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

In the Matter of:

ELECTRONIC APPLICATION OF WOOD)	
DUCK SOLAR LLC FOR A CERTIFICATE OF)	
OF CONSTRUCTION FOR AN APPROXIMATELY)	
100 MEGAWATT MERCHANT ELECTRIC)	
SOLAR GENERATING FACILITY AND)	Case No. 2024-00337
NONREGULATED ELECTRIC TRANSMISSION)	
LINE IN BARREN COUNTY, KENTUCKY)	
PURSUANT TO KRS 278.700 AND 807 KAR)	
5.110)	

Site Assessment Report (SAR)

Wood Duck Solar LLC (the "Applicant" or "Wood Duck"), files this Site Assessment Report (SAR) as specified in KRS 278.708 contemporaneously with its application requesting from the Kentucky State Board on Electric Generation and Transmission Siting (the "Siting Board" or "Board") Certificates of Construction for an approximately 100 megawatt (MW) photovoltaic (PV) merchant electric generating facility and nonregulated electric transmission line pursuant to KRS 278.700 *et seq*.

As part of the SAR, the Applicant submits herewith SAR Attachments A-H. The facts on which the SAR are based are contained in the concurrently filed SAR Attachments and other information and the statements further made by the Applicant as follows:

I. Description of Proposed Project Site

1. Pursuant to KRS 278.708(3)(a), the proposed Wood Duck solar electrical generation facility and nonregulated transmission line (the "Project") is situated on approximately 2,259 acres located near Glasgow, Kentucky, in Barren County (Attachment A). The site consists mainly of 28 parcels secured from 15 landowners pursuant to real estate agreements with each landowner.

The primary land use for these parcels and the surrounding area is generally row crop agriculture, pastureland, and residential uses. The proposed Project is a 100 MW solar facility capable of providing enough clean, renewable electricity to power approximately 20,000 Kentucky homes. Photovoltaic (PV) solar modules are used to convert sunlight into direct current (DC) electricity which is then converted to alternating current (AC) electricity through inverters. Transformers step up the AC electricity to a higher voltage so that it can connect to the regional transmission grid via the Project's nonregulated electric transmission line.

2. Project components will include a PV solar array field, which consists of modules mounted on metal structures anchored to the ground with pilings. Panels will move to track the sun over the course of the day. Other Project components include: an onsite substation, a DC collection system of underground cabling and combiner boxes, and power conversion stations (PCS) with inverters, transformers, and emergency backup power to convert DC to AC. An underground and overhead collection system will be used to convey electricity from the solar array field to the substation. An operation and maintenance (O&M) area for the Project will also be installed and could include, as necessary, an O&M building, parking area, and other associated facilities such as above-ground water storage tanks, security gate, and signage. In addition, the Project will also include an onsite transmission line, fiber optic cable for communications via underground or on overhead lines, interior access ways, and a facility perimeter road. During construction, the Project will include a temporary construction mobilization and laydown area for construction trailers, construction workforce parking, above ground water and fuel tanks, materials receiving, and materials storage.

3. Approximately 99,714 linear feet of private access roads will be utilized within the facility and will be constructed of all-weather gravel. Roads will not exceed 16 feet (4.9 meters) in width, except for turning radii, which will not exceed 50 feet (15.2 meters) in radius. All entrances and

driveways will comply with applicable design requirements for safe access and egress. The Project solar arrays will be secured with approximately 159,740 linear feet of perimeter fence and will consist of six-foot game style fence. Fixed lighting at the perimeter will be limited to gates and the substation area and will be motion-activated to minimize light spillage. The Project will utilize construction methods that minimize large-scale grading and removal of native soil. Clearing and grubbing will occur only where necessary. Minimal grading may be required to level rough or undulating areas of the site and to prepare soils for concrete foundations for substation equipment and inverters. Access roads will also be grubbed, graded, and compacted. The site cut and fill will be appropriately balanced, with no anticipation of import/export necessary.

4. The PV solar arrays, consisting of modules in individual rows placed on a racking structure, will be supported by steel piles driven into the soil. Piles typically are spaced approximately 10 to 15 feet apart, and the maximum height of the PV arrays will not exceed 15 feet. The spacing between array rows is estimated to be approximately 10 to 18 feet. Modules will be oriented in rows running from north to south utilizing a single axis tracking system. The racking system will be supported by steel posts installed with a combination of pile-driving machines and augers. The center height of the racking structures will be approximately four feet (1.2 meters) to 6.8 feet (2.1 meters) above the ground. The modules will be connected using DC cables that can either be buried in a trench or attached to the racking system. The DC cables gather at the end of racking systems to combiner boxes which are connected to cables routing to an inverter.

5. Approximately 35 inverters will be installed throughout the Project to convert the DC power from the 1,500-volt DC collection system to AC power, which will then be transmitted to a Project substation via the 34.5-kilovolt (kV) collection system. The AC collection system will include underground and overhead segments. Underground segments of the AC collection system

Kentucky State Board on Electric Generation and Transmission ApplicationMay 2025will be buried a minimum of three feet (0.9 meters) below grade; and overhead portions will not

exceed a maximum height of 45 feet (13.7 meters) above grade. The AC collection system will be comprised of medium voltage (MV) cable that will transfer electricity to the Project substation. Approximately 59,141 linear feet of collection system cables would be installed throughout the Project. Collection cables are congregated into common trenches and run adjacent to one another. All electrical inverters and the transformer will be placed on concrete foundations or steel skids.

6. The Project will require one substation that will include one 110-mega volt ampere (MVA) transformer and control building foundation. Concrete pads will be constructed as foundations for substation equipment, and the remaining area will be graveled. Concrete for foundations will be brought on-site from an external batching plant. The substation area will serve as the general parking area for permanent employees and contain all necessary equipment to step up incoming MV electricity to the high voltage electricity necessary to interconnect into the existing 69 kV Bon Ayr substation owned and operated by East Kentucky Power Cooperative (EKPC), located adjoining the Project substation area. The substation gen-tie line will be approximately 500 feet (152.4 meters) in length, will be located entirely within the Project footprint and EKPC substation parcel, and will be constructed by the Applicant. EKPC will be responsible for any additional transmission equipment located within the switchyard for the Project. It is anticipated that the gen-tie poles and substation components will not exceed 85 feet (25.9 meters) above grade.

7. Pursuant to KRS 278.708(3)(a)(1), a detailed description of the surrounding land uses is identified in the Property Value Impact Study conducted by Kirkland Appraisals, LLC, and attached as Attachment B. A summary of the surrounding land use is contained in the chart below:

	Acreage	Parcels
Residential	5.64%	54.21%
Agricultural	35.37%	17.76%
Agri/Res	58.64%	25.23%
Utility	0.33%	1.87%
Commercial	0.02%	0.93%
Recreational	0.00%	0.00%

8. Pursuant to KRS 278.708(3)(a)(2), Attachment C contains the legal description of the proposed site.

9. Pursuant to KRS 278.708(3)(a)(3), the proposed facility layout is included in SAR Attachment A. The layout shows the proposed access to the site. Project arrays and inverters will be secured with six-foot game style fencing. A security fence meeting National Electric Safety Code (NESC) requirements will secure the substation and consist of a six-foot chain link fence with three strings of barbed wire at the top.

10. Pursuant to KRS 278.708(3)(a)(4), the proposed locations of all Project infrastructure (buildings, transmission lines, and other structures) are included in the Preliminary Site Layout in Attachment A.

11. Pursuant to KRS 278.708(3)(a)(5), proposed access points are shown in Attachment A. There are no adjacent railways that would be used for construction or operational activities related to the Project.

12. Pursuant to KRS 278.708(3)(a)(6), two existing 69 kV transmission lines owned and operated by EKPC bisect the central-west portion and eastern edge of the Project, with the latter connecting to the proposed Project substation to be constructed and located in the southeast portion of the Project site. Both 69 kV lines run predominately southwest to northeast through the central and eastern portion of the Project, respectively. The locations of the substation and transmission

lines are shown in Attachment A. Currently, it is not anticipated that the Project will need to receive external utility services during typical plant operation.

13. Pursuant to KRS 278.708(3)(a)(7), Barren County enacted setbacks applicable to solar energy systems in Article 503.1.5 of the Subdivision Regulations of Barren County, Kentucky ("Subdivision Regulations"). Under the Subdivision Regulations, the following setbacks apply to the Project: 50-foot front yard; 10-foot side yard; and 20-foot rear yard.

14. Pursuant to KRS 278.708(3)(a)(8), a noise assessment was completed for the Project in April 2023 (Attachment D). The noise assessment evaluated existing noise as well as proposed noise from construction and operation of the facility. Minimal intermittent noise related to the panel tracking system and the noise of the inverters is expected. Existing noise on the Project site consists of noises typically produced by agricultural activities. These noises include tractors, trucks, and all-terrain vehicles. Existing rural wildlife noises contribute to the existing noise conditions including birds, frogs, and insects. Construction of the facility will result in increased traffic noise temporarily, mainly between sunrise and sunset and will be of limited duration at any given location within the Project. The noisiest portion of construction will be from the use of pile drivers, which would intermittently and temporarily produce approximately 96 dBA at the nearest receptor. Construction levels without pile driving onsite are approximately 76 dBA at the sound level of a pickup truck. Construction noise and activities would travel intermittently throughout the site and are not anticipated to be performed near any sensitive receptor for more than a few weeks.

15. All site visits, outside of emergency maintenance, will occur during daylight hours. Operational noise is expected to be intermittent from panel tracking, and constant from inverters during daylight hours. The increase in noise is negligible due to the distance between the

6

Kentucky State Board on Electric Generation and Transmission Application

panels/inverters and the nearest noise-sensitive receptors. Maximum sound levels from the tracking system can be expected to be the levels of a refrigerator hum at the nearest receptor. During average daytime operation, the inverters will be similar in noise level (46 dBA max) to a quiet library at the nearest receptor. At the remaining nearest receptors, no elevated and prolonged noise levels above background levels are expected either during operation of the Project. At night, all inverters are inactive, and noise is restricted to the substation.

II. Compatibility with Scenic Surroundings

16. Pursuant to KRS 278.708(3)(b), a Property Value Impact Study was completed for the Project by Kirkland Appraisals, LLC, in May 2023 (SAR Attachment B). Please refer to Sections IX-XIII from Attachment B which address appropriate setbacks, topography, impacts during construction, scope of research, and compatibility in detail.

17. An excerpt from Section XIII, page 145 reads as follows:

"[L]arger solar farms using fixed or tracking panels are a passive use of the land that is in keeping with a rural/residential area. 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 20 feet high. 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 significantly taller than the 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."

III. Property Value Impacts

18. Pursuant to KRS 278.708(3)(c), Attachment B provides the Property Value Impact Study,

which was prepared by Kirkland Appraisals, LLC to assess the potential property value impacts to

owners adjacent to the proposed facility. The conclusion of the report, Section XIV on page 147,

reads as follows:

"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. Similar paired sales showed no impact from adjoining battery storage facilities...

...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."

IV. Anticipated Noise Levels at Property Boundary

19. Pursuant to KRS 278.708(3)(d), a Sound Study was prepared by Stantec Consulting and is included in Attachment D. Noise will occur temporarily and intermittently during the construction phase of the project due to increases in vehicular traffic, construction equipment and assembly of the solar facility components. This construction noise is expected to be of short duration at any given location within the Project site. The majority of the Project area is currently used for crop production or cattle grazing, so the need for extensive tree removal and earthmoving to prepare the site is anticipated to be minor. Project construction will utilize medium and heavy equipment including dozers, graders, loaders, pile drivers, and trucks. The U.S. Department of Transportation, Federal Highway Administration (FHWA), publishes sound levels for typical construction equipment, which are shown in Table 2 below. Construction for the Project will consist of building roads, fencing, solar arrays, a substation, and associated electrical infrastructure (buried lines, etc.).

Equipment	Typical Noise Level (dBA) 50 Feet from Sources
Air Compressor	78
Backhoe	78
Dozer	82
Generator	81
Pickup Truck	75
Pile Driver (Impact)	101
Pneumatic Tool	85
Pump	81
Spike Driver	77
Tie Cutter	84
Tie Handler	80
Tie Inserter	85
Tractor	84
Welder/Torch	74

Table 2. Typical noise level for construction equipment at 50 feet.

20. The amount of noise generated during construction will vary depending on the types of activities occurring on a given day. Grading and earthmoving equipment, pile drivers, and other construction equipment typically emit sounds between 76 to 101 dBA at 50 feet (FHWA 1999, 2006). Sounds associated with these types of equipment will primarily occur during the initial site set up — grading and access road construction, which is expected to last approximately 12 months. It is anticipated that pile driving for rack support foundations will create the loudest sound (98 and 101 dBA at 50 feet, FHWA 1999, 2009). Installation of each rack support foundation takes between 30 seconds to two minutes, depending on soil conditions; it is anticipated this activity will take up to six to eight months across the entire Project. Finally, the installation of the solar panels on the tracking racks will emit sound levels similar to general construction (75 to 85 dBA at 50 feet). Typically, a forklift is used to place individual panels on the tracking rack system. The

Kentucky State Board on Electric Generation and Transmission Application

sounds from all construction activities will dissipate with distance and will be audible at varying levels, depending on the locations of the equipment and receptors. Note that the Project is approximately four miles from north to south; thus, construction noise will not be isolated to a particular area for long periods of time (i.e., 30 days), except for prime access ways and laydown areas. These areas would experience noise from worker vehicles and delivery trucks. The noisiest portion of the construction includes the use of pile drivers to install the solar panel supports. Typical noise level within 50-feet of pile driving equipment is 84-101 dBA.

21. The noise model was also evaluated without the inputs of the pile driver since that is more typical of ongoing construction sound levels. The average sound levels for typical construction (without pile driving) at the nearest receptor is approximately 76 dBA, which is comparable to a city street or a pickup truck. The peak and average noise levels at the nearest receptor nearest receptor (SR-154) due to construction is detailed in Table 3 below:

Condition	Distance to Solar Array (ft	Estimated L _{max} Sound Level (dBA)	Estimated L _{eq} Sound Level (dBA)
With pile driver	83	96	94
Without pile driver	05	76	74

22. Construction traffic will use the existing county roadway system to access the Project site and deliver construction materials and personnel. There is no specific noise ordinance for unincorporated areas of Barren County. Based upon the sound levels published by FHWA, the sounds contributed by construction vehicles such as semi-trucks, light passenger cars, and trucks fall within acceptable ranges if the sounds do not occur between 7:00 p.m. and 7:00 a.m. Construction traffic sounds will be similar to common farm equipment and typical vehicles on Wood Duck Solar LLC

local roadways. Sound generated during construction is expected to only occur during daylight hours and will be generated by heavy equipment, passenger cars and trucks, and tool use during assembly of the Project. Sound will be present in the Project area during construction; however, because of the size of the Project and the distance to the nearest receptors, construction will not contribute to a significant sound increase when compared to sound currently occurring onsite (i.e., the operation of farming equipment, crop harvesting, and roadway traffic) and baseline ambient sound levels. See Attachment D for the full report studying noise levels associated with the facility's construction at the Project boundary.

23. Potential noise-sensitive receptors were evaluated within a 2,000-foot buffer from the Project Boundary. Two hundred sixty-six (266) residential receptors were identified within this buffer and were assessed within the Sound Study. The nearest receptor (SR-154) to a solar panel is approximately 83 feet; the nearest receptor to an inverter (SR-137) is approximately 430 feet away; and the nearest receptor to the Project substation (SR-082) is approximately 597 feet. Noise receptors and their distance to Project elements are discussed in Attachment D.

24. One hundred thirty (130) of the 266 residential receptors are located within eight areas that meet the definition of "residential neighborhood" under KRS 278.700(6). The residential neighborhoods (and correlating noise sensitive receptors ("SR")) include Millstown Road (SR-004-008), Bon Ayr (SR-087-089; SR-091-103), Den Drive (SR-148-151), Bent Creek Drive (SR-062-086), Dripping Springs Road (SR-047-055), Apple Grove Road (SR-024-034), Rick Road (SR-139-143), and Fairview Church Road (SR-234-239; SR-259-262).

Land use	Nearest Receptor to	Section of Study Area	Distance from Nearest Solar Panel	Distance from Nearest Inverter or Transformer
Residence (SR-137)	Inverter	South	243 ft	430 ft (inverter)
Residence (SR-082)	Substation transformer	East-Central	3,876 ft	597 ft (transformer)
Residence (SR-154)	Panel tracking system	North- Central	83 ft	1,578 ft (inverter)
Residences – Millstown Road Neighborhood (SR- 004 – 008)	N/A	North	544 ft	3,106 ft (inverter)
Residences – Bon Ayr Neighborhood (SR-087 – 089, 091 – 103; SR-180-196; SR-246-248; SR-252-253)	N/A	South-East	1,229 ft	648 ft (transformer)
Residences – Den Drive Neighborhood (SR-148 – 151; SR-207-222)	N/A	Central	634 ft	1,722 ft (inverter)
Residences – Bent Creek Drive Neighborhood (SR-062 – 086)	N/A	South-East	1,558 ft	597 ft (transformer)
Residences – Dripping Springs Road Neighborhood (SR-047 – 057; SR-165-169)	N/A	North-East	587 ft	2,290 ft (inverter)
Residences – Apple Grove Road Neighborhood (SR- 024 – 034)	N/A	North- Central	343 ft	835 ft (inverter)
Residences – Rick Road Neighborhood (SR-139 – 143)	N/A	South-West	649 ft	1,241 ft (inverter)
Residences – Fairview Church Road Neighborhood (SR-234-239; SR-259- 262)	N/A	North-West	1,229 ft	2,005 ft (inverter)

Table 4. Nearest Receptors to the Project

25. There are three principal sound sources associated with normal daytime operation of the Project: solar panel array motors; the substation step-up transformer; and inverters, which are

Wood Duck Solar LLC

distributed through the panel arrays. Tracking systems involve the panels being driven by small, 24-volt brushless DC motors to track the arc of the sun to maximize each panel's potential for solar absorption. Panels would turn no more than five degrees every 15 minutes and would operate no more than one minute out of every 15-minute interval during daylight hours. These tracking motors are a potential source of mechanical noise and are included in this assessment. The sound typically produced by panel tracking motors (NexTracker or equivalent) is approximately 70 dBA at one meter. The nearest receptor (SR-154) from the tracking system will be approximately 38 dBA at 83 feet which is similar to the sound of rustling leaves.

26. The proposed Project substation area covers approximately 5.5 acres and will be located on the southeast portion of the Project site. One main power transformer will be installed in the Project substation. The analysis assumed the sound power level of the substation transformer is 105 dBA. The nearest sensitive receptor (SR-082) is approximately 597 feet away, which equates to a sound level of 45 dBA, comparable to quiet urban nighttime.

27. Solar facilities generate minimal sound while in operation during daylight hours. Inverters are the main source of sound within a solar facility with typical noise levels averaging 75 dBA at the point source, comparable to a vacuum cleaner, and sound dissipates quickly from the point source. Due to proposed landscaping, setbacks, fence lines, and perimeter roads, noise-generating equipment will not be located in proximity to sensitive receptors or near the Project boundary. Approximately 35 inverters are expected to be installed across the Project site. The noise produced by the inverters can be characterized as a hum and during average operation is similar in noise level at the unit to a household air conditioner.

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

13

between the panels/inverters and the nearest noise sensitive receptors. The nearest receptor to solar panels (SR-154) is approximately 83 feet from the panels, and the nearest receptor to an inverter (SR-137) is approximately 430 feet from an inverter. Maximum sound levels from the tracking system are anticipated to be 70 dBA, equivalent to the levels of a vacuum hum. Maximum sound level from the inverters is anticipated to be 99 dBA, though actual sound levels will be much quieter at most receptors. Panel trackers and inverters will not operate at night when residential receptors are most sensitive.

29. According to manufacturer specifications the loudest the substation transformer is expected to be is just over 105 dBA. Since the nearest receptor (SR-082) is approximately 597 feet from the substation, transformers are not expected to add additional noise above background noise as the noise levels are barely audible (41 dBA). Site visits and maintenance activities including single vehicular traffic and mowing will be negligible as they are similar to the background agricultural noise characteristics. All site visits, outside of emergency maintenance, will occur during daylight hours.

30. Construction is not expected to remain in that area beyond a few weeks. At the nearest receptors, besides intermittent and infrequent pile driver activity, no elevated and prolonged noise levels above background levels are expected either during construction or operation of the Project site. Ultimately, noise from construction and operation will not cause disturbance or interfere with the enjoyment of dwellings in the vicinity of the Project.

V. Effect on Road, Railways and Fugitive Dust

31. Pursuant to KRS 278.708(3)(e), a Traffic Impact Study was completed for the Project by Stantec Consulting in March 2023 and is enclosed as Attachment H. The study evaluates the Project's impact on road traffic and transportation.

32. Any transportation impacts will be temporary in nature as they will occur only during the construction phase of the Project. The closest railroad to the Project is located approximately 1.5 miles to the north and will not be utilized in connection with Project construction or operation. For purposes of conducting a conservative analysis, AM and PM peak hour traffic volumes on roadways were increased 25 percent, which is far greater than is anticipated for the Project's construction. All study segments are projected to operate at acceptable level of service (LOS) during construction for both peak hours; therefore, the Project is not expected to cause a significant impact with respect to traffic. Any other roadway segments used for Project-related travel will have acceptable operations. The Project would not substantially increase hazards nor alter any roadways or create any traffic conditions, thus, the Project would not result in significant impacts to transportation and emergency access.

33. Construction and associated land disturbance in connection with the proposed Project may temporarily contribute airborne materials. The Project will utilize Best Management Practices (BMPs) such as: dewatering procedures, stormwater runoff quality control measures, concrete waste management, watering for dust control, and construction of perimeter silt fences, as needed. Water for dust control and operations will be obtained from several potential sources, including an on or off-site groundwater well, or trucked from an offsite water purveyor. During construction, water will be used for dust suppression and other purposes. Additionally, open-bodied trucks transporting dirt will be covered during transport. The Project will comply with dust control regulations and all other applicable requirements to manage erosion, sedimentation, and stormwater runoff that will include submitting a stormwater pollution prevention plan and notice of intent for use of the Kentucky stormwater construction general permit KYR10 to the Kentucky Department for Environmental Protection, Division of Water ("Kentucky DOW") for review and

approval.

VI. Mitigation Measures

34. Pursuant to KRS 278.708(4), the Applicant has implemented or intends to implement the following mitigation measures for the Project:

35. The Project will be compatible with the existing land uses in the area. Construction methods will be implemented to minimize potential impacts on noise, dust, and traffic. Project design also incorporates avoidance and mitigation measures for sensitive resources such as wetlands, listed plant and animal species, and sensitive cultural resources. Vegetative screening will be implemented to mitigate any visual impacts of the facility. Once the Project enters the operational phase, there will be no hazardous materials, pollutant emissions, or discernible sound outside of the facility.

36. *Viewscape*: The Project will utilize construction methods that minimize large-scale grading and removal of native soil. Clearing and grubbing will occur where necessary. The Applicant prepared a Visual Resource Assessment and Mitigation Plan (VRA) and a Glare Study to study the Project's potential impacts on the surrounding viewshed. The Project's VRA and Glare Study are enclosed as Attachments E and F, respectively. Per the Glare Study, green glare is predicted for 4 of the 147 structures, primarily residences, that were analyzed within proximity to the Project area. Green glare is predicted for up to 18 minutes per day (October-February) for two of the structures and for 2-5 minutes per day (October and February) for the other two structures. The glare is predicted to occur in the late morning to early afternoon, and should be considered negligible both due to severity (green category) and length of time predicted. The analyses were also conducted for drivers of vehicles at five feet above ground level (AGL) for cars and small trucks and nine feet for semi-truck viewing heights on 17 road segments adjacent to the PV panels. The results of the ForgeSolar analysis determined that green glare from the Project is predicted to occur for drivers of vehicles on one of 17 road segments included in the analysis, Oak Grove Church Road. The analysis was completed at two viewing heights for roadways: five feet for cars and small trucks and nine feet for semi-trucks. Wood Duck will provide landscape buffers of double row evergreen trees spaced on 15-feet centers, between panel arrays and residential areas and along the public roadways where the arrays could be visible.

37. The Glasgow Municipal Airport and helipad at the TJ Samson Community Hospital is predicted to not have glare from the Project for pilots approaching either runway or helicopters hovering over the helipad. No air traffic control towers are associated with the Glasgow Municipal Airport.

38. *Vegetation.* The Project has been designed to minimize the amount of tree clearing required. The Project's Landscaping Plan, included as Attachment G, focuses on preservation of existing vegetation, augmented by supplemental vegetation to provide an effective screen, and enhancing the area's biological habitat. Pre-existing vegetation will remain preserved to the extent practical to retain visual consistency for adjacent properties and to achieve screening for adjacent properties and rights of way. Where existing vegetation was removed or considered insufficient, supplemental landscaping will be installed as depicted in the Landscape Plan and Project layout (Attachment A). Supplemental screening will consist of two rows of a combination of locally adapted evergreen species on 15-foot centers to mitigate the Project's visual impact. Supplemental plantings, where necessary, will be a minimum of six feet at the time of planting, no more than 15 feet apart, and consisting of double rows. Proposed vegetation will be 10 to 15 feet high at maturity. 39. The interior of the Project will be reseeded with a native seed mixture of grasses and interior vegetation will be maintained at 12 inches in height to prevent shading effects and protect

from safety hazards.

40. *Impacts to cultural resources*. The Project has been designed to avoid impacts to historic homes, cemeteries, and archaeological sites. A search for sensitive site receptors (adjacent historic residences, churches, schools, cemeteries, hospitals, etc.) within 2,000 feet of the Project boundary was performed. One archaeological site deemed not eligible for listing on the NHRP, three historic structures, and three historic cemeteries were identified within this search area and would not be affected due to vegetation screening as implemented in the Landscape Plan.

41. *Stormwater*. The Project will comply with all applicable requirements to manage erosion, sedimentation, and stormwater runoff. This will include submitting a stormwater pollution prevention plan (SWPPP) and a notice of intent (NOI) for use of the Kentucky stormwater construction general permit KYR10 to Kentucky DOW for review and approval. The SWPPP prepared by a qualified engineer or erosion control specialist and will be implemented before and during construction. The SWPPP will be designed to reduce potential impacts related to erosion and surface water quality during construction activities and will include Project information and BMPs. BMPs will include dewatering procedures, stormwater runoff quality control measures, concrete waste management, stormwater detention, watering for dust control, and construction of perimeter silt fences, as needed.

42. *WOTUS*. The Project has been designed to avoid impacts to Waters of the United States (WOTUS) delineated on site. If impact to such features becomes necessary, then the impact will be minimized to the extent practicable, and the appropriate Clean Water Act (CWA) Section 404/401 permit will be obtained from the U.S. Army Corps of Engineers (USACE) and Kentucky DOW.

43. The regulation and permitting of utility-scale solar impacts to stormwater and WOTUS

will be addressed separately to this Siting Board application. Stormwater discharge is addressed in paragraph 40.

44. *Regulatory Agency*. Kentucky DOW: The Project will obtain a Kentucky Department of Environmental Protection Stormwater Construction General Permit from the Kentucky DOW in compliance with the CWA.

45. *Regulatory Agency*. USACE — Louisville District: The Project has been designed to avoid impacts to WOTUS. However, if impact becomes necessary then Wood Duck will coordinate with the USACE — Louisville District and the appropriate CWA Section 404 permit will be obtained. If necessary, a CWA Section 401 Water Quality Certification will be obtained from the Kentucky DOW. As required, the applicant will obtain permit coverage for crossings from the USACE-Louisville District.

Dated this 19th day of May 2025.

Respectfully submitted,

Gregory T. Dutton Kathryn A. Eckert Pierce T. Stevenson **FROST BROWN TODD LLP** 400 W. Market Street, 32nd Floor Louisville, KY 40202 (502) 589-5400 (502) 581-1087 (fax) gdutton@fbtlaw.com keckert@fbtlaw.com pstevenson@fbtlaw.com Counsel for Wood Duck Solar LLC

SAR ATTACHMENT A



GEENEX SOLAR

1000 NC MUSIC FACTORY BLVD

SUITE C3 CHARLOTTE, NC 28206

WOOD DUCK SOLAR

100MW-AC

OVERALL

SITE PLAN

SCALE AS SHOWN

8

DRAWN

Geenex

simply solar

Con a series



DATA
2259.4 ACRES
1126.7 ACRES
1244.7 ACRES
100 MW-AC
135 MWp
CS7N-MB-AG
660Wp
204,552
FS4200M
4MW-AC
25
1.35
SINGLE AXIS TRACKING
34%
1500V
1P SAT

NOTES:

PROJECT AREAS ARE SUBJECT TO CHANGE PENDING FUTURE DESIGN CONTRAINTS AND LOCAL PERMITTING CONSIDERATIONS, WETLANDS SETBACK = 25' STREAM SETBACK = 25' NON-PARTICIPATING OCCUPIED STRUCTURE SETBACK = 300' NON-PARTICIPATING PARCEL SETBACK = 50' COUNTY & STATE ROAD SETBACK = 50' COUNTY & STATE ROAD SETBACK = 100' CL & SCREPTLINE SETEBACK = 100' THAT SETATE ROAD SETBACK = 100' KARST AREA SETBACK = 50' 1)

- 2) 3) 4)
- 5) 6) 7)

- 9) 10)

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Client/Project Number

of the Gen-tie Line

Client Project Report

Exhibit:

1-b

237801898

Geenex Wood Duck Solar Project SAR

Title Sensitive Resources within One Mile

1:25,722

Notes 1. Coordinate System: NAD 1983 StatePlane Kentucky FIPS 1600

Stantec

Solar Sources: Wood Duck Solar Layout, USGS National Structures Dataset
 Subackground: KyFromAbove Orthoimagery (2021)

Savers Storage LLC (Parcel 33-7A)

---- Eastern Kentucky Power Company Substation

• Gen-tie Line Power Poles

Residences within One Mile

Neighborhood within One Mile

- Gen-tie Line

(a) Cemeteries

M Church

SAR ATTACHMENT B



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

May 9, 2025

Ms. Kelley Pope Geenex Solar 1000 NC Music Factory Boulevard, Suite C3 Charlotte, NC 28206

RE: Wood Duck Solar, Off Cumberland Parkway, Glasgow, Barren County, KY

Ms. Pope

At your request, I have considered the impact of a 100 MW solar farm proposed to be constructed on a 1,126.70-acre portion of a 2,259.40-acre assemblage of land off Cumberland Parkway, Glasgow, Barren 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 Geenex Solar, represented to me by Kelley Pope. My findings support the Kentucky Siting Board Application. The effective date of this consultation is May 9, 2025.

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 non-participating home will be 300 feet from the nearest panel and the average distance will be 1,298 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 is quiet, and there is minimal traffic.

If you have any questions please contact me.

Sincerely,

Dila Child Jr

Richard C. Kirkland, Jr., MAI NC Certified General Appraiser A4359 KY Certified General Appraiser #5522



Table of Contents

Con	clusion	1
I.	Proposed Project and Adjoining Uses	4
II.	Demographics	9
III.	Methodology and Discussion of Issues	13
IV.	Research on Solar Farms	16
A.	Appraisal Market Studies	16
B.	Articles	19
C.	Broker Commentary	20
V.	University Studies	20
A.	University of Texas at Austin, May 2018	20
B.	University of Rhode Island, September 2020	21
C.	Georgia Institute of Technology, October 2020	23
D.	Master's Thesis: ECU by Zachary Dickerson July 2018	23
E.	Lawrence Berkeley National Lab, March 2023	24
VI.	Assessor Surveys	30
VII.	Summary of Solar Projects in Kentucky	33
61	3: Crittenden Solar, Crittenden, KY	38
65	9: Cooperative Shelby Solar, Simpsonville, KY	39
66	0: E.W. Brown Solar, Harrodsburg, KY	10
VIII.	Market Analysis of the Impact on Value from Solar Farms	11
А.	Kentucky and Adjoining States Data	12
В.	Southeastern USA Data – Over 5 MW	32
C.	Summary of National Data on Solar Farms	38
D.	Larger Solar Farms	10
IX.	Distance Between Homes and Panels	12
Х.	Topography	12
XI.	Potential Impacts During Construction	12
XII.	Scope of Research	13
XIII	Specific Factors Related To Impacts on Value	14
XIV.	Conclusion	17
XV.	Certification	18

I. **Proposed Project and Adjoining Uses**

Proposed Use Description

This 100 MW solar farm is proposed to be constructed on a 1,126.70-acre portion of a 2,259.40-acre assemblage of land off Cumberland Parkway, Glasgow, Barren County, Kentucky.

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 300 feet from the closest solar panel and the average distance to adjoining homes will be 1,298 feet to the nearest solar panel. Most of these setbacks are larger than what is typically found and will go beyond what is needed to protect adjoining property values when coupled with sufficient landscaped buffers. The minimum distance noted is further than some of the examples identified later in this report showing no impact on property values.

Adjoining land is primarily a mix of residential and agricultural uses, which is very typical of solar farm sites.

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

Adjoining Use Breakdown								
	Acreage	Parcels						
Residential	5.64%	54.21%						
Recreational	0.00%	0.00%						
Agricultural	35.37%	17.76%						
Agri/Res	58.64%	25.23%						
Utility	0.33%	1.87%						
Commercial	0.02%	0.93%						
Total	100.00%	100.00%						



Surrounding Uses

			GIS Data		Adjoin	Adjoin	Distance (ft)	L.F
#	MAP ID	Owner	Acres	Present Use	Acres	Parcels	Home/Panel	Adjacent
1	Edmonson County	N/A	0.00	Agri/Res	0.00%	0.93%	N/A	7025
2	19-4A	Burris	2.18	Residential	0.07%	0.93%	485	505
3	19-6B	Hinkle	5.94	Residential	0.18%	0.93%	630	1385
4	18-6	Partridge	3.15	Residential	0.10%	0.93%	950	55
5	18-6B	Burris	3.08	Residential	0.09%	0.93%	710	1
6	19-6A	Pendleton	2.30	Residential	0.07%	0.93%	920	400
7	19-6C	Childress	5.00	Residential	0.15%	0.93%	1,040	1210
8	19-6	Edmonds	0.48	Residential	0.01%	0.93%	760	120
9	19-7	Burris	7.75	Residential	0.24%	0.93%	N/A	1305
10	18-6C	Harris	3.48	Residential	0.11%	0.93%	615	245
11	18-3E	John	34.47	Agricultural	1.06%	0.93%	N/A	420
12	18-3F	Croley	38.39	Agricultural	1.18%	0.93%	N/A	840
13	18-5	Farrell	2.86	Residential	0.09%	0.93%	335	490
14	18-3H	Mitchell	108.47	Agricultural	3.34%	0.93%	N/A	140
15	18-3J	Croley	42.78	Agricultural	1.32%	0.93%	N/A	330
16	18-3B	Croley	23.18	Agri/Res	0.71%	0.93%	1,650	640
17	18-3	Aidala	32.02	Agri/Res	0.99%	0.93%	2,170	950
18	31-25A	Bunnell	135.88	Agri/Res	4.18%	0.93%	3,635	1
19	32-5	Trulock	139.08	Agri/Res	4.28%	0.93%	3,475	1845
20	32-14	Fox	71.50	Agri/Res	2.20%	0.93%	2,440	1450
21	32-15	Campbell	70.50	Agri/Res	2.17%	0.93%	1,915	1670
22	32-15H	Pancake	1.00	Residential	0.03%	0.93%	530	395
23	32-15J	Sexton	2.00	Residential	0.06%	0.93%	690	195
24	32-15M	Torres	1.00	Residential	0.03%	0.93%	675	80
25	32-15K	Patton	1.00	Residential	0.03%	0.93%	595	80
26	32-15F	Stout	1.00	Residential	0.03%	0.93%	670	100
27	32-15P	Vibbert	2.00	Residential	0.06%	0.93%	720	95
28	32-15G	Craft	1.00	Residential	0.03%	0.93%	645	95
29	32-15N	McDavitt	2.00	Residential	0.06%	0.93%	500	235
30	32-15E	Hill	1.46	Residential	0.04%	0.93%	N/A	405
31	32-15B	Campbell	5.00	Residential	0.15%	0.93%	N/A	130
32	32-15A	Esters	3.03	Residential	0.09%	0.93%	1,145	240
33	32-19	Ortega	28.90	Agricultural	0.89%	0.93%	N/A	3875
34	32-17B	Aidala	0.84	Residential	0.03%	0.93%	710	565
35	32-13	Stephens	175.52	Agri/Res	5.41%	0.93%	1,690	1510
36	32-13A	Martin	5.49	Residential	0.17%	0.93%	N/A	1
37	32-24A	Martin	1.14	Residential	0.04%	0.93%	705	380
38	32-24	Martin	98.86	Agri/Res	3.04%	0.93%	830	1340
39	32-40B	Martin	80.44	Agricultural	2.48%	0.93%	N/A	3865

			GIS Data	L	Adjoin	Adjoin	Distance (ft)	L.F
#	MAP ID	Owner	Acres	Present Use	Acres	Parcels	Home/Panel	Adjacent
40	32-37C	Martin	55.88	Agri/Res	1.72%	0.93%	1,715	730
41	32-38	Ewing	50.00	Agricultural	1.54%	0.93%	N/A	2030
42	83-58	Burks	48.42	Agricultural	1.49%	0.93%	N/A	425
43	33-12	Martin	46.15	Agri/Res	1.42%	0.93%	300	3775
44	33-12B	Kendrick	50.22	Agri/Res	1.55%	0.93%	800	215
45	32-40A	Walker	0.58	Utility	0.02%	0.93%	N/A	370
46	33B-18	Carroll	1.29	Residential	0.04%	0.93%	1,590	305
47	33B-17	Campbell	0.94	Residential	0.03%	0.93%	1,625	120
48	33B-16	Scott	0.95	Residential	0.03%	0.93%	1,745	130
49	33B-15	Martin	0.99	Residential	0.03%	0.93%	1,860	125
50	33B-14	Walker	1.03	Residential	0.03%	0.93%	1,940	130
51	33B-13	Wilson	1.12	Residential	0.03%	0.93%	N/A	145
52	33B-12	Savers	1.06	Residential	0.03%	0.93%	N/A	135
53	33B-11	Wright	1.03	Residential	0.03%	0.93%	2,330	125
54	33B-10	Deal	1.02	Residential	0.03%	0.93%	2,440	1
55	33-7C	East	10.00	Utility	0.31%	0.93%	N/A	1495
56	33-7F	Savers	0.70	Commercial	0.02%	0.93%	N/A	125
57	33-23	Miller	1.47	Residential	0.05%	0.93%	3,750	35
58	33-23G	Goodman	0.93	Residential	0.03%	0.93%	3,750	55
59	33-7E	Robertson	0.93	Residential	0.03%	0.93%	N/A	410
60	33-7	Robertson	1.27	Residential	0.04%	0.93%	3,525	360
61	33-31A	Holmes	31.46	Agricultural	0.97%	0.93%	N/A	905
62	33-6	Emerson	62.36	Agri/Res	1.92%	0.93%	3,395	1815
63	32-40	Martin	69.91	Agri/Res	2.15%	0.93%	1,275	3190
64	32-41J	Wells	1.24	Residential	0.04%	0.93%	N/A	660
65	32-41K	Garrett	1.36	Residential	0.04%	0.93%	740	1
66	32-41F	Wells	6.80	Residential	0.21%	0.93%	1,220	145
67	32-41G	Furlong	0.76	Residential	0.02%	0.93%	1,480	160
68	32-41D	England	0.99	Residential	0.03%	0.93%	1,580	50
69	32-21A	Woodland	0.11	Residential	0.00%	0.93%	N/A	350
70	32-43	Emerson	71.99	Agricultural	2.22%	0.93%	N/A	3915
71	32-20C	Arms	3.69	Residential	0.11%	0.93%	510	1250
72	32-20	Kirby	3.58	Residential	0.11%	0.93%	600	485
73	32-20B	Simpson	29.30	Residential	0.90%	0.93%	985	1235
74	19-33	Lyons	127.07	Agri/Res	3.91%	0.93%	1,055	4850
75	20-6	Burks	25.55	Agri/Res	0.79%	0.93%	365	3190
76	20-5B	Burks	27.10	Agri/Res	0.83%	0.93%	1,530	620
77	20-5A	Burks	27.14	Agri/Res	0.84%	0.93%	905	1730
78	20-7	Houchens	11.12	Residential	0.34%	0.93%	1,410	60

			GIS Data		Adjoin	Adjoin	Distance (ft)	L.F
#	MAP ID	Owner	Acres	Present Use	Acres	Parcels	Home/Panel	Adjacent
79	20-2V	Gray	13.00	Residential	0.40%	0.93%	N/A	1
80	20-9C	James	1.00	Residential	0.03%	0.93%	595	250
81	20-9C	Froedge	9.99	Residential	0.31%	0.93%	670	935
82	20-2P	Hawkins	113.18	Agricultural	3.49%	0.93%	N/A	4875
83	20-2F	Allen	56.82	Agricultural	1.75%	0.93%	N/A	1870
84	20-14A	Chambers	0.78	Residential	0.02%	0.93%	365	120
85	20-14	Allen	28.87	Agricultural	0.89%	0.93%	N/A	280
86	20-13	Allen	50.00	Agri/Res	1.54%	0.93%	640	2640
87	9-8	Allen	163.50	Agri/Res	5.04%	0.93%	2,535	1590
88	20-1	Gordeuk	40.00	Agri/Res	1.23%	0.93%	1,420	2485
89	19-28	Boatman	1.97	Residential	0.06%	0.93%	1,720	300
90	19-28A	Pennycuff	50.00	Agricultural	1.54%	0.93%	N/A	1010
91	20-2D	Gray	1.88	Residential	0.06%	0.93%	1,085	1300
92	20-3	Pennycuff	50.00	Agri/Res	1.54%	0.93%	1,840	3825
93	20-4	Pennycuff	74.62	Agricultural	2.30%	0.93%	N/A	3740
94	19-30B	Copas	2.86	Residential	0.09%	0.93%	1,550	260
95	19-30	Wininger	46.90	Agricultural	1.44%	0.93%	N/A	1205
96	19-25	Double	73.00	Agri/Res	2.25%	0.93%	1,980	1335
97	19-23	Millstown	109.21	Agricultural	3.36%	0.93%	N/A	5900
98	19-17	Roark	81.52	Agricultural	2.51%	0.93%	N/A	365
99	19-16A	Roark	39.68	Agri/Res	1.22%	0.93%	365	2360
100	19-13B	Williams	52.00	Agricultural	1.60%	0.93%	N/A	730
101	19-12	Bellamy	10.75	Residential	0.33%	0.93%	N/A	1475
102	19-10B	Vincent	0.97	Residential	0.03%	0.93%	415	670
103	19-13	Williams	35.50	Agri/Res	1.09%	0.93%	1,300	685
104	19-5A	Gingerich	33.65	Agri/Res	1.04%	0.93%	595	5065
105	19-10C	Cook	1.07	Residential	0.03%	0.93%	340	670
106	19-13A	Williams	180.74	Agri/Res	5.57%	0.93%	720	5660
107	19-16	West	1.83	Residential	0.06%	0.93%	345	730
		Total	3246.970		100.00%	100.00%	1,298	

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. <u>Demographics</u>

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





Housing Profile

1507-1999 Oak Grove Church Rd, Smiths Grove, Kentucky, Ring: 1 mile radius

Prepared by Esri Val N =: 37,04481 L _____ % % 0.0540

10

Population		Households						
2010 Total Population	102		2022 Medi	an Household 1	ncome		\$44,00	
2020 Total Population	104		2027 Median Household Income			\$56.36		
2022 Total Population	105		2022-2027 Annual Rate				5.07%	
2027 Total Population	106			CONCERNING AND				
2022-2027 Annual Rate	0.19%							
		Census 2010		2022		2027		
Housing Units by Occupancy Sta	tus and Tenure	Number	Percent	Number	Percent	Number	Percen	
Total Housing Units	11. June 10. C	38	100.0%	39	100.0%	39	100.0%	
Occupied		35	92.1%	37	94.9%	37	94.9%	
Owner		27	71.1%	28	71.8%	28	71.8%	
Renter		8	21.1%	9	23.1%	9	23.1%	
Vacant		3	7.9%	3	7.7%	2	5.19	
				20	122	2027		
Owner Occupied Housing Units I	by Value			Number	Percent	Number	Percen	
Total	- Colored and			27	100.0%	28	100.0%	
<\$50,000				5	18.5%	5	17.99	
\$50,000-\$99,999				6	22.2%	6	21.49	
\$100,000-\$149,999				4	14.8%	4	14.39	
\$150.000-\$199.999				5	18.5%	5	17.99	
\$200.000-\$249.999				3	11.1%	3	10.79	
\$250,000-\$299,999				2	7.4%	3	10.7%	
\$300,000-\$399,999				i.	3.7%	1	3.6%	
\$400,000-\$499,999				1	3.7%	1	3.69	
\$500.000-\$749.999				Ō	0.0%	0	0.09	
\$750,000-\$999,999				0	0.0%	0	0.09	
\$1,000,000-\$1,499,999				0	0.0%	0	0.09	
\$1,500,000-\$1,999,999				0	0.0%	0	0.09	
\$2,000,000+				0	0.0%	0	0.09	
Martine Velve								
Median value				\$131,250		\$137,500		
Average Value				\$147,222		\$151,786		
Census 2010 Housing Units					N	umber	Percen	
Total						38	100.0%	
In Urbanized Areas						0	0.09	
In Urban Clusters						0	0.0%	
Rural Housing Units						38	100.0%	
In Urbanized Areas In Urban Clusters Rural Housing Units						0 0 38	0 0 100	

Data Note: Persons of Hispanic Drigin may be of any race. Source: Esri forecasts for 2022 and 2027. U.S. Census Bureau 2010 decennial Census data converted by Esri into 2020 geography.

May 23, 2023

0.07 - 7017

30,011,014



Housing Profile

1507-1999 Oak Grove Church Rd, Smiths Grove, Kentucky, Ring: 3 mile radius

Prepared by Esri Larin = 37,04481

Population		Households						
2010 Total Population	1,634		2022 Medi	an Household 1	ncome		\$51,347	
2020 Total Population	020 Total Population 1,653 2027 Median Household Income				ncome	\$59,717		
2022 Total Population	1,644		2022-2027	Annual Rate			3.07%	
2027 Total Population	1,639							
2022-2027 Annual Rate	-0.06%							
		Censu	s 2010	20	22	20	27	
Housing Units by Occupancy Sta	atus and Tenure	Number	Percent	Number	Percent	Number	Percent	
Total Housing Units		683	100.0%	698	100.0%	700	100.0%	
Occupied		601	88.0%	625	89.5%	623	89.0%	
Owner		471	69.0%	482	69.1%	482	68.9%	
Renter		130	19.0%	143	20.5%	141	20.1%	
Vacant		82	12.0%	73	10.5%	77	11.0%	
					2022		2027	
Owner Occupied Housing Units	by Value			Number	Percent	Number	Percent	
Total				483	100.0%	483	100.0%	
<\$50,000				107	22.2%	92	19.0%	
\$50,000-\$99,999				91	18.8%	80	16.6%	
\$100,000-\$149,999				65	13.5%	57	11.8%	
\$150,000-\$199,999				98	20.3%	109	22.6%	
\$200,000-\$249,999				44	9.1%	49	10.1%	
\$250,000-\$299,999				38	7.9%	47	9.7%	
\$300,000-\$399,999				17	3.5%	22	4.6%	
\$400,000-\$499,999				16	3.3%	20	4.1%	
\$500,000-\$749,999				2	0.4%	2	0.4%	
\$750,000-\$999,999				0	0.0%	0	0.0%	
\$1,000,000-\$1,499,999				1	0.2%	1	0.2%	
\$1,500,000-\$1,999,999				0	0.0%	0	0.0%	
\$2,000,000+				4	D.8%	4	0.8%	
Median Value				\$133,462		\$155,734		
Average Value				\$165,166		\$179,400		
Census 2010 Housing Units					N	umber	Percent	
Total						683	100.0%	
In Urbanized Areas						0	0.0%	
In Urban Clusters						0	0.0%	
Rural Housing Units						683	100.0%	

Data Note: Persons of Hispanic Drigin may be of any race. Source: Esri forecasts for 2022 and 2027. U.S. Census Bureau 2010 decennial Census data converted by Esri into 2020 geography.

May 23, 2023

11

0.07 - 7017

94554494



Housing Profile

1507-1999 Oak Grove Church Rd, Smiths Grove, Kentucky, Ring: 5 mile radius

Prepared by Esri Laro = 37,04491 L. 1011-06 - 16.00540

Population		Households						
2010 Total Population 4,958		2022 Median Household Income					\$50,459	
2020 Total Population	5,217	5,217 2027 Median Household Income		Income	\$58,633			
2022 Total Population	al Population 5,225 2022-2027 Annual Rate			3.05				
2027 Total Population	5,279							
2022-2027 Annual Rate	0.21%							
		Censu	s 2010	20	22	20	27	
Housing Units by Occupancy Sta	tus and Tenure	Number	Percent	Number	Percent	Number	Percent	
Total Housing Units		2,074	100.0%	2,177	100.0%	2,200	100.0%	
Occupied		1,881	90.7%	2,009	92.3%	2,031	92.3%	
Owner		1,442	69.5%	1,476	67.8%	1,497	68.0%	
Renter		439	21.2%	533	24.5%	534	24.3%	
Vacant		194	9.4%	167	7.7%	169	7.7%	
			2022			2027		
Owner Occupied Housing Units by Value				Number	Percent	Number	Percent	
Total				1,476	100.0%	1,498	100.0%	
<\$50,000				293	19.9%	244	16.3%	
\$50,000-\$99,999				255	17.3%	222	14.8%	
\$100,000-\$149,999				185	12.5%	159	10.6%	
\$150,000-\$199,999				289	19.6%	317	21.2%	
\$200,000-\$249,999				162	11.0%	184	12.3%	
\$250,000-\$299,999				147	10.0%	184	12.3%	
\$300,000-\$399,999				85	5.8%	117	7.8%	
\$400,000-\$499,999				37	2.5%	45	3.0%	
\$500,000-\$749,999				12	0.8%	15	1.0%	
\$750,000-\$999,999				0	0.0%	0	0.0%	
\$1,000,000-\$1,499,999				4	0.3%	4	0.3%	
\$1,500,000-\$1,999,999				0	0.0%	0	0.0%	
\$2,000,000+				7	0.5%	7	0.5%	
Median Value				\$150.865		\$169.558		
Average Value				\$170,512		\$187,867		
Census 2010 Housing Units					N	umber	Percent	
Total					2,074	100.0%		
In Urbanized Areas						0	0.0%	
In Urban Clusters						7	0.3%	
Rural Housing Units						2,067	99.7%	
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Data Note: Persons of Hispanic Drigin may be of any race. Source: Esri forecasts for 2022 and 2027. U.S. Census Bureau 2010 decennial Census data converted by Esri into 2020 geography.

May 23, 2023

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III. <u>Methodology and Discussion of Issues</u>

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 according to a wide range of noise studies that have been completed.

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

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

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

Market Imperfection

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

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

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

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

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

Relative Solar Farm Sizes

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

Larger solar farms are often set up in sections where any adjoining owner would only be able to see a small section of the project even if there were no landscaping screen. Once a landscaping screen is in place, the primary view is effectively the same whether 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 500 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. Additional analysis on Spotsylvania Solar is shown later in this report with a new section of homes and new price points significantly higher than historical sales in this subdivision.

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.

Kevin T. Meeks, MAI – Corcoran Solar Impact Study, June 19, 2017

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

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

Conclusion of Impact Studies

Of the six studies noted three 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."

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

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

Megan Day reports form 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. <u>University Studies</u>

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.



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 2nd and 3rd most population dense states in the USA. Mr. Lang in conversation as well as in recorded presentations has indicated that the impact in these heavily populated areas may reflect a loss in value due to the scarce greenery in those areas and not specifically related to the solar farm itself. In other words, any development of that site might have a similar impact on property value.

Based on this study I have checked the population for the Rocky Hill Division of Barren County, which has a population of 3,571 population for 2022 based on HomeTownLocator using Census Data and a total area of 64.93 square miles. This indicates a population density of 55 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.

DODUL ATION		HOUSING	
POPULATION		HOUSING	
Total Population	3,571 (100%)	Total HU (Housing Units)	1,592 (100%)
Population in Households	3,571 (100.0%)	Owner Occupied HU	1,080 (67.8%)
Population in Families	3,033 (84.9%)	Renter Occupied HU	281 (17.7%)
Population in Group Quarters ¹	0	Vacant Housing Units	231 (14.5%)
Population Density	55	Median Home Value	\$165,546
Diversity Index ²	18	Average Home Value	\$195,718
		Housing Affordability Index ³	154

Rocky Hill Division Data & Demographics (As of July 1, 2022)

INCOME		HOUSEHOLDS	
Median Household Income	\$54,230	Total Households	1,361
Average Household Income	\$69,396	Average Household Size	2.62
% of Income for Mortgage ⁴	16%	Family Households	992
Per Capita Income	\$26,448	Average Family Size	3
Wealth Index ⁵	53		

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

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

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

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

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

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

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

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

E. Lawrence Berkeley National Lab, March 2023

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

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



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





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



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



The third issue with this study is that it identifies impacts following development in areas where they note that "more adverse home price impacts might be found where LSPVPS (large-scale photovoltaic project) displace green space (consistent with results that show higher property values near green space." The problem with this statement is that it assumes that the greenspace is somehow guaranteed in these areas, when in fact, they could just as readily be developed as a residential subdivision and have the same impacts. They have made no effort to differentiate loss of greenspace through other development purposes such as schools, subdivisions, or other uses versus the impact of solar farms. In other words, they may have simply identified the impact of all forms of development on property value. This would in fact be consistent with the comments in the Rhode Island study where the researchers noted that the loss of greenspace in the highly urban areas was likely due to the loss of greenspace in particular and not due to the addition of solar panels.

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

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

VI. Assessor Surveys

While I have not completed a survey of assessors in Kentucky as of yet, I have been reaching out to assessors in other states about their experience and research on solar farm impacts.

I have completed surveys in North Carolina, Virginia, Colorado, New Mexico, and Mississippi. I have so far found no responses from any assessor that they make negative adjustments to adjoining properties. I currently have 39 responses in North Carolina, 16 responses from Virginia, 4 from Mississippi, and 15 from Colorado. Adding in the 5 responses in New Mexico, I have a total of 79 assessor responses and all 79 indicate either no negative impacts on adjoining property values, or else they did not respond to that part of the question. A total of 69 of the responses were definitively "No" with an additional 10 being "No response" to that question.

I have included the breakdown of that data on the following pages.

New Mexico Tax Assessors

County	Number of Farms in Operation	Change in adjacent property value
Colfax	3, 1 in planning	No
Curry	1, quite a few in talks	No
Dona Ana	2 owned by city and county	No
Lincoln	1	No
Union	1	No
	Total Responses With Solar	5
	Total Responses "No"	5
	Total Responses "Yes"	0

NC	Assessor	Survey	on	Solar	Farm	Property	Value	Impacts
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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, I 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

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 appoved 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 Pears	son 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

MS Assessor Survey on Solar Farm Property Value Impacts

County	Assessor's Name	Number of Farms	Change in Adjacent Property Value
Desoto	Jeff Fitch	1, 1 in planning	No response
Monroe	Mitzi Presley	2 in planning	No response
Stone	Charles Williams, Jr.	1 in planning	No
Union	Tameri Dunnam	1	No

CO Assessor Survey on Solar Farm Property Value Impacts

County	Assessor's Name	Number of Farms	Change in Adjacent Property Value
Conejos	Naomi Keys	3 or 4	No response
Denver	Keith Erffmeyer	3	No
Garfield	Jim Yellico (Vicki Riley)	No response	Classification and value could change
Kiowa	Marci Miller	0, 2 in planning	No
La Plata	Carrie Woodson	0, 1 in planning	No response
Las Animas	Jodi Amato	1 operational, 1 in planning	No
Moffat	Charles "Chuck" Cobb	0, 5 in planning	No
Montezuma	Leslie Bugg	3 approved	No
Montrose	Brad Hughes	2, 1 in planning	Maybe, but would be based on sales data
Morgan	Tim Amen	2, operational, 3 in planning	No
Pitkin	Wendy Schultz	1	No
Rio Blanco	Renae Neilson	2	No response
Saguache	Peter Peterson	1	No
San Miguel	Sarah Enders	1	Not enough data
Yuma	Cindy Taylor	1 in planning	No response

Responses: 15 Negative Impact on Adjoining Value = Yes: 0 Negative Impact on Adjoining Value = No: 7 Negative Impact on Adjoining Value = No Response: 8

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. Below is a map pulled from SEIA on Major Projects and it shows projects under development in orange and under construction in red, with only the smaller yellow dots representing existing solar farms. It was from this map that I have identified the six existing solar farms researched in Kentucky.



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.

						Total	Used	Avg. Dist	Closest	Adjoin	ing Use	by Acre			Adjoinin	g Use b	y Numb	er
Parcel #	State	County	City	Name	Output (MW)	Acres	Acres	to home	Home	Res	Agri	Agri/Res	Com		Reside: A	Agricul C	omm/I	nd %
61) КҮ	Warren	Bowling Green	Bowling Green	2	17.36	17.36	720	720	1%	64%	0%	36%	100%	10%	30%	60%	100%
61	1 KY	Clark	Winchester	Cooperative Solar I	8.5	181.47	63	2,110	2,040	0%	96%	3%	0%	100%	22%	78%	0%	100%
61	2 KY	Kenton	Walton	Walton 2	2	58.03	58.03	891	120	21%	0%	60%	19%	100%	65%	0%	35%	100%
61	3 KY	Grant	Crittenden	Crittenden	2.7	181.7	34.1	1,035	345	22%	27%	51%	0%	100%	96%	4%	0%	100%
61	7 KY	Metcalfe	Summer Shade	Glover Creek		968.2	322.4	1,731	375	6%	25%	69%	0%	100%	83%	17%	0%	100%
61	3 KY	Garrard	Lancaster	Turkey Creek		752.8	297.1	976	240	8%	36%	51%	5%	100%	73%	12%	15%	100%
		Total Num	ber of Solar Farms		6													
				Average	3.80	359.9	132.0	1244	640	9%	5 41%	39%	10%		58%	24%	18%	
				Median	2.35	181.6	60.5	1006	360	7%	32%	51%	3%		69%	14%	7%	
				High	8.50	968.2	322.4	2110	2040	22%	96%	69%	36%		96%	78%	60%	
				Low	2.00	17.4	17.4	720	120	0%	5 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

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

611: Cooperative Solar I, Winchester, KY



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

Adjoining Use Breakdown							
	Acreage	Parcels					
Residential	0.15%	11.11%					
Agricultural	96.46%	77.78%					
Agri/Res	3.38%	11.11%					
Total	100.00%	100.00%					

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612: Walton 2 Solar, Walton, KY



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

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

613: Crittenden Solar, Crittenden, KY



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

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

Adjoining Use Breakdown



659: Cooperative Shelby Solar, Simpsonville, KY

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

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



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

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

Adjoining Use Breakdown

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

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 12 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, Grant County, KY

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

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

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

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

Adjoini	ng Reside	ential	Sales After	Solar F	arm Appr	ove	đ									
Parcel	Solar	Ac	ldress	Acres	Date So	ld	Sales Price	E	Built	GBA	\$/G	BA	BR/B	A Park	Style	Other
	Adjoins	250 0	Claiborne	0.96	1/3/20	19	\$120,000	2	2000	2,016	\$59	52	3/2	2 Drive	Manuf	
	Not	125	0 Cason	1.40	4/18/20	18	\$95,000		1994	1,500	\$63	33	3/2	2 2-Det	Manuf	Carport
	Not	410	Reeves	1.02	11/27/20	018	\$80,000	2	2000	1,456	\$54	95	3/2	2 Drive	Manuf	
	Not	315	5 N Fork	1.09	5/4/20	19	\$107,000		1992	1,792	\$59	71	3/2	2 Drive	Manuf	
Adjustn	nents														Avg	
Solar	Addre	ess	Time	Site	YB	G	LA BR/	BA	Park	Otl	ıer	То	tal	% Diff	% Diff	Distance
Adjoins	250 Clai	borne										\$120	0,000			373
Not	1250 Ca	ason	\$2,081		\$2,850	\$26	6,144		-\$5,000) -\$5,	000	\$116	5,075	3%		
Not	410 Re	eves	\$249		\$0	\$24	4,615					\$104	1,865	13%		
Not	315 N I	Fork	-\$1,091		\$4,280	\$10	0,700					\$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.

Adjoini	ng Resid	ential	Sales After	r Solar F	arm Appr	oved								
Parcel	Solar	Ad	ldress	Acres	Date So	ld Sale	s Price	Built	GBA	\$/GBA	BR/B	A Park	Style	Other
	Adjoins	300 0	Claiborne	1.08	9/20/20	18 \$21	2,720	2003	1,568	\$135.66	3/3	2-Car	Ranch	Brick
	Not	460 0	Claiborne	0.31	1/3/20	19 \$22	9,000	2007	1,446	\$158.37	3/2	2-Car	Ranch	Brick
	Not	2160	Sherman	1.46	6/1/20	19 \$26	5,000	2005	1,735	\$152.74	3/3	2-Car	Ranch	Brick
	Not	215 L	exington	1.00	7/27/20	18 \$23	1,200	2000	1,590	\$145.41	5/4	2-Car	Ranch	Brick
Adjustr	nents												Avg	
Solar	Addr	ess	Time	Site	YB	GLA	BR/B	A Park	Oti	her To	tal	% Diff	% Diff	Distance
Adjoins	300 Clai	borne								\$213	3,000			488
Not	460 Clai	borne	-\$2,026		-\$4,580	\$15,457	\$5,000	C		\$242	2,850	-14%		
Not	2160 Sh	erman	-\$5,672		-\$2,650	-\$20,406				\$236	5,272	-11%		
Not	215 Lexi	ington	\$1,072		\$3,468	-\$2,559	-\$5,00	0		\$228	8,180	-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.

Adjoini	ng Resid	ential \$	Sales After	Solar Fa	arm Appr	oved								
Parcel	Solar	Ad	dress	Acres	Date So	ld S	ales Price	Built	GBA	\$/GBA	BR/B	A Park	Style	Other
	Adjoins	350 C	laiborne	1.00	7/20/20	18	\$245,000	2002	1,688	\$145.14	3/3	2-Car	Ranch	Brick
	Not	460 C	laiborne	0.31	1/3/20	19	\$229,000	2007	1,446	\$158.37	3/2	2-Car	Ranch	Brick
	Not	2160	Sherman	1.46	6/1/20	19	\$265,000	2005	1,735	\$152.74	3/3	2-Car	R/FBsm	t Brick
	Not	215 L	exington	1.00	7/27/20	18	\$231,200	2000	1,590	\$145.41	5/4	2-Car	Ranch	Brick
Adjustn	nents												Avg	
Solar	Addr	ess	Time	Site	YB	GL	A BR/B	A Park	Otl	her To	tal	% Diff	% Diff	Distance
Adjoins	350 Clai	borne								\$245	5,000			720
Not	460 Clai	borne	-\$3,223		-\$5,725	\$30,	660 \$5,00	0		\$255	5,712	-4%		
Not	2160 Sh	erman	-\$7,057		-\$3,975	-\$5,'	743			\$248	3,225	-1%		
Not	215 Lexi	ington	-\$136		\$2,312	\$11,	400 -\$5,00	00		\$239	9,776	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.

Adjoini	ng Resid	ential s	Sales After	r Solar F	arm Appr	oved								
Parcel	Solar	Ad	dress	Acres	Date So	ld Sal	es Price	Built	GBA	\$/GBA	BR/E	BA Park	Style	Other
	Adjoins	370 C	laiborne	1.06	8/22/20	19 \$2	273,000	2005	1,570	\$173.89	4/3	3 2-Car	2-Story	Brick
	Not	2160	Sherman	1.46	6/1/20	19 \$2	265,000	2005	1,735	\$152.74	3/3	3 2-Car	R/FBsm	t Brick
	Not	229	90 Dry	1.53	5/2/20	19 \$2	239,400	1988	1,400	\$171.00	3/2.	5 2-Car	R/FBsm	t Brick
	Not	125 L	exington	1.20	4/17/20	18 \$2	240,000	2001	1,569	\$152.96	3/3	3 2-Car	Split	Brick
Adjustr	nents												Avg	
Solar	Addr	ess	Time	Site	YB	GLA	BR/B	A Park	Ot	her To	tal	% Diff	% Diff	Distance
Adjoins	370 Clai	iborne								\$273	3,000			930
Not	2160 Sh	erman	\$1,831		\$0	-\$20,16	51			\$246	5,670	10%		
Not	2290	Dry	\$2,260		\$20,349	\$23,25	6 \$2,50	0		\$287	7,765	-5%		
Not	125 Lexi	ington	\$9,951		\$4,800					\$254	4,751	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.



Adjoinin	ig Residential Sa	ales Aiter S	olar Farn	i Appr	ovea								
Solar	Address	Acres	Date So	old Sa	ales Price	Built	GBA	\$/GBA	BR/BA	Par	r k	Style	Other
Adjoin	s 330 Claiborn	e 1.00	12/10/2	019	\$282,500	2003	1,768	\$159.79	3/3	2-C	ar	Ranch	Brick/pool
Not	895 Osborne	e 1.70	9/16/20	019	\$249,900	2002	1,705	\$146.57	3/2	2-C	ar	Ranch	Brick/pool
Not	2160 Sherma	n 1.46	6/1/20	19	\$265,000	2005	1,735	\$152.74	3/3	2-C	ar F	R/FBsmt	Brick
Not	215 Lexingto	n 1.00	7/27/20	018	\$231,200	2000	1,590	\$145.41	5/4	2-C	ar	Ranch	Brick
												Avg	
Solar	Address	Time	Site	YB	GLA	BR/BA	Park	Other	Tota	1	% Diff	% Diff	Distance
Adjoins	330 Claiborne								\$282,5	500			665
Not	895 Osborne	\$1,790	\$	\$1,250	\$7,387	\$5,000		\$0	\$265,3	327	6%		
Not	2160 Sherman	\$4,288	-	\$2,650	\$4,032			\$20,000	\$290,6	570	-3%		
Not	215 Lexington	\$9,761	Ş	\$3,468	\$20,706	-\$5,000		\$20,000	\$280,1	135	1%		
												1%	

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

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

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

Adjoinin	g Residential Sal	es After S	olar Farm	Built								
Solar	Address	Acres	Date So	ld Sales	Price I	Built	GBA	\$/GBA	BR/BA	Park	Style	Other
Adjoins	s 250 Claiborne	1.05	1/5/202	2 \$210),000	2002	1,592	\$131.91	4/2	Drive	Ranch	Manuf
Not	255 Spillman	0.64	3/4/202	2 \$166	5,000	1991	1,196	\$138.80	3/1	Drive	Ranch	Remodel
Not	546 Waterworks	0.28	4/29/20	21 \$179	9,500	2007	1,046	\$171.61	4/2	Drive	Ranch	3/4 Fin B
Not	240 Shawnee	1.18	6/7/202	1 \$180),000	1977	1,352	\$133.14	3/2	Gar	Ranch	N/A
											Avg	
Solar	Address	Time	YB	GLA	BR/BA	A Parl	ς.	Other	Total	% Diff	% Diff	Distance
Adjoins	250 Claiborne								\$210,000			365
Not	255 Spillman	-\$379	\$9,130	\$43,971	\$10,00	D	-	\$20,000	\$208,722	1%		
Not	546 Waterworks	\$1,772	-\$4,488	\$74,958			-	\$67,313	\$184,429	12%		
Not	240 Shawnee	\$1,501	\$22,500	\$25,562		-\$10,0	00		\$219,563	-5%		
											3%	

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



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

Aajoinin	g Residential Sa	les Aiter	solar Farm	Built								
Solar	Address	Acres	Date So	ld Sales	Price I	Built	GBA	\$/GBA	BR/BA	Park	Style	Other
Adjoins	s 260 Claiborne	1.00	10/13/20	21 \$175	,000	2001	1,456	\$120.19	3/2	Drive	Ranch	N/A
Not	355 Oakwood	0.58	10/27/20	20 \$186	,000	2002	1,088	\$170.96	3/2	Gar	Ranch	3/4 Fin B
Not	30 Ellen Kay	0.50	1/30/20	20 \$183	,000	1988	1,950	\$93.85	3/2	Gar	2-Story	N/A
Not	546 Waterwork	s 0.28	4/29/20	21 \$179	,500	2007	1,046	\$171.61	4/2	Drive	Ranch	3/4 Fin B
											Avg	
Solar	Address	Time	YB	GLA	BR/B	A Parl	ς.	Other	Total	% Diff	% Diff	Distance
Adjoins	260 Claiborne								\$175,000			390
Not	355 Oakwood	\$18,339	-\$930	\$50,329		-\$10,0	- 00	\$69,750	\$173,988	1%		
Not	30 Ellen Kay	\$31,974	\$11,895	-\$37,088		-\$10,0	00		\$179,781	-3%		
Not	546 Waterworks	\$8,420	-\$5,385	\$56,287			-	-\$67,313	\$171,510	2%		
											0%	

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



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

djoining	Residential Sale	es After So	olar Farm 🛛	Built							
Solar	Address	Acres	Date Sol	d Sales P	rice Built	GBA	\$/GBA	BR/BA	Park	Style	Other
Adjoins	300 Claiborne	0.89	12/18/202	21 \$290,0	000 2002	1,568	\$184.95	3/3	2-Car	Br Rnch	Bsmt
Not	405 Claiborne	0.41	2/1/2022	2 \$267,7	750 2004	1,787	\$149.83	3/2	2-Car	Br Rnch	Bsmt
Not	39 Pinhook	0.68	3/31/202	2 \$299,0	000 1992	1,680	\$177.98	3/2	2-Car	Br Rnch	Bsmt
Not	5 Pinhook	0.70	4/7/2022	2 \$309,9	900 1992	1,680	\$184.46	3/2	2-Car	Br Rnch	Bsmt
										Avg	
Solar	Address	Time	YB	GLA	BR/BA	Park	Other	Total	% Diff	% Diff	Distance
Adjoins	300 Claiborne							\$290,000			570
Not	405 Claiborne	-\$3,384	-\$2,678	-\$26,251				\$235,437	19%		
Not	39 Pinhook	-\$8,651	\$14,950	-\$15,947				\$289,352	0%		
Not	5 Pinhook	-\$9,576	\$15,495	-\$16,528				\$299,291	-3%		
										5%	

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


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

Adjoining	g Residential Sa	les After S	Solar Farm	Built								
Solar	Address	Acres	Date So	ld Sales	Price	Built	GBA	\$/GBA	BR/BA	Park	Style	Other
Adjoins	410 Claiborne	e 0.31	2/10/20	21 \$275	,000	2006	1,595	\$172.41	3/2	2-Car	Br Rnch	Bsmt/Pool
Not	114 Austin	1.40	12/23/2	020 \$248	,000	1994	1,650	\$150.30	3/2	2-Car	Br Rnch	Bsmt
Not	125 Liza	0.29	6/25/20	21 \$315	,000	2005	1,913	\$164.66	4/3	2-Car	Br Rnch	Ktchn Bsmt
Not	130 Hannahs	0.42	2/9/20	21 \$295	,000	2007	1,918	\$153.81	3/3	2-Car	Br Rnch	Fin Bsmt
											Avg	
Solar	Address	Time	YB	GLA	BR/B	A 1	Park	Other	Total	% Diff	% Diff	Distance
Adjoins	410 Claiborne								\$275,000			1080
Not	114 Austin	\$3,413	\$14,880	-\$6,613				\$20,000	\$279,680	-2%		
Not	125 Liza	-\$11,945	\$1,575	-\$41,890	-\$10,00	00			\$252,740	8%		
Not	130 Hannahs	\$83	-\$1,475	-\$39,743	-\$10,00	00			\$243,864	11%		
											6%	

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

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

2. Matched Pair - Walton 2, Walton, Kenton County, KY



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

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

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

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







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 Hearnsberger with United County Farm & Home Realty who noted that they have seen no impact on lot or home sales due to the solar farm in this community.

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

Adjoining Use Breakdown

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

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

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

Adjoini	ing Resid	ential Sales Af	ter Sola	r 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 S	ales Adjusted	1						

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

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

Solar	Address	-									
	11441000	Acres	Date Sold	Sales Price	Built	GBA	\$/GBA	BR/BA	Park	style	e Other
Adjoins	297 Countr	y 1.00	9/30/2016	\$150,000	2002	1,596	\$93.98	3/2	4-Ga	r Ranc	h
Not	185 Dusty	1.85	8/17/2015	\$126,040	2009	1,463	\$86.15	3/2	2-Ga	r Ranc	h
Not	53 Glen	1.13	3/9/2017	\$126,000	1999	1,475	\$85.42	3/2	2-Ga	r Ranc	h Brick
			Adjoining S	ales Adjusted	1						
Solar	Address	Sales Price	Time	Site YB	GLA	Pa	rk Oth	ler To	tal	% Diff	Distance
Adjoins	297 Country	\$150,000						\$150),000		650
Not	185 Dusty	\$126,040	\$4,355	-\$4,41	1 \$9,167	7 \$10,	000	\$145	5,150	3%	
Not	53 Glen	\$126,000	-\$1,699	\$1,89	0 \$8,269	9 \$10,	000	\$144	1,460	4%	
								Ave	rage	3%	
4	Not Not Solar adjoins Not Not	Not 185 Dusty Not 53 Glen Solar Address djoins 297 Country Not 185 Dusty Not 53 Glen	Not 185 Dusty 1.85 Not 53 Glen 1.13 Solar Address Sales Price djoins 297 Country \$150,000 Not 185 Dusty \$126,040 Not 53 Glen \$126,000	Not 185 Dusty 1.85 8/17/2015 Not 53 Glen 1.13 3/9/2017 Adjoining S Solar Address Sales Price Time djoins 297 Country \$150,000 \$4,355 Not 185 Dusty \$126,040 \$4,355 Not 53 Glen \$126,000 -\$1,699	Not 185 Dusty 1.85 8/17/2015 \$126,000 Not 53 Glen 1.13 3/9/2017 \$126,000 Adjoining Sales Adjusted Solar Address Sales Price Time Site YB djoins 297 Country \$150,000 \$135 Dusty \$126,040 \$4,355 -\$4,41 Not 53 Glen \$126,000 -\$1,699 \$1,890	Not 185 Dusty 1.85 8/17/2015 \$126,040 2009 Not 53 Glen 1.13 3/9/2017 \$126,000 1999 Adjoining Sales Adjusted Solar Address Sales Price Time Site YB GLA djoins 297 Country \$150,000 \$4,355 -\$4,411 \$9,167 Not 185 Dusty \$126,000 -\$1,699 \$1,890 \$8,269	Not 185 Dusty 1.85 8/17/2015 \$126,040 2009 1,463 Not 53 Glen 1.13 3/9/2017 \$126,000 1999 1,475 Adjoining Sales Adjusted Solar Address Sales Price Time Site YB GLA Pa djoins 297 Country \$150,000 \$143,000 \$4,355 -\$4,411 \$9,167 \$10, Not 53 Glen \$126,000 \$4,355 -\$4,411 \$9,167 \$10, Not 53 Glen \$126,000 \$1,699 \$1,890 \$8,269 \$10,	Not 185 Dusty 1.85 8/17/2015 \$126,040 2009 1,463 \$86.15 Not 53 Glen 1.13 3/9/2017 \$126,000 1999 1,475 \$85.42 Adjoining Sales Adjusted Solar Address Sales Price Time Site YB GLA Park Oth djoins 297 Country \$150,000 Not 185 Dusty \$126,040 \$4,355 Not 53 Glen \$126,000 \$1,890 \$8,269 \$10,000 Not 53 Glen \$126,000 \$1,899 \$1,890 \$8,269 \$10,000	Not 185 Dusty 1.85 8/17/2015 \$126,040 2009 1,463 \$86.15 3/2 Not 53 Glen 1.13 3/9/2017 \$126,000 1999 1,475 \$85.42 3/2 Adjoining Sales Adjusted Solar Address Sales Price Time Site YB GLA Park Other To djoins 297 Country \$150,000 \$150 Not 185 Dusty \$126,040 \$4,355 -\$4,411 \$9,167 \$10,000 \$145 Not 53 Glen \$126,000 -\$1,699 \$1,890 \$8,269 \$10,000 \$144 Not 53 Glen \$126,000 -\$1,699 \$1,890 \$8,269 \$10,000 \$144	Not 185 Dusty 1.85 8/17/2015 \$126,040 2009 1,463 \$86.15 3/2 2-Ga Not 53 Glen 1.13 3/9/2017 \$126,040 1999 1,475 \$85.42 3/2 2-Ga Adjoining Sales Adjusted Solar Address Sales Price Time Site YB GLA Park Other Total djoins 297 Country \$150,000 \$150,000 \$150,000 \$150,000 \$150,000 \$145,150 Not 185 Dusty \$126,040 \$4,355 -\$4,411 \$9,167 \$10,000 \$145,150 Not 53 Glen \$126,000 -\$1,699 \$1,890 \$8,269 \$10,000 \$144,460 Average	Not 185 Dusty 1.85 8/17/2015 \$126,040 2009 1,463 \$86.15 3/2 2-Gar Ranc Not 53 Glen 1.13 3/9/2017 \$126,040 2009 1,463 \$86.15 3/2 2-Gar Ranc Adjoining Sales Adjusted Solar Address Sales Price Time Site YB GLA Park Other Total % Diff djoins 297 Country \$150,000 \$150,000 \$150,000 \$150,000 \$150,000 Not 185 Dusty \$126,040 \$4,355 -\$4,411 \$9,167 \$10,000 \$145,150 3% Not 53 Glen \$126,000 -\$1,699 \$1,890 \$8,269 \$10,000 \$144,460 4% Average 3% 3% \$3% \$3% \$3% \$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.

Adjoining Residential Sales After Solar Farm Built

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.

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



4. Matched Pair - Grand Ridge Solar, Streator, LaSalle County, IL

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

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

Adjoining Residential Sales After Solar Farm Completed											
#	TAX ID	Acres	Date Sold	Sales Price	Built	GBA	\$/GBA				
13	34-21-237-000	2	Oct-16	\$186,000	1997	2,328	\$79.90				
Not Adjoining Resident	ial Sales After So	lar Farm C	ompleted								
#	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				

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

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

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

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

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

5. Matched Pair - Portage Solar, Portage, Porter County, IN



This solar farm has a 2 MW output and is located on a portion of a 56-acre tract. The project was built in 2012. As can be seen by the more recent map, Lennar Homes is now developing a new subdivision on the vacant land just west of this solar farm.

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 Sa	les After Solar Farm Comple	eted					
#	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	1					
#	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 Aft	er 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 S	Solar Farm Completed						
#	TAX ID	Acres	Date Sold	Sales Price	\$/AC		
	64-07-22-401-001.000-005	74.35	Jun-17	\$520,450	\$7,000		
	64-15-08-200-010.000-001	15.02	Jan-17	\$115.000	\$7.658		

Residential Sale Adjustment Chart

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

2% adjustment/year Adjusted to 2017

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

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

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

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

Land Sale Adjustment Chart

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

2% adjustment/year Adjusted to 2017

	Adjoins Solar Fa	arm	Not	Adjoin Solar F	arm
	Average	Median		Average	Median
Sales Price/Ac	\$8,480	\$8,480		\$7,329	\$7,329
Acres	18.70	18.70		44.68	44.68

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

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



6. Matched Pair – Dominion Indy III, Indianapolis, Marion County, 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 S	olar Farm	Not Adjoin So	lar Farm
	Average	Median	Average	Median
Sales Price/SF	\$64.13	\$63.03	\$61.69	\$63.08
GBA	2,210	2,163	2,333	2,280

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

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

<u>7.</u> VA Matched Pair - Clarke County Solar, Double Tollgate Road, White Post, Clarke County,



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

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

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

Solar	Address	Acre	s Date	Sold Sal	es Price	Built	GBA	\$/GBA	BR/E	A Pa	ark	Style	Other
Adjoins	833 Nations Spr	5.13	1/9/2	2017 \$	295,000	1979	1,392	\$211.93	3/2	Det	Gar	Ranch U	Infin bsm
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	9/9/2	2018 \$	370,000	1986	3,157	\$117.20	4/4	2	Gar 2	2 story	
Not	4174 Rockland	5.06	1/2/2	2017 \$	300,000	1990	1,688	\$177.73	3/2	3	Gar 2	2 story	
Not	400 Sugar Hill	1.00	6/7/2	2018 \$	80,000	1975	1,008	\$178.57	3/1	Dı	rive	Ranch	
Adjoining	Residential Sales Af	ter Solar F	arm Approv	ed	Adjoinin	g Sales Ad	justed						
Adjoining I Solar	Residential Sales Af Address	ter Solar F Acres	arm Approv Date Sold	ed Sales Pric	Adjoinin e Time	g Sales Ad Acres	justed YB	GLA	BR/BA	Park	Other	Total	% Diff
Adjoining I Solar Adjoins	Residential Sales Af Address 833 Nations Spr	ter Solar F Acres 5.13	arm Approv Date Sold 1/9/2017	ed Sales Pric \$295,000	Adjoinin e Time	g Sales Ad Acres	justed YB	GLA	BR/BA	Park	Other	Total \$295,000	% Diff
Adjoining I Solar Adjoins Not	Residential Sales Af Address 833 Nations Spr 85 Ashby	ter Solar F Acres 5.13 5.09	arm Approv Date Sold 1/9/2017 9/11/2017	ed Sales Pric \$295,000 \$315,000	Adjoinin e Time -\$6,300	g Sales Ad Acres	justed YB -\$6,615	GLA -\$38,116	BR/BA	Park -\$7,000	Other \$15,000	Total \$295,000 \$271,969	% Diff 8%
Adjoining I Solar Adjoins Not Not	Residential Sales Aft Address 833 Nations Spr 85 Ashby 541 Old Kitchen	ter Solar F Acres 5.13 5.09 5.07	arm Approv Date Sold 1/9/2017 9/11/2017 9/9/2018	ed Sales Pric \$295,000 \$315,000 \$370,000	Adjoinin e Time -\$6,300 -\$18,500	g Sales Ad Acres	justed YB -\$6,615 -\$18,130	GLA -\$38,116 -\$62,057	BR/BA	Park -\$7,000 -\$7,000	Other \$15,000 \$15,000	Total \$295,000 \$271,969 \$279,313	% Diff 8% 5%
Adjoining I Solar Adjoins Not Not Not	Residential Sales Aft Address 833 Nations Spr 85 Ashby 541 Old Kitchen 4174 Rockland	ter Solar F Acres 5.13 5.09 5.07 5.06	arm Approv Date Sold 1/9/2017 9/11/2017 9/9/2018 1/2/2017	ed Sales Pric \$295,000 \$315,000 \$370,000 \$300,000	Adjoinin e Time -\$6,300 -\$18,500	g Sales Ad Acres	justed YB -\$6,615 -\$18,130 -\$23,100	GLA -\$38,116 -\$62,057 -\$15,782	BR/BA	Park -\$7,000 -\$7,000 -\$12,000	Other \$15,000 \$15,000 \$15,000	Total \$295,000 \$271,969 \$279,313 \$264,118	% Diff 8% 5% 10%
Adjoining I Solar Adjoins Not Not Not Not	Residential Sales Aft Address 833 Nations Spr 85 Ashby 541 Old Kitchen 4174 Rockland 400 Sugar Hill	ter Solar F Acres 5.13 5.09 5.07 5.06 1.00	arm Approv Date Sold 1/9/2017 9/11/2017 9/9/2018 1/2/2017 6/7/2018	ed Sales Pric \$295,000 \$315,000 \$370,000 \$300,000 \$180,000	Adjoinin, e Time -\$6,300 -\$18,500 -\$9,000	g Sales Ad Acres \$43,000	justed YB -\$6,615 -\$18,130 -\$23,100 \$5,040	GLA -\$38,116 -\$62,057 -\$15,782 \$20,571	BR/BA \$10,000	Park -\$7,000 -\$7,000 -\$12,000 \$3,000	Other \$15,000 \$15,000 \$15,000 \$15,000	Total \$295,000 \$271,969 \$279,313 \$264,118 \$267,611	% Diff 8% 5% 10% 9%

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

8. Matched Pair – Walker-Correctional Solar, Barham Road, Barhamsville, New Kent County, 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	g Residential Sa	les Afte	r Solar Farr	n Appro	oved							
Solar	Address	Acres	Date Sold	Sales	Price	Built	GB	A \$/GI	BA BR/B	A Park	Style	Other
Adjoins	5241 Barham	2.65	10/18/2018	\$264	,000	2007	1,6	60 \$159.	04 3/2	Drive	Ranch	Modular
Not	17950 New Kent	5.00	9/5/2018	\$290	,000	1987	1,7	56 \$165.	15 3/2.	5 3 Gar	Ranch	
Not	9252 Ordinary	4.00	6/13/2019	\$277	,000	2001	1,6	10 \$172.	05 3/2	1.5-Gar	Ranch	
Not	2416 W Miller	1.04	9/24/2018	\$299	,000	1999	1,8	64 \$160.	41 3/2.	5 Gar	Ranch	
	A	djoining	g Sales Adju	sted								
Solar	Address 2	ſime	Ac/Loc	YB	GLA	BR	/BA	Park	Other	Total	% Diff	Dist
Adjoins	5241 Barham									\$264,000		250
Not 1	7950 New Kent		-\$8,000 \$	29,000	-\$4,75	56 -\$5	,000	-\$20,000	-\$15,000	\$266,244	-1%	
Not	9252 Ordinary -\$	38,310	-\$8,000	\$8,310	\$2,58	1		-\$10,000	-\$15,000	\$246,581	7%	
Not	2416 W Miller		\$8,000 \$	11,960	-\$9,81	l7 -\$5	,000	-\$10,000	-\$15,000	\$279,143	-6%	
									Ave	rage 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.



This project is a 30 MW facility located on a 322.68-acre tract that was built in the fourth quarter of 2017.

I have considered the 2018 sale of Parcel 17 as shown below. From Parcel 17 the retained trees and setbacks are a light to medium landscaped buffer.

Aujoin	ing Resid	uentiai	Sales Alle	r Solar r	агш арргоч	eu							
Parcel	Solar	Ad	dress	Acres	Date Sold	Sales Price	Built	GBA	\$/GLA	BR/BA	Park	Styl	e Other
	Adjoins	12511	Palestine	6.00	7/31/2018	\$128,400	2013	1,900	\$67.58	4/2.5	Open	Man	uf
	Not	15698	Concord	3.92	7/31/2018	\$150,000	2010	2,310	\$64.94	4/2	Open	Man	uf Fence
	Not	23209	9 Sussex	1.03	7/7/2020	\$95,000	2005	1,675	\$56.72	3/2	Det Crpt	Man	uf
	Not	6494	Rocky Br	4.07	11/8/2018	\$100,000	2004	1,405	\$71.17	3/2	Open	Man	uf
Adjoin	ning Sa	les Ad	justed								Av	g	
Tin	ie i	Site	YB	GLA	BR/B	A Park	Othe	er '	Fotal	% Dif	f % D	iff	Distance
								\$1	28,400				1425
\$C)		\$2,250	-\$21,2	99 \$5,000)		\$1	35,951	-6%			
-\$5,6	560 \$1	3,000	\$3,800	\$10,20	9 \$5,00) \$1,500		\$1	22,849	4%			
-\$84	43		\$4,500	\$28,18	35			\$1	31,842	-3%			
											-19	%	

Adioining Residential Sales After Solar Farm Approved



10. Matched Pair - Spotsylvania Solar, Paytes, Spotsylvania County, 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 P	rice Bu	ilt GBA	\$/GBA	BR/BA	Park	Style	Other
Adjoins	12901 Orng Pla	nk 5.20	8/27/2020	\$319,9	00 19	84 1,714	\$186.64	3/2	Drive	1.5	Un Bsmt
Not	8353 Gold Da	le 3.00	1/27/2021	\$415,0	00 20	04 2,064	\$201.07	3/2	3 Gar	Ranch	
Not	6488 Southfor	·k 7.26	9/9/2020	\$375,0	00 20	17 1,680	\$223.21	3/2	2 Gar	1.5	Barn/Patio
Not	12717 Flintloo	k 0.47	12/2/2020	\$290,0	00 19	90 1,592	\$182.16	3/2.5	Det Gar	Ranch	
Adjoinin Addu	ng Sales Adjus ress T	ted ime	Ac/Loc	үв	GLA	BR/BA	Park	Other	Total	% Dif	f Dist
12901 Or	ng Pink	- 010	¢00,000	¢41 E00	\$FC 000)	¢00.000	h	\$319,900	J D 00/	1270
6488 So	uthfork -	5,219 5401	\$20,000 -\$20,000	-\$41,500 -\$61,875	\$6,071	b	-\$20,000)	\$283,796	5 2% 5 11%	
12717 Fl	intlock -\$	2,312	\$40,000	-\$8,700	\$17,779	-\$5,000) -\$5,000)	\$326,76	7 -2%	
								A	verage Dif	f 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.

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 B	smt/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											
Address	Time	Ac/Loc	YB	GLA	BR/BA	Park	Other	Total	% Diff	Dist	
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.

There are a couple of recent lot sales located along Southview Court that have sold since the solar farm was approved. The most recent lot sales include 11700 Southview Court that sold on December 29, 2021 for \$140,000 for a 0.76-acre lot. This property was on the market for less than 2 months before closing within 6% of the asking price. This lot sold earlier in September 2019 for \$55,000 based on a liquidation sale from NTS to an investor.

A similar 0.68-acre lot at 11507 Stonewood Court within the same subdivision located away from the solar farm sold on March 9, 2021 for \$109,000. This lot sold for 18% over the asking price within 1 month of listing suggesting that this was priced too low. Adjusting this lot value upward by 12% for very strong growth in the market over 2021, the adjusted indicated value is \$122,080 for this lot. This is still showing a 15% premium for the lot backing up to the solar farm.

The lot at 11009 Southview Court sold on August 5, 2019 for \$65,000, which is significantly lower than the more recent sales. This lot was sold by NTS the original developer of this subdivision, who was in the process of liquidating lots in this subdivision with multiple lot sales in this time period throughout the subdivision being sold at discounted prices. The home was later improved by the buyer with a home built in 2020 with 2,430 square feet ranch, 3.5 bathrooms, with a full basement, and a current assessed value of \$492,300.

I spoke with Chris Kalia, MAI, Mark Doherty, local real estate investor, and Alex Doherty, broker, who are all three familiar with this subdivision and activity in this neighborhood. All three indicated that there was a deep sell off of lots in the neighborhood by NTS at discounted prices under \$100,000 each. Those lots since that time are being sold for up to \$140,000. The prices paid for the lots below \$100,000 were liquidation values and not indicative of market value. Homes are being built in the neighborhood on those lots with home prices ranging from \$600,000 to \$800,000 with no sign of impact on pricing due to the solar farm according to all three sources.





Fawn Lake Lot Sales

Parcel	Solar?	Address	Acres	Sale Date	Sale Price Ad.	For Time	% Diff
Α	Adjoins	11700 Southview Ct	0.76	12/29/2021	\$140,000		
	1 1 parcel away	11603 Southview Ct	0.44	3/31/2022	\$140,000	\$141,960	-1.4%
	2 Not adjoin	11507 Stonewood Ct	0.68	3/9/2021	\$109,000	\$118,374	15.4%
	3 Not adjoin	11312 Westgate Wy	0.83	10/15/2020	\$125,000	\$142,000	-1.4%
	4 Not adjoin	11409 Darkstone Pl	0.589	9/23/2021	\$118,000	\$118,000	15.7%
							_

Average	7.1%
Median	7.0%

Least Adjusted 15.7% 2nd Least Adjusted -1.4% (Parcel 1 off solar farm)

Time Adjustments are based on the FHFA Housing Price Index

Vadens Mill

This project was built in 2021 for a solar project with 50 MW. Adjoining uses are residential and agricultural. There was a sale located at 1120 Taylors Mill Road that sold on December 20, 2021, which is about the time the solar farm was completed. This sold for \$224,000 for 2.02 acres with a 2,079 s.f. mobile home on it that was built in 2010. The property was listed for \$224,000 and sold for that same price within two months (went under contract almost exactly 30 days from listing). This sales price works out to \$108 per square foot. This home is 255 feet from the nearest panel.

I have compared this sale to an August 20, 2020 sale at 1000 Long Branch Drive that included 5.10 acres with a 1,980 s.f. mobile home that was built in 1993 and sold for \$162,000, or \$81.82 per square foot. Adjusting this upward for significant growth between this sale date and December 2021 relied on data provided by the FHFA House Pricing Index, which indicates that for homes in the Roanoke, VA MSA would be expected to appreciate from \$162,000 to \$191,000 over that period of time. Using \$191,000 as the effective value as of the date of comparison, the indicated value of this sale works out to \$96.46 per square foot. Adjusting this upward by 17% for the difference in year built, but downward by 5% for the much larger lot size at this comparable, I derive an adjusted indication of value of \$213,920, or \$108 per square foot.

This indicates no impact on value attributable to the new solar farm located across from the home on Taylors Mill Road.

11. Matched Pair - Whitehorn Solar, Gretna, Pittsylvania County, VA



This project was mostly built in 2021 with final construction finished in 2022. This is an 80 MW facility on 720 acres just north of Roanoke River and west of Altavista. Adjoining uses are residential and agricultural.

I have done a Sale/Resale analysis of 3211 Leesville Road which is approximately 540 feet from the nearest solar panel. There was an existing row of trees between this home and the panels that was supplemented with additional screening for a narrow landscaped buffer between the home and the solar panels.

This home sold in December 2018 for \$72,500 for this 1,451 s.f. home built in 1940 with a number of additional outbuildings on 3.35 acres. This was before any announcement of a solar farm. This home sold again on March 28, 2022 for \$124,048 after the solar farm was constructed. This shows a 71% increase in value on this property since 2018. There was significant growth in the market between these dates and to accurately reflect that I have considered the FHFA House Price Index that is specific for the Lynchburg area of Virginia (the closest regional category), which shows an expected increase in home values over that same time period of 33.8%, which would suggest a normal growth in value up to \$97,000. The home sold for significantly more than this which certainly does not support a finding of a negative impact and in fact suggests a significant positive impact. However, I was not able to discuss this sale with the broker and it is possible that the home also was renovated between 2018 and 2022, which may account for that additional increase in value. Still give that the home increased in value so significantly over the initial amount there is no sign of any negative impact due to the solar farm adjacency.



Similarly, I looked at 3026 Bishop Creek Road that is approximately 600 feet from the nearest solar panel. This home sold on July 16, 2019 for \$120,000, which was before construction of the solar farm. This home sold again on February 23, 2022 for \$150,000. This shows a 25% increase in value over that time period. Using the same FHFA House Price Index Calculator, the expected increase in value was 29.2% for an indicated expected value of \$155,000. This is within 3% of the actual closed price, which supports a finding of no impact from the solar farm. This home has a dense wooded area between it and the adjoining solar farm.





13. Matched Pair - DG Amp Piqua, Piqua, Miami County, OH

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

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

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

Adjoin	ing Resi	dential	Sales After S	Solar Fari	m Approved								
Parcel	Solar	A	Address	Acres	Date Sold	Sales Price	Built	GBA	\$/GLA	BR/BA	Park	Style	Other
22	Adjoins	6060 N	Washington	0.80	10/30/2019	\$119,500	1961	1,404	\$85.11	3/1	2 Gar	Br Rnch	Updates
	Not	1523	3 Amesbury	0.25	5/7/2020	\$119,900	1973	1,316	\$91.11	3/2	Gar	Br Rnch	Updates
	Not	160	9 Haverhill	0.17	10/17/2019	\$114,900	1974	1,531	\$75.05	3/1	Gar	Br Rnch	Updates
	Not	1511	Sweetbriar	0.17	8/6/2020	\$123,000	1972	1,373	\$89.58	4/2	Gar	Br Rnch	Updates
Adjoi	ning Sa	les Ac	ljusted								А	vg	
Tin	ne	Site	YB	GLA	BR/BA	Park	Other	: 1	fotal	% Diff	%	Diff I	Distance
								\$1	19,500				155
-\$1,9	920		-\$7,194	\$6,414	-\$5,000	\$7,500	\$0	\$1	19,700	0%			
\$12	26		-\$7,469	-\$7,625		\$7,500	\$0	\$1	07,432	10%			
-\$2,9	913		-\$6,765	\$2,222	-\$5,000	\$7,500	\$0	\$1	18,044	1%			
											4	%	

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

Adjoin	ing Resi	dential	Sales After	Solar Farn	n Approved								
Parcel	Solar	A	ddress	Acres	Date Sold	Sales Price	Built	GBA	\$/GLA	BR/BA	Park	Style	Other
	Nearby	1011	l Plymouth	0.21	2/24/2020	\$113,000	1973	1,373	\$82.30	4/2	Gar	1.5 Str	Fnce/Shd
	Not	1630) Haverhill	0.32	8/18/2019	\$94,900	1973	1,373	\$69.12	4/2	Gar	1.5 Str	/ N/A
	Not	172	0 Williams	0.17	12/4/2019	\$119,900	1968	1,682	\$71.28	4/1	2Gar	1.5 Br	Fnce/Shd
	Not	1710	Cambridge	0.17	1/22/2018	\$116,000	1968	1,648	\$70.39	4/2	Det 2	1.5 Br	Fnce/Shd
Adjoin	ning Sa	les Ad	ljusted								A	vg	
Tin	ıe	Site	YB	GLA	BR/BA	Park	Other	1	lotal	% Diff	% 1	Diff I	Distance
								\$1	13,000				585
\$1,5	19		\$0	\$0			\$10,000) \$1	06,419	6%			
\$82	29		\$2,998	-\$17,621	\$5,000			\$1	11,105	2%			
\$7,4	59		\$2,900	-\$15,485				\$1	10,873	2%			
											3	%	

I considered a home located at 6010 N Washington that sold on August 3, 2021. This property was sold with significant upgrades that made it more challenging to compare, but I focused on similar older brick ranches with updates in the analysis. The comparables suggest an enhancement to this property due to proximity from the solar farm, but it is more likely that the upgrades at the subject were superior. Still this strongly supports a finding of no impact on the value of the property due to proximity to the solar farm.

Adjoin	ing Resi	dential	Sales After	Solar Farı	n Built								
Parcel	Solar	1	Address	Acres	Date Sold	Sales Price	Built	GBA	\$/GLA	BR/BA	Park	Style	Other
24	Adjoins	6010 ľ	V Washington	0.80	8/3/2021	\$176,900	1961	1,448	\$122.17	4/2	2 Gar	Br Ranch	n Updates
	Not	12	44 Severs	0.19	10/29/2021	\$149,900	1962	1,392	\$107.69	3/2	Gar	Br Ranch	n Updates
	Not	151	5 Amesbury	0.19	5/5/2022	\$156,500	1973	1,275	\$122.75	3/2	2 Gar	Br Ranch	n Updates
	Not	183	84 Wilshire	0.21	12/3/2021	\$168,900	1979	1,265	\$133.52	3/2	2 Gar	Br Ranch	n Updates
Adjoi	ning Sa	ales A	djusted								A	vg	
Tin	ne	Site	YB	GLA	BR/BA	Park	Other	r 1	ſotal	% Diff	%	Diff D	istance
								\$1	76,900				155
-\$1,0)99		-\$750	\$4,221		\$7,000		\$1	59,273	10%			
-\$3,6	527		-\$9,390	\$16,988				\$1	60,471	9%			
-\$1,	736		-\$14,357	\$19,547				\$1	72,354	3%			
											7	7%	

I considered a home located at 6240 N Washington that sold on October 15, 2021. The paired sale located at 532 Wilson included a sunroom that I did not adjust for. The -4% impact from that sale is related to that property having a superior sunroom and not related to proximity to the solar farm. The other two comparables strongly support that assertion as well as a finding of no impact on the value of the property due to proximity to the solar farm.

Adjoining Residential Sales After Solar Farm Built

Parcel	Solar	A	ddress	Acres	Date Sold	Sales Price	Built	GBA	\$/GLA	BR/BA	Park	Style	Other
	Adjoins	6240 N	Washington	1.40	10/15/2021	\$155,000	1962	1,582	\$97.98	2/1	Det 3	Ranch	L
	Not	14	08 Brooks	0.13	8/20/2021	\$105,000	1957	1,344	\$78.13	3/1	Drive	Ranch	L
	Not	53	2 Wilson	0.14	7/29/2021	\$159,900	1948	1,710	\$93.51	3/2	Det Gar	Ranch	Sunroom
	Not	424	Pinewood	0.17	5/20/2022	\$151,000	1960	1,548	\$97.55	4/2	Gar	Ranch	L
Adjoi	ning Sa	les Ad	ljusted								A	⁄g	
Tin	ne	Site	YB	GLA	BR/BA	Park	Other	: т	`otal	% Dif	f % I	Diff	Distance
								\$1	55,000				160
\$49	96		\$2,625	\$13,016		\$15,000		\$1	36,136	12%			
\$1,0	51		\$11,193	-\$9,575	-\$10,000	\$8,000		\$1	60,569	-4%			
-\$2,7	761		-\$2,265	\$2,653	-\$10,000	\$7,000		\$14	45,627	6%			
											50	2/2	

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

I also identified three new construction home sales on Arrowhead Drive that sold in 2022. I have reached out to the builder regarding those homes, but these homes sold between \$250,000 and \$275,000 each and were located within 350 feet of the solar farm. These sales show that the presence of the solar farm is not inhibiting new home construction in proximity to the solar farm.

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 \$61,115 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 \$1,600,000 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.

Mat	atched Pair Summary				Adj. Uses By Acreage				1 mile Radi					
		-				Торо						Med.	Avg. Housing	
	Name	City	State	Acres	MW	Shift	Res	Ag	Ag/Res	Com/Ind	Population	Income	Unit	Veg. Buffer
1	Crittenden	Crittenden	KY	34	2.70	40	22%	51%	27%	0%	1,419	\$60,198	\$178,643	Light
2	Walton 2	Walton	KY	58	2.00	90	21%	0%	60%	19%	880	\$81,709	\$277,717	Light
3	Mulberry	Selmer	TN	160	5.00	60	13%	73%	10%	3%	467	\$40,936	\$171,746	Lt to Med
4	Grand Ridge	Streator	IL	160	20.00	1	8%	87%	5%	0%	96	\$70,158	\$187,037	Light
5	Portage	Portage	IN	56	2.00	0	19%	81%	0%	0%	6,642	\$65,695	\$186,463	Light
6	Dominion	Indianapolis	IN	134	8.60	20	3%	97%	0%	0%	3,774	\$61,115	\$167,515	Light
7	Clarke Cnty	White Post	VA	234	20.00	70	14%	39%	46%	1%	578	\$81,022	\$374,453	Light
8	Walker	Barhamsville	VA	485	20.00	N/A	12%	68%	20%	0%	203	\$80,773	\$320,076	Light
9	Sappony	Stony Crk	VA	322	20.00	N/A	2%	98%	0%	0%	74	\$51,410	\$155,208	Medium
10	Spotyslvania	Paytes	VA	3,500	500.00	160	37%	52%	11%	0%	74	\$120,861	\$483,333	Med to Hvy
11	Whitehorn	Gretna	VA	N/A	50.00	N/A	N/A	N/A	N/A	N/A	166	\$43,179	\$168,750	None to Lt
12	Altavista	Altavista	VA	720	80.00	N/A	N/A	N/A	N/A	N/A	7	\$50,000	\$341,667	Light
13	DG Amp Piqua	Piqua	OH	86	12.60	2	26%	16%	58%	0%	6,735	\$38,919	\$96,555	
	Average			496	57.15	49	16%	60%	22%	2%	1,624	\$65,075	\$239,166	
	Median			160	20.00	40	14%	68%	11%	0%	467	\$61,115	\$186,463	
	High			3,500	500.00	160	37%	98%	60%	19%	6,735	\$120,861	\$483,333	
	Low			34	2.00	0	2%	0%	0%	0%	7	\$38,919	\$96,555	



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

On the following page is a summary of the 35 matched pairs for all of the solar farms noted above. They show a pattern of results from -7% to +22%. 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 imperfection. I therefore conclude that these results strongly support an indication of no impact on property value due to the adjacent solar farm.

There is one significant outlier that shows a 22% enhancement due to adjacency to a solar farm. I have attempted to confirm that sale as it appears likely that renovations were done that would explain that significant difference. I have not considered that to be a reliable indicator on property value impacts. Excluding that one indicator the range is -7% to +7%.



		Avg.	
	мw	Distance	% Dif
Average	65.53	625	2%
Median	8.60	480	1%
High	617.00	1,950	22%
Low	2.00	155	-7%

Residential Dwelling Matched Pairs Adjoining Solar Farms

					Approx		Sale			
Pair Solar Farm	City	State	Area	мw	Distance	Tax ID/Address	Date	Sale Price Adj	Price	% Diff Notes
1 Portage	Portage	IN	Rural	2	1320	836 N 450 W	Sep-13	\$149,800		
						336 E 1050 N	Jan-13	\$155,000	\$144,282	4%
2 Dominion	Indianapolis	IN	Rural	8.6	400	2013249 (Tax ID)	Dec-15	\$140,000		
						5723 Minden	Nov-16	\$139,900	\$132,700	5%
3 Dominion	Indianapolis	IN	Rural	8.6	400	2013251 (Tax ID)	Sep-17	\$160.000		
						5910 Mosaic	Aug-16	\$146.000	\$152,190	5%
4 Dominion	Indianapolis	IN	Rural	86	400	2013252 (Tax ID)	May-17	\$147,000	+,	- / -
	P					5836 Sable	Jun-16	\$141,000	\$136 165	7%
5 Dominion	Indianapolis	IN	Pural	86	400	2013258 (Tax ID)	Dec-15	\$131,750	\$100,100	170
5 Dominion	maianapons	114	Rurai	0.0	400	2010200 (Tax 1D)	More 16	\$120,000	\$124.069	20/
(Demining	T	TN	Deres 1	0.6	400	0012060 (T ID)	May-10	\$130,000	φ134,008	-2,70
6 Dominion	indianapons	11N	Rurai	8.0	400	2013260 (Tax ID)	Mar-15	\$127,000	¢100.057	201
				0.6		5904 Minden	May-16	\$130,000	\$128,957	-2%
7 Dominion	Indianapolis	IIN	Rural	8.6	400	2013261 (Tax ID)	Feb-14	\$120,000	****	
			~			5904 Minden	May-16	\$130,000	\$121,930	-2%
8 DG Amp	Piqua	OH	Suburban	12.6	155	6060 N Washington	Oct-19	\$119,500		
						1511 Sweetbriar	Aug-20	\$123,000	\$118,044	1%
9 DG Amp	Piqua	OH	Suburban	12.6	585	1011 Plymouth	Feb-20	\$113,000		
						1720 Williams	Dec-19	\$119,900	\$111,105	2%
10 DG Amp	Piqua	OH	Suburban	12.6	155	6010 N Washington	Aug-21	\$176,900		
						1834 Wilshire	Dec-21	\$168,900	\$172,354	3%
11 DG Amp	Piqua	OH	Suburban	12.6	160	6240 N Washington	Oct-21	\$155,000		
						424 Pinewood	May-22	\$151,000	\$145,627	6%
12 Spotsylvania	Paytes	VA	Rural	617	1270	12901 Orange Plnk	Aug-20	\$319,900		Medium
	5					12717 Flintlock	Dec-20	\$290.000	\$326.767	-2%
13 Spotsvlvania	Pavtes	VA	Rural	617	1950	9641 Nottoway	May-20	\$449,900		Medium
						11626 Forest	A11g-20	\$489,900	\$430.246	4%
14 Spotsvlvania	Pavtes	VA	Rural	617	1171	13353 Post Oak	Sep-20	\$300,000	+,	Heavy
1. opotojivalna	rujtoo	•••	itarai	011		12810 Catharnin	Ian-20	\$280,000	\$200 008	0%
15 Wollrow	Do the merrille	17.4	Dunol	20	250	5041 Barham	Oat 19	\$260,000	φ299,000	Light
15 Walkel	Darmanisvine	VA	Rulai	20	230	0050 Ordinam	UCI-18	\$204,000	046 F01	
16 01 1 0 4	111 · D /	174	D 1	20	1000	9252 Ordinary	Jun-19	\$277,000	\$240,581	1%
16 Clarke Cnty	white Post	VA	Rural	20	1230	833 Nations Spr	Aug-19	\$385,000	#200.00c	Light
						2393 Old Chapel	Aug-20	\$330,000	\$389,286	-1%
17 Sappony	Stony Creek	VA	Rural	20	1425	12511 Palestine	Jul-18	\$128,400		Medium
						6494 Rocky Branch	Nov-18	\$100,000	\$131,842	-3%
18 Crittenden	Crittenden	KY	Suburban	2.7	373	250 Claiborne	Jan-19	\$120,000		
						315 N Fork	May-19	\$107,000	\$120,889	-1%
19 Crittenden	Crittenden	KY	Suburban	2.7	488	300 Claiborne	Sep-18	\$213,000		
						1795 Bay Valley	Dec-17	\$231,200	\$228,180	-7%
20 Crittenden	Crittenden	KY	Suburban	2.7	720	350 Claiborne	Jul-18	\$245,000		
						2160 Sherman	Jun-19	\$265,000	\$248,225	-1%
21 Crittenden	Crittenden	KY	Suburban	2.7	930	370 Claiborne	Aug-19	\$273,000		
						125 Lexington	Apr-18	\$240,000	\$254,751	7%
22 Crittenden	Crittenden	KY	Suburban	2.7	365	250 Claiborne	Jan-22	\$210,000		Light
						240 Shawnee	Jun-21	\$166,000	\$219,563	-5%
23 Crittenden	Crittenden	KY	Suburban	2.7	390	260 Claiborne	Oct-21	\$175,000		Light
						355 Oakwood	Oct-20	\$186,000	\$173,988	1%
24 Crittenden	Crittenden	KY	Suburban	2.7	570	300 Claiborne	Dec-21	\$290.000		Light
						39 Pinhook	Mar-22	\$299.000	\$289.352	0%
25 Crittenden	Crittenden	КY	Suburban	27	1080	410 Claiborne	Feb-21	\$275,000	,	Light
20 011110114011	onteonaon		Suburball	2	1000	114 Austin	Dec-20	\$248,000	\$279 680	-2%
26 Mulberry	Selmer	TN	Rural	5	400	0900A011	Jul-14	\$130,000	<i>42.9,000</i>	Light
20 mailerry	benner	110	Rurur	0	100	09004043	Feb-15	\$148,000	\$136.088	_5%
07 Mulberry	Selmer	ΨN	Durol	5	400	00000000	Int 15	\$130,000	φ150,900	-570 Light
27 Mulberry	Senner	110	Kulai	5	400	0000014040	Man 15	\$130,000	\$101.000	70/
00 M 11	0.1	(1)) 1	D 1	-	400	0990NA040	Mar-15	\$120,000	\$121,200	1%
28 Mulberry	Seimer	1 N	Rural	5	480	491 Dusty	Oct-16	\$176,000	¢170.000	Light
	~ .			_		35 April	Aug-16	\$185,000	\$178,283	-1%
29 Mulberry	Selmer	TN	Rural	5	650	297 Country	Sep-16	\$150,000		Medium
						53 Glen	Mar-17	\$126,000	\$144,460	4%
30 Mulberry	Selmer	TN	Rural	5	685	57 Cooper	Feb-19	\$163,000		Medium
						191 Amelia	Aug-18	\$132,000	\$155,947	4%
31 Grand Ridge	Streator	IL	Rural	20	480	1497 E 21st	Oct-16	\$186,000		Light
						712 Columbus	Jun-16	\$166,000	\$184,000	1%
32 Walton 2	Walton	KY	Suburban	2	410	783 Jones	May-22	\$346,000		Light
						783 Jones	May-12	\$174,900	\$353,000	-2%
33 Whitehorn	Gretna	VA	Rural	50	255	1120 Taylors Mill	Dec-21	\$224,000		Light
						100 Long Branch	Aug-20	\$162,000	\$213,920	5%
34 Altavista	Altavista	VA	Rural	80	540	3211 Leesville	Mar-22	\$124,048		Light
						3211 Leesville	Dec-18	\$72,500	\$97,000	22%
35 Altavista	Altavista	VA	Rural	80	600	3026 Bishop Crk	Feb-22	\$150,000		Heavy
						3026 Bishop Crk	Jul-19	\$120,000	\$155,000	-3%
						T	-			

B. Southeastern USA Data – Over 5 MW

1. Matched Pair - AM Best Solar Farm, Goldsboro, Wayne County, 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

rs vs

Spring Garden Subdivision

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.



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 Median	1.49 1.49		\$246,000 \$246,000	2012.5 2012.5	3,414 3,414	\$72.07 \$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 Su	mmary					
	Adjoins Solar	Farm	Nearby Solar Farm			
	Average	Median	Average	Median		
Sales Price	\$253,600	\$253,000	\$246,000	\$249,000		
Year Built	2013	2013	2014	2014		
Size	3,418	3,400	3,189	3,346		
Price/SF	\$74.27	\$74.41	\$77.85	\$74.46		
Percentage Diffe	erences					
Median Price	-2%	0				
Median Size	-2%	0				
Median Price/SF	0%	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 S

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		
											Avg	
Solar	Address	Time	Site	YB	GLA	BR/BA	Park	Other	Total	% Diff	% Diff	
Adjoins	103 Granville Pl								\$265,000		-2%	
Not	2219 Granville	\$4,382		\$1,300	\$0				\$265,682	0%		
Not	634 Friendly	-\$8,303		-\$6,675	\$16,721	-\$10,000			\$258,744	2%		
		Ac 000		#1 00F	401 050				#200 001	00/		
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		
												Avg	
	Solar	Address	Time	Site	YB	GLA	BR/BA	Park	Other	Total	% Diff	% Diff	
	Adjoins	104 Erin								\$280,000		0%	
	Not	2219 Granville	-\$4,448		\$2,600	\$16,238				\$274,390	2%		
	Not	634 Friendly	-\$17,370		-\$5,340	\$34,702	-\$10,000			\$268,992	4%		

\$48,285

\$298,256

-7%

Adjoining Residential Sales After Solar Farm Approved

2403 Granville -\$15,029

Not

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

\$0

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

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

		Initial Sale		Second Sale		Year			%	Apprec.
	Address	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%

Average2.46%Median2.47%





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 Hearnsberger with United County Farm & Home Realty who noted that they have seen no impact on lot or home sales due to the solar farm in this community.

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

Adjoining Use Breakdown

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

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 homes nearby that do not adjoin a solar farm to look for any potential impact from the solar farm.

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

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

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

Adjoin	ljoining 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 S	ales Adjusted	1									

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

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

Adjoining Residential Sales After Solar Farm	Built
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Parcel	Solar	Address	Acres	Date Sold	Sales	Price	Built	GBA	\$/GBA	BR/	'BA Pari	k Styl	e Other
15	Adjoins	s 297 Countr	y 1.00	9/30/2016	\$150	,000	2002	1,596	\$93.98	3,	/2 4-Ga	ar Rano	ch
	Not	185 Dusty	1.85	8/17/2015	\$126	6,040	2009	1,463	\$86.15	3,	/2 2-Ga	ar Rano	ch
	Not	53 Glen	1.13	3/9/2017	\$126	6,000	1999	1,475	\$85.42	3,	/2 2-Ga	ar Rano	ch Brick
				Adjoining S	Sales Ad	ljusted	L						
Parcel	Solar	Address	Sales Price	Time	Site	YB	GLA	Pa	rk Of	her	Total	% Diff	Distance
15	Adjoins	297 Country	\$150,000								\$150,000		650
	Not	185 Dusty	\$126,040	\$4,355		-\$4,41	1 \$9,167	7 \$10,	000		\$145,150	3%	
	Not	53 Glen	\$126,000	-\$1,699		\$1,890	\$8,269	9 \$10,	000		\$144,460	4%	
											Average	3%	

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

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

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



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

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

Adjoining Sales Adju	ısted			Adjustmen	ts			
Address	Date Sold	Sales Price	Time	GLA	Bsmt	Upgrades	Other	Total
14595 Box Elder Ct	2/12/2016	\$291,000						\$291,000
15313 Bassford Rd	7/20/2016	\$329,800	-\$3,400	-\$13,840	-\$10,000	-\$15,000	-\$5,000	\$282,560
				Difference	Attributa	ble to Loc	ation	\$8,440
								2.90%

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

3. Matched Pair - Leonard Road Solar Farm, Hughesville, Charles County, MD



4. Matched Pair - Gastonia SC Solar, Gastonia, Gaston County, 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

through the approval process. The property was put under contract during the permitting process with the permit being approved while the due diligence period was still ongoing. After the permit was approved the property closed with no concerns from the buyer. I spoke with Jennifer Bouvier, the broker listing the property and she indicated that the solar farm had no impact at all on the sales price. She considered some nearby sales to set the price and the closing price was very similar to the asking price within the typical range for the market. The buyer was aware that the solar farm was coming and they had no concerns.

This two-story brick dwelling was sold on March 20, 2017 for \$270,000 for a 3,437 square foot dwelling built in 1934 in average condition on 1.42 acres. The property has four bedrooms and two bathrooms. The landscaping screen is light for this adjoining home due to it being a new planted landscaping buffer.

Adjoining	g Residentia	1 Sales A	After Sol	ar Farm App	roved							
Solar	Address	s	Acres	Date Sold	Sales Price	e Built	GBA	\$/GLA	BR/BA	Park	Style	Other
Adjoins	609 Neal Hay	wkins	1.42	3/20/2017	\$270,000	1934	3,427	\$78.79	4/2	Open	2-Brick	
Not	1418 N Moo	lena	4.81	4/17/2018	\$225,000	1930	2,906	\$77.43	3/3	2-Crprt	2-Brick	
Not	363 Dallas I	Bess	2.90	11/29/2018	\$265,500	1968	2,964	\$89.57	3/3	Open	FinBsmt	
Not	1612 Dallas	Chry	2.74	9/17/2018	\$245,000	1951	3,443	\$71.16	3/2	Open	2-Brick	Unfin bath
Adjoinin	g Sales Adj	usted									Avg	
Add	ress	Time	Site	YB	GLA	BR/BA	Park	Other	Total	% Diff	% Diff	Distance
609 Neal	Hawkins								\$270,000			225
1418 N	Modena	\$7,319)	\$2,700	\$32,271		-\$10,000		\$257,290	5%		
363 Dal	las Bess	\$746		-\$27,081	\$33,179	-\$10,000		\$53,100	\$262,456	3%		
1612 Da	llas Chry	\$4,110)	-\$12,495	-\$911			\$10,000	\$235,704	13%		
											7%	

I also considered the newer adjoining home identified as Parcel 5 that sold later in 2017 and it likewise shows no negative impact on property value. This is also considered a light landscaping buffer.

Adjoining Residential Sales After Solar Farm Approved

Solar	Address	Acres	Date Sold	Sales Price	Built	GBA	\$/GLA	BR/BA	Park	Style
Adjoins	611 Neal Hawkins	0.78	7/6/2017	\$288,000	1991	2,256	\$127.66	5/3	2-Gar	1.5 Brick
Not	1211 Still Frst	0.51	7/30/2018	\$280,000	1989	2,249	\$124.50	3/3	2-Gar	Br Rnch
Not	2867 Colony Wds	0.52	8/14/2018	\$242,000	1990	2,006	\$120.64	3/3	2-Gar	Br Rnch
Not	1010 Strawberry	1.00	10/4/2018	\$315,000	2002	2,330	\$135.19	3/2.5	2-Gar	1.5 Brick

Adjoining Sales Ad	ljusted									Avg	
Address	Time	Site	YB	GLA	BR/BA	Park	Other	Total	% Diff	% Diff	Distance
611 Neal Hawkins								\$288,000			145
1211 Still Frst	\$1,341		\$2,800	\$697				\$284,838	1%		
2867 Colony Wds	\$7,714		\$1,210	\$24,128				\$275,052	4%		
1010 Strawberry	-\$4,555		-\$17,325	-\$8,003	\$5,000			\$290,116	-1%		
										2%	



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

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

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

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

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

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

Adjoin	ing Resi	dential Sales Aft	er Solar Fa	arm Built									
Parcel	Solar	Address	Acres	Date Sold	Sales Price	Built	GBA	\$/GBA	BR/BA	Park	Style	Other	Distance
15	Adjoins	318 Green View	0.44	9/15/2019	\$357,000	2005	3,460	\$103.18	4/4	2-Car	1.5 Brick		570
	Not	195 St Andrews	0.55	6/17/2018	\$314,000	2002	3,561	\$88.18	5/3	2-Car	2.0 Brick		
	Not	336 Green View	0.64	1/13/2019	\$365,000	2006	3,790	\$96.31	6/4	3-Car	2.0 Brick		
	Not	275 Green View	0.36	8/15/2019	\$312,000	2003	3,100	\$100.65	5/3	2-Car	2.0 Brick		
												Avg	
	Solar	Address	Time	Site	YB	GLA	BR/BA	Park	Other	Total	% Diff	% Diff	
	Adjoins	318 Green View								\$357,000		4%	
	Not	195 St Andrews	\$12,040		\$4,710	-\$7,125	\$10,000			\$333,625	7%		
	Not	336 Green View	\$7,536		-\$1,825	-\$25,425			-\$5,000	\$340,286	5%		
	Not	275 Green View	\$815		\$3,120	\$28,986	\$10.000			\$354.921	1%		

Adjoining Residential Sales After Solar Farm Built

Parcel	Solar	Address	Acres	Date Sold	Sales Price	Built	GBA	\$/GBA	BR/BA	Park	Style	Other	Distance
29	Adjoins	164 Ranchland	1.01	4/30/2019	\$169,000	1999	2,052	\$82.36	4/2	Gar	MFG		440
	Not	150 Pinto	0.94	3/27/2018	\$168,000	2017	1,920	\$87.50	4/2	Drive	MFG		
	Not	105 Longhorn	1.90	10/10/2017	\$184,500	2002	1,944	\$94.91	3/2	Drive	MFG		
	Not	112 Pinto	1.00	7/27/2018	\$180,000	2002	1,836	\$98.04	3/2	Drive	MFG	Fenced	
												Avg	
	Solar	Address	Time	Site	YB	GLA	BR/BA	Park	Other	Total	% Diff	% Diff	
	Adjoins	164 Ranchland								\$169,000		-10%	
	Not	150 Pinto	\$5,649		-\$21,168	\$8,085			\$5,000	\$165,566	2%		
	Not	105 Longhorn	\$8,816	-\$10,000	-\$3,875	\$7,175			\$5,000	\$191,616	-13%		
	Not	112 Pinto	\$4,202		-\$3,780	\$14,824			\$5,000	\$200,245	-18%		

Adjoining Residential Sales After Solar Farm Built

Parcel	Solar	Address	Acres	Date Sold	Sales Price	Built	GBA	\$/GBA	BR/BA	Park	Style	Other	Distance
	Adjoins	358 Oxford	10.03	9/16/2019	\$478,000	2008	2,726	\$175.35	3/3	2 Gar	Ranch		635
	Not	276 Summit	10.01	12/20/2017	\$355,000	2006	1,985	\$178.84	3/2	2 Gar	Ranch		
	Not	176 Providence	6.19	5/6/2019	\$425,000	1990	2,549	\$166.73	3/3	4 Gar	Ranch	Brick	
	Not	1601 B Caratoke	12.20	9/26/2019	\$440,000	2016	3,100	\$141.94	4/3.5	5 Gar	Ranch	Pool	
												Avg	
	Solar	Address	Time	Site	YB	GLA	BR/BA	Park	Other	Total	% Diff	% Diff	
	Adjoins	358 Oxford								\$478,000		5%	
	Not	276 Summit	\$18,996		\$3,550	\$106,017	\$10,000			\$493,564	-3%		
	Not	176 Providence	\$4,763		\$38,250	\$23,609		-\$10,000	-\$25,000	\$456,623	4%		
	Not	1601 B Caratoke	-\$371	\$50,000	-\$17,600	-\$42,467	-\$5,000	-\$10,000		\$414,562	13%		

Adjoin	ing Resid	ential Sales Af	ter Solar Fa	rm Approve	d								
Parcel	Solar	Address	Acres	Date Sold	Sales Price	Built	GBA	\$/GBA	BR/BA	Park	Style	Other	Distance
	Nearby	343 Oxford	10.01	3/9/2017	\$490,000	2016	3,753	\$130.56	3/3	2 Gar	1.5 Story	Pool	970
	Not	287 Oxford	10.01	9/4/2017	\$600,000	2013	4,341	\$138.22	5/4.5	8-Gar	1.5 Story	Pool	
	Not	301 Oxford	10.00	4/23/2018	\$434,000	2013	3,393	\$127.91	5/3	2 Gar	1.5 Story		
	Not	218 Oxford	10.01	4/4/2017	\$525,000	2006	4,215	\$124.56	4/3	4 Gar	1.5 Story	VG Barn	
												Avg	
	Solar	Address	Time	Site	YB	GLA	BR/BA	Park	Other	Total	% Diff	% Diff	
	Adjoins	343 Oxford								\$490,000		3%	
	Not	287 Oxford	-\$9,051		\$9,000	-\$65,017	-\$15,000	-\$25,000		\$494,932	-1%		
	Not	301 Oxford	-\$14,995	-\$10,000	\$6,510	\$36,838				\$452,353	8%		
	Not	218 Oxford	-\$1,150		\$26,250	-\$46,036		-\$10,000	-\$10,000	\$484,064	1%		

6. Matched Pair - Tracy Solar, Bailey, Nash County, 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.

Adjoin	ing Land Sale	es A	fter Sola	Farm Com	pleted										
#	Solar Farm		TAX ID	Grantor	Gran	tee A	ddress	Acres	Date S	old §	Sales Pr	ice	\$/AC	Other	
9 & 10	Adjoins		316003	Cozart	Kings	mill 916	2 Winters	13.22	7/21/2	016	\$70,00	0	\$5,295		
		ė	& 316004												
	Not		6056	Billingsly		42	27 Young	41	10/21/2	2016	\$164,00	00	\$4,000		
	Not		33211	Fulcher	Weil	cel 10	533 Cone	23.46	7/18/2	017	\$137,00	00	\$5,840	Doublewide	, structures
	Not		106807	Perry	Gard	ner Cla	ude Lewis	11.22	8/10/2	017	\$79,00	0	\$7,041	Gravel drive	for sub, cleared
	Not		3437	Vaughan	N /	A 1	1354 Old	18.73	Listing		\$79,90	0	\$4,266	Small ceme	tery,wooded
						Le	ewis Sch								
			Ad	joining	Sales	Adjuste	ed								
				Time	Acı	es Loc	ation	Othe	r Ac	lj \$,	/Ac '	% I	Diff		
									\$	5.2	95				
										,_					
				\$0	\$4	00	\$0	\$0	4	34 4	00	17	70/_		
				φ0 ****	φ I.		φ0 * 0	ф0 + = о	۳ م ط	, I, I			70		
				-\$292	\$2	92	\$0	-\$500	\$ C	\$5,3	40	- 1	%		
				-\$352	\$	C	\$0	-\$1,00	00 \$	\$5,6	89	-7	%		
				-\$213	\$	0	\$0	\$213	3 \$	54,2	66	19	9%		
									A۱	vera	ige		7%		
Adjoin "	ing Residen	tial	Sales Af	ter Solar F	arm Com	pleted	0.1				* (0)			01-1-	041
#	Solar Farm	n		ss 1	Acres	Date Sold	Sales Pric	еви		GLA	\$/G		BR/BA	Style	Other
9 & 10	Adjoins	şs	9162 W1	nters	13.22	1/5/2017	\$255,000	20	10	1,616) \$157.	80	3/2	Ranch	1296 si wrksnp
	NOL	iv.	7352 Re	1 FOX	0.93	0/30/2010	\$170,000	20)10	1,529	φ115.	11	3/2	2-story	
	Ad	jo	ining	Sales Ad	ljusted	l									
		Т	ime	Acres	Y.	В	GLA	Sty	7le	Oth	ler	Т	otal	% Diff	
												\$25	5,000		

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.

\$5.007

\$5,000 \$15,000 \$252,399

1%

\$0

\$44.000 \$7.392

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, Manatee County, 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	Parl	ς.	Style	Note
Adjoins	13670 Highland	5.00	8/21/2017	\$255,000	1997	1,512	\$168.65	3/3	Carport/W	Vrkshp 1	Ranch	Renov.
Not	2901 Arrowsmith	1.91	1/31/2018	\$225,000	1979	1,636	\$137.53	3/2	2 Garage/V	Wrkshp 1	Ranch	
Not	602 Butch Cassidy	1.00	5/5/2017	\$220,000	2001	1,560	\$141.03	3/2	N/A	i 1	Ranch	Renov.
Not	2908 Wild West	1.23	7/12/2017	\$254,000	2003	1,554	\$163.45	3/2	2 Garage/V	Wrkshp 1	Ranch	Renov.
Not	13851 Highland	5.00	9/13/2017	\$240,000	1978	1,636	\$146.70	4/2	3 Gara	age 1	Ranch	Renov.
Solar	TAX ID/Address	Adjoin Time	ing Sales Acres	Adjusted YB	GLA	BI	R/BA	Park	Note	Tota	1 %	Diff
Adjoins	13670 Highland									\$255,0	00	
Not	2901 Arrowsmith	\$2,25	0 \$10,00	0 \$28,350	-\$8,52	7 \$5	5,000 -	\$10,000	\$10,000	\$262,0	73	-3%
Not	602 Butch Cassid	y -\$2,20	00 \$10,00	0 -\$6,160	-\$3,38	5 \$5	5,000	\$2,000		\$225,2	55	12%
Not	2908 Wild West	\$0	\$10,00	0 -\$10,668	-\$3,43	2 \$5	5,000 -	\$10,000		\$244.9	00	
							· ·			~, <i>></i>	00	4%

Average 3%

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

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

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





8. Matched Pair – McBride Place Solar Farm, Midland, Cabarrus County, 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	h	a	ve	c	con	si	de	ere	d	t.	he	e fe	oll	ow	ir	ıg	m	nato	che	ed	pairs	to	the	su	ıbj	ject	p	roț	per	ty.
					_					-				-																

А	djoining Re	esidential Sale	s After Solar	Farm Approved								
	Solar	Address	Acre	s Date Sold	Sales Price	Built	GBA	\$/GBA	BR/BA	Park	Style	Other
	Adjoins	4380 Joyne	er 12.00	0 11/22/2017	\$325,000	1979	1,598	\$203.38	3/2	2xGar	Ranch	Outbldg
	Not	3870 Elkwo	od 5.50	8/24/2016	\$250,000	1986	1,551	\$161.19	3/2.5	Det 2xGar	Craft	
	Not	8121 Lower R	ocky 18.0	0 2/8/2017	\$355,000	1977	1,274	\$278.65	2/2	2xCarprt	Ranch	Eq. Fac.
	Not	13531 Cabar	rus 7.89	5/20/2016	\$267,750	1981	2,300	\$116.41	3/2	2xGar	Ranch	
A	djoining	g Sales Adj	usted									
	Time	Acres	YB	Condition	GLA	BR/BA	Р	ark	Other	Total	%	Diff
										\$325,00	0	
	\$7,500	\$52,000	-\$12,250	\$10,000	\$2,273	-\$2,000	\$2	2,500	\$7,500	\$317,52	3 2	2%
٣	\$7,100	-\$48,000	\$4,970		\$23,156	\$0	\$3	3,000	-\$15,000	\$330,22	6 -	2%
	\$8,033	\$33,000	-\$3,749	\$20,000	-\$35,832	\$0		\$0	\$7,500	\$296,70	2 9	9%

Average 3%

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

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

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

Adjoin	ing Lot S	ales 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

Address	Acres	Date Sold	Sales Price	Built	GBA	\$/GBA	BR/BA	Park	Style	Other
5811 Kristi	3.74	3/31/2020	\$530,000	2018	3,858	\$137.38	5/3.5	2 Gar	2-story	Cement Ext
3915 Tania	1.68	12/9/2019	\$495,000	2007	3,919	\$126.31	3/3.5	2 Gar	2-story	3Det Gar
6782 Manatee	1.33	3/8/2020	\$460,000	1998	3,776	\$121.82	4/2/2h	2 Gar	2-story	Water
314 Old Hickory	1.24	9/20/2019	\$492,500	2017	3,903	\$126.18	6/4.5	2 Gar	2-story	
										Avg
Address	Time	Site	YB	GLA	BR/BA	Park	Other	Total	% Diff	% Diff
5811 Kristi								\$530,000		5%
3915 Tania	\$6,285		\$27,225	-\$3,852		-\$20,000		\$504,657	5%	
6782 Manatee	\$1,189		\$46,000	\$4,995	\$5,000			\$517,183	2%	
314 Old Hickory	\$10,680		\$2,463	-\$2,839	-\$10,000			\$492,803	7%	
	Address 5811 Kristi 3915 Tania 6782 Manatee 314 Old Hickory Address 5811 Kristi 3915 Tania 6782 Manatee 314 Old Hickory	Address Acres 5811 Kristi 3.74 3915 Tania 1.68 6782 Manatee 1.33 314 Old Hickory 1.24 Address Time 5811 Kristi 3915 Tania 3915 Tania \$6,285 6782 Manatee \$1,189 314 Old Hickory \$10,680	Address Acres Date Sold 5811 Kristi 3.74 3/31/2020 3915 Tania 1.68 12/9/2019 6782 Manatee 1.33 3/8/2020 314 Old Hickory 1.24 9/20/2019 Address Time Site 5811 Kristi \$6,285 6782 Manatee \$1,189 314 Old Hickory \$10,680 \$10,680 \$10,680	Address Acres Date Sold Sales Price 5811 Kristi 3.74 3/31/2020 \$530,000 3915 Tania 1.68 12/9/2019 \$495,000 6782 Manatee 1.33 3/8/2020 \$460,000 314 Old Hickory 1.24 9/20/2019 \$492,500 Address Time Site YB 5811 Kristi 3915 Tania \$6,285 \$27,225 6782 Manatee \$1,189 \$46,000 \$46,000 314 Old Hickory \$10,680 \$2,463 \$2,463	Address Acres Date Sold Sales Price Built 5811 Kristi 3.74 3/31/2020 \$530,000 2018 3915 Tania 1.68 12/9/2019 \$495,000 2007 6782 Manatee 1.33 3/8/2020 \$460,000 1998 314 Old Hickory 1.24 9/20/2019 \$492,500 2017 Address Time Site YB GLA 5811 Kristi 3915 Tania \$6,285 \$27,225 -\$3,852 6782 Manatee \$1,189 \$46,000 \$4,995 314 Old Hickory \$10,680 \$2,463 -\$2,839	Address Acres Date Sold Sales Price Built GBA 5811 Kristi 3.74 3/31/2020 \$530,000 2018 3,858 3915 Tania 1.68 12/9/2019 \$495,000 2007 3,919 6782 Manatee 1.33 3/8/2020 \$460,000 1998 3,776 314 Old Hickory 1.24 9/20/2019 \$492,500 2017 3,903 Address Time Site YB GLA BR/BA 5811 Kristi 3915 Tania \$6,285 \$27,225 -\$3,852 6782 Manatee \$1,189 \$46,000 \$4,995 \$5,000 314 Old Hickory \$10,680 \$2,463 -\$2,839 -\$10,000	Address Acres Date Sold Sales Price Built GBA \$/GBA 5811 Kristi 3.74 3/31/2020 \$530,000 2018 3,858 \$137.38 3915 Tania 1.68 12/9/2019 \$495,000 2007 3,919 \$126.31 6782 Manatee 1.33 3/8/2020 \$460,000 1998 3,776 \$121.82 314 Old Hickory 1.24 9/20/2019 \$492,500 2017 3,903 \$126.18 6782 Manatee 1.24 9/20/2019 \$492,500 2017 3,903 \$126.18 7 Address Time Site YB GLA BR/BA Park 5811 Kristi	Address Acres Date Sold Sales Price Built GBA \$/GBA BR/BA 5811 Kristi 3.74 3/31/2020 \$530,000 2018 3,858 \$137.38 5/3.5 3915 Tania 1.68 12/9/2019 \$495,000 2007 3,919 \$126.31 3/3.5 6782 Manatee 1.33 3/8/2020 \$460,000 1998 3,776 \$121.82 4/2/2h 314 Old Hickory 1.24 9/20/2019 \$492,500 2017 3,903 \$126.18 6/4.5 Kristi 3915 Tania \$6,285 YB GLA BR/BA Park Other 5811 Kristi \$6,285 \$27,225 -\$3,852 -\$20,000 -\$20,000 314 Old Hickory \$10,680 \$24,630 \$49,995 \$5,000 -\$20,000	Address Acres Date Sold Sales Price Built GBA \$/GBA BR/BA Park 5811 Kristi 3.74 3/31/2020 \$530,000 2018 3,858 \$137.38 5/3.5 2 Gar 3915 Tania 1.68 12/9/2019 \$495,000 2007 3,919 \$126.31 3/3.5 2 Gar 6782 Manatee 1.33 3/8/2020 \$460,000 1998 3,776 \$121.82 4/2/2h 2 Gar 314 Old Hickory 1.24 9/20/2019 \$492,500 2017 3,903 \$126.18 6/4.5 2 Gar 5811 Kristi .	Address Acres Date Sold Sales Price Built GBA \$/GBA BR/BA Park Style 5811 Kristi 3.74 3/31/2020 \$530,000 2018 3,858 \$137.38 5/3.5 2 Gar 2-story 3915 Tania 1.68 12/9/2019 \$495,000 2007 3,919 \$126.31 3/3.5 2 Gar 2-story 6782 Manatee 1.33 3/8/2020 \$460,000 1998 3,776 \$121.82 4/2/2h 2 Gar 2-story 314 Old Hickory 1.24 9/20/2019 \$492,500 2017 3,903 \$126.18 6/4.5 2 Gar 2-story 5811 Kristi 1.24 9/20/2019 \$492,500 2017 3,903 \$126.18 6/4.5 2 Gar 2-story 5811 Kristi 1.24 9/20/2019 \$492,500 2017 3,903 \$126.18 6/4.5 2 Gar 2-story 5811 Kristi 5 5 \$500 \$50 \$50 \$50 \$50 \$50<

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

Jujoining Saie	s Aujuste	u								Avg	
Address	Time	Site	YB	GLA	BR/BA	Park	Other	Total	% Diff	% 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 bedroooms, 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.

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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, Blacksnake Road, Stanley, Gaston County, NC

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

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

The first is identified in the map above as Parcel 1, which is 215 Mariposa Road. This is an older dwelling on large acreage with only one bathroom. I've compared it to similar nearby homes as shown below. 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 Blacksnake	5.01	9/20/2018	\$242,500	1980	2,156	\$112.48	3/2	Drive	1.5
Not	1201 Abernathy	27.00	5/3/2018	\$390,000	1970	2,190	\$178.08	3/2	Crprt	Br/Rnch

Adjoining	Residential Sale	es After	Solar Farm	Approved	Adjoining	g Sales Adju	usted						
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%

9% Average

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.

Adjoinin	g Residential Sa	les Af	fter Solar	Farm	Appro	ved									
Solar	Address	Acı	res Date	Sold	Sales	Price	Built	GI	BA \$	S/GBA	BR/BA	Park	Style	Other	
Adjoins	242 Mariposa	2.9	91 9/21/	2015	\$180	,000	1962	1,8	\$80 \$	95.74	3/2	Carport	Br/Rncl	n Det W	rkshop
Not	249 Mariposa	0.4	48 3/1/2	2019	\$153	,000	1974	1,7	792 \$	85.38	4/2	Garage	Br/Rncl	ı	
Not	110 Airport	0.8	83 5/10/	2016	\$166	,000	1962	2,1	.65 \$	576.67	3/2	Crprt	Br/Rncl	ı	
Not	1249 Blacksnak	e 5.0	01 9/20/	2018	\$242	,500	1980	2,1	.56 \$	112.48	3/2	Drive	1.5		
Adjoining	Residential Sales	After	Solar Farm	Аррі	oved	Adjoini	ing Sales	Adju	sted						
Solar	Address	Acres	Date Sold	Sale	s Price	Time	e YE	3	Acres	GLA	BR/B	A Park	Other	Total	% Dif
Adjoins	242 Mariposa	2.91	9/21/2015	\$18	30,000									\$180,000	
Not	249 Mariposa	0.48	3/1/2019	\$15	53,000	-\$15,80	07 -\$12,	852	\$18,468	\$7,51	3	-\$3,000	\$25,000	\$172,322	4%
Not	110 Airport	0.83	5/10/2016	\$16	56,000	-\$3,16	5 \$0)	\$15,808	-\$28,6	00		\$25,000	\$175,043	3%
Not	1249 Blacksnake	5.01	9/20/2018	\$24	2,500	-\$21,82	25 -\$30,	555	-\$15,960) -\$40,9	42	\$2,000	\$25,000	\$160,218	11%
														Average	6%

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

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

Adjoinin	g Residential Land	i Sales	After Solar	Farm Approv	ved	Adjoining Sa	les 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.

Adjoinin	g Residential Land	d Sales	After Solar	Farm Approv	ved	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, Double Tollgate Road, White Post, Clarke County,VA



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

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I have considered two recent sales 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. This home sold in January 2017 for \$295,000 and again in August 2019 for \$385,000. I show each sale below and compare those to similar home sales in each time frame. The significant increase in price between 2017 and 2019 is due to a major kitchen remodel, new roof, and related upgrades as well as improvement in the market in general. The sale and later resale of the home with updates and improvements speaks to pride of ownership and increasing overall value as properties perceived as diminished are less likely to be renovated and sold for profit.

I note that 102 Tilthammer includes a number of barns that I did not attribute any value in the analysis. The market would typically give some value for those barns but even without that adjustment there is an indication of a positive impact on value due to the solar farm. The landscaping buffer from this home is considered light.

Aajoin	ing Re	siden	tial	Sales Aite	r Solar P	arm Approv	ea							
Parcel	Sola	r	Ad	dress	Acres	Date Sold	Sales Price	Built	GBA	\$/GLA	BR/BA	Park	Style	Other
3	Adjoir	ns 83	33 N a	ations Spr	5.13	8/18/2019	\$385,000	1979	1,392	\$276.58	3/2	Det Gar	Ranch	UnBsmt
	Not		167	Leslie	5.00	8/19/2020	\$429,000	1980	1,665	\$257.66	3/2	Det2Gar	Ranch	
	Not	23	893 C	ld Chapel	2.47	8/10/2020	\$330,000	1974	1,500	\$220.00	3/1.5	Det Gar	Ranch	
	Not	10	02 Ti	lthammer	6.70	5/7/2019	\$372,000	1970	1,548	\$240.31	3/1.5	Det Gar	Ranch	UnBsmt
Adjoi	ning	Sales	Ad	justed								Av	g	
Tin	ne	Sit	e	YB	GLA	BR/BA	A Park	Othe	r	Total	% Dif	f%D	iff Γ	Distance
									\$3	85,000				1230
-\$13,	268			-\$2,145	-\$56,2	72	-\$5,000	\$50,00	00 \$4	02,315	-4%			
-\$9,9	956	\$25,0	000	\$8,250	-\$19,0	08 \$5,000)	\$50,00	00 \$3	89,286	-1%			
\$3,2	229	. ,		\$16,740	-\$29,9	91 \$5,000)	. ,	\$3	,978	5%			
1-7				, .	1					,		0%	6	
Adjoin	ing Re	siden	tial	Sales After	r Solar F	arm Approv	ed			+ / -	/		.	
Parcel	Sola	r	Ad	dress	Acres	Date Sold	Sales Price	Built	GBA	\$/GLA	BR/BA	Park	Style	Other
3	Adjoir	ns 83	33 Na	ations Spr	5.13	1/9/2017	\$295,000	1979	1,392	\$211.93	3/2	Det Gar	Ranch	UnBsmt
	Not	4	174	Middle	2.00	12/12/2017	\$249,999	1981	1,584	\$157.83	3/2	Open	Ranch	-
	Not	4	100 S	ugar Hill	1.00	6/7/2018	\$180,000	1990	1,000	\$178.57	3/2	2 Gai Open	2-story Ranch	/
Adiai	nin a (Balas	6 00 I	instad	1.00	0/1/2010	\$100,000	1970	1,000	φ170.07	5/1	open •••		
Aujoi.	ning (Sales	лų	Justeu		DD (D)		0.1			0/ D .C	лv с 0/ т	б • сс. т	
110	ne	Sit	е	YВ	GLA	BR/BA	A Park	Othe	r	lotal	% D1I	: %D	111 L	Jistance
									\$2	95,000				1230
-\$7,	100	\$25,0	000	-\$2,500	-\$24,2	42	\$5,000	\$50,00	00 \$2	96,157	0%			
\$17	77			-\$16,500	-\$42,0	85	-\$10,000	\$50,00	00 \$2	81,592	5%			
-\$7,7	797			\$3,600	\$54,85	57 \$10,00	0 \$5,000	\$50,00	00 \$2	95,661	0%			
												19	6	



11. Matched Pair - Candace Solar, US 70 Highway, Princeton, Johnston County, 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.

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

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

Adjoin	Adjoining Residential Sales After Solar Farm Approved													
Parcel	Solar	Address	Acres	Date S	old Sa	ales Price	Built	GBA	\$/GB/	A BR/BA	Park	Style	Other	
16	Adjoins	499 Herring	g 2.03	9/27/2	017 \$	\$215,000	2017	2,356	\$91.26	4/3	Drive	Modular		
	Not	678 WC	6.32	3/8/20	019 \$	\$226,000	1995	1,848	\$122.2	9 3/2.5	Det Gar	Mobile	Ag bldgs	
	Not	1810 Bay V	8.70	3/26/2	018 \$	\$170,000	2003	2,356	\$72.16	3/2	Drive	Mobile	Ag bldgs	
	Not	1795 Bay V	1.78	12/1/2	017 \$	\$194,000	2017	1,982	\$97.88	4/3	Drive	Modular		
Adjoini	ing Reside	ential Sales Af	Adjoining	Sales Adjı	usted							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%			
												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.

<u>12. Matched Pair – Walker-Correctional Solar, Barham Road, Barhamsville, New Kent</u> <u>County, VA</u>



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.

Adjoinin	g Residential Sa	les Afte	r Solar Farn	1 Approv	ved									
Solar	Address	Acres	Date Sold	Sales F	rice E	Built Gl	BA \$/	GBA	BR/B	A Park	Style	Other		
Adjoins	5241 Barham	2.65	10/18/2018	\$264,0	000 2	2007 1,6	60 \$15	9.04	3/2	Drive	Ranch	Modular		
Not	17950 New Kent	5.00	9/5/2018	\$290,0	000	1987 1,7	756 \$16	5.15	3/2.	5 3 Gar	Ranch			
Not	9252 Ordinary	4.00	6/13/2019	\$277,0	000 2	2001 1,6	510 \$17	2.05	3/2	1.5-Gar	Ranch			
Not	2416 W Miller	1.04	9/24/2018	\$299,0	000	1999 1,8	864 \$16	0.41	3/2.	5 Gar	Ranch			
	Adjoining Sales Adjusted													
Solar	Address 2	lime	Ac/Loc	YB	GLA	BR/BA	Park	0	ther	Total	% Diff	Dist		
Adjoins	5241 Barham									\$264,000		250		
Not 1	7950 New Kent		-\$8,000 \$	29,000	-\$4,756	-\$5,000	-\$20,00	00 -\$1	15,000	\$266,244	-1%			
Not	9252 Ordinary -\$	8,310	-\$8,000	\$8,310	\$2,581		-\$10,00	00 -\$1	15,000	\$246,581	7%			
Not	2416 W Miller		\$8,000 \$	11,960	-\$9,817	-\$5,000	-\$10,00	00 -\$1	15,000	\$279,143	-6%			
									Ave	rage 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.



<u>13.</u> <u>Matched Pair – Innovative Solar 46, Roslin Farm Rd, Hope Mills, Cumberland County,</u> <u>NC</u>

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

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

Adjoini	djoining Residential Sales After Solar Farm Approved												
Solar	Address	Acres	Date Sold	Sales Price	Built	GBA	\$/GBA	BR/BA	Park	Style	Other	Distance	
Adjoins	6849 Roslin Farm	1.00	2/18/2019	\$155,000	1967	1,610	\$96.27	3/3	Drive	Ranch	Brick	435	
Not	6592 Sim Canady	2.43	9/5/2017	\$185,000	1974	2,195	\$84.28	3/2	Gar	Ranch	Brick		
Not	1614 Joe Hall	1.63	9/3/2019	\$145,000	1974	1,674	\$86.62	3/2	Det Gar	Ranch	Brick		
Not	109 Bledsoe	0.68	1/17/2019	\$150,000	1973	1,663	\$90.20	3/2	Gar	Ranch	Brick		
											Avg		
Solar	Address	Time	Site	YB	GLA	BR/BA	Park	Other	Total	% Diff	% Diff		
Adjoins	6849 Roslin Farm								\$155,000		5%		
Not	6592 Sim Canady	\$8,278		-\$6,475	-\$39,444	\$10,000	-\$5,000		\$152,359	2%			
Not	1614 Joe Hall	-\$2,407		-\$5,075	-\$3,881	\$10,000	-\$2,500		\$141,137	9%			
Not	109 Bledsoe	\$404	\$10,000	-\$4,500	-\$3,346		-\$5,000		\$147,558	5%			

14. Matched Pair – Innovative Solar 42, County Line Rd, Fayetteville, Cumberland County, 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.

Other Di Brick/Pond	stance 340
Brick/Pond	340
/Pond/Rental	
1/Pool,Stable	
Avg	
% Diff	
20/	
370	
3%	

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.



15. Matched Pair - Sunfish Farm, Keenebec Rd, Willow Spring, Wake County, NC

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

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

Adjoini	ng Resid	dential Sal	es After S	solar Fai	m Approve	d							
Parcel	Solar	Addr	ess	Acres	Date Sold	Sales	Price 1	Built	GBA	\$/GBA	BR/BA	Park	Style
	Adjoins	7513 Gler	n Willow	0.79	9/1/2017	\$185,	,000	1989	1,492	\$123.99	3/2	Gar	BR/Rnch
	Not	2968 1	Tram	0.69	7/17/2017	\$155,	,000	1984	1,323	\$117.16	3/2	Drive	BR/Rnch
	Not	205 Pin	e Burr	0.97	12/29/201	7 \$191,	,000	1991	1,593	\$119.90	3/2.5	Drive	BR/Rnch
	Not	1217 Old H	Ioneycutt	1.00	12/15/201	7 \$176,	,000	1978	1,558	\$112.97	3/2.5	2Carprt	VY/Rnch
Adjustr	nents												Avg
Solar	Ad	dress	Time	Site	YB	GLA	BR/BA	A Par	k Ot	her T	otal '	% Diff	% Diff
Adjoins	7513 GI	len Willow								\$18	5,000		
Not	296	8 Tram	\$601		\$3,875	\$15,840		\$10,0	000	\$18	5,316	0%	
Not	205 P	ine Burr	-\$1,915		-\$1,910	-\$9,688	-\$5,000	C		\$17	2,487	7%	
Not	1217 Old	l Honeycut	-\$1,557		\$9,680	-\$5,965	-\$5,000	C	\$5	,280 \$17	8,438	4%	



This project is a 30 MW facility located on a 322.68-acre tract that was built in the fourth quarter of 2017.

I have considered the 2018 sale of Parcel 17 as shown below. This was a 1,900 s.f. manufactured home on a 6.00-acre lot that sold in 2018. I have compared that to three other nearby manufactured homes as shown below. The range of impacts is within typical market variation with an average of -1%, which supports a conclusion of no impact on property value. The landscaping buffer is considered medium.

Adjoin	ing Resi	dential	Sales Afte	r Solar F	°arm Approv	ed							
Parcel	Solar	Ac	ldress	Acres	Date Sold	Sales Price	Built	GBA	\$/GLA	BR/BA	Park	Styl	e Other
	Adjoins	12511	Palestine	6.00	7/31/2018	\$128,400	2013	1,900	\$67.58	4/2.5	Open	Manu	ıf
	Not	15698	3 Concord	3.92	7/31/2018	\$150,000	2010	2,310	\$64.94	4/2	Open	Manu	uf Fence
	Not	2320	9 Sussex	1.03	7/7/2020	\$95,000	2005	1,675	\$56.72	3/2	Det Crpt	Manu	ıf
	Not	6494	Rocky Br	4.07	11/8/2018	\$100,000	2004	1,405	\$71.17	3/2	Open	Manu	ıf
Adjoi	ning Sa	les Ad	justed								Av	g	
Tin	ıe	Site	YB	GLA	BR/BA	A Park	Othe	er 1	Fotal	% Dif	f % D	iff	Distance
								\$1	28,400				1425
\$C)		\$2,250	-\$21,2	99 \$5,000)		\$1	35,951	-6%			
-\$5,6	560 \$1	13,000	\$3,800	\$10,20	9 \$5,000	\$1,500		\$1	22,849	4%			
-\$84	43		\$4,500	\$28,18	35			\$1	31,842	-3%			

17. Matched Pair - Camden Dam, Shiloh, Camden County, NC



This 5 MW project was built in 2019 and located on a portion of 49.83 acres.

Parcel 1 noted above along with the home on the adjoining parcel to the north of that parcel sold in late 2018 after this solar farm was approved but prior to construction being completed in 2019. I have considered this sale as shown below. The landscaping screen is considered light.

The comparable at 548 Trotman is the most similar and required the least adjustment shows no impact on property value. The other two comparables were adjusted consistently with one showing significant enhancement and another as showing a mild negative. The best indication is the one requiring the least adjustment. The other two sales required significant site adjustments which make them less reliable. The best comparable and the average of these comparables support a finding of no impact on property value.

Adjoinin	g Reside	ntial Sal	es After S	olar Farm	Approved	L								
Solar	Add	ress	Acres	Date Sol	d Sales F	rice I	Built	GBA	\$/0	LA BR/	BA	Park	Styl	e Other
Adjoins	122 N M	Iill Dam	12.19	11/29/20	18 \$350,0	000	2005	2,334	\$149	9.96 3/3	.5	3-Gar	Rano	h
Not	548 Tr	otman	12.10	5/31/202	18 \$309,0	000	2007	1,960	\$157	7.65 4/	2 1	Det2G	Rano	h Wrkshp
Not	198 Sar	nd Hills	2.00	12/22/20	17 \$235,0	000	2007	2,324	\$101	.12 4/	3	Open	Rano	h
Not	140 Sle	epy Hlw	2.05	8/12/202	19 \$330,0	000	2010	2,643	\$124	4.86 4/	3	1-Gar	1.5 St	ory
Adjoinir	ng Sales	Adjuste	d										Avg	
Addr	ess	Time	Site	YB	GLA	BR/B	A Pa	rk	Other	Total	% D	iff	% Diff	Distance
122 N M	ill Dam									\$350,000				342
548 Tro	otman	\$6,163		-\$3,090	\$35,377	\$5,00	0			\$352,450	-1%	6		
198 San	d Hills	\$8,808	\$45,000	-\$2,350	\$607		\$30	,000		\$317,064	9%	6		
140 Slee	py Hlw	-\$9,258	\$45,000	-\$8,250	-\$23,149	\$5,00	0 \$30	,000		\$369,343	-6%	6		


18. Matched Pair - Grandy Solar, Uncle Graham Road, Grandy, Currituck County, 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	g Reside	ential Sale	es After a	Solar Farm A	pproved	1							
Solar	Add	lress	Acres	Date Sold	Sales H	Price B	uilt	GBA	\$/G	LA BR/	BA Park	Styl	e Other
Adjoins	120 Pa	ar Four	0.92	8/17/2019	\$315,	000 2	006	2,188	\$143	.97 4/	3 2-Gai	1.5 St	ory Pool
Not	102 1	ſeague	0.69	1/5/2020	\$300,	000 2	005	2,177	\$137	.80 3/	2 Det 30	G Rano	h
Not	112 Me	adow Lk	0.92	2/28/2019	\$265,	000 1	992	2,301	\$115	17 3/	2 Gar	1.5 St	ory
Not	116 B	arefoot	0.78	9/29/2020	\$290,	000 2	004	2,192	\$132	.30 4/	3 2-Gai	2 Sto	ry
Adjoinin	g Sales	s Adjuste	d									Avg	
Addre	ess	Time	Site	YB	GLA	BR/BA	Pa	ark	Other	Total	% Diff	% Diff	Distance
120 Par	Four									\$315,000			405
102 Tea	ague	-\$4,636		\$1,500	\$910	\$10,00)		\$20,000	\$327,774	-4%		
112 Mead	dow Lk	\$4,937		\$18,550	-\$7,808	\$10,00	5 \$10),000	\$20,000	\$320,679	-2%		
116 Bar	refoot	-\$12,998		\$2,900	-\$318				\$20,000	\$299,584	5%		
												0%	
Adjoining	g Resid	ential Sale	s After	Solar Farm A	pproved	1							
Solar	Add	lress	Acres	Date Sold	Sales H	Price B	uilt	GBA	\$/G	LA BR/	BA Park	Styl	e Other
Adjoins	269 0	Grandy	0.78	5/7/2019	\$275,	000 2	019	1,535	\$179	15 3/2	2.5 2-Gai	r Ranc	h
Not	307 0	Grandy	1.04	10/8/2018	\$240,	000 2	002	1,634	\$146	.88 3/	2 Gar	1.5 St	ory
Not	103 H	Branch	0.95	4/22/2020	\$230,	000 2	000	1,532	\$150	13 4/	2 2-Gai	1.5 St	ory
Not	103 S _l	pring Lf	1.07	8/14/2018	\$270,	000 2	002	1,635	\$165	14 3/	2 2-Gai	r Ranc	h Pool
Adjoinin	g Sales	s Adjuste	d									Avg	
Addre	ess	Time	Site	YB	GLA	BR/BA	Pa	ark	Other	Total	% Diff	% Diff	Distance
269 Gr	andy									\$275,000			477
307 Gr	andy	\$5,550		\$20,400	-\$8,725	\$5,000	\$10	0,000		\$272,225	1%		
103 Bra	anch	-\$8,847		\$21,850	\$270					\$243,273	12%		
103 Spr	ing Lf	\$7,871		\$22,950	-\$9,908	\$5,000			-\$20,000	\$275,912	0%		
-	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.



19. Matched Pair - Champion Solar, Pelion, 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.

Adjoinin	g Resident	tial Sales	After Sol	ar Farm A	pproved								
Solar	Addr	ess	Acres	Date So	ld Sales	S Price	Built	GBA	\$/GBA	BR/BA	Park	Style	Other
Adjoins	517 Old Ch	narleston	11.05	8/25/20	20 \$11	0,000	1962	925	\$118.92	3/1	Crport	Br Rnch	
Not	133 Buer	na Vista	2.65	6/21/20	20 \$11	5,000	1979	1,104	\$104.17	2/2	Crport	Br Rnch	
Not	214 Crys	stal Spr	2.13	6/10/20	19 \$10	2,500	1970	1,025	\$100.00	3/2	Crport	Rnch	
Not	1429 L	aurel	2.10	2/21/20	19 \$12	6,000	1960	1,250	\$100.80	2/1.5	Open	Br Rnch	3 Gar/Brn
Adjoinin	g Sales Ad	justed										Avg	
Add	lress	Time	Site	YB	GLA	BR/H	BA	Park	Other	Total	% Diff	% Diff	Distance
517 Old C	Charleston									\$110,000			505
133 Bue	ena Vista	\$410	\$17,000	-\$9,775	-\$14,917	-\$10,0	000			\$97,718	11%		
214 Cry	/stal Spr	\$2,482	\$18,000	-\$4,100	-\$8,000	-\$10,0	000		\$10,000	\$110,882	-1%		
1429	Laurel	\$3,804	\$18,000	\$1,260	-\$26,208	-\$5,0	00	\$5,000	-\$15,000	\$107,856	2%		
												4%	



20. Matched Pair - Barefoot Bay Solar Farm, Barefoot Bay, Brevard County, FL

This project is located on 504 acres for a 74.5 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.

Adjoir	ning Resid	lential Sales A	After So	lar Farm A	pproved							
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	y 0.11	7/10/2020	\$129,000	1982	1,012	\$127.47	2/2	Crprt	Manuf	Canal
Adjoi1	ning Sales	s Adjusted									Avg	
A	ldress	Time	YB	GLA	BR/BA I	Park	Other	Tota	al %	6 Diff	% Diff	Distance
465 I	Papaya Cr							\$155,	000			765
110	8 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%	
Adioir	ning Resid	lential Sales A	After So	lar Farm A	pproved							
Parcel	Solar	Address	Acres	Date Sold	Sales Price	Built	GBA	\$/GLA	BR/BA	Park	Stvle	Other
19	Adioins	455 Papava	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
Adioiı	ning Sales	s Adiusted									Avg	
A	idress	Time	YB	GLA	BR/BA	Park	Other	Tot	al %	6 Diff	% Diff	Distance
455	Papava				,			\$183.	500			750
938 1	Waterway	\$2,724	\$15.200	-\$6.381				\$171.	542	7%		
719	Barefoot	\$1,770	\$6,750	-\$1,101				\$157	419	14%		
9	04 Fir	-\$422	-\$4,813	-\$568				\$186	697	-2%		
-	01111		\$ 1,010	<i>4000</i>				<i><i><i></i></i></i>		270	6%	
Adjoir	ing Resid	lential Sales A	After So	lar Farm A	pproved							
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

	Solui	11441000		Duce boru	Sures 11100	Dunc	0.011	\$7 G DII	210, 211		00910	0 11101
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								Avg	
Address	Time	YB	GLA	BR/BA	Park	Other	Total	% Diff	% 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 App	proved
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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	djoining Sales Adjusted									
Address	Time	YB	GLA	BR/BA	Park	Other	Total	% Diff	% 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%	

Adjoir	ing Resid	dential Sales .	After So	lar Farm Aj	pproved							
Parcel	Solar	Address	Acres	Date Sold	Sales Pric	e 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
Adjoin	ning Sale	s Adjusted									Avg	
Α	ddress	Time	YB	GLA	BR/BA	Park	Other	Tota	al '	% Diff	% Diff	Distance
343	8 Papaya							\$145,	000			690
865 '	Tamarind	\$3,566	-\$6,026	\$10,963				\$142,	403	2%		
515	5 Papaya	\$7,759	-\$13,775	\$11,128				\$150,	112	-4%		
849 ′	Tamarind	\$2,273	-\$8,525	-\$15,030			\$5,000	\$138,	717	4%		
											1%	
Adjoir	ning Resid	dential Sales .	After So	lar Farm Aj	pproved							
Parcel	Solar	Address	Acres	Date Sold	Sales Pric	e 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	
Adjoin	ning Sale	s Adjusted									Avg	
Α	ddress	Time	YB	GLA	BR/BA	Park	Other	Tota	al '	% Diff	% Diff	Distance
335	o 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	4 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.



21. Matched Pair - Miami-Dade Solar Farm, Miami, Dade County, FL

This project is located on 346.80 acres for a 74.5 MW facility. All of the adjoining uses are agricultural and residential. This project was built in 2019.

I considered the recent sale of Parcel 26 to the south that sold for over \$1.6 million dollars. This home is located on 4.2 acres with additional value in the palm trees according to the listing. The comparables include similar homes nearby that are all actually on larger lots and several include avocado or palm tree income as well. All of the comparables are in similar proximity to the subject and all have similar proximity to the Miami-Dade Executive airport that is located 2.5 miles to the east.

These sales are showing no impact on the value of the property from the adjoining solar farm. The landscaping is considered light.

Adjoin	ing Reside	ntial Sale	s Aiter So	olar Far	m Approved								
Parcel	Solar	Addre	SS	Acres	Date Sold	Sales Price	Built	GBA	\$/GLA	BR/BA	A Park	Style	Other
26	Adjoins	13600 SW	182nd	4.20	11/5/2020	\$1,684,000	2008	6,427	\$262.02	5/5.5	3 Gar	CBS Rnch	n Pl/Guest
	Not	18090 SW	158th	5.73	10/8/2020	\$1,050,000	1997	3,792	\$276.90	5/4	3 Gar	CBS Rnch	1
	Not	14311 SW	187th	4.70	10/22/2020	\$1,100,000	2005	3,821	\$287.88	6/5	3 Gar	CBS Rnch	n Pool
	Not	17950 SW	158th	6.21	10/22/2020	\$1,730,000	2000	6,917	\$250.11	6/5.5	2 Gar	CBS Rnch	n Pool
Adjoin	ing Sales A	Adjusted										Avg	
A	ddress	Time	Site	YI	B GLA	BR/BA	Park	Othe	er To	tal	% Diff	% Diff	Distance
13600	SW 182nd								\$1.68	34 000			1390

\$10,000

\$57,750 \$583,703 \$30,000

\$16,500 \$600,178 \$10,000

\$69,200 -\$98,043

Adjoining Residential Sales After Solar Farm Approved

\$2,478

\$1,298

\$2,041

18090 SW 158th

14311 SW 187th

17950 SW 158th

\$1,723,930 -2% \$1,727,976 -3% \$1,713,199 -2%

-2%



22. Matched Pair - Spotsylvania Solar, Paytes, Spotsylvania County, 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 P	rice E	Built	GBA	\$/GBA	BR/BA	Park	Style	Other
Adjoins	12901 Orng Pln	k 5.20	8/27/2020	\$319,9	000	1984	1,714	\$186.64	3/2	Drive	1.5	Un Bsmt
Not	8353 Gold Dale	3.00	1/27/2021	\$415,0	000 2	2004	2,064	\$201.07	3/2	3 Gar	Ranch	
Not	6488 Southfork	7.26	9/9/2020	\$375,0	000 2	2017	1,680	\$223.21	3/2	2 Gar	1.5	Barn/Patio
Not	12717 Flintlock	0.47	12/2/2020	\$290,0	000	1990	1,592	\$182.16	3/2.5	Det Gar	Ranch	
Adjoinir	ng Sales Adjust	ed										
Add	ress Ti	me	Ac/Loc	YB	GLA	A 1	BR/BA	Park	Other	Total	% Dif	f Dist
12901 Oi	rng Plnk									\$319,90	0	1270
8353 Go	old Dale -\$5	219	\$20,000	-\$41,500	-\$56,2	298		-\$20,000)	\$311,98	3 2%	
6488 So	uthfork -\$4	401	-\$20,000	-\$61,875	\$6,07	71		-\$15,000)	\$283,79	6 11%	
12717 F	lintlock -\$2	312	\$40,000	-\$8,700	\$17,7	79 -	-\$5,000	-\$5,000		\$326,76	7 -2%	
									A	verage Dif	f f 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

Aujoining Sales A	ajustea									
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%

Solar	Addre	ess	Acres	Date Sold	Sales P	rice B	Built	GBA	\$/GBA	BR/BA	Park	Style	Other
Adjoins	13353 Pos	st Oak	5.20	9/21/2020	\$300,0	000 1	1992	2,400	\$125.00	4/3	Drive	2-Story	Fn Bsmt
Not	9609 Loga	an Hgt	5.86	7/4/2019	\$330,0	00 2	2004	2,352	\$140.31	3/2	2Gar	2-Story	
Not	12810 Catl	harpian	6.18	1/30/2020	\$280,0	00 2	2008	2,240	\$125.00	4/2.5	Drive	2-Story B	smt/Nd Pnt
Not	10725 Rb	rt Lee	5.01	10/26/2020	\$295,0	000 1	1995	2,166	\$136.20	4/3	Gar	2-Story	Fn Bsmt
Adjoinin	ng Sales A	djusted	L										
Addı	ess	Tim	e	Ac/Loc	YB	GLA	A 1	BR/BA	Park	Other	Total	% Diff	Dist
13353 Pe	ost Oak										\$300,00	0	1171
9609 Log	gan Hgt	\$12,0	70		\$19,800	\$5,38	38		-\$15,000	\$15,000	\$327,65	8 -9%	
12810 Ca	tharpian	\$5,40	08		-\$22,400	\$16,0	00	\$5,000		\$15,000	\$299,00	8 0%	
10725 R	brt Lee	-\$84	.9		-\$4,425	\$25,4	96		-\$10,000)	\$305,22	2 -2%	
										Ave	erage Di	ff -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.

There are a couple of recent lot sales located along Southview Court that have sold since the solar farm was approved. The most recent lot sales include 11700 Southview Court that sold on December 29, 2021 for \$140,000 for a 0.76-acre lot. This property was on the market for less than 2 months before closing within 6% of the asking price. This lot sold earlier in September 2019 for \$55,000 based on a liquidation sale from NTS to an investor.

A similar 0.68-acre lot at 11507 Stonewood Court within the same subdivision located away from the solar farm sold on March 9, 2021 for \$109,000. This lot sold for 18% over the asking price within 1 month of listing suggesting that this was priced too low. Adjusting this lot value upward by 12% for very strong growth in the market over 2021, the adjusted indicated value is \$122,080 for this lot. This is still showing a 15% premium for the lot backing up to the solar farm.

The lot at 11009 Southview Court sold on August 5, 2019 for \$65,000, which is significantly lower than the more recent sales. This lot was sold by NTS the original developer of this subdivision, who was in the process of liquidating lots in this subdivision with multiple lot sales in this time period throughout the subdivision being sold at discounted prices. The home was later improved by the buyer with a home built in 2020 with 2,430 square feet ranch, 3.5 bathrooms, with a full basement, and a current assessed value of \$492,300.

I spoke with Chris Kalia, MAI, Mark Doherty, local real estate investor, and Alex Doherty, broker, who are all three familiar with this subdivision and activity in this neighborhood. All three indicated that there was a deep sell off of lots in the neighborhood by NTS at discounted prices under \$100,000 each. Those lots since that time are being sold for up to \$140,000. The prices paid for the lots below \$100,000 were liquidation values and not indicative of market value. Homes are being built in the neighborhood on those lots with home prices ranging from \$600,000 to \$800,000 with no sign of impact on pricing due to the solar farm according to all three sources.





Fawn Lake Lot Sales

Parcel	Solar?	Address	Acres	Sale Date	Sale Price Ad.	For Time	% Diff
Α	Adjoins	11700 Southview Ct	0.76	12/29/2021	\$140,000		
	1 1 parcel away	11603 Southview Ct	0.44	3/31/2022	\$140,000	\$141,960	-1.4%
	2 Not adjoin	11507 Stonewood Ct	0.68	3/9/2021	\$109,000	\$118,374	15.4%
	3 Not adjoin	11312 Westgate Wy	0.83	10/15/2020	\$125,000	\$142,000	-1.4%
	4 Not adjoin	11409 Darkstone Pl	0.589	9/23/2021	\$118,000	\$118,000	15.7%
							-

Average	7.1%
Median	7.0%

Least Adjusted 15.7% 2nd Least Adjusted -1.4% (Parcel 1 off solar farm)

Time Adjustments are based on the FHFA Housing Price Index

vadens Mill

23. Matched Pair - Whitehorn Solar, Gretna, Pittsylvania County, VA

This project was built in 2021 for a solar project with 50 MW. Adjoining uses are residential and agricultural. There was a sale located at 1120 Taylors Mill Road that sold on December 20, 2021, which is about the time the solar farm was completed. This sold for \$224,000 for 2.02 acres with a 2,079 s.f. mobile home on it that was built in 2010. The property was listed for \$224,000 and sold for that same price within two months (went under contract almost exactly 30 days from listing). This sales price works out to \$108 per square foot. This home is 255 feet from the nearest panel.

I have compared this sale to an August 20, 2020 sale at 1000 Long Branch Drive that included 5.10 acres with a 1,980 s.f. mobile home that was built in 1993 and sold for \$162,000, or \$81.82 per square foot. Adjusting this upward for significant growth between this sale date and December 2021 relied on data provided by the FHFA House Pricing Index, which indicates that for homes in the Roanoke, VA MSA would be expected to appreciate from \$162,000 to \$191,000 over that period of time. Using \$191,000 as the effective value as of the date of comparison, the indicated value of this sale works out to \$96.46 per square foot. Adjusting this upward by 17% for the difference in year built, but downward by 5% for the much larger lot size at this comparable, I derive an adjusted indication of value of \$213,920, or \$108 per square foot.

This indicates no impact on value attributable to the new solar farm located across from the home on Taylors Mill Road.



This project was mostly built in 2021 with final construction finished in 2022. This is an 80 MW facility on 720 acres just north of Roanoke River and west of Altavista. Adjoining uses are residential and agricultural.

I have done a Sale/Resale analysis of 3211 Leesville Road which is approximately 540 feet from the nearest solar panel. There was an existing row of trees between this home and the panels that was supplemented with additional screening for a narrow landscaped buffer between the home and the solar panels.

This home sold in December 2018 for \$72,500 for this 1,451 s.f. home built in 1940 with a number of additional outbuildings on 3.35 acres. This was before any announcement of a solar farm. This home sold again on March 28, 2022 for \$124,048 after the solar farm was constructed. This shows a 71% increase in value on this property since 2018. There was significant growth in the market between these dates and to accurately reflect that I have considered the FHFA House Price Index that is specific for the Lynchburg area of Virginia (the closest regional category), which shows an expected increase in home values over that same time period of 33.8%, which would suggest a normal growth in value up to \$97,000. The home sold for significantly more than this which certainly does not support a finding of a negative impact and in fact suggests a significant positive impact. However, I was not able to discuss this sale with the broker and it is possible that the home also was renovated between 2018 and 2022, which may account for that additional increase in value. Still give that the home increased in value so significantly over the initial amount there is no sign of any negative impact due to the solar farm adjacency.



Similarly, I looked at 3026 Bishop Creek Road that is approximately 600 feet from the nearest solar panel. This home sold on July 16, 2019 for \$120,000, which was before construction of the solar farm. This home sold again on February 23, 2022 for \$150,000. This shows a 25% increase in value over that time period. Using the same FHFA House Price Index Calculator, the expected increase in value was 29.2% for an indicated expected value of \$155,000. This is within 3% of the actual closed price, which supports a finding of no impact from the solar farm. This home has a dense wooded area between it and the adjoining solar farm.



Conclusion – SouthEast Over 5 MW

Sou Mat	theast USA Ov ched Pair Sun	ver 5 MW 1marv					Adi. U:	ses Bv	Acreage		1 mile	Radius (2	010-2022 Data)	
						Торо		j	g-			Med.	Avg. Housing	Veg.
	Name	City	State	Acres	MW	Shift	Res	Ag	Ag/Res	Com/Ind	Pop.	Income	Unit	Buffer
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	Candace	Princeton	NC	54	5.00	22	76%	24%	0%	0%	448	\$51,002	\$107,171	Medium
12	Walker	Barhamsville	VA	485	20.00	N/A	12%	68%	20%	0%	203	\$80,773	\$320,076	Light
13	Innov 46	Hope Mills	NC	532	78.50	0	17%	83%	0%	0%	2,247	\$58,688	\$183,435	Light
14	Innov 42	Fayetteville	NC	414	71.00	0	41%	59%	0%	0%	568	\$60,037	\$276,347	Light
15	Sunfish	Willow Spring	NC	50	6.40	30	35%	35%	30%	0%	1,515	\$63,652	\$253,138	Light
16	Sappony	Stony Crk	VA	322	20.00	N/A	2%	98%	0%	0%	74	\$51,410	\$155,208	Light
17	Camden Dam	Camden	NC	50	5.00	0	17%	72%	11%	0%	403	\$84,426	\$230,288	Light
18	Grandy	Grandy	NC	121	20.00	10	55%	24%	0%	21%	949	\$50,355	\$231,408	Light
19	Champion	Pelion	SC	100	10.00	N/A	4%	70%	8%	18%	1,336	\$46,867	\$171,939	Light
20	Barefoot Bay	Barefoot Bay	FL	504	74.50	0	11%	87%	0%	3%	2,446	\$36,737	\$143,320	Lt to Med
21	Miami-Dade	Miami	FL	347	74.50	0	26%	74%	0%	0%	127	\$90,909	\$403,571	Light
22	Spotyslvania	Paytes	VA	3,500	617.00	160	37%	52%	11%	0%	74	\$120,861	\$483,333	Md to Hvy
23	Whitehorn	Gretna	VA	N/A	50.00	N/A	N/A	N/A	N/A	N/A	166	\$43,179	\$168,750	None to L
24	Altavista	Altavista	VA	720	80.00	N/A	N/A	N/A	N/A	N/A	7	\$50,000	\$341,667	Light
	Average			506	58.83	36	25%	47%	22%	6%	883	\$62,000	\$237,816	
	Median			234	20.00	20	18%	56%	11%	0%	458	\$55,049	\$230,848	
	High			3,500	617.00	160	76%	98%	94%	44%	4,689	\$120,861	\$483,333	
	Low			35	5.00	0	2%	0%	0%	0%	7	\$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 \$55,049 with a median housing unit value of \$230,848. 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 \$1,600,000 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 59 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 +22% with an average of +2% and median of +1%. Excluding the significant 22% outlier, the range is -10% to +10% with an average and median of +1%. This means that the average and median impact is for a slight positive impact due to adjacency to a solar farm. However, this +1% rate is within the typical variability I would expect from real estate. I therefore conclude that this data shows no negative or positive impact due to adjacency to a solar farm.

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



C. Summary of National Data on Solar Farms

I have worked in over 20 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 38 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.

Mat	ched Pair Sun	nmary					Adj. Us	ses By	Acreage		1 mile Radius (2020 Data)			
		•				Торо		•				Med.	Avg. Housing	
	Name	City	State	Acres	мw	Shift	Res	Ag	Ag/Res	Com/Ind	Population	Income	Unit	
1	AM Best	Goldsboro	NC	38	5.00	2	38%	0%	23%	39%	1,523	\$37,358	\$148,375	
2	Mulberry	Selmer	TN	160	5.00	60	13%	73%	10%	3%	467	\$40,936	\$171,746	
3	Leonard	Hughesville	MD	47	5.00	20	18%	75%	0%	6%	525	\$106,550	\$350,000	
4	Gastonia SC	Gastonia	NC	35	5.00	48	33%	0%	23%	44%	4,689	\$35,057	\$126,562	
5	Summit	Moyock	NC	2,034	80.00	4	4%	0%	94%	2%	382	\$79,114	\$281,731	
6	Tracy	Bailey	NC	50	5.00	10	29%	0%	71%	0%	312	\$43,940	\$99,219	
7	Manatee	Parrish	FL	1,180	75.00	20	2%	97%	1%	0%	48	\$75,000	\$291,667	
8	McBride	Midland	NC	627	75.00	140	12%	10%	78%	0%	398	\$63,678	\$256,306	
9	Grand Ridge	Streator	IL	160	20.00	1	8%	87%	5%	0%	96	\$70,158	\$187,037	
10	Dominion	Indianapolis	IN	134	8.60	20	3%	97%	0%	0%	3,774	\$61,115	\$167,515	
11	Mariposa	Stanley	NC	36	5.00	96	48%	0%	52%	0%	1,716	\$36,439	\$137,884	
12	Clarke Cnty	White Post	VA	234	20.00	70	14%	39%	46%	1%	578	\$81,022	\$374,453	
13	Flemington	Flemington	NJ	120	9.36	N/A	13%	50%	28%	8%	3,477	\$105,714	\$444,696	
14	Frenchtown	Frenchtown	NJ	139	7.90	N/A	37%	35%	29%	0%	457	\$111,562	\$515,399	
15	McGraw	East Windsor	NJ	95	14.00	N/A	27%	44%	0%	29%	7,684	\$78,417	\$362,428	
16	Tinton Falls	Tinton Falls	NJ	100	16.00	N/A	98%	0%	0%	2%	4,667	\$92,346	\$343,492	
17	Simon	Social Circle	GA	237	30.00	71	1%	63%	36%	0%	203	\$76,155	\$269,922	
18	Candace	Princeton	NC	54	5.00	22	76%	24%	0%	0%	448	\$51,002	\$107,171	
19	Walker	Barhamsville	VA	485	20.00	N/A	12%	68%	20%	0%	203	\$80,773	\$320,076	
20	Innov 46	Hope Mills	NC	532	78.50	0	17%	83%	0%	0%	2,247	\$58,688	\$183,435	
21	Innov 42	Fayetteville	NC	414	71.00	0	41%	59%	0%	0%	568	\$60,037	\$276,347	
22	Demille	Lapeer	MI	160	28.40	10	10%	68%	0%	22%	2,010	\$47,208	\$187,214	
23	Turrill	Lapeer	MI	230	19.60	10	75%	59%	0%	25%	2,390	\$46,839	\$110,361	
24	Sunfish	Willow Spring	NC	50	6.40	30	35%	35%	30%	0%	1,515	\$63,652	\$253,138	
25	Picture Rocks	Tucson	AZ	182	20.00	N/A	6%	88%	6%	0%	102	\$81,081	\$280,172	
26	Avra Valley	Tucson	AZ	246	25.00	N/A	3%	94%	3%	0%	85	\$80,997	\$292,308	
27	Sappony	Stony Crk	VA	322	20.00	N/A	2%	98%	0%	0%	74	\$51,410	\$155,208	
28	Camden Dam	Camden	NC	50	5.00	0	17%	72%	11%	0%	403	\$84,426	\$230,288	
29	Grandy	Grandy	NC	121	20.00	10	55%	24%	0%	21%	949	\$50,355	\$231,408	
30	Champion	Pelion	SC	100	10.00	N/A	4%	70%	8%	18%	1,336	\$46,867	\$171,939	
31	Eddy II	Eddy	TX	93	10.00	N/A	15%	25%	58%	2%	551	\$59,627	\$139,088	
32	Somerset	Somerset	TX	128	10.60	N/A	5%	95%	0%	0%	1,293	\$41,574	\$135,490	
33	DG Amp Piqua	Piqua	OH	86	12.60	2	26%	16%	58%	0%	6,735	\$38,919	\$96,555	
34	Barefoot Bay	Barefoot Bay	FL	504	74.50	0	11%	87%	0%	3%	2,446	\$36,737	\$143,320	
35	Miami-Dade	Miami	FL	347	74.50	0	26%	74%	0%	0%	127	\$90,909	\$403,571	
36	Spotyslvania	Paytes	VA	3,500	500.00	160	37%	52%	11%	0%	74	\$120,861	\$483,333	
37	Whitehorn	Gretna	VA	N/A	50.00	N/A	N/A	N/A	N/A	N/A	166	\$43,179	\$168,750	
38	Altavista	Altavista	VA	720	80.00	N/A	N/A	N/A	N/A	N/A	7	\$50,000	\$341,667	
	Average			372	40.18	32	24%	52%	19%	6%	1,440	\$65,255	\$243,139	
	Median			160	19.80	10	16%	59%	7%	0%	538	\$60,576	\$230,848	
	High			3,500	500.00	160	98%	98%	94%	44%	7,684	\$120,861	\$515,399	
	Low			35	5.00	0	1%	0%	0%	0%	7	\$35,057	\$96,555	

From these 38 solar farms, I have derived 89 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% (after excluding the one +22% outlier that may have other factors influencing it).

		Avg.	
	MW	Distance	% Dif
Average	48.77	569	1%
Median	16.00	400	1%
High	617.00	2,020	22%
Low	5.00	145	-10%

While the range is broad, the two charts below show the data points in range from lowest to highest. There is only 3 data points out of 89 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 500 MW facility.

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

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

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

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

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

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

On the following page I show a summary of 248 projects ranging in size from 50 MW up to 1,000 MW with an average size of 119.7 MW and a median of 80 MW. The average closest distance for an adjoining home is 365 feet, while the median distance is 220 feet. The closest distance is 50 feet. The mix of adjoining uses is similar with most of the adjoining uses remaining residential or agricultural in nature. This is the list of solar farms that I have researched for possible matched pairs and not a complete list of larger solar farms in those states.

Total Number of Solar Farms Researched Over 50 MW 238

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

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 singlefamily 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 100feet, but most of the adjoining homes are further than that distance.

X. <u>Topography</u>

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. <u>Potential Impacts During Construction</u>

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 1,000 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.

ercentage By Adjoining Acreage														
	Pos	٨٣	All Res A	ll Comm										
	NC3	ng	Nes/Au	Comm	mu	Avg nome	nome	0363	0303					
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.

Res	Ag	Bea/AC				Closest	All Res A	11 Comm							
Res	Closest Res Ag Res/AG Comm Ind Avg Home Home														
	0	Kes/AG	Comm	mu	Avg nome	nome	0565	0363							
61%	24%	9%	2%	4%	887	344	93%	6%							
65%	19%	5%	0%	0%	708	218	100%	0%							
100%	100%	100%	60%	78%	5,210	4,670	105%	78%							
0%	0%	0%	0%	0%	90	25	0%	0%							
	61% 65% 100% 0%	61%24%65%19%100%100%0%0%	61%24%9%65%19%5%100%100%100%0%0%0%	61%24%9%2%65%19%5%0%100%100%100%60%0%0%0%0%	61%24%9%2%4%65%19%5%0%0%100%100%100%60%78%0%0%0%0%0%	61%24%9%2%4%88765%19%5%0%0%708100%100%60%78%5,2100%0%0%0%0%90	61%24%9%2%4%88734465%19%5%0%0%708218100%100%60%78%5,2104,6700%0%0%0%0%9025	61%24%9%2%4%88734493%65%19%5%0%0%708218100%100%100%100%60%78%5,2104,670105%0%0%0%0%0%90250%							

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. Even less 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 20 feet high. 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 significantly taller than thee 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.

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. Similar paired sales showed no impact from adjoining battery storage facilities.

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.

XV. <u>Certification</u>

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

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

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

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

Val Kalild Jr

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





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

PROFESSIONAL EXPERIENCE

Kirkland Appraisals, LLC, Raleigh, N.C. Commercial appraiser	2003 – Present			
Hester & Company, Raleigh, N.C.				
Commercial appraiser	1996 – 2003			
PROFESSIONAL AFFILIATIONS				
MAI (Member, Appraisal Institute) designation #11796	2001			
NC State Certified General Appraiser # A4359	1999			
VA State Certified General Appraiser # 4001017291				
SC State Certified General Appraiser # 6209				
FL State Certified General Appraiser # RZ3950				
GA State Certified General Appraiser # 321885				
MI State Certified General Appraiser # 1201076620				
PA State Certified General Appraiser # GA004598				
OH State Certified General Appraiser # 2021008689				
IN State Certified General Appraiser # CG42100052				
KY State Certified General Appraiser # 5522				

EDUCATION

Bachelor of Arts in English, University of North Carolina, Chapel Hill	1993	
CONTINUING EDUCATION		
Uniform Standards of Professional Appraisal Practice Update Sexual Harassment Prevention Training Appraisal of Land Subject to Ground Leases Michigan Appraisal Law Uniform Standards of Professional Appraisal Practice Update Uniform Appraisal Standards for Federal Land Acquisitions (Yellow Book) The Cost Approach Income Approach Case Studies for Commercial Appraisers Introduction to Expert Witness Testimony for Appraisers Appraising Small Apartment Properties Florida Appraisal Laws and Regulations Uniform Standards of Professional Appraisal Practice Update Appraisal of REO and Foreclosure Properties	2022 2021 2021 2020 2020 2019 2019 2018 2018 2018 2018 2018 2018 2018	
Appraisal of Self Storage Facilities Land and Site Valuation NCDOT Appraisal Principles and Procedures Uniform Standards of Professional Appraisal Practice Update Forecasting Revenue Wind Turbine Effect on Value Supervisor/Trainee Class	2017 2017 2017 2016 2015 2015 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

SAR ATTACHMENT C



Parcel	Owner	Acreage
20-12	David Bruce Witty	48.8
20-2BB	GRAY JOE B II	133.8
20-5	Darrell L. Burks	150.8
19-31	Edwin T. Burks	151.8
19-22	Leroyce Burks	81.7
19-19	Mikel D. Bellamy	97.7
32-21	Mikel D. Bellamy	319.2
19-18	Jonluke Vincent	59.0
19-17B	Mikel D. Bellamy	102.0
19-17A	Mikel D. Bellamy	0.6
19-10	Mark Bellamy	149.7
32.20B	Kathy Simpson	29.3
19-2	Mark Bellamy	85.0
19-3	Roger Cline	74.9
19-5	Roger Cline	25.0
19-6E	Daniel Lee Deckard	145.9
32-16	Mikel D. Bellamy	65.0
32.16A	Mikel D. Bellamy	65.0
32-16B	Mikel D. Bellamy	10.0
19-8	Billy Hudson	70.8
32-17	Mikel D. Bellamy	72.8
32-17A	Mikel D. Bellamy	10.3
32-22	Michael Glenn Baise	77.2
32-21B	Mikel D. Bellamy	1.8
32-41C	Luther J. Garrett	158.0
32-39	Luther J. Garrett	16.9
33-7A	Savers Storage LLC	54.8

NOTES:

PROJECT AREAS ARE SUBJECT TO CHANGE PENDING FUTURE DESIGN CONTRAINTS AND LOCAL PERMITTING CONSIDERATIONS. WETLANDS SETBACK = 25' STREAM SETBACK = 25' NON-PARTICIPATING OCCUPED STRUCTURE SETBACK = 300' NON-PARTICIPATING PARCEL SETBACK = 50' COUNTY & STATE ROAD SETBACK = 50' COUNTY & STATE ROAD SETBACK = 100' CA \$ 045500 LINE SETBACK = 100' TRUSSION LINE SETBACK = 100' KARST AREA SETBACK = 50' 1)

- 2) 3) 4) 5) 6) 7) 8) 9) 10)

DRAWING TITLE PARCEL MAP

^{.TE} 15 JUN 2023 SCALE AS SHOWN WOOD DUCK SOLAR DRAWN REVISION

100MW-AC

GEENEX SOLAR 1000 NC MUSIC FACTORY BLVD SUITE C3 CHARLOTTE, NC 28206



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Wood Duck Solar Project Sound Study



Prepared for: Geenex Solar 1000 North Carolina Road Suite C3 Music Factory Blvd, Charlotte, NC 28206

Prepared by: Stantec Consulting Services Inc. 733 Marquette Avenue, Suite 1000 Minneapolis, MN 55402

Project Number: 237801898

WOOD DUCK SOLAR PROJECT SOUND STUDY

March 14, 2025

Table of Contents

ABBR	EVIATIONS	II
1.0	PROJECT DESCRIPTION	1
2.0	SOUND TERMINOLOGY	2
3.0	REGULATORY ENVIRONMENT	3
4.0 4.1 4.2 4.3	EXISTING NOISE CONDITIONS NOISE SENSITIVE RECEPTORS EXISTING NOISE FROM ADJACENT PROPERTIES EXISTING NOISE ON THE PROJECT SITE	3 .3 .5
5.0 5.1 5.2	CONSTRUCTION SOUND ASSESSMENT. SOUND SOURCES AND ASSESSMENT METHODOLOGY CONSTRUCTION SOUND ASSESSMENT RESULTS	5 .5 .7
6.0 6.1 6.2	OPERATIONAL SOUND ASSESSMENT. SOUND SOURCES AND ASSESSMENT METHODOLOGY OPERATIONAL SOUND ASSESSMENT RESULTS	7 .7 .8
7.0	SUMMARY	9

Figures

- Figure 1 Vicinity Map
- Figure 2 Common Sound Levels
- Figure 3 Noise Sensitive Receptors
- Figure 4 Estimated Operational Sound Level Contours

Appendices

Appendix A – Receptor Locations (UTM 16 Coordinates) and Operational Sound Model Results

WOOD DUCK SOLAR PROJECT SOUND STUDY

March 14, 2025

Abbreviations

AC	alternating current
dB	decibel
dB(Z) or dBZ	decibel (unweighted)
dB(A) or dBA	decibel (A-weighted)
dB(C) or dBC	decibel (C-weighted)
DC	direct current
Hz	hertz
Leq	equivalent continuous sound level
L _{max}	maximum sound level
MW	megawatt
Project	Wood Duck Solar Project
PV	photovoltaic

WOOD DUCK SOLAR PROJECT SOUND STUDY

March 14, 2025

1.0 **Project Description**

Wood Duck Solar, LLC (Wood Duck), a wholly owned subsidiary of Geenex Solar is proposing to construct and operate the Wood Duck Solar Project (Project) west-northwest of Glasgow, Barren County, Kentucky. The Project location and vicinity is shown on Figure 1. The Project Area encompasses approximately 2,550 acres. The maximum generating capacity of the Project will be up to 100 megawatts (MW) alternating current (AC).

In addition to photovoltaic modules and single access trackers, the Project will include inverter stations, an electrical collection system, access roads, perimeter security fencing, a Project substation, and a generation tie-in transmission line. Wood Duck retained the services of Stantec Consulting Services Inc. (Stantec) to conduct a pre-construction sound study assessing the potential sound due to construction activities and operation of the Project.

The solar arrays will be constructed on predominantly agricultural parcels. The electricity generated by the solar facility will be routed to an electrical substation located in the southeastern portion of the Project area. The predominant land use of the area for the Project is agricultural or wooded land with surrounding residential and commercial development.

The main sources of sound emissions from the Project operations will be the solar inverter stations and a substation transformer. Solar panels produce direct current (DC) voltage which must be converted to AC voltage through a series of inverters. Solar energy facilities operate by converting solar radiation into electricity, meaning the Project will only produce electricity between sunrise and sunset. After sunset, the site no longer receives solar radiation, and the inverters will shift into stand-by mode.

Approximately 35 inverters will be installed in the Project area for the proposed 100-MW Project. The analysis assumed the sound power level of each inverter at full load is 99 decibels, A-weighted (dBA). One main power transformer will be installed in the Project substation. The analysis assumed the sound power level of the substation transformer is 105 dBA.


March 14, 2025

2.0 Sound Terminology

Sound is caused by vibrations that generate waves of minute pressure fluctuations in the surrounding air. Sound levels are measured using a logarithmic decibel (dB) scale. Human hearing varies in sensitivity for different sound frequencies, and the frequency sensitivity changes based on the overall sound level. The ear is most sensitive to sound at frequencies between 800 and 8,000 hertz (Hz) and is least sensitive to sound at frequencies below 400 Hz or above 12,500 Hz. Consequently, several different frequency weighting schemes have been used to approximate the way the human ear responds to various frequencies at different sound levels. The A-weighted decibel, or dBA, scale is the most widely used for regulatory requirements, as it discriminates against low frequency noise similar to the response of the human ear at the low to moderate sound levels typical of environmental sources. The C-weighted decibel, or dBC, scale applies less attenuation to low frequency noise to approximate the response of the human ear at higher sound levels. Sound levels without a frequency weighting applied, referred to as unweighted or linear, are generally reported as dB or dBZ.

The sound power level (PWL or Lw) of a noise source is the strength or intensity of noise that the source emits regardless of the environment in which it is placed. Sound power is a property of the source, and therefore is independent of distance. The radiating sound power then produces a sound pressure level (SPL or Lp) at a point of which human beings can perceive as audible sound. The sound pressure level is dependent on the acoustical environment (e.g., indoor, outdoor, absorption, reflections) and the distance from the noise source. Unless otherwise stated, sound levels in this report are sound pressure levels.

Numerous metrics and indices have been developed to quantify the temporal characteristics (changes over time) of community noise. The equivalent continuous sound level, Leq, metric is the level of a hypothetical steady sound that would have the same energy as the fluctuating sound level over a defined period of time. The Leq represents the time average of the fluctuating sound pressure level. The maximum and minimum sound levels, or Lmax and Lmin, are the loudest and quietest instantaneous sound levels occurring during a period of time.

Sound is a naturally occurring phenomenon, while noise is generally defined as the threshold when sound becomes an annoyance. A change in sound levels of 3 decibels is generally considered to be the threshold of perception, whereas a change of 5 decibels is clearly perceptible, and a change of 10 decibels is perceived as a doubling or halving of loudness.

Examples of A-weighted sound levels in common environments are shown on Figure 2.



March 14, 2025

3.0 Regulatory Environment

The proposed Project is located near the City of Glasgow, Barren County, Kentucky. State and local regulations were reviewed. No City of Glasgow or Barren County regulations applicable to noise from a solar energy facility were identified.

Kentucky Revised Statutes (KRS) Section 278.708 requires a site assessment report be completed for proposed electric generation facilities that includes "evaluation of sound levels expected to be produced by the facility" (KRS 278.708(3)(a)8) and "evaluation of anticipated peak and average sound levels associated with the facility's construction and operation at the property boundary" (KRS 278.708(3)(d)). Quantifiable noise limits are not provided in KRS 278.708. This sound assessment was completed to address the above requirements.

4.0 Existing Noise Conditions

4.1 NOISE SENSITIVE RECEPTORS

In this analysis, noise sensitive receptors were considered to include residences, schools, churches, hospitals, parks, and cemeteries. Noise sensitive receptor locations were identified within 2,000 feet of the Project boundaries by reviewing high resolution aerial imagery. The receptor locations, named with the prefix "SR" and shown on Figures 3 and 4, include 266 identified sensitive receptors.

One-hundred-thirty (130) of the 266 residential receptors are located within eight areas that meet the definition of "residential neighborhood" according to KRS 278.700, which include populated areas of five or more acres containing at least one residential structure per acre. The residential neighborhoods include Millstown Road (SR-004 – 008), Bon Ayr (SR-087 – 089; SR-091 – 103; SR-180 – 196; SR-246 – 248; SR-252 – 253), Den Drive (SR-148 – 151; SR-207 – 222), Bent Creek Drive (SR-062 – 086), Dripping Springs Road (SR-047 – 057; SR-165 – 169), Apple Grove Road (SR-024 – 034), Rick Road (SR-139 – 143), and Fairview Church Road (SR-227 – 232; SR-252 – 255).

Table 1 shows the nearest residential receptor locations to Project boundaries and equipment, both throughout the Project area and within each neighborhood. Receptor SR-137 is located approximately 430 feet south of the nearest inverter. Receptor SR-082 is located approximately 597 feet southeast of the Project substation transformer.

March 14, 2025

Land use	Nearest Receptor to	Section of Study Area	Distance from Nearest Solar Panel	Distance from Nearest Inverter or Substation Transformer
Residence (SR-137)	Inverter	South	243 ft	430 ft (inverter)
Residence (SR-082)	Substation transformer	East-Central	3,876 ft	597 ft (transformer)
Residence (SR-154)	Panel tracking system	North- Central	83 ft	1,578 ft (inverter)
Residences – Millstown Road Neighborhood (SR- 004 – 008)	N/A	North	544 ft	3,106 ft (inverter)
Residences – Bon Ayr Neighborhood (SR-087 – 089; SR-091 – 103; SR-180 – 196; SR-246 – 248; SR-252 – 253)	N/A	South-East	1,229 ft	648 ft (transformer)
Residences – Den Drive Neighborhood (SR-148 – 151; SR-207 – 222)	N/A	Central	634 ft	1,722 ft (inverter)
Residences – Bent Creek Drive Neighborhood (SR-062 – 086)	N/A	South-East	1,558 ft	597 ft (transformer)
Residences – Dripping Springs Road Neighborhood (SR-047 – 057; SR-165 – 169)	N/A	North-East	587 ft	2,290 ft (inverter)
Residences – Apple Grove Road Neighborhood (SR- 024 – 034)	N/A	North- Central	343 ft	835 ft (inverter)
Residences – Rick Road Neighborhood (SR-139 – 143)	N/A	South-West	649 ft	1,241 ft (inverter)
Residences – Fairview Church Road Neighborhood (SR-234 – 239; SR-259 – 262)	N/A	North-West	1,229 ft	2,005 ft (inverter)

Table 1. Nearest Receptors to the Project



March 14, 2025

4.2 EXISTING NOISE FROM ADJACENT PROPERTIES

The primary sources of noise from the surrounding area are likely to be vehicle traffic on rural roads and adjacent agricultural activities, including but not limited to, tractors, farm machinery, trucks, and all-terrain vehicles (ATVs). Traffic from Cumberland Parkway and New Bowling Green Road also contributes to noise in the vicinity of the Project area. Additionally, wildlife such as insects, birds and frogs also contribute to the existing noise environment.

4.3 EXISTING NOISE ON THE PROJECT SITE

Existing sound sources on the Project site are likely those typical of agricultural activities. These sources include tractors, trucks, and ATVs. Rural wildlife noises also contribute to the existing noise environment including birds, frogs, and insects. Typical sound levels in a variety of outdoor environments are shown on Figure 2.

5.0 Construction Sound Assessment

5.1 SOUND SOURCES AND ASSESSMENT METHODOLOGY

Construction activities related to the development of the Project will occur over a period of approximately 12 months. Construction will occur in phases, starting with site preparation activities, such as vegetation clearing and access road construction. Construction of the Project substation along with the trenching and installation of the underground electrical collection system will likely be occurring concurrently with the solar array installation activities. The construction process is progressive in nature; therefore, several locations may see activity during the same time period, with installation activities then progressing to other array sites.

Construction activities will be conducted during daylight hours (7:00 a.m. to 7:00 p.m. or dusk if sunset occurs after 7:00 p.m.). Heavy construction equipment including, but not limited to, backhoes, bulldozers, excavators, and haul trucks may be present and operational at different points during the first phase of the construction period. The second phase of construction at each array site will include impact pile drivers to install posts for the tracking system. This analysis assumes that up to three pile drivers may be operating simultaneously within a solar array field.

Major components of the solar facility include solar modules, a module tracking system, inverters, and a Project substation. Assembly will occur within the Project site several hundred to thousands of feet from the nearest receptors. Assembly will take place during daytime hours and will be of limited duration at any given location within the Project.

Traffic noise is expected to increase temporarily during construction due to the mobilization of labor and materials, equipment and staff moving between sections of the Project, and construction and equipment vehicles entering and leaving the site.

Noise levels from construction equipment will vary by type, age of equipment, and overall condition. Typical construction equipment sound emission levels from the Federal Highway



March 14, 2025

Administration (FHWA) Roadway Construction Noise Model (RCNM)¹ database are presented in Table 2. These sound levels are representative of typical infrastructure construction equipment and were used for this assessment. Pile driving was modeled assuming an L_{max} sound level of 101 dBA at 50 feet. Other than pile drivers, sound levels associated with the types of equipment expected to be used will vary from approximately 74 to 85 dBA at 50 feet. For comparison, typical sound levels generated by common sources are shown on Figure 2.

The FHWA RCNM model was used to assess sound levels during construction at the nearest receptor to solar panel arrays (SR-154) where pile driving would occur. RCNM accounts for the attenuation of sound with distance from equipment and estimates both L_{max} and L_{eq} sound levels. Equipment included in the RCNM model predictions included three pile drivers, one crane, one pickup truck, and one front end loader.

5	Acoustical Use	Sound Level at 50 feet, dBA			
Equipment Description	Factor, % ¹	L _{max}	L _{eq}		
Backhoe	40	78	74		
Compactor (ground)	20	83	76		
Compressor (air)	40	78	74		
Crane	16	81	73		
Dozer	40	82	78		
Dump Truck	40	76	72		
Excavator	40	81	77		
Flat Bed Truck	40	74	70		
Front End Loader	40	79	75		
Generator	50	81	78		
Impact Pile Driver	20	101	94		
Paver	50	77	74		
Pickup Truck	40	75	71		
Pneumatic Tools	50	85	82		
Pumps	50	81	78		
Roller	20	80	73		
Tractor	40	84	80		
Vibratory Pile Driver	20	101	94		
Welder/Torch	40	74	70		

Table 2. Typical Construction Equipment Sound Emission Levels

Source: FHWA Roadway Construction Noise Model User's Guide.

Note: ¹ Acoustical use factor is the fraction of time each piece of construction equipment is estimated to be operating at full power (i.e., loudest condition) during a construction operation.

¹ Federal Highway Administration Roadway Construction Noise Model User's Guide. January 2006.

March 14, 2025

5.2 CONSTRUCTION SOUND ASSESSMENT RESULTS

Table 3 shows the results of the construction sound modeling at the nearest receptor to Project construction activities (SR-154). The table shows the expected loudest instantaneous sound level (L_{max}) as well as the average sound level (L_{eq}) due to multiple pieces of equipment operating simultaneously in a solar field. Because pile drivers will only be used during solar panel post installations, results have been presented both with and without pile drivers in use.

Table 3. Estimated Sound Levels at Nearest Receptor Due to Construction (Sunrise to Sunset)

Condition	Distance to Solar Array (ft)	Estimated L _{max} Sound Level (dBA)	Estimated L _{eq} Sound Level (dBA)
With pile driver		96	94
Without pile driver	83	76	74

The estimated sound levels of 74 to 94 dBA Leq during construction is at the nearest sensitive receptor to pile driving and construction sound levels are expected to be lower at other receptors that are further away from construction activities.

6.0 Operational Sound Assessment

6.1 SOUND SOURCES AND ASSESSMENT METHODOLOGY

The Project, as currently proposed, includes 35 inverters within the solar generation arrays and one substation transformer, as shown in Figures 3 and 4. These are the primary operational sound sources associated with the Project. Solar panels produce DC voltage which must be converted to AC voltage through a series of inverters. Solar energy facilities operate by converting solar radiation into electricity, meaning the Project will only produce electricity between sunrise and sunset. After sunset, the site no longer receives solar radiation, and the inverters will shift into stand-by mode. During nighttime hours, the substation transformer will be energized; however, it will produce minimal sound. Thus, operational sound levels generated by the Project will be highest during daytime hours.

The solar arrays associated with the Project include solar modules mounted on a single-axis tracking system. Tracking systems allow the modules, driven by small, 24-volt brushless DC motors, to track the arc of the sun maximizing each panel's potential for solar absorption. Modules will turn no more than five (5) degrees every 15 minutes and operate no more than one (1) minute out of every 15-minute period during daylight hours. The tracking motors are a potential source of intermittent (occasional) mechanical noise.

This assessment assumed a sound power level of 99 dBA for each inverter based on manufacturer data for a Power Electronics HEM series solar inverter. Project substation transformer specifications were not available; however, a representative sound power level for the substation transformer



March 14, 2025

was estimated to be 105 dBA, which corresponds to a NEMA noise rating² of 85 dBA for a 110 MVA transformer using calculation methods in the Edison Electric Institute Electric Power Plant Environmental Noise Guide³. When module tracking motors are running, the analysis assumed that the maximum sound level is 70 dBA at 1 meter (3.28 feet) based on manufacturer data for a NEXTracker Horizon Single Access Tracker.

Sound attenuates between a source and receptor location due to a variety of factors, including but not limited to, distance between source and receptor, atmospheric absorption, ground type, topography, shielding from solid structures, vegetation, and meteorological conditions. Operational sound levels from the proposed Project equipment were estimated using the CadnaA model by Datakustik, which utilizes the ISO 9613-2 standard⁴ algorithms for outdoor sound propagation.

A CadnaA base model was first developed by importing topographic data from the U.S. Geological Survey National Elevation Dataset and aerial imagery. The inverter and substation transformer noise sources were then modeled as point sources within CadnaA based on the current Project layout provided by Wood Duck. Receptor points were added for the identified sensitive receptor locations. Additional conservative assumptions that were used to estimate worst-case daytime operational sound levels included the following:

- All inverter and substation transformer sources operate simultaneously.
- Ground attenuation factor of G=0.5 (on a scale of 0.0 representing hard ground to 1.0 representing porous ground).
- No sound attenuation from vegetation (foliage) to simulate a worst-case condition when leaves have fallen off trees.
- Meteorological conditions are conducive to sound propagation with all receptors located downwind of all noise sources.

6.2 OPERATIONAL SOUND ASSESSMENT RESULTS

Operational sound levels estimated using the CadnaA model for the 266 sensitive receptors identified in the vicinity of the Project area are provided in tabular format in Appendix A. The estimated sound levels represent daytime sound levels from the Project inverters and the substation transformer. The table in Appendix A also shows the distance from each receptor to the nearest inverter, substation transformer, and panel tracking system.

Sound level contours for daytime operation with all Project inverters and the substation transformer operating at full load are displayed in Figure 4. The figure displays the overall expected sound levels in the vicinity of the Project area and illustrates how sound is expected to propagate in the

⁴ ISO 9613-2: 1996. Acoustics – Attenuation of sound during propagation outdoors. Part 2: General method of calculation.



² National Electrical Manufacturers Association (NEMA) Standards Publication TR 1-2013 (R2019). Transformers, Step Voltage Regulators and Reactors.

³ Edison Electric Institute. Electric Power Plant Environmental Noise Guide. Volume 1 2nd Edition.

March 14, 2025

area. Table 4 provides a summary of the expected operational sound levels at receptors within 2,000 feet of the Project boundaries during daytime hours.

Expected Leq Sound Level	Number of Receptors
35 dBA or less	171
35 to 40 dBA	66
40 to 45 dBA	27
Greater than 45 dBA	2

Table 4. Summary of Estimated Daytime Operational Sound Levels at Sensitive Receptors

The results of the operational sound modeling demonstrate that the highest expected daytime sound level at nearby sensitive receptors is in the vicinity of three Project inverters with 46 dBA Leq at receptor SR-126, located approximately 500 feet north from the nearest inverter At the nearest residence to the Project substation (SR-082) the expected daytime sound level is 45 dBA Leq. Nighttime operation will result in lower sound emissions, as power will not be generated and therefore the solar inverters and substation transformer will be operating in stand-by mode. A sound level of 35 dBA is comparable to a quiet suburban nighttime environment and 50 dBA is comparable to outdoor daytime sound levels in rural to quiet urban environments (Figure 2.)

The nearest sensitive receptor to solar arrays with tracking motors (SR-154) is expected to be approximately 83 feet away from the edge of the nearest solar array. The sound level from the tracking system is expected to be less than 42 dBA at 83 feet. During the approximately four minutes per hour that tracker motors are operating, the sound generated by the motors is likely to be masked by existing daytime ambient sound sources.

7.0 Summary

An operational sound analysis was completed for the Project, considering 35 solar inverters and one substation in full operation. The highest daytime sound level expected at a residence due to operation of the Project is estimated to be 46 dBA Leq. The solar facility will generate power during daylight hours only. Sound from the inverters and substation will be minimal during the nighttime hours, due to equipment operating in an energized stand-by mode.

A construction sound analysis was completed considering impact pile driving and other typical construction equipment. Worst-case construction sound levels at the nearest residence are expected to range from 74 to 94 dBA Leq with multiple pieces of equipment operating simultaneously. Construction related activity is expected to occur mainly during daylight hours (7:00 a.m. to 7:00 p.m. or dusk if sunset occurs after 7:00 p.m.) At times, construction activities will be audible to nearby residences or other sensitive receptors; however, not all equipment will be operating at the same time, and activities will be temporary in duration and spread throughout the Project area.



March 14, 2025

FIGURES



March 14, 2025

Figure 1

Vicinity Map





March 14, 2025

Figure 2

Common Sound Levels





Figure 2. Common Sound Levels

March 14, 2025

Figure 3

Noise Sensitive Receptor Locations





March 14, 2025

Figure 4

Operational Sound Modeling Results





March 14, 2025

Appendix A

Receptor Locations (UTM 16 Coordinates) and Operational Sound Model Results



Receptor ID	Sound Level (dBA Leq)	Distance to Inverter (ft)	Distance to Substation (ft)	Distance to Panel (ft)	X, UTM 16 (m)	Y, UTM 16 (m)	Z, UTM 16 (m)
SR-001	33	2,223	14,537	1,131	581,599	4,101,674	218
SR-002	30	2,579	14,298	1,192	581,730	4,101,679	220
SR-003	31	2,587	12,601	480	582,011	4,101,244	224
SR-004	30	3,717	12,682	1,226	582,298	4,101,458	226
SR-005	30	3,676	12,541	1,122	582,330	4,101,427	226
SR-006	29	3,524	12,395	1,015	582,363	4,101,395	223
SR-007	30	3,334	12,186	814	582,384	4,101,333	224
SR-008	30	3,106	11,917	544	582,400	4,101,248	224
SR-009	31	2,744	11,685	875	582,568	4,101,261	226
SR-010	31	2,671	11,640	841	582,612	4,101,269	226
SR-011	30	2,555	11,557	627	582,677	4,101,273	226
SR-012	29	3,034	12,035	759	582,603	4,101,399	223
SR-013	29	3,214	12,183	989	582,522	4,101,408	224
SR-014	28	3,567	12,550	1,020	582,486	4,101,516	217
SR-015	28	3,282	12,302	630	582,614	4,101,495	219
SR-016	27	4,258	13,266	1,157	582,434	4,101,734	221
SR-017	24	4,809	13,770	424	582,822	4,102,067	200
SR-018	24	4,888	13,763	522	582,966	4,102,114	206
SR-019	22	6,037	14,891	1,666	582,928	4,102,462	202
SR-020	21	6,379	15,044	2,143	583,168	4,102,575	206
SR-021	32	2,034	11,069	143	582,876	4,101,202	228
SR-022	35	1,853	10,884	328	582,858	4,101,132	229
SR-023	34	1,591	10,544	449	583,083	4,101,115	228
SR-024	33	1,267	10,184	679	583,135	4,101,017	227
SR-025	34	1,209	10,093	697	583,161	4,100,998	228
SR-026	36	1,128	9,981	706	583,183	4,100,969	230
SR-027	38	1,108	9,913	692	583,210	4,100,957	232
SR-028	38	1,162	9,867	694	583,255	4,100,958	233
SR-029	38	1,138	9,789	635	583,277	4,100,941	233
SR-030	37	991	9,543	408	583,303	4,100,871	234
SR-031	38	1,161	10,152	463	583,073	4,100,983	230
SR-032	40	945	9,896	465	583,125	4,100,919	230
SR-033	40	920	9,704	483	583,220	4,100,893	233
SR-034	41	835	9,544	343	583,248	4,100,851	234
SR-035	32	1,760	9,519	1,083	583,560	4,100,937	234
SR-036	33	1,691	9,261	1,025	583,580	4,100,861	235
SR-037	34	1,787	9,045	1,002	583,634	4,100,807	237
SR-038	35	1,523	8,718	948	583,579	4,100,691	236
SR-039	37	1,361	7,961	791	583,539	4,100,440	234
SR-040	39	1,535	6,925	753	583,530	4,100,104	234

Appendix A Wood Duck Solar Project - Receptor Locations and Operational Sound Model Results

Receptor ID	Sound Level (dBA Leq)	Distance to Inverter (ft)	Distance to Substation (ft)	Distance to Panel (ft)	X, UTM 16 (m)	Y, UTM 16 (m)	Z, UTM 16 (m)
SR-041	37	1,941	6,240	696	583,535	4,099,883	234
SR-042	38	2,053	6,028	624	583,554	4,099,821	235
SR-043	32	2,265	9,239	880	583,758	4,100,892	236
SR-044	31	2,517	9,359	931	583,822	4,100,939	234
SR-045	31	2,971	8,694	311	584,016	4,100,758	233
SR-046	32	3,002	8,495	189	584,031	4,100,698	231
SR-047	32	2,630	8,114	587	584,270	4,100,590	233
SR-048	32	2,669	8,141	667	584,306	4,100,598	232
SR-049	32	2,512	7,947	691	584,376	4,100,536	232
SR-050	29	2,733	8,168	947	584,427	4,100,600	230
SR-051	29	2,740	8,174	1,060	584,471	4,100,598	229
SR-052	32	2,535	7,969	850	584,450	4,100,538	232
SR-053	30	2,426	7,859	753	584,465	4,100,502	231
SR-054	30	2,290	7,718	647	584,489	4,100,457	232
SR-055	28	3,019	8,397	1,466	584,660	4,100,642	229
SR-056	29	2,781	8,176	1,212	584,613	4,100,582	230
SR-057	30	2,465	7,864	919	584,583	4,100,490	231
SR-058	29	2,784	5,519	833	585,235	4,099,519	228
SR-059	33	2,199	3,174	862	585,048	4,098,757	236
SR-060	35	1,772	2,496	861	584,813	4,098,692	232
SR-061	38	1,086	2,870	344	584,716	4,098,884	236
SR-062	41	2,845	1,047	2,006	584,614	4,098,264	229
SR-063	41	2,747	1,127	1,906	584,622	4,098,295	230
SR-064	40	2,632	1,246	1,785	584,637	4,098,334	230
SR-065	39	2,522	1,354	1,672	584,649	4,098,370	230
SR-066	39	2,411	1,441	1,558	584,652	4,098,406	230
SR-067	38	2,473	1,580	1,613	584,713	4,098,403	230
SR-068	38	2,664	1,564	1,804	584,744	4,098,352	230
SR-069	38	2,777	1,457	1,918	584,731	4,098,311	230
SR-070	39	2,876	1,376	2,018	584,721	4,098,277	229.5
SR-071	40	3,361	1,181	2,509	584,704	4,098,121	223.5
SR-072	41	3,420	998	2,578	584,650	4,098,092	225.1
SR-073	41	3,501	988	2,661	584,646	4,098,066	226.7
SR-074	42	3,637	952	2,801	584,627	4,098,022	228.3
SR-075	42	3,739	949	2,906	584,618	4,097,989	228.3
SR-076	42	3,840	882	3,014	584,588	4,097,955	229.5
SR-077	42	3,959	909	3,134	584,586	4,097,919	230.6
SR-078	43	3,220	788	2,394	584,580	4,098,144	223.5
SR-079	44	3,318	740	2,494	584,570	4,098,114	224.6
SR-080	44	3,548	683	2,730	584,548	4,098,042	228.6
SR-081	45	3,771	633	2,955	584,514	4,097,972	230.0
SR-082	45	3,876	597	3,061	584,491	4,097,940	230.6

Appendix A Wood Duck Solar Project - Receptor Locations and Operational Sound Model Results

Receptor ID	Sound Level (dBA Leq)	Distance to Inverter (ft)	Distance to Substation (ft)	Distance to Panel (ft)	X, UTM 16 (m)	Y, UTM 16 (m)	Z, UTM 16 (m)
SR-083	45	4,015	638	3,199	584,480	4,097,898	231.5
SR-084	44	4,124	688	3,308	584,470	4,097,864	233.1
SR-085	43	4,260	779	3,443	584,463	4,097,823	235
SR-086	42	4,390	883	3,573	584,460	4,097,783	236
SR-087	38	4,543	918	3,726	584,345	4,097,738	236
SR-088	39	4,520	892	3,709	584,310	4,097,746	237
SR-089	39	4,488	873	3,684	584,266	4,097,758	238
SR-090	36	4,891	1,275	4,088	584,251	4,097,636	236
SR-091	38	4,530	938	3,736	584,218	4,097,750	238
SR-092	41	4,241	663	3,453	584,204	4,097,840	240
SR-093	41	4,260	691	3,478	584,177	4,097,838	239
SR-094	38	4,481	912	3,699	584,162	4,097,772	237
SR-095	41	4,202	648	3,428	584,150	4,097,860	238
SR-096	39	4,220	692	3,455	584,119	4,097,860	238
SR-097	39	4,221	731	3,465	584,088	4,097,866	238
SR-098	37	4,431	894	3,665	584,106	4,097,798	237
SR-099	37	4,468	975	3,714	584,059	4,097,796	236
SR-100	36	4,491	1,065	3,754	584,006	4,097,802	235
SR-101	37	4,271	946	3,547	583,988	4,097,877	238
SR-102	35	4,531	1,203	3,813	583,942	4,097,809	234
SR-103	35	4,305	1,091	3,601	583,931	4,097,885	237
SR-104	37	1,717	3,968	1,090	583,612	4,099,150	230
SR-105	36	1,842	4,402	1,001	583,520	4,099,248	230
SR-106	35	1,766	4,962	775	583,510	4,099,441	227
SR-107	35	2,233	5,334	1,284	583,354	4,099,480	225
SR-108	35	2,200	5,708	1,402	583,318	4,099,591	227
SR-109	36	2,108	5,818	1,391	583,282	4,099,609	226
SR-110	38	1,720	6,327	976	583,144	4,099,703	228
SR-111	39	1,526	6,706	664	583,012	4,099,750	224
SR-112	40	1,252	7,086	523	582,873	4,099,789	222
SR-113	39	1,161	7,181	411	582,829	4,099,789	219
SR-114	39	1,826	8,688	348	582,455	4,100,071	224
SR-115	39	1,451	9,469	630	582,163	4,100,120	224
SR-116	38	1,614	10,032	360	581,986	4,100,181	225
SR-117	39	1,041	11,238	151	581,572	4,100,264	218
SR-118	36	1,520	11,304	295	581,680	4,100,421	214
SR-119	33	1,988	11,667	630	581,748	4,100,652	209
SR-120	43	686	13,984	491	581,057	4,100,951	200
SR-121	38	1,340	14,628	684	580,796	4,100,947	206
SR-122	45	454	11,895	323	581,363	4,100,322	214
SR-123	39	857	12,861	351	581,055	4,100,400	212
SR-124	39	1,160	13,411	630	580,842	4,100,386	212

Appendix A Wood Duck Solar Project - Receptor Locations and Operational Sound Model Results

Receptor ID	Sound Level (dBA Leq)	Distance to Inverter (ft)	Distance to Substation (ft)	Distance to Panel (ft)	X, UTM 16 (m)	Y, UTM 16 (m)	Z, UTM 16 (m)
SR-125	32	2,242	14,522	1,388	580,522	4,100,517	206
SR-126	46	500	11,323	267	581,377	4,100,043	218
SR-127	42	843	11,832	397	581,093	4,099,875	207
SR-128	31	2,816	11,818	1,246	580,831	4,099,277	210
SR-129	35	2,207	10,562	1,561	581,006	4,098,162	222
SR-130	36	1,760	10,097	1,172	581,148	4,098,161	222
SR-131	36	1,769	10,069	1,021	581,155	4,098,091	220
SR-132	36	1,617	9,872	888	581,215	4,098,106	217
SR-133	41	704	8,994	303	581,486	4,098,197	224
SR-134	42	762	8,881	273	581,518	4,098,140	224
SR-135	35	1,887	12,913	495	580,601	4,096,503	221
SR-136	34	1,505	12,505	371	580,755	4,096,462	223
SR-137	46	430	11,362	243	581,072	4,096,606	228
SR-138	34	1,677	10,559	1,138	581,486	4,096,352	227
SR-139	36	1,345	8,217	728	581,891	4,097,131	229
SR-140	37	1,270	8,175	649	581,888	4,097,175	229
SR-141	35	1,681	7,902	1,061	582,000	4,097,118	229
SR-142	36	1,281	7,989	694	581,920	4,097,254	226
SR-143	37	1,241	7,943	657	581,916	4,097,309	223
SR-144	35	2,123	7,013	1,529	582,184	4,097,403	228
SR-145	35	2,117	6,989	1,498	582,173	4,097,463	228
SR-146	36	1,372	7,355	957	582,013	4,097,667	223
SR-147	45	546	8,147	359	581,741	4,097,995	221
SR-148	38	1,789	6,719	882	582,177	4,097,969	226
SR-149	39	1,722	6,653	634	582,195	4,098,047	224
SR-150	36	2,022	6,469	1,009	582,255	4,097,933	226
SR-151	37	1,862	6,455	725	582,256	4,098,020	224
SR-152	36	2,000	5,498	999	582,550	4,098,142	228
SR-153	36	2,001	5,316	1,122	582,612	4,098,214	229
SR-154	38	1,578	10,656	83	581,773	4,100,228	223
SR-155	38	1,630	10,437	141	581,827	4,100,188	224
SR-156	21	6,859	15,822	2,472	582,644	4,102,668	202
SR-157	19	7,702	16,101	3,631	583,433	4,102,958	206
SR-158	23	5,358	12,978	2,948	583,912	4,102,059	219
SR-159	23	5,459	13,359	2,580	583,772	4,102,162	220
SR-160	24	4,491	11,985	2,888	583,901	4,101,755	207
SR-161	30	2,541	9,875	1,470	583,746	4,101,086	228
SR-162	29	2,858	10,309	1,881	583,759	4,101,222	228
SR-163	27	3,394	10,630	2,195	583,876	4,101,337	222
SR-164	26	4,377	9,812	2,096	584,468	4,101,100	220
SR-165	27	3,947	9,938	1,730	584,206	4,101,146	225
SR-166	30	2,630	7,894	1,367	584,768	4,100,465	227

Appendix A Wood Duck Solar Project - Receptor Locations and Operational Sound Model Results

Receptor ID	Sound Level (dBA Leq)	Distance to Inverter (ft)	Distance to Substation (ft)	Distance to Panel (ft)	X, UTM 16 (m)	Y, UTM 16 (m)	Z, UTM 16 (m)
SR-167	29	2,651	7,876	1,457	584,805	4,100,451	226
SR-168	29	2,687	7,868	1,558	584,842	4,100,439	224
SR-169	28	2,742	7,877	1,668	584,879	4,100,433	224
SR-170	28	2,831	7,871	1,858	584,944	4,100,414	223
SR-171	27	3,441	6,615	1,876	585,420	4,099,797	224
SR-172	28	3,314	6,354	1,626	585,380	4,099,728	224
SR-173	27	3,630	6,827	2,101	585,475	4,099,838	223
SR-174	27	5,054	6,173	3,377	586,017	4,098,955	241
SR-175	25	5,012	5,519	3,523	585,935	4,098,641	237
SR-176	31	4,959	2,142	4,102	584,873	4,097,660	234
SR-177	38	4,571	1,549	3,726	584,713	4,097,747	236
SR-178	31	5,438	2,274	4,591	584,776	4,097,489	234
SR-179	33	4,687	1,896	3,831	584,831	4,097,735	234
SR-180	35	4,389	2,048	3,528	584,931	4,097,860	231
SR-181	34	4,355	1,249	3,672	583,875	4,097,889	235
SR-182	34	4,555	1,344	3,861	583,878	4,097,823	234
SR-183	34	4,404	1,356	3,733	583,840	4,097,888	235
SR-184	34	4,427	1,454	3,770	583,806	4,097,895	235
SR-185	34	4,464	1,536	3,817	583,779	4,097,895	234
SR-186	33	4,650	1,588	3,987	583,790	4,097,828	233
SR-187	33	4,689	1,671	4,035	583,762	4,097,827	232
SR-188	32	4,748	2,058	4,154	583,616	4,097,885	230
SR-189	33	4,688	1,919	4,080	583,662	4,097,880	232
SR-190	33	4,536	1,617	3,894	583,758	4,097,881	234
SR-191	34	4,382	1,628	3,762	583,737	4,097,945	234
SR-192	34	4,272	1,575	3,655	583,748	4,097,977	234
SR-193	34	4,159	1,675	3,566	583,713	4,098,036	237
SR-194	33	4,034	1,885	3,474	583,654	4,098,121	236
SR-195	35	3,783	1,660	3,210	583,731	4,098,160	241
SR-196	32	3,846	2,032	3,318	583,627	4,098,213	234
SR-197	33	3,773	2,077	3,256	583,622	4,098,246	235
SR-198	32	3,316	3,010	2,311	583,414	4,098,514	218
SR-199	32	3,387	2,901	2,398	583,484	4,098,573	217
SR-200	32	3,151	2,893	2,402	583,526	4,098,632	215
SR-201	32	2,907	3,307	2,036	583,471	4,098,766	217
SR-202	34	2,669	3,626	1,666	583,333	4,098,746	226
SR-203	32	2,785	3,380	2,008	583,478	4,098,809	221
SR-204	34	2,520	3,544	1,984	583,499	4,098,901	226
SR-205	33	2,672	4,803	1,724	582,760	4,098,070	230
SR-206	32	2,947	4,396	2,086	582,885	4,098,104	230
SR-207	31	3,258	6,379	2,661	582,509	4,097,127	234
SR-208	33	2,278	6,446	1,898	582,300	4,097,640	223

Appendix A Wood Duck Solar Project - Receptor Locations and Operational Sound Model Results

Receptor ID	Sound Level (dBA Leq)	Distance to Inverter (ft)	Distance to Substation (ft)	Distance to Panel (ft)	X, UTM 16 (m)	Y, UTM 16 (m)	Z, UTM 16 (m)
SR-209	34	2,428	6,280	1,971	582,351	4,097,647	225
SR-210	34	2,576	6,122	1,987	582,399	4,097,651	226
SR-211	34	2,705	5,986	2,011	582,441	4,097,654	227
SR-212	34	2,400	6,214	1,764	582,358	4,097,712	224
SR-213	34	2,865	5,922	2,227	582,475	4,097,596	228
SR-214	35	2,368	6,131	1,308	582,364	4,097,855	225
SR-215	35	2,374	6,116	1,211	582,366	4,097,887	225
SR-216	34	2,457	5,904	1,276	582,430	4,097,890	225
SR-217	35	2,561	5,940	1,381	582,423	4,097,852	227
SR-218	35	2,563	5,958	1,502	582,422	4,097,812	228
SR-219	35	2,370	6,152	1,457	582,363	4,097,808	226
SR-220	36	2,010	6,479	1,143	582,254	4,097,892	226
SR-221	35	2,005	6,494	1,287	582,253	4,097,849	225
SR-222	35	2,022	6,499	1,419	582,256	4,097,808	224
SR-223	34	2,030	6,529	1,572	582,253	4,097,762	223
SR-224	34	2,106	8,707	1,558	581,879	4,096,799	230
SR-225	28	3,013	14,015	1,664	580,349	4,096,245	220
SR-226	30	3,021	14,174	1,487	579,923	4,097,631	215
SR-227	29	3,330	14,121	1,843	579,927	4,097,791	215
SR-228	29	3,408	14,275	1,900	579,881	4,097,773	214
SR-229	28	3,557	14,472	2,035	579,821	4,097,770	214
SR-230	31	2,907	11,777	1,349	580,832	4,099,239	211
SR-231	30	3,128	11,813	1,576	580,801	4,099,176	208
SR-232	30	2,856	16,180	1,865	580,098	4,100,792	205
SR-233	29	3,370	16,910	2,259	579,867	4,100,842	206
SR-234	28	2,526	17,799	1,856	580,590	4,102,130	200
SR-235	27	2,721	18,012	2,028	580,550	4,102,181	200
SR-236	29	2,142	16,782	1,622	580,917	4,102,005	206
SR-237	31	2,139	16,645	1,654	580,963	4,101,989	208
SR-238	25	3,125	18,294	2,452	580,567	4,102,311	194
SR-239	25	3,210	18,209	2,573	580,651	4,102,349	195
SR-240	30	2,202	15,895	1,551	581,218	4,101,902	212
SR-241	31	2,237	15,210	1,620	581,447	4,101,817	216
SR-242	26	3,100	14,385	1,599	581,846	4,101,790	215
SR-243	28	2,963	14,684	1,718	581,755	4,101,839	220
SR-244	31	2,773	14,745	1,639	581,694	4,101,820	222
SR-245	27	3,153	14,971	2,035	581,743	4,101,936	216
SR-246	29	3,183	13,354	1,229	582,061	4,101,554	220
SR-247	32	5,038	2,115	4,414	583,640	4,097,770	231
SR-248	32	5,153	2,208	4,528	583,623	4,097,739	231
SR-249	32	5,279	2,135	4,616	583,698	4,097,659	234
SR-250	34	2,239	6,105	1,060	582,366	4,097,935	223

Appendix A Wood Duck Solar Project - Receptor Locations and Operational Sound Model Results

Receptor ID	Sound Level (dBA Leq)	Distance to Inverter (ft)	Distance to Substation (ft)	Distance to Panel (ft)	X, UTM 16 (m)	Y, UTM 16 (m)	Z, UTM 16 (m)
SR-251	34	2,327	5,914	1,147	582,424	4,097,931	223
SR-252	33	3,306	2,347	2,733	583,611	4,098,455	228
SR-253	33	4,298	1,863	3,718	583,656	4,098,022	236
SR-254	33	4,406	1,866	3,818	583,658	4,097,982	234
SR-255	28	4,538	4,565	3,159	585,691	4,098,444	236
SR-256	28	4,760	4,925	3,370	585,792	4,098,491	237
SR-257	27	4,738	5,197	3,297	585,839	4,098,619	238
SR-258	23	5,435	13,272	2,666	583,806	4,102,139	222
SR-259	29	2,136	16,926	1,581	580,863	4,102,015	205
SR-260	28	2,327	17,372	1,709	580,734	4,102,084	202
SR-261	27	2,421	17,607	1,781	580,653	4,102,107	200
SR-262	26	2,887	18,110	2,210	580,568	4,102,237	198
SR-263	28	3,019	18,434	2,264	580,421	4,102,237	202
SR-264	26	3,050	18,539	2,267	580,356	4,102,220	199
SR-265	30	3,308	11,840	1,762	580,777	4,099,125	206
SR-266	30	3,454	11,824	1,919	580,767	4,099,075	206

Appendix A Wood Duck Solar Project - Receptor Locations and Operational Sound Model Results