

**115: Buckingham Solar, E. James Anderson Hwy, Buckingham, VA**



This project was proposed in 2017 and located on 460 acres with the closest home proposed to be 150 feet from the closest solar panel.

**Adjoining Use Breakdown**

	<b>Acreage</b>	<b>Parcels</b>
Residential	5.95%	71.79%
Agricultural	78.81%	20.51%
Agri/Res	15.24%	7.69%
<b>Total</b>	<b>100.00%</b>	<b>100.00%</b>

**121: Scott Solar Project, 1580 Goodes Bridge Rd, Powhatan, VA**



This project was built in 2016 and located on 165 acres out of 898 acres for a 17 MW with the closest home proposed to be 730 feet from the closest solar panel.

**Adjoining Use Breakdown**

	<b>Acreage</b>	<b>Parcels</b>
Residential	28.83%	78.57%
Agri/Res	43.52%	3.57%
Agricultural	27.65%	17.86%
<b>Total</b>	<b>100.00%</b>	<b>100.00%</b>

## 204: Walker-Correctional Solar, Barham Road, Barhamsville, VA

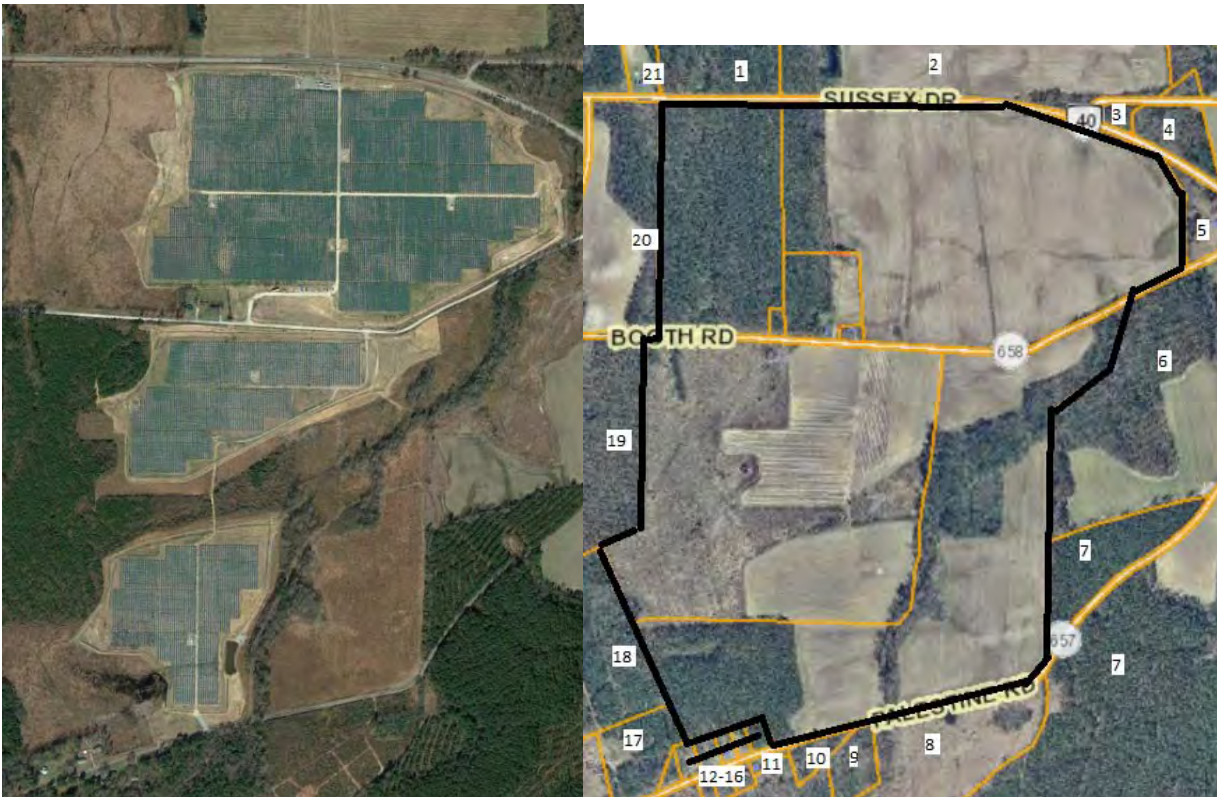


This project was built in 2017 and located on 484.65 acres for a 20 MW with the closest home at 110 feet from the closest solar panel with an average distance of 500 feet.

### Adjoining Use Breakdown

	<b>Acreage</b>	<b>Parcels</b>
Residential	12.59%	76.92%
Agricultural	67.71%	15.38%
Agri/Res	19.70%	7.69%
<b>Total</b>	<b>100.00%</b>	<b>100.00%</b>

**205: Sappony Solar, Sussex Drive, Stony Creek, 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.

**Adjoining Use Breakdown**

	<b>Acreage</b>	<b>Parcels</b>
Residential	12.59%	76.92%
Agricultural	67.71%	15.38%
Agri/Res	19.70%	7.69%
<b>Total</b>	<b>100.00%</b>	<b>100.00%</b>

**354: Amazon Solar project East (Eastern Shore), Accomack, VA**



This project was built in 2016 for a solar project on a 1,000-acre assemblage for an 80 MW facility. The closest home is 135 feet from the closest panel.

**Adjoining Use Breakdown**

	<b>Acreage</b>	<b>Parcels</b>
Residential	8.18%	63.74%
Agricultural	75.16%	30.77%
Agri/Res	16.56%	3.30%
Substation	0.08%	1.10%
Church	0.01%	1.10%
<b>Total</b>	<b>100.00%</b>	<b>100.00%</b>

**364: Remington Solar, 12080 Lucky Hill Rd, Remington, VA**



This project was built in 2017 for a solar project on a 125-acre tract for a 20 MW facility. There were some recent home sales adjoining this project, but it was difficult to do any matched pairs. One sale was an older home in very poor condition according to the broker and required crossing railroad tracks on a private road to get access to the home and located across from a large industrial building. The other sale is a renovated historic home on a large tract of land just one parcel north of the large industrial building. These sales essentially have too much static around them to isolate any impacts separate from these other factors.

**Adjoining Use Breakdown**

	<b>Acreage</b>	<b>Parcels</b>
Residential	10.24%	65.38%
Agricultural	40.79%	19.23%
Agri/Res	30.87%	7.69%
Warehouse	0.82%	3.85%
Substation	17.28%	3.85%
<b>Total</b>	<b>100.00%</b>	<b>100.00%</b>

**370: Cherrydale Solar, Seaside Road, Kendall Grove, VA**



This project was built in 2017 and located on 180.17 acres for a 20 MW facility.

**Adjoining Use Breakdown**

	<b>Acreage</b>	<b>Parcels</b>
Residential	5.44%	80.77%
Agricultural	92.01%	15.38%
Warehouse	2.55%	3.85%
<b>Total</b>	<b>100.00%</b>	<b>100.00%</b>

**371: Clarke County Solar, Double Tollgate Road, White Post, VA**



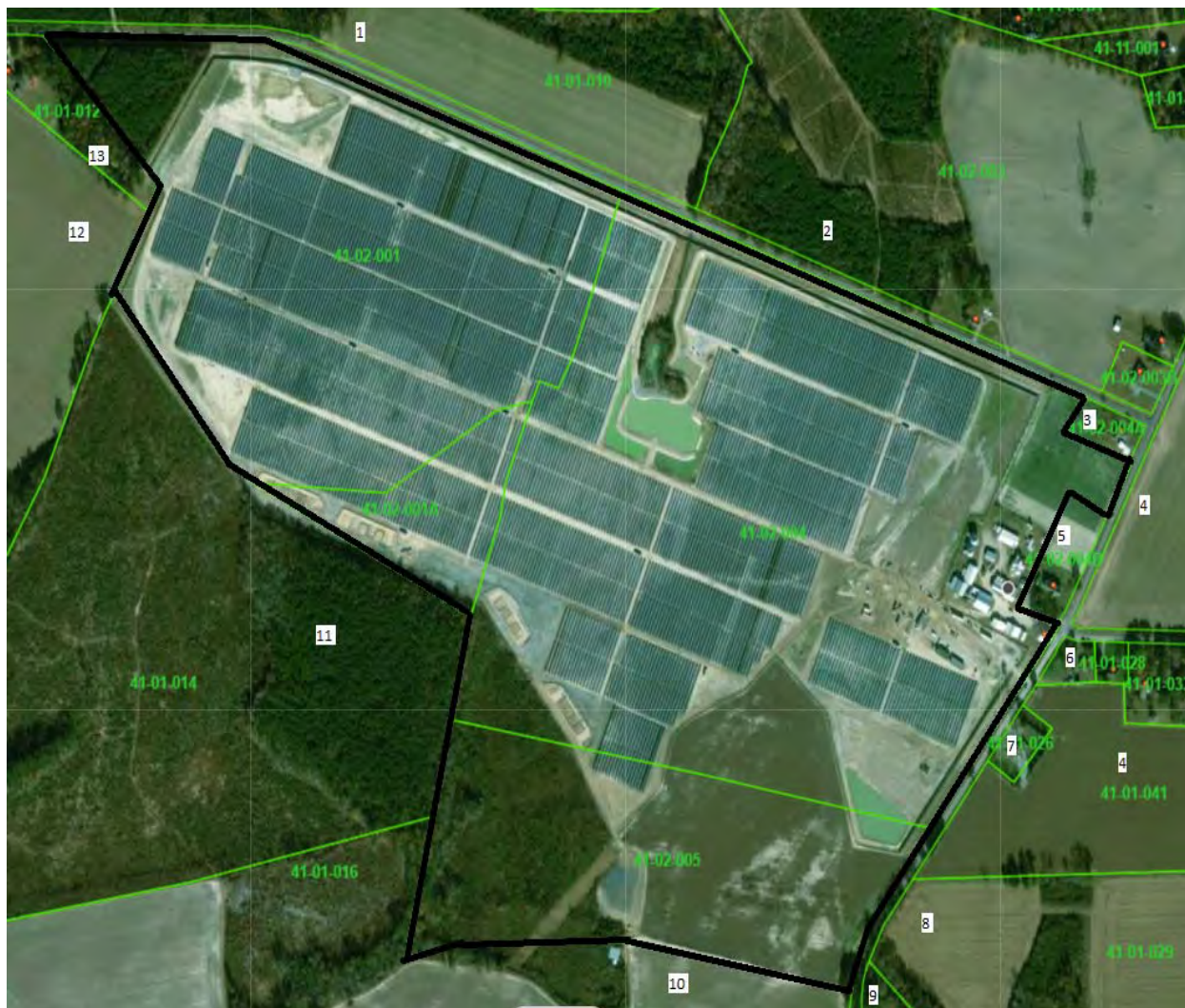
This project was built in 2017 and located on a portion of a 234.84-acre tract for a 20 MW facility.

**Adjoining Use Breakdown**

	<b>Acreage</b>	<b>Parcels</b>
Residential	13.70%	74.19%
Agricultural	38.89%	6.45%
Agri/Res	46.07%	6.45%
Commercial	0.19%	6.45%
Warehouse	0.85%	3.23%
Substation	0.30%	3.23%
<b>Total</b>	<b>100.00%</b>	<b>100.00%</b>



**373: Woodland Solar, Longview Drive, Smithfield, VA**



This project was built in 2016 for a solar project on a 211.12-acre tract for a 19.7 MW facility. The closest single-family home is 190 feet away from the closest solar panel. The average distance is 606 feet.

**Adjoining Use Breakdown**

	<b>Acreage</b>	<b>Parcels</b>
Residential	8.85%	46.15%
Agricultural	91.08%	46.15%
Cell Tower	0.07%	7.69%
<b>Total</b>	<b>100.00%</b>	<b>100.00%</b>

**374: Whitehouse Solar, Chalklevel Road, 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.

**Adjoining Use Breakdown**

	<b>Acreage</b>	<b>Parcels</b>
Residential	23.55%	70.27%
Agricultural	54.51%	10.81%
Agri/Res	18.22%	2.70%
Commercial	2.49%	13.51%
Industrial	1.22%	2.70%
<b>Total</b>	<b>100.00%</b>	<b>100.00%</b>

**484: Essex Solar, Tidewater Trail, Center Cross, VA**

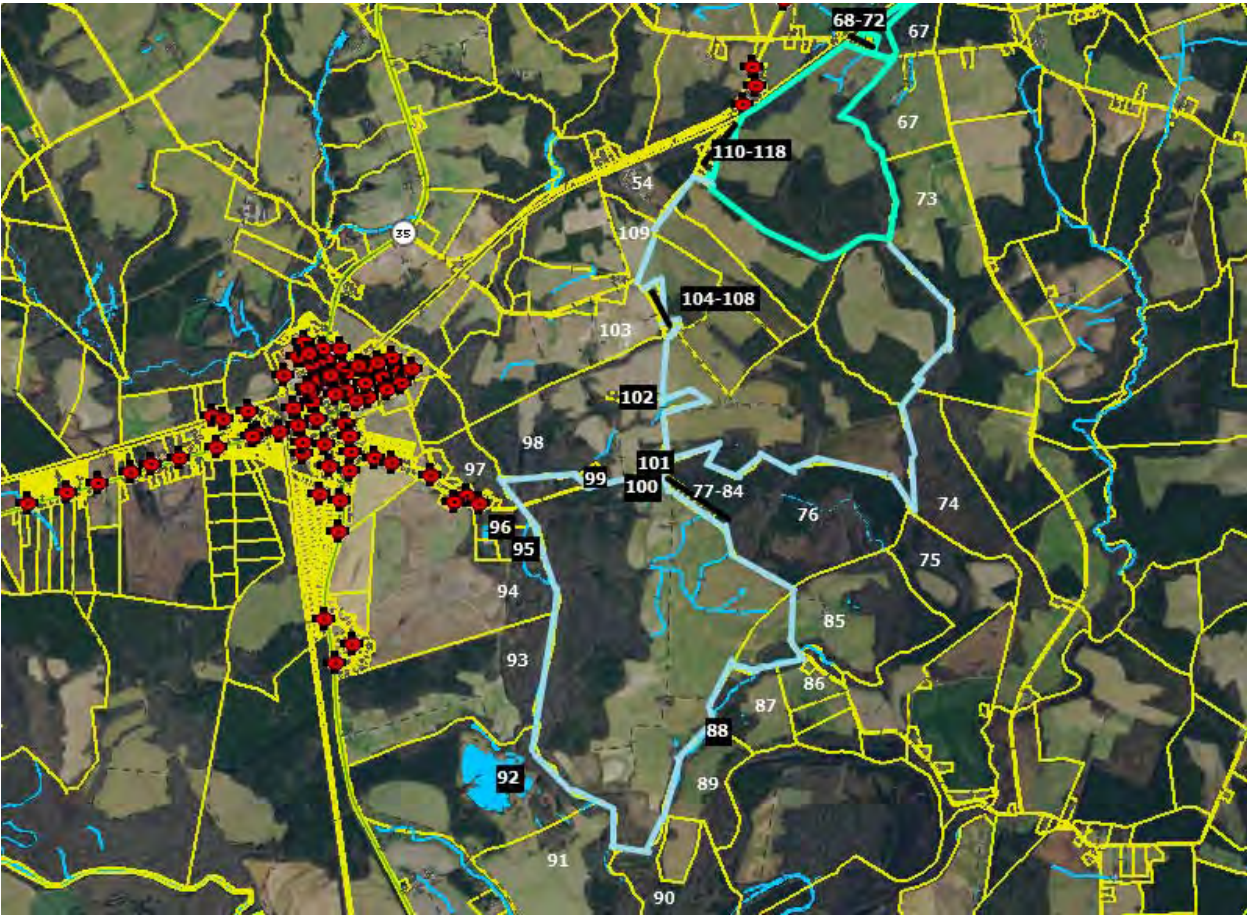
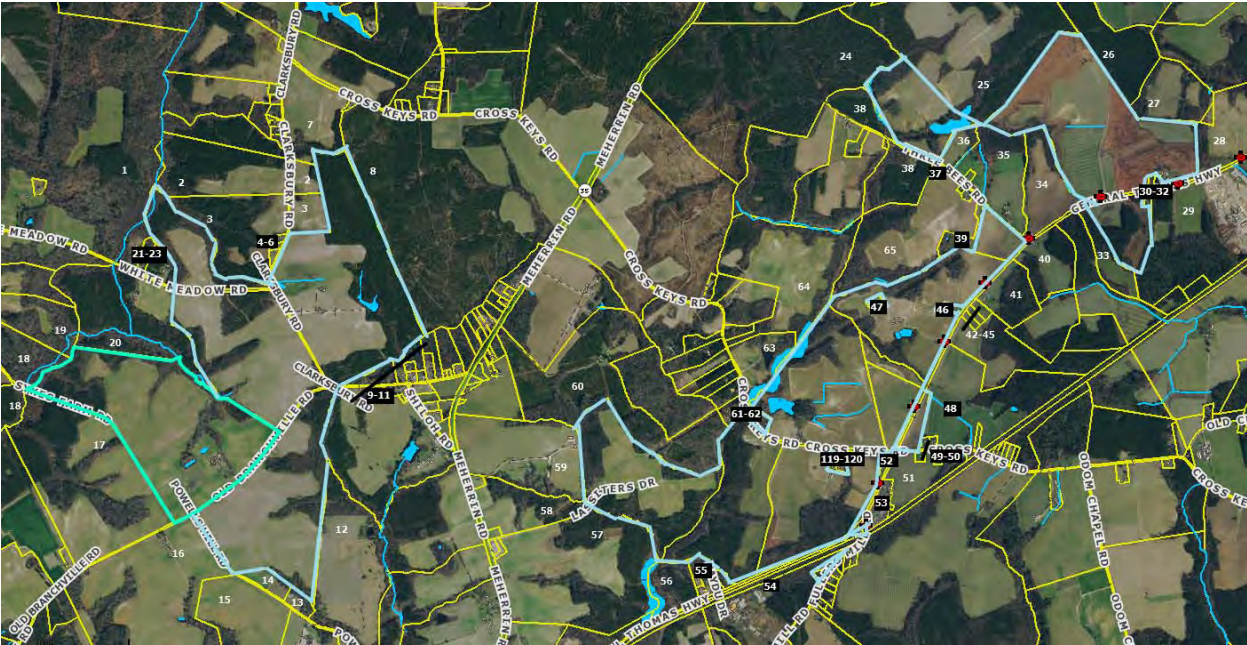


This project was built in 2017 for a solar project on a 106.12-acre tract for a 20 MW facility. The closest single-family home is 360 feet away from the closest solar panel. The average distance is 693 feet.

**Adjoining Use Breakdown**

	<b>Acreage</b>	<b>Parcels</b>
Residential	3.13%	57.89%
Agricultural	69.65%	26.32%
Agri/Res	26.99%	10.53%
Religious	0.23%	5.26%
<b>Total</b>	<b>100.00%</b>	<b>100.00%</b>

**485: Southampton Solar, General Thomas Hwy, Newsoms, VA**





This project was built in 2017 for a solar project on an assemblage of 3,244 acres for a 100 MW facility.

#### **Adjoining Use Breakdown**

	<b>Acreage</b>	<b>Parcels</b>
Residential	2.56%	53.33%
Agricultural	77.99%	36.67%
Agri/Res	16.56%	8.33%
Industrial	2.89%	1.67%
<b>Total</b>	<b>100.00%</b>	<b>100.00%</b>

## **VI. 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 700 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 3 of the 27 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**

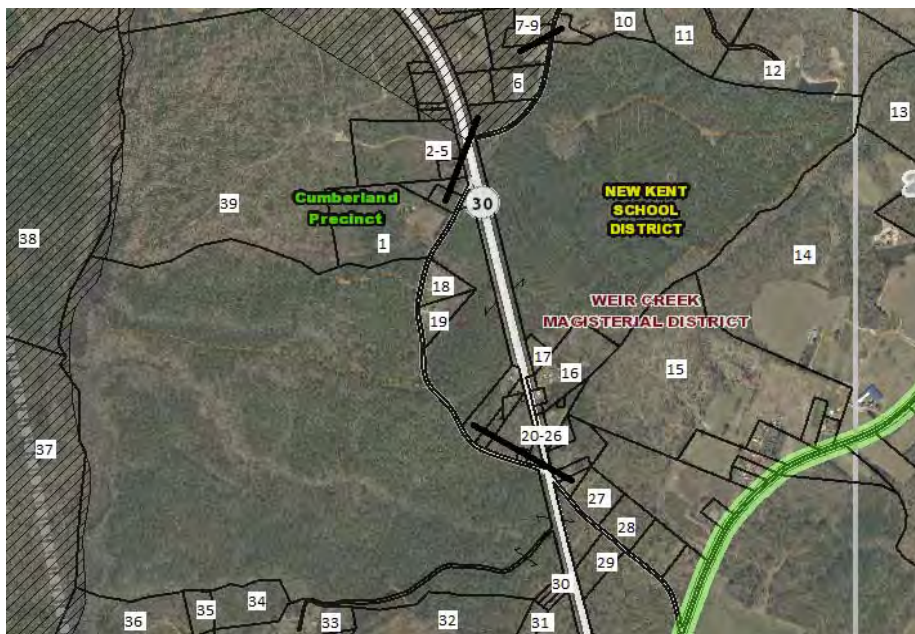


This project is a 20 MW facility located on a 234-acre tract that was built in 2017.





**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**

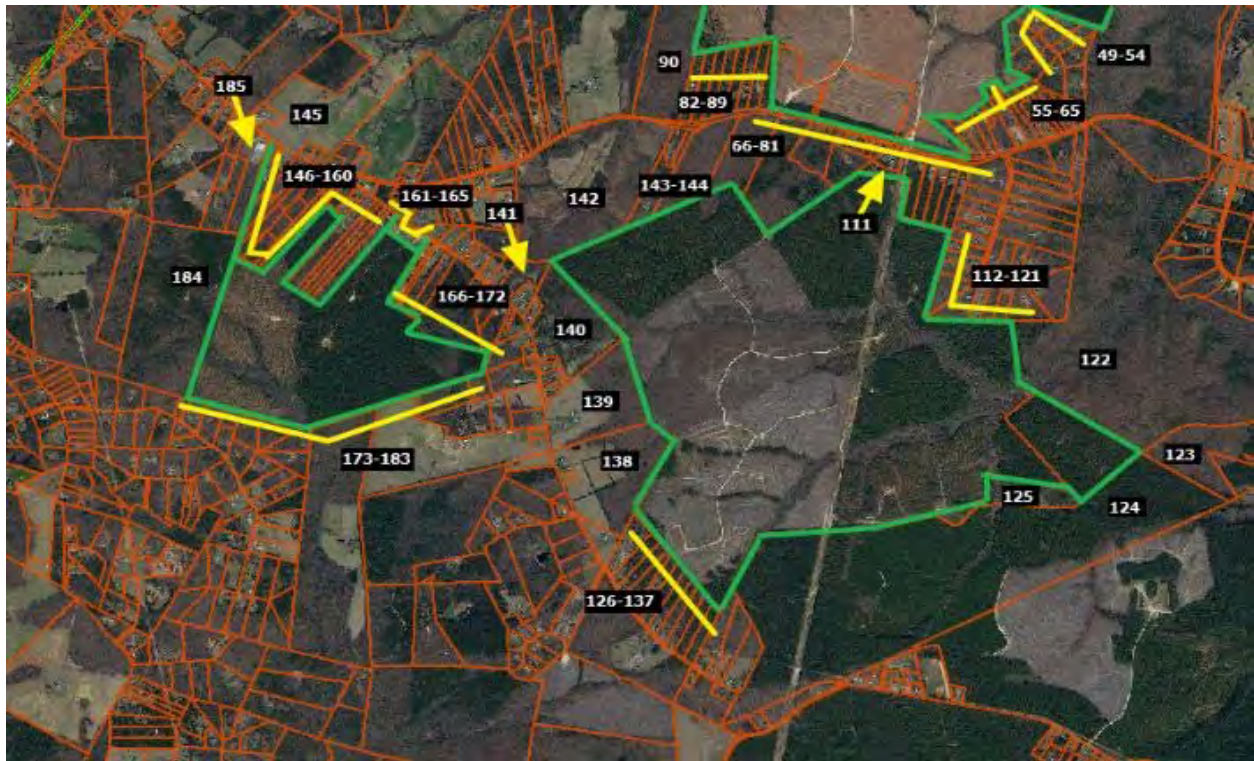
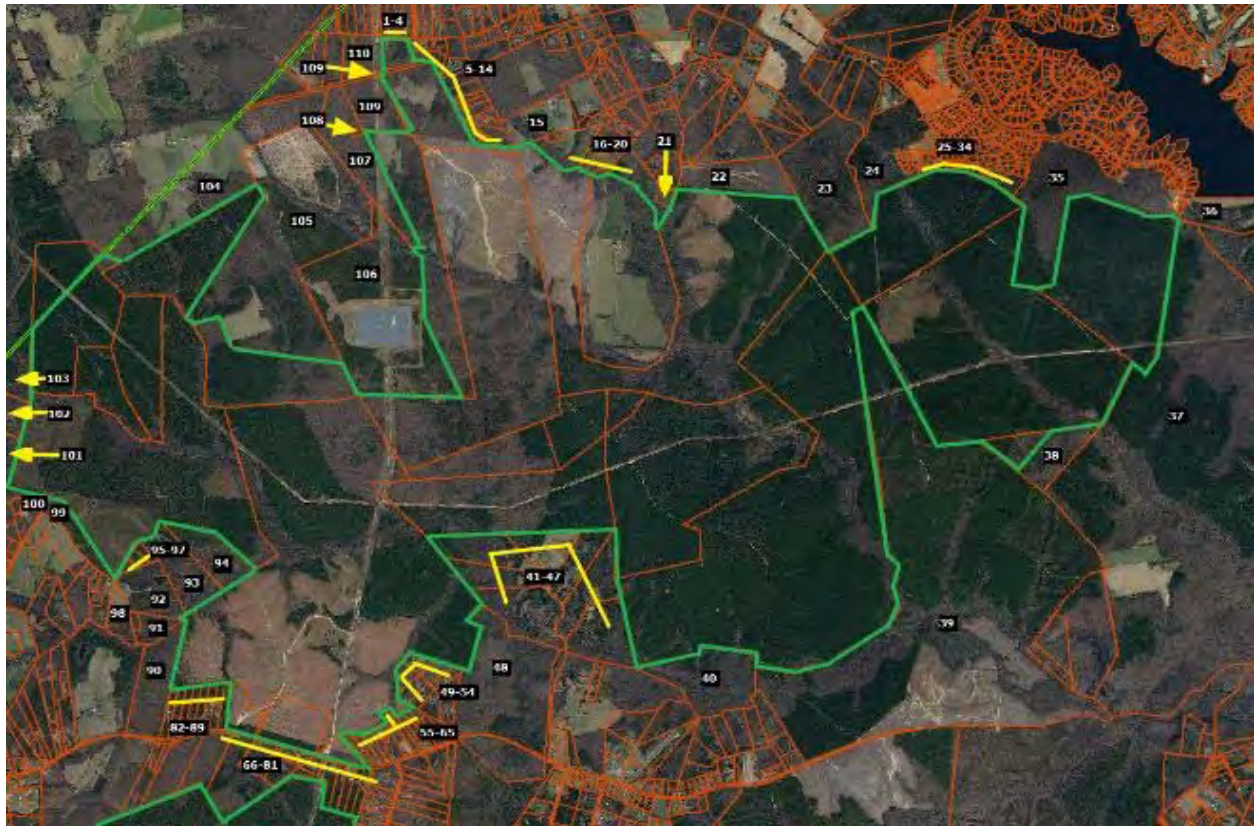
Solar	Address	Time	Ac/Loc	YB	GLA	BR/BA	Park	Other	Total	% Diff	Dist
Adjoins	5241 Barham								\$264,000		250
Not	17950 New Kent		-\$8,000	\$29,000	-\$4,756	-\$5,000	-\$20,000	-\$15,000	\$266,244	-1%	
Not	9252 Ordinary	-\$8,310	-\$8,000	\$8,310	\$2,581		-\$10,000	-\$15,000	\$246,581	7%	
Not	2416 W Miller		\$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.



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 617 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 Caparthin Road on the south side of Site A and east of Site C. The third is located on Post Oak Road for a home that backs up to Site C that sold in September 2020 near the completion of construction for Site C.

#### Spotsylvania Solar Farm

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

#### Adjoining Sales Adjusted

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

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

#### Adjoining Sales Adjusted

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

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

**Adjoining Sales Adjusted**

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

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

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

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



**Adjoining Residential Sales After Solar Farm Approved**

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

**Adjustments**

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

5%

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

**Adjoining Residential Sales After Solar Farm Approved**

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

**Adjustments**

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

-11%

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

**Adjoining Residential Sales After Solar Farm Approved**

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

**Adjustments**

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

-1%

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



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

**Adjoining Residential Sales After Solar Farm Approved**

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

**Adjustments**

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

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

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



**Adjoining Residential Sales After Solar Farm Approved**

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

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

1%

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

The five matched pairs considered in this analysis includes two that show no impact on value, one that shows a negative impact on value, and two 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 -1% and +3%. The average indicated impact is +0% when all five of these indicators are blended.

Furthermore, the comments of the local real estate broker 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.

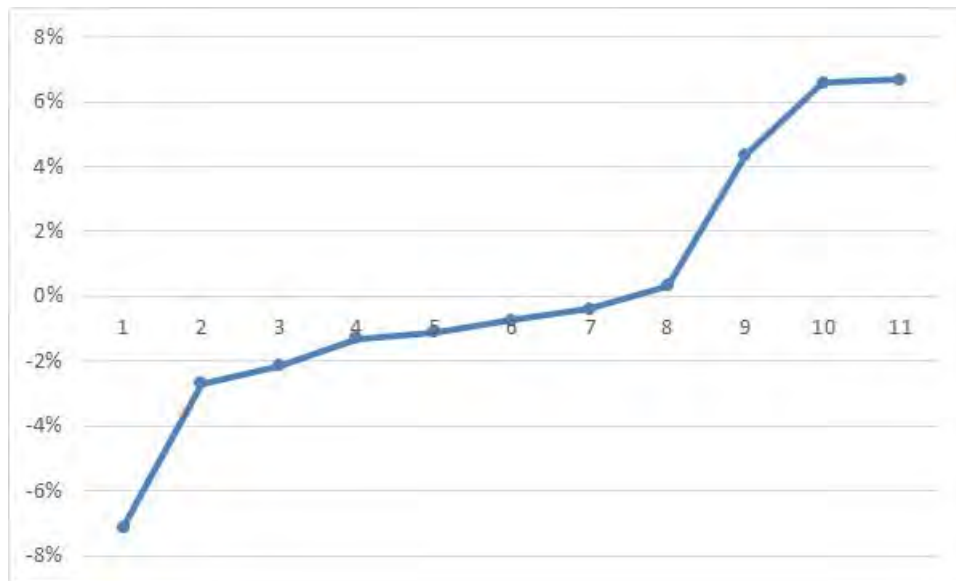
## **Conclusion**

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 \$80,778 with a median housing unit value of \$320,076. 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 \$1,000,000 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.

<b>Matched Pair Summary</b>			<b>Adj. Uses By Acreage</b>							<b>1 mile Radius (2010-2020 Data)</b>			
<b>Name</b>	<b>City</b>	<b>State</b>	<b>Acres</b>	<b>MW</b>	<b>Topo Shift</b>	<b>Res</b>	<b>Ag</b>	<b>Ag/Res</b>	<b>Com/Ind</b>	<b>Population</b>	<b>Med. Income</b>	<b>Avg. Housing Unit</b>	
<b>1</b>	Clarke Cnty	White Post	VA	234	20.00	70	14%	39%	46%	1%	578	\$81,022	\$374,453
<b>2</b>	Walker	Barhamsville	VA	485	20.00	N/A	12%	68%	20%	0%	203	\$80,773	\$320,076
<b>3</b>	Sappony	Stony Crk	VA	322	20.00	N/A	2%	98%	0%	0%	74	\$51,410	\$155,208
<b>4</b>	Spotsylvania	Paytes	VA	3,500	617.00	160	37%	52%	11%	0%	74	\$120,861	\$483,333
<b>5</b>	Crittenden	Crittenden	KY	34	2.70	40	22%	51%	27%	0%	1,419	\$60,198	\$178,643
<b>6</b>	White House	Louisa	VA	500	20.00	N/A	24%	55%	18%	3%	409	\$57,104	\$209,286
<b>Average</b>				846	116.62	90	19%	61%	20%	1%	460	\$75,228	\$286,833
<b>Median</b>				404	20.00	70	18%	54%	19%	0%	306	\$70,486	\$264,681
<b>High</b>				3,500	617.00	160	37%	98%	46%	3%	1,419	\$120,861	\$483,333
<b>Low</b>				34	2.70	40	2%	39%	0%	0%	74	\$51,410	\$155,208
<b>Prince Edward Solar</b>													
<b>1-Mile</b>				211	25.00		0%	55%	45%	0%	25	\$46,667	\$152,273
<b>3-Mile</b>				211	25.00		0%	55%	45%	0%	1,112	\$50,696	\$197,107

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 +5%. 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.



**Residential Dwelling Matched Pairs Adjoining Solar Farms**

Pair	Solar Farm	City	State	Area	MW	Approx		Date	Sale Price	Adj. Sale		Veg. Buffer
						Distance	Tax ID/Address			Price	% Diff	
1	Clarke Cnty	White Post	VA	Rural	20	1230	833 Nations Spr 6801 Middle	Jan-17 Dec-17	\$295,000 \$249,999	\$296,157	0%	Light
2	Walker	Barhamsville	VA	Rural	20	250	5241 Barham 9252 Ordinary	Oct-18 Jun-19	\$264,000 \$277,000	\$246,581	7%	Light
3	Clarke Cnty	White Post	VA	Rural	20	1230	833 Nations Spr 2393 Old Chapel	Aug-19 Aug-20	\$385,000 \$330,000	\$389,286	-1%	Light
4	Sappony	Stony Creek	VA	Rural	20	1425	12511 Palestine 6494 Rocky Branch	Jul-18 Nov-18	\$128,400 \$100,000	\$131,842	-3%	Medium
5	Spotsylvania	Paytes	VA	Rural	617	1270	12901 Orange Plnk 12717 Flintlock	Aug-20 Dec-20	\$319,900 \$290,000	\$326,767	-2%	Medium
6	Spotsylvania	Paytes	VA	Rural	617	1950	9641 Nottoway 11626 Forest	May-20 Aug-20	\$449,900 \$489,900	\$430,246	4%	Medium
7	Spotsylvania	Paytes	VA	Rural	617	1171	13353 Post Oak 12810 Catharpin	Sep-20 Jan-20	\$300,000 \$280,000	\$299,008	0%	Heavy
8	Crittenden	Crittenden	KY	Suburban	2.7	373	250 Claiborne 315 N Fork	Jan-19 May-19	\$120,000 \$107,000	\$120,889	-1%	Light
9	Crittenden	Crittenden	KY	Suburban	2.7	488	300 Claiborne 1795 Bay Valley	Sep-18 Dec-17	\$213,000 \$231,200	\$228,180	-7%	Light
10	Crittenden	Crittenden	KY	Suburban	2.7	720	350 Claiborne 2160 Sherman	Jul-18 Jun-19	\$245,000 \$265,000	\$248,225	-1%	Light
11	Crittenden	Crittenden	KY	Suburban	2.7	930	370 Claiborne 125 Lexington	Aug-19 Apr-18	\$273,000 \$240,000	\$254,751	7%	Light

	Avg. MW	Avg. Distance	Indicated Impact
<b>Average</b>	176.53	1,003	0%
<b>Median</b>	20.00	1,171	-1%
<b>High</b>	617.00	1,950	7%
<b>Low</b>	2.70	250	-7%

I have further broken down these results based on the MWs, Landscaping, and distance from panel to show the following range of findings for these different categories.

This breakdown shows no homes between 100-200 homes. Solar farms up to 75 MW show homes between 201 and 500 feet with no impact on value. Most of the findings are for homes between 201 and 500 feet.



Light landscaping screens are showing no impact on value at any distances, though solar farms over 75.1 MW only show Medium and Heavy landscaping screens in the 3 examples identified.

<b>MW Range</b>									
<b>4.4 to 10</b>									
<b>Landscaping Distance</b>	<b>Light 100-200</b>	<b>Light 201-500</b>	<b>Light 500+</b>	<b>Medium 100-200</b>	<b>Medium 201-500</b>	<b>Medium 500+</b>	<b>Heavy 100-200</b>	<b>Heavy 201-500</b>	<b>Heavy 500+</b>
<b>Average</b>	N/A	-4%	3%	N/A	N/A	N/A	N/A	N/A	N/A
<b>Median</b>	N/A	-4%	3%	N/A	N/A	N/A	N/A	N/A	N/A
<b>High</b>	N/A	-1%	7%	N/A	N/A	N/A	N/A	N/A	N/A
<b>Low</b>	N/A	-7%	-1%	N/A	N/A	N/A	N/A	N/A	N/A
<b>10.1 to 30</b>									
<b>Landscaping Distance</b>	<b>Light 100-200</b>	<b>Light 201-500</b>	<b>Light 500+</b>	<b>Medium 100-200</b>	<b>Medium 201-500</b>	<b>Medium 500+</b>	<b>Heavy 100-200</b>	<b>Heavy 201-500</b>	<b>Heavy 500+</b>
<b>Average</b>	N/A	7%	-1%	N/A	N/A	-3%	N/A	N/A	N/A
<b>Median</b>	N/A	7%	-1%	N/A	N/A	-3%	N/A	N/A	N/A
<b>High</b>	N/A	7%	0%	N/A	N/A	-3%	N/A	N/A	N/A
<b>Low</b>	N/A	7%	-1%	N/A	N/A	-3%	N/A	N/A	N/A
<b>30.1 to 75</b>									
<b>Landscaping Distance</b>	<b>Light 100-200</b>	<b>Light 201-500</b>	<b>Light 500+</b>	<b>Medium 100-200</b>	<b>Medium 201-500</b>	<b>Medium 500+</b>	<b>Heavy 100-200</b>	<b>Heavy 201-500</b>	<b>Heavy 500+</b>
<b>Average</b>	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
<b>Median</b>	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
<b>High</b>	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
<b>Low</b>	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
<b>75.1+</b>									
<b>Landscaping Distance</b>	<b>Light 100-200</b>	<b>Light 201-500</b>	<b>Light 500+</b>	<b>Medium 100-200</b>	<b>Medium 201-500</b>	<b>Medium 500+</b>	<b>Heavy 100-200</b>	<b>Heavy 201-500</b>	<b>Heavy 500+</b>
<b>Average</b>	N/A	N/A	N/A	N/A	N/A	1%	N/A	N/A	N/A
<b>Median</b>	N/A	N/A	N/A	N/A	N/A	1%	N/A	N/A	N/A
<b>High</b>	N/A	N/A	N/A	N/A	N/A	4%	N/A	N/A	N/A
<b>Low</b>	N/A	N/A	N/A	N/A	N/A	-2%	N/A	N/A	N/A

**B. Southeastern USA Data – Over 5 MW**

**1. Matched Pair – AM Best Solar Farm, Goldsboro, NC**

This 5 MW solar farm adjoins Spring Garden Subdivision which had new homes and lots available for new construction during the approval and construction of the solar farm. The recent home sales have ranged from \$200,000 to \$250,000. This subdivision sold out the last homes in late 2014. The solar farm is clearly visible particularly along the north end of this street where there is only a thin line of trees separating the solar farm from the single-family homes.

Homes backing up to the solar farm are selling at the same price for the same floor plan as the homes that do not back up to the solar farm in this subdivision. According to the builder, the solar farm has been a complete non-factor. Not only do the sales show no difference in the price paid for the various homes adjoining the solar farm versus not adjoining the solar farm, but there are actually more recent sales along the solar farm than not. There is no impact on the sellout rate, or time to sell for the homes adjoining the solar farm.

I spoke with a number of owners who adjoin the solar farm and none of them expressed any concern over the solar farm impacting their property value.

The data presented on the following page shows multiple homes that have sold in 2013 and 2014 adjoining the solar farm at prices similar to those not along the solar farm. These series of sales indicate that the solar farm has no impact on the adjoining residential use.



The homes that were marketed at Spring Garden are shown below.

	<p><b>Americana</b> SqFt: 3,194 Bed / Bath: 3 / 3.5</p>	<p>Price: \$237,900 <a href="#">View Now »</a></p>		<p><b>Washington</b> SqFt: 3,292 Bed / Bath: 4 / 3.5</p>	<p>Price: \$244,900 <a href="#">View Now »</a></p>
	<p><b>Presidential</b> SqFt: 3,400 Bed / Bath: 5 / 3.5</p>	<p>Price: \$247,900 <a href="#">View Now »</a></p>		<p><b>Kennedy</b> SqFt: 3,494 Bed / Bath: 5 / 3</p>	<p>Price: \$249,900 <a href="#">View Now »</a></p>
	<p><b>Virginia</b> SqFt: 3,449 Bed / Bath: 5 / 3</p>	<p>Price: \$259,900 <a href="#">View Now »</a></p>			

The homes adjoining the solar farm are considered to have a light landscaping screen as it is a narrow row of existing pine trees supplemented with evergreen plantings.

**Matched Pairs**

As of Date: 9/3/2014

**Adjoining Sales After Solar Farm Completed**

TAX ID	Owner	Acres	Date Sold	Sales Price	Built	GBA	\$/GBA	Style
3600195570	Helm	0.76	Sep-13	\$250,000	2013	3,292	\$75.94	2 Story
3600195361	Leak	1.49	Sep-13	\$260,000	2013	3,652	\$71.19	2 Story
3600199891	McBrayer	2.24	Jul-14	\$250,000	2014	3,292	\$75.94	2 Story
3600198632	Foresman	1.13	Aug-14	\$253,000	2014	3,400	\$74.41	2 Story
3600196656	Hinson	0.75	Dec-13	\$255,000	2013	3,453	\$73.85	2 Story
	Average	1.27		\$253,600	2013.4	3,418	\$74.27	
	Median	1.13		\$253,000	2013	3,400	\$74.41	

**Adjoining Sales After Solar Farm Announced**

TAX ID	Owner	Acres	Date Sold	Sales Price	Built	GBA	\$/GBA	Style
0	Feddersen	1.56	Feb-13	\$247,000	2012	3,427	\$72.07	Ranch
0	Gentry	1.42	Apr-13	\$245,000	2013	3,400	\$72.06	2 Story
	Average	1.49		\$246,000	2012.5	3,414	\$72.07	
	Median	1.49		\$246,000	2012.5	3,414	\$72.07	

**Adjoining Sales Before Solar Farm Announced**

TAX ID	Owner	Acres	Date Sold	Sales Price	Built	GBA	\$/GBA	Style
3600183905	Carter	1.57	Dec-12	\$240,000	2012	3,347	\$71.71	1.5 Story
3600193097	Kelly	1.61	Sep-12	\$198,000	2012	2,532	\$78.20	2 Story
3600194189	Hadwan	1.55	Nov-12	\$240,000	2012	3,433	\$69.91	1.5 Story
	Average	1.59		\$219,000	2012	2,940	\$74.95	
	Median	1.59		\$219,000	2012	2,940	\$74.95	

**Nearby Sales After Solar Farm Completed**

TAX ID	Owner	Acres	Date Sold	Sales Price	Built	GBA	\$/GBA	Style
3600193710	Barnes	1.12	Oct-13	\$248,000	2013	3,400	\$72.94	2 Story
3601105180	Nackley	0.95	Dec-13	\$253,000	2013	3,400	\$74.41	2 Story
3600192528	Mattheis	1.12	Oct-13	\$238,000	2013	3,194	\$74.51	2 Story
3600198928	Beckman	0.93	Mar-14	\$250,000	2014	3,292	\$75.94	2 Story
3600196965	Hough	0.81	Jun-14	\$224,000	2014	2,434	\$92.03	2 Story
3600193914	Preskitt	0.67	Jun-14	\$242,000	2014	2,825	\$85.66	2 Story
3600194813	Bordner	0.91	Apr-14	\$258,000	2014	3,511	\$73.48	2 Story
3601104147	Shaffer	0.73	Apr-14	\$255,000	2014	3,453	\$73.85	2 Story
	Average	0.91		\$246,000	2013.625	3,189	\$77.85	
	Median	0.92		\$249,000	2014	3,346	\$74.46	

**Nearby Sales Before Solar Farm Announced**

TAX ID	Owner	Acres	Date Sold	Sales Price	Built	GBA	\$/GBA	Style
3600191437	Thomas	1.12	Sep-12	\$225,000	2012	3,276	\$68.68	2 Story
3600087968	Lilley	1.15	Jan-13	\$238,000	2012	3,421	\$69.57	1.5 Story
3600087654	Burke	1.26	Sep-12	\$240,000	2012	3,543	\$67.74	2 Story
3600088796	Hobbs	0.73	Sep-12	\$228,000	2012	3,254	\$70.07	2 Story
	Average	1.07		\$232,750	2012	3,374	\$69.01	
	Median	1.14		\$233,000	2012	3,349	\$69.13	

**Matched Pair Summary**

	<b>Adjoins Solar Farm</b>		<b>Nearby Solar Farm</b>	
	<b>Average</b>	<b>Median</b>	<b>Average</b>	<b>Median</b>
Sales Price	\$253,600	\$253,000	\$246,000	\$249,000
Year Built	2013	2013	2014	2014
Size	3,418	3,400	3,189	3,346
Price/SF	\$74.27	\$74.41	\$77.85	\$74.46

**Percentage Differences**

Median Price	-2%
Median Size	-2%
Median Price/SF	0%

I note that 2308 Granville Drive sold again in November 2015 for \$267,500, or \$7,500 more than when it was purchased new from the builder two years earlier (Tax ID 3600195361, Owner: Leak). The neighborhood is clearly showing appreciation for homes adjoining the solar farm.

The Median Price is the best indicator to follow in any analysis as it avoids outlying samples that would otherwise skew the results. The median sizes and median prices are all consistent throughout the sales both before and after the solar farm whether you look at sites adjoining or nearby to the solar farm. The average size for the homes nearby the solar farm shows a smaller building size and a higher price per square foot. This reflects a common occurrence in real estate where the price per square foot goes up as the size goes down. So even comparing averages the indication is for no impact, but I rely on the median rates as the most reliable indication for any such analysis.

I have also considered four more recent resales of homes in this community as shown on the following page. These comparable sales adjoin the solar farm at distances ranging from 315 to 400 feet. The matched pairs show a range from -9% to +6%. The range of the average difference is -2% to +1% with an average of 0% and a median of +0.5%. These comparable sales support a finding of no impact on 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	Distance
	Adjoins	103 Granville Pl	1.42	7/27/2018	\$265,000	2013	3,292	\$80.50	4/3.5	2-Car	2-Story		385
	Not	2219 Granville	1.15	1/8/2018	\$260,000	2012	3,292	\$78.98	4/3.5	2-Car	2-Story		
	Not	634 Friendly	0.96	7/31/2019	\$267,000	2018	3,053	\$87.45	4/4.5	2-Car	2-Story		
	Not	2403 Granville	0.69	4/23/2019	\$265,000	2014	2,816	\$94.11	5/3.5	2-Car	2-Story		
												<b>Avg</b>	
	<b>Solar</b>	<b>Address</b>	<b>Time</b>	<b>Site</b>	<b>YB</b>	<b>GLA</b>	<b>BR/BA</b>	<b>Park</b>	<b>Other</b>	<b>Total</b>	<b>% Diff</b>	<b>% Diff</b>	
	Adjoins	103 Granville Pl								\$265,000		-2%	
	Not	2219 Granville	\$4,382		\$1,300	\$0				\$265,682		0%	
	Not	634 Friendly	-\$8,303		-\$6,675	\$16,721	-\$10,000			\$258,744		2%	
	Not	2403 Granville	-\$6,029		-\$1,325	\$31,356				\$289,001		-9%	

**Adjoining Residential Sales After Solar Farm Approved**

Parcel	Solar	Address	Acres	Date Sold	Sales Price	Built	GBA	\$/GBA	BR/BA	Park	Style	Other	Distance
	Adjoins	104 Erin	2.24	6/19/2017	\$280,000	2014	3,549	\$78.90	5/3.5	2-Car	2-Story		315
	Not	2219 Granville	1.15	1/8/2018	\$260,000	2012	3,292	\$78.98	4/3.5	2-Car	2-Story		
	Not	634 Friendly	0.96	7/31/2019	\$267,000	2018	3,053	\$87.45	4/4.5	2-Car	2-Story		
	Not	2403 Granville	0.69	4/23/2019	\$265,000	2014	2,816	\$94.11	5/3.5	2-Car	2-Story		
												<b>Avg</b>	
	<b>Solar</b>	<b>Address</b>	<b>Time</b>	<b>Site</b>	<b>YB</b>	<b>GLA</b>	<b>BR/BA</b>	<b>Park</b>	<b>Other</b>	<b>Total</b>	<b>% Diff</b>	<b>% Diff</b>	
	Adjoins	104 Erin								\$280,000		0%	
	Not	2219 Granville	-\$4,448		\$2,600	\$16,238				\$274,390		2%	
	Not	634 Friendly	-\$17,370		-\$5,340	\$34,702	-\$10,000			\$268,992		4%	
	Not	2403 Granville	-\$15,029		\$0	\$48,285				\$298,256		-7%	

**Adjoining Residential Sales After Solar Farm Approved**

Parcel	Solar	Address	Acres	Date Sold	Sales Price	Built	GBA	\$/GBA	BR/BA	Park	Style	Other	Distance
	Adjoins	2312 Granville	0.75	5/1/2018	\$284,900	2013	3,453	\$82.51	5/3.5	2-Car	2-Story		400
	Not	2219 Granville	1.15	1/8/2018	\$260,000	2012	3,292	\$78.98	4/3.5	2-Car	2-Story		
	Not	634 Friendly	0.96	7/31/2019	\$267,000	2018	3,053	\$87.45	4/4.5	2-Car	2-Story		
	Not	2403 Granville	0.69	4/23/2019	\$265,000	2014	2,816	\$94.11	5/3.5	2-Car	2-Story		
												<b>Avg</b>	
	<b>Solar</b>	<b>Address</b>	<b>Time</b>	<b>Site</b>	<b>YB</b>	<b>GLA</b>	<b>BR/BA</b>	<b>Park</b>	<b>Other</b>	<b>Total</b>	<b>% Diff</b>	<b>% Diff</b>	
	Adjoins	2312 Granville								\$284,900		1%	
	Not	2219 Granville	\$2,476		\$1,300	\$10,173				\$273,948		4%	
	Not	634 Friendly	-\$10,260		-\$6,675	\$27,986	-\$10,000			\$268,051		6%	
	Not	2403 Granville	-\$7,972		-\$1,325	\$47,956				\$303,659		-7%	

**Adjoining Residential Sales After Solar Farm Approved**

Parcel	Solar	Address	Acres	Date Sold	Sales Price	Built	GBA	\$/GBA	BR/BA	Park	Style	Other	Distance
	Adjoins	2310 Granville	0.76	5/14/2019	\$280,000	2013	3,292	\$85.05	5/3.5	2-Car	2-Story		400
	Not	2219 Granville	1.15	1/8/2018	\$260,000	2012	3,292	\$78.98	4/3.5	2-Car	2-Story		
	Not	634 Friendly	0.96	7/31/2019	\$267,000	2018	3,053	\$87.45	4/4.5	2-Car	2-Story		
	Not	2403 Granville	0.69	4/23/2019	\$265,000	2014	2,816	\$94.11	5/3.5	2-Car	2-Story		
												<b>Avg</b>	
	<b>Solar</b>	<b>Address</b>	<b>Time</b>	<b>Site</b>	<b>YB</b>	<b>GLA</b>	<b>BR/BA</b>	<b>Park</b>	<b>Other</b>	<b>Total</b>	<b>% Diff</b>	<b>% Diff</b>	
	Adjoins	2310 Granville								\$280,000		1%	
	Not	2219 Granville	\$10,758		\$1,300	\$0				\$272,058		3%	
	Not	634 Friendly	-\$1,755		-\$6,675	\$16,721	-\$10,000			\$265,291		5%	
	Not	2403 Granville	\$469		-\$1,325	\$31,356				\$295,500		-6%	

I have also considered the original sales prices in this subdivision relative to the recent resale values as shown in the chart below. This rate of appreciation is right at 2.5% over the last 6 years. Zillow indicates that the average home value within the 27530-zip code as of January 2014 was \$101,300 and as of January 2020 that average is \$118,100. This indicates an average increase in the market of 2.37%. I conclude that the appreciation of the homes adjoining the solar farm are not impacted by the presence of the solar farm based on this data.

Address	Initial Sale		Second Sale		Year Diff	Apprec. Apprec.	% Apprec.	Apprec. %/Year
	Date	Price	Date	Price				
1 103 Granville Pl	4/1/2013	\$245,000	7/27/2018	\$265,000	5.32	\$20,000	8.16%	1.53%
2 105 Erin	7/1/2014	\$250,000	6/19/2017	\$280,000	2.97	\$30,000	12.00%	4.04%
3 2312 Granville	12/1/2013	\$255,000	5/1/2015	\$262,000	1.41	\$7,000	2.75%	1.94%
4 2312 Granville	5/1/2015	\$262,000	5/1/2018	\$284,900	3.00	\$22,900	8.74%	2.91%
5 2310 Granville	8/1/2013	\$250,000	5/14/2019	\$280,000	5.79	\$30,000	12.00%	2.07%
6 2308 Granville	9/1/2013	\$260,000	11/12/2015	\$267,500	2.20	\$7,500	2.88%	1.31%
7 2304 Granville	9/1/2012	\$198,000	6/1/2017	\$225,000	4.75	\$27,000	13.64%	2.87%
8 102 Erin	8/1/2014	\$253,000	11/1/2016	\$270,000	2.25	\$17,000	6.72%	2.98%
							Average	2.46%
							Median	2.47%

## 2. Matched Pair – Mulberry, Selmer, TN



This 16 MW solar farm was built in 2014 on 208.89 acres with the closest home being 480 feet.

This solar farm adjoins two subdivisions with Central Hills having a mix of existing and new construction homes. Lots in this development have been marketed for \$15,000 each with discounts offered for multiple lots being used for a single home site. I spoke with the agent with Rhonda Wheeler and Becky Hearnberger with United County Farm & Home Realty who noted that they have seen no impact on lot or home sales due to the solar farm in this community.

I have included a map below as well as data on recent sales activity on lots that adjoin the solar farm or are near the solar farm in this subdivision both before and after the announced plan for this solar farm facility. I note that using the same method I used to breakdown the adjoining uses at the subject property I show that the predominant adjoining uses are residential and agricultural, which is consistent with the location of most solar farms.

**Adjoining Use Breakdown**

	<b>Acreage</b>	<b>Parcels</b>
Commercial	3.40%	0.034
Residential	12.84%	79.31%
Agri/Res	10.39%	3.45%
Agricultural	73.37%	13.79%
<b>Total</b>	<b>100.00%</b>	<b>100.00%</b>

I have run a number of direct matched comparisons on the sales adjoining this solar farm as shown below. These direct matched pairs include some of those shown above as well as additional more recent sales in this community. In each of these I have compared the one sale adjoining the solar farm to multiple similar farm homes nearby that do not adjoin a solar farm to look for any potential impact from the solar farm.

Parcel	Solar	Address	Acres	Date Sold	Sales Price	Built	GBA	\$/GBA	BR/BA	Park	Style	Other
3	Adjoins	491 Dusty	6.86	10/28/2016	\$176,000	2009	1,801	\$97.72	3/2	2-Gar	Ranch	
	Not	820 Lake Trail	1.00	6/8/2018	\$168,000	2013	1,869	\$89.89	4/2	2-Gar	Ranch	
	Not	262 Country	1.00	1/17/2018	\$145,000	2000	1,860	\$77.96	3/2	2-Gar	Ranch	
	Not	35 April	1.15	8/16/2016	\$185,000	2016	1,980	\$93.43	3/2	2-Gar	Ranch	

<b>Adjoining Sales Adjusted</b>												
Parcel	Solar	Address	Acres	Date Sold	Sales Price	Built	GBA	\$/GBA	BR/BA	Park	Style	Other
3	Adjoins	491 Dusty										
	Not	820 Lake Trail			-\$8,324		\$12,000	-\$3,360	-\$4,890			\$176,000
	Not	262 Country			-\$5,450		\$12,000	\$6,525	-\$3,680			\$163,426
	Not	35 April			\$1,138		\$12,000	-\$6,475	-\$13,380			\$154,396
												\$178,283
												<b>Average</b>
												6%
												480

The best matched pair is 35 April Loop, which required the least adjustment and indicates a -1% increase in value due to the solar farm adjacency.

**Adjoining Residential Sales After Solar Farm Built**

Parcel	Solar	Address	Acres	Date Sold	Sales Price	Built	GBA	\$/GBA	BR/BA	Park	Style	Other
12	Adjoins	57 Cooper	1.20	2/26/2019	\$163,000	2011	1,586	\$102.77	3/2	2-Gar	1.5 Story	Pool
	Not	191 Amelia	1.00	8/3/2018	\$132,000	2005	1,534	\$86.05	3/2	Drive	Ranch	
	Not	75 April	0.85	3/17/2017	\$134,000	2012	1,588	\$84.38	3/2	2-Crprt	Ranch	
	Not	345 Woodland	1.15	12/29/2016	\$131,000	2002	1,410	\$92.91	3/2	1-Gar	Ranch	

<b>Adjoining Sales Adjusted</b>												
Parcel	Solar	Address	Acres	Date Sold	Sales Price	Built	GBA	\$/GBA	BR/BA	Park	Style	Other
12	Adjoins	57 Cooper			\$163,000							
	Not	191 Amelia			\$2,303		\$3,960	\$2,685	\$10,000	\$5,000		\$163,000
	Not	75 April			\$134,000		\$8,029	\$4,000	-\$670	-\$135		\$155,947
	Not	345 Woodland			\$131,000		\$8,710	\$5,895	\$9,811			\$155,224
												\$160,416
												<b>Average</b>
												4%
												5%
												2%
												4%

The best matched pair is 191 Amelia, which was most similar in time frame of sale and indicates a +4% increase in value due to the solar farm adjacency.



**Adjoining Residential Sales After Solar Farm Built**

Parcel	Solar	Address	Acres	Date Sold	Sales Price	Built	GBA	\$/GBA	BR/BA	Park	Style	Other
15	Adjoins	297 Country	1.00	9/30/2016	\$150,000	2002	1,596	\$93.98	3/2	4-Gar	Ranch	
	Not	185 Dusty	1.85	8/17/2015	\$126,040	2009	1,463	\$86.15	3/2	2-Gar	Ranch	
	Not	53 Glen	1.13	3/9/2017	\$126,000	1999	1,475	\$85.42	3/2	2-Gar	Ranch	Brick

**Adjoining Sales Adjusted**

Parcel	Solar	Address	Sales Price	Time	Site	YB	GLA	Park	Other	Total	% Diff	Distance
15	Adjoins	297 Country	\$150,000							\$150,000		650
	Not	185 Dusty	\$126,040	\$4,355		-\$4,411	\$9,167	\$10,000		\$145,150	3%	
	Not	53 Glen	\$126,000	-\$1,699		\$1,890	\$8,269	\$10,000		\$144,460	4%	
										<b>Average</b>	3%	

The best matched pair is 53 Glen, which was most similar in time frame of sale and required less adjustment. It indicates a +4% increase in value due to the solar farm adjacency.

The average indicated impact from these three sets of matched pairs is +4%, which suggests a mild positive relationship due to adjacency to the solar farm. The landscaping buffer for this project is mostly natural tree growth that was retained as part of the development but much of the trees separating the panels from homes are actually on the lots for the homes themselves. I therefore consider the landscaping buffer to be thin to moderate for these adjoining homes.

I have also looked at several lot sales in this subdivision as shown below.

These are all lots within the same community and the highest prices paid are for lots one parcel off from the existing solar farm. These prices are fairly inconsistent, though they do suggest about a \$3,000 loss in the lots adjoining the solar farm. This is an atypical finding and additional details suggest there is more going on in these sales than the data crunching shows. First of all Parcel 4 was purchased by the owner of the adjoining home and therefore an atypical buyer seeking to expand a lot and the site is not being purchased for home development. Moreover, using the SiteToDoBusiness demographic tools, I found that the 1-mile radius around this development is expecting a total population increase over the next 5 years of 3 people. This lack of growing demand for lots is largely explained in that context. Furthermore, the fact that finished home sales as shown above are showing no sign of a negative impact on property value makes this data unreliable and inconsistent with the data shown in sales to an end user. I therefore place little weight on this outlier data.

Parcel	Solar	Address	Acres	Date Sold	Sales Price	4/18/2019 Adj for Time	\$/AC	4/18/2019 Adj for Time
4	Adjoins	Shelter	2.05	10/25/2017	\$16,000	\$16,728	\$7,805	\$8,160
10	Adjoins	Carter	1.70	8/2/2018	\$14,000	\$14,306	\$8,235	\$8,415
11	Adjoins	Cooper	1.28	9/17/2018	\$12,000	\$12,215	\$9,375	\$9,543
	Not	75 Dusty	1.67	4/18/2019	\$20,000	\$20,000	\$11,976	\$11,976
	Not	Lake Trl	1.47	11/7/2018	\$13,000	\$13,177	\$8,844	\$8,964
	Not	Lake Trl	1.67	4/18/2019	\$20,000	\$20,000	\$11,976	\$11,976
		<b>Adjoins</b>	<b>Per Acre</b>	<b>Not Adjoins</b>	<b>Per Acre</b>	<b>% DIF/Lot</b>	<b>% DIF/AC</b>	
	<b>Average</b>	\$14,416	\$8,706	\$17,726	\$10,972	19%	21%	
	<b>Median</b>	\$14,306	\$8,415	\$20,000	\$11,976	28%	30%	
	<b>High</b>	\$16,728	\$9,543	\$20,000	\$11,976	16%	20%	
	<b>Low</b>	\$12,215	\$8,160	\$13,177	\$8,964	7%	9%	

**3. Matched Pair – Leonard Road Solar Farm, Hughesville, MD**



This 5 MW solar farm is located on 47 acres and mostly adjoins agricultural and residential uses to the west, south and east as shown above. The property also adjoins retail uses and a church. I looked at a 2016 sale of an adjoining home with a positive impact on value adjoining the solar farm of 2.90%. This is within typical market friction and supports an indication of no impact on property value.

I have shown this data below. The landscaping buffer is considered heavy.

**Leonardtown Road Solar Farm, Hughesville, MD**

**Nearby Residential Sale After Solar Farm Construction**

Address	Solar Farm Acres	Date Sold	Sales Price*	Built	GBA	\$/GBA	Style	BR/BA	Bsmt	Park	Upgrades	Other
14595 Box Elder Ct	Adjoins	2/12/2016	\$291,000	1991	2,174	\$133.85	Colonial	5/2.5	No	2 Car Att	N/A	Deck
15313 Bassford Rd	Not	7/20/2016	\$329,800	1990	2,520	\$130.87	Colonial	3/2.5	Finished	2 Car Att	Custom	Scr Por/Patio

\*\$9,000 concession deducted from sale price for Box Elder and \$10,200 deducted from Bassford

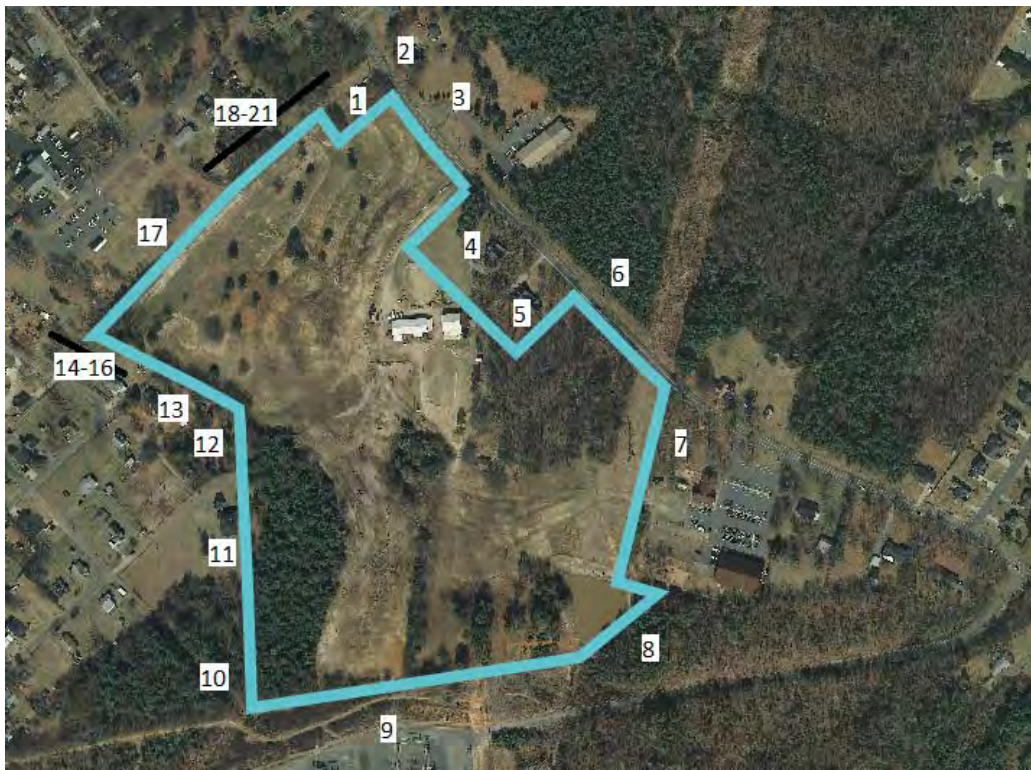
**Adjoining Sales Adjusted**

Address	Date Sold	Sales Price	Time	GLA	Bsmt	Upgrades	Other	Total
14595 Box Elder Ct	2/12/2016	\$291,000						\$291,000
15313 Bassford Rd	7/20/2016	\$329,800	-\$3,400	-\$13,840	-\$10,000	-\$15,000	-\$5,000	\$282,560

**Difference Attributable to Location** \$8,440  
2.90%

This is within typical market friction and supports an indication of no impact on property value.

**4. Matched Pair – Gastonia SC Solar, Gastonia, NC**



This 5 MW project is located on the south side of Neal Hawkins Road just outside of Gastonia. The property identified above as Parcel 4 was listed for sale while this solar farm project was going



**5. Matched Pair – Summit/Ranchlands Solar, Moyock, NC**



This project is located at 1374 Caritoke Highway, Moyock, NC. This is an 80 MW facility on a parent tract of 2,034 acres. Parcels Number 48 and 53 as shown in the map above were sold in 2016. The project was under construction during the time period of the first of the matched pair sales and the permit was approved well prior to that in 2015.

I looked at multiple sales of adjoining and nearby homes and compared each to multiple comparables to show a range of impacts from -10% up to +11% with an average of +2% and a median of +3%. These ranges are well within typical real estate variation and supports an indication of no impact on property value.

<b>Adjoining Residential Sales After Solar Farm Approved</b>													
Parcel	Solar	Address	Acres	Date Sold	Sales Price	Built	GBA	\$/GBA	BR/BA	Park	Style	Other	Distance
48	Adjoins	129 Pinto	4.29	4/15/2016	\$170,000	1985	1,559	\$109.04	3/2	Drive	MFG		1,060
	Not	102 Timber	1.30	4/1/2016	\$175,500	2009	1,352	\$129.81	3/2	Drive	MFG		
	Not	120 Ranchland	0.99	10/1/2014	\$170,000	2002	1,501	\$113.26	3/2	Drive	MFG		
	Solar	Address	Time	Site	YB	GLA	BR/BA	Park	Other	Total	% Diff	Avg % Diff	
	Adjoins	129 Pinto								\$170,000		-3%	
	Not	102 Timber	\$276	\$10,000	-\$29,484	\$18,809				\$175,101	-3%		
	Not	120 Ranchland	\$10,735	\$10,000	-\$20,230	\$4,598				\$175,103	-3%		

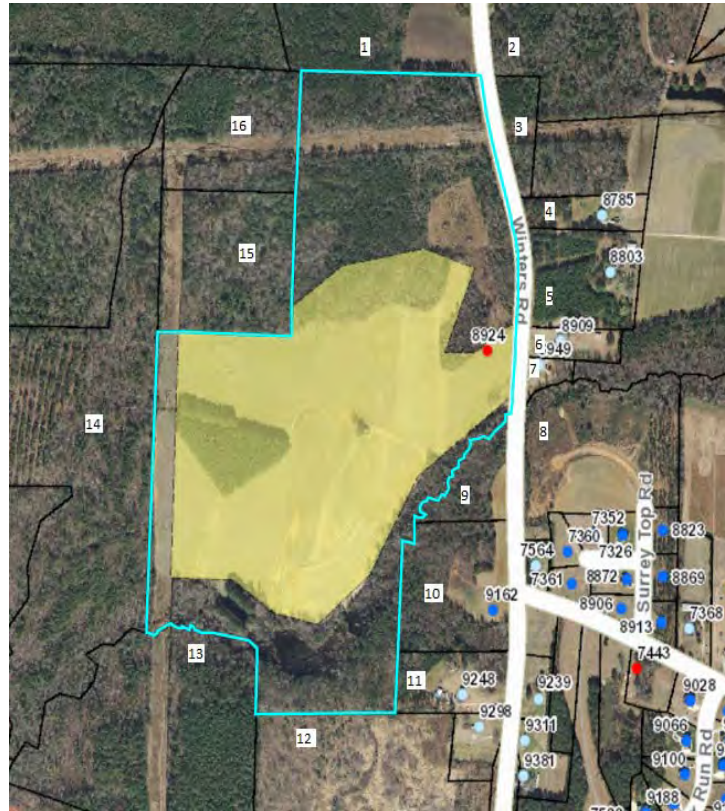
Solar	Address	Acres	Date Sold	Sales Price	Built	GBA	\$/GLA	BR/BA	Park	Style	Other
Adjoins	105 Pinto	4.99	12/16/2016	\$206,000	1978	1,484	\$138.81	3/2	Det G	Ranch	
Not	111 Spur	1.15	2/1/2016	\$193,000	1985	2,013	\$95.88	4/2	Gar	Ranch	
Not	103 Marshall	1.07	3/29/2017	\$196,000	2003	1,620	\$120.99	3/2	Drive	Ranch	
Not	127 Ranchland	0.00	6/9/2015	\$219,900	1988	1,910	\$115.13	3/2	Gar/3Det	Ranch	

<b>Adjoining Sales Adjusted</b>											Avg
Address	Time	Site	YB	GLA	BR/BA	Park	Other	Total	% Diff	% Diff	Distance
105 Pinto								\$206,000			980
111 Spur	\$6,747	\$10,000	-\$6,755	-\$25,359				\$177,633	14%		
103 Marshall	-\$2,212	\$10,000	-\$24,500	-\$8,227		\$5,000		\$176,212	14%		
127 Ranchland	\$13,399	\$10,000	-\$10,995	-\$24,523		-\$10,000		\$197,781	4%		
										11%	

<b>Adjoining Residential Sales After Solar Farm Built</b>													
Parcel	Solar	Address	Acres	Date Sold	Sales Price	Built	GBA	\$/GBA	BR/BA	Park	Style	Other	Distance
15	Adjoins	318 Green View	0.44	9/15/2019	\$357,000	2005	3,460	\$103.18	4/4	2-Car	1.5 Brick		570
	Not	195 St Andrews	0.55	6/17/2018	\$314,000	2002	3,561	\$88.18	5/3	2-Car	2.0 Brick		
	Not	336 Green View	0.64	1/13/2019	\$365,000	2006	3,790	\$96.31	6/4	3-Car	2.0 Brick		
	Not	275 Green View	0.36	8/15/2019	\$312,000	2003	3,100	\$100.65	5/3	2-Car	2.0 Brick		
	Solar	Address	Time	Site	YB	GLA	BR/BA	Park	Other	Total	% Diff	Avg % Diff	
	Adjoins	318 Green View								\$357,000		4%	
	Not	195 St Andrews	\$12,040		\$4,710	-\$7,125	\$10,000			\$333,625	7%		
	Not	336 Green View	\$7,536		-\$1,825	-\$25,425			-\$5,000	\$340,286	5%		
	Not	275 Green View	\$815		\$3,120	\$28,986	\$10,000			\$354,921	1%		



**6. Matched Pair – Tracy Solar, Bailey, NC**



This project is located in rural Nash County on Winters Road with a 5 MW facility that was built in 2016 on 50 acres. A local builder acquired parcels 9 and 10 following construction as shown below



at rates comparable to other tracts in the area. They then built a custom home for an owner and sold that at a price similar to other nearby homes as shown in the matched pair data below. The retained woods provide a heavy landscaped buffer for this homesite.

**Adjoining Land Sales After Solar Farm Completed**

#	Solar Farm	TAX ID	Grantor	Grantee	Address	Acres	Date Sold	Sales Price	\$/AC	Other
9 &10	Adjoins	316003 & 316004	Cozart	Kingsmill	9162 Winters	13.22	7/21/2016	\$70,000	\$5,295	
	Not	6056	Billingsly		427 Young	41	10/21/2016	\$164,000	\$4,000	
	Not	33211	Fulcher	Weikel	10533 Cone	23.46	7/18/2017	\$137,000	\$5,840	Doublewide, structures
	Not	106807	Perry	Gardner	Claude Lewis	11.22	8/10/2017	\$79,000	\$7,041	Gravel drive for sub, cleared
	Not	3437	Vaughan	N/A	11354 Old Lewis Sch	18.73	Listing	\$79,900	\$4,266	Small cemetery, wooded

**Adjoining Sales Adjusted**

Time	Acres	Location	Other	Adj \$/Ac	% Diff
				\$5,295	
\$0	\$400	\$0	\$0	\$4,400	17%
-\$292	\$292	\$0	-\$500	\$5,340	-1%
-\$352	\$0	\$0	-\$1,000	\$5,689	-7%
-\$213	\$0	\$0	\$213	\$4,266	19%
				<b>Average</b>	<b>7%</b>

**Adjoining Residential Sales After Solar Farm Completed**

#	Solar Farm	n	Address	Acres	Date Sold	Sales Price	Built	GLA	\$/GLA	BR/BA	Style	Other
9 &10	Adjoins	s	9162 Winters	13.22	1/5/2017	\$255,000	2016	1,616	\$157.80	3/2	Ranch	1296 sf wrkshp
	Not	w	7352 Red Fox	0.93	6/30/2016	\$176,000	2010	1,529	\$115.11	3/2	2-story	

**Adjoining Sales Adjusted**

Time	Acres	YB	GLA	Style	Other	Total	% Diff
						\$255,000	
\$0	\$44,000	\$7,392	\$5,007	\$5,000	\$15,000	\$252,399	1%

The comparables for the land show either a significant positive relationship or a mild negative relationship to having and adjoining solar farm, but when averaged together they show no negative impact. The wild divergence is due to the difficulty in comping out this tract of land and the wide variety of comparables used. The two comparables that show mild negative influences include a property that was partly developed as a residential subdivision and the other included a doublewide with some value and accessory agricultural structures. The tax assessed value on the improvements were valued at \$60,000. So both of those comparables have some limitations for comparison. The two that show significant enhancement due to adjacency includes a property with a cemetery located in the middle and the other is a tract almost twice as large. Still that larger tract after adjustment provides the best matched pair as it required the least adjustment. I therefore conclude that there is no negative impact due to adjacency to the solar farm shown by this matched pair.

The dwelling that was built on the site was a build-to-suit and was compared to a nearby homesale of a property on a smaller parcel of land. I adjusted for that differenced based on a \$25,000 value for a 1-acre home site versus the \$70,000 purchase price of the larger subject tract. The other adjustments are typical and show no impact due to the adjacency to the solar farm.

The closest solar panel to the home is 780 feet away.

I note that the representative for Kingsmill Homes indicated that the solar farm was never a concern in purchasing the land or selling the home. He also indicated that they had built a number of nearby homes across the street and it had never come up as an issue.

## **7. Matched Pair – Manatee Solar Farm, Parrish, FL**



This solar farm is located near Seminole Trail, Parrish, FL. The solar farm has a 74.50 MW output and is located on a 1,180.38-acre tract and was built in 2016. The tract is owned by Florida Power & Light Company.

I have considered the recent sale of 13670 Highland Road, Wimauma, Florida. This one-story, concrete block home is located just north of the solar farm and separated from the solar farm by a railroad corridor. This home is a 3 BR, 3 BA 1,512 s.f. home with a carport and workshop. The property includes new custom cabinets, granite counter tops, brand-new stainless-steel appliances, updated bathrooms and new carpet in the bedrooms. The home is sitting on 5 acres. The home was built in 1997.

I have compared this sale to several nearby homesales as part of this matched pair analysis as shown below. The landscaping separating the home from the solar farm is considered heavy.

Solar	TAX ID/Address	Acres	Date Sold	Sales Price	Built	GBA	\$/GBA	BR/BA	Park	Style	Note
Adjoins	13670 Highland	5.00	8/21/2017	\$255,000	1997	1,512	\$168.65	3/3	Carport/Wrkshp	Ranch	Renov.
Not	2901 Arrowsmith	1.91	1/31/2018	\$225,000	1979	1,636	\$137.53	3/2	2 Garage/Wrkshp	Ranch	
Not	602 Butch Cassidy	1.00	5/5/2017	\$220,000	2001	1,560	\$141.03	3/2	N/A	Ranch	Renov.
Not	2908 Wild West	1.23	7/12/2017	\$254,000	2003	1,554	\$163.45	3/2	2 Garage/Wrkshp	Ranch	Renov.
Not	13851 Highland	5.00	9/13/2017	\$240,000	1978	1,636	\$146.70	4/2	3 Garage	Ranch	Renov.

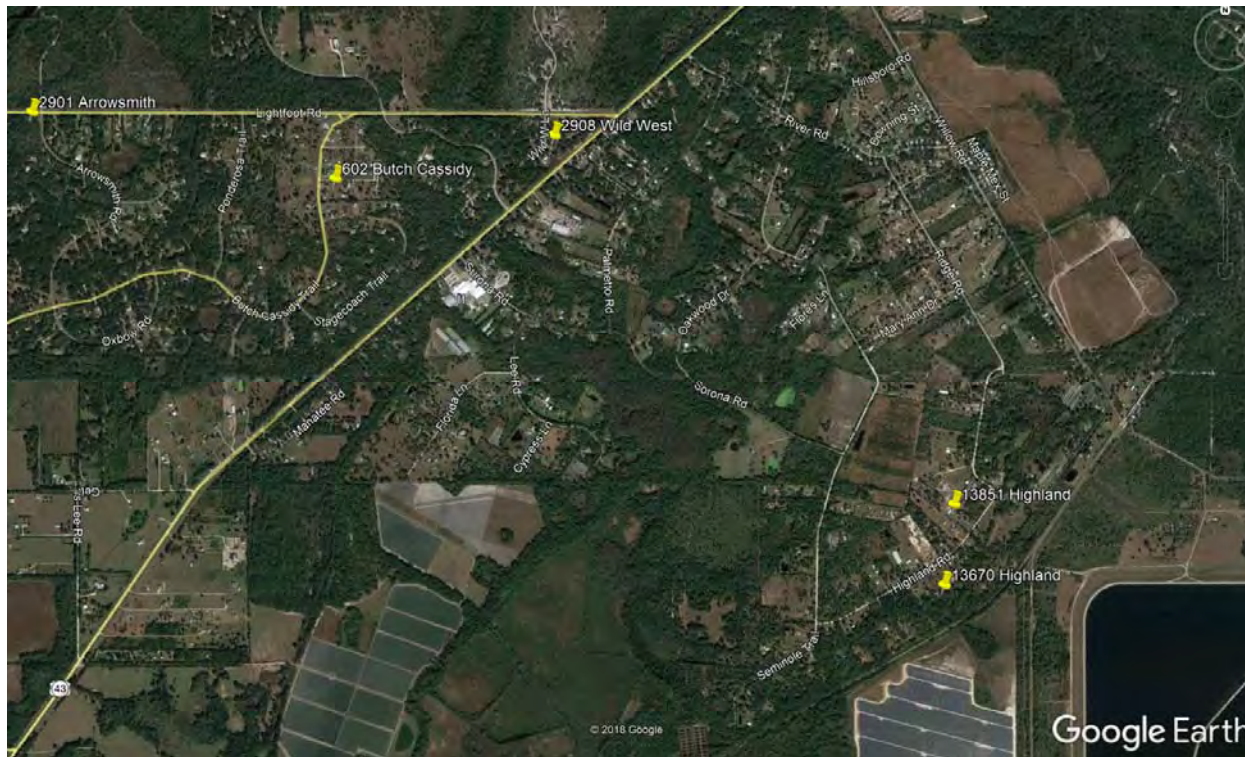
**Adjoining Sales Adjusted**

Solar	TAX ID/Address	Time	Acres	YB	GLA	BR/BA	Park	Note	Total	% Diff
Adjoins	13670 Highland								\$255,000	
Not	2901 Arrowsmith	\$2,250	\$10,000	\$28,350	-\$8,527	\$5,000	-\$10,000	\$10,000	\$262,073	-3%
Not	602 Butch Cassidy	-\$2,200	\$10,000	-\$6,160	-\$3,385	\$5,000	\$2,000		\$225,255	12%
Not	2908 Wild West	\$0	\$10,000	-\$10,668	-\$3,432	\$5,000	-\$10,000		\$244,900	4%
Not	13851 Highland	\$0	\$0	\$31,920	-\$9,095	\$3,000	-\$10,000		\$255,825	0%
<b>Average</b>										3%

The sales prices of the comparables before adjustments range from \$220,000 to \$254,000. After adjustments they range from \$225,255 to \$262,073. The comparables range from no impact to a strong positive impact. The comparables showing -3% and +4% impact on value is considered within a typical range of value and therefore not indicative of any impact on property value.

This set of matched pair data falls in line with the data seen in other states. The closest solar panel to the home at 13670 Highland is 1,180 feet. There is a wooded buffer between these two properties.

I have included a map showing the relative location of these properties below.



**8. Matched Pair – McBride Place Solar Farm, Midland, NC**

This project is located on Mount Pleasant Road, Midland, North Carolina. The property is on 627 acres on an assemblage of 974.59 acres. The solar farm was approved in early 2017 for a 74.9 MW facility.

I have considered the sale of 4380 Joyner Road which adjoins the proposed solar farm near the northwest section. This property was appraised in April of 2017 for a value of \$317,000 with no consideration of any impact due to the solar farm in that figure. The property sold in November

2018 for \$325,000 with the buyer fully aware of the proposed solar farm. The landscaping buffer relative to Joyner Road, Hayden Way, Chanel Court and Kristi Lane is considered medium, while the landscaping for the home at the north end of Chanel Court is considered very light.

I have considered the following matched pairs to the subject property.

**Adjoining Residential Sales After Solar Farm Approved**

Solar	Address	Acres	Date Sold	Sales Price	Built	GBA	\$/GBA	BR/BA	Park	Style	Other
Adjoins	4380 Joyner	12.00	11/22/2017	\$325,000	1979	1,598	\$203.38	3/2	2xGar	Ranch	Outbldg
Not	3870 Elkwood	5.50	8/24/2016	\$250,000	1986	1,551	\$161.19	3/2.5	Det 2xGar	Craft	
Not	8121 Lower Rocky	18.00	2/8/2017	\$355,000	1977	1,274	\$278.65	2/2	2xCarppt	Ranch	Eq. Fac.
Not	13531 Cabarrus	7.89	5/20/2016	\$267,750	1981	2,300	\$116.41	3/2	2xGar	Ranch	

**Adjoining Sales Adjusted**

Time	Acres	YB	Condition	GLA	BR/BA	Park	Other	Total	% Diff
								\$325,000	
\$7,500	\$52,000	-\$12,250	\$10,000	\$2,273	-\$2,000	\$2,500	\$7,500	\$317,523	2%
\$7,100	-\$48,000	\$4,970		\$23,156	\$0	\$3,000	-\$15,000	\$330,226	-2%
\$8,033	\$33,000	-\$3,749	\$20,000	-\$35,832	\$0	\$0	\$7,500	\$296,702	9%
								<b>Average</b>	3%

The home at 4380 Joyner Road is 275 feet from the closest solar panel.

I also considered the recent sale of a lot at 5800 Kristi Lane that is on the east side of the proposed solar farm. This 4.22-acre lot sold in December 2017 for \$94,000. A home was built on this lot in 2019 with the closest point from home to panel at 689 feet. The home site is heavily wooded and their remains a wooded buffer between the solar panels and the home. I spoke with the broker, Margaret Dabbs, who indicated that the solar farm was considered a positive by both buyer and seller as it ensures no subdivision will be happening in that area. Buyers in this market are looking for privacy and seclusion.

The breakdown of recent lot sales on Kristi are shown below with the lowest price paid for the lot with no solar farm exposure, though that lot has exposure to Mt Pleasant Road South. Still the older lot sales have exposure to the solar farm and sold for higher prices than the front lot and adjusting for time would only increase that difference.

**Adjoining Lot Sales After Solar Farm Built**

Parcel	Solar	Address	Acres	Date Sold	Sales Price	\$/AC	\$/Lot
	Adjoins	5811 Kristi	3.74	5/1/2018	\$100,000	\$26,738	\$100,000
	Adjoins	5800 Kristi	4.22	12/1/2017	\$94,000	\$22,275	\$94,000
	Not	5822 Kristi	3.43	2/24/2020	\$90,000	\$26,239	\$90,000

The lot at 5811 Kristi Lane sold in May 2018 for \$100,000 for a 3.74-acre lot. The home that was built later in 2018 is 505 feet to the closest solar panel. This home then sold to a homeowner for \$530,000 in April 2020. I have compared this home sale to other properties in the area as shown below.

**Adjoining Residential Sales After Solar Farm Built**

Solar	Address	Acres	Date Sold	Sales Price	Built	GBA	\$/GBA	BR/BA	Park	Style	Other
Adjoins	5811 Kristi	3.74	3/31/2020	\$530,000	2018	3,858	\$137.38	5/3.5	2 Gar	2-story	Cement Ext
Not	3915 Tania	1.68	12/9/2019	\$495,000	2007	3,919	\$126.31	3/3.5	2 Gar	2-story	3Det Gar
Not	6782 Manatee	1.33	3/8/2020	\$460,000	1998	3,776	\$121.82	4/2/2h	2 Gar	2-story	Water
Not	314 Old Hickory	1.24	9/20/2019	\$492,500	2017	3,903	\$126.18	6/4.5	2 Gar	2-story	

Solar	Address	Time	Site	YB	GLA	BR/BA	Park	Other	Total	% Diff	Avg % Diff
Adjoins	5811 Kristi								\$530,000		5%
Not	3915 Tania	\$6,285		\$27,225	-\$3,852			-\$20,000	\$504,657	5%	
Not	6782 Manatee	\$1,189		\$46,000	\$4,995	\$5,000			\$517,183	2%	
Not	314 Old Hickory	\$10,680		\$2,463	-\$2,839	-\$10,000			\$492,803	7%	

After adjusting the comparables, I found that the average adjusted value shows a slight increase in value for the subject property adjoining a solar farm. As in the other cases, this is a mild positive impact on value but within the typical range of real estate transactions.

I also looked at 5833 Kristi Lane that sold on 9/14/2020 for \$625,000. This home is 470 feet from the closest panel.

Solar	Address	Acres	Date Sold	Sales Price	Built	GBA	\$/GLA	BR/BA	Park	Style	Other
Nearby	5833 Kristi	4.05	9/14/2020	\$625,000	2008	4,373	\$142.92	5/4	3-Car	2-Brick	
Not	4055 Dakeita	4.90	12/30/2020	\$629,000	2005	4,427	\$142.08	4/4	4-Car	2-Brick	4DetGar/Stable
Not	9615 Bales	2.16	6/30/2020	\$620,000	2007	4,139	\$149.79	4/5	3-Car	2-Stone	2DetGar
Not	9522 Bales	1.47	6/18/2020	\$600,000	2007	4,014	\$149.48	4/4.5	3-Car	2-Stone	

**Adjoining Sales Adjusted**

Address	Time	Site	YB	GLA	BR/BA	Park	Other	Total	% Diff	Avg % Diff	Distance
5833 Kristi								\$625,000			470
4055 Dakeita	-\$9,220		\$5,661	-\$6,138			-\$25,000	\$594,303	5%		
9615 Bales	\$6,455		\$1,860	\$28,042	-\$10,000	-\$15,000		\$631,356	-1%		
9522 Bales	\$7,233		\$1,800	\$42,930	-\$5,000			\$646,963	-4%		
									0%		

The average difference is 0% impact and the differences are all within a close range with this set of comparables and supports a finding of no impact on property value.

I have also looked at 4504 Chanel Court. This home sold on January 1, 2020 for \$393,500 for this 3,010 square foot home built in 2004 with 3 bedrooms, 3.5 bathrooms, and a 3-car garage. This home includes a full partially finished basement that significantly complicates comparing this to other sales. This home previously sold on January 23, 2017 for \$399,000. This was during the time that the solar farm was a known factor as the solar farm was approved in early 2017 and public discussions had already commenced. I spoke with Rachelle Killman with Real Estate Realty, LLC the buyer's agent for this transaction and she indicated that the solar farm was not a factor or consideration for the buyer. She noted that you could see the panels sort of through the trees, but it wasn't a concern for the buyer. She was not familiar with the earlier 2017 sale, but indicated that it was likely too high. This again goes back to the partially finished basement issue. The basement has a fireplace, and an installed 3/4 bathroom but otherwise bare studs and concrete floors with different buyers assigning varying value to that partly finished space. I also reached out to Don Gomez with Don Anthony Realty, LLC as he was the listing agent.

I also looked at the recent sale of 4599 Chanel Court. This home is within 310 feet of solar panels but notably does not have a good landscaping screen in place as shown in the photo below. The plantings appear to be less than 3-feet in height and only a narrow, limited screen of existing hardwoods were kept. The photograph is from the listing.

According to Scott David with Better Homes and Gardens Paracle Realty, this property was under contract for \$550,000 contingent on the buyer being able to sell their former home. The former home was apparently overpriced and did not sell and the contract stretched out over 2.5 months.

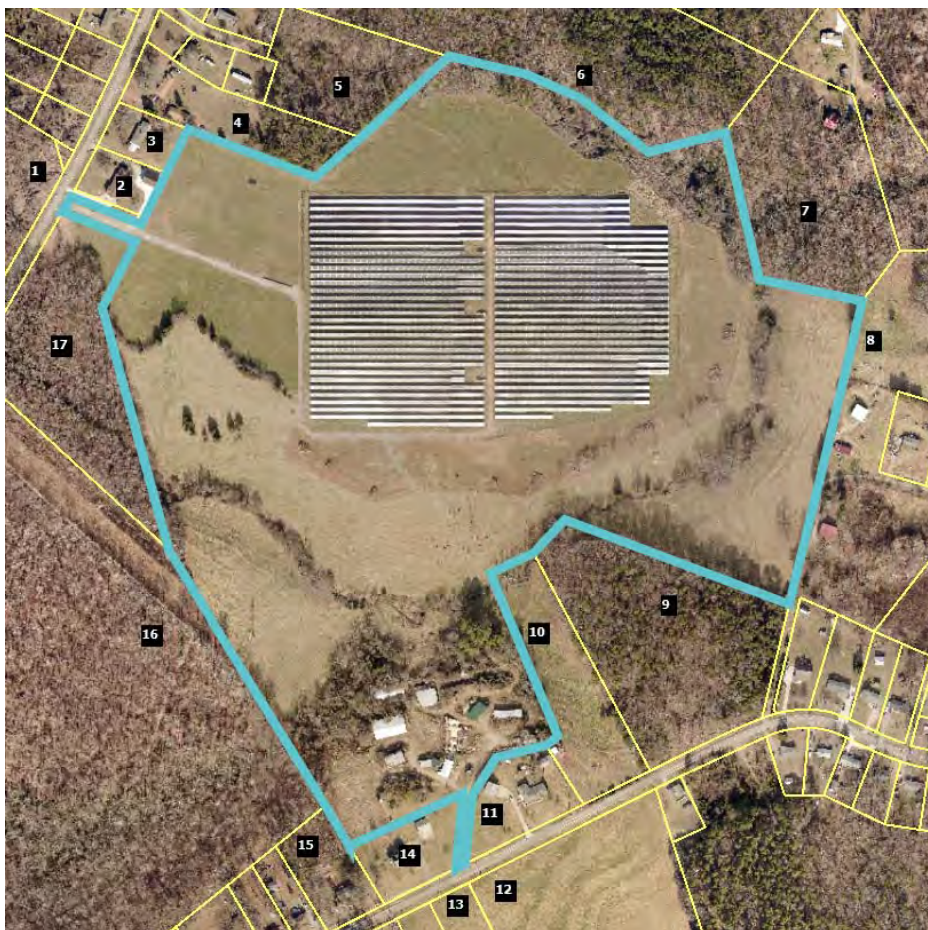
The seller was in a bind as they had a home they were trying to buy contingent on this closing and were about to lose that opportunity. A cash buyer offered them a quick close at \$500,000 and the seller accepted that offer in order to not lose the home they were trying to buy. According to Mr. David, the original contracted buyer and the actual cash buyer never considered the solar farm as a negative. In fact Mr. David noted that the actual buyer saw it as a great opportunity to purchase a home where a new subdivision could not be built behind his house. I therefore conclude that this property supports a finding of no impact on adjoining property, even where the landscaping screen still requires time to grow in for a year-round screen.

I also considered a sale/resale analysis on this property. This same home sold on September 15, 2015 for \$462,000. Adjusting this upward by 5% per year for the five years between these sales dates suggests a value of \$577,500. Comparing that to the \$550,000 contract that suggests a 5% downward impact, which is within a typical market variation. Given that the broker noted no negative impact from the solar farm and the analysis above, I conclude this sale supports a finding of no impact on value.





## 9. Matched Pair – Mariposa Solar, Gaston County, NC



This project is a 5 MW facility located on 35.80 acres out of a parent tract of 87.61 acres at 517 Blacksnsake Road, Stanley that was built in 2016.

I have considered a number of recent sales around this facility as shown below.

The first is identified in the map above as Parcel 1, which is 215 Mariposa Road. This is an older dwelling on large acreage with only one bathroom. I've compared it to similar nearby homes as shown below. The landscaping buffer for this home is considered light.

### Adjoining Residential Sales After Solar Farm Approved

Solar	Address	Acres	Date Sold	Sales Price	Built	GBA	\$/GBA	BR/BA	Park	Style
Adjoins	215 Mariposa	17.74	12/12/2017	\$249,000	1958	1,551	\$160.54	3/1	Garage	Br/Rnch
Not	249 Mariposa	0.48	3/1/2019	\$153,000	1974	1,792	\$85.38	4/2	Garage	Br/Rnch
Not	110 Airport	0.83	5/10/2016	\$166,000	1962	2,165	\$76.67	3/2	Crprt	Br/Rnch
Not	1249 Blacksnsake	5.01	9/20/2018	\$242,500	1980	2,156	\$112.48	3/2	Drive	1.5
Not	1201 Abernathy	27.00	5/3/2018	\$390,000	1970	2,190	\$178.08	3/2	Crprt	Br/Rnch

Adjoining Residential Sales After Solar Farm Approved					Adjoining Sales Adjusted								
Solar	Address	Acres	Date Sold	Sales Price	Time	YB	Acres	GLA	BR/BA	Park	Other	Total	% Diff
Adjoins	215 Mariposa	17.74	12/12/2017	\$249,000								\$249,000	
Not	249 Mariposa	0.48	3/1/2019	\$153,000	-\$5,583	-\$17,136	\$129,450	-\$20,576	-\$10,000			\$229,154	8%
Not	110 Airport	0.83	5/10/2016	\$166,000	\$7,927	-\$4,648	\$126,825	-\$47,078	-\$10,000			\$239,026	4%
Not	1249 Blacksnake	5.01	9/20/2018	\$242,500	-\$5,621	-\$37,345	\$95,475	-\$68,048	-\$10,000	\$5,000		\$221,961	11%
Not	1201 Abernathy	27.00	5/3/2018	\$390,000	-\$4,552	-\$32,760	-\$69,450	-\$60,705	-\$10,000			\$212,533	15%
												<b>Average</b>	9%

The average difference after adjusting for all factors is +9% on average, which suggests an enhancement due to the solar farm across the street. Given the large adjustments for acreage and size, I will focus on the low end of the adjusted range at 4%, which is within the typical deviation and therefore suggests no impact on value.

I have also considered Parcel 4 that sold after the solar farm was approved but before it had been constructed in 2016. The landscaping buffer for this parcel is considered light.

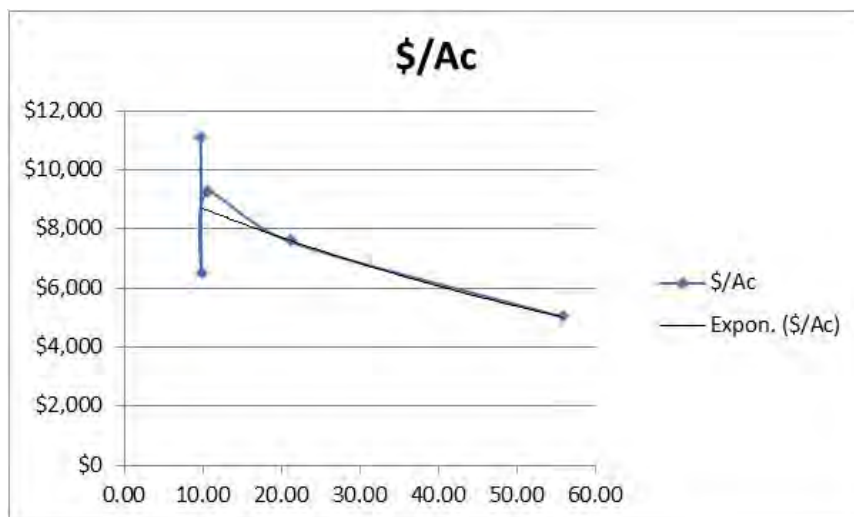
Adjoining Residential Sales After Solar Farm Approved												
Solar	Address	Acres	Date Sold	Sales Price	Built	GBA	\$/GBA	BR/BA	Park	Style	Other	
Adjoins	242 Mariposa	2.91	9/21/2015	\$180,000	1962	1,880	\$95.74	3/2	Carport	Br/Rnch	Det Wrkshop	
Not	249 Mariposa	0.48	3/1/2019	\$153,000	1974	1,792	\$85.38	4/2	Garage	Br/Rnch		
Not	110 Airport	0.83	5/10/2016	\$166,000	1962	2,165	\$76.67	3/2	Crprt	Br/Rnch		
Not	1249 Blacksnake	5.01	9/20/2018	\$242,500	1980	2,156	\$112.48	3/2	Drive	1.5		

Adjoining Residential Sales After Solar Farm Approved					Adjoining Sales Adjusted									
Solar	Address	Acres	Date Sold	Sales Price	Time	YB	Acres	GLA	BR/BA	Park	Other	Total	% Diff	
Adjoins	242 Mariposa	2.91	9/21/2015	\$180,000								\$180,000		
Not	249 Mariposa	0.48	3/1/2019	\$153,000	-\$15,807	-\$12,852	\$18,468	\$7,513		-\$3,000	\$25,000	\$172,322	4%	
Not	110 Airport	0.83	5/10/2016	\$166,000	-\$3,165	\$0	\$15,808	-\$28,600			\$25,000	\$175,043	3%	
Not	1249 Blacksnake	5.01	9/20/2018	\$242,500	-\$21,825	-\$30,555	-\$15,960	-\$40,942		\$2,000	\$25,000	\$160,218	11%	
												<b>Average</b>	6%	

The average difference after adjusting for all factors is +6%, which is again suggests a mild increase in value due to the adjoining solar farm use. The median is a 4% adjustment, which is within a standard deviation and suggests no impact on property value.

I have also considered the recent sale of Parcel 13 that is located on Blacksnake Road south of the project. I was unable to find good land sales in the same 20-acre range, so I have considered sales of larger and smaller acreage. I adjusted each of those land sales for time. I then applied the price per acre to a trendline to show where the expected price per acre would be for 20 acres. As can be seen in the chart below, this lines up exactly with the purchase of the subject property. I therefore conclude that there is no impact on Parcel 13 due to proximity to the solar farm.

Adjoining Residential Land Sales After Solar Farm Approved						Adjoining Sales Adjusted		
Solar	Tax/Street	Acres	Date Sold	Sales Price	\$/Ac	Time	\$/Ac	
Adjoins	174339/Blacksnake	21.15	6/29/2018	\$160,000	\$7,565		\$7,565	
Not	227852/Abernathy	10.57	5/9/2018	\$97,000	\$9,177	\$38	\$9,215	
Not	17443/Legion	9.87	9/7/2018	\$64,000	\$6,484	-\$37	\$6,447	
Not	164243/Alexis	9.75	2/1/2019	\$110,000	\$11,282	-\$201	\$11,081	
Not	176884/Bowden	55.77	6/13/2018	\$280,000	\$5,021	\$7	\$5,027	

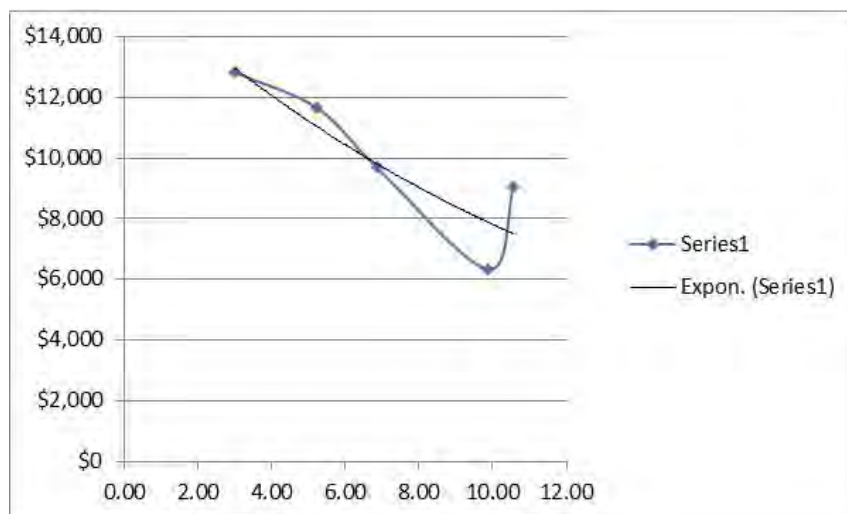


Finally, I have considered the recent sale of Parcel 17 that sold as vacant land. I was unable to find good land sales in the same 7-acre range, so I have considered sales of larger and smaller acreage. I adjusted each of those land sales for time. I then applied the price per acre to a trendline to show where the expected price per acre would be for 7 acres. As can be seen in the chart below, this lines up with the trendline running right through the purchase price for the subject property. I therefore conclude that there is no impact on Parcel 13 due to proximity to the solar farm. I note that this property was improved with a 3,196 square foot ranch built in 2018 following the land purchase, which shows that development near the solar farm was unimpeded.

**Adjoining Residential Land Sales After Solar Farm Approved**

**Adjoining Sales Adjusted**

Solar	Tax/Street	Acres	Date Sold	Sales Price	\$/Ac	Time	Location	\$/Ac
Adjoins	227039/Mariposa	6.86	12/6/2017	\$66,500	\$9,694			\$9,694
Not	227852/Abernathy	10.57	5/9/2018	\$97,000	\$9,177	-\$116		\$9,061
Not	17443/Legion	9.87	9/7/2018	\$64,000	\$6,484	-\$147		\$6,338
Not	177322/Robinson	5.23	5/12/2017	\$66,500	\$12,715	\$217	-\$1,272	\$11,661
Not	203386/Carousel	2.99	7/13/2018	\$43,500	\$14,548	-\$262	-\$1,455	\$12,832



**10. 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.



## 11. Matched Pair – Simon Solar, Social Circle, GA



This 30 MW solar farm is located off Hawkins Academy Road and Social Circle Fairplay Road. I identified three adjoining sales to this tract after development of the solar farm. However, one of those is shown as Parcel 12 in the map above and includes a powerline easement encumbering over a third of the 5 acres and adjoins a large substation as well. It would be difficult to isolate those impacts from any potential solar farm impact and therefore I have excluded that sale. I also excluded the recent sale of Parcel 17, which is a farm with conservation restrictions on it that similarly would require a detailed examination of those conservation restrictions in order to see if there was any impact related to the solar farm. I therefore focused on the recent sale of Parcel 7 and the adjoining parcel to the south of that. They are technically not adjoining due to the access road for the flag-shaped lot to the east. Furthermore, there is an apparent access easement serving the two rear lots that encumber these two parcels which is a further limitation on these sales. This analysis assumes that the access easement does not negatively impact the subject property, though it may.

The landscaping buffer relative to this parcel is considered medium.

**Adjoining Land Sales After Solar Farm Approved**

<b>Parcel</b>	<b>Solar</b>	<b>Address</b>	<b>Acres</b>	<b>Date Sold</b>	<b>Sales Price</b>	<b>\$/AC</b>	<b>Type</b>	<b>Other</b>
7+	Adjoins	4514 Hawkins	36.86	3/31/2016	\$180,000	\$4,883	Pasture	Esmts
	Not	HD Atha	69.95	12/20/2016	\$357,500	\$5,111	Wooded	N/A
	Not	Pannell	66.94	11/8/2016	\$322,851	\$4,823	Mixed	*
	Not	1402 Roy	123.36	9/29/2016	\$479,302	\$3,885	Mixed	**

\* Adjoining 1 acre purchased by same buyer in same deed. Allocation assigned on the County Tax Record.

\*\* Dwelling built in 1996 with a 2016 tax assessed value of \$75,800 deducted from sales price to reflect land value

**Adjoining Sales Adjusted**

<b>Time</b>	<b>Size</b>	<b>Type</b>	<b>Other</b>	<b>Total/Ac</b>	<b>% Diff</b>	<b>Avg % Diff</b>
				\$4,883		
\$89	\$256			\$5,455	-12%	
-\$90	\$241			\$4,974	-2%	
-\$60	\$389			\$4,214	14%	
						0%

The range of impact identified by these matched pairs are -12% to +14%, with an average of 0% impact due to the solar farm. The best matched pair with the least adjustment supports a -2% impact due to the solar farm. I note again that this analysis considers no impact for the existing access easements that meander through this property and it may be having an impact. Still at -2% impact as the best indication for the solar farm, I consider that to be no impact given that market fluctuations support +/- 5%.

**12. Matched Pair – Candace Solar, Princeton, NC**



This 5 MW solar farm is located at 4839 US 70 Highway just east of Herring Road. This solar farm was completed on October 25, 2016.



I identified three adjoining sales to this tract after development of the solar farm with frontage on US 70. I did not attempt to analyze those sales as they have exposure to an adjacent highway and railroad track. Those homes are therefore problematic for a matched pair analysis unless I have similar homes fronting on a similar corridor.

I did consider a land sale and a home sale on adjoining parcels without those complications.

The lot at 499 Herring Road sold to Paradise Homes of Johnston County of NC, Inc. for \$30,000 in May 2017 and a modular home was placed there and sold to Karen and Jason Toole on September 29, 2017. I considered the lot sale first as shown below and then the home sale that followed. The landscaping buffer relative to this parcel is considered medium.

Adjoining Land Sales After Solar Farm Approved						Adjoining Sales Adjusted					
Parcel	Solar	Address	Acres	Date Sold	Sales Price	Other	Time	Site	Other	Total	% Diff
16	Adjoins	499 Herring	2.03	5/1/2017	\$30,000					\$30,000	
	Not	37 Becky	0.87	7/23/2019	\$24,500	Sub/Pwr	-\$1,679	\$4,900		\$27,721	8%
	Not	5858 Bizzell	0.88	8/17/2016	\$18,000		\$390	\$3,600		\$21,990	27%
	Not	488 Herring	2.13	12/20/2016	\$35,000		\$389			\$35,389	-18%
<b>Average</b>											5%

Following the land purchase, the modular home was placed on the site and sold. I have compared this modular home to the following sales to determine if the solar farm had any impact on the purchase price.

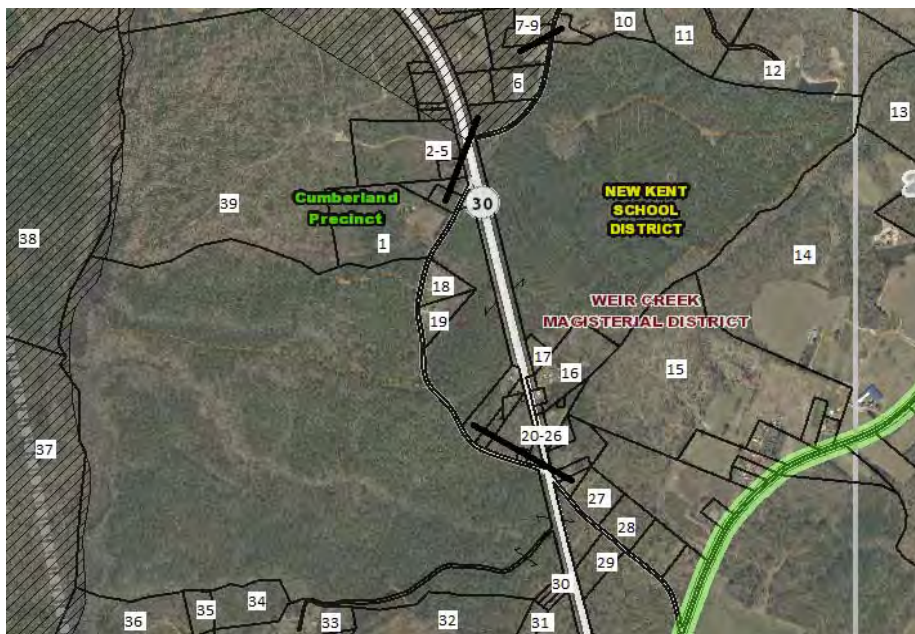
Adjoining Residential Sales After Solar Farm Approved												
Parcel	Solar	Address	Acres	Date Sold	Sales Price	Built	GBA	\$/GBA	BR/BA	Park	Style	Other
16	Adjoins	499 Herring	2.03	9/27/2017	\$215,000	2017	2,356	\$91.26	4/3	Drive	Modular	
	Not	678 WC	6.32	3/8/2019	\$226,000	1995	1,848	\$122.29	3/2.5	Det Gar	Mobile	Ag bldgs
	Not	1810 Bay V	8.70	3/26/2018	\$170,000	2003	2,356	\$72.16	3/2	Drive	Mobile	Ag bldgs
	Not	1795 Bay V	1.78	12/1/2017	\$194,000	2017	1,982	\$97.88	4/3	Drive	Modular	

Adjoining Residential Sales Af Adjoining Sales Adjusted												Avg	
Parcel	Solar	Address	Time	Site	YB	GLA	BR/BA	Park	Other	Total	% Diff	% Diff	Distance
16	Adjoins	499 Herring								\$215,000			488
	Not	678 WC	-\$10,037	-\$25,000	\$24,860	\$37,275	-\$5,000	-\$7,500	-\$20,000	\$220,599	-3%		
	Not	1810 Bay V	-\$2,579	-\$20,000	\$11,900	\$0				\$159,321	26%		
	Not	1795 Bay V	-\$1,063		\$0	\$21,964				\$214,902	0%		
<b>Average</b>												8%	

The best comparable is 1795 Bay Valley as it required the least adjustment and was therefore most similar, which shows a 0% impact. This signifies no impact related to the solar farm.

The range of impact identified by these matched pairs ranges are therefore -3% to +26% with an average of +8% for the home and an average of +4% for the lot, though the best indicator for the lot shows a \$5,000 difference in the lot value due to the proximity to the solar farm or a -12% impact.

**13. 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.

**14. Matched Pair – Innovative Solar 46, Roslin Farm Rd, Hope Mills, NC**



This project was built in 2016 and located on 532 acres for a 78.5 MW solar farm with the closest home at 125 feet from the closest solar panel with an average distance of 423 feet.

I considered the recent sale of a home on Roslin Farm Road just north of Running Fox Road as shown below. This sale supports an indication of no impact on property value. 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	Distance
Adjoins	6849 Roslin Farm	1.00	2/18/2019	\$155,000	1967	1,610	\$96.27	3/3	Drive	Ranch	Brick	435
Not	6592 Sim Canady	2.43	9/5/2017	\$185,000	1974	2,195	\$84.28	3/2	Gar	Ranch	Brick	
Not	1614 Joe Hall	1.63	9/3/2019	\$145,000	1974	1,674	\$86.62	3/2	Det Gar	Ranch	Brick	
Not	109 Bledsoe	0.68	1/17/2019	\$150,000	1973	1,663	\$90.20	3/2	Gar	Ranch	Brick	

Solar	Address	Time	Site	YB	GLA	BR/BA	Park	Other	Total	% Diff	Avg % Diff
Adjoins	6849 Roslin Farm								\$155,000		5%
Not	6592 Sim Canady	\$8,278		-\$6,475	-\$39,444	\$10,000	-\$5,000		\$152,359	2%	
Not	1614 Joe Hall	-\$2,407		-\$5,075	-\$3,881	\$10,000	-\$2,500		\$141,137	9%	
Not	109 Bledsoe	\$404	\$10,000	-\$4,500	-\$3,346		-\$5,000		\$147,558	5%	

**15. Matched Pair – Innovative Solar 42, County Line Rd, Fayetteville, NC**



This project was built in 2017 and located on 413.99 acres for a 71 MW with the closest home at 135 feet from the closest solar panel with an average distance of 375 feet.

I considered the recent sales identified on the map above as Parcels 2 and 3, which is directly across the street these homes are 330 and 340 feet away. Parcel 2 includes an older home built in 1976, while Parcel 3 is a new home built in 2019. So the presence of the solar farm had no impact on new construction in the area.

The matched pairs for each of these are shown below. The landscaping buffer relative to these parcels 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	Distance
Adjoins	2923 County Ln	8.98	2/28/2019	\$385,000	1976	2,905	\$132.53	3/3	2-Car	Ranch	Brick/Pond	340
Not	1928 Shaw Mill	17.00	7/3/2019	\$290,000	1977	3,001	\$96.63	4/4	2-Car	Ranch	Brick/Pond/Rental	
Not	2109 John McM.	7.78	4/25/2018	\$320,000	1978	2,474	\$129.35	3/2	Det Gar	Ranch	Vinyl/Pool,Stable	

Solar	Address	Time	Site	YB	GLA	BR/BA	Park	Other	Total	% Diff	Avg % Diff
Adjoins	2923 County Ln								\$385,000		3%
Not	1928 Shaw Mill	-\$3,055	\$100,000	-\$1,450	-\$7,422	-\$10,000			\$368,074	4%	
Not	2109 John McM.	\$8,333		-\$3,200	\$39,023	\$10,000		\$5,000	\$379,156	2%	

**Adjoining Residential Sales After Solar Farm Approved**

Solar	Address	Acres	Date Sold	Sales Price	Built	GBA	\$/GBA	BR/BA	Park	Style	Other	Distance
Adjoins	2935 County Ln	1.19	6/18/2019	\$266,000	2019	2,401	\$110.79	4/3	Gar	2-Story		330
Not	3005 Hemingway	1.17	5/16/2019	\$269,000	2018	2,601	\$103.42	4/3	Gar	2-Story		
Not	7031 Glynn Mill	0.60	5/8/2018	\$255,000	2017	2,423	\$105.24	4/3	Gar	2-Story		
Not	5213 Bree Brdg	0.92	5/7/2019	\$260,000	2018	2,400	\$108.33	4/3	3-Gar	2-Story		

Solar	Address	Time	Site	YB	GLA	BR/BA	Park	Other	Total	% Diff	Avg % Diff
Adjoins	2935 County Ln								\$266,000		3%
Not	3005 Hemingway	\$748		\$1,345	-\$16,547				\$254,546	4%	
Not	7031 Glynn Mill	\$8,724		\$2,550	-\$1,852				\$264,422	1%	
Not	5213 Bree Brdg	\$920		\$1,300	\$76			-\$10,000	\$252,296	5%	

Both of these matched pairs adjust to an average of +3% on impact for the adjoining solar farm, meaning there is a slight positive impact due to proximity to the solar farm. This is within the standard +/- of typical real estate transactions, which strongly suggests no impact on property value. I noted specifically that for 2923 County Line Road, the best comparable is 2109 John McMillan as it does not have the additional rental unit on it. I made no adjustment to the other sale for the value of that rental unit, which would have pushed the impact on that comparable downward – meaning there would have been a more significant positive impact.









**19. Matched Pair – Grandy Solar, Grandy, NC**



This 20 MW project was built in 2019 and located on a portion of 121 acres.

Parcels 40 and 50 have sold since construction began on this solar farm. I have considered both in matched pair analysis below. I note that the marketing for Parcel 40 (120 Par Four) identified the lack of homes behind the house as a feature in the listing. The marketing for Parcel 50 (269 Grandy) identified the property as “very private.” Landscaping for both of these parcels is considered light.

**Adjoining Residential Sales After Solar Farm Approved**

Solar	Address	Acres	Date Sold	Sales Price	Built	GBA	\$/GLA	BR/BA	Park	Style	Other
Adjoins	120 Par Four	0.92	8/17/2019	\$315,000	2006	2,188	\$143.97	4/3	2-Gar	1.5 Story	Pool
Not	102 Teague	0.69	1/5/2020	\$300,000	2005	2,177	\$137.80	3/2	Det 3G	Ranch	
Not	112 Meadow Lk	0.92	2/28/2019	\$265,000	1992	2,301	\$115.17	3/2	Gar	1.5 Story	
Not	116 Barefoot	0.78	9/29/2020	\$290,000	2004	2,192	\$132.30	4/3	2-Gar	2 Story	

**Adjoining Sales Adjusted**

Address	Time	Site	YB	GLA	BR/BA	Park	Other	Total	% Diff	Avg % Diff	Distance
120 Par Four								\$315,000			405
102 Teague	-\$4,636		\$1,500	\$910	\$10,000		\$20,000	\$327,774	-4%		
112 Meadow Lk	\$4,937		\$18,550	-\$7,808	\$10,000	\$10,000	\$20,000	\$320,679	-2%		
116 Barefoot	-\$12,998		\$2,900	-\$318			\$20,000	\$299,584	5%		

0%

**Adjoining Residential Sales After Solar Farm Approved**

<b>Solar</b>	<b>Address</b>	<b>Acres</b>	<b>Date Sold</b>	<b>Sales Price</b>	<b>Built</b>	<b>GBA</b>	<b>\$/GLA</b>	<b>BR/BA</b>	<b>Park</b>	<b>Style</b>	<b>Other</b>
Adjoins	269 Grandy	0.78	5/7/2019	\$275,000	2019	1,535	\$179.15	3/2.5	2-Gar	Ranch	
Not	307 Grandy	1.04	10/8/2018	\$240,000	2002	1,634	\$146.88	3/2	Gar	1.5 Story	
Not	103 Branch	0.95	4/22/2020	\$230,000	2000	1,532	\$150.13	4/2	2-Gar	1.5 Story	
Not	103 Spring Lf	1.07	8/14/2018	\$270,000	2002	1,635	\$165.14	3/2	2-Gar	Ranch	Pool

**Adjoining Sales Adjusted**

<b>Address</b>	<b>Time</b>	<b>Site</b>	<b>YB</b>	<b>GLA</b>	<b>BR/BA</b>	<b>Park</b>	<b>Other</b>	<b>Total</b>	<b>% Diff</b>	<b>% Diff</b>	<b>Distance</b>
269 Grandy								\$275,000			477
307 Grandy	\$5,550		\$20,400	-\$8,725	\$5,000	\$10,000		\$272,225	1%		
103 Branch	-\$8,847		\$21,850	\$270				\$243,273	12%		
103 Spring Lf	\$7,871		\$22,950	-\$9,908	\$5,000		-\$20,000	\$275,912	0%		
										4%	

Both of these matched pairs support a finding of no impact on value. This is reinforced by the listings for both properties identifying the privacy due to no housing in the rear of the property as part of the marketing for these homes.

**20. Matched Pair – Champion Solar, Lexington County, SC**



This project is a 10 MW facility located on a 366.04-acre tract that was built in 2017.

I have considered the 2020 sale of an adjoining home located off 517 Old Charleston Road. Landscaping is considered light.

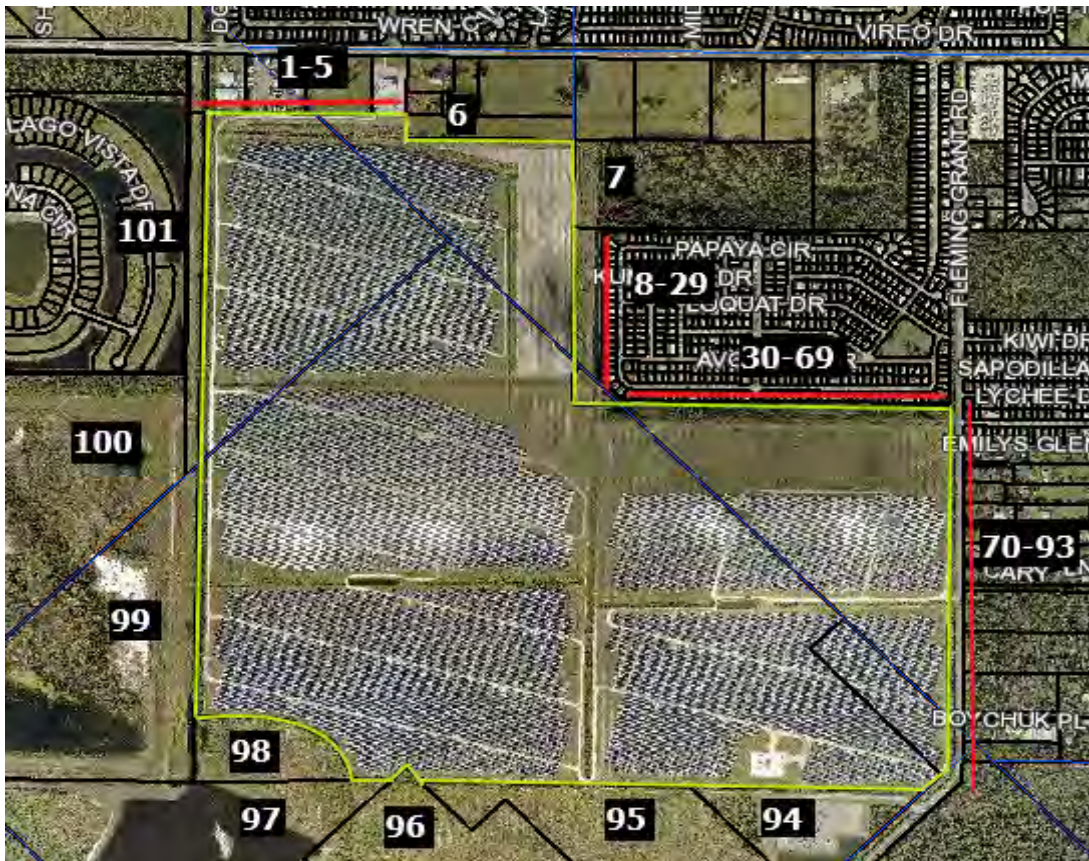
**Adjoining Residential Sales After Solar Farm Approved**

Solar	Address	Acres	Date Sold	Sales Price	Built	GBA	\$/GBA	BR/BA	Park	Style	Other
Adjoins	517 Old Charleston	11.05	8/25/2020	\$110,000	1962	925	\$118.92	3/1	Crport	Br Rnch	
Not	133 Buena Vista	2.65	6/21/2020	\$115,000	1979	1,104	\$104.17	2/2	Crport	Br Rnch	
Not	214 Crystal Spr	2.13	6/10/2019	\$102,500	1970	1,025	\$100.00	3/2	Crport	Rnch	
Not	1429 Laurel	2.10	2/21/2019	\$126,000	1960	1,250	\$100.80	2/1.5	Open	Br Rnch	3 Gar/Brn

**Adjoining Sales Adjusted**

Address	Time	Site	YB	GLA	BR/BA	Park	Other	Total	% Diff	Avg % Diff	Distance
517 Old Charleston								\$110,000			505
133 Buena Vista	\$410	\$17,000	-\$9,775	-\$14,917	-\$10,000			\$97,718	11%		
214 Crystal Spr	\$2,482	\$18,000	-\$4,100	-\$8,000	-\$10,000		\$10,000	\$110,882	-1%		
1429 Laurel	\$3,804	\$18,000	\$1,260	-\$26,208	-\$5,000	\$5,000	-\$15,000	\$107,856	2%	4%	

**21. Matched Pair – Barefoot Bay Solar Farm, Barefoot Bay, FL**



This project is located on 504 acres for a 704.5 MW facility. Most of the adjoining uses are medium density residential with some lower density agricultural uses to the southwest. This project was built in 2018. There is a new subdivision under development to the west.

I have considered a number of recent home sales from the Barefoot Bay Golf Course in the Barefoot Bay Recreation District. There are a number of sales of these mobile/manufactured homes along the eastern boundary and the lower northern boundary. I have compared those home sales to other similar homes in the same community but without the exposure to the solar farm. Staying within the same community keeps location and amenity impacts consistent. I did avoid any comparison with home sales with golf course or lakefront views as that would introduce another variable.

The six manufactured/double wide homes shown below were each compared to three similar homes in the same community and are consistently showing no impact on the adjoining property values. Based on the photos from the listings, there is limited but some visibility of the solar farm to the east, but the canal and landscaping between are providing a good visual buffer and actually are commanding a premium over the non-canal homes.

Landscaping for these adjoining homes is considered light, though photographs from the listings show that those homes on Papaya that adjoin the solar farm from east/west have no visibility of the solar farm and is effectively medium density due to the height differential. The homes that adjoin the solar farm from north/south along Papaya have some filtered view of the solar farm through the trees.

**Adjoining Residential Sales After Solar Farm Approved**

Parcel	Solar	Address	Acres	Date Sold	Sales Price	Built	GBA	\$/GLA	BR/BA	Park	Style	Other
14	Adjoins	465 Papaya Cr	0.12	7/21/2019	\$155,000	1993	1,104	\$140.40	2/2	Drive	Manuf	Canal
	Not	1108 Navajo	0.14	2/27/2019	\$129,000	1984	1,220	\$105.74	2/2	Crprt	Manuf	Canal
	Not	1007 Barefoot	0.11	9/3/2020	\$168,000	2005	1,052	\$159.70	2/2	Crprt	Manuf	Canal
	Not	1132 Waterway	0.11	7/10/2020	\$129,000	1982	1,012	\$127.47	2/2	Crprt	Manuf	Canal

**Adjoining Sales Adjusted**

Address	Time	YB	GLA	BR/BA	Park	Other	Total	% Diff	Avg % Diff	Distance
465 Papaya Cr							\$155,000			765
1108 Navajo	\$1,565	\$5,805	-\$9,812				\$126,558	18%		
1007 Barefoot	-\$5,804	-\$10,080	\$6,643				\$158,759	-2%		
1132 Waterway	-\$3,859	\$7,095	\$9,382				\$141,618	9%	8%	

**Adjoining Residential Sales After Solar Farm Approved**

Parcel	Solar	Address	Acres	Date Sold	Sales Price	Built	GBA	\$/GLA	BR/BA	Park	Style	Other
19	Adjoins	455 Papaya	0.12	9/1/2020	\$183,500	2005	1,620	\$113.27	3/2	Crprt	Manuf	Canal
	Not	938 Waterway	0.11	2/12/2020	\$160,000	1986	1,705	\$93.84	2/2	Crprt	Manuf	Canal
	Not	719 Barefoot	0.12	4/14/2020	\$150,000	1996	1,635	\$91.74	3/2	Crprt	Manuf	Canal
	Not	904 Fir	0.17	9/27/2020	\$192,500	2010	1,626	\$118.39	3/2	Crprt	Manuf	Canal

**Adjoining Sales Adjusted**

Address	Time	YB	GLA	BR/BA	Park	Other	Total	% Diff	Avg % Diff	Distance
455 Papaya							\$183,500			750
938 Waterway	\$2,724	\$15,200	-\$6,381				\$171,542	7%		
719 Barefoot	\$1,770	\$6,750	-\$1,101				\$157,419	14%		
904 Fir	-\$422	-\$4,813	-\$568				\$186,697	-2%	6%	

**Adjoining Residential Sales After Solar Farm Approved**

Parcel	Solar	Address	Acres	Date Sold	Sales Price	Built	GBA	\$/GLA	BR/BA	Park	Style	Other
37	Adjoins	419 Papaya	0.09	7/16/2019	\$127,500	1986	1,303	\$97.85	2/2	Crprt	Manuf	Green
	Not	865 Tamarind	0.12	2/4/2019	\$133,900	1995	1,368	\$97.88	2/2	Crprt	Manuf	Green
	Not	501 Papaya	0.10	6/15/2018	\$109,000	1986	1,234	\$88.33	2/2	Crprt	Manuf	
	Not	418 Papaya	0.09	8/28/2019	\$110,000	1987	1,248	\$88.14	2/2	Crprt	Manuf	

**Adjoining Sales Adjusted**

Address	Time	YB	GLA	BR/BA	Park	Other	Total	% Diff	Avg % Diff	Distance
419 Papaya							\$127,500			690
865 Tamarind	\$1,828	-\$6,026	-\$5,090				\$124,613	2%		
501 Papaya	\$3,637	\$0	\$4,876			\$5,000	\$122,513	4%		
418 Papaya	-\$399	-\$550	\$3,878			\$5,000	\$117,930	8%	5%	

**Adjoining Residential Sales After Solar Farm Approved**

Parcel	Solar	Address	Acres	Date Sold	Sales Price	Built	GBA	\$/GLA	BR/BA	Park	Style	Other
39	Adjoins	413 Papaya	0.09	7/16/2020	\$130,000	2001	918	\$141.61	2/2	Crprt	Manuf	Grn/Upd
	Not	341 Loquat	0.09	2/3/2020	\$118,000	1985	989	\$119.31	2/2	Crprt	Manuf	Full Upd
	Not	1119 Pocatella	0.19	1/5/2021	\$120,000	1993	999	\$120.12	2/2	Crprt	Manuf	Green
	Not	1367 Barefoot	0.10	1/12/2021	\$130,500	1987	902	\$144.68	2/2	Crprt	Manuf	Green/Upd

**Adjoining Sales Adjusted**

Address	Time	YB	GLA	BR/BA	Park	Other	Total	% Diff	Avg % Diff	Distance
413 Papaya							\$130,000			690
341 Loquat	\$1,631	\$9,440	-\$6,777				\$122,294	6%		
1119 Pocatella	-\$1,749	\$4,800	-\$7,784			\$5,000	\$120,267	7%		
1367 Barefoot	-\$1,979	\$9,135	\$1,852				\$139,507	-7%	2%	

**Adjoining Residential Sales After Solar Farm Approved**

Parcel	Solar	Address	Acres	Date Sold	Sales Price	Built	GBA	\$/GLA	BR/BA	Park	Style	Other
48	Adjoins	343 Papaya	0.09	12/17/2019	\$145,000	1986	1,508	\$96.15	3/2	Crprt	Manuf	Gn/Fc/Upd
	Not	865 Tamarind	0.12	2/4/2019	\$133,900	1995	1,368	\$97.88	2/2	Crprt	Manuf	Green
	Not	515 Papaya	0.09	3/22/2018	\$145,000	2005	1,376	\$105.38	3/2	Crprt	Manuf	Green
	Not	849 Tamarind	0.15	6/26/2019	\$155,000	1997	1,716	\$90.33	3/2	Crprt	Manuf	Grn/Fnce

**Adjoining Sales Adjusted**

Address	Time	YB	GLA	BR/BA	Park	Other	Total	% Diff	Avg % Diff	Distance
343 Papaya							\$145,000			690
865 Tamarind	\$3,566	-\$6,026	\$10,963				\$142,403	2%		
515 Papaya	\$7,759	-\$13,775	\$11,128				\$150,112	-4%		
849 Tamarind	\$2,273	-\$8,525	-\$15,030			\$5,000	\$138,717	4%		
									1%	

**Adjoining Residential Sales After Solar Farm Approved**

Parcel	Solar	Address	Acres	Date Sold	Sales Price	Built	GBA	\$/GLA	BR/BA	Park	Style	Other
52	Nearby	335 Papaya	0.09	4/17/2018	\$110,000	1987	1,180	\$93.22	2/2	Crprt	Manuf	Green
	Not	865 Tamarind	0.12	2/4/2019	\$133,900	1995	1,368	\$97.88	2/2	Crprt	Manuf	Green
	Not	501 Papaya	0.10	6/15/2018	\$109,000	1986	1,234	\$88.33	2/2	Crprt	Manuf	
	Not	604 Puffin	0.09	10/23/2018	\$110,000	1988	1,320	\$83.33	2/2	Crprt	Manuf	

**Adjoining Sales Adjusted**

Address	Time	YB	GLA	BR/BA	Park	Other	Total	% Diff	Avg % Diff	Distance
335 Papaya							\$110,000			710
865 Tamarind	-\$3,306	-\$5,356	-\$14,721			\$0	\$110,517	0%		
501 Papaya	-\$542	\$545	-\$3,816			\$5,000	\$110,187	0%		
604 Puffin	-\$1,752	-\$550	-\$9,333			\$5,000	\$103,365	6%		
									2%	

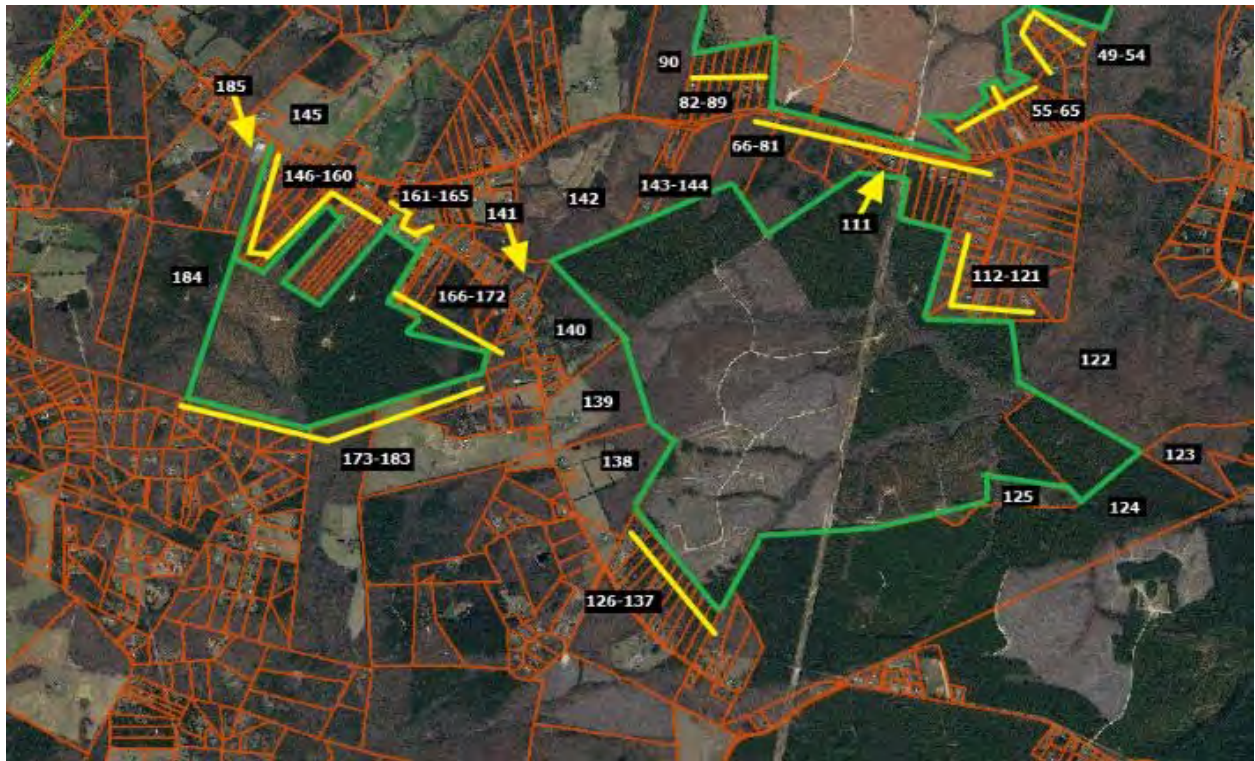
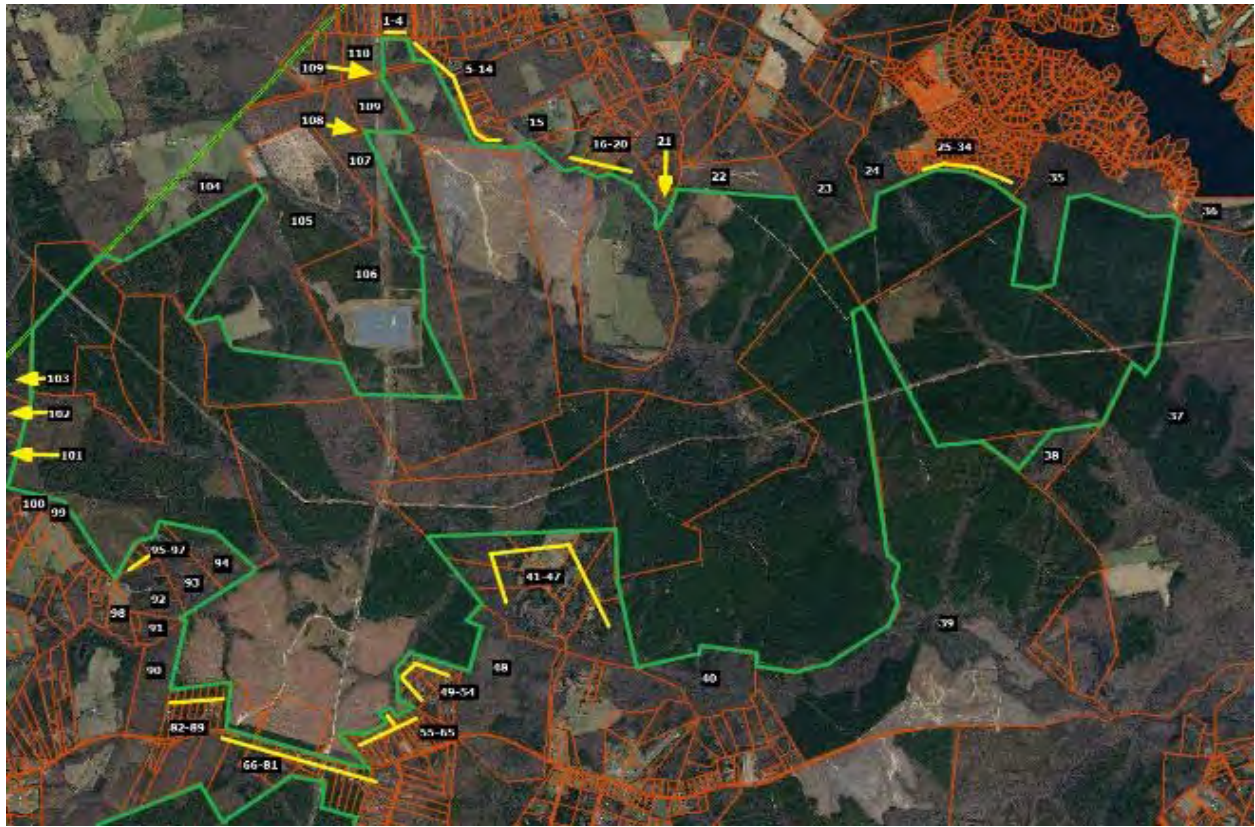
I also identified a new subdivision being developed just to the west of this solar farm called The Lakes at Sebastian Preserve. These are all canal-lot homes that are being built with homes starting at \$271,000 based on the website and closed sales showing up to \$342,000. According to Monique, the onsite broker with Holiday Builders, the solar farm is difficult to see from the lots that back up to that area and she does not anticipate any difficulty in selling those future homes or lots or any impact on the sales price. The closest home that will be built in this development will be approximately 340 feet from the nearest panel.

Based on the closed home prices in Barefoot Bay as well as the broker comments and activity at The Lakes at Sebastian Preserve, the data around this solar farm strongly indicates no negative impact on property value.





**23. 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 617 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 Caparthin Road on the south side of Site A and east of Site C. The third is located on Post Oak Road for a home that backs up to Site C that sold in September 2020 near the completion of construction for Site C.

#### Spotsylvania Solar Farm

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

#### Adjoining Sales Adjusted

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

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

#### Adjoining Sales Adjusted

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

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

**Adjoining Sales Adjusted**

<b>Address</b>	<b>Time</b>	<b>Ac/Loc</b>	<b>YB</b>	<b>GLA</b>	<b>BR/BA</b>	<b>Park</b>	<b>Other</b>	<b>Total</b>	<b>% Diff</b>	<b>Dist</b>
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.

## Conclusion – SouthEast Over 5 MW

### Southeast USA Over 5 MW Matched Pair Summary

	Name	City	State	Acres	MW	Adj. Uses By Acreage					1 mile Radius (2010-2020 Data)			Veg. Buffer
						Topo Shift	Res	Ag	Ag/Res	Com/Ind	Pop.	Med. Income	Avg. Housing Unit	
1	AM Best	Goldsboro	NC	38	5.00	2	38%	0%	23%	39%	1,523	\$37,358	\$148,375	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	Spotyslvania	Paytes	VA	3,500	617.00	160	37%	52%	11%	0%	74	\$120,861	\$483,333	Md to Hvy
	<b>Average</b>			485	57.04	38	24%	48%	22%	6%	923	\$63,955	\$237,700	
	<b>Median</b>			234	20.00	20	17%	59%	11%	0%	467	\$60,037	\$231,408	
	<b>High</b>			3,500	617.00	160	76%	98%	94%	44%	4,689	\$120,861	\$483,333	
	<b>Low</b>			35	5.00	0	1%	0%	0%	0%	48	\$35,057	\$99,219	

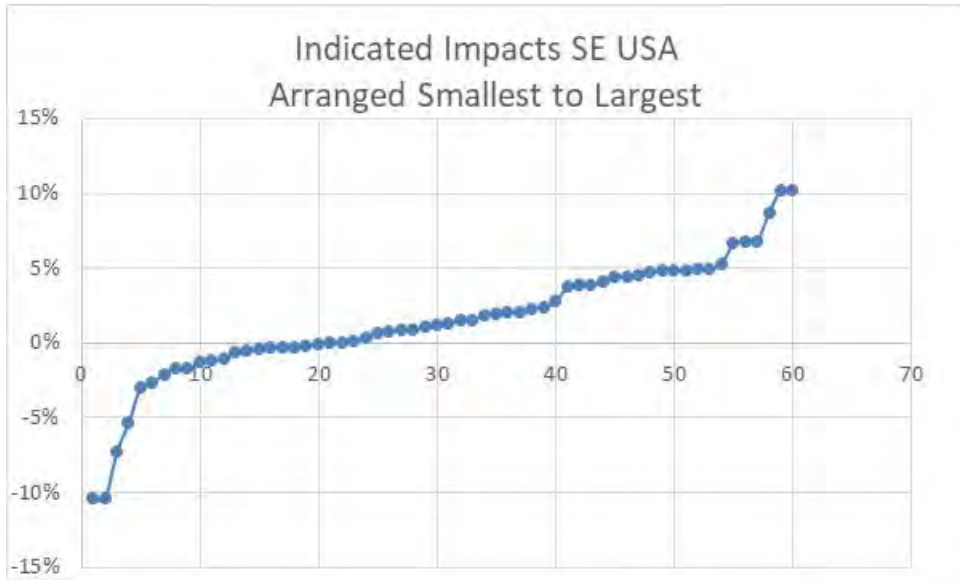
The solar farm matched pairs shown above have similar characteristics to each other in terms of population, but with several outliers showing solar farms in farm more urban areas. The median income for the population within 1 mile of a solar farm is \$60,037 with a median housing unit value of \$231,408. 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.



## Residential Dwelling Matched Pairs Adjoining Solar Farms

Pair	Solar Farm	City	State	MW	Approx		Date	Adj. Sale		Veg.
					Distance	Tax ID/Address		Sale Price	Price	
1	AM Best	Goldsboro	NC	5	280	3600195570	Sep-13	\$250,000		Light
						3600198928	Mar-14	\$250,000	\$250,000	0%
2	AM Best	Goldsboro	NC	5	280	3600195361	Sep-13	\$260,000		Light
						3600194813	Apr-14	\$258,000	\$258,000	1%
3	AM Best	Goldsboro	NC	5	280	3600199891	Jul-14	\$250,000		Light
						3600198928	Mar-14	\$250,000	\$250,000	0%
4	AM Best	Goldsboro	NC	5	280	3600198632	Aug-14	\$253,000		Light
						3600193710	Oct-13	\$248,000	\$248,000	2%
5	AM Best	Goldsboro	NC	5	280	3600196656	Dec-13	\$255,000		Light
						3601105180	Dec-13	\$253,000	\$253,000	1%
6	AM Best	Goldsboro	NC	5	280	3600182511	Feb-13	\$247,000		Light
						3600183905	Dec-12	\$240,000	\$245,000	1%
7	AM Best	Goldsboro	NC	5	280	3600182784	Apr-13	\$245,000		Light
						3600193710	Oct-13	\$248,000	\$248,000	-1%
8	AM Best	Goldsboro	NC	5	280	3600195361	Nov-15	\$267,500		Light
						3600195361	Sep-13	\$260,000	\$267,800	0%
9	Mulberry	Selmer	TN	5	400	0900A011	Jul-14	\$130,000		Light
						099CA043	Feb-15	\$148,900	\$136,988	-5%
10	Mulberry	Selmer	TN	5	400	099CA002	Jul-15	\$130,000		Light
						0990NA040	Mar-15	\$120,000	\$121,200	7%
11	Mulberry	Selmer	TN	5	480	491 Dusty	Oct-16	\$176,000		Light
						35 April	Aug-16	\$185,000	\$178,283	-1%
12	Mulberry	Selmer	TN	5	650	297 Country	Sep-16	\$150,000		Medium
						53 Glen	Mar-17	\$126,000	\$144,460	4%
13	Mulberry	Selmer	TN	5	685	57 Cooper	Feb-19	\$163,000		Medium
						191 Amelia	Aug-18	\$132,000	\$155,947	4%
14	Leonard Rd	Hughesville	MD	5.5	230	14595 Box Elder	Feb-16	\$291,000		Light
						15313 Bassford Rd	Jul-16	\$329,800	\$292,760	-1%
15	Neal Hawkins	Gastonia	NC	5	225	609 Neal Hawkins	Mar-17	\$270,000		Light
						1418 N Modena	Apr-18	\$225,000	\$242,520	10%
16	Summit	Moyock	NC	80	1,060	129 Pinto	Apr-16	\$170,000		Light
						102 Timber	Apr-16	\$175,500	\$175,101	-3%
17	Summit	Moyock	NC	80	980	105 Pinto	Dec-16	\$206,000		Light
						127 Ranchland	Jun-15	\$219,900	\$198,120	4%
18	Tracy	Bailey	NC	5	780	9162 Winters	Jan-17	\$255,000		Heavy
						7352 Red Fox	Jun-16	\$176,000	\$252,399	1%
19	Manatee	Parrish	FL	75	1180	13670 Highland	Aug-18	\$255,000		Heavy
						13851 Highland	Sep-18	\$240,000	\$255,825	0%
20	McBride Place	Midland	NC	75	275	4380 Joyner	Nov-17	\$325,000		Medium
						3870 Elkwood	Aug-16	\$250,000	\$317,523	2%
21	McBride Place	Midland	NC	75	505	5811 Kristi	Mar-20	\$530,000		Medium
						3915 Tania	Dec-19	\$495,000	\$504,657	5%
22	Mariposa	Stanley	NC	5	1155	215 Mariposa	Dec-17	\$249,000		Light
						110 Airport	May-16	\$166,000	\$239,026	4%
23	Mariposa	Stanley	NC	5	570	242 Mariposa	Sep-15	\$180,000		Light
						110 Airport	Apr-16	\$166,000	\$175,043	3%
24	Clarke Cnty	White Post	VA	20	1230	833 Nations Spr	Jan-17	\$295,000		Light
						6801 Middle	Dec-17	\$249,999	\$296,157	0%
25	Candace	Princeton	NC	5	488	499 Herring	Sep-17	\$215,000		Medium
						1795 Bay Valley	Dec-17	\$194,000	\$214,902	0%
26	Walker	Barhamsville	VA	20	250	5241 Barham	Oct-18	\$264,000		Light
						9252 Ordinary	Jun-19	\$277,000	\$246,581	7%
27	AM Best	Goldsboro	NC	5	385	103 Granville Pl	Jul-18	\$265,000		Light
						2219 Granville	Jan-18	\$260,000	\$265,682	0%
28	AM Best	Goldsboro	NC	5	315	104 Erin	Jun-17	\$280,000		Light
						2219 Granville	Jan-18	\$265,000	\$274,390	2%
29	AM Best	Goldsboro	NC	5	400	2312 Granville	May-18	\$284,900		Light
						2219 Granville	Jan-18	\$265,000	\$273,948	4%

## Residential Dwelling Matched Pairs Adjoining Solar Farms

Pair	Solar Farm	City	State	MW	Approx		Date	Adj. Sale		Veg.
					Distance	Tax ID/Address		Sale Price	Price	
30	AM Best	Goldsboro	NC	5	400	2310 Granville	May-19	\$280,000		Light
						634 Friendly	Jul-19	\$267,000	\$265,291	5%
31	Summit	Moyock	NC	80	570	318 Green View	Sep-19	\$357,000		Light
						336 Green View	Jan-19	\$365,000	\$340,286	5%
32	Summit	Moyock	NC	80	440	164 Ranchland	Apr-19	\$169,000		Light
						105 Longhorn	Oct-17	\$184,500	\$186,616	-10%
33	Summit	Moyock	NC	80	635	358 Oxford	Sep-19	\$478,000		Light
						176 Providence	Sep-19	\$425,000	\$456,623	4%
34	Summit	Moyock	NC	80	970	343 Oxford	Mar-17	\$490,000		Light
						218 Oxford	Apr-17	\$525,000	\$484,064	1%
35	Innov 46	Hope Mills	NC	78.5	435	6849 Roslin Farm	Feb-19	\$155,000		Light
						109 Bledsoe	Jan-19	\$150,000	\$147,558	5%
36	Innov 42	Fayetteville	NC	71	340	2923 County Line	Feb-19	\$385,000		Light
						2109 John McMillan	Apr-18	\$320,000	\$379,156	2%
37	Innov 42	Fayetteville	NC	71	330	2935 County Line	Jun-19	\$266,000		Light
						7031 Glynn Mill	May-18	\$255,000	\$264,422	1%
38	Sunfish	Willow Sprng	NC	6.4	205	7513 Glen Willow	Sep-17	\$185,000		Light
						205 Pine Burr	Dec-17	\$191,000	\$172,487	7%
39	Neal Hawkins	Gastonia	NC	5	145	611 Neal Hawkins	Jun-17	\$288,000		Light
						1211 Still Forrest	Jul-18	\$280,000	\$274,319	5%
40	Clarke Cnty	White Post	VA	20	1230	833 Nations Spr	Aug-19	\$385,000		Light
						2393 Old Chapel	Aug-20	\$330,000	\$389,286	-1%
41	Sappony	Stony Creek	VA	20	1425	12511 Palestine	Jul-18	\$128,400		Medium
						6494 Rocky Branch	Nov-18	\$100,000	\$131,842	-3%
42	Camden Dam	Camden	NC	5	342	122 N Mill Dam	Nov-18	\$350,000		Light
						548 Trotman	May-18	\$309,000	\$352,450	-1%
43	Grandy	Grandy	NC	20	405	120 Par Four	Aug-19	\$315,000		Light
						116 Barefoot	Sep-20	\$290,000	\$299,584	5%
44	Grandy	Grandy	NC	20	477	269 Grandy	May-19	\$275,000		Light
						103 Spring Leaf	Aug-18	\$270,000	\$275,912	0%
45	Champion	Pelion	SC	10	505	517 Old Charleston	Aug-20	\$110,000		Light
						1429 Laurel	Feb-19	\$126,000	\$107,856	2%
46	Barefoot Bay	Barefoot Bay	FL	74.5	765	465 Papaya	Jul-19	\$155,000		Medium
						1132 Waterway	Jul-20	\$129,000	\$141,618	9%
47	Barefoot Bay	Barefoot Bay	FL	74.5	750	455 Papaya	Sep-20	\$183,500		Medium
						904 Fir	Sep-20	\$192,500	\$186,697	-2%
48	Barefoot Bay	Barefoot Bay	FL	74.5	690	419 Papaya	Jul-19	\$127,500		Medium
						865 Tamarind	Feb-19	\$133,900	\$124,613	2%
49	Barefoot Bay	Barefoot Bay	FL	74.5	690	413 Papaya	Jul-20	\$130,000		Medium
						1367 Barefoot	Jan-21	\$130,500	\$139,507	-7%
50	Barefoot Bay	Barefoot Bay	FL	74.5	690	343 Papaya	Dec-19	\$145,000		Light
						865 Tamarind	Feb-19	\$133,900	\$142,403	2%
51	Barefoot Bay	Barefoot Bay	FL	74.5	710	335 Papaya	Apr-18	\$110,000		Light
						865 Tamarind	Feb-19	\$133,900	\$110,517	0%
52	Miami-Dade	Miami	FL	74.5	1390	13600 SW 182nd	Nov-20	\$1,684,000		Light
						17950 SW 158th	Oct-20	\$1,730,000	\$1,713,199	-2%
53	Spotsylvania	Paytes	VA	617	1270	12901 Orange Plnk	Aug-20	\$319,900		Medium
						12717 Flintlock	Dec-20	\$290,000	\$326,767	-2%
54	Spotsylvania	Paytes	VA	617	1950	9641 Nottoway	May-20	\$449,900		Medium
						11626 Forest	Aug-20	\$489,900	\$430,246	4%
55	Spotsylvania	Paytes	VA	617	1171	13353 Post Oak	Sep-20	\$300,000		Heavy
						12810 Catharpin	Jan-20	\$280,000	\$299,008	0%
56	McBride Place	Midland	NC	75	470	5833 Kristi	Sep-20	\$625,000		Light
						4055 Dakeita	Dec-20	\$600,000	\$594,303	5%

MW	Avg. Distance	Average	Indicated Impact
64.91	612	Average	1%
20.00	479	Median	1%
617.00	1,950	High	10%
5.00	145	Low	-10%

I have further broken down these results based on the MWs, Landscaping, and distance from panel to show the following range of findings for these different categories.

Most of the findings are for homes between 201 and 500 feet. Most of the findings are for Light landscaping screens.

Light landscaping screens are showing no impact on value at any distances, including for solar farms over 75.1 MW.

<b>MW Range</b>									
<b>4.4 to 10</b>									
<b>Landscaping</b>	<b>Light</b>	<b>Light</b>	<b>Light</b>	<b>Medium</b>	<b>Medium</b>	<b>Medium</b>	<b>Heavy</b>	<b>Heavy</b>	<b>Heavy</b>
<b>Distance</b>	<b>100-200</b>	<b>201-500</b>	<b>500+</b>	<b>100-200</b>	<b>201-500</b>	<b>500+</b>	<b>100-200</b>	<b>201-500</b>	<b>500+</b>
<b>#</b>	1	19	2	0	1	2	0	0	1
<b>Average</b>	5%	2%	3%	N/A	0%	4%	N/A	N/A	1%
<b>Median</b>	5%	1%	3%	N/A	0%	4%	N/A	N/A	1%
<b>High</b>	5%	10%	4%	N/A	0%	4%	N/A	N/A	1%
<b>Low</b>	5%	-5%	3%	N/A	0%	4%	N/A	N/A	1%
<b>10.1 to 30</b>									
<b>Landscaping</b>	<b>Light</b>	<b>Light</b>	<b>Light</b>	<b>Medium</b>	<b>Medium</b>	<b>Medium</b>	<b>Heavy</b>	<b>Heavy</b>	<b>Heavy</b>
<b>Distance</b>	<b>100-200</b>	<b>201-500</b>	<b>500+</b>	<b>100-200</b>	<b>201-500</b>	<b>500+</b>	<b>100-200</b>	<b>201-500</b>	<b>500+</b>
<b>#</b>	0	3	2	0	0	1	0	0	0
<b>Average</b>	N/A	4%	-1%	N/A	N/A	-3%	N/A	N/A	N/A
<b>Median</b>	N/A	5%	-1%	N/A	N/A	-3%	N/A	N/A	N/A
<b>High</b>	N/A	7%	0%	N/A	N/A	-3%	N/A	N/A	N/A
<b>Low</b>	N/A	0%	-1%	N/A	N/A	-3%	N/A	N/A	N/A
<b>30.1 to 75</b>									
<b>Landscaping</b>	<b>Light</b>	<b>Light</b>	<b>Light</b>	<b>Medium</b>	<b>Medium</b>	<b>Medium</b>	<b>Heavy</b>	<b>Heavy</b>	<b>Heavy</b>
<b>Distance</b>	<b>100-200</b>	<b>201-500</b>	<b>500+</b>	<b>100-200</b>	<b>201-500</b>	<b>500+</b>	<b>100-200</b>	<b>201-500</b>	<b>500+</b>
<b>#</b>	0	2	3	0	0	4	0	0	0
<b>Average</b>	N/A	1%	0%	N/A	N/A	0%	N/A	N/A	N/A
<b>Median</b>	N/A	1%	0%	N/A	N/A	0%	N/A	N/A	N/A
<b>High</b>	N/A	2%	2%	N/A	N/A	9%	N/A	N/A	N/A
<b>Low</b>	N/A	1%	-2%	N/A	N/A	-7%	N/A	N/A	N/A
<b>75.1+</b>									
<b>Landscaping</b>	<b>Light</b>	<b>Light</b>	<b>Light</b>	<b>Medium</b>	<b>Medium</b>	<b>Medium</b>	<b>Heavy</b>	<b>Heavy</b>	<b>Heavy</b>
<b>Distance</b>	<b>100-200</b>	<b>201-500</b>	<b>500+</b>	<b>100-200</b>	<b>201-500</b>	<b>500+</b>	<b>100-200</b>	<b>201-500</b>	<b>500+</b>
<b>#</b>	0	2	5	0	0	2	0	0	1
<b>Average</b>	N/A	-3%	2%	N/A	N/A	1%	N/A	N/A	0%
<b>Median</b>	N/A	-3%	4%	N/A	N/A	1%	N/A	N/A	0%
<b>High</b>	N/A	5%	5%	N/A	N/A	4%	N/A	N/A	0%
<b>Low</b>	N/A	-10%	-3%	N/A	N/A	-2%	N/A	N/A	0%



### C. Summary of National Data on Solar Farms

I have worked in 19 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 37 solar farms over 5 MW studied with each one providing matched pair data supporting the findings of this report.

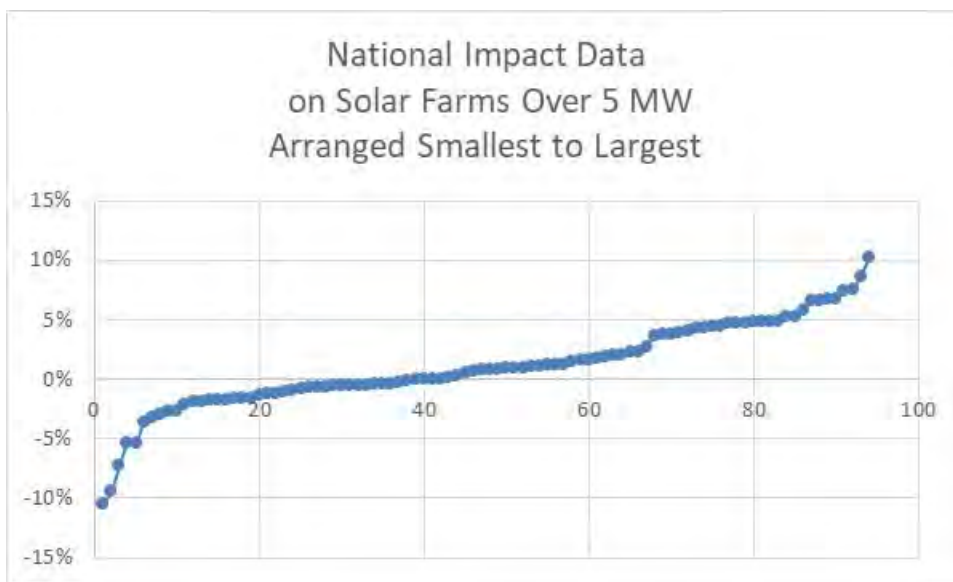
The solar farms summary is shown below with a summary of the matched pair data shown on the following page.

Matched Pair Summary						Adj. Uses By Acreage					1 mile Radius (2010-2020 Data)			Veg. Buffer
Name	City	State	Acres	MW	Topo	Shift	Res	Ag	Ag/Res	Com/Ind	Popl.	Income	Unit	
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
7	Tracy	Bailey	NC	50	5.00	10	29%	0%	71%	0%	312	\$43,940	\$99,219	Heavy
8	Manatee	Parrish	FL	1,180	75.00	20	2%	97%	1%	0%	48	\$75,000	\$291,667	Heavy
9	McBride	Midland	NC	627	75.00	140	12%	10%	78%	0%	398	\$63,678	\$256,306	Lt to Med
10	Grand Ridge	Streator	IL	160	20.00	1	8%	87%	5%	0%	96	\$70,158	\$187,037	Light
11	Dominion	Indianapolis	IN	134	8.60	20	3%	97%	0%	0%	3,774	\$61,115	\$167,515	Light
12	Mariposa	Stanley	NC	36	5.00	96	48%	0%	52%	0%	1,716	\$36,439	\$137,884	Light
13	Clarke Cnty	White Post	VA	234	20.00	70	14%	39%	46%	1%	578	\$81,022	\$374,453	Light
14	Flemington	Flemington	NJ	120	9.36	N/A	13%	50%	28%	8%	3,477	\$105,714	\$444,696	Lt to Med
15	Frenchtown	Frenchtown	NJ	139	7.90	N/A	37%	35%	29%	0%	457	\$111,562	\$515,399	Light
16	McGraw	East Windsor	NJ	95	14.00	N/A	27%	44%	0%	29%	7,684	\$78,417	\$362,428	Light
17	Tinton Falls	Tinton Falls	NJ	100	16.00	N/A	98%	0%	0%	2%	4,667	\$92,346	\$343,492	Light
18	Simon	Social Circle	GA	237	30.00	71	1%	63%	36%	0%	203	\$76,155	\$269,922	Medium
19	Candace	Princeton	NC	54	5.00	22	76%	24%	0%	0%	448	\$51,002	\$107,171	Medium
20	Walker	Barhamsville	VA	485	20.00	N/A	12%	68%	20%	0%	203	\$80,773	\$320,076	Light
21	Innov 46	Hope Mills	NC	532	78.50	0	17%	83%	0%	0%	2,247	\$58,688	\$183,435	Light
22	Innov 42	Fayetteville	NC	414	71.00	0	41%	59%	0%	0%	568	\$60,037	\$276,347	Light
23	Demille	Lapeer	MI	160	28.40	10	10%	68%	0%	22%	2,010	\$47,208	\$187,214	Light
24	Turrill	Lapeer	MI	230	19.60	10	75%	59%	0%	25%	2,390	\$46,839	\$110,361	Light
25	Sunfish	Willow Spring	NC	50	6.40	30	35%	35%	30%	0%	1,515	\$63,652	\$253,138	Light
26	Picture Rocks	Tucson	AZ	182	20.00	N/A	6%	88%	6%	0%	102	\$81,081	\$280,172	None
27	Avra Valley	Tucson	AZ	246	25.00	N/A	3%	94%	3%	0%	85	\$80,997	\$292,308	None
28	Sappony	Stony Crk	VA	322	20.00	N/A	2%	98%	0%	0%	74	\$51,410	\$155,208	Medium
29	Camden Dam	Camden	NC	50	5.00	0	17%	72%	11%	0%	403	\$84,426	\$230,288	Light
30	Grandy	Grandy	NC	121	20.00	10	55%	24%	0%	21%	949	\$50,355	\$231,408	Light
31	Champion	Pelion	SC	100	10.00	N/A	4%	70%	8%	18%	1,336	\$46,867	\$171,939	Light
32	Eddy II	Eddy	TX	93	10.00	N/A	15%	25%	58%	2%	551	\$59,627	\$139,088	Light
33	Somerset	Somerset	TX	128	10.60	N/A	5%	95%	0%	0%	1,293	\$41,574	\$135,490	Light
34	DG Amp Piqua	Piqua	OH	86	12.60	2	26%	16%	58%	0%	6,735	\$38,919	\$96,555	Light
45	Barefoot Bay	Barefoot Bay	FL	504	74.50	0	11%	87%	0%	3%	2,446	\$36,737	\$143,320	Lt to Med
36	Miami-Dade	Miami	FL	347	74.50	0	26%	74%	0%	0%	127	\$90,909	\$403,571	Light
37	Spotyslvania	Paytes	VA	3,500	617.00	160	37%	52%	11%	0%	74	\$120,861	\$483,333	Med to Hvy
<b>Average</b>				362	42.05	32	24%	52%	19%	6%	1,515	\$66,292	\$242,468	
<b>Median</b>				150	17.80	10	16%	59%	7%	0%	560	\$62,384	\$230,848	
<b>High</b>				3,500	617.00	160	98%	98%	94%	44%	7,684	\$120,861	\$515,399	
<b>Low</b>				35	5.00	0	1%	0%	0%	0%	48	\$35,057	\$96,555	

From these 37 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%.

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

While the range is broad, the two charts below show the data points in range from lowest to highest. There is only 3 data points out of 94 that show a negative impact. The rest support either a finding of no impact or 9 of the data points suggest a positive impact due to adjacency to a solar farm. As discussed earlier in this report, I consider this data to strongly support a finding of no impact on value as most of the findings are within typical market variation and even within that, most are mildly positive findings.



## D. Larger Solar Farms

I have also considered larger solar farms to address impacts related to larger projects. Projects have been increasing in size and most of the projects between 100 and 1000 MW are newer with little time for adjoining sales. I have included a breakdown of solar farms with 20 MW to 80 MW facilities with one 617 MW facility.

Matched Pair Summary - @20 MW And Larger						Adj. Uses By Acreage					1 mile Radius (2010-2019 Data)			Veg. Buffer
Name	City	State	Acres	MW	Topo Shift	Res	Ag	Ag/Res	Com/Ind	Popl.	Med. Income	Avg. Housing Unit		
1	Summit	Moyock	NC	2,034	80.00	4	4%	0%	94%	2%	382	\$79,114	\$281,731	Light
2	Manatee	Parrish	FL	1,180	75.00	20	2%	97%	1%	0%	48	\$75,000	\$291,667	Heavy
3	McBride	Midland	NC	627	75.00	140	12%	10%	78%	0%	398	\$63,678	\$256,306	Lt to Med
4	Grand Ridge	Streator	IL	160	20.00	1	8%	87%	5%	0%	96	\$70,158	\$187,037	Light
5	Clarke Cnty	White Post	VA	234	20.00	70	14%	39%	46%	1%	578	\$81,022	\$374,453	Light
6	Simon	Social Circle	GA	237	30.00	71	1%	63%	36%	0%	203	\$76,155	\$269,922	Medium
7	Walker	Barhamsville	VA	485	20.00	N/A	12%	68%	20%	0%	203	\$80,773	\$320,076	Light
8	Innov 46	Hope Mills	NC	532	78.50	0	17%	83%	0%	0%	2,247	\$58,688	\$183,435	Light
9	Innov 42	Fayetteville	NC	414	71.00	0	41%	59%	0%	0%	568	\$60,037	\$276,347	Light
10	Demille	Lapeer	MI	160	28.40	10	10%	68%	0%	22%	2,010	\$47,208	\$187,214	Light
11	Turrill	Lapeer	MI	230	19.60	10	75%	59%	0%	25%	2,390	\$46,839	\$110,361	Light
12	Picture Rocks	Tucson	AZ	182	20.00	N/A	6%	88%	6%	0%	102	\$81,081	\$280,172	Light
13	Avra Valley	Tucson	AZ	246	25.00	N/A	3%	94%	3%	0%	85	\$80,997	\$292,308	None
14	Sappony	Stony Crk	VA	322	20.00	N/A	2%	98%	0%	0%	74	\$51,410	\$155,208	None
15	Grandy	Grandy	NC	121	20.00	10	55%	24%	0%	21%	949	\$50,355	\$231,408	Medium
16	Barefoot Bay	Barefoot Bay	FL	504	74.50	0	11%	87%	0%	3%	2,446	\$36,737	\$143,320	Lt to Med
17	Miami-Dade	Miami	FL	347	74.50	0	26%	74%	0%	0%	127	\$90,909	\$403,571	Light
18	Spotyslvania	Paytes	VA	3,500	617.00	160	37%	52%	11%	0%	74	\$120,861	\$483,333	Med to Hvy
<b>Average</b>			640	76.03		19%	64%	17%	4%	721	\$69,501	\$262,659		
<b>Median</b>			335	29.20		12%	68%	2%	0%	293	\$72,579	\$273,135		
<b>High</b>			3,500	617.00		75%	98%	94%	25%	2,446	\$120,861	\$483,333		
<b>Low</b>			121	19.60		1%	0%	0%	0%	48	\$36,737	\$110,361		

The breakdown of adjoining uses, population density, median income and housing prices for these projects are very similar to those of the larger set. The matched pairs for each of these were considered earlier and support a finding of no negative impact on the adjoining home values.

I have included a breakdown of solar farms with 50 MW to 617 MW facilities adjoining.

Matched Pair Summary - @50 MW And Larger						Adj. Uses By Acreage					1 mile Radius (2010-2019 Data)			Veg. Buffer
Name	City	State	Acres	MW	Topo Shift	Res	Ag	Ag/Res	Com/Ind	Popl.	Med. Income	Avg. Housing Unit		
1	Summit	Moyock	NC	2,034	80.00	4	4%	0%	94%	2%	382	\$79,114	\$281,731	Light
2	Manatee	Parrish	FL	1,180	75.00	20	2%	97%	1%	0%	48	\$75,000	\$291,667	Heavy
3	McBride	Midland	NC	627	75.00	140	12%	10%	78%	0%	398	\$63,678	\$256,306	Lt to Med
4	Innov 46	Hope Mills	NC	532	78.50	0	17%	83%	0%	0%	2,247	\$58,688	\$183,435	Light
5	Innov 42	Fayetteville	NC	414	71.00	0	41%	59%	0%	0%	568	\$60,037	\$276,347	Light
6	Barefoot Bay	Barefoot Bay	FL	504	74.50	0	11%	87%	0%	3%	2,446	\$36,737	\$143,320	Lt to Med
7	Miami-Dade	Miami	FL	347	74.50	0	26%	74%	0%	0%	127	\$90,909	\$403,571	Light
8	Spotyslvania	Paytes	VA	3,500	617.00	160	37%	52%	11%	0%	74	\$120,861	\$483,333	Med to Hvy
<b>Average</b>			1,142	143.19		19%	58%	23%	1%	786	\$73,128	\$289,964		
<b>Median</b>			580	75.00		15%	67%	0%	0%	390	\$69,339	\$279,039		
<b>High</b>			3,500	617.00		41%	97%	94%	3%	2,446	\$120,861	\$483,333		
<b>Low</b>			347	71.00		2%	0%	0%	0%	48	\$36,737	\$143,320		

The breakdown of adjoining uses, population density, median income and housing prices for these projects are very similar to those of the larger set. The matched pairs for each of these were considered earlier and support a finding of no negative impact on the adjoining home values.

The data for these larger solar farms is shown in the SE USA and the National data breakdowns with similar landscaping, setbacks and range of impacts that fall mostly in the +/-5% range as can be seen earlier in this report.

On the following page I show 81 projects ranging in size from 50 MW up to 1,000 MW with an average size of 111.80 MW and a median of 80 MW. The average closest distance for an adjoining home is 263 feet, while the median distance is 188 feet. The closest distance is 57 feet. The mix of adjoining uses is similar with most of the adjoining uses remaining residential or agricultural in nature. This is the list of solar farms that I have researched for possible matched pairs and not a complete list of larger solar farms in those states.

Parcel #	State	City	Name	Output Total		Used Acres	Avg. Dist to home	Closest Adjoining Use by Acre			Com	
				(MW)	Acres			Home	Res	Agri		Ag/R
78	NC	Moyock	Summit/Ranchland	80	2034		674	360	4%	94%	0%	2%
133	MS	Hattiesburg	Hattiesburg	50	1129	479.6	650	315	35%	65%	0%	0%
179	SC	Ridgeland	Jasper	140	1600	1000	461	108	2%	85%	13%	0%
211	NC	Enfield	Chestnut	75	1428.1		1,429	210	4%	96%	0%	0%
222	VA	Chase City	Grasshopper	80	946.25				6%	87%	5%	1%
226	VA	Louisa	Belcher	88	1238.1			150	19%	53%	28%	0%
305	FL	Dade City	Mountain View	55	347.12		510	175	32%	39%	21%	8%
319	FL	Jasper	Hamilton	74.9	1268.9	537	3,596	240	5%	67%	28%	0%
336	FL	Parrish	Manatee	74.5	1180.4		1,079	625	2%	50%	1%	47%
337	FL	Arcadia	Citrus	74.5	640				0%	0%	100%	0%
338	FL	Port Charlotte	Babcock	74.5	422.61				0%	0%	100%	0%
353	VA	Oak Hall	Amazon East(ern st	80	1000		645	135	8%	75%	17%	0%
364	VA	Stevensburg	Greenwood	100	2266.6	1800	788	200	8%	62%	29%	0%
368	NC	Warsaw	Warsaw	87.5	585.97	499	526	130	11%	66%	21%	3%
390	NC	Ellerbe	Innovative Solar 34	50	385.24	226	N/A	N/A	1%	99%	0%	0%
399	NC	Midland	McBride	74.9	974.59	627	1,425	140	12%	78%	9%	0%
400	FL	Mulberry	Alafia	51	420.35		490	105	7%	90%	3%	0%
406	VA	Clover	Foxhound	91	1311.8		885	185	5%	61%	17%	18%
410	FL	Trenton	Trenton	74.5	480		2,193	775	0%	26%	55%	19%
411	NC	Battleboro	Fern	100	1235.4	960.71	1,494	220	5%	76%	19%	0%
412	MD	Goldsboro	Cherrywood	202	1722.9	1073.7	429	200	10%	76%	13%	0%
434	NC	Conetoe	Conetoe	80	1389.9	910.6	1,152	120	5%	78%	17%	0%
440	FL	Debary	Debary	74.5	844.63		654	190	3%	27%	0%	70%
441	FL	Hawthorne	Horizon	74.5	684				3%	81%	16%	0%
484	VA	Newsoms	Southampton	100	3243.9		-	-	3%	78%	17%	3%
486	VA	Stuarts Draft	Augusta	125	3197.4	1147	588	165	16%	61%	16%	7%
491	NC	Misenheimer	Misenheimer 2018	80	740.2	687.2	504	130	11%	40%	22%	27%
494	VA	Shackelfords	Walnut	110	1700	1173	641	165	14%	72%	13%	1%
496	VA	Clover	Piney Creek	80	776.18	422	523	195	15%	62%	24%	0%
511	NC	Scotland Neck	American Beech	160	3255.2	1807.8	1,262	205	2%	58%	38%	3%
514	NC	Reidsville	Williamsburg	80	802.6	507	734	200	25%	12%	63%	0%
517	VA	Luray	Cape	100	566.53	461	519	110	42%	12%	46%	0%
518	VA	Emporia	Fountain Creek	80	798.3	595	862	300	6%	23%	71%	0%
525	NC	Plymouth	Macadamia	484	5578.7	4813.5	1,513	275	1%	90%	9%	0%
526	NC	Mooreboro	Broad River	50	759.8	365	419	70	29%	55%	16%	0%
555	FL	Mulberry	Durrance	74.5	463.57	324.65	438	140	3%	97%	0%	0%
560	NC	Yadkinville	Sugar	60	477	357	382	65	19%	39%	20%	22%
561	NC	Enfield	Halifax 80mw 2019	80	1007.6	1007.6	672	190	8%	73%	19%	0%
577	VA	Windsor	Windsor	85	564.1	564.1	572	160	9%	67%	24%	0%
579	VA	Paytes	Spotsylvania	500	6412	3500			9%	52%	11%	27%
582	NC	Salisbury	China Grove	65	428.66	324.26	438	85	58%	4%	38%	0%
583	NC	Walnut Cove	Lick Creek	50	1424	185.11	410	65	20%	64%	11%	5%
584	NC	Enfield	Sweetleaf	94	1956.3	1250	968	160	5%	63%	32%	0%
586	VA	Aylett	Sweet Sue	77	1262	576	1,617	680	7%	68%	25%	0%
593	NC	Windsor	Sumac	120	3360.6	1257.9	876	160	4%	90%	6%	0%
599	TN	Somerville	Yum Yum	147	4000	1500	1,862	330	3%	32%	64%	1%
602	GA	Waynesboro	White Oak	76.5	516.7	516.7	2,995	1,790	1%	34%	65%	0%
603	GA	Butler	Butler GA	103	2395.1	2395.1	1,534	255	2%	73%	23%	2%
604	GA	Butler	White Pine	101.2	505.94	505.94	1,044	100	1%	51%	48%	1%
605	GA	Metter	Live Oak	51	417.84	417.84	910	235	4%	72%	23%	0%
606	GA	Hazelhurst	Hazelhurst II	52.5	947.15	490.42	2,114	105	9%	64%	27%	0%
607	GA	Bainbridge	Decatur Parkway	80	781.5	781.5	1,123	450	2%	27%	22%	49%
608	GA	Leslie-DeSoto	Americus	1000	9661.2	4437	5,210	510	1%	63%	36%	0%
616	FL	Fort White	Fort White	74.5	570.5	457.2	828	220	12%	71%	17%	0%
621	VA	Spring Grove	Loblolly	150	2181.9	1000	1,860	110	7%	62%	31%	0%
622	VA	Scottsville	Woodridge	138	2260.9	1000	1,094	170	9%	63%	28%	0%
625	NC	Middlesex	Phobos	80	754.52	734	356	57	14%	75%	10%	0%
628	MI	Deerfield	Carroll Road	200	1694.8	1694.8	343	190	12%	86%	0%	2%
633	VA	Emporia	Brunswick	150.2	2076.4	1387.3	1,091	240	4%	85%	11%	0%
634	NC	Elkin	Partin	50	429.4	257.64	945	155	30%	25%	15%	30%

Parcel #	State	City	Name	Output Total	Used	Avg. Dist	Closest	Adjoining Use by Acre				
				(MW)	Acres	Acres	to home	Home	Res	Agri	Ag/R	Com
638	GA	Dry Branch	Twiggs	200	2132.7	2132.7	-	-	10%	55%	35%	0%
639	NC	Hope Mills	Innovative Solar 46	78.5	531.87	531.87	423	125	17%	83%	0%	0%
640	NC	Hope Mills	Innovative Solar 42	71	413.99	413.99	375	135	41%	59%	0%	0%
645	NC	Stanley	Hornet	75	1499.5	858.4	663	110	30%	40%	23%	6%
650	NC	Grifton	Grifton 2	56	681.59	297.6	363	235	1%	99%	0%	0%
651	NC	Grifton	Buckleberry	52.1	367.67	361.67	913	180	5%	54%	41%	0%
657	KY	Greensburg	Horseshoe Bend	60	585.65	395	1,394	63	3%	36%	61%	0%
658	KY	Campbellsville	Flat Run	55	429.76	429.76	408	115	13%	52%	35%	0%
666	FL	Archer	Archer	74.9	636.94	636.94	638	200	43%	57%	0%	0%
667	FL	New Smyrna Beach	Pioneer Trail	74.5	1202.8	900	1,162	225	14%	61%	21%	4%
668	FL	Lake City	Sunshine Gateway	74.5	904.29	472	1,233	890	11%	80%	8%	0%
669	FL	Florahome	Coral Farms	74.5	666.54	580	1,614	765	19%	75%	7%	0%
672	VA	Appomattox	Spout Spring	60	881.12	673.37	836	335	16%	30%	46%	8%
676	TX	Stamford	Alamo 7	106.4	1663.1	1050	-	-	6%	83%	0%	11%
677	TX	Fort Stockton	RE Roserock	160	1738.2	1500	-	-	0%	100%	0%	0%
678	TX	Lamesa	Lamesa	102	914.5	655	921	170	4%	41%	11%	44%
679	TX	Lamesa	Ivory	50	706	570	716	460	0%	87%	2%	12%
680	TX	Uvalde	Alamo 5	95	830.35	800	925	740	1%	93%	6%	0%
684	NC	Waco	Brookcliff	50	671.03	671.03	560	150	7%	21%	15%	57%
689	AZ	Arlington	Mesquite	320.8	3774.5	2617	1,670	525	8%	92%	0%	0%
692	AZ	Tucson	Avalon	51	479.21	352	-	-	0%	100%	0%	0%
				81								
<b>Average</b>				111.80	1422.4	968.4	1031	263	10%	62%	22%	6%
<b>Median</b>				80.00	914.5	646.0	836	188	7%	64%	17%	0%
<b>High</b>				1000.00	9661.2	4813.5	5210	1790	58%	100%	100%	70%
<b>Low</b>				50.00	347.1	185.1	343	57	0%	0%	0%	0%

## **VII. 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.

## **VIII. Topography**

As shown on the summary charts for the solar farms, I have been identifying the topographic shifts across the solar farms considered. Differences in topography can impact visibility of the panels, though typically this results in distant views of panels as opposed to up close views. The topography noted for solar farms showing no impact on adjoining home values range from as much as 160-foot shifts across the project. Given that appearance is the only factor of concern and that distance plus landscape buffering typically addresses up close views, this leaves a number of potentially distant views of panels. I specifically note that in Crittenden in KY there are distant views of panels from the adjoining homes that showed no impact on value.

General rolling terrain with some distant solar panel views are showing no impact on adjoining property value.

## **IX. Potential Impacts During Construction**

Any development of a site will have a certain amount of construction, whether it is for a commercial agricultural use such as large-scale poultry operations or a new residential subdivision. Construction will be temporary and consistent with other development uses of the land and in fact dust from the construction will likely be less than most other construction projects given the minimal grading. I would not anticipate any impacts on property value due to construction on the site.

I note that in the matched pairs that I have included there have been a number of home sales that happened after a solar farm was approved but before the solar farm was built showing no impact on property value. Therefore the anticipated construction had no impact as shown by that data.

## **X. Scope of Research**

I have researched over 750 solar farms and sites on which solar farms are existing and proposed in Virginia, Illinois, Tennessee, North Carolina, Kentucky as well as other states to determine what uses are typically found in proximity with a solar farm. The data I have collected and provide in this report strongly supports the assertion that solar farms are having no negative consequences on adjoining agricultural and residential values.

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

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

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

**Total Solar Farms Considered: 705**

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

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

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

**Total Solar Farms Considered: 705**

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



## **XI. 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. No 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.

## **7. Conclusion**

On the basis of the factors described above, it is my professional opinion that the proposed solar farm will not negatively impact adjoining property values. The only category of impact of note is appearance, which is addressed through setbacks and landscaping buffers. The matched pair data supports that conclusion.

## **XII. 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's quiet, and there is no traffic.



# Kirkland Appraisals, LLC

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

## ***Professional Experience***

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

## ***Professional Affiliations***

<b>MAI</b> (Member, Appraisal Institute) designation #11796	2001
<b>NC State Certified General Appraiser</b> # A4359	1999
<b>VA State Certified General Appraiser</b> # 4001017291	
<b>SC State Certified General Appraiser</b> # 6209	
<b>FL State Certified General Appraiser</b> # RZ3950	
<b>IL State Certified General Appraiser</b> # 553.002633	
<b>KY State Certified General Appraiser</b> # 5522	

## ***Education***

<b>Bachelor of Arts in English</b> , University of North Carolina, Chapel Hill	1993
--	------


## ***Continuing Education***

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 Supervisors/Trainees	2012 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 Business Practices and Ethics	2011 2011
Appraisal Curriculum Overview (2 Days – General)	2009
Appraisal Review - General	2009
Uniform Standards of Professional Appraisal Practice Update Subdivision Valuation: A Comprehensive Guide	2008 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 Evaluating Commercial Construction	2006 2005
Conservation Easements	2005
Uniform Standards of Professional Appraisal Practice Update Condemnation Appraising	2004 2004
Land Valuation Adjustment Procedures	2004
Supporting Capitalization Rates	2004
Uniform Standards of Professional Appraisal Practice, C Wells and Septic Systems and Wastewater Irrigation Systems	2002 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 Basic Income Capitalization	1997 1996

## 3.13 Community Meeting Sign-in Sheet

Community Meeting Sign-In Sheet  
Prince Edward Solar Farm – September 20, 2021

Name	Address	Phone Number	Email
Deborah McWee Wayne McWee	3384 Rice Creek Rd Farmville	434-390-1340	mcweewe@longwood.edu
Robert Love Prince Edward Co.	Po Box 382 Farmville VA	434-446-9287	rlove@co.prince-edward.va.us
Judy Fisher	3111 Rice Creek Farmville	434-223-8758	jfisher@longwood.edu
Shauna Watkins	3268 DATA ROAD Farmville VA		
	1753 Winkley St Farmville VA	434-392-8837	justinstanley@co.prince-edward.va.us
Kester Freeman	5914 Meherrin Rd	803-603-2703	Kester.Freeman@gmail.com
WAKY NEWMAN	65 LAKEWOOD LN FARMVILLE VA	434-391-4650	NEWMANWAKY@GMAIL.COM
Jolanne + Bill Burgin	479 Spring Grove Rd Sport Springs VA 24593	434 352-7231	apppvot@gmail.com
Margaret + Matt Eldridge	2448 Hollyhock Dr Charlottesville 22901	571-232-2939	@eldridgemarg@gmail.com



## 3.14 Community Meeting Notes

## Prince Edward Solar Community Meeting Notes 9/20/2021

The following document summarizes the topics discussed during the Prince Edward Solar Farm Community Meeting:

### 1. What will you have to do to maintain the site?

- Seasonal landscaping (approximately 1-2 trucks every 1-2 weeks for landscaping)
- Routine electrical inspection
- Due to seasonal rainfall in Virginia, panels will not require cleaning maintenance
- Remote monitoring of the site will be utilized

### 2. Will you be able to see the panels?

- Based on the Prince Edward County ordinance, a minimum of a 15-foot vegetative buffer will be placed around the site to protect viewsheds
- The planted vegetative buffer will be 3-feet at the time of planting and will be estimated to reach 8-feet within the first three years

### 3. Will you be able to hear anything?

- Outside the fence, studies show that the sound generated by solar farms is generally not audible
- Inside the fence, the sound level of an inverter has been described as roughly equivalent to that of a dishwasher

### 4. Will the site be fenced?

- Yes, the perimeter of the panel area will be surrounded by a 6-foot-tall fence topped by one foot of 3 strands of barbed wire.
- The project will partner with local fire/rescue to ensure appropriate access

5. What will the construction time be?

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

6. How will this solar farm impact Rice Creek Road and Rice Creek Road bridge?

- Repair of Rice Creek Road may be included in Prince Edward County's six-year plan
- CEP will follow the recommendations of VDOT regarding entrance sites and appropriate routes to the site for construction and operations.
- Roughly 130 truckloads of panels will be transported within a 1–2-month timeline

7. How long will it be till this project is implemented?

- CEP plans to have the project operational by 2023

8. How long will the project last?

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

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

- As a condition of project permitting, a decommissioning bond or other form of financial security will be established to ensure timely removal of the project
- Upon removal of the equipment, the ground will be available for its original use (managed timber, agriculture, or otherwise)

10. What is the topography on the site and how will that factor into where panels are located?

- The topography varies across the site and is in consideration for the final project design.
- Areas of extreme slope may not be appropriate to place solar panels
- County and state storm water management and erosion control will be followed

11. How will the project be financed?

- The project will be financed by a long-term owner through private investment with credit worthy financing

12. How will the project benefit the county financially?

- The county will benefit through adopting the revenue share ordinance
- The project will pay \$1,400 per MW annually with an increase rate of 10% every 5 years
- Over the estimated life of the project, it will produce approximately \$2.2 million in tax revenue (based on the revenue share ordinance)

13. Will this project increase my Southside Electric bill?

- No, developing and building this project will not increase your electric bill
- CEP Solar will develop the project and finance it through private investment, but CEP does not have control over how Southside Electric sets their prices

## 3.15 Site Control

Prepared by and return to:  
CEP Solar, LLC  
Attn:  
Tyson Utt  
1310 Roseneath Rd. Suite 200  
Richmond, VA 23230

**MEMORANDUM OF OPTION TO LEASE**

This MEMORANDUM OF OPTION TO LEASE (this "Memorandum"), is made this 30<sup>th</sup> day of September, 2021 by PRJ Trust (the "Landlord") and CEP Solar, LLC a Virginia limited liability company (the "Tenant").

Landlord and Tenant have entered into that certain Option to Lease Agreement dated September 30<sup>th</sup>, 2021 (the "Option Agreement") affecting the property described below. In connection with Option Agreement, Landlord and Tenant wish to set forth and acknowledge the following information:

1. Name and Address of Landlord:

PRJ Land Trust  
PO Box 268  
Farmville, VA 23901

2. Name and Address of Tenant:

CEP Solar, LLC  
1310 Roseneath Rd, Suite 200  
Richmond, VA 23230

3. Property: That certain real property located at 1434 Rice Creek Road and 0 Loman Road. Parcels are identified as tax map identification # 92-A-31 and #79-5-3.
4. Option: Pursuant to the Option Agreement, Landlord has granted to Tenant the exclusive option to lease all or a portion of the Property (the "Option").
5. Term of Option: 3 years.
6. Extensions of Option: Tenant has the right to extend the option by one (1) period of one (1) year.
7. Amendment: The Option Agreement may be amended in writing by the Landlord and the Tenant from time to time during the term of the Option Agreement and thereafter, and such amendment shall be deemed part of the original Option Agreement.
8. This Memorandum is executed and recorded for the purpose of providing record notice of the existence of the Option Agreement and the Option.

**This Memorandum shall not supersede or in any way modify the terms or conditions of the Option Agreement. In the event of any conflict between any term or provision of the Option Agreement and this Memorandum, the applicable term or provision of the Option Agreement shall control. All capitalized terms used herein and not otherwise defined shall have the meaning ascribed to such term in the Option Agreement. This Memorandum may be executed in counterparts, each of which shall be deemed an original but all of which together shall constitute one and the same instrument.**

**[Signature Page Follows]**

IN WITNESS WHEREOF, the parties have executed this Memorandum of Option to Lease under seal as of the date set forth above.

**LANDLORD:**

By: *N. Garrison Elder*

Name: N. Garrison Elder, Trustee

STATE OF Virginia

COUNTY OF Prince Edward

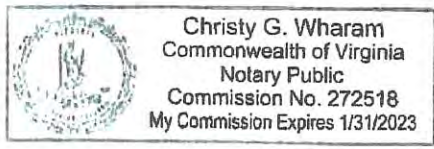
ss.

This instrument was acknowledged before me this 30 day of September, 2021,  
by N. Garrison Elder.

*Christy M. Wharam*  
Notary Public

My commission expires: 1/31/2023

(SEAL)





TENANT:

CEP SOLAR, LLC,  
a Virginia limited liability company

By: *Tyson Utt*

Name: Tyson Utt

Title: Manager

COMMONWEALTH OF VIRGINIA

CITY OF RICHMOND

This instrument was acknowledged before me this 30 day of September, 2021,  
by Savannah Summer Sheffey Shomette

*Savannah Summer Sheffey Shomette*  
Notary Public

My Commission expires: 11/30/2025

(SEAL)



## 3.16 Wildlife and Wildlife Habitats Analysis

September 30, 2021

Mr. Tyson Utt  
CEP Solar, LLC  
1310 Roseneath Rd  
Richmond, VA 23230

RE: Prince Edward Solar Farm – Desktop Database Review

Dear Mr. Utt,

Timmons Group has completed a desktop review of the Prince Edward Solar Farm project for a proposed solar power generation facility. The project is located on approximately 304.6 acres and is located in Prince Edward County, Virginia (see Figure 1: Vicinity Map). The study was developed as a preliminary planning tool to help identify potential constraints to assist in planning the proposed Prince Edward Solar Farm facility (Site). The study consists of a comprehensive review of publicly available environmental mapping and database resources to identify local, state, and federally regulated resources that have the potential to significantly impact the feasibility of the Site.

#### **I. Threatened and Endangered Species Database Search**

An endangered species review was conducted to gain insight regarding the potential presence of Endangered Species Act (ESA) listed species as well as State listed species onsite or in the vicinity of the Site. The following agencies and associated databases were reviewed for threatened and endangered species:

- U.S. Fish and Wildlife Services (USFWS) – Information, Planning and Consultations system (IPaC)
- Virginia Department of Wildlife Resources (VDWR) – Wildlife Environmental Review Map Service (WERMS)
- Virginia Department of Wildlife Resources (VDWR) – Virginia Fish and Wildlife Information Service (VaFWIS)
- Virginia Department of Wildlife Resources (VDWR) – Northern Long Eared Bat (NLEB) Winter Habitat and Roost Tree Locator
- Virginia Department of Wildlife Resources (VDWR) – Little Brown Bat and Tri-colored Bat Winter Habitat & Roosts Locator
- Virginia Department of Conservation and Recreation (VDCR) – Natural Heritage Project Review
- Virginia Department of Environmental Quality (VDEQ) – Coastal Geospatial and Educational Mapping System (GEMS)
- Center for Conservation Biology (CCB) – VaEagles Nest Locator
- U.S. Fish and Wildlife Services (USFWS) – Bald Eagle Concentration Areas - Virginia

The comprehensive database search determined there is the potential for two species with federal and state protection to occur within the project area (see Attachment 1: Threatened and Endangered Database Searches). The potentially present species and their associated database is listed below in Table 1.

**Table 1.** Threatened and Endangered Species Potentially Present at Prince Edward Solar Farm

Common Name	Scientific Name	Status	Agency Source
Mammal			
Northern Long-eared Bat	<i>Myotis septentrionalis</i>	Federal Threatened State Threatened	USFWS
Butterfly			
Monarch Butterfly	<i>Danaus plexippus</i>	Candidate	USFWS

According to the USFWS IPaC results, the federally and state threatened northern long-eared bat (NLEB) (*Myotis septentrionalis*) has the potential to occur on the Site. Based upon a review of available information, in particular the VDWR NLEB Winter Habitat and Roost Tree Locator, there are no known maternity roosts or hibernacula located within or in close proximity to the Site. Therefore, the Site will not likely affect any known NLEB areas and additional coordination with USFWS regarding this species is not anticipated. The Site may implement a time of year restriction for tree clearing from June 1 – July 31 during the NLEB pup season. Under the NLEB final 4(d) rule, the USFWS reserves the right to request additional studies or information during consultation with federal permitting agencies, if a federal permit is obtained.

According to the USFWS IPaC results, the monarch butterfly (*Danaus plexippus*) has the potential to occur on the Site. The monarch butterfly is a candidate species, but it is not currently listed as federally or state threatened or endangered. Monarch butterflies are found across North America and are broken into two populations separated by the Rocky Mountains. Milkweed is the host plant of this species, and the monarch butterfly relies on this plant to complete its lifecycle. As the species is not listed as threatened or endangered, there is no time of year restrictions for this species, but USFWS recommends protective measures to enhance the butterfly habitat, including planting pollinator habitat.

According to the VDWR Little Brown Bat and Tri-colored Bat Winter Habitat & Roosts Locator, the little brown bat (*Myotis lucifugus*) and tri-colored bat (*Perimyotis subflavus*) do not have hibernacula within range of the Site.

Additional reviews of VDWR and VDCR’s databases did not indicate any potential for species with federal and/or state protection.

According to the VDEQ Coastal GEMS, the site is not located within a CAPZ. According to the Center for Conservation Biology, one known bald eagle nest is located approximately 2.2 miles west of the Site. This nest is not expected to influence development. USFWS does not detail any Bald Eagle Concentration Areas in the vicinity of the Site.

## II. Summary and Conclusions

We have conducted queries of federal and state databases for the presence of threatened and endangered species.

There is one potential listed species present within the vicinity of the Site, the Northern Long Eared Bat. There are no known maternity roosts or hibernacula located within or in close proximity to the Site. Therefore, the Site will not likely affect any known NLEB areas and additional coordination with USFWS

regarding this species is not anticipated. The monarch butterfly also has the potential to be present within the vicinity of the Site; however, this species is not listed and has no time of year restriction.

Further coordination with VDWR and VDCR will be required during the state permit by rule process.

We appreciate the opportunity to present this preliminary analysis for planning purposes. Please note that threatened and endangered database searches must be recent (data accessed within six months) to be considered current by reviewing agencies.

If you have any questions, please contact me at (804) 200-6577 or [julia.jenkins@timmons.com](mailto:julia.jenkins@timmons.com).

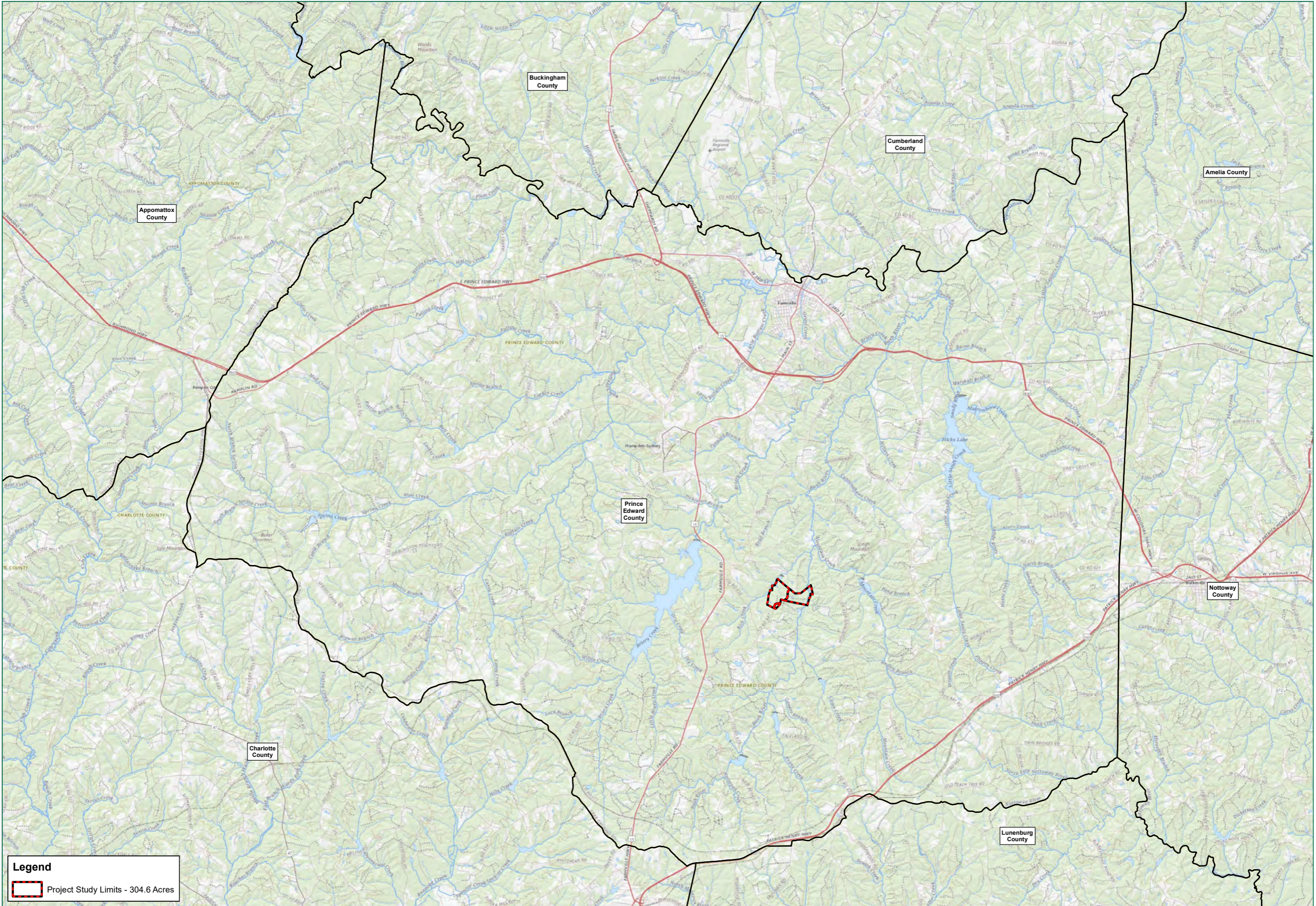
Sincerely,

A handwritten signature in cursive script that reads "Julia Jenkins".

Julia Jenkins

Attachments

Figure 1      Vicinity Map  
Attachment 1      Threatened and Endangered Species Database Searches



**TIMMONS GROUP**  
 YOUR VISION ACHIEVED THROUGH OURS.  
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 Richmond, VA 23225  
 TEL 804.200.6500  
 www.timmons.com

**CEPSOLAR**  
 COMMERCIAL ENERGY PARTNERS  
 1310 Rosemeath Rd, Suite 200  
 Richmond, VA 23220

**PRINCE EDWARD SOLAR FARM**  
 PRINCE EDWARD COUNTY - VIRGINIA

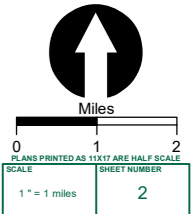
DATE: 09/15/2021  
 PROJECT NUMBER: 47661.014  
 PROJECT NAME: PRINCE EDWARD SOLAR FARM  
 DESIGNED BY / DRAWN BY: J. FRAZIER

**NOTES:**  
 Project Limits have been previously surveyed.  
 Topographic basemap from USGS.  
 County data from VDEM.  
 Latitude: 37.678373 | Longitude: -78.147362  
 USGS Quadrangle: Hampden Sydney | Date: 2019  
 Watershed: Appomattox (James River Basin)

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REVISIONS	
NO.	DESCRIPTION

DRAWING DESCRIPTION  
 COUNTY MAP



ATTACHMENT 1 -  
THREATENED AND ENDANGERED SPECIES SEARCHES

# IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

## Location

Prince Edward County, Virginia



## Local office

Virginia Ecological Services Field Office

☎ (804) 693-6694

📅 (804) 693-9032

6669 Short Lane

Gloucester, VA 23061-4410

<http://www.fws.gov/northeast/virginiafield/>



# Endangered species

**This resource list is for informational purposes only and does not constitute an analysis of project level impacts.**

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species<sup>1</sup> and their critical habitats are managed by the [Ecological Services Program](#) of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries<sup>2</sup>).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact [NOAA Fisheries](#) for [species under their jurisdiction](#).

1. Species listed under the [Endangered Species Act](#) are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the [listing status page](#) for more information. IPaC only shows species that are regulated by USFWS (see FAQ).
2. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

The following species are potentially affected by activities in this location:

## Mammals

NAME

STATUS

Northern Long-eared Bat *Myotis septentrionalis*

Threatened

Wherever found

No critical habitat has been designated for this species.

<http://ecos.fws.gov/ecp/species/9045>

## Insects

NAME

STATUS

Monarch Butterfly *Danaus plexippus*

Candidate

Wherever found

No critical habitat has been designated for this species.

<http://ecos.fws.gov/ecp/species/9743>

## Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

THERE ARE NO CRITICAL HABITATS AT THIS LOCATION.

## Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act<sup>1</sup> and the Bald and Golden Eagle Protection Act<sup>2</sup>.

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described [below](#).

1. The [Migratory Birds Treaty Act](#) of 1918.
2. The [Bald and Golden Eagle Protection Act](#) of 1940.

Additional information can be found using the following links:

- Birds of Conservation Concern <http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php>
- Measures for avoiding and minimizing impacts to birds <http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php>
- Nationwide conservation measures for birds <http://www.fws.gov/migratorybirds/pdf/management/nationwidestandardconservationmeasures.pdf>

The birds listed below are birds of particular concern either because they occur on the [USFWS Birds of Conservation Concern](#) (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ

[below](#). This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the [E-bird data mapping tool](#) (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found [below](#).

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME

BREEDING SEASON (IF A BREEDING SEASON IS INDICATED FOR A BIRD ON YOUR LIST, THE BIRD MAY BREED IN YOUR PROJECT AREA SOMETIME WITHIN THE TIMEFRAME SPECIFIED, WHICH IS A VERY LIBERAL ESTIMATE OF THE DATES INSIDE WHICH THE BIRD BREEDS ACROSS ITS ENTIRE RANGE. "BREEDS ELSEWHERE" INDICATES THAT THE BIRD DOES NOT LIKELY BREED IN YOUR PROJECT AREA.)

Prairie Warbler *Dendroica discolor*

Breeds May 1 to Jul 31

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

## Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

### Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is  $0.25/0.25 = 1$ ; at week 20 it is  $0.05/0.25 = 0.2$ .
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

### Breeding Season (■)

Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

### Survey Effort (|)

Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

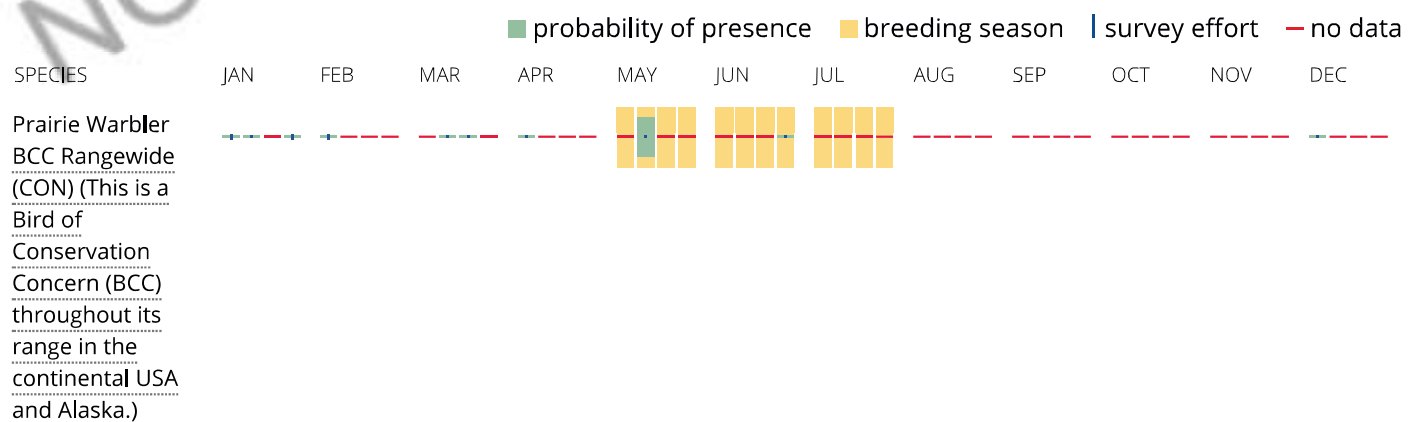
To see a bar's survey effort range, simply hover your mouse cursor over the bar.

### No Data (-)

A week is marked as having no data if there were no survey events for that week.

### Survey Timeframe

Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.



**Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.**

[Nationwide Conservation Measures](#) describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and

avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. [Additional measures](#) or [permits](#) may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

### What does IPaC use to generate the migratory birds potentially occurring in my specified location?

The Migratory Bird Resource List is comprised of USFWS [Birds of Conservation Concern \(BCC\)](#) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the [Avian Knowledge Network \(AKN\)](#). The AKN data is based on a growing collection of [survey, banding, and citizen science datasets](#) and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle ([Eagle Act](#) requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the [AKN Phenology Tool](#).

### What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the [Avian Knowledge Network \(AKN\)](#). This data is derived from a growing collection of [survey, banding, and citizen science datasets](#).

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

### How do I know if a bird is breeding, wintering, migrating or present year-round in my project area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may refer to the following resources: [The Cornell Lab of Ornithology All About Birds Bird Guide](#), or (if you are unsuccessful in locating the bird of interest there), the [Cornell Lab of Ornithology Neotropical Birds guide](#). If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

### What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangelwide" birds are [Birds of Conservation Concern](#) (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the [Eagle Act](#) requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangelwide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird

impacts and requirements for eagles, please see the FAQs for these topics.

### Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the [Northeast Ocean Data Portal](#). The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the [NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf](#) project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the [Diving Bird Study](#) and the [nanotag studies](#) or contact [Caleb Spiegel](#) or [Pam Loring](#).

### What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to [obtain a permit](#) to avoid violating the Eagle Act should such impacts occur.

### Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

## Facilities

### National Wildlife Refuge lands

Any activity proposed on lands managed by the [National Wildlife Refuge](#) system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS AT THIS LOCATION.

# Fish hatcheries

THERE ARE NO FISH HATCHERIES AT THIS LOCATION.

## Wetlands in the National Wetlands Inventory

Impacts to [NWI wetlands](#) and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local [U.S. Army Corps of Engineers District](#).

WETLAND INFORMATION IS NOT AVAILABLE AT THIS TIME

This can happen when the National Wetlands Inventory (NWI) map service is unavailable, or for very large projects that intersect many wetland areas. Try again, or visit the [NWI map](#) to view wetlands at this location.

### Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

### Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tubercid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

### Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal,

state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

NOT FOR CONSULTATION



Virginia Department of Wildlife Resources (VDWR) – Virginia Fish  
and Wildlife Information Service (VaFWIS)

VaFWIS - Department of Game and Inland Fisheries

37.18375 -78.39785

is the Search Point

Submit Cancel

Search Point

- Change to "clicked" map point
- Fixed at 37.18375 -78.39785

Show Position Rings

- Yes  No
- 1 mile and 1/4 mile at the Search Point

Show Search Area

- Yes  No
- 2.5 Search distance miles buffer

Search Point is at map center

Base Map Choices

BW Aerial Photography

Map Overlay Choices

Current List: Anadromous, TEWaters, BAEANests, BECAR, Trout, TierII, Habitat, Search

Map Overlay Legend

T & E Waters

- Federal
- State

Predicted Habitat WAP Tier I & II

- Aquatic
- Terrestrial

Trout Waters

- Class I - IV
- Class V - VI

Anadromous Fish Reach

- Confirmed
- Potential

Impediment

- 2.5 mile radius Search Area

Bald Eagle Concentration Areas and Roosts

- Bald Eagle nests 660 and 330 foot management zones
- Data Observation Site

back

Map Click

Pan To M

Map Scale

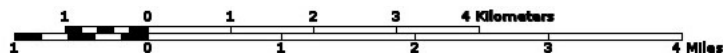
In Zoom Out

Screen Size

Small Size Big

Help

Refresh Browser Page



Point of Search 37.18375 -78.39785

Map Location 37.18375 -78.39785

- Select Coordinate System:
- Degrees,Minutes,Seconds Latitude - Longitude
  - Decimal Degrees Latitude - Longitude
  - Meters UTM NAD83 East North Zone
  - Meters UTM NAD27 East North Zone

Base Map source: Black & White USGS Aerial Photography (see Microsoft terraserver-usa.com for details)

Map projection is UTM Zone 17 NAD 1983 with left 722992 and top 4126429. Pixel size is 16 meters . Coordinates displayed are decimal Degrees North and West. Map is currently displayed as 1000 columns by 1000 rows for a total of 1000000 pixels. The map display represents 16000 meters east to west by 16000 meters north to south for a total of 256.0 square kilometers. The map display represents 52502 feet east to west by 52502 feet north to south for a total of 98.8 square miles.

Topographic maps and Black and white aerial photography for year 1990+- are from the United States Department of the Interior, United States Geological Survey. Color aerial photography aquired 2002 is from Virginia Base Mapping Program, Virginia Geographic Information Network.

Shaded topographic maps are from TOPO! ©2006 National Geographic  
<http://www.national.geographic.com/topo>

All other map products are from the Commonwealth of Virginia Department of Game and Inland Fisheries.

map assembled 2021-09-03 10:15:52 (qa/qc March 21, 2016 12:20 - tn=1125905 dist=4022.5  
1 )  
\$poi=37.1840700 -78.3937800

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**VaFWIS Initial Project Assessment Report** Compiled on 9/3/2021,[Help](#)

10:18:49 AM

Known or likely to occur within a **2.5 mile buffer around polygon; center 37.1840700 -78.3937799**  
in **147 Prince Edward County, VA**

[View Map of  
Site Location](#)

443 Known or Likely Species ordered by Status Concern for Conservation  
(displaying first 20) (16 species with Status\* or Tier I\*\* or Tier II\*\*)

<a href="#">BOVA Code</a>	<a href="#">Status*</a>	<a href="#">Tier**</a>	<a href="#">Common Name</a>	<a href="#">Scientific Name</a>	<a href="#">Confirmed</a>	<a href="#">Database(s)</a>
060003	FESE	Ia	<a href="#">Wedgemussel, dwarf</a>	Alasmidonta heterodon		BOVA
050022	FTST	Ia	<a href="#">Bat, northern long-eared</a>	Myotis septentrionalis		BOVA
050020	SE	Ia	<a href="#">Bat, little brown</a>	Myotis lucifugus		BOVA
050027	SE	Ia	<a href="#">Bat, tri-colored</a>	Perimyotis subflavus		BOVA
040293	ST	Ia	<a href="#">Shrike, loggerhead</a>	Lanius ludovicianus		BOVA
060173	FPST	Ia	<a href="#">Pigtoe, Atlantic</a>	Fusconaia masoni		BOVA
060081	ST	IIa	<a href="#">Floater, green</a>	Lasmigona subviridis		BOVA
040292	ST		<a href="#">Shrike, migrant loggerhead</a>	Lanius ludovicianus migrans		BOVA
030063	CC	IIIa	<a href="#">Turtle, spotted</a>	Clemmys guttata		BOVA
010077		Ia	<a href="#">Shiner, bridge</a>	Notropis bifrenatus		BOVA
020002		IIa	<a href="#">Treefrog, barking</a>	Hyla gratiosa		BOVA
040052		IIa	<a href="#">Duck, American black</a>	Anas rubripes		BOVA
040320		IIa	<a href="#">Warbler, cerulean</a>	Setophaga cerulea		BOVA
040140		IIa	<a href="#">Woodcock, American</a>	Scolopax minor		BOVA
040105		IIb	<a href="#">Rail, king</a>	Rallus elegans		BOVA
100166		IIc	<a href="#">Skipper, Dotted</a>	Hesperia attalus slossonae		BOVA
010131		IIIa	<a href="#">Eel, American</a>	Anguilla rostrata		BOVA
030068		IIIa	<a href="#">Turtle, woodland box</a>	Terrapene carolina carolina		BOVA
040100		IIIa	<a href="#">Bobwhite, northern</a>	Colinus virginianus		BOVA
040202		IIIa	<a href="#">Cuckoo, yellow-billed</a>	Coccyzus americanus	<a href="#">Yes</a>	BOVA,SppObs

To view **All 443 species** [View 443](#)

\*FE=Federal Endangered; FT=Federal Threatened; SE=State Endangered; ST=State Threatened; FP=Federal Proposed; FC=Federal Candidate; CC=Collection Concern

\*\*I=VA Wildlife Action Plan - Tier I - Critical Conservation Need; II=VA Wildlife Action Plan - Tier II - Very High Conservation Need; III=VA Wildlife Action Plan - Tier III - High Conservation Need; IV=VA Wildlife Action Plan - Tier IV - Moderate Conservation Need  
Virginia Wildlife Action Plan Conservation Opportunity Ranking:  
a - On the ground management strategies/actions exist and can be feasibly implemented.;

- b - On the ground actions or research needs have been identified but cannot feasibly be implemented at this time.;
- c - No on the ground actions or research needs have been identified or all identified conservation opportunities have been exhausted.

**Bat Colonies or Hibernacula: Not Known**

**Anadromous Fish Use Streams**

N/A

**Colonial Water Bird Survey**

N/A

**Threatened and Endangered Waters**

N/A

**Managed Trout Streams**

N/A

**Bald Eagle Concentration Areas and Roosts**

N/A

**Bald Eagle Nests**

N/A

**Habitat Predicted for Aquatic WAP Tier I & II Species**

N/A

**Habitat Predicted for Terrestrial WAP Tier I & II Species**

N/A

**Public Holdings:** ( 2 names )

Name	Agency	Level
Briery Creek Wildlife Management Area	Va DGIF	
Prince Edward-Gallion State Forest	VA Dept. of Forestry	State

Compiled on 9/3/2021, 10:18:49 AM I1125905 report=IPA searchType= P dist= 4022 poi= 37.1840700 -78.3937799 siteDD= 37.1840778 -78.3937891;37.1840861 -78.3936460;37.1840975  
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Virginia Department of Wildlife Resources (VDWR) – Wildlife  
Environmental Review Map Service (WERMS)

Species Observed Within 2 Miles		
Common Name	Federal Status	State Status
Bass, largemouth	NT/NE	NT/NE
Bass, smallmouth	NT/NE	NT/NE
Bass, spotted	NT/NE	NT/NE
Bluegill	NT/NE	NT/NE
Bullhead, brown	NT/NE	NT/NE
Bullhead, yellow	NT/NE	NT/NE
Bunting, indigo	NT/NE	NT/NE
Chub, bluehead	NT/NE	NT/NE
Chub, creek	NT/NE	NT/NE
Chubsucker, creek	NT/NE	NT/NE
Cowbird, brown-headed	NT/NE	NT/NE
Crow, American	NT/NE	NT/NE
Cuckoo, yellow-billed	NT/NE	NT/NE
Dace, blacknose	NT/NE	NT/NE
Dace, mountain redbelly	NT/NE	NT/NE
Dace, rosyside	NT/NE	NT/NE
Darter, fantail	NT/NE	NT/NE
Darter, glassy	NT/NE	NT/NE
Darter, johnny	NT/NE	NT/NE
Darter, stripeback	NT/NE	NT/NE
Darter, swamp	NT/NE	NT/NE
Darters, Genus = Etheostoma	NT/NE	NT/NE
Fallfish	NT/NE	NT/NE
Flier	NT/NE	NT/NE
Madtom, margined	NT/NE	NT/NE
Minnnow, eastern silvery	NT/NE	NT/NE
Newt, red-spotted	NT/NE	NT/NE
Perch, pirate	NT/NE	NT/NE
Pumpkinseed	NT/NE	NT/NE
Salamander, eastern red-backed	NT/NE	NT/NE
Shiner, common	NT/NE	NT/NE
Shiner, crescent	NT/NE	NT/NE
Shiner, golden	NT/NE	NT/NE
Shiner, roselin	NT/NE	NT/NE
Shiner, satinfin	NT/NE	NT/NE
Shiner, swallowtail	NT/NE	NT/NE
Stoneroller, central	NT/NE	NT/NE
Sucker, northern hog	NT/NE	NT/NE
Sucker, torrent	NT/NE	NT/NE
Sucker, white	NT/NE	NT/NE
Sunfish, mud	NT/NE	NT/NE
Sunfish, redbreast	NT/NE	NT/NE
Thrush, wood	NT/NE	NT/NE
Titmouse, tufted	NT/NE	NT/NE
Vireo, red-eyed	NT/NE	NT/NE
Warmouth	NT/NE	NT/NE
Woodpecker, downy	NT/NE	NT/NE
Wormsnake, eastern	NT/NE	NT/NE
Wren, Carolina	NT/NE	NT/NE

NT = Non-Threatened, NE = Non-Endangered

**Legend**

- Project Study Limits - 306.5 Acres
- Two Mile Project Buffer
- NLEB Roost Trees - Not Present
- Threatened/Endangered Waters - Not Present
- Trout Streams - Not Present
- Anadromous Fish Use - Not Present
- Bald Eagle Concentration Areas and Roosts - Not Present
- Colonial Water Birds - Not Present
- Bat Hibernacula (0.5 Mile Buffer) - Not Present
- Bat Hibernacula (5.5 Mile Buffer) - Not Present
- Federal or State Listed Observation Area - Not Present

**Federal Status, State Status**

- Non-Threatened, Non-Endangered



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 YOUR VISION ACHIEVED THROUGH OURS.  
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 Richmond, VA 23226  
 TEL 804.206.6500  
 www.timmons.com

**CEPSOLAR**  
 COMMERCIAL ENERGY PARTNERS  
 1310 Rosemeath Rd, Suite 300  
 Richmond, VA 23220

PROJECT NAME & LOCATION  
**PRINCE EDWARD SOLAR FARM**  
 PRINCE EDWARD COUNTY - VIRGINIA

DATE: 09/15/2021  
 PROJECT NUMBER: 47661.014  
 PROJECT NAME: PRINCE EDWARD SOLAR FARM  
 DESIGNED BY / DRAWN BY: J. FRAZIER

NOTES:  
 Project Limits have been previously surveyed.  
 WERMS data from DGIF.  
 Bat hibernacula include identifications of Northern long-eared bat, Tri-colored bat, Little-brown bat, Virginia big-eared bat, Gray bat, and Indiana bat.  
 Aerial imagery from VGIN.

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REVISIONS	
NO.	DESCRIPTION

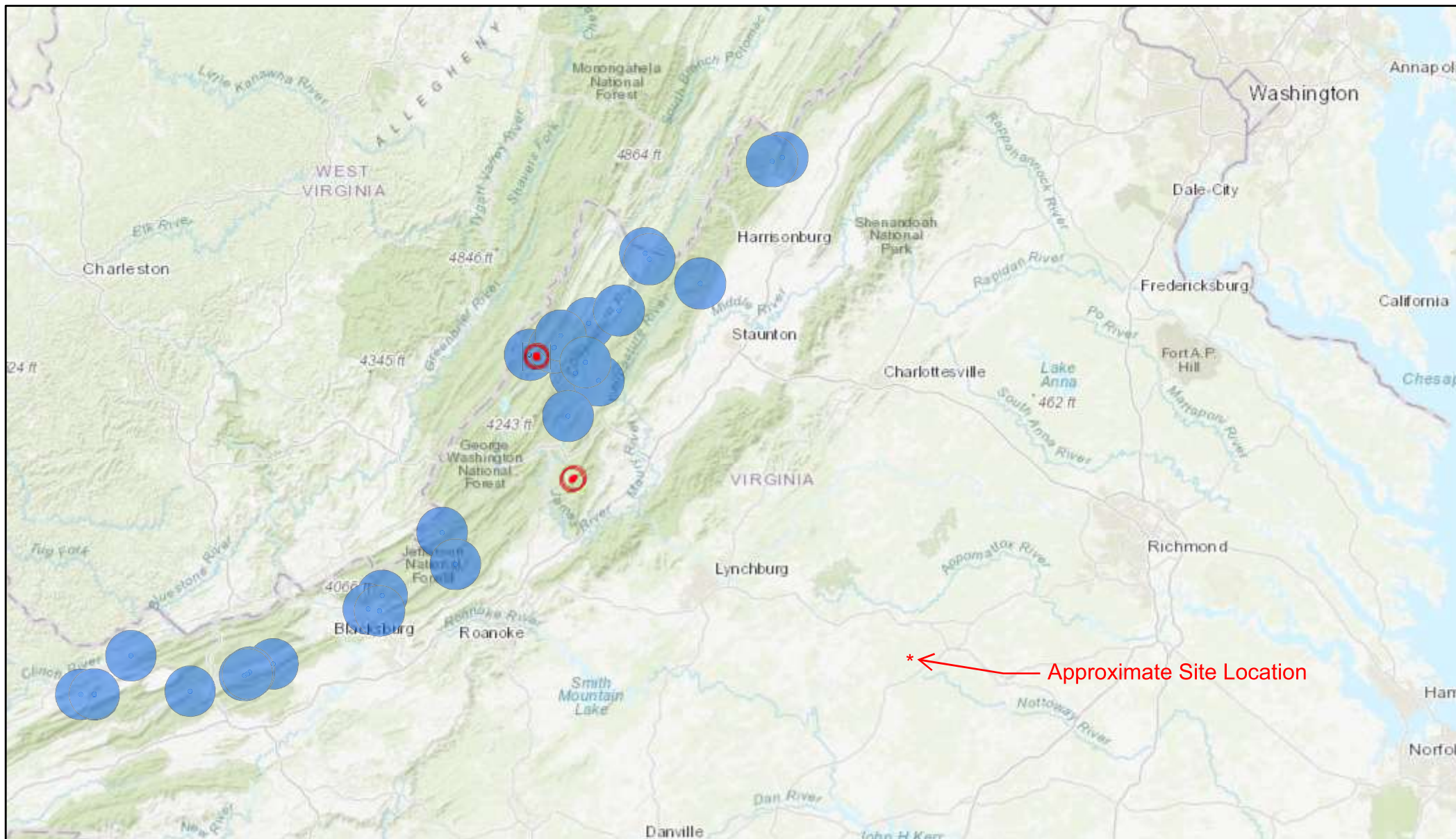
DRAWING DESCRIPTION  
**WILDLIFE ENVIRONMENTAL REVIEW MAP**

SCALE (FEET)  
 0 1,400 2,800  
 PLANS PRINTED AS SHOWN ARE HALF SCALE  
 SCALE SHEET NUMBER  
 H: 1" = 1,400' 8






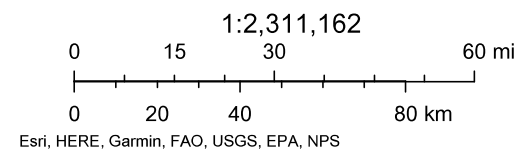
Virginia Department of Wildlife Resources (VDWR) – Northern Long  
Eared Bat (NLEB) Winter Habitat and Roost Tree Locator

# NLEB Locations and Roost Trees



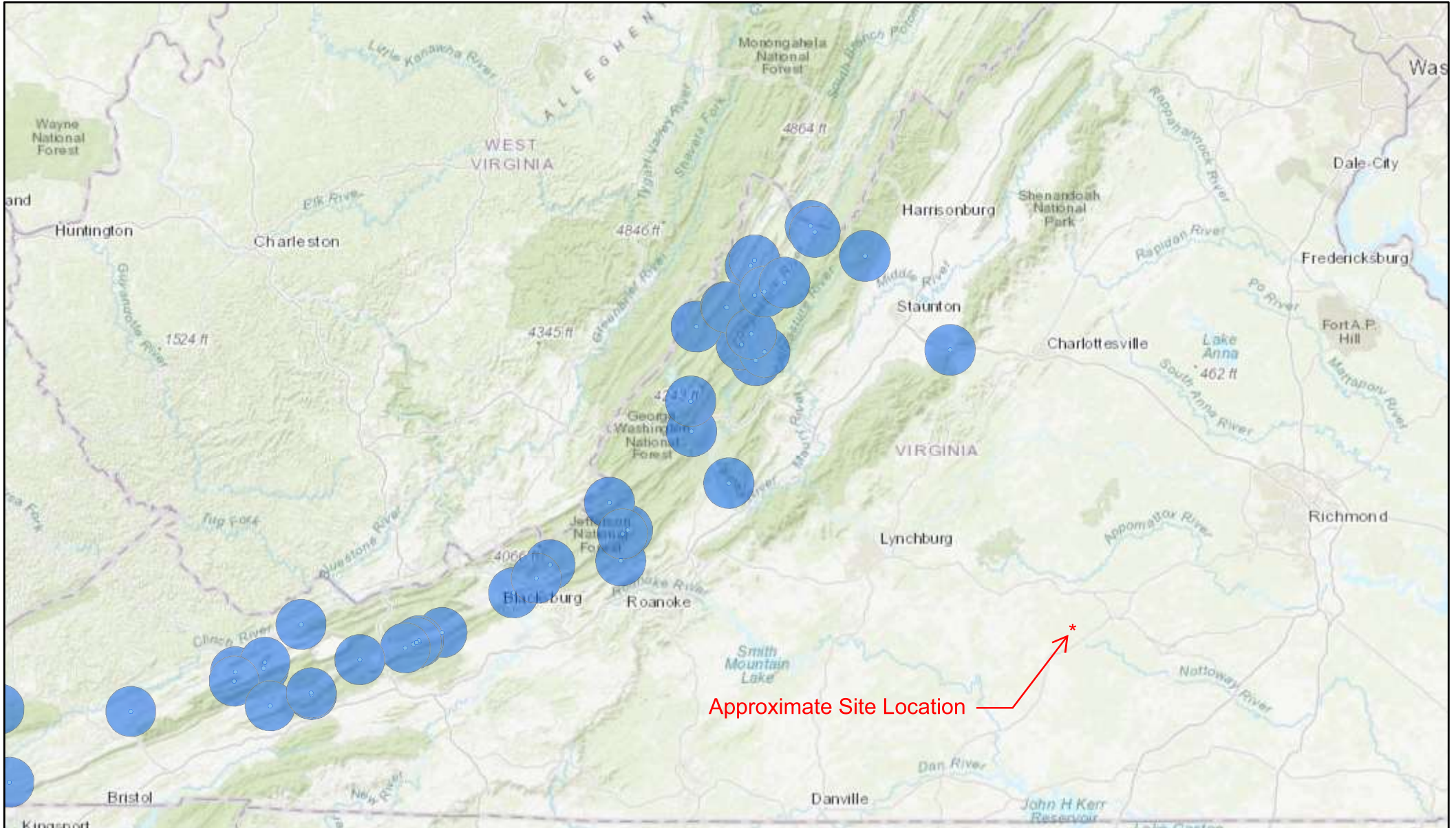
9/3/2021, 10:24:32 AM

-  NLEB Known Occupied Maternity Roost (Summer Habitat)
-  NLEB Hibernaculum 5.5 Mile Buffer
-  NLEB Hibernaculum Half Mile Buffer



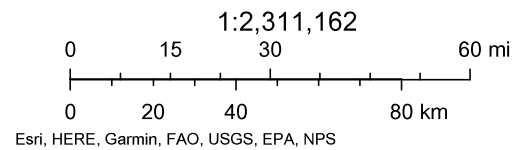
Virginia Department of Wildlife Resources (VDWR) – Little Brown  
Bat and Tri-colored Bat Winter Habitat & Roosts Locator

# Tri-Colored and Little Brown Bat Locations and Roost Trees



9/3/2021, 10:25:59 AM

- Tri-colored and Little Brown Hibernaculum Half Mile Buffer
- Tri-colored and Little Brown Hibernaculum 5.5 Mile Buffer



Virginia Department of Conservation and Recreation (VDCR) – Division of  
Natural Heritage (DNH) Project Review



Department of Conservation & Recreation  
CONSERVING VIRGINIA'S NATURAL & RECREATIONAL RESOURCES

**Web Project ID:** WEB0000016229

**Client Project Number:** 47661.014

***PROJECT INFORMATION***

---

**TITLE:** Prince Edward I Solar

**DESCRIPTION:** The project is a proposed solar facility. Wetlands and streams will be avoided to the extent practicable.

**EXISTING SITE CONDITIONS:** Forested

**QUADRANGLES:** Hampden Sydney

**COUNTIES:** Prince Edward

**Latitude/Longitude (DMS):** 37° 10' 59.9590" N / 78° 23' 57.606" W

**Acreage:** 307 acres

**Comments:**

***REQUESTOR INFORMATION***

---

**Priority:** N

**Tier Level:** Tier I

**Tax ID:** 54-1301413

**Contact Name:** Jillian Frazier

**Company Name:** Timmons Group

**Address:** 1001 Boulders Parkway

**City:** Chesterfield

**State:** VA

**Zip:** 23225

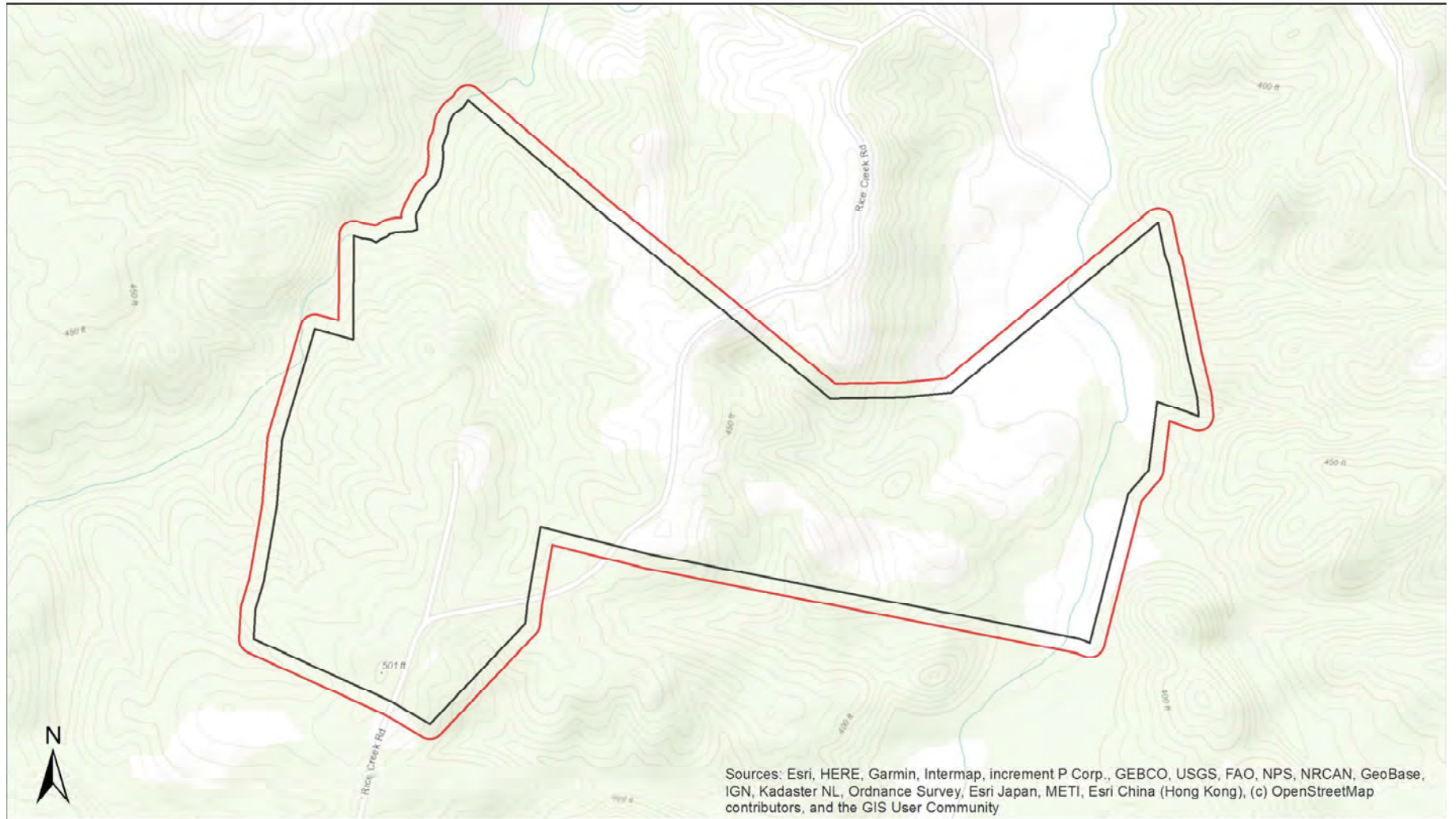
**Phone:** 804-448-5973

**Fax:**

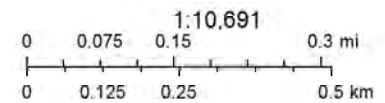
**Email:** [jillian.frazier@timmons.com](mailto:jillian.frazier@timmons.com)

Conservation Site	Site Type	Brank	Acreage	Listed Species Presence	Essential Conservation Site?
<b>Natural Heritage Screening Features Intersecting Project Boundary</b>					
<b>Intersecting Predictive Models</b>					
Predictive Model Results					

# Prince Edward I Solar



- Project Boundary
- Buffered Project Boundary



Quads: Hampden Sydney  
Counties: Prince Edward

Company: Timmons Group  
Lat/Long: 371059 / -782357





COMMONWEALTH of VIRGINIA  
DEPARTMENT OF CONSERVATION AND RECREATION

The project mapped as part of this report has been searched against the Department of Conservation and Recreation's Biotics Data System for occurrences of natural heritage resources in the vicinity of the area indicated for this project. Natural heritage resources are defined as the habitat of rare, threatened, or endangered plant and animal species, unique or exemplary natural communities, and significant geologic formations.

According to the information currently in Biotics, natural heritage resources have not been documented within the submitted project boundary including a 100 foot buffer. In addition, the project area does not intersect any of the predictive models identifying potential habitat for natural heritage resources.

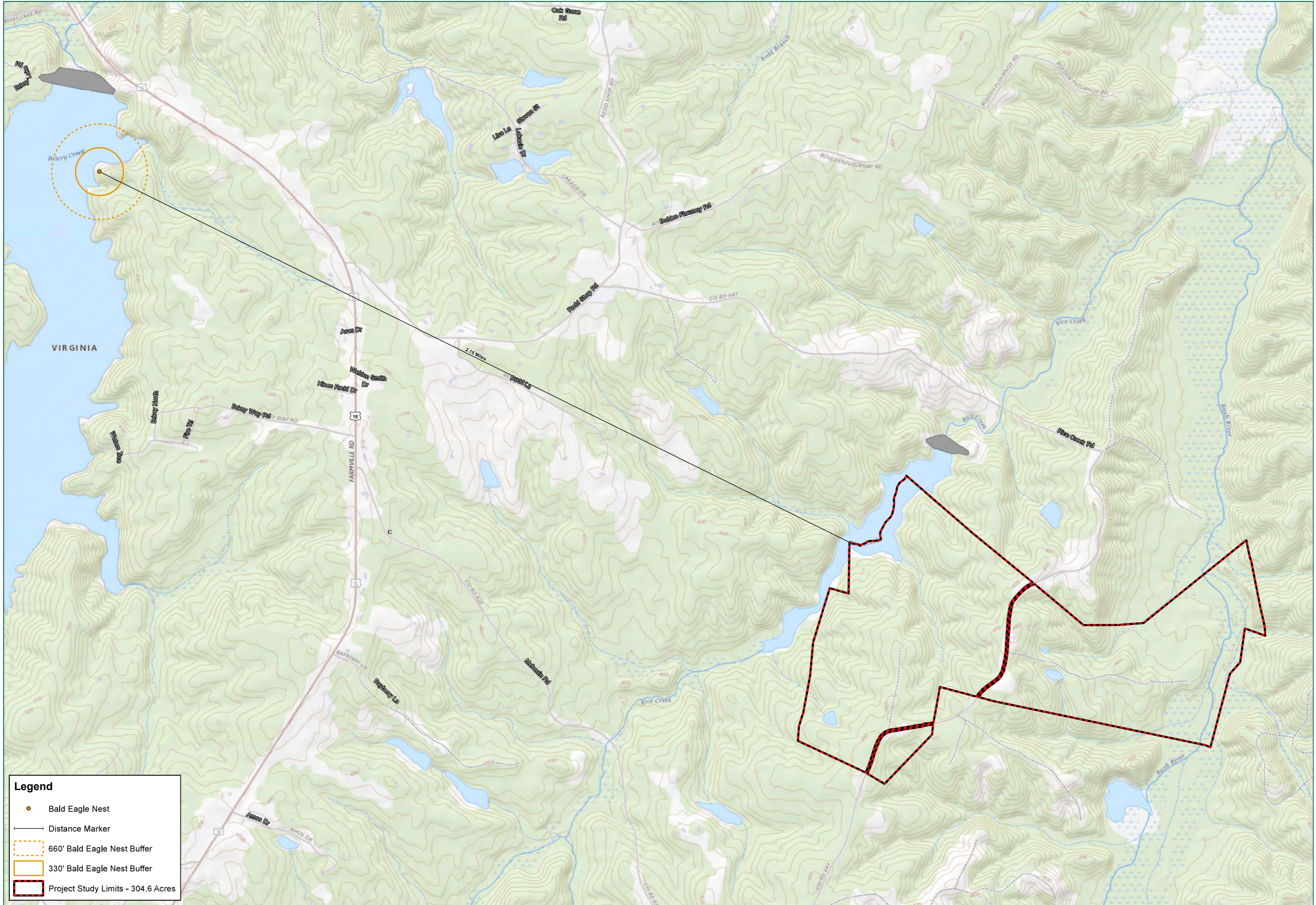
Under a Memorandum of Agreement established between the Virginia Department of Agriculture and Consumer Services (VDACS) and the Virginia Department of Conservation and Recreation (DCR), DCR represents VDACS in comments regarding potential impacts on state-listed threatened and endangered plant and insect species. The current activity will not affect any documented state-listed plants or insects.

Any absence of data may indicate that the project area has not been surveyed, rather than confirm that the area lacks additional natural heritage resources. New and updated information is continually added to Biotics. Please revisit this website or contact DCR for an update on this natural heritage information if a significant amount of time passes (DCR recommends no more than six months) before it is utilized.

The Virginia Department of Wildlife Resources maintains a database of wildlife locations, including threatened and endangered species, trout streams, and anadromous fish waters, that may contain information not documented in the Natural Heritage Data Explorer. Their database may be accessed from <http://vafwis.org/fwis/> or contact Ernie Aschenbach (804-367-2733 or [Ernie.Aschenbach@dwr.virginia.gov](mailto:Ernie.Aschenbach@dwr.virginia.gov)).

Thank you for submitting your project to the Virginia Department of Conservation and Recreation's Natural Heritage Data Explorer Web Service. **Based on the preliminary screening results for this project, no further correspondence will be sent from this office.** Should you have any questions or concerns about this report, the Data Explorer, or other Virginia Natural Heritage Program services, please contact the Natural Heritage Project Review Unit at 804-371-2708.

Center for Conservation Biology (CCB) – VaEagles Nest Locator



**Legend**

- Bald Eagle Nest
- Distance Marker
- 660' Bald Eagle Nest Buffer
- 330' Bald Eagle Nest Buffer
- Project Study Limits - 304.6 Acres

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 Richmond, VA 23220

PROJECT NAME & LOCATION  
**PRINCE EDWARD SOLAR FARM**  
 PRINCE EDWARD COUNTY - VIRGINIA

DATE: 09/15/2021  
 PROJECT NUMBER: 47661.014  
 PROJECT NAME: PRINCE EDWARD SOLAR  
 DESIGNED BY / DRAWN BY: J. FRAZIER

NOTES:  
 Project Limits have been previously surveyed.  
 Bald eagle nest data from CCB.

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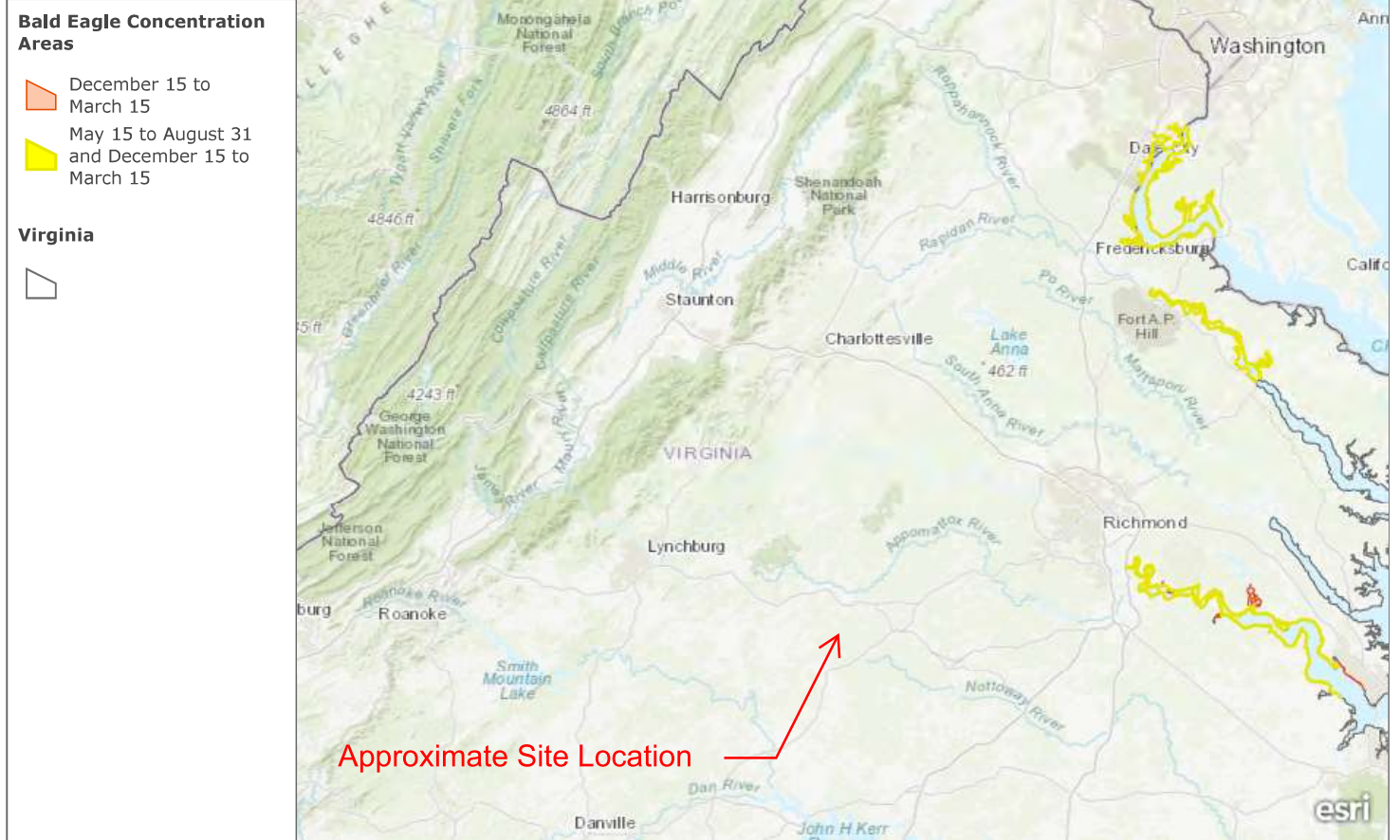
REVISIONS	
#	DESCRIPTION

DRAWING DESCRIPTION  
**BALD EAGLE NEST MAP**

North Arrow  
 Feet  
 0 600 1,200  
 PLANS PRINTED AS 1/4" = 1' ARE HALF SCALE  
 SCALE: 1" = 600 feet  
 SHEET NUMBER: 1

United States Fish and Wildlife Services (USFWS) –  
Bald Eagle Concentration Areas

### USFWS Bald Eagle Concentration Areas - Virginia



This map depicts designated Bald Eagle Concentration Areas in the State of Virginia. The Intent of this map is to provide information to the public about shoreline areas that ar ...

Esri, HERE, Garmin, FAO, USGS, EPA, NPS

## 3.17 Pollinator Memorandum

# MEMORANDUM

**TO:** CEP Solar, LLC

**FROM:** Trevor Buckley, Project Manager, Landscape Architecture

**DATE:** 9/30/2021

**RE:** Landscape Plan and Pollinator Impacts and Benefits for CEP Solar, LLC

## **NOTES:**

CEP Solar, LLC has engaged the Landscape Architecture team at Timmons Group to prepare a landscape and screening plan for a proposed facility in Prince Edward County, named the Prince Edward Solar Farm. This plan is shown on Sheets C4.0 and C4.1 of the SUP submittal set.

The project is located on 304.6 acres along Rice Creek Road. The existing site is mostly wooded with some open fields. There may be existing pollinator habitat that is impacted by the project with the removal of native plants in the woodland areas and in the cultivated and non-cultivated areas of the open fields; however, proposed plantings of wildlife- and pollinator-friendly species will offset these impacts. Existing onsite vegetation has not been inventoried, but there is no known significant pollinator habitat that is expected to be removed. Wetlands and stream corridors on site will be preserved and maintain their benefits for wildlife and pollinator species.

Proposed pollinator-friendly plantings include two components: the *vegetative buffer* and *groundcover*. Timmons Group has prioritized the use of native species for both plantings per the requirements of the Prince Edward County ordinance for Alternative Energy Facilities. While the use of native species optimizes the benefit to pollinator species and wildlife, some exception has been made in the groundcover selection as described below.

## **Vegetative Buffer**

All species selected are native species or cultivated varieties of native species. This includes 1) mostly evergreen species (approximately 10 trees per 100 linear feet) for year-round screening, and 2) flowering trees (approximately 3 trees per 100 linear feet). Species of both types will provide habitat and or food sources for a variety of pollinator species. Per the County's requirements, the buffer will also be seeded with pollinator-friendly species—see more information below.

## Groundcover

Three groundcovers have been selected for different parts of the Project Area.

For the Panel Zone and Screening Zone, a Solar Farm Seed Mix of non-tall type fescues, bluegrass, and white clover has been selected that will do well beneath panels that are situated low to the ground. These species are short-growing and will require minimal mowing. While these species are not native, they are an environmentally sound choice and practical for using beneath panels, and the white clover will provide a nectar source for pollinator species. Our experience in specifying groundcover for numerous utility-scale solar projects is that commercially available, economically viable options are very limited for or native seed mixes that will grow beneath panels at their standard height above the ground (2 to 3 feet). Therefore, clover-grass mixes are preferred for these projects. Several industry specialists and current best practices, such as those described in the ["North Carolina Technical Guidance for Native Plantings on Solar Sites"](#), recommend the use of clover-grass mixes as an alternative to native species for groundcover on utility-scale projects for the same aforementioned reasons.

For the Open Area within the fence and any temporary construction facilities post-use, a Short Native Grass Mix of three species has been selected in consultation with the Virginia Department of Conservation and Recreation's Natural Heritage Program. This an economical, commercially available mix with species that will provide habitat benefitting pollinator species and other wildlife.

Both the Solar Farm Mix and Short Native Grass Mix will require only seasonal mowing (one to three times a year) to stimulate healthy growth and maturation of the groundcover and control weeds.

While no stormwater facilities have yet been designated on the site, a standard mix of native species that is appropriate for detention basins has been included with the landscape notes and details.