

## **Exhibit E**

COMMONWEALTH OF KENTUCKY  
BEFORE THE KENTUCKY STATE BOARD ON ELECTRIC GENERATION AND  
TRANSMISSION SITING

In the Matter of:

ELECTRONIC APPLICATION OF )  
HUMMINGBIRD ENERGY LLC FOR A )  
CERTIFICATE OF CONSTRUCTION )  
FOR AN APPROXIMATELY 200 )  
MEGAWATT MERCHANT ELECTRIC )  
SOLAR GENERATING FACILITY AND )  
NONREGULATED ELECTRIC )  
TRANSMISSION LINE IN FLEMING )  
COUNTY, KENTUCKY PURSUANT TO )  
KRS 278.700 AND 807 KAR 5:110 )

Case No. 2022-00272

**Proof of Service in Compliance with  
KRS 278.706(2)(h) and KRS 278.714(2)(f)**

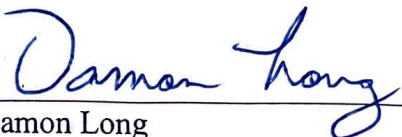
Comes the Affiant, Damon Long, and hereby states as follows:

1. I am over the age of 18 and a resident of Kentucky.
2. On this day, September 30, 2022, I personally delivered physical and electronic versions of the Hummingbird Energy LLC Application for a Certificate of Construction for a merchant solar electric generating facility and nonregulated transmission line to the following individual/location:

County Judge-Executive Larry H. Foxworthy  
100 Court Square  
Flemingsburg, KY 41041

**I affirm under the penalties of perjury that the foregoing representations are true.**

Date: September 30, 2022

  
Damon Long

STATE OF Kentucky )  
 ) SS:  
COUNTY OF Jefferson )

Subscribed and sworn to before me, a Notary Public in and for said County and State, by  
Damon Long on this 30th day of September, 2022.

My Commission Expires:

\_\_\_\_\_



Notary Public – Written

My County of Residence:

**DUWANNA K. INGLE**  
Notary Public, ID No. KYNP18018  
State at Large, Kentucky  
My Commission Expires Nov. 5, 2024

\_\_\_\_\_

Notary Public – Printed

[NOTARY PUBLIC AFFIX NOTARY SEAL]

## **Exhibit F**



# HUMMINGBIRD SOLAR

## ECONOMIC & FISCAL CONTRIBUTION TO FLEMING COUNTY & THE STATE OF KENTUCKY (PRIVATE FINANCING SCENARIO)



Prepared for

**RECURRENT  
ENERGY**

A subsidiary of Canadian Solar

JANUARY 2022

**MANGUM**   
economics

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## About Mangum Economics, LLC

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Mangum Economics, LLC is a Glen Allen, Virginia based firm that specializes in producing objective economic, quantitative, and qualitative analysis in support of strategic decision making. Much of our recent work relates to IT & Telecom Infrastructure (data centers, terrestrial and subsea fiber), Renewable Energy, and Economic Development. Examples of typical studies include:

### POLICY ANALYSIS

Identify the intended and, more importantly, unintended consequences of proposed legislation and other policy initiatives.

### ECONOMIC IMPACT ASSESSMENTS AND RETURN ON INVESTMENT ANALYSES

Measure the economic contribution that businesses and other enterprises make to their localities.

### WORKFORCE ANALYSIS

Project the demand for, and supply of, qualified workers.

### CLUSTER ANALYSIS

Use occupation and industry clusters to illuminate regional workforce and industry strengths and identify connections between the two.

### The Project Team

Martina Arel, M.B.A.

*Research Director –*

*Economic Development and Renewable Energy*

A. Fletcher Mangum, Ph.D.

*Founder and CEO*



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## Executive Summary

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This report assesses the economic and fiscal contribution that the proposed Hummingbird Solar project would make to Fleming County and to the Commonwealth of Kentucky. The primary findings from that assessment are as follows:

- **Hummingbird Solar is a proposed 200-megawatt (MW) alternating current (AC) utility-scale solar photovoltaic power generating facility that would be developed by Recurrent Energy. The project would be located on approximately 1,638 acres of leased agricultural land at Millersburg Pike and Ruddles Mill Road in Fleming County, Kentucky.**
- **The proposed Hummingbird Solar project would make a significant economic contribution to Fleming County and to the Commonwealth of Kentucky during construction of the project:**
  - The proposed Hummingbird Solar project would provide an estimated one-time pulse of economic activity to Fleming County during its construction phase supporting approximately:
    - 268 direct, indirect, and induced jobs.
    - \$8.3 million in associated labor income.<sup>1</sup>
    - \$30.2 million in economic output.
    - \$1.7 million in state and local tax revenue.
  - The proposed Hummingbird Solar project would provide an estimated one-time pulse of economic activity to the Commonwealth of Kentucky (including Fleming County) during its construction phase supporting approximately:
    - 940 direct, indirect, and induced jobs.
    - \$45.6 million in associated labor income.
    - \$136.8 million in economic output.
    - \$6.8 million in state and local tax revenue.
- **The proposed Hummingbird Solar project would make a significant economic contribution to Fleming County and to the Commonwealth of Kentucky during its ongoing operational phase:<sup>2</sup>**
  - The proposed Hummingbird Solar project would provide an estimated annual economic impact to Fleming County during its ongoing operational phase supporting approximately:
    - 4 direct and 4 indirect and induced jobs.
    - \$234,800 in associated labor income.
    - \$915,000 in economic output.

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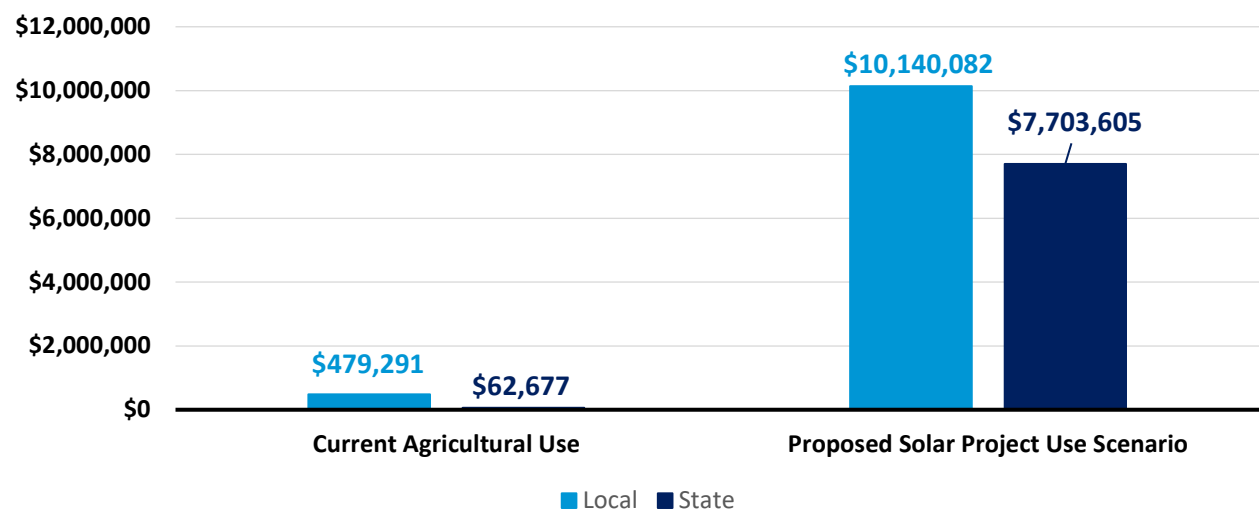
<sup>1</sup> Labor income includes wages and benefits.

<sup>2</sup> Please refer to the economic impact section of the report (p. 18f) for additional detail.



- The proposed Hummingbird Solar project would provide an estimated annual economic impact to the Commonwealth of Kentucky (including Fleming County) during its ongoing operational phase supporting approximately:
  - 4 direct and 5 indirect and induced jobs.
  - \$276,600 in associated labor income.
  - \$1.1 million in economic output.
- **The proposed Hummingbird Solar project would have a significantly greater fiscal impact on Fleming County and the Commonwealth of Kentucky than the property generates in its current agricultural use:<sup>3</sup>**
  - The proposed Hummingbird Solar project would generate approximately \$10.1 million in cumulative local tax revenue<sup>4</sup> as compared to approximately \$479,291 in cumulative local tax revenue over 40 years in the property’s current agricultural use (in 2022 dollars).
  - The proposed Hummingbird Solar project would also generate approximately \$7.7 million in cumulative state tax revenue as compared to approximately \$62,677 in cumulative state tax revenue over 40 years in the property’s current agricultural use (in 2022 dollars).

**Estimated Cumulative Fleming County and Commonwealth of Kentucky Tax Revenue over 40 Years - Private Financing (2022 dollars)**



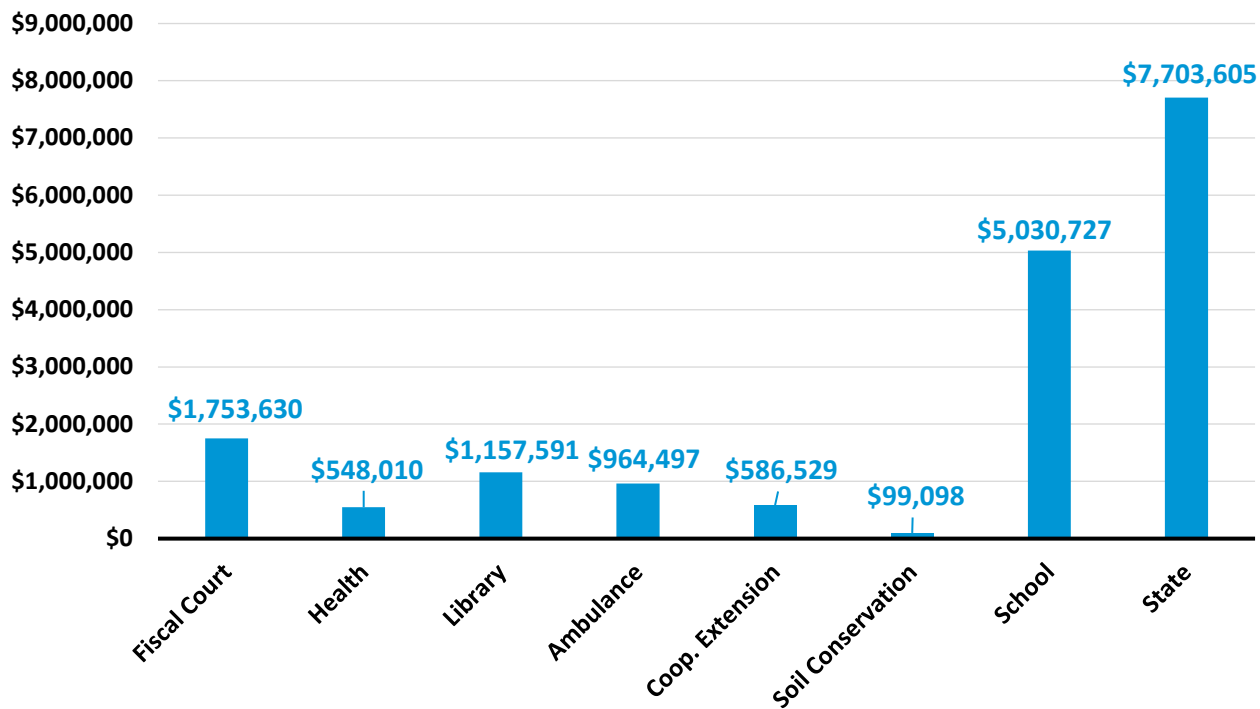
<sup>3</sup> Please note that the future tax revenue stream for the investments has been calculated based on the cost approach to valuation due to data limitations on the future income streams of the project. Actual revenues generated by Hummingbird Solar may therefore vary from the analysis presented because they do not include the impact on the revenues that are associated with the franchise value of the project. Actual tax revenues are also subject to change based on final design, vendor contracts, and classification of investments.

<sup>4</sup> Refers to the local real and personal property tax revenue for the county fiscal court, health, library, ambulance, extension services, soil conservation, and school district taxing jurisdictions.



- Taxation of the proposed Hummingbird Solar project over the facility’s anticipated 40-year operational life under a private financing scenario would generate approximately:
  - \$1.8 million for the county fiscal court,
  - \$0.5 million for the health jurisdiction,
  - \$1.2 million for the library jurisdiction,
  - \$1.0 million for the ambulance jurisdiction,
  - \$0.6 million for the extension services jurisdiction,
  - \$0.1 million for soil conservation,
  - \$5.0 million for the school district, and
  - \$7.7 million for the Commonwealth of Kentucky.

**Estimated Cumulative Fleming County and Commonwealth of Kentucky Tax Revenue over 40 Years - Private Financing (2022 dollars)**



- **The proposed Hummingbird Solar project would provide a boost to Fleming County's construction sector:**
  - At 149 jobs, construction is Fleming County's 6<sup>th</sup> largest industry super sector. It also pays average weekly wages (\$1,199/week) that are the highest in the county and 60 percent above the county-wide average (\$750/week).<sup>5</sup>
  - Additionally, the construction sector posted the third largest job gain of any sectors in the county between the 1<sup>st</sup> Quarter of 2020 and 1<sup>st</sup> Quarter of 2021 (a gain of 21 jobs).
  - The proposed Hummingbird Solar project could directly support approximately 216 jobs and \$6.5 million in labor income in Fleming County's construction sector.<sup>6</sup>

*The estimates provided in this report are based on the best information available and all reasonable care has been taken in assessing that information. However, because these estimates attempt to foresee circumstances that have not yet occurred, it is not possible to provide any assurance that they will be representative of actual events. These estimates are intended to provide a general indication of likely future outcomes and should not be construed to represent a precise measure of those outcomes.*

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<sup>5</sup> Data Source: Bureau of Labor Statistics, QCEW, Quarter 1, 2021.

<sup>6</sup> Please note that although employment within a local construction sector can sometimes quickly expand to take advantage of new opportunities, because of the relatively small size of Fleming County's existing construction sector it is not possible to know with certainty what proportion of these jobs would go to county construction contractors or be filled by county residents. Labor income includes wages and benefits.





## Introduction

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This report assesses the economic and fiscal contribution that the proposed Hummingbird Solar project would make to Fleming County and to the Commonwealth of Kentucky. This report was commissioned by Recurrent Energy and produced by Mangum Economics.

## The Project

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Hummingbird Solar is a proposed 200-megawatt (MW) alternating current (AC) utility-scale solar photovoltaic power generating facility that would be developed by Recurrent Energy. The project would be located on approximately 1,638 acres of leased agricultural land at Millersburg Pike and Ruddles Mill Road in Fleming County, Kentucky.

## Electricity Production in Kentucky

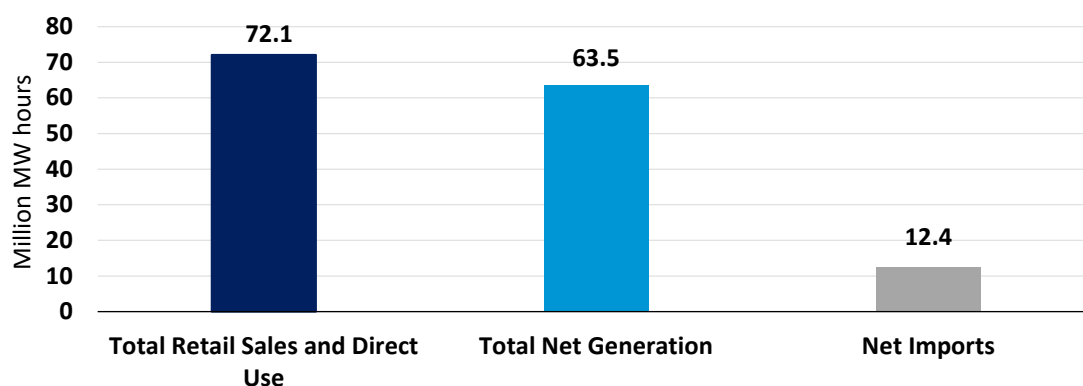
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This section provides a backdrop for the proposed Hummingbird Solar project by profiling Kentucky's electricity production sector and the role that solar energy could play in that sector.

### Overall Market

As shown in Figure 1, electricity sales and direct use in Kentucky totaled 72.1 million megawatt hours in 2020. However, net generation only totaled 63.5 million megawatt hours and Kentucky had to import the remaining electricity it consumed from producers in other states. As with all imports, this means that the jobs, wages, and economic output created by that production went to localities in those states, not to localities in Kentucky.

Figure 1: Demand and Supply of Electricity in Kentucky in 2020 (in millions of megawatt-hours)<sup>7</sup>



<sup>7</sup> Data Source: U.S. Energy Information Administration. In this chart, “Net Imports” does not directly equal the residual of “Total Net Generation” minus “Total Retail Sales and Direct Use” because of losses during transmission.





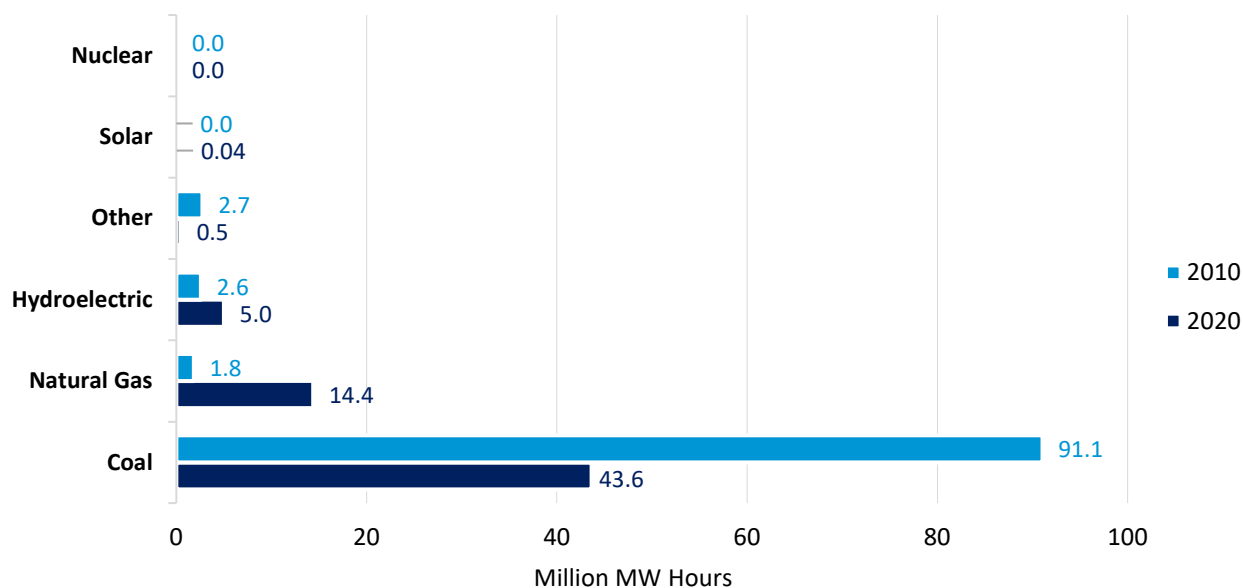
## Sources of Production

Between 2010 and 2020, the total amount of electricity produced in Kentucky decreased from 98.2 to 63.5 million megawatt hours, while retail and direct consumption of electricity only decreased from 94.0 to 72.1 million megawatt hours. Consequently, imports of electricity increased by 10.0 million megawatt hours during this time.<sup>8</sup>

Figure 2 provides a comparison of the energy sources that were used to produce electricity in Kentucky in 2010 and 2020. As these data show, the most significant change between 2010 and 2020 was a decrease in the use of coal and an increase in the use of natural gas. Where coal was the state’s largest source of electricity in 2010, accounting for 91.1 million megawatt hours (or 93 percent) of production, by 2020 production had fallen by 47.5 million megawatt hours, keeping coal as the largest source of electricity, but reducing the proportion to 69 percent of total production.

In contrast, the share of electricity produced using cleaner-burning low-emissions energy sources increased over the period. Where natural gas accounted for only 1.8 million megawatt hours (or 2 percent) of Kentucky’s electricity production in 2010, by 2020 that proportion had increased to 14.4 million megawatt hours (or 23 percent of production), making natural gas the state’s second largest source of electricity. Solar entered the state’s electricity production market in 2016 and its share increased to 0.04 million megawatt hours by 2020.

Figure 2: Electricity Generation in Kentucky by Energy Source in 2010 and 2020 (in millions of megawatt-hours)<sup>9</sup>



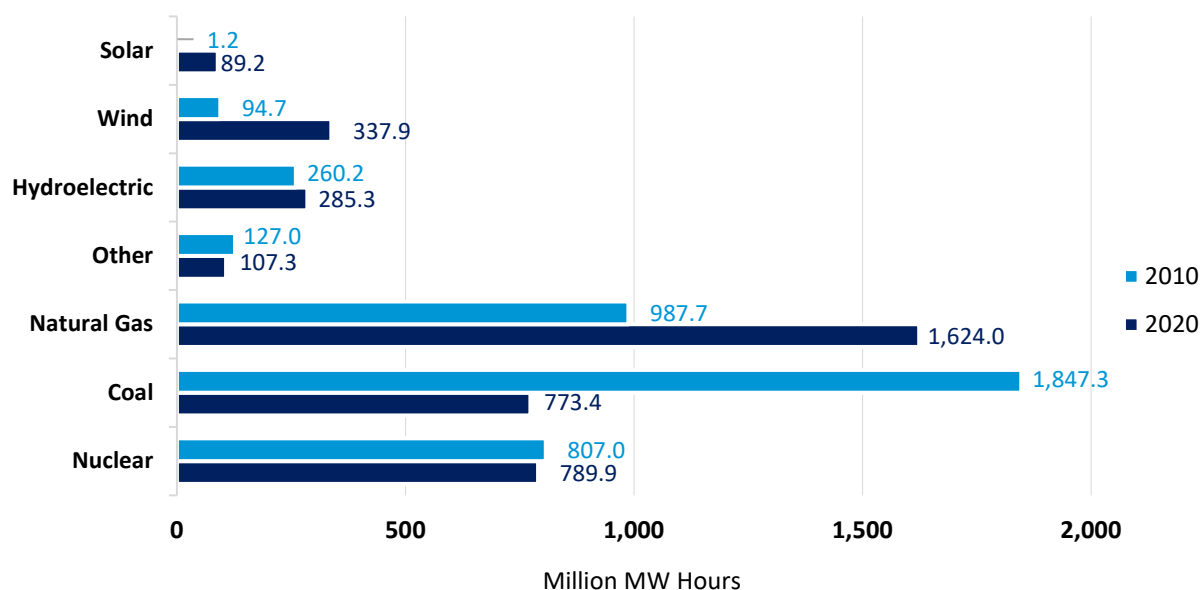
<sup>8</sup> Imports also takes into account losses during transmission. As a result, totals do not equal sum of components.

<sup>9</sup> Data Source: U.S. Energy Information Administration. “Other” includes other biomass, other, petroleum, and wood.



Figure 3 provides similar data for the U.S. as a whole. A quick comparison of Figures 2 and 3 shows that although the degree of reliance on specific energy sources for electricity production is quite different between the U.S. and Kentucky, the trend toward lower-emissions energy sources is the same. Nationally, between 2010 and 2020 the amount of electricity produced using coal declined by 1,073.9 million megawatt hours from 45 to 19 percent of production, while in contrast the amount of electricity produced using natural gas increased by 636.4 million megawatt hours from 24 to 41 percent of production. Nationwide, as in Kentucky, the reliance on renewable energy sources increased during this time but at a much faster pace than in Kentucky. Between 2010 and 2020, the amount of electricity produced using solar increased by 88.0 million megawatt hours to 2 percent of total electricity production compared to 0.07 percent of total electricity production in Kentucky.

**Figure 3: Electricity Generation in the United States by Energy Source in 2010 and 2020 (in millions of megawatt-hours) <sup>10</sup>**



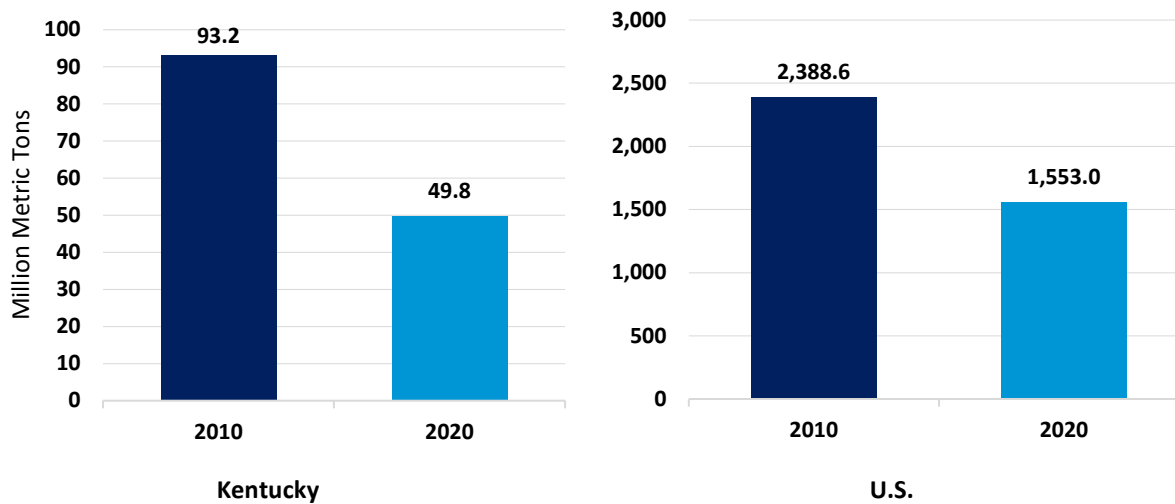
## Impact on the Environment

In discussing the impact of these trends on the environment, it is important to realize that electricity production is one of the U.S.’s largest sources of greenhouse gas emissions. Figure 4 depicts carbon dioxide emissions from electricity production in 2010 and 2020 for both Kentucky and the U.S. As these data indicate, between 2010 and 2020, as the share of electricity produced in Kentucky by coal fell from 93 to 69 percent, carbon dioxide emissions from electricity production fell from 93.2 to 49.8 million metric tons. Where at the national level, as the share of electricity produced by coal fell from 45 to 19 percent, carbon dioxide emissions from electricity production fell from 2,388.6 to 1,553.0 million metric tons.

<sup>10</sup> Data Source: U.S. Energy Information Administration. “Other” includes battery, geothermal, other, other biomass, other gas, petroleum, pumped storage, and wood.



Figure 4: Carbon Dioxide Emissions from Electricity Production (millions of metric tons)<sup>11</sup>



<sup>11</sup> Data Source: U.S. Energy Information Administration.



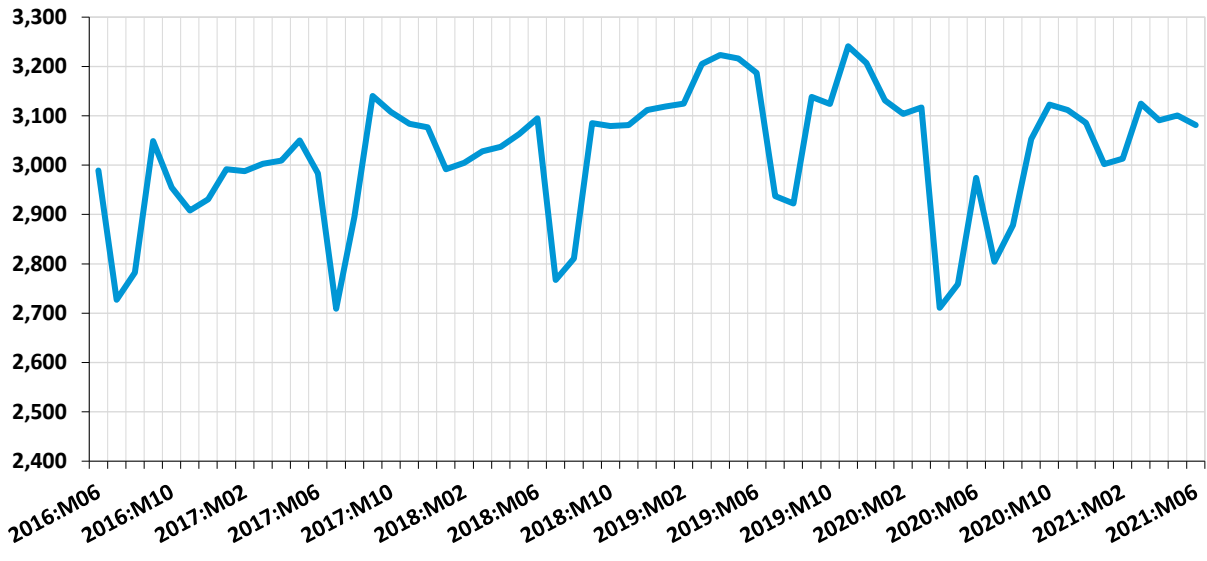
# Local Economic Profile

The local economic profile offers context for the economic and fiscal impact assessments to follow by profiling the local economy of Fleming County.

## Total Employment

Figure 5 depicts the trend in total employment in Fleming County from June 2016 to June 2021. As these data show, aside from seasonal fluctuations employment in Fleming County generally trended upward throughout the period, until April 2020, when total employment declined significantly in response to a decrease in economic activity associated with the COVID-19 pandemic. Total employment partially recovered in the year that followed but has not reached pre-pandemic levels. As of June 2021, total employment stood at 3,081 jobs, which represents an overall increase of 92 jobs or 3.1 percent over the entire five-year period. To put this number in perspective, over this same five-year period, total statewide employment in Kentucky declined by 1.2 percent.<sup>12</sup>

Figure 5: Total Employment in Fleming County – June 2016 to June 2021<sup>13</sup>



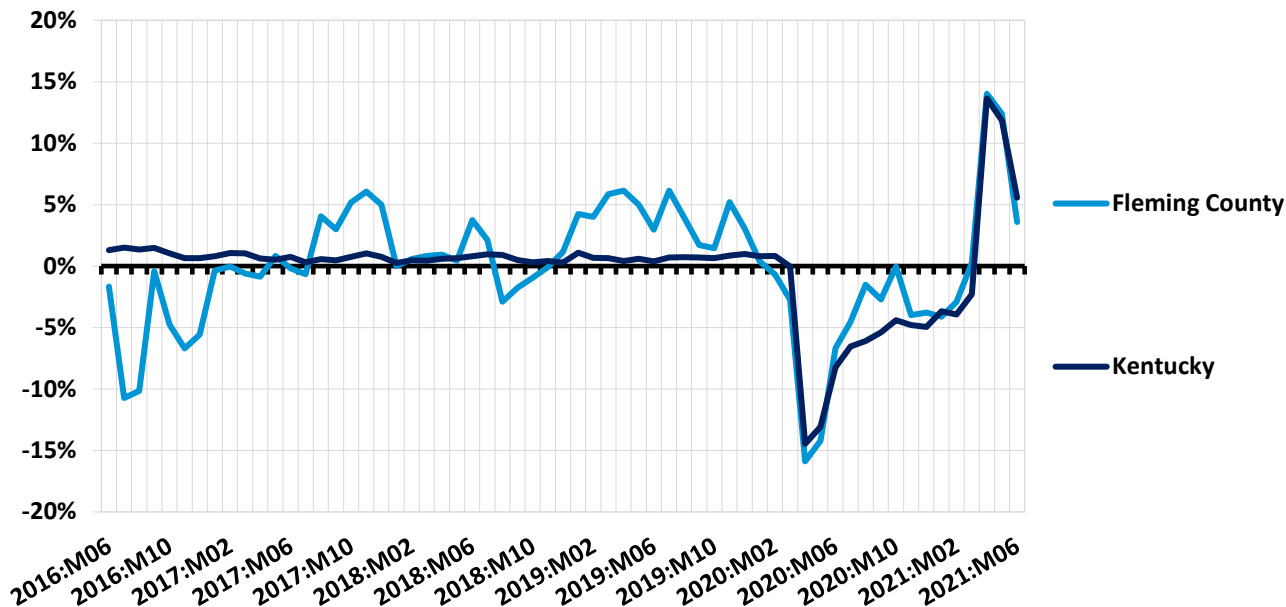
To control for seasonality and provide context for the growth numbers given above, Figure 6 compares the year-over-year change in total employment in Fleming County to that of Kentucky as a whole over the same five-year period. Any point above the zero line in this graph indicates an increase in employment, while any point below the zero line indicates a decline in employment. As these data show, Fleming County fluctuated between periods of year-over-year employment increases and declines, outperforming and underperforming the statewide trend in Kentucky. Fleming County was also more adversely impacted than the state as a whole in April 2020 as a result of labor dislocations caused

<sup>12</sup> Data Source: Bureau of Labor Statistics.  
<sup>13</sup> Data Source: Bureau of Labor Statistics.



by the coronavirus pandemic, but the county outperformed the statewide norm during the recovery. As of June 2021, the year-over-year change in total employment in Fleming County was 3.6 percent while the year-over-year change in employment for Kentucky as a whole was 5.6 percent.

Figure 6: Year-Over-Year Change in Total Employment – June 2016 to June 2021<sup>14</sup>



## Employment and Wages by Major Industry Sector

To provide a better understanding of the underlying factors motivating the total employment trends depicted in Figures 5 and 6, Figures 7 through 9 provide data on private employment and wages in Fleming County by industry super sector.<sup>15</sup>

Figure 7 provides an indication of the distribution of private sector employment across industry super sectors in Fleming County for the first quarter of 2021. As these data indicate, the county’s largest industry super sector that quarter was Trade, Transportation and Utilities (679 jobs), followed by Manufacturing (566 jobs), and Education and Health Services (484 jobs).

Figure 8 provides a similar ranking for average private sector weekly wages by industry super sector in Fleming County for the first quarter of 2021. As these data show, the highest paying industry super sectors that quarter were Construction (\$1,199 per week), Financial Activities (\$1,158 per week), and Education and Health Services (\$883 per week). For reference, the average private sector weekly wage across all industry sectors in Fleming County that quarter was \$750 per week.

<sup>14</sup> Data Source: Bureau of Labor Statistics.

<sup>15</sup> A “super sector” is the highest level of aggregation in the coding system that the Bureau of Labor Statistics uses to classify industries.



Figure 7: Private Employment by Industry Super Sector in Fleming County – Qu. 1 2021<sup>16</sup>

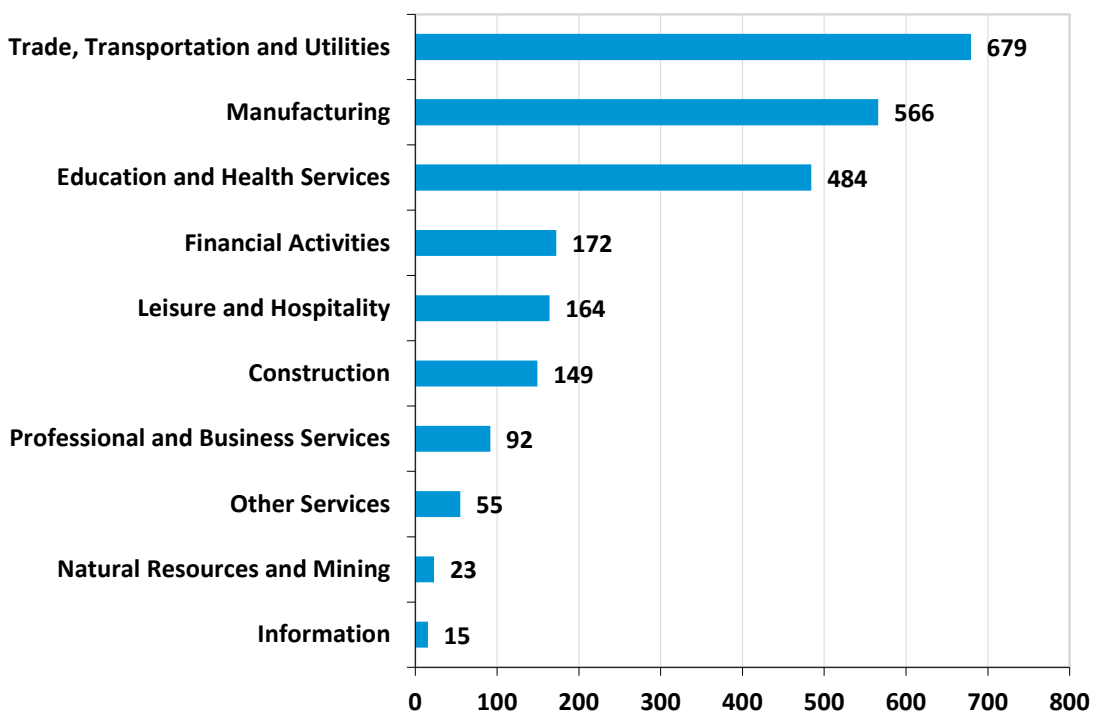
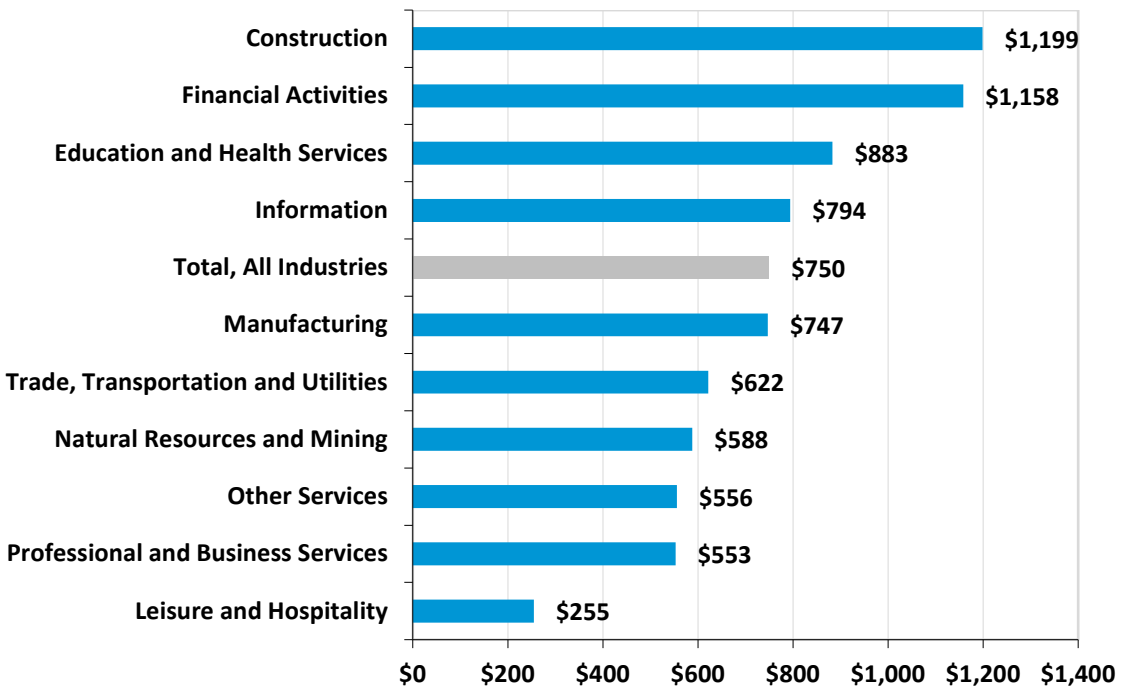


Figure 8: Average Private Weekly Wages by Industry Super Sector in Fleming County – Qu. 1 2021<sup>17</sup>

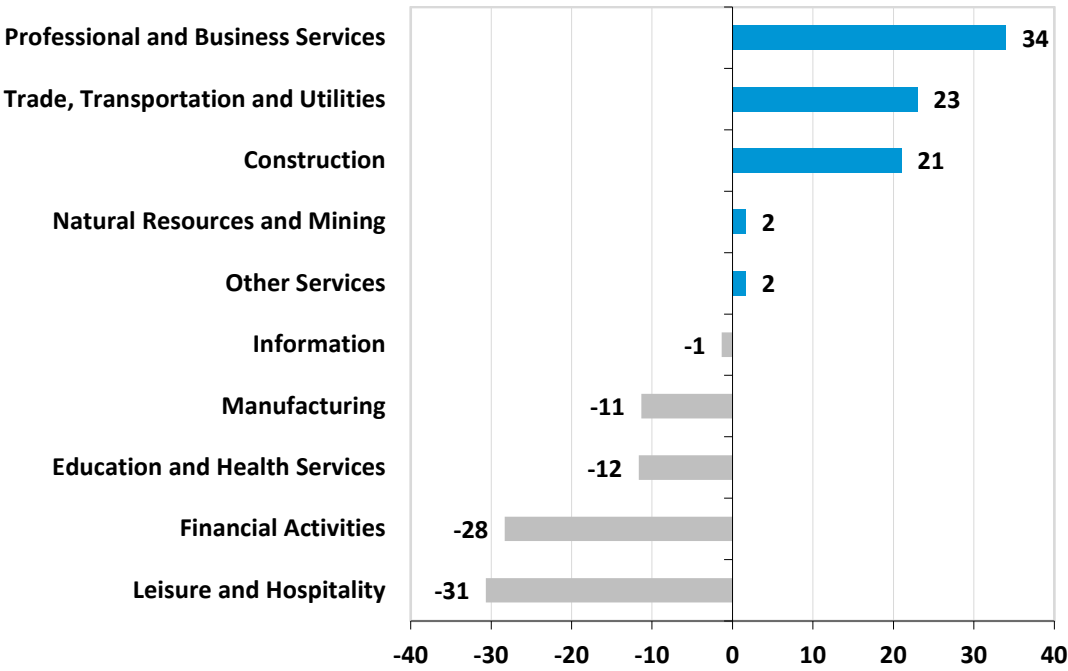


<sup>16</sup> Data Source: Bureau of Labor Statistics.  
<sup>17</sup> Data Source: Bureau of Labor Statistics.



Lastly, Figure 9 details the year-over-year change in private sector employment from the first quarter of 2020 to the first quarter of 2021 in Fleming County by industry super sector. The largest employment gains occurred in the Professional and Business Services (up 34 jobs), Trade, Transportation and Utilities (up 23 jobs), and Construction (up 21 jobs) and) sectors. The largest employment losses occurred in the Leisure and Hospitality (down 31 jobs), Financial Activities (down 28 jobs), and Education and Health Services (down 12 jobs) sectors.

**Figure 9: Change in Private Employment by Major Industry in Fleming County from Qu. 1 2020 to Qu. 1 2021<sup>18</sup>**



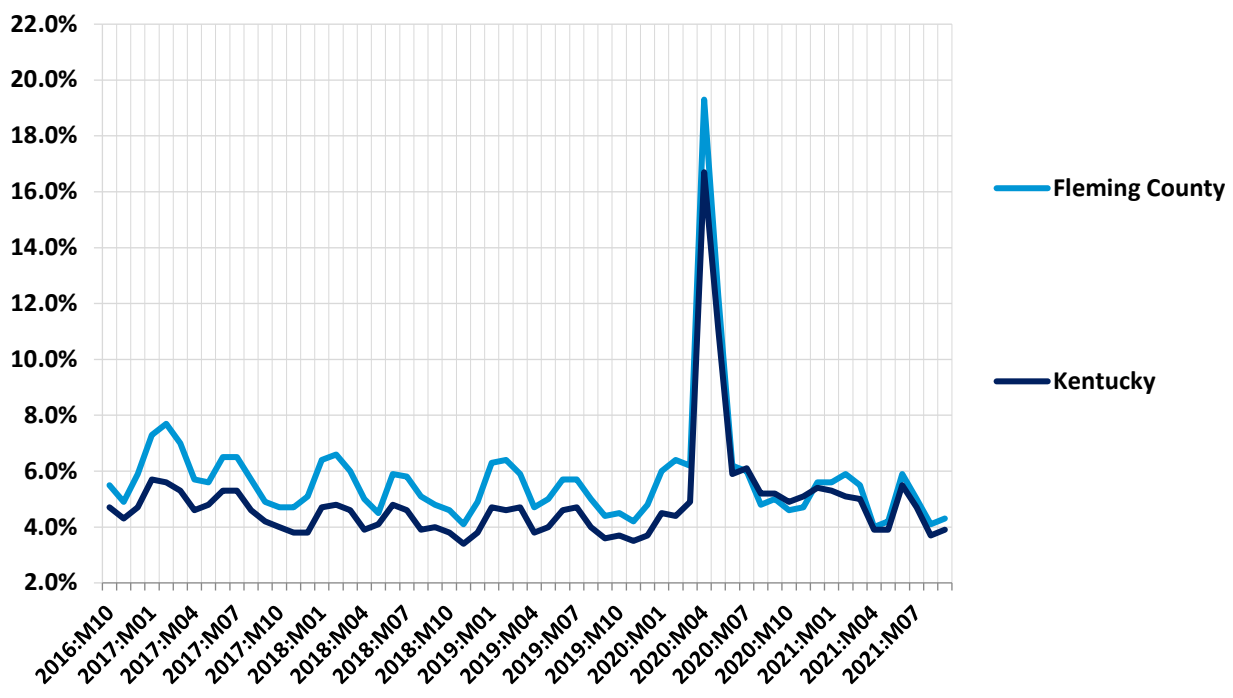
### Unemployment

Figure 10 illustrates the trend in Fleming County’s unemployment rate over the five-year period from October 2016 through October 2021 and benchmarks those data against the statewide trend for Kentucky. As these data show, unemployment rates in Fleming County generally tracked closely with statewide trends but at rates on average 1.1 percentage points above the statewide rate. During the recovery from the pandemic, unemployment rates in Fleming County were much closer to the statewide average, and as of October 2021, unemployment stood at 4.1 percent in Fleming County as compared to 3.7 percent in Kentucky as a whole.

<sup>18</sup> Data Source: Bureau of Labor Statistics.



Figure 10: Unemployment Rate – October 2016 to October 2021<sup>19</sup>



<sup>19</sup> Data Source: Bureau of Labor Statistics.



## Economic and Fiscal Impact

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The analysis provided in this section quantifies the economic and fiscal contribution that the proposed Hummingbird Solar project would make to Fleming County and to the Commonwealth of Kentucky. The analysis separately evaluates the one-time pulse of economic activity that would occur during the construction phase of the project, as well as the annual economic activity that the project would generate during its ongoing operational phase.

### Method

To empirically evaluate the likely local economic impact attributable to the proposed Hummingbird Solar project, the analysis employs a regional economic impact model called IMPLAN.<sup>20</sup> The IMPLAN model is one of the most commonly used economic impact simulation models in the U.S. and is commonly employed by universities, state agencies and research institutes. Like all economic impact models, the IMPLAN model uses economic multipliers to quantify economic impact.

Economic multipliers measure the ripple effects that an expenditure generates as it makes its way through the economy. For example, as when the Hummingbird Solar project purchases goods and services – or when employees and contractors hired by the facility use their salaries and wages to make household purchases – thereby generating income for someone else, which is in turn spent, thereby becoming income for yet someone else, and so on, and so on. Through this process, one dollar in expenditures generates multiple dollars of income. The mathematical relationship between the initial expenditure and the total income generated is the economic multiplier.

One of the primary advantages of the IMPLAN model is that it uses regional and national production and trade flow data to construct region-specific and industry-specific economic multipliers, which are then further adjusted to reflect anticipated actual spending patterns within the specific geographic study area that is being evaluated. As a result, the economic impact estimates produced by IMPLAN are not generic. They reflect as precisely as possible the economic realities of the specific industry, and the specific study area, being evaluated.

In the analysis that follows, these impact estimates are divided into three categories. First round direct impact measures the direct economic contribution of the entity being evaluated (e.g., goods and services purchased by the Hummingbird Solar project). Second round indirect and induced impact measures the economic ripple effects of this direct impact in terms of business to business, and household (employee) to business, transactions. Total impact is simply the sum of the preceding two. These categories of impact are then further defined in terms of employment (the jobs that are created), labor income (the wages and benefits associated with those jobs), and economic output (the total amount of economic activity that is created in the economy).

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<sup>20</sup> IMPLAN is produced by IMPLAN Group, LLC.

## Construction Phase

This portion of the section assesses the economic and fiscal impact that the one-time pulse of activity associated with construction of the proposed Hummingbird Solar project would have on Fleming County.

### Assumptions

The analysis is based on the following assumptions:

- Total capitalized investment in the Hummingbird Solar project is estimated to be approximately \$245.4 million.<sup>21</sup>
- Of that total:
  - Architecture, engineering, site preparation, and other development and construction costs are estimated to be approximately \$87.8 million.<sup>22</sup> It is estimated that approximately 26 percent of that total could be spent in Fleming County while the remainder would be spent with vendors within the state.<sup>23</sup>
  - Capital equipment and other costs are estimated to be approximately \$157.6 million.<sup>24</sup> It is anticipated that no capital equipment would be purchased from vendors in Fleming County or Kentucky.<sup>25</sup>
- For ease of analysis, all construction expenditures are assumed to take place in a single year.

### Results – Fleming County

Applying these assumptions in the IMPLAN model results in the following estimates of one-time economic impact on Fleming County. As shown in Table 1, construction of the proposed Hummingbird Solar project could directly provide a one-time pulse of economic activity supporting approximately: 1) 216 jobs, 2) \$6.5 million in labor income, and 3) \$22.5 million in economic output to Fleming County (in 2022 dollars).<sup>26</sup>

Taking into account the economic ripple effects that direct investment would generate, the total estimated one-time impact on Fleming County would support approximately: 1) 268 jobs, 2) \$8.3 million in labor income, and 3) \$30.2 million in economic output, and 4) \$1.7 million in state and local tax revenue (in 2022 dollars).

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<sup>21</sup> Data Source: Recurrent Energy. Investment estimate is subject to change based on final design and vendor contracts

<sup>22</sup> Data Source: Recurrent Energy.

<sup>23</sup> Data Source: IMPLAN Group, LLC.

<sup>24</sup> Data Source Recurrent Energy.

<sup>25</sup> Data Source: IMPLAN Group, LLC.

<sup>26</sup> Please note that construction sector jobs are not necessarily new jobs, but the investments made can also support a job during the construction of the project.

**Table 1: Estimated One-Time Economic and Fiscal Impact on Fleming County from Construction of the Hummingbird Solar Project (2022 Dollars)<sup>27</sup>**

Economic Impact	Employment	Labor Income	Output
<b>1<sup>st</sup> Round Direct Economic Activity</b>	216	\$6,523,344	\$22,494,596
<b>2<sup>nd</sup> Round Indirect and Induced Economic Activity</b>	52	\$1,758,006	\$7,727,496
<b>Total Economic Activity</b>	<b>268</b>	<b>\$8,281,350</b>	<b>\$30,222,092</b>
<b>Fiscal Impact</b>			
<b>State and Local Tax Revenue</b>			<b>\$1,709,619</b>

*\*Totals may not sum due to rounding.*

## Results – Kentucky Statewide

*(Includes Fleming County impact)*

Applying the above stated assumptions in the IMPLAN model results in the following estimates of one-time economic impact on the Commonwealth of Kentucky. As shown in Table 2, construction of the proposed Hummingbird Solar project would directly provide a one-time pulse of economic activity supporting approximately: 1) 638 jobs, 2) \$31.3 million in labor income, and 3) \$87.8 million in economic output to the Commonwealth of Kentucky as a whole (in 2022 dollars).<sup>28</sup>

Taking into account the economic ripple effects that direct investment would generate, the total estimated one-time impact on the Commonwealth of Kentucky would support approximately: 1) 940 jobs, 2) \$45.6 million in labor income, and 3) \$136.8 million in economic output, and 4) \$6.8 million in state and local tax revenue (in 2022 dollars).

**Table 2: Estimated One-Time Economic and Fiscal Impact on the Commonwealth of Kentucky from Construction of the Hummingbird Solar Project (2022 Dollars)<sup>29</sup>**

Economic Impact	Employment	Labor Income	Output
<b>1<sup>st</sup> Round Direct Economic Activity</b>	638	\$31,262,241	\$87,789,756
<b>2<sup>nd</sup> Round Indirect and Induced Economic Activity</b>	302	\$14,373,769	\$49,048,764
<b>Total Economic Activity</b>	<b>940</b>	<b>\$45,636,009</b>	<b>\$136,838,520</b>
<b>Fiscal Impact</b>			
<b>State and Local Tax Revenue</b>			<b>\$6,780,053</b>

*\*Totals may not sum due to rounding.*

<sup>27</sup> Please note that construction sector jobs are not necessarily new jobs, but the investments made can also support a job during the construction of the project.

<sup>28</sup> Please note that construction sector jobs are not necessarily new jobs, but the investments made can also support a job during the construction of the project.

<sup>29</sup> Please note that construction sector jobs are not necessarily new jobs, but the investments made can also support a job during the construction of the project.

## Ongoing Operations Phase

This portion of the section assesses the annual economic and fiscal impact that the proposed Hummingbird Solar project would have on Fleming County and the Commonwealth of Kentucky during its anticipated 40-year operational life.

### Economic Impact Assumptions

The analysis is based on the following assumptions:

- The Hummingbird Solar project would spend approximately \$700,000 each year for vegetative control, maintenance and repair, and other operational expenditures.<sup>30</sup>
- The Hummingbird Solar project would make confidential lease payments to local landowners.

### Results – Fleming County

Applying these assumptions in the IMPLAN model results in the following estimates of annual economic impact on Fleming County. As shown in Table 3, annual operation of the proposed Hummingbird Solar project could directly support approximately: 1) 4 jobs, 2) \$96,496 in labor income, and 3) \$357,943 in economic output to Fleming County (in 2022 dollars).

Taking into account the economic ripple effects that direct impact would generate, the total estimated annually supported impact on Fleming County would be approximately: 1) 8 jobs, 2) \$234,849 in labor income, and 3) \$915,034 in economic output (in 2022 dollars).

**Table 3: Estimated Annual Economic Impact on Fleming County from the Ongoing Operation of the Hummingbird Solar Project (2022 Dollars)**

Economic Impact	Employment	Labor Income	Output
<b>1<sup>st</sup> Round Direct Economic Activity</b>	4	\$96,496	\$357,943
<b>2<sup>nd</sup> Round Indirect and Induced Economic Activity</b>	4	\$138,353	\$557,091
<b>Total Economic Activity</b>	<b>8</b>	<b>\$234,849</b>	<b>\$915,034</b>

*\*Totals may not sum due to rounding.*

### Results – Kentucky Statewide

*(Includes Fleming County impact)*

Applying these assumptions in the IMPLAN model results in the following estimates of annual economic impact on the Commonwealth of Kentucky. As shown in Table 4, annual operation of the proposed Hummingbird Solar project would directly support approximately: 1) 4 jobs, 2) \$96,496 in labor income, and 3) \$357,943 in economic output to the Commonwealth of Kentucky (in 2022 dollars).

<sup>30</sup> Data Source: Recurrent Energy. Expenditure estimate is subject to change based on final design and vendor contracts.

Taking into account the economic ripple effects that direct impact would generate, the total estimated annually supported impact on the Commonwealth of Kentucky would be approximately: 1) 9 jobs, 2) \$276,582 in labor income, and 3) \$1.1 million in economic output (in 2022 dollars).

**Table 4: Estimated Annual Economic Impact on the Commonwealth of Kentucky from the Ongoing Operation of the Hummingbird Solar Project (2022 Dollars)**

Economic Impact	Employment	Labor Income	Output
<b>1<sup>st</sup> Round Direct Economic Activity</b>	4	\$96,496	\$357,943
<b>2<sup>nd</sup> Round Indirect and Induced Economic Activity</b>	5	\$180,086	\$693,667
<b>Total Economic Activity</b>	<b>9</b>	<b>\$276,582</b>	<b>\$1,051,610</b>

*\*Totals may not sum due to rounding.*

### Fiscal Impact Assumptions

The analysis provided on the following pages is based on the following assumptions:

- Hummingbird Solar would have a generation capacity of 200 MW AC.<sup>31</sup>
- The total capitalized investment in the Hummingbird Solar project would be categorized as follows.<sup>32</sup>
  - Approximately \$192.7 million would be classified as manufacturing machinery.
  - Approximately \$25.4 million would be classified as tangible personal property.
  - Approximately \$4.3 million would be classified as real property improvements.
  - The remainder of the investment in site and general development would increase the value of the land, which would be assessed at a commercial value using the income approach.<sup>33</sup>
- The manufacturing machinery and tangible personal property would be depreciated using the Kentucky Department of Revenue depreciation schedule for Class VI.<sup>34</sup>
- The Hummingbird Solar project would be situated on a 1,638-acre tract of farmland located in Fleming County, that is currently assessed at a farmland value of approximately \$1.3 million.<sup>35</sup>
- Once operational, the affected 1,638 acres used for solar purposes would be reassessed at a commercial use value of approximately \$12.2 million.<sup>36</sup>

<sup>31</sup> Recurrent Energy.

<sup>32</sup> Data Source: Recurrent Energy based on Kentucky Dept. of Revenue’s solar farm assessment guidelines. Actual values for each category are subject to change based on final design, vendor contracts, and classification of investments.

<sup>33</sup> Data Source: Based on an informal discussion with the Fleming County PVA Office, land leased for solar farm operations would be assessed at a commercial use value using the income approach.

<sup>34</sup> Data Source: Recurrent Energy.

<sup>35</sup> Data Source: Derived from site layout provided by Recurrent Energy and from parcel data provided on the Fleming County Property Valuation Administrator (PVA) website. Includes estimated value of structures that would be removed under solar use.

<sup>36</sup> Data Source: Calculated based on an assumed capitalization rate and the value of confidential future lease payments.

- The remaining, unused acreage of each parcel would continue to be assessed at its current agricultural use farmland value.<sup>37</sup>
- For taxation purposes, we assume that:
  - The entire capitalized investment would be privately financed.
  - Manufacturing machinery would be taxed at a state rate of 15.0 cents per \$100.<sup>38</sup>
  - Tangible personal property would be taxed at the state and local levels. Applicable tax rates would be: state – 45.0 cents per \$100; County Fiscal Court – 16.0 cents per \$100; Health – 5.0 cents per \$100; Library – 12.78 cents per \$100; Ambulance – 8.8 cents per \$100; Extension Services – 6.34 cents per \$100; and School District – 45.9 cents per \$100.<sup>39</sup>
  - Real property (land and improvements) would be taxed at the state and local levels. Applicable tax rates would be: state – 11.9 cent per \$100; County Fiscal Court – 16.0 cents per \$100; Health – 5.0 cents per \$100; Library – 9.1 cents per \$100; Ambulance – 8.8 cents per \$100; Extension Services – 4.7 cents per \$100; Soil Conservation 1.5 cents per \$100; and School District – 45.9 cents per \$100.<sup>40</sup>
  - Tax rates remain constant throughout the analysis.

## Fiscal Impact Results

The analysis on the following pages quantifies the direct fiscal contribution that the proposed Hummingbird Solar project would make to Fleming County and to the Commonwealth of Kentucky from taxation of the real property (land) and capital investments. It should be noted at the outset, however, that the analysis that follows likely understates the actual fiscal impact that Hummingbird Solar would have as it only accounts for the direct fiscal impact that Hummingbird Solar would have on Fleming County and the state. It does not take into account any additional tax revenue that would be generated as a result of the indirect economic activity attributable to the ongoing operation of Hummingbird Solar.

### *Real Estate Tax Revenue – Land and Improvements*

Table 5 details the revenue that the proposed Hummingbird Solar project would generate for Fleming County and the Commonwealth of Kentucky over a 40-year period from the increased property assessments associated with assessing the affected acreage at a commercial use value, as well as taxation of the real property improvements to the site.

As the data in Table 5 indicate, the local real estate tax revenue from the project after reassessment is estimated to be approximately \$110,858 per year (in 2022 dollars). The local real estate tax revenue from taxation of the improvements to the site is estimated to be approximately \$39,442 per year, for a

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<sup>37</sup> Data Source: Assumes each remaining parcel has 11 or more acres in farm use.

<sup>38</sup> Data Source: Kentucky Department of Revenue.

<sup>39</sup> Data Source: Kentucky Department of Revenue and Fleming County PVA office, 2021 tax rates.

<sup>40</sup> Data Source: Kentucky Department of Revenue and Fleming County PVA office, 2021 tax rates.

combined annual total of approximately \$150,299 (in 2022 dollars). The cumulative total over 40 years is estimated to be approximately \$6.0 million (in 2022 dollars). This consists of approximately: \$1.1 million for the county fiscal court, \$0.3 million for the health jurisdiction, \$0.6 million for the library jurisdiction, \$0.6 million for the ambulance jurisdiction, \$0.3 million for the extension services jurisdiction, \$0.1 million for soil conservation, and \$3.0 million for the school district (in 2022 dollars).

Table 5 also shows the state real estate tax revenue from the project after reassessment, which is estimated to be approximately \$14,497 per year (in 2022 dollars). The state tax revenue from taxation of the improvements to the site is estimated to be approximately \$5,158 per year, for a combined annual total of approximately \$19,654 (in 2022 dollars). The cumulative total over 40 years is estimated to be approximately \$0.8 million (in 2022 dollars).



**Table 5: Estimated Tax Revenue Generated by the Proposed Hummingbird Solar Project over 40 Years from Additional Real Property Taxes (2022 Dollars)**

	County Fiscal Court	Health	Library	Ambulance	Extension Services	Soil Conservation	School District	Total Local Revenue	Total State Revenue
Real Estate Tax Rate per \$100 <sup>41</sup>	0.16	0.05	0.091	0.088	0.047	0.015	0.459	0.91	0.119
Estimated Commercial Value of Land <sup>42</sup>									\$12,182,143
Annual Real Estate Tax Revenue Land	\$19,491	\$6,091	\$11,086	\$10,720	\$5,726	\$1,827	\$55,916	\$110,858	\$14,497
Estimated Value of Improvements <sup>43</sup>									\$4,334,238
Annual Real Estate Tax Revenue – Improvements	\$6,935	\$2,167	\$3,944	\$3,814	\$2,037	\$650	\$19,894	\$39,442	\$5,158
<b>Total Annual Real Estate Revenue</b>	<b>\$26,426</b>	<b>\$8,258</b>	<b>\$15,030</b>	<b>\$14,534</b>	<b>\$7,763</b>	<b>\$2,477</b>	<b>\$75,810</b>	<b><u>\$150,299</u></b>	<b><u>\$19,654</u></b>
<b>Cumulative Real Estate Tax Revenue over 40 Years</b>	<b>\$1,057,048</b>	<b>\$330,328</b>	<b>\$601,196</b>	<b>\$581,377</b>	<b>\$310,508</b>	<b>\$99,098</b>	<b>\$3,032,408</b>	<b><u>\$6,011,963</u></b>	<b><u>\$786,180</u></b>

<sup>41</sup> Data Source: Fleming County PVA office, 2021 tax rates. Assumes tax rates remain constant throughout analysis.

<sup>42</sup> Data Source: Calculated based on an assumed capitalization rate and the value of confidential lease payments.

<sup>43</sup> Data Source: Recurrent Energy. Estimated value based on cost of construction. Subject to change based on final design, vendor contracts, and classification of investments.



### *Manufacturing Machinery and Tangible Personal Property*

Tables 6 and 7 detail the revenue that the proposed Hummingbird Solar project would generate over a 40-year period from taxation of the tangible personal property and the manufacturing machinery located on the site. Based on guidance from the Kentucky Department of Revenue, this property would be assessed by the Department based on a cost approach during the initial years of operation, moving to an income approach thereafter. Due to data limitations on the future income streams of the project, the analysis presented on the following pages relies on the cost approach for the duration of the project. Please note that actual revenues generated by Hummingbird Solar may therefore vary from the analysis presented.

#### **Tangible Personal Property Tax Revenue**

As the data in Table 6 indicate, the local tax revenue from taxation of the investment in tangible personal property is estimated to be approximately \$233,177 in year 1 of the project with that figure projected to decline to approximately \$24,064 in year 26 of the project and thereafter as the value of the property is further depreciated, for a cumulative total of approximately \$4.1 million over 40 years (in 2022 dollars). This consists of approximately: \$0.7 million for the county fiscal court, \$0.2 million for the health jurisdiction, \$0.6 million for the library jurisdiction, \$0.4 million for the ambulance jurisdiction, \$0.3 million for the extension services jurisdiction, and \$2.0 million for the school district (in 2022 dollars).

The state tax revenue from taxation of the tangible personal property is estimated to be approximately \$110,662 in year 1 of the project with that figure projected to decline to approximately \$11,420 in year 26 of the project and thereafter as the value of the property is further depreciated, for a cumulative total of approximately \$2.0 million over 40 years (in 2022 dollars).



**Table 6: Estimated Tax Revenue Generated by the Proposed Hummingbird Solar Project over 40 Years from Additional Tangible Personal Property Taxes (2022 Dollars)**

Year	Original Cost <sup>44</sup>	Depreciation <sup>45</sup>	Net Book / Reported Market Value	County Fiscal Court	Health	Library	Ambulance	Extension Services	School District	Total Local Tax Revenue	Total State Tax Revenue
<b>Tax Rate (per \$100)</b>				<b>0.16</b>	<b>0.05</b>	<b>0.1278</b>	<b>0.088</b>	<b>0.0634</b>	<b>0.459</b>	<b>0.9482</b>	<b>0.45</b>
1	\$25,378,246	0.97	\$24,591,521	\$39,346	\$12,296	\$31,428	\$21,641	\$15,591	\$112,875	\$233,177	\$110,662
2	\$25,378,246	0.96	\$24,286,982	\$38,859	\$12,143	\$31,039	\$21,373	\$15,398	\$111,477	\$230,289	\$109,291
3	\$25,378,246	0.94	\$23,957,065	\$38,331	\$11,979	\$30,617	\$21,082	\$15,189	\$109,963	\$227,161	\$107,807
4	\$25,378,246	0.93	\$23,576,391	\$37,722	\$11,788	\$30,131	\$20,747	\$14,947	\$108,216	\$223,551	\$106,094
5	\$25,378,246	0.90	\$22,738,909	\$36,382	\$11,369	\$29,060	\$20,010	\$14,416	\$104,372	\$215,610	\$102,325
6	\$25,378,246	0.85	\$21,495,375	\$34,393	\$10,748	\$27,471	\$18,916	\$13,628	\$98,664	\$203,819	\$96,729
7	\$25,378,246	0.82	\$20,886,297	\$33,418	\$10,443	\$26,693	\$18,380	\$13,242	\$95,868	\$198,044	\$93,988
8	\$25,378,246	0.79	\$20,023,436	\$32,037	\$10,012	\$25,590	\$17,621	\$12,695	\$91,908	\$189,862	\$90,105
9	\$25,378,246	0.76	\$19,160,576	\$30,657	\$9,580	\$24,487	\$16,861	\$12,148	\$87,947	\$181,681	\$86,223
10	\$25,378,246	0.74	\$18,830,659	\$30,129	\$9,415	\$24,066	\$16,571	\$11,939	\$86,433	\$178,552	\$84,738
11	\$25,378,246	0.71	\$18,094,690	\$28,952	\$9,047	\$23,125	\$15,923	\$11,472	\$83,055	\$171,574	\$81,426
12	\$25,378,246	0.65	\$16,495,860	\$26,393	\$8,248	\$21,082	\$14,516	\$10,458	\$75,716	\$156,414	\$74,231
13	\$25,378,246	0.65	\$16,368,969	\$26,190	\$8,184	\$20,920	\$14,405	\$10,378	\$75,134	\$155,211	\$73,660
14	\$25,378,246	0.62	\$15,709,135	\$25,135	\$7,855	\$20,076	\$13,824	\$9,960	\$72,105	\$148,954	\$70,691
15	\$25,378,246	0.61	\$15,404,596	\$24,647	\$7,702	\$19,687	\$13,556	\$9,767	\$70,707	\$146,066	\$69,321
16	\$25,378,246	0.58	\$14,770,139	\$23,632	\$7,385	\$18,876	\$12,998	\$9,364	\$67,795	\$140,050	\$66,466
17	\$25,378,246	0.57	\$14,440,222	\$23,104	\$7,220	\$18,455	\$12,707	\$9,155	\$66,281	\$136,922	\$64,981
18	\$25,378,246	0.52	\$13,222,066	\$21,155	\$6,611	\$16,898	\$11,635	\$8,383	\$60,689	\$125,372	\$59,499
19	\$25,378,246	0.47	\$11,927,776	\$19,084	\$5,964	\$15,244	\$10,496	\$7,562	\$54,748	\$113,099	\$53,675
20	\$25,378,246	0.41	\$10,455,838	\$16,729	\$5,228	\$13,363	\$9,201	\$6,629	\$47,992	\$99,142	\$47,051
21	\$25,378,246	0.36	\$9,136,169	\$14,618	\$4,568	\$11,676	\$8,040	\$5,792	\$41,935	\$86,629	\$41,113
22	\$25,378,246	0.30	\$7,689,609	\$12,303	\$3,845	\$9,827	\$6,767	\$4,875	\$35,295	\$72,913	\$34,603

<sup>44</sup> Data Source: Recurrent Energy based on Kentucky Dept. of Revenue’s solar farm assessment guidelines. Actual value is subject to change based on final design, vendor contracts, and classification of investments.

<sup>45</sup> Data Source: Kentucky Department of Revenue depreciation schedule for Class VI. Values shown rounded to first digit.



Year	Original Cost <sup>44</sup>	Depre- ciation <sup>45</sup>	Net Book / Reported Market Value	County Fiscal Court	Health	Library	Ambulance	Extension Services	School District	Total Local Tax Revenue	Total State Tax Revenue
23	\$25,378,246	0.24	\$6,166,914	\$9,867	\$3,083	\$7,881	\$5,427	\$3,910	\$28,306	\$58,475	\$27,751
24	\$25,378,246	0.19	\$4,694,976	\$7,512	\$2,347	\$6,000	\$4,132	\$2,977	\$21,550	\$44,518	\$21,127
25	\$25,378,246	0.13	\$3,172,281	\$5,076	\$1,586	\$4,054	\$2,792	\$2,011	\$14,561	\$30,080	\$14,275
26	\$25,378,246	0.10	\$2,537,825	\$4,061	\$1,269	\$3,243	\$2,233	\$1,609	\$11,649	\$24,064	\$11,420
27	\$25,378,246	0.10	\$2,537,825	\$4,061	\$1,269	\$3,243	\$2,233	\$1,609	\$11,649	\$24,064	\$11,420
28	\$25,378,246	0.10	\$2,537,825	\$4,061	\$1,269	\$3,243	\$2,233	\$1,609	\$11,649	\$24,064	\$11,420
29	\$25,378,246	0.10	\$2,537,825	\$4,061	\$1,269	\$3,243	\$2,233	\$1,609	\$11,649	\$24,064	\$11,420
30	\$25,378,246	0.10	\$2,537,825	\$4,061	\$1,269	\$3,243	\$2,233	\$1,609	\$11,649	\$24,064	\$11,420
31	\$25,378,246	0.10	\$2,537,825	\$4,061	\$1,269	\$3,243	\$2,233	\$1,609	\$11,649	\$24,064	\$11,420
32	\$25,378,246	0.10	\$2,537,825	\$4,061	\$1,269	\$3,243	\$2,233	\$1,609	\$11,649	\$24,064	\$11,420
33	\$25,378,246	0.10	\$2,537,825	\$4,061	\$1,269	\$3,243	\$2,233	\$1,609	\$11,649	\$24,064	\$11,420
34	\$25,378,246	0.10	\$2,537,825	\$4,061	\$1,269	\$3,243	\$2,233	\$1,609	\$11,649	\$24,064	\$11,420
35	\$25,378,246	0.10	\$2,537,825	\$4,061	\$1,269	\$3,243	\$2,233	\$1,609	\$11,649	\$24,064	\$11,420
36	\$25,378,246	0.10	\$2,537,825	\$4,061	\$1,269	\$3,243	\$2,233	\$1,609	\$11,649	\$24,064	\$11,420
37	\$25,378,246	0.10	\$2,537,825	\$4,061	\$1,269	\$3,243	\$2,233	\$1,609	\$11,649	\$24,064	\$11,420
38	\$25,378,246	0.10	\$2,537,825	\$4,061	\$1,269	\$3,243	\$2,233	\$1,609	\$11,649	\$24,064	\$11,420
39	\$25,378,246	0.10	\$2,537,825	\$4,061	\$1,269	\$3,243	\$2,233	\$1,609	\$11,649	\$24,064	\$11,420
40	\$25,378,246	0.10	\$2,537,825	\$4,061	\$1,269	\$3,243	\$2,233	\$1,609	\$11,649	\$24,064	\$11,420
<b>Cumulative Total over 40 years</b>				<b>\$696,582</b>	<b>\$217,682</b>	<b>\$556,395</b>	<b>\$383,120</b>	<b>\$276,021</b>	<b>\$1,998,320</b>	<b>\$4,128,120</b>	<b>\$1,959,137</b>

\*Totals may not sum due to rounding

## Manufacturing Machinery Property Tax Revenue

Table 7 details the revenue that the proposed Hummingbird Solar project would generate for the Commonwealth of Kentucky over a 40-year period from taxation of the manufacturing machinery located on the site. As stated in the assumptions, manufacturing machinery is taxed at the state level only in Kentucky. The state tax revenue is estimated to be approximately \$280,069 in year 1 of the project with that figure projected to decline to approximately \$28,903 in year 26 of the project and thereafter as the investment is further depreciated, for a cumulative total of approximately \$5.0 million over 40 years (in 2022 dollars).

**Table 7: Estimated Tax Revenue Generated by the Proposed Hummingbird Solar Project over 40 Years from Additional Manufacturing Machinery Taxes (2022 Dollars)**

Year	Original Cost <sup>46</sup>	Depreciation <sup>47</sup>	Net Book Value	Total State Tax Revenue
<b>Tax Rate (per \$100)</b>				<b>0.15</b>
1	\$192,685,831	0.97	\$186,712,570	\$280,069
2	\$192,685,831	0.96	\$184,400,340	\$276,601
3	\$192,685,831	0.94	\$181,895,424	\$272,843
4	\$192,685,831	0.93	\$179,005,137	\$268,508
5	\$192,685,831	0.90	\$172,646,505	\$258,970
6	\$192,685,831	0.85	\$163,204,899	\$244,807
7	\$192,685,831	0.82	\$158,580,439	\$237,871
8	\$192,685,831	0.79	\$152,029,121	\$228,044
9	\$192,685,831	0.76	\$145,477,802	\$218,217
10	\$192,685,831	0.74	\$142,972,887	\$214,459
11	\$192,685,831	0.71	\$137,384,997	\$206,077
12	\$192,685,831	0.65	\$125,245,790	\$187,869
13	\$192,685,831	0.65	\$124,282,361	\$186,424
14	\$192,685,831	0.62	\$119,272,529	\$178,909
15	\$192,685,831	0.61	\$116,960,299	\$175,440
16	\$192,685,831	0.58	\$112,143,154	\$168,215
17	\$192,685,831	0.57	\$109,638,238	\$164,457
18	\$192,685,831	0.52	\$100,389,318	\$150,584
19	\$192,685,831	0.47	\$90,562,341	\$135,844
20	\$192,685,831	0.41	\$79,386,562	\$119,080
21	\$192,685,831	0.36	\$69,366,899	\$104,050
22	\$192,685,831	0.30	\$58,383,807	\$87,576
23	\$192,685,831	0.24	\$46,822,657	\$70,234
24	\$192,685,831	0.19	\$35,646,879	\$53,470
25	\$192,685,831	0.13	\$24,085,729	\$36,129
26	\$192,685,831	0.10	\$19,268,583	\$28,903
27	\$192,685,831	0.10	\$19,268,583	\$28,903
28	\$192,685,831	0.10	\$19,268,583	\$28,903

<sup>46</sup> Data Source: Recurrent Energy based on Kentucky Dept. of Revenue's solar farm assessment guidelines. Actual value is subject to change based on final design, vendor contracts, and classification of investments.

<sup>47</sup> Data Source: Kentucky Department of Revenue depreciation schedule for Class VI. Values shown rounded to first digit.

Year	Original Cost <sup>46</sup>	Depreciation <sup>47</sup>	Net Book Value	Total State Tax Revenue
29	\$192,685,831	0.10	\$19,268,583	\$28,903
30	\$192,685,831	0.10	\$19,268,583	\$28,903
31	\$192,685,831	0.10	\$19,268,583	\$28,903
32	\$192,685,831	0.10	\$19,268,583	\$28,903
33	\$192,685,831	0.10	\$19,268,583	\$28,903
34	\$192,685,831	0.10	\$19,268,583	\$28,903
35	\$192,685,831	0.10	\$19,268,583	\$28,903
36	\$192,685,831	0.10	\$19,268,583	\$28,903
37	\$192,685,831	0.10	\$19,268,583	\$28,903
38	\$192,685,831	0.10	\$19,268,583	\$28,903
39	\$192,685,831	0.10	\$19,268,583	\$28,903
40	\$192,685,831	0.10	\$19,268,583	\$28,903
<b>Cumulative Total over 40 years</b>				<b><u>\$4,958,288</u></b>

*\*Totals may not sum due to rounding*

## Total Fiscal Impact

Table 8 combines the results from the calculations depicted in Tables 5 through 7 to provide an estimate of the cumulative fiscal contribution that the proposed Hummingbird Solar project would make to Fleming County and to the Commonwealth of Kentucky over its anticipated 40-year operational life. As these data indicate, that cumulative total is approximately \$10.1 million in local tax revenue, consisting of approximately: \$1.8 million for the county fiscal court, \$0.5 million for the health jurisdiction, \$1.2 million for the library jurisdiction, \$1.0 million for the ambulance jurisdiction, \$0.6 million for the extension services jurisdiction, \$0.1 million for soil conservation, and \$5.0 million for the school district (in 2022 dollars). The state tax revenue is estimated at approximately \$7.7 million over 40 years (in 2022 dollars).



**Table 8: Estimated Cumulative Tax Revenue from the Proposed Hummingbird Solar Project over 40 Years (2022 dollars)**

Tax Revenue by Type	County Fiscal Court	Health	Library	Ambulance	Extension Services	Soil Conservation	School District	Total Local Tax Revenue	Total State Tax Revenue
Real Property Tax Revenue – Land	\$779,657	\$243,643	\$443,430	\$428,811	\$229,024	\$73,093	\$2,236,641	\$4,434,300	<b>\$579,870</b>
Real Property Tax Revenue – Improvements	\$277,391	\$86,685	\$157,766	\$152,565	\$81,484	\$26,005	\$795,766	\$1,577,663	<b>\$206,310</b>
Manufacturing Machinery Tax Revenue	-	-	-	-	-	-	-	-	<b>\$4,958,288</b>
Personal Property Tax Revenue	\$696,582	\$217,682	\$556,395	\$383,120	\$276,021	-	\$1,998,320	\$4,128,120	<b>\$1,959,137</b>
<b>TOTAL Cumulative Revenue over 40 years<sup>48</sup></b>	<b>\$1,753,630</b>	<b>\$548,010</b>	<b>\$1,157,591</b>	<b>\$964,497</b>	<b>\$586,529</b>	<b>\$99,098</b>	<b>\$5,030,727</b>	<b><u>\$10,140,082</u></b>	<b><u>\$7,703,605</u></b>

*\*Totals may not sum due to rounding*

<sup>48</sup> Please note that the future tax revenue stream for the investments has been calculated based on the cost approach to valuation due to data limitations on the future income streams of the project. Actual revenues generated by Hummingbird Solar may therefore vary from the analysis presented because they do not include the impact on the revenues that are associated with the franchise value of the project. Actual tax revenues are also subject to change based on final design, vendor contracts, and classification of investments.

## Current Agricultural Use

This section provides a benchmark for the previous estimates of the economic contribution that the proposed Hummingbird Solar project would make to Fleming County by estimating the economic and fiscal contribution that the site would make to the county in an active agricultural use. The analysis is based on the following assumptions:

- The proposed Hummingbird Solar would be situated on an approximate 1,638-acre tract of land, which is currently used to produce corn, soybeans, hay, and as rangeland for cattle.<sup>49</sup>
- The average annual revenue per acre for Fleming County farmland is approximately \$300.<sup>50</sup>
- The 1,638-acre tract of farmland is currently assessed at a farmland value of approximately \$1.3 million.<sup>51</sup>

### Economic Impact

Applying these assumptions in the IMPLAN model results in the following estimates of annual economic impact. As shown in Table 9, in its current agricultural use, the proposed Hummingbird Solar project site directly supports approximately: 1) 10 jobs, 2) -\$32,866 in labor income<sup>52</sup>, and 3) \$491,695 in economic output to Fleming County.

Taking into account the economic ripple effects that direct impact generates, the total annually supported impact on Fleming County would be approximately: 1) 12 jobs, 2) \$7,696 in labor income, 3) \$699,106 in economic output.

**Table 9: Total Annual Economic Impact of the Hummingbird Solar Project Site on Fleming County – Current Agricultural Use (2022 Dollars)**

Economic Impact	Employment	Labor Income	Output
<b>1<sup>st</sup> Round Direct Economic Activity</b>	10	-\$32,866	\$491,695
<b>2<sup>nd</sup> Round Indirect and Induced Economic Activity</b>	2	\$40,562	\$207,411
<b>Total Economic Activity</b>	<b>12</b>	<b>\$7,696</b>	<b>\$699,106</b>

<sup>49</sup> Data Source: Recurrent Energy.

<sup>50</sup> Data Source: Estimated based on data from the U.S. Department of Agriculture 2017 Census in Fleming County. Calculated as the weighted average revenue per acre for corn, soy, hay, and rangeland for cattle, based on the respective acreage for each category.

<sup>51</sup> Data Source: Derived from site layout provided by Recurrent Energy and from parcel data provided on the Fleming County PVA website. Includes estimated value of structures that would be removed under solar use.

<sup>52</sup> Labor income is the sum of employee compensation and proprietor income. If proprietor income is negative, overall labor income can be negative, even when total employee wages are positive. Please note that this does not mean that the proprietors went out of business, but they could be borrowing money or using savings to maintain cash flow.



## Fiscal Impact

Table 10 details the estimated current real property tax revenue generated from taxation of the project site and affected structures assessed at an agricultural use farmland value. The total local real property tax revenue from the site is estimated to be approximately \$11,982 per year, for a cumulative total of approximately \$479,291 (consisting of approximately \$84,271 for the county fiscal court, \$26,335 for the health jurisdiction, \$47,929 for the library jurisdiction, \$46,349 for the ambulance jurisdiction, \$24,755 for the extension services jurisdiction, \$7,900 for soil conservation, and \$241,752 for the school district) over the project's anticipated 40-year operational life (in 2022 dollars).

The total current state real property tax revenue from the site is estimated to be approximately \$1,567 per year for a cumulative total of approximately \$62,677 over the project's anticipated 40-year operational life (in 2022 dollars).





Table 10: Estimated Tax Revenue Generated by the Land under an Agricultural Use over 40 Years (2022 Dollars)

	County Fiscal Court	Health	Library	Ambulance	Extension Services	Soil Conservation	School District	Total Local Revenue	State Revenue
Real Estate Tax Rate per \$100 <sup>53</sup>	0.16	0.05	0.091	0.088	0.047	0.015	0.459	0.91	0.119
Estimated Current Agricultural Farmland Value of Land and Affected Structures <sup>54</sup>									\$1,316,733
Annual Real Estate Tax Revenue Land	\$2,107	\$658	\$1,198	\$1,159	\$619	\$198	\$6,044	\$11,982	\$1,567
<b>Cumulative Real Estate Tax Revenue over 40 Years</b>	<b>\$84,271</b>	<b>\$26,335</b>	<b>\$47,929</b>	<b>\$46,349</b>	<b>\$24,755</b>	<b>\$7,900</b>	<b>\$241,752</b>	<b>\$479,291</b>	<b>\$62,677</b>

\*Totals may not sum due to rounding.

The estimates provided in this report are based on the best information available and all reasonable care has been taken in assessing that information. However, because these estimates attempt to foresee circumstances that have not yet occurred, it is not possible to provide any assurance that they will be representative of actual events. These estimates are intended to provide a general indication of likely future outcomes and should not be construed to represent a precise measure of those outcomes.

<sup>53</sup> Data Source: Fleming County PVA office, 2021 tax rates. Assumes tax rates remain constant throughout analysis.

<sup>54</sup> Data Source: Derived from the site layout provided by Recurrent Energy and from parcel data provided on the Fleming County PVA website. Includes estimated value of structures that would be removed under solar use.

## **Exhibit G**



# Kirkland Appraisals, LLC

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March 15, 2022

Chad Martin  
Cardno  
76 San Marcos Street  
Austin, TX 78702

**RE: Hummingbird Solar Project, Fleming County, KY**

Mr. Martin,

At your request, I have considered the impact of a 200 MW solar farm proposed to be constructed on a portion of a 3,115-acre assemblage of land off Poplar Grove Road, located near Flemingsburg, Fleming County, 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 Cardno represented to me by Chad Martin. My findings support the Kentucky Siting Board Application. The effective date of this consultation is March 15, 2021.

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

## **Conclusion**

The adjoining properties are well set back from the proposed solar panels and supplemental vegetation is proposed to enhance the areas where the existing trees do not currently provide a proper screen. The closest home will be 500 feet from the nearest panel and the average distance will be 963 feet.

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

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

Very similar solar farms in very similar areas have been found by hundreds of towns and counties not to have a substantial negative effect to abutting or adjoining properties, and many of those

findings of no impact have been upheld by appellate courts. Similar solar farms have been approved with adjoining agricultural uses, schools, churches, and residential developments.

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

If you have any questions please contact me.

Sincerely,



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

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# I. Proposed Project and Adjoining Uses

## Proposed Use Description

This 200 MW solar farm is proposed to be constructed on a portion of a 3,115-acre assemblage of land located off Poplar Grove Road, Flemingsburg, Fleming County, Kentucky. Adjoining land is a mix of residential and agricultural uses, which is very typical of solar farm sites.

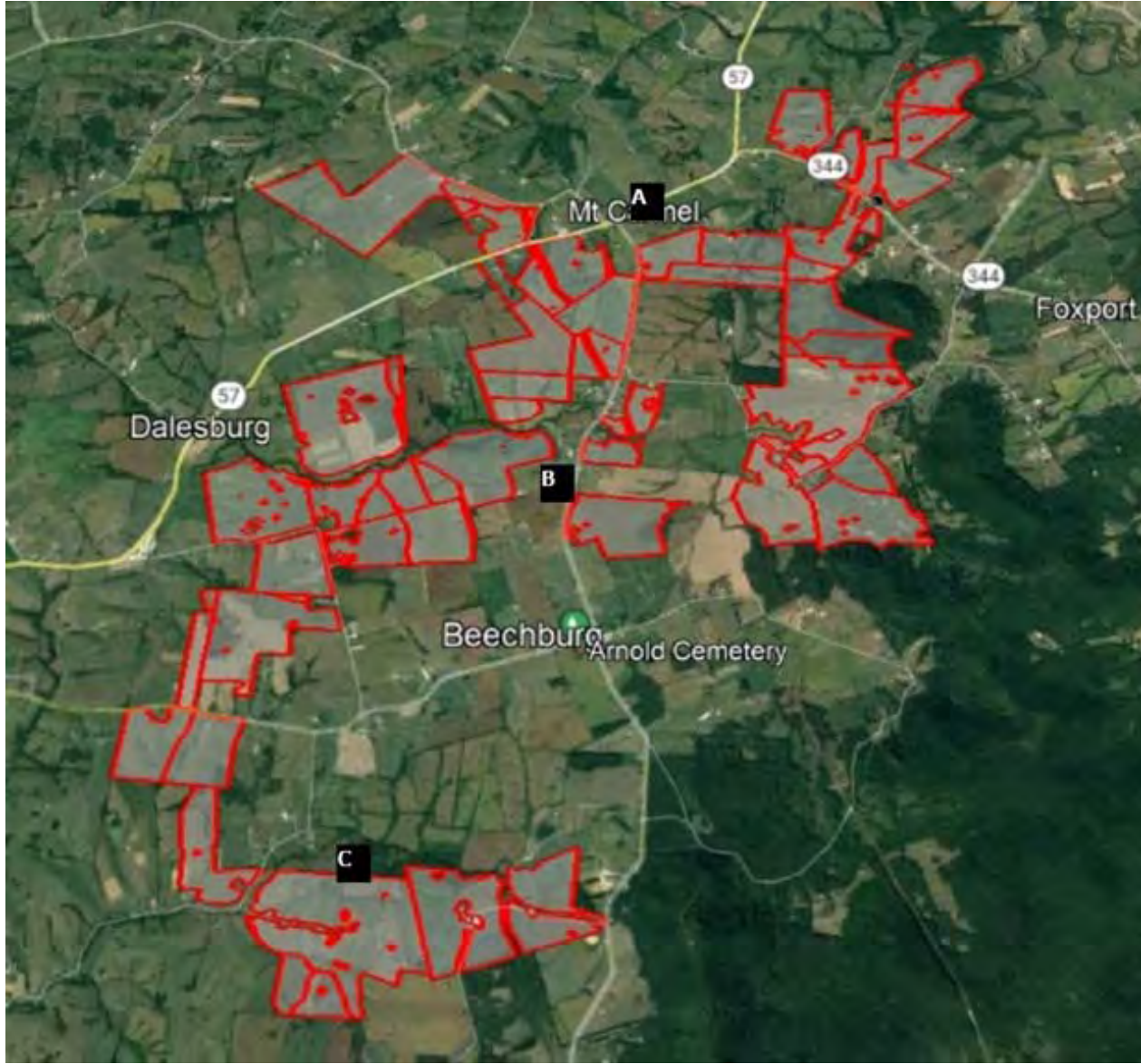
## Adjoining Properties

I have considered adjoining uses and included a map to identify each parcel's location. Based on the current site plan the closest adjoining home will be 500 feet from the closest solar panel and the average distance to adjoining homes will be 963 feet to the nearest solar panel. These setbacks are much larger than what is typically found and will go beyond what is needed to protect adjoining

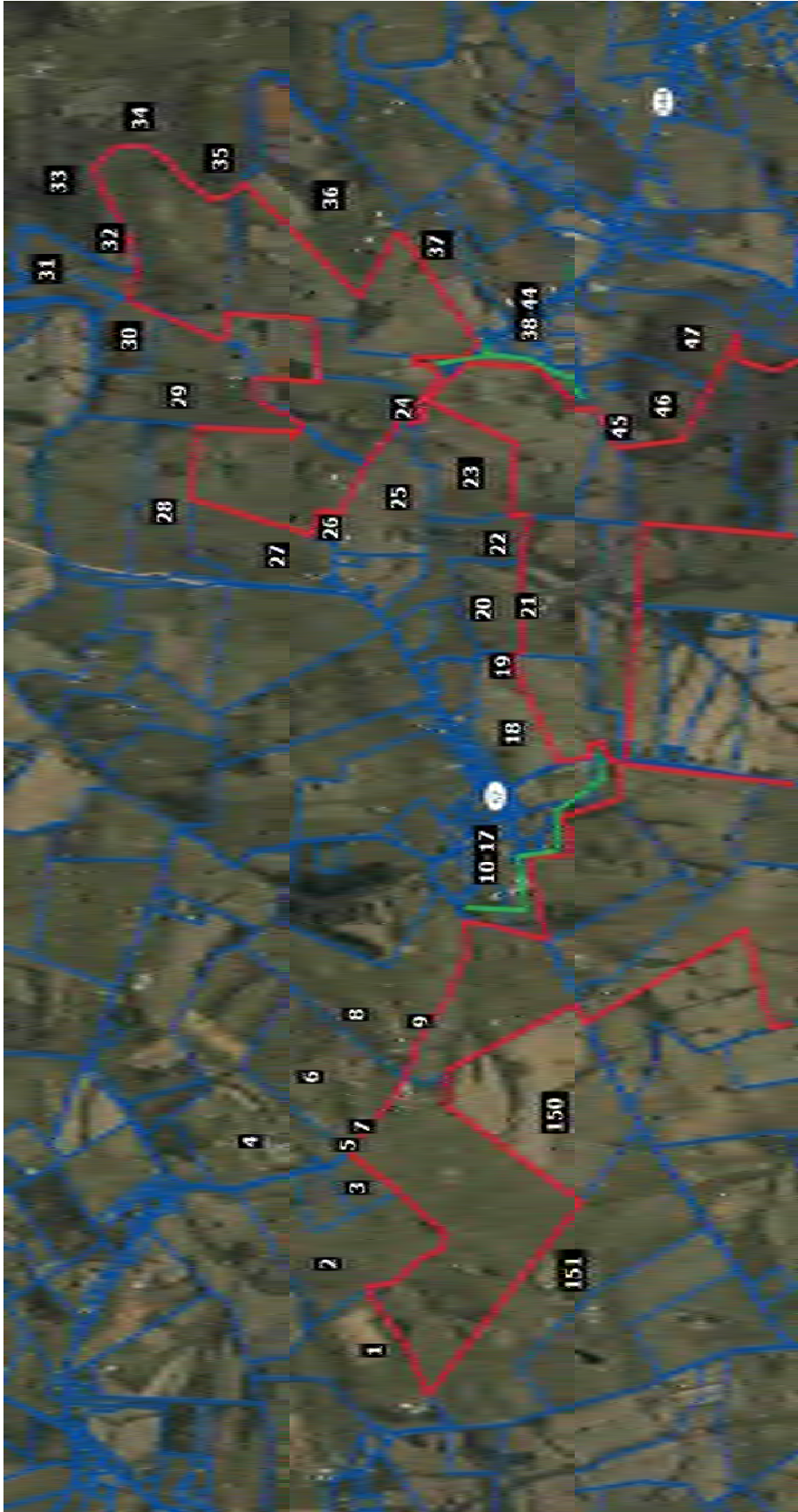
The breakdown of those uses by acreage and number of parcels is summarized below.

<b>Adjoining Use Breakdown</b>		
	<b>Acreage</b>	<b>Parcels</b>
Residential	4.64%	46.71%
Agricultural	37.40%	25.00%
Agri/Res	57.94%	27.63%
Cemetery	0.02%	0.66%
<b>Total</b>	<b>100.00%</b>	<b>100.00%</b>

**Tax Parcel Map**

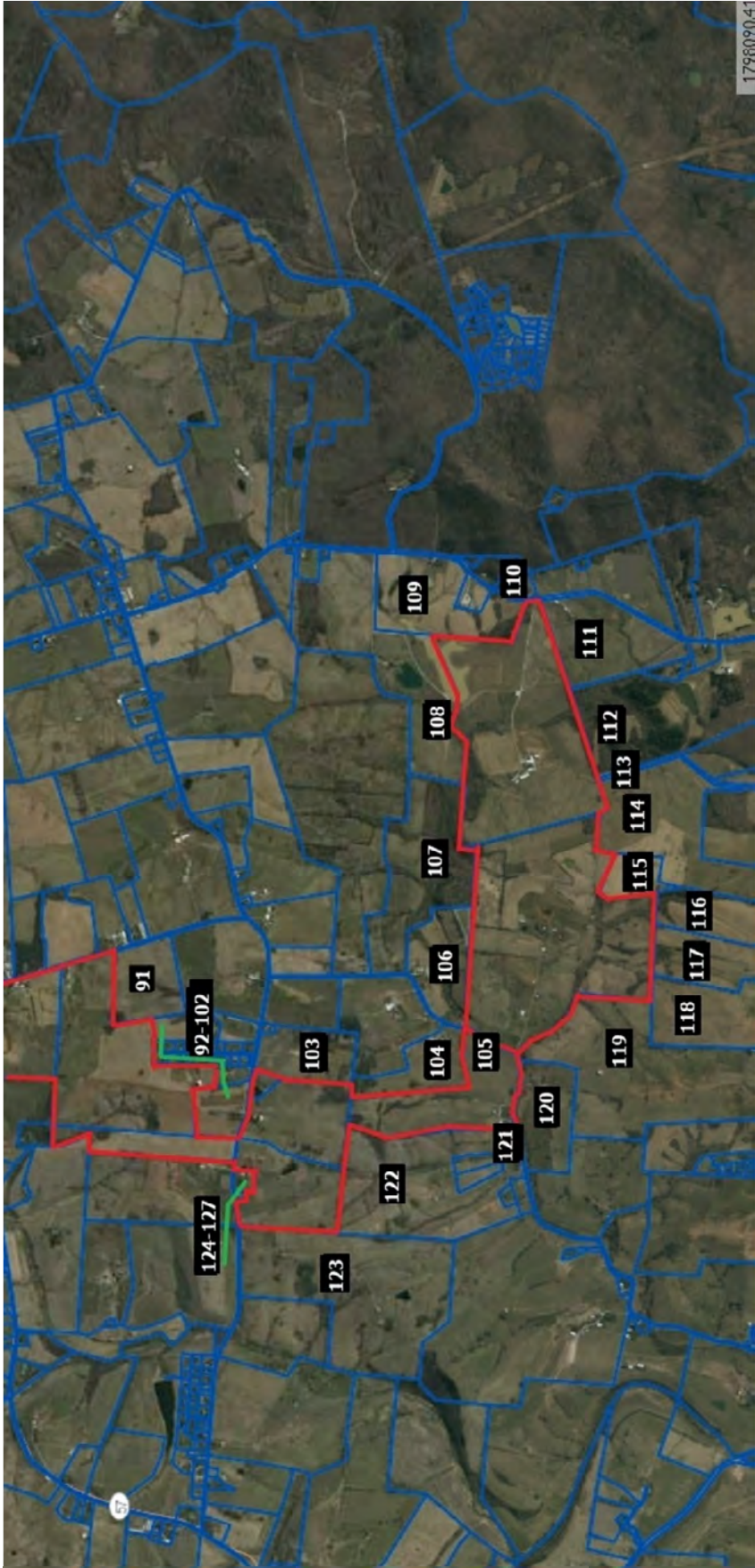












**Surrounding Uses**

#	MAP ID	Owner	GIS Data		Adjoin	Distance (ft)	LF
			Acres	Present Use	Acres	Home/Panel	Adjacency
1	057-00-00-037.00	Schwartz	86.13	Agri/Res	1.23%	500	2,175
2	057-00-00-007.00	Eicher	95.83	Agricultural	1.37%	N/A	2875
3	057-00-00-007.02	Lengacher	15.11	Residential	0.22%	N/A	1130
4	057-00-00-006.00	Triple A Farm	141.88	Agri/Res	2.03%	2,015	1
5	057-00-00-008.00	Reid	0.50	Residential	0.01%	1,620	155
6	057-00-00-008.00	Reid	87.90	Agri/Res	1.26%	1,130	1,250
7	057-00-00-008.01	Reid	0.59	Residential	0.01%	1,180	140
8	069-00-00-019.00	Humphries	174.00	Agri/Res	2.49%	500	2750
9	069-00-00-018.00	Kearns	1.50	Residential	0.02%	500	220
10	069-00-00-021.01	Graber	13.66	Residential	0.20%	650	775
11	069-00-00-021.00	Lengacher	25.06	Agri/Res	0.36%	500	2,140
12	069-00-00-020.00	Mers	0.58	Residential	0.01%	500	50
13	069-00-00-025.00	Mers	5.41	Residential	0.08%	500	1,570
14	069-00-00-027.0	Meadows	9.11	Residential	0.13%	565	695
15	069-00-00-028.00	Crump	20.20	Agri/Res	0.29%	885	200
16	069-00-00-028.01	Rucker	7.21	Residential	0.10%	765	1050
17	069-00-00-029.00	Utterback	1.88	Residential	0.03%	N/A	Easement
18	069-00-00-029.01	Utterback	46.82	Agricultural	0.67%	N/A	Easement
19	069-40-00-054.00	Utterback	1.33	Residential	0.02%	2,750	Easement
20	069-00-00-007.00	Mineer	41.08	Agricultural	0.59%	N/A	Easement
21	069-00-00-011.00	Mineer	0.98	Residential	0.01%	1,770	Easement
22	069-00-00-007.03	Suarez	45.03	Agricultural	0.64%	N/A	Easement
23	069-00-00-001.00	Miller	60.00	Agricultural	0.86%	N/A	3000
24	080-00-00-011.00	Applegate	1.00	Residential	0.01%	N/A	590
25	069-00-00-004.00	Applegate	56.75	Agri/Res	0.81%	1,140	1910
26	069-00-00-003.00	Ratliff	4.95	Residential	0.07%	860	855
27	069-00-00-005.00	Foxworthy	150.00	Agri/Res	2.15%	1,165	2110
28	068-00-00-013.00	White	65.50	Agri/Res	0.94%	1,510	1275
29	080-00-00-004.00	Meadows	128.19	Agri/Res	1.84%	650	4880
30	080-00-00-004.01	Hughes	25.31	Agricultural	0.36%	N/A	645
31	080-00-00-002.00	Applegate	49.50	Agri/Res	0.71%	1,220	555
32	104647	Applegate	10.40	Residential	0.15%	N/A	1315
33	012-00-00-048.00	Unknown	209.30	Agricultural	3.00%	N/A	1040
34	105270	Applegate	69.80	Agricultural	1.00%	N/A	1525
35	104208	Burberry	113.80	Agricultural	1.63%	N/A	1790
36	080-00-00-009.00	Schwartz	121.00	Agri/Res	1.73%	500	4210
37	081-00-00-010.00	Schwartz	38.03	Agricultural	0.54%	N/A	2230
38	081-00-00-002.00	Beckett	0.50	Residential	0.01%	500	215
39	081-00-00-004.02	Skaggs	6.06	Residential	0.09%	N/A	1255
40	080-00-00-012.00	Skaggs	0.87	Residential	0.01%	N/A	610
41	080-00-00-006.00	May	2.29	Residential	0.03%	500	635
42	081-00-00-001.02	Palmer	0.77	Residential	0.01%	500	295
43	081-00-00-001.01	Palmer	3.52	Residential	0.05%	530	490
44	081-00-00-006.00	Mers	2.85	Residential	0.04%	500	490



#	MAP ID	Owner	GIS Data		Adjoin	Distance (ft)	LF
			Acres	Present Use	Acres	Home/Panel	Adjacency
45	081-00-00-009.00	Spann	2.59	Residential	0.04%	500	25
46	081-00-00-008.00	Schwartz	43.23	Agricultural	0.62%	N/A	315
47	081-00-00-012.00	Graber	69.93	Agricultural	1.00%	N/A	Easement
48	081-00-00-045.00	Graber	10.00	Residential	0.14%	N/A	1680
49	081-00-00-039.00	Smith	30.00	Agri/Res	0.43%	500	825
50	081-00-00-040.00	Doyle	72.92	Agricultural	1.04%	N/A	250
51	081-00-00-041.00	Garrett	335.55	Agri/Res	4.80%	845	2640
52	081-00-00-041.01	Steele	5.54	Residential	0.08%	N/A	920
53	070-00-00-002.01	Graber	30.70	Agricultural	0.44%	N/A	3000
54	070-00-00-003.00	Rolph Family	1.38	Cemetery	0.02%	N/A	215
55	082-00-00-005.00	New Direction	70.12	Agricultural	1.00%	N/A	1265
56	082-00-00-032.00	Taylor Trust	285.25	Agri/Res	4.08%	5,110	775
57	070-00-00-028.02	Holt	7.59	Residential	0.11%	N/A	340
58	070-00-00-028.05	Schwartz	81.43	Agri/Res	1.17%	1,785	1855
59	070-00-00-026.00	Marshall	66.41	Agri/Res	0.95%	1,215	2970
60	070-00-00-023.00	Marshall	110.96	Agricultural	1.59%	1,110	3970
61	070-00-00-009.00	Marshall	96.68	Agricultural	1.38%	N/A	705
62	069-00-00-039.00	Caudill	85.38	Agricultural	1.22%	N/A	3220
63	069-00-00-037.00	Williams	95.06	Agri/Res	1.36%	500	980
64	069-00-00-048.00	Turner	107.21	Agricultural	1.53%	N/A	3155
65	069-00-00-033.00	Lewis	35.62	Agricultural	0.51%	1,085	Easement
66	069-00-00-031.00	Swim	1.11	Residential	0.02%	1,055	Easement
67	069-00-00-034.01	Ripato	0.93	Residential	0.01%	1,210	Easement
68	069-00-00-034.02	Ripato	1.83	Residential	0.03%	1,330	Easement
69	069-00-00-036.00	Williams	52.31	Agri/Res	0.75%	1,080	Easement
70	069-00-00-042.00	Esh	1.94	Residential	0.03%	500	755
71	069-00-00-041.00	Kegley	2.81	Residential	0.04%	500	650
72	069-00-00-040.00	Kegley	0.86	Residential	0.01%	500	605
73	069-00-00-047.02	Kegley	52.48	Agricultural	0.75%	N/A	1865
74	069-00-00-045.00	Caudill	29.36	Agricultural	0.42%	N/A	895
75	069-00-00-044.00	Mik	4.75	Residential	0.07%	500	575
76	070-00-00-006.01	Esh	14.95	Residential	0.21%	515	1
77	070-00-00-004.00	McKisson	5.00	Residential	0.07%	625	430
78	069-00-00-047.01	Hickerson	1.90	Residential	0.03%	500	950
79	070-00-00-005.00	Helmuth	12.66	Residential	0.18%	500	1705
80	070-00-00-006.02	Norton	16.81	Residential	0.24%	665	1580
81	070-00-00-010.00	Peachey	36.07	Agri/Res	0.52%	880	2165
82	070-00-00-011.00	Marshall	1.21	Residential	0.02%	500	175
83	070-00-00-014.00	Marshall	110.00	Agricultural	1.57%	N/A	4325
84	070-00-00-013.00	Gardner	1.30	Residential	0.02%	500	485
85	070-00-00-015.00	Marshall	70.86	Agricultural	1.01%	N/A	1145
86	070-00-00-016.00	Caudill	38.46	Agricultural	0.55%	N/A	1525
87	070-00-00-016.00	Marshall	57.75	Agricultural	0.83%	N/A	2205
88	058-00-00-034.00	Holland	17.00	Residential	0.24%	795	1455

#	MAP ID	Owner	GIS Data		Adjoin	Distance (ft)	LF
			Acres	Present Use	Acres	Home/Panel	Adjacency
89	058-00-00-034.01	Peachey	26.69	Agricultural	0.38%	N/A	720
90	058-00-00-036.00	Coblentz	19.00	Residential	0.27%	500	315
91	058-00-00-037.00	Prater	39.75	Agricultural	0.57%	N/A	2120
92	058-00-00-040.00	Fearin	13.55	Residential	0.19%	N/A	405
93	058-00-00-040.28	Harmon	0.70	Residential	0.01%	500	175
94	058-00-00-040.26	Conn	1.21	Residential	0.02%	500	490
95	058-00-00-040.22	Soule	1.10	Residential	0.02%	500	220
96	058-00-00-040.20	Ballard	0.55	Residential	0.01%	500	110
97	058-00-00-040.18	Ballard	0.55	Residential	0.01%	N/A	125
98	058-00-00-040.14	Stacy	1.33	Residential	0.02%	500	295
99	058-00-00-040.12	Williams	0.57	Residential	0.01%	500	120
100	058-00-00-040.10	McCleese	0.57	Residential	0.01%	500	1
101	058-00-00-041.03	Utterback	5.00	Residential	0.07%	500	405
102	058-00-00-041.00	Brewer	21.03	Agri/Res	0.30%	695	1280
103	059-00-00-005.01	Harvey	38.15	Agricultural	0.55%	N/A	Easement
104	059-00-00-009.02	Lunsford	34.47	Agricultural	0.49%	500	2730
105	059-00-00-012.01	Williams	1.72	Residential	0.02%	500	1215
106	059-00-00-009.01	Mazelin	45.00	Agri/Res	0.64%	835	2250
107	059-00-00-008.00	Wills	100.30	Agricultural	1.44%	N/A	2770
108	070-00-00-039.00	Fearin	127.44	Agri/Res	1.82%	500	3060
109	071-00-00-003.00	Williams	80.07	Agri/Res	1.15%	1,425	2240
110	071-00-00-003.01	Williams	9.13	Residential	0.13%	525	150
111	071-00-00-005.00	Salyers	119.60	Agri/Res	1.71%	500	1810
112	071-00-00-010.01	Lengacher	130.47	Agri/Res	1.87%	2,635	1760
113	059-00-00-028.01	Jones	0.86	Residential	0.01%	N/A	20
114	059-00-00-028.00	Jones	112.25	Agri/Res	1.61%	2,975	1710
115	059-00-00-027.00	Jones	18.28	Residential	0.26%	N/A	1880
116	059-00-00-026.00	Strausbaugh	45.65	Agri/Res	0.65%	2,835	620
117	059-00-00-023.00	Borders	50.00	Agri/Res	0.72%	2,140	940
118	059-00-00-022.00	Gooding	68.00	Agri/Res	0.97%	2,180	460
119	059-00-00-021.00	Himes	169.00	Agri/Res	2.42%	2,705	3090
120	059-00-00-011.00	Bedore	40.00	Agri/Res	0.57%	500	1315
121	059-00-00-014.00	Mitchell	3.33	Residential	0.05%	500	270
122	059-00-00-013.00	Doyle	125.32	Agri/Res	1.79%	850	4785
123	059-00-00-001.00	Kaenzig	170.60	Agri/Res	2.44%	2,825	2830
124	058-00-00-043.00	Colgan	87.05	Agricultural	1.25%	N/A	Easement
125	058-00-00-042.00	Colgan	76.75	Agri/Res	1.10%	880	Easement
126	059-00-00-003.00	Colgan	0.34	Residential	0.00%	1,450	Easement
127	059-00-00-004.00	Galbreath	4.39	Residential	0.06%	1,225	Easement
128	058-00-00-019.00	Morris	100.00	Agri/Res	1.43%	2,015	Easement
129	058-00-00-022.00	Lindberg	5.43	Residential	0.08%	500	Easement
130	058-00-00-023.02	Hill	35.57	Agricultural	0.51%	N/A	1450
131	058-00-00-023.00	Lamar	0.24	Residential	0.00%	500	100
132	058-00-00-023.01	Spencer	3.26	Residential	0.05%	670	545

#	MAP ID	Owner	GIS Data		Adjoin	Distance (ft)	LF
			Acres	Present Use	Acres	Home/Panel	Adjacency
133	058-00-00-025.00	Cox	1.27	Residential	0.02%	500	390
134	058-00-00-026.00	Earls	0.77	Residential	0.01%	500	335
135	058-00-00-028.00	Spencer	0.32	Residential	0.00%	500	120
136	058-00-00-029.00	Schwartz	0.34	Residential	0.00%	500	100
137	058-00-00-030.00	Arthur	0.61	Residential	0.01%	500	345
138	058-00-00-020.00	Graham	26.37	Agricultural	0.38%	N/A	645
139	058-00-00-020.01	Strode	32.42	Agri/Res	0.46%	875	1575
140	058-00-00-017.00	Gilliam	41.93	Agri/Res	0.60%	500	1935
141	058-00-00-018.00	Dillon	24.50	Agri/Res	0.35%	500	2725
142	058-00-00-016.00	Utterback	0.70	Residential	0.01%	500	3060
143	058-00-00-012.03	Caskey	12.48	Residential	0.18%	N/A	575
144	058-00-00-012.05	Hawkins	2.00	Residential	0.03%	575	260
145	058-00-00-012.00	Gilkerson	12.47	Residential	0.18%	N/A	140
146	058-00-00-014.00	Utterback	25.83	Agricultural	0.37%	N/A	960
147	057-00-00-016.00	Conrad	110.00	Agri/Res	1.57%	1,690	2400
148	057-00-00-013.00	Reeder	149.97	Agricultural	2.15%	N/A	4220
149	057-00-00-013.00	Reeder	80.03	Agricultural	1.15%	N/A	4240
150	057-00-00-011.00	Johnson	93.33	Agri/Res	1.34%	1,120	4965
151	057-00-00-012.00	Reeder	141.78	Agricultural	2.03%	N/A	5870
152	057-00-00-015.00	Humphries	175.93	Agri/Res	2.52%	940	4265
<b>Total</b>			<b>6985.389</b>		<b>100.00%</b>	963	

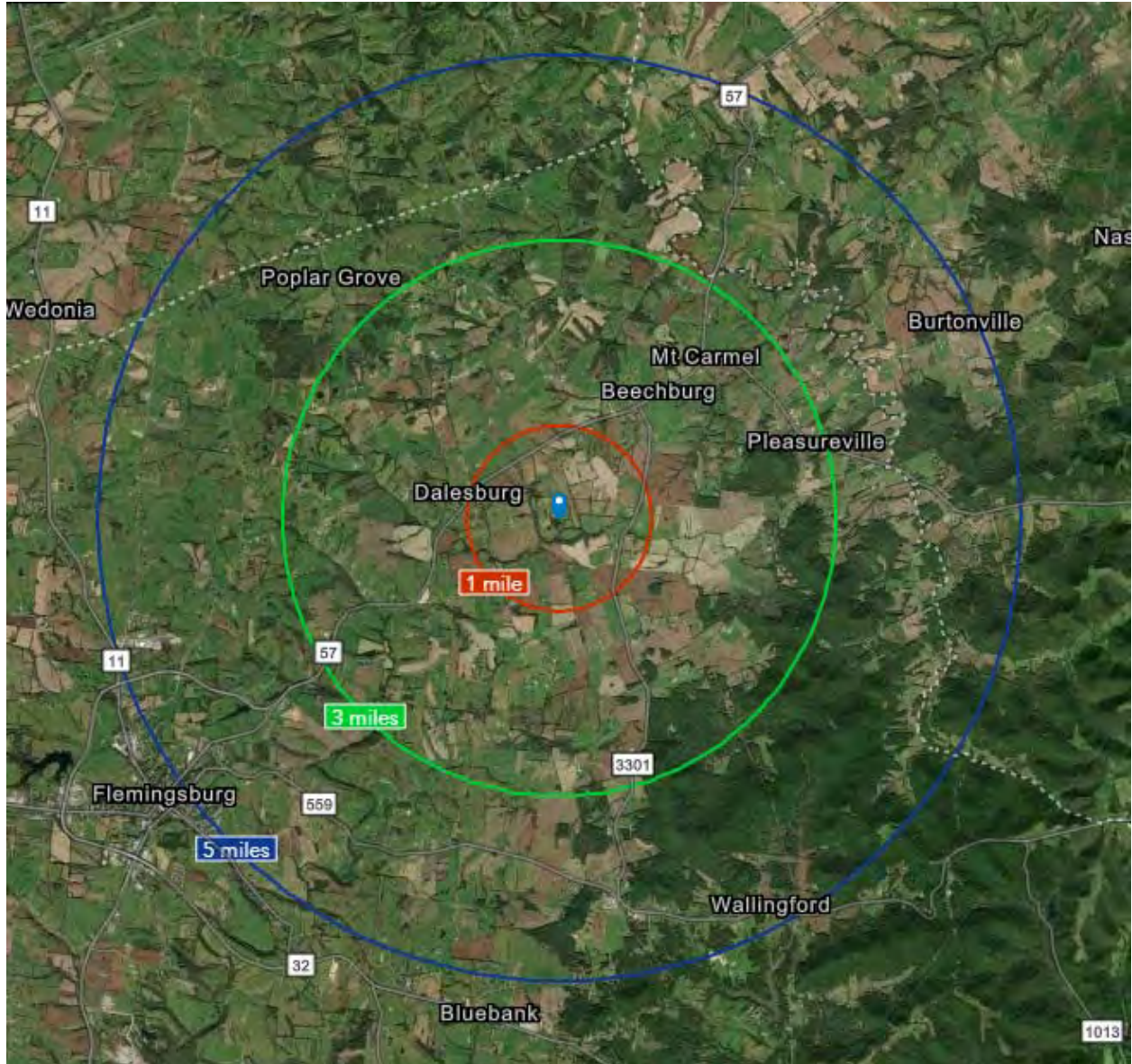
N/A indicates that there is no adjoining home to which to measure.

Linear feet of adjacency listed in red means that the property is across a right of way from the subject property.

Linear feet of adjacency of 1 foot is assigned where properties meet at a corner.

## II. Demographics

I have pulled the following demographics for a 1-mile, 3-mile and 5-mile radius around the proposed solar farm project.







## Housing Profile

41041, Flemingsburg, Kentucky 2  
 41041, Flemingsburg, Kentucky  
 Ring: 1 mile radius

Prepared by Esri  
 Latitude: 38.46500  
 Longitude: -83.65440

Population		Households	
2010 Total Population	118	2021 Median Household Income	\$59,840
2021 Total Population	110	2026 Median Household Income	\$59,840
2026 Total Population	109	2021-2026 Annual Rate	0.00%
2021-2026 Annual Rate	-0.18%		

Housing Units by Occupancy Status and Tenure	Census 2010		2021		2026	
	Number	Percent	Number	Percent	Number	Percent
Total Housing Units	40	100.0%	38	100.0%	38	100.0%
Occupied	34	85.0%	32	84.2%	32	84.2%
Owner	28	70.0%	25	65.8%	25	65.8%
Renter	6	15.0%	7	18.4%	7	18.4%
Vacant	6	15.0%	6	15.8%	6	15.8%

Owner Occupied Housing Units by Value	2021		2026	
	Number	Percent	Number	Percent
Total	25	100.0%	24	100.0%
<\$50,000	3	12.0%	2	8.3%
\$50,000-\$99,999	5	20.0%	4	16.7%
\$100,000-\$149,999	5	20.0%	4	16.7%
\$150,000-\$199,999	3	12.0%	3	12.5%
\$200,000-\$249,999	0	0.0%	0	0.0%
\$250,000-\$299,999	1	4.0%	1	4.2%
\$300,000-\$399,999	5	20.0%	6	25.0%
\$400,000-\$499,999	0	0.0%	0	0.0%
\$500,000-\$749,999	2	8.0%	3	12.5%
\$750,000-\$999,999	1	4.0%	1	4.2%
\$1,000,000-\$1,499,999	0	0.0%	0	0.0%
\$1,500,000-\$1,999,999	0	0.0%	0	0.0%
\$2,000,000+	0	0.0%	0	0.0%
Median Value	\$145,000		\$183,333	
Average Value	\$230,000		\$270,833	

Census 2010 Housing Units	Number	Percent
Total	40	100.0%
In Urbanized Areas	0	0.0%
In Urban Clusters	1	2.5%
Rural Housing Units	39	97.5%

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

March 15, 2022





## Housing Profile

41041, Flemingsburg, Kentucky 2  
 41041, Flemingsburg, Kentucky  
 Ring: 3 mile radius

Prepared by Esri  
 Latitude: 38.46500  
 Longitude: -83.65440

Population		Households	
2010 Total Population	1,078	2021 Median Household Income	\$54,492
2021 Total Population	1,088	2026 Median Household Income	\$56,791
2026 Total Population	1,077	2021-2026 Annual Rate	0.83%
2021-2026 Annual Rate	-0.20%		

Housing Units by Occupancy Status and Tenure	Census 2010		2021		2026	
	Number	Percent	Number	Percent	Number	Percent
Total Housing Units	421	100.0%	428	100.0%	433	100.0%
Occupied	382	90.7%	388	90.7%	386	89.1%
Owner	319	75.8%	303	70.8%	303	70.0%
Renter	63	15.0%	85	19.9%	83	19.2%
Vacant	39	9.3%	40	9.3%	47	10.9%

Owner Occupied Housing Units by Value	2021		2026	
	Number	Percent	Number	Percent
Total	304	100.0%	302	100.0%
<\$50,000	36	11.8%	26	8.6%
\$50,000-\$99,999	69	22.7%	53	17.5%
\$100,000-\$149,999	54	17.8%	48	15.9%
\$150,000-\$199,999	43	14.1%	44	14.6%
\$200,000-\$249,999	17	5.6%	19	6.3%
\$250,000-\$299,999	10	3.3%	11	3.6%
\$300,000-\$399,999	36	11.8%	47	15.6%
\$400,000-\$499,999	0	0.0%	0	0.0%
\$500,000-\$749,999	19	6.2%	27	8.9%
\$750,000-\$999,999	17	5.6%	24	7.9%
\$1,000,000-\$1,499,999	3	1.0%	3	1.0%
\$1,500,000-\$1,999,999	0	0.0%	0	0.0%
\$2,000,000+	0	0.0%	0	0.0%
Median Value	\$143,519		\$177,273	
Average Value	\$230,345		\$277,152	

Census 2010 Housing Units	Number	Percent
Total	421	100.0%
In Urbanized Areas	0	0.0%
In Urban Clusters	98	23.3%
Rural Housing Units	323	76.7%

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

March 15, 2022



## Housing Profile

41041, Flemingsburg, Kentucky 2  
 41041, Flemingsburg, Kentucky  
 Ring: 5 mile radius

Prepared by Esri  
 Latitude: 38.46500  
 Longitude: -83.65440

Population		Households	
2010 Total Population	4,142	2021 Median Household Income	\$48,754
2021 Total Population	4,181	2026 Median Household Income	\$51,387
2026 Total Population	4,152	2021-2026 Annual Rate	1.06%
2021-2026 Annual Rate	-0.14%		

Housing Units by Occupancy Status and Tenure	Census 2010		2021		2026	
	Number	Percent	Number	Percent	Number	Percent
Total Housing Units	1,803	100.0%	1,825	100.0%	1,846	100.0%
Occupied	1,607	89.1%	1,631	89.4%	1,624	88.0%
Owner	1,233	68.4%	1,159	63.5%	1,161	62.9%
Renter	374	20.7%	472	25.9%	463	25.1%
Vacant	196	10.9%	194	10.6%	222	12.0%

Owner Occupied Housing Units by Value	2021		2026	
	Number	Percent	Number	Percent
Total	1,159	100.0%	1,161	100.0%
<\$50,000	156	13.5%	120	10.3%
\$50,000-\$99,999	318	27.4%	269	23.2%
\$100,000-\$149,999	176	15.2%	160	13.8%
\$150,000-\$199,999	161	13.9%	167	14.4%
\$200,000-\$249,999	84	7.2%	94	8.1%
\$250,000-\$299,999	44	3.8%	49	4.2%
\$300,000-\$399,999	107	9.2%	143	12.3%
\$400,000-\$499,999	2	0.2%	3	0.3%
\$500,000-\$749,999	51	4.4%	74	6.4%
\$750,000-\$999,999	51	4.4%	71	6.1%
\$1,000,000-\$1,499,999	8	0.7%	10	0.9%
\$1,500,000-\$1,999,999	1	0.1%	1	0.1%
\$2,000,000+	0	0.0%	0	0.0%
Median Value		\$129,972		\$159,431
Average Value		\$203,214		\$242,076

Census 2010 Housing Units	Number	Percent
Total	1,803	100.0%
In Urbanized Areas	0	0.0%
In Urban Clusters	594	32.9%
Rural Housing Units	1,209	67.1%

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

March 15, 2022

### **III. Methodology and Discussion of Issues**

#### **Standards and Methodology**

I conducted this analysis using the standards and practices established by the Appraisal Institute and that conform to the Uniform Standards of Professional Appraisal Practice. The analyses and methodologies contained in this report are accepted by all major lending institutions, and they are used in 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.

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

#### **Determining what is an External Obsolescence**

An external obsolescence is a use of property that, because of its characteristics, might have a negative impact on the value of adjacent or nearby properties because of identifiable impacts. Determining whether a use would be considered an external obsolescence requires a study that isolates that use, eliminates any other causing factors, and then studies the sales of nearby versus distant comparable properties. The presence of one or a combination of key factors does not mean the use will be an external obsolescence, but a combination of these factors 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) Appearance/Viewshed. This is the one area that potentially applies to solar farms. However, solar farms are generally required to provide significant setbacks and landscaping buffers to address that concern. Furthermore, any consideration of appearance of viewshed impacts has to be considered in comparison with currently allowed uses on that site. For example if a residential subdivision is already an allowed use, the question becomes in what way does the appearance impact adjoining property owners above and beyond the appearance of that allowed subdivision or other similar allowed uses.

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

### **Relative Solar Farm Sizes**

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

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

I have split out the data for the matched pairs adjoining larger solar farms only to illustrate the similarities later in this report. I note that I have matched pairs adjoining solar farms up to 620 MWs in size showing no impact on property value.

### **Steps Involved in the Analysis**

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

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

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

## **IV. Research on Solar Farms**

### **A. *Appraisal Market Studies***

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

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

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

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

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

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

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

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

Mr. Kaila also interviewed County Planners and Real Estate Assessor's in eight different Virginia counties with none of the assessor's identifying any negative impacts observed for existing solar projects.

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

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

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

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

re-assessments were based on the County Official, who lived adjacent to the solar farm, appeal to the assessor for reductions with his own home.” In that Clay County Case study the noted lack of lot sales after announcement of the solar farm also coincided with the recession in 2008/2009 and lack of lot sales effectively defined that area during that time. I contacted the Clay County Assessor who indicated that there is no set downward adjustment for properties adjoining solar farms in the county at this time.

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

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

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

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

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

**Mary McClinton Clay, MAI – McCracken County Solar Project Value Impact Report, July 10, 2021**

Ms. Mary Clay, MAI reviewed a report by Kirkland Appraisals in this case and also provided a differing opinion of impact. She cites a number of other appraisal studies and interestingly finds fault with heavily researched opinions, while praising the results of poorly researched studies that found the opposing view.

Her analysis includes details from solar farms that show no impact on value, but she dismisses those.

She cites the University of Texas study noted later in this report, but she cites only isolated portions of that study to conclude the opposite of what that study specifically concludes.

She cites the University of Rhode Island study noted alter in this report, but specifically excludes the conclusion of that study that in rural areas they found no impact on property value.

She cites lot sales near Spotsylvania Solar without confirming the purchase prices with brokers as indicative of market impact and has made no attempt to compare lot prices that are contemporaneous. In her 5 lot sales that she identifies, all of the lot prices decline with time from 2015 through 2019. This includes the 3 lot sales prior to the approval of the solar farm. The lot sales she cites showing a drop are all related to the original developer of that subdivision 20+ years

ago liquidating all of their lots in that time period and shows significant drops on all of the lots due to it being a liquidation value. More recent lot sales show lot prices over \$100,000 with the most recent land sale adjoining the solar farm having sold in December of 2021 for \$140,000. I spoke with Chris Kalia, MAI out of VA about these lot sales and he confirmed along with two other appraisers in that market that he connected me with that the lot sales Ms. Clay identified were all related to that liquidation and not related to the solar farm. All three appraisers agreed that they had seen no negative impacts from Spotsylvania Solar and that lot prices among builders and home owners were going up and home prices in the neighborhood were likewise going up.

She considers data at McBride Place Solar Farm and does a sale/resale analysis based on Zillow Home Value Index, which is not a reliable indication for appreciation in the market. She then adjusted her initial sales prior to the solar farm over 7 years to determine what she believes the home should have appreciated by and then compares that to an actual sale. She has run no tests or any analysis to show that the appreciation rates she is using are consistent with the market but more importantly she has not attempted to confirm any of these sales with market participants. I have spoken with brokers active in the sales that she cites and they have all indicated that the solar farm was not a negative factor in marketing or selling those homes.

She has considered lot sales at Sunshine Farms in Grandy, NC. She indicates that the lots next to the solar farm are selling for less than lots not near the solar farm, but she is actually using lot sales next to the solar farm prior to the solar farm being approved. She also ignores recent home sales adjoining this solar farm after it was built that show no impact on property value.

She also notes a couple of situations where solar developers have purchased adjoining homes and resold them or where a neighbor agreement was paid as proof of a negative impact on property value. Given that there are over 2,500 solar farms in the USA as of 2018 according to the U.S. Energy Information Administration and there are only a handful of such examples, this is clearly not an industry standard but a business decision. Furthermore, solar developers are not in the business of flipping homes and are in a position very similar to a bank that acquires a home as OREO (Other Real Estate Owned), where homes are frequently sold at discounted prices, not because of any drop in value, but because they are not a typically motivated seller. Market value requires an analysis of a typically motivated buyer and seller. So these are not good indicators of market value impacts.

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

### **Conclusion of Impact Studies**

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

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

### **B. Articles**

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

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

Andy Ames, ASFMRA (American Society of Farm Managers and Rural Appraisers) published this article that includes a discussion of his survey of appraisers and studies on the question of property

value related to solar farms. He discusses the university studies that I have cited as well as Patricia McGarr, MAI.

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

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

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

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

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

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

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

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

### **C. *Broker Commentary***

In the process of working up the matched pairs used later in this report, I have collected comments from brokers who have actually sold homes adjoining solar farms indicating that the solar farm had no impact on the marketing, timing, or sales price for the adjoining homes. I have comments from brokers noted within the solar farm write ups of this report including brokers from Kentucky, Virginia, Tennessee, and North Carolina. I have additional commentary from other states including New Jersey and Michigan that provide the same conclusion.



## V. University Studies

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

### A. *University of Texas at Austin, May 2018*

#### **An Exploration of Property-Value Impacts Near Utility-Scale Solar Installations**

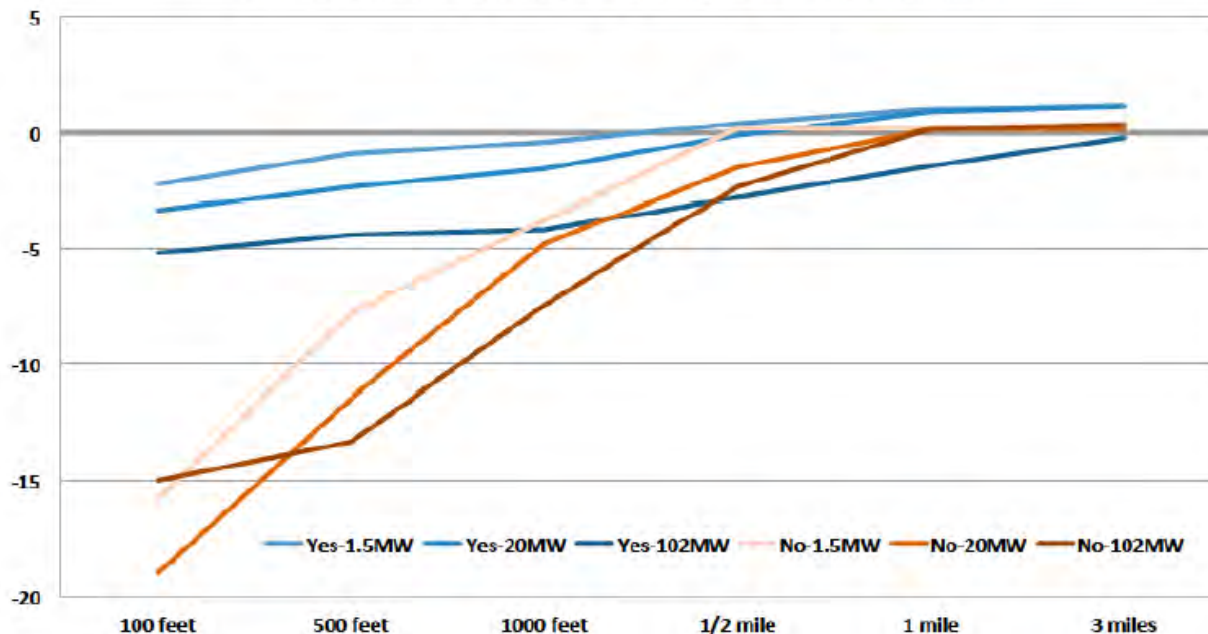
This study considers solar farms from two angles. First it looks at where solar farms are being located and concludes that they are being located primarily in low density residential areas where there are fewer homes than in urban or suburban areas.

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

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

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

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



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

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

This analysis supports the conclusion of this report that the data supports no impact on adjoining property values. The only impact suggested by this study is -5% if a home was within 100 feet of a 100 MW solar farm with little to no landscaping screening. The proposed project has a landscaping screening, is much further setback than 100 feet from adjoining homes, and is less than 100 MW.

### ***B. University of Rhode Island, September 2020***

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

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

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

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

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

Based on this study I have checked the population for the Flemingsburg CCD of Fleming County, which has a population of 7,522 population for 2021 based on HomeTownLocator using Census Data and a total area of 112.27 square miles. This indicates a population density of 67 people per square mile which puts this well below the threshold indicated by the Rhode Island Study.

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

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

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

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

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

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

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

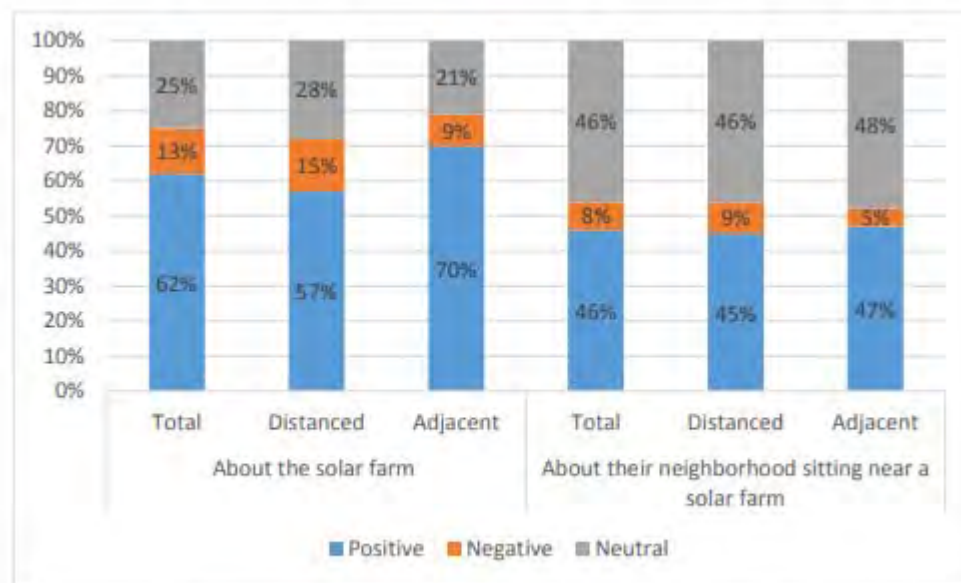


Figure 11: Residents' positive/negative word choices by geographic setting for both questions

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

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

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

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

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

## **VI. Assessor Surveys**

I have attempted to contact all of the assessor departments in North Carolina to determine how local assessors are handling solar farms and adjoining property values. I have spoken personally with a number of assessors, but much of this data was obtained via email. I have 39 counties in NC that have both responded to these questions on property value and also have solar farms in that county. I have excluded responses from assessors from counties where there are no current solar farms.

As can be seen in the chart below, of the 39 responses all of the responses have indicated that they make no adjustment to properties adjoining solar farms. Several assessors indicated that it would require an adjoining property owner to appeal their property value with data showing a negative impact before they would make any adjustment and to date they have not had that happen.

I also point out specifically Clay County. I spoke with the assessor there specifically about adjustments that were applied to some properties near a solar farm back in 2008/2011. She was unaware of the details of that event as she was not in this position at that time. As discussed earlier in this report the lower re-assessments at that solar farm were based on a County Official, who owned property adjacent to the solar farm, who made an appeal to the assessor for reductions for his own property. The noted lack of lot sales after announcement of the solar farm however coincided with the recession in 2009 and lack of lot sales effectively defined that area during that time, but without relying on any data the assessor made that change in that time frame based on conversations with the assessor. Since then, Clay County has confirmed that they do not currently make any changes to adjoining property values and the current county assessor was not even aware that they had in the past done so.

## NC Assessor Survey on Solar Farm Property Value Impacts

County	Assessor's Name	Number of Farms	Change in Adjacent Property Value
Alexander	Doug Fox	3	No
Buncombe	Lisa Kirbo	1	No
Burke	Daniel Isenhour	3, 2 on 1 parcel, 1 on 3 parcels	No
Cabarrus	Justin	less than 10, more in the works	No
Caldwell	Monty Woods	3 small	No, but will look at data in 2025
Catawba	Lori Ray	14	No
Chatham	Jenny Williams	13	No
Cherokee	Kathy Killian	9	No
Chowan	Melissa Radke	3, 1 almost operational	No
Clay	Bonnie L. Lyvers		No
Davidson	Libby	1	No
Duplin	Gary Rose	34, 2 more in planning	No
Franklin	Marion Cascone	11	No
Gaston	Traci Hovis	3	No
Gates	Chris Hill	3	No
Granville	Jenny Griffin	8	No
Halifax	C. Shane Lynch	Multiple	No
Hoke	Mandi Davis	4	No
Hyde	Donnie Shumate	1 to supplement egg processing plant	No
Iredell	Wes Long	2, 3 others approved	No
Lee	Lisa Faulkner	8	No
Lincoln	Susan Sain	2	No
Moore	Michael Howery	10	No
New Hanover	Rhonda Garner	35	No
Orange	Chad Phillip	2 or 7 depending on breakdown	No
Pender	Kayla Bolick Futrell	6	No
Person	Russell Jones	9	No
Pitt	Russell D. Hill	8, 1 in planning	No
Randolph	Mark Frick	19	No
Rockingham	Mark C McClintock	6	No
Rutherford	Kim Aldridge	20	No
Sampson	Jim Johnson	9, 1 in construction	No
Scotland	James Brown	15, 1 in process	No
Stokes	Richard Brim	2	No
Surry	Penny Harrison	4, 2 more in process	No
Union	Robin E. Merry	6	No
Vance	Cathy E. Renn	13	No
Warren	John Preston	7	No
Wayne	Alan Lumpkin	32	No
Wilson	William (Witt) Putney	~16	No, mass appraisal standards applied

Responses: 39

Negative Impact on Adjoining Value = Yes: 0

Negative Impact on Adjoining Value = No: 39

I have also been working on a survey of Virginia Assessors regarding property values related to solar farms and whether or not the local assessors have found any data to support any changes to value on property adjoining solar farms. In this process I have contacted every assessor's office by email and I have received responses by email and by phone from a number of these counties. Many of the counties in Virginia rely on outside firms to assist in gathering data for the assessments and where that is the case we have contacted the outside firms regarding the question of whether or not the assessors are currently making any adjustments to properties adjoining solar farms.

I currently have response from 16 counties that have solar farms in them and of those 16 responses none of the assessors are currently applying a negative impact on property value. One response suggested that adjoining values may go up.

I did speak with Randy Willis with Pearson Assessors. His company assists in the assessments in many of the counties south of Richmond. He indicated that they had found no data to suggest a negative impact on property value and they have looked as they were concerned about that issue. He indicated that they would make no negative impact adjustments and that he recognizes that

there are a number of agricultural adjoining uses that have a greater impact on adjoining properties in terms of noise, dust and odor than a solar farm would have. He did indicate that there could be situations where an individual home might have a greater visual impact and those should be looked at on a case-by-case basis, but he also agreed that many allowed agricultural uses could have similar visual impacts on such properties as well.

**VIRGINIA Commissioner of the Revenue**

County	Assessor Name	Number of Farms in Operation	Change in adjacent property value
Appomattox	Sara Henderson	1, plus one in process	No
Augusta	W. Jean Shrewsbury	no operational	No
Buckingham	Stephanie D. Love	1	No
Charlotte	Naisha Pridgen Carter	1, several others in the works	No
Clarke	Donna Peake	1	No
Frederick	Seth T. Thatcher	none, 2 approved for 2022	No, assuming compatible with rural area
Goochland	Mary Ann Davis		No
Hanover	Ed Burnett	1	No
Louisa	Stacey C. Fletcher	2 operational by end of year	No, only if supported by market data
Mecklenburg	Joseph E. "Ed" Taylor		No
Nottoway	Randy Willis with Pearson Assessors		No
Powhatan	Charles Everest	2 approved, 1 built	Likely increase in value
Rockingham	Dan Cullers	no operational	Likely no
Southampton	Amy B. Carr	1	Not normally
Surry	Jonathan F. Judkins	1	None at this time
Westmoreland	William K. Hoover	4	No

Responses: 16  
 Negative Impact on Adjoining Value = Yes: 0  
 Negative Impact on Adjoining Value = No: 16

## VII. 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 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 plant.

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 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 North Carolina 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 impacts 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				Adjoining Use by Number					
										Res	Agri	Agri/Res	Com	Resider	Agricul	Comm	Ind %		
610	KY	Warren	Bowling Green	Bowling Green	2	17.36	17.36	720	720	1%	64%	0%	36%	100%	10%	30%	60%	100%	
611	KY	Clark	Winchester	Cooperative Solar I	8.5	181.47	63	2,110	2,040	0%	96%	3%	0%	100%	22%	78%	0%	100%	
612	KY	Kenton	Walton	Walton 2	2	58.03	58.03	891	120	21%	0%	60%	19%	100%	65%	0%	35%	100%	
613	KY	Grant	Crittenden	Crittenden	2.7	181.7	34.1	1,035	345	22%	27%	51%	0%	100%	96%	4%	0%	100%	
617	KY	Metcalf	Summer Shade	Glover Creek		968.2	322.4	1,731	375	6%	25%	69%	0%	100%	83%	17%	0%	100%	
618	KY	Garrard	Lancaster	Turkey Creek		752.8	297.1	976	240	8%	36%	51%	5%	100%	73%	12%	15%	100%	
<b>Total Number of Solar Farms</b>					6														
<b>Average</b>					3.80	359.9	132.0	1244	640	9%	41%	39%	10%		58%	24%	18%		
<b>Median</b>					2.35	181.6	60.5	1006	360	7%	32%	51%	3%		69%	14%	7%		
<b>High</b>					8.50	968.2	322.4	2110	2040	22%	96%	69%	36%		96%	78%	60%		
<b>Low</b>					2.00	17.4	17.4	720	120	0%	0%	0%	0%		3%	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**

	<b>Acreage</b>	<b>Parcels</b>
Residential	0.58%	10.00%
Agricultural	63.89%	30.00%
Industrial	35.53%	60.00%
<b>Total</b>	<b>100.00%</b>	<b>100.00%</b>



## 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

	<b>Acreage</b>	<b>Parcels</b>
Residential	0.15%	11.11%
Agricultural	96.46%	77.78%
Agri/Res	3.38%	11.11%
<b>Total</b>	<b>100.00%</b>	<b>100.00%</b>

## 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

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



**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**

	<b>Acreage</b>	<b>Parcels</b>
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%
<b>Total</b>	<b>100.00%</b>	<b>100.00%</b>

**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**

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



## 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

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

## **VIII. 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 properties. 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.

I have derived a breakdown of the adjoining uses to show where solar farms are located. A summary showing the results of compiling that data over hundreds of solar farms is shown later in the Scope of Research section of this report.

I also consider whether the properties adjoining a solar farm in one location have characteristics similar to the properties abutting or adjoining the proposed site so that I can make an assessment of market impact on each proposed site. Notably, in most cases solar farms are placed in areas very similar to the site in question, which is surrounded by low density residential and agricultural uses. In my over 700 studies, I have found a striking repetition of that same typical adjoining property 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 solar farms and the matched pair sets were chosen. This is the total of all the usable home sales adjoining the 900+ solar farms that I have looked at over the last 10 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 than they do in urban and suburban areas and the number of adjoining homes is relatively small.

I review the solar farms that I have looked at periodically 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.

After my review of all sales and elimination of the family transactions and those sales with multiple differentials, I am left with the matched pairs shown in this report to analyze. I do have additional matched pair data in other areas of the United States that were not included in this report due to being states less comparable to Kentucky than those shown. 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. 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 and Adjoining States 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 Clairborne Drive and one home sale to the south on Eagle Ridge Drive since the completion of this solar farm. The home sale on Eagle Drive is for a \$75,000 home and all of the homes along that street are similar in size and price range. According to local broker Steve Glacken with Cutler Real Estate these are the lowest price range/style home in the market. I have not analyzed that sale as it would unlikely provide significant data to other homes in the area.

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

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



**Adjoining Residential Sales After Solar Farm Approved**

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

**Adjustments**

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

5%

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

**Adjoining Residential Sales After Solar Farm Approved**

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

**Adjustments**

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

-11%

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

**Adjoining Residential Sales After Solar Farm Approved**

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

**Adjustments**

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

-1%

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



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

**Adjoining Residential Sales After Solar Farm Approved**

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

**Adjustments**

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

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

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



**Adjoining Residential Sales After Solar Farm Approved**

<b>Solar</b>	<b>Address</b>	<b>Acres</b>	<b>Date Sold</b>	<b>Sales Price</b>	<b>Built</b>	<b>GBA</b>	<b>\$/GBA</b>	<b>BR/BA</b>	<b>Park</b>	<b>Style</b>	<b>Other</b>
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

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

1%

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

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

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



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



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

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

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

**Adjoining Use Breakdown**

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

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

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

**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%	
									<b>Average</b>	<b>6%</b>	

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%	
										<b>Average</b>	<b>4%</b>	

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

**Adjoining Residential Sales After Solar Farm Built**

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

**Adjoining Sales Adjusted**

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

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

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

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

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

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



### 3. Matched Pair – 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. The landscaping buffer is considered light.

#### **Adjoining Residential Sales After Solar Farm Completed**

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

#### **Not Adjoining Residential Sales After Solar Farm Completed**

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

<b>TAX ID</b>	<b>Date Sold</b>	<b>Time</b>	<b>Adjustments</b>	
			<b>Total</b>	<b>\$/Sf</b>
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

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

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

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

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

#### 4. 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. The landscaping buffer is considered light.

**Adjoining Residential Sales After Solar Farm Completed**

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

**Nearby Residential Sales After Solar Farm Completed**

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

**Adjoining Land Sales After Solar Farm Completed**

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

**Nearby Land Sales After Solar Farm Completed**

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

**Residential Sale Adjustment Chart**

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

2% adjustment/year  
Adjusted to 2017

	Adjoins Solar Farm		Not Adjoin Solar Farm	
	Average	Median	Average	Median
<b>Sales Price/SF</b>	\$89.41	\$89.41	\$90.91	\$91.99
<b>GBA</b>	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.

The landscaping separating this solar farm from the homes is considered light.

**Land Sale Adjustment Chart**

<b>TAX ID</b>	<b>Date Sold</b>	<b>Adjustments</b>		<b>\$/Acre</b>
		<b>Time</b>	<b>Total</b>	
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

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



**5. 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. The landscaping buffer is considered light.

**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
<b>Sales Price/SF</b>	\$64.13	\$63.03	\$61.69	\$63.08
<b>GBA</b>	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.

The landscaping screen is considered light in relation to the homes considered above.



**6. 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 of 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 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%	
<b>Average</b>												8%		

The landscaping screen is primarily a newly planted buffer with a row of existing trees being maintained near the northern boundary and considered light.



**7. Matched Pair – Walker-Correctional Solar, Barham Road, Barhamville, VA**



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

I considered the recent sale identified on the map above as Parcel 19, which is directly across the street and based on the map shown on the following page is 250 feet from the closest panel. A limited buffering remains along the road with natural growth being encouraged, but currently the panels are visible from the road. Alex Uminski, SRA with MGMiller Valuations in Richmond VA

confirmed this sale with the buying and selling broker. The selling broker indicated that the solar farm was not a negative influence on this sale and in fact the buyer noticed the solar farm and then discovered the listing. The privacy being afforded by the solar farm was considered a benefit by the buyer. I used a matched pair analysis with a similar sale nearby as shown below and found no negative impact on the sales price. Property actually closed for more than the asking price. The landscaping buffer is considered light.

**Adjoining Residential Sales After Solar Farm Approved**

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

**Adjoining Sales Adjusted**

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

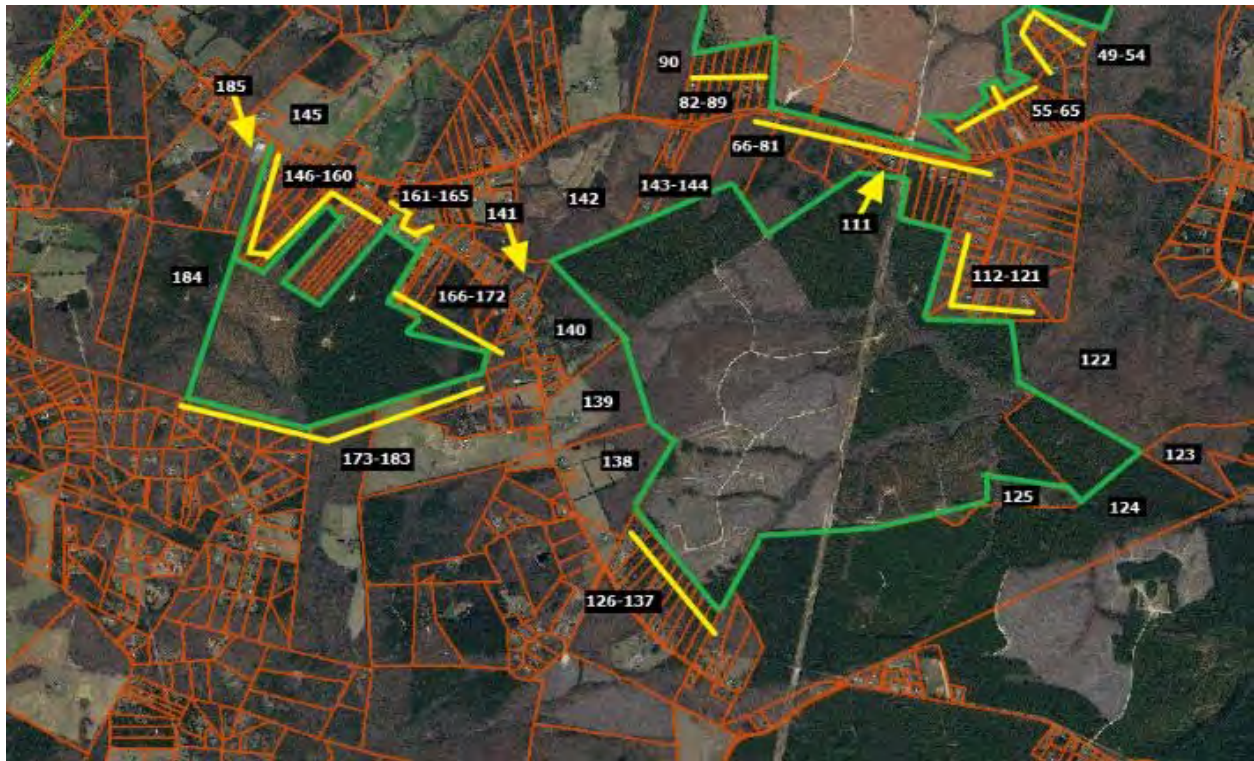
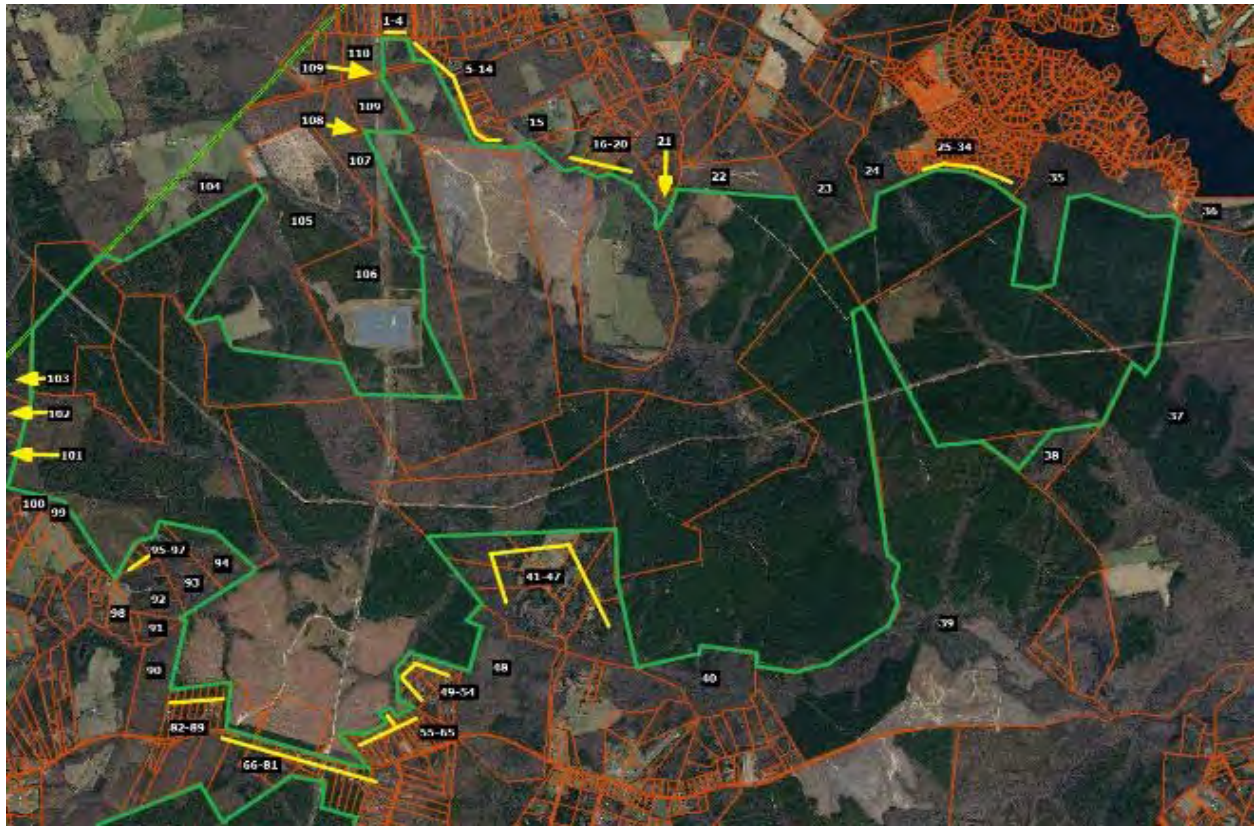
**Average Diff** 0%

I also spoke with Patrick W. McCrerey of Virginia Estates who was marketing a property that sold at 5300 Barham Road adjoining the Walker-Correctional Solar Farm. He indicated that this property was unique with a home built in 1882 and heavily renovated and updated on 16.02 acres. The solar farm was through the woods and couldn't be seen by this property and it had no impact on marketing this property. This home sold on April 26, 2017 for \$358,000. I did not set up any matched pairs for this property 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.





**9. Matched Pair – Spotsylvania Solar, Paytes, VA**



This solar farm is being built in four phases with the area known as Site C having completed construction in November 2020 after the entire project was approved in April 2019. Site C, also known as Pleinmont 1 Solar, includes 99.6 MW located in the southeast corner of the project and shown on the maps above with adjoining parcels 111 through 144. The entire Spotsylvania project totals 617 MW on 3500 acres out of a parent tract assemblage of 6,412 acres.

I have identified three adjoining home sales that occurred during construction and development of the site in 2020.

The first is located on the north side of Site A on Orange Plank Road. The second is located on Nottoway Lane just north of Caparthin Road on the south side of Site A and east of Site C. The third is located on Post Oak Road for a home that backs up to Site C that sold in September 2020 near the completion of construction for Site C.

#### Spotsylvania Solar Farm

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

#### Adjoining Sales Adjusted

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

**Average Diff** 4%

I contacted Keith Snider to confirm this sale. This is considered to have a medium landscaping screen.

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

#### Adjoining Sales Adjusted

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

**Average Diff** 2%

I contacted Annette Roberts with ReMax about this transaction. This is considered to have a medium landscaping screen.



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

**Adjoining Sales Adjusted**

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

**Average Diff** -4%

I contacted Joy Pearson with CTI Real Estate about this transaction. This is considered to have a heavy landscaping screen.

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

**Conclusion**

The solar farm matched pairs shown above have similar characteristics to each other in terms of population, but with several outliers showing solar farms in far more urban areas. The median income for the population within 1 mile of a solar farm among this subset of matched pairs is \$65,695 with a median housing unit value of \$186,463. Most of the comparables are under \$300,000 in the home price, with \$483,333 being the high end of the set, though I have matched pairs in other states over \$1,000,000 in price adjoining large solar farms. The predominate adjoining uses are residential and agricultural. These figures are in line with the larger set of solar farms that I have looked at with the predominant adjoining uses being residential and agricultural and similar to the solar farm breakdown shown for Kentucky and adjoining states as well as the proposed subject property.

Based on the similarity of adjoining uses and demographic data between these sites and the subject property, I consider it reasonable to compare these sites to the subject property.

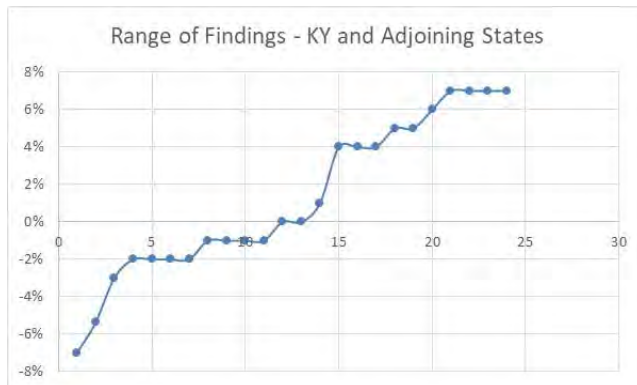
Matched Pair Summary			Adj. Uses By Acreage								1 mile Radius (2010-2020 Data)			
Name	City	State	Acres	MW	Topo Shift	Res	Ag	Ag/Res	Com/Ind	Popl.	Income Med.	Avg. Housing Unit	Veg. Buffer	
1	Crittenden	Crittenden	KY	34	2.70	40	22%	51%	27%	0%	1,419	\$60,198	\$178,643	Light
2	Mulberry	Selmer	TN	160	5.00	60	13%	73%	10%	3%	467	\$40,936	\$171,746	Lt to Med
3	Grand Ridge	Streator	IL	160	20.00	1	8%	87%	5%	0%	96	\$70,158	\$187,037	Light
4	Portage	Portage	IN	56	2.00	0	19%	81%	0%	0%	6,642	\$65,695	\$186,463	Light
5	Dominion	Indianapolis	IN	134	8.60	20	3%	97%	0%	0%	3,774	\$61,115	\$167,515	Light
6	Walker	Barhamsville	VA	485	20.00	N/A	12%	68%	20%	0%	203	\$80,773	\$320,076	Light
7	Clarke Cnty	White Post	VA	234	20.00	70	14%	39%	46%	1%	578	\$81,022	\$374,453	Light
8	Sappony	Stony Crk	VA	322	20.00	N/A	2%	98%	0%	0%	74	\$51,410	\$155,208	Medium
9	Spotsylvania	Paytes	VA	3,500	617.00	160	37%	52%	11%	0%	74	\$120,861	\$483,333	Med to Hvy
<b>Average</b>				565	79.48	50	14%	72%	13%	0%	1,481	\$70,241	\$247,164	
<b>Median</b>				160	20.00	40	13%	73%	10%	0%	467	\$65,695	\$186,463	
<b>High</b>				3,500	617.00	160	37%	98%	46%	3%	6,642	\$120,861	\$483,333	
<b>Low</b>				34	2.00	0	2%	39%	0%	0%	74	\$40,936	\$155,208	

Proposed Solar Farm at a 1-mile radius has 110 people with an average income of \$59,840 and an average home price of \$230,000.

Proposed Solar Farm at a 3-mile radius has 1,088 people with an average income of \$54,492 and an average home price of \$230,345.

These are very similar to the demographics shown around these comparable solar farms.

On the following page is a summary of the matched pairs for all of the solar farms noted above. They show a pattern of results from -7% to +7%. As can be seen in the chart of those results below, most of the data points are between -2% and +5%. This variability is common with real estate and consistent with market “static.” I therefore conclude that these results strongly support an indication of no impact on property value due to the adjacent solar farm.



**Residential Dwelling Matched Pairs Adjoining Solar Farms**

Pair	Solar Farm	City	State	MW	Approx		Date	Adj. Sale		Veg.
					Distance	Tax ID/Address		Sale Price	Price	
1	Crittenden	Crittenden	KY	2.7	373	250 Claiborne	Jan-19	\$120,000		Light
						315 N Fork	May-19	\$107,000	\$120,889	-1%
2	Crittenden	Crittenden	KY	2.7	488	300 Claiborne	Sep-18	\$213,000		Light
						1795 Bay Valley	Dec-17	\$231,200	\$228,180	-7%
3	Crittenden	Crittenden	KY	2.7	720	350 Claiborne	Jul-18	\$245,000		Light
						2160 Sherman	Jun-19	\$265,000	\$248,225	-1%
4	Crittenden	Crittenden	KY	2.7	930	370 Claiborne	Aug-19	\$273,000		Light
						125 Lexington	Apr-18	\$240,000	\$254,751	7%
5	Mulberry	Selmer	TN	5	400	0900A011	Jul-14	\$130,000		Light
						099CA043	Feb-15	\$148,900	\$136,988	-5%
6	Mulberry	Selmer	TN	5	400	099CA002	Jul-15	\$130,000		Light
						0990NA040	Mar-15	\$120,000	\$121,200	7%
7	Mulberry	Selmer	TN	5	480	491 Dusty	Oct-16	\$176,000		Light
						35 April	Aug-16	\$185,000	\$178,283	-1%
8	Mulberry	Selmer	TN	5	650	297 Country	Sep-16	\$150,000		Medium
						53 Glen	Mar-17	\$126,000	\$144,460	4%
9	Mulberry	Selmer	TN	5	685	57 Cooper	Feb-19	\$163,000		Medium
						191 Amelia	Aug-18	\$132,000	\$155,947	4%
10	Grand Ridge	Streator	IL	20	480	1497 E 21st	Oct-16	\$186,000		Light
						712 Columbus	Jun-16	\$166,000	\$184,000	1%
11	Dominion	Indianapolis	IN	8.6	400	2013249 (Tax ID)	Dec-15	\$140,000		Light
						5723 Minden	Nov-16	\$139,900	\$132,700	5%
12	Dominion	Indianapolis	IN	8.6	400	2013251 (Tax ID)	Sep-17	\$160,000		Light
						5910 Mosaic	Aug-16	\$146,000	\$152,190	5%
13	Dominion	Indianapolis	IN	8.6	400	2013252 (Tax ID)	May-17	\$147,000		Light
						5836 Sable	Jun-16	\$141,000	\$136,165	7%
14	Dominion	Indianapolis	IN	8.6	400	2013258 (Tax ID)	Dec-15	\$131,750		Light
						5904 Minden	May-16	\$130,000	\$134,068	-2%
15	Dominion	Indianapolis	IN	8.6	400	2013260 (Tax ID)	Mar-15	\$127,000		Light
						5904 Minden	May-16	\$130,000	\$128,957	-2%
16	Dominion	Indianapolis	IN	8.6	400	2013261 (Tax ID)	Feb-14	\$120,000		Light
						5904 Minden	May-16	\$130,000	\$121,930	-2%
17	Clarke Cnty	White Post	VA	20	1230	833 Nations Spr	Jan-17	\$295,000		Light
						6801 Middle	Dec-17	\$249,999	\$296,157	0%
18	Walker	Barhamsville	VA	20	250	5241 Barham	Oct-18	\$264,000		Light
						9252 Ordinary	Jun-19	\$277,000	\$246,581	7%
19	Clarke Cnty	White Post	VA	20	1230	833 Nations Spr	Aug-19	\$385,000		Light
						2393 Old Chapel	Aug-20	\$330,000	\$389,286	-1%
20	Sappony	Stony Creek	VA	20	1425	12511 Palestine	Jul-18	\$128,400		Medium
						6494 Rocky Branch	Nov-18	\$100,000	\$131,842	-3%
21	Spotsylvania	Paytes	VA	617	1270	12901 Orange Plnk	Aug-20	\$319,900		Medium
						12717 Flintlock	Dec-20	\$290,000	\$326,767	-2%
22	Spotsylvania	Paytes	VA	617	1950	9641 Nottoway	May-20	\$449,900		Medium
						11626 Forest	Aug-20	\$489,900	\$430,246	4%
23	Spotsylvania	Paytes	VA	617	1171	13353 Post Oak	Sep-20	\$300,000		Heavy
						12810 Catharpin	Jan-20	\$280,000	\$299,008	0%

MW	Avg. Distance	Average	Indicated Impact
106.72	738		1%
8.60	480	Median	0%
617.00	1,950	High	7%
5.00	250	Low	-5%

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

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

Light landscaping screens are showing no impact on value at any distances, though solar farms over 75.1 MW only show Medium and Heavy landscaping screens in the 3 examples identified. Light landscaping is 20-foot wide or less landscaping and is often a planted mix by the solar farm developer. Medium landscaping is 20 to 100 feet of landscaped buffer and is generally a retained existing wooded area. Heavy landscaping is over 100 feet of wooded buffer.

<b>MW Range</b>									
<b>4.4 to 10</b>									
<b>Landscaping</b>	<b>Light</b>	<b>Light</b>	<b>Light</b>	<b>Medium</b>	<b>Medium</b>	<b>Medium</b>	<b>Heavy</b>	<b>Heavy</b>	<b>Heavy</b>
<b>Distance</b>	<b>100-200</b>	<b>201-500</b>	<b>500+</b>	<b>100-200</b>	<b>201-500</b>	<b>500+</b>	<b>100-200</b>	<b>201-500</b>	<b>500+</b>
<b>#</b>	0	11	2	0	0	2	0	0	0
<b>Average</b>	N/A	1%	N/A	N/A	N/A	4%	N/A	N/A	N/A
<b>Median</b>	N/A	-1%	N/A	N/A	N/A	4%	N/A	N/A	N/A
<b>High</b>	N/A	7%	N/A	N/A	N/A	4%	N/A	N/A	N/A
<b>Low</b>	N/A	-5%	N/A	N/A	N/A	4%	N/A	N/A	N/A
<b>10.1 to 30</b>									
<b>Landscaping</b>	<b>Light</b>	<b>Light</b>	<b>Light</b>	<b>Medium</b>	<b>Medium</b>	<b>Medium</b>	<b>Heavy</b>	<b>Heavy</b>	<b>Heavy</b>
<b>Distance</b>	<b>100-200</b>	<b>201-500</b>	<b>500+</b>	<b>100-200</b>	<b>201-500</b>	<b>500+</b>	<b>100-200</b>	<b>201-500</b>	<b>500+</b>
<b>#</b>	0	2	2	0	0	1	0	0	0
<b>Average</b>	N/A	4%	-1%	N/A	N/A	-3%	N/A	N/A	N/A
<b>Median</b>	N/A	4%	-1%	N/A	N/A	-3%	N/A	N/A	N/A
<b>High</b>	N/A	7%	0%	N/A	N/A	-3%	N/A	N/A	N/A
<b>Low</b>	N/A	1%	-1%	N/A	N/A	-3%	N/A	N/A	N/A
<b>30.1 to 75</b>									
<b>Landscaping</b>	<b>Light</b>	<b>Light</b>	<b>Light</b>	<b>Medium</b>	<b>Medium</b>	<b>Medium</b>	<b>Heavy</b>	<b>Heavy</b>	<b>Heavy</b>
<b>Distance</b>	<b>100-200</b>	<b>201-500</b>	<b>500+</b>	<b>100-200</b>	<b>201-500</b>	<b>500+</b>	<b>100-200</b>	<b>201-500</b>	<b>500+</b>
<b>#</b>	0	0	0	0	0	0	0	0	0
<b>Average</b>	N/A	1%	0%	N/A	N/A	0%	N/A	N/A	N/A
<b>Median</b>	N/A	1%	0%	N/A	N/A	0%	N/A	N/A	N/A
<b>High</b>	N/A	2%	2%	N/A	N/A	9%	N/A	N/A	N/A
<b>Low</b>	N/A	1%	-2%	N/A	N/A	-7%	N/A	N/A	N/A
<b>75.1+</b>									
<b>Landscaping</b>	<b>Light</b>	<b>Light</b>	<b>Light</b>	<b>Medium</b>	<b>Medium</b>	<b>Medium</b>	<b>Heavy</b>	<b>Heavy</b>	<b>Heavy</b>
<b>Distance</b>	<b>100-200</b>	<b>201-500</b>	<b>500+</b>	<b>100-200</b>	<b>201-500</b>	<b>500+</b>	<b>100-200</b>	<b>201-500</b>	<b>500+</b>
<b>#</b>	0	0	0	0	0	2	0	0	1
<b>Average</b>	N/A	N/A	N/A	N/A	N/A	1%	N/A	N/A	0%
<b>Median</b>	N/A	N/A	N/A	N/A	N/A	1%	N/A	N/A	0%
<b>High</b>	N/A	N/A	N/A	N/A	N/A	4%	N/A	N/A	0%
<b>Low</b>	N/A	N/A	N/A	N/A	N/A	-2%	N/A	N/A	0%

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

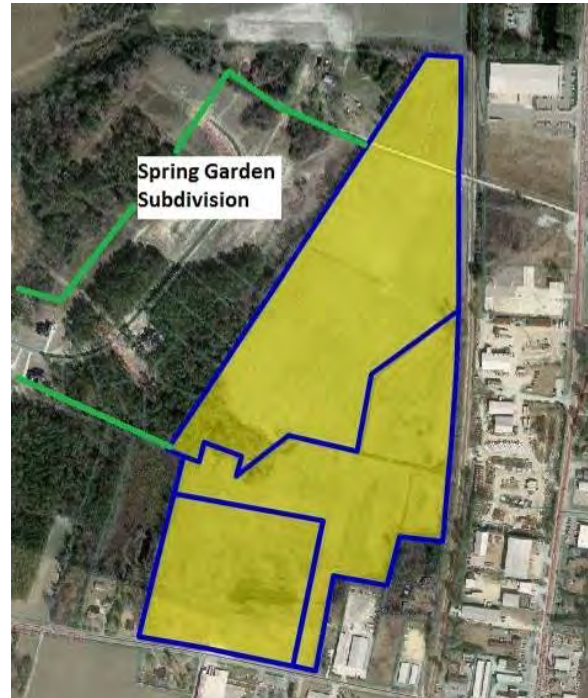
### **1. Matched Pair – AM Best Solar Farm, Goldsboro, NC**

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

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

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

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



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

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

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

**Matched Pairs**

As of Date: 9/3/2014

**Adjoining Sales After Solar Farm Completed**

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

**Adjoining Sales After Solar Farm Announced**

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

**Adjoining Sales Before Solar Farm Announced**

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

**Nearby Sales After Solar Farm Completed**

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

**Nearby Sales Before Solar Farm Announced**

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



**Matched Pair Summary**

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

**Percentage Differences**

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

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

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

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

**Adjoining Residential Sales After Solar Farm Approved**

Parcel	Solar	Address	Acres	Date Sold	Sales Price	Built	GBA	\$/GBA	BR/BA	Park	Style	Other	Distance
	Adjoins	103 Granville Pl	1.42	7/27/2018	\$265,000	2013	3,292	\$80.50	4/3.5	2-Car	2-Story		385
	Not	2219 Granville	1.15	1/8/2018	\$260,000	2012	3,292	\$78.98	4/3.5	2-Car	2-Story		
	Not	634 Friendly	0.96	7/31/2019	\$267,000	2018	3,053	\$87.45	4/4.5	2-Car	2-Story		
	Not	2403 Granville	0.69	4/23/2019	\$265,000	2014	2,816	\$94.11	5/3.5	2-Car	2-Story		
												<b>Avg</b>	
	<b>Solar</b>	<b>Address</b>	<b>Time</b>	<b>Site</b>	<b>YB</b>	<b>GLA</b>	<b>BR/BA</b>	<b>Park</b>	<b>Other</b>	<b>Total</b>	<b>% Diff</b>	<b>% Diff</b>	
	Adjoins	103 Granville Pl								\$265,000		-2%	
	Not	2219 Granville	\$4,382		\$1,300	\$0				\$265,682	0%		
	Not	634 Friendly	-\$8,303		-\$6,675	\$16,721	-\$10,000			\$258,744	2%		
	Not	2403 Granville	-\$6,029		-\$1,325	\$31,356				\$289,001	-9%		

**Adjoining Residential Sales After Solar Farm Approved**

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

**Adjoining Residential Sales After Solar Farm Approved**

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

**Adjoining Residential Sales After Solar Farm Approved**

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

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

Address	Initial Sale		Second Sale		Year	%		Apprec.
	Date	Price	Date	Price	Diff	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 – Mulberry, Selmer, TN



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

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

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

### Adjoining Use Breakdown

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

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

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

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

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

### Adjoining Residential Sales After Solar Farm Built

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

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

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

**Adjoining Residential Sales After Solar Farm Built**

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

**Adjoining Sales Adjusted**

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

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

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

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

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

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



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



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

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

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

**Nearby Residential Sale After Solar Farm Construction**

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

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

**Adjoining Sales Adjusted**

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

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

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



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



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





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



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

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

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

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

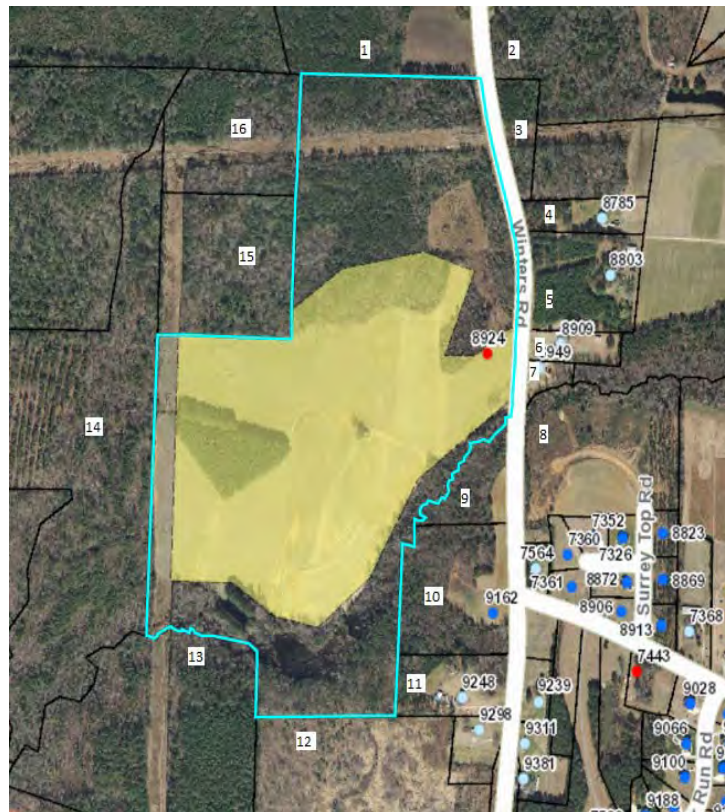
<b>Adjoining Sales Adjusted</b>											<b>Avg</b>
Address	Time	Site	YB	GLA	BR/BA	Park	Other	Total	% Diff	% Diff	Distance
105 Pinto								\$206,000			980
111 Spur	\$6,747	\$10,000	-\$6,755	-\$25,359				\$177,633	14%		
103 Marshall	-\$2,212	\$10,000	-\$24,500	-\$8,227		\$5,000		\$176,212	14%		
127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

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





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



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

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

**Adjoining Land Sales After Solar Farm Completed**

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

**Adjoining Sales Adjusted**

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

**Adjoining Residential Sales After Solar Farm Completed**

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

**Adjoining Sales Adjusted**

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

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

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

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

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

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



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

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

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



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

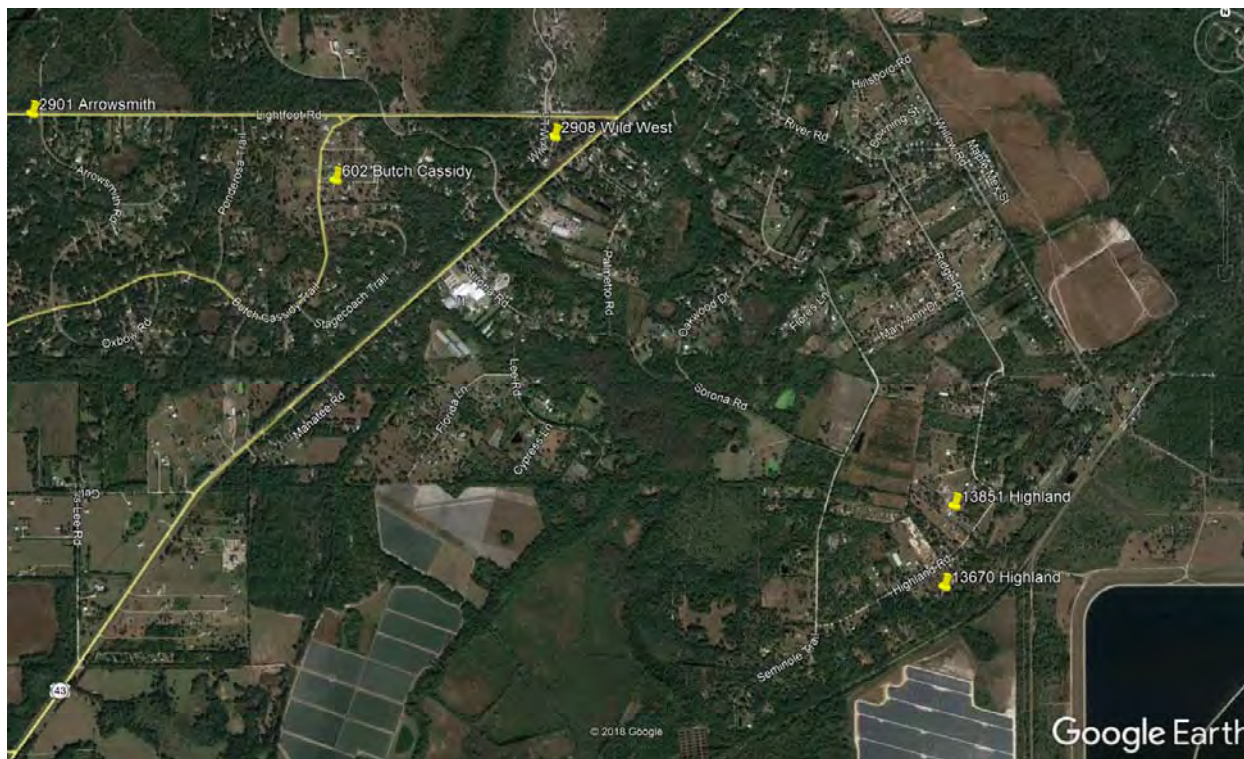
**Adjoining Sales Adjusted**

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

The sales prices of the comparables before adjustments range from \$220,000 to \$254,000. After adjustments they range from \$225,255 to \$262,073. The comparables range from no impact to a strong positive impact. The comparables showing -3% and +4% impact on value 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.





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

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

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

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

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

**Adjoining Residential Sales After Solar Farm Approved**

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

**Adjoining Sales Adjusted**

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

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 solar panel. This home then sold to a homeowner for \$530,000 in April 2020. I have compared this home sale to other properties in the area as shown below.

**Adjoining Residential Sales After Solar Farm Built**

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

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

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

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

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

**Adjoining Sales Adjusted**

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

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

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

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

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

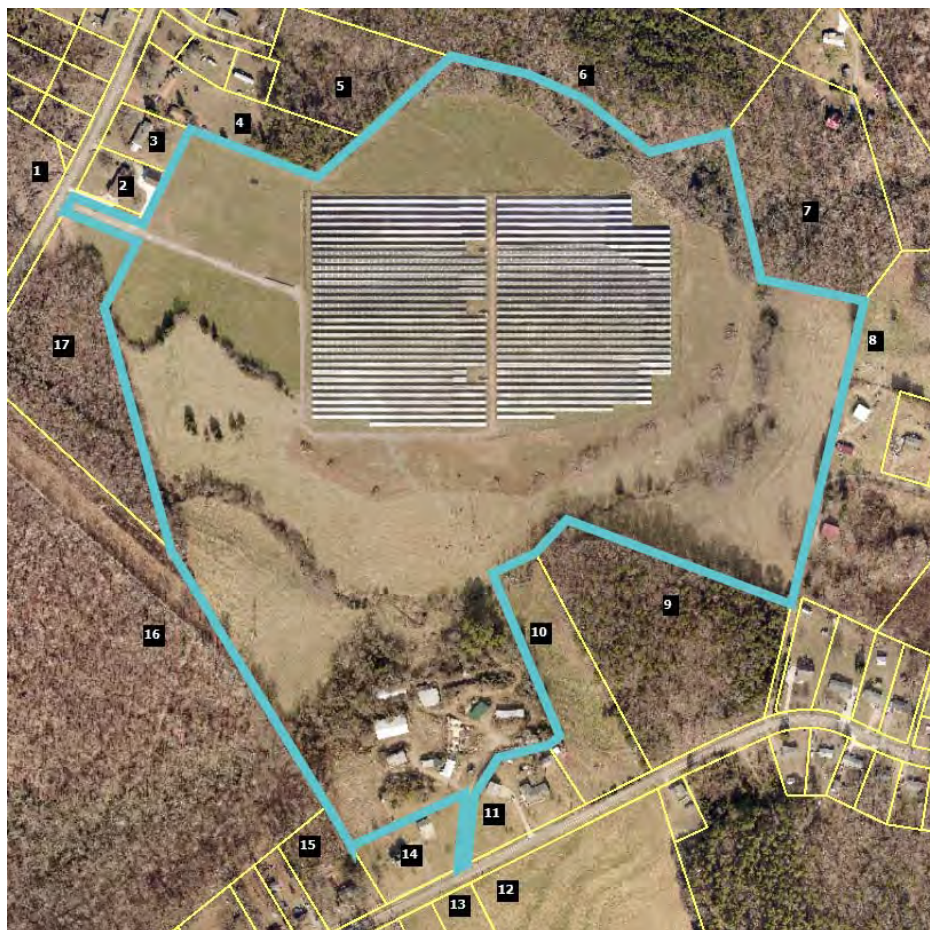


The seller was in a bind as they had a home they were trying to buy contingent on this closing and were about to lose that opportunity. A cash buyer offered them a quick close at \$500,000 and the seller accepted that offer in order to not lose the home they were trying to buy. According to Mr. David,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

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



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



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

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

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

**Adjoining Residential Sales After Solar Farm Approved**

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



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

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

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

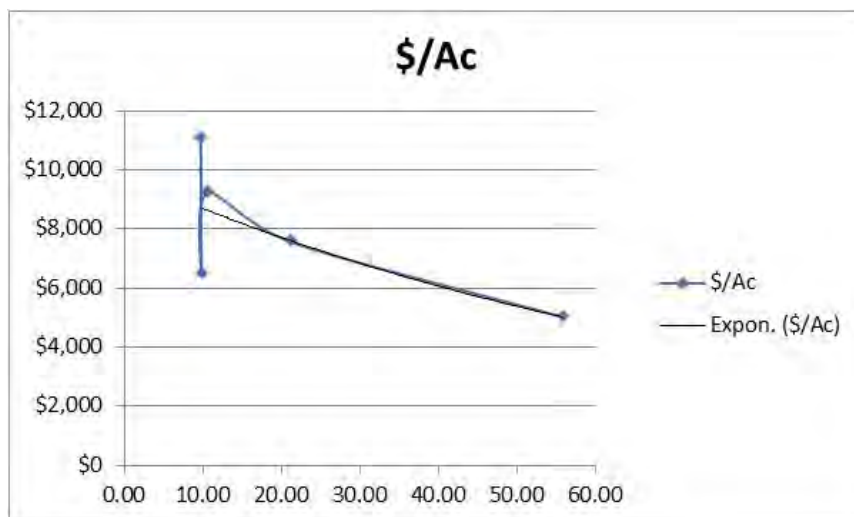
Adjoining Residential Sales After Solar Farm Approved												
Solar	Address	Acres	Date Sold	Sales Price	Built	GBA	\$/GBA	BR/BA	Park	Style	Other	
Adjoins	242 Mariposa	2.91	9/21/2015	\$180,000	1962	1,880	\$95.74	3/2	Carport	Br/Rnch	Det Wrkshop	
Not	249 Mariposa	0.48	3/1/2019	\$153,000	1974	1,792	\$85.38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

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

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

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

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

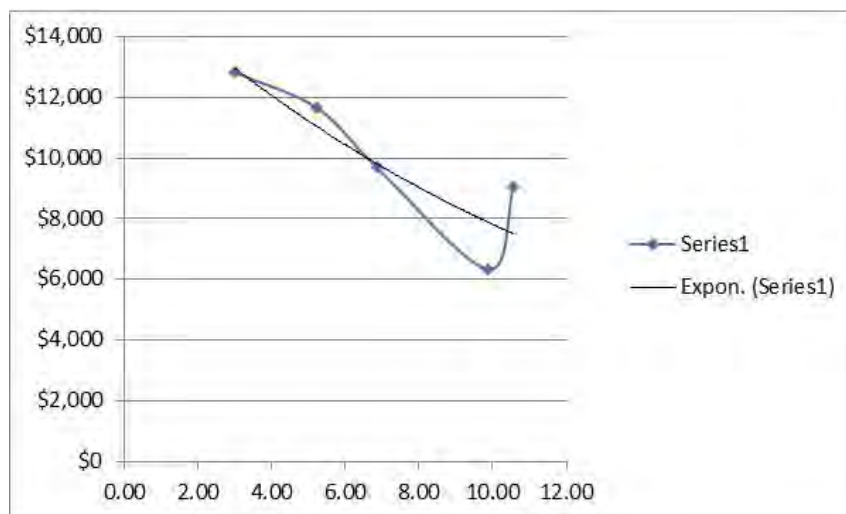


Finally, I have considered the recent sale of Parcel 17 that sold as vacant land. I was unable to find good land sales in the same 7 acre range, so I have considered sales of larger and smaller acreage. I adjusted each of those land sales for time. I then applied the price per acre to a trendline to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

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

**Adjoining Sales Adjusted**

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



**10. Matched Pair – Clarke County Solar, Clarke County, VA**



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





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



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

The landscaping buffer relative to this parcel is considered medium.



**Adjoining Land Sales After Solar Farm Approved**

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

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

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

**Adjoining Sales Adjusted**

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

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

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



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

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

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

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

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

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

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

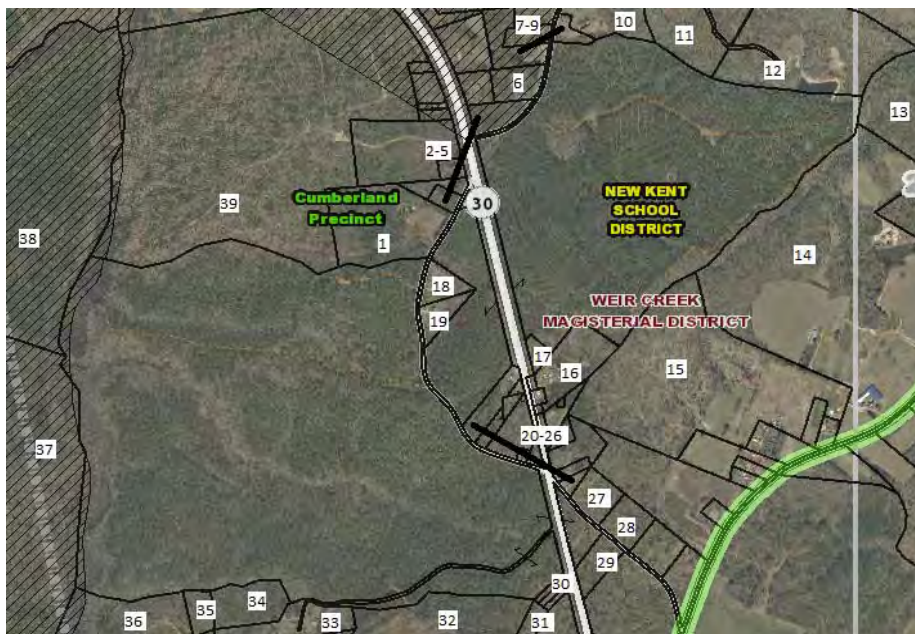
Adjoining Residential Sales Af Adjoining Sales Adjusted												Avg	
Parcel	Solar	Address	Time	Site	YB	GLA	BR/BA	Park	Other	Total	% Diff	% Diff	Distance
16	Adjoins	499 Herring								\$215,000			488
	Not	678 WC	-\$10,037	-\$25,000	\$24,860	\$37,275	-\$5,000	-\$7,500	-\$20,000	\$220,599	-3%		
	Not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

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

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



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



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

I considered the recent sale identified on the map above as Parcel 19, which is directly across the street and based on the map shown on the following page is 250 feet from the closest panel. A

limited buffering remains along the road with natural growth being encouraged, but currently the panels are visible from the road. Alex Uminski, SRA with MGMiller Valuations in Richmond VA confirmed this sale with the buying and selling broker. The selling broker indicated that the solar farm was not a negative influence on this sale and in fact the buyer noticed the solar farm and then discovered the listing. The privacy being afforded by the solar farm was considered a benefit by the buyer. I used a matched pair analysis with a similar sale nearby as shown below and found no negative impact on the sales price. Property actually closed for more than the asking price. The landscaping buffer is considered light.

**Adjoining Residential Sales After Solar Farm Approved**

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

**Adjoining Sales Adjusted**

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

**Average Diff** 0%

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







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



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

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

The matched pairs for each of these are shown below. The landscaping buffer relative to these parcels is considered light.

**Adjoining Residential Sales After Solar Farm Approved**

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

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

**Adjoining Residential Sales After Solar Farm Approved**

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

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

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











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



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

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

**Adjoining Residential Sales After Solar Farm Approved**

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

**Adjoining Sales Adjusted**

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

0%

**Adjoining Residential Sales After Solar Farm Approved**

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

**Adjoining Sales Adjusted**

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

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



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



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

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

**Adjoining Residential Sales After Solar Farm Approved**

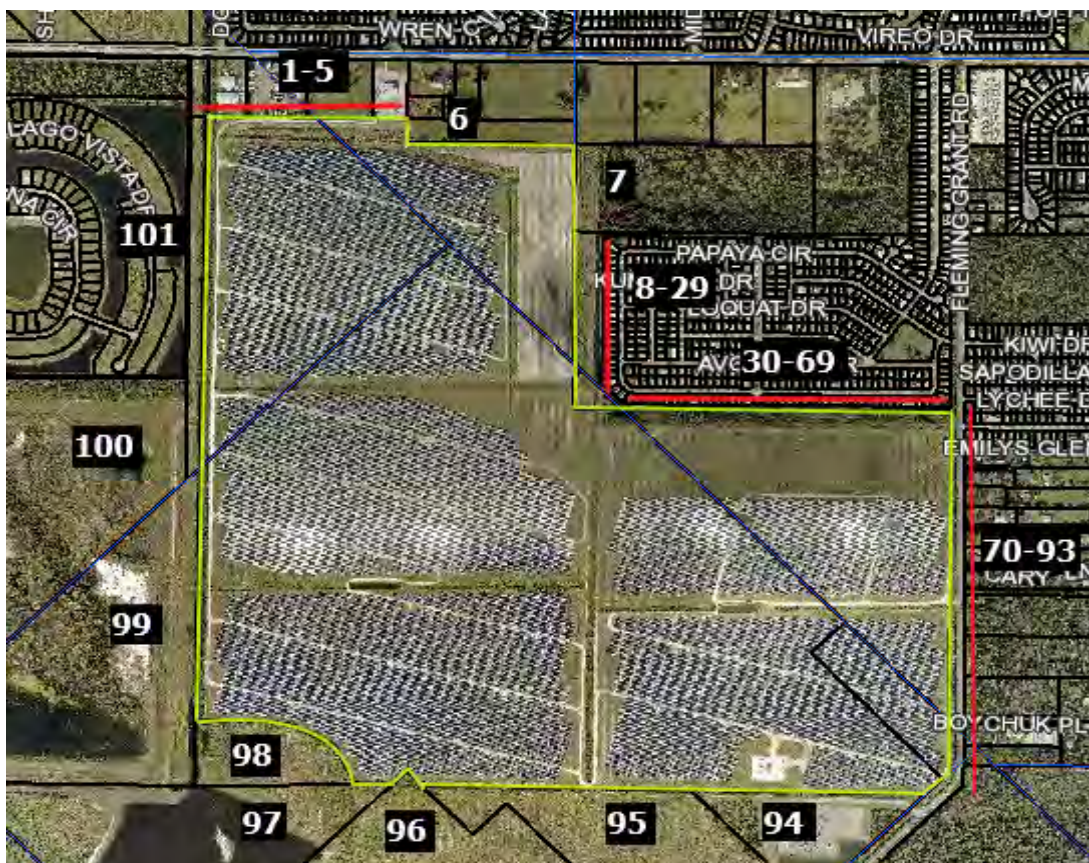
Solar	Address	Acres	Date Sold	Sales Price	Built	GBA	\$/GBA	BR/BA	Park	Style	Other
Adjoins	517 Old Charleston	11.05	8/25/2020	\$110,000	1962	925	\$118.92	3/1	Crport	Br Rnch	
Not	133 Buena Vista	2.65	6/21/2020	\$115,000	1979	1,104	\$104.17	2/2	Crport	Br Rnch	
Not	214 Crystal Spr	2.13	6/10/2019	\$102,500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

**Adjoining Sales Adjusted**

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



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



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

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

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

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



**Adjoining Residential Sales After Solar Farm Approved**

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

**Adjoining Sales Adjusted**

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

**Adjoining Residential Sales After Solar Farm Approved**

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

**Adjoining Sales Adjusted**

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

**Adjoining Residential Sales After Solar Farm Approved**

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

**Adjoining Sales Adjusted**

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

**Adjoining Residential Sales After Solar Farm Approved**

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

**Adjoining Sales Adjusted**

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

**Adjoining Residential Sales After Solar Farm Approved**

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

**Adjoining Sales Adjusted**

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

**Adjoining Residential Sales After Solar Farm Approved**

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

**Adjoining Sales Adjusted**

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

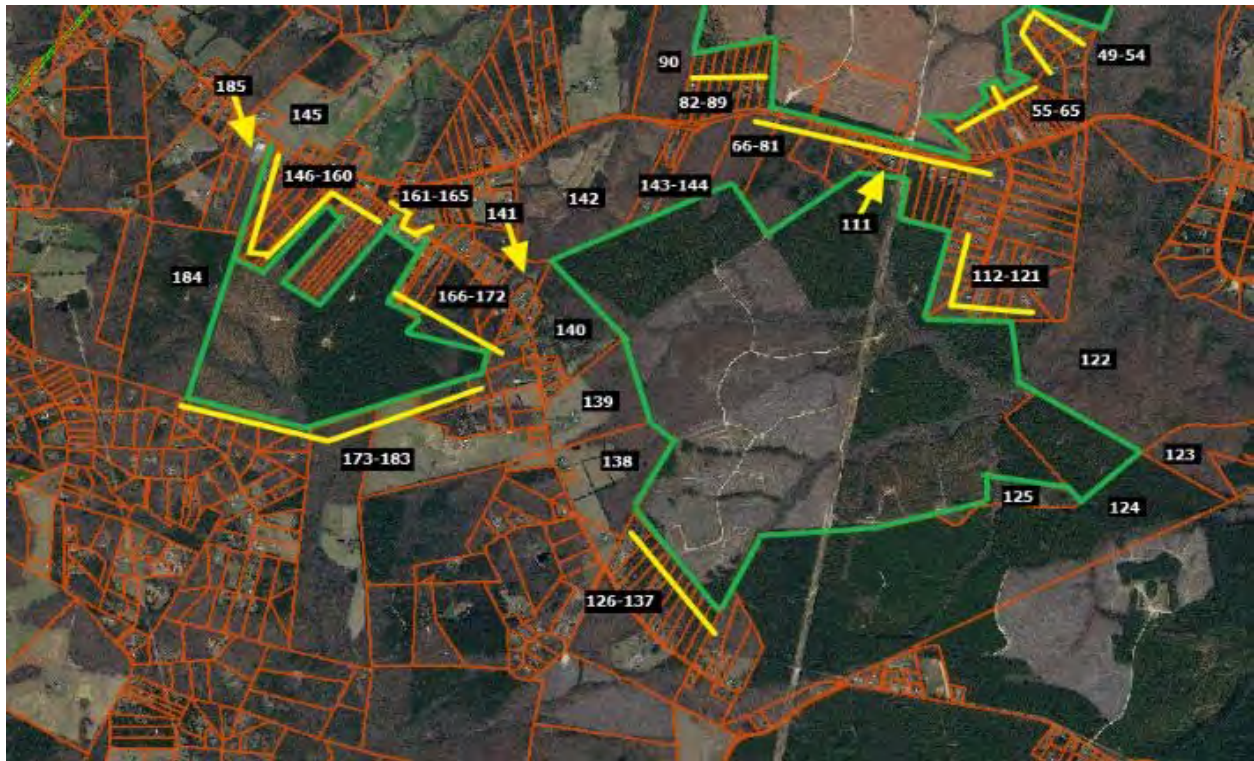
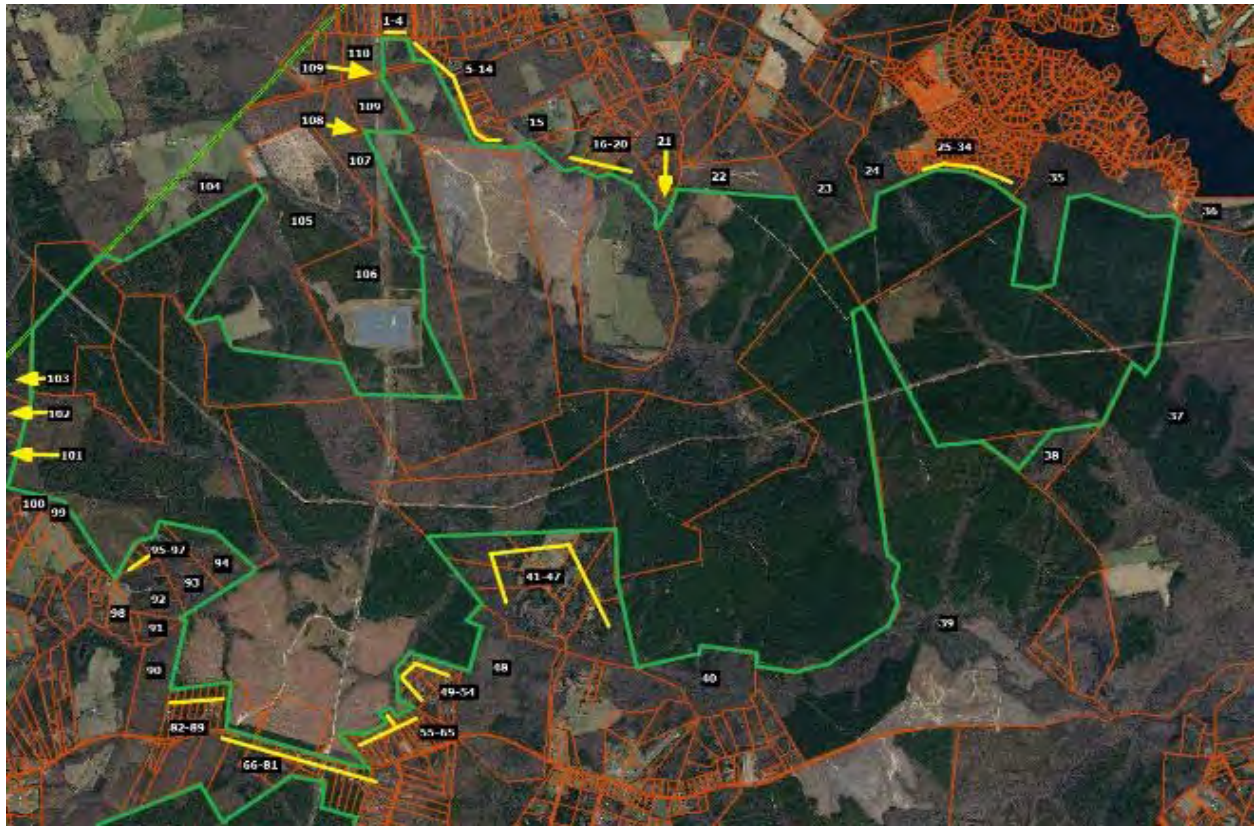
I also identified a new subdivision being developed just to the west of this solar farm called The Lakes at Sebastian Preserve. These are all canal-lot homes that are being built with homes starting at \$271,000 based on the website and closed sales showing up to \$342,000. According to Monique, the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

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





**23. Matched Pair – Spotsylvania Solar, Paytes, VA**



This solar farm is being built in four phases with the area known as Site C having completed construction in November 2020 after the entire project was approved in April 2019. Site C, also known as Pleinmont 1 Solar, includes 99.6 MW located in the southeast corner of the project and shown on the maps above with adjoining parcels 111 through 144. The entire Spotsylvania project totals 617 MW on 3500 acres out of a parent tract assemblage of 6,412 acres.

I have identified three adjoining home sales that occurred during construction and development of the site in 2020.

The first is located on the north side of Site A on Orange Plank Road. The second is located on Nottoway Lane just north of Caparthin Road on the south side of Site A and east of Site C. The third is located on Post Oak Road for a home that backs up to Site C that sold in September 2020 near the completion of construction for Site C.

#### Spotsylvania Solar Farm

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

#### Adjoining Sales Adjusted

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

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

#### Adjoining Sales Adjusted

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

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



**Adjoining Sales Adjusted**

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

**Average Diff** -4%

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

## Conclusion – SouthEast Over 5 MW

### Southeast USA Over 5 MW Matched Pair Summary

	Name	City	State	Acres	MW	Adj. Uses By Acreage					1 mile Radius (2010-2020 Data)			Veg. Buffer
						Topo Shift	Res	Ag	Ag/Res	Com/Ind	Pop.	Med. Income	Avg. Housing Unit	
1	AM Best	Goldsboro	NC	38	5.00	2	38%	0%	23%	39%	1,523	\$37,358	\$148,375	Light
2	Mulberry	Selmer	TN	160	5.00	60	13%	73%	10%	3%	467	\$40,936	\$171,746	Lt to Med
3	Leonard	Hughesville	MD	47	5.00	20	18%	75%	0%	6%	525	\$106,550	\$350,000	Light
4	Gastonia SC	Gastonia	NC	35	5.00	48	33%	0%	23%	44%	4,689	\$35,057	\$126,562	Light
5	Summit	Moyock	NC	2,034	80.00	4	4%	0%	94%	2%	382	\$79,114	\$281,731	Light
6	Tracy	Bailey	NC	50	5.00	10	29%	0%	71%	0%	312	\$43,940	\$99,219	Heavy
7	Manatee	Parrish	FL	1,180	75.00	20	2%	97%	1%	0%	48	\$75,000	\$291,667	Heavy
8	McBride	Midland	NC	627	75.00	140	12%	10%	78%	0%	398	\$63,678	\$256,306	Lt to Med
9	Mariposa	Stanley	NC	36	5.00	96	48%	0%	52%	0%	1,716	\$36,439	\$137,884	Light
10	Clarke Cnty	White Post	VA	234	20.00	70	14%	39%	46%	1%	578	\$81,022	\$374,453	Light
11	Simon	Social Circle	GA	237	30.00	71	1%	63%	36%	0%	203	\$76,155	\$269,922	Medium
12	Candace	Princeton	NC	54	5.00	22	76%	24%	0%	0%	448	\$51,002	\$107,171	Medium
13	Walker	Barhamsville	VA	485	20.00	N/A	12%	68%	20%	0%	203	\$80,773	\$320,076	Light
14	Innov 46	Hope Mills	NC	532	78.50	0	17%	83%	0%	0%	2,247	\$58,688	\$183,435	Light
15	Innov 42	Fayetteville	NC	414	71.00	0	41%	59%	0%	0%	568	\$60,037	\$276,347	Light
16	Sunfish	Willow Spring	NC	50	6.40	30	35%	35%	30%	0%	1,515	\$63,652	\$253,138	Light
17	Sappony	Stony Crk	VA	322	20.00	N/A	2%	98%	0%	0%	74	\$51,410	\$155,208	Light
18	Camden Dam	Camden	NC	50	5.00	0	17%	72%	11%	0%	403	\$84,426	\$230,288	Light
19	Grandy	Grandy	NC	121	20.00	10	55%	24%	0%	21%	949	\$50,355	\$231,408	Light
20	Champion	Pelion	SC	100	10.00	N/A	4%	70%	8%	18%	1,336	\$46,867	\$171,939	Light
21	Barefoot Bay	Barefoot Bay	FL	504	74.50	0	11%	87%	0%	3%	2,446	\$36,737	\$143,320	Lt to Med
22	Miami-Dade	Miami	FL	347	74.50	0	26%	74%	0%	0%	127	\$90,909	\$403,571	Light
23	Spotyslvania	Paytes	VA	3,500	617.00	160	37%	52%	11%	0%	74	\$120,861	\$483,333	Md to Hvy
	<b>Average</b>			485	57.04	38	24%	48%	22%	6%	923	\$63,955	\$237,700	
	<b>Median</b>			234	20.00	20	17%	59%	11%	0%	467	\$60,037	\$231,408	
	<b>High</b>			3,500	617.00	160	76%	98%	94%	44%	4,689	\$120,861	\$483,333	
	<b>Low</b>			35	5.00	0	1%	0%	0%	0%	48	\$35,057	\$99,219	

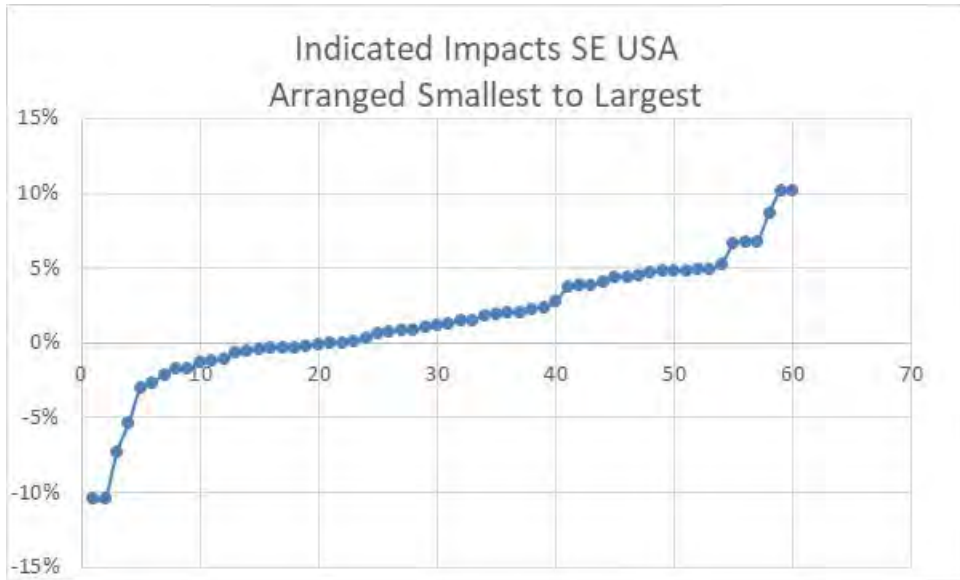
The solar farm matched pairs shown above have similar characteristics to each other in terms of population, but with several outliers showing solar farms in farm more urban areas. The median income for the population within 1 mile of a solar farm is \$60,037 with a median housing unit value of \$231,408. Most of the comparables are under \$300,000 in the home price, with \$483,333 being the high end of the set, though I have matched pairs in multiple states over \$1,000,000 adjoining solar farms. The adjoining uses show that residential and agricultural uses are the predominant adjoining uses. These figures are in line with the larger set of solar farms that I have looked at with the predominant adjoining uses being residential and agricultural and similar to the solar farm breakdown shown for Virginia and adjoining states as well as the proposed subject property.

Based on the similarity of adjoining uses and demographic data between these sites and the subject property, I consider it reasonable to compare these sites to the subject property.

I have pulled 56 matched pairs from the above referenced solar farms to provide the following summary of home sale matched pairs and land sales next to solar farms. The summary shows that the range of differences is from -10% to +10% with an average of +1% and median of +1%. This means that the average and median impact is for a slight positive impact due to adjacency to a solar farm. However, this +1 to rate is within the typical variability I would expect from real estate. I therefore conclude that this data shows no negative or positive impact due to adjacency to a solar farm.

While the range is seemingly wide, the graph below clearly shows that the vast majority of the data falls between -5% and +5% and most of those are clearly in the 0 to +5% range. This data strongly supports an indication of no impact on adjoining residential uses to a solar farm.

I therefore conclude that these matched pairs support a finding of no impact on value at the subject property for the proposed project, which as proposed will include a landscaped buffer to screen adjoining residential properties.



## Residential Dwelling Matched Pairs Adjoining Solar Farms

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

## Residential Dwelling Matched Pairs Adjoining Solar Farms

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

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



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

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

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

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

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

I have worked in 19 states related to solar farms and I have been tracking matched pairs in most of those states. On the following pages I provide a brief summary of those findings showing 37 solar farms over 5 MW studied with each one providing matched pair data supporting the findings of this report.

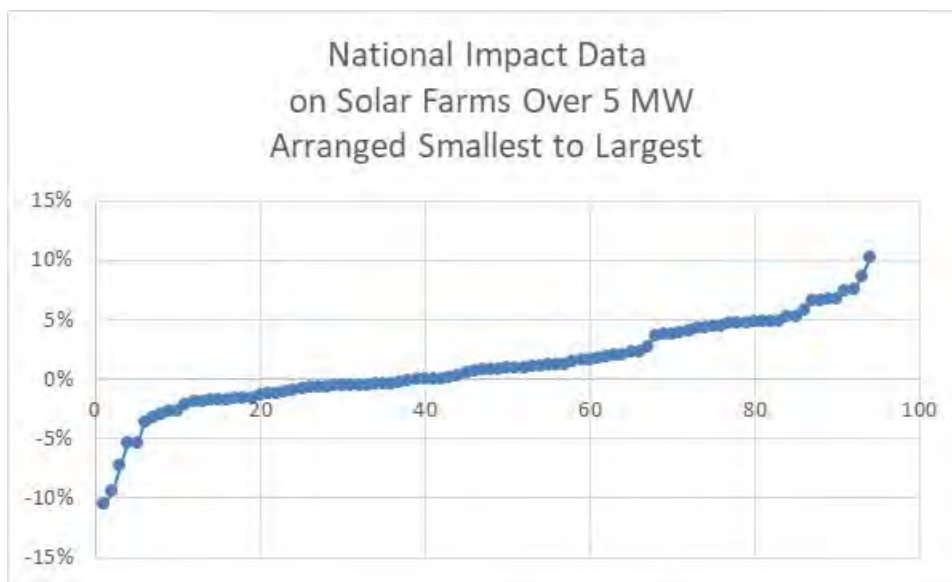
The solar farms summary is shown below with a summary of the matched pair data shown on the following page.

Matched Pair Summary						Adj. Uses By Acreage					1 mile Radius (2010-2020 Data)			Veg. Buffer
Name	City	State	Acres	MW	Topo	Shift	Res	Ag	Ag/Res	Com/Ind	Popl.	Income	Unit	
1	AM Best	Goldsboro	NC	38	5.00	2	38%	0%	23%	39%	1,523	\$37,358	\$148,375	Light
2	Mulberry	Selmer	TN	160	5.00	60	13%	73%	10%	3%	467	\$40,936	\$171,746	Lt to Med
3	Leonard	Hughesville	MD	47	5.00	20	18%	75%	0%	6%	525	\$106,550	\$350,000	Light
4	Gastonia SC	Gastonia	NC	35	5.00	48	33%	0%	23%	44%	4,689	\$35,057	\$126,562	Light
5	Summit	Moyock	NC	2,034	80.00	4	4%	0%	94%	2%	382	\$79,114	\$281,731	Light
7	Tracy	Bailey	NC	50	5.00	10	29%	0%	71%	0%	312	\$43,940	\$99,219	Heavy
8	Manatee	Parrish	FL	1,180	75.00	20	2%	97%	1%	0%	48	\$75,000	\$291,667	Heavy
9	McBride	Midland	NC	627	75.00	140	12%	10%	78%	0%	398	\$63,678	\$256,306	Lt to Med
10	Grand Ridge	Streator	IL	160	20.00	1	8%	87%	5%	0%	96	\$70,158	\$187,037	Light
11	Dominion	Indianapolis	IN	134	8.60	20	3%	97%	0%	0%	3,774	\$61,115	\$167,515	Light
12	Mariposa	Stanley	NC	36	5.00	96	48%	0%	52%	0%	1,716	\$36,439	\$137,884	Light
13	Clarke Cnty	White Post	VA	234	20.00	70	14%	39%	46%	1%	578	\$81,022	\$374,453	Light
14	Flemington	Flemington	NJ	120	9.36	N/A	13%	50%	28%	8%	3,477	\$105,714	\$444,696	Lt to Med
15	Frenchtown	Frenchtown	NJ	139	7.90	N/A	37%	35%	29%	0%	457	\$111,562	\$515,399	Light
16	McGraw	East Windsor	NJ	95	14.00	N/A	27%	44%	0%	29%	7,684	\$78,417	\$362,428	Light
17	Tinton Falls	Tinton Falls	NJ	100	16.00	N/A	98%	0%	0%	2%	4,667	\$92,346	\$343,492	Light
18	Simon	Social Circle	GA	237	30.00	71	1%	63%	36%	0%	203	\$76,155	\$269,922	Medium
19	Candace	Princeton	NC	54	5.00	22	76%	24%	0%	0%	448	\$51,002	\$107,171	Medium
20	Walker	Barhamsville	VA	485	20.00	N/A	12%	68%	20%	0%	203	\$80,773	\$320,076	Light
21	Innov 46	Hope Mills	NC	532	78.50	0	17%	83%	0%	0%	2,247	\$58,688	\$183,435	Light
22	Innov 42	Fayetteville	NC	414	71.00	0	41%	59%	0%	0%	568	\$60,037	\$276,347	Light
23	Demille	Lapeer	MI	160	28.40	10	10%	68%	0%	22%	2,010	\$47,208	\$187,214	Light
24	Turrill	Lapeer	MI	230	19.60	10	75%	59%	0%	25%	2,390	\$46,839	\$110,361	Light
25	Sunfish	Willow Spring	NC	50	6.40	30	35%	35%	30%	0%	1,515	\$63,652	\$253,138	Light
26	Picture Rocks	Tucson	AZ	182	20.00	N/A	6%	88%	6%	0%	102	\$81,081	\$280,172	None
27	Avra Valley	Tucson	AZ	246	25.00	N/A	3%	94%	3%	0%	85	\$80,997	\$292,308	None
28	Sappony	Stony Crk	VA	322	20.00	N/A	2%	98%	0%	0%	74	\$51,410	\$155,208	Medium
29	Camden Dam	Camden	NC	50	5.00	0	17%	72%	11%	0%	403	\$84,426	\$230,288	Light
30	Grandy	Grandy	NC	121	20.00	10	55%	24%	0%	21%	949	\$50,355	\$231,408	Light
31	Champion	Pelion	SC	100	10.00	N/A	4%	70%	8%	18%	1,336	\$46,867	\$171,939	Light
32	Eddy II	Eddy	TX	93	10.00	N/A	15%	25%	58%	2%	551	\$59,627	\$139,088	Light
33	Somerset	Somerset	TX	128	10.60	N/A	5%	95%	0%	0%	1,293	\$41,574	\$135,490	Light
34	DG Amp Piqua	Piqua	OH	86	12.60	2	26%	16%	58%	0%	6,735	\$38,919	\$96,555	Light
45	Barefoot Bay	Barefoot Bay	FL	504	74.50	0	11%	87%	0%	3%	2,446	\$36,737	\$143,320	Lt to Med
36	Miami-Dade	Miami	FL	347	74.50	0	26%	74%	0%	0%	127	\$90,909	\$403,571	Light
37	Spotyslvania	Paytes	VA	3,500	617.00	160	37%	52%	11%	0%	74	\$120,861	\$483,333	Med to Hvy
<b>Average</b>				362	42.05	32	24%	52%	19%	6%	1,515	\$66,292	\$242,468	
<b>Median</b>				150	17.80	10	16%	59%	7%	0%	560	\$62,384	\$230,848	
<b>High</b>				3,500	617.00	160	98%	98%	94%	44%	7,684	\$120,861	\$515,399	
<b>Low</b>				35	5.00	0	1%	0%	0%	0%	48	\$35,057	\$96,555	

From these 37 solar farms, I have derived 94 matched pairs. The matched pairs show no negative impact at distances as close as 105 feet between a solar panel and the nearest point on a home. The range of impacts is -10% to +10% with an average and median of +1%.

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

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



## D. Larger Solar Farms

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

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

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

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

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

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

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

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



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

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

## **IX. Distance Between Homes and Panels**

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

However, in tracking other approved solar farms across 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 in the form of privacy fencing or landscaping, there is no sign of negative impact.

I have also tracked a number of locations where solar panels are between 50 and 100 feet of single-family homes. In these cases the landscaping is typically a double row of more mature evergreens at time of planting. There are many examples of solar farms with one or two homes closer than 100-feet, but most of the adjoining homes are further than that distance.

## **X. Topography**

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

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

## **XI. 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. 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.

## **XII. Scope of Research**

I have researched over 800 solar farms and sites on which solar farms are existing and proposed in Kentucky, Illinois, Tennessee, North Carolina, 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.

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

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

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

**Total Solar Farms Considered: 705**

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

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

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

**Total Solar Farms Considered: 705**

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

### **XIII. Specific Factors Related To Impacts on Value**

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

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

#### **1. Hazardous material**

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

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

#### **2. Odor**

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

#### **3. Noise**

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

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

#### **4. Traffic**

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

#### **5. Stigma**

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

Solar panels have no associated stigma and in smaller collections are found in yards and roofs in many residential communities. Solar farms are adjoining elementary, middle and high schools as well as churches and subdivisions. I note that one of the solar farms in this report not only adjoins a church, but is actually located on land owned by the church. Solar panels on a roof are often cited as an enhancement to the property in marketing brochures.



I see no basis for an impact from stigma due to a solar farm.

## 6. Appearance

I note that larger solar farms using fixed or tracking panels are a passive use of the land that is in keeping with a rural/residential area. As shown below, solar farms are comparable to larger greenhouses. This is not surprising given that a greenhouse is essentially another method for collecting passive solar energy. The greenhouse use is well received in residential/rural areas and has a similar visual impact as a solar farm.



The solar panels are all less than 15 feet high, which means that the visual impact of the solar panels will be similar in height to a typical greenhouse and lower than a single story residential dwelling. Were the subject property developed with single family housing, that development would have a much greater visual impact on the surrounding area given that a two-story home with attic could be three to four times as high as these proposed panels.

Whenever you consider the impact of a proposed project on viewshed or what the adjoining owners may see from their property it is important to distinguish whether or not they have a protected viewshed or not. Enhancements for scenic vistas are often measured when considering properties that adjoin preserved open space and parks. However, adjoining land with a preferred view today conveys no guarantee that the property will continue in the current use. Any consideration of the impact of the appearance requires a consideration of the wide variety of other uses a property already has the right to be put to, which for solar farms often includes subdivision development, agricultural business buildings such as poultry, or large greenhouses and the like.

Dr. Randall Bell, MAI, PhD, and author of the book **Real Estate Damages**, Third Edition, on Page 146 “Views of bodies of water, city lights, natural settings, parks, golf courses, and other amenities are considered desirable features, particularly for residential properties.” Dr. Bell continues on Page 147 that “View amenities may or may not be protected by law or regulation. It is sometimes argued that views have value only if they are protected by a view easement, a zoning ordinance, or covenants, conditions, and restrictions (CC&Rs), although such protections are relatively

uncommon as a practical matter. The market often assigns significant value to desirable views irrespective of whether or not such views are protected by law.”

Dr. Bell concludes that a view enhances adjacent property, even if the adjacent property has no legal right to that view. He then discusses a “borrowed” view where a home may enjoy a good view of vacant land or property beyond with a reasonable expectation that the view might be partly or completely obstructed upon development of the adjoining land. He follows that with “This same concept applies to potentially undesirable views of a new development when the development conforms to applicable zoning and other regulations. Arguing value diminution in such cases is difficult, since the possible development of the offending property should have been known.” In other words, if there is an allowable development on the site then arguing value diminution with such a development would be difficult. This further extends to developing the site with alternative uses that are less impactful on the view than currently allowed uses.

This gets back to the point that if a property has development rights and could currently be developed in such a way that removes the viewshed such as a residential subdivision, than a less intrusive use such as a solar farm that is easily screened by landscaping would not have a greater impact on the viewshed of any perceived value adjoining properties claim for viewshed. Essentially, if there are more impactful uses currently allowed, then there is no viewshed enhancement to adjoining parcels.

## **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.

## **XIV. Conclusion**

The matched pair analysis shows no negative impact in home values due to abutting or adjoining a solar farm as well as no impact to abutting or adjacent vacant residential or agricultural land. The proposed setbacks are further than those measured showing no impact for similar price ranges of homes and for areas with similar demographics to the subject area. The criteria that typically correlates with downward adjustments on property values such as noise, odor, and traffic all support a finding of no impact on property value.

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

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

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



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## **PROFESSIONAL EXPERIENCE**

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

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## **PROFESSIONAL AFFILIATIONS**

<b>MAI</b> (Member, Appraisal Institute) designation #11796	2001
<b>NC State Certified General Appraiser</b> # A4359	1999
<b>VA State Certified General Appraiser</b> # 4001017291	
<b>SC State Certified General Appraiser</b> # 6209	
<b>FL State Certified General Appraiser</b> # RZ3950	
<b>GA State Certified General Appraiser</b> # 321885	
<b>MI State Certified General Appraiser</b> # 1201076620	
<b>PA State Certified General Appraiser</b> # GA004598	
<b>OH State Certified General Appraiser</b> # 2021008689	
<b>IN State Certified General Appraiser</b> # CG42100052	

## **EDUCATION**

<b>Bachelor of Arts in English</b> , University of North Carolina, Chapel Hill	1993
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## **CONTINUING EDUCATION**

Uniform Standards of Professional Appraisal Practice Update	2022
Sexual Harassment Prevention Training	2021
Appraisal of Land Subject to Ground Leases	2021
Michigan Appraisal Law	2020
Uniform Standards of Professional Appraisal Practice Update	2020
Uniform Appraisal Standards for Federal Land Acquisitions (Yellow Book)	2019
The Cost Approach	2019
Income Approach Case Studies for Commercial Appraisers	2018
Introduction to Expert Witness Testimony for Appraisers	2018
Appraising Small Apartment Properties	2018
Florida Appraisal Laws and Regulations	2018
Uniform Standards of Professional Appraisal Practice Update	2018
Appraisal of REO and Foreclosure Properties	2017
Appraisal of Self Storage Facilities	2017
Land and Site Valuation	2017
NCDOT Appraisal Principles and Procedures	2017
Uniform Standards of Professional Appraisal Practice Update	2016
Forecasting Revenue	2015
Wind Turbine Effect on Value	2015
Supervisor/Trainee Class	2015

Business Practices and Ethics	2014
Subdivision Valuation	2014
Uniform Standards of Professional Appraisal Practice Update	2014
Introduction to Vineyard and Winery Valuation	2013
Appraising Rural Residential Properties	2012
Uniform Standards of Professional Appraisal Practice Update	2012
Supervisors/Trainees	2011
Rates and Ratios: Making sense of GIMs, OARs, and DCFs	2011
Advanced Internet Search Strategies	2011
Analyzing Distressed Real Estate	2011
Uniform Standards of Professional Appraisal Practice Update	2011
Business Practices and Ethics	2011
Appraisal Curriculum Overview (2 Days – General)	2009
Appraisal Review - General	2009
Uniform Standards of Professional Appraisal Practice Update	2008
Subdivision Valuation: A Comprehensive Guide	2008
Office Building Valuation: A Contemporary Perspective	2008
Valuation of Detrimental Conditions in Real Estate	2007
The Appraisal of Small Subdivisions	2007
Uniform Standards of Professional Appraisal Practice Update	2006
Evaluating Commercial Construction	2005
Conservation Easements	2005
Uniform Standards of Professional Appraisal Practice Update	2004
Condemnation Appraising	2004
Land Valuation Adjustment Procedures	2004
Supporting Capitalization Rates	2004
Uniform Standards of Professional Appraisal Practice, C	2002
Wells and Septic Systems and Wastewater Irrigation Systems	2002
Appraisals 2002	2002
Analyzing Commercial Lease Clauses	2002
Conservation Easements	2000
Preparation for Litigation	2000
Appraisal of Nonconforming Uses	2000
Advanced Applications	2000
Highest and Best Use and Market Analysis	1999
Advanced Sales Comparison and Cost Approaches	1999
Advanced Income Capitalization	1998
Valuation of Detrimental Conditions in Real Estate	1999
Report Writing and Valuation Analysis	1999
Property Tax Values and Appeals	1997
Uniform Standards of Professional Appraisal Practice, A & B	1997
Basic Income Capitalization	1996