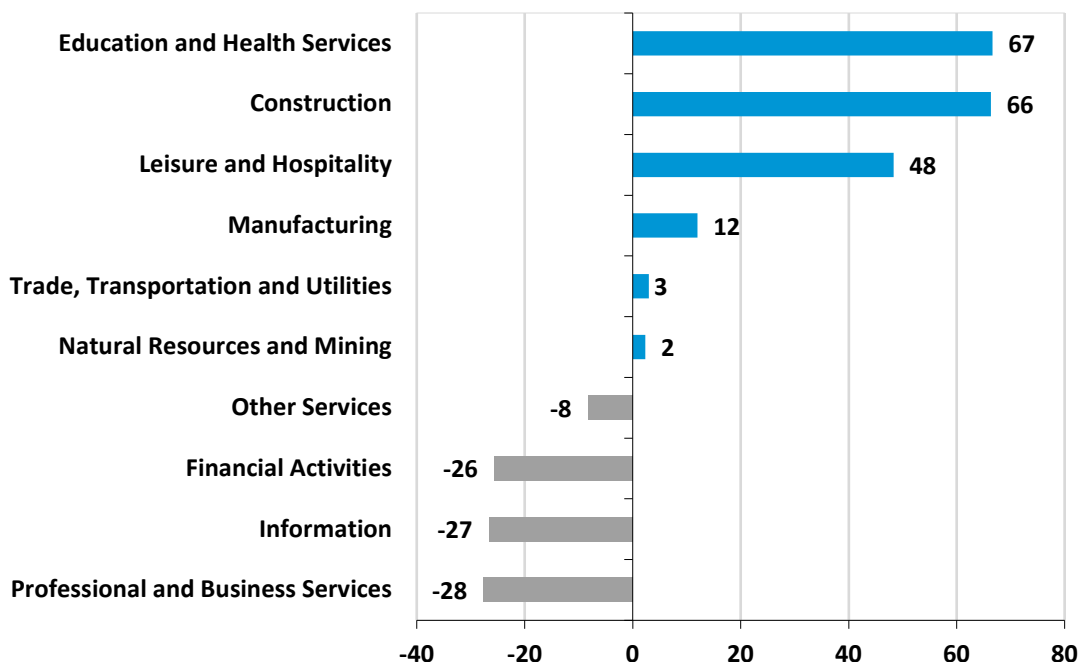


¹⁵ Data Source: U.S. Bureau of Labor Statistics.

¹⁶ Data Source: U.S. Bureau of Labor Statistics.

Figure 10 details the year-over-year change in private sector employment from the first quarter of 2022 to the first quarter of 2023 in Prince Edward County by industry supersector. Over this period, the largest employment gains occurred in the Education and Health Services (up 67 jobs), Construction (up 66 jobs), and Leisure and Hospitality (up 48 jobs) sectors. The largest employment losses occurred in the Professional and Business Services (down 28 jobs), Information (down 27 jobs), and Financial Activities (down 26 jobs) sectors.

Figure 10: Change in Private Employment by Industry Supersector in Prince Edward County from Q1 2022 to Q1 2023¹⁷

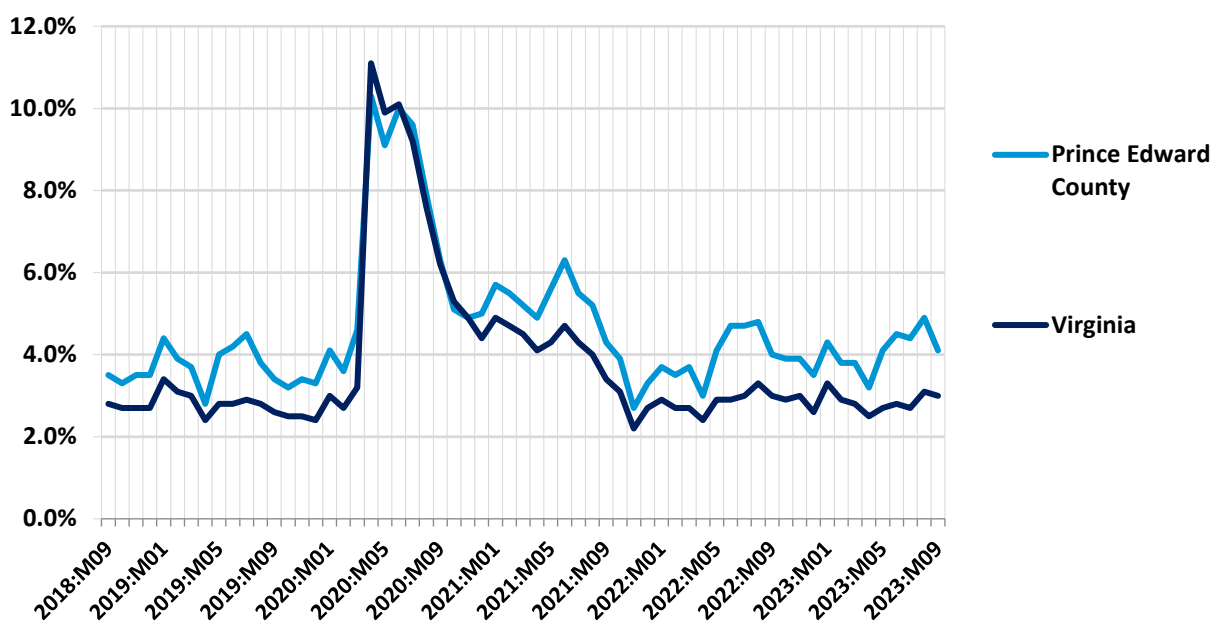


Unemployment

Figure 11 illustrates the trend in Prince Edward County's unemployment rate over the five-year period from September 2018 through September 2023 and benchmarks those data against the statewide trend for Virginia. As these data show, unemployment rates in Prince Edward County tracked closely with the statewide trend throughout the period but at rates above the statewide average. In April 2020 unemployment in the county and state significantly rose as a result of the labor dislocations caused by the COVID-19 pandemic. As of September 2023, unemployment stood at 4.1 percent in Prince Edward County compared to 3.0 percent in Virginia as a whole.

¹⁷ Data Source: U.S. Bureau of Labor Statistics.

Figure 11: Unemployment Rate – September 2018 to September 2023¹⁸



¹⁸ Data Source: U.S. Bureau of Labor Statistics.

Economic and Fiscal Impact

This section quantifies the economic and fiscal contribution that the proposed High Bridge Solar project would make to the town of Farmville and to Prince Edward County. The analysis separately evaluates the one-time pulse of economic activity that would occur during the construction phase of the project, as well as the annual economic activity that the project would generate during its ongoing operations phase.

Method

To empirically evaluate the likely local economic impact attributable to the proposed High Bridge Solar project, the analysis employs a regional economic impact model called IMPLAN.¹⁹ The IMPLAN model is one of the most commonly used economic impact simulation models in the U.S., and in Virginia is used by UVA's Weldon Cooper Center, the Virginia Department of Planning and Budget, the Virginia Employment Commission, and other state agencies and research institutes. Like all economic impact models, the IMPLAN model uses economic multipliers to quantify economic impact.

Economic multipliers measure the ripple effects that an expenditure generates as it makes its way through the economy. For example, as when the High Bridge Solar project purchases goods and services – or when contractors hired by the facility use their salaries and wages to make household purchases – thereby generating income for someone else, which is in turn spent, thereby becoming income for yet someone else, and so on, and so on. Through this process, one dollar in expenditures generates multiple dollars of income. The mathematical relationship between the initial expenditure and the total income generated is the economic multiplier.

One of the primary advantages of the IMPLAN model is that it uses regional and national production and trade flow data to construct region-specific and industry-specific economic multipliers, which are then further adjusted to reflect anticipated actual spending patterns within the specific geographic study area that is being evaluated. As a result, the economic impact estimates produced by IMPLAN are not generic. They reflect as precisely as possible the economic realities of the specific industry, and the specific study area, being evaluated.

In the analysis that follows, these impact estimates are divided into three categories. First round direct impact measures the direct economic contribution of the entity being evaluated (e.g., own employment, wages paid, goods and services purchased by the High Bridge Solar project). Second round indirect and induced impact measures the economic ripple effects of this direct impact in terms of business to business, and household (employee) to business, transactions. Total impact is simply the sum of the preceding two. These categories of impact are then further defined in terms of employment (the jobs that are created), labor income (the wages and benefits associated with those jobs), and economic output (the total amount of economic activity that is created in the economy).

¹⁹ IMPLAN is produced by IMPLAN Group, LLC.

Construction Phase

This portion of the section assesses the economic and fiscal impact that the one-time pulse of activity associated with construction of the proposed High Bridge Solar project would have on the town of Farmville and on Prince Edward County.

Economic Impact Assumptions

The analysis is based on the following assumptions:

- Total capital investment associated with the High Bridge Solar is estimated to be approximately \$20.2 million.²⁰
- Of that total:
 - Architecture, engineering, site preparation, and other construction and development costs are estimated to be approximately \$9.8 million.²¹
 - Capital equipment costs are estimated to be approximately \$10.4 million.²² It is anticipated that no capital equipment would be purchased from vendors in Prince Edward County.²³
- High Bridge Solar would employ approximately 26 full-time equivalent construction workers.²⁴
- For ease of explication, all construction expenditures are assumed to take place during a twelve-month period.

Economic Impact

Applying these assumptions in the IMPLAN model results in the following estimates of one-time economic and fiscal impact. As shown in Table 1, construction of the proposed High Bridge Solar would directly provide a one-time pulse supporting approximately: 1) 8 job years, 2) \$0.5 million in wages and benefits, and 3) \$2.1 million in economic output to Prince Edward County.

Taking into account the economic ripple effects that direct investment would generate, the total estimated one-time impact on Prince Edward County would support approximately: 1) 19 job years, 2) \$0.9 million in wages and benefits, 3) \$3.6 million in economic output, and 4) \$0.2 million in state and local tax revenue.

²⁰ Data Source: High Bridge Solar, LLC. Investment estimate subject to change based on final design and vendor contracts.

²¹ Data Source: High Bridge Solar, LLC.

²² Data Source: High Bridge Solar, LLC.

²³ Data Source: IMPLAN Group LLC.

²⁴ Please note that for ease of explication the analysis is modeled based on full-time equivalent jobs over a 12-month period. Actual construction is anticipated to take approximately five months with approximately 63 construction workers, which is equivalent to 26 full-time workers.

Table 1: Estimated One-Time Economic and Fiscal Impact on Prince Edward County from Construction of the High Bridge Solar Project^{25,26}

Economic Impact	Employment (Job Years)	Wages and Benefits	Output
1st Round Direct Economic Activity	8	\$523,000	\$2,104,100
2nd Round Indirect and Induced Economic Activity	11	\$408,200	\$1,497,400
Total Economic Activity	19	\$931,200	\$3,601,500
Fiscal Impact			
State and Local Tax Revenue			\$174,200

**Totals may not sum due to rounding.*

Ongoing Operations Phase

This portion of the section assesses the annual economic and fiscal impact that the proposed High Bridge Solar project would have on the town of Farmville and on Prince Edward County during its anticipated 40-year operational phase.

Economic Impact Assumptions

The analysis is based on the following assumptions:

- High Bridge Solar would spend approximately \$0.2 million each year for maintenance and repair, vegetative control, and other operational expenditures.²⁷

Economic Impact

Applying these assumptions in the IMPLAN model results in the following estimates of annual economic impact. As shown in Table 2, annual operation of the proposed High Bridge Solar would on average directly support approximately: 1) 1 job, 2) \$37,800 in wages and benefits, and 3) \$0.1 million in economic output to Prince Edward County.

Taking into account the economic ripple effects that direct impact would generate, the total estimated annually supported impact on Prince Edward County would be approximately: 1) 1 job, 2) \$49,700 in wages and benefits, and 3) \$0.2 million in economic output.

²⁵ Please note that construction sector jobs are not necessarily new jobs, but the investments made can also support an existing job during the construction of the project. Additionally, it is important to note that it is not possible to know with certainty what proportion of jobs would go to county construction contractors or be filled by county residents. A construction sector job, also referred to as a job year, is equal to one job over one year. It is used to denote employment on construction projects where the construction schedule is not exactly one year and to account for the fact that actual on-site employment may vary over the period.

²⁶ Impacts from per diem spending of non-local construction workers included.

²⁷ Data Source: High Bridge Solar, LLC.

Table 2: Estimated Annual Economic Impact on Prince Edward County from the Ongoing Operation of the High Bridge Solar Project

Economic Impact	Employment	Wages and Benefits	Output
1st Round Direct Economic Activity	1	\$37,800	\$140,400
2nd Round Indirect and Induced Economic Activity	0	\$11,900	\$49,700
Total Economic Activity	1	\$49,700	\$190,100

Fiscal Impact Assumptions

The analysis is based on the following assumptions:

- Total capitalized investment in taxable machinery and tools in the High Bridge Solar is estimated to be approximately \$17.4 million.²⁸
- The approximately 58.8 fenced-in acres would be removed from the land use program and reassessed at a solar use assessment value of \$10,000 per acre.²⁹
- The initial interconnection request for High Bridge Solar was filed in October 2020.³⁰
- Tax rates and the depreciation schedule are assumed to remain constant throughout the analysis.
- High Bridge Solar's total generation capacity would be 12 MW AC.³¹
- High Bridge Solar would become operational in 2024 and would be privately owned.³²
- High Bridge Solar would have an operational life of 40 years.³³

Fiscal Impact

This portion of the section quantifies the direct fiscal contribution that the proposed High Bridge Solar would make to the town of Farmville. The analysis considers two scenarios. Both scenarios include the additional revenue that High Bridge Solar would generate for the town of Farmville over a 40-year period from the increased property assessments associated with reassessing the site as solar use property. Scenario 1 then describes the additional revenue High Bridge Solar would generate for the town of Farmville from taxes levied on the capital investment in machinery and tools, while Scenario 2 assumes tax revenue generated from capital investment will be replaced with revenue associated with a locally adopted revenue share ordinance and based on the project's total generation capacity.

²⁸ Data Source: High Bridge Solar, LLC.

²⁹ Data Source: Actual future assessment value for solar projects in Prince Edward County is currently unknown. The potential future assessment value is based on experience with comparable solar projects in Virginia.

³⁰ Data Source: High Bridge Solar, LLC.

³¹ Data Source: High Bridge Solar, LLC.

³² Data Source: High Bridge Solar, LLC.

³³ Data Source: High Bridge Solar, LLC.

Reassessment of Property

Table 3 details the increased tax revenue associated with reassessing the 58.8-acre solar site as solar use property. The town's real estate tax revenue from the fenced-in acreage after reassessment is estimated to be approximately \$770 per year, for a cumulative total of approximately \$30,600 over the project's anticipated 40-year operational life expectancy. In contrast, the property currently generates approximately \$320 per year for the town, for a cumulative total of approximately \$12,600 over 40 years.

Table 3: Estimated Town Revenue Generated by the Proposed High Bridge Solar Project over 40 Years from Real Estate Taxes

Estimated Increased Appraised Value of Property ³⁴	\$588,200
Town of Farmville Real Estate Tax Rate ³⁵	0.0013
Annual Town Real Estate Tax – Solar Use	\$770
Cumulative Revenue over 40 Years	\$30,600

**Totals may not sum due to rounding.*

Scenario 1: Taxation of Capital Investment in Machinery and Tools

Table 4 separately details the additional annual revenue that the proposed High Bridge Solar project would generate for the town of Farmville over a 40-year period from taxes levied on capital investment in machinery and tools. This estimate is calculated as: 1) the taxable portion of capital investments based on the stepdown local tax exemption pursuant to Virginia Code §58.1-3660³⁶, times 2) Prince Edward County's depreciation guidelines for machinery and tools³⁷, times 3) Town of Farmville's machinery and tools tax / personal property rate of \$1.50 per \$100 of assessed value.³⁸

As the data in Table 4 indicate, based on these calculations the estimated additional town revenue from taxation of capital investments associated with the proposed High Bridge Solar would be approximately \$5,230 in the project's first year of operation, with that figure projected to fluctuate thereafter as the equipment is depreciated and the value of the exemption reduced. The annual tax revenue is estimated

³⁴ Calculated as 58.82 acres times \$10,000 per acre.

³⁵ Data Source: Town of Farmville website.

³⁶ Virginia Code §58.1-3660 stipulates that solar facilities over 5 MW and under 150 MW with an interconnection request on or after January 1, 2019 are subject to a stepdown exemption from local property taxes. The amount of the exemption is 80 percent in the first five years, 70 percent in years six through ten, and 60 percent thereafter.

³⁷ Because the High Bridge Solar would be independently owned and does not meet the definition of an "Electric Supplier" because it is under 25 MW, it would be assessed locally. Although the actual potential local assessment methodology is not known, the analysis presented is based on the assumption that the investment would be assessed as machinery and tools because of the Virginia Department of Taxation Tax Ruling 14-37, which determined that production of electricity for sale or resale by a private entity is eligible for the industrial manufacturing processing exemption from sales and use taxes.

³⁸ Data Source: Town of Farmville website.

to increase to approximately \$10,500 in year 11 of the project and thereafter for a cumulative total of approximately \$379,400 over 40 years.

Table 4: Estimated Town Revenue by Proposed High Bridge Solar Investment Over 40 Years

Year	Total Capital Investment Subject to Exemption ³⁹	Depreciated Value of Taxable Capital Investment ⁴⁰	Additional Annual Town Tax Revenue Solar Investment ⁴¹
1	\$17,441,900	\$348,800	\$5,230
2	\$17,441,900	\$348,800	\$5,230
3	\$17,441,900	\$348,800	\$5,230
4	\$17,441,900	\$348,800	\$5,230
5	\$17,441,900	\$348,800	\$5,230
6	\$17,441,900	\$523,300	\$7,850
7	\$17,441,900	\$523,300	\$7,850
8	\$17,441,900	\$523,300	\$7,850
9	\$17,441,900	\$523,300	\$7,850
10	\$17,441,900	\$523,300	\$7,850
11	\$17,441,900	\$697,700	\$10,500
12	\$17,441,900	\$697,700	\$10,500
13	\$17,441,900	\$697,700	\$10,500
14	\$17,441,900	\$697,700	\$10,500
15	\$17,441,900	\$697,700	\$10,500
16	\$17,441,900	\$697,700	\$10,500
17	\$17,441,900	\$697,700	\$10,500
18	\$17,441,900	\$697,700	\$10,500
19	\$17,441,900	\$697,700	\$10,500
20	\$17,441,900	\$697,700	\$10,500
21	\$17,441,900	\$697,700	\$10,500
22	\$17,441,900	\$697,700	\$10,500
23	\$17,441,900	\$697,700	\$10,500
24	\$17,441,900	\$697,700	\$10,500
25	\$17,441,900	\$697,700	\$10,500
26	\$17,441,900	\$697,700	\$10,500
27	\$17,441,900	\$697,700	\$10,500
28	\$17,441,900	\$697,700	\$10,500
29	\$17,441,900	\$697,700	\$10,500

³⁹ Data Source: High Bridge Solar, LLC.

⁴⁰ Accounts for Prince Edward County's depreciation guidelines for Machinery and Tools. Also accounts for the stepdown exemption from local property taxes pursuant to Virginia Code §58.1-3660 for projects over 5 MW and under 150 MW with an interconnect request after January 1, 2019. The exemption is 80 percent in the first five years, 70 percent in years six through ten, and 60 percent thereafter.

⁴¹ Calculated pursuant to Virginia Code §58.1-2600. Because High Bridge Solar would be independently owned and does not meet the definition of an "Electric Supplier" because it is under 25 MW, it would be taxed at the Machinery and Tools / Personal Property tax rate of \$1.50 per \$100.

Year	Total Capital Investment Subject to Exemption ³⁹	Depreciated Value of Taxable Capital Investment ⁴⁰	Additional Annual Town Tax Revenue Solar Investment ⁴¹
30	\$17,441,900	\$697,700	\$10,500
31	\$17,441,900	\$697,700	\$10,500
32	\$17,441,900	\$697,700	\$10,500
33	\$17,441,900	\$697,700	\$10,500
34	\$17,441,900	\$697,700	\$10,500
35	\$17,441,900	\$697,700	\$10,500
36	\$17,441,900	\$697,700	\$10,500
37	\$17,441,900	\$697,700	\$10,500
38	\$17,441,900	\$697,700	\$10,500
39	\$17,441,900	\$697,700	\$10,500
40	\$17,441,900	\$697,700	\$10,500
CUMULATIVE TOTAL			\$379,400

**Totals may not sum due to rounding.*

Scenario 1: Total Fiscal Impact

Table 5 combines the results from the calculations depicted in Tables 3 and 4 to provide an estimate of the cumulative fiscal contribution that the proposed High Bridge Solar would make to the town of Farmville over its 40-year anticipated operational life under Scenario 1. As these data indicate, that cumulative total is approximately \$0.4 million.

Table 5: Estimated Cumulative Town Tax Revenue from the Proposed High Bridge Solar over 40 Years under Scenario 1⁴²

Town Real Estate Tax Revenue	\$30,600
Town Revenue from Taxation of Capital Investments	\$379,400
TOTAL Cumulative Revenue over 40 Years	\$409,900

**Totals may not sum due to rounding.*

Scenario 2: Revenue Share Ordinance

The following section describes the additional annual revenue that the proposed High Bridge Solar project would generate for the town of Farmville assuming the town adopts an energy revenue share ordinance under Virginia Code §58.1-2636. The Virginia Code currently stipulates that a locality may assess an annual revenue share of up to \$1,400 per megawatt (MW) alternating current (AC) generation capacity of a solar facility. However, legislation that was passed in the 2021 General Assembly (SB 1201/HB 2006) and went into effect on July 1, 2021, allows a 10 percent escalator to be applied to the

⁴² Total does not include the value of a potential siting agreement which is subject to negotiation between High Bridge Solar and the town of Farmville.

\$1,400 per MW revenue share every five years, beginning in 2026. Section 58.1-3660 further stipulates that capital investment associated with the solar project will be exempt from taxation if the town adopts an energy revenue share ordinance.

Table 6 details the revenue generated from a revenue share ordinance between High Bridge Solar and town of Farmville with the 10 percent escalator. Based on a total generation capacity of 12 MW AC and an assumed commissioning date of 2024, a revenue share ordinance would generate approximately \$1.0 million over the anticipated 40-year operational life of the project.

Table 6: Estimated Town Revenue Generated from a Revenue Share Ordinance over 40 Years

Year	MW	Revenue Share per MW with Escalator	Annual Town Revenue
1	12	\$1,400	\$16,800
2	12	\$1,400	\$16,800
3	12	\$1,540	\$18,500
4	12	\$1,540	\$18,500
5	12	\$1,540	\$18,500
6	12	\$1,540	\$18,500
7	12	\$1,540	\$18,500
8	12	\$1,694	\$20,300
9	12	\$1,694	\$20,300
10	12	\$1,694	\$20,300
11	12	\$1,694	\$20,300
12	12	\$1,694	\$20,300
13	12	\$1,863	\$22,400
14	12	\$1,863	\$22,400
15	12	\$1,863	\$22,400
16	12	\$1,863	\$22,400
17	12	\$1,863	\$22,400
18	12	\$2,050	\$24,600
19	12	\$2,050	\$24,600
20	12	\$2,050	\$24,600
21	12	\$2,050	\$24,600
22	12	\$2,050	\$24,600
23	12	\$2,255	\$27,100
24	12	\$2,255	\$27,100
25	12	\$2,255	\$27,100
26	12	\$2,255	\$27,100
27	12	\$2,255	\$27,100
28	12	\$2,480	\$29,800
29	12	\$2,480	\$29,800
30	12	\$2,480	\$29,800
31	12	\$2,480	\$29,800
32	12	\$2,480	\$29,800
33	12	\$2,728	\$32,700

Year	MW	Revenue Share per MW with Escalator	Annual Town Revenue
34	12	\$2,728	\$32,700
35	12	\$2,728	\$32,700
36	12	\$2,728	\$32,700
37	12	\$2,728	\$32,700
38	12	\$3,001	\$36,000
39	12	\$3,001	\$36,000
40	12	\$3,001	\$36,000
Cumulative Total			\$1,018,300

**Totals may not sum due to rounding.*

Scenario 2: Total Fiscal Impact

Table 7 combines the results from the calculations depicted in Tables 3 and 6 to provide an estimate of the cumulative fiscal contribution that the proposed High Bridge Solar would make to the town of Farmville over its 40-year anticipated operational life under Scenario 2. As these data indicate, that cumulative total is approximately \$1.0 million.

Table 7: Estimated Cumulative Town Revenue from the Proposed High Bridge Solar over 40 Years under Scenario 2⁴³

Town Revenue from Real Estate Tax	\$30,600
Town Revenue from Revenue Share Ordinance	\$1,018,300
TOTAL Cumulative Revenue over 40 Years	\$1,048,800

**Totals may not sum due to rounding.*

Siting Agreement

Siting agreements add significant value to the total fiscal impact of solar projects on their host localities. The Code of Virginia §15.2-2316.7 stipulates that a solar project is required to request a meeting with its potential host locality to discuss a voluntary siting agreement. The terms and conditions of a siting agreement vary by locality and project and can include the mitigation of any impact of the solar facility, payments for capital improvements, payments to address fiscal needs, and assistance with the local deployment of broadband.

Due to the variation in the value and payment schedule of siting agreements negotiated between localities and solar projects in Virginia, as well as the fact that these agreements can be subject to change until approved, the study does not include the siting agreement details for High Bridge Solar.

⁴³ Total does not include the value of a potential siting agreement which is subject to negotiation between High Bridge Solar and the town of Farmville.

Current Use

This section provides a benchmark for the previous estimates of the fiscal contribution that the proposed High Bridge Solar project would make to the town of Farmville by estimating the fiscal contribution that the site makes to the town in its current use.

Economic Impact

The actively used, fenced-in solar site would be approximately 58.8 acres of wooded land that currently does not provide any economic benefit to the town.⁴⁴

Fiscal Impact Assumptions

- The current assessment value of the affected acreage is approximately \$242,400.⁴⁵

Fiscal Impact

Table 8 details the estimated tax revenue that the proposed High Bridge Solar site generates for the town of Farmville in its current use. As the data in Table 8 indicate, the current town real estate tax revenue from the project site is estimated to be approximately \$320 per year, for a cumulative total of approximately \$12,600 over 40 years.

Table 8: Estimated Town Revenue Generated by the Proposed High Bridge Solar Project Site over 40 Years from Real Estate Taxes – Current Use

Estimated Assessed Value of Property – Current Use ⁴⁶	\$242,400
Town of Farmville Current Real Estate Tax Rate	0.0013
Estimated Annual Town Real Estate Tax – Current Use	\$320
Total Cumulative Revenue over 40 years	\$12,600

**Totals may not sum due to rounding.*

The estimates provided in this report are based on the best information available and all reasonable care has been taken in assessing that information. However, because these estimates attempt to foresee circumstances that have not yet occurred, it is not possible to provide any assurance that they will be representative of actual events. These estimates are intended to provide a general indication of likely future outcomes and should not be construed to represent a precise measure of those outcomes.

⁴⁴ Data Source: High Bridge Solar, LLC.

⁴⁵ Data Source: Derived from Prince Edward County's property assessment database. Includes the value of a potentially affected structure.

⁴⁶ Data Source: Derived from Prince Edward County's property assessment database.

**HIGH BRIDGE SOLAR
DECOMMISSIONING PLAN
MARCH 20, 2024**

Purpose

This decommissioning plan is provided by High Bridge Solar, LLC (the “Project Company”) and will detail the projected decommissioning demands associated with the proposed project.

The purpose of this decommissioning plan is to provide procedures and an opinion of probable construction cost for partial or full closure of the solar facility. The Applicant notes that the Town of Farmville does not currently have regulations pertaining to decommissioning. The Town has directed the Applicant to reference the Prince Edward Zoning Code which requires a decommissioning plan and performance guarantees to supplement plans submitted as part of the Special Use Permit package. This decommissioning plan details provisions for facility deconstruction and site restoration to satisfy the specific guidelines set forth in the Project’s Special Use Permit. This decommissioning plan shall take effect upon facility abandonment, discontinuation of operation, or expiration of the use permit as defined by Prince Edward Zoning Code.

Site Location

High Bridge Solar proposes to build a photovoltaic (PV) solar facility (“Solar Facility”) with a nameplate capacity of approximately 12 MW_{AC} (“Project”), in the Town of Farmville, VA. The Facility is located at 510 Cedar Avenue Farmville, VA 23901 and within tax parcel identification number 0024000(0A)00-06 (“Property”).

Anticipated Service Life of the Project

Unless the system is purchased by the Town or other entity, the facility shall be decommissioned in accordance with this Decommissioning Plan (“Plan”), restoring the site to as close to its agreed-upon post-decommissioned state as practicably possible upon expiration or termination of the Power Purchase Agreement. The Solar Facility will have a maturity date of twenty (20) years but carries an expected useful lifetime of more than 30 years. The expected useful life of the Project is forty (40) years and is expected to be operational for the full forty (40) years.

Decommissioning responsibilities include but are not limited to the removal of above and below ground cables, perimeter fencing, debris, structures, or equipment to include concrete or steel foundations and pads, all metal structures (mounting racks), all photovoltaic (PV) modules, alternators, generators,

transformers, inverters, fans, switch boxes, fixtures, etc., and otherwise restoring the premises to its natural condition for other approved state. "Natural Condition" shall mean the stabilization of soil to a depth of three (3) feet and restoration of site vegetation and topography to pre-existing conditions, provided that the exact method and final site restoration plan shall be subject to site plan review and approval giving, among other items, consideration to impact upon future site use, environmental and adjacent property impacts. Other Plan activities include the management of materials and waste, projected costs, and a decommissioning fund agreement overview.

Decommissioning Risk Over the Lifecycle of a Project

The probability of an event that would lead to abandonment or long-term interruption is extremely low during the first 15 to 20 years of the Project life. Accordingly, the risk of decommissioning the Project is extremely low during this time frame. The reasons why the risk to decommission the Project is extremely low in the early phases of the Project include, but are not limited to:

- Project owners have sophisticated financing structures that allow the lender or tax equity partner to step in and rectify the event that may lead to abandonment.
- Most critical solar components have original equipment manufacturer (OEM) warranties with terms exceeding five years that include labor and parts. A warranty is an agreement or guarantee outlined by a manufacturer to a customer that defines performance requirements for a product or service. Warranties give customers a form of insurance if the purchased product or service does not adhere to quality standards. These warranties assure the Project owner, financing parties, and other stakeholders, that equipment will perform as expected which minimizes the risk of a decommissioning event. Average warranty lengths for critical solar components range from 5 to 10 years, with production warranties on solar panels extending to 20 to 25 years.
- Solar projects consist of many networked components designed to convert solar radiation into electrical energy. The failure of any single component will not result in a substantial reduction of energy generation that could lead to a decommissioning event.
- Solar projects are required to maintain replacement value property damage insurance coverage and business interruption insurance coverage. Business interruption insurance covers the loss of income that a business suffers after a disaster or equipment failure. Typical solar business interruption insurance covers income loss for twelve months from the date of the event triggering the loss.
- The replacement costs of solar components will typically decline over time, and accordingly, costs to replace failed or damaged equipment after lapsed OEM warranties will not create large financial hurdles for the Project.
- In the early stages of the Project, the resale value of the equipment is significantly higher than the decommissioning costs, resulting in a net positive (revenue).

Considering the reasons stated above, a decommissioning bond early in the life of a solar project life is not required to assure the coverage facility removal and site restoration costs.

Solar power is an increasingly popular form of renewable energy around the world and as an alternative to the burning of fossil fuels, solar ranks alongside wind and hydropower as essential energy options for the future of the planet. Solar also offers the additional benefit of being easier to build, operate, and decommission with minimal environmental risks. Recent rises in popularity and use can be linked to lower installation and operation costs and it is expected that this pattern will continue, further reducing the risk of a decommissioning event.

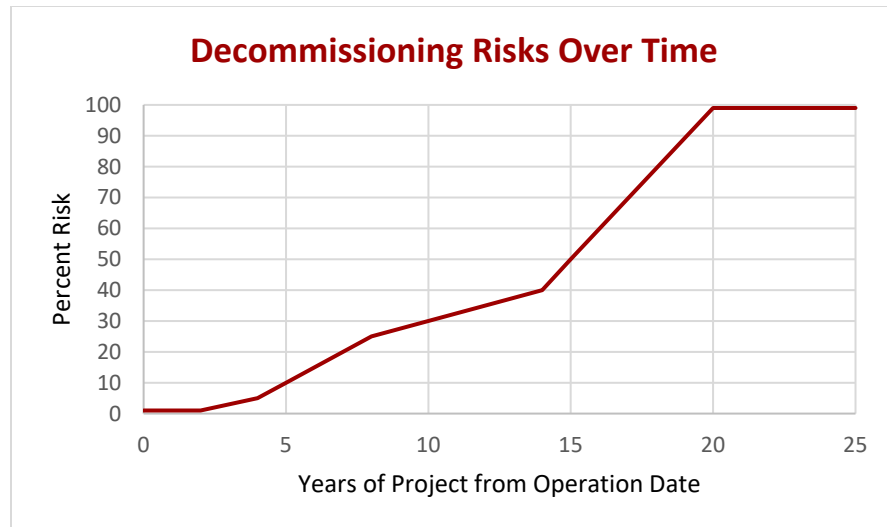
Decommissioning Risks Over Time

As previously noted, the probability of a decommissioning event that would lead to abandonment or long-term financial interruption is extremely low during the first 15 to 20 years of the Project life and accordingly, the financial risk to decommission the Project is also extremely low. A risk analysis approach is presented here for informational purposes only and has not been considered in the decommissioning cost estimates present in this Plan.

It is important to note that there are two aspects to consider when evaluating the risk for decommissioning the Project:

1. The risk of the need to decommission the Project as a whole (Project termination risk), and
2. The risk of failing to recuperate the cost of the decommissioning activities (decommissioning funding).

The most important concern for the Town of Farmville is the ability to recuperate the cost of decommissioning and restoration of the land to pre-Project conditions. The presence of a Power Purchase Agreement (PPA) in the first 20 years of the Project makes the likelihood of decommissioning very low during that time. The graph below summarizes the estimated decommissioning risk of cost recovery for the Project. The graph utilizes a “one percent” risk as the lowest risk; however, the financial value of the Project or equipment in the early years would far exceed the cost of the decommissioning and restoration activities and therefore, the graph is conservative.



The factors taken into consideration in estimating the risk include, but were not limited to:

- Years 1-5 – Minimal Project termination or financial risk due to presence of PPA with guarantee to purchase power, resale of value components, component warranties, value of facility.
- Years 5-10 – Similar consideration of previous period, except minimal increased financial risk due to the decrease in resale value of used components and rise in technological improvements of new equipment in market.
- Years 10-15 – Similar consideration of previous period, with slightly increased risk as warranties start to expire. Value of equipment is still substantial but decreasing.
- Years 15-20 – Similar consideration of previous period, warranties continue to expire; value of equipment diminishes with age and technological improvements in market.
- Years 20-25 – PPA expires, Project termination and funding risks increase, value of equipment diminishes, and technological improvements in market. A rise in salvage value of removed equipment due to diminishing natural resources and improvements in the efficiency of recycling/extraction technologies will offset the cost of decommissioning.

Commencement of Decommissioning

This Plan assumes that the Facility will be decommissioned under any of the following conditions:

1. The land lease (including the exercise of any extension options) ends and will either not be renewed, or a new lease will not be entered into for the Project.
2. The system does not produce power for sale for a consecutive 365-day period, except in the instance of a force majeure event in which the Project is being repaired and/or restored.
3. The system is damaged and will not be repaired or replaced.

Removal of Nonutility Owned Equipment

To decommission the Solar Facility, the Project will include at a minimum:

- Disconnection from the utility power grid
- Removal of all Facility components: panels, inverters, wire, cable, combiner boxes, transformers, racking, weather monitoring, control system apparatus, etc.
- Removal of all non-utility owned equipment (at point of interconnection), conduits, structures, fencing, and foundations to a depth of at least three feet below grade.
- Restoration of property to a natural condition reasonably similar to its condition prior to Facility installation, or as initially agreed upon.
- Plant vegetation suitable for the location, native to the region, and which matches surrounding vegetation.

The owner of the leased property may request in writing for certain items to remain, e.g., access roads, travel ways, internal paths, landscaping, pads, or other items which will serve a future permitted site use to remain.

This decommissioning plan is based on current best management practices and procedures. This Plan may be subject to revision based on new standards and emergent best management practices at the time of decommissioning. Permits will be obtained as required and notification will be given to necessary stakeholders prior to decommissioning.

The decommissioning process will maximize the recycling, reuse and salvage of applicable facility components, which are outlined in the opinion of probable construction costs. Based on the extent of decommissioning, prior to beginning construction activities, the developer will submit applicable demolition and construction plans and permit applications which will outline the schedule and extents of demolition. Decommissioning activities will not begin prior to issuance of approved permits by local regulatory agencies with appropriate jurisdiction.

Restoration of Property

In order to adequately restore the site to its previous condition, documentation using pre-construction video and/or digital photography will be performed prior to construction activities. This information will be reviewed prior to preparation of decommissioning demolition documents and included in the submittal to the County. Pre-construction documentation will also consist of detailed descriptions of existing vegetative and soil conditions as well as existing topography and drainage patterns.

At the time of decommissioning, the Project Company will restore the Solar Facility to a meadow-like condition. All waste and excess materials will be disposed of in accordance with municipal, provincial and federal regulations. Waste that can be recycled under municipal programs will be recycled accordingly. Provided, however, the Project Company shall not be required to replace any structures that were removed to build the Solar Facility.

The restoration will consist of de-compaction of the topsoil by disking or tilling and re-vegetation of the property. Mass grading is not anticipated since the initial project will not alter topography significantly. At the end of the project the area will be seeded and fertilized with native vegetation as needed to return the site to as close as practicable to original or initially agreed-upon condition. Landscaping and paved entrance will remain following site restoration. The future use of the land will be determined at the time of decommissioning. Deciding factors will be influenced by Town of Farmville land use and comprehensive plans and regulations at such time in the future.

The developer will coordinate with the Town of Farmville to monitor vegetation and drainage following restoration until permanent vegetation is established. Erosion and sediment control, re-seeding, soil stabilization, weed control and fertilization will be provided by the developer as needed until the site is stabilized and approved to be completed by the Town of Farmville.

Upon completion of the site restoration, a final report of activities will be submitted to the Town documenting the process and results.

Time Period to Complete Decommissioning

The Project Company will have 365-days from the date decommissioning commences to complete decommissioning. Provided, however, the Project Company shall be able to request an extension upon approval of the board of supervisors if it is in good faith diligently decommissioning and is delayed due to weather conditions or other items outside its control.

Party Responsible for Decommissioning

The Project Company is responsible for this decommissioning, provided however that the Project Company may contract with a third-party to perform the decommissioning on its behalf. Nothing in this plan relieves any obligation that the real estate property owner may have to remove the Facility as outlined in the Special Use Permit in the event the operator of the Facility does not fulfill this obligation.

Decommissioning Cost Estimate and Bonding

An engineer's opinion of probable construction cost and analysis of material salvage value were prepared as part of this decommissioning plan. Exhibit A summarizes the probable costs and salvage values associated with decommissioning. Exhibit B summarizes probable costs associated with decommissioning exclusive of salvage values. Exhibit C summarizes probable costs associated with trucking panels to approved recycling facilities.

Prince Edward County Zoning Code requires High Bridge Solar to provide a faithful performance bond as a financial guarantee for proper decommissioning. This bond is separate from, and in addition to, performance bonding submitted for permitting. Furthermore, High Bridge Solar will be required to submit detailed engineering plans at the time of decommissioning, and obtain construction permits as required by appropriate authorities.

Expenses associated with decommissioning the Project will be dependent on labor costs at the time of decommissioning. For the purposes of this report, current RSMeans data was used to estimate labor, material, and equipment expenses. Inflation of the labor costs were not factored into the estimates.

Total probable cost of decommissioning in Year 5 is estimated to be **\$2,605,664.82**.

Resale/Salvage Value Estimate

There is a robust secondary market for resale of solar PV panels worldwide and a network of facilities available for recycling panels. Solar PV panels are estimated to degrade less than 0.5% per year, meaning they're expected to operate at 90% of capacity after 20 years. Panel manufacturers will guarantee the performance for each individual module and replace defective modules per the terms of warranty. Panels can therefore be sold for a price higher than their scrap value.

In general, the highest component value would be expected at the time of construction with declining value over the life of the Project. Over most of the Project's life, components such as the solar panels

could be sold in the wholesale market for reuse or refurbishment. As panel efficiency and power production decrease due to aging and/or weathering, the resale value will decline accordingly. Secondary markets for used solar components include other utility scale solar facilities with similar designs that may require replacement equipment due to damage or normal wear over time; other buyers (e.g., developers, consumers) that are willing to accept a slightly lower power output in return for a significantly lower price point when compared to new equipment. The solar facility's additional supporting components, such as inverters, transformers, racking and piles, can be dismantled and resold for scrap value. Inverters and transformers are comprised of salvageable materials such as copper, aluminum, and silver. Piles and other steel components can likewise be recovered and salvaged. Resale values at the end of Year 5 for equipment of significant value were calculated with straight-line depreciation after an instant depreciation of the original material cost.

A current sampling of reused solar panels indicates a wide range of pricing depending on age and condition (\$0.10 to \$0.50 per watt). Future pricing of solar panels is difficult to predict currently, due to the relatively young age of the market, changes to solar panel technology, and the ever-increasing product demand. A conservative estimation of the value of solar panels in Year 5 at \$0.18 per watt would yield approximately \$2,100,878.31. Increased costs of removal, for resale versus salvage, would be expected to preserve the integrity of the panels; however, the net revenue would still be substantially higher than the estimated salvage value.

The resale value of components such as racking, may decline more quickly; however, the salvage value of the steel that makes up a larger portion of the tracker is expected to stay at or above the value used in this report.

The price used to value the steel in this report is \$212.12 per ton. The price used to value copper in this report is \$3.24 per lb. Current steel and copper values are referenced from RS Means Heavy Construction Cost Data, 29th Edition.

Total probable salvage value of decommissioning in Year 5 is estimated to be **\$3,102,630.24**. This is a standalone value and not included in the decommissioning construction cost estimate provided in the previous section.

EXHIBIT A

HIGH BRIDGE SOLAR TOWN OF FARMVILLE

Decommissioning Estimate Pro Forma w/o Salvage

The Engineer has no control over the cost of labor, materials, equipment, or over the Contractor's methods of determining prices or over competitive bidding or market conditions. Opinions of probable costs provided herein are based on the information known to Engineer at this time and represent only the Engineer's judgment as a design professional familiar with the construction industry. The Engineer cannot and does not guarantee that proposals, bids, or actual construction costs will not vary from its opinions of probable costs. LS = Lump Sum, HR = Hours, EA = Each, LF = Linear Feet.

Item	Quantity	Unit	Unit Price	Total Price
Mobilization	1	LS		\$108,710.00
Supervision	900	HR	\$92.00	\$82,800.00
Temporary Facilities	1	LS		\$13,440.00
Safety	1	LS		\$9,110.00
Legal Expenses	1	LS		\$2,390.00
General Liability Insurance	1	LS		\$9,760.00
Contractor's G&A	1	LS		\$18,430.00
SWPPP, Erosion Control Measures (Disturbed Area)	78	Ac	\$670.00	\$52,561.50
Seeding	78	Ac	\$1,957.26	\$152,666.44
Tilling 6" topsoil/scarifying access road and rough grading existing soil	78	Ac	\$1,075.56	\$83,893.68
Remove and Recycle Chainlink Fence	14,250	LF	\$5.00	\$71,246.26
Remove Power Pole	8	EA	\$427.19	\$3,417.52
Remove and Recycle AC Cables	9,000	LF	\$3.05	\$27,449.92
Remove and Recycle DC Cables	3,002,973	LF	\$0.15	\$457,231.36
Backfill AC and DC trenches	2,957,555	LF	\$0.23	\$682,626.79
Remove and Recycle Inverters/Transformers	3	EA	\$1,656.55	\$4,969.65
Remove and Recycle Photovoltaic Modules	28,704	EA	\$9.32	\$267,521.28
Remove and Recycle Piles	6,000	EA	\$37.73	\$226,380.00
Remove and Recycle Support Assemblies	3,771,948	LB	\$0.04	\$137,130.87
Contaminated Soils Testing	1	LS		\$2,000.00
Reclamation Monitoring and Maintenance	1	LS		\$5,000.00
Subtotal:				\$2,418,735.27
Inflation (1.5%/year):				\$186,929.55
Total:				\$2,605,664.82

Notes:

1. A site of similar size was used to derive potential quantities for erosion and sediment control (scaling from 36 MW to XX MW). Quantities were determined by comparing "unit/MW" quantities directly.
2. Labor productivity and unit rates were derived from RSMeans Online (Heavy Construction, 2023 data).
3. Labor, material, and equipment rates are based on the RSMeans City Cost Index (CCI) for [Closest Location to Project].
4. Equipment rental rates determined from RSMeans and/or local rental facilities.

EXHIBIT B

**HIGH BRIDGE SOLAR
TOWN OF FARMVILLE
Decommissioning Salvage/Resale Values**

Table 1. Material Salvage Values

Line Item	Quantity	Unit	Quantity	Unit	Unit Density (Lb/unit)	Weight (Lb)	Price/Lb	Unit Price	Total Price
Copper Wire			3011973	lf	0.05	150,599	\$ 3.24	\$ 0.16	\$ 487,939.63
Steel									
Piles	6000	EA	96000	lf	7	672,000	\$ 0.11	\$ 0.77	\$ 73,920.00
Racks	28704	Panels	7697.8534	ft ³	490	3,771,948	\$ 0.11	\$ 53.90	\$ 414,914.30
Fence	14250	LF	14250	ft	5.6	79,800	\$ 0.11	\$ 0.62	\$ 8,778.00

Table 2. Equipment Resale Values

Line Item	Quantity	Unit	Unit Price	Original Total Cost	Instant Depreciation	End of Life Salvage Value	Useful Life	Age of Component at Decommissioning	Resale Value
Modules	28704	EA	\$73.19	\$ 4,200,000.00	\$ 3,000,000.00	\$ 2,100,878.31	5	5	\$ 2,100,878.31
Inverters	3	EA	18000	\$ 54,000.00	\$ 27,000.00	\$ 5,400.00	10	5	\$ 16,200.00
Transformers	42	EA	40000	\$ 1,200,000.00	\$ 600,000.00	\$ 120,000.00	30	5	\$ 42,000.00
Vista Switch	4	EA	25000	\$ 25,000.00	\$ 12,500.00	\$ 2,500.00	30	5	\$ 8,750.00

References: [Israpapp.com](https://www.iscrapapp.com) for current steel and copper values
RS Means Heavy Construction Cost Data, 29th Edition



MEETING DATE: Wednesday, April 17, 2024 (Planning Commission)

ITEM NO. 10

REQUEST: **CUP24-001**, High Bridge Solar, LLC's request for a conditional use permit to allow for a utility service, major (utility scale solar facility) per Town Code Section 29.22.a. The 131 acre site is located at the terminus of Cedar Avenue, northeast of its intersection with East Second Street on Parcel 0024000(OA)00-006. This property is zoned R-3 High Density Residential.

BACKGROUND: Written staff report and other supporting materials and verbal report by Ashley Atkins-Austin, Director of Community Development.

RECOMMENDATION: That the Planning Commission recommends approval of CUP24-001 to Town Council.

MOTION: _____

SECONDED: _____

Commissioner	Yes	No
O'Connor		
Weiss		
Davenport		
Patterson		
Crute		
Miller		



MEMORANDUM

To: C. Scott Davis, LPD, Town Manager
From: Ashley Atkins-Austin, CZA, Director of Community Development
Date: Friday, April 5, 2024
Subject: Director's Monthly Report (March 2024), Department of Community Development

Statistics

Item	Amounts	Notes
Zoning Permits	17	
Building Permits	26	
	0	New single-family construction
	18	Trades (mechanical, electrical, plumbing)
	2	Other Structural (interior renovations)
	6	Other Structural (exterior improvements, decks, accessory buildings, porches, etc.)
	0	Signs
FAB Ridership	9,364 riders, 14,936 miles, 1,038 service hours	
Fuel Sold at KVVX	28 sales totaling \$6240.37 1068.20 Gallons	661.30 gallons A V 406.90 gallons Jet A
Arrivals/Departures at KVVX	See chart	Figures represent 7-day trailing averages only. South Boston (W78) also provided for comparison.

Items of interest

- The Staff participated in the following meetings and trainings in March:
 - o Permittechnation Monthly meeting (Watkins)
 - o James Madison Building and Code Officials Association Regional Meeting (Ramsay, Watkins)
 - o Local Building Officials check-in (Ramsay)
 - o Electrical Inspection – Residential class (Ramsay)
 - o Mechanical/Fuel Gas Inspection – Residential class (Ramsay)
 - o Farmville DCR Community Assistance Meeting (Austin, Ramsay)

- Farmville Regional Airport (KFVX) updates:
 - Additional airport usage figures are attached. Flightaware.com provides 7-day trailing averages for free, and more specific data is available for purchase. For comparison, Staff includes the same data for William M. Tuck Airport (W78) in South Boston.
- The Planning Commission did not meet in the month of March 2024. No applications had been filed, and no public hearings were scheduled or advertised.
- The Board of Zoning Appeals did not meet in the month of March 2024. No applications had been filed.

Staff Contacts | Department of Community Development

Ashley Austin	Director of Community Development	aaustin@farmvilleva.com	434-392-2114
Phillip Moore	Building Official	pmoore@farmvilleva.com	434-392-8465
John Ramsay	Residential Code Inspector	jramsay@farmvilleva.com	434-392-8465
Michelle Watkins	Administrative Assistant II / Permit Tech	mwatkins@farmvilleva.com	434-392-8465

March 2024 Arrivals and Departures

Farmville Regional Airport KFBX

Date	Day	KFBX Arrivals & Departures *	KFBX Notes Farmville	W78 Arrivals & Departures * South Boston
3/1/2024	FRIDAY	6		4
3/2/2024	SATURDAY	6		4
3/3/2024	SUNDAY	6		4
3/4/2024	MONDAY	8		5
3/5/2024	TUESDAY	6		0
3/6/2024	WEDNESDAY	6		6
3/7/2024	THURSDAY	7		6
3/8/2024	FRIDAY	8		6
3/9/2024	SATURDAY	0		5
3/10/2024	SUNDAY	0		0
3/11/2024	MONDAY	0		5
3/12/2024	TUESDAY	10		6
3/13/2024	WEDNESDAY	14		5
3/14/2024	THURSDAY	12		6
3/15/2024	FRIDAY	14		5
3/16/2024	SATURDAY	15		5
3/17/2024	SUNDAY	14		6
3/18/2024	MONDAY	13		7
3/19/2024	TUESDAY	12		7
3/20/2024	WEDNESDAY	0		6
3/21/2024	THURSDAY	10		6
3/22/2024	FRIDAY	9		7
3/23/2024	SATURDAY	0		6
3/24/2024	SUNDAY	8		6
3/25/2024	MONDAY	7		6
3/26/2024	TUESDAY	10		0
3/27/2024	WEDNESDAY	0		0
3/28/2024	THURSDAY	9		6
3/29/2024	FRIDAY	9		6
3/30/2024	SATURDAY	7		4
3/31/2024	SUNDAY	8		5

* Source: FlightAware.com- 7-day trailing averages