Ashwood Solar 1, LLC

Kentucky State Board on Electric Generation and Transmission Application

Site Assessment Report

Case No. 2020-00280

December 2020

RWE

APPLICATION OF ASHWOOD SOLAR 1, LLC FOR CONSTRUCTION CERTIFICATE TO CONSTRUCT MERCHANT ELECTRIC GENERATING FACILITY LYON COUNTY, KENTUCKY CASE NO. 2020-00280

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1. Description of Proposed Site

REQUIREMENT: per KRS 278.708 (3)(a); *A description of the proposed facility that shall include a proposed site development plan that describes:*

> *1. Surrounding land uses for residential, commercial, agricultural, and recreational purposes;*
>
> *2. The legal boundaries of the proposed site;*
>
> *3. Proposed access control to the site;*
>
> *4. The location of facility buildings, transmission lines, and other structures;*
>
> *5. Location and use of access ways, internal roads, and railways;*
>
> *6. Existing or proposed utilities to service the facility;*
>
> *7. Compliance with applicable setback requirements as provided under KRS 278.704(2), (3), (4), or (5); and*
>
> *8. Evaluation of the noise levels expected to be produced by the facility*

COMPLIANCE: The proposed Ashwood Solar 1 Facility (the Project) will be an 86-megawatt alternating current (MWac) photovoltaic electricity generation facility. The project is to be located in Lyon County, one mile south of Bakers, Kentucky along US 641. The power generated by the project will be transported on the existing KU/LGE transmission line infrastructure that crosses the property.

The project will be situated on up to 1521 acres which has historically been used for row crop and winter wheat production. The equipment onsite will consist of crystalline solar panels, inverters, a substation transformer, and an associated wiring, balance of system and potential battery storage. Ashwood Solar secured rights to over 2,000 acres, including land in Caldwell County, but this application seeks a construction certificate for the Project to be located only in Lyon County. References in studies performed for Ashwood Solar may analyze the larger area, not all of which will be used for the Project

The racking system has a small footprint that uses minimal concrete (concrete will only be used to support posts that cannot be driven to adequate depths), and the panels are not considered impervious as rainwater can travel over and around the panels, making this a low impact development. A fence meeting National Electric Safety Code (NESC) requirements, typically a six-foot fence with three strings of barbed wire at the top, will enclose the facility. Where there are potential visual impacts created by the facility, a vegetative buffer will be planted. The vegetative buffer, where applicable, will consist of two staggered rows of evergreen shrubs at least three feet in height at time of planting.

1. A detailed description of the surrounding land uses is identified in the Impact Study

conducted by Kirkland Appraisals, LLC, and attached as Exhibit A. A summary of the surrounding land use is contained in the chart below

	Acreage	**Parcels**
Residential	3.70%	54.05%
Agricultural	46.11%	24.32%
Agri/Res	22.99%	18.92%
Correctional	27.20%	2.70%

2. Exhibit B contains the legal description of the proposed site.

3. The proposed facility layout is located in Exhibit E. The layout shows the proposed access to the site. A fence meeting National Electric Safety Code (NESC) requirements, typically a six-foot fence with three strings of barbed wire at the top, will enclose the facility

4. The locations of all project infrastructure (buildings, transmission lines, and other structures), can be seen in the Preliminary Site Layout in Appendix E.

5. Proposed access points are shown in Exhibit E. There are no railways within or adjacent to the Project site and no railways will be used for any construction or operation of the Proposed project.

6. There are 2 transmission lines that intersect the southern project boundary; Kentucky Utilities Co. owns the North Princeton to South Paducah 161 kV transmission line and Big Rivers Electric Co-orp owns the Caldwell County to Barkley 161 kV transmission line. The project will interconnect with the KY Utilities North Princeton line. The locations of these lines are shown in Exhibit EAt this time, it is not anticipated that the Project will need to receive external utility services during typical plant operation.

7. The applicable setback requirements are identified in the Preliminary Site Layout Map that is Exhibit E. Ashwood will seek a deviation from those setback requirements

8. Exhibit C is the report showing noise levels expected to be produced by the facility. It indicates that "During site operation, intermittent noise related to the panel tracking system and the constant noise of the inverters is expected. The increase in noise is negligible due to the distance between the panels / inverters and the nearest noise sensitive receptors. The nearest receptor is more than 120 feet from any solar panels and approximately 500 feet from an inverter. Sound levels from the tracking system can be expected to be the levels of a normal conversation at the nearest receptor (~67 dB_A), while the sounds will be much quieter at most receptors. During average operation the inverters will be similar in noise level (~49 dB_A) to a household air conditioner. According to manufacturer specifications the loudest the transformer is expected to be just over 60 dB_A, or the level of a normal conversation. Proposed vegetative buffers will further decrease perceived noise. Site visits and maintenance activities including single vehicular traffic and mowing will be negligible as they are similar to the background agricultural noise characteristics.
   At the nearest receptors no elevated and prolonged noise levels above background levels are expected either during construction or operation of the Project site."

2. Compatibility with Scenic Surroundings

REQUIREMENT: per KRS 278.708 (3)(b); *An evaluation of the compatibility of the facility with scenic surroundings*

COMPLIANCE:

Please refer to Sections III-VI from Exhibit A which address appropriate setbacks, topography, harmony of use, and compatibility in detail.

An excerpt from Section IV, page 110, reads as follows:

"[L]arger solar farms using fixed or tracking panels are a passive use of the land that is in keeping with a rural/residential area. . . . 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."

As noted in Section 6 of the Siting Board Application, representatives from the Project have met personally on various occasions with adjoining landowners to address their concerns, which they voiced, about the viewsheds from their particular properties. To mitigate viewshed impacts Ashwood has considered these concerns by placing vegetative buffers in specific locations. This buffer will consist of two staggered rows of evergreen shrubs, approximately 15 feet wide and at least three feet in height at time of planting. See the site plan, Exhibit E, for the planned locations of the buffer.

3. Property Value Impacts

REQUIREMENT: per KRS 278.708 (3)(c); *The potential changes in property values and land use resulting from the siting, construction, and operation of the proposed facility for property owners adjacent to the facility*

COMPLIANCE: See Exhibit A for a report studying potential property value impacts to owners adjacent to the proposed facility by a certified real estate appraiser. The conclusion of the report, Section VII on page 111, reads as follows:

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

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

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

4. Anticipated Noise Levels at Property Boundary

REQUIREMENT: per KRS 278.708 (3)(d); *Evaluation of anticipated peak and average noise levels associated with the facility's construction and operation at the property boundary*

COMPLIANCE: See Exhibit C for a report studying the anticipated peak and average noise levels associated with the facility's construction and operation at the property boundary. See the excerpt below for a brief summary, found on pages 5-6 of Exhibit C.

"Noise is expected to increase temporarily and intermittently during the construction phase of the project due to increases in vehicular traffic, construction equipment and assembly of the solar facility components. This increase in noise is expected to be within accepted ranges and of short duration at any given location within the project with the majority of the noise producing activities to occur many hundreds to thousands of feet from the nearest noise sensitive receptors. The typical noise levels of construction equipment are not unlike the existing noise levels related to cultivation and livestock operations within and surrounding the Project. The noisiest portion of the construction includes the use of pile drivers to install the solar panel supports. These will only be used very briefly and the worst case maximum noise [L_{max} (dB_A)] expected to occur at the nearest receptor is 92.8 dB_A which is similar to a motorcycle. The equivalent continuous sound level [L_{eq} (dB_A)] from construction including the pile driver is 86.0 dB_A which is similar to a lawnmower or heavy traffic. Construction activities at the Project site would move around the site and are not anticipated to be performed near a sensitive receptor for more than a few days or weeks

During site operation, intermittent noise related to the panel tracking system and the constant noise of the inverters is expected. The increase in noise is negligible due to the distance between the panels / inverters and the nearest noise sensitive receptors. The nearest receptor is more than 120 feet from any solar panels and approximately 500 feet from an inverter. Sound levels from the tracking system can be expected to be the levels of a normal conversation at the nearest receptor (~67 dBA), while the sounds will be much quieter at most receptors. During average operation the inverters will be similar in noise level (~49 dBA) to a household air conditioner. According to manufacturer specifications the loudest the transformer is expected to be is just over 60 dBA, or the level of a normal conversation. Proposed vegetative buffers will further decrease perceived noise. Site visits and maintenance activities including single vehicular traffic and mowing will be negligible as they are similar to the background agricultural noise characteristics.

At the nearest receptors no elevated and prolonged noise levels above background levels are expected either during construction or operation of the Project site."

5. Effect on Road, Railways, and Fugitive Dust

REQUIREMENT: per KRS 278.708 (3)(e); *The impact of the facility's operation on road and rail traffic to and within the facility, including anticipated levels of fugitive dust created by the traffic and any anticipated degradation of roads and lands in the vicinity of the facility*

COMPLIANCE: See Exhibit C for a report on the Project's impact on road and rail traffic, and anticipated levels of fugitive dust created by the traffic and degradation of roads caused by traffic created by the Project. See below for a brief summary of the report.

"As demonstrated in the traffic analysis, the construction period trip generation of workers and trucks will not generate a significant number of trips on local roadways. KY 1943, KY 3169, and US 641 will continue to operate at a LOS A during worst-case scenario construction peak traffic. Although no significant, adverse traffic impacts are expected during project construction or operation, using mitigation measures such as ridesharing between construction workers, using appropriate traffic controls or allowing flexible working hours outside of peak hours could be implemented to minimize any potential for delays during the AM and PM peak hours."

Construction and associated land disturbance associated with the proposed project may temporarily contribute airborne materials. The Project will utilize Best Management Practices such as: appropriate revegetation measures, application of water, or covering of spoil piles, to minimize dust. Additionally, open-bodied trucks transporting dirt will be covered while moving. During construction activities water may be applied to internal road system to reduce dust generation. Water used for dust control is authorized under the Kentucky Pollutant Discharge Elimination System (KPDES) as a non-stormwater discharge activity, which will be required for the proposed project.

The Project will not be using railways for any construction or operation activities.

6. Mitigation Measures

REQUIREMENT: per KRS 278.708(4); *The site assessment report shall also suggest any mitigating measures to be implemented by the applicant to minimize or avoid adverse effects identified in the site assessment report*; and per KRS 278.708(6); *The applicant shall be given the opportunity to present evidence to the board regarding any mitigation measures. As a condition of approval for an application to obtain a construction certificate, the board may require the implementation of any mitigation measures that the board deems appropriate.*

COMPLIANCE: Specific of mitigation measures are listed below.

1. Planting of native evergreen species as a visual buffer to mitigate viewshed impacts. Plantings to primarily be in areas directly adjacent to the Project without existing vegetation; see Exhibit E for anticipated planting areas and the specifics of the plantings. Members of the development team have been meeting with neighbors to discuss specific viewshed concerns.
2. Cultivation of at least 2 acres of native pollinator-friendly species onsite; see Exhibit E for anticipated pollinator area.
3. Ashwood Solar had an Environmental Site Assessment (ESA) Phase 1 completed for the site. See Exhibit D for the results of this study. Please note, this Phase 1 ESA includes parcels (approximately 600 acres) not planned for development as part of the Ashwood Solar 1 project.

The regulation and permitting of utility scale solar impacts to wetlands, waters of the US, and stormwater will be addressed separately to this Siting Board application, and are as follows: Ashwood Solar, LLC has engaged Stantec Consulting Services, Inc to perform an on-site wetlands delineation and coordinate with the U.S. Army Corps of Engineers for an Approved Jurisdictional Determination (AJD) submission. Other permit applications will follow to the appropriate regulatory body as described below, as the project prepares for construction.

1. Stormwater Discharges Associate with Construction Activity

Regulatory Agency: Kentucky Energy & Environment Cabinet – Department for Environmental Protection – Division of Water (DOW)

The Project will obtain a Kentucky Department of Environmental Protection Stormwater Construction General Permit (Permit) from the Kentucky DOW for construction projects that disturb one or more acres of land in compliance with the National Pollutant Discharge Elimination System (NPDES) of the Clean Water Act (CWA). The Kentucky Pollution Discharge Elimination System (KPDES) permit (KPDES No: KYR100000) is a General Permit for Stormwater Discharges Associated with Construction Activity.

2. Wetlands and Waters of the United States

Federal Regulatory Agency: United States Army Corps of Engineers – Louisville District

An Approved Jurisdictional Determination (AJD) has been requested through the U.S. Army Corps of Engineers (USACE) – Nashville District. The AJD process will include the USACE Nashville District determining which aquatic features are considered federally jurisdictional under the Clean Water Act (CWA). If project design proposes to impact aquatic features, features that are deemed federally jurisdictional, a Section 404 of the CWA permit will be needed from the USACE.

The type of USACE permit required will depend on amount of impact (e.g., acres or linear feet) to jurisdictional wetlands and/or Waters of the US. If the proposed activity has minimal impacts, it may be authorized under a Nationwide Permit. If Project impacts exceed threshold requirements of the Nationwide Permits, an Individual Permit may be necessary.

Kentucky Regulatory Agency: Kentucky Energy & Environment Cabinet – Department for Environmental Protection – Division of Water Division of Water

Depending on Project impacts and type of Section 404 permit necessary (discussed above), a Section 401 Water Quality Certification may be needed.

An applicant seeking a Section 401 Water Quality Certification must submit an Application for Permit to Construct Across or Along a Stream and/or Water Quality Certification to the Division of Water (DOW). DOW reviews projects jointly for potential impacts to water and floodplains. Projects proposing to minimally affect waters of the State may be authorized under General Certifications of USACE Nationwide Permits. General Certifications may include impact thresholds and specific conditions for the proposed activity. If the proposed activity qualifies for coverage under the Nationwide Permit and the corresponding General Certification, an applicant does not need anything from DOW. An applicant can request a letter from DOW that the project meets the requirements of a Nationwide Permit. An Individual Water Quality Certification is required if the activity does not qualify for General Certification.

Exhibit A: Property Value Impact Report

Kirkland Appraisals, LLC

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September 23, 2020

Mr. Joshua McNeely
RWE Renewables Americas, LLC
701 Brazos Street, Suite 1400
Austin, TX 78701

RE: Ashwood Solar Impact Study

Mr. McNeely

At your request, I have considered the impact of a solar farm proposed to be constructed on a portion of a 1,537.70-acre assemblage of land on Coleman Doles Road, Fredonia, Kentucky. Specifically, I have been asked to give my professional opinion on whether the proposed solar farm will have any impact on adjoining property value and whether "the location and character of the use, if developed according to the plan as submitted and approved, will be in harmony with the area in which it is to be located."

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

This letter is a limited report of a real property appraisal consulting assignment and subject to the limiting conditions attached to this letter. My client is RWE Renewables Americas, LLC, represented to me by Mr. Joshua McNeely. My findings support the Kentucky Siting Board Application. The effective date of this consultation is September 23, 2020.

While based in NC, I am also a Kentucky State Certified General Appraiser #5522.

Conclusion

The matched pair analysis shows no 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 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.

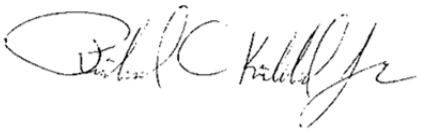
Very similar solar farms in very similar areas have been found by hundreds of towns and counties not to have a substantial injury to abutting or adjoining properties, and many of those findings of no impact have been upheld by appellate courts. Similar solar farms have been approved adjoining agricultural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

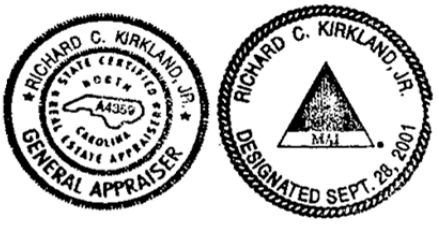
Based on the data and analysis in this report, it is my professional opinion that the solar farm proposed at the subject property will have no impact on the value of adjoining or abutting property and that the proposed use is in harmony with the area in which it is located. I note that some of the positive implications of a solar farm that have been expressed by people living next to solar farms include protection from future development of residential developments or other more

intrusive uses, reduced dust, odor and chemicals from former farming operations, protection from light pollution at night, it's quiet, and there is minimal traffic.

If you have any further questions please call me any time.

Sincerely,





Richard C. Kirkland, Jr., MAI
Kentucky State Certified General Appraiser #5522

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 Kentucky 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.

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 tend to be present when market data reflects that a use is an external obsolescence.

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

1) Traffic. Solar Farms are not traffic generators.

2) Odor. Solar farms do not produce odor.

3) Noise. Solar farms generate no noise concerns and are silent at night.

4) Environmental. Solar farms do not produce toxic or hazardous waste. Grass is maintained underneath the panels so there is minimal impervious surface area.

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

Proposed Use Description

The proposed solar farm is proposed to be constructed on a portion of a 1,537.70-acre assemblage of land on Coleman Doles Road, Fredonia, Kentucky. Adjoining land is primarily a mix of residential and agricultural uses, which is very typical of solar farm sites.

Adjoining Properties

I have considered adjoining uses and included a map to identify each parcel's location. The closest adjoining home will be 170 feet from the closest panel and the average distance to adjoining homes

will be 785 feet. Matched pair data presented later in this report shows no impact on home values as close as 105 feet when reasonable visual buffers are provided.

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

Adjoining Use Breakdown

	Acreage	Parcels
Residential	3.70%	54.05%
Agricultural	46.11%	24.32%
Agri/Res	22.99%	18.92%
Correctional	27.20%	2.70%
Total	**100.00%**	**100.00%**

Surrounding Uses

#	MAP ID	Owner	GIS Data Acres	Present Use	Adjoin Acres	Adjoin Parcels	Distance (ft) Home/Panel
1	38-4	Williams	124.95	Agri/Res	5.70%	2.70%	225
2	38-7	Vied	51.10	Agricultural	2.33%	2.70%	N/A
3	38-21	McDowerll	138.40	Agricultural	6.32%	2.70%	N/A
4	38-17-01	Hooks	1.28	Residential	0.06%	2.70%	570
5	38-17	Hooks	4.62	Residential	0.21%	2.70%	475
6	38-18	Sutton	284.00	Agricultural	12.96%	2.70%	N/A
7	38-18-01	Melander	1.00	Residential	0.05%	2.70%	1,160
8	38-16-01	Dean	4.08	Residential	0.19%	2.70%	750
9	38-16-02	N/A	0.73	Residential	0.03%	2.70%	N/A
10	38-15-01	N/A	1.78	Residential	0.08%	2.70%	N/A
11	38-23	Phelps	1.35	Residential	0.06%	2.70%	630
12	49-5	Gregory	102.60	Agricultural	4.68%	2.70%	N/A
13	-	West KY Farm	595.90	Correctional	27.20%	2.70%	N/A
14	39-29	Hooks	44.19	Agricultural	2.02%	2.70%	N/A
15	39-31	Pierson	11.80	Residential	0.54%	2.70%	435
16	38-20-01	Williams	1.42	Residential	0.06%	2.70%	170
16	39-3	Gish	15.80	Residential	0.72%	2.70%	780
17	39A-11	Wileman	0.50	Residential	0.02%	2.70%	395
18	39A-10	Schenk	0.58	Residential	0.03%	2.70%	405
19	39A-9	Widner	0.47	Residential	0.02%	2.70%	535
20	39A-8	Equity Trust	0.41	Residential	0.02%	2.70%	615
21	39A7	Brunsen	0.58	Residential	0.03%	2.70%	740
22	39A-5	N/A	0.50	Residential	0.02%	2.70%	875
23	39A-6	Hawkins	0.60	Residential	0.03%	2.70%	N/A
24	39-5	Herring Trust	161.36	Agricultural	7.37%	2.70%	N/A
25	39-6-01	Ferguson	2.00	Residential	0.09%	2.70%	1,085
26	39-25	Walton	6.08	Residential	0.28%	2.70%	2,070
27	39-7	Walton	18.86	Residential	0.86%	2.70%	1,905
28	39-8	Stewart	6.65	Residential	0.30%	2.70%	575
29	39-11	Dorroh	62.30	Agri/Res	2.84%	2.70%	1,335
30	29-39	Young	73.50	Agricultural	3.36%	2.70%	N/A
31	29-20	Engler	44.00	Agri/Res	2.01%	2.70%	200
32	29-21	Engler	47.40	Agri/Res	2.16%	2.70%	550
33	29-15	White	127.10	Agri/Res	5.80%	2.70%	1,445
34	38-12	Patton	30.00	Agricultural	1.37%	2.70%	N/A
35	38-10-01	O'Daniel	106.00	Agricultural	4.84%	2.70%	N/A
36	38-11	Doles	67.80	Agri/Res	3.10%	2.70%	920
37	38-3	White	48.93	Agricultural	2.23%	2.70%	N/A
		Total	**2190.610**		**100.00%**	**102.70%**	785

I. Summary of Solar Projects in Kentucky

I have researched the solar projects in Kentucky. I identified the solar farms through the Solar Energy Industries Association (SEIA) Major Projects List and then excluded the roof mounted facilities. This leaves only six solar farms in Kentucky for analysis at this time.

One of these six solar farms has limited analysis potential: E.W. Brown near Harrodsburg in Mercer County. The E. W. Brown 10 MW solar farm was built in 2014 and adjoins three coal-fired units. Given that research studies that I have previously read regarding fossil fuel power plants including "The Effect of Power Plants on Local Housing Values and Rents" by Lucas W. Davis and published May 2010, it would not be appropriate to use any data from this solar farm due to the influence of the coal fired power plant that could have an impact on up to a one-mile radius. I note that the closest home to a solar panel at this site is 565 feet and the average distance is 1,026 feet. The homes are primarily clustered at the Herrington Lake frontage. Recent sales in this area range from $164,000 to $212,000 for these waterfront homes. Again, no usable data can be derived from this solar farm due to the adjoining coal fired plants.

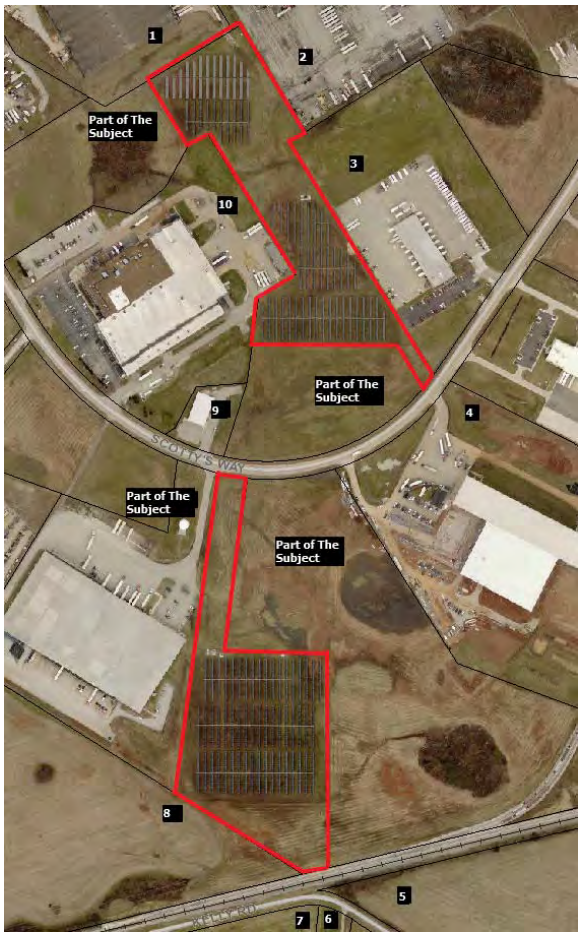
Furthermore, the Cooperative solar farm in Shelby County is a 0.5 MW facility on 35 acres built in 2020 that is proposed to eventually be 4 MW. This project is too new and there have been no home sales adjoining this facility. I also cannot determine how close the nearby homes are to the adjoining solar panels as the aerial imagery does not yet show these panels.

I have provided a summary of projects below and additional detailed information on the projects on the following pages. I specifically note the similarity in most of the sites in Kentucky as compared to most of the states that I have searched before in terms of mix of adjoining uses, topography, and distances to adjoining homes.

The number of solar farms currently in Kentucky is low compared to a number of other states and NC in particular. I have looked at solar farms in Kentucky for sales activity, but the small number of sites coupled with the relatively short period of time these solar farms have been in place has not provided as many examples of sales adjoining a solar farm as I am able to pull from other places. I have therefore also considered sales in other states, but I have shown in the summary how the demographics around the solar farms in other locations relate to the demographics around the proposed solar farm to show that generally similar locations are being considered. The similarity of the sites in terms of adjoining uses and surrounding demographics makes it reasonable to compare the lack of significant impacts in other areas would translate into a similar lack of significant impact at the subject site.

Parcel #	State	County	City	Name	Output (MW)	Total Acres	Used Acres	Avg. Dist to home	Closest Home	Adjoining Use by Acre			
										Res	Agri	Agri/Res	Com
610	KY	Warren	Bowling Green	Bowling Green	2	17.36	17.36	720	720	1%	64%	0%	36%
611	KY	Clarky	Winchester	Cooperative Solar I	8.5	181.47	63	2,110	2,040	0%	96%	3%	0%
612	KY	Kenton	Walton	Walton 2	2	58.03	58.03	891	120	21%	0%	60%	19%
613	KY	Grant	Crittenden	Crittenden	2.7	181.7	34.1	1,035	345	22%	27%	51%	0%
659	KY	Shelby	Simpsonville	Cooperative Shelby	4	35	35			6%	11%	32%	52%
660	KY	Mercer	Harrodsburg	E.W. Brown	10	50	50	1,026	565	3%	44%	29%	25%
		Total Number of Solar Farms			6								
				Average	4.87	87.3	42.9	1156	758	9%	40%	29%	22%
				Median	3.35	54.0	42.5	1026	565	4%	36%	30%	22%
				High	10.00	181.7	63.0	2110	2040	22%	96%	60%	52%
				Low	2.00	17.4	17.4	720	120	0%	0%	0%	0%

610: Bowling Green Solar, Bowling Green, KY



This project was built in 2011 and located on 17.36 acres for a 2 MW project on Scotty's Way with the adjoining uses being primarily industrial. The closest dwelling is 720 feet from the nearest panel.

Adjoining Use Breakdown

	Acreage	Parcels
Residential	0.58%	10.00%
Agricultural	63.89%	30.00%
Industrial	35.53%	60.00%
Total	**100.00%**	**100.00%**

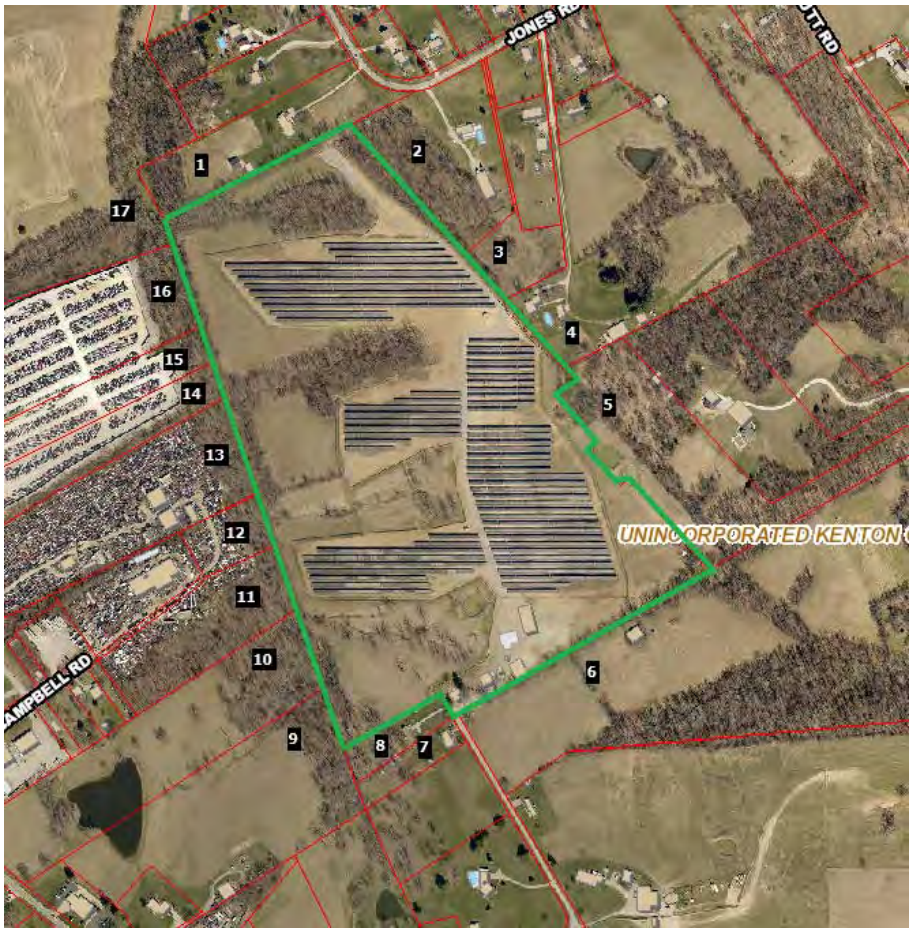
611: Cooperative Solar I, Winchester, KY

This project was built in 2017 on 63 acres of a 181.47-acre parent tract for an 8.5 MW project with the closest home at 2,040 feet from the closest solar panel.

Adjoining Use Breakdown

	Acreage	Parcels
Residential	0.15%	11.11%
Agricultural	96.46%	77.78%
Agri/Res	3.38%	11.11%
Total	**100.00%**	**100.00%**

612: Walton 2 Solar, Walton, 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.

Adjoining Use Breakdown

	Acreage	Parcels
Residential	20.84%	47.06%
Agri/Res	59.92%	17.65%
Commercial	19.25%	35.29%
Total	**100.00%**	**100.00%**

613: Crittenden Solar, Crittenden, KY

This project was built in late 2017 on 34.10 acres out of a 181.70-acre tract for a 2.7 MW project where the closest home is 345 feet from the closest panel.

Adjoining Use Breakdown

	Acreage	Parcels
Residential	1.65%	32.08%
Agricultural	73.39%	39.62%
Agri/Res	23.05%	11.32%
Commercial	0.64%	9.43%
Industrial	0.19%	3.77%
Airport	0.93%	1.89%
Substation	0.15%	1.89%
Total	**100.00%**	**100.00%**

659: Cooperative Shelby Solar, Simpsonville, KY

This project was built in 2020 on 35 acres for a 0.5 MW project that is approved for expansion up to 4 MW.

Adjoining Use Breakdown

	Acreage	Parcels
Residential	6.04%	44.44%
Agricultural	10.64%	11.11%
Agri/Res	31.69%	33.33%
Institutional	51.62%	11.11%
Total	**100.00%**	**100.00%**

660: E.W. Brown Solar, Harrodsburg, KY

This project was built in 2016 on 50 acres for a 10 MW project. This solar facility adjoins three coal-fired units, which makes analysis of these nearby home sales problematic as it is impossible to extract the impact of the coal plant on the nearby homes especially given the lake frontage of the homes shown.

Adjoining Use Breakdown

	Acreage	**Parcels**
Residential	2.77%	77.27%
Agricultural	43.92%	9.09%
Agri/Res	28.56%	9.09%
Industrial	24.75%	4.55%
Total	**100.00%**	**100.00%**

II. Market Analysis of the Impact on Value from Solar Farms

I have researched hundreds of solar farms in numerous states to determine the impact of these facilities on the value of adjoining property. This research has primarily been in North Carolina, but I have also conducted market impact analyses in Virginia, South Carolina, Tennessee, Texas, Oregon, Mississippi, Maryland, New York, California, Missouri, Florida, Montana, Georgia, Kentucky, 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 650 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.

I have previously been asked by the Kentucky Siting Board about how the 37 solar farms and the 84 matched pair sets were chosen. This is the total of all the usable home and land sales adjoining the 650+ solar farms that I have looked at over the last 9 years. Most of the solar farms that I have looked at are only a few years old and have not been in place long enough for home or land sales to occur next to them for me to analyze. There is nothing unusual about this given the relatively rural locations of most of the solar farms where home and land sales occur much less frequently and the number of adjoining homes is relatively small.

Essentially, I go back through the solar farms that I have looked at roughly once a year to see if there are any new sales. If there is a sale I have to be sure it is not an inhouse sale or to a related family member. A great many of the rural sales that I find are from one family member to another, which makes analysis impossible given that these are not "arm's length" transactions. There are also numerous examples of sales that are "arm's length" but are still not usable due to other factors such as adjoining significant negative factors such as a coal fired plant or at a landfill or prison. I have looked at homes that require a driveway crossing a railroad spur, homes in close proximity to large industrial uses, as well as homes adjoining large state parks, or homes that are over 100 years old with multiple renovations. Such sales are not usable as they have multiple factors impacting the value that are tangled together. You can't isolate the impact of the coal fired plant, the industrial building, or the railroad unless you are comparing that sale to a similar property with similar impacts. Matched pair analysis requires that you isolate properties that only have one differential to test for, which is why the type of sales noted above is not appropriate for analysis.

So once I go through all of the sales and eliminate the family transactions and those sales with multiple differentials, I am left with 84 matched pairs to analyze. The only other sales that I have eliminated from the analysis are home sales under $100,000, which there haven't been many such examples, but at that price range it is difficult to identify any impacts through matched pair analysis. As can be seen from a later question, I have not cherry picked the data to include just the sales that support one direction in value, but I have included all of them both positive and negative with a preponderance of the evidence supporting no impact to mild positive impacts.

A. Kentucky Data

1. Matched Pair – Crittenden Solar, Crittenden, KY

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

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

Mr. Glacken is currently selling lots at the west end of Claiborne for new home construction. He indicated that the solar farm near the entrance of the development has been a complete non-factor and none of the home sales are showing any concern over the solar farm. Most of the homes are in the $250,000 to $280,000 price range on lots being marketed for $28,000 to $29,000.

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

Adjoining Residential Sales After Solar Farm Approved

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

Adjustments

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%	

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.

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.

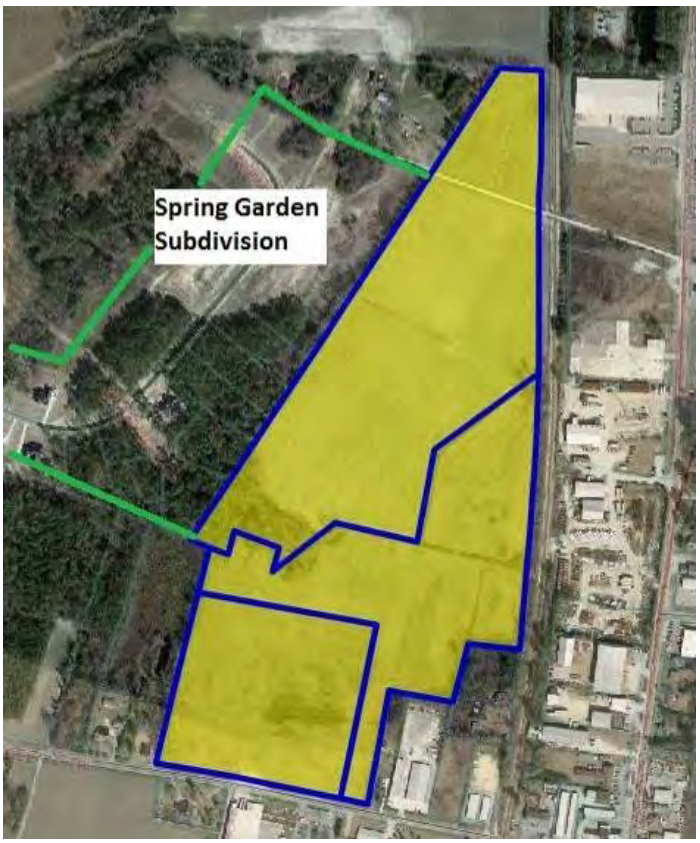
The five matched pairs considered in this analysis includes two that show no impact on value, one that shows a negative impact on value, and two that show a positive impact. The negative indication supported by one matched pair is -7% and the positive impacts are +6% and +7%. The two neutral indications show impacts of -1% and +3%. The average indicated impact is +0% when all five of these indicators are blended.

Furthermore, the comments of the local broker strongly support the data that shows no negative impact on value due to the proximity to the solar farm. This is further supported by the national data that is shown on the following pages.

B. National Data

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

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

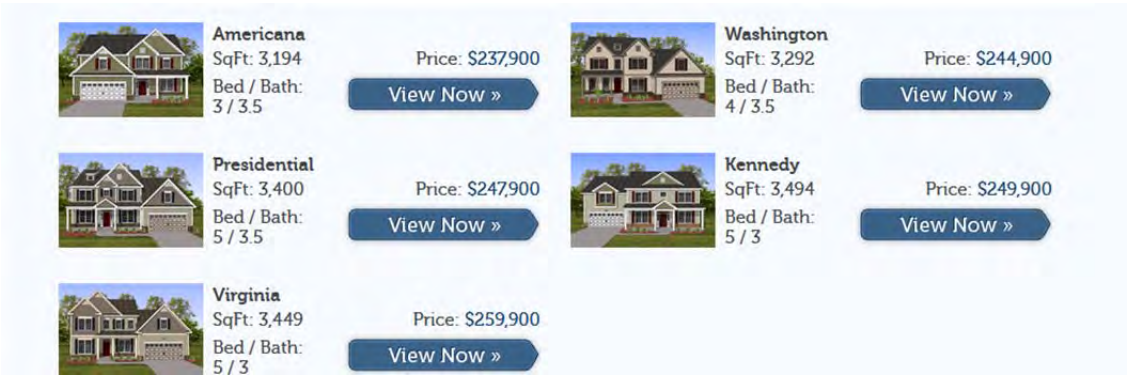


Homes backing up to the solar farm are selling at the same price for the same floor plan as the homes that do not back up to the solar farm in this subdivision. According to the builder, the solar farm has been a complete non-factor. Not only do the sales show no difference in the price paid for the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

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

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

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



Matched Pairs
As of Date: 9/3/2014

Adjoining Sales After Solar Farm Completed

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

Adjoining Sales After Solar Farm Announced

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

Adjoining Sales Before Solar Farm Announced

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

Nearby Sales After Solar Farm Completed

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

Nearby Sales Before Solar Farm Announced

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

Matched Pair Summary

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

Percentage Differences

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

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

The Median Price is the best indicator to follow in any analysis as it avoids outlying samples that would otherwise skew the results. The median sizes and median prices are all consistent throughout the sales both before and after the solar farm whether you look at sites adjoining or nearby to the solar farm. The average for the homes nearby the solar farm shows a smaller building size and a higher price per square foot. This reflects a common occurrence in real estate where the price per square foot goes up as the size goes down. This is similar to the discount you see in any market where there is a discount for buying larger volumes. So when you buy a 2 liter coke you pay less per ounce than if you buy a 16 oz. coke. So even comparing averages the indication is for no impact, but I rely on the median rates as the most reliable indication for any such analysis.

I have also considered four more recent resales of homes in this community as shown on the following page. These comparable sales adjoin the solar farm at distances ranging from 315 to 400 feet. The matched pairs show a range from -9% to +6%. The range of the average difference is -2% to +1% with an average of 0% and a median of +0.5%. These comparable sales support a finding of no impact on property value.

Adjoining Residential Sales After Solar Farm Approved

Parcel	Solar	Address	Acres	Date Sold	Sales Price	Built	GBA	$/GBA	BR/BA	Park	Style	Other	Distance
	Adjoins	103 Granville Pl	1.42	7/27/2018	$265,000	2013	3,292	$80.50	4/3.5	2-Car	2-Story		385
	Not	2219 Granville	1.15	1/8/2018	$260,000	2012	3,292	$78.98	4/3.5	2-Car	2-Story		
	Not	634 Friendly	0.96	7/31/2019	$267,000	2018	3,053	$87.45	4/4.5	2-Car	2-Story		
	Not	2403 Granville	0.69	4/23/2019	$265,000	2014	2,816	$94.11	5/3.5	2-Car	2-Story		

Solar	Address	Time	Site	YB	GLA	BR/BA	Park	Other	Total	% Diff	Avg % Diff
Adjoins	103 Granville Pl								$265,000		-2%
Not	2219 Granville	$4,382		$1,300	$0				$265,682	0%	
Not	634 Friendly	-$8,303		-$6,675	$16,721	-$10,000			$258,744	2%	
Not	2403 Granville	-$6,029		-$1,325	$31,356				$289,001	-9%	

Adjoining Residential Sales After Solar Farm Approved

Parcel	Solar	Address	Acres	Date Sold	Sales Price	Built	GBA	$/GBA	BR/BA	Park	Style	Other	Distance
	Adjoins	104 Erin	2.24	6/19/2017	$280,000	2014	3,549	$78.90	5/3.5	2-Car	2-Story		315
	Not	2219 Granville	1.15	1/8/2018	$260,000	2012	3,292	$78.98	4/3.5	2-Car	2-Story		
	Not	634 Friendly	0.96	7/31/2019	$267,000	2018	3,053	$87.45	4/4.5	2-Car	2-Story		
	Not	2403 Granville	0.69	4/23/2019	$265,000	2014	2,816	$94.11	5/3.5	2-Car	2-Story		

Solar	Address	Time	Site	YB	GLA	BR/BA	Park	Other	Total	% Diff	Avg % Diff
Adjoins	104 Erin								$280,000		0%
Not	2219 Granville	-$4,448		$2,600	$16,238				$274,390	2%	
Not	634 Friendly	-$17,370		-$5,340	$34,702	-$10,000			$268,992	4%	
Not	2403 Granville	-$15,029		$0	$48,285				$298,256	-7%	

Adjoining Residential Sales After Solar Farm Approved

Parcel	Solar	Address	Acres	Date Sold	Sales Price	Built	GBA	$/GBA	BR/BA	Park	Style	Other	Distance
	Adjoins	2312 Granville	0.75	5/1/2018	$284,900	2013	3,453	$82.51	5/3.5	2-Car	2-Story		400
	Not	2219 Granville	1.15	1/8/2018	$260,000	2012	3,292	$78.98	4/3.5	2-Car	2-Story		
	Not	634 Friendly	0.96	7/31/2019	$267,000	2018	3,053	$87.45	4/4.5	2-Car	2-Story		
	Not	2403 Granville	0.69	4/23/2019	$265,000	2014	2,816	$94.11	5/3.5	2-Car	2-Story		

Solar	Address	Time	Site	YB	GLA	BR/BA	Park	Other	Total	% Diff	Avg % Diff
Adjoins	2312 Granville								$284,900		1%
Not	2219 Granville	$2,476		$1,300	$10,173				$273,948	4%	
Not	634 Friendly	-$10,260		-$6,675	$27,986	-$10,000			$268,051	6%	
Not	2403 Granville	-$7,972		-$1,325	$47,956				$303,659	-7%	

Adjoining Residential Sales After Solar Farm Approved

Parcel	Solar	Address	Acres	Date Sold	Sales Price	Built	GBA	$/GBA	BR/BA	Park	Style	Other	Distance
	Adjoins	2310 Granville	0.76	5/14/2019	$280,000	2013	3,292	$85.05	5/3.5	2-Car	2-Story		400
	Not	2219 Granville	1.15	1/8/2018	$260,000	2012	3,292	$78.98	4/3.5	2-Car	2-Story		
	Not	634 Friendly	0.96	7/31/2019	$267,000	2018	3,053	$87.45	4/4.5	2-Car	2-Story		
	Not	2403 Granville	0.69	4/23/2019	$265,000	2014	2,816	$94.11	5/3.5	2-Car	2-Story		

Solar	Address	Time	Site	YB	GLA	BR/BA	Park	Other	Total	% Diff	Avg % Diff
Adjoins	2310 Granville								$280,000		1%
Not	2219 Granville	$10,758		$1,300	$0				$272,058	3%	
Not	634 Friendly	-$1,755		-$6,675	$16,721	-$10,000			$265,291	5%	
Not	2403 Granville	$469		-$1,325	$31,356				$295,500	-6%	

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

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

2. Matched Pair – White Cross Solar Farm, Chapel Hill, NC

A new solar farm was built at 2159 White Cross Road in Chapel Hill, Orange County in 2013. After construction, the owner of the underlying land sold the balance of the tract not encumbered by the solar farm in July 2013 for $265,000 for 47.20 acres, or $5,606 per acre. This land adjoins the solar farm to the south and was clear cut of timber around 10 years ago. I compared this purchase to a nearby transfer of 59.09 acres of timber land just south along White Cross Road that sold in November 2010 for $361,000, or $6,109 per acre. After purchase, this land was divided into three mini farm tracts of 12 to 20 acres each. These rates are very similar and the difference in price per acre is attributed to the timber value and not any impact of the solar farm.

Type	TAX ID	Owner	Acres	Date	Price	$/Acre	Notes	Conf By
Adjoins Solar	9748336770	Haggerty	47.20	Jul-13	$265,000	$5,614	Clear cut	Betty Cross, broker
Not Near Solar	9747184527	Purcell	59.09	Nov-10	$361,000	$6,109	Wooded	Dickie Andrews, broker

The difference in price is attributed to the trees on the older sale.
No impact noted for the adjacency to a solar farm according to the broker.
I looked at a number of other nearby land sales without proximity to a solar farm for this matched pair, but this land sale required the least allowance for differences in size, utility and location.

Matched Pair Summary

	Adjoins Solar Farm		Nearby Solar Farm	
	Average	**Median**	**Average**	**Median**
Sales Price	$5,614	$5,614	$6,109	$6,109
Adjustment for Timber	$500	$500		
Adjusted	$6,114	$6,114	$6,109	$6,109
Tract Size	47.20	47.20	59.09	59.09

Percentage Differences

Median Price Per Acre	0%

This matched pair again supports the conclusion that adjacency to a solar farm has no impact on adjoining residential/agricultural land.

3. Matched Pair – Wagstaff Farm, Roxboro, NC

This solar farm is located at the northeast corner of a 594-acre farm with approximately 30 acres of solar farm area. This solar farm was approved and constructed in 2013.

After approval, 18.82 acres were sold out of the parent tract to an adjoining owner to the south. This sale was at a similar price to nearby land to the east that sold in the same time from for the same price per acre as shown below.

Type	TAX ID	Owner	Acres	Present Use	Date Sold	Price	$/AC
Adjoins Solar	0918-17-11-7960	Piedmont	18.82	Agriculatural	8/19/2013	$164,000	$8,714
Not Near Solar	0918-00-75-9812 et al	Blackwell	14.88	Agriculatural	12/27/2013	$130,000	$8,739

Matched Pair Summary

	Adjoins Solar Farm		Nearby Solar Farm	
	Average	Median	Average	Median
Sales Price	$8,714	$8,714	$8,739	$8,739
Tract Size	18.82	18.82	14.88	14.88

Percentage Differences

Median Price Per Acre	0%

This matched pair again supports the conclusion that adjacency to a solar farm has no impact on adjoining residential/agricultural land.

4. Matched Pair – Mulberry, Selmer, TN

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

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

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

Adjoining Use Breakdown

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

From the above map, I identified four recent sales of homes that occurred adjoining the solar farm both before and after the announcement of the solar farm. I have adjusted each of these for differences in size and age in order to compare these sales among themselves. As shown below after adjustment, the median value is $130,776 and the sales prices are consistent with one outlier which is also the least comparable home considered. The close grouping and the similar price per point overall as well as the similar price per square foot both before and after the solar farm.

Matched Pairs

#	TAX ID	Owner	Date Sold	Sales Price	Acres	Built	GBA	$/GBA	Style	Parking
6&7	0900 A 011.00	Henson	Jul-14	$130,000	2.65	2007	1,511	$86.04	1 Story	2 Garage
12	0900 A 003.00	Amerson	Aug-12	$130,000	1.20	2011	1,586	$81.97	1 Story	2 Garage
15	099C A 003.00	Smallwood	May-12	$149,900	1.00	2002	1,596	$93.92	1 Story	4 Garage
16	099C A 002.00	Hessing	Jun-15	$130,000	1.00	1999	1,782	$72.95	1 Story	2 Garage
		Average		$134,975	1.46	2005	1,619	$83.72		
		Median		$130,000	1.10	2005	1,591	$84.00		

					Adjustments*					
#	TAX ID	Owner	Date Sold	Sales Price	Acres	Built	GBA	Style	Parking	Total
6&7	0900 A 011.00	Henson	Jul-14	$130,000	-$7,500	$2,600	$6,453	$0	$0	$131,553
12	0900 A 003.00	Amerson	Aug-12	$130,000	$0	$0	$0	$0	$0	$130,000
15	099C A 003.00	Smallwood	May-12	$149,900	$0	$6,746	-$939	$0	-$15,000	$140,706
16	099C A 002.00	Hessing	Jun-15	$130,000	$0	$7,800	-$14,299	$0	$0	$123,501
		Average		$134,975	-$1,875	$4,286	-$2,196	$0	-$3,750	$131,440
		Median		$130,000	$0	$4,673	-$470	$0	$0	$130,776

* I adjusted all of the comparables to a base line 2011 Year Built and 1,586 s.f. based on Lot 12

I also considered a number of similar home sales nearby that were both before and after the solar farm was announced as shown below. These homes are generally newer in construction and include a number of larger homes but show a very similar price point per square foot.

Nearby Sales Before Solar Farm Announced

TAX ID	Owner	Date Sold	Sales Price	Acres	Built	GBA	$/GBA	Style	Parking
099B A 019	Durrance	Sep-12	$165,000	1.00	2012	2,079	$79.37	1 Story	2 Garage
099B A 021	Berryman	Apr-12	$212,000	2.73	2007	2,045	$103.67	1 Story	2 Garage
090O A 060	Nichols	Feb-13	$165,000	1.03	2012	1,966	$83.93	1 Story	2 Garage
	Average		$180,667	1.59	2010	2,030	$88.99		
	Median		$165,000	1.03	2012	2,045	$83.93		

Nearby Sales After Solar Farm Announced

TAX ID	Owner	Date Sold	Sales Price	Acres	Built	GBA	$/GBA	Style	Parking
090N A 040	Carrithers	Mar-15	$120,000	1.00	2010	1,626	$73.80	1 Story	2 Garage
099C A 043	Cherry	Feb-15	$148,900	2.34	2008	1,585	$93.94	1 Story	2 Garage
	Average		$134,450	1.67	2009	1,606	$83.87		
	Median		$134,450	1.67	2009	1,606	$83.87		

I then adjusted these nearby sales using the same criteria as the adjoining sales to derive the following breakdown of adjusted values based on a 2011 year built 1,586 square foot home. The adjusted values are consistent with a median rate of $128,665, which is actually lower than the values for the homes that back up to the solar farm.

Nearby Sales Adjusted				Adjustments*					
TAX ID	**Owner**	**Date Sold**	**Sales Price**	**Acres**	**Built**	**GBA**	**Style**	**Parking**	**Total**
099B A 019	Durrance	Sep-12	$165,000	$0	-$825	-$39,127	$0	$0	$125,048
099B A 021	Berryman	Apr-12	$212,000	-$7,500	$4,240	-$47,583	$0	$0	$161,157
090O A 060	Nichols	Feb-13	$165,000	$0	-$825	-$31,892	$0	$0	$132,283
090N A 040	Carrithers	Mar-15	$120,000	$0	$600	-$2,952	$0	$0	$117,648
099C A 043	Cherry	Feb-15	$148,900	-$7,500	$2,234	$94	$0	$0	$143,727
	Average		$165,500	-$1,875	$798	-$30,389	$0	$0	$134,034
	Median		$165,000	$0	-$113	-$35,510	$0	$0	$128,665

* I adjusted all of the comparables to a base line 2011 Year Built and 1,586 s.f. based on Lot 12

If you consider just the 2015 nearby sales, the range is $117,648 to $143,727 with a median of $130,688. If you consider the recent adjoining sales the range is $123,501 to $131,553 with a median of $127,527.

This difference is less than 3% in the median and well below the standard deviation in the sales. The entire range of the adjoining sales prices is overlapped by the range from the nearby sales. These are consistent data sets and summarized below.

Matched Pair Summary

	Adjoins Solar Farm		**Nearby After Solar Farm**	
	Average	**Median**	**Average**	**Median**
Sales Price	$134,975	$130,000	$134,450	$134,450
Year Built	2005	2005	2009	2009
Size	1,619	1,591	1,606	1,606
Price/SF	$83.72	$84.00	$83.87	$83.87

Based on the data presented above, I find that the price per square foot for finished homes is not being impacted negatively by the announcement of the solar farm. The difference in pricing in homes in the neighborhood is accounted for by differences in size, building age, and lot size. The median price for a home after those factors are adjusted for are consistent throughout this subdivision and show no impact due to the proximity of the solar farm. This is consistent with the comments from the broker I spoke with for this subdivision as well.

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

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

Adjoining Sales Adjusted

Parcel	Solar	Address	Time	Site	YB	GLA	Park	Other	Total	% Diff	Distance
3	Adjoins	491 Dusty							$176,000		480
	Not	820 Lake Trail	-$8,324	$12,000	-$3,360	-$4,890			$163,426	7%	
	Not	262 Country	-$5,450	$12,000	$6,525	-$3,680			$154,396	12%	
	Not	35 April	$1,138	$12,000	-$6,475	-$13,380			$178,283	-1%	
									Average	6%	

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

Adjoining Residential Sales After Solar Farm Built

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

Adjoining Sales Adjusted

Parcel	Solar	Address	Sales Price	Time	Site	YB	GLA	Park	Other	Total	% Diff	Distance
12	Adjoins	57 Cooper	$163,000							$163,000		685
	Not	191 Amelia	$132,000	$2,303		$3,960	$2,685	$10,000	$5,000	$155,947	4%	
	Not	75 April	$134,000	$8,029	$4,000	-$670	-$135	$5,000	$5,000	$155,224	5%	
	Not	345 Woodland	$131,000	$8,710		$5,895	$9,811		$5,000	$160,416	2%	
										Average	4%	

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

Adjoining Residential Sales After Solar Farm Built

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

Adjoining Sales Adjusted

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

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

The average indicated impact from these three sets of matched pairs is +4%, which suggests a mild positive relationship due to adjacency to the solar farm.

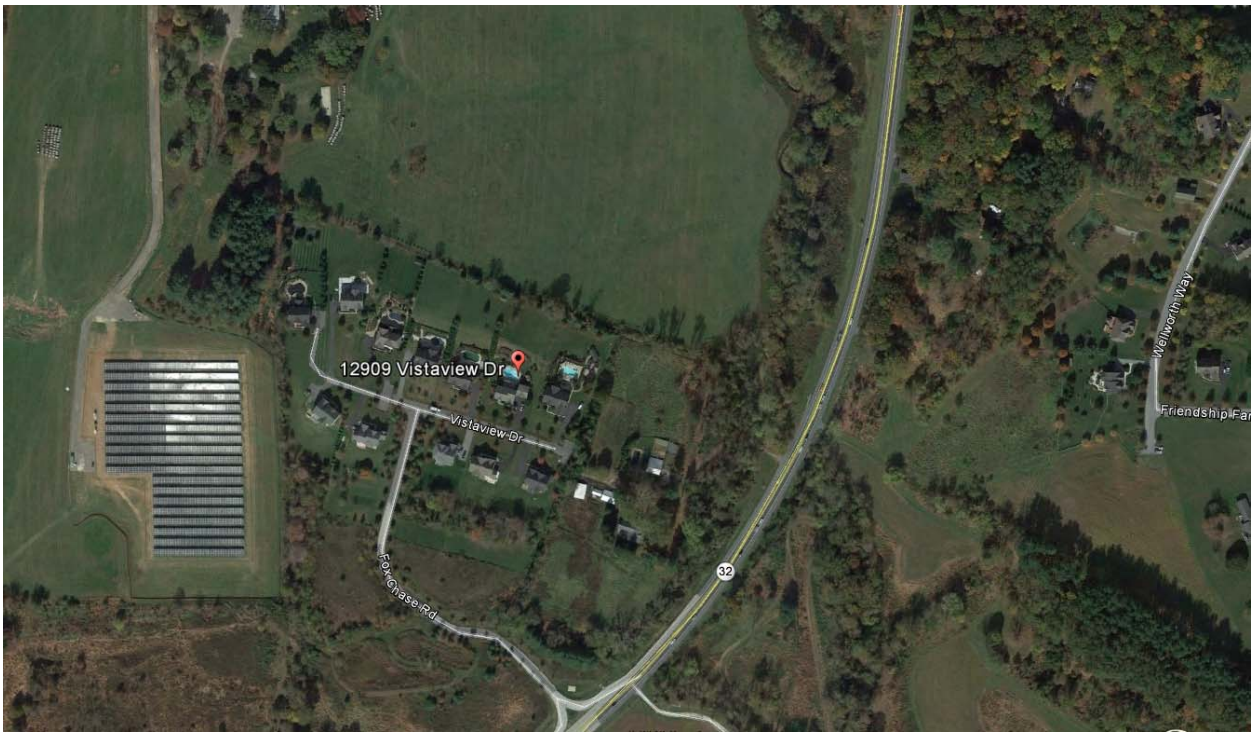
I have also looked at several lot sales in this subdivision as shown below.

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

Parcel	Solar	Address	Acres	Date Sold	Sales Price	4/18/2019 Adj for Time	$/AC	4/18/2019 Adj for Time
4	Adjoins	Shelter	2.05	10/25/2017	$16,000	$16,728	$7,805	$8,160
10	Adjoins	Carter	1.70	8/2/2018	$14,000	$14,306	$8,235	$8,415
11	Adjoins	Cooper	1.28	9/17/2018	$12,000	$12,215	$9,375	$9,543
	Not	75 Dusty	1.67	4/18/2019	$20,000	$20,000	$11,976	$11,976
	Not	Lake Trl	1.47	11/7/2018	$13,000	$13,177	$8,844	$8,964
	Not	Lake Trl	1.67	4/18/2019	$20,000	$20,000	$11,976	$11,976

	Adjoins	Per Acre	Not Adjoins	Per Acre	% DIF/Lot	% DIF/AC
Average	$14,416	$8,706	$17,726	$10,972	19%	21%
Median	$14,306	$8,415	$20,000	$11,976	28%	30%
High	$16,728	$9,543	$20,000	$11,976	16%	20%
Low	$12,215	$8,160	$13,177	$8,964	7%	9%

5. Matched Pair – Nixon's Solar Farm, West Friendship, MD



This smaller 2 MW solar farm being developed in phases mostly adjoins agricultural and residential uses as shown above. This is part of what will eventually be a 10 MW facility.

I compared a recent sale of 12909 Vistaview Drive to 2713 Friendship Farm Court. While this does not look at an adjacent home sale, it is close proximity and based on the matched pair data in the report it shows a $16,640 positive impact on value due to proximity to the solar farm, or 2.16%. This is within typical market friction and supports an indication of no impact on property value.

I have shown this data below.

Nixon's Farm Solar Farm, West Friendship, MD

Nearby Residential Sale After Solar Farm Construction

Address	Solar Farm	Acres	Date Sold	Sales Price*	Built	GBA	$/GBA	Style	BR/BA	Park
12909 Vistaview	Nearby	0.92	9/12/2014	$771,640	2003	2,692	$286.64	Colonial	4/3.5	2 Car Det
2713 Friendship Farm	Not	0.98	6/20/2014	$690,000	2000	2,792	$247.13	Colonial	4/2.5	2 Car Att

*$3,360 concession deducted from sale price for Vistaview

Adjoining Sales Adjusted			Adjustments					
Address	Date Sold	Sales Price	Time	Acres	YB	BR/BA	Other	Total
12909 Vistaview	9/12/2014	$771,640						$771,640
2713 Friendship Farm	6/20/2014	$690,000	$0	$0	$0	$10,000	$55,000	$755,000
					Difference Attributable to Location			$16,640
								2.16%

6. Matched Pair – Leonard Road Solar Farm, Hughesville, MD

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

I have shown this data below.

Leonardtown Road Solar Farm, Hughesville, MD

Nearby Residential Sale After Solar Farm Construction

Address	Solar Farm	Acres	Date Sold	Sales Price*	Built	GBA	$/GBA	Style	BR/BA	Bsmt	Park	Upgrades	Other
14595 Box Elder Ct	Adjoins	3.00	2/12/2016	$291,000	1991	2,174	$133.85	Colonial	5/2.5	No	2 Car Att	N/A	Deck
15313 Bassford Rd	Not	3.32	7/20/2016	$329,800	1990	2,520	$130.87	Colonial	3/2.5	Finished	2 Car Att	Custom	Scr Por/Patio

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

Adjoining Sales Adjusted			Adjustments					
Address	Date Sold	Sales Price	Time	GLA	Bsmt	Upgrades	Other	Total
14595 Box Elder Ct	2/12/2016	$291,000						$291,000
15313 Bassford Rd	7/20/2016	$329,800	-$3,400	-$13,840	-$10,000	-$15,000	-$5,000	$282,560
						Difference Attributable to Location		$8,440
								2.90%

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

7. Matched Pair – Talbot County Community Center Solar Farm, Easton, MD

This solar farm mostly adjoins agricultural and residential uses but also the Community center and located across the street from a golf course which can be seen just to the east. I looked at a 2012 sale of a home 1,000 feet to the west of the solar farm with a slight positive impact on value nearby the solar farm.

I have shown this data below.

Talbot County Community Center, Easton, MD

Nearby Residential Sale After Solar Farm Construction

Address	Solar Farm	Acres	Date Sold	Sales Price*	Built	GBA	$/GBA	Style	BR/BA	Park	Upgrades
10193 Hiners	Nearby	1.06	10/31/2012	$136,092	1947	776	$175.38	Bungalow	2/1	3 Car Det	N/A
10711 Hiners	Not	0.60	12/15/2012	$135,000	1957	832	$162.26	Bungalow	2/1	1 Car Det	Upd. Bath

*$5,908 concessions deducted from 10193 Hiners sales price

Adjoining Sales Adjusted			Adjustments					
Address	Date Sold	Sales Price	Age	Acres	Park	Upgrades	Other	Total
10193 Hiners	10/31/2012	$136,092						$136,092
10711 Hiners	12/15/2012	$135,000	-$6,750	$4,000	$6,000	-$3,000	$0	$135,250

Difference Attributable to Location $842

8. Matched Pair – Alamo II, San Antonio, Texas

This project is located at 8203 Binz-Engleman Road, Converse, Texas, on 98.37 acres with a 4.4 MW output. This project is located with small lot residential development on to the north west and south. There appears to be minimal landscaping along this project. The closest home to the north is 83 feet from the solar panels, while the homes to the west are 110 feet and the homes to the south are 175 feet away from the solar panels.

This solar farm strongly shows an acceptance of nearby residential development in close proximity to solar farms as this solar farm has minimal landscaping, close proximity, small adjoining lot sizes, and the development of homes on three sides of the solar farm.

Adjoining Use Breakdown

Acreage	**Parcels**
Residential	94.64%
Agricultural	5.36%
Total	**100.00%**

I have considered home sales in the three adjoining subdivisions to look at matched pair data. There are sales and resales of homes in Glenloch and Mustang Valley subdivisions to the south and west of this solar farm.

I have considered multiple matched pairs from these subdivisions to show typical appreciation and no impact on property value both before and after the solar farm was constructed in 2013. I have

looked at a number of home sales and resales in the larger subdivisions, but I have focused on those directly adjoining/facing the solar farm in the examples shown below. These are sales and resales of the homes adjoining the solar farm both before and after the solar farm project in 2013.

The comparables shown below are compared to an earlier sale prior to the solar farm announcement or construction followed by a second sale after the solar farm. The first two have solar farms in the Backyard (B), while the other has the solar farm in the Side yard (S). All of these sales show appreciation that falls within the typical annual appreciation for homes in this area over this time period.

	7703 Redstone Mnr (B)	
	Date	**Price**
Sale	10/3/2012	$149,980
Sale	3/24/2016	$166,000
	Time - YRS	**% Incr.**
	3.47	10.7%
	Per Year	**3.1%**
Years	3.5	**10.8%**

	7807 Redstone Mnr (B)	
	Date	**Price**
Sale	5/11/2012	$136,266
Sale	8/11/2014	$147,000
	Time - YRS	**% Incr.**
	2.25	7.9%
	Per Year	**3.5%**
Years	2.5	**8.7%**

	7734 Sundew Mist (S)	
	Date	**Price**
Sale	5/23/2012	$117,140
Sale	11/18/2014	$134,000
	Time - YRS	**% Incr.**
	2.49	14.4%
	Per Year	**5.8%**
Years	2	**11.6%**

I therefore conclude that this set of matched pairs shows no impact on property value and that homes in the area are showing typical appreciation consistent with other homes not in the vicinity of solar farms.

9. Matched Pair – Neal Hawkins Solar, Gastonia, NC

This project is located on the south side of Neal Hawkins Road just outside of Gastonia. The property identified above as Parcel 4 was listed for sale while this solar farm project was going through the approval process. The property was put under contract during the permitting process with the permit being approved while the due diligence period was still ongoing. After the permit was approved the property closed with no concerns from the buyer. I spoke with Jennifer Bouvier, the broker listing the property and she indicated that the solar farm had no impact at all on the sales price. She considered some nearby sales to set the price and the closing price was very similar to the asking price within the typical range for the market. The buyer was aware that the solar farm was coming and they had no concerns.

This two-story brick dwelling was sold on March 20, 2017 for $270,000 for a 3,437 square foot dwelling built in 1934 in average condition on 1.42 acres. The property has four bedrooms and two bathrooms.

A more recent aerial photo is shown on the following page to illustrate the proximity of panels to homes.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10. Matched Pair – Summit/Ranchlands Solar, Moyock, NC

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

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

Adjoining Residential Sales After Solar Farm Approved

Parcel	Solar	Address	Acres	Date Sold	Sales Price	Built	GBA	$/GBA	BR/BA	Park	Style	Other	Distance
48	Adjoins	129 Pinto	4.29	4/15/2016	$170,000	1985	1,559	$109.04	3/2	Drive	MFG		1,060
	Not	102 Timber	1.30	4/1/2016	$175,500	2009	1,352	$129.81	3/2	Drive	MFG		
	Not	120 Ranchland	0.99	10/1/2014	$170,000	2002	1,501	$113.26	3/2	Drive	MFG		

	Solar	Address	Time	Site	YB	GLA	BR/BA	Park	Other	Total	% Diff	Avg % Diff
	Adjoins	129 Pinto								$170,000		-3%
	Not	102 Timber	$276	$10,000	-$29,484	$18,809				$175,101	-3%	
	Not	120 Ranchland	$10,735	$10,000	-$20,230	$4,598				$175,103	-3%	

Adjoining Residential Sales After Solar Farm Approved

Parcel	Solar	Address	Acres	Date Sold	Sales Price	Built	GBA	$/GBA	BR/BA	Park	Style	Other	Distance
53	Adjoins	105 Pinto	4.99	12/16/2016	$206,000	1978	1,484	$138.81	3/2	Det Gar	Ranch		2,020
	Not	111 Spur	1.15	2/1/2016	$193,000	1985	2,013	$95.88	4/2	Gar	Ranch		
	Not	103 Marshall	1.07	3/29/2017	$196,000	2003	1,620	$120.99	3/2	Drive	Ranch		
	Not	127 Ranchland	0.99	6/9/2015	$219,900	1988	1,910	$115.13	3/2	Gar/3Gar	Ranch		

	Solar	Address	Time	Site	YB	GLA	BR/BA	Park	Other	Total	% Diff	Avg % Diff
	Adjoins	105 Pinto								$206,000		11%
	Not	111 Spur	$6,918	$10,000	-$6,755	-$25,359				$177,803	14%	
	Not	103 Marshall	-$2,268	$10,000	-$24,500	-$8,227		$5,000		$176,005	15%	
	Not	127 Ranchland	$13,738	$10,000	-$10,995	-$24,523		-$10,000		$198,120	4%	

Adjoining Residential Sales After Solar Farm Built

Parcel	Solar	Address	Acres	Date Sold	Sales Price	Built	GBA	$/GBA	BR/BA	Park	Style	Other	Distance
15	Adjoins	318 Green View	0.44	9/15/2019	$357,000	2005	3,460	$103.18	4/4	2-Car	1.5 Brick		570
	Not	195 St Andrews	0.55	6/17/2018	$314,000	2002	3,561	$88.18	5/3	2-Car	2.0 Brick		
	Not	336 Green View	0.64	1/13/2019	$365,000	2006	3,790	$96.31	6/4	3-Car	2.0 Brick		
	Not	275 Green View	0.36	8/15/2019	$312,000	2003	3,100	$100.65	5/3	2-Car	2.0 Brick		

	Solar	Address	Time	Site	YB	GLA	BR/BA	Park	Other	Total	% Diff	Avg % Diff
	Adjoins	318 Green View								$357,000		4%
	Not	195 St Andrews	$12,040		$4,710	-$7,125	$10,000			$333,625	7%	
	Not	336 Green View	$7,536		-$1,825	-$25,425			-$5,000	$340,286	5%	
	Not	275 Green View	$815		$3,120	$28,986	$10,000			$354,921	1%	

Adjoining Residential Sales After Solar Farm Built

Parcel	Solar	Address	Acres	Date Sold	Sales Price	Built	GBA	$/GBA	BR/BA	Park	Style	Other	Distance
29	Adjoins	164 Ranchland	1.01	4/30/2019	$169,000	1999	2,052	$82.36	4/2	Gar	MFG		440
	Not	150 Pinto	0.94	3/27/2018	$168,000	2017	1,920	$87.50	4/2	Drive	MFG		
	Not	105 Longhorn	1.90	10/10/2017	$184,500	2002	1,944	$94.91	3/2	Drive	MFG		
	Not	112 Pinto	1.00	7/27/2018	$180,000	2002	1,836	$98.04	3/2	Drive	MFG	Fenced	

	Solar	Address	Time	Site	YB	GLA	BR/BA	Park	Other	Total	% Diff	Avg % Diff
	Adjoins	164 Ranchland								$169,000		-10%
	Not	150 Pinto	$5,649		-$21,168	$8,085			$5,000	$165,566	2%	
	Not	105 Longhorn	$8,816	-$10,000	-$3,875	$7,175			$5,000	$191,616	-13%	
	Not	112 Pinto	$4,202		-$3,780	$14,824			$5,000	$200,245	-18%	

Adjoining Residential Sales After Solar Farm Built

Parcel	Solar	Address	Acres	Date Sold	Sales Price	Built	GBA	$/GBA	BR/BA	Park	Style	Other	Distance
	Adjoins	358 Oxford	10.03	9/16/2019	$478,000	2008	2,726	$175.35	3/3	2 Gar	Ranch		635
	Not	276 Summit	10.01	12/20/2017	$355,000	2006	1,985	$178.84	3/2	2 Gar	Ranch		
	Not	176 Providence	6.19	5/6/2019	$425,000	1990	2,549	$166.73	3/3	4 Gar	Ranch	Brick	
	Not	1601 B Caratoke	12.20	9/26/2019	$440,000	2016	3,100	$141.94	4/3.5	5 Gar	Ranch	Pool	

	Solar	Address	Time	Site	YB	GLA	BR/BA	Park	Other	Total	% Diff	Avg % Diff
	Adjoins	358 Oxford								$478,000		5%
	Not	276 Summit	$18,996		$3,550	$106,017	$10,000			$493,564	-3%	
	Not	176 Providence	$4,763		$38,250	$23,609		-$10,000	-$25,000	$456,623	4%	
	Not	1601 B Caratoke	-$371	$50,000	-$17,600	-$42,467	-$5,000	-$10,000		$414,562	13%	

Adjoining Residential Sales After Solar Farm Approved

Parcel	Solar	Address	Acres	Date Sold	Sales Price	Built	GBA	$/GBA	BR/BA	Park	Style	Other	Distance
	Nearby	343 Oxford	10.01	3/9/2017	$490,000	2016	3,753	$130.56	3/3	2 Gar	1.5 Story	Pool	970
	Not	287 Oxford	10.01	9/4/2017	$600,000	2013	4,341	$138.22	5/4.5	8-Gar	1.5 Story	Pool	
	Not	301 Oxford	10.00	4/23/2018	$434,000	2013	3,393	$127.91	5/3	2 Gar	1.5 Story		
	Not	218 Oxford	10.01	4/4/2017	$525,000	2006	4,215	$124.56	4/3	4 Gar	1.5 Story	VG Barn	

	Solar	Address	Time	Site	YB	GLA	BR/BA	Park	Other	Total	% Diff	Avg % Diff
	Adjoins	343 Oxford								$490,000		3%
	Not	287 Oxford	-$9,051		$9,000	-$65,017	-$15,000	-$25,000		$494,932	-1%	
	Not	301 Oxford	-$14,995	-$10,000	$6,510	$36,838				$452,353	8%	
	Not	218 Oxford	-$1,150		$26,250	-$46,036		-$10,000	-$10,000	$484,064	1%	

11. Matched Pair – White Cross II, Chapel Hill, NC

This project is located in rural Orange County on White Cross Road with a 2.8 MW facility. This project is a few parcels south of White Cross Solar Farm that was developed by a different company. An adjoining home sold after construction as presented below.

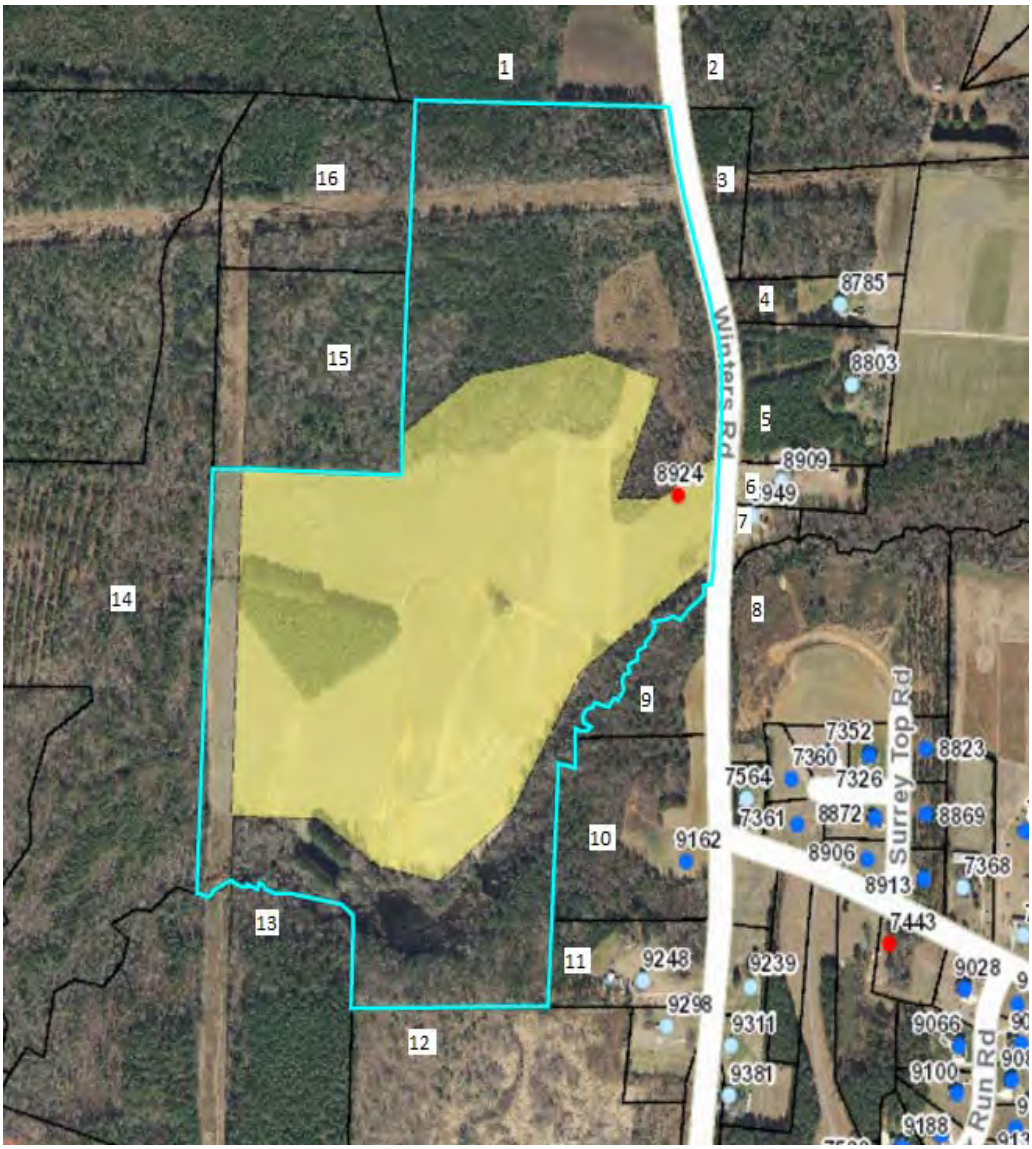
Adjoining Residential Sales After Solar Farm Completed

Solar	TAX ID/Address	Acres	Date Sold	Sales Price	Built	GBA	$/GBA	BR/BA	Park	Style
Adjoins	97482114578	11.78	2/29/2016	$340,000	1994	1,601	$212.37	3/3	Garage	Ranch
Not	4200B Old Greensbor	12.64	12/28/2015	$380,000	2000	2,075	$183.13	3/2.5	Garage	Ranch

Adjoining Residential Sales After Solar Farm Adjoining Sales Adjusted

Solar	TAX ID/Address	Sales Price	Time	Acres	YB	GLA	BR/BA	Park	Total	% Diff
Adjoins	97482114578	$340,000							$340,000	
Not	4200B Old Greensbor	$380,000	$3,800	$0	-$15,960	-$43,402	$5,000	$0	$329,438	3%

12. Matched Pair – Tracy Solar, Bailey, NC



This project is located in rural Nash County on Winters Road with a 5 MW facility that was built in 2016. A local builder acquired parcels 9 and 10 following construction as shown below at rates comparable to other tracts in the area. They then built a custom home for an owner and sold that at a price similar to other nearby homes as shown in the matched pair data below.

Adjoining Land Sales After Solar Farm Completed

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

Adjoining Sales Adjusted

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

Adjoining Residential Sales After Solar Farm Completed

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

Adjoining Sales Adjusted

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

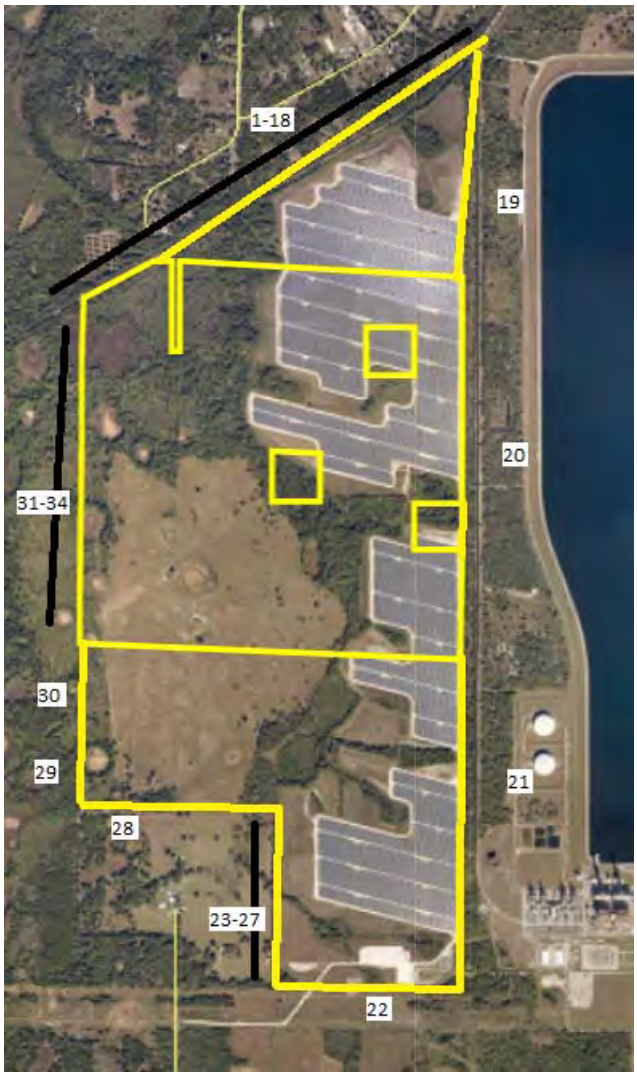
The comparables for the land show either a significant positive relationship or a mild negative relationship to having and adjoining solar farm, but when averaged together they show no negative impact. The wild divergence is due to the difficulty in comping out this tract of land and the wide variety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

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

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

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

13. Matched Pair – Manatee Solar Farm, Parrish, FL



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

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

I have compared this sale to several nearby homesales as part of this matched pair analysis as shown below.

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

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

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

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

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

14. Matched Pair – McBride Place Solar Farm, Midland, NC

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

I have considered the sale of 4380 Joyner Road which adjoins the proposed solar farm near the northwest section. This property was appraised in April of 2017 for a value of $317,000 with no

consideration of any impact due to the solar farm in that figure. The property sold in November 2018 for $325,000 with the buyer fully aware of the proposed solar farm.

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

Adjoining Residential Sales After Solar Farm Approved

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

Adjoining Sales Adjusted

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

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

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

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

Adjoining Lot Sales After Solar Farm Built

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

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

Adjoining Residential Sales After Solar Farm Built

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

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

After adjusting the comparables, I found that the average adjusted value shows a slight increase in value for the subject property adjoining a solar farm. As in the other cases, this is a mild positive and within the typical range of real estate transactions. I therefore conclude that these matched pairs show no impact on value.

15. Matched Pair – Yamhill II, Amity, OR

This solar farm has a 1.2 MW output and is located on a 186.60 acre tract using less than 10 of those acres. The project was built in 2011.

I have considered the recent sale of Parcel 11 shown above, which sold on July 22, 2015 after the solar farm was built. The property sold for $326,456 for a 2.12 acre site with a home built in 1912 with 2,154 s.f. and 4 BR and 2 BA. It was noted as a recently remodeled residence with outbuildings that sold for $151.56 per square foot. I compared this to a number of similar older residences on similar acreage as shown below.

Adjoining Residential Sales After Solar Farm Approved

Solar	Address	Acres	Date Sold	Sales Price	Built	GBA	$/GBA	BR/BA	Adjust for Time	Adjusted Sales	Adjusted $/SF
Adjoins	12001 SW Bellevue, Amity	2.12	7/22/2015	$326,456	1912	2,154	$151.56	4/2			
Not	19915 SW Muddy, McMinnville	1.82	2/28/2011	$213,400	1910	1,798	$118.69	3/2	27%	$271,018	$150.73
Not	22600 Hopewell, Salem	1.00	10/15/2014	$256,000	1910	1,966	$130.21	3/2	5%	$268,800	$136.72
Not	22355 Hopewell, Salem	1.00	11/13/2015	$320,000	1930	2,592	$123.46	3/2	-2%	$313,600	$120.99
Not	9955 Bethel, Amity	2.86	2/17/2016	$289,900	1936	2,028	$142.95	3/2	-4%	$278,304	$137.23
Not	3361 Lone Oak, McMinnville	2.91	3/1/2016	$465,000	1937	2,950	$157.63	3/2	-7%	$432,450	$146.59

Average $138.45
Median $137.23

The sales prices of the comparables were only adjusted for time and provide a range of adjusted values of $120.99 per square foot to $150.73 per square foot. The subject property sold for above the high end of this range despite being on the older end of the range of comparables. Considering 9955 Bethel as the most similar in acreage, age and size and the price per square foot which adjusted to the median rate at $137.23 per square foot. Applying that rate to the subject property square footage, the indicated value is $295,593 for that matched pair, suggesting a 9% enhancement due to the adjacency to the solar farm.

This set of matched pair data falls in line with the data seen in other states. The home is 700 feet from the closest solar panel.

16. Matched Pair – Marion Solar, Aurora, OR

This solar farm has a 0.3 MW output and is located on a 2-acre portion of a 31.76-acre tract. The project was built in 2014.

I have considered the recent sale of Parcels 5 and 6 shown above, which sold on August 6, 2014 after the solar farm was built for $259,000, or $16,444 per acre for a combined 15.75 acres. This was sold as vacant agricultural land with a permitted home site.

I compared this to a number of similar land sales as shown below.

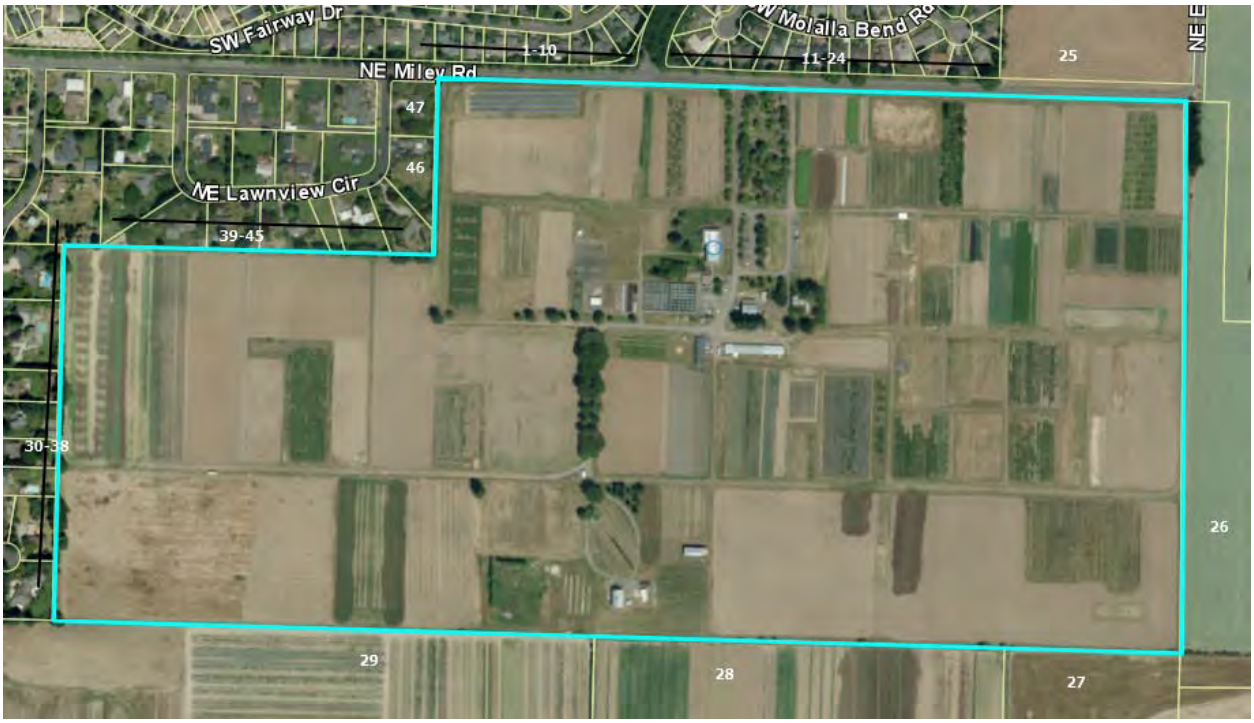
Adjoining Residential Land Sales After Solar Farm Approved

Solar	Address	Acres	Date Sold	Sales Price	$/Ac	Soils	Homesite	Adj for Time	Adjusted Sales	Adjusted $/SF
Adjoins	18916 Butteville, Aurora	15.75	8/6/2014	$259,000	$16,444	2&3	Est.			
Not	15961 Wilsonville, Wilsonville	50.50	5/20/2014	$950,000	$18,812	2&3	Est.	1.5%	$964,250	$19,094
Not	11471 Wilco, Mt. Angel	13.31	11/10/2014	$159,500	$11,983	2&4	N/A	-1.5%	$157,108	$11,804
Not	Waconda, Salem	11.86	9/9/2015	$215,000	$18,128	2	N/A	-6.5%	$201,025	$16,950

Average	$15,949
Median	$16,950

The sales price for the subject property is in line and between the average and median rates from the comparables. The sale at 11471 Wilco is the most similar in terms of acreage, time, and location. The sale on Waconda is similar in size, but newer and required more adjustment. I therefore conclude that no impact due to the proximity of the solar farm.

17. Matched Pair – Clackamas II, Aurora, OR



This solar farm has a 0.22 MW output and is located on a 1-acre portion of a 156.32-acre tract. The project was built in 2014.

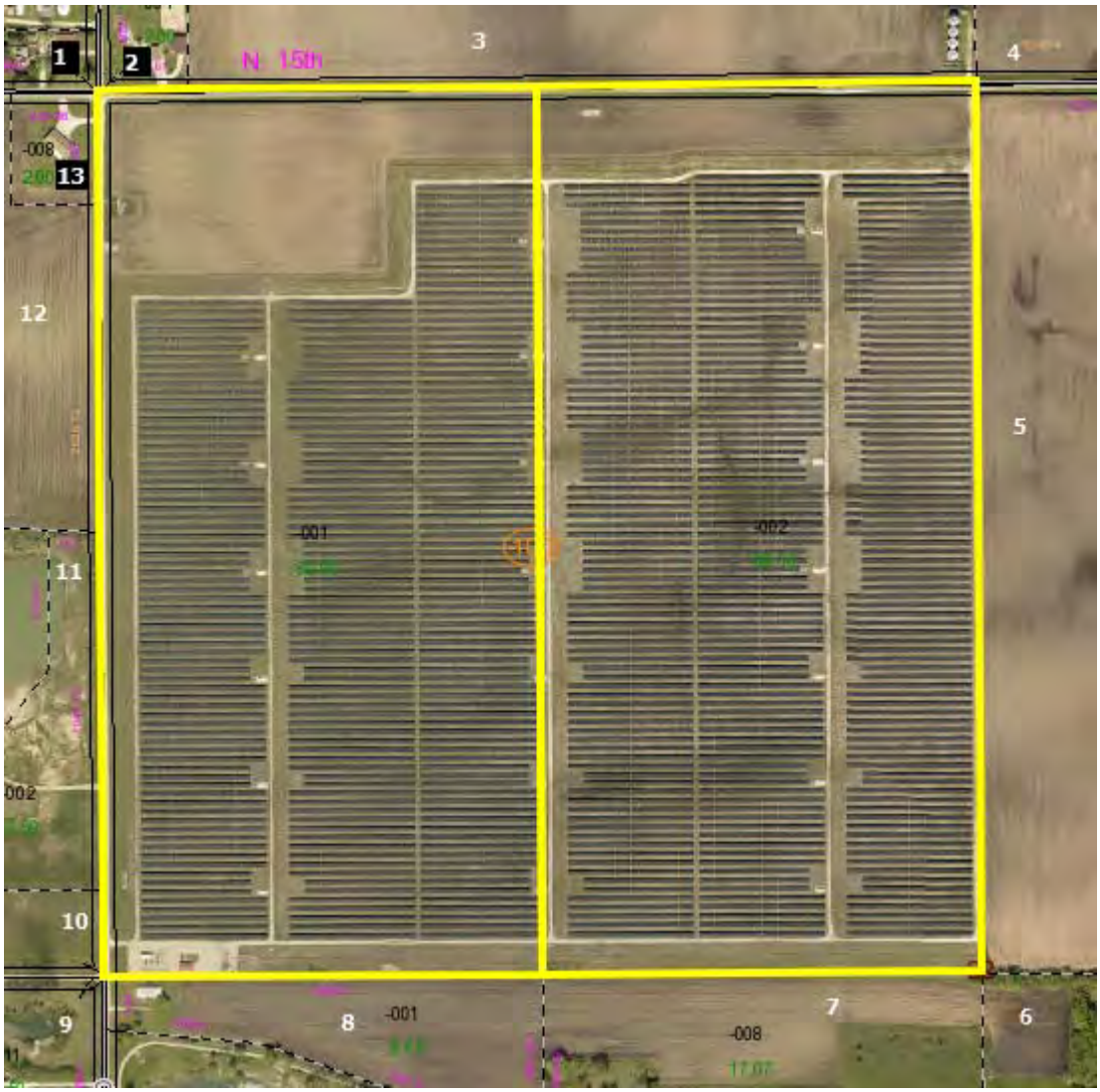
I have considered the homesales along SW Fairway Drive both before and after the solar farm was announced to see if there was any impact on total sales price or price per square foot. As can be seen in the chart below, the sales prices continued to trend upward after the announcement and the price per square foot continued to trend upward. These homes are all approximately 125 feet from the closest solar panel.

I adjusted these based on 0.75% per month difference in date of sale to January 1, 2014. The indicated average and median rate are right in line with the sales before and after the solar farm was built. These comparables strongly indicate no impact in sales price.

Adjoining Residential Sales Before and After Solar Farm Announced

Solar	Address	Acres	Date Sold	Sales Price	Built	GBA	$/GBA	Adjust Time	Adjusted Sales	Adjusted $/SF
Prior	7500 SW Fairway	0.20	12/9/2011	$365,000	1992	2,435	$149.90	18.8%	$433,620	$178.08
Prior	7580 SW Fairway	0.30	11/21/2012	$335,000	1990	2,256	$148.49	11%	$370,175	$164.08
Prior	7480 SW Fairway	0.19	6/27/2013	$365,000	1992	2,244	$162.66	5%	$384,345	$171.28
							$153.68	**Average**		$171.15
							$149.90	**Median**		$171.28
After	7620 SW Fairway	0.27	7/1/2013	$365,000	1992	2,212	$165.01	3.8%	$378,870	$171.28
After	7700 SW Fairway	0.18	6/11/2014	$377,100	1991	2,328	$161.98	-2%	$371,444	$159.55
After	7380 SW Fairway	0.19	7/18/2014	$415,000	1989	2,115	$196.22	-6%	$390,100	$184.44
							$174.40	**Average**		$171.76
							$165.01	**Median**		$171.28

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



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

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

Adjoining Residential Sales After Solar Farm Completed

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

Not Adjoining Residential Sales After Solar Farm Completed

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

TAX ID	Date Sold	Adjustments Time	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.

19. Matched Pair – Portage Solar, Portage, IN

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

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

Adjoining Residential Sales After Solar Farm Completed

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

Nearby Residential Sales After Solar Farm Completed

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

Adjoining Land Sales After Solar Farm Completed

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

Nearby Land Sales After Solar Farm Completed

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

Residential Sale Adjustment Chart

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

2% adjustment/year
Adjusted to 2017

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

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

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

Land Sale Adjustment Chart

TAX ID	Date Sold	Adjustments Time	Total	$/Acre
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	
	Average	Median	Average	Median
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.

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

This solar farm has an 8.6 MW output and is located on a portion of a 134-acre tract. The project was built in 2013.

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

Adjoining Residential Sales After Solar Farm Completed

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

Nearby Not Adjoining Residential Sales After Solar Farm Completed

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

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

2% adjustment/year
Adjusted to 2017

	Adjoins Solar Farm		Not Adjoin Solar Farm	
	Average	**Median**	**Average**	**Median**
Sales Price/SF	$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.

21. Matched Pair – Beetle-Shelby Solar, Cleveland County, NC

This project is located on Bachelor Road at Timber Drive, Mooresboro, NC. This is a 4 MW facility on a parent tract of 24 acres.

I have considered a custom home on a nearby property adjoining this solar farm. This home is located on 10.08 acres, was built in 2013, and has a gross living area of 3,196 s.f. This property sold on October 1, 2018 $416,000. I compared this to several nearby homes of similar size on large lots as shown below.

Adjoining Residential Sales After Solar Farm Approved

Solar	Address	Acres	Date Sold	Sales Price	Built	GBA	$/GBA	BR/BA	Park	Style	Other
Adjoins	1715 Timber	10.08	10/1/2018	$416,000	2013	3,196	$130.16	4/3.5	2xGar	1.5 story	Pool, Scrn Prch
Not	1021 Posting	2.45	2/15/2019	$414,000	2000	4,937	$83.86	4/4.5	2xGar	1.5 story	Scrn Prch
Not	2521 Wood	3.25	7/30/2017	$350,000	2003	3,607	$97.03	4/4	4xGar	1.5 story	Pool, sunroom
Not	356 Whitaker	7.28	1/9/2017	$340,000	1997	3,216	$105.72	4/4	2xGar	Ranch	Pole barn

Adjoining Sales Adjusted								
Time	**Acres**	**YB**	**GLA**	**BR/BA**	**Park**	**Other**	**Total**	**% Diff**
							$416,000	
	$15,000	$37,674	-$58,398	-$10,000			$398,276	4%
$10,500	$12,000	$24,500	-$15,952	-$5,000	-$5,000		$371,048	11%
$15,300	$5,000	$38,080	-$846	-$5,000			$392,534	6%
							Average	7%

The data on these sales all show that the subject property adjoining the solar farm sold for more than these other comparable sales. These sales suggest a mild increase in value due to proximity to the solar farm; however, the subject property is a custom home with upgrades that would balance out that difference. I therefore conclude that these matched pairs support an indication of no impact on property value.

22. Matched Pair – Courthouse Solar, Gaston County, NC

This project is a 5 MW facility located on 161.92 acres on Tryon Courthouse Road near Bessemer City that was approved in late 2016 but has not yet been constructed due to delays in the power purchase agreement process with Duke Progress Energy.

I have considered a recent sale of a home (Parcel 13) located across from this approved solar farm project as well as an adjoining lot sale (Parcel 25) to the west of this approved project.

I compared the home sale to similar sized homes with similar exposure to county roads as shown below. I considered three similar sales that once adjusted for differences show a positive relationship due to proximity to the solar farm. The positive impact is less than 5% which is a standard deviation for real estate transaction and indicates no impact on property value.

Adjoining Residential Sales After Solar Farm Approved

Solar	Address	Acres	Date Sold	Sales Price	Built	GBA	$/GBA	BR/BA	Park	Style
Adjoins	2134 Tryon Court.	0.85	3/15/2017	$111,000	2001	1,272	$87.26	3/2	Drive	Ranch
Not	214 Kiser	1.14	1/5/2017	$94,000	1987	1,344	$69.94	3/2	Drive	Ranch
Not	101 Windward	0.30	3/30/2017	$104,000	1995	1,139	$91.31	3/2	Drive	Ranch
Not	5550 Lennox	1.44	10/12/2018	$115,000	2002	1,224	$93.95	3/2	Drive	Ranch

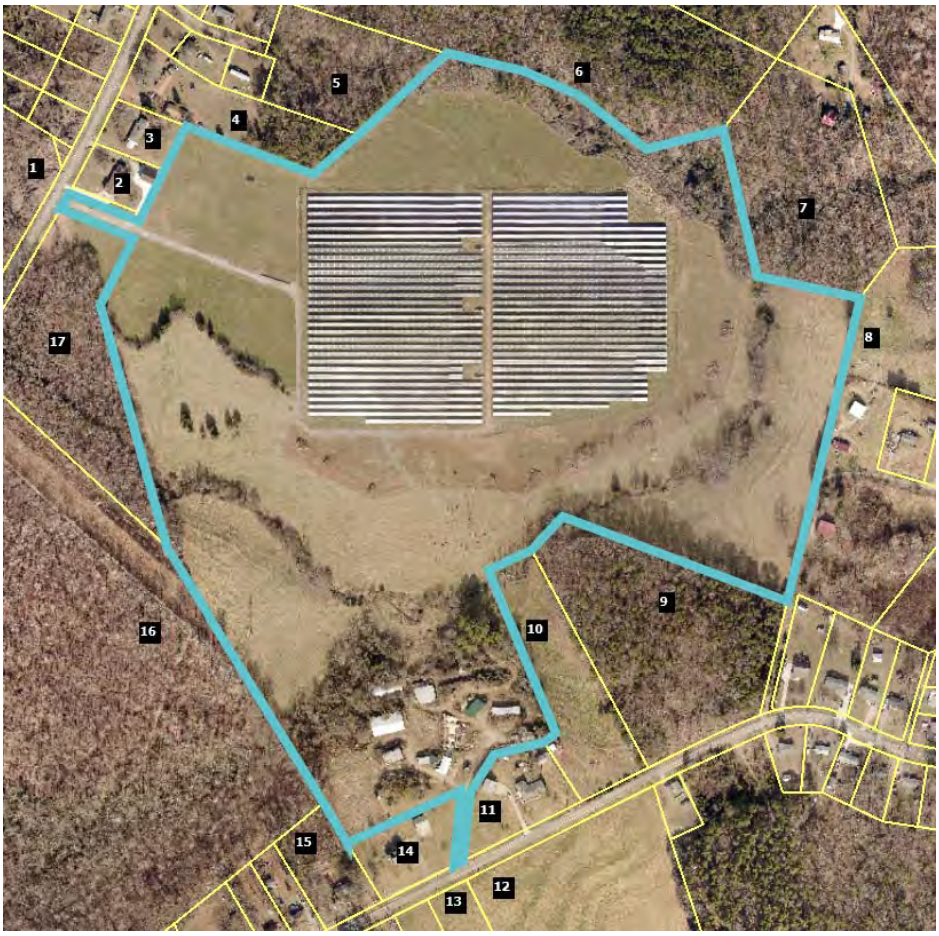
Adjoining Residential Sales After Solar Farm Approved					Adjoining Sales Adjusted					
Solar	Address	Acres	Date Sold	Sales Price	Time	Acres	YB	GLA	Total	% Diff
Adjoins	2134 Tryon Court.	0.85	3/15/2017	$111,000					$111,000	
Not	214 Kiser	1.14	1/5/2017	$94,000	$533		$9,212	-$1,511	$102,234	8%
Not	101 Windward	0.30	3/30/2017	$104,000	-$128		$4,368	$5,615	$113,855	-3%
Not	5550 Lennox	1.44	10/12/2018	$115,000	-$5,444		-$805	-$2,396	$106,355	4%
								Average		3%

Similarly, I compared the lot sale to four nearby land sales. Parcel 25 could not be subdivided and was a single estate lot. There were a number of nearby lot sales along Weaver Dairy that sold for $43,000 to $30,000 per lot for 4-acre home lots. Estate lots typically sell at a base homesite rate

that would be represented by those prices plus a diminishing additional value per additional acre. The consideration of the larger tract more accurately illustrates the value per acre for larger tracts. After adjustments, the land sales show a mild positive impact on land value with an average increase of 9%, which supports a positive impact.

Adjoining Residential Land Sales After Solar Farm Approved						Adjoining Sales Adjusted				
Solar	**Address**	**Acres**	**Date Sold**	**Sales Price**	**$/Ac**	**Time**	**Acres**	**Total**	**% Diff**	**Note**
Adjoins	5021 Buckland	9.66	3/21/2018	$58,500	$6,056			$58,500		1 homesite only
Not	Campbell	6.75	10/31/2018	$42,000	$6,222	-$773	$18,107	$59,333	-1%	
Not	Kiser	17.65	11/27/2017	$69,000	$3,909	$647	-$19,508	$50,139	14%	6 acres less usable due to shape (50%)
Not	522 Weaver Dairy	3.93	2/26/2018	$30,000	$7,634	$57	$25,000	$55,057	6%	
Not	779 Sunnyside	6.99	3/6/2017	$34,000	$4,864	$1,062	$12,987	$48,049	18%	
								Average	9%	

23. Matched Pair – Mariposa Solar, Gaston County, NC



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

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

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

Adjoining Residential Sales After Solar Farm Approved

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

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

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

I have also considered Parcel 4 that sold after the solar farm was approved but before it had been constructed in 2016.

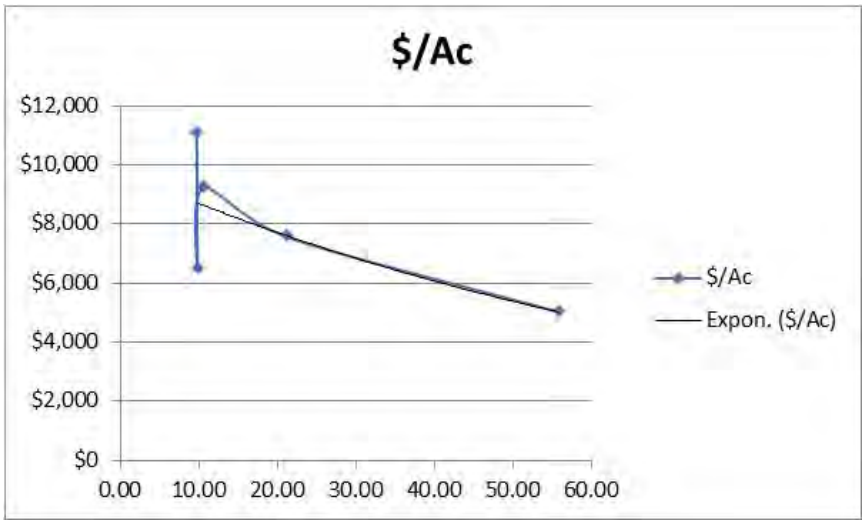
Adjoining Residential Sales After Solar Farm Approved											
Solar	**Address**	**Acres**	**Date Sold**	**Sales Price**	**Built**	**GBA**	**$/GBA**	**BR/BA**	**Park**	**Style**	**Other**
Adjoins	242 Mariposa	2.91	9/21/2015	$180,000	1962	1,880	$95.74	3/2	Carport	Br/Rnch	Det Wrkshop
Not	249 Mariposa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

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

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

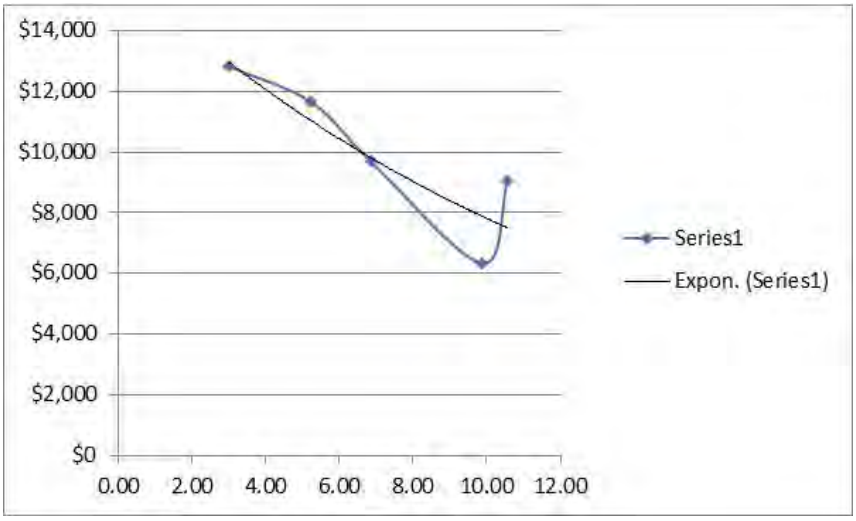
I have also considered the recent sale of Parcel 13 that is located on Blacksnake Road south of the project. I was unable to find good land sales in the same 20 acre range, so I have considered sales of larger and smaller acreage. I adjusted each of those land sales for time. I then applied the price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

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

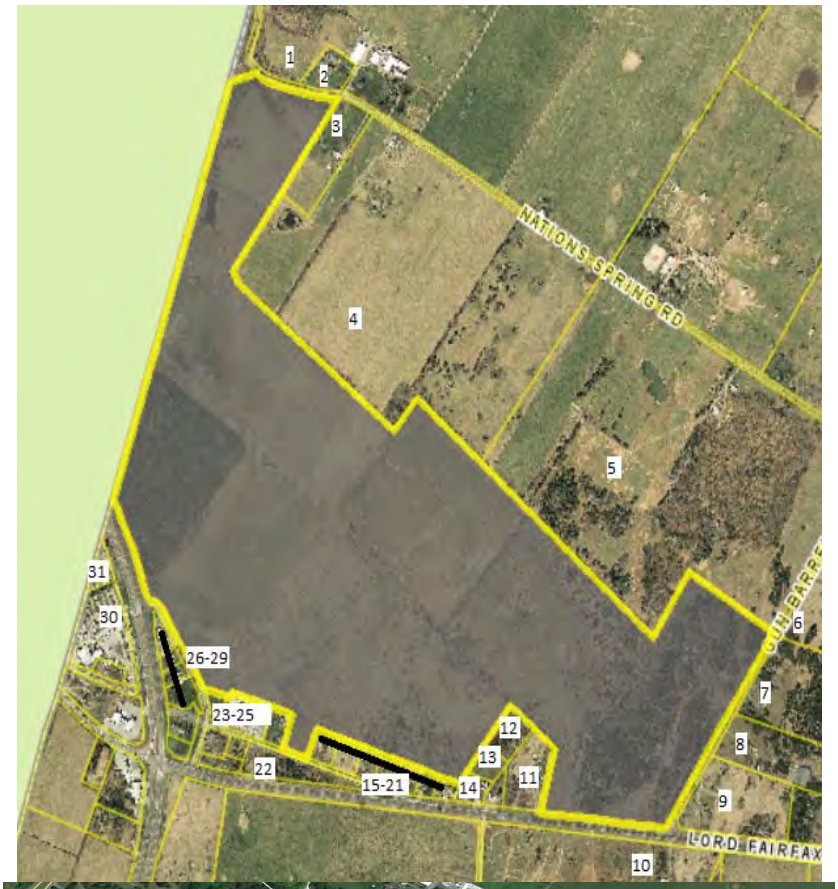


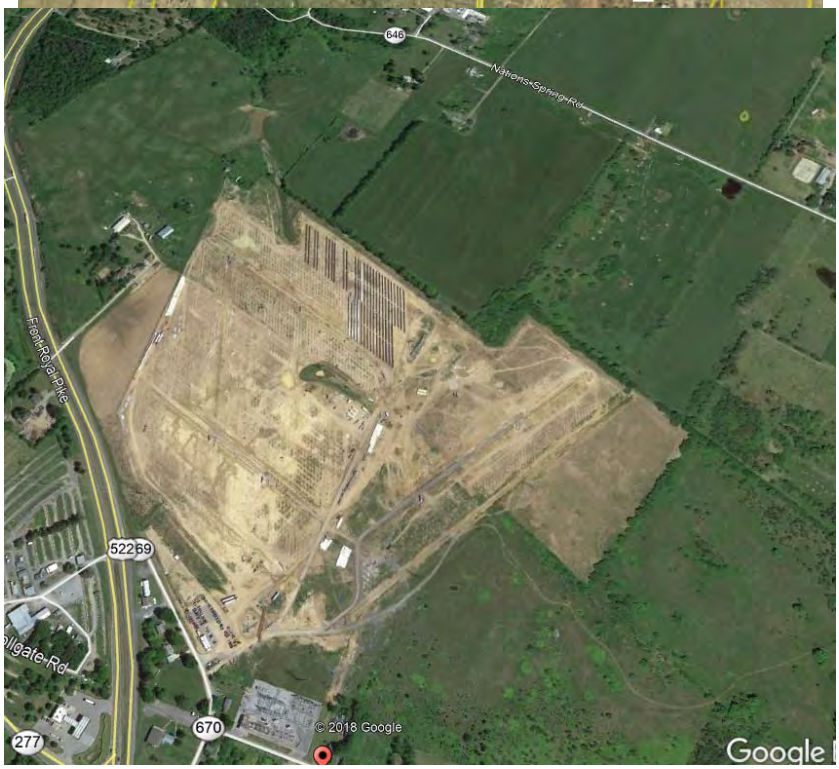
Finally, I have considered the recent sale of Parcel 17 that sold as vacant land. I was unable to find good land sales in the same 7 acre range, so I have considered sales of larger and smaller acreage. I adjusted each of those land sales for time. I then applied the price per acre to a trendline to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

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



24. Matched Pair – Clarke County Solar, Clarke County, VA





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

I have considered a recent sale or Parcel 3. The home on this parcel is 1,230 feet from the closest panel as measured in the second map from Google Earth, which shows the solar farm under construction.

I've compared this home sale to a number of similar rural homes on similar parcels as shown below. I have used multiple sales that bracket the subject property in terms of sale date, year built, gross living area, bedrooms and bathrooms. Bracketing the parameters insures that all factors are well balanced out in the adjustments. The trend for these sales shows a positive value for the adjacency to the solar farm.

Adjoining Residential Sales After Solar Farm Approved

Solar	Address	Acres	Date Sold	Sales Price	Built	GBA	$/GBA	BR/BA	Park	Style	Other
Adjoins	833 Nations Spr	5.13	1/9/2017	$295,000	1979	1,392	$211.93	3/2	Det Gar	Ranch	Unfin bsmt
Not	85 Ashby	5.09	9/11/2017	$315,000	1982	2,333	$135.02	3/2	2 Gar	Ranch	
Not	541 Old Kitchen	5.07	9/9/2018	$370,000	1986	3,157	$117.20	4/4	2 Gar	2 story	
Not	4174 Rockland	5.06	1/2/2017	$300,000	1990	1,688	$177.73	3/2	3 Gar	2 story	
Not	400 Sugar Hill	1.00	6/7/2018	$180,000	1975	1,008	$178.57	3/1	Drive	Ranch	

Adjoining Residential Sales After Solar Farm Approved					Adjoining Sales Adjusted								
Solar	Address	Acres	Date Sold	Sales Price	Time	Acres	YB	GLA	BR/BA	Park	Other	Total	% Diff
Adjoins	833 Nations Spr	5.13	1/9/2017	$295,000								$295,000	
Not	85 Ashby	5.09	9/11/2017	$315,000	-$6,300		-$6,615	-$38,116		-$7,000	$15,000	$271,969	8%
Not	541 Old Kitchen	5.07	9/9/2018	$370,000	-$18,500		-$18,130	-$62,057		-$7,000	$15,000	$279,313	5%
Not	4174 Rockland	5.06	1/2/2017	$300,000			-$23,100	-$15,782		-$12,000	$15,000	$264,118	10%
Not	400 Sugar Hill	1.00	6/7/2018	$180,000	-$9,000	$43,000	$5,040	$20,571	$10,000	$3,000	$15,000	$267,611	9%
											Average		8%

25. Matched Pair – Flemington Solar, Flemington, NJ

This solar farm is located off Kuhl Road and is south of Hart Boulevard. I spoke with Gerry Giles a local realtor who is familiar with the adjoining neighborhood as she has lived in that neighborhood. She indicated that in her opinion the adjoining solar farm is a quiet neighbor and would not have a negative impact on property value.

Furthermore, I spoke with her specifically about the recent sale of 10 Coventry, which I have included in the matched pairs. She noted that the seller was a divorced bachelor who had set the place up like a dorm and that it showed terribly. She believes proper staging of the interior would have significantly improved the sales price on this home. I adjusted for that factor in the comparables in that analysis based on that information.

I have identified four recent sales of homes adjoining this subdivision along Hart Boulevard and the side streets off of Hart Boulevard.

Adjoining Residential Sales After Solar Farm Approved

Parcel	Solar	Address	Acres	Date Sold	Sales Price	Built	GBA	$/GBA	BR/BA	Park	Style	Other
8	Adjoins	10 Coventry	0.36	3/19/2018	$370,000	1986	1,829	$202.30	3/2.5	2-Gar	2-Story	Staging
	Not	58 Wellington	0.45	6/8/2018	$334,500	1984	1,757	$190.38	3/2.5	2-Gar	2-Story	
	Not	28 Bristol	0.35	1/17/2018	$398,000	1985	1,757	$226.52	3/2.5	2-Gar	2-Story	
	Not	1 Sheffield	0.35	12/15/2017	$399,900	1984	1,870	$213.85	4/2.5	2-Gar	2-Story	

Adjoining Sales Adjusted								Avg	
Time	YB	GLA	BR/BA	Park	Other	Total	% Diff	% Diff	Distance
						$370,000			295
-$2,283	$3,345	$8,224			-$10,035	$333,751	10%		
$2,046	$1,990	$9,786			-$11,940	$399,882	-8%		
$3,168	$3,999	-$5,261			-$11,997	$389,809	-5%		
								-1%	

Adjoining Residential Sales After Solar Farm Approved

Parcel	Solar	Address	Acres	Date Sold	Sales Price	Built	GBA	$/GBA	BR/BA	Park	Style	Other
14	Adjoins	54 Hart	0.36	7/25/2016	$420,000	1986	2,680	$156.72	4/2.5	2-Gar	2-Story	
	Not	43 Aberdeen	0.36	11/21/2016	$417,000	1987	2,524	$165.21	4/2.5	2-Gar	2-Story	
	Not	42 Aberdeen	0.34	2/7/2017	$454,900	1988	2,734	$166.39	5/3	2-Gar	2-Story	
	Not	18 Aberdeen	0.34	11/6/2017	$437,500	1988	2,687	$162.82	4/2.5	2-Gar	2-Story	

Adjoining Sales Adjusted								Avg	
Time	YB	GLA	BR/BA	Park	Other	Total	% Diff	% Diff	Distance
						$420,000			375
-$4,182	-$2,085	$15,464				$426,197	-1%		
-$7,552	-$4,549	-$5,391	-$5,000			$432,408	-3%		
-$17,291	-$4,375	-$684				$415,150	1%		
								-1%	

Adjoining Residential Sales After Solar Farm Approved

Parcel	Solar	Address	Acres	Date Sold	Sales Price	Built	GBA	$/GBA	BR/BA	Park	Style	Other
16	Adjoins	6 Portsmith	0.36	6/19/2015	$410,000	1991	2,687	$152.59	4/2.5	2-Gar	2-Story	
	Not	43 Aberdeen	0.36	11/21/2016	$417,000	1987	2,524	$165.21	4/2.5	2-Gar	2-Story	
	Not	42 Aberdeen	0.34	2/7/2017	$454,900	1988	2,734	$166.39	5/3	2-Gar	2-Story	
	Not	18 Aberdeen	0.34	11/6/2017	$437,500	1988	2,687	$162.82	4/2.5	2-Gar	2-Story	

Adjoining Sales Adjusted								Avg	
Time	YB	GLA	BR/BA	Park	Other	Total	% Diff	% Diff	Distance
						$410,000			425
-$18,308	$8,340	$16,158				$423,190	-3%		
-$22,962	$6,824	-$4,692	-$5,000			$429,069	-5%		
-$32,112	$6,563	$0				$411,950	0%		
								-3%	

Adjoining Residential Sales After Solar Farm Approved

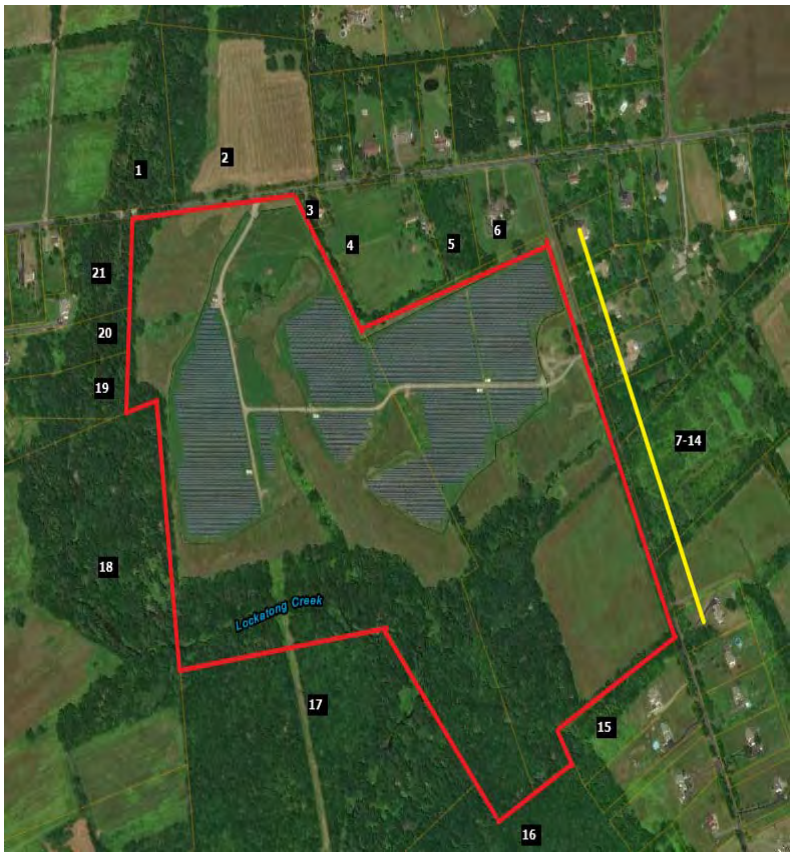
Parcel	Solar	Address	Acres	Date Sold	Sales Price	Built	GBA	$/GBA	BR/BA	Park	Style	Other
19	Adjoins	12 Stratford	0.55	11/30/2017	$414,900	1991	1,828	$226.97	3/2.5	2-Gar	2-Story	
	Not	58 Wellington	0.45	6/8/2018	$334,500	1984	1,757	$190.38	3/2.5	2-Gar	2-Story	
	Not	28 Bristol	0.35	1/17/2018	$398,000	1985	1,757	$226.52	3/2.5	2-Gar	2-Story	
	Not	1 Sheffield	0.35	12/15/2017	$399,900	1984	1,870	$213.85	4/2	Gar	2-Story	

Adjoining Sales Adjusted								Avg	
Time	YB	GLA	BR/BA	Park	Other	Total	% Diff	% Diff	Distance
						$414,900			345
-$5,356	$11,708	$8,110				$348,962	16%		
-$1,610	$11,940	$9,650				$417,980	-1%		
-$505	$13,997	-$5,389	$5,000	$7,000		$420,002	-1%		
								5%	

The range of impact identified by these matched pairs ranges are therefore -3% to +5% for distances ranging from 295 feet to 425 feet with an average difference from these four indicators of 0%. As noted earlier this range is within the typical plus or minus for any real estate transaction and indicates no impact on property value.

The broker Gerry Giles indicated that she has not seen the solar farm having any impact on adjoining property value. She noted that the solar farm is visible from Hart Boulevard and from a number of these backyards, but is still heavily screened.

26. Matched Pair – Frenchtown Solar, Frenchtown, NJ



This solar farm is located off Muddy Run Road. I spoke with Gerry Giles a local realtor who helped a buyer purchase 5 Muddy Town Road. She indicated that his home adjoining the solar farm had multiple offers and that most of those offers were higher than the offer she presented, but her buyer provided an all cash offer. This was important as the property was being purchased while the septic system required repairs and updates that the seller paid for but completed the work during/after the purchase. The solar farm was not considered a negative by her buyer.

Adjoining Residential Sales After Solar Farm Approved

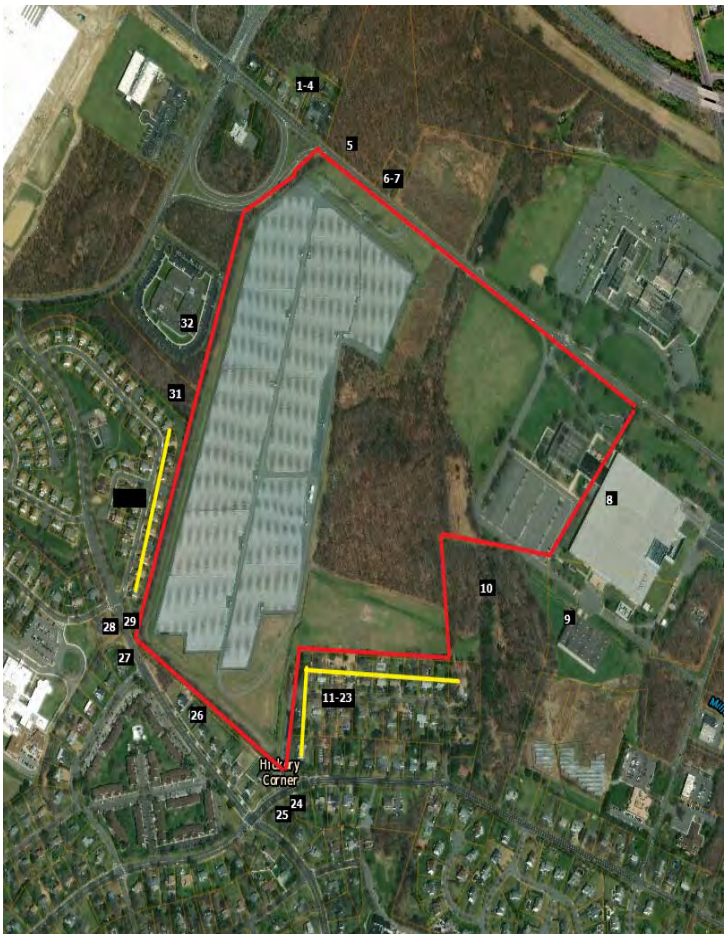
Parcel	Solar	Address	Acres	Date Sold	Sales Price	Built	GBA	$/GBA	BR/BA	Park	Style	Other
7	Adjoins	5 Muddy Run	2.14	6/23/2017	$385,000	1985	2,044	$188.36	4/2.5	2-Gar	2-Story	Updated
	Not	319 Barbertown	2.00	5/21/2019	$358,000	1988	2,240	$159.82	4/3	Gar	2-Story	
	Not	132 Kingwood	3.17	10/31/2016	$380,000	1996	2,392	$158.86	3/2.5	Det 2	2-Story	
	Not	26 Barbertown	2.03	5/21/2019	$360,000	1998	2,125	$169.41	4/3	2-Gar	2-Story	

Adjoining Sales Adjusted

Time	YB	GLA	BR/BA	Park	Other	Total	% Diff	Avg % Diff	Distance
						$385,000			250
-$13,673	-$5,370	-$18,795	-$5,000	$10,000	$20,000	$345,162	10%		
$4,893	-$20,900	-$33,171		$5,000	$20,000	$355,823	8%		
-$13,749	-$23,400	-$8,233	-$5,000		$20,000	$329,618	14%		
								11%	

After typical adjustments including a $20,000 increase in the comparable sales for updates, the subject property is showing a significant premium that may be attributable to the adjoining solar farm.

27. Matched Pair – McGraw Solar, East Windsor, NJ



This solar farm is located off Oak Creek Road. The matched pairs considered at this solar farm involve the townhome/duplexes located off Wyndmoor Drive and a single family home off Wilmor Drive.

Adjoining Residential Sales After Solar Farm Approved

Parcel	Solar	Address	Acres	Date Sold	Sales Price	Built	GBA	$/GBA	BR/BA	Park	Style
	Adjoins	153 Wyndmoor	N/A	4/25/2017	$215,000	1987	1,532	$140.34	3/3	Gar	2-Story
	Not	164 Wyndmoor	N/A	5/13/2019	$258,000	1987	1,532	$168.41	3/3	Gar	2-Story
	Not	33 Monroe	N/A	2/6/2018	$261,000	1987	1,532	$170.37	3/3	Gar	2-Story
	Not	20 Spyglass	N/A	12/19/2017	$240,000	1987	1,532	$156.66	3/3	Gar	2-Story

Adjoining Sales Adjusted

Time	YB	GLA	BR/BA	Park	Other	Total	% Diff	Avg % Diff	Distance
						$215,000			175
-$15,862	$0	$0				$242,138	-13%		
-$6,157	$0	$0				$254,843	-19%		
-$4,695	$0	$0				$235,305	-9%		
								-14%	

Adjoining Residential Sales After Solar Farm Approved

Parcel	Solar	Address	Acres	Date Sold	Sales Price	Built	GBA	$/GBA	BR/BA	Park	Style
	Adjoins	149 Wyndmoor	N/A	5/24/2017	$206,000	1987	1,236	$166.67	2/1.5	Gar	2-Story
	Not	97 Wyndmoor	N/A	4/17/2017	$210,000	1987	1,236	$169.90	2/1.5	Gar	2-Story
	Not	24 Monroe	N/A	12/23/2016	$217,979	1987	1,560	$139.73	3/2.5	Gar	2-Story
	Not	81 Wyndmoor	N/A	1/31/2018	$204,000	1987	1,254	$162.68	2/2.5	Gar	2-Story

Adjoining Sales Adjusted

Time	YB	GLA	BR/BA	Park	Other	Total	% Diff	Avg % Diff	Distance
						$206,000			175
$639	$0	$0				$210,639	-2%		
$2,723	$0	-$27,164				$193,539	6%		
-$4,225	$0	-$1,757				$198,018	4%		
								3%	

Adjoining Residential Sales After Solar Farm Approved

Parcel	Solar	Address	Acres	Date Sold	Sales Price	Built	GBA	$/GBA	BR/BA	Park	Style
	Adjoins	26 Wilmor	0.46	3/19/2019	$286,000	1961	1,092	$261.90	3/1.5	Gar	Ranch
	Not	25 Pinehurst	0.48	5/17/2019	$315,000	1967	1,314	$239.73	3/1&2	Gar	Ranch
	Not	15 Maple Stream	0.40	6/6/2017	$285,000	1964	1,202	$237.10	3/1.5	Gar	Ranch
	Not	3 Amy	0.29	10/11/2018	$286,000	1969	1,229	$232.71	3/1.5	Gar	Ranch

Adjoining Sales Adjusted

Time	YB	GLA	BR/BA	Park	Other	Total	% Diff	Avg % Diff	Distance
						$286,000			400
-$1,566	-$9,450	-$31,932	-$5,000			$267,052	7%		
$15,635	-$4,275	-$15,649				$280,711	2%		
$3,832	-$11,440	-$19,129				$259,263	9%		
								6%	
							Average	-2%	250

The range of impact identified by these matched pairs ranges are therefore -14% to +6% for distances ranging from 175 feet to 400 feet with an average difference from these three indicators of -2%. As noted earlier this range is within the typical plus or minus for any real estate transaction and indicates no impact on property value.

This set of matched pairs is interesting and there appears to be more going on when you compare the two townhome properties. One shows a significant discount and the other shows no impact. When I compare the two townhomes that both back up to the same solar farm, the townhome that includes 1,532 s.f. sold for only $9,000 more than the townhome that has 1,236 s.f. I attempted to speak with the broker involved with these but was unable to get a reply. The difference there strongly indicates that something else is going on with the larger townhome. I will not rely heavily on that matched pair, but I have included it to be complete.

28. Matched Pair – Tinton Falls Solar, Tinton Falls, NJ

This solar farm is located off W. Park Avenue. The tract with the solar farm also has a condo/townhome project from which I have considered recent sales activity. I note that the developer of the solar farm and the townhome community clearly did not see any negative impact from the combined use. These units are still being constructed with new sales expected in the near future.

Adjoining Residential Sales After Solar Farm Approved

Parcel	Solar	Address	Acres	Date Sold	Sales Price	Built	GBA	$/GBA	BR/BA	Park	Style	Other
	Adjoins	111 Kyle	N/A	8/8/2018	$402,000	2015	2,200	$182.73	3/2.5	Gar	3-Story	End
	Not	80 Kyle	N/A	9/18/2017	$410,000	2015	2,226	$184.19	2/2.5	Gar	3-Story	End/Park
	Not	15 Michael	N/A	9/19/2018	$412,000	2016	2,157	$191.01	3/2.5	Gar	3-Story	End
	Not	31 Michael	N/A	4/1/2019	$390,000	2016	2,200	$177.27	3/2.5	Gar	3-Story	End
	Not	15 Michael	N/A	9/9/2018	$412,000	2016	2,157	$191.01	3/2.5	Gar	3-Story	End

Adjoining Sales Adjusted

Time	YB	GLA	BR/BA	Park	Other	Total	% Diff	Avg % Diff	Distance
						$402,000			185
$11,194	$0	-$2,873			-$20,500	$397,821	1%		
-$1,458	-$2,060	$4,928				$413,410	-3%		
-$7,756	-$1,950	$0				$380,294	5%		
-$1,111	-$2,060	$4,928				$413,757	-4%		
								1%	

Adjoining Residential Sales After Solar Farm Approved

Parcel	Solar	Address	Acres	Date Sold	Sales Price	Built	GBA	$/GBA	BR/BA	Park	Style	Other
	Adjoins	47 Kyle	N/A	8/31/2018	$260,000	2016	1,140	$228.07	2/2	Gar	3-Story	End
	Not	26 Jake	N/A	10/31/2017	$268,000	2014	1,140	$235.09	2/2	Gar	3-Story	End
	Not	4 Michael	N/A	11/8/2018	$260,000	2015	1,140	$228.07	2/2	Gar	3-Story	End
	Not	36 Kyle	N/A	1/10/2019	$260,000	2015	1,140	$228.07	2/2	Gar	3-Story	

Adjoining Sales Adjusted								Avg	
Time	YB	GLA	BR/BA	Park	Other	Total	% Diff	% Diff	Distance
						$260,000			155
$6,866	$2,680	$0				$277,546	-7%		
-$1,512	$1,300	$0				$259,788	0%		
-$2,892	$1,300	$0			$7,800	$266,208	-2%		
								-3%	

Adjoining Residential Sales After Solar Farm Approved

Parcel	Solar	Address	Acres	Date Sold	Sales Price	Built	GBA	$/GBA	BR/BA	Park	Style	Other
	Adjoins	7 Kyle	N/A	6/15/2017	$262,195	2017	1,140	$230.00	2/2	Gar	3-Story	End
	Not	26 Jake	N/A	10/31/2017	$268,000	2014	1,140	$235.09	2/2	Gar	3-Story	End
	Not	4 Michael	N/A	11/8/2018	$260,000	2015	1,140	$228.07	2/2	Gar	3-Story	End
	Not	36 Kyle	N/A	1/10/2019	$260,000	2015	1,140	$228.07	2/2	Gar	3-Story	

Adjoining Sales Adjusted								Avg	
Time	YB	GLA	BR/BA	Park	Other	Total	% Diff	% Diff	Distance
						$262,195			150
-$3,117	$4,020	$0				$268,903	-3%		
-$11,196	$2,600	$0	-$5,000			$246,404	6%		
-$12,576	$2,600	$0			$7,800	$257,824	2%		
								2%	

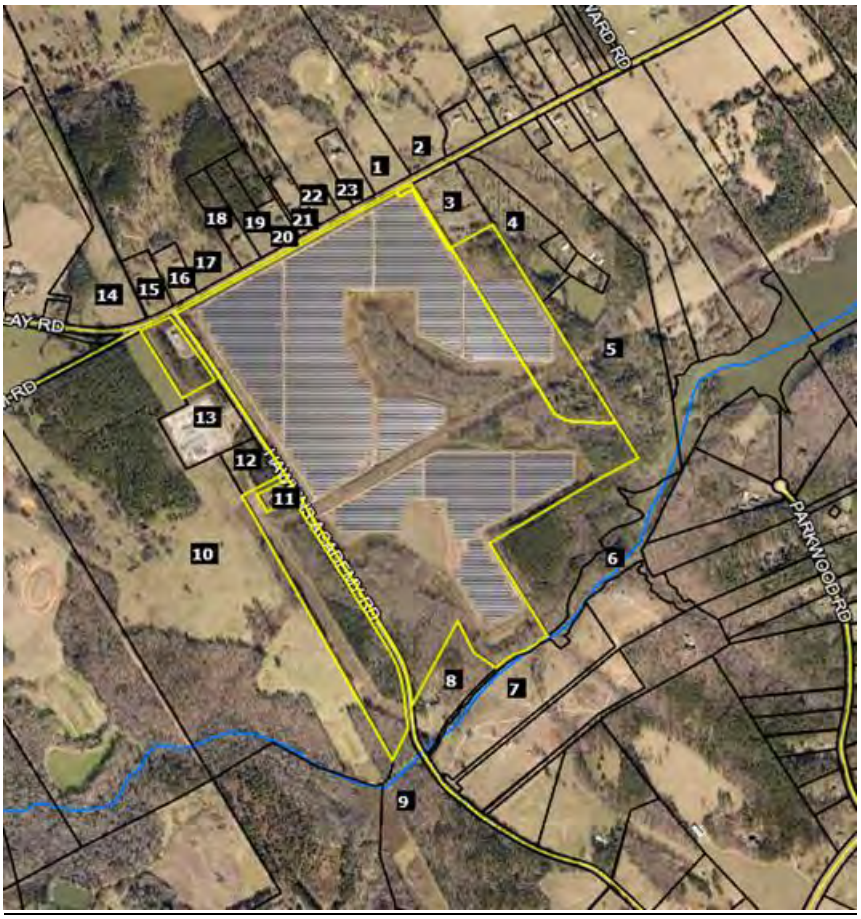
Adjoining Residential Sales After Solar Farm Approved

Parcel	Solar	Address	Acres	Date Sold	Sales Price	Built	GBA	$/GBA	BR/BA	Park	Style	Other
	Adjoins	1 Samantha	N/A	9/1/2017	$258,205	2017	1,140	$226.50	2/2	Gar	3-Story	End
	Not	26 Jake	N/A	10/31/2017	$268,000	2014	1,140	$235.09	2/2	Gar	3-Story	End
	Not	4 Michael	N/A	11/8/2018	$260,000	2015	1,140	$228.07	2/2	Gar	3-Story	End
	Not	36 Kyle	N/A	1/10/2019	$260,000	2015	1,140	$228.07	2/2	Gar	3-Story	

Adjoining Sales Adjusted								Avg	
Time	YB	GLA	BR/BA	Park	Other	Total	% Diff	% Diff	Distance
						$258,205			155
-$1,355	$4,020	$0	-$5,000			$265,665	-3%		
-$9,487	$2,600	$0				$253,113	2%		
-$10,867	$2,600	$0			$7,800	$259,533	-1%		
								0%	

The range of impact identified by these matched pairs ranges are therefore -3% to +2% for distances ranging from 150 feet to 185 feet with an average difference from these four indicators of 0%. As noted earlier this range is within the typical plus or minus for any real estate transaction and indicates no impact on property value.

29. Matched Pair – Simon Solar, Social Circle, GA



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

Adjoining Land Sales After Solar Farm Approved

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

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

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

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

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

30. Matched Pair – Candace Solar, Princeton, NC

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

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

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

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

Adjoining Land Sales After Solar Farm Approved / **Adjoining Sales Adjusted**

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

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

Adjoining Residential Sales After Solar Farm Approved

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

Adjoining Residential Sales Af / **Adjoining Sales Adjusted**

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

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

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

31. Matched Pair – Crittenden Solar, Crittenden, KY

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

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

Mr. Glacken is currently selling lots at the west end of Claiborne for new home construction. He indicated that the solar farm near the entrance of the development has been a complete non-factor and none of the home sales are showing any concern over the solar farm. Most of the homes are in the $250,000 to $280,000 price range on lots being marketed for $28,000 to $29,000.

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

Adjoining Residential Sales After Solar Farm Approved

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

Adjustments

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%	

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.

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

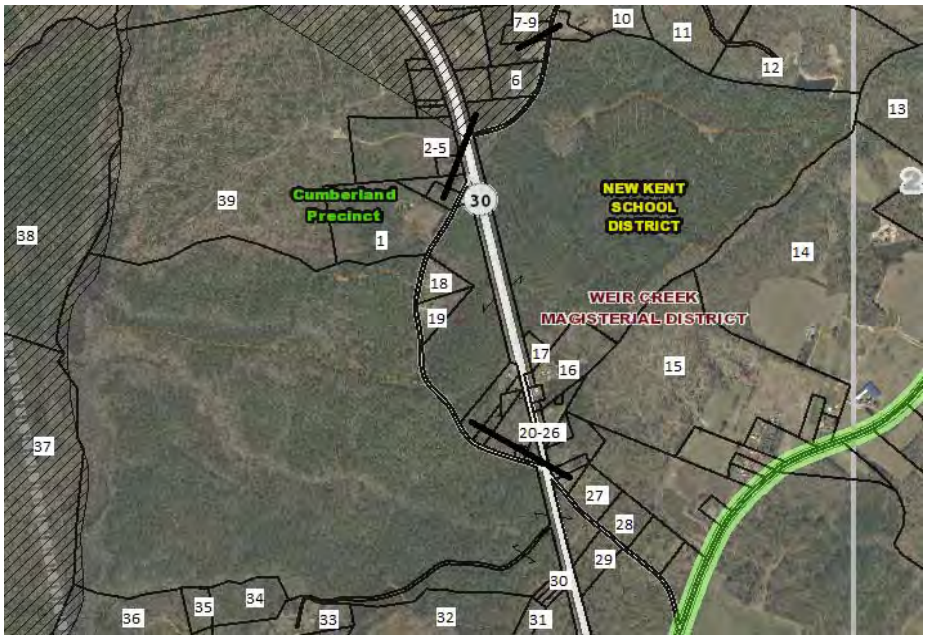
Solar	Address	Time	Site	YB	GLA	BR/BA	Park	Other	Total	% Diff	Avg % Diff	Distance
Adjoins	330 Claiborne								$282,500			665
Not	895 Osborne	$1,790		$1,250	$7,387	$5,000		$0	$265,327	6%		
Not	2160 Sherman	$4,288		-$2,650	$4,032			$20,000	$290,670	-3%		
Not	215 Lexington	$9,761		$3,468	$20,706	-$5,000		$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 five matched pairs considered in this analysis includes two that show no impact on value, one that shows a negative impact on value, and two that show a positive impact. The negative indication supported by one matched pair is -7% and the positive impacts are +6% and +7%. The two neutral indications show impacts of -1% and +3%. The average indicated impact is +0% when all five of these indicators are blended.

Furthermore, the comments of the local broker strongly support the data that shows no negative impact on value due to the proximity to the solar farm. This is further supported by the national data that is shown on the following pages.

32. Matched Pair – Walker-Correctional Solar, Barham Road, Barhamsville, VA



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

I considered the recent sale identified on the map above as Parcel 19, which is directly across the street and based on the map shown on the following page is 250 feet from the closest panel. A limited buffering remains along the road with natural growth being encouraged, but currently the panels are visible from the road. Alex Uminski, SRA with MGMiller Valuations in Richmond VA confirmed this sale with the buying and selling broker. The selling broker indicated that the solar farm was not a negative influence on this sale and in fact the buyer noticed the solar farm and then discovered the listing. The privacy being afforded by the solar farm was considered a benefit by the buyer. I used a matched pair analysis with a similar sale nearby as shown below and found no negative impact on the sales price. Property actually closed for more than the asking price.

Adjoining Residential Sales After Solar Farm Approved

Solar	Address	Acres	Date Sold	Sales Price	Built	GBA	$/GBA	BR/BA	Park	Style	Other
Adjoins	5241 Barham	2.65	10/18/2018	$264,000	2007	1,660	$159.04	3/2	Drive	Ranch	Modular
Not	17950 New Kent	5.00	9/5/2018	$290,000	1987	1,756	$165.15	3/2.5	3 Gar	Ranch	
Not	9252 Ordinary	4.00	6/13/2019	$277,000	2001	1,610	$172.05	3/2	1.5-Gar	Ranch	
Not	2416 W Miller	1.04	9/24/2018	$299,000	1999	1,864	$160.41	3/2.5	Gar	Ranch	

Adjoining Sales Adjusted

Solar	Address	Time	Ac/Loc	YB	GLA	BR/BA	Park	Other	Total	% Diff	Dist
Adjoins	5241 Barham								$264,000		250
Not	17950 New Kent		-$8,000	$29,000	-$4,756	-$5,000	-$20,000	-$15,000	$266,244	-1%	
Not	9252 Ordinary	-$8,310	-$8,000	$8,310	$2,581		-$10,000	-$15,000	$246,581	7%	
Not	2416 W Miller		$8,000	$11,960	-$9,817	-$5,000	-$10,000	-$15,000	$279,143	-6%	
								Average Diff		0%	

I also spoke with Patrick W. McCrerey of Virginia Estates who was marketing a property that sold at 5300 Barham Road adjoining the Walker-Correctional Solar Farm. He indicated that this property was unique with a home built in 1882 and heavily renovated and updated on 16.02 acres. The solar farm was through the woods and couldn't be seen by this property and it had no impact on marketing this property. This home sold on April 26, 2017 for $358,000. I did not set up any matched pairs for this property as it was such a unique property that any such comparison would be difficult to rely on. The broker's comments do support the assertion that the adjoining solar farm had no impact on value. The home in this case was 510 feet from the closest panel.

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

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

I considered the recent sale of a home on Roslin Farm Road just north of Running Fox Road as shown below. This sale supports an indication of no impact on property value.

Adjoining Residential Sales After Solar Farm Approved

Solar	Address	Acres	Date Sold	Sales Price	Built	GBA	$/GBA	BR/BA	Park	Style	Other	Distance
Adjoins	6849 Roslin Farm	1.00	2/18/2019	$155,000	1967	1,610	$96.27	3/3	Drive	Ranch	Brick	435
Not	6592 Sim Canady	2.43	9/5/2017	$185,000	1974	2,195	$84.28	3/2	Gar	Ranch	Brick	
Not	1614 Joe Hall	1.63	9/3/2019	$145,000	1974	1,674	$86.62	3/2	Det Gar	Ranch	Brick	
Not	109 Bledsoe	0.68	1/17/2019	$150,000	1973	1,663	$90.20	3/2	Gar	Ranch	Brick	

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

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

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

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

The matched pairs for each of these are shown below followed by a more recent map showing the panels at this site.

Adjoining Residential Sales After Solar Farm Approved

Solar	Address	Acres	Date Sold	Sales Price	Built	GBA	$/GBA	BR/BA	Park	Style	Other	Distance
Adjoins	2923 County Ln	8.98	2/28/2019	$385,000	1976	2,905	$132.53	3/3	2-Car	Ranch	Brick/Pond	340
Not	1928 Shaw Mill	17.00	7/3/2019	$290,000	1977	3,001	$96.63	4/4	2-Car	Ranch	Brick/Pond/Rental	
Not	2109 John McM.	7.78	4/25/2018	$320,000	1978	2,474	$129.35	3/2	Det Gar	Ranch	Vinyl/Pool,Stable	

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

Adjoining Residential Sales After Solar Farm Approved

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

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

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

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

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

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

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

Adjoining Residential Sales After Solar Farm Built

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

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

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

Adjoining Residential Sales After Solar Farm Built

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

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

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

Adjoining Residential Sales After Solar Farm Built

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

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

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

Parcel 14, 1174 Alice Drive, sold in January 2019. I have compared that sale to three similar properties as shown below. I included 1135 Gwen Drive as a nearby comparable, but it is not a good comparable. According to the broker, Paul Coulter, that home had many recent and significant upgrades that made it superior to similar housing in the neighborhood. It is notably the highest sales price in the neighborhood. I have shown that one but I made no adjustment for those upgrades, but I won't rely on that sale for the matched pairs. I consider the 1127 Don Wayne Drive comparable to be a more reasonable comparison. I spoke with Chris Fergurson 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.

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

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

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

The first is 1060 Cliff Drive that sold in September 2018. I compared this to multiple nearby home sales as shown below.

Adjoining Residential Sales After Solar Farm Built

Solar	Address	Acres	Date Sold	Sales Price	Built	GBA	$/GBA	BR/BA	Park	Style	Other	Distance
Adjoins	1060 Cliff Dr	1.03	9/14/2018	$200,500	1970	2,114	$94.84	4/2.5	2-Car	2 Story	Brick	290
Not	1331 W Genessee	0.45	10/25/2019	$160,707	1940	1,955	$82.20	4/1.5	Drive	1.5 Story	Vinyl/Unfin Bsmt	
Not	1128 Gwen Dr	0.47	8/24/2018	$187,500	1973	2,040	$91.91	3/2.5	2-Car	2 Story	Brick/Unfin Bsmt	
Not	1227 Oakridge	1.05	6/11/2017	$235,000	1980	2,500	$94.00	4/2.5	2-Car	2 Story	Brk/Prt Fin Bsmt	

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

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

Adjoining Residential Sales After Solar Farm Built

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

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

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

37. Matched Pair – Sunfish Farm, Keenebec Rd, Willow Spring, NC

This project was built in 2015 and located on 49.6 acres (with an inset 11.25 acre parcel) for a 6.4 MW project with the closest home at 135 feet with an average distance of 105 feet.

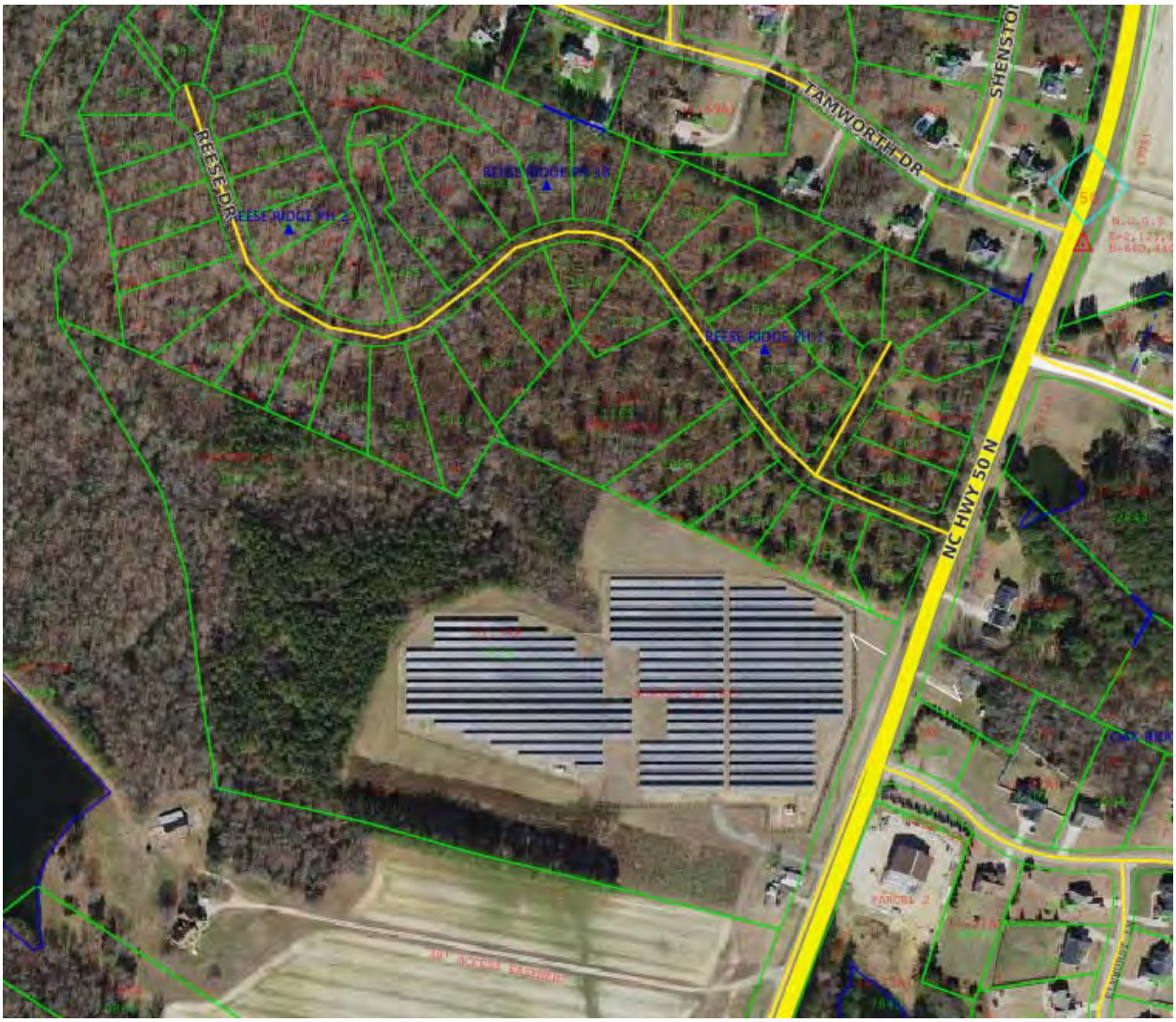
I considered the 2017 sale identified on the map above, which is 205 feet away from the closest panel. The matched pairs for each of these are shown below followed by a more recent map showing the panels at this site. The average difference in the three comparables and the subject property is +3% after adjusting for differences in the sales date, year built, gross living area, and other minor differences. This data is supported by the comments from the broker Brian Schroepfer with Keller Williams that the solar farm had no impact on the purchase price.

Adjoining Residential Sales After Solar Farm Approved

Parcel	Solar	Address	Acres	Date Sold	Sales Price	Built	GBA	$/GBA	BR/BA	Park	Style
	Adjoins	7513 Glen Willow	0.79	9/1/2017	$185,000	1989	1,492	$123.99	3/2	Gar	BR/Rnch
	Not	2968 Tram	0.69	7/17/2017	$155,000	1984	1,323	$117.16	3/2	Drive	BR/Rnch
	Not	205 Pine Burr	0.97	12/29/2017	$191,000	1991	1,593	$119.90	3/2.5	Drive	BR/Rnch
	Not	1217 Old Honeycutt	1.00	12/15/2017	$176,000	1978	1,558	$112.97	3/2.5	2Carprt	VY/Rnch

Adjustments											Avg
Solar	Address	Time	Site	YB	GLA	BR/BA	Park	Other	Total	% Diff	% Diff
Adjoins	7513 Glen Willow								$185,000		
Not	2968 Tram	$601		$3,875	$15,840		$10,000		$185,316	0%	
Not	205 Pine Burr	-$1,915		-$1,910	-$9,688	-$5,000			$172,487	7%	
Not	1217 Old Honeycutt	-$1,557		$9,680	-$5,965	-$5,000		$5,280	$178,438	4%	
											3%

38. Matched Pair – HCE Johnston I, LLC, Benson, NC



This 2.6 MW project was built in 2015 and located on 30.55 acres.

There is a new subdivision that was developed in 2019 just north of this solar farm called Reese's Ridge. This location is near the McGees Crossroads near Mount Pleasant Road. As can be seen in the map below, the adjoining land to the north of this solar farm was purchased in 2017 and subdivided as Reese Ridge with 0.49 to 0.53 acre lots. Most of the trees on this site were cleared as part of the development with a single row of pine trees retained as a buffer along the solar farm. The first six lots on the south side of Reese Drive are around 115 feet from the center point in the lot to the nearest solar farm panel. This tract of land was purchased on September 7, 2017 for $925,000 for 42.388 acres, or $21,822 per acre.

The proposed homes will be custom homes starting at $330,000. County water is available and the homes will use individual septic tanks. I spoke with Amanda with The Rodney Carroll Team who is marketing the homes and she indicated that 7 custom home builders had a lottery to purchase all of the lots.

Three different builders have purchased lots adjoining the solar farm for $60,000 each. Similar lots across Reese Drive and further from the solar farm are selling at the same $60,000 each. At

$60,000 this indicates a lot-to-home ratio of 18%, which is typical for new home construction in the county where there is no amenity package.

Since then a home was built and then sold at 63 Reese Drive, which is two lots off of NC 50 and backs up to the solar farm. Similarly, 107 Reese Drive which is six lots off of NC 50 and backs up to the solar farm. I have considered both of these for matched pairs as shown below.

Adjoining Residential Sales After Solar Farm Built

Parcel	Solar	Address	Acres	Date Sold	Sales Price	Built	GBA	$/GBA	BR/BA	Park	Style	Other
	Adjoins	107 Reese Drive	0.69	11/27/2019	$393,000	2019	2,960	$132.77	3/3	2-Car	1.5 Vinyl	
	Not	200 Reese Drive	0.44	2/19/2020	$400,000	2019	3,209	$124.65	3/2.5	2-Car	1.5 Batten/Stone	
	Not	35 Pawnee Pl	0.65	5/30/2018	$325,000	2017	2,609	$124.57	4/3	2-Car	1.5 Vinyl/Stone	
	Not	278 Timber Wolf	0.88	1/24/2020	$367,443	2019	2,983	$123.18	3/3	2-Car	1.5 Vinyl/Stone	

	Solar	Address	Time	Site	YB	GLA	BR/BA	Park	Other	Total	% Diff	Avg % Diff
	Adjoins	107 Reese Drive								$393,000		5%
	Not	200 Reese Drive	-$2,831		$0	-$24,830	$5,000			$377,338	4%	
	Not	35 Pawnee Pl	$14,954		$3,250	$34,979				$378,183	4%	
	Not	278 Timber Wolf	-$1,796		$0	-$2,266				$363,381	8%	

Adjoining Residential Sales After Solar Farm Built

Parcel	Solar	Address	Acres	Date Sold	Sales Price	Built	GBA	$/GBA	BR/BA	Park	Style	Other
	Adjoins	63 Reese Drive	0.45	3/24/2020	$410,000	2019	3,240	$126.54	4/3	2-Car	Ranch/Wd	
	Not	200 Reese Drive	0.44	2/19/2020	$400,000	2019	3,209	$124.65	3/2.5	2-Car	1.5 Batten/Stone	
	Not	320 Wolf Den	0.97	9/27/2019	$377,780	2019	3,122	$121.01	4/3	2-Car	1.5 Vinyl/Stone	
	Not	37 Makers Way	0.59	5/29/2019	$373,508	2019	3,122	$119.64	4/3	3-Car	1.5 Vinyl/Stone	

	Solar	Address	Time	Site	YB	GLA	BR/BA	Park	Other	Total	% Diff	Avg % Diff
	Adjoins	63 Reese Drive								$410,000		3%
	Not	200 Reese Drive	$1,146		$0	$2,705	$5,000			$408,851	0%	
	Not	320 Wolf Den	$5,699		$0	$9,995				$393,474	4%	
	Not	37 Makers Way	$9,443		$0	$9,882		-$5,000		$387,833	5%	

After adjustments, the two sales support a conclusion of no impact on property value due to the solar farm. I spoke with Rodney Carroll the broker marketing the homes and he indicated that the solar farm had zero impact on the sales price and they were marketing it as the best neighbor you could have.

Conclusion

The solar farm matched pairs shown above have similar characteristics to each other in terms of population, with most of the projects being in areas with a 1-mile radius population under 1,000, but with several outliers showing solar farms in farm more urban areas.

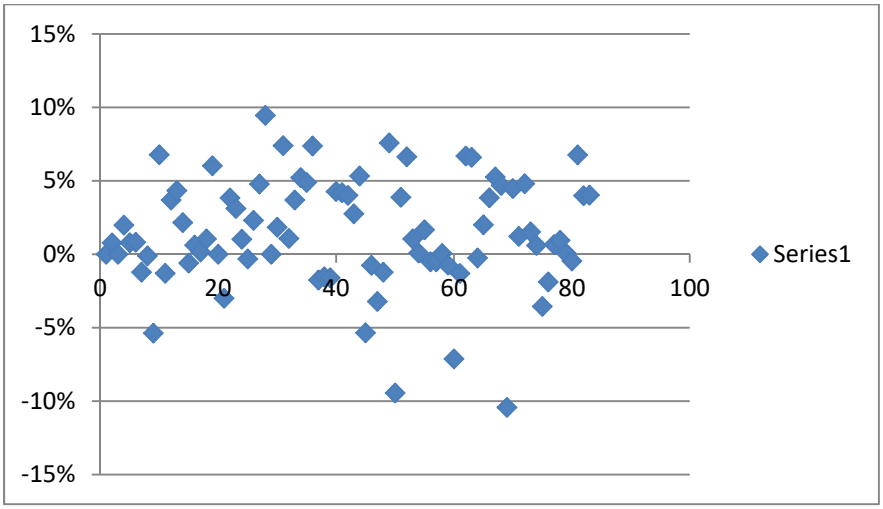
The median income for the population within 1 mile of a solar farm is $63,665 with a median housing unit value of $252,841. Most of the comparables are under $400,000 in the home price, with $770,000 being the high end of the set of matched pairs. The adjoining uses show that residential and agricultural uses are the predominant adjoining uses.

These figures are in line with the larger set of solar farms that I have looked at with the predominant adjoining uses being residential and agricultural and similar to the solar farm breakdown shown for Kentucky and the proposed subject property.

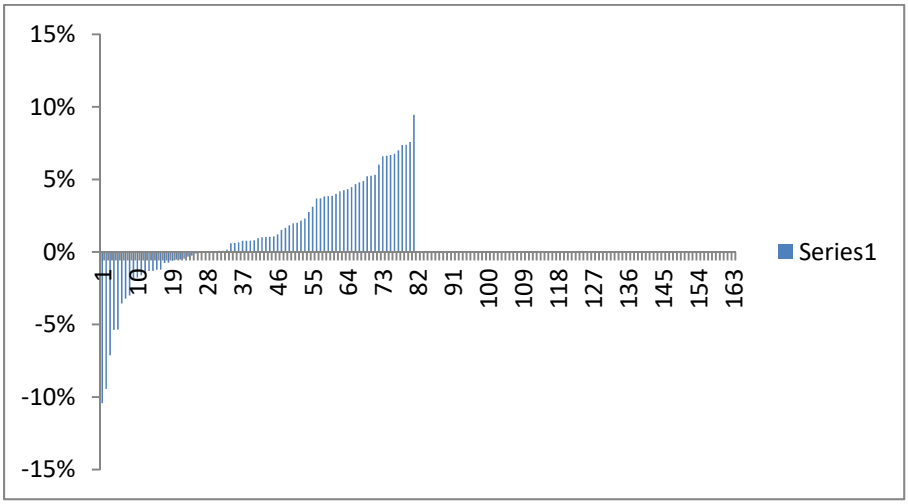
Matched Pair Summary							Adj. Uses By Acreage				1 mile Radius (2010-2019 Data)		
	Name	City	State	Acres	MW	Topo Shift	Res	Ag/Res	Ag	Com/Ind	Population	Med. Income	Avg. Housing Unit
1	AM Best	Goldsboro	NC	38	5.00	2	38%	23%	0%	39%	1,523	$37,358	$148,375
2	White Cross	Chapel Hill	NC	45	5.00	50	5%	51%	44%	0%	213	$67,471	$319,929
3	Wagstaff	Roxboro	NC	30	5.00	46	7%	89%	4%	0%	336	$41,368	$210,723
4	Mulberry	Selmer	TN	160	5.00	60	13%	10%	73%	3%	467	$40,936	$171,746
5	Nixon's	W. Friendship	MD	97	2.00	40	79%	4%	17%	0%	939	$166,958	$770,433
6	Leonard	Hughesville	MD	47	5.00	20	18%	0%	75%	6%	525	$106,550	$350,000
7	Talbot	Easton	MD	50	0.55	0	81%	0%	19%	0%	536	$47,136	$250,595
8	Alamo II	Converse	TX	98	4.40	30	95%	0%	5%	0%	9,257	$62,363	$138,617
9	Gastonia SC	Gastonia	NC	35	5.00	48	33%	23%	0%	44%	4,689	$35,057	$126,562
10	Summit	Moyock	NC	2,034	80.00	4	4%	94%	0%	2%	382	$79,114	$281,731
11	White Cross II	Chapel Hill	NC	34	2.80	35	25%	75%	0%	0%	213	$67,471	$319,929
12	Tracy	Bailey	NC	50	5.00	10	29%	71%	0%	0%	312	$43,940	$99,219
13	Manatee	Parrish	FL	1,180	75.00	20	2%	1%	97%	0%	48	$75,000	$291,667
14	McBride	Midland	NC	627	75.00	140	12%	78%	10%	0%	398	$63,678	$256,306
15	Yamhill II	Amity	OR	186	1.20	20	2%	0%	97%	1%	97	$58,248	$342,391
16	Marion	Aurora	OR	32	0.30	0	2%	37%	61%	0%	267	$75,355	$370,833
17	Clackamas II	Aurora	OR	156	0.22	0	7%	25%	68%	0%	3,062	$70,911	$464,501
18	Grand Ridge	Streator	IL	160	20.00	1	8%	5%	87%	0%	96	$70,158	$187,037
19	Portage	Portage	IN	56	2.00	0	19%	0%	81%	0%	6,642	$65,695	$186,463
20	Dominion	Indianapolis	IN	134	8.60	20	3%	0%	97%	0%	3,774	$61,115	$167,515
21	Beetle-Shelby	Shelby	NC	24	4.00	52	22%	0%	77%	1%	218	$53,541	$192,692
22	Courthouse	Bessemer	NC	52	5.00	150	48%	52%	0%	0%	551	$45,968	$139,404
23	Mariposa	Stanley	NC	36	5.00	96	48%	52%	0%	0%	1,716	$36,439	$137,884
24	Clarke Cnty	White Post	VA	234	20.00	70	14%	46%	39%	1%	578	$81,022	$374,453
25	Flemington	Flemington	NJ	120	9.36	N/A	13%	28%	50%	8%	3,477	$105,714	$444,696
26	Frenchtown	Frenchtown	NJ	139	7.90	N/A	37%	29%	35%	0%	457	$111,562	$515,399
27	McGraw	East Windsor	NJ	95	14.00	N/A	27%	0%	44%	29%	7,684	$78,417	$362,428
28	Tinton Falls	Tinton Falls	NJ	100	16.00	N/A	98%	0%	0%	2%	4,667	$92,346	$343,492
29	Simon	Social Circle	GA	237	30.00	71	1%	36%	63%	0%	203	$76,155	$269,922
30	Candace	Princeton	NC	54	5.00	22	76%	0%	24%	0%	448	$51,002	$107,171
31	Crittenden	Crittenden	KY	34	2.70	40	22%	27%	51%	0%	1,419	$60,198	$178,643
32	Walker	Barhamsville	VA	485	20.00	N/A	12%	20%	68%	0%	203	$80,773	$320,076
33	Innov 46	Hope Mills	NC	532	78.50	0	17%	0%	83%	0%	2,247	$58,688	$183,435
34	Innov 42	Fayetteville	NC	414	71.00	0	41%	0%	59%	0%	568	$60,037	$276,347
35	Demille	Lapeer	MI	160	28.40	10	10%	0%	68%	22%	2,010	$47,208	$187,214
36	Turrill	Lapeer	MI	230	19.60	10	75%	0%	59%	25%	2,390	$46,839	$110,361
37	Sunfish	Willow Spring	NC	50	6.40	30	35%	30%	35%	0%	1,515	$63,652	$253,138
38	HCE Johnston	Benson	NC	30	2.60	0	55%	45%	0%	0%	1,169	$65,482	$252,544
	Average			218	17.17	33	30%	25%	42%	5%	1,718	$67,130	$265,891
	Median			98	5.00	20	21%	22%	44%	0%	560	$63,665	$252,841
	High			2,034	80.00	150	98%	94%	97%	44%	9,257	$166,958	$770,433
	Low			24	0.22	0	1%	0%	0%	0%	48	$35,057	$99,219
1 Mile Radius	Ashwood			1,537	86	80	4%	23%	46%	27%	71	$54,740	$152,500
3 Mile Radius	Ashwood			1,537	86	80	4%	23%	46%	27%	555	$51,538	$145,411

I have pulled 84 matched pairs from the above referenced solar farms to provide the following summary of home sale matched pairs and land sales next to solar farms. The summary shows that the range of differences is from -10% to +9% with an average of +2% and median of +1%. This means that the average and median impact is for a slight positive impact due to adjacency to a solar farm. However, this 1% rate is within the typical variability I would expect from real estate. I therefore conclude that this data shows no negative or positive impact due to adjacency to a solar farm.

While the range is seemingly wide, the graph below clearly shows that the vast majority of the data falls between -5% and +5% and most of those are clearly in the 0 to +5% range.



Arranging the data points in order of impact, I get the following chart that shows only 3 matched pairs out of 84 identifying impacts greater than -5% and only 18 more out of 84 between -5% and 0. This leaves 63 out of 84 matched pairs showing positive impacts from 0 to +9%, or 75% of the total matched pairs. However, given that +/- 5% is considered no impact, that would include 70 of the 84 matched pairs, or 83% of the findings supporting a finding of no impact. The other readings are considered outliers with only 3 suggesting a negative impact and 11 suggesting a positive impact.



Similarly, the 10 land sales shows a median impact of 0% due to adjacency to a solar farm. The range of these adjustments range from -12% to +17%. Land prices tend to vary more widely than residential homes, which is part of that greater range. I consider this data to support no negative or positive impact due to adjacency to a solar farm.

Residential Dwelling Matched Pairs Adjoining Solar Farms

Pair	Solar Farm	City	State	Area	MW	Approx Distance	Tax ID/Address	Sale Date	Sale Price	Adj. Sale Price	% Diff
1	AM Best	Goldsboro	NC	Suburban	5	280	3600195570	Sep-13	$250,000		
							3600198928	Mar-14	$250,000	$250,000	0%
2	AM Best	Goldsboro	NC	Suburban	5	280	3600195361	Sep-13	$260,000		
							3600194813	Apr-14	$258,000	$258,000	1%
3	AM Best	Goldsboro	NC	Suburban	5	280	3600199891	Jul-14	$250,000		
							3600198928	Mar-14	$250,000	$250,000	0%
4	AM Best	Goldsboro	NC	Suburban	5	280	3600198632	Aug-14	$253,000		
							3600193710	Oct-13	$248,000	$248,000	2%
5	AM Best	Goldsboro	NC	Suburban	5	280	3600196656	Dec-13	$255,000		
							3601105180	Dec-13	$253,000	$253,000	1%
6	AM Best	Goldsboro	NC	Suburban	5	280	3600182511	Feb-13	$247,000		
							3600183905	Dec-12	$240,000	$245,000	1%
7	AM Best	Goldsboro	NC	Suburban	5	280	3600182784	Apr-13	$245,000		
							3600193710	Oct-13	$248,000	$248,000	-1%
8	AM Best	Goldsboro	NC	Suburban	5	280	3600195361	Nov-15	$267,500		
							3600195361	Sep-13	$260,000	$267,800	0%
9	Mulberry	Selmer	TN	Rural	5	400	0900A011	Jul-14	$130,000		
							099CA043	Feb-15	$148,900	$136,988	-5%
10	Mulberry	Selmer	TN	Rural	5	400	099CA002	Jul-15	$130,000		
							0990NA040	Mar-15	$120,000	$121,200	7%
11	Mulberry	Selmer	TN	Rural	5	480	491 Dusty	Oct-16	$176,000		
							35 April	Aug-16	$185,000	$178,283	-1%
12	Mulberry	Selmer	TN	Rural	5	650	297 Country	Sep-16	$150,000		
							53 Glen	Mar-17	$126,000	$144,460	4%
13	Mulberry	Selmer	TN	Rural	5	685	57 Cooper	Feb-19	$163,000		
							191 Amelia	Aug-18	$132,000	$155,947	4%
14	Pine Valley	West End	NC	Rural	5	175	16893	Aug-16	$66,000		
							16897	Aug-16	$59,000	$65,490	1%
15	Nixon's	W. Friendship	MD	Rural	2	660	12909 Vistaview	Sep-14	$775,000	$771,640	
							2712 Friendship Farm	Jun-14	$690,000	$755,000	2%
16	Leonard Rd	Hughesville	MD	Rural	5.5	230	14595 Box Elder	Feb-16	$291,000		
							15313 Bassford Rd	Jul-16	$329,800	$292,760	-1%
17	Talbot Cnty	Easton	MD	Rural	0.55	1000	10193 Hiners	Oct-12	$136,092		
							10711 Hiners	Dec-12	$135,000	$135,250	1%
18	Alamo II	San Antonio	TX	Suburban	4.4	360	7703 Redstone Mnr	Mar-16	$166,000		
							7703 Redstone Mnr	Oct-12	$149,980	$165,728	0%
19	Alamo II	San Antonio	TX	Suburban	4.4	170	7807 Redstone Mnr	Aug-14	$147,000		
							7807 Redstone Mnr	May-12	$136,266	$145,464	1%
20	Alamo II	San Antonio	TX	Suburban	4.4	150	7734 Sundew Mist	Nov-14	$134,000		
							7734 Sundew Mist	May-12	$117,140	$125,928	6%
21	Neal Hawkins	Gastonia	NC	Suburban	5	275	139179	Mar-17	$270,000		
							139179	Mar-17	$270,000	$270,000	0%
22	Summit	Moyock	NC	Suburban	80	1,060	129 Pinto	Apr-16	$170,000		
							102 Timber	Apr-16	$175,500	$175,101	-3%
23	Summit	Moyock	NC	Suburban	80	2,020	105 Pinto	Dec-16	$206,000		
							127 Ranchland	Jun-15	$219,900	$198,120	4%
24	White Cross II	Chapel Hill	NC	Rural	2.8	1,479	2018 Elkins	Feb-16	$340,000		
							4200B Old Greensbor	Dec-15	$380,000	$329,438	3%
25	Tracy	Bailey	NC	Rural	5	780	9162 Winters	Jan-17	$255,000		
							7352 Red Fox	Jun-16	$176,000	$252,399	1%
26	Manatee	Parrish	FL	Rural	75	1180	13670 Highland	Aug-18	$255,000		
							13851 Highland	Sep-18	$240,000	$255,825	0%
27	McBride Place	Midland	NC	Rural	75	275	4380 Joyner	Nov-17	$325,000		
							3870 Elkwood	Aug-16	$250,000	$317,523	2%
28	Yamhill II	Amity	OR	Rural	1.2	700	12001 SW Bellerus	Jul-15	$326,456		
							9955 Bethel	Feb-16	$289,900	$295,593	9%
29	Clackamas II	Aurora	OR	Suburban	0.22	125	7620 SW Fairway	Jul-13	$365,000		
							7480 SW Fairway	Jun-13	$365,000	$365,000	0%
30	Clackamas II	Aurora	OR	Suburban	0.22	125	7700 SW Fairway	Jun-14	$377,100		
							7500 SW Fairway	Dec-11	$365,000	$370,175	2%
31	Clackamas II	Aurora	OR	Suburban	0.22	125	7380 SW Fairway	Jul-14	$415,000		
							7480 SW Fairway	Jun-13	$365,000	$384,345	7%

Pair	Solar Farm	City	State	Area	MW	Approx Distance	Tax ID/Address	Sale Date	Sale Price	Adj. Sale Price	% Diff
32	Grand Ridge	Streator	IL	Rural	20	480	1497 E 21st	Oct-16	$186,000		
							712 Columbus	Jun-16	$166,000	$184,000	1%
33	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%
34	Dominion	Indianapolis	IN	Rural	8.6	400	2013249 (Tax ID)	Dec-15	$140,000		
							5723 Minden	Nov-16	$139,900	$132,700	5%
35	Dominion	Indianapolis	IN	Rural	8.6	400	2013251 (Tax ID)	Sep-17	$160,000		
							5910 Mosaic	Aug-16	$146,000	$152,190	5%
36	Dominion	Indianapolis	IN	Rural	8.6	400	2013252 (Tax ID)	May-17	$147,000		
							5836 Sable	Jun-16	$141,000	$136,165	7%
37	Dominion	Indianapolis	IN	Rural	8.6	400	2013258 (Tax ID)	Dec-15	$131,750		
							5904 Minden	May-16	$130,000	$134,068	-2%
38	Dominion	Indianapolis	IN	Rural	8.6	400	2013260 (Tax ID)	Mar-15	$127,000		
							5904 Minden	May-16	$130,000	$128,957	-2%
39	Dominion	Indianapolis	IN	Rural	8.6	400	2013261 (Tax ID)	Feb-14	$120,000		
							5904 Minden	May-16	$130,000	$121,930	-2%
40	Beetle-Shelby	Mooresboro	NC	Rural	4	945	1715 Timber	Oct-18	$416,000		
							1021 Posting	Feb-19	$414,000	$398,276	4%
41	Courthouse	Bessemer	NC	Rural	5	375	2134 Tryon Court.	Mar-17	$111,000		
							5550 Lennox	Oct-18	$115,000	$106,355	4%
42	Mariposa	Stanley	NC	Suburban	5	1155	215 Mariposa	Dec-17	$249,000		
							110 Airport	May-16	$166,000	$239,026	4%
43	Mariposa	Stanley	NC	Suburban	5	570	242 Mariposa	Sep-15	$180,000		
							110 Airport	Apr-16	$166,000	$175,043	3%
44	Clarke Cnty	White Post	VA	Rural	20	1230	833 Nations Spr	Jan-17	$295,000		
							541 Old Kitchen	Sep-18	$370,000	$279,313	5%
45	Flemington	Flemington	NJ	Suburban	9.36	295	10 Coventry	Mar-18	$370,000		
							1 Sheffield	Dec-17	$399,900	$389,809	-5%
46	Flemington	Flemington	NJ	Suburban	9.36	375	54 Hart	Jul-16	$420,000		
							43 Aberdeen	Nov-16	$417,000	$423,190	-1%
47	Flemington	Flemington	NJ	Suburban	9.36	425	6 Portsmith	Jun-15	$410,000		
							43 Aberdeen	Nov-16	$417,000	$423,190	-3%
48	Flemington	Flemington	NJ	Suburban	9.36	345	12 Stratford	Nov-17	$414,900		
							28 Bristol	Dec-18	$398,000	$420,002	-1%
49	Frenchtown	Frenchtown	NJ	Rural	7.9	250	5 Muddy Run	Jun-17	$385,000		
							132 Kingswood	Oct-16	$380,000	$355,823	8%
50	McGraw	East Windsor	NJ	Suburban	14	175	153 Wyndmoor	Apr-17	$215,000		
							20 Spyglass	Dec-17	$240,000	$235,305	-9%
51	McGraw	East Windsor	NJ	Suburban	14	175	149 Wyndmoor	May-17	$206,000		
							81 Wyndmoor	Jan-18	$204,000	$198,018	4%
52	McGraw	East Windsor	NJ	Suburban	14	400	26 Wilmor	Mar-19	$286,000		
							25 Pinehurst	May-19	$315,000	$267,052	7%
53	Tinton Falls	Tinton Falls	NJ	Suburban	16	185	111 Kyle	Aug-18	$402,000		
							80 Kyle	Sep-17	$410,000	$397,821	1%
54	Tinton Falls	Tinton Falls	NJ	Suburban	16	155	47 Kyle	Aug-18	$260,000		
							4 Michael	Nov-18	$260,000	$259,788	0%
55	Tinton Falls	Tinton Falls	NJ	Suburban	16	150	7 Kyle	Jun-17	$262,195		
							36 Kyle	Jan-19	$260,000	$257,824	2%
56	Tinton Falls	Tinton Falls	NJ	Suburban	16	155	1 Samantha	Sep-17	$258,205		
							36 Kyle	Jan-19	$260,000	$259,533	-1%
57	Tinton Falls	Tinton Falls	NJ	Suburban	16	155	1 Samantha	Sep-17	$258,205		
							36 Kyle	Jan-19	$260,000	$259,533	-1%
58	Candace	Princeton	NC	Suburban	5	488	499 Herring	Sep-17	$215,000		
							1795 Bay Valley	Dec-17	$194,000	$214,902	0%
59	Crittenden	Crittenden	KY	Suburban	2.7	373	250 Claiborne	Jan-19	$120,000		
							315 N Fork	May-19	$107,000	$120,889	-1%
60	Crittenden	Crittenden	KY	Suburban	2.7	488	300 Claiborne	Sep-18	$213,000		
							1795 Bay Valley	Dec-17	$231,200	$228,180	-7%

Pair	Solar Farm	City	State	Area	MW	Approx Distance	Tax ID/Address	Sale Date	Sale Price	Adj. Sale Price	% Diff
60	Crittenden	Crittenden	KY	Suburban	2.7	488	300 Claiborne	Sep-18	$213,000		
							1795 Bay Valley	Dec-17	$231,200	$228,180	-7%
61	Crittenden	Crittenden	KY	Suburban	2.7	720	350 Claiborne	Jul-18	$245,000		
							2160 Sherman	Jun-19	$265,000	$248,225	-1%
62	Crittenden	Crittenden	KY	Suburban	2.7	930	370 Claiborne	Aug-19	$273,000		
							125 Lexington	Apr-18	$240,000	$254,751	7%
63	Walker	Barhamsville	VA	Rural	20	250	5241 Barham	Oct-18	$264,000		
							9252 Ordinary	Jun-19	$277,000	$246,581	7%
64	AM Best	Goldsboro	NC	Suburban	5	385	103 Granville Pl	Jul-18	$265,000		
							2219 Granville	Jan-18	$260,000	$265,682	0%
65	AM Best	Goldsboro	NC	Suburban	5	315	104 Erin	Jun-17	$280,000		
							2219 Granville	Jan-18	$265,000	$274,390	2%
66	AM Best	Goldsboro	NC	Suburban	5	400	2312 Granville	May-18	$284,900		
							2219 Granville	Jan-18	$265,000	$273,948	4%
67	AM Best	Goldsboro	NC	Suburban	5	400	2310 Granville	May-19	$280,000		
							634 Friendly	Jul-19	$267,000	$265,291	5%
68	Summit	Moyock	NC	Suburban	80	570	318 Green View	Sep-19	$357,000		
							336 Green View	Jan-19	$365,000	$340,286	5%
69	Summit	Moyock	NC	Suburban	80	440	164 Ranchland	Apr-19	$169,000		
							105 Longhorn	Oct-17	$184,500	$186,616	-10%
70	Summit	Moyock	NC	Suburban	80	635	358 Oxford	Sep-19	$478,000		
							176 Providence	Sep-19	$425,000	$456,623	4%
71	Summit	Moyock	NC	Suburban	80	970	343 Oxford	Mar-17	$490,000		
							218 Oxford	Apr-17	$525,000	$484,064	1%
72	Innov 46	Hope Mills	NC	Suburban	78.5	435	6849 Roslin Farm	Feb-19	$155,000		
							109 Bledsoe	Jan-19	$150,000	$147,558	5%
73	Innov 42	Fayetteville	NC	Suburban	71	340	2923 County Line	Feb-19	$385,000		
							2109 John McMillan	Apr-18	$320,000	$379,156	2%
74	Innov 42	Fayetteville	NC	Suburban	71	330	2935 County Line	Jun-19	$266,000		
							7031 Glynn Mill	May-18	$255,000	$264,422	1%
75	Demille	Lapeer	MI	Suburban	28	310	1120 Don Wayne	Aug-19	$194,000		
							1231 Turrill	Apr-19	$182,000	$200,895	-4%
76	Demille	Lapeer	MI	Suburban	28	310	1126 Don Wayne	May-18	$160,000		
							3565 Garden	May-19	$165,000	$163,016	-2%
77	Demille	Lapeer	MI	Suburban	28	380	1138 Don Wayne	Aug-19	$191,000		
							1128 Gwen	Aug-18	$187,500	$189,733	1%
78	Demille	Lapeer	MI	Suburban	28	280	1174 Alice	Jan-19	$165,000		
							1127 Don Wayne	Sep-19	$176,900	$163,443	1%
79	Turrill	Lapeer	MI	Suburban	20	290	1060 Cliff	Sep-18	$200,500		
							1128 Gwen	Aug-18	$187,500	$200,350	0%
80	Turrill	Lapeer	MI	Suburban	20	255	1040 Cliff	Jun-17	$145,600		
							1127 Don Wayne	Sep-19	$176,900	$146,271	0%
81	Sunfish	Willow Sprng	NC	Suburban	6.4	205	7513 Glen Willow	Sep-17	$185,000		
							205 Pine Burr	Dec-17	$191,000	$172,487	7%
82	HCE Johnston	Benson	NC	Suburban	2.6	290	107 Reese	Nov-19	$393,000		
							200 Reese	Feb-20	$400,000	$377,338	4%
83	HCE Johnston	Benson	NC	Suburban	2.6	105	63 Reese	Mar-20	$410,000		
							320 Wolf Den	Sep-19	$377,780	$393,474	4%
84	Crittenden	Crittenden	KY	Suburban	2.7	655	330 Claiborne	Dec-19	$282,500		
							895 Osborne	Sep-19	$249,900	$265,327	6%

	MW	Avg. Distance
Average	18.20	468
Median	5.25	378
High	80.00	2,020
Low	0.22	105

	% Dif
Average	2%
Median	1%
High	9%
Low	-10%

Land Sale Matched Pairs Adjoining Solar Farms

Pair	Solar Farm	City	State	Area	MW	Tax ID/Address	Sale Date	Sale Price	Acres	$/AC	Adj. $/AC	% Diff
1	White Cross	Chapel Hill	NC	Rural	5	9748336770	Jul-13	$265,000	47.20	$5,614		
						9747184527	Nov-10	$361,000	59.09	$6,109	$5,278	6%
2	Wagstaff	Roxboro	NC	Rural	5	91817117960	Aug-13	$164,000	18.82	$8,714		
						91800759812	Dec-13	$130,000	14.88	$8,737	$8,737	0%
3	Tracy	Bailey	NC	Rural	5	316003	Jul-16	$70,000	13.22	$5,295		
						6056	Oct-16	$164,000	41.00	$4,000	$4,400	17%
4	Marion	Aurora	OR	Rural	0.3	18916 Butteville	Aug-14	$259,000	15.75	$16,444		
						Waconda	Sep-15	$215,000	11.86	$18,128	$16,950	-3%
5	Portage	Portage	IN	Sub	2	64-06-19-200-003	Feb-14	$149,600	18.70	$8,000		
						64-15-08-200-010	Jan-17	$115,000	15.02	$7,656	$7,198	10%
6	Courthouse	Bessemer	NC	Rural	5	5021 Buckland	Mar-18	$58,500	9.66	$6,056		
						Kiser	Nov-17	$69,000	17.65	$3,909	$5,190	14%
7	Mariposa	Stanley	NC	Sub	5	174339	Jun-18	$160,000	21.15	$7,565		
						227852	May-18	$97,000	10.57	$9,177	$7,565	0%
8	Mariposa	Stanley	NC	Sub	5	227039	Dec-17	$66,500	6.86	$9,694		
						177322	May-17	$66,500	5.23	$12,715	$9,694	0%
9	Simon	Social Circle	GA	Rural	30	4514 Hawkins	Mar-16	$180,000	36.86	$4,883		
						Pannell	Nov-16	$322,851	66.94	$4,823	$4,974	-2%
10	Candace	Princeton	NC	Sub	5	499 Herring	May-17	$30,000	2.03	$14,778		
						488 Herring	Dec-16	$35,000	2.17	$16,129	$16,615	-12%

Average	6.73	**Average**	3%
Median	5.00	**Median**	0%
High	30.00	**High**	17%
Low	0.30	**Low**	-12%

Larger Solar Farm Data

I have summarized the solar farm data for projects at 20 MW and larger as shown below. These are the same solar farms noted above but focused on larger projects.

Matched Pair Summary

							Adj. Uses By Acreage				**1 mile Radius (2010-2018 Data)**		
	Name	**City**	**State**	**Acres**	**MW**	**Topo Shift**	**Res**	**Ag/Res**	**Ag**	**Com/Ind**	**Population**	**Med. Income**	**Avg. Housing Unit**
10	Summit	Moyock	NC	2,034	80.00	4	4%	94%	0%	2%	382	$79,114	$281,731
13	Manatee	Parrish	FL	1,180	75.00	20	2%	1%	97%	0%	48	$75,000	$291,667
14	McBride	Midland	NC	627	75.00	140	12%	78%	10%	0%	398	$63,678	$256,306
18	Grand Ridge	Streator	IL	160	20.00	1	8%	5%	87%	0%	96	$70,158	$187,037
24	Clarke Cnty	White Post	VA	234	20.00	70	14%	46%	39%	1%	578	$81,022	$374,453
26	Simon	Social Circle	GA	237	30.00	71	1%	36%	63%	0%	203	$76,155	$269,922
32	Walker	Barhamsville	VA	485	20.00	N/A	12%	20%	68%	0%	203	$80,773	$320,076
33	Innov 46	Hope Mills	NC	532	78.50	0	17%	0%	83%	0%	2,247	$58,688	$183,435
34	Innov 42	Fayetteville	NC	414	71.00	0	41%	0%	59%	0%	568	$60,037	$276,347
35	Demille	Lapeer	MI	160	28.40	10	10%	0%	68%	22%	2,010	$47,208	$187,214
36	Turrill	Lapeer	MI	230	19.60	10	75%	0%	59%	25%	2,390	$46,839	$110,361
	Average			572	47	33	18%	25%	58%	5%	829	$67,152	$248,959
	Median			414	30	10	12%	5%	63%	0%	398	$70,158	$269,922
	High			2,034	80	140	75%	94%	97%	25%	2,390	$81,022	$374,453
	Low			160	20	0	1%	0%	0%	0%	48	$46,839	$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.

On the next page, I have reshown all of the 21 matched pairs specific to these 12 solar farms over 20 MW. This set shows impacts ranging from -10% to +7% with an average and median of +1%, which is very similar to the larger set. This suggests that the size of a project has no bearing on adjacent impacts as well.

Residential Dwelling Matched Pairs Adjoining Solar Farms

Pair	Solar Farm	City	State	Area	MW	Approx Distance	Tax ID/Address	Sale Date	Sale Price	Adj. Sale Price	% Diff
21	Summit	Moyock	NC	Suburban	80	1,060	129 Pinto	Apr-16	$170,000		
							102 Timber	Apr-16	$175,500	$169,451	0%
22	Summit	Moyock	NC	Suburban	80	2,020	105 Pinto	Dec-16	$206,000		
							127 Ranchland	Jun-15	$219,900	$194,278	6%
25	Manatee	Parrish	FL	Rural	75	1180	13670 Highland	Aug-18	$255,000		
							13851 Highland	Sep-18	$240,000	$255,825	0%
26	McBride Place	Midland	NC	Rural	75	275	4380 Joyner	Nov-17	$325,000		
							3870 Elkwood	Aug-16	$250,000	$317,523	2%
31	Grand Ridge	Streator	IL	Rural	20	480	1497 E 21st	Oct-16	$186,000		
							712 Columbus	Jun-16	$166,000	$184,000	1%
44	Clarke Cnty	White Post	VA	Rural	20	1230	833 Nations Spr	Jan-17	$295,000		
							541 Old Kitchen	Sep-18	$370,000	$279,313	5%
63	Walker	Barhamsville	VA	Rural	20	250	5241 Barham	Oct-18	$264,000		
							9252 Ordinary	Jun-19	$277,000	$246,581	7%
68	Summit	Moyock	NC	Suburban	80	570	318 Green View	Sep-19	$357,000		
							336 Green View	Jan-19	$365,000	$340,286	5%
69	Summit	Moyock	NC	Suburban	80	440	164 Ranchland	Apr-19	$169,000		
							105 Longhorn	Oct-17	$184,500	$186,616	-10%
70	Summit	Moyock	NC	Suburban	80	635	358 Oxford	Sep-19	$478,000		
							176 Providence	Sep-19	$425,000	$456,623	4%
71	Summit	Moyock	NC	Suburban	80	970	343 Oxford	Mar-17	$490,000		
							218 Oxford	Apr-17	$525,000	$484,064	1%
72	Innov 46	Hope Mills	NC	Suburban	78.5	435	6849 Roslin Farm	Feb-19	$155,000		
							109 Bledsoe	Jan-19	$150,000	$147,558	5%
73	Innov 42	Fayetteville	NC	Suburban	71	340	2923 County Line	Feb-19	$385,000		
							2109 John McMillan	Apr-18	$320,000	$379,156	2%
74	Innov 42	Fayetteville	NC	Suburban	71	330	2935 County Line	Jun-19	$266,000		
							7031 Glynn Mill	May-18	$255,000	$264,422	1%
75	Demille	Lapeer	MI	Suburban	28	310	1120 Don Wayne	Aug-19	$194,000		
							1231 Turrill	Apr-19	$182,000	$200,895	-4%
76	Demille	Lapeer	MI	Suburban	28	310	1126 Don Wayne	May-18	$160,000		
							3565 Garden	May-19	$165,000	$163,016	-2%
77	Demille	Lapeer	MI	Suburban	28	380	1138 Don Wayne	Aug-19	$191,000		
							1128 Gwen	Aug-18	$187,500	$189,733	1%
78	Demille	Lapeer	MI	Suburban	28	280	1174 Alice	Jan-19	$165,000		
							1127 Don Wayne	Sep-19	$176,900	$163,443	1%
79	Turrill	Lapeer	MI	Suburban	20	290	1060 Cliff	Sep-18	$200,500		
							1128 Gwen	Aug-18	$187,500	$200,350	0%
80	Turrill	Lapeer	MI	Suburban	20	255	1040 Cliff	Jun-17	$145,600		
							1127 Don Wayne	Sep-19	$176,900	$146,271	0%

	MW	Avg. Distance
Average	53.13	602
Median	71.00	408
High	80.00	2,020
Low	20.00	250

Average	1%
Median	1%
High	7%
Low	-10%

It's useful to note that Matched Pair 68 on Green View Drive is within a golf course community that adjoins the solar farm, but that test pair has no golf view.

I also note that Matched Pairs 71 and 74 were new homes that were built after the solar farm was constructed so the adjoining solar farm was not a limiting factor on construction in those cases.

I have also researched information on a number of larger solar farm projects across the country where many are newer and there have not been any adjoining sales for analysis at this time, but do show a similar range of adjoining uses as those projects listed above.

On the following page I show 63 projects ranging in size from 50 MW up to 1,000 MW with an average size of 118.48 MW and a median of 80 MW. The average closest distance for an adjoining home is 241 feet, while the median distance is 175 feet. The closest distance is 57 feet. The mix of adjoining uses is similar with most of the adjoining uses remaining residential or agricultural in nature.

Parcel #	State	County	City	Name	Output (MW)	Total Acres	Used Acres	Avg. Dist to home	Closest Home	Adjoining Use by Acre			
										Res	Agri	Agri/Res	Com
78	NC	Currituck	Moyock	Summit/Ranchland	80	2034		674	360	4%	94%	0%	2%
133	MS	Forrest	Hattiesburg	Hattiesburg	50	1129	479.6	650	315	35%	65%	0%	0%
179	SC	Jasper	Ridgeland	Jasper	140	1600	1000	461	108	2%	85%	13%	0%
211	NC	Halifax	Enfield	Chestnut	75	1428.1		1,429	210	4%	96%	0%	0%
222	VA	Mecklenburg	Chase City	Grasshopper	80	946.25				6%	87%	5%	1%
226	VA	Louisa	Louisa	Belcher	88	1238.1			150	19%	53%	28%	0%
305	FL	Pasco	Dade City	Mountain View	55	347.12		510	175	32%	39%	21%	8%
319	FL	Hamilton	Jasper	Hamilton	74.9	1268.9	537	3,596	240	5%	67%	28%	0%
336	FL	Manatee	Parrish	Manatee	74.5	1180.4		1,079	625	2%	50%	1%	47%
337	FL	DeSoto	Arcadia	Citrus	74.5	640				0%	0%	100%	0%
338	FL	Charlotte	Port Charlotte	Babcock	74.5	422.61				0%	0%	100%	0%
353	VA	Accomack	Oak Hall	Amazon East(ern shore)	80	1000		645	135	8%	75%	17%	0%
364	VA	Culpepper	Stevensburg	Greenwood	100	2266.6	1800	788	200	8%	62%	29%	0%
368	NC	Duplin	Warsaw	Warsaw	87.5	585.97	499	526	130	11%	66%	21%	3%
390	NC	Richmond	Ellerbe	Innovative Solar 34	50	385.24	226	N/A	N/A	1%	99%	0%	0%
399	NC	Cabarrus	Midland	McBride	74.9	974.59	627	1,425	140	12%	78%	9%	0%
400	FL	Polk	Mulberry	Alafia	51	420.35		490	105	7%	90%	3%	0%
406	VA	Halifax	Clover	Foxhound	91	1311.8		885	185	5%	61%	17%	18%
410	FL	Gilchrist	Trenton	Trenton	74.5	480		2,193	775	0%	26%	55%	19%
411	NC	Edgecombe	Battleboro	Fern	100	1235.4	960.71	1,494	220	5%	76%	19%	0%
412	MD	Caroline	Goldsboro	Cherrywood	202	1722.9	1073.7	429	200	10%	76%	13%	0%
434	NC	Edgecombe	Conetoe	Conetoe	80	1389.9	910.6	1,152	120	5%	78%	17%	0%
440	FL	Volusia	Debary	Debary	74.5	844.63		654	190	3%	27%	0%	70%
441	FL	Alachua & Pu	Hawthorne	Horizon	74.5	684				3%	81%	16%	0%
484	VA	Southampton	Newsoms	Southampton	100	3243.9		-	-	3%	78%	17%	3%
486	VA	Augusta	Stuarts Draft	Augusta	125	3197.4	1147	588	165	16%	61%	16%	7%
491	NC	Stanly	Misenheimer	Misenheimer 2018	80	740.2	687.2	504	130	11%	40%	22%	27%
494	VA	King and Que	Shacklefords	Walnut	110	1700	1173	641	165	14%	72%	13%	1%
496	VA	Halifax	Clover	Piney Creek	80	776.18	422	523	195	15%	62%	24%	0%
511	NC	Halifax	Scotland Neck	American Beech	160	3255.2	1807.8	1,262	205	2%	58%	38%	3%
514	NC	Rockingham	Reidsville	Williamsburg	80	802.6	507	734	200	25%	12%	63%	0%
517	VA	Page	Luray	Cape	100	566.53	461	519	110	42%	12%	46%	0%
518	VA	Greensville	Emporia	Fountain Creek	80	798.3	595	862	300	6%	23%	71%	0%
525	NC	Washington	Plymouth	Macadamia	484	5578.7	4813.5	1,513	275	1%	90%	9%	0%
526	NC	Cleveland	Mooresboro	Broad River	50	759.8	365	419	70	29%	55%	16%	0%
555	FL	Polk	Mulberry	Durrance	74.5	463.57	324.65	438	140	3%	97%	0%	0%
560	NC	Yadkin	Yadkinville	Sugar	60	477	357	382	65	19%	39%	20%	22%
561	NC	Halifax	Enfield	Halifax 80mw 2019	80	1007.6	1007.6	672	190	8%	73%	19%	0%
577	VA	Isle of Wight	Windsor	Windsor	85	564.1	564.1	572	160	9%	67%	24%	0%
579	VA	Spotsylvania	Paytes	Spotsylvania	500	6412	3500			9%	52%	11%	27%
582	NC	Rowan	Salisbury	China Grove	65	428.66	324.26	438	85	58%	4%	38%	0%
583	NC	Stokes	Walnut Cove	Lick Creek	50	1424	185.11	410	65	20%	64%	11%	5%
584	NC	Halifax	Enfield	Sweetleaf	94	1956.3	1250	968	160	5%	63%	32%	0%
586	VA	King William	Aylett	Sweet Sue	77	1262	576	1,617	680	7%	68%	25%	0%
593	NC	Bertie	Windsor	Sumac	120	3360.6	1257.9	876	160	4%	90%	6%	0%
599	TN	Fayette	Somerville	Yum Yum	147	4000	1500	1,862	330	3%	32%	64%	1%
602	GA	Burke	Waynesboro	White Oak	76.5	516.7	516.7	2,995	1,790	1%	34%	65%	0%
603	GA	Taylor	Butler	Butler GA	103	2395.1	2395.1	1,534	255	2%	73%	23%	2%
604	GA	Taylor	Butler	White Pine	101.2	505.94	505.94	1,044	100	1%	51%	48%	1%
605	GA	Candler	Metter	Live Oak	51	417.84	417.84	910	235	4%	72%	23%	0%
606	GA	Jeff Davis	Hazelhurst	Hazelhurst II	52.5	947.15	490.42	2,114	105	9%	64%	27%	0%
607	GA	Decatur	Bainbridge	Decatur Parkway	80	781.5	781.5	1,123	450	2%	27%	22%	49%
608	GA	Sumter	Leslie-DeSoto	Americus	1000	9661.2	4437	5,210	510	1%	63%	36%	0%
616	FL	Colombia	Fort White	Fort White	74.5	570.5	457.2	828	220	12%	71%	17%	0%
621	VA	Surry	Spring Grove	Loblolly	150	2181.9	1000	1,860	110	7%	62%	31%	0%
622	VA	Albemarle	Scottsville	Woodridge	138	2260.9	1000	1,094	170	9%	63%	28%	0%
625	NC	Nash	Middlesex	Phobos	80	754.52	734	356	57	14%	75%	10%	0%
628	MI	Lenawee	Deerfield	Carroll Road	200	1694.8	1694.8	343	190	12%	86%	0%	2%
633	VA	Greensville	Emporia	Brunswick	150.2	2076.4	1387.3	1,091	240	4%	85%	11%	0%
634	NC	Surry	Elkin	Partin	50	429.4	257.64	945	155	30%	25%	15%	30%
638	GA	Twiggs	Dry Branch	Twiggs	200	2132.7	2132.7	-	-	10%	55%	35%	0%
639	NC	Cumberland	Hope Mills	Innovative Solar 46	78.5	531.87	531.87	423	125	17%	83%	0%	0%
640	NC	Cumberland	Hope Mills	Innovative Solar 42	71	413.99	413.99	375	135	41%	59%	0%	0%
		Total Number of Solar Farms			63								
				Average	118.48	1533.1	1043.6	1058	241	11%	60%	24%	6%
				Median	80.00	1000.0	657.1	808	175	7%	64%	19%	0%
				High	1000.00	9661.2	4813.5	5210	1790	58%	99%	100%	70%
				Low	50.00	347.1	185.1	343	57	0%	0%	0%	0%

III. Distance Between Homes and Solar Panels

I have measured distances at matched pairs as close as 105 feet between panel and home to show no impact on value. This measurement goes from the closest point on the home to the closest solar panel. This is a strong indication that at this distance there is no impact on adjoining homes.

However, in tracking other approved solar farms across Kentucky, North Carolina and other states, I have found that it is common for there to be homes within 100 to 150 feet of solar panels. Given the visual barriers whether in privacy fencing or landscaping involved in these 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.

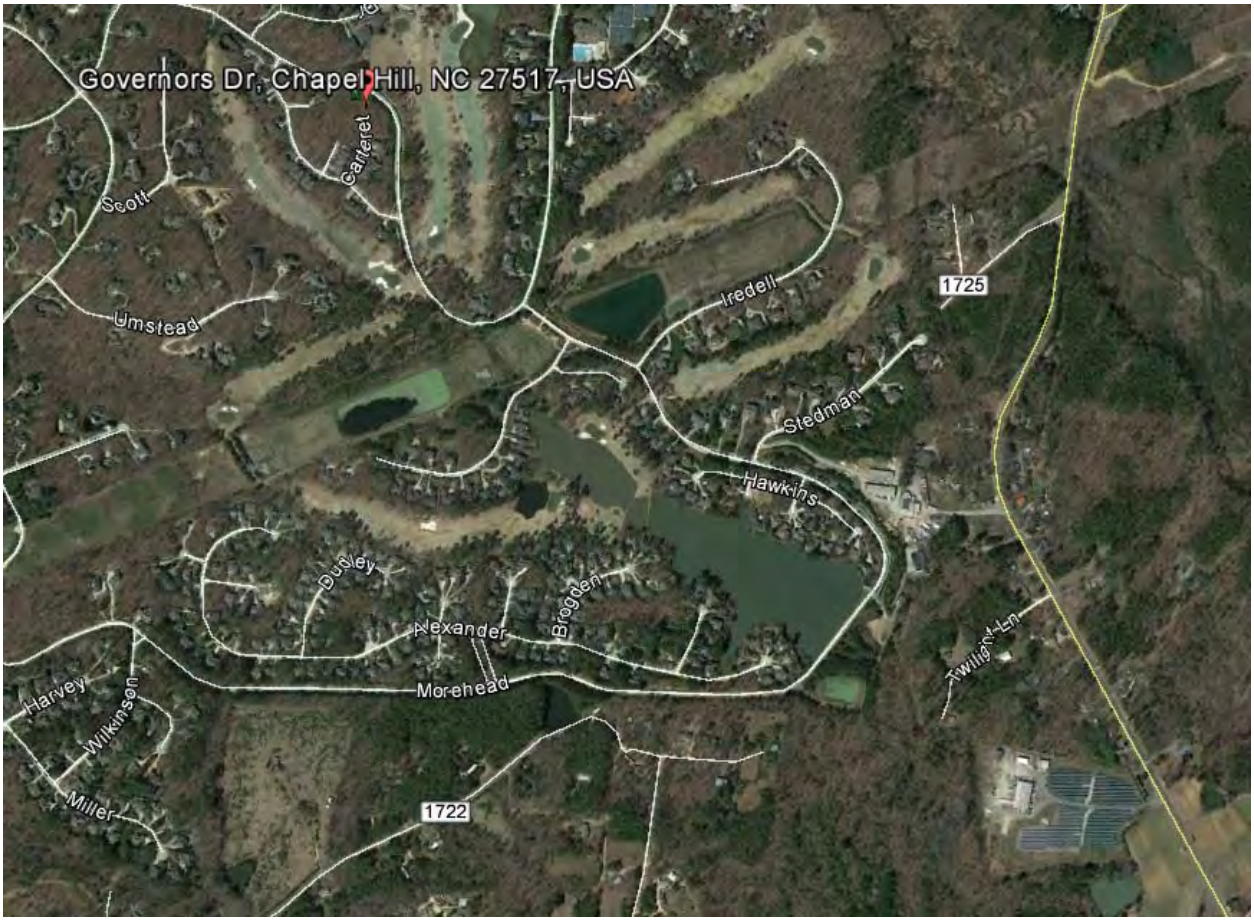
IV. Potential Impacts During Construction

I have previously been asked by the Kentucky Siting Board about potential impacts during construction. This is not a typical question I get as any development of a site will have a certain amount of construction, whether it is for a commercial agricultural use such as large scale poultry operations or a new residential subdivision. I defer to the traffic study on traffic impacts. Construction will be temporary and consistent with other development uses of the land and in fact dust from the construction will likely be less than most other construction projects given the minimal grading. I would not anticipate any impacts on property value due to construction on the site.

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

V. Scope of Research

I have researched nearly 700 solar farms and sites on which solar farms are existing and proposed in North Carolina, Kentucky, Virginia 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. While I have focused on adjoining values, I note that there are many examples of solar farms being located within a quarter mile of residential developments, including such notable developments as Governor's Club in Chapel Hill, which has a solar farm within a quarter mile as shown on the following aerial map. Governor's Club is a gated golf community with homes selling for $300,000 to over $2 million.



The subdivisions included in the matched pair analysis also show an acceptance of residential uses adjoining solar farms with no negative impact on property value.

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. Dist to Home	Closest Home	All Res Uses	All Comm Uses
Average	19%	53%	20%	1%	7%	849	346	92%	8%
Median	11%	57%	8%	0%	0%	661	215	100%	0%
High	100%	100%	100%	80%	96%	4,835	4,670	100%	96%
Low	0%	0%	0%	0%	0%	90	25	0%	0%

Res = Residential, Ag = Agriculture, Sub = Substation, Com = Commercial, Ind = Industrial.

Total Solar Farms Considered: 493

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

Percentage By Number of Parcels Adjoining									
	Res	Ag	Res/AG	Comm	Ind	Avg. Dist to Home	Closest Home	All Res Uses	All Comm Uses
Average	61%	24%	9%	2%	4%	848	346	94%	6%
Median	65%	20%	5%	0%	0%	661	215	100%	0%
High	100%	100%	100%	60%	78%	4,835	4,670	100%	78%
Low	0%	0%	0%	0%	0%	90	25	22%	0%

Res = Residential, Ag = Agriculture, Sub = Substation, Com = Commercial, Ind = Industrial.

Total Solar Farms Considered: 493

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.

VI. 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

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

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

2. Odor

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

3. Noise

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

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

4. Traffic

The solar farm will have no onsite employee's or staff. The site requires only minimal maintenance. Relative to other potential uses of the site (such as a residential subdivision), the additional traffic generated by a solar farm use on this site is insignificant.

5. Stigma

There is no stigma associated with solar farms and solar farms and people generally respond favorably towards such a use. While an individual may express concerns about proximity to a solar farm, there is no specific stigma associated with a solar farm. Stigma generally refers to things such as adult establishments, prisons, rehabilitation facilities, and so forth.

Solar panels have no associated stigma and in smaller collections are found in yards and roofs in many residential communities. Solar farms are adjoining elementary, middle and high schools as well as churches and subdivisions. I note that Solar Farm Matched Pair Set 9 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.

7. Conclusion

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

VII. Conclusion

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

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

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

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Professional Experience

Kirkland Appraisals, LLC, Raleigh, N.C. — 2003 – Present
Commercial appraiser

Hester & Company, Raleigh, N.C.
Commercial appraiser — 1996 – 2003

Professional Affiliations

MAI (Member, Appraisal Institute) designation #11796 — 2001
NC State Certified General Appraiser # A4359 — 1999
VA State Certified General Appraiser # 4001017291
SC State Certified General Appraiser # 6209
FL State Certified General Appraiser # RZ3950
IL State Certified General Appraiser # 553.002633
OR State Certified General Appraiser # C001204
KY State Certified General Appraiser # 5522

Education

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

Continuing Education

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

Exhibit B: Legal Description of Site

EXHIBIT A

Depiction of Property

The following depicted land located in Lyon County, State of Kentucky, containing 119.16 acres, more or less:

- As described in Deed Book 77 at Page 213, said deed recorded on Mar 2, 1978, consisting of 119.16 acres, more or less, also known as Parcel ID 38-15, as depicted in the map on the following page:

GLENN TRACT I

Said tract of land is situated about eight miles northeast from the town of Kuttawa on the Federal Highway leading from Kuttawa to Fredonia, and is bounded as follows:

BEGINNING at a stone in the Old Fredonia and Kuttawa Road; running thence with said road N. 31 E. 64 poles to a stake (or stone) in said road, and immediately east of the said Federal Highway; thence N. 83-1/2 W. 210-2/5 poles to a stone in the original line of survey, white oak and sassafras as pointers; thence with said original line S. 31 W. 77 poles to a stone, walnut pointer, corner to Garner; thence S. 86 E. 214 poles to the beginning, containing 84.57 acres.

EXCEPTED from the foregoing is 1.35 acres of land which was conveyed to Doug Phelps et ux by Deed recorded 8-31-81 in Deed Book 83, Page 368, above said office.

GLENN TRACT II

A certain tract, piece or parcel of land lying and being in Lyon County, Kentucky on the west side of the Fredonia-Kuttawa Highway No. 93, bounded and described as follows:

BEGINNING at a stake or stone on the west side of said highway, corner to the said H.F. Glenn; thence with said Highway No. 93, N. 31 E. 12 poles and 15 feet to a stake or stone, corner to Hearod; thence with his line N. 78-3/4 W. 56-1/2 poles to a stake near a pond; thence N. 24-3/4 E. 6-3/4 poles; thence N. 74 W. 135 poles to a stake; thence S. 31 W. 50 3 poles to a stone, corner to said Glenn; thence S. 83-1/2 E. 205-1/2 poles to the beginning, containing 37.1 acres, more or less.

GLENN TRACT III:

A certain triangular shaped tract or parcel of land lying on the northwest side of Highway U.S. 641 about four miles southwest of Fredonia, in Lyon County, Kentucky, bounded and described as follows:

Said tract is bounded by Highway U.S. 641, the lands formerly owned by Charles H. Brockmeyer, Jr., now known as Quertermous property and the "Old Kuttawa-Fredonia Road" (the lands of E.F. Glenn, et ux).

Being the same property that was conveyed to Denzil K. White et al by Deed from Eugene F. Glenn et ux dated September 17, 1975, recorded in Deed Book 71, Page 657, Lyon County Court Clerk's Office. Also by Deed from Jack Millikan et ux to Denzil Kim White and Grady White recorded 12-12-77 in Deed Book 77, Page 213 (and by this Deed Kim and Grady White own a 1/2 undivided interest each).

EXHIBIT A

Depiction of Property

The following depicted land located in Lyon County, State of Kentucky, containing 92.84 acres, more or less:

- And As described in Deed Book 147 at Page 703, said deed recorded on Jun 16, 2008, consisting of 92.84 acres, more or less, also known as Parcel ID 39-2, as depicted in the map on the following page:

A certain tract of land situated about six miles northeast of Kuttawa, near the Kuttawa & Fredonia (Ollie James) Highway, in Lyon County, Kentucky, described by metes and bounds as follows:

Beginning at a point in the center line of W.P.A. road which passes the residence of Mrs. Fred C. Dorroh, said point being in the line of W. E. Jackson; thence with said W.P.A. road S 61 E 45 poles to a stake or stone which marks the end of a cross wire fence; thence with said line N 26 ¼ E 48-2/5 poles to a stake in a flat and in the line of the Brasher survey; thence with said line S 31 ½ E 59 ½ poles to a stone, corner to Plot No. 4; thence with the line of same N 59 ½ E 21 ½ poles to a stone in the edge of a woodland; thence with the line of said woodland N 27 W 16 poles to a stake; thence N 58 E 64 poles; thence N 59 E 69 ½ poles to a stake on the northeast side of a large pond in the line of Charlie Wadlington; thence with the Wadlington line N 23 ¼ W 17 ½ poles to a stake, corner to Charlie Wadlington in the line of Charlie Garner; thence with the Garner line S 78 ¼ W 70 poles to a stake, corner to Garner with hackberry and elm as pointers; thence with the Garner line continued N 25 W 39 ¾ poles to a sassafras on a drain, corner to said Garner with a red oak as a pointer; thence continuing with the Garner line S 88 ½ W 78 ½ poles to a stake, corner to W. E. Jackson in Garner's line; thence with the line of W. E. Jackson S 24 W 112 ½ poles to the beginning, containing 93.12 acres.

This is the same property conveyed to John L. Dixon and Margo Dixon (same person as Margot D. Dixon) by deed from Billy Joe Dorroh, as Executor of the Will of B. C. Dorroh, deceased, dated July 16, 1982 and recorded in Deed Book 84, page 602. Margot D. Dixon obtained title to the entirety upon the death of John L. Dixon on May 23, 1995 by the survivorship nature of said deed. Margot D. Dixon died testate on July 10, 2007; and the present Grantors, Michelle Dixon Cronk and Licia B. Albert, obtained their interests in said property pursuant to the Last Will and Testament of Margot D. Dixon, which is a matter of record in Will Book 10, page 86. All references are in the Lyon County Court Clerk's Office. Grantors, Michelle Dixon Cronk and Licia B. Albert, are the sole issue of Margot D. Dixon, deceased, and are the sole beneficiaries of the aforementioned Last Will and Testament of Margot D. Dixon and the trust referred to therein.

EXHIBIT A

Depiction of Property

The following depicted land located in Lyon County, State of Kentucky:

- As described in Deed Book 129 at Page 736, said deed recorded on Jan 13, 2003, consisting of 118.11 acres, more or less, also known as Parcel ID 38-14, as depicted in the map on the following page:

PARCEL 2

A certain tract or parcel of land lying on the waters of Skinframe Creek in Lyon County, Kentucky, and bounded as follows:

Beginning at a stake in the center of the road leading from Eddyville to Fredonia via New Bethel Church, not far north of what is known as the Stegar house, at point where cross fence now intersects with string of fence on west side of said road; thence with said cross fence S. 74 W. 80 poles to a stake in line of said fence; thence S. 72½ W. 134 poles to a stake in line of said fence in fresh land; thence S. 85 W. with line of said fence 55 poles to a stake in Easley's line where said cross fence intersects said line, with a red oak pointer; thence with line of Easley's N. 27 E. 131 poles passing corner of Easley and McElroy at 50 poles to a stone with a black gum as pointer, also McElroy's corner; thence with McElroy's line S. 88 E. 215 poles to a stake in the center of said public road; thence down the same, in the center thereof, S. 30½ W. 36 poles to a stake; thence S. 18 E. 11¼ poles to the place of beginning, containing by triangular estimate one hundred and twelve (112) acres and 35 poles; *EXCEPTION* but there was excepted and not devised, a portion of said tract, which was conveyed to the said C. B. Jackson and Melba Jackson by the said Charles W. Garner by deed dated March 28, 1939, and of record at page 258, Deed Book 38, office of the Clerk of the Lyon County Court. Said portion is described in said Deed as follows:
A certain small tract or parcel of land on the west side of the old Kuttawa and Fredonia road, about four miles west of Fredonia, in Lyon County, Kentucky, bounded and described as follows: on the north by the lands of E. F. Glenn; on the east and south by the lands of Ruby Brockmeyer; on the west by the lands of C. W. Garner; containing what is supposed to be about fifteen (15)

PARCEL 3

Also, the following tract of land which was conveyed to C. B. Jackson and Melba Jackson by the said Charles W. Garner by deed dated March 28, 1939, and of record at page 258, Deed Book 38, Office of the Clerk of the Lyon County Court. Said portion is described in said deed as follows:

A certain tract or parcel of land on the west side of the old Kuttawa and Fredonia Road, about four miles west of Fredonia, in Lyon County, Kentucky, bounded and described as follows: On the north by the lands of E. F. Glenn; on the east and south by the lands of Ruby Brockmeyer; on the west by the lands of C. W. Garner; containing what is supposed to be about fifteen (15) acres.

Said tract hereby conveyed included all of said original tract hereinafter referred to which lies east of the fence which begins at the gate near C. W. Garner's residence, corner to Ruby Brockmyer and C. W. Garner, and runs in a northerly direction in E. F. Glenn's line. *[This paragraph appears in the source deed at Deed Book 38, page 258, but is omitted from the subsequent deeds.]*

acres. For further description reference is made to said Deed. *[This description was taken from the deed within the chain of title of Melba Jackson to C. B. Jackson, of record in Deed Book 44, page 96, in the Lyon County Clerk's Office. The exception set out above was omitted in the subsequent deeds.]*

EXHIBIT A

Depiction of Property

The following depicted land located in Lyon County, State of Kentucky:

- As described in Deed Book 129 at Page 736, said deed recorded on Jan 13, 2003, consisting of 121.51 acres, more or less, also known as Parcel ID 49-6, as depicted in the map on the following page:

PARCEL 1

Two (2) certain tracts of land lying and being in Lyon County, Kentucky, on the waters of Skinframe Creek, bounded and described as follows:

FIRST TRACT: Beginning at a stone, corner to Mrs. C. M. Shelby; running thence N. 89½ W. 120¾ poles to a stone, corner to C. Rice; thence with his line N. ½ E. 106 poles to a stone near a grove of silver poplars; thence S. 88¼ E. 139 poles to a stone in the center of the Eddyville and Fredonia road; thence with same S. 11 W. 105 poles to the beginning, containing by survey 85 acres, 1 rood and 23 poles.

SECOND TRACT: Beginning at a stone in C. Rice's line, corner to the C. M. Shelby tract; thence N. 1¼ E. 100 poles to a stone in W. C. Rice's line; thence with said line N. 85 E. 55-19/25 poles to a stone; thence with said W. C. Rice's line S. ½ W. 106 poles to a stone; thence N. 89¼ W. 57-11/25 poles to the beginning, containing 36½ acres.

EXHIBIT A

Depiction of Property

The following depicted land located in Lyon County, State of Kentucky:

- As described in Deed Book 129 at Page 346, said instrument recorded on October 31, 2002, consisting of 340.98 acres, more or less, also known as Parcel ID 38-20:

Source of title. Being a part of the same property conveyed to William Clayborne Rice (a/k/a W. C. Rice) by W. J. Stone, et ux, by Deed dated December 1, 1893, and appearing of record in Deed Book L, Page 546, records of the Lyon County Clerk's Office. W. C. Rice died in 1902, and pursuant to the Last Will and Testament of W. C. Rice dated March 25, 1902, said property was devised to his daughter, Ruby Catherine Rice (a/k/a Ruby Catherine Rice Brockmeyer, Ruby Catherine Brockmeyer, Ruby C. Brockmeyer, and Ruby R. Brockmeyer). See Will of W. C. Rice recorded in Will Book C, Page 115, records of the Caldwell County Clerk's Office.

Ruby Catherine Brockmeyer died testate on May 11, 1955, and she devised all of her interest in the real estate to her son, Charles H. Brockmeyer, Jr. See Will of Ruby R. Brockmeyer, of record in Will Book E, Page 432, records of the Caldwell County Clerk's Office.

Charles H. Brockmeyer, Jr. died testate on May 22, 1960, and he devised all of his interest in the property to his wife, Dorothy Lee Brockmeyer (a/k/a Dorothy Lee Quertermous). See the Will of Charles H. Brockmeyer, Jr. dated November 13, 1953, of record in Will Book F, Page 130, records of the Caldwell County Clerk's Office.

Dorothy Lee Quertermous died testate on January 29, 1981 and devised all of her interest in the property to her husband, James F. Quertermous for life, with remainder to her grandchildren, Jessica Lee Jacob and Stephanie Jacob Vidrine, after the lifetime of James F. Quertermous. See the Last Will and Testament of Dorothy Lee Quertermous dated December 31, 1964, and the First Codicil to the Last Will and Testament of Dorothy Lee Quertermous dated August 15, 1978, of record in Will Book 3, Page 60, records of the Lyon County Clerk's Office.

James F. Quertermous died on January 4, 2002, a resident of Lyon County, Kentucky, and ownership for the real property vested in Jessica Lee Jacob and Stephanie Jacob Vidrine.

A metes and bounds description from the December 1, 1893 deed referenced above, recorded in Deed Book L at Page 546 is reproduced below:

A certain tract of land lying on waters of Skinfrons Creek in County aforesaid and bounded thus, Namely. Beginning at a Stone buried in the ground in the Midle of the road at the end of a lane at the North east Corner of New Bethel Church Lot, running thence North by East 180 poles to a Stone in N.A. Rices line. thence N 77½ E 189 poles to a Stone, thence S 82 W 52½ poles to a Stone thence S 20¼ W 16 poles to a Stone. thence S 17½ E 8 poles and 18 links to a Stone, thence S 75 W 67 poles and 7 links to a Stone in Garners line. thence S 4¼ E 50 poles to a Stone. thence S 80 E 37 poles to a Stone in N.J. Stones line. thence N 67 E 92 poles to a Stone. thence S 28½ E 52 poles to a Stone thence S 2¼ E 70 poles to the Beginning. Containing 330 acres or about that amount. be the Same more or less.

Total Acres: 340.98 acres, more or less, as depicted in the image on the following page:

EXHIBIT A

Depiction of Property

The following depicted land located in Lyon County, State of Kentucky, containing 85.37 acres, more or less:

- As described in Deed Book 130 at Page 219, said deed recorded on Mar 13, 2003, consisting of 85.37 acres, more or less, also known as Parcel ID 39-6, as depicted in the map on the following page:

TRACT I

A certain tract of land situated about six miles northeast of the town of Kuttawa, on the Kuttawa & Fredonia road (highway U.S. 641), in Lyon County, Kentucky, and bounded and described as follows: Beginning at a stone, original corner in the Brasher survey and corner also to Plot No. 3 (beginning corner) in line of Robbie Dorroh; thence with same N 58-3/4 E 56 poles to a stone, corner to the Robbie Dorroh survey (later Redericks) with a sassafras as a pointer; thence with the Rederick line S 39 E 77 poles to a stone in the center of the Old Kuttawa & Fredonia Road, corner to Wadlington; thence with said old road and the Wadlington line N 46-3/4 E 22 poles; thence N 37 E 12 poles; thence N 26 E 19 poles; thence N 28-1/4 E 27 poles to an iron stake in center of said Kuttawa & Fredonia road, corner to Charlie Wadlington; thence with his line N 23-1/4 W 114-1/2 poles to a stake on the northeast side

of a large pond and corner to Plot No. 5; thence with the line of same S 59 W 69-1/2 poles; thence S 58 W 64 poles to a stake in the edge of a woodland; thence with the line of said woodland S 27 E 16 poles to a stone; thence S 59-1/2 W 21-1/2 poles to a stone in the line of Plot No. 3; thence with said line S 31-1/2 E 54 poles to the beginning, containing 96 acres, more or less.

EXCEPTED HEREFROM is a small parcel of land coveyed by J. R. Dorroh, et ux, to C. Y. Wadlington by deed dated July 18, 1944 and recorded in Deed Book 40, page 325, Lyon County Court Clerk's Office.

TRACT II

A certain small parcel of land situated on the west side of Highway U. S. 641 about 15 miles north of Kuttawa, in Lyon County, Kentucky, bounded and described as follows:

Beginning at a stake in the western right-of-way line of said Highway, corner to the land owned and occupied by Henry Kingston and Tabitha Peek Kingston, or one of them; running thence in a northerly direction with said western right-of-way line of said highway for a distance of 135 feet to a stake, corner to the land of L. R. Cannon and Minnie Cannon; thence in a southerly direction with the line of L. R. Cannon and Minnie Cannon for a distance of 135 feet to a stake in the line of said Kingstons; thence in an easterly direction with the line of said Kingstons for a distance of 45 feet to the beginning.

Tract I is the same property conveyed to L. R. Cannon and Minnie Cannon, by deed from M. W. Hall and Bernice Hall, his wife, dated August 29, 1958 and recorded in Deed Book 46, Page 220. Tract II is the same property conveyed to L. R. Cannon and Minnie Cannon, by deed from L. T. Wadlington and Emma Wadlington, his wife, dated April 29, 1960 and recorded in Deed Book 50, Page 388. The said Minnie Cannon conveyed her one-half (1/2) interest in Tract I to the said L. R. Cannon by deed dated April 30, 1968 and recorded in Deed Book 60, Page 372. The present owners obtained their respective one-quarter (1/4) interest each by inheritance, deed and will. Reference is made to Affidavit of Descent of L. R. Cannon, dated March 5, 1988 and recorded in Deed Book 94, Page 74; Affidavit of Descent of Minnie Cannon, dated March 5, 1988 and recorded in Deed Book 94, Page 75; deed from Diane Yates, a single woman to George Cannon, Sr. and wife, Annie M. Cannon, dated April 8, 1988 and recorded in Deed Book 94, Page 225; Affidavit of Descent of George Cannon, Sr., dated May 14, 2001 and recorded in Deed Book 125, Page 451; and

Will of Annie Cannon recorded in Will Book 7, Page 657, the said Annie Cannon died on Feb 12, 2000. All references are in the Lyon County Court Clerk's Office.

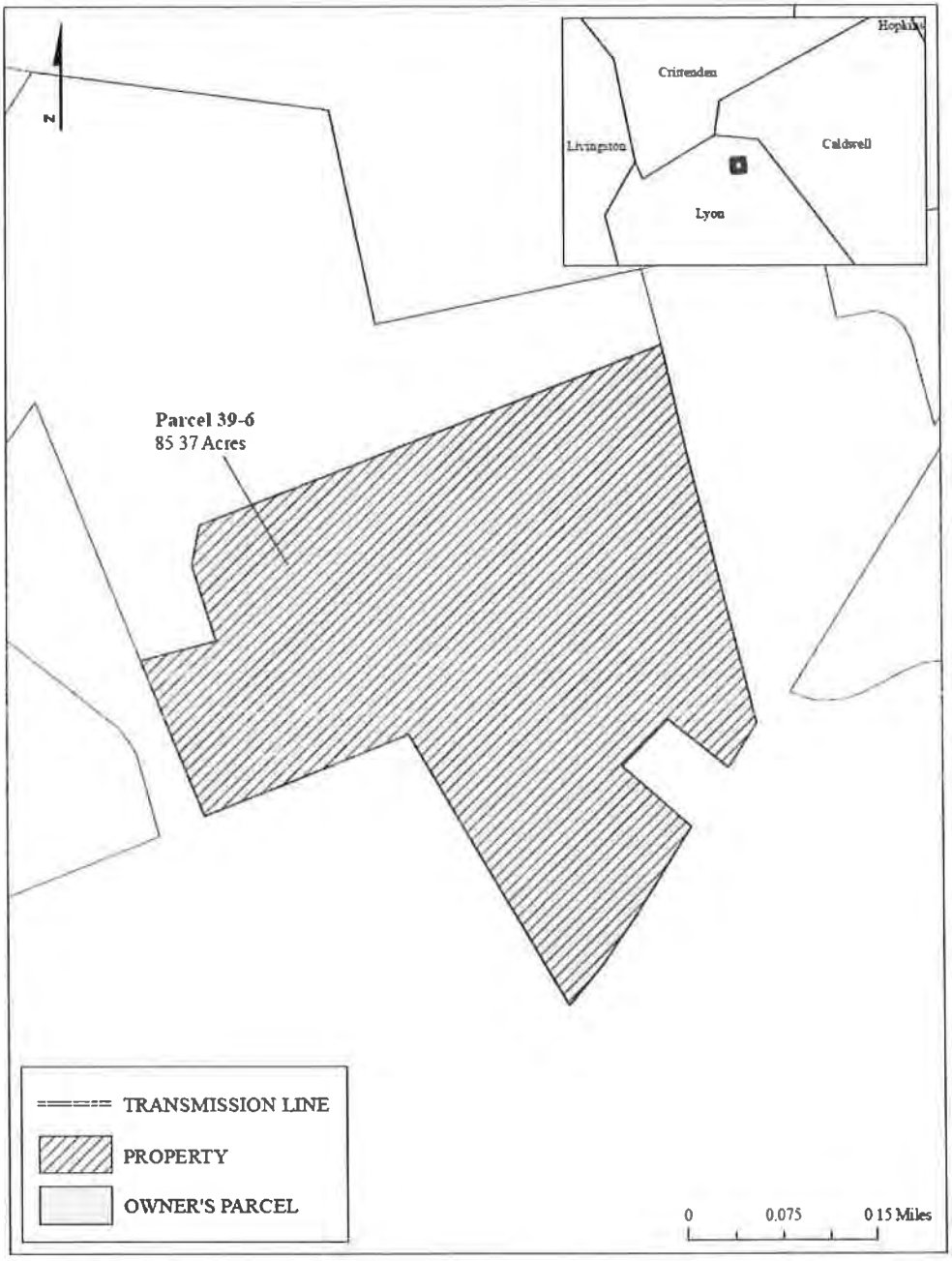


EXHIBIT A

Depiction of Property

The following depicted land located in Lyon County, State of Kentucky, containing 628.832 acres, more or less:

- As described in Deed Book 147 at Page 707, said deed recorded on Jun 16, 2008, consisting of 105.63 acres, more or less, also known as Parcel ID 38-13, as depicted in the map on the following page:

PARCEL NO. 2
TRACT I

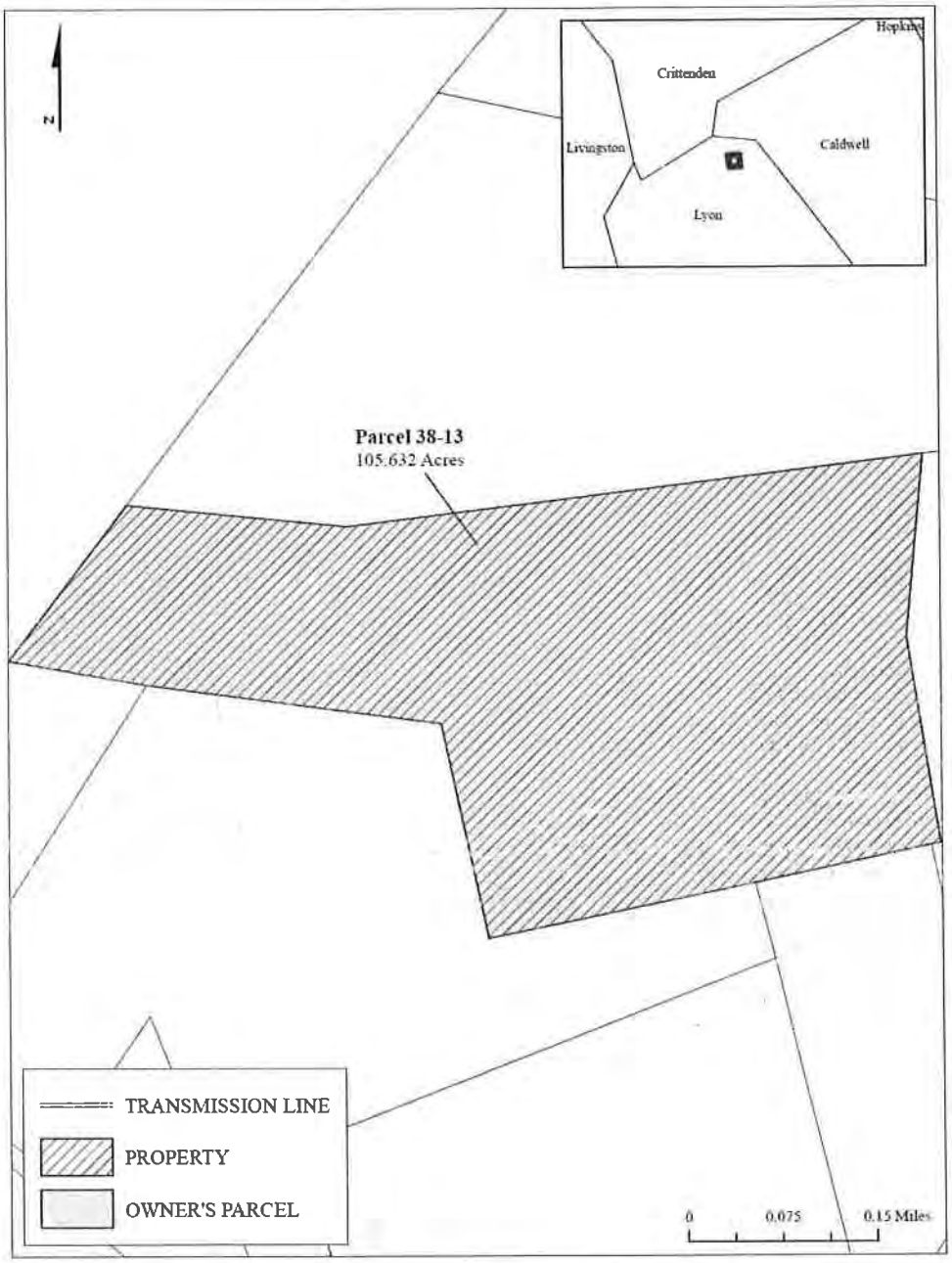
A certain tract of land lying on waters of Skinframe Creek in Lyon County, Kentucky, and bounded thus: Beginning at a stone corner to W. C. Rice in W. H. Garner's line; running thence S 74° W 13 poles to a stone; thence S 72 ½ W 134 poles to a stone; thence S 85° W 55 poles to a stone in Easley's line; thence S 25° W _____ poles with Easley's line to a double black oak, corner to Woodall; thence S 89° E 39 poles to a black oak (marked ??); thence S 53 ½ ° E 6 poles to a sassafras; thence S 26 ½ E 39 poles to a large forked black oak; thence N 67 ½ E 117 poles to a stone corner to W. C. Rice; thence N 20 W 51 poles to a stone; thence N 4 ¼ W 50 poles to the beginning, containing _____ acres.

This conveyance of what is known as the "Garner Farm" is estimated to contain 98 acres, more or less; however, the exact acreage is not warranted and is SUBJECT TO any off-conveyances, reservations, or easements which may appear as a matter of record, if any.

TRACT II

A right of way or road sixteen (16) feet wide adjoining the Brockmyer place and running from the residence on the Stone place to the Old Kuttawa and Fredonia Road.

This is the same property conveyed to Charles R. Dorroh, a married man, and Margo D. Dixon (same person as Margot D. Dixon), a married woman, a one-half (1/2) interest each as tenants in common, by deed from Dorris G. Dorroh, a widow, dated November 6, 1984 and recorded in Deed Book 88, page 502. Margot D. Dixon died testate on July 10, 2007; and the present Grantors, Michelle Dixon Cronk and Licia B. Albert, obtained said decedent's one-half (1/2) interest in said property pursuant to the Last Will and Testament of Margot D. Dixon, which is a matter of record in Will Book 10, page 86. All references are in the Lyon County Court Clerk's Office. Grantors, Michelle Dixon Cronk and Licia B. Albert, are the sole issue of Margot D. Dixon, deceased, and are the sole beneficiaries of the aforementioned Last Will and Testament of Margot D. Dixon and the trust referred to therein.

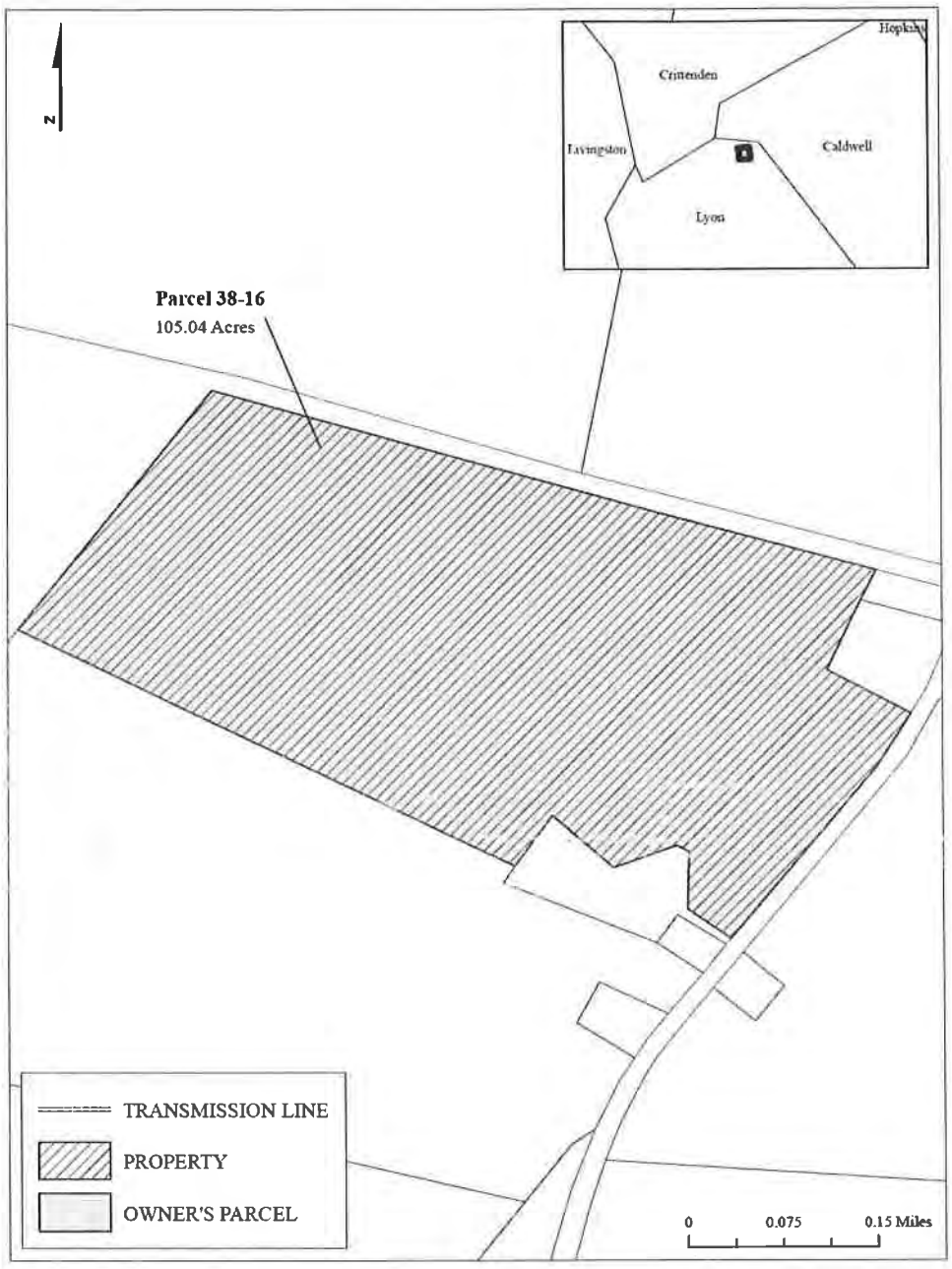

N
Hopkins
Crittenden
Livingston
Caldwell
Lyon
Parcel 38-13
105.632 Acres
TRANSMISSION LINE
PROPERTY
OWNER'S PARCEL
0
0.075
0.15 Miles

- As described in Deed Book 102 at Page 164, said deed recorded on Mar 13, 1992, consisting of 105.04 acres, more or less, also known as Parcel ID 38-16, as depicted in the map on the following page:

TRACT IV: JONES PLACE, 135.5 ACRES

A certain tract or parcel of land lying on the west side of the Kuttawa and Fredonia Road (Highway U.S. No. 641) about 7 miles northeast of Kuttawa, in Lyon County, Kentucky and bounded and described as follows:
BEGINNING at a stake or stone on the west side of said Highway at a point where it is intersected by the Old Dycusburg Road; thence with said Dycusburg Road N. 86 W. 203-1/4 poles; thence S. 31 W. 82-1/2 poles to a stake or stone, corner to H.F. Glenn; thence with his line S. 74 E. 135 poles to a stake near a pond; thence S. 24-3/4 W. 6-3/4 poles to a stake; thence S. 78-3/4 E. 56-1/2 poles to a stake or stone on the west side of said Highway; thence with same to the point of beginning, containing 135.5 acres, more or less.
LESS FIVE (5) ACRES HERETOFORE CONVEYED OFF to William Herrod by Deed recorded 3-31-49, Deed Book 42, Page 301, Lyon County Court Clerk's Office.

Being the same property that was conveyed to Denzil K. White and wife Janice A. White and Paul Holt et ux by Deed from Velma W. Jones, single, recorded 10-12-78 in Deed Book 66, Page 531, Lyon County Court Clerk's Office.


N
Hopkins
Crittenden
Livingston
Caldwell
Lyon
Parcel 38-16
105.04 Acres
TRANSMISSION LINE
PROPERTY
OWNER'S PARCEL
0
0.075
0.15 Miles

- As described in Deed Book 147 at Page 707, said deed recorded on Jun 16, 2008, consisting of 62.92 acres, more or less, also known as Parcel ID 39-1, as depicted in the map on the following page:

PARCEL NO. 1

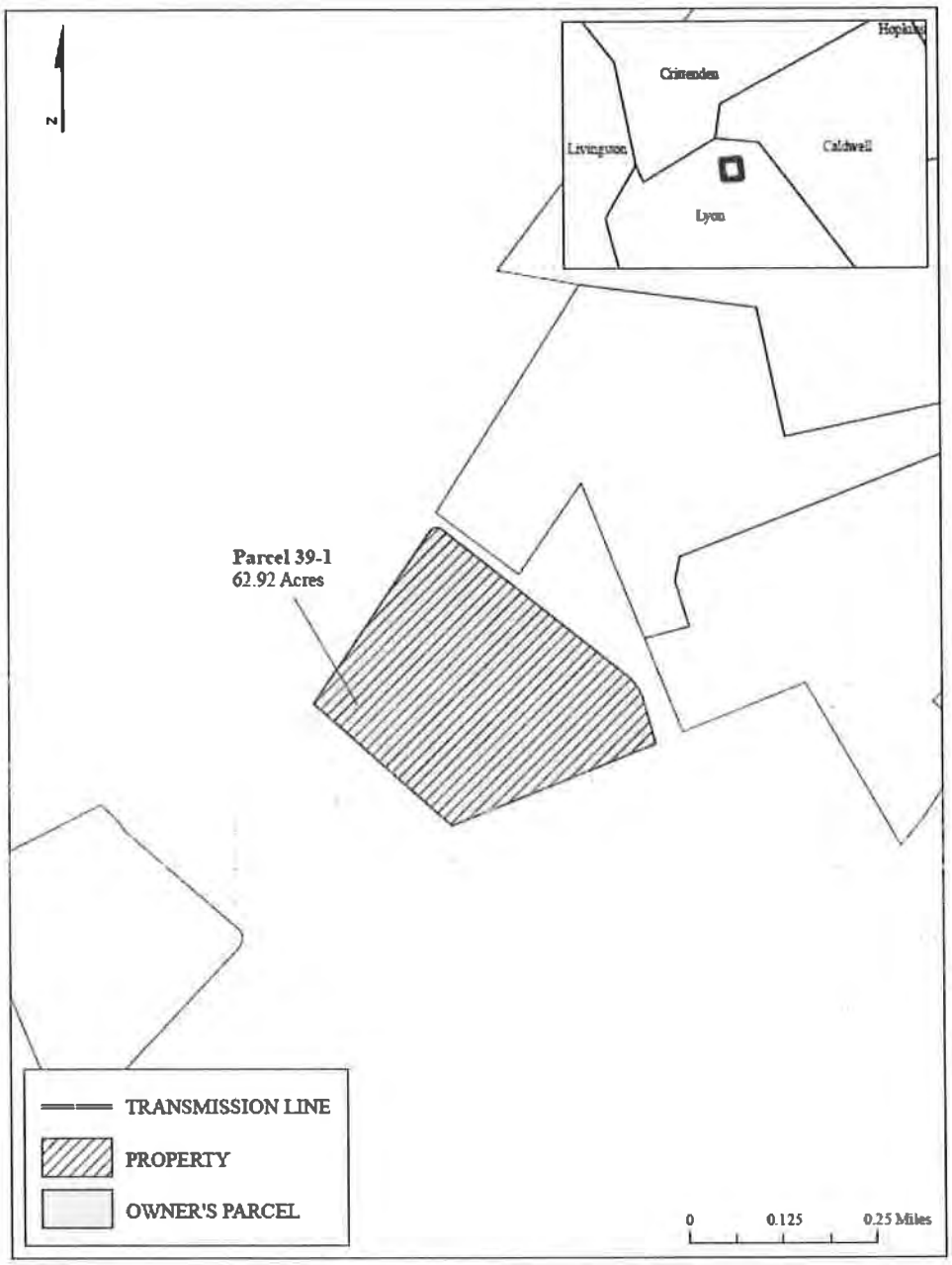
A certain tract or parcel of land situated about six miles northeast of Kuttawa, near Kentucky Highway No. 93, in Lyon County, Kentucky, and described by metes and bounds as follows:

Beginning at a stone, corner to the Brasher survey in the line of Robbie Dorroh; thence with the line of the Brasher survey N 31 ½ W 113 ¾ poles to a stake in a flat, corner to wire fence line intersection; thence with said wire fence line S 26 ¼ W 48-2/5 poles to center line of W.P.A. road which passes the residence of Mrs. Fred C. Dorroh; thence with the center line of said road N 61 W 45 poles to a point in said W.P.A. road in the line of outside boundary (Jackson's line); thence with the same S 24 W 96 ½ poles to a stone in a public road, corner to W. E. Jackson, Roy Williams and Robbie Dorroh; thence with the Dorroh line S 58 ½ E 80 ½ poles to a stone, original corner in the Brasher survey and corner to Plot No. 2; thence with the line of same N 58 ¾ E 96 ½ poles to the beginning, containing 80.9 acres.

This conveyance of what is known as the "Dorroh Farm" is estimated to contain 80.9 acres, more or less; however, the exact acreage is not warranted and is SUBJECT TO any off-conveyances, reservations, or easements which may appear as a matter of record, if any.

This is the same property conveyed to Charles R. Dorroh, a married man, and Margo D. Dixon (same person as Margot D. Dixon), a married woman, a one-half (1/2) interest each as tenants in common, by deed from Dorris G. Dorroh, a widow, dated November 6, 1984 and recorded in Deed Book 88, page 500. Margot D. Dixon died testate on July 10, 2007; and the present Grantors, Michelle Dixon Cronk and Licia B. Albert, obtained said decedent's one-half (1/2) interest in said property pursuant to the Last Will and Testament of Margot D. Dixon, which is a matter of record in Will Book 10, page 86. All references are in the Lyon County Court Clerk's Office.

Grantors, Michelle Dixon Cronk and Licia B. Albert, are the sole issue of Margot D. Dixon, deceased, and are the sole beneficiaries of the aforementioned Last Will and Testament of Margot D. Dixon and the trust referred to therein.


N
Hopkins
Crittenden
Livingston
Caldwell
Lyon
Parcel 39-1
62.92 Acres
TRANSMISSION LINE
PROPERTY
OWNER'S PARCEL
0
0.125
0.25 Miles

- As described in Deed Book 98 at Page 432, said deed recorded on Aug 14, 1990, consisting of 355.24 acres, more or less, also known as Parcel ID 38-5, as depicted in the map on the following page:

Being a 355.2371 acre tract of land in Lyon Co., Ky., approximately 4.5 miles northeast of Eddyville on the north side of Coleman-Doles Road, and more particularly described as beginning at the southeast corner of the property herein described at a 1/2 inch rebar (set) at a fence corner post in the 25 ft. north right-of-way of said road approximately 1700 ft. west of U. S. 641, a corner to Ricky McDowell; thence with said right-of-way as follows; North 85 degrees 23 minutes 16 seconds West-589.70 ft.; North 85 degrees 03 minutes 16 seconds West-461.49 ft.; North 86 degrees 31 minutes 28 seconds West-543.49 ft.; North 89 degrees 09 minutes 25 seconds West-773.03 ft.; North 88 degrees 38 minutes 53 seconds West-408.60 ft.; North 88 degrees 16 minutes 58 seconds West-531.84 ft.; to a railroad spike (set) in the projected centerline of Clift Road; thence North 02 degrees 05 minutes 42 seconds East-2956.92 ft. with the lines of Owen Lumber Co. and John Stice, also being the centerline of said road, to a 1/2 inch rebar (set) in the projected centerline intersection of said road; thence South 88 degrees 21 minutes 06 seconds East-278.66 ft. and continuing with said centerline to a 1/2 inch rebar (set) at the projected centerline intersection of said road; thence North 00 degrees 19 minutes 57 seconds East-1693.55 ft. to a steel post in the centerline of said road; thence

South 89 degrees 42 minutes 15 seconds East-1481.68 ft. to a stone at a fence corner; thence South 89 degrees 28 minutes 26 seconds East-1859.73 ft. to a 1/2 inch rebar (set) at a fence corner in the line of the Norwood Vaed Estate; thence South 00 degrees 41 minutes 27 seconds West-1816.87 ft. to a stone at a fence corner in the north line of Ricky McDowell; thence North 89 degrees 56 minutes 47 seconds West-387.84 ft. to a stone at a fence corner, corner to McDowell; thence South 00 degrees 30 minutes 00 seconds West-2956.54 ft. to the point of beginning. Survey prepared by Randy L. Gray, KY R.L.S. #2932. See plat of record in Plat Cabinet __1__, File __115__, Office of the Lyon County Court Clerk's Office.

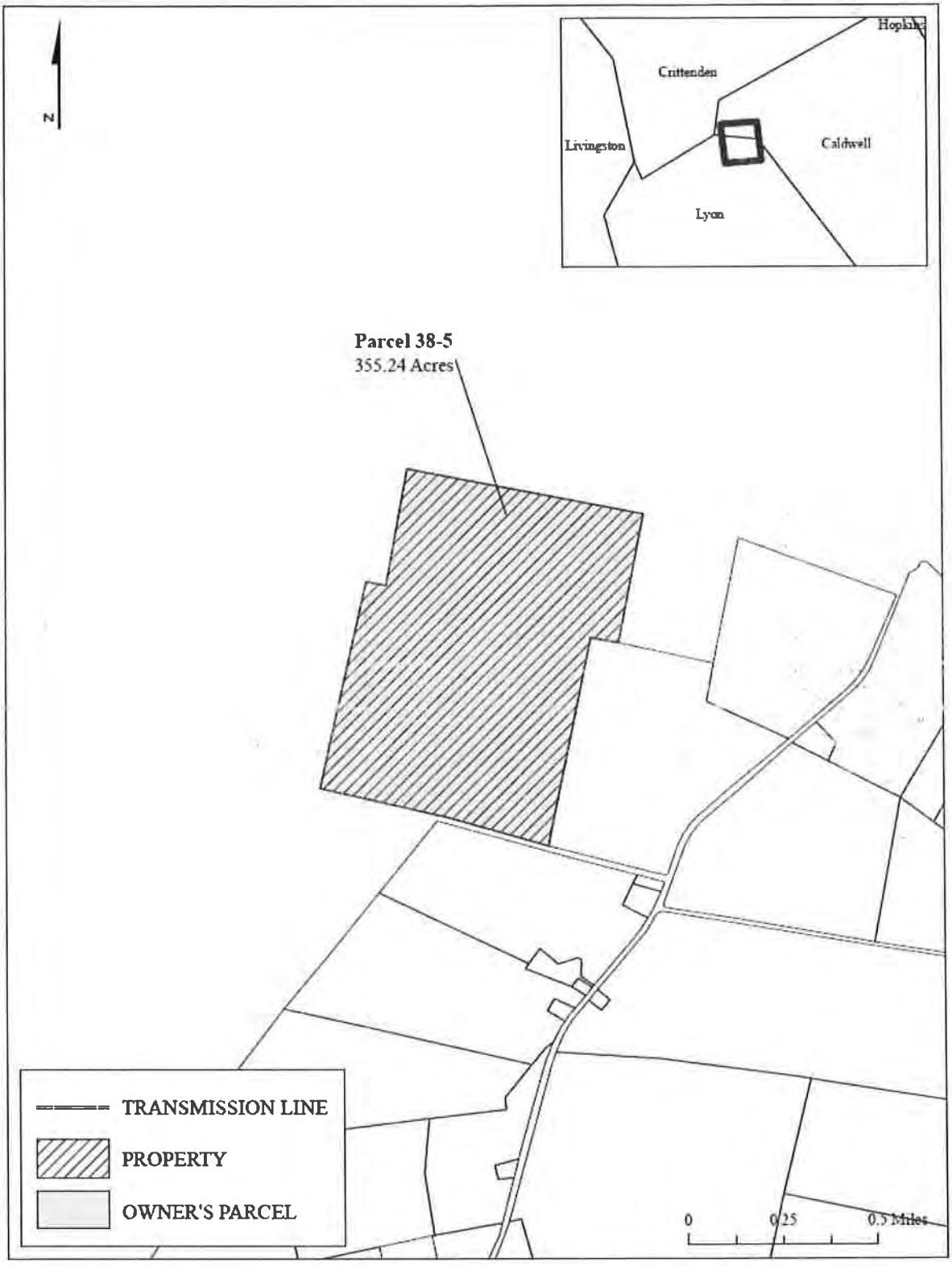

N
Hopkins
Crittenden
Livingston
Caldwell
Lyon
Parcel 38-5
355.24 Acres
TRANSMISSION LINE
PROPERTY
OWNER'S PARCEL
0
0.25
0.5 Miles

Exhibit C: Noise and Traffic Studies

Noise Assessment

Ashwood 86MW Solar Facility

December 11, 2020

Prepared for:

Ashwood Solar I

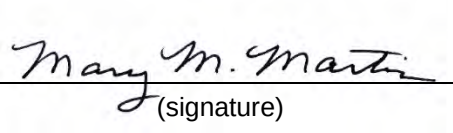
Prepared by:

Stantec Consulting Services, Inc
Louisville, Kentucky

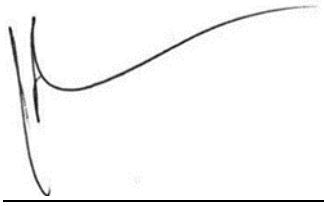
This document entitled Noise Assessment was prepared by Stantec Consulting Services Inc. (“Stantec”) for the account of RWE Solar Development, LLC (the “Client”). Any reliance on this document by any third party is strictly prohibited. The material in it reflects Stantec’s professional judgment in light of the scope, schedule and other limitations stated in the document and in the contract between Stantec and the Client. The opinions in the document are based on conditions and information existing at the time the document was published and do not take into account any subsequent changes. In preparing the document, Stantec did not verify information supplied to it by others. Any use which a third party makes of this document is the responsibility of such third party. Such third party agrees that Stantec shall not be responsible for costs or damages of any kind, if any, suffered by it or any other third party as a result of decisions made or actions taken based on this document.

Prepared by 
(signature)

Amber Coleman

Reviewed by 
(signature)

Mary Martin

Approved by 
(signature)

Josh Adams

Table of Contents

LIST OF TABLES

1.0 INTRODUCTION

1.1 PROJECT DESCRIPTION

The Ashwood Solar Project (Project) is a proposed 86-megawatt (MW) photovoltaic (PV) solar power energy generating facility located in Lyon County, Kentucky. The project site is located on approximately 1,500 acres in the northeast corner of the county (Figure 1). The solar project will consist of inverters and a utility interconnection substation. The power generated by the proposed solar facility will be connected to the existing power grid using the transmission line currently traversing the tract. The generating facility will sell power on the wholesale market as a merchant power plant or independent power producer. The solar facility will be enclosed by a six-foot chain-link fence topped with three strands of barbed wire, which will be located at least 50 feet inside of any property boundary. In areas where potential visual or auditory impacts may be of concern, a vegetative buffer will be planted, which will consists of two staggered rows of evergreen shrubs that are at least three feet in height at the time of planting and will grow to at least six feet in height three years after planting. At the end of the project's life the equipment and electrical infrastructure will be removed from the site, and land may return to farming or other development.

A desktop noise assessment was completed to evaluate potential noise impacts to noise sensitive receptors within 1,000 feet from the project boundary. Background noise as well as noise generated during construction and operation of the Project were considered in the analysis.

1.2 EXISTING LAND USE AND SITE CONDITIONS

The project is located in a rural area with gently sloping topography. Existing land use within the project site is primarily cultivated cropland with small areas of deciduous forest (MLRC 2016 and USDA-FSA 2018). Portions of the cropland include large center pivot irrigation systems. Land use adjacent to the Project is comprised of scattered homes, cultivated cropland and pasture land. One church, New Bethel Baptist Church, is located near the southern boundary of the site. The site is bisected by US 641, Coleman Doles Road, and State Highway 1943. Multiple utility corridors cross the site including a natural gas pipeline and multiple electrical transmission lines (Figure 2). The Western Kentucky Correctional Complex is located adjacent to the southeast edge of the project site. The Fredonia Valley Quarry is located approximately one mile to the northwest.

2.0 NOISE STUDY

2.1 EXISTING NOISE CONDITIONS

2.1.1 Noise Sensitive Receptors

A noise sensitive receptor is generally defined as locations where people reside or where the presence of unwanted sound may adversely affect the use of the land. Receptors may include but are not limited to schools, homes, churches, hospitals, and certain types of recreation or outdoor land uses such as outdoor restaurant seating.

Potential noise sensitive receptors were evaluated within a 1,000 foot buffer from the project boundary. High resolution aerial photography, Google street view photos, and proposed site layouts were analyzed using ESRI ArcMap 10.7 and Google Earth Pro to determine the presence of potential noise sensitive receptors. These receptors include dwellings and one church and are shown on Figure 2. No schools, childcare centers, outdoor recreation, medical centers or other types of noise sensitive receptors were observed.

Thirty-nine (39) residences including a combination of single family homes and mobile homes are located within the buffer. The majority of these occur along US 641 within and near a neighborhood located along Breezy Loop near the intersection of US 641 and New Bethel Church Road. The nearest receptors are approximately 35 feet from the project boundary (Table 1). According to the proposed site plan, with setbacks these nearby receptors actually range from approximately 120 feet to more than 600 feet away from the proposed solar panels. Proposed inverters are located even further away with the nearest being approximately 400 feet from a dwelling and most being over 1,000 feet away.

New Bethel Baptist Church is located over 500 feet from the southern edge of the Project where the proposed substation and potential battery storage are planned to be installed.

Table 1 Nearest Sensitive Receptor to the Site

Type	Direction from Project Site	Distance from Property Boundary	Distance from Nearest Solar Panel	Distance from Nearest Inverter or Transformer
Residences – Coleman Doles Road	Northwest of the property boundary	Within 87 ft	Within 300 ft	Within 1,448 ft
Residences – US 641	Along US 641 through the center of the project site	Within 62 ft	Within 126 ft	Within 395 ft
Residences – Breezy Loop Neighborhood	South of the project boundary	Within 35 ft	Within 338 ft	Within 1,482 ft
Residences – State Road 1943	Southwest of the property boundary	Within 63 ft	Within 627 ft	Within 1,937 ft
Place of Worship – New Bethel Baptist Church	South of the property boundary	Within 514 ft	Within 1,470 ft	Within 581 ft

2.1.2 Existing Noise from Surrounding Areas

The unincorporated portions of Lyon County do not appear to have a specific noise ordinance, but the County has language in their nuisance ordinance related to the potential noise disturbance from animals (Lyon Fiscal Court 2016). Those Noise is typically measured in decibels (dB_A) to describe the relative loudness of specific sounds. See Table 2 for example sound levels from the Centers for Disease Control and Prevention (CDC 2020).

Table 2. Common Sources of Noise and Decibel Levels

Noise Source	Average Noise Level (dB_A)*
Loud Entertainment Venues (Nightclubs, Bars and Rock Concerts)	105 – 110
Car horn at 16 ft / Sporting Events	100
Motorcycle	95
Gas powered lawnmowers and leaf blowers	80-85
Heavy Traffic	80-85
Washing Machine / Dishwasher	70
Normal Conversation / Air Conditioner	60
Soft Whisper	30

**CDC 2020*

The primary source of noise from the surrounding area is similar to the Project site with adjacent farms producing agricultural sounds related to tractors, farm machinery, trucks, ATVs and irrigation. Wildlife and livestock also contribute to the local noise including cattle, insects, birds and frogs.

US 641, State Highway 1943, and Coleman Doles Road contribute to the traffic noise in the area. The Kentucky Transportation Cabinet (KYTC) is in the planning and design stage for a realignment of US 641. Within the project area, the current preferred alignment includes constructing a highway on new location approximately 3,500 feet to the east of the current alignment. Both the old and new alignments bisect the Project (Figure 2). Approximately 4,000 vehicles per day use this stretch of roadway and could increase to 5,300 by 2030 on the new alignment. Construction is currently scheduled to begin in spring 2022 (KYTC 2019).

2.1.3 Existing On-Site Noise

Existing noise on the Project site consists of noises typically produced by agricultural activities. These noises include tractors, trucks, all-terrain vehicles, and sounds associated with cultivation including harvesters, bailers and irrigation systems. Rural wildlife and livestock noises contribute to the existing noise conditions including cattle, birds, frogs and insects.

2.2 PROPOSED CONSTRUCTION NOISE CONDITIONS

2.2.1 Equipment and Machinery

The Project site consists primarily cultivated crops on gently rolling land and only minimal earthmoving and tree removal activities are anticipated during Project construction. Typical construction equipment is expected to be used for site preparation and infrastructure installation and may include dump trucks, pile drivers, backhoes, dozers, and excavators. The Federal Transit Administration outlines typical construction equipment noise levels and is presented in Table 3 (FTA 2018). The Federal Highway Administration (FHWA) Roadway Construction Noise Model (RCNM) was used to evaluate noise during construction (FHWA 2006). Pile drivers are expected to be the loudest machinery and will only be used during installation of the solar panel supports. Since pile drivers will only be used briefly, model results have been presented both with and without pile drivers in use.

Table 3. Construction Equipment Noise Emission Levels

Equipment	Typical Noise Levels at 50 ft from Source (dB_A)*
Air Compressor	80
Backhoe	80
Ballast Equalizer	82
Ballast Tamper	83
Compactor	82
Concrete Mixer	85
Concrete Pump	82
Concrete Vibrator	76
Crane, Derrick	88
Crane, Mobile	83
Dozer	85
Generator	82
Grader	85
Impact Wrench	85
Jack Hammer	88
Loader	80
Paver	85
Pile Driver (Impact)	101
Pile Driver (Sonic)	95
Pneumatic Tool	85
Pump	77
Rail Saw	90
Rock Drill	95
Roller	85
Saw	76
Scarifier	83
Scraper	85
Shovel	82
Spike Driver	77
Tie Cutter	84
Tie Handler	80
Tie Inserter	85
Truck	84

**Taken from FTA 2018*

2.2.2 Roadway Noise During Construction

Traffic noise is expected to increase temporarily during construction due to the mobilization of labor and materials, equipment and staff moving between sections of the project and vehicles like dump trucks leaving the site. Construction related activity will be occurring between 7 a.m. and 9 p.m. and will be of short duration at any given location within the project.

2.2.3 Assembly of Solar Array and Construction of Facilities

The solar facility consists of solar panels, a panel tracking system, inverters and electrical equipment associated with the solar facility and substation. All facility equipment is expected to be assembled using handheld equipment and power tools. Assembly will occur within the Project site several hundred to thousands of feet from the nearest receptors. Assembly will take place during daytime hours and will be of short duration at any given location within the project.

2.3 PROPOSED OPERATIONAL NOISE CONDITIONS

2.3.1 Solar Array and Tracking System

The solar array associated with this project includes single-axis tracking panels distributed evenly across the site (Figure 2). Tracking systems involve the panels being driven by small, 24-volt brushless DC motors to track the arc of the sun to maximize each panel's potential for solar absorption. Panels would turn no more than five (5) degrees every 15 minutes and would operate no more than one (1) minute out of every 15-minute period. These tracking motors are a potential source of mechanical noise and are included in this assessment. The sound typically produced by panel tracking motors (NexTracker or equivalent) is approximately 78 dB_A. Comparing similar noise values and distances from the RCNM, the tracking system will be approximately 67-70 dB_A at the nearest receptor.

2.3.2 Inverters

Approximately 29 inverters are expected to be installed across the 1,500 acre Project site. Inverters installed onsite are expected to be SMA PCS or GE LV5 PCS similar. Manufacturer's specifications for the equipment include a range of noise emission for SMA PCS from 49 dB_A at 50 meters (164 feet) distance to 67 dB_A at 10 meters (32.8 feet) from the source. The GE LV5 PCS ranges from 73.6 dB_A at lowest cooling level to 91.3 dB_A at highest cooling levels at 10 meters (32.8 feet) from the source. The noise produced by the inverters can be characterized as a hum and during average operation is similar in noise level to a household air conditioner. Proposed inverter locations are shown on Figure 2. In the event that these inverters have to be moved, they will not be placed any closer than currently depicted.

2.3.3 Transformers

The proposed substation covers approximately 9.3 acres and is located on the southern end of the Project site. The substation will include a SBG-SMIT 3 phase 630 kVA transformer or similar. According to manufacturer specifications the loudest the transformer is expected to be is just over 60 dB_A, measured 1 meter (3.2 feet) from the source, or the level of a normal conversation. The nearest sensitive receptor is New Bethel Baptist Church just under 600 feet away.

2.3.4 Site Operation and Maintenance

2.3.4.1 Vehicular Traffic

The solar facility is expected to have a maximum of one technician visiting the site daily for inspection and two to three technicians up to 70 days per year. Operation and maintenance work may proceed at night for up to 30 days per year. Weekend work is not anticipated but may be required upon any component outages that may impact energy production from the site. Other than the scenarios mentioned, vehicular traffic onsite will be limited to typical weekday business hours. Technicians will drive mid- or full-sized trucks and will not contribute noticeably to the existing traffic noise levels.

2.3.4.2 Maintenance Activities

Typical maintenance activities may include inspection, minor repair and maintenance on the solar panels, the tracking system, wiring, and/or inverters. Grounds maintenance will include periodic inspection of the vegetative buffers, boundary fencing, and vegetation control through mowing and herbicide applications.

2.4 NOISE SUMMARY AND CONCLUSIONS

Noise is expected to increase temporarily and intermittently during the construction phase of the project due to increases in vehicular traffic, construction equipment and assembly of the solar facility components. This increase in noise is expected to be within accepted ranges and of short duration at any given location within the project with the majority of the noise producing activities to occur many hundreds to thousands of feet from the nearest noise sensitive receptors. The typical noise levels of construction equipment are not unlike the existing noise levels related to cultivation and livestock operations within and surrounding the Project. The noisiest portion of the construction includes the use of pile drivers to install the solar panel supports. These will only be used very briefly and the worst-case maximum noise [L_{max} (dB_A)] expected to occur at the nearest receptor is 92.8 dB_A which is similar to a motorcycle. The equivalent continuous sound level [L_{eq} (dB_A)] from construction including the pile driver is 86.0 dB_A which is similar to a lawnmower or heavy traffic. The model was also evaluated without the inputs of the pile driver since that is more typical of ongoing construction sound levels. The sound levels for typical construction onsite ranges from a dishwasher to heavy traffic in similarity (Table 4). Construction activities at the Project site would move around the site and are not anticipated to be performed near a sensitive receptor for more than a few days or weeks.

Table 4. Calculated Noise Levels at Nearest Receptor Due to Construction

	Calculated L_{max} (dB_A)	Calculated L_{eq} (dB_A)
Noise Level at Nearest Receptor (including pile driver)	92.8	86.0
Noise Level at Nearest Receptor (minus pile driver)	78.1	74.3

During site operation, intermittent noise related to the panel tracking system and the constant noise of the inverters is expected. The increase in noise is negligible due to the distance between the panels /

inverters and the nearest noise sensitive receptors. The nearest receptor is more than 120 feet from any solar panels and approximately 500 feet from an inverter. Sound levels from the tracking system can be expected to be the levels of a normal conversation at the nearest receptor (~67 dB_A), while the sounds will be much quieter at most receptors. During average operation, the inverters will be similar in noise level (~49 dB_A) to a household air conditioner. According to manufacturer specifications the loudest the transformer is expected to be just over 60 dB_A, or the level of a normal conversation. Proposed vegetative buffers will further decrease perceived noise. Site visits and maintenance activities including single vehicular traffic and mowing will be negligible as they are similar to the background agricultural noise characteristics. All site visits, outside of emergency maintenance, will occur during daylight hours.

At the nearest receptors no elevated and prolonged noise levels above background levels are expected either during construction or operation of the Project site.

3.0 REFERENCES

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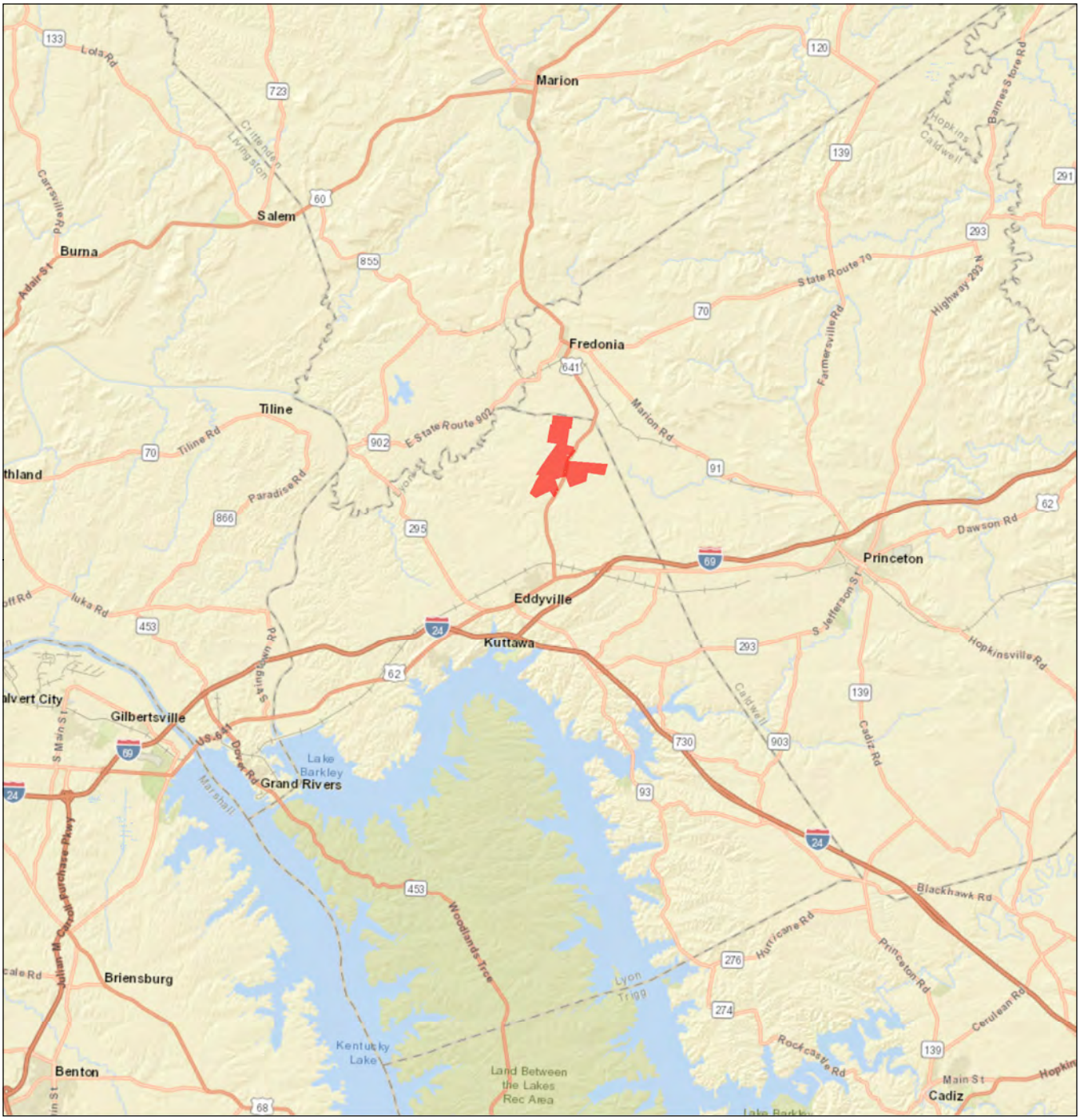
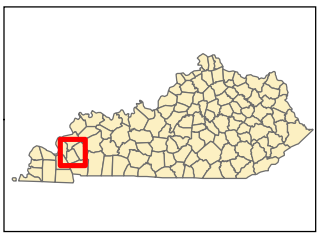
Appendix A FIGURES





Legend

Ashwood Solar Project Boundary

0 2.5 5 Miles

(At original document size of 8.5x11)
1:316,800

N

Stantec

Project Location
Lyon County, KY

Prepared by ALC on 2020-12-02
TR by MMM on 2020-12-02
IR Review by JA on 2020-12-02

Client/Project
RWE Renewables
Ashwood Solar Project
Noise Assessment

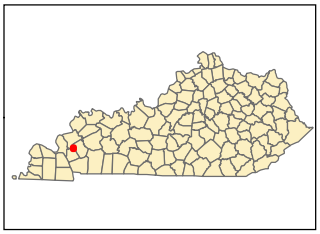
172658236 REVA

Figure No.
1

DRAFT

Title
Vicinity Map

Notes
1. Coordinate System: NAD 1983 2011 StatePlane Kentucky South FIPS 1602 Ft US
2. Data Sources: RWE, Stantec
3. Background: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community



Notes

1. Coordinate System: NAD 1983 2011 StatePlane Kentucky South FIPS 1602 Ft US
2. Data Sources: RWE, Stantec
3. Background: 2018 USDA-NAIP-FSA Imagery - Kentucky (60cm resolution)

Legend

- Noise Sensitive Receptors - Residential (39)
- Noise Sensitive Receptors - Church (1)
- Other Structures (barns, sheds, garages)
- 1000 ft Noise Assessment Area
- Proposed Setbacks
- Potential Access Roads
- Natural Gas Pipeline
- Potential Vegetation Buffer
- Transmission Lines
- Fredonia Valley Quarry
- US 641 Preliminary Preferred Alignment
- Potential Inverter Location
- Potential PV Layout - 86MW
- Potential Project Footprint Area
- Substation and Potential Battery Storage Location
- Western Kentucky Correctional Complex
- County Boundary

0 0.2 0.4 Miles

(At original document size of 8.5x11)
1:30,000

N

Stantec

Project Location
Lyon County, KY

Prepared by ALC on 2020-11-30
TR by MMM on 2020-12-01
IR Review by JA on 2020-12-01

Client/Project
RWE Renewables
Ashwood Solar Project
Noise Assessment

172658236 REVA

Figure No.
2

DRAFT

Title
Proposed Layout and Noise Sensitive Receptor Map

C:\Users\acoleman\OneDrive - Stantec Office 365\PROJECTS\KY_Solar_Noise\mapping\lyon_working.mxd Revised: 2020-12-01 By: acoleman

Ashwood Traffic Impact Study

December 8, 2020

Prepared for:

Ashwood Solar I

Prepared by:

Stantec Consulting Services Inc.
10509 Timberwood Circle, Suite 100
Louisville, Kentucky 40223

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Executive Summary

The Ashwood solar facility development is proposed to be located north of Eddyville in northeastern Lyon County, Kentucky. The petitioner proposes to utilize the existing land to establish a solar facility on the site which is approximately 1,500 acres in size. The development will have as many as two fully functional access points on both US 641 and KY 1943, as well as single access points on Coleman-Doles Road and KY 3169.

Analyses of the 2020 existing conditions (pre-Covid traffic conditions), the 2021 construction year, and the post-construction future demand were performed. The traffic impact study (TIS) evaluated the operating conditions for the AM and PM peak hours at the following five roadway segments:

- Station 072799: KY 1943 from KY 373 (MP 2.558) to US 641 (MP 6.994)
- Station 072062: KY 3169 from US 641 (MP 0.000) to End of State Maintenance (MP 0.380)
- Station 072001: US 641 from US 62 (MP 0.000) to KY 1943 (MP 2.668)
- Station 072016: US 641 from KY 1943 (MP 2.668) to Lyon/Caldwell County Line (MP 5.715)
- Station 017755: US 641 from Lyon/Caldwell County Line (MP 5.715) to J D Bugg Road (MP 1.587)

Based on the results of the analysis, the following conclusions were developed:

- During construction, all highway segments are anticipated to continue to operate at acceptable level of service (LOS) standards during both the peak hours. Therefore, the construction for this project will not adversely affect traffic operations on KY 1943, KY 3169, or US 641.

- After construction is complete, the future traffic demand related to this project will be less than a typical single-family home. This additional volume of daily traffic is considered negligible and the operational phase of the project will have no measurable impact on the traffic and/or transportation infrastructure.

1.0 INTRODUCTION

The purpose of this study is to estimate the traffic impacts associated with the proposed Ashwood solar facility in northeastern Lyon County. The project site is located north of Eddyville and just southwest of the Caldwell County line, as shown in **Figure 1**.

The project site, which is approximately 1,500 acres, currently serves agricultural land uses. The petitioner proposes to utilize the existing land to establish a solar facility. The development will have two fully functional access points on both US 641 and KY 1943, as well as single access points on Coleman-Doles Road and KY 3169. A construction year of 2021 and the post-construction future year were evaluated as part of the study.

2.0 DATA COLLECTION

24-hour traffic count and vehicle classification data were obtained from Kentucky Transportation Cabinet (KYTC) Division of Planning to establish the existing traffic conditions. **Figure 2** shows the locations of the five count stations used in this analysis. A summary of the count data for each of these stations is included in **Appendix A** for the following count stations:

- Station 072799: KY 1943 from KY 373 (MP 2.558) to US 641 (MP 6.994)
- Station 072062: KY 3169 from US 641 (MP 0.000) to End of State Maintenance (MP 0.380)
- Station 072001: US 641 from US 62 (MP 0.000) to KY 1943 (MP 2.668)
- Station 072016: US 641 from KY 1943 (MP 2.668) to Lyon/Caldwell County Line (MP 5.715)
- Station 017755: US 641 from Lyon/Caldwell County Line (MP 5.715) to J D Bugg Road (MP 1.587)

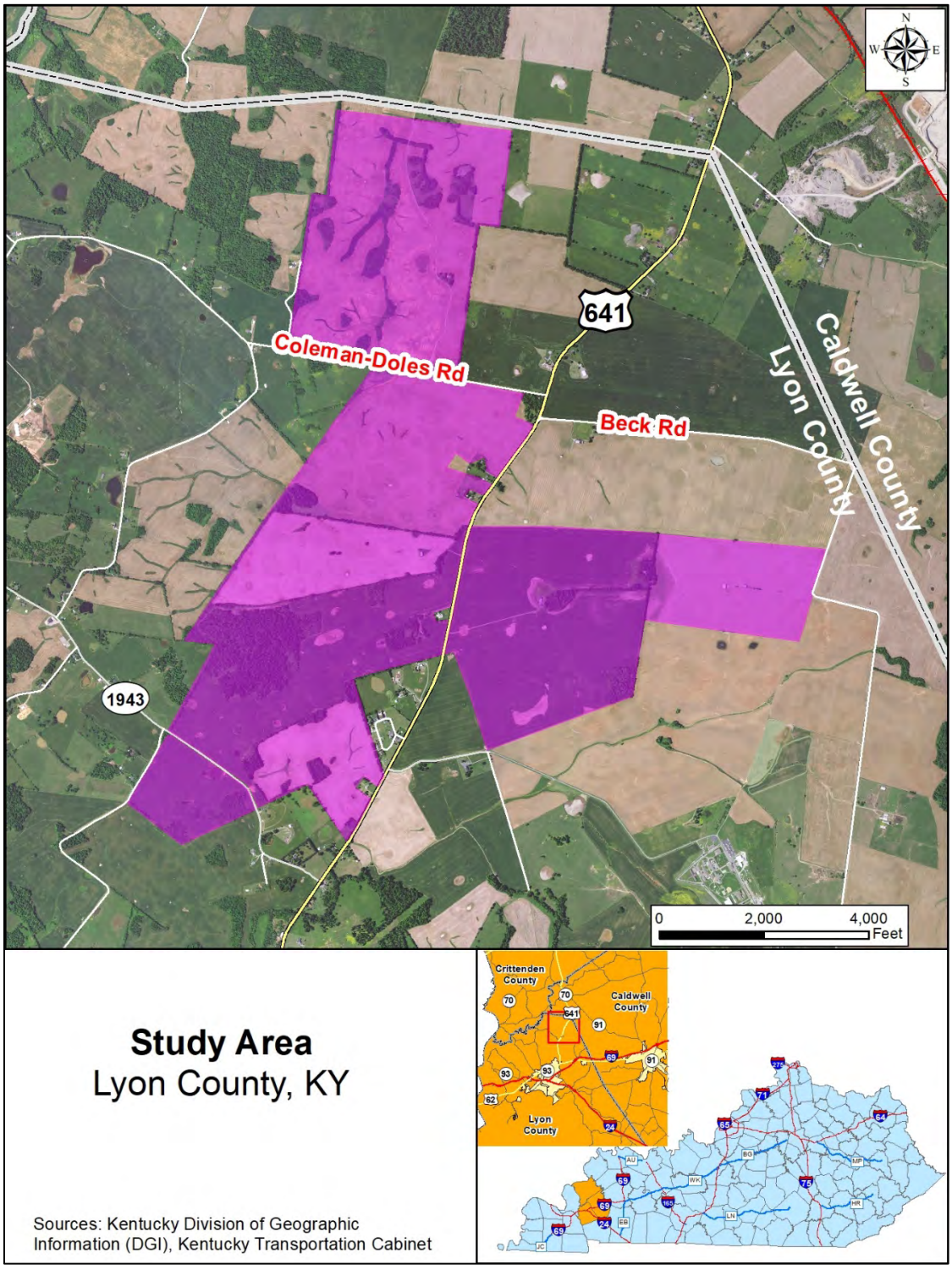

Figure 1: Project Location

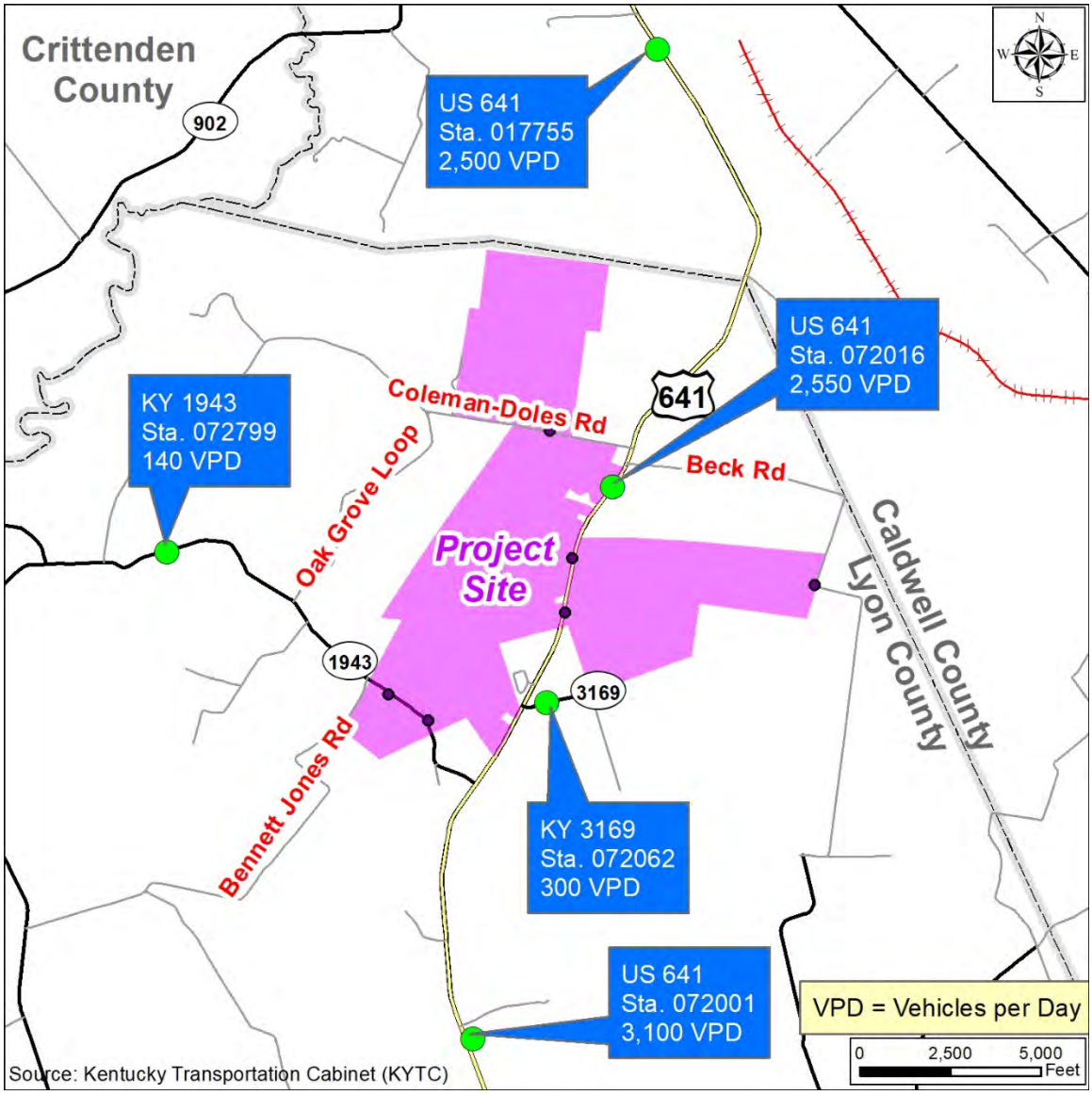

Figure 2: Traffic Count Stations

One major roadway directly serves the proposed site. US 641 is a two-lane road which is functionally classified as a rural minor arterial with a posted speed limit of 55 miles per hour (mph). KY 1943 is two-lane road which is functionally classified as a rural minor collector between KY 373 and US 641 with a posted speed limit of 55 mph. KY 3169 is a two-lane road which is functionally classified as a urban local street with a posted speed limit of 55 mph.

Traffic analyses for the adjacent roadways were performed using the Two-Lane Highway Analysis methodology within the Highway Capacity Software (HCS 7), and the results can be found in **Appendix B**. This analysis estimates capacity and Level of Service (LOS) for given traffic and geometric conditions. LOS is a qualitative measure describing the quality of traffic flow provided by a roadway facility, expressed in terms of letter grades with LOS A representing the highest quality traffic flow and minimal delay, and LOS F representing poor traffic operations and significant delay. The two-lane highways method utilizes follower density (followers/mile) as the service measure for LOS. In rural areas such as the propose site location, LOS C or better is generally considered desirable.

The results of the existing traffic for the AM peak-hour two-lane analyses are summarized in **Table 1**. The results of the existing traffic for the PM peak-hour two-lane analyses are summarized in **Table 2.** The tables indicate that all highways currently operate at acceptable level-of-service standards during both the AM and PM peak hours.

Table 1: Existing AM Two-Lane Highway Analysis

Segment	Existing	
	Density (followers/mi)	LOS
KY 1943 at:		
KY 373 to US 641	0.0	A
KY 3169 at:		
US 641 to MP 0.380	0.1	A
US 641 (Lyon County) at:		
US 62 to MP 0.090	0.5	A
MP 0.09 to KY 1943	0.6	A
KY 1943 to Lyon/Caldwell County Line	0.6	A
US 641 (Caldwell County) at:		
Lyon/Caldwell County Line to J D Bugg Road	0.5	A

Table 2: Existing PM Two-Lane Highway Analysis

Segment	Existing	
	Density (followers/mi)	LOS
KY 1943 at:		
KY 373 to US 641	0.0	A
KY 3169 at:		
US 641 to MP 0.380	0.1	A
US 641 (Lyon County) at:		
US 62 to MP 0.090	1.0	A
MP 0.09 to KY 1943	1.0	A
KY 1943 to Lyon/Caldwell County Line	1.0	A
US 641 (Caldwell County) at:		
Lyon/Caldwell County Line to MP 2.315	0.8	A

3.0 PROJECT TRIP GENERATION

3.1 CONSTRUCTION

The trip generation analysis for this project is based on the number of workers and the associated construction and delivery truck trips expected during the construction of the project. Construction workers will consist of laborers, equipment operators, electricians, supervisory personnel, support personnel, and construction management personnel. It is envisioned that most workers will arrive/depart from passenger vehicles and trucks daily during the AM (7:00 – 9:00 AM) and PM (3:00 – 6:00 PM) peak hours, however construction may take place as late as 9 PM. Equipment deliveries will occur on trailers, flatbeds, or other large vehicles at various times during the day. To account for the temporary increased demand on the roadways, ten percent of the current peak traffic volumes for the AM and PM hours was added to the existing volumes. The construction of the proposed facility will take from eight to twelve months to complete.

CONSTRUCTION ANALYSIS

The construction year analysis assumed the same roadway geometry that was used for the analysis of existing conditions. The results of the construction year for the AM peak-hour two-lane analysis is summarized in **Table 3**. The results of the construction year for the PM peak-hour two-lane is summarized in **Table 4**. The results demonstrate that all highway segments are anticipated to continue to operate at acceptable LOS during construction for both peak hours. Therefore, the construction for this project will not adversely affect the operation of KY 1943, KY 3169, or US 641.

Table 3: Construction AM Two-Lane Highway Analysis

Segment	Construction	
	Density (followers/mi)	LOS
KY 1943 at:		
KY 373 to US 641	0.0	A
KY 3169 at:		
US 641 to MP 0.380	0.1	A
US 641 (Lyon County) at:		
US 62 to MP 0.090	0.6	A
MP 0.09 to KY 1943	0.7	A
KY 1943 to Lyon/Caldwell County Line	0.7	A
US 641 (Caldwell County) at:		
Lyon/Caldwell County Line to J D Bugg Road	0.6	A

Table 4: Construction PM Two-Lane Highway Analysis

Segment	Construction	
	Density (followers/mi)	LOS
KY 1943 at:		
KY 373 to US 641	0.0	A
KY 3169 at:		
US 641 to MP 0.380	0.1	A
US 641 (Lyon County) at:		
US 62 to MP 0.090	1.1	A
MP 0.09 to KY 1943	1.2	A
KY 1943 to Lyon/Caldwell County Line	1.1	A
US 641 (Caldwell County) at:		
Lyon/Caldwell County Line to MP 2.315	0.9	A

3.2 OPERATION

Once operational, the facility will only have to be managed and monitored. Therefore, it is envisioned that the facility will have one employee on site every day and up to three additional employees for 70 days a year for site inspections and repair. Operations workers are expected to commute to and from the project site individually during the peak AM and PM hours. Work can also be conducted at night up to thirty days

a year. This additional volume of daily traffic is considered negligible and the operational phase of the project will have no measurable impact on the traffic and/or transportation infrastructure.

4.0 CONCLUSION

As demonstrated in the traffic analysis, the construction period trip generation of workers and trucks will not generate a significant number of trips on local roadways. KY 1943, KY 3169, and US 641 will continue to operate at a LOS A during worst-case scenario construction peak traffic. Although no significant, adverse traffic impacts are expected during project construction or operation, using mitigation measures such as ridesharing between construction workers, using appropriate traffic controls or allowing flexible working hours outside of peak hours could be implemented to minimize any potential for delays during the AM and PM peak hours.

Appendix A

TRAFFIC COUNTS AND CLASSIFICATION DATA

Kentucky Transportation Cabinet

Count Class Distribution for 08/12/2014 through 08/14/2014

Site names: 072001
County: Lyon
Funct Class: R Minor Arterial - Other
Location: 072-US-0641 -000 @ .681 From: US 62 (W KY FACTORY

Seasonal Factor Grp: 2
Daily Factor Grp: 2
Axle Factor Grp: 06
Growth Factor Grp: 06

	Road	Pos	Neg	Pos Lane1	Neg Lane1
MC	99 1.65%	53 1.77%	46 1.53%	53 1.77%	46 1.53%
CAR	3,466 57.62%	1,592 53.05%	1,874 62.18%	1,592 53.05%	1,874 62.18%
PU	1,517 25.22%	841 28.02%	676 22.43%	841 28.02%	676 22.43%
BUS	40 .67%	25 .83%	15 .50%	25 .83%	15 .50%
2D	308 5.12%	190 6.33%	118 3.92%	190 6.33%	118 3.92%
SU 3	151 2.51%	108 3.60%	43 1.43%	108 3.60%	43 1.43%
SU 4+	87 1.45%	15 .50%	72 2.39%	15 .50%	72 2.39%
ST 4-	90 1.50%	55 1.83%	35 1.16%	55 1.83%	35 1.16%
ST 5	236 3.92%	112 3.73%	124 4.11%	112 3.73%	124 4.11%
ST 6+	15 .25%	6 .20%	9 .30%	6 .20%	9 .30%
MT 5-	1 .02%	1 .03%	0 .00%	1 .03%	0 .00%
MT 6	0 .00%	0 .00%	0 .00%	0 .00%	0 .00%
MT 7+	2 .03%	1 .03%	1 .03%	1 .03%	1 .03%
NA	0 .00%	0 .00%	0 .00%	0 .00%	0 .00%
UNCLS	3 .05%	2 .07%	1 .03%	2 .07%	1 .03%
Trucks	930 15.46%	513 17.09%	417 13.84%	513 17.09%	417 13.84%
Combo Trucks	344 5.72%	175 5.83%	169 5.61%	175 5.83%	169 5.61%
Classified	6,012 99.95%	2,999 99.93%	3,013 99.97%	2,999 99.93%	3,013 99.97%
Unclassified	3 .05%	2 .07%	1 .03%	2 .07%	1 .03%
Total	6,015 100.00%	3,001 100.00%	3,014 100.00%	3,001 100.00%	3,014 100.00%

Kentucky Transportation Cabinet

Count Class Distribution for 10/06/2020 through 10/07/2020

Site names: 072001
County: Lyon
Funct Class: R Minor Arterial - Other
Location: 072-US-0641 -000 @ .681 From: US 62 (W KY FACTORY

Seasonal Factor Grp: 2
Daily Factor Grp: 2
Axle Factor Grp: 06
Growth Factor Grp: 06

	Road	Pos	Neg	Pos Lane1	Neg Lane1
MC	59 1.19%	42 1.67%	17 .70%	42 1.67%	17 .70%
CAR	2,644 53.49%	1,291 51.43%	1,353 55.61%	1,291 51.43%	1,353 55.61%
PU	1,218 24.64%	651 25.94%	567 23.30%	651 25.94%	567 23.30%
BUS	48 .97%	37 1.47%	11 .45%	37 1.47%	11 .45%
2D	255 5.16%	149 5.94%	106 4.36%	149 5.94%	106 4.36%
SU 3	130 2.63%	87 3.47%	43 1.77%	87 3.47%	43 1.77%
SU 4+	64 1.29%	6 .24%	58 2.38%	6 .24%	58 2.38%
ST 4-	116 2.35%	54 2.15%	62 2.55%	54 2.15%	62 2.55%
ST 5	385 7.79%	181 7.21%	204 8.38%	181 7.21%	204 8.38%
ST 6+	15 .30%	7 .28%	8 .33%	7 .28%	8 .33%
MT 5-	0 .00%	0 .00%	0 .00%	0 .00%	0 .00%
MT 6	3 .06%	2 .08%	1 .04%	2 .08%	1 .04%
MT 7+	1 .02%	1 .04%	0 .00%	1 .04%	0 .00%
NA	0 .00%	0 .00%	0 .00%	0 .00%	0 .00%
UNCLS	5 .10%	2 .08%	3 .12%	2 .08%	3 .12%
Trucks	1,017 20.57%	524 20.88%	493 20.26%	524 20.88%	493 20.26%
Combo Trucks	520 10.52%	245 9.76%	275 11.30%	245 9.76%	275 11.30%
Classified	4,938 99.90%	2,508 99.92%	2,430 99.88%	2,508 99.92%	2,430 99.88%
Unclassified	5 .10%	2 .08%	3 .12%	2 .08%	3 .12%
Total	4,943 100.00%	2,510 100.00%	2,433 100.00%	2,510 100.00%	2,433 100.00%

Kentucky Transportation Cabinet

Short-term Hourly Traffic Volume for 11/06/201 through 11/08/2018

Site names: 017755
County: Caldwell
Funct Class: R Minor Arterial - Other
Location: 017-US-0641 -000 @ 1.300 From: LYON COUNTY LINE To: KY

Seasonal Factor Grp: 2
Daily Factor Grp: 2
Axle Factor Grp: 06
Growth Factor Grp: 06

	Sun, Nov 4, 2018			Mon, Nov 5, 2018			Tue, Nov 6, 2018			Wed, Nov 7, 2018			Thu, Nov 8, 2018			Fri, Nov 9, 2018			Sat, Nov 10, 2018		
	Road	Pos	Neg	Road	Pos	Neg	Road	Pos	Neg	Road	Pos	Neg	Road	Pos	Neg	Road	Pos	Neg	Road	Pos	Neg
00:00										6	2	4	9	5	4						
01:00										9	5	4	5	5	0						
02:00										8	2	6	9	3	6						
03:00										8	4	4	14	4	10						
04:00										50	15	35	47	16	31						
05:00										108	32	76	107	32	75						
06:00										164	53	111	153	48	105						
07:00										174	67	107	170	61	109						
08:00										133	48	85	156	63	93						
09:00										141	64	77	153	80	73						
10:00							166	77	89	150	75	75									
11:00							186	84	102	174	87	87									
12:00							163	86	77	185	109	76									
13:00							177	107	70	156	87	69									
14:00							166	87	79	167	87	80									
15:00							227	140	87	201	124	77									
16:00							235	149	86	209	129	80									
17:00							172	106	66	165	83	82									
18:00							85	44	41	114	75	39									
19:00							60	37	23	58	40	18									
20:00							42	29	13	65	38	27									
21:00							36	21	15	37	23	14									
22:00							27	11	16	16	10	6									
23:00							24	20	4	29	19	10									
Total							1,766	998	768	2,527	1,278	1,249	823	317	506						
AM Peak Vol										174	87	111									
AM Peak Fct										1	1	1									
AM Peak Hr							:	:	:	7: 00	11: 00	6: 00									
PM Peak Vol							235	149	87	209	129	82									
PM Peak Fct							1	1	1	1	1	1									
PM Peak Hr							16: 00	16: 00	15: 00	16: 00	16: 00	17: 00									
Seasonal Fct							1.027	1.027	1.027	1.027	1.027	1.027	1.027	1.027	1.027						
Daily Fct							.949	.949	.949	.948	.948	.948	1.000	1.000	1.000						
Axle Fct							.500	.500	.500	.500	.500	.500	.500	.500	.500						
Pulse Fct							2.000	2.000	2.000	2.000	2.000	2.000	2.000	2.000	2.000						

Created 11/17/2020 7:59 AM

ROAD AADT 2,515 NDIR AADT 1,243 PDIR AADT 1,272

Kentucky Transportation Cabinet

Short-term Hourly Traffic Volume for 08/15/201 through 08/17/2017

Site names:	072001	Seasonal Factor Grp:	2
County:	Lyon	Daily Factor Grp:	2
Funct Class:	R Minor Arterial - Other	Axle Factor Grp:	06
Location:	072-US-0641 -000 @ .681 From: US 62 (W KY FACTORY	Growth Factor Grp:	06

	Sun, Aug 13, 2017			Mon, Aug 14, 2017			Tue, Aug 15, 2017			Wed, Aug 16, 2017			Thu, Aug 17, 2017			Fri, Aug 18, 2017			Sat, Aug 19, 2017		
	Road	Pos	Neg	Road	Pos	Neg	Road	Pos	Neg	Road	Pos	Neg	Road	Pos	Neg	Road	Pos	Neg	Road	Pos	Neg
00:00										10	5	5	10	5	5						
01:00										5	1	4	5	3	2						
02:00										8	5	3	9	7	2						
03:00										11	3	8	15	6	9						
04:00										48	20	28	43	13	30						
05:00										97	36	61	92	39	53						
06:00										210	116	94	205	106	99						
07:00										232	103	129	231	104	127						
08:00										197	74	123	192	101	91						
09:00										157	77	80	174	83	91						
10:00										206	91	115	168	69	99						
11:00										220	114	106									
12:00							175	96	79	192	90	102									
13:00							192	101	91	181	103	78									
14:00							216	104	112	242	128	114									
15:00							317	163	154	315	141	174									
16:00							267	135	132	279	150	129									
17:00							242	123	119	229	119	110									
18:00							129	68	61	152	77	75									
19:00							132	82	50	89	48	41									
20:00							104	57	47	108	67	41									
21:00							58	47	11	45	28	17									
22:00							38	24	14	45	30	15									
23:00							37	21	16	24	10	14									
Total							1,907	1,021	886	3,302	1,636	1,666	1,144	536	608						
AM Peak Vol							0	0	0	232	116	129	0	0	0						
AM Peak Fct							0	0	0	1	1	1	0	0	0						
AM Peak Hr							:	:	:	7: 00	6: 00	7: 00	:	:	:						
PM Peak Vol							317	163	154	315	150	174	0	0	0						
PM Peak Fct							1	1	1	1	1	1	0	0	0						
PM Peak Hr							15: 00	15: 00	15: 00	15: 00	16: 00	15: 00	:	:	:						
Seasonal Fct							.957	.957	.957	.957	.957	.957	.957	.957	.957						
Daily Fct							1.004	1.004	1.004	.990	.990	.990	.939	.939	.939						
Axle Fct							.500	.500	.500	.500	.500	.500	.500	.500	.500						
Pulse Fct							2.000	2.000	2.000	2.000	2.000	2.000	2.000	2.000	2.000						

Created 11/17/2020 7:59 AM ROAD AADT 3,099 NDIR AADT 1,538 PDIR AADT 1,560

Kentucky Transportation Cabinet

Short-term Hourly Traffic Volume for 10/06/202 through 10/07/2020

Site names:	072001	Seasonal Factor Grp:	2
County:	Lyon	Daily Factor Grp:	2
Funct Class:	R Minor Arterial - Other	Axle Factor Grp:	06
Location:	072-US-0641 -000 @ .681 From: US 62 (W KY FACTORY	Growth Factor Grp:	06

	Sun, Oct 4, 2020			Mon, Oct 5, 2020			Tue, Oct 6, 2020			Wed, Oct 7, 2020			Thu, Oct 8, 2020			Fri, Oct 9, 2020			Sat, Oct 10, 2020		
	Road	Pos	Neg	Road	Pos	Neg	Road	Pos	Neg	Road	Pos	Neg	Road	Pos	Neg	Road	Pos	Neg	Road	Pos	Neg
00:00										7	2	5									
01:00										4	4	0									
02:00										10	3	7									
03:00										11	6	5									
04:00										39	10	29									
05:00										104	35	69									
06:00										190	92	98									
07:00										210	102	108									
08:00										196	80	116									
09:00										187	98	89									
10:00							195	86	109	227	107	120									
11:00							195	99	96	249	108	141									
12:00							200	94	106	219	112	107									
13:00							212	118	94	227	113	114									
14:00							227	113	114	216	124	92									
15:00							275	145	130	267	134	133									
16:00							270	142	128	276	173	103									
17:00							218	119	99												
18:00							109	70	39												
19:00							131	76	55												
20:00							61	30	31												
21:00							49	31	18												
22:00							31	19	12												
23:00							32	17	15												
Total							2,205	1,159	1,046	2,639	1,303	1,336									
AM Peak Vol										249	108	141									
AM Peak Fct										.877	.73	.82									
AM Peak Hr							:	:	:	11: 00	11: 00	11: 00									
PM Peak Vol							275	149	134												
PM Peak Fct							.849	.828	.817												
PM Peak Hr							15: 00	14: 30	14: 45	:	:	:									
Seasonal Fct							.987	.987	.987	.987	.987	.987									
Daily Fct							.972	.972	.972	.985	.985	.985									
Axle Fct							.500	.500	.500	.500	.500	.500									
Pulse Fct							2.000	2.000	2.000	2.000	2.000	2.000									

Created 11/17/2020 7:59 AM ROAD AADT 3,108 NDIR AADT 1,536 PDIR AADT 1,573

Kentucky Transportation Cabinet

Short-term Hourly Traffic Volume for 06/27/201 through 06/28/2018

Site names:	072016	Seasonal Factor Grp:	2
County:	Lyon	Daily Factor Grp:	2
Funct Class:	R Minor Arterial - Other	Axle Factor Grp:	06
Location:	072-US-0641 -000 @ 4.379 From: KY 1943 To: CALDWELL	Growth Factor Grp:	06

	Sun, Jun 24, 2018			Mon, Jun 25, 2018			Tue, Jun 26, 2018			Wed, Jun 27, 2018			Thu, Jun 28, 2018			Fri, Jun 29, 2018			Sat, Jun 30, 2018		
	Road	Pos	Neg	Road	Pos	Neg	Road	Pos	Neg	Road	Pos	Neg	Road	Pos	Neg	Road	Pos	Neg	Road	Pos	Neg
00:00													11								
01:00													7								
02:00													5								
03:00													11								
04:00													51								
05:00													101								
06:00													168								
07:00													189								
08:00													186								
09:00													180								
10:00													197								
11:00										190			176								
12:00										189			219								
13:00										196			241								
14:00										202			238								
15:00										261			245								
16:00										216			193								
17:00										184											
18:00										135											
19:00										83											
20:00										65											
21:00										48											
22:00										27											
23:00										26											
Total										1,822			2,418								
AM Peak Vol										0			197								
AM Peak Fct										0			1								
AM Peak Hr										:			10: 00								
PM Peak Vol										261			0								
PM Peak Fct										1			0								
PM Peak Hr										15: 00			:								
Seasonal Fct										.931			.931								
Daily Fct										1.007			.967								
Axle Fct										.471			.471								
Pulse Fct										2.000			2.000								

Kentucky Transportation Cabinet

Short-term Hourly Traffic Volume for 07/08/201 through 07/11/2019

Site names: 072062
County: Lyon
Funct Class: R Local System
Location: 072-KY-3169 -000 @ .050 From: US 641 To: EDDYVILLE

Seasonal Factor Grp: 2
Daily Factor Grp: 2
Axle Factor Grp: 09
Growth Factor Grp: 09

	Sun, Jul 7, 2019			Mon, Jul 8, 2019			Tue, Jul 9, 2019			Wed, Jul 10, 2019			Thu, Jul 11, 2019			Fri, Jul 12, 2019			Sat, Jul 13, 2019		
	Road	Pos	Neg	Road	Pos	Neg	Road	Pos	Neg	Road	Pos	Neg	Road	Pos	Neg	Road	Pos	Neg	Road	Pos	Neg
00:00							0			0			1								
01:00							0			0			0								
02:00							0			0			0								
03:00							0			0			0								
04:00							2			4			3								
05:00							10			18			7								
06:00							58			52			54								
07:00							27			29			24								
08:00							9			12			14								
09:00							12			9			14								
10:00							19			17											
11:00				8			9			13											
12:00				6			15			14											
13:00				12			10			18											
14:00				39			22			32											
15:00				55			66			43											
16:00				9			6			11											
17:00				22			8			13											
18:00				5			2			13											
19:00				2			2			7											
20:00				3			1			10											
21:00				0			4			0											
22:00				12			11			10											
23:00				13			12			14											
Total				186			305			339			117								
AM Peak Vol							63			56											
AM Peak Fct							.75			.7											
AM Peak Hr				:			6: 15			6: 15											
PM Peak Vol				75			70			53											
PM Peak Fct				.586			.438			.631											
PM Peak Hr				14: 30			14: 45			14: 30											
Seasonal Fct				.947			.947			.947			.947								
Daily Fct				1.007			.989			.960			1.005								
Axle Fct				.500			.500			.500			.500								
Pulse Fct				2.000			2.000			2.000			2.000								

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ROAD AADT 300 NDIR AADT 0 PDIR AADT 0

Kentucky Transportation Cabinet

Short-term Hourly Traffic Volume for 08/29/201 through 08/31/2017

Site names: 072799
County: Lyon
Funct Class: R Minor Collector
Location: 072-KY-1943 -000 @ 4.617 From: KY 373/JOE PECK ROAD To:

Seasonal Factor Grp: 2
Daily Factor Grp: 2
Axle Factor Grp: 08
Growth Factor Grp: 08

	Sun, Aug 27, 2017			Mon, Aug 28, 2017			Tue, Aug 29, 2017			Wed, Aug 30, 2017			Thu, Aug 31, 2017			Fri, Sep 1, 2017			Sat, Sep 2, 2017		
	Road	Pos	Neg	Road	Pos	Neg	Road	Pos	Neg	Road	Pos	Neg	Road	Pos	Neg	Road	Pos	Neg	Road	Pos	Neg
00:00										1			1								
01:00										0			0								
02:00										0			1								
03:00										0			1								
04:00										0			0								
05:00										1			1								
06:00										11			5								
07:00										19			12								
08:00										5			9								
09:00										5			5								
10:00							6			5											
11:00							14			6											
12:00							4			2											
13:00							6			2											
14:00							7			25											
15:00							8			20											
16:00							16			7											
17:00							11			11											
18:00							12			11											
19:00							5			17											
20:00							3			10											
21:00							1			1											
22:00							2			0											
23:00							0			1											
Total							95			160			35								
AM Peak Vol							0			19			0								
AM Peak Fct							0			1			0								
AM Peak Hr							:			7: 00			:								
PM Peak Vol							16			25			0								
PM Peak Fct							1			1			0								
PM Peak Hr							16: 00			14: 00			:								
Seasonal Fct							.957			.957			.957								
Daily Fct							1.004			.990			.939								
Axle Fct							.489			.489			.489								
Pulse Fct							2.000			2.000			2.000								

Appendix B

HCS FILES

HCS7 Two-Lane Highway Report

Project Information

Analyst	ATW	Date	11/17/2020
Agency	Stantec	Analysis Year	2020
Jurisdiction	KY 1943 MP 2.558 to 6.994	Time Period Analyzed	Existing AM
Project Description	Traffic Impact Study	Unit	United States Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	23422
Lane Width, ft	9	Shoulder Width, ft	0
Speed Limit, mi/h	55	Access Point Density, pts/mi	7.7

Demand and Capacity

Directional Demand Flow Rate, veh/h	10	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.94	Total Trucks, %	12.00
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.01

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	54.4
Speed Slope Coefficient	3.58313	Speed Power Coefficient	0.41674
PF Slope Coefficient	-1.41140	PF Power Coefficient	0.66867
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.0
%Improved % Followers	0.0	% Improved Avg Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	23422	-	-	54.4

Vehicle Results

Average Speed, mi/h	54.4	Percent Followers, %	6.1
Segment Travel Time, minutes	4.89	Follower Density, followers/mi/ln	0.0
Vehicle LOS	A		

Facility Results

T	Follower Density, followers/mi/ln	LOS
1	0.0	A

HCS7 Two-Lane Highway Report

Project Information

Analyst	ATW	Date	11/17/2020
Agency	Stantec	Analysis Year	2020
Jurisdiction	KY 1943 MP 2.558 to 6.994	Time Period Analyzed	Existing PM
Project Description	Traffic Impact Study	Unit	United States Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	23422
Lane Width, ft	9	Shoulder Width, ft	0
Speed Limit, mi/h	55	Access Point Density, pts/mi	7.7

Demand and Capacity

Directional Demand Flow Rate, veh/h	9	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.94	Total Trucks, %	12.00
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.01

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	54.4
Speed Slope Coefficient	3.58313	Speed Power Coefficient	0.41674
PF Slope Coefficient	-1.41140	PF Power Coefficient	0.66867
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.0
%Improved % Followers	0.0	% Improved Avg Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	23422	-	-	54.4

Vehicle Results

Average Speed, mi/h	54.4	Percent Followers, %	5.7
Segment Travel Time, minutes	4.89	Follower Density, followers/mi/ln	0.0
Vehicle LOS	A		

Facility Results

T	Follower Density, followers/mi/ln	LOS
1	0.0	A

HCS7 Two-Lane Highway Report

Project Information

Analyst	ATW	Date	11/17/2020
Agency	Stantec	Analysis Year	2020
Jurisdiction	KY 3169 MP 0.00 to 0.38	Time Period Analyzed	Existing AM
Project Description	Traffic Impact Study	Unit	United States Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	2006
Lane Width, ft	9	Shoulder Width, ft	0
Speed Limit, mi/h	55	Access Point Density, pts/mi	5.3

Demand and Capacity

Directional Demand Flow Rate, veh/h	34	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.94	Total Trucks, %	12.00
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.02

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	55.0
Speed Slope Coefficient	3.50091	Speed Power Coefficient	0.41674
PF Slope Coefficient	-1.40226	PF Power Coefficient	0.73637
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.1
%Improved % Followers	0.0	% Improved Avg Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	2006	-	-	55.0

Vehicle Results

Average Speed, mi/h	55.0	Percent Followers, %	11.0
Segment Travel Time, minutes	0.41	Follower Density, followers/mi/ln	0.1
Vehicle LOS	A		

Facility Results

T	Follower Density, followers/mi/ln	LOS
1	0.1	A

HCS7 Two-Lane Highway Report

Project Information

Analyst	ATW	Date	11/17/2020
Agency	Stantec	Analysis Year	2020
Jurisdiction	KY 3169 MP 0.00 to 0.38	Time Period Analyzed	Existing PM
Project Description	Traffic Impact Study	Unit	United States Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	2006
Lane Width, ft	9	Shoulder Width, ft	0
Speed Limit, mi/h	55	Access Point Density, pts/mi	5.3

Demand and Capacity

Directional Demand Flow Rate, veh/h	34	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.94	Total Trucks, %	12.00
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.02

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	55.0
Speed Slope Coefficient	3.50091	Speed Power Coefficient	0.41674
PF Slope Coefficient	-1.40226	PF Power Coefficient	0.73637
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.1
%Improved % Followers	0.0	% Improved Avg Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	2006	-	-	55.0

Vehicle Results

Average Speed, mi/h	55.0	Percent Followers, %	11.0
Segment Travel Time, minutes	0.41	Follower Density, followers/mi/ln	0.1
Vehicle LOS	A		

Facility Results

T	Follower Density, followers/mi/ln	LOS
1	0.1	A

HCS7 Two-Lane Highway Report

Project Information

Analyst	ATW	Date	11/17/2020
Agency	Stantec	Analysis Year	2020
Jurisdiction	US 641 MP 0 to 0.09 SB	Time Period Analyzed	Existing AM
Project Description	Traffic Impact Study	Unit	United States Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	475
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	55	Access Point Density, pts/mi	22.2

Demand and Capacity

Directional Demand Flow Rate, veh/h	115	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.94	Total Trucks, %	20.56
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.07

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	56.5
Speed Slope Coefficient	3.56914	Speed Power Coefficient	0.41674
PF Slope Coefficient	-1.42556	PF Power Coefficient	0.73086
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.5
%Improved % Followers	0.0	% Improved Avg Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	475	-	-	55.8

Vehicle Results

Average Speed, mi/h	55.8	Percent Followers, %	25.4
Segment Travel Time, minutes	0.10	Follower Density, followers/mi/ln	0.5
Vehicle LOS	A		

Facility Results

T	Follower Density, followers/mi/ln	LOS
1	0.5	A

HCS7 Two-Lane Highway Report

Project Information

Analyst	ATW	Date	11/17/2020
Agency	Stantec	Analysis Year	2020
Jurisdiction	US 641 0 to 1.587 SB	Time Period Analyzed	Existing AM
Project Description	Traffic Impact Study	Unit	United States Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	8379
Lane Width, ft	10	Shoulder Width, ft	1
Speed Limit, mi/h	55	Access Point Density, pts/mi	16.4

Demand and Capacity

Directional Demand Flow Rate, veh/h	115	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.94	Total Trucks, %	9.60
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.07

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	53.6
Speed Slope Coefficient	3.49123	Speed Power Coefficient	0.41674
PF Slope Coefficient	-1.34059	PF Power Coefficient	0.73200
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.5
%Improved % Followers	0.0	% Improved Avg Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	8379	-	-	53.0

Vehicle Results

Average Speed, mi/h	53.0	Percent Followers, %	24.0
Segment Travel Time, minutes	1.80	Follower Density, followers/mi/ln	0.5
Vehicle LOS	A		

Facility Results

T	Follower Density, followers/mi/ln	LOS
1	0.5	A

HCS7 Two-Lane Highway Report

Project Information

Analyst	ATW	Date	11/17/2020
Agency	Stantec	Analysis Year	2020
Jurisdiction	US 641 MP 0.09 to 2.668 SB	Time Period Analyzed	Existing AM
Project Description	Traffic Impact Study	Unit	United States Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	13612
Lane Width, ft	10	Shoulder Width, ft	1
Speed Limit, mi/h	55	Access Point Density, pts/mi	12.4

Demand and Capacity

Directional Demand Flow Rate, veh/h	115	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.94	Total Trucks, %	20.26
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.07

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	54.2
Speed Slope Coefficient	3.56150	Speed Power Coefficient	0.41674
PF Slope Coefficient	-1.37966	PF Power Coefficient	0.69229
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.6
%Improved % Followers	0.0	% Improved Avg Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	13612	-	-	53.6

Vehicle Results

Average Speed, mi/h	53.6	Percent Followers, %	26.5
Segment Travel Time, minutes	2.89	Follower Density, followers/mi/ln	0.6
Vehicle LOS	A		

Facility Results

T	Follower Density, followers/mi/ln	LOS
1	0.6	A

HCS7 Two-Lane Highway Report

Project Information

Analyst	ATW	Date	11/17/2020
Agency	Stantec	Analysis Year	2020
Jurisdiction	US 641 MP 2.668 to 5.715 SB	Time Period Analyzed	Existing AM
Project Description	Traffic Impact Study	Unit	United States Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	16088
Lane Width, ft	10	Shoulder Width, ft	1
Speed Limit, mi/h	55	Access Point Density, pts/mi	8.3

Demand and Capacity

Directional Demand Flow Rate, veh/h	115	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.94	Total Trucks, %	9.61
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.07

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	55.6
Speed Slope Coefficient	3.64888	Speed Power Coefficient	0.41674
PF Slope Coefficient	-1.40265	PF Power Coefficient	0.67149
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.6
%Improved % Followers	0.0	% Improved Avg Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	16088	-	-	55.0

Vehicle Results

Average Speed, mi/h	55.0	Percent Followers, %	28.0
Segment Travel Time, minutes	3.33	Follower Density, followers/mi/ln	0.6
Vehicle LOS	A		

Facility Results

T	Follower Density, followers/mi/ln	LOS
1	0.6	A

HCS7 Two-Lane Highway Report

Project Information

Analyst	ATW	Date	11/17/2020
Agency	Stantec	Analysis Year	2020
Jurisdiction	US 641 MP 0 to 0.09 NB	Time Period Analyzed	Existing PM
Project Description	Traffic Impact Study	Unit	United States Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	475
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	55	Access Point Density, pts/mi	22.2

Demand and Capacity

Directional Demand Flow Rate, veh/h	168	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.94	Total Trucks, %	20.26
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.10

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	56.5
Speed Slope Coefficient	3.56968	Speed Power Coefficient	0.41674
PF Slope Coefficient	-1.42552	PF Power Coefficient	0.73084
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.0
%Improved % Followers	0.0	% Improved Avg Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	475	-	-	55.3

Vehicle Results

Average Speed, mi/h	55.3	Percent Followers, %	32.1
Segment Travel Time, minutes	0.10	Follower Density, followers/mi/ln	1.0
Vehicle LOS	A		

Facility Results

T	Follower Density, followers/mi/ln	LOS
1	1.0	A

HCS7 Two-Lane Highway Report

Project Information

Analyst	ATW	Date	11/17/2020
Agency	Stantec	Analysis Year	2020
Jurisdiction	US 641 0 to 1.587 NB	Time Period Analyzed	Existing PM
Project Description	Traffic Impact Study	Unit	United States Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	8379
Lane Width, ft	10	Shoulder Width, ft	1
Speed Limit, mi/h	55	Access Point Density, pts/mi	16.4

Demand and Capacity

Directional Demand Flow Rate, veh/h	148	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.94	Total Trucks, %	9.60
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.09

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	53.6
Speed Slope Coefficient	3.49095	Speed Power Coefficient	0.41674
PF Slope Coefficient	-1.34062	PF Power Coefficient	0.73199
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.8
%Improved % Followers	0.0	% Improved Avg Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	8379	-	-	52.6

Vehicle Results

Average Speed, mi/h	52.6	Percent Followers, %	28.2
Segment Travel Time, minutes	1.81	Follower Density, followers/mi/ln	0.8
Vehicle LOS	A		

Facility Results

T	Follower Density, followers/mi/ln	LOS
1	0.8	A

HCS7 Two-Lane Highway Report

Project Information

Analyst	ATW	Date	11/17/2020
Agency	Stantec	Analysis Year	2020
Jurisdiction	US 641 MP 0.09 to 2.668 NB	Time Period Analyzed	Existing PM
Project Description	Traffic Impact Study	Unit	United States Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	13612
Lane Width, ft	10	Shoulder Width, ft	1
Speed Limit, mi/h	55	Access Point Density, pts/mi	12.4

Demand and Capacity

Directional Demand Flow Rate, veh/h	168	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.94	Total Trucks, %	20.26
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.10

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	54.2
Speed Slope Coefficient	3.56150	Speed Power Coefficient	0.41674
PF Slope Coefficient	-1.37966	PF Power Coefficient	0.69229
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.0
%Improved % Followers	0.0	% Improved Avg Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	13612	-	-	53.1

Vehicle Results

Average Speed, mi/h	53.1	Percent Followers, %	33.1
Segment Travel Time, minutes	2.92	Follower Density, followers/mi/ln	1.0
Vehicle LOS	A		

Facility Results

T	Follower Density, followers/mi/ln	LOS
1	1.0	A

HCS7 Two-Lane Highway Report

Project Information

Analyst	ATW	Date	11/17/2020
Agency	Stantec	Analysis Year	2020
Jurisdiction	US 641 MP 2.668 to 5.715	Time Period Analyzed	Existing PM
Project Description	Traffic Impact Study	Unit	United States Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	16088
Lane Width, ft	10	Shoulder Width, ft	1
Speed Limit, mi/h	55	Access Point Density, pts/mi	8.3

Demand and Capacity

Directional Demand Flow Rate, veh/h	159	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.94	Total Trucks, %	9.61
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.09

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	55.6
Speed Slope Coefficient	3.64888	Speed Power Coefficient	0.41674
PF Slope Coefficient	-1.40265	PF Power Coefficient	0.67149
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.0
%Improved % Followers	0.0	% Improved Avg Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	16088	-	-	54.5

Vehicle Results

Average Speed, mi/h	54.5	Percent Followers, %	33.4
Segment Travel Time, minutes	3.36	Follower Density, followers/mi/ln	1.0
Vehicle LOS	A		

Facility Results

T	Follower Density, followers/mi/ln	LOS
1	1.0	A

HCS7 Two-Lane Highway Report

Project Information

Analyst	ATW	Date	11/17/2020
Agency	Stantec	Analysis Year	2020
Jurisdiction	KY 1943 MP 2.558 to 6.994	Time Period Analyzed	Construction AM
Project Description	Traffic Impact Study	Unit	United States Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	23422
Lane Width, ft	9	Shoulder Width, ft	0
Speed Limit, mi/h	55	Access Point Density, pts/mi	7.7

Demand and Capacity

Directional Demand Flow Rate, veh/h	11	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.94	Total Trucks, %	12.00
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.01

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	54.4
Speed Slope Coefficient	3.58313	Speed Power Coefficient	0.41674
PF Slope Coefficient	-1.41140	PF Power Coefficient	0.66867
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.0
%Improved % Followers	0.0	% Improved Avg Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	23422	-	-	54.4

Vehicle Results

Average Speed, mi/h	54.4	Percent Followers, %	6.5
Segment Travel Time, minutes	4.89	Follower Density, followers/mi/ln	0.0
Vehicle LOS	A		

Facility Results

T	Follower Density, followers/mi/ln	LOS
1	0.0	A

HCS7 Two-Lane Highway Report

Project Information

Analyst	ATW	Date	11/17/2020
Agency	Stantec	Analysis Year	2020
Jurisdiction	KY 1943 MP 2.558 to 6.994	Time Period Analyzed	Construction PM
Project Description	Traffic Impact Study	Unit	United States Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	23422
Lane Width, ft	9	Shoulder Width, ft	0
Speed Limit, mi/h	55	Access Point Density, pts/mi	7.7

Demand and Capacity

Directional Demand Flow Rate, veh/h	10	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.94	Total Trucks, %	12.00
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.01

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	54.4
Speed Slope Coefficient	3.58313	Speed Power Coefficient	0.41674
PF Slope Coefficient	-1.41140	PF Power Coefficient	0.66867
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.0
%Improved % Followers	0.0	% Improved Avg Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	23422	-	-	54.4

Vehicle Results

Average Speed, mi/h	54.4	Percent Followers, %	6.1
Segment Travel Time, minutes	4.89	Follower Density, followers/mi/ln	0.0
Vehicle LOS	A		

Facility Results

T	Follower Density, followers/mi/ln	LOS
1	0.0	A

HCS7 Two-Lane Highway Report

Project Information

Analyst	ATW	Date	11/17/2020
Agency	Stantec	Analysis Year	2020
Jurisdiction	KY 3169 MP 0.00 to 0.38	Time Period Analyzed	Construction AM
Project Description	Traffic Impact Study	Unit	United States Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	2006
Lane Width, ft	9	Shoulder Width, ft	0
Speed Limit, mi/h	55	Access Point Density, pts/mi	5.3

Demand and Capacity

Directional Demand Flow Rate, veh/h	37	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.94	Total Trucks, %	12.00
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.02

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	55.0
Speed Slope Coefficient	3.50091	Speed Power Coefficient	0.41674
PF Slope Coefficient	-1.40226	PF Power Coefficient	0.73637
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.1
%Improved % Followers	0.0	% Improved Avg Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	2006	-	-	55.0

Vehicle Results

Average Speed, mi/h	55.0	Percent Followers, %	11.7
Segment Travel Time, minutes	0.41	Follower Density, followers/mi/ln	0.1
Vehicle LOS	A		

Facility Results

T	Follower Density, followers/mi/ln	LOS
1	0.1	A

HCS7 Two-Lane Highway Report

Project Information

Analyst	ATW	Date	11/17/2020
Agency	Stantec	Analysis Year	2020
Jurisdiction	KY 3169 MP 0.00 to 0.38	Time Period Analyzed	Construction PM
Project Description	Traffic Impact Study	Unit	United States Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	2006
Lane Width, ft	9	Shoulder Width, ft	0
Speed Limit, mi/h	55	Access Point Density, pts/mi	5.3

Demand and Capacity

Directional Demand Flow Rate, veh/h	37	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.94	Total Trucks, %	12.00
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.02

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	55.0
Speed Slope Coefficient	3.50091	Speed Power Coefficient	0.41674
PF Slope Coefficient	-1.40226	PF Power Coefficient	0.73637
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.1
%Improved % Followers	0.0	% Improved Avg Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	2006	-	-	55.0

Vehicle Results

Average Speed, mi/h	55.0	Percent Followers, %	11.7
Segment Travel Time, minutes	0.41	Follower Density, followers/mi/ln	0.1
Vehicle LOS	A		

Facility Results

T	Follower Density, followers/mi/ln	LOS
1	0.1	A

HCS7 Two-Lane Highway Report

Project Information

Analyst	ATW	Date	11/17/2020
Agency	Stantec	Analysis Year	2020
Jurisdiction	US 641 MP 0 to 0.09 SB	Time Period Analyzed	Construction AM
Project Description	Traffic Impact Study	Unit	United States Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	475
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	55	Access Point Density, pts/mi	22.2

Demand and Capacity

Directional Demand Flow Rate, veh/h	126	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.94	Total Trucks, %	20.56
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.07

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	56.5
Speed Slope Coefficient	3.56914	Speed Power Coefficient	0.41674
PF Slope Coefficient	-1.42556	PF Power Coefficient	0.73086
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.6
%Improved % Followers	0.0	% Improved Avg Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	475	-	-	55.7

Vehicle Results

Average Speed, mi/h	55.7	Percent Followers, %	26.9
Segment Travel Time, minutes	0.10	Follower Density, followers/mi/ln	0.6
Vehicle LOS	A		

Facility Results

T	Follower Density, followers/mi/ln	LOS
1	0.6	A

HCS7 Two-Lane Highway Report

Project Information

Analyst	ATW	Date	11/17/2020
Agency	Stantec	Analysis Year	2020
Jurisdiction	US 641 0 to1.587 SB	Time Period Analyzed	Construction AM
Project Description	Traffic Impact Study	Unit	United States Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	8379
Lane Width, ft	10	Shoulder Width, ft	1
Speed Limit, mi/h	55	Access Point Density, pts/mi	16.4

Demand and Capacity

Directional Demand Flow Rate, veh/h	126	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.94	Total Trucks, %	9.60
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.07

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	53.6
Speed Slope Coefficient	3.49095	Speed Power Coefficient	0.41674
PF Slope Coefficient	-1.34062	PF Power Coefficient	0.73199
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.6
%Improved % Followers	0.0	% Improved Avg Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	8379	-	-	52.8

Vehicle Results

Average Speed, mi/h	52.8	Percent Followers, %	25.4
Segment Travel Time, minutes	1.80	Follower Density, followers/mi/ln	0.6
Vehicle LOS	A		

Facility Results

T	Follower Density, followers/mi/ln	LOS
1	0.6	A

HCS7 Two-Lane Highway Report

Project Information

Analyst	ATW	Date	11/17/2020
Agency	Stantec	Analysis Year	2020
Jurisdiction	US 641 MP 0.09 to 2.668 SB	Time Period Analyzed	Construction AM
Project Description	Traffic Impact Study	Unit	United States Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	13612
Lane Width, ft	10	Shoulder Width, ft	1
Speed Limit, mi/h	55	Access Point Density, pts/mi	12.4

Demand and Capacity

Directional Demand Flow Rate, veh/h	126	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.94	Total Trucks, %	20.26
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.07

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	54.2
Speed Slope Coefficient	3.56150	Speed Power Coefficient	0.41674
PF Slope Coefficient	-1.37966	PF Power Coefficient	0.69229
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.7
%Improved % Followers	0.0	% Improved Avg Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	13612	-	-	53.5

Vehicle Results

Average Speed, mi/h	53.5	Percent Followers, %	28.0
Segment Travel Time, minutes	2.89	Follower Density, followers/mi/ln	0.7
Vehicle LOS	A		

Facility Results

T	Follower Density, followers/mi/ln	LOS
1	0.7	A

HCS7 Two-Lane Highway Report

Project Information

Analyst	ATW	Date	11/17/2020
Agency	Stantec	Analysis Year	2020
Jurisdiction	US 641 MP 2.668 to 5.715 SB	Time Period Analyzed	Construction AM
Project Description	Traffic Impact Study	Unit	United States Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	16088
Lane Width, ft	10	Shoulder Width, ft	1
Speed Limit, mi/h	55	Access Point Density, pts/mi	8.3

Demand and Capacity

Directional Demand Flow Rate, veh/h	126	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.94	Total Trucks, %	9.61
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.07

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	55.6
Speed Slope Coefficient	3.64888	Speed Power Coefficient	0.41674
PF Slope Coefficient	-1.40265	PF Power Coefficient	0.67149
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.7
%Improved % Followers	0.0	% Improved Avg Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	16088	-	-	54.8

Vehicle Results

Average Speed, mi/h	54.8	Percent Followers, %	29.4
Segment Travel Time, minutes	3.34	Follower Density, followers/mi/ln	0.7
Vehicle LOS	A		

Facility Results

T	Follower Density, followers/mi/ln	LOS
1	0.7	A

HCS7 Two-Lane Highway Report

Project Information

Analyst	ATW	Date	11/17/2020
Agency	Stantec	Analysis Year	2020
Jurisdiction	US 641 MP 0 to 0.09 NB	Time Period Analyzed	Construction PM
Project Description	Traffic Impact Study	Unit	United States Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	475
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	55	Access Point Density, pts/mi	22.2

Demand and Capacity

Directional Demand Flow Rate, veh/h	185	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.94	Total Trucks, %	20.26
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.11

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	56.5
Speed Slope Coefficient	3.56968	Speed Power Coefficient	0.41674
PF Slope Coefficient	-1.42552	PF Power Coefficient	0.73084
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.1
%Improved % Followers	0.0	% Improved Avg Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	475	-	-	55.2

Vehicle Results

Average Speed, mi/h	55.2	Percent Followers, %	34.0
Segment Travel Time, minutes	0.10	Follower Density, followers/mi/ln	1.1
Vehicle LOS	A		

Facility Results

T	Follower Density, followers/mi/ln	LOS
1	1.1	A

HCS7 Two-Lane Highway Report

Project Information

Analyst	ATW	Date	11/17/2020
Agency	Stantec	Analysis Year	2020
Jurisdiction	US 641 0 to 1.587 NB	Time Period Analyzed	Construction PM
Project Description	Traffic Impact Study	Unit	United States Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	8379
Lane Width, ft	10	Shoulder Width, ft	1
Speed Limit, mi/h	55	Access Point Density, pts/mi	16.4

Demand and Capacity

Directional Demand Flow Rate, veh/h	163	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.94	Total Trucks, %	9.60
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.10

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	53.6
Speed Slope Coefficient	3.49095	Speed Power Coefficient	0.41674
PF Slope Coefficient	-1.34062	PF Power Coefficient	0.73199
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.9
%Improved % Followers	0.0	% Improved Avg Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	8379	-	-	52.5

Vehicle Results

Average Speed, mi/h	52.5	Percent Followers, %	29.9
Segment Travel Time, minutes	1.81	Follower Density, followers/mi/ln	0.9
Vehicle LOS	A		

Facility Results

T	Follower Density, followers/mi/ln	LOS
1	0.9	A

HCS7 Two-Lane Highway Report

Project Information

Analyst	ATW	Date	11/17/2020
Agency	Stantec	Analysis Year	2020
Jurisdiction	US 641 MP 0.09 to 2.668 NB	Time Period Analyzed	Construction PM
Project Description	Traffic Impact Study	Unit	United States Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	13612
Lane Width, ft	10	Shoulder Width, ft	1
Speed Limit, mi/h	55	Access Point Density, pts/mi	12.4

Demand and Capacity

Directional Demand Flow Rate, veh/h	185	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.94	Total Trucks, %	20.26
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.11

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	54.2
Speed Slope Coefficient	3.56150	Speed Power Coefficient	0.41674
PF Slope Coefficient	-1.37966	PF Power Coefficient	0.69229
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.2
%Improved % Followers	0.0	% Improved Avg Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	13612	-	-	52.9

Vehicle Results

Average Speed, mi/h	52.9	Percent Followers, %	34.9
Segment Travel Time, minutes	2.92	Follower Density, followers/mi/ln	1.2
Vehicle LOS	A		

Facility Results

T	Follower Density, followers/mi/ln	LOS
1	1.2	A

HCS7 Two-Lane Highway Report

Project Information

Analyst	ATW	Date	11/17/2020
Agency	Stantec	Analysis Year	2020
Jurisdiction	US 641 MP 2.668 to 5.715	Time Period Analyzed	Construction PM
Project Description	Traffic Impact Study	Unit	United States Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	16088
Lane Width, ft	10	Shoulder Width, ft	1
Speed Limit, mi/h	55	Access Point Density, pts/mi	8.3

Demand and Capacity

Directional Demand Flow Rate, veh/h	174	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.94	Total Trucks, %	9.61
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.10

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	55.6
Speed Slope Coefficient	3.64888	Speed Power Coefficient	0.41674
PF Slope Coefficient	-1.40265	PF Power Coefficient	0.67149
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.1
%Improved % Followers	0.0	% Improved Avg Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	16088	-	-	54.4

Vehicle Results

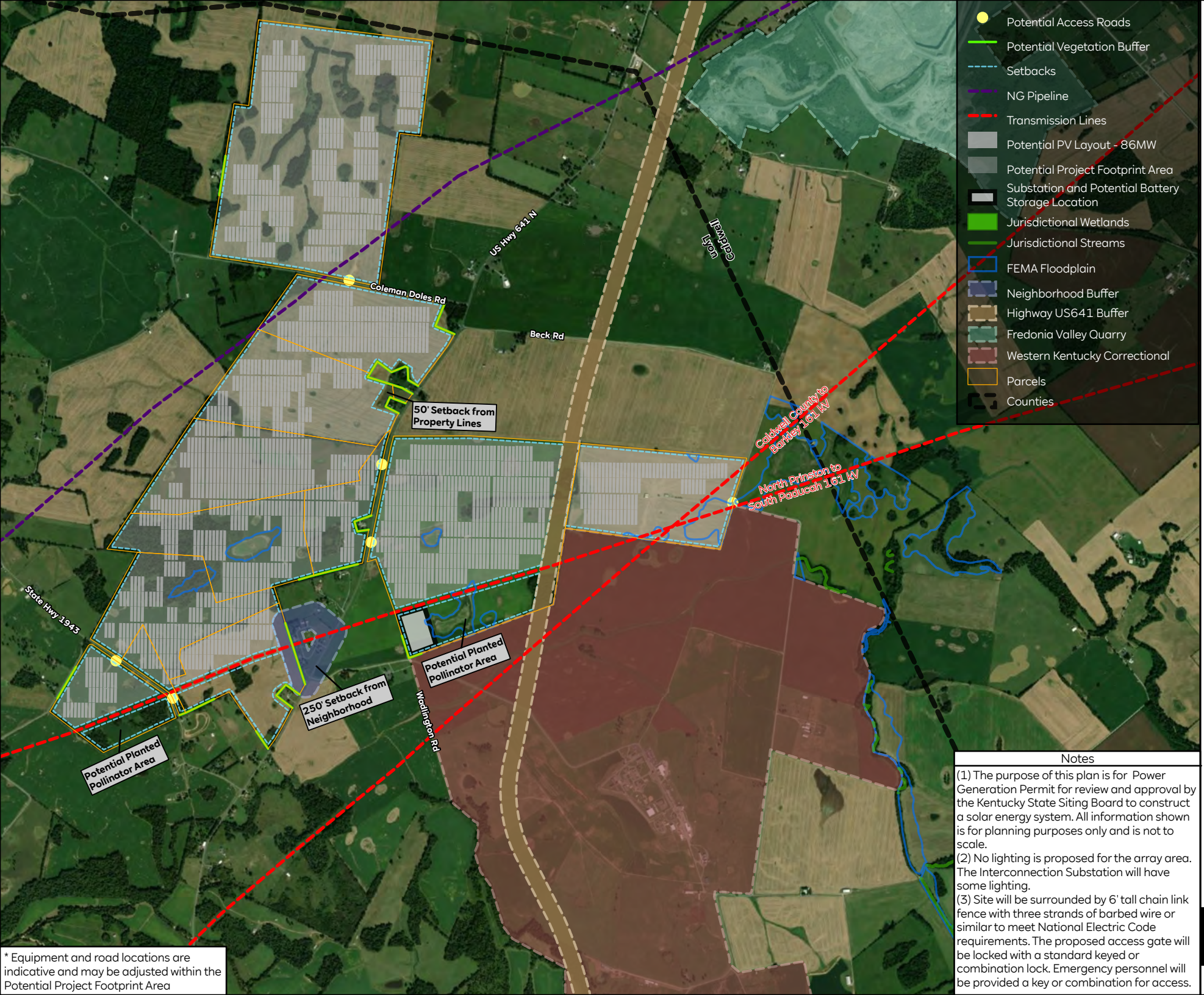
Average Speed, mi/h	54.4	Percent Followers, %	35.2
Segment Travel Time, minutes	3.36	Follower Density, followers/mi/ln	1.1
Vehicle LOS	A		

Facility Results

T	Follower Density, followers/mi/ln	LOS
1	1.1	A

Exhibit D: Environmental Site Assessment – Phase 1 – Attached as Volume 3

Exhibit E: Preliminary Site Layout



RWE

RWE Renewables America, LLC
701 Brazos Street, Suite 1400
Austin, TX 78701

Projection
NAD 1983 2011 StatePlane
Kentucky South FIPS 1602 Ft US

Date
08.24.2020

Project
Ashwood
86 MW

a

01

Notes

(1) The purpose of this plan is for Power Generation Permit for review and approval by the Kentucky State Siting Board to construct a solar energy system. All information shown is for planning purposes only and is not to scale.
(2) No lighting is proposed for the array area. The Interconnection Substation will have some lighting.
(3) Site will be surrounded by 6' tall chain link fence with three strands of barbed wire or similar to meet National Electric Code requirements. The proposed access gate will be locked with a standard keyed or combination lock. Emergency personnel will be provided a key or combination for access.

* Equipment and road locations are indicative and may be adjusted within the Potential Project Footprint Area