

Figure 3.

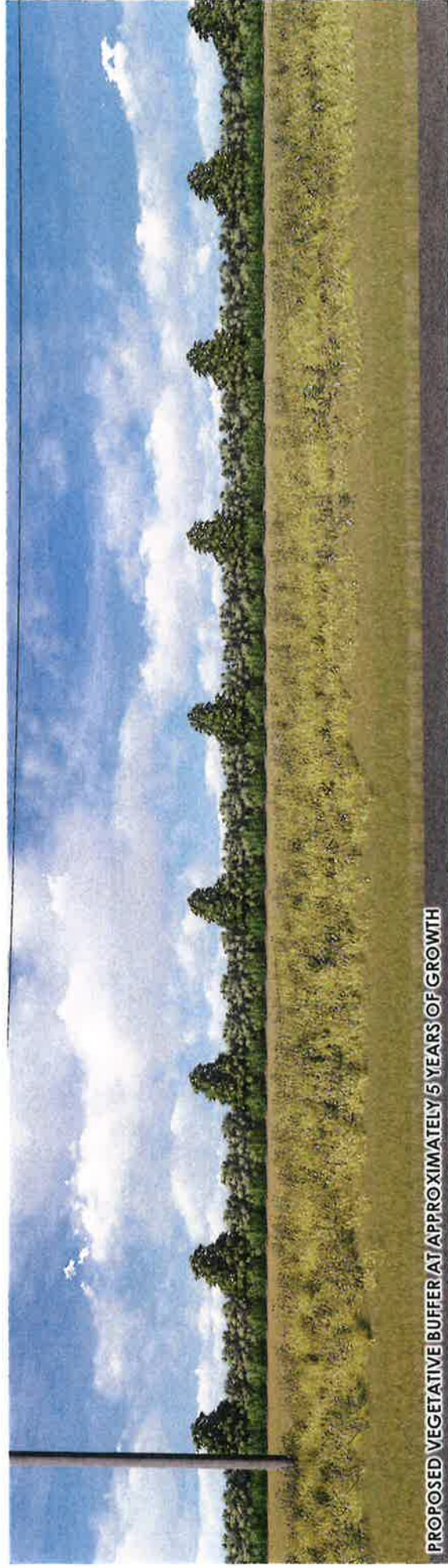
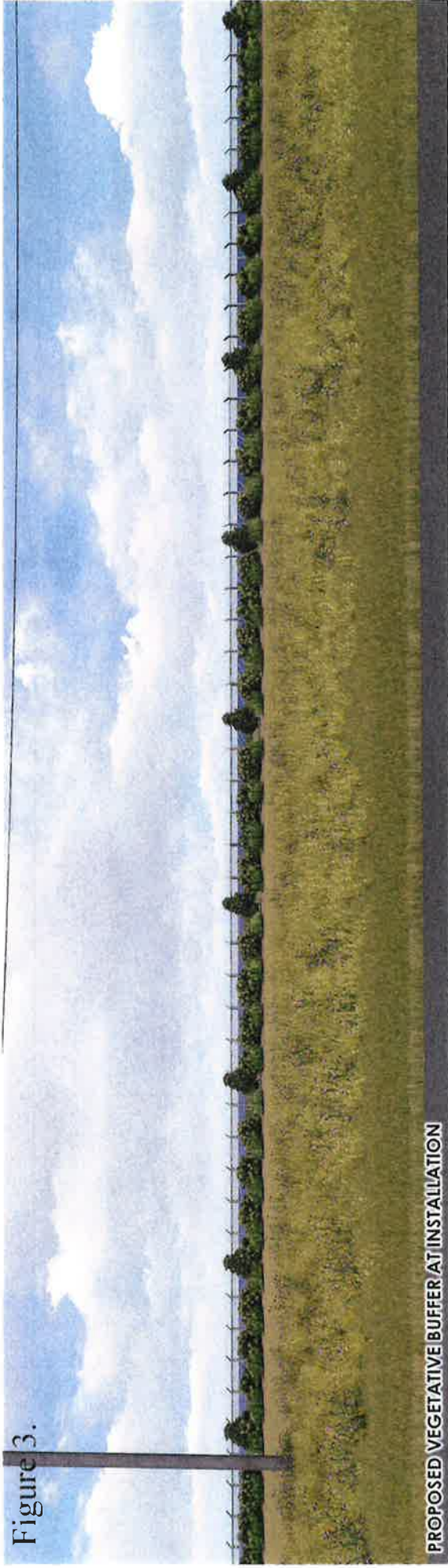




Figure 4.



Existing Driveway located along Alden Road, to the north near  
the Railroad on parcel 550(OA)00-009-0





Existing Driveway located along Alden Road, to the south on  
parcel 550(0A)00-013-0



Location where driveway to access to the facility portion located west of Arwood Road





600 Park Offices Dr Suite 285  
Research Triangle Park, NC 27709

PO Box 13092  
Durham, NC 27709

T: 984-2445069

101 Second Street, Ste. 1250  
San Francisco, CA 94105

T 415 626 1802  
F 415 449 3466

**RE: Notice of Intent for Solar Energy Project – full PBR projects**

January 10, 2020

Ms. Mary E. Major  
Department of Environmental Quality  
P. O. Box 1105  
629 East Main Street  
Richmond, VA 23218  
[mary.major@deq.virginia.gov](mailto:mary.major@deq.virginia.gov)

Dear Ms. Major:

On behalf of Warwick PV1, LLC, I am providing notice to the Department of Environmental Quality of our intention to submit the necessary documentation for a permit by rule for a small renewable energy project (solar) in Prince George County, Virginia, pursuant to Virginia Regulation 9VAC15-60. This small renewable energy project is located in eastern Prince George County, Just outside of the Town of Disputanta and approximately 9 miles to the west of the Town of Waverly and 13 miles east of the City of Petersburg along HWY 460. This project is located on 20 land parcels and a total area proposed for use by the solar farm is approximately 393 acres within the fence-line. This approximate rated capacity of this project is 60 megawatts (AC). The estimated number of solar modules is 195,832 on a single axis tracker system.

If the Department has questions regarding this project, please contact Forrest Melvin Coldren at [FMelvin@ecoplexus.com](mailto:FMelvin@ecoplexus.com) or by phone at 919-440-8149. My office mailing address is PO Box 13092, Durham, NC 27709.

Sincerely yours,

**Forrest Coldren**  
Permitting Specialist, Ecoplexus, Inc.



Ecoplexus Japan  
2-28-4 Sendagaya  
Inui Building 4<sup>th</sup> Floor  
Shibuya-Ku, Tokyo, Japan

Ecoplexus Mexico  
Paseo de la Reforma 350, 10<sup>th</sup> Floor  
Colonia Juarez, CP 6600  
Mexico City, Mexico

Ecoplexus Vietnam  
16/F Saigon Tower  
29 Le Duan Street, District 1  
Ho Chi Minh City

***Generation Interconnection  
System Impact Study Report***

***For***

***PJM Generation Interconnection Request  
Queue Position AC2-078***

***Disputanta – Waverly 115kV  
22.8MW Capacity / 60MW Energy***

**April 2018**

## Introduction

This System Impact Study (SIS) has been prepared in accordance with the PJM Open Access Transmission Tariff, Section 205, as well as the System Impact Study Agreement between RES America Developments, Inc., the Interconnection Customer (IC) and PJM Interconnection, LLC (PJM), Transmission Provider (TP). The Interconnected Transmission Owner (ITO) is Virginia Electric and Power Company (VEPCO).

## Preface

The intent of the System Impact Study is to determine a plan, with approximate cost and construction time estimates, to connect the subject generation interconnection project to the PJM network at a location specified by the IC. As a requirement for interconnection, the IC may be responsible for the cost of constructing Network Upgrades, which are facility additions, or upgrades to existing facilities, that are needed to maintain the reliability of the PJM system. All facilities required for interconnection of a generation interconnection project must be designed to meet the technical specifications (on PJM web site) for the appropriate transmission owner.

In some instances an IC may not be responsible for 100% of the identified network upgrade cost because other transmission network uses, e.g. another generation interconnection or merchant transmission upgrade, may also contribute to the need for the same network reinforcement. The possibility of sharing the reinforcement costs with other projects may be identified in the Feasibility Study, but the actual allocation will be deferred until the System Impact Study is performed.

The System Impact Study estimates do not include the feasibility, cost, or time required to obtain property rights and permits for construction of the required facilities. The IC is responsible for the right of way, real estate, and construction permit issues. For properties currently owned by Transmission Owners, the costs may be included in the study.

## General

The IC has proposed a solar generating facility located in Prince George County, Virginia. The installed facilities will have a total capability of 60 MW with 22.8 MW of this output being recognized by PJM as capacity. The proposed in-service date for this project is 12/31/2019.

**This study does not imply an ITO commitment to this in-service date.**

## Point of Interconnection

AC2-078 will interconnect with the ITO transmission system via a new three breaker ring bus switching station that connects on the Disputanta - Waverly 115kV line.

## Cost Summary

The AC2-078 interconnection request will be responsible for the following costs:



Description	Total Cost
Attachment Facilities	\$1,550,000
Direct Connection Network Upgrades	\$5,500,000
Non Direct Connection Network Upgrades	\$ 800,000
Allocation for New System Upgrades	\$ 0
Contribution for Previously Identified Upgrades	\$1,592,700
<b>Total Costs</b>	<b>\$9,492,700</b>

## **Attachment Facilities**

Generation Substation: Install metering and associated protection equipment. The estimated cost is \$550,000.

Transmission: Construct approximately one span of 115 kV Attachment line between the generation substation and a new AC2-078 Switching Station. The estimated cost for this work is \$1,000,000.

The estimated total cost of the Attachment Facilities is \$1,550,000. It is estimated to take 18-24 months to complete this work. These preliminary cost estimates are based on typical engineering costs. A more detailed engineering cost estimates are normally done when the IC provides an exact site plan location for the generation substation during the Facility Study phase. These costs do not include CIAC Tax Gross-up. The single line is shown below in Attachment 1.

## **Direct Connection Cost Estimate**

Substation: Establish the new 115 kV AC2-078 Switching Substation (interconnection substation). The estimated cost of this work scope is \$5,500,000. It is estimated to take 24-36 months to complete this work.

## **Non-Direct Connection Cost Estimate**

Transmission: Install transmission structure in-line with transmission line to allow the proposed interconnection switching station to be interconnected with the transmission system. The estimated cost is \$800,000 and it is estimated to take 24-30 months to complete.

Remote Terminal Work: During the Facilities Study, ITO's System Protection Engineering Department will review transmission line protection as well as anti-islanding required to accommodate the new generation and interconnection substation. System Protection Engineering will determine the minimal acceptable protection requirements to reliably interconnect the proposed generating facility with the transmission system. The review is based on maintaining system reliability by reviewing ITO's protection requirements with the known transmission system configuration which includes generating facilities in the area. This review may determine that transmission line protection and communication upgrades are required at remote substations.

## System Reinforcements

Violation #	Ruling Violation #	Loading	Upgrade Description	Upgrade Cost	Allocated Cost
# 1	#1	From 112.49% to 113.34%	Elmont 500 – 230 kV Tx#1 replace the 500-230 kV transformer #1 increase its line rating to 1134 MVA (normal), 1203 MVA (emergency), and 1365 MVA (load dump). It is estimated to cost \$17,500,000 and 24-30 months to engineer and construct.	\$17,500,000	\$1,592,700
<b>Total Estimated Allocated Cost of Network Upgrades</b>				<b>\$1,592,700</b>	



## **Interconnection Customer Requirements**

ITO's Facility Interconnection Requirements as posted on PJM's website

<http://www.pjm.com/~media/planning/plan-standards/private-dominion/facility-connection-requirements1.ashx>

**Voltage Ride Through Requirements** - The Customer Facility shall be designed to remain in service (not trip) for voltages and times as specified for the Eastern Interconnection in Attachment 1 of NERC Reliability Standard PRC-024-1, and successor Reliability Standards, for both high and low voltage conditions, irrespective of generator size, subject to the permissive trip exceptions established in PRC-024-1 (and successor Reliability Standards).

**Frequency Ride Through Requirements** - The Customer Facility shall be designed to remain in service (not trip) for frequencies and times as specified in Attachment 2 of NERC Reliability Standard PRC-024-1, and successor Reliability Standards, for both high and low frequency condition, irrespective of generator size, subject to the permissive trip exceptions established in PRC-024-1 (and successor Reliability Standards).

**Reactive Power** - The Generation Interconnection Customer shall design its non-synchronous Customer Facility with the ability to maintain a power factor of at least 0.95 leading to 0.95 lagging measured at the generator's terminals.

**Meteorological Data Reporting Requirement** - The solar generation facility shall, at a minimum, be required to provide the Transmission Provider with site-specific meteorological data including:

- Temperature (degrees Fahrenheit)
- Atmospheric pressure (hectopascals)
- Irradiance
- Forced outage data

## **Revenue Metering and SCADA Requirements**

### **PJM Requirements**

The Interconnection Customer will be required to install equipment necessary to provide Revenue Metering (KWH, KVARH) and real time data (KW, KVAR) for IC's generating Resource. See PJM Manuals M-01 and M-14D, and PJM Tariff Sections 24.1 and 24.2.

### **Interconnected Transmission Owner Requirements**

Metering and SCADA/Communication equipment must meet the requirements outlined in section 3.1.6 Metering and Telecommunications of ITO's Facility Connection Requirement NERC Standard FAC-001 which is publically available at [www.dom.com](http://www.dom.com).

## Network Impacts

PJM assessed the impact of the proposed Queue Project as an injection into the ITO's transmission system, for compliance with NERC Reliability Criteria. The system was assessed using the summer 2020 RTEP case. When performing analysis, ITO Criteria considers a transmission facility overloaded if it exceeds 94% of its emergency rating under single contingency (normal and stressed system conditions). A full listing of the ITO's Planning Criteria and interconnection requirements can be found in the ITO's Facility Connection Requirements which are publicly available at: <http://www.dom.com>.

The results of these studies evaluate the system under a limited set of operating conditions and do not guarantee the full delivery of the capacity and associated energy of this proposed generation facility under all operating conditions. NERC Planning and Operating Reliability Criteria allow for the re-dispatch of generating units to resolve projected and actual deficiencies in real time and planning studies. Specifically NERC Category C Contingency Conditions (Bus Fault, Tower Line, N-1-1, and Stuck Breaker scenarios) allow for re-dispatch of generating units to resolve potential reliability deficiencies. For ITO Planning Criteria the re-dispatch of generating units for these contingency conditions is allowed as long as the projected loading does not exceed 100% of a facility Load Dump Rating. The results of these studies are discussed in more detail below.

The Queue Project AC2-078 was evaluated as a 60.0 MW (Capacity 22.8 MW) injection at a new switching station on the Disputanta-Waverly 115kV line in the ITO area. Project AC2-078 was evaluated for compliance with applicable reliability planning criteria (PJM, NERC, NERC Regional Reliability Councils, and Transmission Owners). Project AC2-078 was studied with a commercial probability of 100%. Potential network impacts were as follows:

### Contingency Descriptions

The following contingencies resulted in overloads:

Contingency Name	Description
562T563	CONTINGENCY '562T563' /*CARSON OPEN BRANCH FROM BUS 314902 TO BUS 314923 CKT 1 /*CARSON TO MIDLOTHIAN OPEN BRANCH FROM BUS 314914 TO BUS 314902 CKT 1 /*CARSON 500.00 - 8SEPTA 500.00 END
H2T557	CONTINGENCY 'H2T557' /* ELMONT OPEN BRANCH FROM BUS 314908 TO BUS 314903 CKT 1 /*ELMONT TO CHICKAHOMINY (LINE 557) OPEN BRANCH FROM BUS 314903 TO BUS 314214 CKT 1 /*CHICKAHOMINY 500-230 (TX#1) OPEN BRANCH FROM BUS 314908 TO BUS 314218 CKT 2 /*ELMONT 500-230 (TX#2) END

Contingency Name	Description
LN 15_B	CONTINGENCY 'LN 15_B' OPEN BRANCH FROM BUS 314350 TO BUS 932580 CKT 1 /* AC2-078 TAP 115.00 - 3WVLY DP 115.00 OPEN BRANCH FROM BUS 314347 TO BUS 314351 CKT 1 /* 3WAKEFLD 115.00 - 3WAVERLY 115.00 OPEN BRANCH FROM BUS 314350 TO BUS 314351 CKT 1 /* 3WVLY DP 115.00 - 3WAVERLY 115.00 OPEN BRANCH FROM BUS 313878 TO BUS 314347 CKT 1 /* 3SADL_1 115.00 - 3WAKEFLD 115.00 OPEN BUS 314347 /* ISLAND OPEN BUS 314350 /* ISLAND OPEN BUS 314351 /* ISLAND END
LN 208-259	CONTINGENCY 'LN 208-259' OPEN BRANCH FROM BUS 314286 TO BUS 314309 CKT 1 /* 6CHSTF A 230.00 - 6IRON208 230.00 OPEN BRANCH FROM BUS 314309 TO BUS 314338 CKT 1 /* 6IRON208 230.00 - 6SOUWEST 230.00 OPEN BUS 314309 /* ISLAND OPEN BRANCH FROM BUS 314276 TO BUS 314287 CKT 1 /* 6BASIN 230.00 - 6CHSTF B 230.00 END
LN 211	CONTINGENCY 'LN 211' OPEN BRANCH FROM BUS 314287 TO BUS 314303 CKT 1 /* 6CHSTF B 230.00 - 6HOPEWLL 230.00 END
LN 259	CONTINGENCY 'LN 259-2065' OPEN BRANCH FROM BUS 314276 TO BUS 314287 CKT 1 /* 6BASIN 230.00 - 6CHSTF B 230.00 OPEN BRANCH FROM BUS 314276 TO BUS 314339 CKT 1 /* 6BASIN 230.00 - 6SPRUNCE 230.00 END
LN 259-2065	CONTINGENCY 'LN 259-2065' OPEN BRANCH FROM BUS 314276 TO BUS 314287 CKT 1 /* 6BASIN 230.00 - 6CHSTF B 230.00 OPEN BRANCH FROM BUS 314276 TO BUS 314339 CKT 1 /* 6BASIN 230.00 - 6SPRUNCE 230.00 END
LN 557	CONTINGENCY 'LN 557' OPEN BRANCH FROM BUS 314214 TO BUS 314903 CKT 1 /* 6CHCKAHM 230.00 - 8CHCKAHM 500.00 OPEN BRANCH FROM BUS 314903 TO BUS 314908 CKT 1 /* 8CHCKAHM 500.00 - 8ELMONT 500.00 END
LN 563	CONTINGENCY 'LN 563' OPEN BRANCH FROM BUS 314902 TO BUS 314914 CKT 1 /* 8CARSON 500.00 - 8MDLTHAN 500.00 END



Contingency Name	Description
T672B	CONTINGENCY 'T672B' /*_ BASIN
	OPEN BRANCH FROM BUS 314276 TO BUS 314260 CKT 1 /*L284 BASIN
	VARINA
	OPEN BRANCH FROM BUS 314275 TO BUS 314276 CKT 1 /*L2055 BASIN
	BELLMEADE
	REMOVE MACHINE 1 FROM BUS 315053 /*BELMEADE GEN
	CT-1
	REMOVE MACHINE 2 FROM BUS 315054 /*BELMEADE GEN
	CT-2
	REMOVE MACHINE 3 FROM BUS 315055 /*BELMEADE GEN ST
	OPEN BRANCH FROM BUS 314274 TO BUS 314276 CKT 1 /*BASIN TX5
	OPEN BRANCH FROM BUS 314274 TO BUS 314276 CKT 2 /*BASIN TX6
	OPEN BRANCH FROM BUS 314276 TO BUS 314287 CKT 1 /*L259 BASIN
	CHESTERFIELD
	OPEN BRANCH FROM BUS 314276 TO BUS 314339 CKT 1 /*L2065 BASIN
	SPRUANCE NUG
	END

## **Summer Peak Analysis – 2020**

### **Generator Deliverability**

*(Single or N-1 contingencies for the Capacity portion only of the interconnection)*

None.

### **Multiple Facility Contingency**

*(Double Circuit Tower Line, Fault with a Stuck Breaker, and Bus Fault contingencies for the full energy output).*

None.

### **Short Circuit**

*(Summary of impacted circuit breakers)*

New circuit breakers found to be over-duty:

None.

Contributions to previously identified circuit breakers found to be over-duty:

None.

### **Contribution to Previously Identified Overloads**

*(This project contributes to the following contingency overloads, i.e. "Network Impacts", identified for earlier generation or transmission interconnection projects in the PJM Queue)*

#	Contingency Type	Name	Affected Area	Facility Description	Bus		Power Flow	Loading %		Rating		MW Contribution	Ref
					From	To		Initial	Final	Type	MVA		
1	LFFB	H2T557	DVP - DVP	8ELMONT 500/230 kV transformer	314218	314908	1	112.49	113.34	LDR	1051	12.13	1

#	Contingency		Affected Area	Bus			Cir.	Power Flow	Loading %		Rating		Ref	
	Type	Name		Facility Description	From	To			Initial	Final	Type	MVA		MW Contribution
2	DCTL	LN 208-259	DVP - DVP	6CHARCTY-6LAKESD 230 kV line	314225	314227	1	AC	127.65	129.46	LDR	459	8.28	2
3	DCTL	LN 208-259	DVP - DVP	6MESSER-6CHARCTY 230 kV line	314228	314225	1	AC	138.74	140.54	LDR	459	8.28	3
4	LFFB	T672B	DVP - DVP	6MESSER-6CHARCTY 230 kV line	314228	314225	1	AC	108	109.47	LDR	459	7.91	
5	DCTL	LN 259- 2065	DVP - DVP	6MESSER-6CHARCTY 230 kV line	314228	314225	1	AC	107	108.72	LDR	459	7.84	
6	DCTL	LN 208-259	DVP - DVP	6CHSTF B-6MESSER 230 kV line	314287	314228	1	AC	138.76	140.57	LDR	459	8.28	4
7	LFFB	T672B	DVP - DVP	6CHSTF B-6MESSER 230 kV line	314287	314228	1	AC	108.03	109.5	LDR	459	7.91	
8	DCTL	LN 259- 2065	DVP - DVP	6CHSTF B-6MESSER 230 kV line	314287	314228	1	AC	107.03	108.75	LDR	459	7.84	
9	LFFB	562T563	DVP - DVP	6CHSTF B-6BASIN 230 kV line	314287	314276	1	AC	135.1	136.66	LDR	549	8.54	5

### **Steady-State Voltage Requirements**

*(Summary of the VAR requirements based upon the results of the steady-state voltage studies)*

None.

### **Stability and Reactive Power Requirement for Low Voltage Ride Through**

*(Summary of the VAR requirements based upon the results of the dynamic studies)*

None.



## New System Reinforcements

(Upgrades required to mitigate reliability criteria violations, i.e. Network Impacts, initially caused by the addition of this interconnection request)

None.

## Contribution to Previously Identified System Reinforcements

(Overloads initially caused by prior Queue positions with additional contribution to overloading by this project. This project may have a % allocation cost responsibility which is calculated and reported for in the Impact Study)

Violation #	Overloaded Facility	Upgrade Description	Network Upgrade Number	Upgrade Cost	AC2-078 Allocation																		
#1	Elmont 500 – 230 kV Tx#1	replace the 500-230 kV transformer #1 increase its line rating to 1134 MVA (normal), 1203 MVA (emergency), and 1365 MVA (load dump). It is estimated to cost \$17,500,000 and 24-30 months to engineer and construct. <table><thead><tr><th>Queue</th><th>Impact (MW)</th><th>Cost</th></tr></thead><tbody><tr><td>AC1-164</td><td>48.87</td><td>\$6,416,754.20</td></tr><tr><td>AC1-191</td><td>26.35</td><td>\$3,459,821.43</td></tr><tr><td>AC1-216</td><td>21.14</td><td>\$2,775,735.29</td></tr><tr><td>AC2-012</td><td>24.79</td><td>\$3,254,989.50</td></tr><tr><td>AC2-078</td><td>12.13</td><td>\$1,592,699.58</td></tr></tbody></table>	Queue	Impact (MW)	Cost	AC1-164	48.87	\$6,416,754.20	AC1-191	26.35	\$3,459,821.43	AC1-216	21.14	\$2,775,735.29	AC2-012	24.79	\$3,254,989.50	AC2-078	12.13	\$1,592,699.58	Pending	\$17,500,000	\$1,592,700
Queue	Impact (MW)	Cost																					
AC1-164	48.87	\$6,416,754.20																					
AC1-191	26.35	\$3,459,821.43																					
AC1-216	21.14	\$2,775,735.29																					
AC2-012	24.79	\$3,254,989.50																					
AC2-078	12.13	\$1,592,699.58																					
#2	6CHARCTY-6LAKESD 230 kV line	PJM Baseline #b2745 will eliminate the identified overloads. Baseline #b2745 rebuilds 21.32 miles of existing line between Chesterfield - Lakeside 230 kV. The scheduled in service date for b2745 is 06/01/2020	b2745	\$31,700,000	\$0																		
#3,4,5	6MESSER-6CHARCTY 230 kV line	PJM Baseline #b2745 will eliminate the identified overloads. The scheduled in service date for b2745 is 06/01/2020	b2745	\$31,700,000	\$0																		
#6,7,8	6CHSTF B-6MESSER 230 kV	P PJM Baseline #b2745 will eliminate the identified overloads. The scheduled in service date for b2745 is 06/01/2020	b2745	\$31,700,000	\$0																		

Violation #	Overloaded Facility	Upgrade Description	Network Upgrade Number	Upgrade Cost	AC2-078 Allocation
#9	Line #259 Chesterfield – Basin 230 kV	Reconductor 0.14 miles of 1109 ACAR with a conductor which will increase the line rating to approximately 706 MVA (normal), 706 MVA (emergency), and 812 MVA (load dump). It is estimated to cost \$250,000 and 15-18 months to engineer, permit and construct.  The reinforcement above is triggered by a prior queue. Since the cost is <\$M, AC2-078 does not receive a cost allocation towards the above upgrade. However if the prior projects withdraw, AC2-078 will need to be re-tooled and may get cost allocation.	Pending	\$250,000	\$0
<b>Total New Network Upgrades</b>					<b>\$1,592,700</b>

### Potential Congestion due to Local Energy Deliverability

*PJM also studied the delivery of the energy portion of this interconnection request. Any problems identified below are likely to result in operational restrictions to the project under study. The IC can proceed with network upgrades to eliminate the operational restriction at their discretion by submitting a Merchant Transmission Interconnection request.*

*Note: Only the most severely overloaded conditions are listed below. There is no guarantee of full delivery of energy for this interconnection request by addressing only the conditions listed in this section. With a Transmission Interconnection Request, a subsequent analysis will be performed which shall study all overload conditions associated with the overloaded element(s) identified.*

#	Contingency Type	Name	Affected Area	Facility Description	Bus		Circuit	Power Flow	Loading %		Rating		MW Contribution
					From	To			Initial	Final	Type	MVA	
10	N-1	LN 557	DVP - DVP	6CHARCTY-6LAKESD 230 kV line	314225	314227	1	AC	124.38	126.09	ER	375	6.39
11	N-1	LN 259	DVP - DVP	6MESSER-6CHARCTY 230 kV line	314228	314225	1	AC	131.19	132.97	ER	375	7.88
12	N-1	LN 211	DVP - DVP	6BERMUDA-6CHSTF A 230 kV line	314278	314286	1	AC	117.63	118.96	ER	449	7.04

Contingency			Affected Area	Facility Description	Bus		Circuit	Power Flow	Loading %		Rating		MW Contribution
#	Type	Name			From	To			Initial	Final	Type	MVA	
13	N-1	LN 259	DVP - DVP	6CHSTF B-6MESSER 230 kV line	314287	314228	1	AC	131.22	133.01	ER	375	7.88
14	N-1	LN 563	DVP - DVP	6CHSTF B-6BASIN 230 kV line	314287	314276	1	AC	153.69	155.59	ER	449	8.52
15	N-1	LN 211	DVP - DVP	6HOPEWLL-6BERMUDA 230 kV line	314303	314278	1	AC	117.65	118.99	ER	449	7.04
16	N-1	LN 15_B	DVP - DVP	AC2-079 TAP-3OAKR123 115 kV line	932590	314532	1	AC	39.31	42.87	ER	111	4.44

### Light Load Analysis in 2020

Not required for this fuel type.

### Affected System Analysis & Mitigation

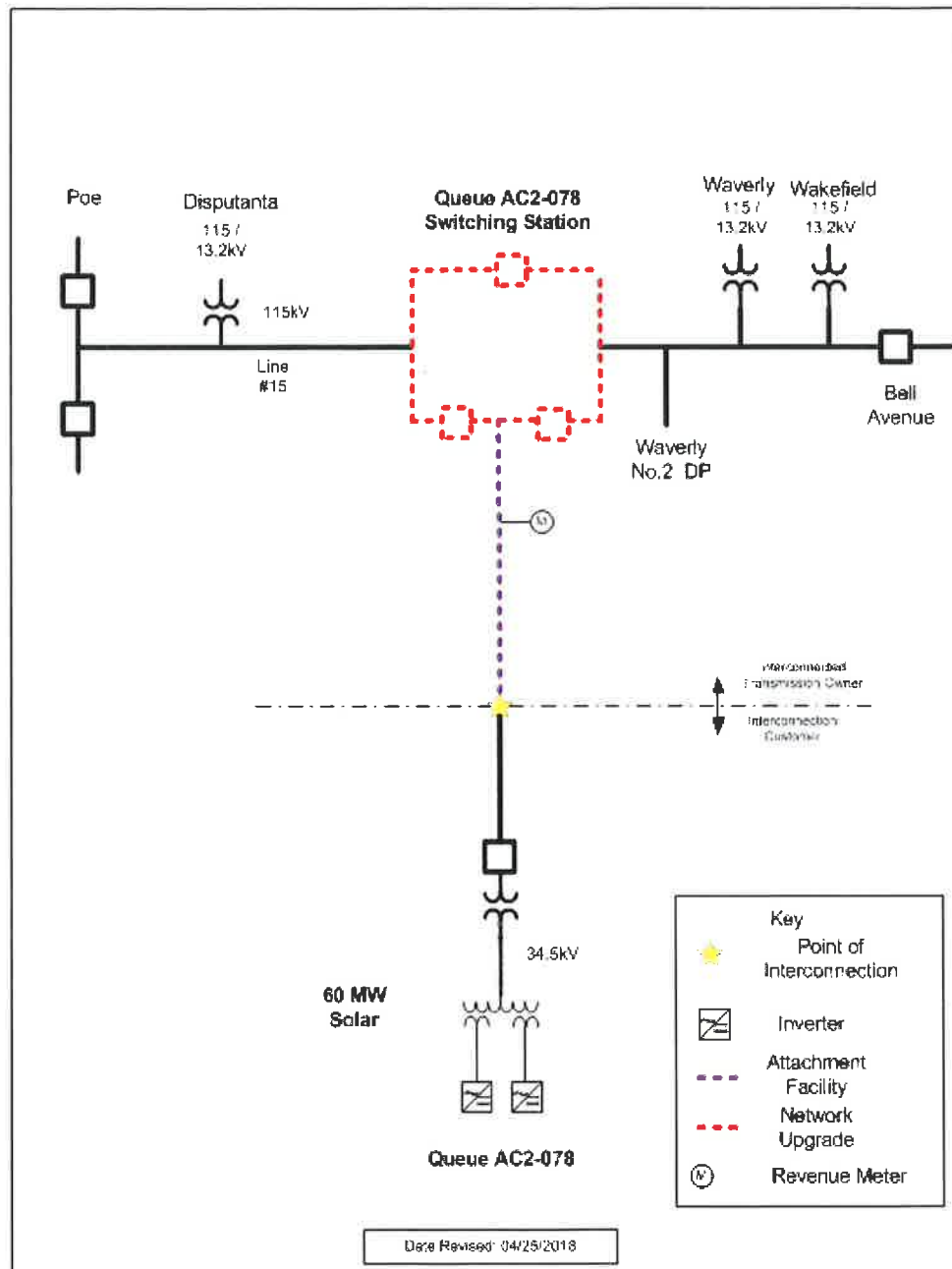
#### Duke Energy:

None.



# Attachment 1.

## System Configuration











**PLANNING COMMISSION  
PUBLIC HEARING: JANUARY 23, 2020**

**SPECIAL EXCEPTION SE-19-12 & SUBSTANTIAL ACCORD DETERMINATION SA-19-03:**

Request of Sebera-Winstead, LLC, pursuant to § 90-103 (57), to permit a large-scale solar energy facility in a R-A, Residential-Agricultural, Zoning District, and a Substantial Accord Determination for the use of a 20 MW solar energy facility. The subject property is located along Sebera Road and Lawyers Road in the Blackwater Magisterial District on 182+/- acres and known as Tax Map 250(0A)00-054-0. The Comprehensive Plan indicates the property is suitable for residential uses.

**CASE NUMBER:** SE-19-12  
**APPLICANT:** Sebera-Winstead, LLC  
**ADDRESS:** Along Sebera Road and Lawyers Road  
**TAX MAP ID:** 250(0A)00-054-0  
**SIZE OF PROJECT:** 182+/- ac (legal)  
**MAGISTERIAL DISTRICT:** Blackwater  
**PLANNING AREA:** Prince George Planning Area  
**UTILITIES:** Well and Septic  
**REAL ESTATE TAXES:** All taxes paid as of 1/2/2020  
**PROPOSED USE(S):** Large Solar Energy Facility  
**CURRENT USE:** Silviculture, Agriculture, Residential  
**COMP PLAN FUTURE USE:** Residential  
**EXISTING ZONING:** R-A, Residential Agricultural  
**SURROUNDING ZONING:** R-A, Residential Agricultural

**MEETING INFORMATION:**

**Community Meeting:** December 3, 2019 at 5:30 p.m.  
**Planning Commission:** January 23, 2020 at 6:30 p.m.  
**Board of Supervisors:** TBD

**STAFF RECOMMENDATION:** Staff recommends a 30-day deferral for the Special Exception and the Substantial Accord Determination.

**ATTACHMENTS:**

1. GIS Location Map
2. Satellite View
3. Land Use Map
4. Application
5. Applicant Narrative

## **Special Exception Request:**

Sebera-Winstead, LLC is proposing a 20 MW large-scale solar energy facility on one (1) parcel on a 182+/- acre site in a R-A, Residential-Agricultural Zoning District.

The applicant anticipates the project will encompass 150 acres of the overall 212 acres (surveyed) with approximately 86,000 photovoltaic panels. The panel arrays will be mounted on fixed-tilt structures made of galvanized steel with no moving parts and noise associated with the arrays. The panel arrays will not exceed 10 feet in height. Associated electrical equipment will be located in the interior portions of the site. Inverters will not be any closer than 150 feet from any perimeter property line. Solar panels are distributed across the site to minimize and avoid impacts to wetland areas.

It is contemplated that up to three (3) small pre-fabricated sheds (approximately 10 feet in height) will be located on the property to store various maintenance equipment, replacement parts, and supplies.

The area encompassing the solar energy facility will be ringed with a minimum 6-foot high security fence, with as many as three (3) vehicular entry gates as depicted on the Special Exception Plan [December 12, 2019]. The primary vehicular access point will be on Sebera Road; up to two additional vehicular access points may also be located on Lawyers Road. Personnel gates at multiple locations throughout the facility may be considered for operational safety and maintenance convenience. Personnel can be expected to be on-site one to three times per month, performing routine inspections, maintenance, and repairs as needed.

Screening of the solar panel arrays and inverters from adjacent properties and public rights-of-way are achieved through a 50-foot setback along the perimeter of parcel 250(0A)00-054-B (another property owned by the applicant). For all other areas, no structures will be located closer than 75 feet from adjacent properties and public rights-of-way. In many areas of the site, setbacks will exceed 100, 150, and 500 feet from the property line as shown on the Special Exception Plan.

Photovoltaic panel arrays will generate electricity during daylight hours only, and no outdoor lighting is proposed.

## **Substantial Accord Determination**

The Code of Virginia § 15.2-2232 was amended in 2018 to require that solar facilities be substantially in accord with the comprehensive plan. § 15.2-2232(H) was added and states:

*A solar facility subject to subsection A shall be deemed to be substantially in accord with the comprehensive plan if (i) such proposed solar facility is located in a zoning district that allows such solar facilities by right or (ii) such proposed solar facility is designed to serve the electricity or thermal needs of the property upon which such facility is located, or will be owned or operated by an eligible customer-generator or eligible agricultural customer-generator under § 56-594 or by a agricultural generator under § 56-594.2. All other solar facilities shall be reviewed for substantial accord with the comprehensive plan in accordance with this section. However, a locality may allow for a substantial accord*

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*review for such solar facilities to be advertised and approved concurrently in a public hearing process with a rezoning, special exception, or other approval process.*

### **Proposed Use:**

Based on the use request described by the applicant, the applicant's described use fits the following use found in the Prince George County Zoning Ordinance:

***Sec. 90-103. - Uses and structures permitted by special exception. (R-A District)***  
***(57) Large-scale solar energy facility.***

#### ***Sec 90-1 Definitions.***

*Large-scale solar energy facility means a photovoltaic system consisting of solar PV panels, modules, accessory structures and related equipment such as DC to AC inverters, wiring, electric transformers, control systems and storage areas that collect solar energy and convert it into electricity using ten acres or more.*

*Photovoltaic or PV means materials and devices that absorb sunlight and convert it directly into electricity by semiconductors.*

*Photovoltaic cell or PV cell means a solid state device that converts sunlight directly into electricity. PV cells may be connected together to form PV modules, which in turn may be combined and connected to form PV arrays (often called PV panels).*

*Photovoltaic system or PV system means PV cells, which may be connected into one or more PV modules or arrays, including any appurtenant wiring, electric connections, mounting hardware, power-conditioning equipment (inverter), and storage batteries.*

### **Comprehensive Plan**

The Comprehensive Plan Future Land Use Map identifies this subject area as appropriate for residential or agricultural uses.

The Future Land Use Map serves as a general guide for the future development of Prince George County. The Planning Commission and Board of Supervisors can use this map as one resource when planning public facilities or evaluating land use requests. The Future Land Use map presents a generalized overview of desired locations for land uses in the County, and it is not intended to be parcel-specific. Actual proposed land uses will be individually reviewed by the Planning Commission and the Board of Supervisors with consideration for the proposed use's compatibility with surrounding land uses, both current and future, and the overall impact on the larger community. The Comprehensive Plan explains the intent of the future land uses planned for this area as follows:

*Residential – includes areas within the Prince George Planning Area where small lot residential development is encouraged. Public water and/or wastewater facilities are available and required for such development.*

*Agricultural - Includes land areas in the rural portions of the County where agricultural and forestall land uses are, and should be, the dominant land use. Large lot single family*

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*development may exist within some of these areas. Future residential development of these properties is not encouraged.*

The Comprehensive Plan Recommends:

1. The Planning Commission and Board of Supervisors use the future land use map contained within the Comprehensive Plan as a general guide for determining the desired location of development.
2. Commercial and/or industrial developments that are approved in rural portions of the County should be small in scale and of a design character that is consistent with a rural environment.

### **Staff Review Comments:**

#### **Planning & Zoning Division:**

1. Future Land Use

The Future Land Use Map shows that the 182+/- acre site should be used for Residential or Agricultural uses. As the Future Land Use Map is a general guide for development and is not parcel specific, such considerations should be made when considering conformance to the Comprehensive Plan.

2. Prince George Planning Area

The 182+/- acre solar-energy facility site will be located in the County's Prince George Planning Area where the County has policies designed to require that all new development in the Prince George Planning Area be connected to public utility services. The site also directly abuts the Rural Conservation Area, which is the County's designated conservation area.

The Comprehensive Plan states that the Crater Planning District Commission determined that under the County's current zoning regulations that there is sufficient vacant acreage within the current limits of the Prince George Planning Area to accommodate over seventy (70) years of anticipated residential growth.

Although the Water & Wastewater Master Plan requires the connection of utilities for this site, there is no set period of time, per the plan, when a water or sewer line will be developed.

3. Land Use and Prince George Planning Area

After reviewing the location of the proposed solar energy facility staff finds that the Planning Commission and Board of Supervisors, based on the Comprehensive Plan, can determine if the parcel can be considered for agricultural or residential future land use. The previous use of the land was silviculture and agriculture, and undetermined period of time that a water or sewer line will connect to this site would keep the land as an agricultural use until utilities are slated, and the site is ready for residential development.

Staff believes that because this property could be considered for agricultural or residential development, the special exception for solar energy facility should have a time limit recommended by the Planning Commission to the Board of Supervisors.



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### 4. Setbacks

The County Zoning Ordinance addresses minimum setbacks for solar energy facilities in 90-16:

- a. *The minimum setback for a ground-mounted solar energy facilities are required to meet a minimum of 75 -85ft from the right-of-way(depending on the width), and*
- b. *A minimum of 50 ft from all other property lines.*

Minimum setbacks as required by the ordinance should be increased to provide additional separation in the Prince George Planning Area and from residential properties. Conditions of approval of the special exception should consider increased setbacks and required landscape buffers.

The applicant addresses setbacks and landscaping, and has suggested a variety of setback and buffer treatments throughout the site:

Along the eastern property Lawyers Road the application suggests a 150-foot setback and to use existing vegetation and providing supplemental understory to the substantially preserved landscape.

Along the northern property line the applicant proposes a 100-foot setback from the property line and along Sebera Road with the exception of a 50- foot setback from the applicant's own property parcel located along Sebera Road

Along the southern property line the applicant proposes a 75-foot setback from the 134 acre site and a 100-foot setback from residentially used properties.

The western property line is along the Blackwater Swamp and there is a 500-foot setback at the western boundary line.

The applicant should provide a consistent 100-foot setback and screening along the northern property line to include the applicant's own parcel.

### 5. Security Fencing

The applicant addresses perimeter fencing by proposing to use a 6-foot tall security fence with three (3) vehicular entry gates.

### 6. Wildlife Corridors

The applicant has not specifically addressed wildlife corridors, but has grouped the sections of panel arrays [A-R] in the Special Exception Plan December 12, 2019.

### 7. Permit by Rule – DEQ verification

The applicant stated they met with Beth Major, staff contact for DEQ's Renewable Energy in the summer of 2019 to review and discuss the Rives Road and Fort Powhatan permit by rule (PBR) files and the procedures for filing and working with DEQ in the PBR program. At that time, the Applicant discussed interest in developing a solar facility in Prince George County of the nature that would be required to submit the necessary documentation for a PBR for a small renewable energy project. Ms. Major acknowledged that it was completely appropriate to delay the filing of the required PBR Notice of Intent, pursuant to 9VAC15-60, until such time as local government approval for the solar energy use was secured. Accordingly, the Applicant is currently working with

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Prince George County to earn Board of Supervisors approval of the Special Exception for the Sebera Solar Farm. The Applicant has contracted with environmental and engineering consultants to be poised to initiate the PBR process at the earliest opportunity.

### 8. Community Meeting

The applicants held a community meeting at Sycamore United Methodist Church on December 3, 2019. All adjoining property owners; all property owners along both sides of Sebera Road from Old Stage Road to Prince George Drive; all property owners along both sides of Lawyers Road from Old Stage Road to and include Mt. Hope Baptist Church were invited to attend. Approximately 20-25 citizens and a couple of Planning Commissioners and Staff attended; many citizens participated by asking questions, expressing concerns and also expressing support for the project.

The concerns of the community primarily included: (a) the visibility of the solar panels from adjoining properties, (b) the possibility of declining property values, (c) noise made by the inverters, (d) environmental contamination (and radiation) as a result of the solar energy facility, and (e) who is responsible for maintaining buffers and screening for the life of the project.

The applicant addressed each concern generally as follows:

- a. Visibility: It was stated that the intent is to make the solar facility practically invisible from adjoining properties and rights-of-way. Consideration will be given to the widening buffers, expanding the extent and height of landscaped berms and adding the planting of understory evergreen species to fill in gaps between the stems of existing trees to be preserved. As reflected in the Special Exception Plan dated December 12, 2019, buffers were expanded, the landscaped berm was increased to a minimum of 4.5 feet in height and a commitment to planting evergreen understory plant materials, as requested by citizens at the meeting, was memorialized in the proposed Conditions.
- b. Impact to Property Values: It was stated that there is no reliable evidence to suggest that property values are negatively affected by the operation of a solar farm. Further investigation after the community meeting finds no peer-reviewed, published studies indicating negative property value impacts from utility scale solar generation facilities. In fact, anecdotal experience indicates that a well buffered solar facility has no negative impact on surrounding property values and actually stabilizes and enhances surrounding property values compared to by-right residential development of the subject property.
- c. Inverter Noise: It was stated that there is no noise generated by the solar panels themselves as they are fixed (i.e., stationary) panels, but that the AC-DC inverters do generate a modest hum only audible in close proximity to the inverter and only during daylight hours (i.e., the inverters only operating during daylight hours). At 100-150 feet distance from the inverters, the sound emanating from them is inaudible as it is less than the ambient sound levels in the area (e.g., wildlife, wind, passing vehicular traffic and other environmental sounds). All inverters will be located more than 150 feet from the property line and there is no noise emanating from the inverters whatsoever after daylight hours.

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- d. Buffer Maintenance Responsibility: It was stated that the Owner of the solar facility (i.e. the operator) will be responsible for maintaining the effectiveness of the buffers to provide screening of the facility. The landowner anticipates leasing the property to the entity that will build the facility, own the equipment comprising the facility and operating and maintaining the facility. The owner is secondarily responsible for the maintenance of the landscaping and buffer requirements if the operator fails to comply with its obligations.
- e. Environmental Contamination/EMF Radiation: It was stated that the types of solar panels to be used at this site are silica based and are essentially inert. With respect to EMF radiation (the electromagnetic fields generated by the panels and inverters), it was stated that the panels themselves do not generate measurable "radiation"; the inverters do generate electromagnetic fields that are at such a level that one would have to stand immediately beside or sit on top of an inverter for unrealistically long time frames (weeks, months) to suffer any negative health effects. EMF radiation experienced by most people in our existing modern environment is far greater than anything associated with the project. For example the EMF radiation associated with transformers located on power poles along the electrical distribution system is far greater and significantly closer to homes than any inverter proposed with this project. Inverters at a distance of 100-150 feet produce no measurable EMF radiation; all inverters will be located more than 150 feet from property boundaries.

9. Written position on the capacity of distribution lines or other electrical infrastructure:  
The Applicant filed an interconnect request with Dominion in early Spring 2019 and was assigned Dominion Queue #VA19023. The Sebera Solar Farm is tagged to the Hopewell substation, meaning power generated by this facility will primarily flow to that substation for subsequent distribution to the grid. In June 2019, the Applicant held a substantive teleconference with Dominion's Lewis Gulay who indicated that the project was in full study by planning and system protection divisions and he confirmed that this project was number one in the queue for that substation. Dominion identified that limited upgrades inside the Hopewell substation will be required. No additional pole lines or other infrastructure are expected to be required. It is possible that hanging upgraded, higher capacity copper wiring along existing pole line routes to replace the older, lower capacity wiring may be necessary in places.

10. Fiscal impact assessment of proposed energy facility against existing use and Comprehensive Plan Future Land Use ( by applicant)

The subject property is currently vacant with no habitable homes and its use is agricultural and forestal. The market value taxable basis in 2019 was \$601,700. The property qualifies for Land Use assessment, resulting in a 2019 total taxable value of \$192,800. As such, the Land Use assessment represents an approximately 68% reduction in taxable value. The first year of Land Use assessment for the property was 2016. With no homes on the land, the property poses no burden on the locality for the provision of public services but generates taxes on the order of \$1,660 annually.

At such time as the property is placed into use as a solar generating facility, the roll back taxes will become due and the assessed value of the property will increase by virtue of the commercial use. While the precise amount of roll back taxes can only be determined

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by the Assessor and Commissioner of Revenue, the approximate roll back taxes that will accrue upon establishment of the solar production use are estimated as follows:

	2016	2017	2018	2019
Total Market Value	\$606,100	\$599,800	\$599,800	\$601,700
Total Taxable Value (Land Use)	\$186,400	\$177,000	\$181,100	\$192,800
Difference	\$419,700	\$422,800	\$418,700	\$408,900
Tax "Deferred" (@ \$0.86/\$100 Value)	\$3,609	\$3,636	\$3,600	\$3,515
Total Approx. Rollback Amount	\$14,360			

In addition to payment of the rollback taxes, the property will become subject to a new assessment once the solar facility becomes operational based on the conversion of the net operating income (NOI) to be derived from a land lease into an imputed land value through application of a capitalization (cap) rate. The land lease amount is proprietary, but documentary data from the region suggests that solar leases commonly run in the range of \$600 - \$1000 per acre of solar farm area. Assessors in the region commonly use capitalization rates of between 8 and 10%. Using a 9% cap rate, such rents would equate to approximately \$6,700 per acre to \$11,100 per acre. For the subject property, it is anticipated that approximately 150 acres of the property will be used for solar energy production. Assuming the average of the foregoing capitalized land lease values per acre (\$8,900), the property could increase in assessed value to approximately \$1,335,000 (or just more than double the market value as currently assessed without land use). Non-power generating and power distribution facilities on the site (e.g. storage and equipment sheds) will also be taxable as real property and add to the taxable value of the site. As a solar energy facility, the property will continue to pose effectively no burden on the locality for the provision of public services but will generate taxes on year one of operation on the order of \$11,480, roughly ten times the current amount of the property tax.

The current Comprehensive Plan designates the subject property for Residential Land Use on the Future Land Use Map. This designation calls for small lot residential development where public water and/or wastewater facilities are available; it is noteworthy that utilities are not currently available at the site. Depending on the zoning classification used to implement this land use vision, and assuming public water and sanitary sewer service are someday available to serve the property in the future, minimum lot sizes could range from between 20,000 square feet to five (5) acres or larger. Given known environmental constraints and minimum required bulk area requirements, one could fairly estimate between thirty (30) and three hundred (300) residential homes could be possible on the property under the current Comprehensive Plan future land use designation for the property.

For any residential development, the single largest expense to the County arises from the need to educate the school age population residing in the homes. Different types of dwellings generate more or fewer school age children. Many jurisdictions have determined home value levels at which a breakpoint is reached, meaning above a certain home value the homes generate more tax revenue than they consume in all local government services, including schools. The applicant states that they are not aware of any such analysis having previously been prepared for Prince George County. The



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applicant states that it would be purely speculative to project the nature, number and value of any possible future homes to be developed on the subject property. The homes could be starter homes, workforce or affordable housing units, move-up homes in the mid-price range or higher end homes – the housing and real estate market at the time of subdivision development will dictate the product type and quantity that would be most marketable. Given that there is currently no proposal for housing at this time, and that the public utilities needed to support housing beyond large estate lots at this location do not now exist, it is not possible to fairly project the fiscal impact, positive or negative, that could result when or if the property develops residentially 40 or more years from now.

### 11. Planning Recommendations

Based on discussions with other County departments, P&Z staff recommends that conditions for the Special Exception should consider the surrounding parcels and should address: rollback taxes, site plan requirements, buffering, structure height, and decommissioning. In order to properly address these items and provide the Planning Commission with sufficient information to provide a recommendation to the Board of Supervisors, staff suggests the Planning Commission consider Staff's recommended solar energy policy prior to approval of the applicant's request.

Contact: Horace Wade III, Planner

### **Real Estate Assessor:**

1. All Rollback taxes should be paid for all of the parcels as a condition of approval.
2. The zip code be corrected to 23188.
3. The Legal acreage is listed as 182.61; GIS acreage is listed as 213.4233. Legal acreage may change upon an actual survey of the property.

Contact: Rod Compton, Director

### **Utilities:**

This site is located within the County's Planning Area designated to be served by public water and sewer. This development does not propose any water or sewer improvements. Should the development require water and/or sewer services, it will be required to install public facilities in accordance with the current Water & Wastewater Master Plan.

Contact: Frank Haltom, Director of Engineering and Utilities

### **Building Inspections Division:**

This request has been evaluated under the provisions of the 2015 Virginia USBC and the 2015 Virginia SFPC. All structures that may be built on property that exceeds 150 square feet will need to be permitted and meet all requirement of the 2015 Virginia USBC and the 2015 Virginia SFPC.

Contact: Dean Simmons, Building Official and Fire Official

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### **Transportation (VDOT):**

1. The submitted application did not include any information as to the number of permanent employees that would be accessing the facility after construction is complete. VDOT's experience with similar type facilities is that any proposed entrances would be classified as low volume commercial entrances. Low volume commercial entrances must demonstrate that stopping sight distance is available at the proposed entrance locations. Determination of the final entrance types will be made during the site plan review process when additional information is available. All entrances will be required to meet VDOT standards.
2. The proposed project will potential impact several secondary VDOT maintained roadways during construction; SR 636 Lawyers Road, SR 609 Old Stage Road, and SR 710 Sebera Road. It is recommended that the County consider requiring the development of a Construction Traffic Management Plan and mitigation measures similar to what has been required by the County for other Special Exception permits granted for other solar energy development projects.
3. It is anticipated that the applicant will want to cross VDOT maintained roadways to provide utility interconnections between the proposed pods of solar panels. VDOT has specific regulations concerning the crossing of VDOT roadways with utilities. It is likely that the applicant will have to be registered with the SCC as a utility company and enroll in the "Miss Utility" program as well in order to cross VDOT roadways.

Contact: Paul Hinson, Southern Region Land Use Engineer, VDOT

### **Fire Department:**

1. During the construction phase of the operation, please adhere to the Fire Department Access chapter in the Statewide Fire Prevention Code.
2. During and once complete, training and education should be conducted on a variety of days for fire responders.

Contact: Shawn Jones, Firefighter/Medic

### **Police Department**

If the construction entrance is on Sebera Road ensure that the road remains clean as required by VDOT. There have been several incidents of vehicles running off the road in that curve. Don't need mud on the road to make it any worse.

Contact: Chris Douglas, Police

**Environmental Division; Economic Development; Health Department:** No comments.

### **Public Notice:**

Twenty-three (23) adjacent property owners were notified by mailing on 1/13/20.  
A legal ad was run for the request on 1/8/20 and 1/15/20.

### **Substantial Accord Determination Recommendation:**

Staff recommends approval of a Substantial Accord Determination of the requested large-scale solar energy facility as the request with the Special Exception staff recommendation complies with the Comprehensive Plan's objective to maintain the rural character and serve as a small scale industrial by utilizing 150 of 220 acres in an area that can be seen as agricultural.

### **Special Exception Recommendation:**

Staff recommends a thirty (30) day deferral to the Planning Commission on the proposed, large-scale solar energy facility land use to review staff's proposed Solar energy facility policy. Staff has proposed recommended conditions to ensure this use minimizes the impact on surrounding property owners and ensures the use complies with all applicable local, state and federal requirements:

1. This Special Exception is granted for a large-scale solar energy facility use to Sebera-Winstead, LLC and is located on Tax Map 250(0A)00-054-0. This Special Exception may be transferred provided that Condition 10(b) is met relative to the proper surety.
2. Payment of all rollback taxes for parcels enrolled in the Land Use program shall be a pre-condition of the County's issuance of a land disturbance permit pursuant to a site plan prepared for the solar energy facility.
3. Site Plan Requirements. In addition to all State and County site plan requirements, the Applicant shall provide the following plans for review and approval as a part of the site plan for the solar energy facility prior to the issuance of a building permit:
  - a. Construction Management Plan. The applicant shall prepare a Construction Management Plan for each applicable site plan for the solar energy facility, which shall address the following:
    - i. Construction Traffic Management Plan including mitigation measures shall be developed by the applicant, owner or operator and shall be submitted to the Virginia Department of Transportation (VDOT) and Planning Manager for review and approval. The Plan shall address traffic control measures, pre-and post-construction road evaluation, and any necessary repairs to the public roads that are required as a result of any damage from the solar energy facility construction and/or expansion. All VDOT permits must be received and be approved by VDOT prior to site construction occurring on the premises.
    - ii. Site access planning, directing employee and delivery traffic to minimize conflicts with local traffic.
    - iii. A site parking and staging plan shall be submitted as a part of the Site Plan approval and be submitted for various stages of the site construction process. All subsequent construction processes shall also adhere to submitting a parking and staging plan prior to the commencement for expansion or decommissioning.
    - iv. Fencing. The applicant shall install temporary security fencing prior to the commencement of construction activities occurring on the solar energy facility.

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- v. Lighting. During construction of the solar energy facility, any temporary construction lighting shall be positioned downward, inward, and shielded to eliminate glare from all adjacent properties.
- b. Construction Mitigation Plan. The applicant shall prepare a Construction Mitigation Plan for each applicable site plan for the solar energy facility to the satisfaction of the Planning Manager. Each plan shall address, at a minimum:
  - i. The effective mitigation of dust. All construction roads and construction areas shall remain dust-free by the use of a water truck or other approved method to keep sediment on the premises and not be of a general nuisance to the adjoining property owners during site construction and/or site expansion for a solar energy facility.
  - ii. Burning operations.
  - iii. Hours of construction. All pile driving shall be limited to the hours from sunrise to sunset Monday through Saturday. No Sunday pile driving shall occur during site construction, expansion, or operation of the facility. All other normal on-site construction activity is permitted Monday through Sunday in accordance with the provisions of the County Noise Ordinance, as amended from time to time, and as enforced by the Prince George County Police Department.
  - iv. Access and road improvements.
  - v. General construction complaints.
- c. Grading Plan. The solar energy facility shall be constructed in compliance with the County-approved grading plan as approved by County staff prior to the commencement of any construction activities in coordination with the Erosion and Sediment Control Plan. The owner or operator shall construct, maintain, and operate the project in compliance with the approved plan. An E&S bond will be posted for the construction portion of the project. The grading plan shall:
  - i. Clearly show existing and proposed contours;
  - ii. Note the locations and amount of topsoil to be removed (if any) and the percent of the site to be graded;
  - iii. Limit grading to the greatest extent practicable by avoiding steep slopes and lay out arrays parallel to landforms;
  - iv. Require an earthwork balance to be achieved on-site with no import or export of soil;
  - v. Require topsoil to first be stripped and stockpiled on-site to be used to increase the fertility of areas intended to be seeded in areas proposed to be permanent access roads which will receive gravel or in any areas where more than a few inches of cut are required;
- d. Solar Facility Screening and Vegetation Plan. The owner or operator shall construct, maintain, and operate the facility in compliance with the approved plan. A separate surety shall be posted for the ongoing maintenance of the project's vegetative buffers in the amount of 120% of the installation cost of all planted vegetation.
  - i. Site groundcover for the solar energy facility shall consist of a variety of native groundcovers that benefit birds, bees, and other insects.
  - ii. Groundcover shall be expeditiously established following the completion of construction activities to minimize erosion and loss of soil.

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- iii. Use of synthetic herbicides to control and maintain groundcover shall not be permitted.
  - e. The design, installation, maintenance, and repair of the solar energy facility shall be in accordance with the most current National Electrical Code (NFPA 70)
4. Operations.
- a. Permanent Security Fence. The applicant shall install a permanent security fence, consisting of chain link, 2-inch square mesh, 6 feet in height, around the Solar Facility prior to the commencement of operations of the Solar Energy Facility. Failure to maintain the fence in a good and functional condition will result in revocation of the special exception.
  - b. Lighting. Any on-site lighting shall be dark-sky compliant, shielded away from adjacent properties, and positioned downward to minimize light spillage onto adjacent properties.
  - c. Noise. Daytime noise will be under 67 dBA throughout the day with no noise emissions at night.
  - d. Ingress/Egress. Permanent access roads and parking areas will be stabilized with gravel, asphalt, or concrete to minimize dust and impacts to adjacent properties.
5. Buffers.
- a. Setbacks.
    - i. Western Boundary Setback. A minimum 150-foot setback along the western boundary of the property line, which includes a substantially preserved 150-foot of vegetation and supplemental planting as described in 5(b)(i), shall be maintained from a principal Solar Energy Facility structure to the edge of the public right-of-way.
    - ii. Northern Boundary Setback.
      - a. A minimum 100-foot setback along the northern boundary of the property which includes a substantially preserved 75-foot of vegetation and supplemental planting as described in 5(b)(ii), shall be maintained from the principal Solar Energy Facility to the edge of the public right-of-way or adjacent property lines.
      - b. A minimum 100-foot setback along the northern boundary of the property which currently has no vegetation includes a 50-foot vegetative buffer as described in 5(b)(iii) shall be maintained from the principal solar energy facility to the edge of the public right-of-way or adjacent property lines
    - iii. Southern Boundary Setback. A minimum 100-foot setback along the southern boundary of the property adjacent to residential land uses and a minimum 75-foot setback along the southern boundary of the property adjacent to Tax Map 250(0A)00-123-0 which includes buffers as described in 5(b)(iv) shall be maintained from the principal solar energy facility to adjacent property lines.



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- iv. Western Boundary Setback. A minimum 500-foot setback area along the Blackwater Swamp is required. Vegetation within the 500-foot setback shall remain undisturbed.
- b. Screening. A minimum 50-foot vegetative buffer (consisting of existing trees and vegetation) shall be maintained. If there is no existing vegetation or if the existing vegetation is inadequate to serve as a buffer as determined by the Planning Manager, a staggered triple row of evergreen trees and shrubs will be planted on approximately 10-foot centers in the 25 feet immediately adjacent to the security fence. New plantings of trees and shrubs shall be approximately 6 feet in height at time of planting. In addition, pine seedlings will be installed in the remaining 25 feet of the 50-foot buffer.
  - i. Western Boundary Screening (Existing). Vegetation shall be preserved with a minimum 150-foot vegetative buffer and supplemental Evergreen understory shrubs to be installed along the existing forest edge abutting Lawyers Road at not more than 10 feet on center and a minimum of 2 feet tall at planting within the first 50 feet of the buffer.
  - ii. Northern Boundary Screening (Existing vegetation). Vegetation shall be preserved a with a minimum 75-foot vegetative buffer and supplemental Evergreen understory shrubs to be installed along the existing forest edge abutting Sebera Road and properties north of the subject parcel at not more than 10 feet on center and a minimum of 2 feet tall at planting within the first 50 feet of the buffer.
  - iii. Northern Boundary Screening (Berm) There shall be a minimum 50-foot wide, 4.5-foot tall earthen berm with evergreen shrubs, a planted at minimum of 2 feet in height, and evergreen trees, a planted at a minimum of 6 feet in height in three staggered rows.
  - iv. Southern Boundary Screening (Existing). Vegetation shall be preserved with a minimum 100-foot vegetative buffer and supplemental Evergreen understory shrubs to be installed along the existing forest edge abutting residential land uses south of the subject property and preserve a minimum 75-foot vegetative buffer and supplemental Evergreen understory shrubs installed along the existing property line of Tax Map 250(0A)00-123-0 at not more than 10 feet on center and a minimum of 2 feet tall at planting within the first 50 feet of the buffer.
- c. Wildlife Corridors. The applicant shall identify an access corridor for wildlife to navigate through the Solar Energy Facility. The proposed wildlife corridor shall be shown on the site plan submitted to the County. Areas between fencing shall be kept open to allow for the movement of migratory animals and other wildlife.
- d. Wetlands. The applicant shall provide a 50-foot minimum setback from all wetlands that are not located in the Chesapeake Bay Preservation Areas.
- 6. Height of Structures. Solar Energy Facility structures shall not exceed 10 feet, however, towers constructed for electrical lines may exceed the maximum permitted height as provided in the zoning district regulations, provided that no structure shall exceed the

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height of 25 feet above ground level, unless required by applicable code to interconnect into existing electric infrastructure or necessitated by applicable code to cross certain structures.

7. Inspections. The applicant will allow designated County representatives or employees access to the facility at any time for inspection purposes as set forth in their application.
8. The applicant, owner or operator shall coordinate directly with Fire, EMS and Emergency Management to provide solar energy materials, educational information and/or training to the respective personnel responding to the solar energy facility project in regards to how to safely respond to any emergencies that may occur on the premises.
9. Compliance. The Solar Facility shall be designed, constructed, and tested to meet relevant local, state, and federal standards as applicable.
10. Decommissioning.
  - a. Decommissioning Plan. A decommissioning plan shall be developed by the applicant, owner or operator prior to the approval of a site plan being issued for a solar energy facility. The purpose of the decommissioning plan is to specify the procedure by which the applicant or its successor would remove the solar energy facility after the end of its useful life and to restore the property for prior usage. If the solar energy facility is inactive completely or substantially discontinuing the delivery of electricity to an electrical grid for a continuous twenty-four (24) month period it shall be considered abandoned. The applicant, owner or operator shall provide notice to Prince George County in writing once the property becomes inactive as a solar energy facility use. The decommissioning of the site shall commence within six (6) months of receipt of such notice from the applicant, owner or operator by Prince George County. This shall be known as the "Decommissioning Plan" under Zoning Ordinance Section 90-16 (ii) (e) which shall include the following:
    - i. Anticipated life of the solar energy facility project;
    - ii. The estimated cost of the decommissioning in the future as expressed in current dollars by a State licensed professional engineer;
    - iii. Method estimate was determined;
    - iv. The manner in which the project will be decommissioned; and
    - v. The name and physical address of the person or entity responsible for the decommissioning plan and a performance bond for the life of the use.
  - b. Surety. Unless the solar energy facility project is owned by a public utility within the Commonwealth of Virginia, the net costs of decommissioning shall be secured by an adequate surety in a form agreed to by the County Attorney, including but not limited to a letter of credit, cash or a guarantee by an investment grade entity, posted within thirty (30) days of the project receiving its occupancy permit or equivalent from Prince George County to operate the use. If an adequate surety is required, the cost estimates of the decommissioning shall be updated at least every five (5) years by the applicant, owner or operator, and provided to the County. If the solar energy facility is sold to an entity that is not a public utility, the Special Exception shall not transfer to the purchaser until such time as adequate surety is provided for the solar energy facility. At its option, the County may require that a surety amount be increased based upon the net cost of decommissioning the use as approved by the County Attorney.

## SPECIAL EXCEPTION SE-19-12 STAFF REPORT

- c. Applicant/Property Owner Obligation. Within six (6) months after the cessation of use of the solar energy facility for electrical power generation or transmission, the applicant or its successor, at its sole cost and expense, shall decommission the solar energy facility in accordance with the decommissioning plan approved by the County. If the applicant or its successor fails to decommission the solar energy facility within six (6) months, the property owners shall commence decommissioning activities in accordance with the decommissioning plan. Following the completion of decommissioning of the entire solar energy facility arising out of a default by the applicant or its successor, any remaining surety funds held by the County shall be distributed to the property owners in a proportion of the surety funds and the property owner's acreage ownership of the solar energy facility.
- d. Applicant/Property Owner Default; Decommissioning by the County.
  - i. If the applicant, its successor, or the property owners fail to decommission the solar energy facility within six (6) months, the County shall have the right, but not the obligation, to commence decommissioning activities and shall have access to the property, access to the full amount of the decommissioning surety, and the rights to the solar energy equipment and materials on the property.
  - ii. If applicable, any excess decommissioning surety funds shall be returned to the current owner of the property after the County has completed the decommissioning activities.
  - iii. Prior to the issuance of any permits, the applicant and the property owners shall deliver a legal instrument to the County granting the County (1) the right to access the property, and (2) an interest in the solar energy facility equipment and materials to complete the decommissioning upon the applicant's and property owner's default. Such instrument(s) shall bind the applicant and property owners and their successors, heirs, and assigns. Nothing herein shall limit other rights or remedies that may be available to the County to enforce the obligations of the applicant, including under the County's zoning powers.
- e. Equipment/Building Removal. All physical improvements, materials, and equipment related to solar energy generation, both surface and subsurface components, shall be removed following disturbance cause in the removal process. Perimeter fencing will be removed and recycled or reused.
- f. Infrastructure Removal. All access roads will be removed, including any geotextile material beneath the roads and granular material. The exception to removal of the access roads and associated culverts or their related material would be upon written request from the current or future landowner to leave all or a portion of these facilities in place for use by the landowner. Access roads will be removed within areas that were previously used for agricultural purposes and topsoil will be redistributed to provide substantially similar growing media as was present within the areas prior to site disturbance.
- g. Partial Decommissioning. Any reference to decommissioning the solar energy facility shall include the obligation to decommission all or a portion of the solar

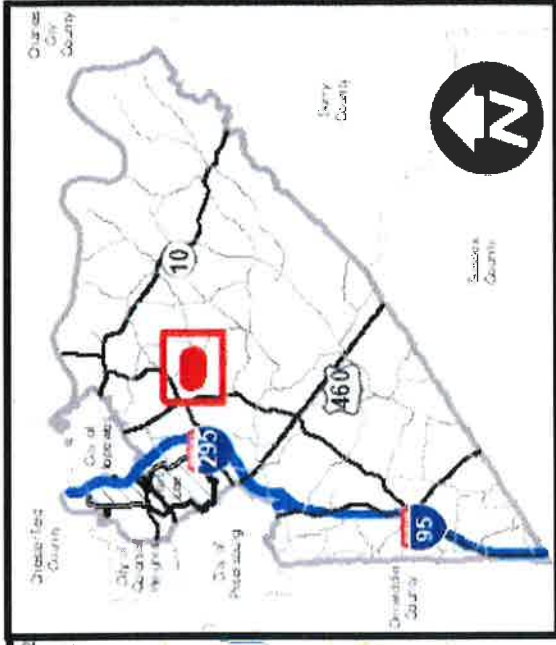
## SPECIAL EXCEPTION SE-19-12 STAFF REPORT

energy facility whichever is applicable with respect to a particular situation. If decommissioning is triggered for a portion, but not the entire solar energy facility, then the applicant or its successor will commence and complete decommissioning, in accordance with the decommissioning plan, for the applicable portion of the solar energy facility; the remaining portion of the solar energy facility would continue to be subject to the decommissioning plan.

11. Power Purchase Agreement. At the time of the applicant's site plan submission, the applicant shall have executed a power purchase agreement with a third-party providing for the sale of a minimum of 80% of the solar energy facility's anticipated generation capacity for not less than 10 years from commencement of operation. Upon the County's request, the applicant shall provide the County and legal counsel with a redacted version of the executed power purchase agreement.
12. This Special Exception shall become null and void if the use of a large-scale solar energy facility is abandoned for a period of twenty-four (24) consecutive months.
13. This Special Exception may be revoked by Prince George County or by its designated agent for failure by the applicant, owner or operator to comply with any of the listed conditions or any provision of federal, state or local regulations.
14. The Commercial Operation Date for this solar energy facility shall be deemed the date that the solar power facilities subject to this Special Exception first supply power to the electrical grid. This Special Exception shall become null and void on the date which is forty (40) years following the Commercial Operation Date, subject to the following limitations:
  - a. Should the applicant intend to continue the Special Exception, the owner/operator shall provide written notice to the Board of Supervisors to amend, renew or re-issue a new Special Exception or other permit as may then be required.



**Special Exception:  
SE-19-12  
Sebera-Winstead LLC**



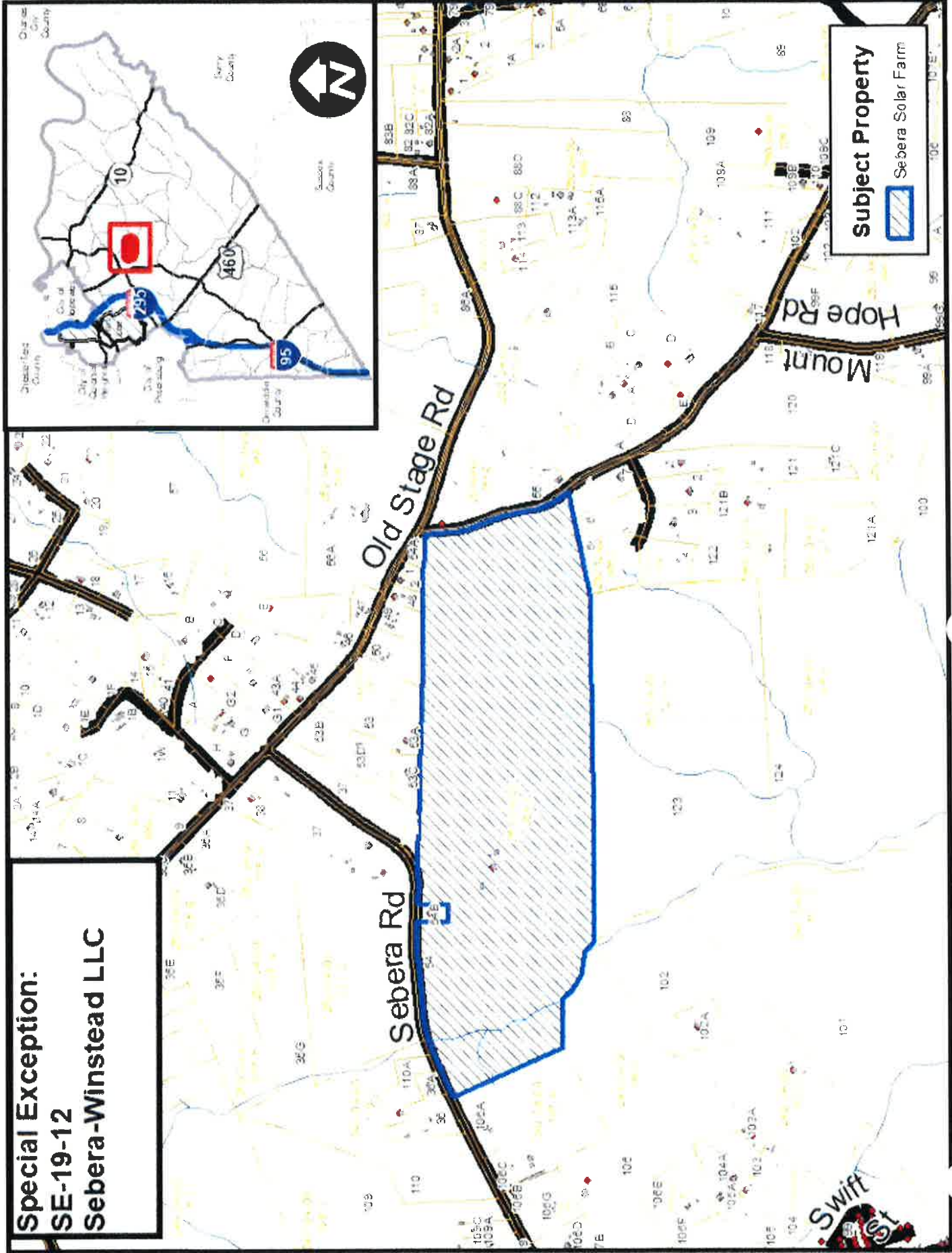
Sebera Rd

Old Stage Rd

Mount Hope Rd

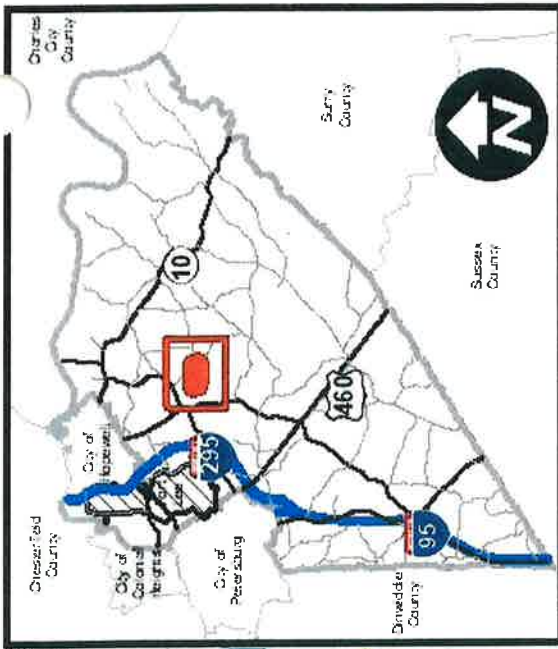
**Subject Property**

Sebera Solar Farm





**Special Exception:  
SE-19-12  
Sebera-Winstead LLC**



Sebera Rd  
Old Stage Rd

**Subject Property**

NAME



Prince George Planning Area

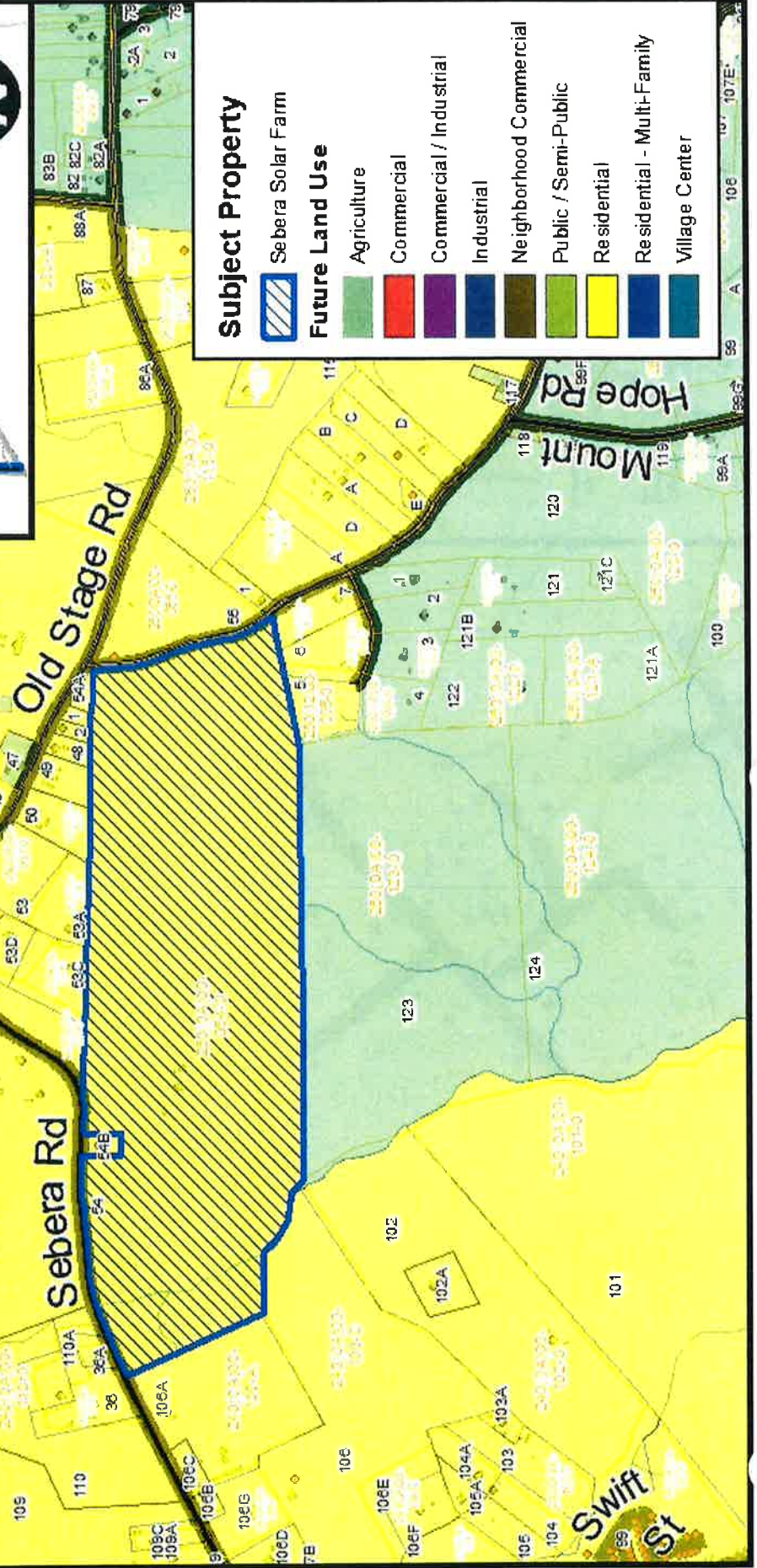
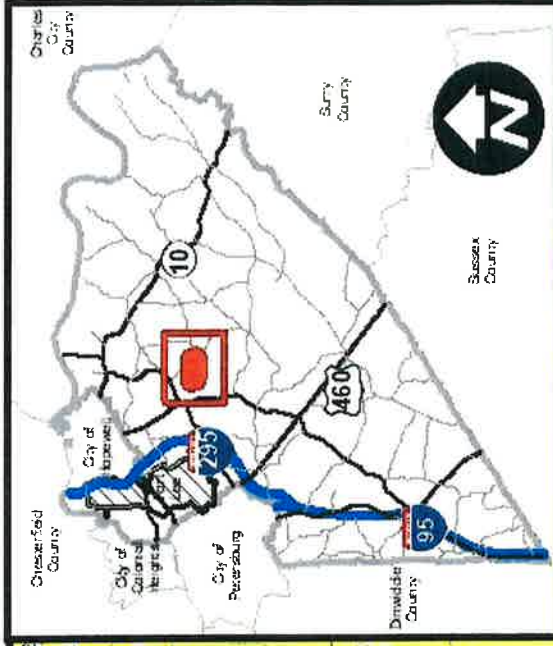
Rural Conservation Area

Sebera Solar Farm





**Special Exception:  
SE-19-12  
Sebera-Winstead LLC**





# APPLICATION FOR SPECIAL EXCEPTION - CONDITIONAL USE PERMIT

Department of Community Development and Code Compliance  
6602 Courts Drive  
Prince George, VA 23875  
Planning Division (804) 722-8678  
[www.princegeorgecountyva.gov](http://www.princegeorgecountyva.gov)

OFFICE USE ONLY

APPLICATION #:

SE-19-12

DATE SUBMITTED:

DEC 12 2019

ZONING ORDINANCE  
SECTION:

(PLEASE FILL-IN ALL BLANKS)

LEGAL OWNER(S) OF PROPERTY REQUESTED FOR PERMIT:

Sebera-Winstead, LLC

ADDRESS:

4029 Ironbound Road, Suite 100

CITY: Williamsburg

STATE: VA

ZIP CODE: 23199

PHONE NUMBER:  
(757) 220-2874

E-MAIL ADDRESS: mrinaldi@bushcos.com

TAX MAP OF SUBJECT PARCEL: 250(OA)00-054-0

RECORDED IN THE CIRCUIT COURT CLERK'S OFFICE:

DEED BOOK 08 PAGE 129 Date 1/9/08 DEED RESTRICTIONS: None

ACREAGE: 212 +/-

PARTIAL PARCEL:

☐ YES ☒ NO

SUBDIVISION: N/A

PRESENT USE: Farm and Forest

## ZONING CLASSIFICATION

LAND USE CLASSIFICATION: Residential

PRESENT ZONING: R-A, Residential Agriculture

AGENT OR REPRESENTATIVE OF PROPERTY OWNER(S), IF ANY (SPECIFY INTEREST):

NAME: Timothy O. Trant, Kaufman and Canoles, PC

ADDRESS: 4801 Courthouse Street, Suite 300

CITY: Williamsburg

STATE: VA

ZIP CODE: 23188

PHONE NUMBER:  
(757) 259-3823

E-MAIL: tottrant@kaufcan.com

PROVIDE A GENERAL DESCRIPTION OF THE PROJECT: (ATTACH A SEPARATE LETTER IF NECESSARY)

See Attached Narrative



AFFIDAVIT

A. The undersigned (1) Property Owner or (7) duly authorized agent or representative certifies that this petition and the foregoing answers, statement, and other information herewith submitted are in all respect true and correct to the best of their knowledge and belief.

SIGNED: \_\_\_\_\_

DATE: 12/10/2019

MAILING ADDRESS: 4029 Ironbound Road, Suite 100

CITY/STATE/ZIP: Williamsburg, Virginia 23188

PHONE NUMBER: (757) 220-2874

E-MAIL ADDRESS: mrinaldl@bushcos.com



STATE BELOW THE NAME, ADDRESS, AND PHONE NUMBER OF PERSON(S) TO BE CONTACTED REGARDING THIS APPLICATION IF OTHER THAN ABOVE PERSON(S):

NAME: None

MAILING ADDRESS: \_\_\_\_\_

CITY/STATE/ZIP: \_\_\_\_\_

PHONE NUMBER: \_\_\_\_\_

E-MAIL ADDRESS: \_\_\_\_\_

STATE OF VIRGINIA

COUNTY OF: JAMES CITY

Subscribed and sworn before me this 10<sup>TH</sup> day of DECEMBER, 2019.

My Commission expires: 31 Jan, 2020

Notary Public

*Marianne G. Yoder*  
Notary Public

AFFIDAVIT

## Sebera-Winstead, LLC

### Proposed Sebera Solar Project Narrative

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#### **Project Overview**

Sebera-Winstead, LLC, (Applicant) as owner of tax assessor's parcel 250(0A)000-054-0, is applying for a Special Exception for a proposed solar energy facility at 9209 Sebera Road. KDC Solar Sebera, LLC has entered into an Option Agreement with the Applicant for the future development and construction of the solar energy facility on the subject property.

The 20MW (AC) renewable energy facility will be constructed on portions of an approximately 212 ± acre parcel of land currently zoned R-A, Residential Agriculture. The currently vacant property is comprised of approximately 20 acres of farmland and the balance of the property is in forestry use.

#### **Planning Context**

The subject property is located immediately inside the boundaries of the current Prince George Planning Area and directly abuts the Rural Conservation Area. The Planning Area is the County's designated long-term growth area; the Rural Conservation Area is intended for conservation and preservation objectives.

The Prince George Planning Area was reduced in size from an earlier comprehensive plan because the Crater PDC determined that the reduced area could support over 70 years of anticipated residential growth in the County under current zoning. A proposed solar energy facility at this location would have a projected life of 35-40 years, or roughly half the timeframe over which currently zoned parcels can support the growth projected for Prince George during that time.

Within the Prince George Planning Area, over 2,300 acres of R-1 zoned land existed as of the last Comprehensive Plan adoption. Should the County deem it appropriate to selectively rezone some portion of the existing R-1 parcels to greater density with R-2 or R-3 zoning, in response to landowner requests or as part of a strategic planned growth management initiative, substantially more than 70 years of anticipated growth can be accommodated in the Planning Area.

As such, there remains a substantial reserve of lands in locations more suitable for near-term residential development because of utility infrastructure availability, roadway capacity and proximity to essential public and private services and amenities that are preferred areas for near-future rezoning to more intensive, compact development. The Applicant believes the subject property, while located just inside the Prince George Planning Area and someday suitable for residential development, is not ripe for residential development at this time. The interim use of the property for a solar generation facility will preserve the property for future residential



development at some future date without unduly limiting practical options for more near-term residential development elsewhere within the Prince George Planning Area.

### **Site Context**

The subject property is generally rectangular in shape, ranging in elevation from 108 feet above MSL to 150 feet MSL over several hundreds of feet, and can be characterized as predominantly moderately sloping land with a series of broad ridges and intervening broad ravines. In many cases, the lowest elevations of these ravines contain jurisdictional wetlands. Avoidance and minimization of impacts to these wetland areas is the central organizing principal for how the solar panel arrays are distributed across the site.

The largest single natural feature of the site is the North Fork of the Blackwater Swamp, a matrix of wetlands, small ponds and upland areas comprising the western portion of the property. There will be no disturbance to this natural area whatsoever.

The Virginia Department of Forestry prepared a Forest Stewardship Plan for the subject property. This plan identifies the predominant forest stand "tract", over 130 acres, as natural pine-hardwood, most recently clear cut in 2007. Tree quality across most of the property is characterized as poor to moderate with moderate wildlife habitat characterization. This area is deemed overstocked, meaning there are significantly more trees per acre (+ 600 trees) than recommended. The advantage is that the existing vegetation retained along perimeter buffers is more dense and provides a better screen than would ordinarily be the case for existing stands of pine in this area.

The remainder of forested areas outside of the Blackwater Swamp are identified as pine plantation and natural pine stands of moderate quality and moderate wildlife habitat and are recommended for clear cut. Removal of trees for this project across the site will be the minimum necessary to allow for construction staging, accessways, stormwater management, solar panel arrays, inverters and panel shading mitigation.

### **Project Description**

The proposed 20MW solar generation facility will involve the placement of approximately 86,000 photovoltaic panels across approximately 150 acres of the site, leaving roughly 60 acres of buffer area. Total construction time is projected at 8 to 10 months, depending on seasonal impacts of weather and daylight hours. Capital expenditures for the construction of this project are estimated at \$35-40 million.

The panel arrays will be mounted on fixed-tilt structures made of galvanized steel. As fixed-tilt panel arrays, there will be no moving parts and no noise involved in the deployment of photovoltaic panels on the land. The panel arrays will not exceed 0 feet in height. Associated electrical equipment, including DC to AC electric inverters and miscellaneous control and instrument panels will be located in the interior portions of the site. Inverters will in no instance be located closer than 150 feet from any perimeter property line.

It is contemplated that up to three small pre-fabricated sheds (approximately 10 feet maximum height) will be located on the property to store various maintenance equipment, replacement parts and supplies. Total impervious ground surface is projected to be on the order of 5% of the total panel array area. Stormwater management for quantity control will comply with applicable State and County requirements. Water quality controls, as or if required, are expected to be met fully by on-site open space offsets. Final engineering will conform to all applicable building, electrical, fire-protection and safety codes.

The area encompassing the solar facility will be ringed with a minimum 6-foot high security fence, with as many as three (3) vehicular entry gates as depicted on the Special Exception Plan. The primary vehicular access point will be on Sebera Road; up to two additional vehicular access points may also be located on Lawyers Road. Personnel gates at multiple locations throughout the facility may be considered for operational safety and maintenance convenience. Personnel can be expected to be on-site one to three times per month, performing routine inspections, maintenance and repairs as needed.

Ordinance required setbacks are a minimum of 50-feet. A 50-foot setback is provided around the perimeter of parcel 250-(0A)00-054-B (9115 Sebera Road), which property is owned by the Applicant. For all other areas of the site, no structures will be located closer than 75 feet from adjacent properties and public rights-of-way. In many areas of the site, setbacks will exceed 100, 150 and 500 feet from the property line, as shown on the Special Exception Plan.

Screening of the solar panel arrays and inverters from adjacent properties and public rights-of-way will be accomplished by any one or a combination of methods that achieves a substantially mitigated viewshed from adjacent rights-of-way and residential dwellings. Substantially mitigated shall not be interpreted to mean that screening will create a completely impenetrable visual barrier at planting or over time. Screening will be provided either by the existing vegetation to be preserved and maintained within perimeter buffers with such supplemental understory planting as needed, by the planting of evergreen shrubs and/or trees, by the installation of an earthen berm of sufficient height to block views or by any combination of these methods. Installation and maintenance of screening meeting these standards shall be the responsibility of the licensed facility operator and shall be maintained for the duration of the solar energy facility's operation and decommissioning.

The photovoltaic panel arrays will generate electricity during daylight hours only. Because solar panels are designed to absorb sunlight, glare is not an issue in their deployment. The facility will operate year-round, distributing its electricity as AC current to the Dominion Energy overhead distribution powerlines serving the site and surrounding properties generally in the location shown on the Special Exception Plan, or at such other location as Dominion Energy may require. No outdoor lighting is proposed; should emergency repairs or unscheduled maintenance require night-time operations, temporary lighting will be deployed to the site and removed immediately upon completion of the work.

The operation of a solar generating facility is a passive use of the property. It is clean, quiet, generates extremely low traffic once operational and adds no new students to the County's school system. No water is consumed in the ongoing operation of the facility and no air emissions are created. There is no impact to the County's essential infrastructure such as sewer, water, roadways, fire, rescue and police services. Property taxes will increase over the life of the project; roll back taxes owed and payable from the conversion of the current land use valuation to a solar energy generation facility will be paid prior to the County's issuance of a land disturbance permit.

As an interim use for this property, the underlying land will be protected and preserved for possible future development consistent with the County's Comprehensive Plan and other growth management strategies, policies and guidance. The facility owner/operator will post a surety for the removal of the facility panels, inverters and underground and overhead wiring on the site. This decommissioning will occur when the facility's useful life has ended, at which time the property can be considered for other uses, including farming, forestry, residential development or other uses deemed appropriate by the County at that time.







VIEW NORTH FROM LAWYERS ROAD - EXISTING CONDITIONS



VIEW SOUTH FROM LAWYERS ROAD - EXISTING CONDITIONS

## SEBERA SOLAR FARM

PRINCE GEORGE COUNTY, VIRGINIA

**KDC SOLAR**  
DEVELOP • OWN • OPERATE





VIEW SOUTHEAST FROM SEBERA ROAD - EXISTING



VIEW SOUTHEAST FROM SEBERA ROAD - PROPOSED SOLAR ARRAY WITH BERM



VIEW SOUTHEAST FROM SEBERA ROAD - PROPOSED SOLAR ARRAY WITH BERM AND SCREENING

## SEBERA SOLAR FARM

PRINCE GEORGE COUNTY, VIRGINIA

**KDC SOLAR**  
DEVELOP • OWN • OPERATE

