

EXHIBIT L: PROPERTY VALUE IMPACT STUDY (BY OTHERS)

CONFIDENTIAL



Kirkland Appraisals, LLC

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

January 8, 2024

Soyoung Park
Samsung C&T Renewables, LLC
707 Skokie Blvd
Northbrook, IL 60062

RE: Carina Solar, near Columbus, Bartholomew County, Indiana

Soyoung Park

At your request, we have considered the impact of a 100 MW solar farm proposed to be constructed on a 785-acre portion of a 1,945-acre assemblage near Columbus, Bartholomew County, Indiana. Specifically, we have been asked to give my professional opinion on whether the proposed solar will or will not be injurious to or diminish the use, value and enjoyment of other property in the immediate vicinity for the purposes already permitted as well as whether or not it will impede the normal and orderly development and improvements of surrounding property for uses permitted by right in the zoning districts of surrounding property.

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 Samsung C&T Renewables, LLC, represented to me by Soyoung Park. My findings support the application. The effective date of this consultation is January 8, 2024.

I. Conclusion

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.

The adjoining properties have sufficient setbacks from the proposed solar panels and supplemental vegetation is proposed to enhance the areas with screening where the existing trees are insufficient to provide a proper screen. The distances and landscaping buffers indicated for this project are well supported by the market data as sufficient for protecting adjoining property values. I therefore conclude that the project as presented will not have a negative impact on adjoining property values.

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.

The data that I have researched includes new home construction as well as new subdivision development adjoining solar farms which speaks to a finding of no impact on adjoining uses.

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 farming operations, protection from light pollution at night, it is quiet, and there is minimal traffic.

If you have any questions, please let me know.

Sincerely,



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

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III. Proposed Project and Adjoining Uses

Proposed Use Description

This 100 MW solar farm is proposed to be constructed on a 785-acre portion of a 1,945-acre assemblage near Columbus, Bartholomew County, Indiana.

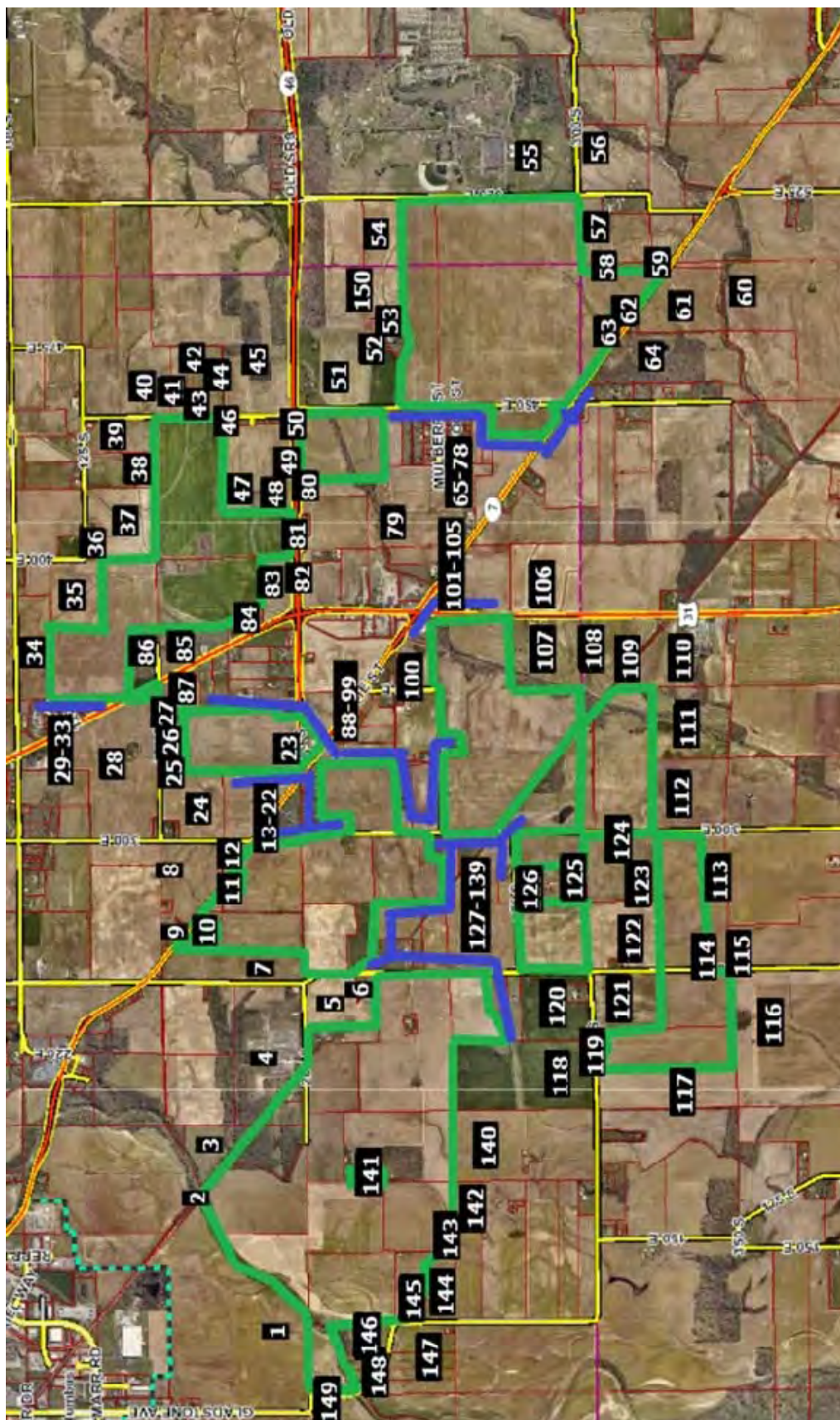
Adjoining Properties

I have considered adjoining uses and included a map to identify each parcel's location. The closest adjoining home will be at least 500 feet from the closest solar panel. The closest structure identified is associated with St. Paul Lutheran Preschool at 255 feet. The average distance to adjoining homes and church buildings is 788 feet. 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	15.49%	67.33%
Agricultural	63.73%	25.33%
Park	10.40%	0.67%
Agri/Res	7.73%	3.33%
Religious	0.11%	1.33%
Utility	2.31%	0.67%
Commercial	0.22%	1.33%
Total	100.00%	100.00%

GIS/Tax Map of Adjoining Parcels



Surrounding Uses

#	MAP ID	Owner	GIS Data		Adjoin	Adjoin	Distance (ft)
			Acres	Present Use	Acres	Parcels	Home/Panel
1	03-96-32-000-000.700-004	Burbrink	168.85	Agricultural	4.97%	0.67%	N/A
2	03-96-32-000-001.100-004	US Railroad	5.74	Residential	0.17%	0.67%	N/A
3	03-96-32-000-000.900-004	Rediker	21.60	Agricultural	0.64%	0.67%	N/A
4	03-96-33-000-002.900-004	Public	78.49	Utility	2.31%	0.67%	N/A
5	03-86-04-000-000.500-004	Vinson	29.09	Agricultural	0.86%	0.67%	N/A
6	03-86-04-000-000.501-004	schuff	2.75	Residential	0.08%	0.67%	605
7	03-96-33-000-003.200-004	Bolte	38.75	Agricultural	1.14%	0.67%	N/A
8	03-96-33-000-003.500-004	Burbrink	37.94	Agricultural	1.12%	0.67%	N/A
9	03-96-33-000-003.501-004	Carmichael	1.70	Residential	0.05%	0.67%	1,575
10	03-96-33-000-003.301-004	Schudder	3.06	Residential	0.09%	0.67%	1,275
11	03-96-33-000-003.401-004	Hackman	2.71	Residential	0.08%	0.67%	570
12	03-96-33-000-003.402-004	Burbri nk	5.47	Residential	0.16%	0.67%	N/A
13	03-96-33-000-003.800-004	St Pauls	0.27	Religious	0.01%	0.67%	255
14	03-96-34-000-001.801-004	St Pauls	3.56	Religious	0.10%	0.67%	300
15	03-86-03-000-002.302-004	Dow	1.67	Residential	0.05%	0.67%	N/A
16	03-86-03-000-002.306-004	St Pauls	1.82	Residential	0.05%	0.67%	N/A
17	03-86-03-000-002.307-004	St Pauls	1.81	Residential	0.05%	0.67%	N/A
18	03-86-03-000-002.303-004	Dow	1.67	Residential	0.05%	0.67%	550
19	03-86-03-000-002.304-004	Wood	1.68	Residential	0.05%	0.67%	555
20	03-86-03-000-002.305-004	Perkinson	1.68	Residential	0.05%	0.67%	565
21	03-86-03-000-002.301-004	Tirmenstein	3.41	Residential	0.10%	0.67%	715
22	03-96-34-000-001.704-004	Hackman	28.66	Agricultural	0.84%	0.67%	N/A
23	03-96-34-000-002.001-004	Schnur	1.55	Residential	0.05%	0.67%	580
24	03-96-34-000-001.700-004	Pollert	33.03	Agricultural	0.97%	0.67%	N/A
25	03-96-34-000-002.100-004	Potter	3.00	Residential	0.09%	0.67%	1,065
26	03-96-34-000-002.200-004	Potter	5.00	Residential	0.15%	0.67%	1,015
27	03-96-34-000-002.201-004	Potter	4.11	Residential	0.12%	0.67%	800
28	03-96-34-000-001.500-004	Reid	86.80	Agricultural	2.56%	0.67%	N/A
29	03-96-34-240-000.100-004	Siegelin	1.93	Residential	0.06%	0.67%	595
30	03-96-34-210-002.500-004	Siegelin	1.93	Residential	0.06%	0.67%	N/A
31	03-96-34-210-003.300-004	Hendrick	0.49	Residential	0.01%	0.67%	670
32	03-96-34-210-001.900-004	Lovins	0.29	Residential	0.01%	0.67%	755
33	03-96-34-210-000.700-004	Kirk	0.53	Residential	0.02%	0.67%	845
34	03-96-34-000-000.600-004	Weimeier	29.96	Agricultural	0.88%	0.67%	N/A
35	03-96-34-000-000.300-004	Three Grandsons	30.02	Agricultural	0.88%	0.67%	N/A
36	03-96-35-000-000.901-004	Hammitt	4.96	Residential	0.15%	0.67%	1,110
37	03-96-35-000-000.900-004	Mace	35.39	Agricultural	1.04%	0.67%	N/A
38	03-96-35-000-001.000-004	Mace	10.41	Residential	0.31%	0.67%	N/A
39	03-96-35-000-001.300-004	Fischer	19.07	Residential	0.56%	0.67%	N/A

Surrounding Uses

#	MAP ID	Owner	GIS Data		Adjoin	Adjoin	Distance (ft)
			Acres	Present Use	Acres	Parcels	Home/Panel
40	03-96-35-000-002.501-004	Fischer	61.20	Agricultural	1.80%	0.67%	N/A
41	03-96-35-000-002.501-004	Fischer	10.16	Residential	0.30%	0.67%	N/A
42	03-96-35-000-002.600-004	Arnholt	8.83	Residential	0.26%	0.67%	N/A
43	03-96-35-000-002.601-004	Rocker	1.00	Residential	0.03%	0.67%	535
44	03-96-35-000-002.700-004	Arnholt	10.02	Residential	0.30%	0.67%	N/A
45	03-96-35-000-002.800-004	Kloppel	116.22	Agricultural	3.42%	0.67%	N/A
46	03-96-35-000-002.400-004	Louden	0.80	Residential	0.02%	0.67%	615
47	03-96-35-000-001.500-004	Psalm 145	42.16	Agricultural	1.24%	0.67%	N/A
48	03-96-35-000-001.502-004	Arnholt	5.62	Residential	0.17%	0.67%	580
49	03-96-35-000-001.501-004	Indiana	3.66	Residential	0.11%	0.67%	N/A
50	03-86-02-000-002.100-004	Indiana	0.36	Residential	0.01%	0.67%	N/A
51	03-86-02-000-000.103-004	CCH Farms	92.84	Agricultural	2.73%	0.67%	N/A
52	03-86-02-000-000.101-004	Sims	2.97	Residential	0.09%	0.67%	890
53	03-86-02-000-000.102-004	Sims	7.65	Residential	0.23%	0.67%	540
54	03-86-01-000-000.802-017	CCH Farms	20.93	Agricultural	0.62%	0.67%	N/A
55	03-86-01-000-000.700-017	Cummins	353.18	Park	10.40%	0.67%	N/A
56	03-86-12-000-000.500-018	Morrisson	39.84	Agri/Res	1.17%	0.67%	1,360
57	03-86-12-000-000.600-018	Arnholt	195.25	Agricultural	5.75%	0.67%	N/A
58	03-86-11-000-000.190-018	Arnholt	3.52	Residential	0.10%	0.67%	N/A
59	03-86-11-000-001.800-018	Arnholt	0.84	Residential	0.02%	0.67%	N/A
60	03-86-11-000-001.700-018	Arnholt	120.27	Agricultural	3.54%	0.67%	N/A
61	03-86-11-000-000.200-018	Arnholt	38.24	Agricultural	1.13%	0.67%	N/A
62	03-86-11-000-000.100-018	Blair	1.51	Residential	0.04%	0.67%	805
63	03-86-11-000-000.400-018	Guernsey	3.00	Residential	0.09%	0.67%	660
64	03-86-11-000-000.500-018	Deweese	56.81	Agri/Res	1.67%	0.67%	990
65	03-86-11-000-000.901-018	Harris	2.28	Residential	0.07%	0.67%	330
66	03-86-02-000-001.900-004	Harris	0.72	Residential	0.02%	0.67%	N/A
67	03-86-02-000-001.800-004	Davis	2.12	Residential	0.06%	0.67%	465
68	03-86-02-000-001.300-004	Daily	0.45	Residential	0.01%	0.67%	N/A
69	03-86-02-000-001.200-004	Daily	15.64	Residential	0.46%	0.67%	N/A
70	03-86-02-000-001.100-004	Kaur	5.00	Residential	0.15%	0.67%	565
71	03-86-02-000-001.000-004	Louden	5.00	Residential	0.15%	0.67%	555
72	03-86-02-310-001.900-004	Newland	0.70	Residential	0.02%	0.67%	530
73	03-86-02-310-001.800-004	Rudicel	0.70	Residential	0.02%	0.67%	525
74	03-86-02-310-000.100-004	Condra	0.70	Residential	0.02%	0.67%	535
75	03-86-02-240-000.100-004	Little	0.70	Residential	0.02%	0.67%	565
76	03-86-02-000-000.900-004	Chapman	5.00	Residential	0.15%	0.67%	1,060
77	03-86-02-000-000.800-004	Knotts	5.00	Residential	0.15%	0.67%	705
78	03-86-02-000-000.700-004	Minor	8.01	Residential	0.24%	0.67%	975

Surrounding Uses

#	MAP ID	Owner	GIS Data		Adjoin	Adjoin	Distance (ft)
			Acres	Present Use	Acres	Parcels	Home/Panel
79	03-86-02-000-000.600-004	Arnholt	78.57	Agri/Res	2.31%	0.67%	2,390
80	03-86-02-000-002.200-004	Indiana	0.47	Residential	0.01%	0.67%	N/A
81	03-96-35-000-001.401-004	Indiana	1.34	Residential	0.04%	0.67%	N/A
82	03-96-35-000-001.401-004	Indiana	1.34	Residential	0.04%	0.67%	N/A
83	03-96-34-000-003.000-004	Meyer	15.20	Residential	0.45%	0.67%	N/A
84	03-96-34-000-003.103-004	Crider	5.50	Residential	0.16%	0.67%	505
85	03-96-34-000-003.200-004	Taylor	18.02	Residential	0.53%	0.67%	670
86	03-96-34-000-000.500-004	Williamson	11.76	Residential	0.35%	0.67%	520
87	03-96-34-000-000.400-004	Smith	75.45	Agricultural	2.22%	0.67%	N/A
88	03-96-34-000-000.400-004	Page	10.98	Residential	0.32%	0.67%	N/A
89	03-96-34-000-002.301-004	Shoaf	6.53	Residential	0.19%	0.67%	930
90	03-96-34-000-002.400-004	Shoaf	6.78	Residential	0.20%	0.67%	1,005
91	03-96-34-000-002.500-004	Route 3	4.79	Residential	0.14%	0.67%	N/A
92	03-96-34-000-001.900-004	Route 3	1.34	Residential	0.04%	0.67%	550
93	03-86-03-000-001.400-004	Sullivan	10.67	Residential	0.31%	0.67%	N/A
94	03-86-03-000-002.101-004	Zurbrugg	11.21	Residential	0.33%	0.67%	N/A
95	03-86-03-000-002.401-004	Shumaker	4.00	Residential	0.12%	0.67%	555
96	03-86-03-000-002.400-004	Redmon	4.88	Residential	0.14%	0.67%	605
97	03-86-03-000-002.402-004	Arnholt	16.62	Residential	0.49%	0.67%	N/A
98	03-86-03-000-002.102-004	Sullivan	2.08	Residential	0.06%	0.67%	660
99	03-86-03-000-002.501-004	Murphy	3.17	Residential	0.09%	0.67%	565
100	03-86-03-000-001.800-004	Sullivan	14.47	Residential	0.43%	0.67%	N/A
101	03-86-03-000-001.900-004	Jtt Ind	5.65	Commercial	0.17%	0.67%	N/A
102	03-86-03-000-002.000-004	Lovelace RS	1.17	Residential	0.03%	0.67%	N/A
103	03-86-03-000-002.800-004	S&H Petroleum	1.73	Commercial	0.05%	0.67%	N/A
104	03-86-03-000-002.900-004	Arnholt	30.02	Agricultural	0.88%	0.67%	N/A
105	03-86-03-000-003.000-004	Lodwig-yeley	1.19	Residential	0.04%	0.67%	1,195
106	03-86-03-000-003.200-004	Nolting	40.94	Agricultural	1.21%	0.67%	N/A
107	03-86-03-000-002.700-004	Whipker	40.56	Agri/Res	1.19%	0.67%	1,500
108	03-86-10-000-000.300-018	Whipker	38.00	Agricultural	1.12%	0.67%	N/A
109	03-86-10-000-001.900-018	State of Imd	2.82	Residential	0.08%	0.67%	N/A
110	03-86-10-000-001.300-018	Whipker	46.73	Agri/Res	1.38%	0.67%	2,215
111	03-86-10-000-000.600-018	Whipker	44.50	Agricultural	1.31%	0.67%	N/A
112	03-86-10-000-000.700-018	Weichman	42.15	Agricultural	1.24%	0.67%	N/A
113	03-86-09-000-000.400-018	Wischmeier	26.41	Agricultural	0.78%	0.67%	N/A
114	03-86-09-000-000.301-018	Estes	1.55	Residential	0.05%	0.67%	545
115	03-86-09-000-001.000-018	Roxbury	3.00	Residential	0.09%	0.67%	560
116	03-86-09-000-000.900-018	Kinney Partners	155.18	Agricultural	4.57%	0.67%	N/A
117	03-86-09-000-000.800-018	Nolting	46.16	Agricultural	1.36%	0.67%	N/A

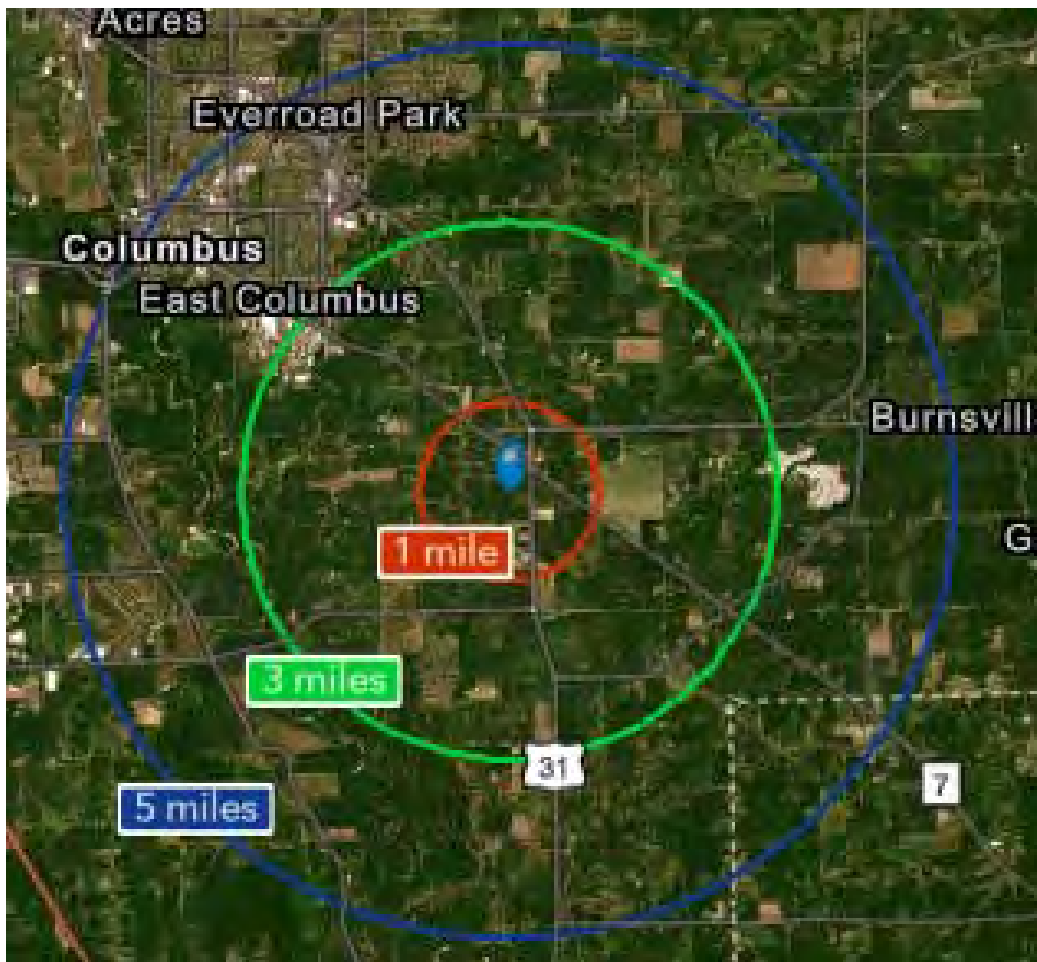
Surrounding Uses

#	MAP ID	Owner	GIS Data		Adjoin	Adjoin	Distance (ft)
			Acres	Present Use	Acres	Parcels	Home/Panel
118	03-86-04-000-000.900-004	Forester	79.15	Agricultural	2.33%	0.67%	N/A
119	03-86-09-000-000.701-018	Daily	1.00	Residential	0.03%	0.67%	N/A
120	03-86-04-000-001.000-004	Sunny	36.19	Agricultural	1.07%	0.67%	N/A
121	03-86-09-000-000.600-018	Sunny	33.05	Agricultural	0.97%	0.67%	N/A
122	03-86-09-000-000.200-018	Sunny	38.54	Agricultural	1.13%	0.67%	N/A
123	03-86-09-000-000.100-018	Haasfurder	36.78	Agricultural	1.08%	0.67%	N/A
124	03-86-09-000-000.101-018	Rager	3.00	Residential	0.09%	0.67%	540
125	03-86-04-000-001.400-004	Meyer	14.71	Residential	0.43%	0.67%	N/A
126	03-86-04-000-001.401-004	Barr	3.89	Residential	0.11%	0.67%	585
127	03-86-04-000-001.301-004	Wischmeier	4.61	Residential	0.14%	0.67%	640
128	03-86-04-000-001.200-004	Fiesbeck	39.71	Agricultural	1.17%	0.67%	N/A
129	03-86-03-000-002.600-004	Goodwin	37.17	Agricultural	1.09%	0.67%	N/A
130	03-86-04-000-000.201-004	Bay	6.01	Residential	0.18%	0.67%	545
131	03-86-04-000-000.202-004	Bay	6.51	Residential	0.19%	0.67%	N/A
132	03-86-04-000-000.203-004	Arnholt	2.29	Residential	0.07%	0.67%	540
133	03-86-04-000-000.300-004	Maetzloff	13.49	Residential	0.40%	0.67%	N/A
134	03-86-04-000-000.301-004	Metzloff	16.68	Residential	0.49%	0.67%	1,130
135	03-86-04-000-000.402-004	Schuff	11.80	Residential	0.35%	0.67%	N/A
136	03-86-04-000-000.401-004	Schuff	1.10	Residential	0.03%	0.67%	N/A
137	03-86-04-000-001.302-004	Napier	10.02	Residential	0.30%	0.67%	870
138	03-86-04-000-000.803-004	Scott	6.99	Residential	0.21%	0.67%	650
139	03-86-04-000-000.804-004	Knapp	6.98	Residential	0.21%	0.67%	735
140	03-86-05-000-001.305-004	Forester	79.61	Agricultural	2.34%	0.67%	N/A
141	03-86-05-000-000.204-004	Steinker	2.60	Residential	0.08%	0.67%	500
142	03-86-05-000-001.401-004	Meyer	29.97	Agricultural	0.88%	0.67%	N/A
143	03-86-05-000-000.290-004	South	0.88	Residential	0.03%	0.67%	N/A
144	03-86-05-000-001.400-004	Adkins	16.40	Residential	0.48%	0.67%	2,100
145	03-86-05-000-000.400-004	Foist	3.92	Residential	0.12%	0.67%	N/A
146	03-86-05-000-000.500-004	Stienker	3.92	Residential	0.12%	0.67%	N/A
147	03-86-05-000-000.602-004	Dkj Dudley	28.05	Agricultural	0.83%	0.67%	N/A
148	03-86-05-000-000.900-004	Dkj Dudley	9.80	Residential	0.29%	0.67%	N/A
149	03-86-05-000-000.790-004	Dudley	1.75	Residential	0.05%	0.67%	N/A
150	03-86-02-000-000.104-004	CCH Farms	16.49	Residential	0.49%	0.67%	N/A
Total			3395.737		100.00%	100.00%	788

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.

The population within the 1-mile ring has been in decline and projected to drop further, while the 3-mile and 5-mile rings show modest growth most likely focused on the portions of the rings within Columbus.





Housing Profile

47201
 47201, Columbus, Indiana
 Ring: 1 mile radius

Prepared by Esri
 Latitude: 39.16299
 Longitude: -85.04613

Population		Households	
2020 Total Population	285	2023 Median Household Income	\$73,763
2023 Total Population	275	2028 Median Household Income	\$89,655
2028 Total Population	270	2023-2028 Annual Rate	3.98%
2023-2028 Annual Rate	-0.37%		

Housing Units by Occupancy Status and Tenure	Census 2020		2023		2028	
	Number	Percent	Number	Percent	Number	Percent
Total Housing Units	103	100.0%	103	100.0%	103	100.0%
Occupied	86	83.5%	88	85.4%	87	84.5%
Owner	65	63.1%	66	64.1%	66	64.1%
Renter	21	20.4%	22	21.4%	21	20.4%
Vacant	11	10.7%	15	14.6%	16	15.5%

Owner Occupied Housing Units by Value	2023		2028	
	Number	Percent	Number	Percent
Total	65	100.0%	67	100.0%
<\$50,000	2	3.1%	0	0.0%
\$50,000-\$99,999	2	3.1%	0	0.0%
\$100,000-\$149,999	2	3.1%	1	1.5%
\$150,000-\$199,999	23	35.4%	12	17.9%
\$200,000-\$249,999	3	4.6%	3	4.5%
\$250,000-\$299,999	6	9.2%	6	9.0%
\$300,000-\$399,999	23	35.4%	37	55.2%
\$400,000-\$499,999	2	3.1%	3	4.5%
\$500,000-\$749,999	0	0.0%	0	0.0%
\$750,000-\$999,999	2	3.1%	4	6.0%
\$1,000,000-\$1,499,999	0	0.0%	0	0.0%
\$1,500,000-\$1,999,999	0	0.0%	1	1.5%
\$2,000,000+	0	0.0%	0	0.0%
Median Value		\$254,167		\$331,081
Average Value		\$269,231		\$359,701

Census 2020 Housing Units	Number	Percent
Total	103	100.0%
Housing Units In Urbanized Areas	34	33.0%
Rural Housing Units	69	67.0%

Census 2020 Owner Occupied Housing Units by Mortgage Status	Number	Percent
Total	65	100.0%
Owned with a Mortgage/Loan	39	60.0%
Owned Free and Clear	26	40.0%

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

December 21, 2023



Housing Profile

47201
47201, Columbus, Indiana
Ring: 3 mile radius

Prepared by Esri
Latitude: 39.16299
Longitude: -85.04613

Population		Households	
2020 Total Population	4,030	2023 Median Household Income	\$70,650
2023 Total Population	4,065	2028 Median Household Income	\$80,846
2028 Total Population	4,088	2023-2028 Annual Rate	2.73%
2023-2028 Annual Rate	0.11%		

Housing Units by Occupancy Status and Tenure	Census 2020		2023		2028	
	Number	Percent	Number	Percent	Number	Percent
Total Housing Units	1,741	100.0%	1,767	100.0%	1,783	100.0%
Occupied	1,579	90.7%	1,612	91.2%	1,633	91.6%
Owner	1,118	64.2%	1,077	61.0%	1,088	61.0%
Renter	461	26.5%	535	30.3%	545	30.6%
Vacant	153	8.8%	155	8.8%	149	8.4%

Owner Occupied Housing Units by Value	2023		2028	
	Number	Percent	Number	Percent
Total	1,075	100.0%	1,087	100.0%
<\$50,000	46	4.3%	29	2.7%
\$50,000-\$99,999	39	3.6%	10	0.9%
\$100,000-\$149,999	57	5.3%	14	1.3%
\$150,000-\$199,999	361	33.6%	222	20.4%
\$200,000-\$249,999	98	9.1%	91	8.4%
\$250,000-\$299,999	85	7.9%	88	8.1%
\$300,000-\$399,999	315	29.3%	509	46.8%
\$400,000-\$499,999	52	4.8%	83	7.6%
\$500,000-\$749,999	3	0.3%	1	0.1%
\$750,000-\$999,999	16	1.5%	24	2.2%
\$1,000,000-\$1,499,999	0	0.0%	0	0.0%
\$1,500,000-\$1,999,999	3	0.3%	16	1.5%
\$2,000,000+	0	0.0%	0	0.0%
Median Value		\$217,602		\$317,583
Average Value		\$255,419		\$323,712

Census 2020 Housing Units	Number	Percent
Total	1,741	100.0%
Housing Units In Urbanized Areas	596	34.2%
Rural Housing Units	1,145	65.8%

Census 2020 Owner Occupied Housing Units by Mortgage Status	Number	Percent
Total	1,118	100.0%
Owned with a Mortgage/Loan	707	63.2%
Owned Free and Clear	411	36.8%

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

December 21, 2023



Housing Profile

47201
 47201, Columbus, Indiana
 Ring: 5 mile radius

Prepared by Esri
 Latitude: 39.16299
 Longitude: -85.04613

Population		Households	
2020 Total Population	28,396	2023 Median Household Income	\$59,743
2023 Total Population	28,843	2028 Median Household Income	\$68,457
2028 Total Population	29,465	2023-2028 Annual Rate	2.76%
2023-2028 Annual Rate	0.43%		

Housing Units by Occupancy Status and Tenure	Census 2020		2023		2028	
	Number	Percent	Number	Percent	Number	Percent
Total Housing Units	13,228	100.0%	13,448	100.0%	13,741	100.0%
Occupied	12,141	91.8%	12,421	92.4%	12,755	92.8%
Owner	6,704	50.7%	7,508	55.8%	7,750	56.4%
Renter	5,437	41.1%	4,913	36.5%	5,005	36.4%
Vacant	1,087	8.2%	1,027	7.6%	986	7.2%

Owner Occupied Housing Units by Value	2023		2028	
	Number	Percent	Number	Percent
Total	7,508	100.0%	7,749	100.0%
<\$50,000	416	5.5%	309	4.0%
\$50,000-\$99,999	616	8.2%	335	4.3%
\$100,000-\$149,999	1,027	13.7%	769	9.9%
\$150,000-\$199,999	2,600	34.6%	2,299	29.7%
\$200,000-\$249,999	837	11.1%	977	12.6%
\$250,000-\$299,999	640	8.5%	885	11.4%
\$300,000-\$399,999	839	11.2%	1,325	17.1%
\$400,000-\$499,999	224	3.0%	368	4.7%
\$500,000-\$749,999	190	2.5%	233	3.0%
\$750,000-\$999,999	41	0.5%	59	0.8%
\$1,000,000-\$1,499,999	2	0.0%	2	0.0%
\$1,500,000-\$1,999,999	43	0.6%	137	1.8%
\$2,000,000+	33	0.4%	51	0.7%
Median Value	\$182,596		\$208,316	
Average Value	\$227,141		\$281,081	

Census 2020 Housing Units	Number	Percent
Total	13,228	100.0%
Housing Units In Urbanized Areas	10,440	78.9%
Rural Housing Units	2,788	21.1%

Census 2020 Owner Occupied Housing Units by Mortgage Status	Number	Percent
Total	6,704	100.0%
Owned with a Mortgage/Loan	4,441	66.2%
Owned Free and Clear	2,263	33.8%

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

IV. Methodology and Discussion of Issues

Standards and Methodology

I conducted this analysis using the standards and practices established by the Appraisal Institute and that conform to the Uniform Standards of Professional Appraisal Practice. The analyses and methodologies contained in this report are accepted by all major lending institutions, and they are used in 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 based on numerous noise studies and personal inspection of hundreds of solar farm sites. They make even less noise 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.

Market Imperfection

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

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

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

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

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

Relative Solar Farm Sizes

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

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

We have researched projects up to 1,000 MW and we have significant amounts of data adjoining a 617 MW project in Spotsylvania VA that was of great concern to neighbors when it was proposed, but home values have rapidly increased adjoining the solar farm since it was installed and new home development adjoining that project has approached closer to the solar farm including the most recent section that has solar panels on three sides where homes are being sold for over \$700,000



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

Steps Involved in the Analysis

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

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

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

V. Research on Solar Farms

A. *Appraisal Market Studies*

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Donald Fisher, ARA, 2021

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

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

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

Conclusion of Impact Studies

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

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

B. Articles

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

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

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

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

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

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

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

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

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

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

North Carolina Sustainable Energy Association: NC Solar and Agriculture, April 2017

This paper addresses specific impacts of solar energy development and agricultural uses and best practices for mitigating impacts to the land. This paper projects that by 2030 as much as 5% of the NC’s energy could come from solar and that it would only occupy 0.6% of the state’s total agricultural land. It further discusses dual agricultural and solar use of the land in the form of agri-voltaics. This article includes 101 Endnotes and citations to other studies.

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.

Massachusetts Department of Energy Resources, Department of Environmental Protection, Clean Energy Center: Clean Energy Results, June 2015

This is a collection of research on a variety of solar farm topics. Much like the NCSU White Paper this addresses multiple questions about hazardous materials, EMFs and decommissioning with cited studies and resources throughout.

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 multiple brokers within this report including brokers from Indiana, Kentucky, Virginia, Tennessee, and North Carolina.

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

VI. University Studies

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

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

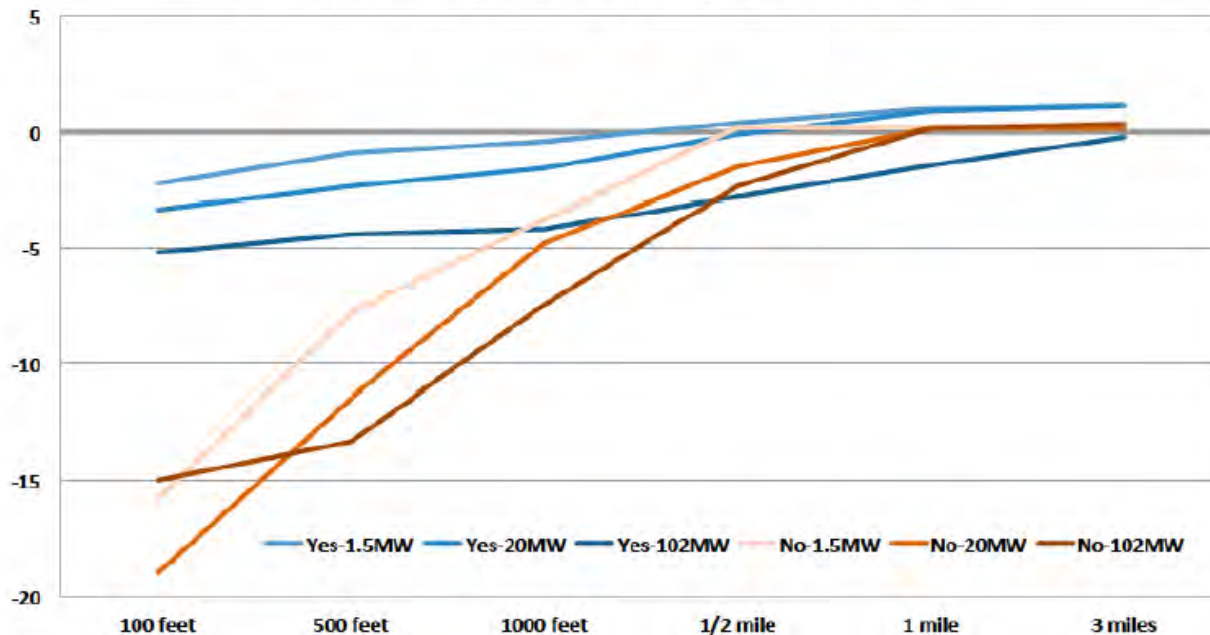
This study considers solar farms from two angles. First it looks at where solar farms are being located and concludes that they are being located primarily in low density residential areas where there are fewer homes than in urban or suburban areas.

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

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

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

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



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

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

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

B. University of Rhode Island, September 2020

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

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

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

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

Where they did find negative impacts was in high population density areas that was largely a factor of running the study in Massachusetts and Rhode Island which the study specifically cites as being the 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 Township of Columbus of Batholomew County. Township of Columbus has a population of 52,601 for 2023 based on HomeTownLocator which uses the US Census data and a total area of 55.02 square miles. This indicates a population density of 956 people per square mile which puts this well below the 2,000 people per square mile 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.

Township Of Columbus Data & Demographics (As of July 1, 2023)

POPULATION		HOUSING	
Total Population	52,601 (100%)	Total HU (Housing Units)	23,061 (100%)
Population in Households	51,410 (97.7%)	Owner Occupied HU	14,062 (61.0%)
Population in Families	40,663 (77.3%)	Renter Occupied HU	7,388 (32.0%)
Population in Group Quarters ¹	1,191 (2.3%)	Vacant Housing Units	1,613 (7.0%)
Population Density	956	Median Home Value	\$201,545
Diversity Index ²	54	Average Home Value	\$248,537
		Housing Affordability Index ³	151

INCOME		HOUSEHOLDS	
Median Household Income	\$74,408	Total Households	21,448
Average Household Income	\$103,891	Average Household Size	2.4000000000
% of Income for Mortgage ⁴	16%	Family Households	13,597
Per Capita Income	\$42,403	Average Family Size	3
Wealth Index ⁵	94		

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

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

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

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

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

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

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

1. Are there different aspects that affect resident satisfaction regarding solar farms?
2. Are there variations in satisfaction for residents among different geographic settings, e.g. neighborhoods adjacent to the solar farms or distances from the solar farms?

- How can insight from both the utility and planning sectors, combined with knowledge gained from residents, fill gaps in communication and policy writing in regard to solar farms?

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

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

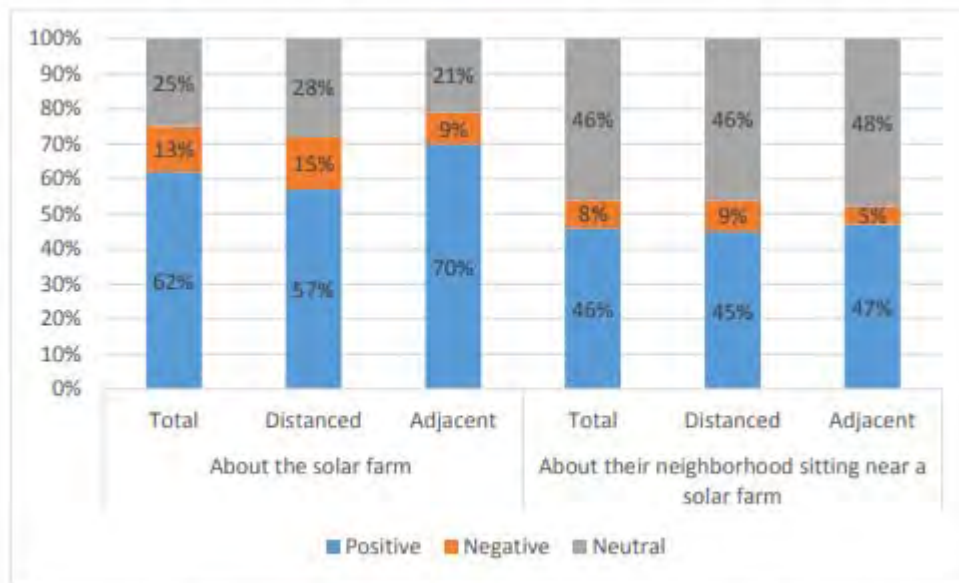
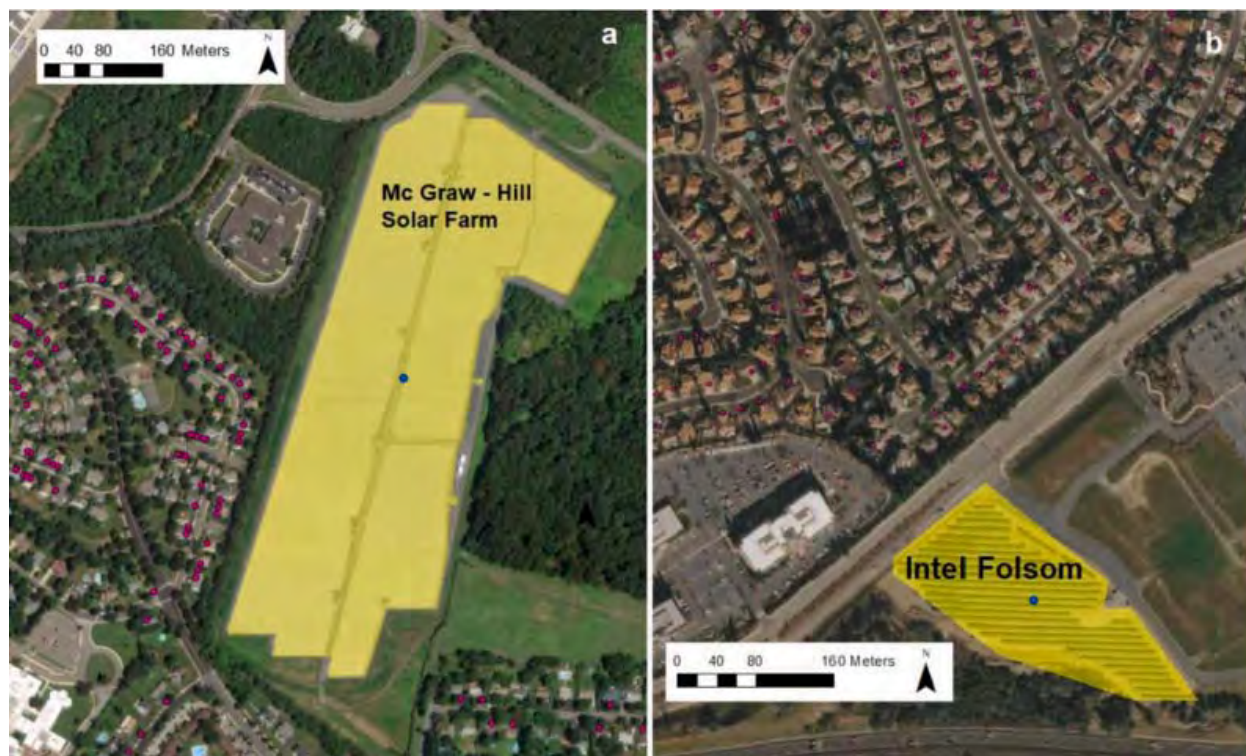


Figure 11: Residents' positive/negative word choices by geographic setting for both questions

E. Lawrence Berkeley National Lab, March 2023

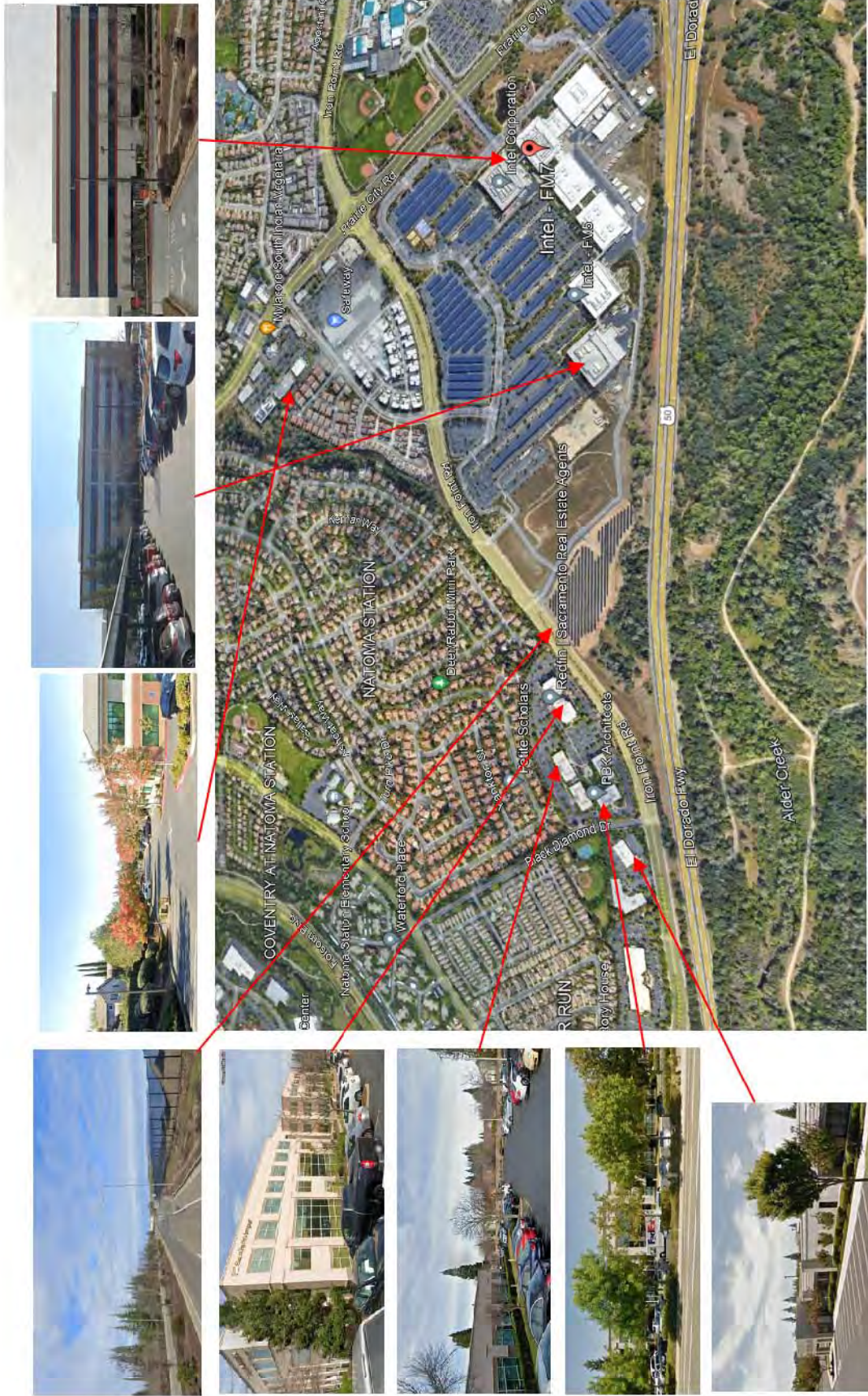
Shedding light on large-scale solar impacts: An analysis of property values and proximity to photovoltaics across six U.S. states

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



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





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



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



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

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

Despite these three shortcomings in the analysis – the lack of differentiating landscape screening, the lack of consideration of other uses within the area that could be impacting property values, and the lack of consideration of alternative development impacts – the study still only found impacts between 0 and 5% with a conclusion of 1.5% within a 1-mile radius. As discussed later in this report, real estate is an imperfect market and real estate transactions typically sell for much wider variability than 5% even where there are no external factors operating on property value.

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

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

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

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

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

VII. Solar Farms on Agricultural Land Discussion

A question that often arises with solar farms is the displacement of agricultural land as part of the solar farm development. As noted earlier in this report, a solar farm is a temporary use of the land that at the end of the life of the project (approximately 40 years) will be removed and the land restored to the current condition. Topsoil is to be maintained throughout the project with minimal grading in the initial development and anywhere topsoil is removed, it is to be stockpiled for later restoration.

The viability of restoring the land to agricultural use following 40 years as a solar farm is well supported through a wide variety of resources. The NCSU White Paper identified earlier in this report - **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** – specifically addresses common questions and supports a lack of impacts on soils, erosion, and related issues. This is a heavily researched paper that identifies multiple supporting references and resources.

The American Society of Farm Managers and Rural Appraisers (ASFMRA) has looked at the issue of farms being used for solar and considers it to be a good means of providing farmers with a more diverse and stable income as part of a mix of agricultural incomes. They further consider this to be a good method for preserving farmland for the future. After 40 years of the land being in what amounts to pasture, the land will have rested, which allows the soil quality to improve, and be ready to return to agricultural production if the owners choose to do so.

The US Department of Energy has a report on The 5 Cs of Agrivoltaic Success Factors in the United States: Lesson from InSPIRE Research Study that was published by the National Renewable Energy Laboratory (NREL) in August 2022. The 5 Cs include Crop Selection and Cultivation which addresses the methods, vegetation, and agricultural approaches used for agrivoltaic activities and research. They also include Compatibility, which addresses compatibility with agricultural uses. This paper specifically addresses compaction and soil quality and best practices for maintaining the soils as well as the benefits of pollinator habitat on surrounding farms.

The US Department of Energy also has a report from NREL called ASTRO: Facilitating Advancements in Low-Impact Solar Research, Deployment, and Dissemination that was published in August 2022. This paper also addresses agrivoltaics and working with solar and crops, solar and grazing, as well as solar beekeeping.

The US Department of Energy NREL estimated in 2016 that the entire energy needs of the US would require approximately 10 million acres of land based on solar panels that were 20% efficient. The total amount of agricultural land in the US is 897 million acres based on the US Department of Agriculture (USDA) as of 2020. This means that approximately 1.11% of US farmland could support 100% of US Energy needs based on those terms. This percentage gets even smaller if accounting for improving efficiency of solar panels as well as the ongoing agrivoltaic efforts for dual use of farmland and solar farms.

According to the Indiana State Department of Agriculture, Indiana lost approximately 460,000 acres of farmland between 1982 and 2012 due to urbanization and other non-agricultural uses. Despite that loss in farmland, agricultural products sold by farmers has increased from \$4.1 billion in 1982 to \$11.2 billion in 2012. Adjusting those figures by the CPI for inflation, the \$4.1 billion of 1982 dollars is equivalent to \$9.84 billion in 2012 dollars. This means that despite reduced acreage in farming in Indiana, there was still a 13.8% increase in agricultural production over that time period. This is attributed to improvements in agricultural production, which is an ongoing process. The average corn yield in the US in 2020 was 172 bushels per acre, while the average in 1980 was only 109 bushels per acre. This shows an increase in productivity of 57.8% over a 40-year period, or about 1.45% per year on average.

Indiana has 14.7 million acres of agricultural land according to the USDA as of 2020. Marshall County has approximately 153,800 acres of agricultural land according to the USDA as of 2017. The current project proposed for Tamarack Solar would include a portion of 2,773.81 acres. If I assumed all 2,773.81 acres were converted instead of just part of it, this would reflect 1.08% of the agricultural land in the county. Based on the average increase in output for farmland noted above, there would be no net loss in output in agricultural product if just this one change occurred.

Furthermore, the USDA as of 2021 indicated that there are approximately 442,000 acres enrolled in the Conservation Reserve Enhancement Program (CREP) in Indiana. This land is being paid by the US government to avoid agricultural production for periods that typically range from 10 to 15 years. The purpose is to manage crop yields, protect and enhance soils and wildlife. These same functions can occur on land leased for solar farms, without the US government payments.

Also, as of 2021 the USDA indicates that approximately 550 to 600 million bushels of corn are used for ethanol production in Indiana. This represents approximately 34% to 37% of the total corn produced in the state, or 5 to 5.4 million acres in Indiana. Converting some of this ethanol production acreage to solar farm land would have no impact on food production in the state.

VIII. Assessor Surveys

I have completed a survey of assessors in Indiana similar to surveys completed in other states as shown below.

Indiana Solar Farm Research Survey

County	Assessor's Name	Number of Farms	Change in Adjacent Property Value
Bartholomew	Ginny Whipple	1	No
Blackford	Sheila Hyer	2 in process	No
Carroll	Neda Duff	2	No
Clark	Lewis "Butch" Love	0	No
Clay	Barbara "Barb" Scott	3	No
Clinton	Jada Ray	0	No
Delaware	James D. Carmichael	0	No
Dubois	Angela C. (Angie) Giesler	1	No
Elkhart	Cathy Searcy	1	No
Fountain	Melissa Griffin	1, 2 more possibly	No
Gibson	Kim Beadle	0	No
Greene	Dawn Abrams	2	No
Harrison	Lorena (Rena) A. Stepro	1	No
Hendricks	Nicki Lawson	1	No
Henry	Jodie Brown	2	No
Huntington	Jill Amick-Zorger	0	No
Jay	Robin Alberson	0	No
Lagrange	LaTonya Spearman	0	No
Lawrence	April Stapp Collins	1	No
Marshall	Peter Paul	4	No
Miami	Karen Lemaster	3	No
Monroe	Judith A. Sharp	2	No
Newton	Kristen Hoskins	2	No, but would base enhancement/decrease on data
Noble	Ben Castle	0	No
Pike	Mike Goodpaster	0	No, but probably in future - need more data
Posey	Nancy Hoehn	0	No
Randolph	George Caster	1	No
Starke	Michelle Schouten	0	No
Steuben	Kim (Johnson) Anderson	2 small lots less than 1 acre, with 3 or 4 at the schools	No
Vigo	Kevin Gardner	1	No
Wabash	Kelly Schenkel	0	No

Responses: 31

Negative Impact on Adjoining Value = Yes: 0

Negative Impact on Adjoining Value = No: 31

1 response indicated future data would "probably" show negative impact

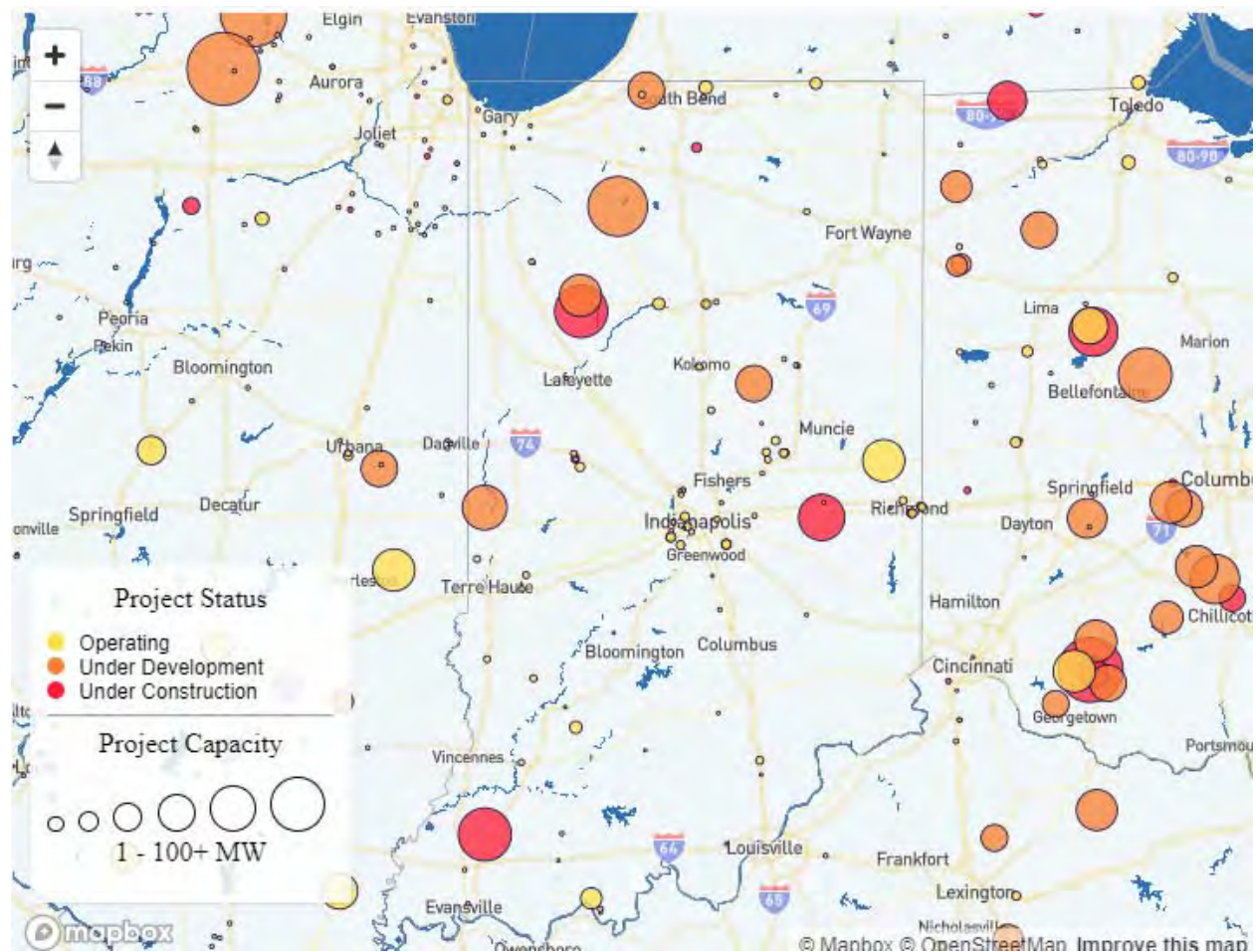
1 response indicated future data might show positive or negative

I have completed similar surveys in a number of states and I have shown the breakdown of those responses below. I have not had any assessor indicate a negative adjustment due to adjacency to a solar farm in any state. These responses total 188 with 170 definitively indicating no negative adjustments are made to adjoining property values, 18 providing no response to the question, and 0 indicating that they do address a negative impact on adjoining property value.

Summary of Assessor Surveys				
State	Responses	No Impact	Yes Impact	No Comment
North Carolina	39	39		
Virginia	16	16		
Indiana	31	31		
Colorado	15	7		8
Georgia	33	33		
Kentucky	10	6		4
Mississippi	4	2		2
New Mexico	5	5		
Ohio	24	20		4
South Carolina	11	11		
Totals	188	170		18

IX. 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. The map below shows the solar farms that SEIA is tracking and shows a number under development. Riverstart is the 200 MW project identified in the large yellow circle east of Muncie and the next largest project identified is Troy Solar Park at 50.4 MW to the south (identified at 67 MW in other sources)



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

St. Joseph Solar, South Bend, IN

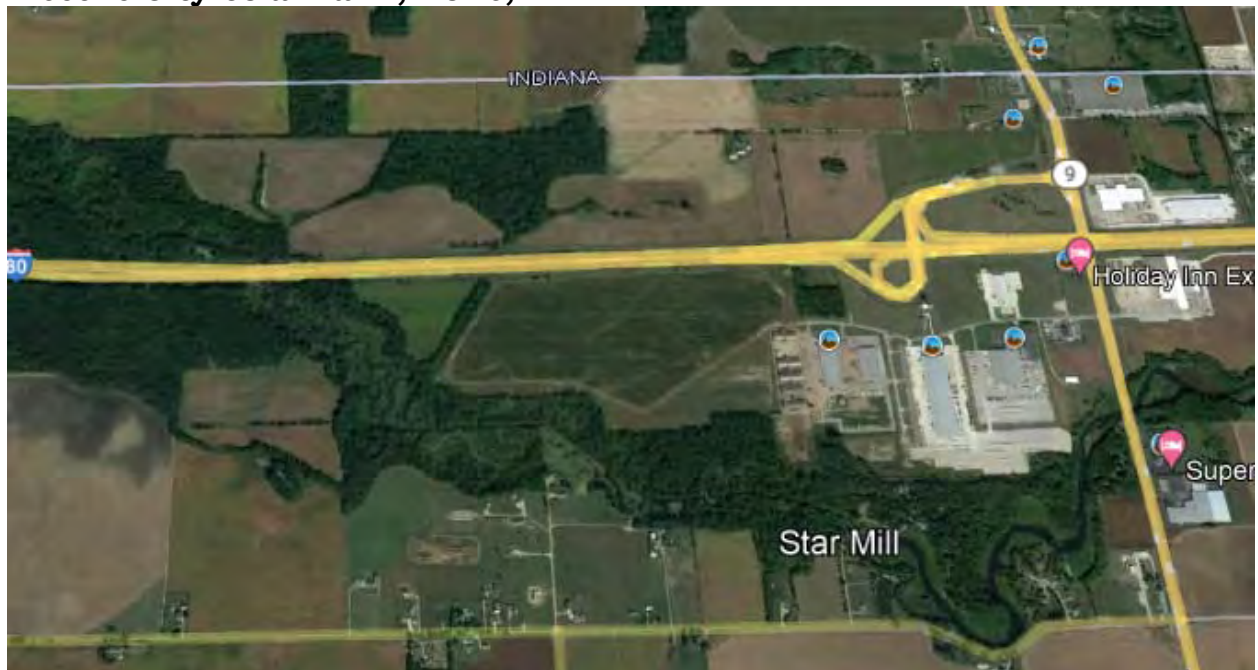
This solar farm is a 26.7 MW facility that is currently in operation.

Olive PV, Olive, IN



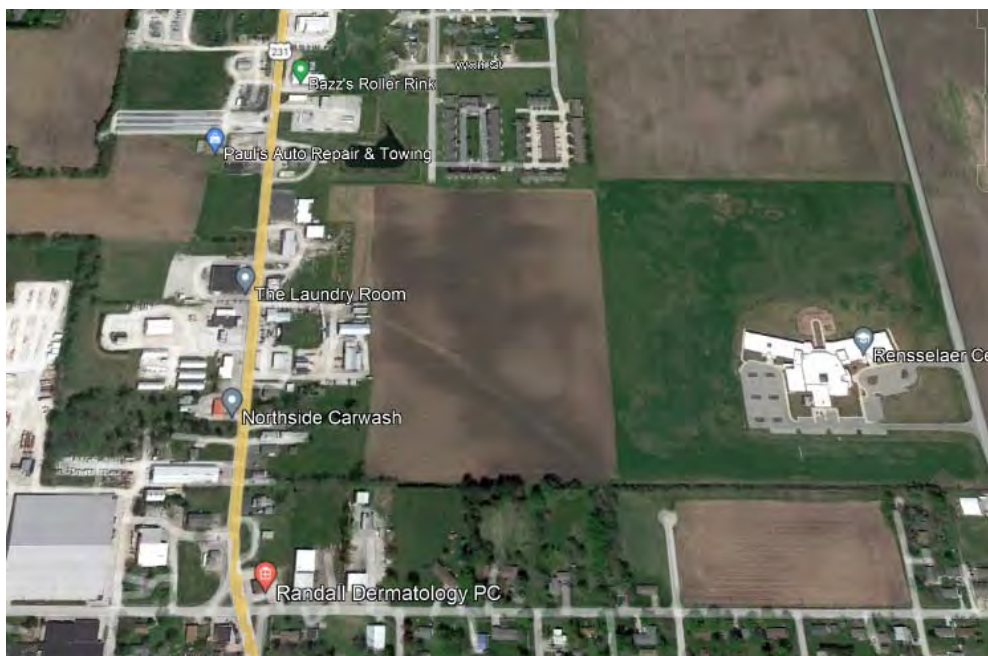
This solar farm is 6.4 MW and located between Olive and New Carlisle.

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



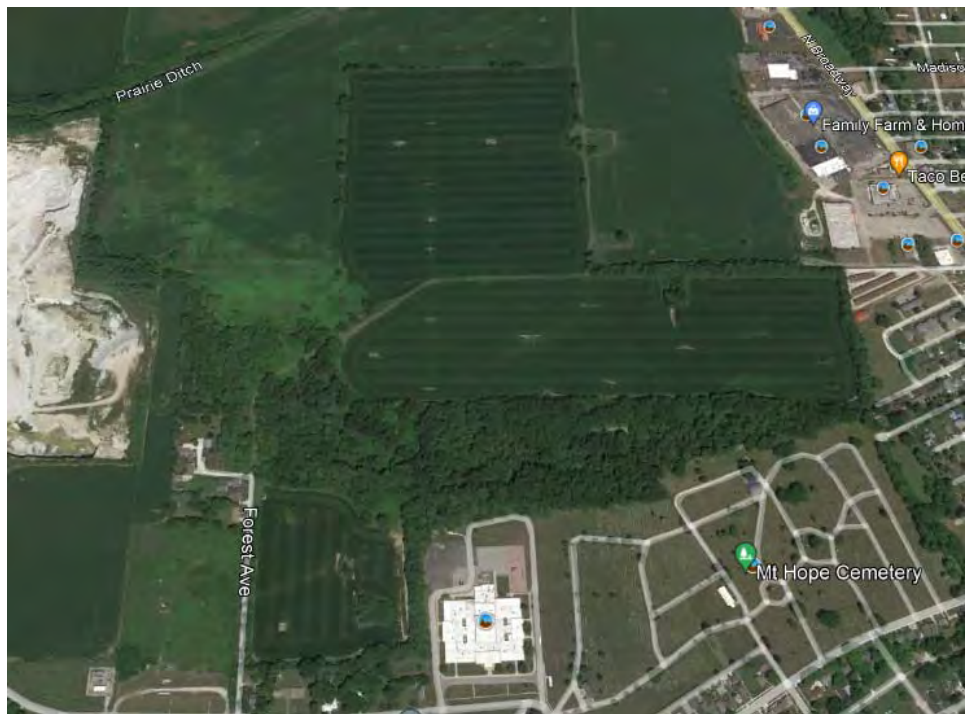
This 5.1 MW facility is located on the field shown in the middle of the map.

Logansport Solar, Logansport, IN



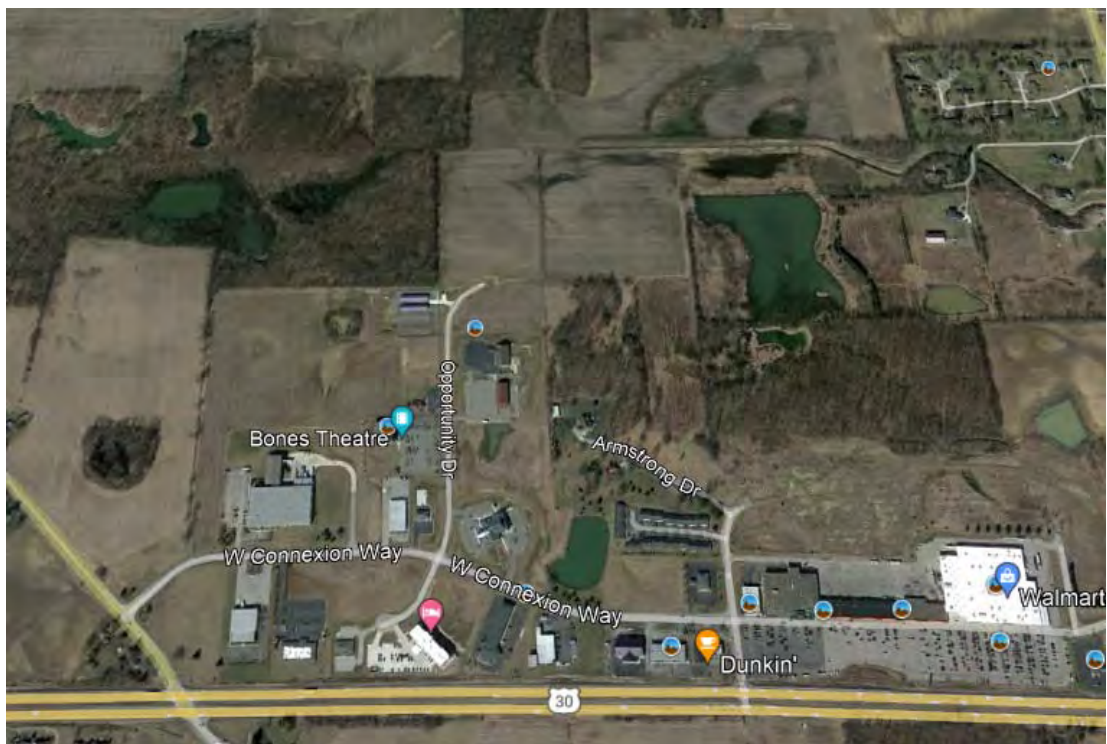
This 21.3 MW facility is located on the field between Holland Street and Water Street.

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



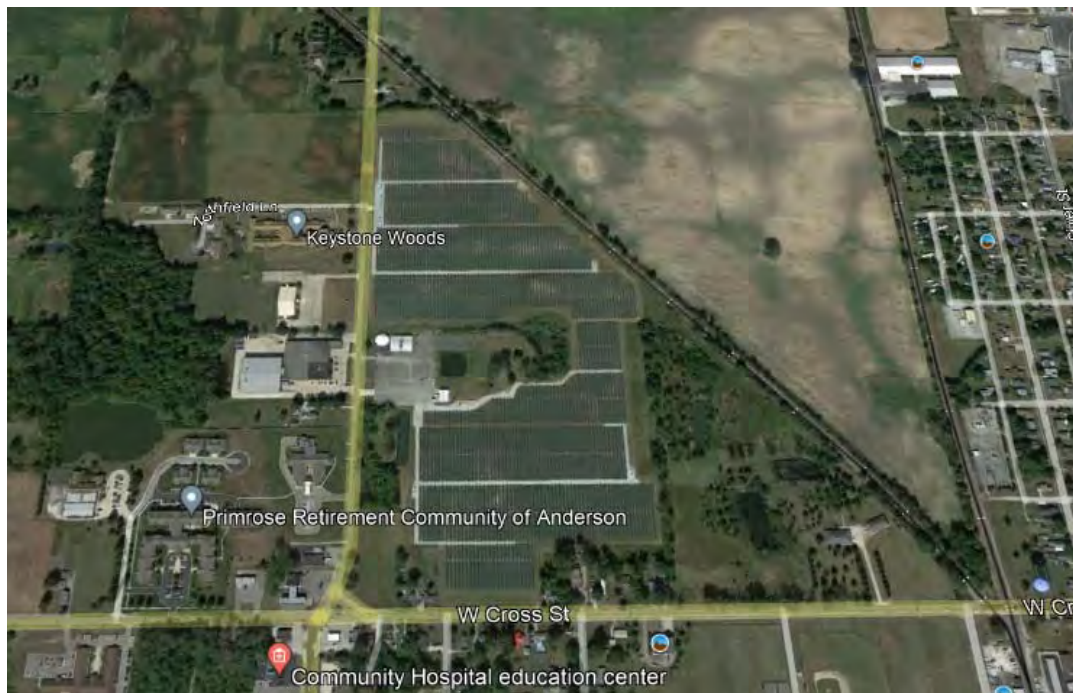
This 5.7 MW solar farm is located at the north end of Opportunity Drive.

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



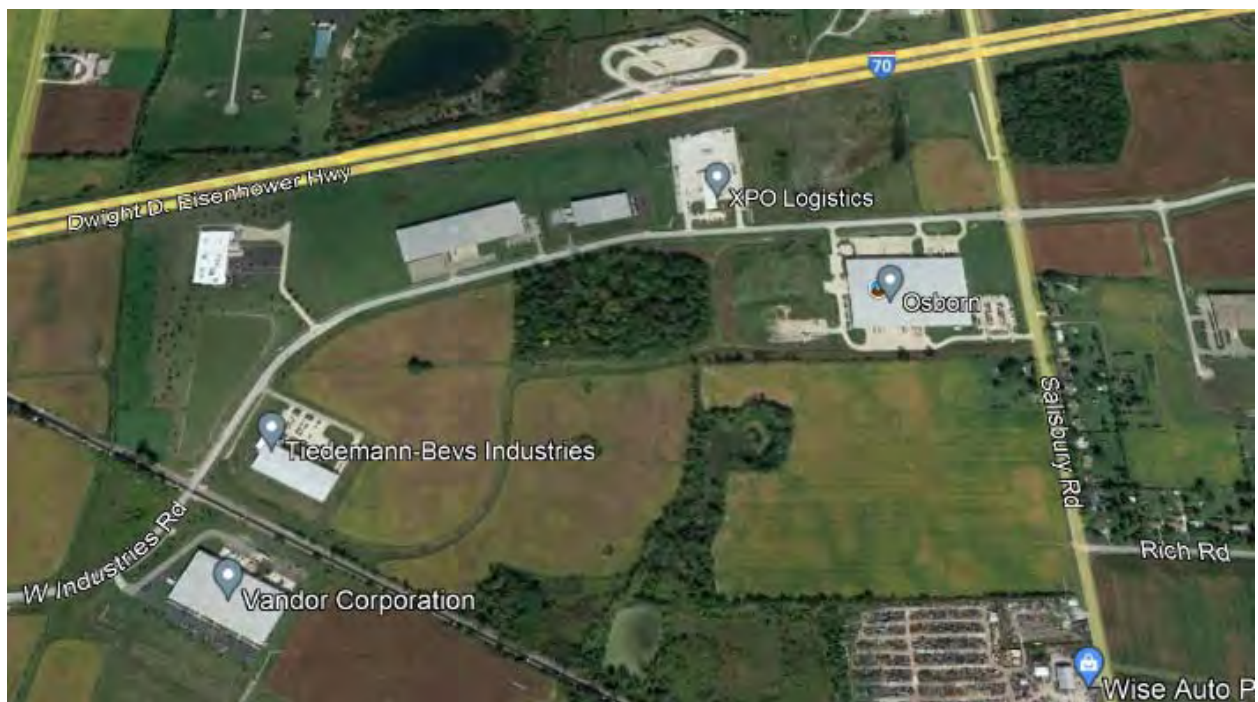
Anderson 4 is located off S Rangeline Road closer to Union Township Drive and is a 10.4 MW facility. Anderson 3 was built in 2021 and is located closer to E 150 S Street and is an 11.6 MW solar farm. Anderson 5 is a 4 MW solar farm located to the north east across S Rangeline Road.

Richmond Solar Park 2 and 3, Richmond, IN



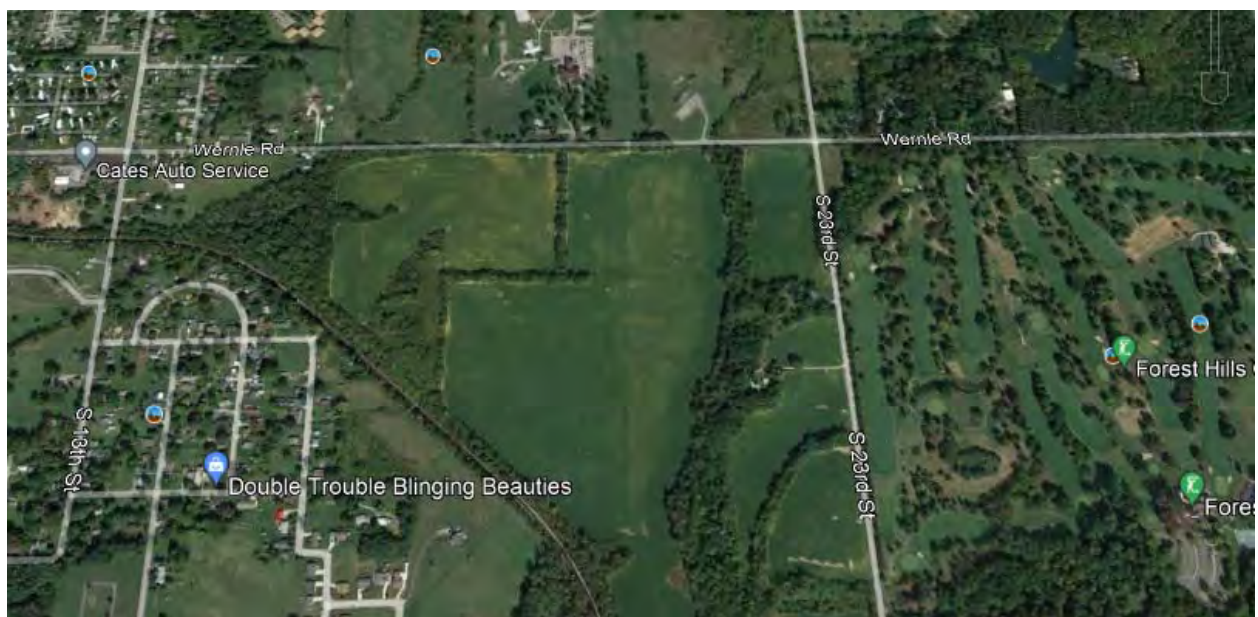
Richmond 3 is located at the north end of Commerce Road with 8.7 MW of capacity. Richmond 2 is located to the southeast across from the US 35 Highway and US 40 interchange with 9.8 MW of capacity.

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 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



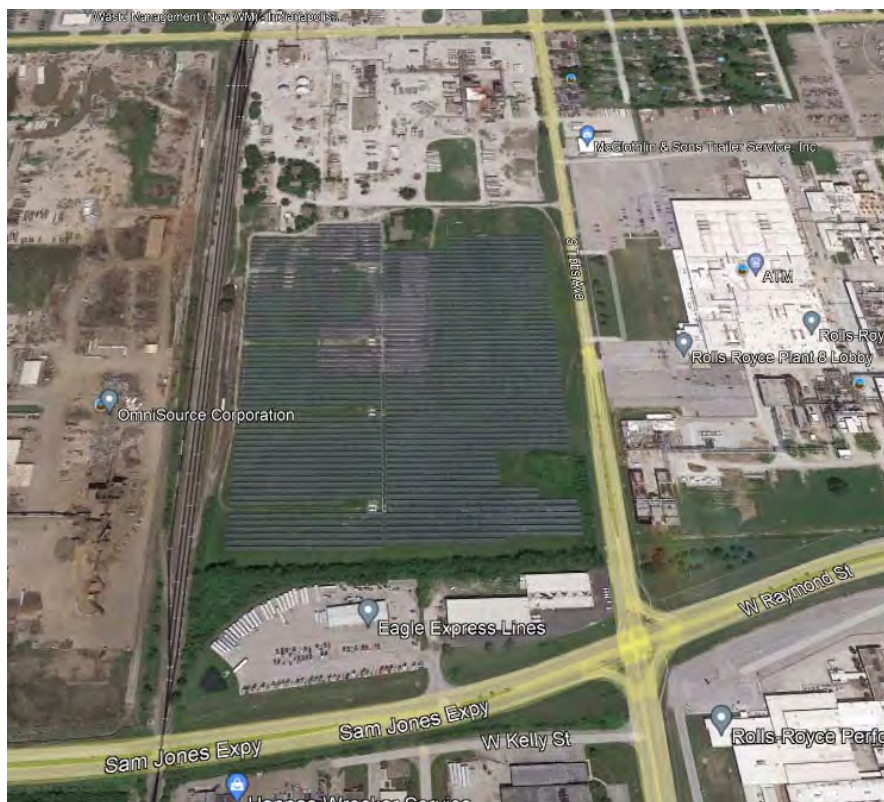
This is a 11.9 MW facility located off of W. Southport Road and was built in 2014. There have been three nearby sales of homes to the north recently that I have discussed later in this report.

IND Community Solar Farm Phases 1 and 2



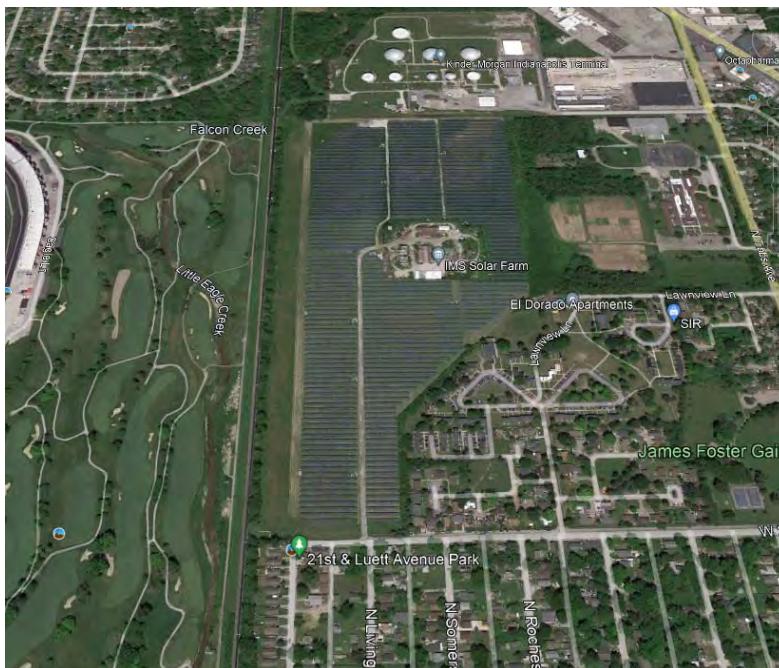
Phase 1 is 12.5 MW and Phase 2 is 9.8 MW. These are located adjoining the Indianapolis International Airport.

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

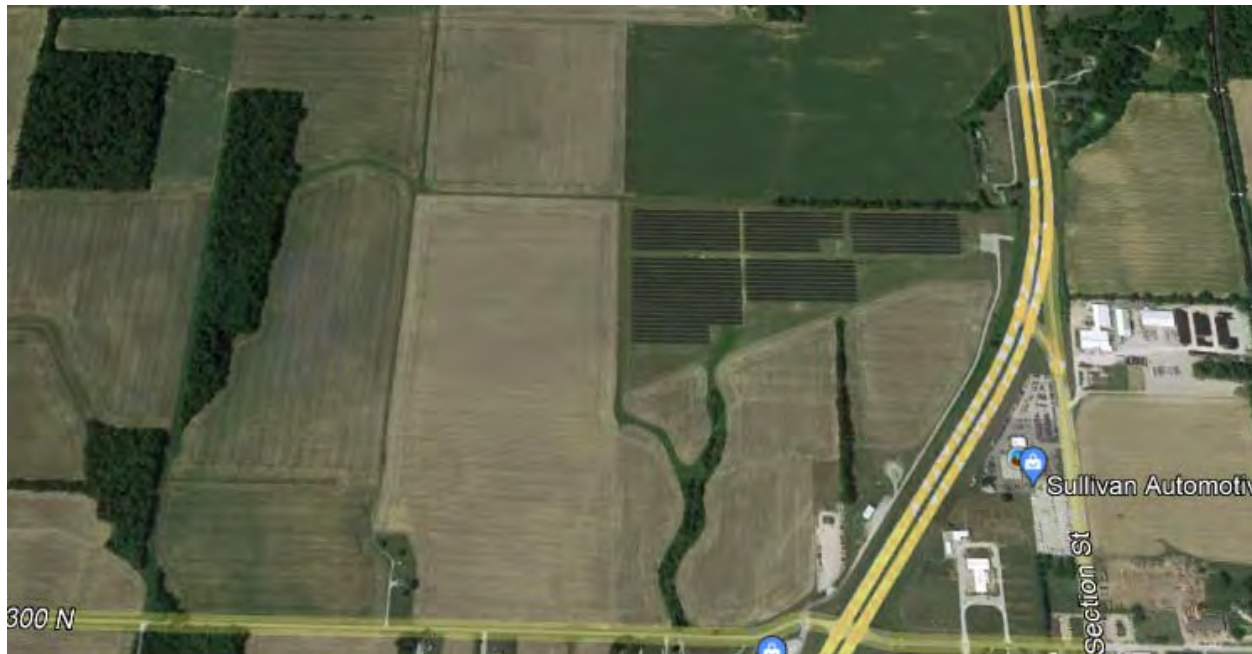


This 11.2 MW solar farm is located just east of Brickyard Crossing Golf Course and east of the Indianapolis Motor Speedway.

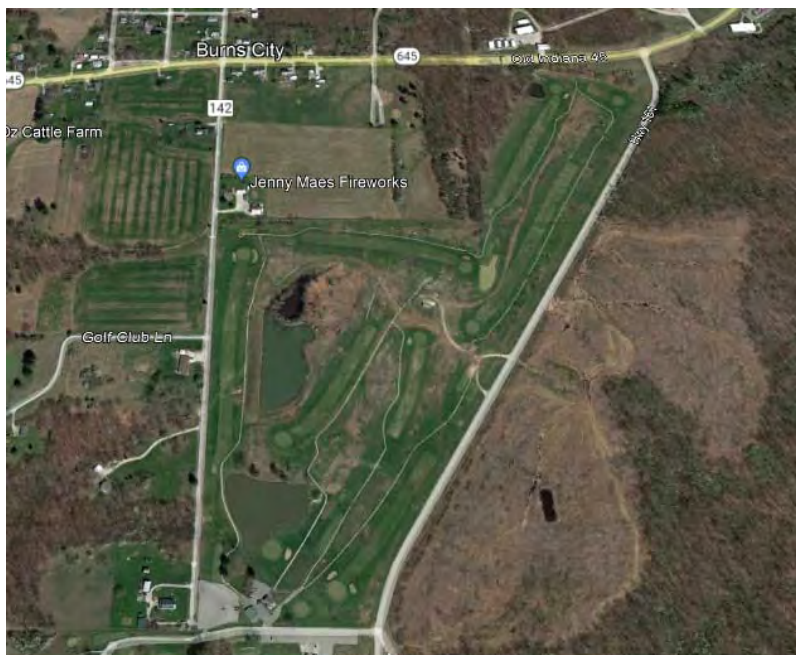
Pastime Farm, LLC, Brazil, IN



This 7 MW solar farm is located just west of Brazil built in 2015. The home to the southwest at 4183 W County Road 900 N, Brazil sold on June 3, 2022 for \$215,000 for this 3 BR, 1 BA with 2,408 s.f. on 1.95 acres built in 1961, or \$89.29 per s.f. This home was remodeled and most recently sold the prior year on August 31, 2021 for \$165,000, or \$68.52 per s.f. The extent of the remodeling is unclear from the listing and complicates analysis. It does show that an investor was not concerned with the solar farm being 590 feet away from the home as they purchased the home, renovated it, and then sold it for a presumed profit.

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



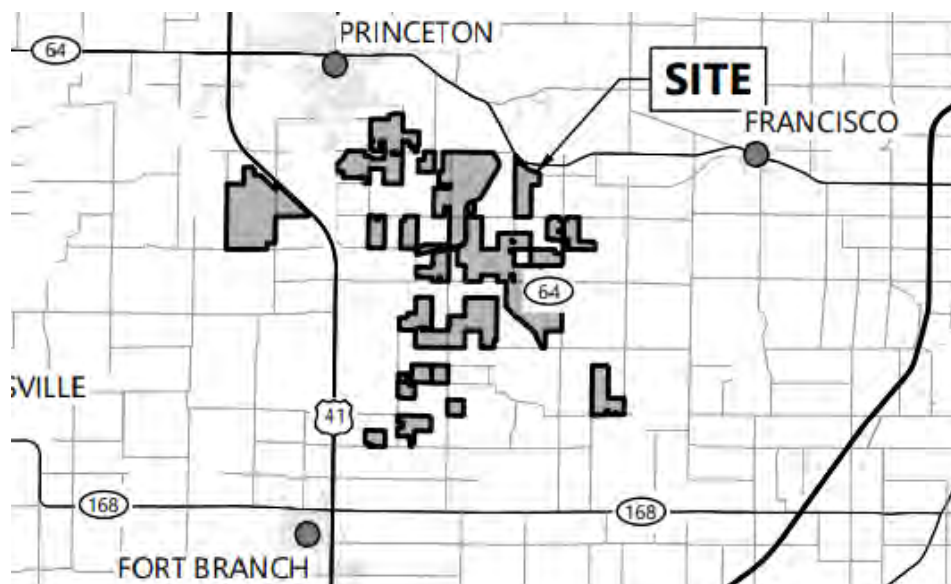
This 9.7 MW solar farm is located adjoining the reservoir.

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



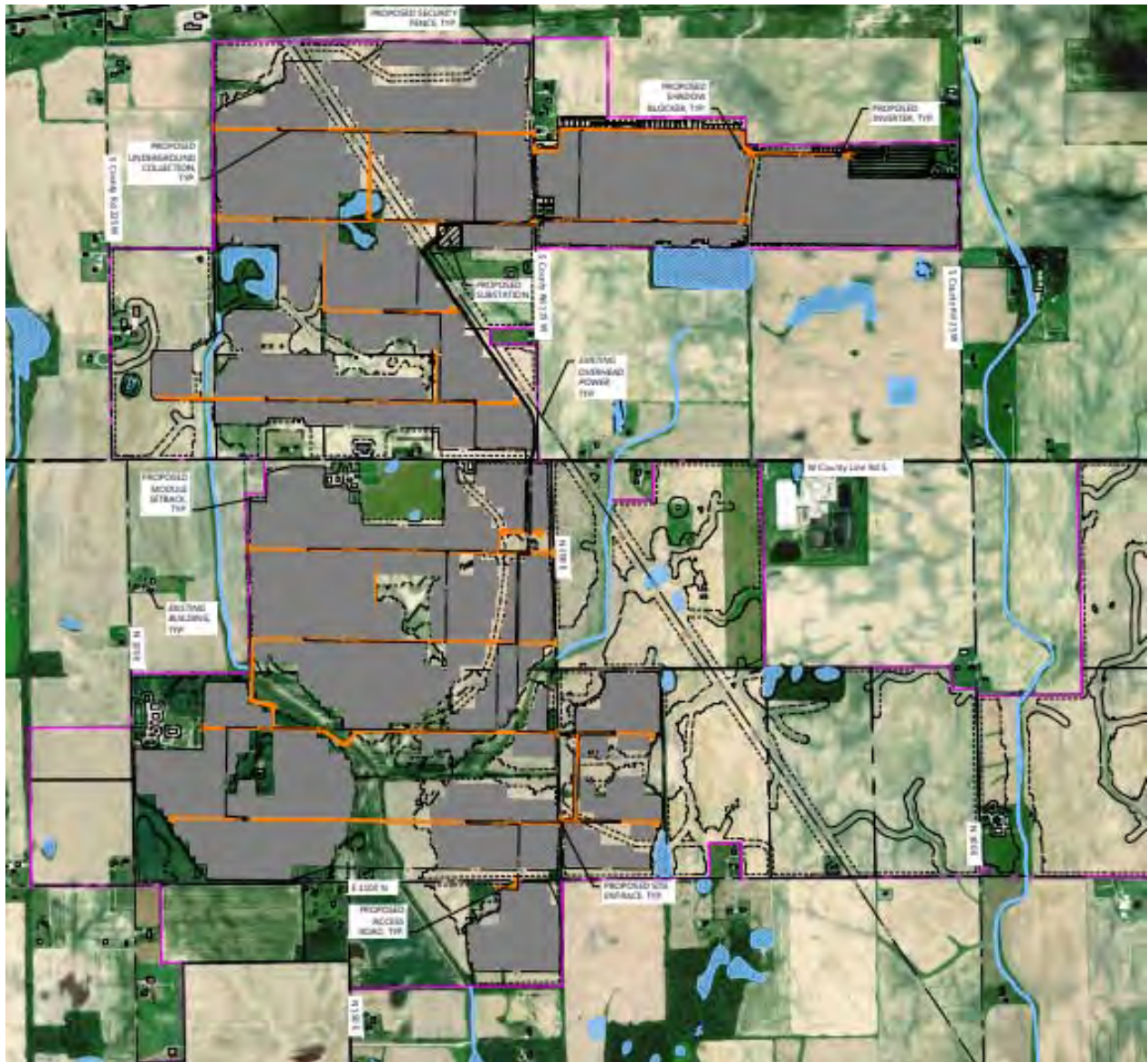
This 280 MW solar farm is being developed on the tracts shown above between Princeton, Fort Branch, and Francisco. This will be located on 2,250 acres of land, though parts of the property are non-contiguous as shown in the map above.

Bremen Solar (IMPA), Bremen, IN

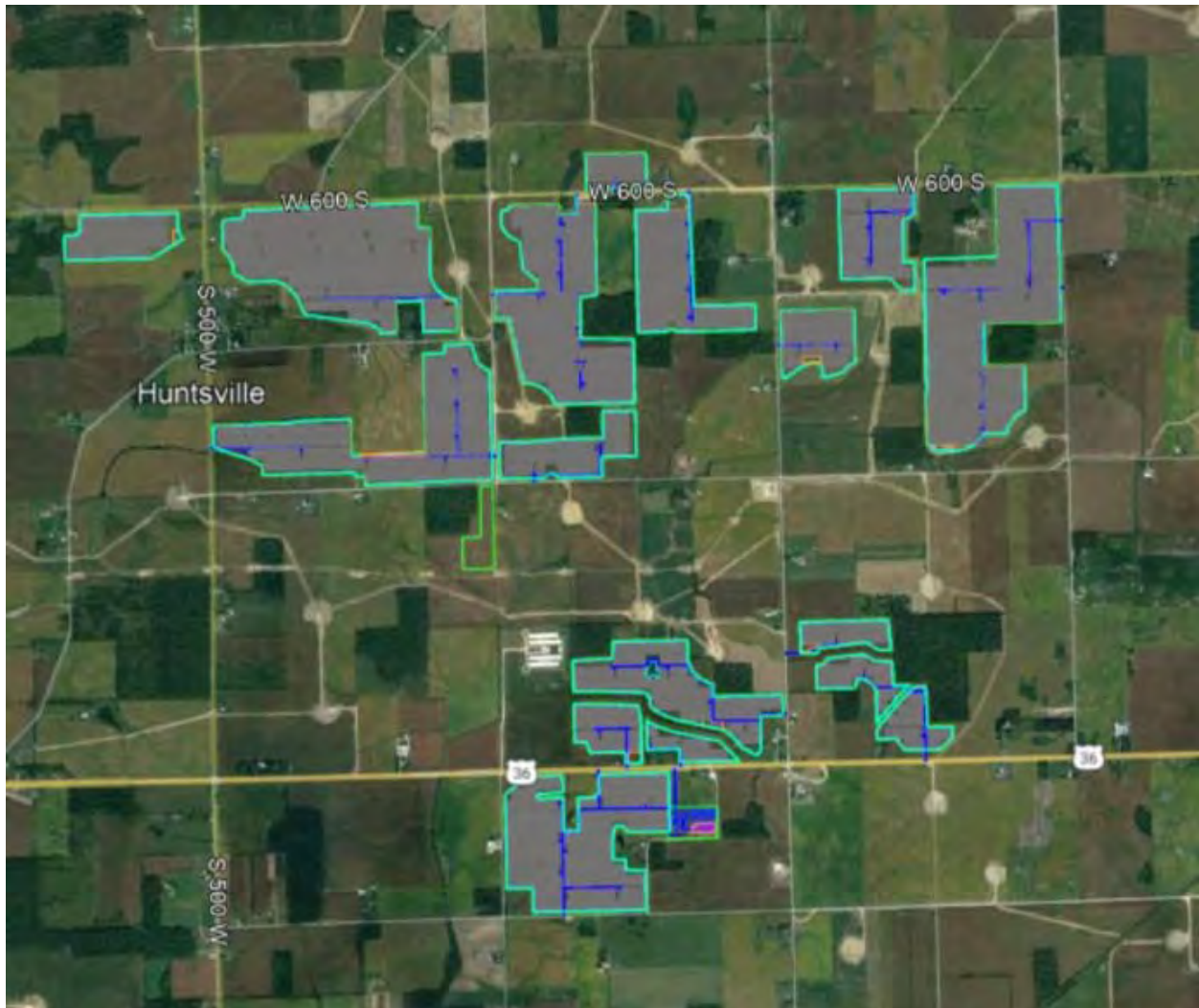


This 6.8 MW solar farm was built in 2022 on 36.74 acres. The closest adjoining homes is 60 feet and the average distance is 133 feet. This project has no landscaping screen and is not consistent with most of the projects that I have researched.

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 200 MW solar farm is located in Union and Washington Townships in Randolph County and was completed in January 2022. These solar panels are being installed near the existing windmill farm.

X. 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 900 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.

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

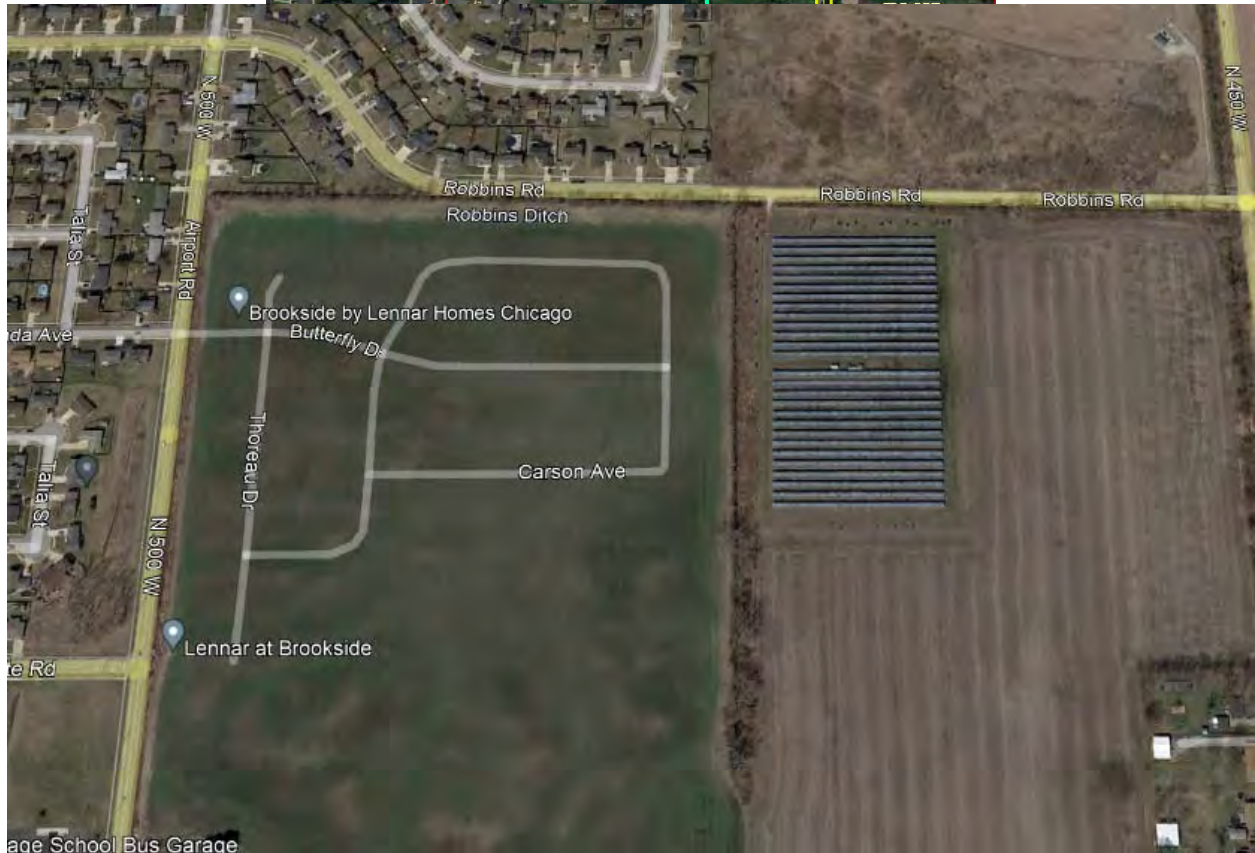
Adjoining Sales Adjusted

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%		

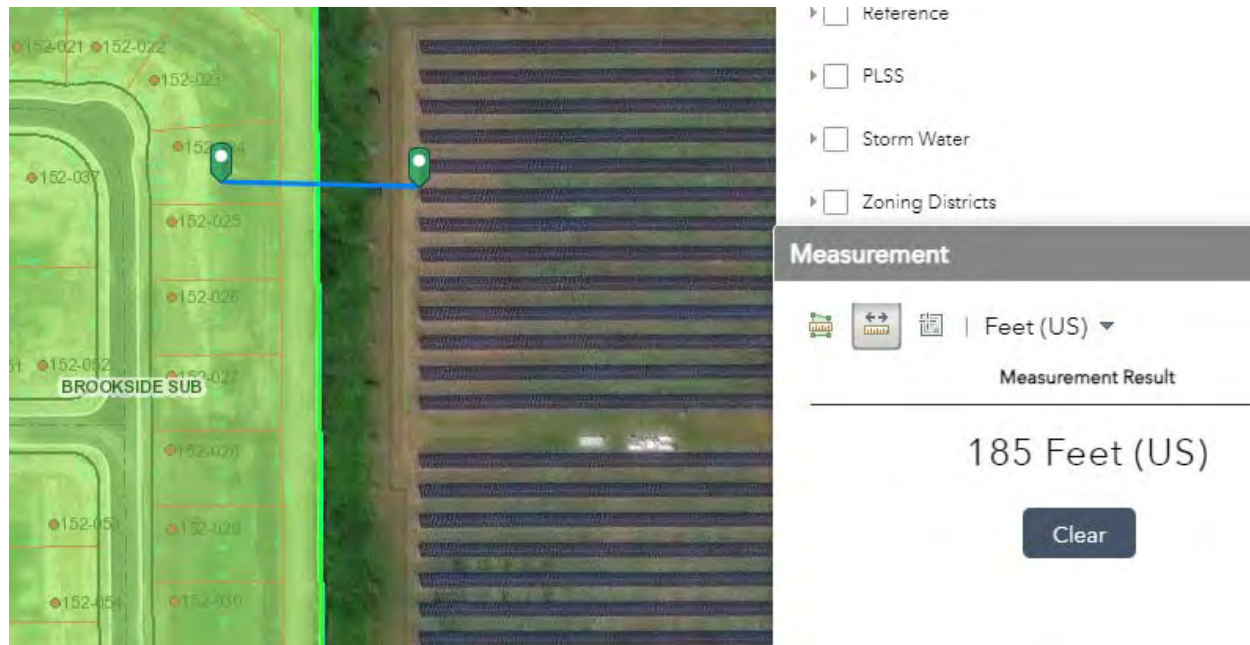
3%

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, Porter County, 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. As can be seen by the more recent map, Lennar Homes is now developing a new subdivision on the vacant land just west of this solar farm called Brookside. There have been seventeen home sales identified in this subdivision at prices ranging from \$349,000 to \$414,990. Clearly they anticipate no negative impacts from the adjoining solar farm. While I have not identified any finished homes sold directly adjoining the solar farm I note that the likely home sites will be 185 feet from the nearest solar panel based on the measurement shown below. The lot plan has 13 lots that will adjoin the solar farm at that distance with no significant setbacks or lot layout that attempts to minimize the number of lots in this area of the tract, which further supports the assertion that Lennar Homes does not ascribe a significant impact to the solar farm.



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
		<u>Time</u>	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	
	<u>Average</u>	<u>Median</u>	<u>Average</u>	<u>Median</u>
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		\$/Acre
		<u>Time</u>	Total	
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, Marion County, 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 from the time period closest to the solar farm having been built – between 2005 and 2017. 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, Grant County, KY



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

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

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

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

Adjoining Residential Sales After Solar Farm Approved

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

Adjustments

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

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

Adjoining Residential Sales After Solar Farm Approved

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

Adjustments

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

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

Adjoining Residential Sales After Solar Farm Approved

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

Adjustments

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

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



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

Adjoining Residential Sales After Solar Farm Approved

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

Adjustments

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

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

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



Adjoining Residential Sales After Solar Farm Approved

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

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

1%

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

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

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

Adjoining Residential Sales After Solar Farm Built

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

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

3%

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



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

Adjoining Residential Sales After Solar Farm Built

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

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

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



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

Joining Residential Sales After Solar Farm Built

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

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

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



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



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

Adjoining Residential Sales After Solar Farm Built

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

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

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

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

5. Matched Pair – Walton 2, Walton, Kenton County, KY



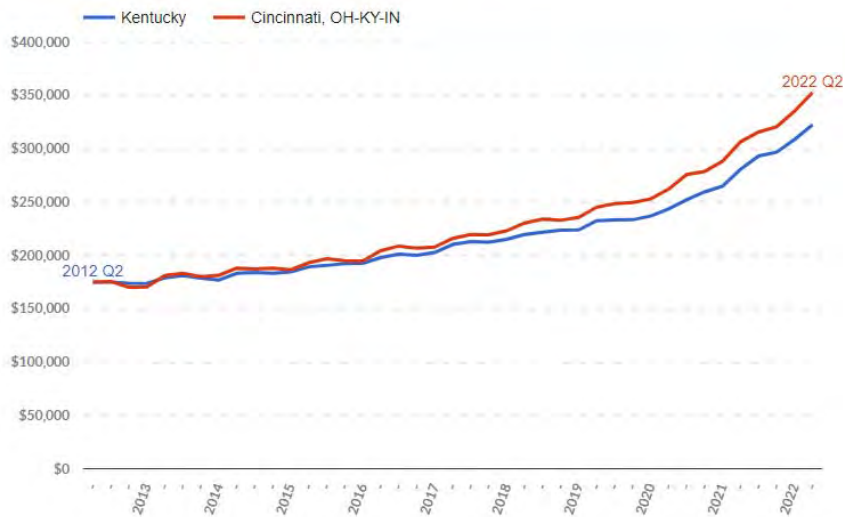
This project was built in 2017 on 58.03 acres for a 2 MW project with the closest home 120 feet from the closest panel.

The home located on Parcel 1 (783 Jones Road, Walton, KY) in the map above sold on May 4, 2022 for \$346,000. This home is 410 feet from the nearest solar panel. I have considered a Sale/Resale analysis of this home as it previously sold on May 7, 2012 for \$174,900. This analysis compares that 2012 purchase price and uses the FHFA House Price Index Calculator to identify what real estate values in the area have been appreciating at to determine where it was expected to appreciate to. I have then compared that to the actual sales price to determine if there is any impact attributable to the addition of the solar farm.

As can be seen on the calculator form, the expected value for \$174,900 home sold in 2nd quarter 2012 would be \$353,000 for 2nd quarter 2022. This is within 2% of the actual sales price and supports a finding of no impact on property value.

I have not attempted a paired sales analysis with other sales, as this property also has the nearby recycling and car lot that would be a potential factor in comparing to other sales. But based on aerial imagery, these same car lots were present in 2012 and therefore has no additional impact when comparing this home sale to itself.

Purchase Quarter	Valuation Quarter	X
2012 Quarter 2	2022 Quarter 2	Percentage Change
Purchase Value	Estimated Value for MSA	101.8%
\$174,900	\$353,000	



6. Matched Pair – Demille Solar, Demille Road, Lapeer, Lapeer County, 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%		

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.

7. Matched Pair – Turrill Solar, Turrill Road, Lapeer, Lapeer County, 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.

8. Matched Pair – Freeport Solar 1, Freeport, Stephenson County, IL

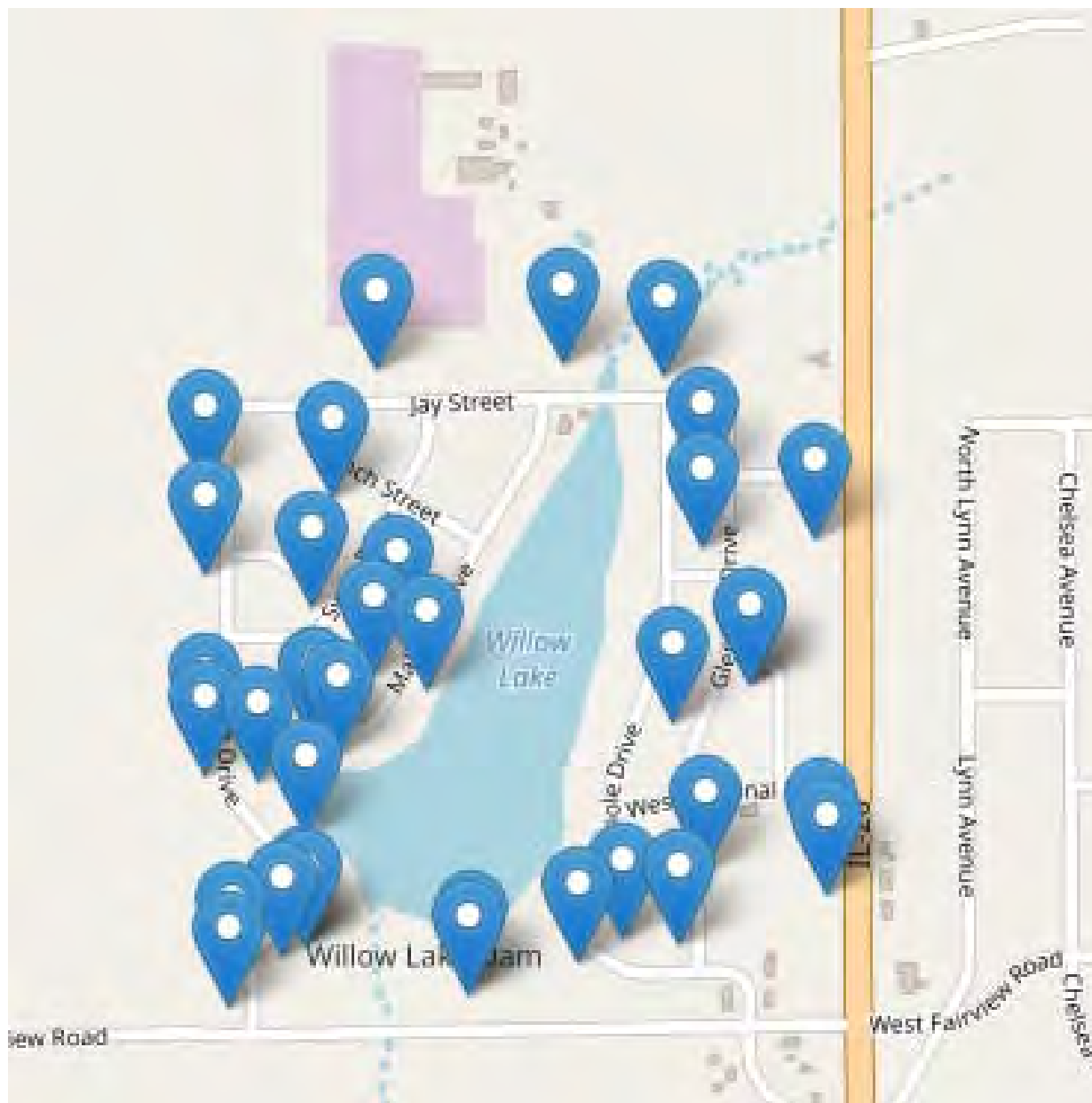
This project is located north of Jay Street near Freeport as shown in the map above. This 2 MW project was built in 2019.

The data set for this example was primarily developed by Lee Ovington, MAI when we worked together on a similar project in Illinois.

Before and After the Solar Farm Analysis

Immediately South of the Freeport Solar 1 Farm is a subdivision known as Willow Lakes. This subdivision has an unincorporated location within Stephenson County, about 1 mile north of Freeport. Over the past several years, numerous sales have transacted in the subdivision. From this sales data, we were able to conduct an analysis of the sale prices of single-family homes before and after the presence of the Solar Farm in the market area. We have provided our data, analysis, and conclusions below.

36 Test Area Transactions in the Willow Lake subdivision sold from 2016 to 2023. These sales are of homes situated on ½ acre +/- sites with an average year built of 1972 and gross living area ranging from 950 to 3,000 square feet. Below is a map showing the locations of the sales and a chart summarizing the sales in the Test Area.



TEST AREA TRANSACTIONS

Street Number	Street Name	Street Suffix	City	Closed Date	Listing Market Time	Sold Price	Approx Sq Ft	PSF
2287	Mallard	DR	Freeport	7/22/2015	34	\$ 117,000	2694	\$ 43.43
2296	Swan	DR	Freeport	3/11/2016	11	\$ 100,000	1550	\$ 64.52
2055	Oriole	DR	Freeport	11/22/2016	22	\$ 87,000	2496	\$ 34.86
2418	Glenview	DR	Freeport	1/17/2017	67	\$ 88,000	1260	\$ 69.84
2226	Glenview	DR	Freeport	3/15/2017	41	\$ 79,900	1344	\$ 59.45
2048	Oriole	DR	Freeport	11/7/2017	3	\$ 125,000	1738	\$ 71.92
2049	Eagle	DR	Freeport	4/27/2018	17	\$ 93,000	2028	\$ 45.86
1344	Fairview	RD	Freeport	8/29/2018	43	\$ 70,000	950	\$ 73.68
1419	Finch	ST	Freeport	9/21/2018	7	\$ 138,000	2210	\$ 62.44
2188	Eagle	DR	Freeport	11/30/2018	50	\$ 89,900	1392	\$ 64.58
2308	Mallard	DR	Freeport	4/26/2019	236	\$ 110,500	1782	\$ 62.01
2173	Eagle	DR	Freeport	6/24/2019	11	\$ 137,000	2720	\$ 50.37
2314	Eagle	DR	Freeport	9/12/2019	22	\$ 146,200	2196	\$ 66.58
2243	Mallard	DR	Freeport	9/13/2019	14	\$ 150,000	1924	\$ 77.96
1400	Jay	ST	Freeport	11/27/2019	3	\$ 128,500	1584	\$ 81.12
2028	Oriole	DR	Freeport	12/11/2019	35	\$ 132,500	2086	\$ 63.52
2280	Mallard	DR	Freeport	6/19/2020	30	\$ 118,000	1528	\$ 77.23
2062	Dove	ST	Freeport	7/25/2020	30	\$ 95,000	1352	\$ 70.27
2260	Woodland	CT	Freeport	7/31/2020	26	\$ 147,500	1620	\$ 91.05
2374	IL RTE. 26 N		Freeport	10/2/2020	54	\$ 134,000	2700	\$ 49.63
1226	Jay	ST	Freeport	1/15/2021	18	\$ 150,000	2009	\$ 74.66
2026	Eagle	DR	Freeport	3/25/2021	19	\$ 118,000	1680	\$ 70.24
1150	Jay	ST	Freeport	8/27/2021	0	\$ 110,000	2728	\$ 40.32
2231	Mallard	DR	Freeport	10/12/2021	28	\$ 195,000	3031	\$ 64.34
1344	Fairview	RD	Freeport	10/14/2021	39	\$ 105,000	1065	\$ 98.59
2084	Il Route 26		Freeport	12/22/2021	32	\$ 6,000	800	\$ 7.50
2388	Eagle	DR	Freeport	1/24/2022	3	\$ 140,000	1577	\$ 88.78
2113	Eagle	DR	Freeport	5/12/2022	10	\$ 170,000	1496	\$ 113.64
2037	Eagle	DR	Freeport	6/10/2022	3	\$ 151,000	2205	\$ 68.48
1116	Lark	ST	Freeport	6/30/2022	8	\$ 168,500	1680	\$ 100.30
2116	IL ROUTE 26 N	HWY	Freeport	10/25/2022	120	\$ 185,900	2382	\$ 78.04
2231	Mallard	DR	Freeport	3/16/2023	184	\$ 207,000	3031	\$ 68.29
2004	Eagle	DR	Freeport	5/5/2023	10	\$ 184,000	2430	\$ 75.72
2260	Woodland	CT	Freeport	5/5/2023	44	\$ 191,000	1620	\$ 117.90
2049	Eagle	DR	Freeport	6/14/2023	17	\$ 206,000	2216	\$ 92.96
2180	Eagle	DR	Freeport	6/30/2023	7	\$ 164,900	1601	\$ 103.00

The Control Area Transactions are comprised of sales during the same time period of 2016 to present in unincorporated areas of Freeport. The Control Area has 131 Transactions. The data has a year-built range of 1880 to 2006 with an average year built of 1964. The average lot size is ½ acre +/- . Homes range in size from 950 to 2,800 square feet with an average of 1,936 square feet. Below is a summary of the data.

Summary of Transaction Data

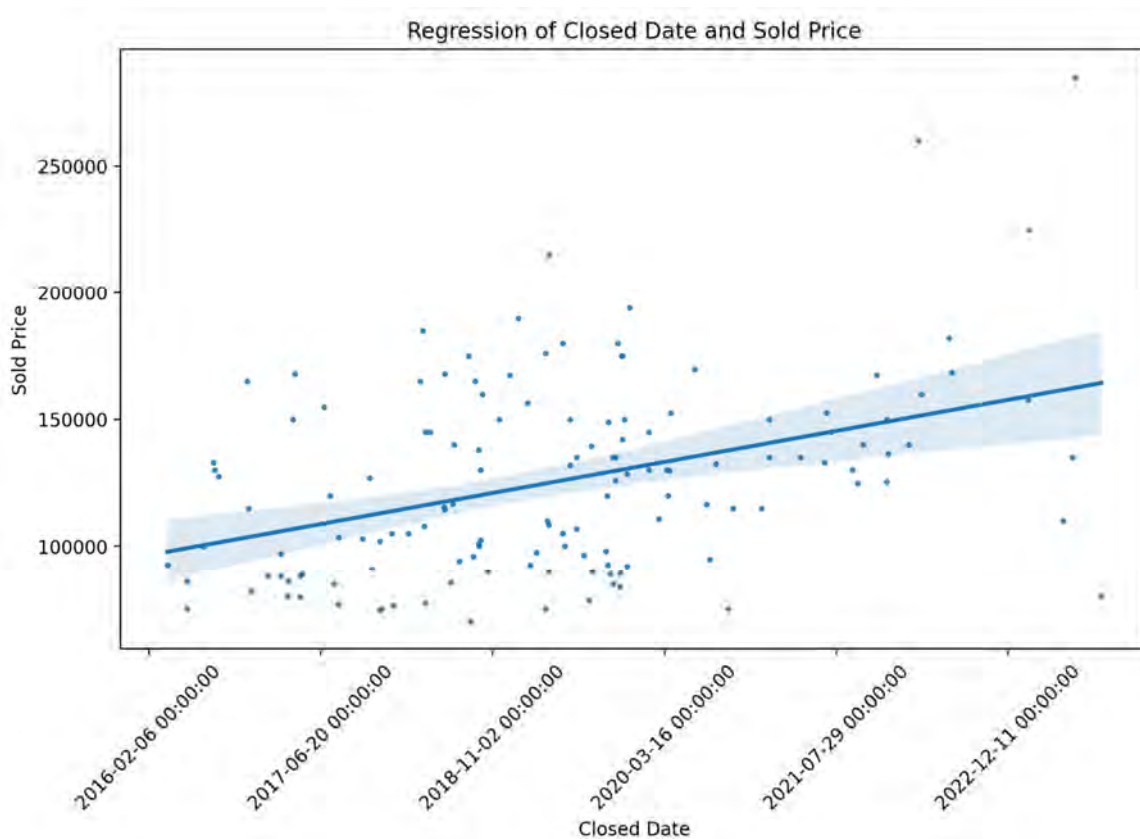
	<u>Test Area</u>	<u>Control Area</u>
Average Year Built	1972	1964
Average Sale Price	\$131,647	\$125,991
Average Marketing Time	36 Days	66 Days
Average Sq. Ft.	1,908	1,936
Average Price per SF	\$70.64	\$66.90

In both the Test Area and the Control Area, prices have been increasing over the past several years. Below are graphs showing the correlation between the Closed Date and Sale price and a linear regression of sale prices.



Test Area – Willow Lake Subdivision

The graph below shows sale prices in the Control Area Transactions over the same time period with a regression line plotted. The Control Area shows a similar pattern of increasing Sold Prices since 2016.



Control Area – Unincorporated Freeport

To make a more reliable comparison, sold price per square foot was used as the unit of comparison. An analysis of unit prices before and after 2019 (the year the Solar Farm was developed) was conducted to compare appreciation rates in the Test Area to appreciation rates in the Control Area. Below is a summary of this analysis.

The annual rate of increase in price per square foot (PSF) in Willow Lakes prior to 2019 was 5.98%. The annual rate of increase in PSF after 2019 was 7.88%. Outside the Willow Lake subdivision in other unincorporated areas of Freeport, the annual rate of increase in the Price per Square Foot (PSF) prior to 2019 was 4.48%. After 2019, the annual rate of increase in PSF was 7.93%.

	<u>Before 2019</u>	<u>After 2019</u>
Test Area - Willow Lake Subdivision	5.98%	7.88%
Control Area - Competing Unincorporated Freeport	4.48%	7.93%
Average	5.23%	7.90%

Conclusion

A difference in appreciation rates does not appear to exist between Test Area versus the Control Area before or after the presence of the Solar Farm in the market (2019). Before the Solar Farm, the Test Area and Control Area show similar rates of appreciation within 0.75% +/- of the 5.23% average. When compared to the Control Area, sale prices after 2019 in the Test Area exhibit a similar appreciation trend as the sale prices in the Control Area, within 0.03% +/- of the 7.9% average.

Overall, these findings indicate that there is not a measurable difference in rates of price appreciation for homes proximate to the solar farm.

Paired Sale Analysis

Jay Street runs east-west along the northern section of the Willow Lake Subdivision. Some of the homes along the north side of Jay Street back to the Solar Farm. These homes have a direct view of the Solar Farm, with some trees along the lot line providing a partial visual buffer. A transaction of a home adjacent to the Solar Farm was utilized for a Paired Sale Analysis.



The Sale Price of this home at 1400 Jay Street was compared to a sale of a similar home away from and not influenced by proximity to a Solar Farm at 1908 Revere Street. The property at 1908 Revere has a similar split-level design and appeal and sold within 1 month of the sale at 1400 Jay Street.

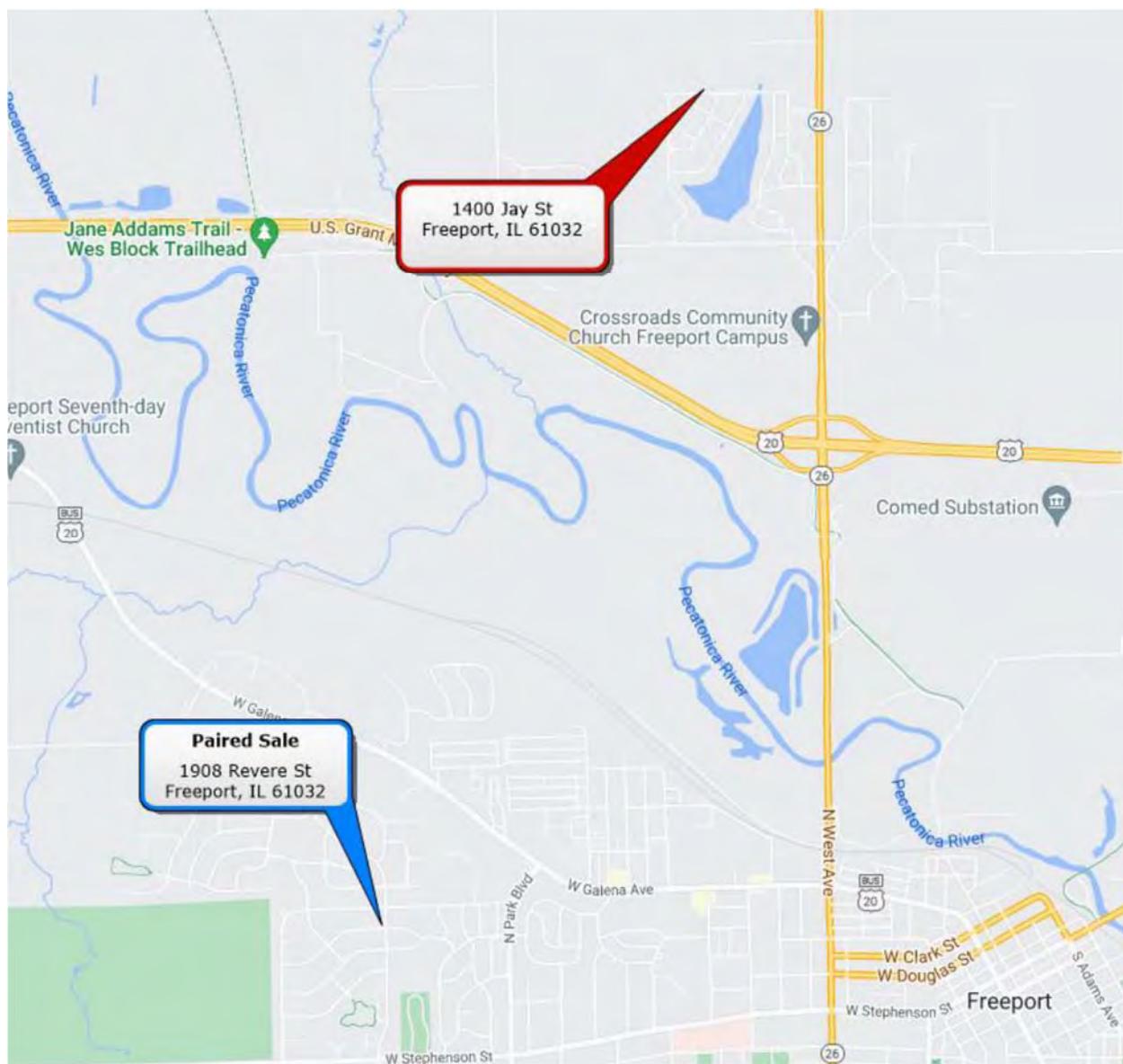
This home is 225 feet from the nearest panel.



1400 Jay Street, Freeport, IL



1908 Revere Street, Freeport, IL



Location Map of 1400 Jay Street and the Paired Sale at 1908 Revere Street.

Although these properties are similar, they are not exactly the same. It is necessary to adjust for the subtle differences between the two, in order to isolate any impact on price caused by location. The Paired Sale was adjusted for differences in lot size, age, bathrooms, GLA, and garage. After adjusting for these differences, the differences between the adjusted sale price of the paired sale and the sale price of 1400 Jay Street can be attributed to its proximity and view of the Solar Farm.

	Sale Adjacent to Solar Farm	Paired Sale	
Address	1400 Jay St.	1908 Revere St.	
City	Freeport	Freeport	
Sale Price	\$128,500	\$126,000	
Price/SF GLA	\$81.12	\$74.07	
Data Source	MLS	MLS	
Verification	Assessor	Assessor	
Financing	Conv	Conv	
Date of Sale	Nov-19	Oct-19	
Location	Average	Average	
Property Rights	Fee Simple	Fee Simple	
Site SF	16553	11761	1,198
View	Res, Solar Farm	Similar Res	
Design	Raised Ranch	Split Level	
Quality	Average	Average	
Age	38	53	7,500
Appeal	Average	Average	
Condition	Average	Average	
Room Count	7/3/2.1	7/3/1.1	5,000
GLA	1320	1701	-17,145
Basement & Finished	Included Above	Included Above	
Rooms Below Grade			
Functional Utility	Average	Average	
HVAC	GFA/CAC	GFA/CAC	
Garage	2 Car	1 Car	5000
Porch, Patio, Deck	Deck	Deck	
Net Adjustment		1,553	
Adj. Sales Price		\$127,553	

Analysis and Conclusion

The Paired Sale has an adjusted sale price of \$127,553. The Sale price of 1400 Jay is \$128,500. After adjusting for differences in features, no price differential was noted between the sale of 1400 Jay, adjacent to the Solar Farm, and the sale of a home without the attribute of being adjacent to a Solar Farm.

We interviewed the Realtor, Kimberly Taylor, that listed and sold the property at 1400 Jay Street. During our interview, Ms. Taylor mentioned that she has listed and sold several homes in the Willow Lake Subdivision and in her experience “nobody seems to care” about the nearby solar farm. She reported that she has not observed any buyer resistance to purchasing in the Willow Lakes Subdivision or purchasing homes in close proximity to the Solar Farm in the area.

9. Matched Pair – Hilltop Solar, Rockford, Winnebago, IL



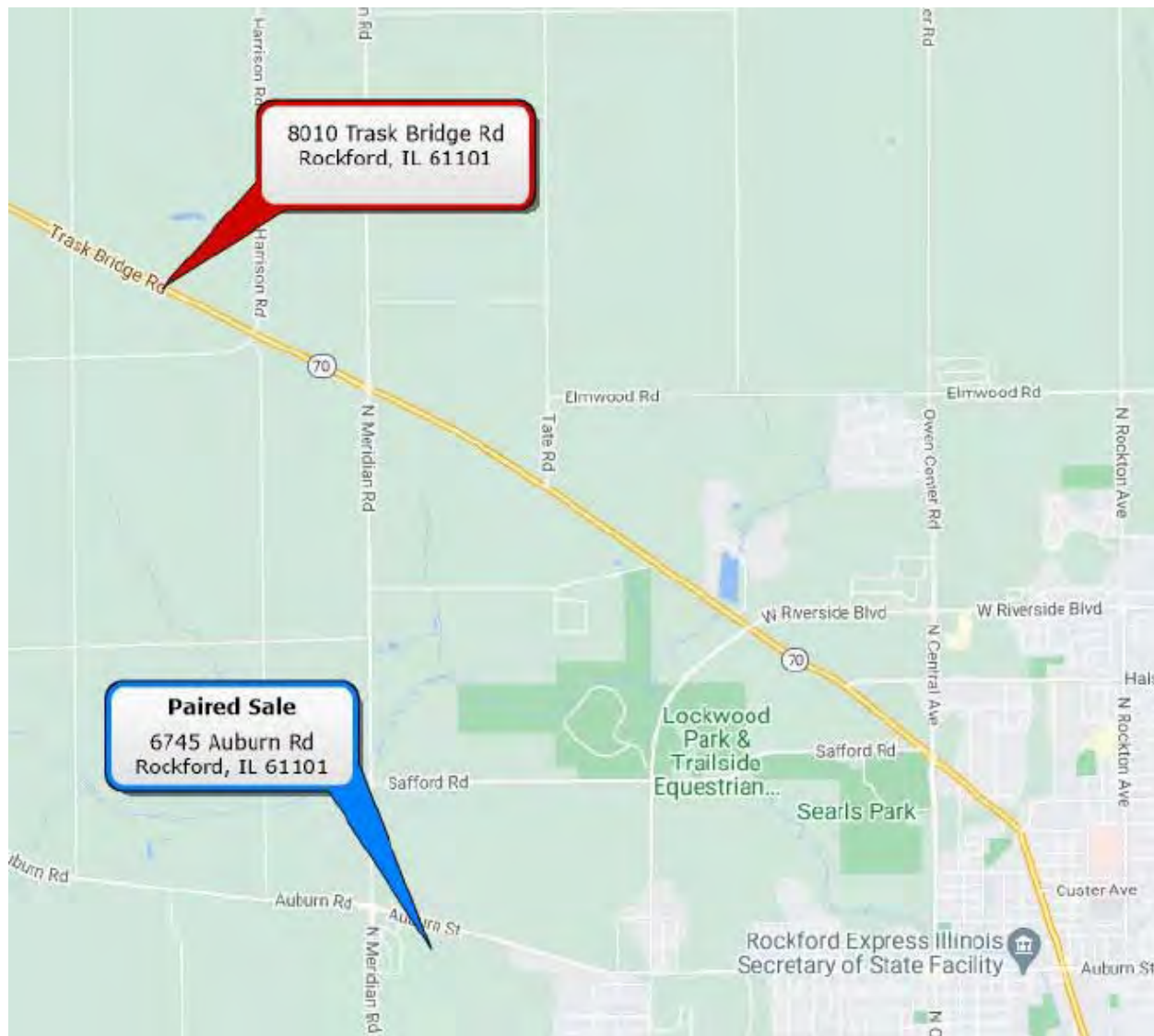
This solar farm has a 2 MW output and is located off Trask Bridge Road and was built in 2021.

The data set for this example was primarily developed by Lee Ovington, MAI when we worked together on a similar project in Illinois.

We considered a nearby sale of 8101 Trask Bridge Road for a paired sale analysis. This property sold in September 2021, after the construction of the Solar Farm. This home has a view of the Solar Farm to the Southwest that is partially buffered by a couple of barns and outbuildings. There is not visible planted vegetation providing a visual buffer. This home is 455 feet from the nearest panel.

The listing agent, Olga Kampmeier, that handled this transaction was interviewed. During our interview, Ms. Kampmeier reported that she did not recall any buyers asking or commenting about the nearby solar farm nor did the Solar Farm become an issue discussed by buyers during price negotiations.

The sale of 8010 Trask Bridge Road was compared to a similar home that sold in the same market area during mid-2021.



Location Map of 8101 Trask Bridge Road and the Paired Sale at 6745 Auburn Road.



8010 Trask Bridge Road, Rockford, IL



6745 Auburn Road, Rockford, IL

	Sale Adjacent to Solar Farm	Paired Sale	
Address	8010 Trask Bridge Rd.	6745 Auburn Rd.	
City	Rockford	Rockford	
Sale Price	\$250,000	\$260,000	
Price/SF GLA	\$189.39	\$161.19	
Data Source	MLS	MLS	
Verification	Assessor	Assessor	
Financing	Conv	Conv	
Date of Sale	Sep-21	Jul-21	
Location	Average	Average	
Property Rights	Fee Simple	Fee Simple	
Site SF	217800	245243	-6,861
View	Fields, Solar Farm	Fields	
Design	Ranch	Ranch	
Quality	Average	Average	
Age	55	71	8,000
Appeal	Average	Average	
Condition	Average	Average	
Room Count	6/3/2.0	6/3/1.0	5,000
GLA	1320	1613	-13,185
Basement & Finished	Full Bsmt	Full Bsmt	
Rooms Below Grade	RR, Bath	Unfinished	12,000
Functional Utility	Average	Average	
HVAC	GFA/CAC	GFA/CAC	
Garage	2 Car	2 Car	
Porch, Patio, Deck	Deck	None	5000
Other	Two Small Barns	Three Larger Barns	-20,000
Net Adjustment			-10,046
Adj. Sales Price			\$249,954

Although these properties are similar, they are not exactly the same. It is necessary to adjust for the subtle differences between the two, in order to isolate any impact on price caused by location, proximity to, and view of the Solar Farm. The Paired Sale was adjusted for differences in lot size, age, bathrooms, GLA, basement finish, deck, and barns. After adjusting for these differences, the differences between the adjusted sale price of the paired sale and the sale price of the 8010 Trask Bridge Road can be attributed to its proximity and view of the Solar Farm.

Analysis and Conclusion

The Paired Sale has an adjusted sale price of \$249,954. The Sale price of 8010 Trask Bridge Road is \$250,000. After adjusting for differences in features, no price differential was noted between the sale of 8010 Trask Bridge Road, adjacent to the Solar Farm, and the sale of a home without the attribute of being adjacent to a Solar Farm.

Furthermore, the marketing time of the sale at 8010 Trask Bridge Road was 18 days while the marketing time of the Paired sale was 26 days. These are effectively equal market times.

10. Matched Pair – Grand Ridge Solar, Streator, LaSalle County, 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. The landscaping buffer is considered light.

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	Time	Adjustments	
			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.

There is minimal landscaping separating this solar farm from nearby properties and is therefore considered light.

	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.

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.

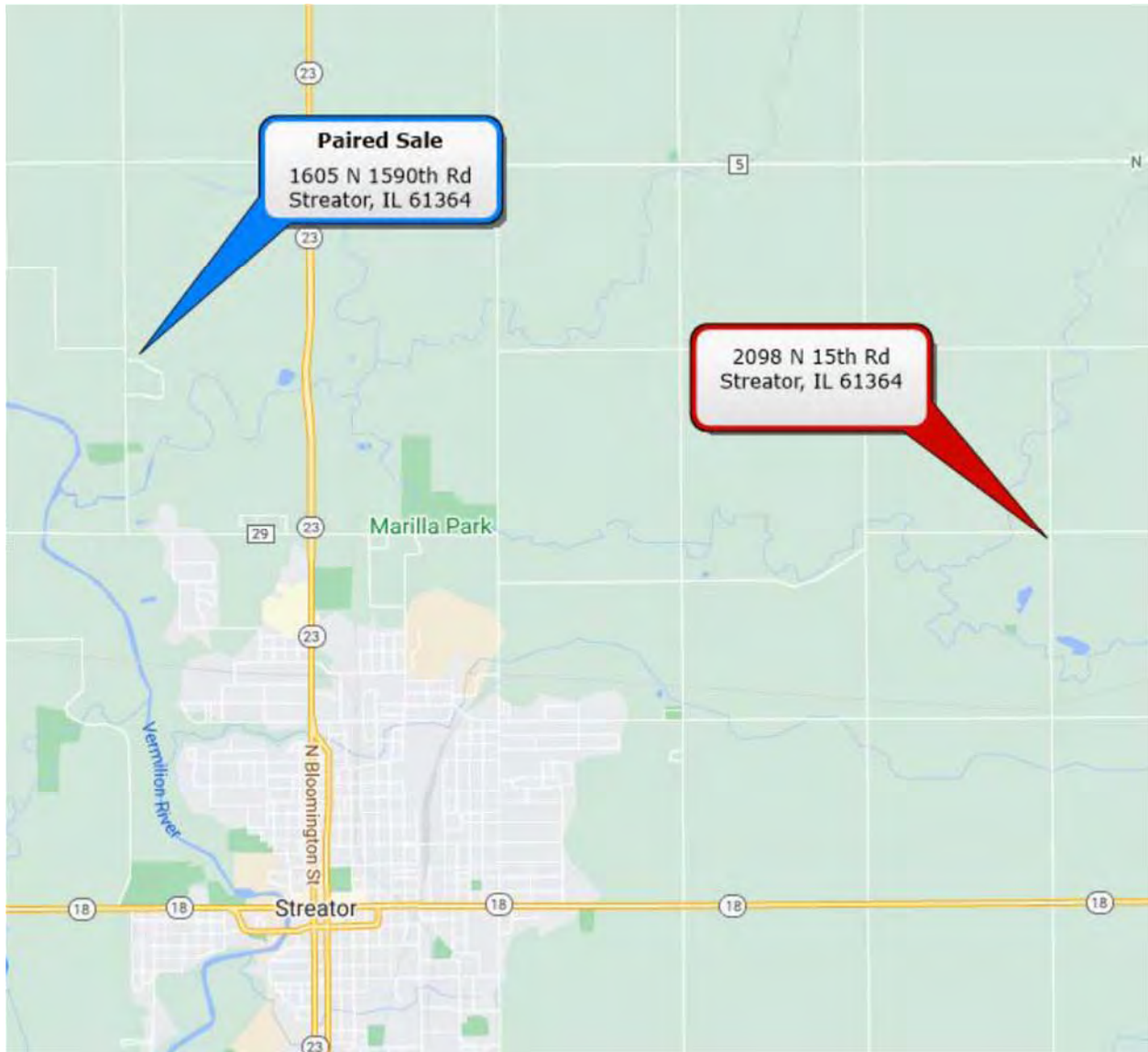
The data set for this example was primarily developed by Lee Ovington, MAI when we worked together on a similar project in Illinois.

We further analyzed the sale of 2098 N 15th Road situated directly across the street from with an unobstructed view of the Solar Farm. It is 485 feet from the nearest panel.

We attempted to interview the listing agent, Beckie Chismarick, but learned from an associate and co-listing agent, Deborah Spangler, that Beckie has since passed away. During our interview with Beckie, she mentioned that she could not recall any buyers commenting about the Solar Farm; however, she stated that Beckie handled most of the details on that transaction.



The sale of 2098 N 15th Road was compared to a similar home that sold in the same market area.



Location Map of 8101 Trask Bridge Road and the Paired Sale at 6745 Auburn Road.



2098 N 15th Road, Streator, IL



1605 N 1590th Road, Streator, IL

	Sale Adjacent to Solar Farm	Paired Sale	
Address	2098 N 15th	1605 N 1590th	
City	Streator	Streator	
Sale Price	\$186,000	\$175,000	
Price/SF GLA	\$79.90	\$83.21	
Data Source	MLS	MLS	
Verification	Assessor	Assessor	
Financing	Conv	Conv	
Date of Sale	Oct-16	Oct-17	-6,125
Location	Average	Average	
Property Rights	Fee Simple	Fee Simple	
Site SF	87120	76230	2,723
View	Fields, Solar Farm	Similar Res.	
Design	Ranch	Ranch	
Quality	Average	Average	
Age	19	11	-12,000
Appeal	Average	Average	
Condition	Average	Average	
Room Count	7/3/3.0	6/3/2.0	5,000
GLA	2328	2103	5,625
Basement & Finished	Full Bsmt	Full Bsmt	
Rooms Below Grade	RR, Bath	Unfinished	12,000
Functional Utility	Average	Average	
HVAC	GFA/CAC	GFA/CAC	
Garage	3 Car	2 Car	3000
Porch, Patio, Deck	Deck	Patio	
Net Adjustment			10,223
Adj. Sales Price			\$185,223

Although these properties are similar, they are not exactly the same. It is necessary to adjust for the subtle differences between the two, in order to isolate any impact on price caused by location, proximity to, and view of the Solar Farm. The Paired Sale was adjusted for differences in date of sale, lot size, age, bathrooms, GLA, basement finish, and garage. After adjusting for these differences, the differences between the adjusted sale price of the paired sale and the sale price of the 2098 N 15th Road can be attributed to its proximity and view of the Solar Farm.

Analysis and Conclusion

The Paired Sale has an adjusted sale price of \$185,223. The Sale price of 2098 N 15th Road was \$186,000. After adjusting for differences in features, no price differential was noted between the sale adjacent to the Solar Farm and the sale of a home without the attribute of being adjacent to a Solar Farm.

11. Matched Pair – Bremen Solar, Bremen, Marshall County, IN

This 6.8 MW solar farm was built in 2022 on 36.74 acres. The closest adjoining homes is 60 feet and the average distance is 133 feet. This project has no landscaping screen and is not consistent with most of the projects that I have researched.

A manufactured home at 1141 Gilbert Lane sold for \$186,000 on May 1, 2023 and most recently sold prior to that on January 7, 2022 for \$160,000. Adjusting for the change in time based on the FHFA HPI Calculator for the South Bend area, the indicated expected value is \$189,000. This indicates a 1.6% difference below the expected which is within typical market imperfection and supports a finding of no impact on property value. This home does not directly adjoin the solar farm and is 310 feet from the nearest panel.

Conclusion – Indiana and Adjoining States

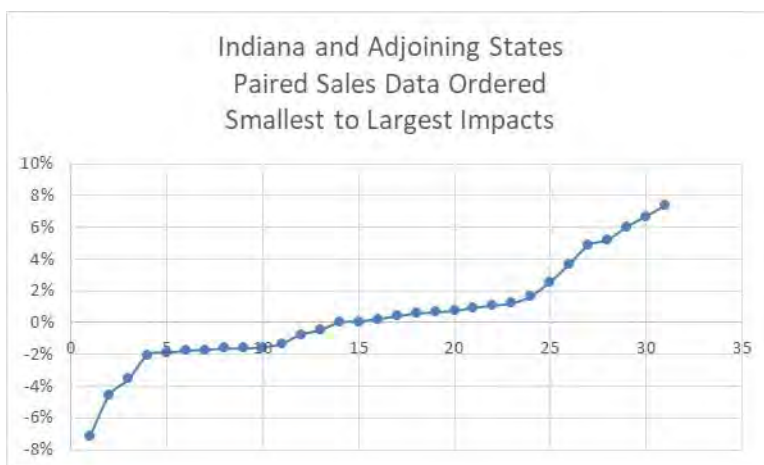
Matched Pair Summary					Adj. Uses By Acreage					1 mile Radius (2020-2024 Data)			
Name	City	State	Acres	MW	Topo	Shift	Res	Ag	Ag/Res	Com/Ind	Population	Med. Income	Avg. Housing Unit
1	DG Amp Piqua	Piqua	OH	86	12.60	2	26%	16%	58%	0%	6,735	\$38,919	\$96,555
2	Portage	Portage	IN	56	2.00	0	19%	81%	0%	0%	6,642	\$65,695	\$186,463
3	Dominion	Indianapolis	IN	134	8.60	20	3%	97%	0%	0%	3,774	\$61,115	\$167,515
4	Crittenden	Crittenden	KY	34	2.70	40	22%	51%	27%	0%	1,419	\$60,198	\$178,643
5	Walton 2	Walton	KY	58	2.00	90	21%	0%	60%	19%	880	\$81,709	\$277,717
6	Demille	Lapeer	MI	160	28.40	10	10%	68%	0%	22%	2,010	\$47,208	\$187,214
7	Turrill	Lapeer	MI	230	19.60	10	75%	59%	0%	25%	2,390	\$46,839	\$110,361
8	Freeport	Freeport	IL	16	2.00	1	2%	78%	20%	0%	945	\$76,565	\$162,351
9	Hilltop	Rockford	IL	20	2.00	1	7%	84%	0%	9%	58	\$85,248	\$250,000
10	Grand Ridge	Streator	IL	160	20.00	1	8%	87%	5%	0%	96	\$70,158	\$187,037
11	Bremen	Bremen	IN	37	6.80	15	40%	60%	0%	0%	388	\$62,855	\$232,857
Average			90	9.70	17	21%	62%	15%	7%		2,303	\$63,319	\$185,156
Median			58	6.80	10	19%	68%	0%	0%		1419	\$62,855	\$186,463
High			230	28.40	90	75%	97%	60%	25%		6,735	\$85,248	\$277,717
Low			16	2.00	0	2%	0%	0%	0%		58	\$38,919	\$96,555

The median income for the population within 1 mile of a solar farm is \$62,855 with a median housing unit value of \$186,463. All of these comparable solar farms have homes within a 1-mile radius under \$300,000 on average, though I have matched pairs in other states over \$1,600,000 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 is 1 of the 31 matched pairs that suggest a negative impact due to the solar farm and there are 3 of the 31 matched pairs that suggest a positive impact due to the solar farm. That leaves 27 out of 31, or 87% of the findings supporting no impact on value. This could also be stated as 97% of the matched pairs support a finding of either no impact or a positive impact. The biggest negative impact identified is considered 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 31 matched pairs from these 11 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% which is 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	Oct-16	\$186,000		
							712 Columbus	Jun-16	\$166,000	\$184,000	1%
2	Portage	Portage	IN	Rural	2	1320	836 N 450 W	Sep-13	\$149,800		
							336 E 1050 N	Jan-13	\$155,000	\$144,282	4%
3	Dominion	Indianapolis	IN	Rural	8.6	400	2013249 (Tax ID)	Dec-15	\$140,000		
							5723 Minden	Nov-16	\$139,900	\$132,700	5%
4	Dominion	Indianapolis	IN	Rural	8.6	400	2013251 (Tax ID)	Sep-17	\$160,000		
							5910 Mosaic	Aug-16	\$146,000	\$152,190	5%
5	Dominion	Indianapolis	IN	Rural	8.6	400	2013252 (Tax ID)	May-17	\$147,000		
							5836 Sable	Jun-16	\$141,000	\$136,165	7%
6	Dominion	Indianapolis	IN	Rural	8.6	400	2013258 (Tax ID)	Dec-15	\$131,750		
							5904 Minden	May-16	\$130,000	\$134,068	-2%
7	Dominion	Indianapolis	IN	Rural	8.6	400	2013260 (Tax ID)	Mar-15	\$127,000		
							5904 Minden	May-16	\$130,000	\$128,957	-2%
8	Dominion	Indianapolis	IN	Rural	8.6	400	2013261 (Tax ID)	Feb-14	\$120,000		
							5904 Minden	May-16	\$130,000	\$121,930	-2%
9	Demille	Lapeer	MI	Suburban	28	310	1120 Don Wayne	Aug-19	\$194,000		
							1231 Turrill	Apr-19	\$182,000	\$200,895	-4%
10	Demille	Lapeer	MI	Suburban	28	310	1126 Don Wayne	May-18	\$160,000		
							3565 Garden	May-19	\$165,000	\$163,016	-2%
11	Demille	Lapeer	MI	Suburban	28	380	1138 Don Wayne	Aug-19	\$191,000		
							1128 Gwen	Aug-18	\$187,500	\$189,733	1%
12	Demille	Lapeer	MI	Suburban	28	280	1174 Alice	Jan-19	\$165,000		
							1127 Don Wayne	Sep-19	\$176,900	\$163,443	1%
13	Turrill	Lapeer	MI	Suburban	20	290	1060 Cliff	Sep-18	\$200,500		
							1128 Gwen	Aug-18	\$187,500	\$200,350	0%
14	Turrill	Lapeer	MI	Suburban	20	255	1040 Cliff	Jun-17	\$145,600		
							1127 Don Wayne	Sep-19	\$176,900	\$146,271	0%
15	DG Amp	Piqua	OH	Suburban	12.6	155	6060 N Washington	Oct-19	\$119,500		
							1511 Sweetbriar	Aug-20	\$123,000	\$118,044	1%
16	DG Amp	Piqua	OH	Suburban	12.6	585	1011 Plymouth	Feb-20	\$113,000		
							1720 Williams	Dec-19	\$119,900	\$111,105	2%
17	DG Amp	Piqua	OH	Suburban	12.6	155	6010 N Washington	Aug-21	\$176,900		
							1834 Wilshire	Dec-21	\$168,900	\$172,354	3%
18	DG Amp	Piqua	OH	Suburban	12.6	160	6240 N Washington	Oct-21	\$155,000		
							424 Pinewood	May-22	\$151,000	\$145,627	6%
19	Crittenden	Crittenden	KY	Suburban	2.7	373	250 Claiborne	Jan-19	\$120,000		
							315 N Fork	May-19	\$107,000	\$120,889	-1%
20	Crittenden	Crittenden	KY	Suburban	2.7	488	300 Claiborne	Sep-18	\$213,000		
							1795 Bay Valley	Dec-17	\$231,200	\$228,180	-7%
21	Crittenden	Crittenden	KY	Suburban	2.7	720	350 Claiborne	Jul-18	\$245,000		
							2160 Sherman	Jun-19	\$265,000	\$248,225	-1%
22	Crittenden	Crittenden	KY	Suburban	2.7	930	370 Claiborne	Aug-19	\$273,000		
							125 Lexington	Apr-18	\$240,000	\$254,751	7%
23	Crittenden	Crittenden	KY	Suburban	2.7	365	250 Claiborne	Jan-22	\$210,000		
							240 Shawnee	Jun-21	\$166,000	\$219,563	-5%
24	Crittenden	Crittenden	KY	Suburban	2.7	390	260 Claiborne	Oct-21	\$175,000		
							355 Oakwood	Oct-20	\$186,000	\$173,988	1%
25	Crittenden	Crittenden	KY	Suburban	2.7	570	300 Claiborne	Dec-21	\$290,000		
							39 Pinhook	Mar-22	\$299,000	\$289,352	0%
26	Crittenden	Crittenden	KY	Suburban	2.7	1080	410 Claiborne	Feb-21	\$275,000		
							114 Austin	Dec-20	\$248,000	\$279,680	-2%
27	Walton 2	Walton	KY	Suburban	2	410	783 Jones	May-22	\$346,000		
							783 Jones	May-12	\$174,900	\$353,000	-2%
28	Bremen	Bremen	IN	Suburban	6.8	310	1141 Gilbert	May-23	\$186,000		
							1141 Gilbert	Jan-22	\$160,000	\$189,000	-2%
29	Grand Ridge	Streator	IL	Rural	20	485	2098 N 15th	Oct-16	\$186,000		
							1605 N 1590th	Oct-17	\$175,000	\$185,223	0%
30	Hilltop	Rockford	IL	Rural	2	455	8010 Trask Brdg	Sep-21	\$250,000		
							6745 Auburn	Jul-21	\$260,000	\$249,954	0%
31	Freeport	Freeport	IL	Rural	2	225	1400 Jay	Nov-19	\$128,500		
							1908 Revere	Oct-19	\$126,000	\$127,553	1%

	Avg.			
	MW	Distance		% Dif
Average	10.35	447	Average	0%
Median	8.60	400	Median	0%
High	28.00	1,320	High	7%
Low	2.00	155	Low	-7%

B. Midwest USA Data – Over 5 MW

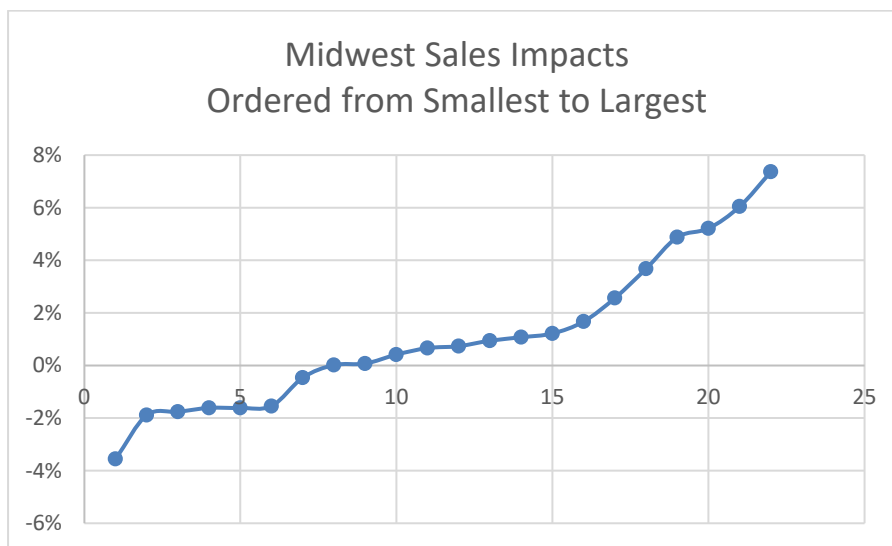
This is a similar set to the Indiana and adjoining states, but excludes data from Kentucky.

Matched Pair Summary						Adj. Uses By Acreage					1 mile Radius (2020-2024 Data)		
Name	City	State	Acres	MW	Topo Shift	Res	Ag	Ag/Res	Com/Ind	Population	Med. Income	Avg. Housing Unit	
1	Grand Ridge	Streator	IL	160	20.00	1	8%	87%	5%	0%	96	\$70,158	\$187,037
2	Portage	Portage	IN	56	2.00	0	19%	81%	0%	0%	6,642	\$65,695	\$186,463
3	Dominion	Indianapolis	IN	134	8.60	20	3%	97%	0%	0%	3,774	\$61,115	\$167,515
4	Demille	Lapeer	MI	160	28.40	10	10%	68%	0%	22%	2,010	\$47,208	\$187,214
5	Turrill	Lapeer	MI	230	19.60	10	75%	59%	0%	25%	2,390	\$46,839	\$110,361
6	DG Amp Piqua	Piqua	OH	86	12.60	2	26%	16%	58%	0%	6,735	\$38,919	\$96,555
7	Freeport	Freeport	IL	16	2.00	1	2%	78%	20%	0%	945	\$76,565	\$162,351
8	Hilltop	Rockford	IL	20	2.00	1	7%	84%	0%	9%	58	\$85,248	\$250,000
9	Grand Ridge	Streator	IL	160	20.00	1	8%	87%	5%	0%	96	\$70,158	\$187,037
10	Bremen	Bremen	IN	37	6.80	15	40%	60%	0%	0%	388	\$62,855	\$232,857
Average			106	12.20	6	20%	72%	9%	6%	2,313	\$62,476	\$176,739	
Median			110	10.60	2	9%	80%	0%	0%	1478	\$64,275	\$186,750	
High			230	28.40	20	75%	97%	58%	25%	6,735	\$85,248	\$250,000	
Low			16	2.00	0	2%	16%	0%	0%	58	\$38,919	\$96,555	

The median income for the population within 1 mile of a solar farm is \$64,275 with a median housing unit value of \$186,750. All of these comparable solar farms have homes within a 1-mile radius under \$300,000 on average, though I have matched pairs in other states over \$1,600,000 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 22 matched pairs from these 10 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. None of the sales support a finding of a negative impact, while 2 of the 22 show positive impacts.



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	Oct-16	\$186,000		
							712 Columbus	Jun-16	\$166,000	\$184,000	1%
2	Portage	Portage	IN	Rural	2	1320	836 N 450 W	Sep-13	\$149,800		
							336 E 1050 N	Jan-13	\$155,000	\$144,282	4%
3	Dominion	Indianapolis	IN	Rural	8.6	400	2013249 (Tax ID)	Dec-15	\$140,000		
							5723 Minden	Nov-16	\$139,900	\$132,700	5%
4	Dominion	Indianapolis	IN	Rural	8.6	400	2013251 (Tax ID)	Sep-17	\$160,000		
							5910 Mosaic	Aug-16	\$146,000	\$152,190	5%
5	Dominion	Indianapolis	IN	Rural	8.6	400	2013252 (Tax ID)	May-17	\$147,000		
							5836 Sable	Jun-16	\$141,000	\$136,165	7%
6	Dominion	Indianapolis	IN	Rural	8.6	400	2013258 (Tax ID)	Dec-15	\$131,750		
							5904 Minden	May-16	\$130,000	\$134,068	-2%
7	Dominion	Indianapolis	IN	Rural	8.6	400	2013260 (Tax ID)	Mar-15	\$127,000		
							5904 Minden	May-16	\$130,000	\$128,957	-2%
8	Dominion	Indianapolis	IN	Rural	8.6	400	2013261 (Tax ID)	Feb-14	\$120,000		
							5904 Minden	May-16	\$130,000	\$121,930	-2%
9	Demille	Lapeer	MI	Suburban	28	310	1120 Don Wayne	Aug-19	\$194,000		
							1231 Turrill	Apr-19	\$182,000	\$200,895	-4%
10	Demille	Lapeer	MI	Suburban	28	310	1126 Don Wayne	May-18	\$160,000		
							3565 Garden	May-19	\$165,000	\$163,016	-2%
11	Demille	Lapeer	MI	Suburban	28	380	1138 Don Wayne	Aug-19	\$191,000		
							1128 Gwen	Aug-18	\$187,500	\$189,733	1%
12	Demille	Lapeer	MI	Suburban	28	280	1174 Alice	Jan-19	\$165,000		
							1127 Don Wayne	Sep-19	\$176,900	\$163,443	1%
13	Turrill	Lapeer	MI	Suburban	20	290	1060 Cliff	Sep-18	\$200,500		
							1128 Gwen	Aug-18	\$187,500	\$200,350	0%
14	Turrill	Lapeer	MI	Suburban	20	255	1040 Cliff	Jun-17	\$145,600		
							1127 Don Wayne	Sep-19	\$176,900	\$146,271	0%
15	DG Amp	Piqua	OH	Suburban	12.6	155	6060 N Washington	Oct-19	\$119,500		
							1511 Sweetbriar	Aug-20	\$123,000	\$118,044	1%
16	DG Amp	Piqua	OH	Suburban	12.6	585	1011 Plymouth	Feb-20	\$113,000		
							1720 Williams	Dec-19	\$119,900	\$111,105	2%
17	DG Amp	Piqua	OH	Suburban	12.6	155	6010 N Washington	Aug-21	\$176,900		
							1834 Wilshire	Dec-21	\$168,900	\$172,354	3%
18	DG Amp	Piqua	OH	Suburban	12.6	160	6240 N Washington	Oct-21	\$155,000		
							424 Pinewood	May-22	\$151,000	\$145,627	6%
19	Bremen	Bremen	IN	Suburban	6.8	310	1141 Gilbert	May-23	\$186,000		
							1141 Gilbert	Jan-22	\$160,000	\$189,000	-2%
20	Grand Ridge	Streator	IL	Rural	20	485	2098 N 15th	Oct-16	\$186,000		
							1605 N 1590th	Oct-17	\$175,000	\$185,223	0%
21	Hilltop	Rockford	IL	Rural	2	455	8010 Trask Brdg	Sep-21	\$250,000		
							6745 Auburn	Jul-21	\$260,000	\$249,954	0%
22	Freeport	Freeport	IL	Rural	2	225	1400 Jay	Nov-19	\$128,500		
							1908 Revere	Oct-19	\$126,000	\$127,553	1%

	Avg.			% Dif
	MW	Distance		
Average	13.66	385	Average	1%
Median	12.60	380	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 24 states related to solar farms and I have been tracking matched pairs in most of those states. On the following pages I provide a brief summary of those findings showing 36 solar farms over 5 MW studied with each one providing matched pair data supporting the findings of this report.

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

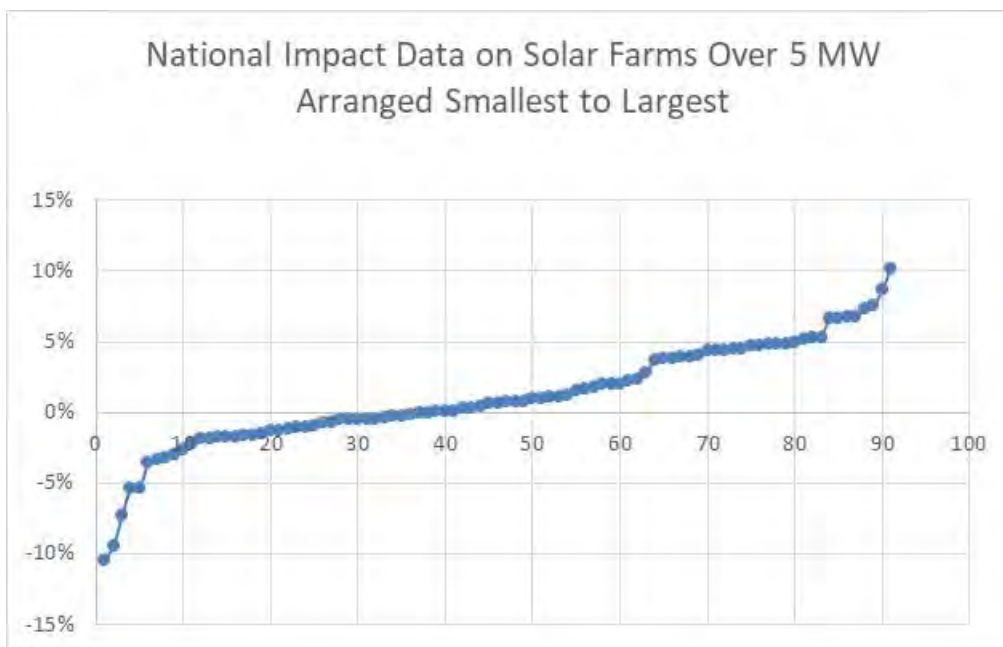
Matched Pair Summary						Adj. Uses By Acreage					1 mile Radius (2020 Data)		
Name	City	State	Acres	MW	Topo	Shift	Res	Ag	Ag/Res	Com/Ind	Population	Med. Income	Avg. Housing Unit
1	AM Best	Goldsboro	NC	38	5.00	2	38%	0%	23%	39%	1,523	\$37,358	\$148,375
2	Mulberry	Selmer	TN	160	5.00	60	13%	73%	10%	3%	467	\$40,936	\$171,746
3	Leonard	Hughesville	MD	47	5.00	20	18%	75%	0%	6%	525	\$106,550	\$350,000
4	Gastonia SC	Gastonia	NC	35	5.00	48	33%	0%	23%	44%	4,689	\$35,057	\$126,562
5	Summit	Moyock	NC	2,034	80.00	4	4%	0%	94%	2%	382	\$79,114	\$281,731
6	Tracy	Boyle	NC	50	5.00	10	29%	0%	71%	0%	312	\$43,940	\$99,219
7	Manatee	Parrish	FL	1,180	75.00	20	2%	97%	1%	0%	48	\$75,000	\$291,667
8	McBride	Midland	NC	627	75.00	140	12%	10%	78%	0%	398	\$63,678	\$256,306
9	Grand Ridge	Streator	IL	160	20.00	1	8%	87%	5%	0%	96	\$70,158	\$187,037
10	Dominion	Indianapolis	IN	134	8.60	20	3%	97%	0%	0%	3,774	\$61,115	\$167,515
11	Mariposa	Stanley	NC	36	5.00	96	48%	0%	52%	0%	1,716	\$36,439	\$137,884
12	Clarke Cnty	White Post	VA	234	20.00	70	14%	39%	46%	1%	578	\$81,022	\$374,453
13	Flemington	Flemington	NJ	120	9.36	N/A	13%	50%	28%	8%	3,477	\$105,714	\$444,696
14	Frenchtown	Frenchtown	NJ	139	7.90	N/A	37%	35%	29%	0%	457	\$111,562	\$515,399
15	McGraw	East Windsor	NJ	95	14.00	N/A	27%	44%	0%	29%	7,684	\$78,417	\$362,428
16	Tinton Falls	Tinton Falls	NJ	100	16.00	N/A	98%	0%	0%	2%	4,667	\$92,346	\$343,492
17	Simon	Social Circle	GA	237	30.00	71	1%	63%	36%	0%	203	\$76,155	\$269,922
18	Candace	Princeton	NC	54	5.00	22	76%	24%	0%	0%	448	\$51,002	\$107,171
19	Walker	Barhamsville	VA	485	20.00	N/A	12%	68%	20%	0%	203	\$80,773	\$320,076
20	Innov 46	Hope Mills	NC	532	78.50	0	17%	83%	0%	0%	2,247	\$58,688	\$183,435
21	Innov 42	Fayetteville	NC	414	71.00	0	41%	59%	0%	0%	568	\$60,037	\$276,347
22	Demille	Lapeer	MI	160	28.40	10	10%	68%	0%	22%	2,010	\$47,208	\$187,214
23	Turrill	Lapeer	MI	230	19.60	10	75%	59%	0%	25%	2,390	\$46,839	\$110,361
24	Sunfish	Willow Spring	NC	50	6.40	30	35%	35%	30%	0%	1,515	\$63,652	\$253,138
25	Picture Rocks	Tucson	AZ	182	20.00	N/A	6%	88%	6%	0%	102	\$81,081	\$280,172
26	Avra Valley	Tucson	AZ	246	25.00	N/A	3%	94%	3%	0%	85	\$80,997	\$292,308
27	Sappony	Stony Crk	VA	322	20.00	N/A	2%	98%	0%	0%	74	\$51,410	\$155,208
28	Camden Dam	Camden	NC	50	5.00	0	17%	72%	11%	0%	403	\$84,426	\$230,288
29	Grandy	Grandy	NC	121	20.00	10	55%	24%	0%	21%	949	\$50,355	\$231,408
30	Champion	Pelion	SC	100	10.00	N/A	4%	70%	8%	18%	1,336	\$46,867	\$171,939
31	Eddy II	Eddy	TX	93	10.00	N/A	15%	25%	58%	2%	551	\$59,627	\$139,088
32	Somerset	Somerset	TX	128	10.60	N/A	5%	95%	0%	0%	1,293	\$41,574	\$135,490
33	DG Amp Piqua	Piqua	OH	86	12.60	2	26%	16%	58%	0%	6,735	\$38,919	\$96,555
34	Barefoot Bay	Barefoot Bay	FL	504	74.50	0	11%	87%	0%	3%	2,446	\$36,737	\$143,320
35	Miami-Dade	Miami	FL	347	74.50	0	26%	74%	0%	0%	127	\$90,909	\$403,571
36	Spotsylvania	Paytes	VA	3,500	500.00	160	37%	52%	11%	0%	74	\$120,861	\$483,333
37	Whitehorn	Gretna	VA	N/A	50.00	N/A	N/A	N/A	N/A	N/A	166	\$43,179	\$168,750
38	Altavista	Altavista	VA	720	80.00	N/A	N/A	N/A	N/A	N/A	7	\$50,000	\$341,667
39	Hattiesburg	Hattiesburg	MS	400	50.00	N/A	10%	85%	5%	0%	1,065	\$28,545	\$129,921
40	Bremen	Bremen	IN	37	6.80	15	40%	60%	0%	0%	388	\$62,855	\$232,857
Average				364	39.59	32	24%	53%	19%	6%	1,404	\$64,278	\$240,051
Median				160	19.80	13	16%	60%	6%	0%	538	\$60,576	\$230,848
High				3,500	500.00	160	98%	98%	94%	44%	7,684	\$120,861	\$515,399
Low				35	5.00	0	1%	0%	0%	0%	7	\$28,545	\$96,555

From these 40 solar farms, I have derived 91 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	47.66	565	Average 1%
Median	16.00	400	Median 1%
High	617.00	2,020	High 10%
Low	5.00	145	Low -10%

While the range is broad, the chart below shows the data points in range from lowest to highest. There are only 3 data points out of 91 that show a negative impact (-6% or more). The rest support either a finding of no impact or 8 of the data points suggest a positive impact (+6% or more) due to adjacency to a solar farm. As discussed earlier in this report, findings between +/-5% is typical market variation/imperfection and is not indicative of a positive or negative impact. If I were to consider impacts within that range as indicative of market impacts, then the majority of the impacts would suggest a positive impact on property value as indicated by the +1% average impact and +1% median impact.

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



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 500 MW facility.

Matched Pair Summary - @20 MW And Larger					Adj. Uses By Acreage					1 mile Radius (2010-2020 Data)			
Name	City	State	Acres	MW	Topo Shift	Res	Ag	Ag/Res	Com/Ind	Population	Med. Income	Avg. Housing Unit	
1	Summit	Moyock	NC	2,034	80.00	4	4%	0%	94%	2%	382	\$79,114	\$281,731
2	Manatee	Parrish	FL	1,180	75.00	20	2%	97%	1%	0%	48	\$75,000	\$291,667
3	McBride	Midland	NC	627	75.00	140	12%	10%	78%	0%	398	\$63,678	\$256,306
4	Grand Ridge	Streator	IL	160	20.00	1	8%	87%	5%	0%	96	\$70,158	\$187,037
5	Clarke Cnty	White Post	VA	234	20.00	70	14%	39%	46%	1%	578	\$81,022	\$374,453
6	Simon	Social Circle	GA	237	30.00	71	1%	63%	36%	0%	203	\$76,155	\$269,922
7	Walker	Barhamsville	VA	485	20.00	N/A	12%	68%	20%	0%	203	\$80,773	\$320,076
8	Innov 46	Hope Mills	NC	532	78.50	0	17%	83%	0%	0%	2,247	\$58,688	\$183,435
9	Innov 42	Fayetteville	NC	414	71.00	0	41%	59%	0%	0%	568	\$60,037	\$276,347
10	Demille	Lapeer	MI	160	28.40	10	10%	68%	0%	22%	2,010	\$47,208	\$187,214
11	Turrill	Lapeer	MI	230	19.60	10	75%	59%	0%	25%	2,390	\$46,839	\$110,361
12	Picure Rocks	Tucson	AZ	182	20.00	N/A	6%	88%	6%	0%	102	\$81,081	\$280,172
13	Avra Valley	Tucson	AZ	246	25.00	N/A	3%	94%	3%	0%	85	\$80,997	\$292,308
14	Sappony	Stony Crk	VA	322	20.00	N/A	2%	98%	0%	0%	74	\$51,410	\$155,208
15	Grandy	Grandy	NC	121	20.00	10	55%	24%	0%	21%	949	\$50,355	\$231,408
16	Barefoot Bay	Barefoot Bay	FL	504	74.50	0	11%	87%	0%	3%	2,446	\$36,737	\$143,320
17	Miami-Dade	Miami	FL	347	74.50	0	26%	74%	0%	0%	127	\$90,909	\$403,571
18	Spotyslvania	Paytes	VA	3,500	500.00	160	37%	52%	11%	0%	74	\$120,861	\$483,333
19	Whitehorn	Gretna	VA	N/A	50.00	N/A	N/A	N/A	N/A	N/A	166	\$43,179	\$168,750
20	Altavista	Altavista	VA	720	80.00	N/A	N/A	N/A	N/A	N/A	7	\$50,000	\$341,667
Average			644	69.08		19%	64%	17%	4%		658	\$67,210	\$261,914
Median			347	40.00		12%	68%	2%	0%		203	\$66,918	\$273,135
High			3,500	500.00		75%	98%	94%	25%		2,446	\$120,861	\$483,333
Low			121	19.60		1%	0%	0%	0%		7	\$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 500 MW facilities adjoining.

Matched Pair Summary - @50 MW And Larger					Adj. Uses By Acreage					1 mile Radius (2010-2020 Data)			
Name	City	State	Acres	MW	Topo Shift	Res	Ag	Ag/Res	Com/Ind	Population	Med. Income	Avg. Housing Unit	
1	Summit	Moyock	NC	2,034	80.00	4	4%	0%	94%	2%	382	\$79,114	\$281,731
2	Manatee	Parrish	FL	1,180	75.00	20	2%	97%	1%	0%	48	\$75,000	\$291,667
3	McBride	Midland	NC	627	75.00	140	12%	10%	78%	0%	398	\$63,678	\$256,306
4	Innov 46	Hope Mills	NC	532	78.50	0	17%	83%	0%	0%	2,247	\$58,688	\$183,435
5	Innov 42	Fayetteville	NC	414	71.00	0	41%	59%	0%	0%	568	\$60,037	\$276,347
6	Barefoot Bay	Barefoot Bay	FL	504	74.50	0	11%	87%	0%	3%	2,446	\$36,737	\$143,320
7	Miami-Dade	Miami	FL	347	74.50	0	26%	74%	0%	0%	127	\$90,909	\$403,571
8	Spotyslvania	Paytes	VA	3,500	500.00	160	37%	52%	11%	0%	74	\$120,861	\$483,333
9	Whitehorn	Gretna	VA	N/A	50.00	N/A	N/A	N/A	N/A	N/A	166	\$43,179	\$168,750
10	Altavista	Altavista	VA	720	80.00	N/A	N/A	N/A	N/A	N/A	7	\$50,000	\$341,667
Average			1,095	115.85		19%	58%	23%	1%		646	\$67,820	\$283,013
Median			627	75.00		15%	67%	0%	0%		274	\$61,858	\$279,039
High			3,500	500.00		41%	97%	94%	3%		2,446	\$120,861	\$483,333
Low			347	50.00		2%	0%	0%	0%		7	\$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.

Below is a summary of 238 projects ranging in size from 50 MW up to 1,000 MW with an average size of 119.7 MW and a median of 80 MW. The average closest distance for an adjoining home is 365 feet, while the median distance is 220 feet. The closest distance is 50 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.

**Total Number of Solar Farms
Researched Over 50 MW**

238

	Output (MW)	Total Acres	Used Acres	Avg. Dist to home	Closest Home	Adjoining Use by Acre			
						Res	Agri	Agri/Res	Com
Average	119.7	1521.4	1223.3	1092	365	10%	68%	18%	4%
Median	80.0	987.3	805.5	845	220	7%	72%	12%	0%
High	1000.0	19000.0	9735.4	6835	6810	98%	100%	100%	70%
Low	50.0	3.0	3.0	241	50	0%	0%	0%	0%

XI. 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.

XII. 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.

XIII. Scope of Research

I have researched approximately 1,000 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.

XIV. 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 especially 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 has a hum similar to an HVAC that can only be heard in close proximity and the buffers on the property are sufficient to make emitted sounds effectively inaudible from the adjoining properties. A wide variety of noise studies have been conducted on solar farms to illustrate compatibility between solar properties and nearby residential uses.

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

4. Traffic

Solar farms will typically have no onsite employee's or staff. Even where there is onsite staff, the traffic generated is minimal after construction. 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.

XV. Conclusion on Solar Farm

The paired sales 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.

The distances indicated for the subject property is consistent with the paired sales showing no impact on adjoining property values given the distances involved and the proposed landscaping screen.

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 is quiet, and there is no traffic.

XVI. Certification

I certify that, to the best of my knowledge and belief:

1. The statements of fact contained in this report are true and correct;
2. The reported analyses, opinions, and conclusions are limited only by the reported assumptions and limiting conditions, and are my personal, unbiased professional analyses, opinions, and conclusions;
3. I have no present or prospective interest in the property that is the subject of this report and no personal interest with respect to the parties involved;
4. I have no bias with respect to the property that is the subject of this report or to the parties involved with this assignment;
5. My engagement in this assignment was not contingent upon developing or reporting predetermined results;
6. My compensation for completing this assignment is not contingent upon the development or reporting of a predetermined value or direction in value that favors the cause of the client, the amount of the value opinion, the attainment of a stipulated result, or the occurrence of a subsequent event directly related to the intended use of the appraisal;
7. The reported analyses, opinions, and conclusions were developed, and this report has been prepared, in conformity with the requirements of the Code of Professional Ethics and Standards of Professional Appraisal Practice of the Appraisal Institute;
8. My analyses, opinions and conclusions were developed, and this report has been prepared, in conformity with the Uniform Standards of Professional Appraisal Practice.
9. The use of this report is subject to the requirements of the Appraisal Institute relating to review by its duly authorized representatives;
10. I have not made a personal inspection of the property that is the subject of this report, and;
11. No one provided significant real property appraisal assistance to the person signing this certification.
12. As of the date of this report I have completed the continuing education program for Designated Members of the Appraisal Institute;
13. I have not completed any other appraisal related assignments regarding this project within the three years prior to engagement in this current assignment.

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

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




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



Kirkland Appraisals, LLC

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

PROFESSIONAL EXPERIENCE

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

PROFESSIONAL AFFILIATIONS

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

EDUCATION

Bachelor of Arts in English , University of North Carolina, Chapel Hill	1993
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CONTINUING EDUCATION

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

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