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January 30, 2022

Tom Schoder
Invenergy
One South Wacker Drive, Suite 1800
Chicago, IL 60606

RE: Meadow Forge Solar, Deleware County, Indiana

Mr. Schoder,

At your request, we have considered the impact of a proposed 163 MW solar farm proposed to be constructed on a portion of an assemblage of 1,202.30 acres off W. Co Road 1100 N, Gaston, Delaware County, Indiana. Specifically, we have been asked to give my professional opinion on whether the proposed solar farm will have any impact on adjoining property value and whether “the location and character of the use, if developed according to the plan as submitted and approved, will be in harmony with the area in which it is to be located.”

To form an opinion on these issues, we have researched and visited existing and proposed solar farms in Indiana as well as other states, researched articles through the Appraisal Institute and other studies, and discussed the likely impact with other real estate professionals. We have not been asked to assign any value to any specific property.

This letter is a limited report of a real property appraisal consulting assignment and subject to the limiting conditions attached to this letter. My client is Invenergy represented to me by Tom Schoder. My findings support the application. The effective date of this consultation is January 30, 2022.

I further note that the project as presented to me is considered by the developer to be a conservative layout that is likely larger than what is actually going to be used once final site plan layout is determined. This is common as during the actual design phase some areas will have to be avoided so developer’s typically show more area than actually needed in order to have flexibility in the design phase.

Conclusion

The adjoining properties have sufficient setbacks from the proposed solar panels and supplemental vegetation is proposed to enhance the areas where the existing trees are insufficient to provide a proper screen.

The matched pair analysis shows no impact on home values due to abutting or adjoining a solar farm as well as no impact to abutting or adjacent vacant residential or agricultural land where the solar farm is properly screened and buffered. The criteria that typically correlates with downward adjustments on property values such as noise, odor, and traffic all indicate that a solar farm is a compatible use for rural/residential transition areas and that it would function in a harmonious manner with this area.

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

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

Based on the data and analysis in this report, it is my professional opinion that the solar farm proposed at the subject property will have no impact on the value of adjoining or abutting properties and that the proposed use is in harmony with the area in which it is located. I note that some of the positive implications of a solar farm that have been expressed by people living next to solar farms include protection from future development of residential developments or other more intrusive uses, reduced dust, odor and chemicals from former farming operations, protection from light pollution at night, it's quiet, and there is minimal traffic.

If you have any questions, please let me know.

Sincerely,



Richard C. Kirkland, Jr., MAI
NC Certified General Appraiser #A4359
IN Certified General Appraiser CG42100052

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I. Proposed Project and Adjoining Uses

Proposed Use Description

This 163 MW solar farm is proposed to be constructed on a portion of an assemblage of 1,202.30 acres off W. Co Road 1100 N, Gaston, Delaware County, Indiana.

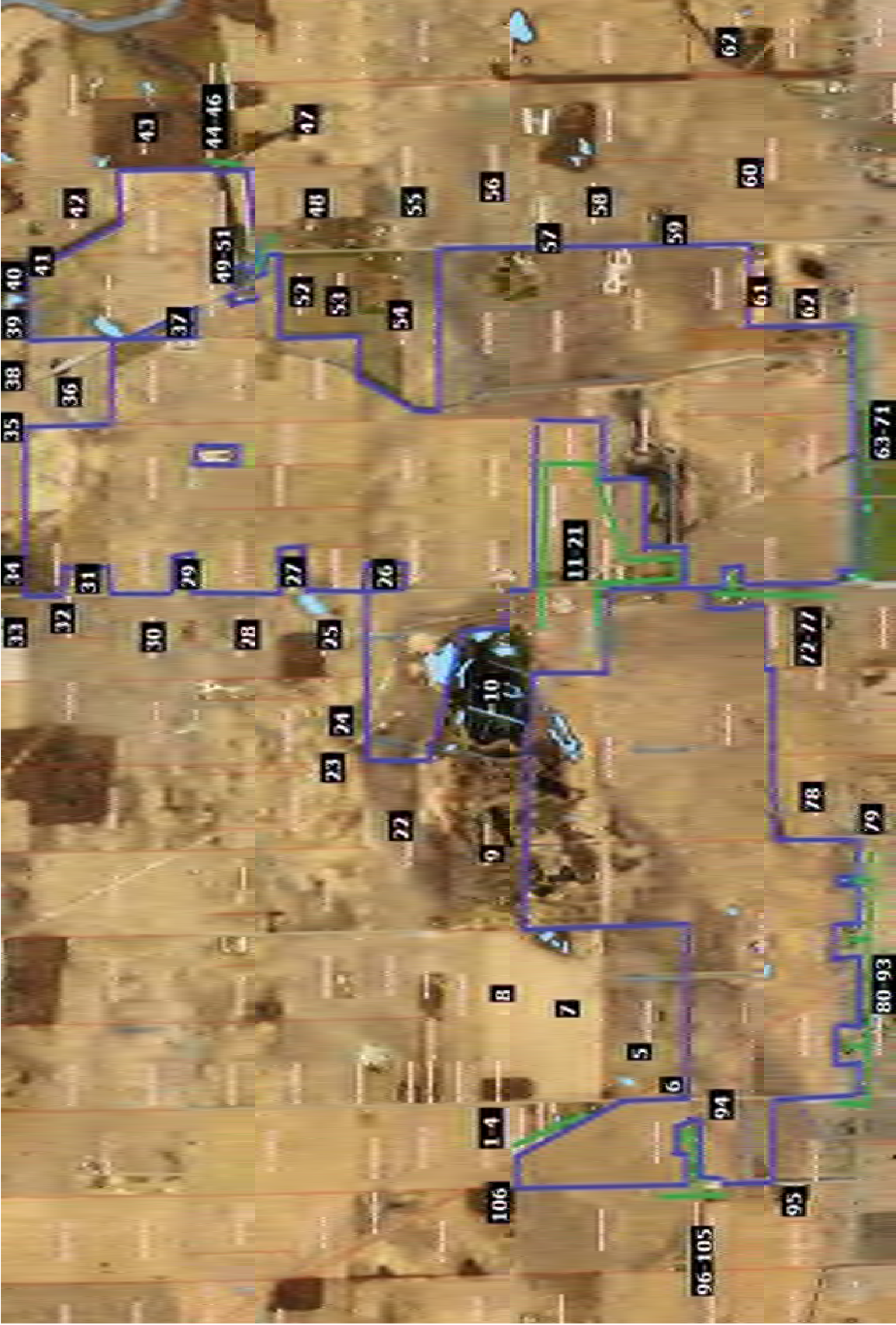
Adjoining Properties

I have considered adjoining uses and included a map to identify each parcel's location. The closest adjoining home will be 230 feet from the closest solar panel and the average distance to adjoining homes will be 718 feet to the nearest solar panel. Adjoining land is primarily a mix of residential and agricultural uses, which is very typical of solar farm sites.

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

Adjoining Use Breakdown

	Acreage	Parcels
Residential	12.60%	57.69%
Agricultural	60.23%	31.73%
Religious	0.20%	1.92%
Agri/Res	26.98%	8.65%
Total	100.00%	100.00%



Surrounding Uses

#	MAP ID	Owner	GIS Data		Adjoin	Adjoin	Distance (ft)
			Acres	Present Use	Acres	Parcels	Home/Panel
1	217300005000	Wright's	28.48	Agricultural	1.14%	0.96%	N/A
2	220100003000	Kurt	3.04	Residential	0.12%	0.96%	720
3	220100008000	Besser	8.14	Residential	0.32%	0.96%	500
4	220100005000	Waymire	6.00	Residential	0.24%	0.96%	250
5	220200003000	Miller	74.24	Agricultural	2.96%	0.96%	N/A
6	0220200002000	Jaycox	4.37	Residential	0.17%	0.96%	285
7	220200001000	Roberts	80.00	Agricultural	3.19%	0.96%	N/A
8	217400006000	Roberts	40.00	Agricultural	1.60%	0.96%	N/A
9	216300002000	Sneed	75.08	Agri/Res	3.00%	0.96%	2,350
10	216400002000	MOB	69.35	Agricultural	2.77%	0.96%	N/A
11	221200005000	Luzadder	7.53	Residential	0.30%	0.96%	N/A
12	222100016000	Wilson	3.20	Residential	0.13%	0.96%	560
13	222100015000	Luzadder	18.98	Residential	0.76%	0.96%	N/A
14	222100012000	Luzadder	24.01	Agricultural	0.96%	0.96%	N/A
15	222100003000	Luzadder	44.00	Agri/Res	1.76%	0.96%	510
16	222100004000	Smith	0.92	Residential	0.04%	0.96%	515
17	222100005000	Smith	2.14	Residential	0.09%	0.96%	N/A
18	222100007000	Lewis	2.06	Residential	0.08%	0.96%	N/A
19	222100006000	Lewis	0.92	Residential	0.04%	0.96%	510
20	222100017000	Reason	3.32	Residential	0.13%	0.96%	345
21	0221200002000	Luzadder	28.80	Agri/Res	1.15%	0.96%	425
22	216300001000	Richards	73.71	Agricultural	2.94%	0.96%	N/A
23	216100008000	Richards	9.00	Residential	0.36%	0.96%	N/A
24	216200001000	Richards	64.92	Agricultural	2.59%	0.96%	N/A
25	216200003000	Dewitt	40.00	Agricultural	1.60%	0.96%	N/A
26	215300002000	Vest	5.97	Residential	0.24%	0.96%	635
27	215100006000	Crabtree	6.75	Residential	0.27%	0.96%	420
28	216200002000	Richards	40.00	Agricultural	1.60%	0.96%	N/A
29	210300004000	Walker	5.00	Residential	0.20%	0.96%	290
30	209400004000	Richards	38.52	Agricultural	1.54%	0.96%	N/A
31	210300003000	Williams	7.56	Residential	0.30%	0.96%	235
32	209400002000	Richards	20.00	Agricultural	0.80%	0.96%	N/A
33	209200003000	Richards	40.00	Agri/Res	1.60%	0.96%	955
34	21010000200	Lasater	40.00	Agricultural	1.60%	0.96%	N/A
35	210100006000	Martin	41.85	Agricultural	1.67%	0.96%	N/A
36	210100006000	Thurman	27.45	Agricultural	1.10%	0.96%	N/A
37	210400006000	Stephens	6.00	Residential	0.24%	0.96%	260
38	0210200004000	Martini	4.68	Residential	0.19%	0.96%	805
39	210200003000	Martini	68.16	Agricultural	2.72%	0.96%	N/A

#	MAP ID	Owner	GIS Data		Adjoin	Adjoin	Distance (ft)
			Acres	Present Use	Acres	Parcels	Home/Panel
40	210200008000	Martini	3.83	Residential	0.15%	0.96%	N/A
41	210400003000	Warfel	1.47	Residential	0.06%	0.96%	N/A
42	0211300001000	Warfel	40.17	Agri/Res	1.60%	0.96%	550
43	211300005000	Glass	38.00	Agricultural	1.52%	0.96%	N/A
44	214201001000	Glass	23.27	Agricultural	0.93%	0.96%	N/A
45	214127002000	Schwartz	1.12	Residential	0.04%	0.96%	N/A
46	0214127001000	Schwartz	0.50	Residential	0.02%	0.96%	770
47	214176001000	Mauck	54.82	Agricultural	2.19%	0.96%	N/A
48	214151002000	Ritchie	48.00	Agri/Res	1.92%	0.96%	1,175
49	214151003000	Stegmier	5.00	Residential	0.20%	0.96%	925
50	215200007000	Davis	1.90	Residential	0.08%	0.96%	620
51	215200006000	Kelly	3.46	Residential	0.14%	0.96%	260
52	215200004000	Johnson	20.00	Agricultural	0.80%	0.96%	N/A
53	215200005000	Johnson	18.00	Residential	0.72%	0.96%	N/A
54	215400001000	Johnson	62.27	Agri/Res	2.49%	0.96%	2,005
55	214300001000	Mauck	80.00	Agricultural	3.19%	0.96%	2,200
56	214300002000	Mauck	75.00	Agricultural	2.99%	0.96%	N/A
57	223100005000	Mauck	2.50	Residential	0.10%	0.96%	N/A
58	223100002000	Mauck	66.62	Agri/Res	2.66%	0.96%	435
59	223100004000	Rice	2.00	Residential	0.08%	0.96%	310
60	223300003000	Mauck	168.89	Agri/Res	6.74%	0.96%	3,190
61	222400003000	Tarter	10.00	Residential	0.40%	0.96%	265
62	222400004000	Shell	21.45	Agricultural	0.86%	0.96%	N/A
63	227200003000	Pittenger	15.31	Residential	0.61%	0.96%	N/A
64	227200002000	Pittenger	24.09	Agricultural	0.96%	0.96%	N/A
65	227200001000	Pittenger	24.05	Agricultural	0.96%	0.96%	N/A
66	227100008000	Mauck	20.00	Agricultural	0.80%	0.96%	N/A
67	227100008000	Mauck	20.00	Agricultural	0.80%	0.96%	N/A
68	227100007000	Mauck	31.54	Agricultural	1.26%	0.96%	N/A
69	227100012000	Anderson	8.45	Residential	0.34%	0.96%	1,255
70	227100001000	Mauck	66.00	Agricultural	2.63%	0.96%	N/A
71	222300002000	Fouch	1.00	Residential	0.04%	0.96%	230
72	221400006000	Falls	62.00	Agri/Res	2.48%	0.96%	600
73	221400005000	Carmin	11.00	Residential	0.44%	0.96%	N/A
74	221400004000	Carmin	11.00	Residential	0.44%	0.96%	N/A
75	221400003000	Whitestone	1.65	Residential	0.07%	0.96%	N/A
76	221400009000	Landis	5.36	Residential	0.21%	0.96%	320
77	0222300007000	Mauck	2.25	Residential	0.09%	0.96%	250
78	221300003000	Falls	40.00	Agricultural	1.60%	0.96%	N/A

#	MAP ID	Owner	GIS Data		Adjoin		Distance (ft)
			Acres	Present Use	Acres	Parcels	Home/Panel
79	228100011000	Hawk	6.48	Residential	0.26%	0.96%	N/A
80	228100001000	Miller	70.28	Agricultural	2.81%	0.96%	N/A
81	221300005000	Cannon	0.99	Residential	0.04%	0.96%	410
82	220400008000	Kirtley	5.00	Residential	0.20%	0.96%	430
83	229200008000	Miller	10.72	Residential	0.43%	0.96%	N/A
84	229200014000	Miller	1.31	Residential	0.05%	0.96%	N/A
85	229200015000	Miller	10.91	Residential	0.44%	0.96%	N/A
86	0229200012000	Dennin	9.88	Residential	0.39%	0.96%	1,280
87	229200016000	Dennin	5.00	Residential	0.20%	0.96%	N/A
88	229200002000	Smith	14.00	Residential	0.56%	0.96%	910
89	220400006000	Wright	5.00	Residential	0.20%	0.96%	385
90	229200013000	Smith	5.09	Residential	0.20%	0.96%	N/A
91	229200001000	Amonett	0.94	Residential	0.04%	0.96%	570
92	229100007000	Day	1.25	Residential	0.05%	0.96%	700
93	220300010000	Rosebaum	40.00	Agri/Res	1.60%	0.96%	780
94	220300008000	Patterson	1.00	Residential	0.04%	0.96%	250
95	220300004000	Jackson	9.58	Residential	0.38%	0.96%	1,660
96	220300005000	Jackson	50.41	Agricultural	2.01%	0.96%	N/A
97	220300003000	Praire	3.56	Religious	0.14%	0.96%	740
98	220300017000	Praire	1.43	Religious	0.06%	0.96%	N/A
99	220300006000	Johnson	1.44	Residential	0.06%	0.96%	460
100	220300007000	Burton	1.44	Residential	0.06%	0.96%	485
101	220300011000	Priddy	1.50	Residential	0.06%	0.96%	475
102	220100006000	Patterson	1.00	Residential	0.04%	0.96%	N/A
103	220100007000	Glass	1.00	Residential	0.04%	0.96%	265
104	220100001000	Smith	79.00	Agricultural	3.15%	0.96%	N/A
105	220300016000	Estile	3.58	Residential	0.14%	0.96%	905
106	217300006000	Hodge	7.02	Residential	0.28%	0.96%	700
Total			2504.921		100.00%	101.92%	718

Demographics Around Subject Property

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





Housing Profile

47342, Gaston, Indiana
Ring: 1 mile radius

Prepared by Esri
Latitude: 40.34413
Longitude: -85.45950

Population		Households	
2010 Total Population	78	2021 Median Household Income	\$41,233
2021 Total Population	77	2026 Median Household Income	\$45,540
2026 Total Population	76	2021-2026 Annual Rate	2.01%
2021-2026 Annual Rate	-0.26%		

Housing Units by Occupancy Status and Tenure	Census 2010		2021		2026	
	Number	Percent	Number	Percent	Number	Percent
Total Housing Units	33	100.0%	34	100.0%	34	100.0%
Occupied	32	97.0%	32	94.1%	32	94.1%
Owner	27	81.8%	27	79.4%	27	79.4%
Renter	5	15.2%	5	14.7%	5	14.7%
Vacant	1	3.0%	2	5.9%	2	5.9%

Owner Occupied Housing Units by Value	2021		2026	
	Number	Percent	Number	Percent
Total	26	100.0%	27	100.0%
<\$50,000	4	15.4%	1	3.7%
\$50,000-\$99,999	11	42.3%	5	18.5%
\$100,000-\$149,999	3	11.5%	5	18.5%
\$150,000-\$199,999	0	0.0%	4	14.8%
\$200,000-\$249,999	2	7.7%	4	14.8%
\$250,000-\$299,999	6	23.1%	8	29.6%
\$300,000-\$399,999	0	0.0%	0	0.0%
\$400,000-\$499,999	0	0.0%	0	0.0%
\$500,000-\$749,999	0	0.0%	0	0.0%
\$750,000-\$999,999	0	0.0%	0	0.0%
\$1,000,000-\$1,499,999	0	0.0%	0	0.0%
\$1,500,000-\$1,999,999	0	0.0%	0	0.0%
\$2,000,000+	0	0.0%	0	0.0%
Median Value		\$90,909		\$181,250
Average Value		\$130,769		\$178,704

Census 2010 Housing Units	Number	Percent
Total	33	100.0%
In Urbanized Areas	0	0.0%
In Urban Clusters	0	0.0%
Rural Housing Units	33	100.0%

Data Note: Persons of Hispanic Origin may be of any race.
Source: U.S. Census Bureau, Census 2010 Summary File 1. Esri forecasts for 2021 and 2026.

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Housing Profile

47342, Gaston, Indiana
Ring: 3 mile radius

Prepared by Esri
Latitude: 40.34413
Longitude: -85.49950

Population		Households	
2010 Total Population	2,079	2021 Median Household Income	\$50,833
2021 Total Population	2,042	2026 Median Household Income	\$57,159
2026 Total Population	2,027	2021-2026 Annual Rate	2.37%
2021-2026 Annual Rate	-0.15%		

Housing Units by Occupancy Status and Tenure	Census 2010		2021		2026	
	Number	Percent	Number	Percent	Number	Percent
Total Housing Units	946	100.0%	960	100.0%	964	100.0%
Occupied	834	88.2%	829	86.4%	823	85.4%
Owner	689	72.8%	672	70.0%	672	69.7%
Renter	145	15.3%	157	16.4%	151	15.7%
Vacant	112	11.8%	131	13.6%	140	14.5%

Owner Occupied Housing Units by Value	2021		2026	
	Number	Percent	Number	Percent
Total	673	100.0%	672	100.0%
<\$50,000	187	27.8%	93	13.8%
\$50,000-\$99,999	295	43.8%	238	35.4%
\$100,000-\$149,999	52	7.7%	63	9.4%
\$150,000-\$199,999	44	6.5%	98	14.6%
\$200,000-\$249,999	27	4.0%	41	6.1%
\$250,000-\$299,999	62	9.2%	117	17.4%
\$300,000-\$399,999	3	0.4%	5	0.7%
\$400,000-\$499,999	0	0.0%	0	0.0%
\$500,000-\$749,999	3	0.4%	17	2.5%
\$750,000-\$999,999	0	0.0%	0	0.0%
\$1,000,000-\$1,499,999	0	0.0%	0	0.0%
\$1,500,000-\$1,999,999	0	0.0%	0	0.0%
\$2,000,000+	0	0.0%	0	0.0%
Median Value		\$75,339		\$103,968
Average Value		\$99,629		\$147,284

Census 2010 Housing Units	Number	Percent
Total	946	100.0%
In Urbanized Areas	0	0.0%
In Urban Clusters	0	0.0%
Rural Housing Units	946	100.0%

Data Note: Persons of Hispanic Origin may be of any race.
Source: U.S. Census Bureau, Census 2010 Summary File 1. Esri forecasts for 2021 and 2026.

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Housing Profile

47342, Gaston, Indiana
Ring: 5 mile radius

Prepared by Esri
Latitude: 40.34413
Longitude: -85.49950

Population		Households	
2010 Total Population	4,115	2021 Median Household Income	\$53,639
2021 Total Population	4,116	2026 Median Household Income	\$60,359
2026 Total Population	4,097	2021-2026 Annual Rate	2.39%
2021-2026 Annual Rate	-0.09%		

Housing Units by Occupancy Status and Tenure	Census 2010		2021		2026	
	Number	Percent	Number	Percent	Number	Percent
Total Housing Units	1,791	100.0%	1,852	100.0%	1,865	100.0%
Occupied	1,627	90.8%	1,644	88.8%	1,640	87.9%
Owner	1,370	76.5%	1,364	73.7%	1,368	73.4%
Renter	257	14.3%	280	15.1%	272	14.6%
Vacant	164	9.2%	208	11.2%	225	12.1%

Owner Occupied Housing Units by Value	2021		2026	
	Number	Percent	Number	Percent
Total	1,364	100.0%	1,368	100.0%
<\$50,000	281	20.6%	135	9.9%
\$50,000-\$99,999	470	34.5%	345	25.2%
\$100,000-\$149,999	145	10.6%	148	10.8%
\$150,000-\$199,999	157	11.5%	254	18.6%
\$200,000-\$249,999	121	8.9%	158	11.5%
\$250,000-\$299,999	124	9.1%	212	15.5%
\$300,000-\$399,999	20	1.5%	31	2.3%
\$400,000-\$499,999	11	0.8%	19	1.4%
\$500,000-\$749,999	29	2.1%	50	3.7%
\$750,000-\$999,999	6	0.4%	16	1.2%
\$1,000,000-\$1,499,999	0	0.0%	0	0.0%
\$1,500,000-\$1,999,999	0	0.0%	0	0.0%
\$2,000,000+	0	0.0%	0	0.0%
Median Value	\$92,660		\$161,024	
Average Value	\$135,282		\$183,260	

Census 2010 Housing Units	Number	Percent
Total	1,791	100.0%
In Urbanized Areas	11	0.6%
In Urban Clusters	12	0.7%
Rural Housing Units	1,768	98.7%

Data Note: Persons of Hispanic Origin may be of any race.
Source: U.S. Census Bureau, Census 2010 Summary File 1. Esri forecasts for 2021 and 2026.

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II. Methodology and Discussion of Issues

Standards and Methodology

I conducted this analysis using the standards and practices established by the Appraisal Institute and that conform to the Uniform Standards of Professional Appraisal Practice. The analyses and methodologies contained in this report are accepted by all major lending institutions, and they are used in Indiana and across the country as the industry standard by certified appraisers conducting appraisals, market analyses, or impact studies and are considered adequate to form an opinion of the impact of a land use on neighboring properties. These standards and practices have also been accepted by the courts at the trial and appellate levels and by federal courts throughout the country as adequate to reach conclusions about the likely impact a use will have on adjoining or abutting properties.

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

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

Determining what is an External Obsolescence

An external obsolescence is a use of property that, because of its characteristics, might have a negative impact on the value of adjacent or nearby properties because of identifiable impacts. Determining whether a use would be considered an external obsolescence requires a study that isolates that use, eliminates any other causing factors, and then studies the sales of nearby versus distant comparable properties. The presence of one or a combination of key factors does not mean the use will be an external obsolescence, but a combination of these factors tends to be present when market data reflects that a use is an external obsolescence.

External obsolescence is evaluated by appraisers based on several factors. These factors include but are not limited to:

- 1) Traffic. Solar Farms are not traffic generators.
- 2) Odor. Solar farms do not produce odor.
- 3) Noise. Solar farms generate no noise concerns and are silent at night.
- 4) Environmental. Solar farms do not produce toxic or hazardous waste. Grass is maintained underneath the panels so there is minimal impervious surface area.

5) Appearance/Viewshed. This is the one area that potentially applies to solar farms. However, solar farms are generally required to provide significant setbacks and landscaping buffers to address that concern. Furthermore, any consideration of appearance of viewshed impacts has to be considered in comparison with currently allowed uses on that site. For example if a residential subdivision is already an allowed use, the question becomes in what way does the appearance impact adjoining property owners above and beyond the appearance of that allowed subdivision or other similar allowed uses.

6) Other factors. I have observed and studied many solar farms and have never observed any characteristic about such facilities that prevents or impedes neighbors from fully using their homes or farms or businesses for the use intended.

Relative Solar Farm Sizes

Solar farms have been increasing in size in recent years. Much of the data collected is from existing, older solar farms of smaller size, but there are numerous examples of sales adjoining 75 to 80 MW facilities that show a similar trend as the smaller solar farms. This is understandable given that the primary concern relative to a solar farm is the appearance or view of the solar farm, which is typically addressed through setbacks and landscaping buffers. The relevance of data from smaller solar farms to larger solar farms is due to the primary question being one of appearance. If the solar farm is properly screened, then little of the solar farm would be seen from adjoining property regardless of how many acres are involved.

Larger solar farms are often set up in sections where any adjoining owner would only be able to see a small section of the project even if there were no landscaping screen. Once a landscaping screen is in place, the primary view is effectively the same whether adjoining a 5 MW, 20 MW or 100 MW facility.

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

Steps Involved in the Analysis

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

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

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

III. Research on Solar Farms

A. *Appraisal Market Studies*

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

CohnReznick – Property Value Impact Study: Adjacent Property Values Solar Impact Study: A Study of Eight Existing Solar Facilities

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

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

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

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

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

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

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

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

Fred Beck, MAI, CCIM – Impact Analysis in Lincoln County 2013

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

Mr. Beck was interviewed as part of the Christian Kalia study noted above. From that I quote “Mr. Beck concluded on no effect on moderate priced homes, and only a 5% change in his limited research of higher priced homes. His one sale that fell through is hardly a reliable sample. It also was misleading on Mr. Beck’s part to report the lower re-assessments since the primary cause of the

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

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

Also noted in the Christian Kalia interview notes is a response from Mr. Beck indicating that in his opinion “the homes were higher priced homes and had full view of the solar farm.” Based on a description of screening so that “the solar farm would not be in full view to adjoining property owners. Mr. Beck said in that case, he would not see any drop in property value.”

NorthStar Appraisal Company – Impact Analysis for Nichomus Run Solar, Pilesgrove, NJ, September 16, 2020

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

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

MR Valuation Consulting, LLC – The Kuhl Farm Solar Development and The Fischer Farm Solar Development – June 7, 2012

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

Conclusion of Impact Studies

Of the five studies noted three included actual sales data to derive an opinion of no impact on value. The only study to conclude on a negative impact was the Fred Beck study based on no actual sales data adjoining solar farms, and he has since indicated that with landscaping screens he would not conclude on a negative impact.

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

B. Articles

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

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

Andy Ames, ASFMRA (American Society of Farm Managers and Rural Appraisers) published this article that includes a discussion of his survey of appraisers and studies on the question of property value related to solar farms. He discusses the university studies that I have cited as well as Patricia McGarr, MAI.

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

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

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

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

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

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

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

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

C. *Broker Commentary*

In the process of working up the matched pairs used later in this report, I have collected comments from brokers who have actually sold homes adjoining solar farms indicating that the solar farm had no impact on the marketing, timing, or sales price for the adjoining homes. I have comments from 12 such brokers within this report including brokers from Kentucky, Virginia, Tennessee, and North Carolina.

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

IV. University Studies

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

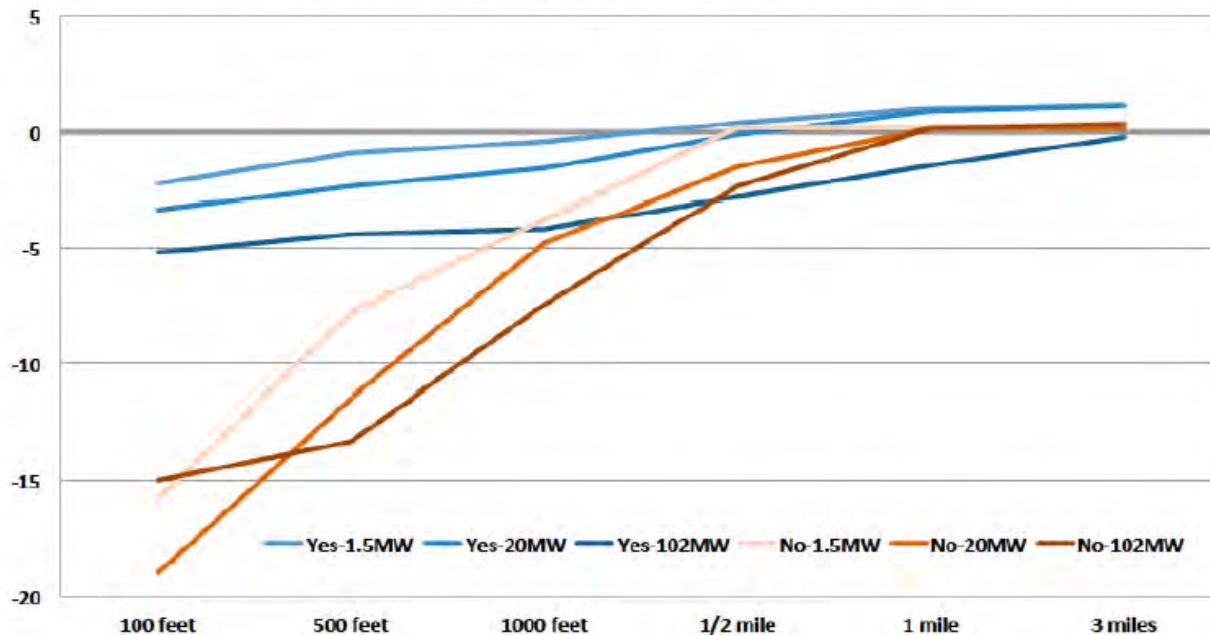
A. *University of Texas at Austin, May 2018* **An Exploration of Property-Value Impacts Near Utility-Scale Solar Installations**

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

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

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

Chart B.2 - Estimates of Property Value Impacts (%) by Size of Facility, Distance, & Respondent Type
 Have you assessed a home near a utility-scale solar installation?



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

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

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

B. University of Rhode Island, September 2020

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

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

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

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

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

Based on this study I have checked the population for the Washington Township of Delaware County, which has a population of 1,968 for 2021 based on HomeTownLocator which uses the US Census data and a total area of 35.14 square miles. This indicates a population density of 56 people per square mile which puts this well below the threshold indicated by the Rhode Island Study.

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

C. *Master's Thesis: ECU by Zachary Dickerson July 2018*

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

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

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

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

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

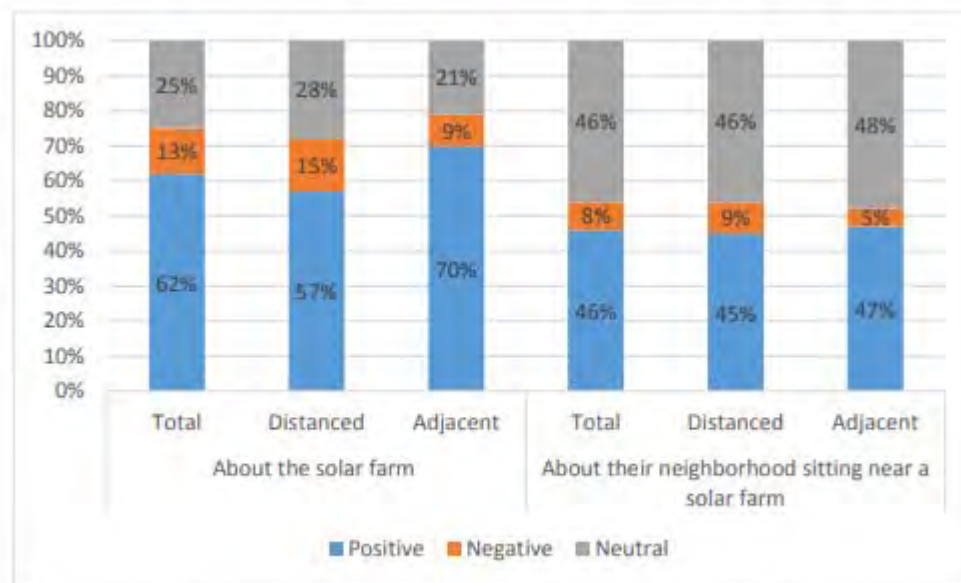


Figure 11: Residents' positive/negative word choices by geographic setting for both questions

D. Ernest Orlando Lawrence Berkeley National Laboratory, December, 2019

The Impact of Wind Power Projects on Residential Property Values in the United States: A Multi-Site Hedonic Analysis

This study addresses wind farms and not solar farms but it is a reasonable consideration. The activity on a wind farm is significantly different in terms of the mechanics and more particularly on the appearance or viewshed as wind farms cannot be screened from adjoining property owners. This study was commissioned by the Department of Energy and not by any developer. This study examined 7,500 home sales between 1996 and 2007 in order to track sales prices both before and after a wind energy facility was announced or built. This study specifically looked into possible stigma, nuisance, and scenic vista.

On page 17 of that study they conclude “Although the analysis cannot dismiss the possibility that individual homes or small numbers of homes have been or could be negatively impacted, it finds that if these impacts do exist, they are either too small and/or too infrequent to result in any widespread, statistically observable impact.”

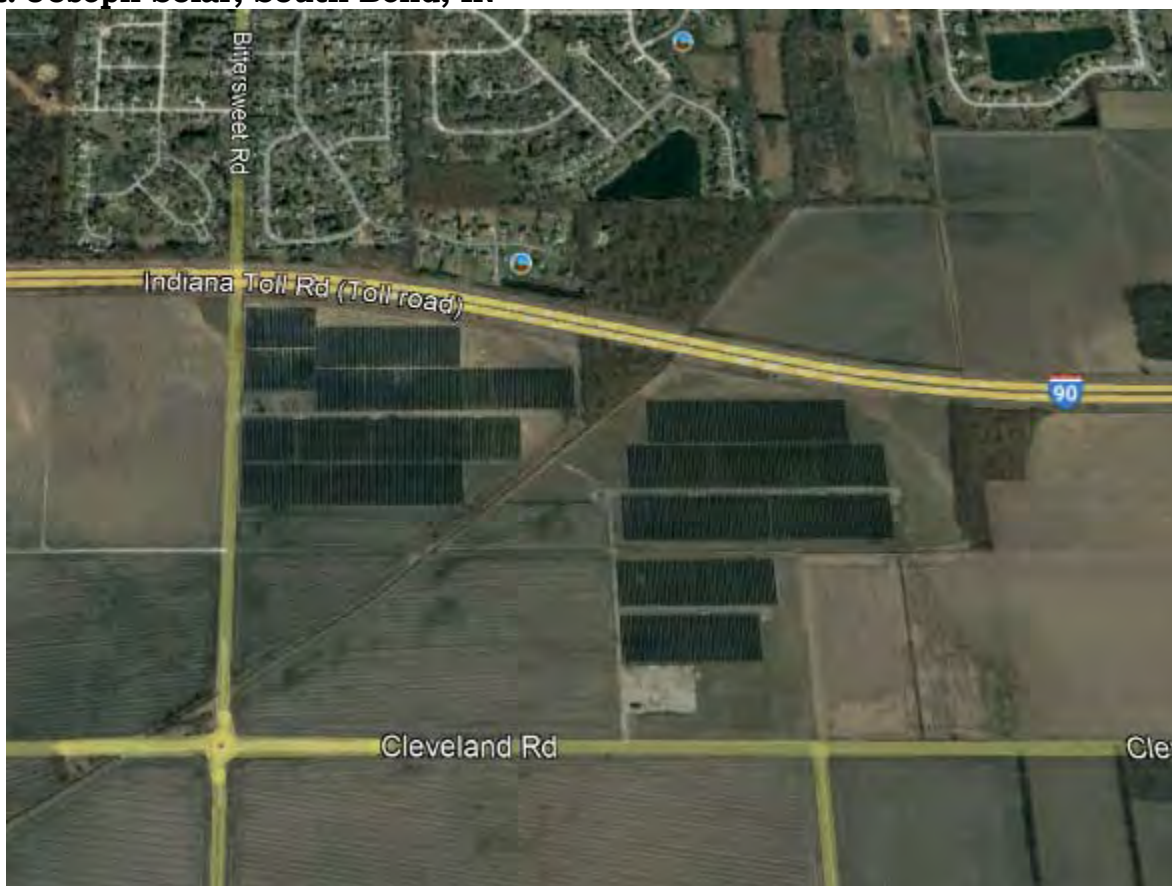
Given that solar farms are a similar use, but with a lower profile and therefore a lower viewshed than the wind farms, it is reasonable to translate these findings of no impact to solar farms.

V. Summary of Solar Projects In and Around Indiana

I have researched the solar projects in Indiana. I identified the solar farms through the Solar Energy Industries Association (SEIA) Major Projects List and then excluded the roof mounted facilities. I focused on larger solar farms over 5 MW.

A quick summary of each solar farm identified is shown on the following pages.

St. Joseph Solar, South Bend, IN



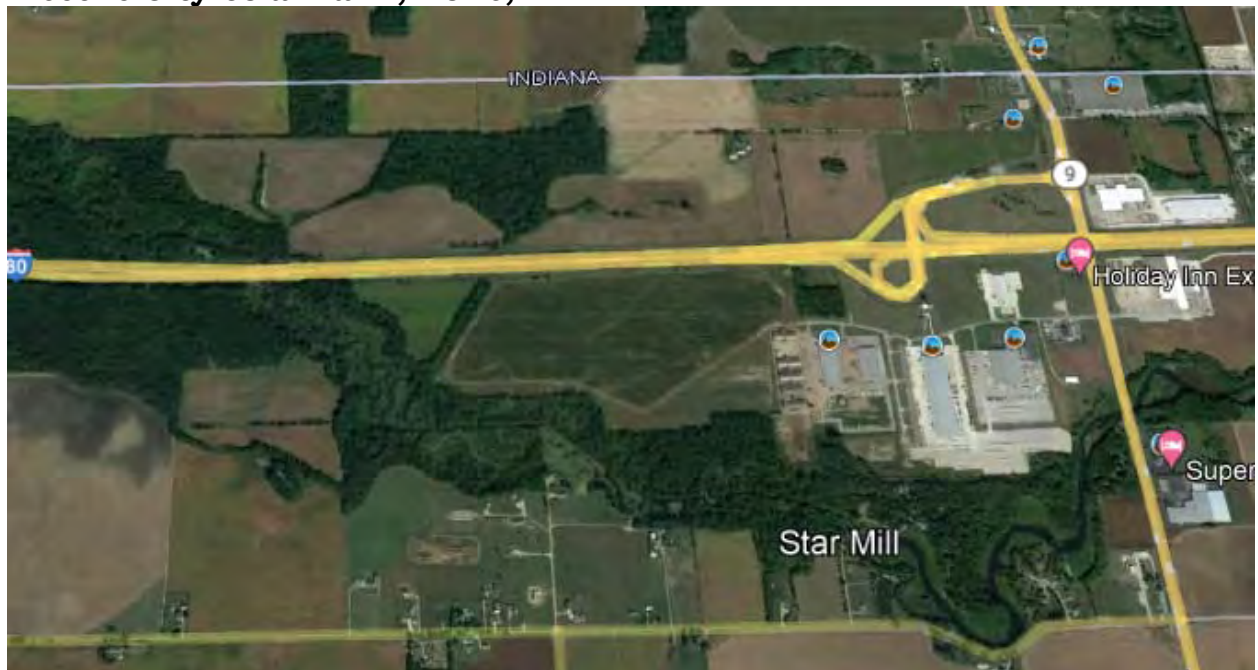
This solar farm is a 26.7 MW facility that is currently in operation.

Olive PV, Olive, IN



This solar farm is 6.4 MW and located between Olive and New Carlisle.

Electric City Solar Farm, Howe, IN



This 18.9 MW facility is located just off I-80-90 between Sturgis and Howe.

Rensselaer 2 Solar, Rensselaer, IN



This 5.1 MW facility is located on the field shown in the middle of the map.

Logansport Solar, Logansport, IN



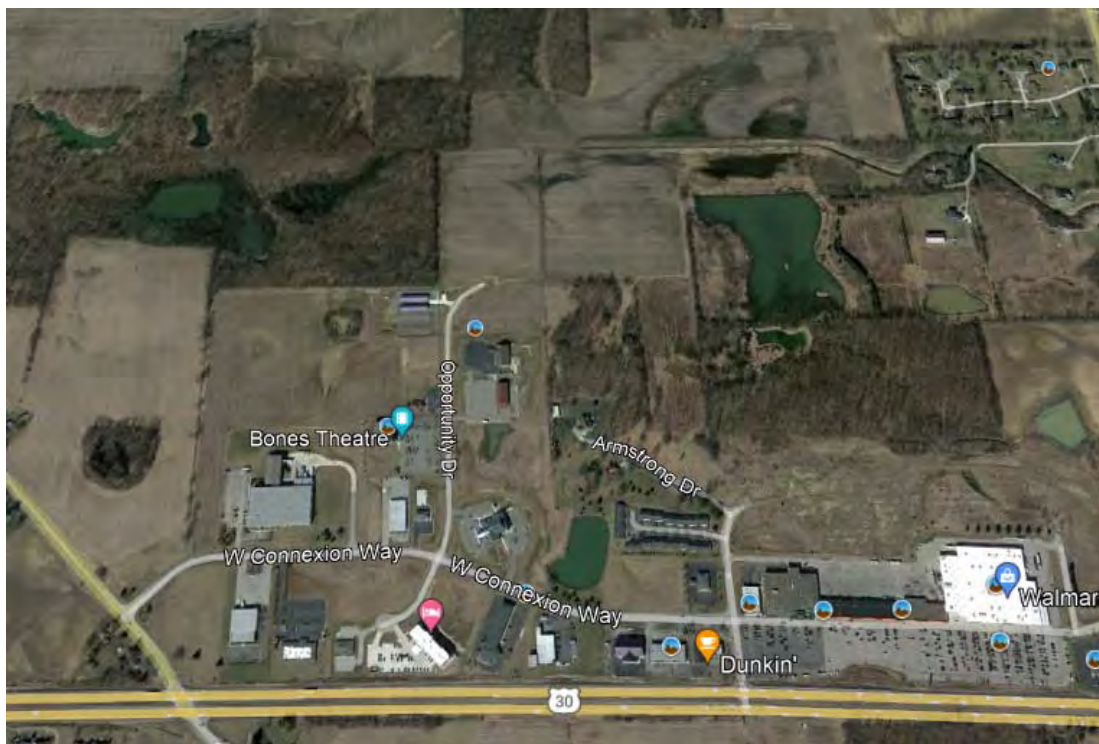
This 21.3 MW facility is located on the field between Holland Street and Water Street.

Peru 2 Solar, Peru, IN



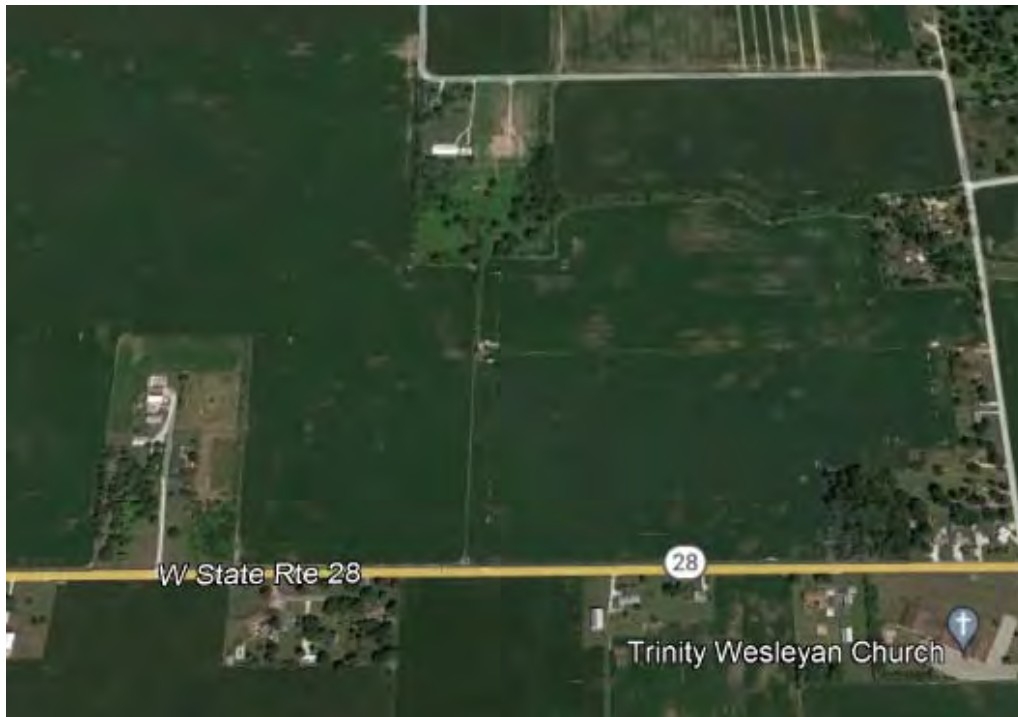
This 12.7 MW solar farm is located north of Mt. Hope Cemetery in the map above.

Columbia City Solar Park, Columbia City



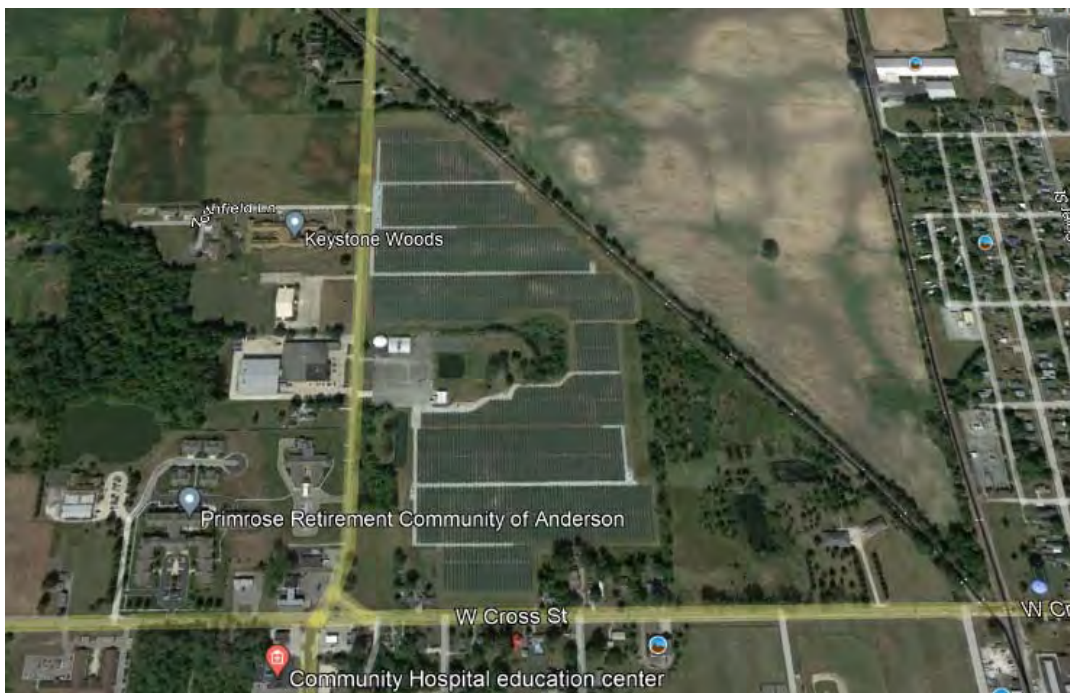
This 5.7 MW solar farm is located at the north end of Opportunity Drive.

Tipton Solar Park, Tipton, IN



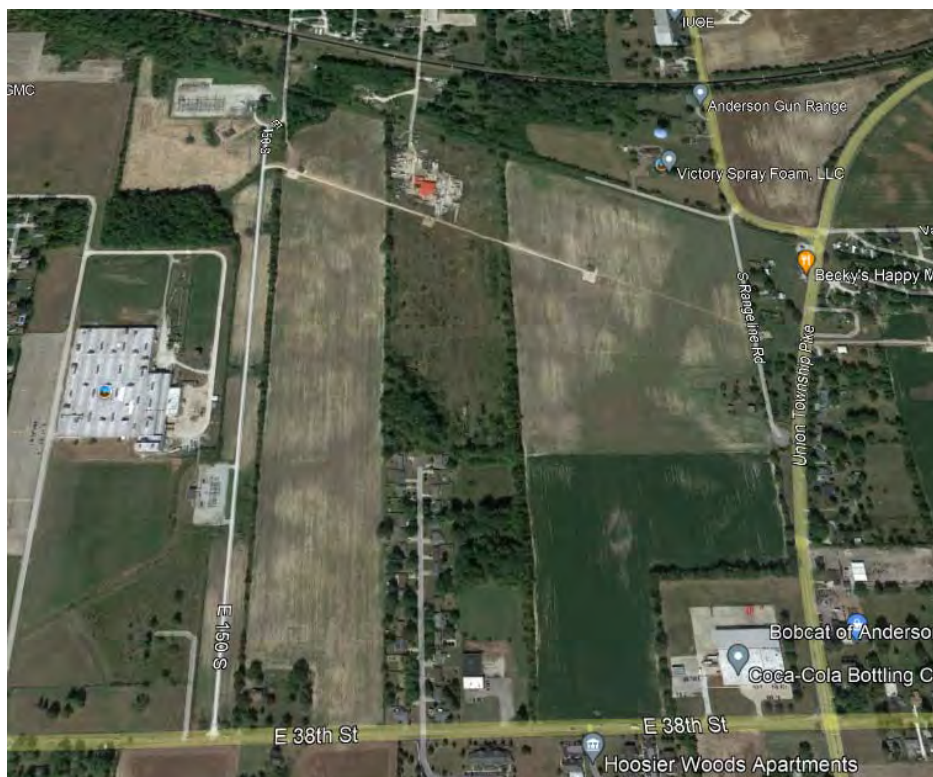
This project was built in 2019 for a 5.25 MW solar farm and adjoins mostly agricultural properties. It is on the north side of State Rte 28 near the middle of the map.

IMPA Anderson Solar Park, Anderson, IN



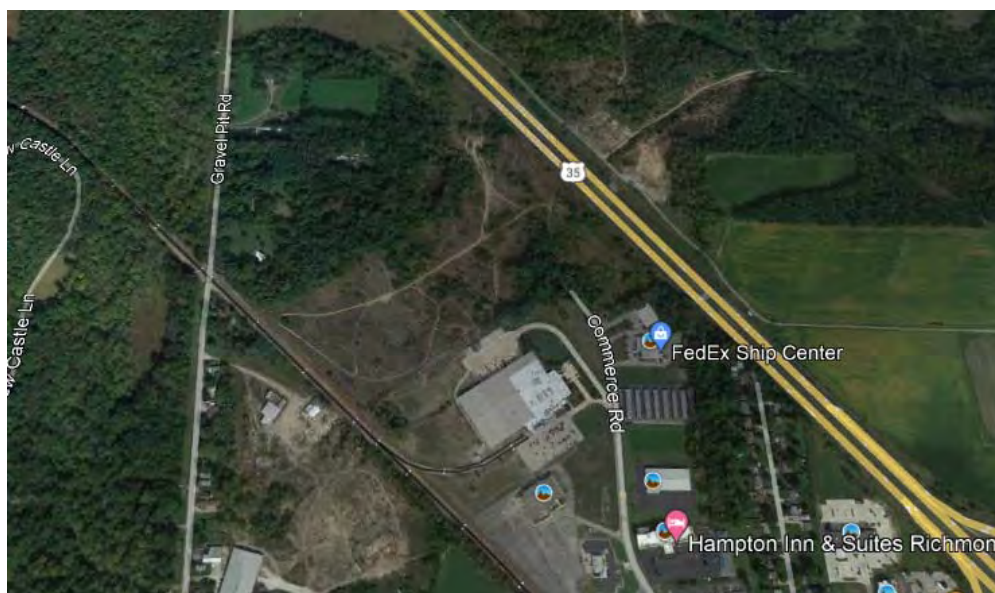
This solar farm has a 10.2 MW capacity.

Anderson 3 and Anderson 4, Anderson, IN



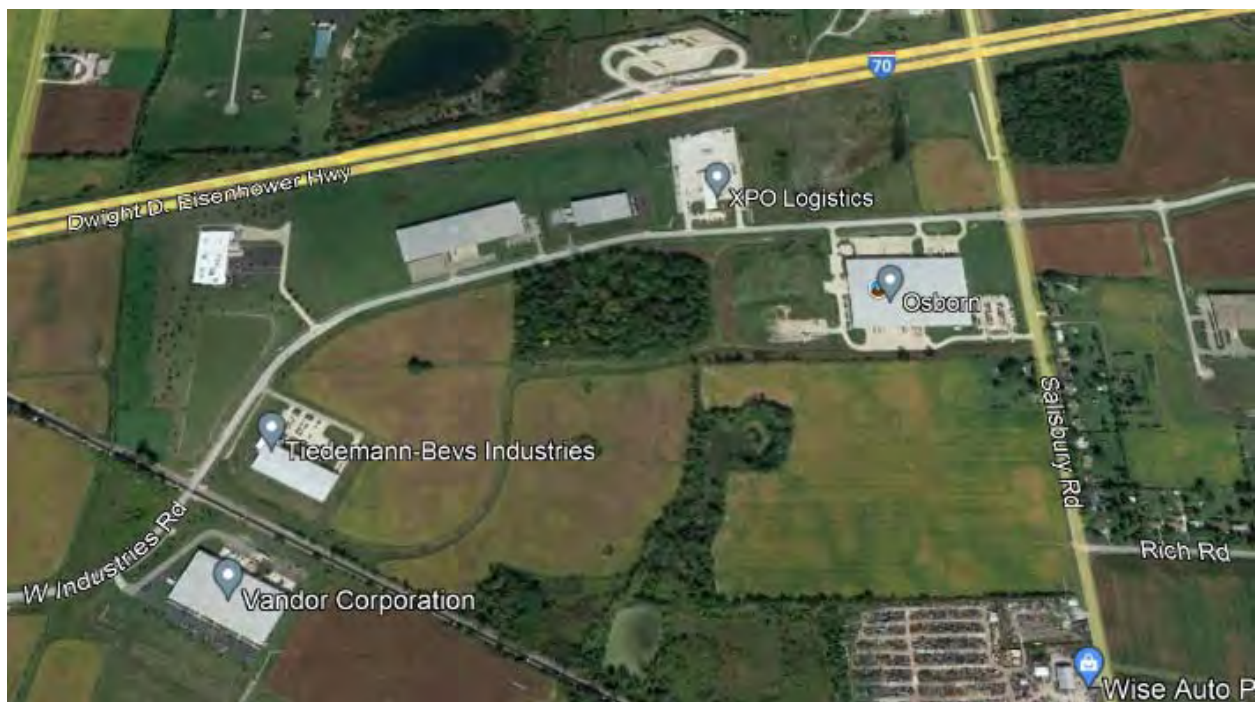
Anderson 4 is located off S Rangeline Road closer to Union Township Drive and is a 10.4 MW facility. Anderson 3 was built in 2021 and is located closer to E 150 S Street and is an 11.6 MW solar farm. Anderson 5 is a 4 MW solar farm located to the north east across S Rangeline Road.

Richmond Solar Park 2 and 3, Richmond, IN



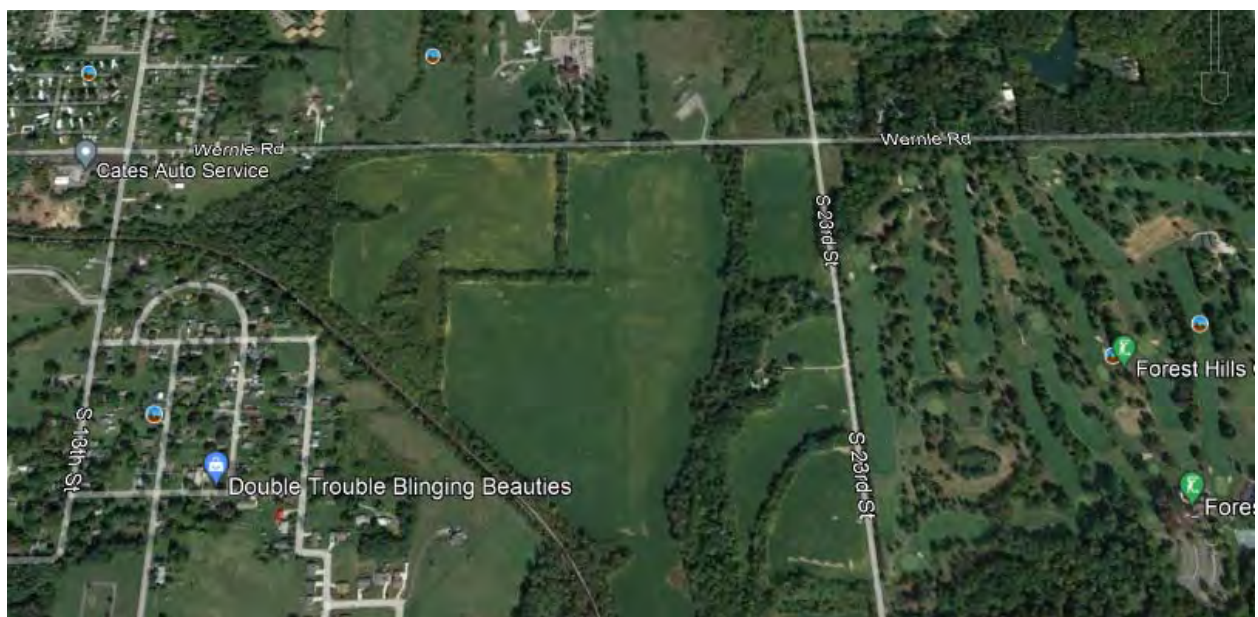
Richmond 3 is located at the north end of Commerce Road with 8.7 MW of capacity. Richmond 2 is located to the southeast across from the US 35 Highway and US 40 interchange with 9.8 MW of capacity.

Richmond Solar Park 4, Richmond, IN



Richmond 4 is located on the south side of Industries Road with 9.3 MW capacity.

Richmond Solar Park 5 and 6, Richmond, IN



Richmond 5 is located on the south side of Wernle Road Road with 12 MW capacity. Richmond 6 is just west of that with 6.8 MW capacity.

It is notable that Forest Hills Country Club is located just to the west of this location. Most of the adjoining residential housing is located across the railroad line shown along the southern boundary of the solar farms.

Indy Solar II, LLC, Indianapolis, IN



This is a 13.9 MW facility located off of E. Southport Road. There was a January 7, 2021 sale of a new home constructed at 9620 E McGregor Road to the southwest of this solar farm. This home is approximately 1,700 feet from the nearest panel. I have not analyzed this sale as it is not adjoining, though I have noted it as new activity in the area.

Indy Solar III, LLC, Indianapolis, IN



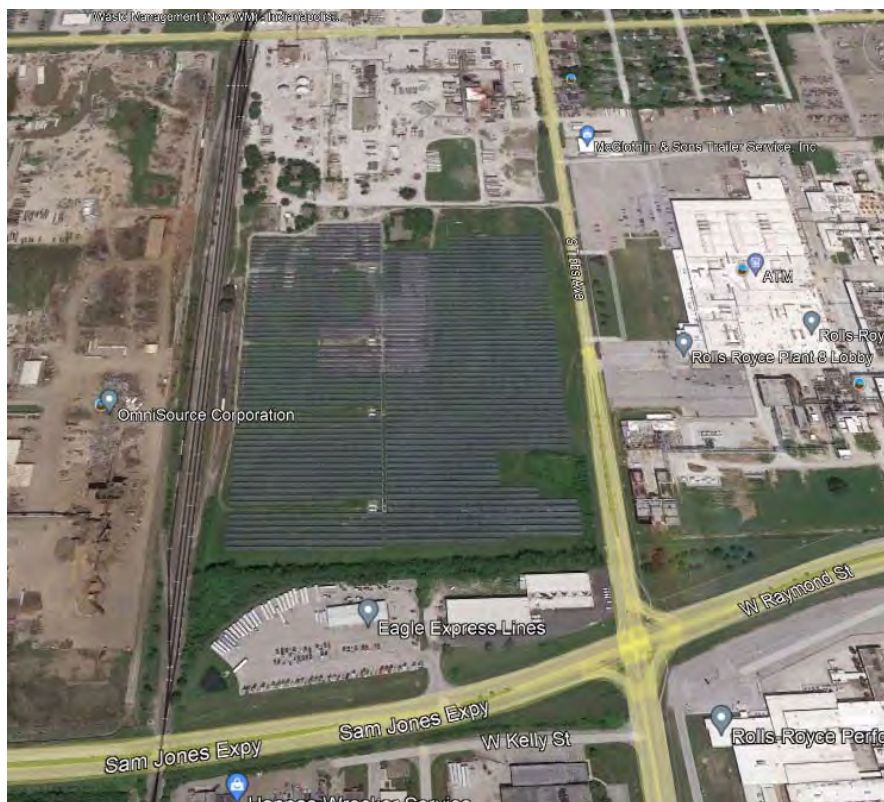
This is a 11.9 MW facility located off of W. Southport Road and was built in 2014. There have been three nearby sales of homes to the north recently that I have discussed later in this report.

IND Community Solar Farm Phases 1 and 2



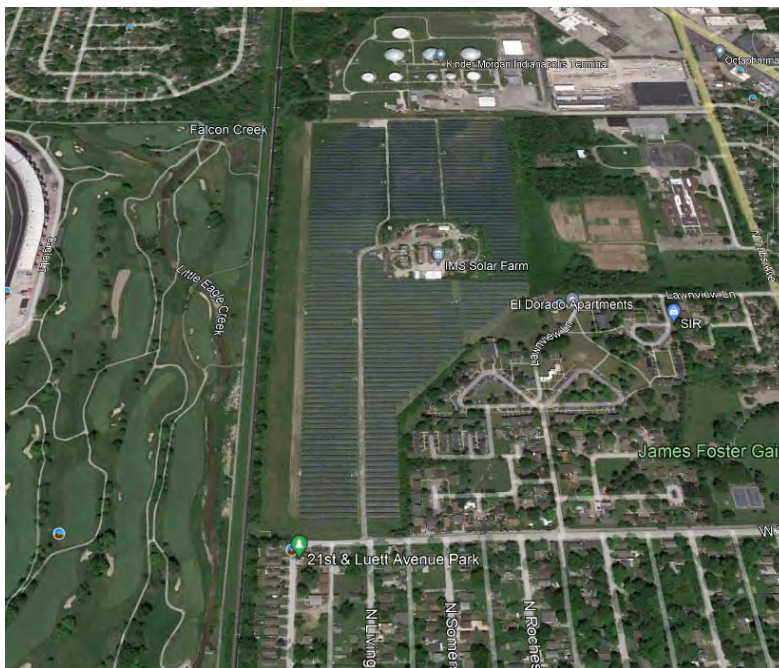
Phase 1 is 12.5 MW and Phase 2 is 9.8 MW. These are located adjoining the Indianapolis International Airport.

Maywood Photovoltaic Project, Indianapolis, IN



This 10.5 MW solar farm is located just north of Sam Jones Expressway.

Indianapolis Motor Speedway Solar PV, Indianapolis, IN

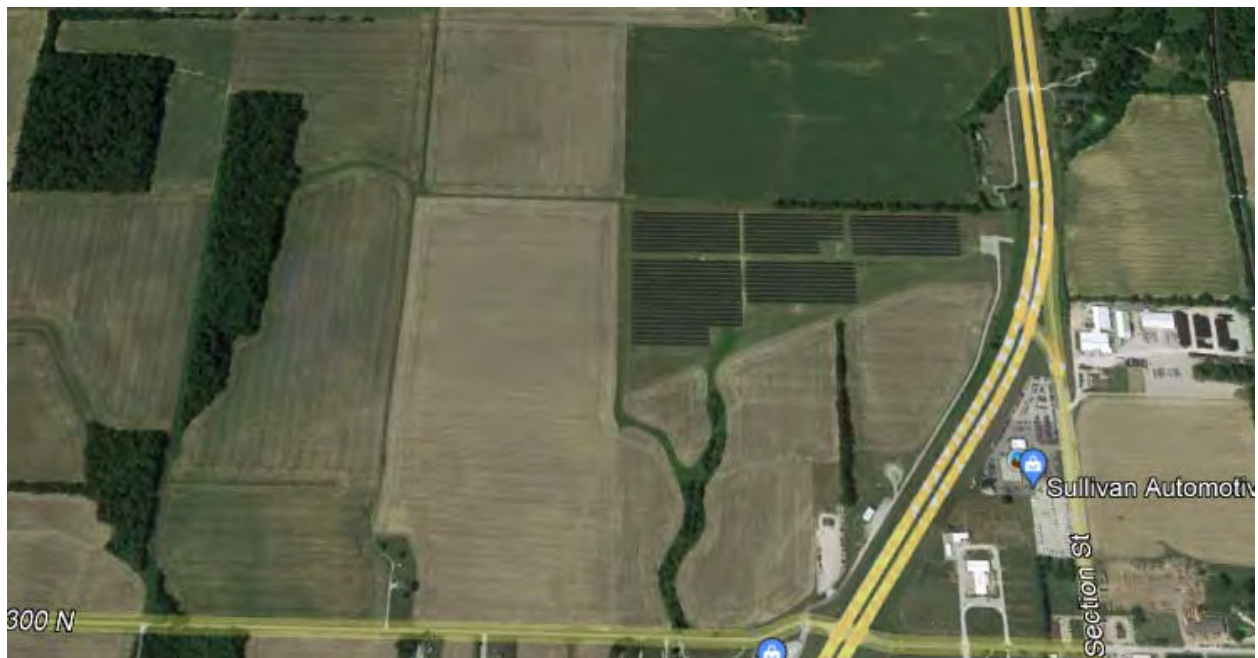


This 11.2 MW solar farm is located just east of Brickyard Crossing Golf Course and east of the Indianapolis Motor Speedway.

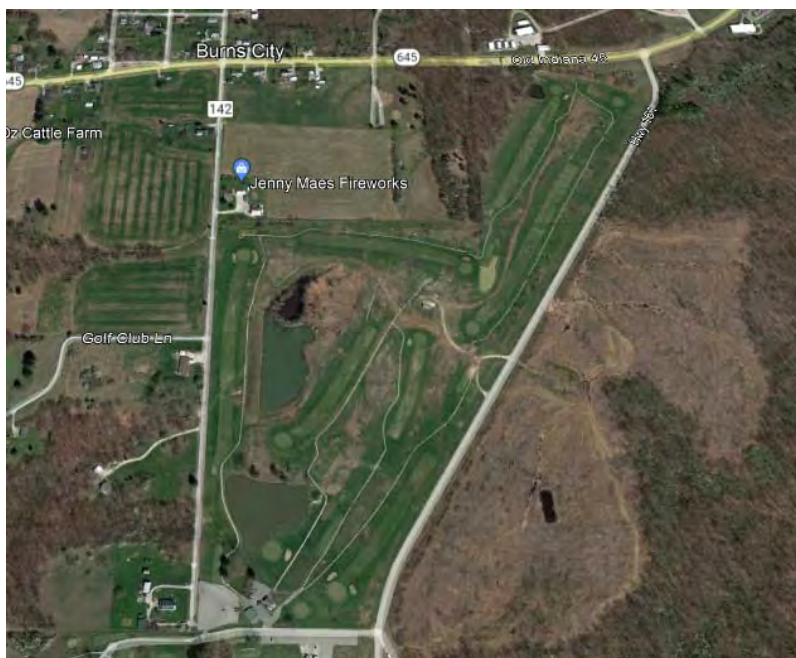
Pastime Farm, LLC, Brazil, IN



This 7 MW solar farm is located just west of Brazil.

Sullivan Solar, LLC, Sullivan, IN

This 7.1 MW solar farm is located just off US 41 Highway.

Crane Solar Facility, Burns City, IN

This 24.3 MW solar farm is located on the former front nine holes at Eagle View Golf Course at Naval Support Activity Crane.

Scottsburg Solar Park, Scottsburg, IN

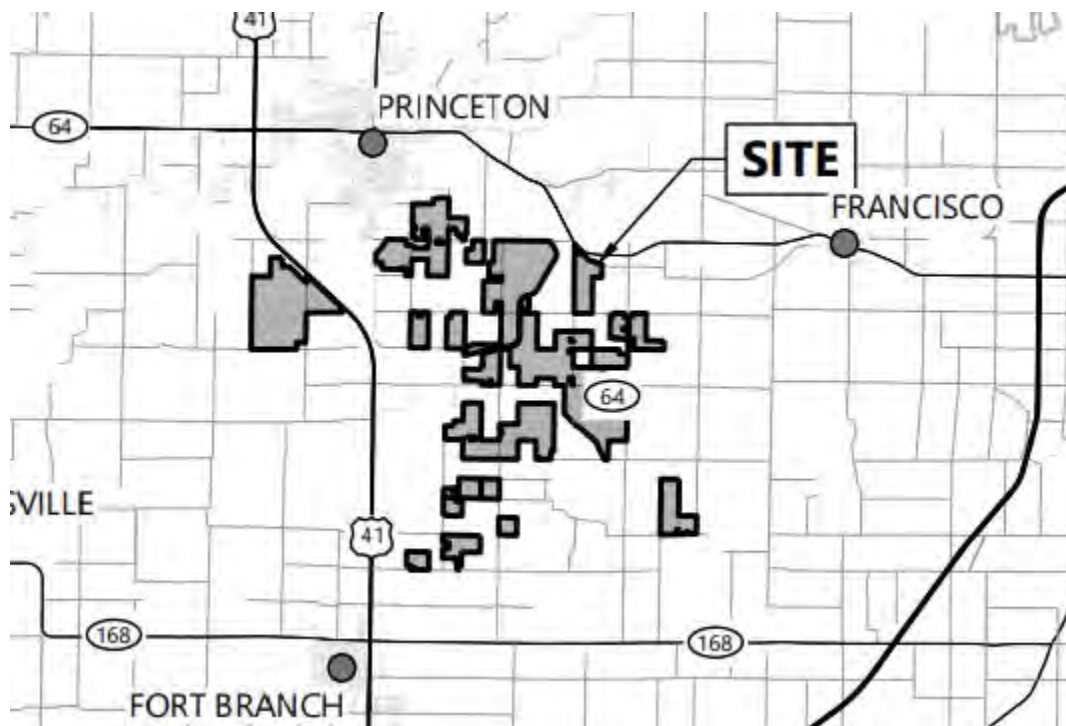


This 9.7 MW solar farm is located adjoining the reservoir.

Troy Solar, Troy, IN

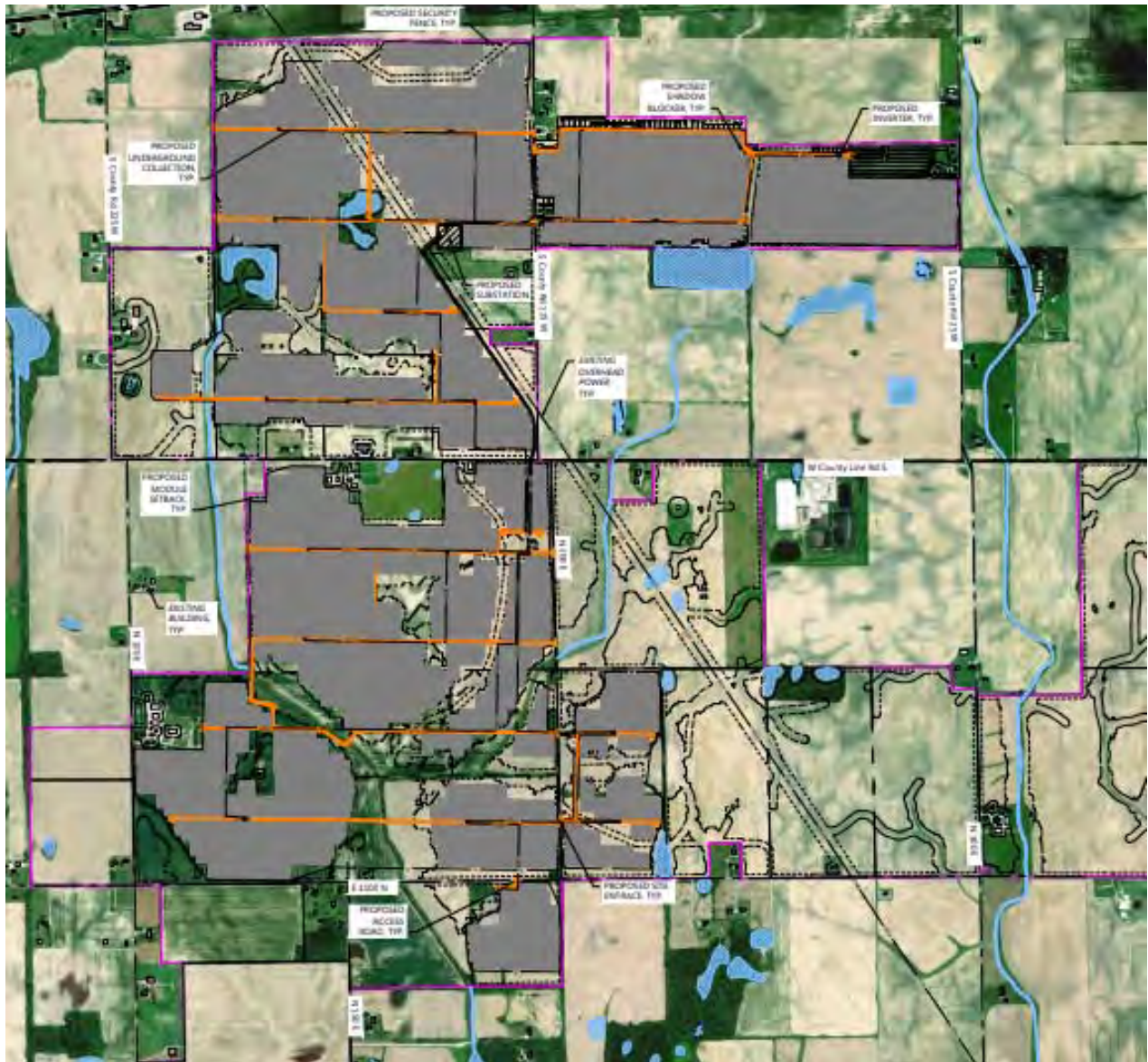


This 67.2 MW solar farm is located on both sides of State Road 545 and both sides of County Road 950 N.

Gibson Solar, LLC, Princeton, IN

This 280 MW solar farm is being developed on the tracts shown above between Princeton, Fort Branch, and Francisco. This will be located on 2,250 acres of land, though parts of the property are non-contiguous as shown in the map above.

Bellflower Solar 1, LLC, Henry & Rush County, IN



This 203.3 MW solar farm is located on the south side of US 40 Highway east of State Road 3. This is proposed to be built in 2023.

Riverstart Solar Farm, Randolph County, IN



This 266.6 MW solar farm is located on the south side of US 40 Highway east of State Road 3 and was completed in January 2022. I was unable to find a site plan and it is too new for an aerial view of the project, but the entrance to the project is identified near the Riverstart Laydown Yard in the map above.

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 Indiana, Ohio, 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 the area around Indiana. I searched home sales in Kentucky, Indiana and Michigan, Illinois as well as Ohio.

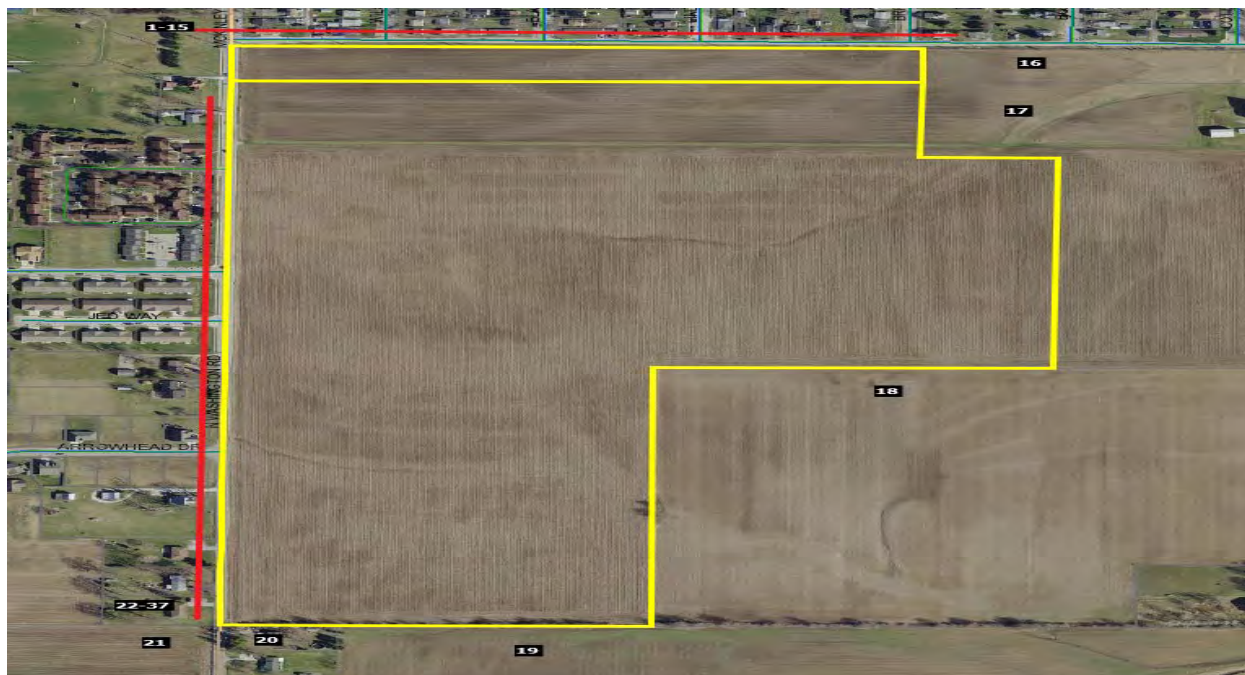
In the next section I have considered matched pair data throughout the Midwest Region of the United States as being the most similar states that would most readily compare to Indiana. This includes data from Illinois as well as Indiana, Ohio, and Michigan. Finally, I have included a brief summary of data pulled nationally as additional support for these findings.

A. *Indiana and Adjoining State Data*

I have focused first on Indiana and then on adjoining states. Additional data from adjoining states is included for additional support.

I have included two solar farms from Indiana, one from Kentucky, one from Ohio, and two from Michigan where I was able to locate a number of additional matched pairs as outlined on the following pages.

1. Matched Pair – DG Amp Piqua



This project is located on the southeast corner of Manier Street and N Washington Road, Piqua, OH. There are a number of nearby homes to the north, south and west of this solar farm.

I considered one adjoining sale and one nearby sale (one parcel off) that happened since the project was built in 2019. I did not consider the sale of a home located at Parcel 20 that happened in that time period as that property was marketed with damaged floors in the kitchen and bathroom, rusted baseboard heaters and generally was sold in an As-Is condition that makes it difficult to compare to move-in ready homes. I also did not consider some sales to the north that sold for prices significantly under \$100,000. The homes in that community includes a wide range of smaller, older homes that have been selling for prices ranging from \$25,000 to \$80,000. I have not been tracking home sales under \$100,000 as homes in that price range are less susceptible to external factors.

The adjoining sale at 6060 N Washington is a brick range fronting on a main road. I did not adjust the comparables for that factor despite the subdivision exposure on those comparables was superior. I considered the difference in lot size to be balancing factors. If I adjusted further for that main road frontage, then it would actually show a positive impact for adjoining the solar farm.

Adjoining Residential Sales After Solar Farm Approved

Parcel	Solar	Address	Acres	Date Sold	Sales Price	Built	GBA	\$/GLA	BR/BA	Park	Style	Other
22	Adjoins	6060 N Washington	0.80	10/30/2019	\$119,500	1961	1,404	\$85.11	3/1	2 Gar	Br Rnch	Updates
	Not	1523 Amesbury	0.25	5/7/2020	\$119,900	1973	1,316	\$91.11	3/2	Gar	Br Rnch	Updates
	Not	1609 Haverhill	0.17	10/17/2019	\$114,900	1974	1,531	\$75.05	3/1	Gar	Br Rnch	Updates
	Not	1511 Sweetbriar	0.17	8/6/2020	\$123,000	1972	1,373	\$89.58	4/2	Gar	Br Rnch	Updates

Adjoining Sales Adjusted

Time	Site	YB	GLA	BR/BA	Park	Other	Total	% Diff	Avg % Diff	Distance
							\$119,500			155
-\$1,920		-\$7,194	\$6,414	-\$5,000	\$7,500	\$0	\$119,700	0%		
\$126		-\$7,469	-\$7,625		\$7,500	\$0	\$107,432	10%		
-\$2,913		-\$6,765	\$2,222	-\$5,000	\$7,500	\$0	\$118,044	1%		

4%

I also considered a home fronting on Plymouth Avenue which is one lot to the west of the solar farm with a rear view towards the solar farm. After adjustments this set of matched pairs shows no impact on the value of the property due to proximity to the solar farm.

Adjoining Residential Sales After Solar Farm Approved

Parcel	Solar	Address	Acres	Date Sold	Sales Price	Built	GBA	\$/GLA	BR/BA	Park	Style	Other
	Nearby	1011 Plymouth	0.21	2/24/2020	\$113,000	1973	1,373	\$82.30	4/2	Gar	1.5 Stry	Fnce/Shd
	Not	1630 Haverhill	0.32	8/18/2019	\$94,900	1973	1,373	\$69.12	4/2	Gar	1.5 Stry	N/A
	Not	1720 Williams	0.17	12/4/2019	\$119,900	1968	1,682	\$71.28	4/1	2Gar	1.5 Br	Fnce/Shd
	Not	1710 Cambridge	0.17	1/22/2018	\$116,000	1968	1,648	\$70.39	4/2	Det 2	1.5 Br	Fnce/Shd

Adjoining Sales Adjusted

Time	Site	YB	GLA	BR/BA	Park	Other	Total	% Diff	Avg % Diff	Distance
							\$113,000			585
\$1,519		\$0	\$0			\$10,000	\$106,419	6%		
\$829		\$2,998	-\$17,621	\$5,000			\$111,105	2%		
\$7,459		\$2,900	-\$15,485				\$110,873	2%		

3%

Based on these two matched pairs, the data at this solar farm supports a finding of no impact on property value due to the proximity of the solar farm for homes as close as 155 feet.

2. Matched Pair – Portage Solar, Portage, IN



This solar farm has a 2 MW output and is located on a portion of a 56-acre tract. The project was built in 2012.

I have considered the recent sale of Parcels 5 and 12. Parcel 5 is an undeveloped tract, while Parcel 12 is a residential home. I have compared each to a set of comparable sales to determine if there was any impact due to the adjoining solar farm. This home is 1,320 feet from the closest solar panel.

Adjoining Residential Sales After Solar Farm Completed

#	TAX ID	Acres	Date Sold	Sales Price	Built	GBA	\$/GBA
12	64-06-19-326-007.000-015	1.00	Sep-13	\$149,800	1964	1,776	\$84.35

Nearby Residential Sales After Solar Farm Completed

#	TAX ID	Acres	Date Sold	Sales Price	Built	GBA	\$/GBA
2501 Architect Dr	64-04-32-202-004.000-021	1.31	Nov-15	\$191,500	1959	2,064	\$92.78
336 E 1050 N	64-07-09-326-003.000-005	1.07	Jan-13	\$155,000	1980	1,908	\$81.24
2572 Pryor Rd	64-05-14-204-006.000-016	1.00	Jan-16	\$216,000	1960	2,348	\$91.99

Adjoining Land Sales After Solar Farm Completed

#	TAX ID	Acres	Date Sold	Sales Price	\$/AC
5	64-06-19-200-003.000-015	18.70	Feb-14	\$149,600	\$8,000

Nearby Land Sales After Solar Farm Completed

#	TAX ID	Acres	Date Sold	Sales Price	\$/AC
	64-07-22-401-001.000-005	74.35	Jun-17	\$520,450	\$7,000
	64-15-08-200-010.000-001	15.02	Jan-17	\$115,000	\$7,658

Residential Sale Adjustment Chart

TAX ID	Date Sold	Adjustments		\$/Sf
		Time	Total	
64-06-19-326-007.000-015	Sep-13	\$8,988	\$158,788	\$89.41
64-04-32-202-004.000-021	Nov-15	\$3,830	\$195,330	\$94.64
64-07-09-326-003.000-005	Jan-13	\$9,300	\$164,300	\$86.11
64-05-14-204-006.000-016	Jan-16		\$216,000	\$91.99

2% adjustment/year
Adjusted to 2017

	Adjoins Solar Farm		Not Adjoin Solar Farm	
	Average	Median	Average	Median
Sales Price/SF	\$89.41	\$89.41	\$90.91	\$91.99
GBA	1,776	1,776	2,107	2,064

After adjusting the price per square foot is 2.88% less for the home adjoining the solar farm versus those not adjoining the solar farm. This is within the typical range of variation to be anticipated in any real estate transaction and indicates no impact on property value.

Applying the price per square foot for the 336 E 1050 N sale, which is the most similar to the Parcel 12 sale, the adjusted price at \$81.24 per square foot applied to the Parcel 12 square footage yields a value of \$144,282.

Land Sale Adjustment Chart

TAX ID	Date Sold	Adjustments		Total	\$/Acre
		<u>Time</u>			
64-06-19-200-003.000-015	Feb-14	\$8,976		\$158,576	\$8,480
64-07-22-401-001.000-005	Jun-17			\$520,450	\$7,000
64-15-08-200-010.000-001	Jan-17			\$115,000	\$7,658

2% adjustment/year
Adjusted to 2017

	Adjoins Solar Farm		Not Adjoin Solar Farm	
	<u>Average</u>	<u>Median</u>	<u>Average</u>	<u>Median</u>
Sales Price/Ac	\$8,480	\$8,480	\$7,329	\$7,329
Acres	18.70	18.70	44.68	44.68

After adjusting the price per acre is higher for the property adjoining the solar farm, but the average and median size considered is higher which suggests a slight discount. This set of matched pair supports no indication of negative impact due to the adjoining solar farm.

Alternatively, adjusting the 2017 sales back to 2014 I derive an indicated price per acre for the comparables at \$6,580 per acre to \$7,198 per acre, which I compare to the unadjusted subject property sale at \$8,000 per acre.

3. Matched Pair – Dominion Indy III, Indianapolis, IN



This solar farm has an 11.9 MW output and is located on a portion of a 134-acre tract. The project was built in 2013/2014.

There are a number of homes on small lots located along the northern boundary and I have considered several sales of these homes. I have compared those homes to a set of nearby not adjoining home sales as shown below. The adjoining homes that sold range from 380 to 420 feet from the nearest solar panel, with an average of 400 feet.

Adjoining Residential Sales After Solar Farm Completed

#	TAX ID	Acres	Date Sold	Sales Price	Built	GBA	\$/GBA
2	2013249	0.38	12/9/2015	\$140,000	2006	2,412	\$58.04
4	2013251	0.23	9/6/2017	\$160,000	2006	2,412	\$66.33
5	2013252	0.23	5/10/2017	\$147,000	2009	2,028	\$72.49
11	2013258	0.23	12/9/2015	\$131,750	2011	2,190	\$60.16
13	2013260	0.23	3/4/2015	\$127,000	2005	2,080	\$61.06
14	2013261	0.23	2/3/2014	\$120,000	2010	2,136	\$56.18

Nearby Not Adjoining Residential Sales After Solar Farm Completed

#	TAX ID	Acres	Date Sold	Sales Price	Built	GBA	\$/GBA
5836 Sable Dr	2013277	0.14	Jun-16	\$141,000	2005	2,280	\$61.84
5928 Mosaic Pl	2013845	0.17	Sep-15	\$145,000	2007	2,280	\$63.60
5904 Minden Dr	2012912	0.16	May-16	\$130,000	2004	2,252	\$57.73
5910 Mosaic Pl	2000178	0.15	Aug-16	\$146,000	2009	2,360	\$61.86
5723 Minden Dr	2012866	0.26	Nov-16	\$139,900	2005	2,492	\$56.14

Adjustments

TAX ID	Date Sold	Time	Total	\$/Sf
2013249	12/9/2015	\$5,600	\$145,600	\$60.36
2013251	9/6/2017		\$160,000	\$66.33
2013252	5/10/2017		\$147,000	\$72.49
2013258	12/9/2015	\$5,270	\$137,020	\$62.57
2013260	3/4/2015	\$5,080	\$132,080	\$63.50
2013261	2/3/2014	\$7,200	\$127,200	\$59.55
2013277	6/1/2016	\$2,820	\$143,820	\$63.08
2013845	9/1/2015	\$5,800	\$150,800	\$66.14
2012912	5/1/2016	\$2,600	\$132,600	\$58.88
2000178	8/1/2016	\$2,920	\$148,920	\$63.10
2012866	11/1/2016	\$2,798	\$142,698	\$57.26

2% adjustment/year
Adjusted to 2017

Sales Price/SF	Adjoins Solar Farm		Not Adjoin Solar Farm	
	Average	Median	Average	Median
	\$64.13	\$63.03	\$61.69	\$63.08
GBA	2,210	2,163	2,333	2,280

This set of homes provides very strong indication of no impact due to the adjacency to the solar farm and includes a large selection of homes both adjoining and not adjoining in the analysis.

There have been three additional nearby sales of homes to the north more recently than those identified above

A two-story home located at 5737 Sable Drive of brick and siding construction built in 2010 with 3 BR, 2.5 BA, 2,136 SF and a 2-car garage sold for \$172,000 on April 25, 2019. This works out to \$80.52 per square foot. This home is approximately 230 feet from the nearest solar panel.

A similar home located at 6006 Jackie Lane in the same neighborhood but not near the solar farm sold on August 5, 2019 for \$178,400 for a 4 BR, 2.5 BA, 2,332 SF and a 2-car garage, or \$76.50 per square foot. This is an older dwelling built in 1997 and adjusting the price per s.f. upward by 6.5% for that difference in age as well as downward by 1.5% for growth in the market for time for the 5 months difference in sales date, I derive an adjusted price per square foot of \$80.33 per square foot. This is within a reasonable range (less than 1% difference) from the price per square foot of the home adjoining the solar farm. I consider this to be good support for an indication of no impact on property value.

Another home located at 5813 Sable Drive sold on January 1, 2021 for \$190,645 for a brick and siding two-story home built in 2005 with 3 BR, 2.5 BA, 2,080 SF and a 2-car garage. This works out to \$91.57 per square foot. This home is approximately 230 feet from the nearest solar panel.

A similar home located at 5834 Jackie Lane in the same neighborhood but not near the solar farm sold on May 12, 2021 for \$224,000 for a brick and siding home built in 2005 with 3 BR, 2.5 BA, 2600 SF and a 2-car garage. This works out to \$86.15 per square foot. Adjusting this upward by 5% for being a larger house where there is often a slight discount per square foot for a home and downward 1% for growth in the market over time, I derive an adjusted indication of value of \$89.60 per square foot. This shows about a 2% increase in value for the property adjoining the solar farm. I consider this to support an indication of no impact on property value.

Finally, I considered the recent sale at 5909 Sable Drive that sold on June 3, 2019 for \$169,900 for this two-story brick and siding home built in 2006 with 3 BR, 2.5 BA, 2,412 SF, and two car garage. This works out to \$70.44 per square foot. This home is approximately 410 feet from the nearest solar panel.

A similar home located at 6006 Jackie Lane in the same neighborhood but not near the solar farm sold on August 5, 2019 for \$178,400 for a 4 BR, 2.5 BA, 2,332 SF and a 2-car garage, or \$76.50 per square foot. This is an older dwelling built in 1997 and adjusting the price per s.f. upward by 4.5% for that difference in age as well as downward by 0.5% for growth in the market for time for the 2 months difference in sales date, I derive an adjusted price per square foot of \$79.56 per square foot. This shows a 13% impact on value. I have included a photo from the listing of the view from the backyard where solar panels are in the background and barely visible in the one central section.

I spoke with Beth Guthrie with Keller Williams Realty Indy Metro Northeast who was the buyer's agent. She indicated that the solar farm did not have any impact on the sales price for the buyers or in the appraisal of the property for the financing of the property. I therefore conclude that this matched pair is just an outlier.



4. 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 four home sales to the north of this solar farm on Claiborne 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 Claiborne 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 on lots being marketed for \$28,000 to \$29,000.

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											Avg	
Solar	Address	Time	Site	YB	GLA	BR/BA	Park	Other	Total	% Diff	% 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	\$213,000	2003	1,568	\$135.84	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											Avg	
Solar	Address	Time	Site	YB	GLA	BR/BA	Park	Other	Total	% Diff	% 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											Avg	
Solar	Address	Time	Site	YB	GLA	BR/BA	Park	Other	Total	% Diff	% 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%	

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											Avg	
Solar	Address	Time	Site	YB	GLA	BR/BA	Park	Other	Total	% Diff	% 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 positive negative 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 static of real estate transactions. This indication is higher than that and suggests a positive relationship.

The four matched pairs considered in this analysis includes two that show no impact on value, one that shows a negative impact on value, and one that shows a positive impact. The negative indication supported by one matched pair is -7% and the positive impact of another is +7%. The two neutral indications show impacts of -1% and +3%. The average indicated impact is +1% when all four of these indicators are blended.

5. Matched Pair – Demille Solar, Demille Road, Lapeer, MI



This solar farm is located on 160 acres of a parent tract assemblage of 311.40 acres with a 28.4 MW output. This was built in 2017.

I have identified several home sales adjoining this solar farm at the southeast corner where the red line shows adjoining Parcels 5 through 17 on the map above.

The first is Parcel 8 in the map above, 1120 Don Wayne Drive that sold in August 2019. I have compared this to multiple home sales as shown below. I consider 1231 Turrill to be the best comparable of this set as it required the least adjustment and was the most similar in size, age, and date of sale.

Adjoining Residential Sales After Solar Farm Built

Solar	Address	Acres	Date Sold	Sales Price	Built	GBA	\$/GBA	BR/BA	Park	Style	Other	Dist.
Adjoins	1120 Don Wayne	0.47	8/28/2019	\$194,000	1976	1,700	\$114.12	3/3.5	2-Car	Ranch	Brick/FinBsmt	310
Not	1127 Don Wayne	0.51	9/23/2019	\$176,900	1974	1,452	\$121.83	3/2	2-Car	Ranch	Brick/Ufin Bsmt	
Not	1231 Turrill	1.21	4/25/2019	\$182,000	1971	1,560	\$116.67	3/2	2-Car	Ranch	Brick/Wrkshp	
Not	1000 Baldwin	3.11	8/1/2017	\$205,000	1993	1,821	\$112.58	3/2.5	2-Car	Ranch	Vinyl	

Solar	Address	Time	Site	YB	GLA	BR/BA	Park	Other	Total	% Diff	Avg % Diff
Adjoins	1120 Don Wayne								\$194,000		-1%
Not	1127 Don Wayne	-\$258		\$1,769	\$24,171	\$10,000			\$212,582	-10%	
Not	1231 Turrill	\$1,278	-\$10,000	\$4,550	\$13,067	\$10,000			\$200,895	-4%	
Not	1000 Baldwin	\$8,718	-\$20,000	-\$17,425	-\$10,897	\$10,000			\$175,396	10%	

Next I considered Parcel 9, 1126 Don Wayne Drive, which I have compared to two similar home sales nearby that are not adjoining a solar farm as shown below. This home sold in May 2018 after the solar farm was built.

Adjoining Residential Sales After Solar Farm Built

Solar	Address	Acres	Date Sold	Sales Price	Built	GBA	\$/GBA	BR/BA	Park	Style	Other	Dist.
Adjoins	1126 Don Wayne	0.47	5/16/2018	\$160,000	1971	1,900	\$84.21	3/2.5	2-Car	Ranch	Brick,FinBsmt	310
Not	70 Sterling Dr	0.32	8/2/2018	\$137,500	1960	1,800	\$76.39	3/1.5	1-Car	Ranch	Brick	
Not	3565 Garden Dr	0.34	5/15/2019	\$165,000	1960	2,102	\$78.50	3/1.5	2-Car	Ranch	Brick	

Solar	Address	Time	Site	YB	GLA	BR/BA	Park	Other	Total	% Diff	Avg % Diff
Adjoins	1126 Don Wayne								\$160,000		-3%
Not	70 Sterling Dr	-\$603		\$7,563	\$6,111	\$10,000	\$5,000		\$165,571	-3%	
Not	3565 Garden Dr	-\$3,374		\$9,075	-\$12,685	\$5,000			\$163,016	-2%	

Next I looked at Parcel 11, 1138 Don Wayne Drive that sold in August 2019. I have compared this to three similar sales as shown below. I attributed no value to the pool at 1138 Don Wayne Drive.

Adjoining Residential Sales After Solar Farm Built

Solar	Address	Acres	Date Sold	Sales Price	Built	GBA	\$/GBA	BR/BA	Park	Style	Other	Dist.
Adjoins	1138 Don Wayne	0.47	8/28/2019	\$191,000	1975	2,128	\$89.76	4/1.5	2-Car	2-Story	Brick	380
Not	1331 W Genessee	0.45	10/25/2019	\$160,707	1940	1,955	\$82.20	4/1.5	Drive	1.5 Story	Vinyl/UnBsmt	
Not	1128 Gwen Dr	0.47	8/24/2018	\$187,500	1973	2,040	\$91.91	3/2.5	2-Car	2 Story	Brick/UnBsmt	
Not	1227 Oakridge	1.05	6/11/2017	\$235,000	1980	2,500	\$94.00	4/2.5	2-Car	2 Story	Brk/PFinBsmt	

Solar	Address	Time	Site	YB	GLA	BR/BA	Park	Other	Total	% Diff	Avg % Diff
Adjoins	1138 Don Wayne								\$191,000		-1%
Not	1331 W Genessee	-\$524		\$16,874	\$11,377		\$10,000		\$198,434	-4%	
Not	1128 Gwen Dr	\$3,887		\$1,875	\$6,471	-\$10,000			\$189,733	1%	
Not	1227 Oakridge	\$10,667	-\$10,000	-\$5,875	-\$27,974	-\$10,000			\$191,818	0%	

Parcel 13, 1168 Alice Drive, sold in October 2019. I spoke with Tanya Biernat the buyer's agent who handled that sale and she indicated that the property was placed on the market below market for a fast sale by the sellers. The buyers expressed no concern regarding the adjacent solar farm and it had no impact on marketing or selling the property, though it did sell for a low price. I also spoke with Chantel Fink's office, the selling agent. They confirmed that the solar farm was not an issue in the sales price or marketing of the property. Given that this sale was noted as below market for a fast sale, I have not attempted to set it up as a matched pair.

Parcel 14, 1174 Alice Drive, sold in January 2019. I have compared that sale to three similar properties as shown below. I included 1135 Gwen Drive as a nearby comparable, but it is not a good comparable. According to the broker, Paul Coulter, that home had many recent and significant upgrades that made it superior to similar housing in the neighborhood. It is notably the highest sales price in the neighborhood. I have shown that one but I made no adjustment for those upgrades, but I won't rely on that sale for the matched pairs. I consider the 1127 Don Wayne Drive comparable to be a more reasonable comparison. I spoke with Chris Ferguson the broker for that sale who confirmed that it was arm's length and that while across Don Wayne Drive from the homes that adjoin the solar farm, this home had no view of the solar farm and was not an issue in marketing this home.

Adjoining Residential Sales After Solar Farm Built

Solar	Address	Acres	Date Sold	Sales Price	Built	GBA	\$/GBA	BR/BA	Park	Style	Other	Dist.
Adjoins	1174 Alice Dr	0.54	1/14/2019	\$165,000	1973	1,400	\$117.86	3/1.5	2-Car	Ranch	Brick/Fin Bsmt	280
Not	1127 Don Wayne	0.51	9/23/2019	\$176,900	1974	1,452	\$121.83	3/2	2-Car	Ranch	Brick/Ufin Bsmt	
Not	1135 Gwen Dr	0.43	7/26/2019	\$205,000	1967	1,671	\$122.68	3/2	2-Car	Ranch	Brick/Ufin Bsmt	
Not	1160 Beth Dr	0.46	6/20/2019	\$147,500	1970	1,482	\$99.53	4/1.5	2-Car	Ranch	Brick/Fin Bsmt	

Solar	Address	Time	Site	YB	GLA	BR/BA	Park	Other	Total	% Diff	Avg % Diff
Adjoins	1174 Alice Dr								\$165,000		2%
Not	1127 Don Wayne	-\$2,504		-\$885	-\$5,068	-\$5,000			\$163,443	1%	
Not	1135 Gwen Dr	-\$2,223		\$6,150	-\$26,597	-\$5,000			\$177,330	-7%	
Not	1160 Beth Dr	-\$1,301		\$2,213	-\$6,529				\$141,883	14%	

The four matched pairs identified show a range of -3% to +2% based on the average difference for each set of matched pairs. This is a very similar range I have found in most sales adjoining solar farms and strongly supports the assertion that the solar farm is not having a negative impact on adjoining property values.

Furthermore, two brokers active in the sale of a home adjoining the solar farm both confirmed that Parcel 13 was not impacted by the presence of the solar farm on the adjacent tract.

6. Matched Pair – Turrill Solar, Turrill Road, Lapeer, MI



This solar farm is located on approximately 230 acres with a 19.6 MW output. This was built in 2017.

I have identified several home sales adjoining this solar farm on the west side of this solar farm on Cliff Drive.

The first is 1060 Cliff Drive that sold in September 2018. I compared this to multiple nearby home sales 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	Distance
Adjoins	1060 Cliff Dr	1.03	9/14/2018	\$200,500	1970	2,114	\$94.84	4/2.5	2-Car	2 Story	Brick	290
Not	1331 W Genessee	0.45	10/25/2019	\$160,707	1940	1,955	\$82.20	4/1.5	Drive	1.5 Story	Vinyl/Unfin Bsmt	
Not	1128 Gwen Dr	0.47	8/24/2018	\$187,500	1973	2,040	\$91.91	3/2.5	2-Car	2 Story	Brick/Unfin Bsmt	
Not	1227 Oakridge	1.05	6/11/2017	\$235,000	1980	2,500	\$94.00	4/2.5	2-Car	2 Story	Brk/Prt Fin Bsmt	

Solar	Address	Time	Site	YB	GLA	BR/BA	Park	Other	Total	% Diff	Avg % Diff
Adjoins	1060 Cliff Dr								\$200,500		-2%
Not	1331 W Genessee	-\$3,666	\$10,000	\$14,464	\$10,456	\$10,000	\$10,000		\$211,961	-6%	
Not	1128 Gwen Dr	\$221	\$10,000	-\$2,813	\$5,441				\$200,350	0%	
Not	1227 Oakridge	\$6,073		-\$11,750	-\$29,027				\$200,296	0%	

Next I considered 1040 Cliff Drive as shown below. Comparing to the 1127 Don Wayne Drive, I show no impact. I included 1135 Gwen Drive as a nearby comparable, but it is not a good comparable. According to the broker, Paul Coulter, that home had many recent and significant upgrades that made it superior to similar housing in the neighborhood. It is notably the highest sales price in the neighborhood. I have shown that one but I made no adjustment for those upgrades, but I won't rely on that sale for the matched pairs. This leaves 1127 Don Wayne Drive which shows no impact and 1160 Beth Drive, which had the fewest adjustments shows a 12% premium or enhancement for adjoining the solar farm. I consider the Don Wayne Drive match up to be the better of these two comparables even with a higher number of adjustments.

Adjoining Residential Sales After Solar Farm Built

Solar	Address	Acres	Date Sold	Sales Price	Built	GBA	\$/GBA	BR/BA	Park	Style	Other	Distance
Adjoins	1040 Cliff Dr	1.03	6/29/2017	\$145,600	1960	1,348	\$108.01	3/1.5	3-Car	Ranch	Brick/Wrkshp	255
Not	1127 Don Wayne	0.51	9/23/2019	\$176,900	1974	1,452	\$121.83	3/2	2-Car	Ranch	Brick/Ufin Bsmt	
Not	1135 Gwen Dr	0.43	7/26/2019	\$205,000	1967	1,671	\$122.68	3/2	2-Car	Ranch	Brick/Ufin Bsmt	
Not	1160 Beth Dr	0.46	6/20/2019	\$147,500	1970	1,482	\$99.53	4/1.5	2-Car	Ranch	Brick/Fin Bsmt	

Solar	Address	Time	Site	YB	GLA	BR/BA	Park	Other	Total	% Diff	Avg % Diff
Adjoins	1040 Cliff Dr								\$145,600		1%
Not	1127 Don Wayne	-\$8,110		-\$12,383	-\$10,136	-\$5,000	\$5,000		\$146,271	0%	
Not	1135 Gwen Dr	-\$8,718		-\$7,175	-\$31,701	-\$5,000	\$5,000		\$157,406	-8%	
Not	1160 Beth Dr	-\$5,975		-\$7,375	-\$10,669		\$5,000		\$128,481	12%	

The two matched pairs identified show a range of -2% to +1% based on the average difference for each set of matched pairs. This is a very similar range I have found in most sales adjoining solar farms and strongly supports the assertion that the solar farm is not having a negative impact on adjoining property values.

Conclusion – Indiana and Adjoining States

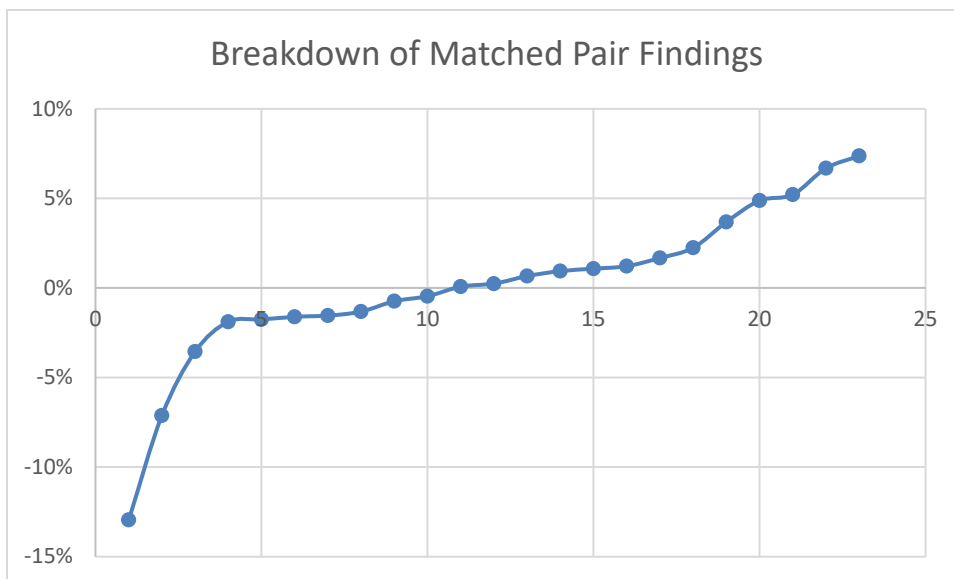
Matched Pair Summary						Adj. Uses By Acreage				1 mile Radius (2010-2020 Data)			
Name	City	State	Acres	MW	Topo Shift	Res	Ag/Res	Ag	Com/Ind	Population	Med. Income	Avg. Housing Unit	
1	DG Amp Piqua	Piqua	OH	86	12.60	2	26%	58%	16%	0%	6,735	\$38,919	\$96,555
2	Portage	Portage	IN	56	2.00	0	19%	0%	81%	0%	6,642	\$65,695	\$186,463
3	Dominion	Indianapolis	IN	134	8.60	20	3%	0%	97%	0%	3,774	\$61,115	\$167,515
4	Crittenden	Crittenden	KY	34	2.70	40	22%	27%	51%	0%	1,419	\$60,198	\$178,643
5	Demille	Lapeer	MI	160	28.40	10	10%	0%	68%	22%	2,010	\$47,208	\$187,214
6	Turrill	Lapeer	MI	230	19.60	10	75%	0%	59%	25%	2,390	\$46,839	\$110,361
Average				117	12.32	14	26%	14%	62%	8%	3,828	\$53,329	\$154,459
Median				110	10.60	10	21%	0%	64%	0%	3082	\$53,703	\$173,079
High				230	28.40	40	75%	58%	97%	25%	6,735	\$65,695	\$187,214
Low				34	2.00	0	3%	0%	16%	0%	1,419	\$38,919	\$96,555

The median income for the population within 1 mile of a solar farm is \$53,703 with a median housing unit value of \$173,079. All of these comparable solar farms have homes within a 1-mile radius under \$200,000 on average, though I have matched pairs in other states over \$1,000,000 in price adjoining large solar farms. The adjoining uses show that residential and agricultural uses are the predominant adjoining uses.

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. While none of these solar farms are of the same scale, these are located in Indiana or adjoining states. I will address larger solar farms in a later section of this report.

Each of these solar farms has adjoining home sales that support a conclusion of no impact on adjoining property values. There are 2 of the 23 matched pairs that suggest a negative impact due to the solar farm and there are 2 of the 23 matched pairs that suggest a positive impact due to the solar farm. That leaves 19 out of 23, or 83% of the findings of no impact on value. This could also be stated as 91% of the matched pairs support a finding of either no impact or a positive impact. The biggest negative impact identified is just an outlier as the buyer’s agent involved in that specific purchase indicated that the solar farm did not have an impact on the purchase price.

The following pages show greater detail on these solar farms and how the 23 matched pairs from these 6 solar farms were established. Below I have shown those findings charted from smallest to largest to show that most of the findings are between +/-5% within typical market variation.



Residential Dwelling Matched Pairs Adjoining Solar Farms

Pair	Solar Farm	City	State	Area	MW	Approx		Date	Adj. Sale		% Diff
						Distance	Tax ID/Address		Sale Price	Price	
1	Portage	Portage	IN	Rural	2	1320	836 N 450 W 336 E 1050 N	Sep-13 Jan-13	\$149,800 \$155,000	\$144,282	4%
2	Grand Ridge	Streator	IL	Rural	20	480	1497 E 21st 712 Columbus	Oct-16 Jun-16	\$186,000 \$166,000	\$184,000	1%
3	Dominion	Indianapolis	IN	Rural	11.9	400	2013249 (Tax ID) 5723 Minden	Dec-15 Nov-16	\$140,000 \$139,900	\$132,700	5%
4	Dominion	Indianapolis	IN	Rural	11.9	400	2013251 (Tax ID) 5910 Mosaic	Sep-17 Aug-16	\$160,000 \$146,000	\$152,190	5%
5	Dominion	Indianapolis	IN	Rural	11.9	400	2013252 (Tax ID) 5836 Sable	May-17 Jun-16	\$147,000 \$141,000	\$136,165	7%
6	Dominion	Indianapolis	IN	Rural	11.9	400	2013258 (Tax ID) 5904 Minden	Dec-15 May-16	\$131,750 \$130,000	\$134,068	-2%
7	Dominion	Indianapolis	IN	Rural	11.9	400	2013260 (Tax ID) 5904 Minden	Mar-15 May-16	\$127,000 \$130,000	\$128,957	-2%
8	Dominion	Indianapolis	IN	Rural	11.9	400	2013261 (Tax ID) 5904 Minden	Feb-14 May-16	\$120,000 \$130,000	\$121,930	-2%
9	Dominion	Indianapolis	IN	Rural	11.9	230	5737 Sable 6006 Jackie	Apr-19 Aug-19	\$172,000 \$178,400	\$171,585	0%
10	Dominion	Indianapolis	IN	Rural	11.9	230	5813 Sable 5834 Jackie	Jan-21 May-21	\$190,645 \$224,000	\$186,368	2%
11	Dominion	Indianapolis	IN	Rural	11.9	410	5909 Sable 6006 Jackie	Jun-19 Aug-19	\$169,900 \$178,400	\$191,899	-13%
12	Demille	Lapeer	MI	Suburban	28	310	1120 Don Wayne 1231 Turrill	Aug-19 Apr-19	\$194,000 \$182,000	\$200,895	-4%
13	Demille	Lapeer	MI	Suburban	28	310	1126 Don Wayne 3565 Garden	May-18 May-19	\$160,000 \$165,000	\$163,016	-2%
14	Demille	Lapeer	MI	Suburban	28	380	1138 Don Wayne 1128 Gwen	Aug-19 Aug-18	\$191,000 \$187,500	\$189,733	1%
15	Demille	Lapeer	MI	Suburban	28	280	1174 Alice 1127 Don Wayne	Jan-19 Sep-19	\$165,000 \$176,900	\$163,443	1%
16	Turrill	Lapeer	MI	Suburban	20	290	1060 Cliff 1128 Gwen	Sep-18 Aug-18	\$200,500 \$187,500	\$200,350	0%
17	Turrill	Lapeer	MI	Suburban	20	255	1040 Cliff 1127 Don Wayne	Jun-17 Sep-19	\$145,600 \$176,900	\$146,271	0%
18	Crittenden	Crittenden	KY	Suburban	2.7	373	250 Claiborne 315 N Fork	Jun-19 May-19	\$120,000 \$107,000	\$120,889	-1%
19	Crittenden	Crittenden	KY	Suburban	2.7	488	300 Claiborne 1795 Bay Valley	Sep-18 Dec-17	\$213,000 \$231,200	\$228,180	-7%
20	Crittenden	Crittenden	KY	Suburban	2.7	720	350 Claiborne 2160 Sherman	Jul-18 Apr-18	\$245,000 \$265,000	\$248,225	-1%
21	Crittenden	Crittenden	KY	Suburban	2.7	930	370 Claiborne 125 Lexington	Aug-19 Apr-18	\$273,000 \$240,000	\$254,751	7%
22	DG Amp	Piqua	OH	Suburban	12.6	155	6060 N Washington 1511 Sweetbriar	Oct-19 Aug-20	\$119,500 \$123,000	\$118,044	1%
23	DG Amp	Piqua	OH	Suburban	12.6	585	1011 Plymouth 1720 Williams	Feb-20 Dec-19	\$113,000 \$119,900	\$111,105	2%

	MW	Avg. Distance	Average	Indicated Impact
Average	13.79	441	Average	0%
Median	11.90	400	Median	0%
High	28.00	1,320	High	7%
Low	2.00	155	Low	-13%

B. Midwest USA Data – Over 5 MW

I have not reshown the data for Ohio, Indiana, and Michigan, but I will include them in the summary for the Midwest data.

7. Matched Pair – Grand Ridge Solar, Streator, IL



This solar farm has a 20 MW output and is located on a 160-acre tract. The project was built in 2012.

I have considered the recent sale of Parcel 13 shown above, which sold in October 2016 after the solar farm was built. I have compared that sale to a number of nearby residential sales not in proximity to the solar farm as shown below. Parcel 13 is 480 feet from the closest solar panel.

Adjoining Residential Sales After Solar Farm Completed

#	TAX ID	Acres	Date Sold	Sales Price	Built	GBA	\$/GBA
13	34-21-237-000	2	Oct-16	\$186,000	1997	2,328	\$79.90

Not Adjoining Residential Sales After Solar Farm Completed

#	TAX ID	Acres	Date Sold	Sales Price	Built	GBA	\$/GBA
712 Columbus Rd	32-39-134-005	1.26	Jun-16	\$166,000	1950	2,100	\$79.05
504 N 2782 Rd	18-13-115-000	2.68	Oct-12	\$154,000	1980	2,800	\$55.00
7720 S Dwight Rd	11-09-300-004	1.14	Nov-16	\$191,000	1919	2,772	\$68.90
701 N 2050th Rd	26-20-105-000	1.97	Aug-13	\$200,000	2000	2,200	\$90.91
9955 E 1600th St	04-13-200-007	1.98	May-13	\$181,858	1991	2,600	\$69.95

TAX ID	Date Sold	Adjustments		
		Time	Total	\$/Sf
34-21-237-000	Oct-16		\$186,000	\$79.90
32-39-134-005	Jun-16		\$166,000	\$79.05
18-13-115-000	Oct-12	\$12,320	\$166,320	\$59.40
11-09-300-004	Nov-16		\$191,000	\$68.90
26-20-105-000	Aug-13	\$12,000	\$212,000	\$96.36
04-13-200-007	May-13	\$10,911	\$192,769	\$74.14

	Adjoins Solar Farm		Not Adjoin Solar Farm	
	Average	Median	Average	Median
Sales Price/SF	\$79.90	\$79.90	\$75.57	\$74.14
GBA	2,328	2,328	2,494	2,600

Based on the matched pairs I find no indication of negative impact due to proximity to the solar farm.

The most similar comparable is the home on Columbus that sold for \$79.05 per square foot. This is higher than the median rate for all of the comparables. Applying that price per square foot to the subject property square footage indicates a value of \$184,000.

Conclusion - Midwest

This is a similar set to the Indiana and adjoining states, but excludes data from Kentucky and includes data from Illinois.

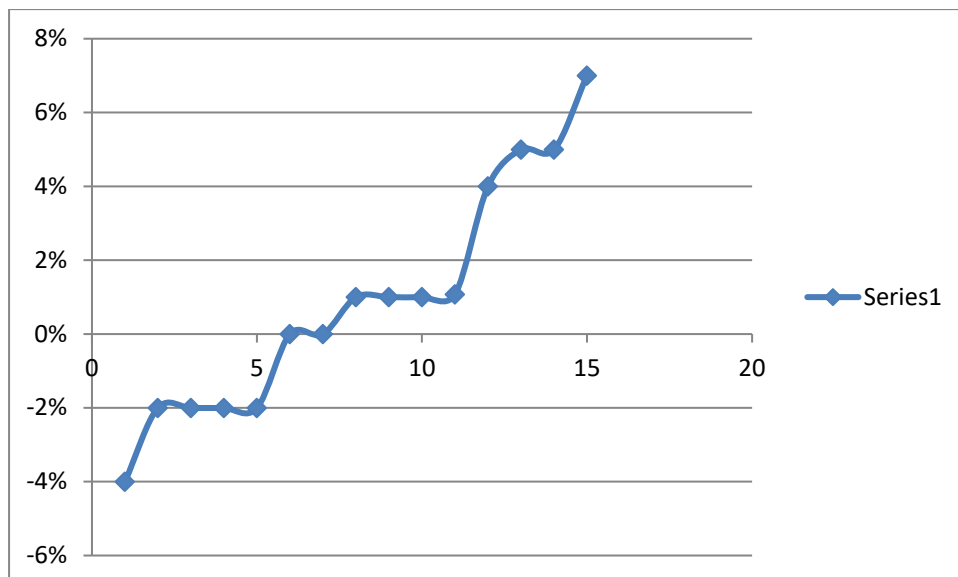
Matched Pair Summary			Adj. Uses By Acreage							1 mile Radius (2010-2020 Data)			
Name	City	State	Acres	MW	Topo Shift	Res	Ag/Res	Ag	Com/Ind	Population	Med. Income	Avg. Housing Unit	
1	DG Amp Piqua	Piqua	OH	86	12.60	2	26%	58%	16%	0%	6,735	\$38,919	\$96,555
2	Portage	Portage	IN	56	2.00	0	19%	0%	81%	0%	6,642	\$65,695	\$186,463
3	Dominion	Indianapolis	IN	134	8.60	20	3%	0%	97%	0%	3,774	\$61,115	\$167,515
5	Demille	Lapeer	MI	160	28.40	10	10%	0%	68%	22%	2,010	\$47,208	\$187,214
6	Turrill	Lapeer	MI	230	19.60	10	75%	0%	59%	25%	2,390	\$46,839	\$110,361
7	Grand Ridge	Streator	IL	160	20.00	1	8%	5%	87%	0%	96	\$70,158	\$187,037
Average				138	15.20	7	23%	11%	68%	8%	3,608	\$54,989	\$155,858
Median				147	16.10	6	15%	0%	75%	0%	3082	\$54,162	\$176,989
High				230	28.40	20	75%	58%	97%	25%	6,735	\$70,158	\$187,214
Low				56	2.00	0	3%	0%	16%	0%	96	\$38,919	\$96,555

The median income for the population within 1 mile of a solar farm is \$54,162 with a median housing unit value of \$176,989. All of these comparable solar farms have homes within a 1-mile radius under \$200,000 on average, though I have matched pairs in other states over \$1,000,000 in price adjoining large solar farms. The adjoining uses show that residential and agricultural uses are the predominant adjoining uses.

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. While none of these solar farms are of the same scale, these are located in the same region. I will address larger solar farms in a later section of this report.

Each of these solar farms has adjoining home sales that support a conclusion of no impact on adjoining property values.

The following pages show greater detail on these solar farms and how the 16 matched pairs from these 6 solar farms were established. In each case I started with three matched pairs to establish a range of potential adjustments as shown on the earlier pages and in the chart I concluded on the matched pair that required the least adjustment. Below I have shown those findings charted from smallest to largest to show that most of the findings are between +/-5% within typical market variation.



Residential Dwelling Matched Pairs Adjoining Solar Farms

Pair	Solar Farm	City	State	Area	MW	Approx		Sale Date	Sale Price	Adj. Sale Price	% Diff
						Distance	Tax ID/Address				
1	Grand Ridge	Streator	IL	Rural	20	480	1497 E 21st 712 Columbus	Oct-16	\$186,000		
2	Portage	Portage	IN	Rural	2	1320	836 N 450 W 336 E 1050 N	Jun-16	\$166,000	\$184,000	1%
3	Dominion	Indianapolis	IN	Rural	8.6	400	2013249 (Tax ID) 5723 Minden	Sep-13	\$149,800	\$144,282	4%
4	Dominion	Indianapolis	IN	Rural	8.6	400	2013251 (Tax ID) 5910 Mosaic	Dec-15	\$140,000	\$132,700	5%
5	Dominion	Indianapolis	IN	Rural	8.6	400	2013252 (Tax ID) 5836 Sable	Sep-17	\$160,000	\$152,190	5%
6	Dominion	Indianapolis	IN	Rural	8.6	400	2013258 (Tax ID) 5904 Minden	Aug-16	\$146,000	\$136,165	7%
7	Dominion	Indianapolis	IN	Rural	8.6	400	2013260 (Tax ID) 5904 Minden	May-17	\$147,000	\$134,068	-2%
8	Dominion	Indianapolis	IN	Rural	8.6	400	2013261 (Tax ID) 5904 Minden	Mar-15	\$127,000	\$128,957	-2%
9	Demille	Lapeer	MI	Suburban	28	310	1120 Don Wayne 1231 Turrill	May-16	\$120,000	\$121,930	-2%
10	Demille	Lapeer	MI	Suburban	28	310	1126 Don Wayne 3565 Garden	Aug-19	\$194,000	\$200,895	-4%
11	Demille	Lapeer	MI	Suburban	28	380	1138 Don Wayne 1128 Gwen	May-18	\$182,000	\$163,016	-2%
12	Demille	Lapeer	MI	Suburban	28	280	1174 Alice 1127 Don Wayne	May-19	\$160,000	\$189,733	1%
13	Turrill	Lapeer	MI	Suburban	20	290	1060 Cliff 1128 Gwen	Jan-19	\$165,000	\$163,443	1%
14	Turrill	Lapeer	MI	Suburban	20	255	1040 Cliff 1127 Don Wayne	Sep-18	\$176,900	\$200,350	0%
15	DG Amp	Piqua	OH	Suburban	12.6	155	6060 N Washington 1511 Sweetbriar	Aug-18	\$200,500	\$146,271	0%
16	DG Amp	Piqua	OH	Suburban	12.6	585	1011 Plymouth	Oct-19	\$119,500	\$118,044	1%

	Avg.			
	MW	Distance		% Dif
Average	15.68	423	Average	1%
Median	12.60	400	Median	1%
High	28.00	1,320	High	7%
Low	2.00	155	Low	-4%

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.

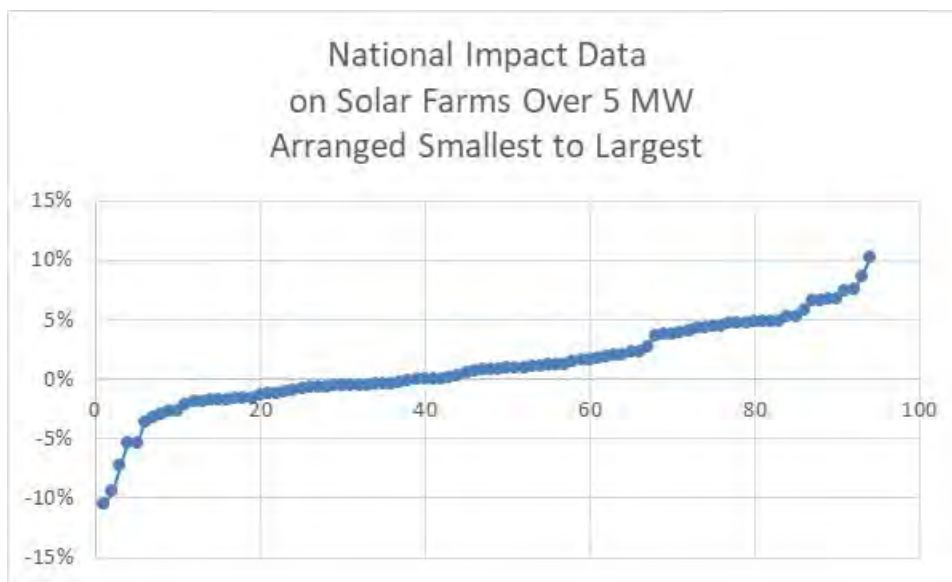
The solar farms summary is shown below with a summary of the matched pair data shown on the following page.

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	Med. Unit	Avg. Housing	
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
Average				362	42.05	32	24%	52%	19%	6%	1,515	\$66,292	\$242,468	
Median				150	17.80	10	16%	59%	7%	0%	560	\$62,384	\$230,848	
High				3,500	617.00	160	98%	98%	94%	44%	7,684	\$120,861	\$515,399	
Low				35	5.00	0	1%	0%	0%	0%	48	\$35,057	\$96,555	

From these 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%.

	MW	Avg. Distance	Indicated Impact
Average	44.80	569	1%
Median	14.00	400	1%
High	617.00	1,950	10%
Low	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	Picure 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
Average				640	76.03		19%	64%	17%	4%	721	\$69,501	\$262,659	
Median				335	29.20		12%	68%	2%	0%	293	\$72,579	\$273,135	
High				3,500	617.00		75%	98%	94%	25%	2,446	\$120,861	\$483,333	
Low				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
Average				1,142	143.19		19%	58%	23%	1%	786	\$73,128	\$289,964	
Median				580	75.00		15%	67%	0%	0%	390	\$69,339	\$279,039	
High				3,500	617.00		41%	97%	94%	3%	2,446	\$120,861	\$483,333	
Low				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		Use by Acre		
				(MW)	Acres			Home	Res	Agri	Ag/R	Com
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									
				Average	111.80	1422.4	968.4	1031	263	10%	62%	22%	6%
				Median	80.00	914.5	646.0	836	188	7%	64%	17%	0%
				High	1000.00	9661.2	4813.5	5210	1790	58%	100%	100%	70%
				Low	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, 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. Scope of Research

I have researched over 800 solar farms and sites on which solar farms are existing and proposed in Indiana, Ohio, Virginia, Illinois, Tennessee, North Carolina, Kentucky as well as other states to determine what uses are typically found in proximity with a solar farm. The data I have collected and provide in this report strongly supports the assertion that solar farms are having no negative consequences on adjoining agricultural and residential values.

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

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

Res = Residential, Ag = Agriculture, Com = Commercial

Total Solar Farms Considered: 705

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

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

Res = Residential, Ag = Agriculture, Com = Commercial

Total Solar Farms Considered: 705

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

X. Specific Factors Related To Impacts on Value

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

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

1. Hazardous material

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

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

2. Odor

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

3. Noise

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

XI. Conclusion

The matched pair analysis shows no negative impact in home values due to abutting or adjoining a solar farm as well as no impact to abutting or adjacent vacant residential or agricultural land. The criteria that typically correlates with downward adjustments on property values such as noise, odor, and traffic all support a finding of no impact on property value.

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

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

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.



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Professional Experience

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

Professional Affiliations

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

Education

Bachelor of Arts in English , University of North Carolina, Chapel Hill	1993
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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	2012
Supervisors/Trainees	2011
Rates and Ratios: Making sense of GIMs, OARs, and DCFs	2011
Advanced Internet Search Strategies	2011
Analyzing Distressed Real Estate	2011
Uniform Standards of Professional Appraisal Practice Update	2011
Business Practices and Ethics	2011
Appraisal Curriculum Overview (2 Days – General)	2009
Appraisal Review - General	2009
Uniform Standards of Professional Appraisal Practice Update	2008
Subdivision Valuation: A Comprehensive Guide	2008
Office Building Valuation: A Contemporary Perspective	2008
Valuation of Detrimental Conditions in Real Estate	2007
The Appraisal of Small Subdivisions	2007
Uniform Standards of Professional Appraisal Practice Update	2006
Evaluating Commercial Construction	2005
Conservation Easements	2005
Uniform Standards of Professional Appraisal Practice Update	2004
Condemnation Appraising	2004
Land Valuation Adjustment Procedures	2004
Supporting Capitalization Rates	2004
Uniform Standards of Professional Appraisal Practice, C	2002
Wells and Septic Systems and Wastewater Irrigation Systems	2002
Appraisals 2002	2002
Analyzing Commercial Lease Clauses	2002
Conservation Easements	2000
Preparation for Litigation	2000
Appraisal of Nonconforming Uses	2000
Advanced Applications	2000
Highest and Best Use and Market Analysis	1999
Advanced Sales Comparison and Cost Approaches	1999
Advanced Income Capitalization	1998
Valuation of Detrimental Conditions in Real Estate	1999
Report Writing and Valuation Analysis	1999
Property Tax Values and Appeals	1997
Uniform Standards of Professional Appraisal Practice, A & B	1997
Basic Income Capitalization	1996