### BEFORE THE OHIO POWER SITING BOARD

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In the Matter of the Application of Birch Solar 1, LLC for a Certificate of Environmental Compatibility and Public Need to Construct a Solar-Powered Electric Generation Facility in Allen and Auglaize Counties, Ohio.

Case No. 20-1605-EL-BGN

### **DIRECT TESTIMONY OF**

Andrew R. Lines, MAI Principal Valuation Advisory Services Group CohnReznick LLP

> on behalf of Birch Solar 1, LLC

> > May 4, 2022

<u>/s/ Christine M.T. Pirik</u> Christine M.T. Pirik (0029759) Matthew C. McDonnell (0090164) Jonathan R. Secrest (0075445) David A. Lockshaw, Jr. (0082403) Dickinson Wright PLLC 180 East Broad Street, Suite 3400 Columbus, Ohio 43215 (614) 591-5461 cpirik@dickinsonwright.com mmcdonnell@dickinsonwright.com jsecrest@dickinsonwright.com

### 1 1. Please state your name, current title, and business address.

- My name is Andrew R. Lines MAI. I am a Principal of the Valuation Advisory Services Group at CohnReznick LLP ("CohnReznick"). My business address is 200 South Wacker Drive, Suite 2600, Chicago, Illinois 60606.
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### 2. Please summarize your educational background and professional experience.

7 I have a B.F.A. degree from Syracuse University. I am a designated Member of the 8 Appraisal Institute ("MAI"), a recognized designation by courts of law, government 9 agencies, as well as financial institutions, with over 19 years of real estate appraisal 10 experience. I am a Certified General Real Estate Appraiser with active licenses in the 11 following states: Florida, Georgia, Illinois, Indiana, New Jersey, New York, Ohio, 12 Pennsylvania and Kentucky, as well as the District of Columbia. I have performed 13 valuations on a wide variety of real property types including single- and multi-unit 14 residential (including Low Income Housing Tax Credit properties), student housing, office, 15 retail, industrial, mixed-use and special purpose properties including landfills, waste 16 transfer stations, marinas, hospitals, universities, telecommunications facilities, data 17 centers, self-storage facilities, racetracks, continuing care retirement communities, and 18 railroad corridors. I am also experienced in the valuation of leasehold, leased fee, and 19 partial interests, as well as purchase price allocations (Generally Accepted Accounting 20 Principles, International Financial Reporting Standards, and Internal Revenue Code 1060) 21 for financial reporting. I have also completed valuations nationwide for a variety of 22 assignments including mortgage financing, litigation, tax appeals, estate gifts, asset management, workouts, and restructuring, as well as valuations for financial reporting 23 24 including purchase price allocations (ASC 805), impairment studies, and appraisals for 25 investment company guidelines. I have completed valuation impact studies on landfills, 26 big box retail developments, electric power transmission lines, environmental stigma, view 27 amenities, as well as solar farms. I have qualified as an expert witness in both Federal and 28 State courts, providing testimony for cases in the states of Virginia, Illinois, and Maryland, 29 as well as the District of Columbia. I have been previously accepted as an expert at zoning 30 hearings in the states of Illinois, Indiana, Michigan, Colorado, Hawaii, Kentucky, New 31 York, and Pennsylvania. I have also provided testimony to the Ohio Power Siting Board ("Board") for the Kingwood Solar Project proceeding (Case No. 21-117-EL-BGN), Big
Plain Solar proceeding (Case No. 19-1823-EL-BGN), the Yellowbud Solar proceeding
(Case No. 20-972-EL-BGN), the Ross County Solar proceeding (Case No. 20-1380-ELBGN), the Sycamore Creek Solar proceeding (Case No. 20-1762-EL-BGN), the AEUG
Union Solar proceeding (Case No. 20-1405-EL-BGN), the Harvey Solar proceeding (Case
No. 21-164-EL-BGN, and the Border Basin Solar proceeding (Case No. 21-277-EL-BGN).
A copy of my resume is attached to my testimony as Attachment ARL-1.

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### 9 3. On whose behalf are you offering testimony?

10 I am testifying on behalf of Birch Solar 1, LLC ("Applicant" or "Birch Solar"), which is 11 seeking to develop the proposed Birch Solar facility ("Project") in Allen and Auglaize 12 Counties, Ohio pursuant to its application filed in Case No. 20-1605-EL-BGN on February 12 and 17, 2021, as supplemented,<sup>1</sup> and further supplemented by responses to data requests 13 14 that were received from the Board's Staff and filed in the docket ("Application"). My 15 testimony, together with the other witnesses for Birch Solar testifying in this case, supports 16 the Board's approval of Birch Solar's Application for a Certificate of Environmental 17 Compatibility and Public Need ("Certificate") to construct the Project.

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### 4. What is the purpose of your testimony?

The purpose of my testimony is to provide information regarding property valuation as it relates to the Project. My analysis is contained in my Real Estate Adjacent Property Value Impact Report, which is attached to my testimony as Attachment ARL-2, and my Real Estate Adjacent Property Value Impact Report Site-Specific Analysis Addendum, which is attached to my testimony as Attachment ARL-3.

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### 26 5. Please describe the history of your involvement with the Birch Solar Project?

I have reviewed and am familiar with the Application filed by the Applicant in this case. I
have also visited and am familiar with the area in which the Project is proposed to be
located.

<sup>&</sup>lt;sup>1</sup> The Application was initially filed on February 12 and 17, 2021, and subsequently supplemented on: March 25, 2021; March 31, 2021; April 5, 2021; October 5, 2021; February 9, 2022; February 17, 2022; and May 4, 2022.

# Are you generally familiar with the impact of commercial-scale solar projects on property values in the area surrounding a solar project.

3 Yes. I have been involved in studies evaluating the potential impact of utility-scale (larger 4 than 5 megawatt ["MW"]) solar projects on surrounding properties in the states of Indiana, 5 Illinois, Michigan, Minnesota, North Carolina, New York, Georgia, Florida, Missouri, and 6 Virginia, including one of the largest operational facilities being the North Star Solar plant 7 in Minnesota, consisting of a 100 MW facility located on over 1,000 acres. Additionally, 8 I have been involved in over one dozen studies evaluating the potential impact of 9 community-sized solar farms (less than 5 MW) in the states of Illinois, Indiana, Colorado, 10 Hawaii, New York, Florida, Pennsylvania, and Missouri. For both sized projects, I have 11 provided expert testimony at local zoning and county board hearings. I have also provided 12 expert testimony to the Board for the Kingwood Solar Project proceeding (Case No. 21-13 117-EL-BGN), Big Plain Solar proceeding (Case No. 19-1823-EL-BGN), the Yellowbud 14 Solar proceeding (Case No. 20-972-EL-BGN), the Ross County Solar proceeding (Case 15 No. 20-1380-EL-BGN), the Sycamore Creek Solar proceeding (Case No. 20-1762-EL-16 BGN), the AEUG Union Solar proceeding (Case No. 20-1405-EL-BGN), the Harvey Solar 17 proceeding (Case No. 21-164-EL-BGN), and the Border Basin Solar proceeding (Case No. 18 21-277-EL-BGN) concerning the impact of those solar projects on property values in the 19 areas surrounding the projects.

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### 21 7. Can you explain how the valuation study on the Project was conducted?

22 Yes. The purpose of the study was to determine whether existing solar energy uses have 23 had any measurable impact on the value of adjacent properties. As further described in 24 Attachment ARL- 2 established solar farms are included in our study that are comparable 25 to the Birch Solar Project. Properties adjacent to existing and established solar energy 26 plants were researched and analyzed - focusing on rural and suburban areas with 27 neighboring residential homes that are most comparable to the areas and adjacent uses of 28 the proposed solar facilities. Those sales located physically contiguous to the solar farms, 29 or the Target Group, are then compared to similar properties that are removed from any 30 solar facility influence, referred to as the Control Group. This comparison was made in 31 order to determine if proximity to solar energy uses results in any consistent and

measurable impact on property values. As a part of this study, we examined utility-scale 1 2 solar farms in the Midwest, Southeast, and East as well as the property value trends of the 3 adjacent land uses, including agricultural, single family, and residential properties. The 4 basic premise of this comparative analysis is that, if there is any impact on the value of 5 adjacent properties by virtue of their proximity to a solar energy use, it would be reflected 6 by such factors as the range of sale prices, differences in unit sale prices, conditions of sale, 7 and overall marketability. When comparing these factors for properties near an existing 8 solar energy use to properties locationally removed from the solar energy use, it would be 9 expected that some emerging and consistent pattern of substantial difference in these 10 comparative elements would appear - if, in fact, there was an effect. The paired sales 11 analysis is an effective method of determining if there is a measurable and consistent 12 detrimental impact on surrounding properties and has been recognized as so by Randall 13 Bell, PhD, MAI, author of the text Real Estate Damages, Third Edition, published by the 14 Appraisal Institute in 2016. As an approved method, this technique can be utilized to 15 extract the effect of a single characteristic on value, such as proximity to an existing solar 16 energy use. By definition, paired data analysis is "a quantitative technique used to identify 17 and measure adjustments to the sale prices or rents of comparable properties; to apply this technique, sales or rental data on nearly identical properties is analyzed to isolate a single 18 characteristic's effect on value or rent."<sup>2</sup> The difference in sale price is considered to be 19 20 the impact of the proximity to the solar farm. For each existing solar energy use studied, 21 we have identified Test Area Sales (sales adjacent to existing solar energy uses that 22 occurred after announcement and subsequent development of the solar farm) and have 23 compared those to Control Area Sales (sales of comparable properties that are removed 24 from the influence of a solar energy use) that occurred within a reasonable time frame of 25 the Test Area Sales, adjusted to a common date utilizing a Trend Analysis.

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Ownership and sales history for each adjoining property to an existing solar farm is maintained within our workfile through the effective date of the study. Adjoining properties with no sales data or that sold prior to the announcement of the solar farm were

<sup>&</sup>lt;sup>2</sup> The Appraisal of Real Estate 14th Edition. Chicago, IL: Appraisal Institute, 2013.

excluded from further analysis. Adjoining properties that sold in a non-arm's length 1 2 transaction (such as a transaction between related parties, bank-owned transaction, or 3 between adjacent owners) were excluded from analysis as these are not considered to be reflective of market price levels. The adjoining properties that remained after exclusions 4 5 were considered for a paired sale analysis (Test Area Sales). We have found Control Area 6 Sales data through the local Multiple Listing Service ("MLS") and other real estate broker 7 databases and verified these sales through county records, conversations with brokers, the 8 individual county's Geographic Information System ("GIS") services, and the County 9 Auditor's office. It is important to note that these Control Area Sales are not adjoining to 10 any solar farm, nor do they have a view of a solar farm from the property. Therefore, 11 neither the announcement nor the completion of the solar farm use could have impacted 12 the sales price of these properties. To make direct comparisons, the sale prices of the 13 Control Area Sales were adjusted for market conditions to a common date. In this analysis, 14 the common date is the date (or median sale date) of the Test Area Sales. After adjustment, 15 any measurable difference between the sale prices would be indicative of a possible price 16 impact of the solar farm, if any.

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In addition to our research and analysis of existing solar energy facilities, we have reviewed property value trends of the adjacent land uses, including agricultural, single-family, and residential properties; reviewed published studies, and held discussions with market participants (real estate assessors and brokers).

22

### 23 8. Please summarize the findings of the Property Value Impact Report.

Based on my review of other academic studies noted within my report, as well as interviews with assessors and market participants familiar with sales of property adjacent to solar farms, and the conclusions of the ten solar farm studies CohnReznick conducted and summarized within the report, I conclude that there is no evidence that solar farms are negatively impacting adjacent real estate property values. Given this conclusion, and my review of elements of the Application of Birch Solar, I do not expect there to be any negative impact to the real estate surrounding the Applicant's proposed Project.

### 1 9. Does this conclude your testimony?

Yes. However, I reserve the right to update my testimony to respond to any further
testimony, reports, and/or evidence submitted in this case.

### **CERTIFICATE OF SERVICE**

The Ohio Power Siting Board's e-filing system will electronically serve notice of the filing of this document on the parties referenced in the service list of the docket card who have electronically subscribed to these cases. In addition, the undersigned certifies that a copy of the foregoing document is also being served upon the persons below this 4<sup>th</sup> day of May 2022.

<u>/s/ Christine M.T. Pirik</u> Christine M.T. Pirik (0029759)

Counsel:

jodi.bair@OhioAGO.gov Kyle.Kern@OhioAGO.gov epierce@auglaizecounty.org RDove@keglerbrown.com EChristensen@bdlaw.com jlandfried@bdlaw.com HJacobs@bdlaw.com JReagan@bdlaw.com amilam@ofbf.org cendsley@ofbf.org clay@cbalyeat.com lcurtis@ofbf.org jvankley@vankleywalker.com

Administrative Law Judges via email:

Michael.williams@puco.ohio.gov Jesse.Davis@puco.ohio.gov

4863-1392-1310 v1 [92234-1]

Birch Solar 1, LLC Case No. 20-1605-EL-BGN

## Attachment ARL-1 Andrew R. Lines Resume







## Andrew R. Lines, MAI Principal – Real Estate Valuation, Valuation Advisory Services

Chicago Office 200 S. Wacker Drive, Suite 2600 Chicago, IL 60606 312-508-5892 andrew.lines@cohnreznick.com www.cohnreznick.com Corporate Headquarters 1301 6th Ave Seventh Floor New York, NY 10019 (212) 297-0400

Andrew R. Lines is a principal in CohnReznick's Valuation Advisory Services group where he specializes in Real Estate, Affordable Housing, Cannabis and Renewable Energy. Andrew leads a group of appraisers across the country performing valuations on a wide variety of real estate property types including residential, commercial, industrial, hospitality and special purpose properties: landfills, waste transfer stations, marinas, hospitals, universities, self-storage facilities, race tracks, CCRCs, and railroad corridors. Affordable Housing experience includes Market Studies, Rent Compatibility Studies and Feasibility Analysis for LIHTC and mixed-income developments. Cannabis assignments have covered cultivation, processing and dispensaries in 15 states, including due diligence for mergers and acquisitions of multi-state operational and early stage companies. Renewable Energy assignments have included preparation of impact studies and testimony at local zoning hearings in 10 states.

He is experienced in the valuation of leasehold, leased fee and partial interest and performs appraisals for all purposes including financial reporting (GAAP, IFRS, IRC), litigation (including Eminent Domain), and gift/estate planning. Andrew is a State Certified General Real Estate Appraiser in the states of Illinois, Indiana, Maryland, Georgia, Florida, Ohio, New York, New Jersey, Arizona, Kentucky and the District of Columbia.

Before joining CohnReznick, Andrew was with Integra Realty Resources-Chicago Metro, starting as analyst support in 2002 and leaving the firm as a director in late 2011. His real estate experience also includes administration for the residential multifamily REIT Equity Residential Properties Trust (ERP), in the transaction department, where he performed due diligences associated with the sale and acquisition of multi-family properties and manufactured home communities.

### **Education**

- Syracuse University: Bachelor of Fine Arts
- MAI Designation (Member of the Appraisal Institute)

### Professional Affiliations

- Chicago Chapter of the Appraisal Institute
  - Alternate Regional Representative (2016 2018)
  - MAI Candidate Advisor (2014 2019)
  - International Real Estate Management (IREM)
- National Council of Real Estate Investment Fiduciaries (NCREIF)
- National Council of Housing Market Analysts (NCHMA)





### Community Involvement

- Syracuse University Regional Council Active Member
- Syracuse University Alumni Association of Chicago, Past Board member
- Chicago Friends School Treasurer & Active Board Member

### Court Cases - Expert Witness Testimony

- IDOT vs. Wegeilnik, Elk Grove Village, Cook County, IL Circuit Court Trial Date: July 2013
- IDOT vs. BMO Harris Bank, Homer Glen, Will County, IL Circuit Court Trial Date: July 2014
- IDOT vs. Itasca Bank & Trust #10237, Itasca, DuPage County, IL Circuit Court Trial Date: November 2017
- Multi-Housing Tax Credit Partners XXX v. Alexander Dairy Associates, LLC, Federal Court Richmond, VA Trial Date: April 2021

### Court Cases – Depositions/Mediation Meetings/Filings

- IDOT vs. BMO Harris Bank, Machesny Park, Winnebago County, IL October 2015
- IRS vs. Phoenix Bond & Indemnity, Cook County, IL December 2016
- SDOT vs. Garrison Forest Plaza (Utility Pipeline Case), Owings Mills, MD July 2016
- CTA vs. Thomas Investors, Chicago, Cook County, IL May 2017
- IDOT vs. Itasca Bank & Trust #10237, DuPage County, IL July 2017
- IRS vs. the Estate of Tamir Sapir, New York, NY July 2018
- District of Columbia vs. VEDEM, LLC, District of Columbia January 2020
- Multi-Housing Tax Credit Partners XXX v. Alexander Dairy Associates, LLC, Federal Court Richmond, VA Deposition Date: February 2021

### Zoning Hearings - List of Counties Accepted as Expert

- Illinois Cook, Grundy, McHenry, Ogle, Lee, Champaign, Kankakee, Livingston, Peoria, DeKalb, Boone
- Indiana Jasper, Clinton
- Michigan Menominee, Cheboygan, Eaton
- Ohio Ohio Power Siting Board (Columbus)
- New York Onondaga
- Colorado Logan
- Pennsylvania Adams
- Hawaii Maui
- Kentucky Fleming
- Wisconsin Sheboygan

### Presentations/Panels

- "Planning for Year 15" NCHMA Fall 2020 Virtual Summit December 2020
- "Public vs. Private Cannabis REIT Opportunities" NCIA Cannabis Business Cyber Summit November 2020
- "Valuation and Forecasting Strategies During a COVID Crises" CRE Finance Council- July 2020
- "Cannabis and Its Impact on Associated Real Estate" Sacramento-Sierra Chapter 2019 Conference; Lake Tahoe, CA - October 2019
- "Cannabis & Real Estate The Ripple Effects of Legalization & Regulation" National Appraisal Institute Conference; Denver, CO - July 2019
- "How Deals Are Getting Done: Capital Markets and Multifamily Finance" Bisnow Multifamily Annual Conference Midwest; Chicago, IL - October 2018
- "Valuations/Financial Reporting" IMN CFO (west) Private Equity Conference; Carlsbad, CA May 2015
- "Fair Value and ASC 805", Masters of Accounting Seminar, Georgetown University October 2013
- "Fair Value and ASC 805", Internal CohnReznick Audit Training, Los Angeles, CA November 2014
- "Fair Value and ASC 805", Internal CohnReznick Audit Training, Bethesda, MD September 2014



### Valuation Impact Studies

- Landfills
- Big Box Retail Developments
- Electric Power Transmission Lines
- Solar Farms
- Wind Farms
- Environmental Stigma
- View Amenities

### Appraisal Institute Classes Completed

- 15-Hour National USPAP (2005); 7-Hour National USPAP (2009; 2011; 2013; 2014; 2016; 2018; 2020)
- Basic Appraisal Principles (2005)
- Basic Appraisal Procedures (2005)
- Basic Income Capitalization (2006)
- Eminent Domain and Condemnation (2006)
- General Applications (2007)
- Residential Sales Comparison and Income Approaches (2007)
- Advanced Income Capitalization (2008)
- Capital Market Conditions and its Impact on Real Estate (2008)
- General Appraisal Market Analysis and Highest and Best Use (2008)
- Associated Guidance Leadership Program (2008)
- Online Supervising Appraisal Trainees (2008)
- Report Writing and Valuation Analysis (2009)
- Advanced Sales Comparison & Cost Approaches (2009)
- Advanced Applications (2009)
- Business Practices & Ethics (2009)
- Appraisal Curriculum Overview (2-day general) (2011)
- Analyzing Distressed Real Estate (2011)
- General Demonstration Report Capstone Program (2012)
- General Demonstration Report Writing (2012)
- Candidate for Designation Program (2013)
- Appraising the Appraisal: Appraisal Review General (2013)
- Advanced Internet Search Strategies (2013)
- FHA and The Appraisal Process (2013)
- Legislative Session (2013)
- Candidate for Designation Program- Advisor (2013)
- 2014 Illinois Supervisor/Trainee Seminar (2014)
- Illinois Appraisers Seminar (2014)
- Data Verification Methods (2015)
- The Discounted Cash Flow Model: Concepts, Issues and Apps. (2015)
- Appraisal Convenience Stores (2016)
- Rates and Ratios: Making Sense of GIMs, OARs, and DCF (2016)
- Uniform Appraisal Standards for Federal Land Acquisitions: Practical Applications (2017)
- Review Case Studies General (2017)
- Residential & Commercial Valuation of Solar (2018)
- Supervisory Appraiser/Trainee Appraiser Course (2018)
- Review Theory General (2020)



### **Clientele Served**

- FDIC
- Amtrak, Metra
- Churchill Downs
- BMO Harris
- Commonwealth Edison/Exelon
- Water Reclamation District of Greater Chicago
- DePaul University
- Hartz Mountain, Inc.
- Paramount Properties
- American Healthcare Investors, Inc.
- Ventas/Lillibridge
- Advocate Healthcare
- CBS Radio/Outfront Media
- Righeimer Martin & Cinquino
- Ross & Hardies
- Mayfair Development Group
- First Washington Realty
- DuPage County Forest Preserve
- NIPSCO
- Related Companies
- Preferred Apartment Communities
- Lowe Enterprises
- Carl M. Freeman Companies
- Cortland Partners
- Tierpoint
- 365 Data Centers
- PNC Bank
- Innovative Industrial Properties REIT

### Notable Assignments Completed

- Willis Tower
- McCormick Place Expansion Projects
- The Arlington Park Race Track Complex
- Carson Pirie Scott State Street Chicago
- The Chicago Board of Options Exchange
- Hartz Mountain Portfolio (Hotels and Distribution Centers)
- DePaul University's Lincoln Park Campus
- Ritz-Carlton Hotels in Florida and California
- Morris Airport Expansion Project
- The Sedgebrook CCRC (Erickson)
- Drake Hotel, Chicago
- Estrella Mountain Ranch Master Planned Community
- Westphalia Master Planned Community
- 11 Madison Avenue
- Trump Tower (NYC) Penthouse Condominium
- Icon Tower Las Olas
- Former Kraft Corporate Headquarters (Northbrook, IL)

- The John Buck Company
- ADP
- Foulger-Pratt
- Chevy Chase Land Company
- BF Saul & Co.
- Quadrum Global
- Walton Development USA
- Skanska USA
- Magnetar Capital
- USAA
- Burroughs and Chapin
- GTIS Partners
- Toll Brothers
- The Pal Group (Palumbo)
- Urban Development Group
- Neal and Leroy
- The Village of LaGrange
- The Village of Lake Zurich
- The City of Des Plaines
- The City of Barrington
- The City of Chicago
- Pathway Senior Living
- The Gencom Group
- SL Industries
- Moduslink Global
- Empire Petroleum
- Other developers, attorneys, banks, individuals, et al.



- United Technologies Corporation Headquarters (Farmington, CT)
- United Technologies Windsor Locks Manufacturing Campus (Windsor Locks, CT)
- ComEd/Exelon Corporate Headquarters (Oakbrook, IL)
- Rochelle Community Hospital
- Idaho Waste Systems Landfill
- DeWitt County Clinton Landfill
- Rochelle Landfill
- Silver Spring Metro Center
- Rockville Metro Center
- Park Potomac Buildings D, E & G
- Mid-Town Athletic Club (Chicago)
- Wilmette Harbor Marina
- Racine County Marina
- Potomac Yards and Waterfront Station
- Port Covington Sangamore Development Land

Birch Solar 1, LLC Case No. 20-1605-EL-BGN

### Attachment ARL- 2

Real Estate Adjacent Property Value Impact Report – Academic and Peer Authored Property Value Analysis of Existing Solar Facilities, and Market Participant and Assessor Interviews

**CohnReznick LLP** 

May 3, 2022



www.cohnreznick.com



## REAL ESTATE ADJACENT PROPERTY VALUE IMPACT REPORT:

Academic and Peer Authored Property Value Impact Studies, Research and Analysis of Existing Solar Facilities, and Market Participant and Assessor Interviews

**Prepared For:** Ms. Jacqui Kitchen Senior Manager, Development Lightsource, BP

Submitted By:

CohnReznick LLP Valuation Advisory Services 200 S. Wacker Drive, Suite 2600 Chicago, Illinois 60606 (312) 508-5900

Patricia L. McGarr, MAI, CRE, FRICS Andrew R. Lines, MAI Erin C. Bowen, MAI

May 3, 2022

### LETTER OF TRANSMITTAL

May 3, 2022

Ms. Jacqui Kitchen Senior Manager, Development Lightsource, BP

SUBJECT: Property Value Impact Report An Analysis of Existing Solar Farms

To Whom it May Concern:

CohnReznick is pleased to submit the accompanying property values impact consulting report for proposed solar energy uses in Ohio. Per the client's request, CohnReznick researched property transactions adjacent to existing solar farms, researched and analyzed articles and other published studies, and interviewed real estate professionals and Township/County Assessors active in the market where solar farms are located, to gain an understanding of actual market transactions in the presence of solar energy uses.

The purpose of this consulting assignment is to determine whether proximity to a renewable energy use (solar farm) has an impact adjacent property values. The intended use of our opinions and conclusions is to assist the client in addressing local concerns and to provide information that local bodies are required to consider in their evaluation of solar project use applications. We have not been asked to value any specific property, and we have not done so.

The client and intended user for the assignment is Birch Solar I, LLC. Additional intended users of our findings include LightsourceBP, Christine M. T. Pirik, Esquire of DickinsonWright, and all relevant permitting authorities for Birch Solar I, LLC's proposed solar project in Ohio. The report may be used only for the aforementioned purpose and may not be distributed without the written consent of CohnReznick LLP ("CohnReznick").

This consulting assignment is intended to conform to the Uniform Standards of Professional Appraisal Practice (USPAP), the Code of Professional Ethics and Standards of Professional Appraisal Practice of the Appraisal Institute, as well as applicable state appraisal regulations.

Based on the analysis in the accompanying report, and subject to the definitions, assumptions, and limiting conditions expressed in the report, our findings are:



I. Academic Studies (pages 21-23): CohnReznick reviewed and analyzed published academic studies that specifically analyzed the impact of solar facilities on nearby property values. These studies include multiple regression analyses of hundreds and thousands of sales transactions, and opinion surveys, for both residential homes and farmland properties in rural communities, which concluded existing solar facilities have had no negative impact on adjacent property values.

Peer Authored Studies: CohnReznick also reviewed studies prepared by other real estate valuation experts that specifically analyzed the impact of solar facilities on nearby property values. These studies found little to no measurable or consistent difference in value between the Test Area Sales and the Control Area Sales attributed to the proximity to existing solar farms and noted that solar energy uses are generally considered a compatible use.

II. CohnReznick Studies (*pages 24-111*): Further, CohnReznick has performed 26 studies in over 15 states, of both residential and agricultural properties, in which we have determined that the existing solar facilities have not caused any consistent and measurable negative impact on property values.

For this Project, we have included 10 of these studies which are most similar to the subject in terms of general location and size, summarized as follows:

CohnReznick - Existing Solar Farms Studied						
#	Solar Farm	County	State	MW AC	Acreage	
1	North Star Solar	Chisago	MN	100.00	±1,000	
2	Dominion Indy Solar III	Marion	IN	8.60	129.04	
3	Dougherty Solar	Dougherty	GA	120.00	1,280.93	
4	Miami-Dade Solar Energy Center	Miami-Dade	FL	74.50	465.61	
5	Barefoot Bay Solar Energy Center	Brevard	FL	74.50	504.75	
6	Innovative Solar 42	Bladen & Cumberland	NC	71.00	413.99	
7	Rutherford Farm	Rutherford	NC	61.00	488.84	
8	Elm City Solar	Wilson	NC	40.00	354.00	
9	Woodland Solar	Isle of Wight	VA	19.00	211.12	
10	DTE Lapeer Solar	LaPeer	MI	48.28	365.68	

It is noted that proximity to the solar farms has not deterred sales of nearby agricultural land and residential single-family homes, nor has it deterred the development of new single-family homes on adjacent land.

This report also includes four "Before and After" analyses, in which sales that occurred prior to the announcement and construction of the solar farm project were compared with sales that occurred after completion of the solar farm project, for both adjoining and non-adjoining properties. No measurable impact on property values was demonstrated.



III. Market Participant Interviews (*pages 112-114*): Our conclusions also consider interviews with over 45 County and Township Assessors, who have at least one solar farm in their jurisdiction, and in which they have determined that solar farms have not negatively affected adjacent property values.

With regards to the Project, we specifically interviewed Auditors in Ohio:

- Lisa Ruhlen, Real Estate Clerk in the Hardin County, Ohio Auditor's office reported that as of first quarter 2022, <u>there have been no complaints or petitions to lower assessed values on</u> <u>homes near the Hardin Solar farm</u>.
- Bill Nichols, Chief Appraiser with the Trumbull County Auditor in Ohio, stated that he has seen <u>no effect on property values in properties near a solar farm</u> and no one has come in to complain to the Auditor's office about an impact on their property value.
- Beth Fritz, the Valuation Specialist in the Wood County, Ohio Auditor's office <u>has seen no</u> <u>effect or impact on residential, commercial or agricultural property values on any properties</u> <u>with proximity to a solar farm</u>.
- Jarra Underwood, Wayne County Auditor in Ohio reported that she <u>has seen no impact on</u> property values due to their location near a solar farm.

To give us additional insight as to how the market evaluates farmland and single-family homes with views of solar farms, we interviewed numerous real estate brokers and other market participants who were party to actual sales of property adjacent to solar; these professionals also confirmed that solar farms did not diminish property values or marketability in the areas they conducted their business.

IV. Solar Farm Factors on Harmony of Use (pages 115-120): In the course of our research and studies, we have recorded information regarding the compatibility of these existing solar facilities and their adjoining uses, including the continuing development of land adjoining these facilities.

### CONCLUSION

Considering all of the preceding, the data indicates that solar facilities do not have a negative impact on adjacent property values.



If you have any questions or comments, please contact the undersigned. Thank you for the opportunity to be of service.

Very truly yours,

### CohnReznick LLP

WILL

Andrew R. Lines, MAI Principal **Certified General Real Estate Appraiser** Ohio License No. 2019001053 Expires 3/25/2022 Illinois License No. 553.001841 Expires 9/30/2023 Indiana License No. CG41500037 Expires 6/30/2022

Erin C. Bowen, MAI Senior Manager **Certified General Real Estate Appraiser** Arizona License No. 32052 Expires 12/31/2022

Patricia SM Gars

Patricia L. McGarr, MAI, CRE, FRICS National Director - Valuation Advisory Services **Certified General Real Estate Appraiser** Indiana License No. #CG49600131 Expires 6/30/2022 Michigan License No. 1201072979 Expires 7/31/2022 Illinois License No. #553.000621 Expires 9/30/2023



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### **SCOPE OF WORK**

### **CLIENT AND INTENDED USERS**

The client and intended user of this report is Birch Solar I, LLC, Lightsource BP and Christine M. T. Pirik, Esquire; other intended users may include the client's legal and site development professionals. Additional intended users of our findings include all relevant permitting authorities for Birch Solar I, LLC and Lightsource BP's proposed solar projects in Ohio.

### **INTENDED USE**

The intended use of our findings and conclusions is to address certain criteria considered by zoning and siting boards in their process of reviewing applications for proposed solar energy uses. We have not been asked to value any specific property, and we have not done so. The report may be used only for the aforementioned purpose and may not be distributed without the written consent of CohnReznick LLP ("CohnReznick").

### PURPOSE

The purpose of this consulting assignment is to determine whether proximity to the proposed solar facility will result in an impact on adjacent property values.

### **DEFINITION OF VALUE**

This report utilizes Market Value as the appropriate premise of value. Market value is defined as:

"The most probable price which a property should bring in a competitive and open market under all conditions requisite to a fair sale, the buyer and seller each acting prudently and knowledgeably, and assuming the price is not affected by undue stimulus. Implicit in this definition are the consummation of a sale as of a specified date and the passing of title from seller to buyer under conditions whereby:

- 1. Buyer and seller are typically motivated;
- 2. Both parties are well informed or well advised, and acting in what they consider their own best interests;
- 3. A reasonable time is allowed for exposure in the open market.
- 4. Payment is made in terms of cash in U.S. dollars or in terms of financial arrangements comparable thereto; and
- 5. The price represents the normal consideration for the property sold unaffected by special or creative financing or sales concessions granted by anyone associated with the sale."<sup>1</sup>

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<sup>&</sup>lt;sup>1</sup> Code of Federal Regulations, Title 12, Chapter I, Part 34.42[h]

### EFFECTIVE DATE & DATE OF REPORT

April 5, 2022 (Paired sale analyses contained within each study are periodically updated.)

### PRIOR SERVICES

USPAP requires appraisers to disclose to the client any services they have provided in connection with the subject property in the prior three years, including valuation, consulting, property management, brokerage, or any other services.

This report is a compilation of the existing solar farms which we have studied over the past year and is not evaluating a specific subject site. In this instance, there is no "subject property" to disclose.

### INSPECTION

Patricia L. McGarr, MAI, CRE, FRICS, Andrew R. Lines, MAI, and Erin C. Bowen, MAI have viewed the exterior of all comparable data referenced in this report in person, via photographs, or aerial imagery.



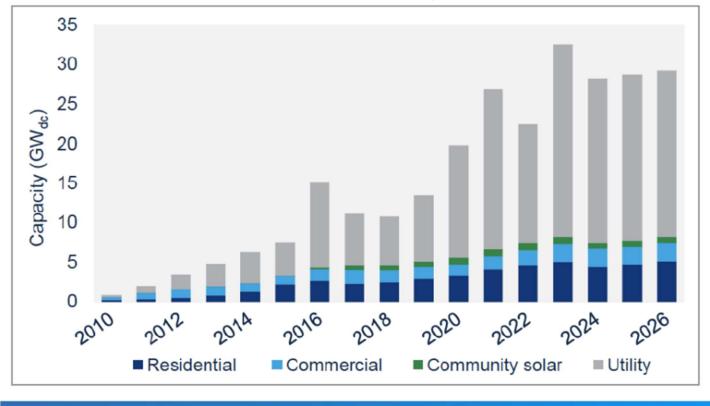
Wood

Mackenzie POWER & RENEWABLES

### **OVERVIEW OF SOLAR DEVELOPMENT IN THE UNITED STATES**

Solar development increased almost exponentially over the past ten years in the United States as technology and the economic incentives (Solar Investment Tax Credits or ITC) made the installation of solar farms economically reasonable. The cost to install solar panels has dropped nationally by 70 percent since 2010, which has been one cause that led to the increase in installations. A majority of these solar farm installations are attributed to larger-scale solar farm developments for utility purposes. The chart below portrays the historical increase on an annual basis of solar installations in the US as a whole, courtesy of research by Solar Energy Industries Association (SEIA) and Wood Mackenzie, and projects solar photovoltaic (PV) deployment for the next five years through 2026, with the largest percentage of installations attributed to utility-scale projects.

### US PV installation historical data and forecast, 2010-2026



### ©2021

In Q3 2021, the US solar market installed 5.4 GW of solar capacity, a 33% increase over the third quarter of 2020 and the largest Q3 on record. A total of 15.7 GW have been installed through Q3 2021, on pace to easily exceed 20 GW in 2021 and set another annual record. Since the cost to install solar has decreased more than 70% over the past decade, solar has continued to rank either first or second in new electric capacity additions in each of the past eight years. Although, the coronavirus pandemic had put some supply-side constraint on solar construction. According to SEIA, "increasing demand for solar, combined with pandemic-related macroeconomic

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caused by the coronavirus pandemic.

realities (such as increased shipping costs, microchip availability, and a residential home renovation boom) have led to increased commodity prices and delivery delays." The pipeline for utility-scale PV, as of third quarter 2021, includes capacity of 81 GW for contracted projects.<sup>2</sup> With the increase of utility-scale solar installations across the country, solar projects have become a common and understood feature of the landscape and will continue to do so with the projected additional capacity to come online in the coming years despite the downside risks

Recent articles show that over the past decade, the solar industry has experienced unprecedented growth. Among the factors contributing to its growth were government incentives, significant capacity additions from existing and new entrants and continual innovation. Solar farms offer a wide array of economic and environmental benefits to surrounding properties. Unlike other energy sources, solar energy does not produce emissions that may cause negative health effects or environmental damage. Solar farms produce a lower electromagnetic field exposure than most household appliances, such as TV and refrigerators, and studies have confirmed there are no health issues related to solar farms.<sup>3</sup>

Solar farm construction in rural areas has also dramatically increased the tax value of the land on which they are built, which has provided a financial boost to some counties. CohnReznick has studied real estate tax increases due to the installation of solar, which can range up to 10-12 times the rate for farmland. Majority of tax revenue is funneled back into the local area, and as much as 50% of tax revenue can typically be allocated to the local school district. By converting farmland to a passive solar use for the duration of the system's life, the solar energy use would not burden school systems, utilities, traffic, nor infrastructure as it is a passive use that does not increase population as say a residential subdivision would.

Beyond creating jobs, solar farms are also benefiting the overall long-term agricultural health of the community. The unused land, and also all the land beneath the solar panels, will be left to repair naturally. In the long run this is a better use of land since the soil is allowed to recuperate instead of being ploughed and fertilized year in and year out. A solar farm can offer some financial security for the property owner over 20 to 25 years. Once solar panel racking systems are removed, the land can revert to its original use.<sup>4</sup>

### NATIONAL UTILITY-SCALE ENERGY PRODUCTION

As of July 2021, the U.S. produces almost 1.224 million megawatts (MW) of power each year, according to the U.S. Energy Information Administration (EIA) in ±23,700 unique power generation facilities. Of that power produced, approximately four percent is generated from solar facilities, or 51,907 MW AC, at 4,828 solar facilities across the country, reflecting an average facility size of 10.75 MW AC. For utility scale solar production, the number of facilities that generate over 5 MW of power accounts for 33.6 percent of all solar facilities, nationwide, whereas 88.8 percent of solar power generated in the country comes from utility scale facilities, overall.

<sup>3</sup> "Electromagnetic Field and Public Health." Media Centre (2013): 1-4. World Health Organization.

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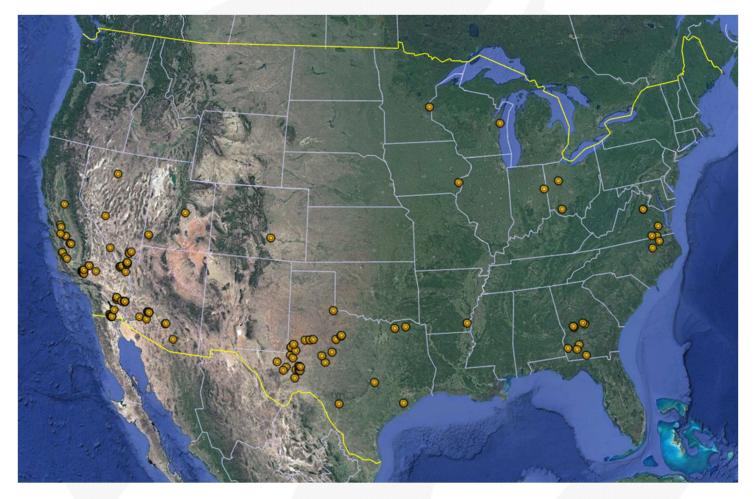


<sup>&</sup>lt;sup>2</sup> Solar Energy Industries Association, Solar Market Insight Report 2021 Q4

<sup>&</sup>lt;sup>4</sup> NC State Extension. (May 2016). Landowner Solar Leasing: Contract Terms Explained. Retrieved from:

https://content.ces.ncsu.edu/landowner-solar-leasing-contract-terms-explained

According to the U.S. Energy Information Administration (EIA) through January 2022, ±130 solar facilities in operation that generate 100 MW AC or more of power. A map illustrating existing solar farms with capacities greater than 100 MW is presented below (indicated by yellow suns), using data retrieved from the Energy Information Administration (EIA).

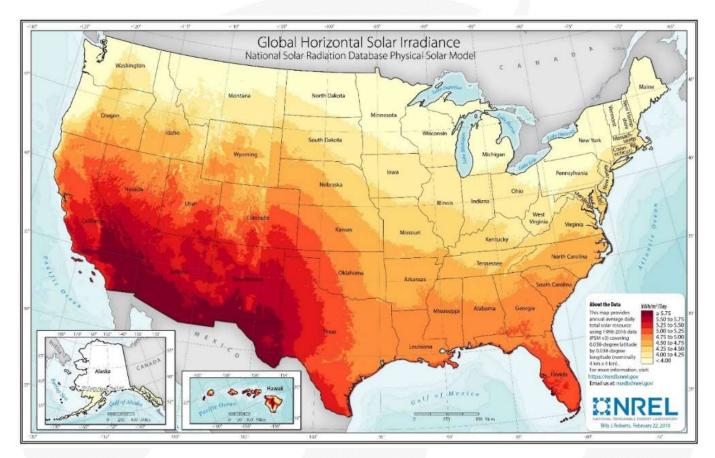


To meet zoning and planning requirements, and/or to take advantage of certain incentive programs, several solar farms are built by the same developer around the same location, de facto functioning as one larger solar farm. Many of these solar facilities are located in California, with several located in Florida, Texas, Nevada, North Carolina, Arizona, Georgia and Utah. Additionally, these installations are typically located in outlying areas where site costs are lowest, and residential development and sales activity is minimal in these areas. While we reviewed each for surrounding uses, the majority are not good candidates for a paired sales analysis since they were either recently constructed or surrounding development/sales activity was minimal.

In the United States, there are ±42 operating solar farms with generating capacities above 200 MW AC, presented below. All of the existing solar farms in operation as of January 2022 that have a generating capacity of greater than 200 MW AC are located in the southwestern United States, with the exception of the 200 MW Hillcrest Solar project in Ohio, the 200 MW Riverstart Solar Park project in Indiana, the 204 MW Twiggs Solar Project in Georgia and the 240 MW Pleinmont Project in Virginia. This is due to economies of scale for reducing



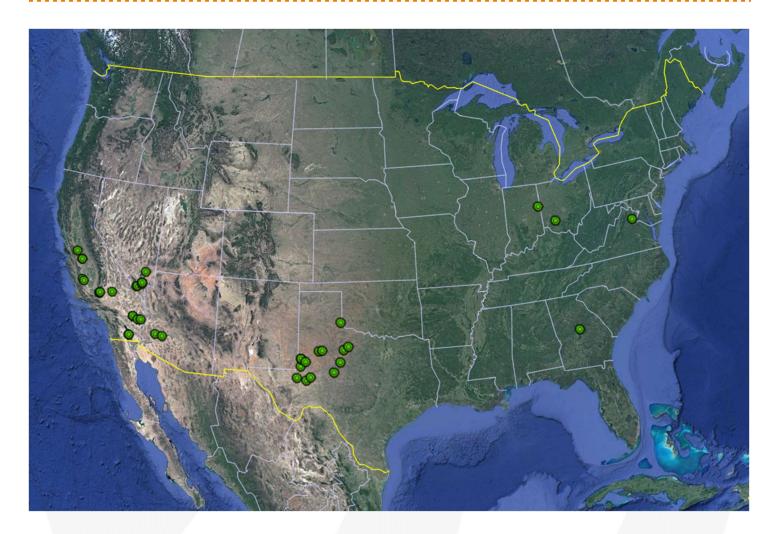
development costs by maximizing size in areas where there is maximum sunlight. The map developed by the National Renewable Energy Laboratory (NREL), presented next, shows the solar resources released by the sun daily throughout in the United States. Red indicates the areas with the most solar resources.



It should be noted that there are 95 solar projects currently planned across the United States over 200MW. These projects are located throughout the United States, not just in the areas with solar resources, the largest of which is a 690 MW facility outside of Las Vegas, Nevada, currently under construction. The next largest is a 600 MW solar facility in Lee County, Illinois, currently in the planning phase.

The following map has operating solar installations larger than 200 MW (marked by green suns) and shows that the largest solar installations have been built in areas where there are the most solar resources.



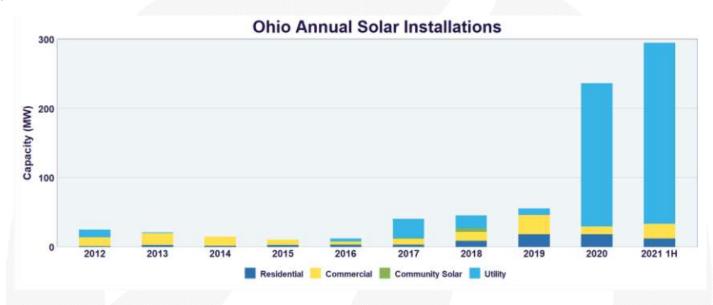




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### **ENERGY PRODUCTION IN OHIO**

As of 2021, Ohio ranked 23rd in the U.S. for the capacity of solar installed, down from 18<sup>th</sup> in 2020, according to the Solar Energy Industries Association (SEIA). There have been significantly more utility investments in clean energy with continued growth on the horizon, with 5,596 MW of solar proposed to be installed over the next five years.



There are 14 solar power generation facilities that are planned, or are under construction in Ohio, according to the EIA, that will produce 2,259 MW of power when in service, as of December 2021 information. These solar projects range from 35 MW to 325 MW.

Notable large projects include the 300-MW Highland Solar project being developed by Hecate Energy is under construction and will be located in Highland County, 45 miles east of Cincinnati. The project is expected to achieve commercial operation in late 2022. The project will supply 100% of the City of Cincinnati's municipal electricity.

Liberty Power is currently constructing the Newmarket Solar Project in Clay and Whiteoak Townships in Highland County, Ohio. The project consists of two facilities: Highland 4, a 65-megawatt facility that will occupy 582 acres, and Highland 2, a 35-megawatt facility that will occupy 222 acres. The combined 100 MW project is expected to come online in late 2022.

The Yellowbud Solar Project is a 274 MW solar facility currently under construction by National Grid Renewables in Ross County and Pickaway County, Ohio. The project will span approximately 2,000 acres and is expected to be completed in late 2022.

Recent notable new solar facilities in Ohio include the first phase (150 MW) of the Hardin Solar energy project was placed in operation in February 2021. Due to its recent completion date, there are no home sales that sold after the Hardin I project's completion that can be analyzed in a paired sale analysis. The second phase of the Hardin Solar energy project is scheduled to be operational in June 2023 with 170 MW, in Hardin County.

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The 200 MW Hillcrest Solar developed by Innergex Renewable Development became operational in July 2021. Surrounding Hillcrest Solar there have been approximately three home sales near the project boundary that sold between late January 2020 (start of construction) and the date of this report. Each of these sales sold during normal marketing time of 30-90 days on market and sold at list to sale price discounts of -2.2 percent to 12.6 percent (above list price). There were not any immediately adjacent transactions that would allow for an impact study as of the date of this report; however, the sales of nearby homes discussed above appear to have sold at market prices with typical marketing periods.

The Riverstart Solar Park, developed by EDP Renewables, opened in December 2021; this 200 MW facility is located in Randolph County, Indiana, near the border with Ohio. We have not gleaned any information regarding this newly operating facility, but do note its presence in the market.

Ohio currently has 35 solar facilities in service that generate 480.3 MW of power, of which are eight solar facilities that produce over 5 MW of power. Our review of these 8 facilities, the majority of which are sized between 5MW and 20MW, did not reveal test sales that we believe would allow for a meaningful study. As the larger and more recently approved projects come online, we believe there will be more eligible data to review and prepare future impact studies, as transactions of nearby homes occur.



### APPRAISAL THEORY – ADAJCENT PROPERTY'S IMPACT ON VALUE

According to Randall Bell, PhD, MAI, author of text Real Estate Damages, published by the Appraisal Institute in 2016, understanding the market's perceptions on all factors that may have an influence on a property's desirability (and therefore its value) is essential in determining if a diminution or enhancement of value has occurred.<sup>5</sup> According to Dr. Bell:

"There is often a predisposition to believe that detrimental conditions automatically have a negative impact on property values. However, it is important to keep in mind that if a property's value is to be affected by a negative condition, whether internal or external to the property, that condition must be given enough weight in the decision-making process of buyers and sellers to have a material effect on pricing relative to all the other positive and negative attributes that influence the value of that particular property."6

Market data and empirical research through the application of the three traditional approaches to value should be utilized to estimate the market value to determine if there is a material effect on pricing due, to the influence of a particular characteristic of or on a property.

A credible impact analysis is one that is logical, innate, testable and repeatable, prepared in conformity with approved valuation techniques. In order to produce credible assignment results, more than one valuation technique should be utilized for support for the primary method, or a check of reasonableness, such as utilization of more than one approach to value, conducting a literature review, or having discussions (testimony) with market participants.<sup>7</sup> CohnReznick implemented the scientific method<sup>8</sup> to determine if a detrimental condition of proximity to a solar farm exists, further described in the next section.

- 1. Identify the problem.
- 2. Collect relevant data.
- 3. Propose a hypothesis.
- 4. Test the hypothesis.
- 5. Assess the validity of the hypothesis.

Bell, Randall, PhD, MAI. Real Estate Damages. Third ed. Chicago, IL: Appraisal Institute, 2016. (Pages 314-316)



<sup>&</sup>lt;sup>5</sup> Bell, Randall, PhD, MAI. Real Estate Damages. Third ed. Chicago, IL: Appraisal Institute, 2016. (Pages 1-2)

<sup>&</sup>lt;sup>6</sup> Ibid, Page 314

<sup>&</sup>lt;sup>7</sup> Ibid, Pages 7-8

<sup>&</sup>lt;sup>8</sup> The scientific method is a process that involves observation, development of a theory, establishment of a hypothesis, and testing. The valuation process applies principles of the scientific method as a model, based upon economic principles (primarily substitution) as the hypothesis. The steps for the scientific method are outlined as follows:

The purpose of this report is to determine whether proximity to the solar facility resulted in any measurable and consistent impact on adjacent property values. To test this hypothesis, CohnReznick identified three relevant techniques to test if a detrimental condition exists.

- (1) A review of published studies;
- (2) Paired sale analysis of properties adjacent to existing solar generating facilities, which may include repeat sale analyses or "Before and After" analyses; and,
- (3) Interviews with real estate professionals and local real estate assessors.

The paired sales analysis is an effective method of determining if there is a detrimental impact on surrounding properties.

"One of the most useful applications of the sales comparison approach is paired sale analysis. This type of analysis may compare the subject property or similarly impacted properties called Test Areas (at Points B, C, D, E, or F) with unimpaired properties called Control Areas (Point A). A comparison may also be made between the unimpaired value of the subject property before and after the discovery of a detrimental condition. If a legitimate detrimental condition exists, there will likely be a *measurable and consistent difference* between the two sets of market data; if not, there will likely be no significant difference between the two sets of data. This process involves the study of a group of sales with a detrimental condition, which are then compared to a group of otherwise similar sales without the detrimental condition."9

As an approved method, paired sales analysis can be utilized to extract the effect of a single characteristic on value. By definition, paired data analysis is "a quantitative technique used to identify and measure adjustments to the sale prices or rents of comparable properties; to apply this technique, sales or rental data on nearly identical properties is analyzed to isolate a single characteristic's effect on value or rent."<sup>10</sup> The text further describes that this method is theoretically sound when an abundance of market data, or sale transactions, is available for analysis.

Where data is available, CohnReznick has also prepared "Before and After" analyses or a Repeat Sale Analysis,<sup>11</sup> to determine if a detrimental impact has occurred.



<sup>&</sup>lt;sup>9</sup> Bell, Randall, PhD, MAI. Real Estate Damages. Third ed. Chicago, IL: Appraisal Institute, 2016. (Page 33)

<sup>&</sup>lt;sup>10</sup> The Appraisal of Real Estate 14<sup>th</sup> Edition. Chicago, IL: Appraisal Institute, 2013.

<sup>&</sup>lt;sup>11</sup> Another type of paired sales analysis involves studying the sale and subsequent resale of the same property. This method is used to determine the influence of time on market values or to determine the impact of a detrimental condition by comparing values before and after the discovery of the condition.

Bell, Randall, PhD, MAI. Real Estate Damages. Third ed. Chicago, IL: Appraisal Institute, 2016. (Page 35)

### **SCOPE OF WORK**

The scope of work utilized to test the hypothesis stated on the prior page is as follows:

- 1. Review published studies, assess credibility, and validity of conclusions;
- 2. Prepare paired sale analyses for existing solar farms as follows:
  - 2.1. Identify existing solar farms comparable to the proposed project to analyze;
  - 2.2. Define Test Area Sales and Control Areas Sales;
  - 2.3. Collect market data (sale transactions) for both Test Area and Control Area Sales;
  - 2.4. Analyze and confirm sales, including omission of sales that are not reflective of market value;
  - 2.5. Prepare comparative analysis of Test Area and Control Area sales, adjusting for market conditions:
  - 2.6. Interpret calculations; and
- 3. Conduct interviews with real estate professionals and local real estate assessors who have evaluated real property adjacent to existing solar farms.

It should be noted that our impact report data and methodology have been previously reviewed by our peer in the field – Kirkland Appraisals, LLC – as well as by the Solar Energy Industries Association (SEIA) and the American Clean Power Association (ACP).

The following bullet points summarize important elements to consider in our scope of work:

- Due to the limited transactional data around existing larger utility scale projects in the state of Ohio, we have incorporated other utility scale projects in other states.
- Target Area Sales consists of sales that are adjacent to an existing solar facility. Ownership and sales history for each adjoining property to an existing solar farm through the effective date of this report is maintained within our workfile. Adjoining properties with no sales data or that sold prior to the announcement of the solar farm were excluded from further analysis.
- Control Area Sales are generally located in the same market area, although varies based on the general location of the existing solar farm under analysis. In rural areas, sales are identified first within the township, and expands radially outward through the county until a reliable set of data points is obtained.
- Control Area Sales are generally between 12 and 18 months before or after the date of the Test Area Sale(s), and are comparable in physical characteristics such as age, condition, style, and size.
- Sales of properties that sold in a non-arm's length transaction (such as a transaction between related parties, bank-owned transaction, or between adjacent owners) were excluded from analysis as these are not considered to be reflective of market value, as defined earlier in this report. The sales that remained after exclusions were considered for a paired sale analysis.

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- The methodology employed in this report for paired sale analysis does not rely on multiple subjective adjustments that are typical in many appraisals and single-paired sales analyses. Rather, the methodology remains objective, and the only adjustment required is for market conditions<sup>12</sup> the analysis relies upon market conditions trends tracked by credible agencies such as the Federal Housing Finance Agency ("FHFA"), who maintains a House Price Index ("HPI")<sup>13</sup> for macro and micro regions in the United States. A market conditions adjustment is a variable that affects all properties similarly and can be adjusted for in an objective manner.
- To make direct comparisons, the sale price of the Control Area Sales was adjusted for market conditions to a common date. In this analysis, the common date is the date of the Test Area Sale(s). After adjustment, any measurable difference between the sale prices would be indicative of a possible price impact by the solar facility.
- If there is more than one Test Area Sale to evaluate, the sales are grouped if they exhibit similar transactional and physical characteristics; otherwise, they are evaluated separately with their own respective Control Area Sale groups.



<sup>&</sup>lt;sup>12</sup> Adjusting for market conditions is necessary as described in The Appraisal of Real Estate 14th Edition as follows: "Comparable sales that occurred under market conditions different from those applicable to the subject on the effective date of appraisal require adjustment for any differences that affect their values. An adjustment for market conditions is made if general property values have increased or decreased since the transaction dates."

<sup>&</sup>lt;sup>13</sup> The FHFA HPI is a weighted, repeat-sales index, meaning that it measures average price changes in repeat sales or refinancings on the same properties. This information is obtained by reviewing repeat mortgage transactions on single-family properties whose mortgages have been purchased or securitized by Fannie Mae or Freddie Mac since January 1975. The FHFA HPI serves as a timely, accurate indicator of house price trends at various geographic levels. Because of the breadth of the sample, it provides more information than is available in other house price indexes.

### **TECHNIQUE 1: REVIEW OF PUBLISHED STUDIES**

The following is a discussion of various studies that consider the impact of solar farms on surrounding property values. The studies range from quantitative analysis to survey-based formal research to less formal analyses.

### ACADEMIC REPORTS

There have been three academic reports that attempt to quantify the effect on property values due to proximity to solar.

i. The first report is a study completed by **The University of Texas at Austin**, published in May 2018.<sup>14</sup> The portion of the study focusing on property impact was an Opinion Survey of Assessors with no sales data or evidence included in the survey. The opinion survey was sent to 400 accessors nationwide and received only 37 responses. Of those 37 assessors, only 18 had assessed a home near a utility-scale solar installation, the remainder had not. Of the 18 assessors with experience in valuing homes near solar farms, 17 had not found any impact on home values near solar. Those are the actual facts in the study. A small number of those assessor respondents hypothetically surmised an impact, but none had evidence to support such statements.

The paper admits that there is no actual sales data analyzed, and further denotes its own areas of weakness, including "This study did not differentiate between ground-mounted and rooftop installations." The author states on the last line of page 22: "Finally, to shift from perceived to actual property value impacts, future research can conduct analyses on home sales data to collect empirical evidence of actual property value impacts."

The paper concludes with a suggestion that a statistic hedonic regression model may better identify impacts. It should be noted that the type of statistical analysis that the author states is required to determine "actual property value impacts' was completed two years later by the following Academic Studies.

The second report is a study prepared by a team at the University of Rhode Island, published in ii. September 2020, "Property Value Impacts of Commercial-Scale Solar Energy in Massachusetts and *Rhode Island*.<sup>315</sup> The study utilized a hedonic pricing model, or multiple regression analysis, to quantify the effect of proximity on property values due to solar by studying existing solar installations in Massachusetts and Rhode Island. The study evaluated 208 solar facilities, 71,373 housing sales occurring within one-mile of the solar facilities (Test Group), and 343,921 sales between one-to-three miles (Control Group). Because it is a hedonic regression model, it allowed them to isolate specific



<sup>&</sup>lt;sup>14</sup> Al-Hamoodah, Leila, et al. An Exploration of Property-Value Impacts Near Utility-Scale Solar Installations. Policy Research Project (PRP), LBJ School of Public Affairs, The University of Texas at Austin, May 2018, emp.lbl.gov/sites/default/files/propertyvalue impacts near utility-scale solar installations.pdf.

<sup>&</sup>lt;sup>15</sup> Gaur, V. and C. Lang. (2020). Property Value Impacts of Commercial-Scale Solar Energy in Massachusetts and Rhode Island. Submitted to University of Rhode Island Cooperative Extension on September 29, 2020. Accessed at

https://web.uri.edu/coopext/valuing-sitingoptions-for-commercial-scale-solar-energy-in-rhode-island/.

variables that could impact value, including isolating rural and non-rural locations. The study defines "Rural," as an area having a "population density of 850 people per square mile or fewer."

The study provides data which found no negative impact to residential homes near solar arrays in rural areas: "these results suggest that [the Test Area] in rural areas is effectively zero (a statistically insignificant 0.1%), and that the negative externalities of solar arrays are only occurring in non-rural areas."16 Further, the study tested to determine if the size of the installation impacted values, and found no evidence of differential property values impacts by the solar installation's size.

Thus, not only are there no impacts to homes in similar areas as the proposed Project, but any differences in the size of a solar farm are similarly not demonstrating an impact.

The third report is a published study prepared by Dr. Nino Abashidze, School of Economics, Georgia iii. Institute of Technology, dated October 20, 2020, entitled "Utility Scale Solar Farms and Agricultural Land Values." Abashidze examined 451 solar farms in North Carolina. "Across many samples and specifications, we find no direct negative or positive spillover effect of a solar farm construction on nearby agricultural land values. 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."

### VALUATION EXPERT REPORTS

We have similarly considered property value impact studies prepared by other experts, which have also noted that the installation of utility-scale solar on a property has no measurable or consistent impact on adjoining property value. According to a report titled "Mapleton Solar Impact Study" from Kirkland Appraisals, LLC, conducted in Murfreesboro, North Carolina in September 2017, which studied 13 existing solar farms in the state, found that the solar farms had no impact on adjacent vacant residential, agricultural land, or residential homes. The paired sales data analysis in the report primarily consisted of low density residential and agricultural land uses and included one case where the solar farm adjoined to two dense subdivisions of homes.

Donald Fisher, ARA who has served six years as Chair of the American Society of Farm Managers and Rural Appraisers, and has prepared several market studies examining the impact of solar on residential values was quoted in a press release dated February 15, 2021 stating, "Most of the locations were in either suburban or rural areas, and all of these studies found either a neutral impact or, ironically, a positive impact, where values on properties after the installation of solar farms went up higher than time trends."



<sup>&</sup>lt;sup>16</sup> The U of RI study's conclusion that there may be an impact to non-rural communities is surmised is that "land is abundant in rural areas, so the development of some land into solar does little to impact scarcity, whereas in non-rural areas it makes a noticeable impact.

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### **REAL ESTATE ASSESSOR SOLAR IMPACT REPORTS**

The Chisago County (Minnesota) Assessor's Office conducted their own study on property prices adjacent to and in the close vicinity of the North Star solar farm in Chisago County, Minnesota. At the November 2017 Chisago County Board meeting, John Keefe, the Chisago County Assessor, presented data from his study. He concluded that the North Star solar farm had, "no adverse impact" on property values. His study encompassed 15 parcels that sold and were adjacent or in the close vicinity to the solar farm between January 2016 and October 2017; the control group used for comparison comprised of over 700 sales within the county. Almost all of the [Test Area] properties sold were at a price above the assessed value. He further stated that, "It seems conclusive that valuation has not suffered."<sup>17</sup>

Furthermore, Grant County, Kentucky Property Value Administrator, Elliott Anderson, stated that Duke Energy built a solar farm near Crittenden, adjacent to existing homes on Claiborne Drive in December 2017. At the time of the interview, there have been nine arm's length homes sales on that street since the solar farm commenced operations. Each of those nine homes sold higher than its assessed value, and one over 32 percent higher. At the time, Anderson noted that several more lots were for sale by the developer and four more homes were currently under construction. Anderson said that <u>the solar farm had no impact either on adjoining home values or on marketability or desirability of those homes adjacent to the solar farm.</u>

### CONCLUSION

These published studies and other valuation expert opinions conclude that there is no impact to property adjacent to established solar farms. These conclusions have been confirmed by academic studies utilizing large sales databases and regression analysis investigating this uses' potential impact on property values. Further, the conclusion has been confirmed by county assessors who have also investigated this adjacent land use' potential impact on property values.

<sup>17</sup> Chisago County Press: County Board Real Estate Update Shows No "Solar Effects" (11/03/2017)



SOLAR FARM 1: NORTH STAR SOLAR FARM, CHISAGO COUNTY, MINNESOTA

Coordinates: Latitude 45.486756, Longitude -92.884206

**PINs:** Multiple

**Population Density (2020) Chisago County:** 136 people per square mile (Largest City = North Branch)

Total Land Size: ±1,000 Acres

Date Project Announced: 2014

Date Project Completed: October 2016

Output: 100 MW AC



### **Overview and Surrounding Area:**

The North Star Solar Farm is located approximately four miles southeast of the City of North Branch in unincorporated Chisago County, near the intersection of Route 69 and Route 72. The solar farm was developed by Community Energy Solar in 2016 and is the largest solar farm in the Midwest. The solar farm features 440,000 solar panels and a power output capacity of 100 MW AC, which is enough to power 20,000 homes. The owner, North Star, LLC, has a 25-year purchase contract for the power produced by the project with Xcel Energy.



Chisago County lies on Minnesota's eastern border, abutting the western border of Wisconsin, across the Saint Croix River. The North Star Solar Farm is approximately 16 miles west of the border with Wisconsin and is just over one mile west of the Kost Dam public park and reservoir, a 28-acre park on the south branch of the Sunrise River.

### The Immediate Area:

The North Star Solar Farm is adjoined by agricultural land to the north and west. To the south and east of the project there are several residential properties, including some located within the actual solar farm. The solar farm has agricultural and deer fencing around parts of the project. Additionally, native vegetation and trees previously existed as a buffer along the frontage roads.

Prior Use: Agricultural use

### **Real Estate Tax Information:**

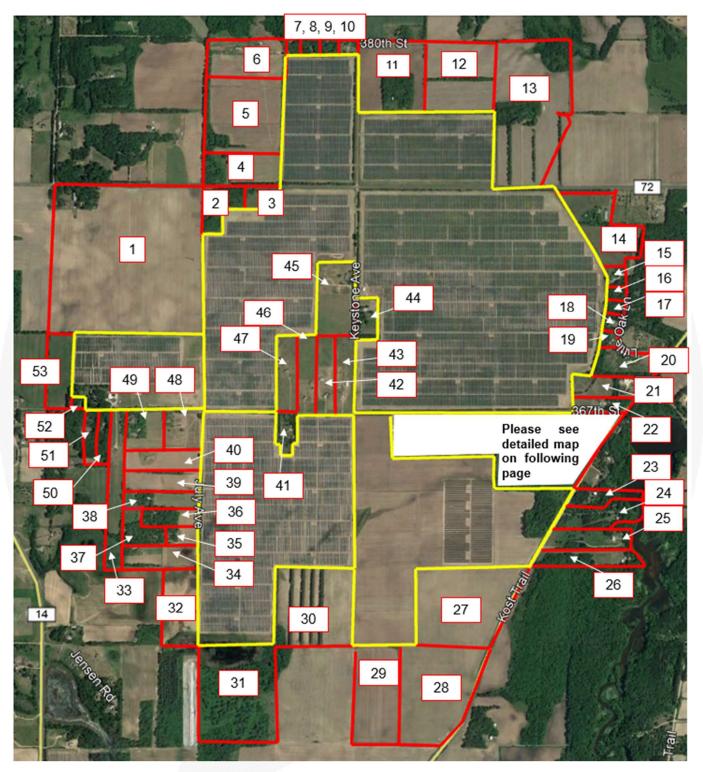
Prior to development of the solar farm, in 2015, this ±1,000-acre site paid real estate taxes of \$37,250, annually. After the solar farm development, in 2017, real estate taxes increased to \$112,856, a 203 percent increase in tax revenue for the site.

PIN	Acres	20	15 Taxes Paid	20	17 Taxes Paid	Tax Increase	2015 Assessed Value		2017 Assessed Value		Value Increase	
Chisago County, MN	1				1							
09.00348.00	74.91	\$	2,806	\$	8,546	205%	\$	198,800	\$	233,900	18%	
09.00349.00	74.30	\$	2,818	\$	8,578	204%	\$	199,600	\$	234,800	18%	
09.00350.10	16.95	\$	644	\$	2,752	327%	\$	45,600	\$	75,300	65%	
09.00351.10	68.01	\$	3,260	\$	9,806	201%	\$	230,900	\$	268,400	16%	
09.00353.00	81.87	\$	3,114	\$	8,678	179%	\$	220,500	\$	237,500	8%	
09.00354.00	121.84	\$	4,578	\$	13,324	191%	\$	324,200	\$	364,700	12%	
11.00517.00	72.07	\$	3,382	\$	7,440	120%	\$	194,400	\$	224,100	15%	
11.00528.00	66.42	\$	1,460	\$	6,836	368%	\$	180,000	\$	210,000	17%	
11.00529.00	60.26	\$	1,506	\$	7,284	384%	\$	168,700	\$	168,800	0%	
11.00726.00	40.55	\$	1,010	\$	3,968	293%	\$	110,700	\$	140,700	27%	
11.00730.00	68.32	\$	3,426	\$	7,638	123%	\$	315,700	\$	338,200	7%	
11.00731.00	160.83	\$	3,598	\$	17,924	398%	\$	422,500	\$	469,100	11%	
11.00732.00	30.52	\$	788	\$	4,748	503%	\$	84,900	\$	109,500	29%	
11.00732.10	10.00	\$	4,860	\$	5,334	10%	\$	257,700	\$	290,100	13%	
TOTAL	946.85	\$	37,250	\$	112,856	203%	\$	2,954,200	\$	3,365,100	14%	

### **Adjoining Properties:**

The maps on the following pages display the parcels that contain the solar farm (outlined in yellow). Properties adjoining the solar site (outlined in red) are numbered for subsequent analysis.

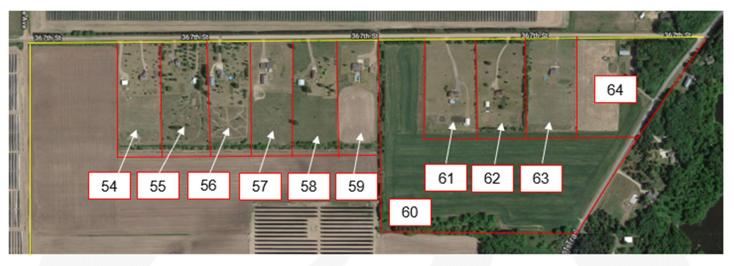




North Star Solar Farm - Adjoining Properties

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North Star Solar Farm - Adjoining Properties

In reviewing Adjoining Properties to study in a Paired Sales Analysis, several properties and sales were considered but eliminated from further consideration as discussed below.

While assembling the solar development site, the developer of the solar farm acquired seven homes along 367<sup>th</sup> Street and Keystone Avenue, which we refer to as Adjoining Properties 41, 42, 43, 44, 45, 46, and 47, and are surrounded by the solar arrays. According to conversations with the solar developer, they purchased the homes prior to development to provide interim housing for employees as the solar farm was under construction or for potential use for the project area (which ultimately was not necessary). The developer had each home appraised, and then negotiated separately with each homeowner. All of the houses sold above their appraised values, which the developer considered to be an assemblage premium. After construction, the developer sold all seven homes at market prices, six to new buyers, and one, Adjoining Property 47, which was re-purchased by the original owner. Over a year later, these subsequent sales from the developer to individual homeowners were still higher than the originally appraised values. This indicates that the development of the North Star Solar Farm did not deter transactions nor affect sale prices in the surrounding area.

Clifford Sheppeck, broker at Keller Williams Classic, was hired by Renewable Energy Asset Co, LLC, the solar farm developer, to market and sell the remaining properties that the developer owned. We discussed these transactions with Mr. Sheppeck who indicated they all sold within two months, which was in line with the market.

In addition to the seven homes sold by the developer, we identified six other properties all which sold since the construction of the solar farm: Adjoining Properties 3, 10, 18, 19, 22, 38, 54, 57 and 64. In all, a total of 16 identified Adjoining Properties have sold during or since the construction of the solar farm. These properties are discussed further in the following sections.

### **Properties Excluded from Paired Sales Analysis**

Adjoining Property 10, located at 10270 380<sup>th</sup> Street, sold in June 2018 for \$163,800, or \$143.18 per square foot of finished living area. The property is improved with a small, single-story, modular/pre-fabricated home with no basement, which is atypical for the area. Most of the homes in the area, while similar in gross living areas, are



one-story, single-family homes with finished basements. We conducted a search in the area for comparable modular homes without basements but did not find sufficient data yield reliable conclusions in a paired sale analysis. Additionally, this home does not appear to have been listed on the local MLS as we could not identify a broker contact for the most recent sale. We have reached out to the buyer and seller to confirm the nature of the transaction, but as of this writing, we have not made contact. We note that the home sold previously in July 2004; however, county sale records indicate the 2004 sale was between related parties which disgualifies it as an arm's length transaction. Due to limited sales in the area to categorize as Control Area Sales, Adjoining Property 10 was excluded from further analysis.

Adjoining Property 38, located at 36438 July Avenue, sold during construction of the solar farm in October 2015 for \$225,000, or \$117.68 per square foot of finished living area. It is a home designed specifically as a passive solar home, taking advantage of the same renewable energy potential of the North Star solar farm. The property is set back behind five acres of agricultural land and is secluded behind trees and operates as a mixed-use "hobby farm." This is a highly atypical use with no comparable sales which sold during construction; we have excluded the 2015 sale from paired sale analysis because we cannot separate any influence from construction on the sale price at that time. We note that the home sold previously in November 2003; however, we could not prepare a Before and After analysis utilizing this prior transaction as the most recent sale was marketed as a passive solar home. For these reasons, Adjoining Property 38 was excluded from further analysis.

Adjoining Property 41, located at 10095 367th Street, is subject to an existing 30-year lease for the southern 6.24 acres of the parcel for solar panels in the North Star solar farm. The property most recently sold in April 2021 for \$339,186 and previously in June 2017 for \$336,900. The sale of this property in May 2016 was to the solar developer for an above appraised value of \$365,000, which was an atypically motivated transaction. Because the property is a participating parcel in the solar farm, and due to the additional rental income from the land, this property was excluded from both paired sale and the Before and After Analysis.

Adjoining Property 44, located at 37083 Keystone Avenue, sold for \$257,000, or \$157.86 per square foot of finished living area, in August 2017 and is a one-story rambler style home with an unfinished basement. Sale listing materials indicated significant deferred maintenance, which would need to be accurately assessed in order to quantify an appropriate adjustment. Most comparable sales in the area either have finished or walk-out basements and no items of significant deferred maintenance. Due to limited comparable sales for this property, and the required adjustment for deferred maintenance, Adjoining Property 44 was excluded from a paired sales analysis. The prior sale of this property was in October 2016, to the solar developer for assemblage, for \$302,500. Because this home traded in an atypically motivated transaction in 2016, we have not included it in a Before and After analysis.

Adjoining Property 45, located at 37206 Keystone Avenue, sold in June 2017 for \$290,000, or \$149.48 per square foot of finished living area, from the solar farm developer. The property is a split-entry home on over 20 acres. The home features an attached 3-car garage, a detached two-car garage with a finished second story, and a fenced in-ground pool. The County Assessor classified this property as agricultural due to its large acreage. Because this home is atypical (large acreage and pool) there were no comparable sales in the area and Adjoining Property 45 was excluded from further analysis. This home was previously purchased by the solar farm developer in July 2016 for \$450,000, an above market price, for assemblage during solar farm construction. After



construction was complete, the home was sold in 2017 at a market-oriented price, in an average number of days listed on the Multiple Listing Service (MLS). Because this home traded in an atypically motivated transaction in 2016, we have not included it in a Before and After analysis.

Adjoining Property 47, located at 10090 367th Street, most recently sold in March 2018 for \$302,500, or \$127.53 per square foot of finished living area, from the solar farm developer. This home was previously purchased by the solar farm developer in August 2016 for \$360,800, an above market price, for assemblage during solar farm construction. According to the broker, Cliff Sheppeck, the original owner leased the house back from the developer after the sale, never moved out, and was hired to do maintenance and upkeep on the other six houses the developer purchased in the area. When the developer no longer needed the property, he sold it back to the original owner in 2018 at a market-oriented price. Because of the relationship between the parties in 2018 and 2016, we have not included it in a Paired Sales Analysis nor a Before and After analysis.

### **Properties Included in Paired Sales Analysis**

Adjoining Property 3, located at 10009 375th Street, sold most recently in July 2019 for \$260,000, or \$172.41 per square foot of finished living area. This property is improved with a one-story, modular/pre-fabricated home in the rambler style, with an English basement, on just over five acres of land. Although this home sold most recently in July 2019 for \$260,000, it had also sold in March 2016 for \$219,900, during construction of the solar farm. The home previously sold in March of 2005 for \$163,000. We have excluded the 2016 sale from paired sale analysis because we cannot separate any influence from construction on the sale price at that time. However, we can calculate the average monthly appreciation from 2005 to 2019 (+0.27 percent), which is higher than the average monthly home price appreciation in the same zip code of 55056 - according to the FHFA Housing Price Index (discussed in more detail later), local home appreciation was 0.0 percent per month over the same period. It is evident that the home value increased at a higher rate than homes in the local area over the same period. This information is also presented in the Before and After Analysis later in the study of the North Star solar farm. The buyer's broker in the 2019 sale, Gail Reinhard, noted that the buyer had no concerns or issues with the home's proximity to the solar farm and the price paid was market oriented. This home qualified for a paired sales analysis and was studied in Group 4, as detailed on subsequent pages.

Adjoining Property 18, located at 37096 Little Oak Lane, sold in April 2017 for \$289,000, or \$119.82 per square foot of finished living area. The home is a rambler style, one-story, home with a finished walk-out basement on a 2.07-acre parcel. The improvements on this property are located approximately 225 feet from the nearest solar panel. The buyer's broker, Amy Lamb, noted that the home was in good shape and had been on the market for two years, because the seller would not lower the price to market levels during previous listings. In the summer, Lamb noted, the solar panels were barely visible from the back of the property, but in winter they were visible. Lamb asked the buyers if the solar panel view would be a problem and their opinion was that the neighboring solar panels meant no other development that created traffic or noise would be built to disturb them. This home qualified for a paired sales analysis and was studied in Group 2, as detailed on subsequent pages. We have also studied this property in a Before and After analysis later in this report as it also sold in 2006, prior to construction of the North Star solar farm. The average monthly change in value from 2006 to 2017 (-0.05 percent) is higher than the average monthly home price appreciation in the same zip code of 55056 according to the



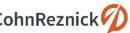
FHFA Housing Price Index, which was -0.10 percent per month over the same period. It is evident that the home's value reflects a better rate from the prior sale than homes in the local area over the same period.

Adjoining Property 19, located at 37056 Little Oak Lane, sold in August 2021 for \$435,000, or \$205.09 per square foot of finished living area. The property was listed for approximately 14 days on the market before going under contract. The home is a split-level style house on 2.37 acres. The improvements on this property are located approximately 280 feet from the nearest solar panel. This property also sold previously in June 2013 for \$208,000 before the solar farm was constructed. The average monthly appreciation from 2013 to 2021 (+0.76 percent) was higher than the average monthly home price appreciation in the same zip code, per the FHFA Housing Price Index, of 0.58 percent per month over the same period. The data indicates the home value increased at a higher rate than homes in the local area over the same period. This information is also presented in the Before and After Analysis later in the study of the North Star solar farm. This home gualified for a paired sales analysis and was studied in Group 5, as detailed on subsequent pages.

Adjoining Property 22, located at 11210 367<sup>th</sup> Street, sold in April 2021 for \$430,000, or \$114.48 per square foot of finished living area. The property was listed on the market for 5 days before going under contract and sold \$5,000 above its asking price. It is a rambler built in 1974 with a full finished basement and has some ancillary farm buildings on a 5.2 acre site. This property also sold previously in March 2015 for \$280,000 during the construction of the solar farm and December 2003 for \$107,000 before the solar farm was constructed. We have excluded the 2015 sale from paired sale analysis, due to the influence from construction on the sale price at that time but have analyzed the 2021 sale in our analysis. This sale's average monthly appreciation from 2003 to 2021 (+0.67 percent), is higher than the average monthly home price appreciation in the same zip code, per the FHFA Housing Price Index of 0.12 percent per month over the same period. This demonstrates that the Target home value increased at a higher rate than homes in the local area over the same period. This information is also presented in the Before and After Analysis later in the study of the North Star solar farm. Additionally, the most recent sale of the Adjoining Property 22 was studied in Group 6, as detailed on subsequent pages.

Adjoining Property 42, located at 10200 367th Street, sold in November 2017 for \$330,000, or \$151.93 per square foot of finished living area. The home is a split-level style house on 9.30 acres. The improvements on this property are approximately 393 feet from the nearest solar panel. This home qualified for a paired sales analysis and was studied in Group 1, as detailed on subsequent pages. This home was previously purchased by the solar farm developer in July 2016 for \$387,900, an above market price, for assemblage during solar farm construction. After construction was complete, the home was sold in 2017 at a market-oriented price, in an average number of days listed on the Multiple Listing Service (MLS). Because this home traded in an atypically motivated transaction in 2016, we have not included it in a Before and After analysis. However, this property also sold previously in October 2004 for \$309,900 before the solar farm was constructed. The average monthly appreciation from 2004 to 2017 (+0.04 percent) is higher than the average monthly home price appreciation in the same zip code, per the FHFA Housing Price Index, of -0.02 percent per month over the same period. This home's value increased at a higher rate than homes in the local area over the same period. This information is also presented in the Before and After Analysis later in the study of the North Star solar farm.

Adjoining Property 43, located at 10254 367th Street, sold for \$335,000 in July 2017, for \$156.84 per square foot of finished gross living area, and is a split-level home with an atypical floor design. Most of the homes in the



area, while having similar gross living areas, are one-story, single-family homes with basements. We conducted a search in the area for comparable above-grade, split level homes. Mr. Sheppeck was the listing broker for this property and confirmed its atypical nature. He indicated that it sold at a price that was in-line with the market even though split-level, two story homes are considered to be rare in the area. However, we were able to find comparably designed sales in the area, and have included the sale within our analysis, studied in Group 7, as detailed on subsequent pages. The prior sale of this property was to the solar developer for assemblage during construction for \$535,000, an above market price, in July 2016. Because this home traded in an atypically motivated transaction in 2016, we have not included this transaction a Before and After analysis. However, this property also sold previously in November 2005 for \$373,000 before the solar farm was constructed. The average monthly change in value from 2005 to 2017 (-0.08 percent) was the same as the average monthly home price appreciation in the same zip code, according to the FHFA Housing Price Index over the same period. This information is also presented in the Before and After Analysis later in the study of the North Star solar farm.

Adjoining Property 46, located at 10132 367th Street, sold most recently in December 2020 for \$415,000, or \$196.87 per square foot of finished living area. The home is a split-level style house on 9.31 acres. The home features an attached 3-car heated garage, an 816 square foot detached heated garage, and a 1,400 square foot outbuilding. The improvements on this property are approximately 330 feet from the nearest solar panel. This home also sold in October 2017 for \$333,000 from the solar developer who had purchased it in September 2016 for \$387,900, an above market price, for assemblage during solar farm construction. After construction was complete, the home was sold in 2017 at a market-oriented price, in an average number of days listed on the Multiple Listing Service (MLS). This home qualified for a paired sales analysis and was studied in Group 1 (2017 sale), and in Group 3 (2020 sale), as detailed on subsequent pages. Because this home traded in an atypically motivated transaction in 2016, we have not included the 2016 sale in a Before and After analysis. However, this property also sold previously in July 2001 for \$226,800 before the solar farm was constructed. The average monthly appreciation from 2001 to 2017 (+0.20 percent) is higher than the average monthly home price appreciation in the same zip code according to the FHFA Housing Price Index, which was +0.08 percent per month over the same period. This information is also presented in the Before and After Analysis later in the study of the North Star solar farm.

Adjoining Property 54, located at 10505 367th Street, sold in August 2016 for \$260,500, or \$137.83 per square foot of finished living area. The home is a split-level style house on 5.0 acres. The improvements on this property are located approximately 352 feet from the nearest solar panel. The sale of the property was at the end of the construction period, which completed in October 2016, after majority of the project infrastructure was completed; thus, we have incorporated this sale in the analysis. This home qualified for a paired sales analysis and was studied in Group 1, as detailed on subsequent pages. We have also studied this property in a Before and After analysis later in this report as it also sold in 1999 for \$123,294, prior to construction of the North Star solar farm. The average monthly appreciation from 1999 to 2016 (+0.36 percent) is higher than the average monthly home price appreciation in the same zip code, according to the FHFA Housing Price Index, which was +0.15 percent per month over the same period. This information is also presented in the Before and After Analysis later in the study of the North Star solar farm.

Adjoining Property 57, located at 10655 367<sup>th</sup> Street, sold in November 2018 for \$304,900, or \$101.63 per square foot of finished living area. The home is a split-level style house on 5.0 acres. The home has an opportunity for



a purchaser to add two baths (roughed in at the time of sale), two bedrooms, a family room, and storage in the lower level. We spoke with Jenna Bruski, the listing agent, who indicated that the improvements are unique, and could be divided into two separate dwelling units. According to the agent, the price paid reflected a slight discount because it required a specific buyer to undertake the build-out project on the lower level. It was on the market for a few months, but it was not unreasonable for the asset given its characteristics. Additionally, the agent indicated that potential purchasers did not mention the adjacency to the solar panels; there was no impact on the sale price because of adjacency to the panels. The improvements on this property are located approximately 285 feet from the nearest solar panel. This home qualified for a paired sales analysis and was studied in Group 9, as detailed on subsequent pages.

Adjoining Property 64, located at 36640 Kost Trail, sold in December 2019 for \$310,000, or \$139.70 per square foot of finished living area. The property is an above-grade, two-story home and has a partially finished basement, on 9.29 acres of land. The property also includes a detached 2-car garage and a pole barn. Jeff Turbeville, broker at Edina Realty Inc., explained this two-story home style is atypical in the area. However, we have identified comparable Control Area Sales and Adjoining Property 64 was studied in Group 8, as detailed on subsequent pages.

### **Paired Sales Analysis**

### Group 1

We analyzed three split-level homes that sold between 2016 and 2017 that were located adjacent to the North Star solar farm.

North Star Solar Test Area Sales - Group 1										
Adj. Property #	Address	Sale Price	Site Size (AC)	Beds	Baths	Year Built	GLA (SF)	Sale Date	Price PSF	
54	10505 367th St	\$260,500	5.00	3	2	1999	1,890	Aug-16	\$137.83	
42	10200 367th St	\$330,000	9.30	4	3	2003	2,172	Nov-17	\$151.93	
46	10132 367th St	\$333,000	9.31	4	3	2001	2,108	Oct-17	\$157.97	
Median		\$330,000	9.30	4	3	2001	2,108	Oct-17	\$151.93	

Throughout our analysis we have relied on square footage data from the Chisago County Assessor's office for home sizes. We have included above-grade and finished below-grade square footage in our calculations as the market in this area considers finished square feet on every level to be livable. Split-level homes and those with basements or walkout basements are prevalent in this area. We note that the square footage for Adjoining Property 42 is shown on the MLS real estate listing from 2017 as being 2,350, we have utilized the Assessor's livable square footage of 2,172 in our analysis.

We analyzed 11 Control Area Sales, single family homes with similar location, construction, square footages, lot sizes, and ages that sold within a reasonable time frame from the median sale date of the Test Area Sales, that were not located in close proximity to the solar farm.

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The Control Area Sales for Group 1 are split-level homes with either 3 or 4 bedrooms and 1.5 to 4 bathrooms. We excluded sales that were bank-owned, those between related parties, or others under duress as non-arm's length transactions.

When adjusting sale prices for market conditions (time between date of Test Area Sale and Control Area Sale date) throughout this analysis we have used regression analysis to identify the appropriate monthly market conditions adjustment. We utilized the Federal Housing Finance Agency House Price Index (FHFA HPI) for the zip code 55056, the zip code of all Test Area and Control Area Sales, for the compounded monthly rate of appreciation. The FHFA HPI is a broad measure of the movement of single-family house prices. The FHFA HPI is a weighted, repeat-sales index, meaning that it measures average price changes in repeat sales or refinancings on the same properties. The FHFA HPI serves as a timely, accurate indicator of house price trends at various geographic levels.<sup>18</sup> We adjusted Group 1 Control Area Sales using the FHFA HPI for the period from 2016 through 2017.

CohnReznick Paired Sale Analysis North Star Solar Group 1									
No. of Sales	Adjusted Median Price Per SF								
Test Area Sales (3)	Adjoining solar farm	\$151.93							
Control Area Sales (11)	No: Not adjoining solar farm	\$139.50							
Difference between Unit Pri Adjusted Median Unit Pric		8.91%							

The results of our analysis for Group 1 are presented following.

We note a somewhat large positive difference in adjusted median price per square foot between the median of the Test Area Sales and the Control Area Sales. The price differential is likely attributable to the larger parcel sizes of the Test Area Sales, which range from 5.00 acres to 9.31 acres. The Control Area Sales home sites range from to 2.29 to 7.10 acres, with a median of 5.0 acres. Control Area Sales with lot sizes that bracketed the Test Area Sales on the high side did not transact during the period studied but the properties are considered comparable. The sale prices of Adjoining Properties in Group 1 were not negatively impacted by the homes' proximity to the North Star solar farm.

We note that the median unit sale price of the most recent sales of each of the excluded adjoining properties identified previously is \$141.44 per square foot. As indicated above, the included Test Area Sales have a median

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<sup>&</sup>lt;sup>18</sup> https://www.fhfa.gov/DataTools/Downloads/Pages/House-Price-Index.aspx

unit price of \$151.93 per square foot. Inclusion of the excluded adjoining property sales would not have made a conclusive impact on the conclusions of the paired sale analysis.

### Group 2

We analyzed Adjoining Property 18, a single-story, rambler style home that sold in 2017.

	North Star Solar										
		Tes	st Area Sale	- Group	2						
Adj. Property #	Address	Median Sale Price	Median Site Size (AC)	Median Beds	Median Baths	Median Year Built	Median GLA (SF)	Median Sale Date	Median Price PSF		
18	37096 Little Oak Ln	\$289,000	2.07	4	3.0	2001	2,412	Apr-17	\$119.82		

We analyzed 10 Control Area Sales, single family homes with similar location, construction, square footages, lot sizes, and ages that sold within a reasonable time frame from the median sale date of the Test Area Sale, that were not located in close proximity to the solar farm.

Adjoining Property 18 sits on a somewhat small lot for the home size in this area. So as to capture homes that bracket the Test Area Sale home size, those ranging from 1,700 square feet to 3,400 square feet of finished gross living area were included. The parameters of our search for Control Area Sales were widened to include lot sizes between 1 and 10 acres.

The Control Area Sales for Group 2 are rambler style homes with 4 bedrooms and 2 to 4 bathrooms on less than 10-acre parcels. We excluded sales that were bank-owned, those between related parties, or others under duress as non-arm's length transactions. We adjusted the Control Area Sales for market conditions using the compounded monthly growth rate exhibited in the FHFA House Price Index for the zip code, for the period from 2016 through 2018.

CohnReznick Paired Sale Analysis North Star Solar Group 2								
No. of Sales	Potentially Impacted by Solar Farm	Adjusted Median Price Per SF						
Test Area Sales (1)	Adjoining solar farm	\$119.82						
Control Area Sales (10)	No: Not adjoining solar farm	\$116.33						
Difference between Unit Pr Adjusted Median Unit Prie		3.00%						

**<u>Noting no significant price differential</u>**, it does not appear that the North Star solar farm had any negative impact on adjacent property value in Group 2.



Adjoining Property 46 was analyzed as a 2017 sale in Group 1 and sold again most recently in December 2020.



Photo of 10132 367<sup>th</sup> Street (Adjoining Property 46) with view of solar arrays from 2020 MLS listing

North Star Solar Test Area Sale - Group 3									
Adj. Property #	Address	Median Sale Price	Median Site Size (AC)	Median Beds	Median Baths	Median Year Built	Median GLA (SF)	Median Sale Date	Median Price PSF
46	10132 367th St	\$415,000	9.31	4	3.0	2001	2,108	Dec-20	\$196.87

We analyzed ten Control Area Sales, single family homes with similar location, construction, square footages, lot sizes, and ages that sold within a reasonable time frame from the median sale date of the Test Area Sale, that were not located in close proximity to the solar farm.

The Control Area Sales for Group 3 are split-level style homes and similar with 4 bedrooms and 2 or 3 bathrooms on one to ten acre parcels. We excluded sales that were bank-owned, those between related parties, or others under duress as non-arm's length transactions. We adjusted the Control Area Sales for market conditions using the compounded monthly growth rate exhibited in the FHFA House Price Index, for the period from 2018 through mid-year 2021 (the most recent data available). The results of our analysis are presented next.



CohnReznick Paired Sale Analysis North Star Solar Group 3								
No. of Sales	Potentially Impacted by Solar Farm	Adjusted Median Price Per SF						
Test Area Sale (1)	Adjoining solar farm	\$196.87						
Control Area Sales (10)	No: Not adjoining solar farm	\$151.73						
Difference between Unit Pr Adjusted Median Unit Prio		29.75%						

We note that the sale price of the 2020 sale of Adjoining Property 46 is one of the highest for this home type (split-level) in all the County Assessor data from 2016 to year to date 2021 for North Branch and Sunrise Townships. However, the selling broker, Candace Rindahl, remarked that the price was market for the area at the time of sale. We see this in a study of the rate of appreciation over the course of three years between the prior sale and most recent sale. Adjoining Property 46 appreciated at a higher rate than the local area, as seen in the following table.

	Test Area Sale								FHFA Housin	Zip Code ng Price Index ange	
Property ID	Address	Land Area (Acres)	Total Finished Living Area (SF)	Most Recent Sale Date	Most Recent Sale Price	Date	Prior Sale Price	Total Appreciation	Monthly Appreciation Rate	Total Appreciation	Monthly Appreciation Rate
AP 46	10132 367th St	9.31	2,108	12/20/20	\$415,000	10/20/17	\$333,000	24.62%	0.58%	17.43%	0.42%

We note a somewhat large positive difference in adjusted median price per square foot between the Test Area Sale and the Control Area Sales. The most comparable Control Area Sale, 6836 410<sup>th</sup> Street, sold for an adjusted sale price per square foot of \$193.35, reflecting a difference of 1.8 percent to the unit sale price of the Test Area Sale. We find that on a macro and micro level of analysis, <u>the sale price of Adjoining Property 46 (Group 3)</u> was not negatively impacted by its proximity to the North Star solar farm.

The differential between the Test Area Sale and the Control Area Sales is much higher than any of our other studies; we have considered this to be an outlier. While the indication shows that the adjacent solar farm has not negatively impacted the property value for this home, we have considered that this house has "set the market" for this kind of property type (home style, age and acreage) – we believe that this differential will likely stabilize in the near future as other homes catch up to the appreciation shown by Adjoining Property 46. Thus, we have not included this Group in the collection of impact studies in our conclusion.



We analyzed Adjoining Property 3, a single-story, rambler style home that sold in 2019.

North Star Solar Test Area Sale - Group 4									
Adj. Property #	Address	Sale Price	Site Size (AC)	Bedrooms	Bathrooms	Year Built/ Renovated	GLA (SF)	Sale Date	Price PSF
3	10009 375TH ST	\$260,000	5.05	3	2.5	1980 / 2005	1,508	Jul-19	\$172.41

We analyzed seven Control Area Sales, single family homes with similar location, construction, square footages, lot sizes, and ages that sold within a reasonable time frame from the median sale date of the Test Area Sale, that were not located in close proximity to the solar farm.

Adjoining Property 3 sits on a somewhat large lot for the home size in this area. So as to capture homes that bracket the Test Area Sale home size, those ranging from 1,200 to 2,000 square feet of finished gross living area were included. The parameters of our search for Control Area Sales were widened to include lot sizes between 2 and 7 acres.

The Control Area Sales for Group 4 are rambler style homes with 2 to 4 bedrooms and 2 to 3 bathrooms on less than 7-acre parcels but greater than 2 acre parcels. We excluded sales that were bank-owned, those between related parties, or others under duress as non-arm's length transactions. We adjusted the Control Area Sales for market conditions using the compounded monthly growth rate exhibited in the FHFA House Price Index, for the period from 2018 through 2020.

CohnReznick Paired Sale Analysis North Star Solar Group 4									
No. of Sales	Adjusted Median Price Per SF								
Test Area Sale (1)	Adjoining solar farm	\$172.41							
Control Area Sales (7)	No: Not adjoining solar farm	\$170.86							
Difference between Unit Pr Adjusted Median Unit Pri		0.91%							

**Noting no significant price differential**, it does not appear that the North Star solar farm had any negative impact on adjacent property value in Group 4.



	North Star Solar Test Area Sale - Group 5								
Adj. Property #	Address	Sale Price	Site Size (AC)	Bedrooms	Bathrooms	Year Built/ Renovated	GLA (SF)	Sale Date	Price PSF
19	37056 LITTLE OAK LN	\$435,000	2.37	4	3.0	2001	2,121	Aug-21	\$205.09

We analyzed Adjoining Property 19, a split level-style home that sold in 2021.

We analyzed eight Control Area Sales, single family homes with similar location, construction, square footages, lot sizes, and ages that sold within a reasonable time frame from the median sale date of the Test Area Sale, that were not located in close proximity to the solar farm.

So as to capture homes that bracket the Test Area Sale home size, those ranging from 1,500 to 2,500 square feet of finished gross living area were included. The parameters of our search for Control Area Sales were widened to include lot sizes between 2 and 6 acres.

The Control Area Sales for Group 5 are split level homes with 3 to 5 bedrooms and 2 to 3 bathrooms on less than 6-acre parcels but greater than 2 acre parcels. We adjusted the Control Area Sales for market conditions using the compounded monthly growth rate exhibited in the FHFA House Price Index, for the period from 2019 through mid-year 2021 (the most recent data available).

CohnReznick Paired Sale Analysis North Star Solar Group 5									
No. of Sales	Adjusted Median Price Per SF								
Test Area Sale (1)	Adjoining solar farm	\$205.09							
Control Area Sales (8)	No: Not adjoining solar farm	\$170.88							
Difference between Unit Pr Adjusted Median Unit Pric		20.02%							

**Noting no significant negative price differential**, it does not appear that the North Star solar farm had any negative impact on adjacent property value in Group 5. We note that the sale price of the 2021 sale of Adjoining Property 19 is one of the highest for this home type (split-level) in all the County Assessor data from 2016 to year to date 2021 for North Branch and Sunrise Townships. We see this in a study of the rate of appreciation between the prior sale and most recent sale. Adjoining Property 19 appreciated at a higher rate than the local area, as seen in the following table.



		55056 Zip Code FHFA Housing Price Ind Change									
Property ID	Address	Land Area (Acres)	Total Finished Living Area (SF)	Recent	Most Recent Sale Price	Date	Prior Sale Price	Total Appreciation	Monthly Appreciation Rate	Total Appreciation*	Monthly Appreciation Rate
AP 19	37056 Little Oak Lane	2.37	2,121	8/20/21	\$435,000	6/21/13	\$208,000	109.13%	0.76%	75.96%	0.58%

\*The 2021 HPI for the zip code is not available as of the report date. The estimate presented relies on the index for 2020, grown by the 2021 trend for the census region on a monthly basis through August 2021.

### Group 6

We analyzed Adjoining Property 22, a rambler style home that sold in 2019. We note this site has a large lowerlevel with a second full kitchen, which is much larger than surrounding homes in the same marketplace.

	North Star Solar Test Area Sale - Group 6													
Adj. Property #	Address	Sale Price	Site Size (AC)	Bedrooms	Bathrooms	Year Built/ Renovated	Finished GLA (SF)	Sale Date	Price PSF					
22	11210 367TH ST	\$430,000	5.34	4	2.5	1975	3,756	Apr-21	\$114.48					

We analyzed four Control Area Sales, single family homes with similar location, construction, square footages, lot sizes, and ages that sold within a reasonable time frame from the median sale date of the Test Area Sale, that were not located in close proximity to the solar farm.

Adjoining Property 22 sits on a large lot for the home size in this area. So as to capture homes that bracket the Test Area Sale home size, those ranging from 3,200 to 5,000 square feet of finished gross living area were included. The parameters of our search for Control Area Sales include lot sizes between 1 and 10 acres.

Comparable sales of large rambler-style homes on larger lots with finished basements were less prevalent in Sunrise and North Branch Townships. The Control Area Sales for Group 6 are rambler style homes with 4 to 6 bedrooms on less than 10-acre parcels but greater than 1 acre parcels. We adjusted the Control Area Sales for market conditions using the compounded monthly growth rate exhibited in the FHFA House Price Index, for the period from 2020 through mid-year 2021 (the most recent data available).



	CohnReznick Paired Sale Analysis North Star Solar Group 6										
No. of SalesPotentially Impacted by Solar FarmAdjusted Median Price Per SF											
Test Area Sale (1)	Adjoining solar farm	\$114.48									
Control Area Sales (4)	No: Not adjoining solar farm	\$120.49									
	Difference between Unit Price of Test Area Sale and Adjusted Median Unit Price of Control Area Sales										

One of the Control Area Sales located at 44869 John Avenue reflects an adjusted unit value of \$114.96 per square feet of finished gross living area, or a differential of -0.42 percent, which is considered nominal. While the unique characteristics of the Test Area Sale (Adjoining Property 22) result in what we consider to be an outlier in the marketplace, it does not appear that the North Star solar farm had any negative impact on adjacent property value in Group 6.



	North Star Solar Test Area Sale - Group 7													
Adj. Property #	Adj. Property # Address Sale Price Site Size (AC) Bedrooms Bathrooms Bathroot (SF) Date Price PSF													
43	10254 367TH ST	\$335,000	9.29	3	2.5	2005/2009	2,136	Oct-17	\$156.84					
Median	Median         \$335,000         9.29         3         2.5         2005/2009         2,136         Oct-17         \$156.84													

We analyzed Adjoining Property 43, which is a split-level style home that sold in 2017.

We analyzed 11 Control Area Sales, single family homes with similar location, construction, square footages, lot sizes, and ages that sold within a reasonable time frame from the median sale date of the Test Area Sale, that were not located in close proximity to the solar farm.

Adjoining Property 43 sits on a large lot for the home size in this area. So as to capture homes that bracket the Test Area Sale home size, those ranging from 1,500 square feet to 2,500 square feet of finished gross living area were included. The parameters of our search for Control Area Sales were widened to include lot sizes between 2 and 10 acres.

The Control Area Sales for Group 7 are generally split-level homes with 3 to 4 bedrooms and 2 to 3 bathrooms on less than 10-acre parcels, but greater than 2 acre parcels. We adjusted the Control Area Sales for market conditions using the compounded monthly growth rate exhibited in the FHFA House Price Index, for the period from 2016 through 2019.

CohnReznick Paired Sale Analysis North Star Solar Group 7											
No. of Sales	Adjusted Median Price Per SF										
Test Area Sale (1)	Adjoining solar farm	\$156.84									
Control Area Sales (11)	No: Not adjoining solar farm	\$135.63									
Difference between Unit Pr Adjusted Median Unit Pri		15.64%									

Noting no significant negative price differential, it does not appear that the North Star solar farm had any negative impact on adjacent property value in Group 6. Homes in this area are typically on 2 to 5 acre lot sizes. One home sale at 40723 Lowden Ave, an 1,896 square foot split level home built in 1999 on 10.1 acres, sold for a unit price of \$152.43 per square foot, unadjusted, in June 2018, or \$146.92 per square foot after adjustments for market conditions. This reflects a variance of 6.8 percent, which does not indicate a diminution in price.

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We analyzed Adjoining Property 64, a two-story home that sold in 2019.

		· · · · · · · · · · · · · · · · · · ·	Tes	North Star S st Area Sale -									
Adj. Property#	Adj. Property #     Address     Sale Price     Site Size (AC)     Bedrooms     Bathrooms     Year Built/ Renovated     GLA (SF)     Sale Date												
64	64 36640 KOST TRL \$310,000 8.13 4 3.0 1987 / 2003 2,219 Dec-19 \$139.7												

We analyzed five Control Area Sales, single family homes with similar location, construction, square footages, lot sizes, and ages that sold within a reasonable time frame from the median sale date of the Test Area Sale, that were not located in close proximity to the solar farm.

Adjoining Property 64 sits on a somewhat large lot for the home size in this area. So as to capture homes that bracket the Test Area Sale home size, those ranging from 1,500 square feet to 2,500 square feet of finished gross living area, the parameters of our search for Control Area Sales were widened to include lot sizes between 2 and 10 acres.

The Control Area Sales for Group 8 are two story homes with 3 to 4 bedrooms and 1.5 to 3 bathrooms on less than 10-acre parcels but greater than 2 acre parcels. We adjusted the Control Area Sales for market conditions using the compounded monthly growth rate exhibited in the FHFA House Price Index, for the period from 2018 through 2020.

CohnReznick Paired Sale Analysis North Star Solar Group 8											
No. of Sales	Adjusted Median Price Per SF										
Test Area Sale (1)	Adjoining solar farm	\$139.70									
Control Area Sales (5)	No: Not adjoining solar farm	\$132.68									
Difference between Unit Pr Adjusted Median Unit Pri	5.29%										

**<u>Noting no significant price differential</u>**, it does not appear that the North Star solar farm had any negative impact on adjacent property value in Group 8.

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We analyzed Adjoining Property 57, a split-level home with a partially finished lower level that sold in 2018. The home has an opportunity for a purchaser to add two baths (roughed in at the time of sale), two bedrooms, a family room, and storage in the lower level. While the lower level is not fully finished, a purchaser would likely evaluate the sale price against comparables based on the potential gross living area, inclusive of the cost to complete the build-out. We have relied on this unit of comparison in our analysis.

	North Star Solar Test Area Sale - Group 9													
Adj. Property #	Adj. Property #     Address     Sale Price     Site Size (AC)     Bedrooms     Bathrooms     Year Built/ Renovated     GLA     Sale Date													
57	10655 367TH ST	\$304,900	5.00	3	4.0	1998	3,000	Nov-18	\$101.63					

We analyzed eight Control Area Sales, single family homes with similar location, construction, square footages, lot sizes, and ages that sold within a reasonable time frame from the median sale date of the Test Area Sale, that were not located in close proximity to the solar farm.

Adjoining Property 57 sits on a somewhat large lot for the home size in this area. So as to capture homes that bracket the Test Area Sale home size, those ranging from 2,648 square feet to 4,324 square feet of finished gross living area were included. The parameters of our search for Control Area Sales were widened to include lot sizes between approximately 1 and 7 acres.

The Control Area Sales for Group 9 are split level and rambler homes with lower levels, with 3 to 5 bedrooms and 2 to 4 bathrooms on less than 7-acre parcels but greater than approximately 1 acre parcels. We adjusted the Control Area Sales for market conditions using the compounded monthly growth rate exhibited in the FHFA House Price Index, for the period from 2017 through 2019.

CohnReznick Paired Sale Analysis North Star Solar Group 9											
No. of Sales	Adjusted Median Price Per SF										
Test Area Sale (1)	Adjoining solar farm	\$101.63									
Control Area Sales (8)	No: Not adjoining solar farm	\$103.95									
Difference between Unit P Adjusted Median Unit Pri		-2.22%									

Noting no significant price differential, it does not appear that the North Star solar farm had any negative impact on adjacent property value in Group 9.

### Repeat Sales Analysis (Before and After Construction of the Solar Farm)

In a 2017 study conducted by Chisago County Assessor John Keefe, Keefe analyzed the sales of 15 homes alongside or near the North Star Solar Farm that sold between January 2016 and October 2017. Based on trends exhibited by 750+ sales throughout the county, Keefe concluded that the homes, located on 375<sup>th</sup>, 367<sup>th</sup>, Keystone, Little Oak, Lincoln Trail, and Kost Trail were all "in excess of assessed" and reported that "valuation hasn't suffered."<sup>19</sup>

Considering Keefe's 2017 study, we conducted a supplemental analysis in which we compared the sale prices of homes that are in our Test Area Groups that are adjacent to the North Star Solar Farm to the previous sale

price of the home, commonly known as a "Repeat Sales Analysis" utilizing a sale and resale of the same property. These sales reflect the average site size, home type, and home size of properties in the surrounding area. In our comparison for each property analyzed, we calculated the total appreciation between each sale, the number of months that elapsed between each sale, and determined the monthly appreciation rate for the property. We then compared the extracted monthly appreciation rates to the change in the Federal Housing Finance Agency (FHFA) Home Price Index in Minnesota's 55056 zip code (where the studied homes are located) over the same period. The index for zip codes is measured on a yearly basis and is presented to the right. We note, there were two Test Area Sales which transacted in April and August 2021. The FHFA Home Price Index (HPI) by zip code does not have 2021 data available as of the report date since the calendar year has not completed. We have analyzed the FHFA Home Price Index, not seasonally adjusted, for the West North Central region of the USA, which includes Minnesota, and have estimated the percentage increase from December 2020 to each April and August 2021 by the corresponding monthly change for the West North Central census division.

We conducted the same analysis for 38 single-family Control Group properties that had repeat sales that are not within proximity to the North Star Solar Farm. The tables on the following page present this study. The applied same estimation for the HPI for the Control Area Sales that sold in 2021 and 2022.

Some homes experienced depreciation between sale dates. During the

calendar years of 2005, 2006 and 2007, housing prices in the United States were reaching their peak. In 2006 the HPI for the zip code reached 251.83, a record at that time. Post-recession homes prices, after 2008 continued

55056 Zij	(Yeai	ousing Pric Over Yea onally Adju	
Year	Annual Index	Annual Change (%)	Compounded Monthly Change (%)
1991	100.00		
1992	101.15	1.15%	0.10%
1993	105.00	3.81%	0.31%
1994	110.54	5.28%	0.43%
1995	121.51	9.92%	0.79%
1996	127.27	4.74%	0.39%
1997	134.29	5.52%	0.45%
1998	141.08	5.06%	0.41%
1999	149.86	6.22%	0.50%
2000	169.13	12.86%	1.01%
2001	187.18	10.67%	0.85%
2002	200.83	7.29%	0.59%
2003	212.82	5.97%	0.48%
2004	226.83	6.58%	0.53%
2005	246.73	8.77%	0.70%
2006	251.83	2.07%	0.17%
2007	243.35	-3.37%	-0.29%
2008	223.07	-8.33%	-0.72%
2009	196.72	-11.81%	-1.04%
2010	179.99	-8.50%	-0.74%
2011	163.09	-9.39%	-0.82%
2012	155.38	-4.73%	-0.40%
2013	165.02	6.20%	0.50%
2014	175.59	6.41%	0.52%
2015	187.02	6.51%	0.53%
2016	203.03	8.56%	0.69%
2017	220.28	8.50%	0.68%
2018	235.98	7.13%	0.58%
2019	248.44	5.28%	0.43%
2020	258.67	4.12%	0.34%



<sup>&</sup>lt;sup>19</sup> https://www.cleanenergyresourceteams.org/chisago-county-boards-real-estate-update-shows-solar-has-no-impact-property-values

to fall until 2012, the effective bottom at 155.38, a drop of more than 38% in market value over 6 years from the peak. The market did not recover to the same or higher levels until 2019 and 2020. When the homes sold in 2017 and 2016, respectively, the housing market had not fully recovered in the area and the negative appreciation tracks with the overall market conditions.

				Test Area	Sales Group						55056 Zip Co	ode - FHFA H	ousing Price In	dex Change
Property ID	Address	Land Area (Acres)	Total Finished Living Area (SF)	Most Recent Sale Date	Most Recent Sale Price	Prior Sale Date	Prior Sale Price	Total Appreciation	Months Elapsed Between Sales	Monthly Appreciation Rate	Index Level During Year of Most Recent Sale	Prior Sale Year Index Level	Total Appreciation	Monthly Appreciation Rate
AP 3	10009 375th Street	5.10	1,508	Jul-19	\$260,000	Mar-05	\$163,000	59.51%	172	0.27%	248.44	246.73	0.69%	0.00%
AP 18	37096 Little Oak Lane	2.10	2,412	Apr-17	\$289,000	Jan-06	\$308,000	-6.17%	134	-0.05%	220.28	251.83	-12.53%	-0.10%
AP 19	37056 Little Oak Lane	2.37	2,121	Aug-21	\$435,000	Jun-13	\$208,000	109.13%	98	0.76%	290.37	165.02	75.96%	0.58%
AP 22	11210 367th Street	5.20	3,756	Apr-21	\$430,000	Dec-03	\$107,000	301.87%	208	0.67%	274.78	212.82	29.11%	0.12%
AP 42	10200 367th Street	9.30	2,172	Jan-22	\$454,900	Nov-17	\$330,000	37.85%	50	0.64%	294.76	220.28	33.81%	0.58%
AP 43	10254 367th Street	9.30	2,136	Oct-17	\$335,000	Nov-05	\$373,000	-10.19%	143	-0.08%	220.28	246.73	-10.72%	-0.08%
AP 46	10132 367th Street	9.31	2,108	Oct-17	\$333,000	Jul-01	\$226,800	46.83%	196	0.20%	220.28	187.18	17.68%	0.08%
AP 54	10505 367th Avenue	5.00	1,890	Aug-16	\$260,500	Apr-99	\$123,294	111.28%	208	0.36%	203.03	149.86	35.48%	0.15%
Median - Tes	st Area Sales	5.15	2,129							0.32%				0.10%

				Control Are	a Sales Group							55056 Zip Code - FHFA Housing Price Index Change				
Property ID		Land Area (Acres)	Living Area (SF)	Most Recent Sale Date	Most Recent Sale Price	Date	Price	Total Appreciation	Sales	Monthly Appreciation Rate	Index Level During Year of Most Recent Sale	Prior Sale Year Index Level	Total Appreciation	Monthly Appreciation Rate		
G1-1	10589 Wilcox Road	5.00	1,900	Jul-16	\$262,500	Sep-07	\$223,700	17.34%	105	0.15%	203.03	243.35	-16.57%	-0.17%		
G1-2	5183 366th Street	2.29	1,530	Jul-16	\$227,708	Apr-07	\$207,000	10.00%	112	0.09%	203.03	243.35	-16.57%	-0.16%		
G1-3	4359 Elk Court	2.50	1,970	Jan-17	\$263,000	Nov-98	\$175,365	49.97%	218	0.19%	220.28	141.08	56.14%	0.20%		
G1-4	39088 More Ferry Road	5.00	1,838	Jan-17	\$229,000	Sep-05	\$185,000	23.78%	136	0.16%	220.28	246.73	-10.72%	-0.08%		
G1-7/G5-4	4737 377th Street	2.50	2,002	Nov-20	\$298,000	May-99	\$138,400	115.32%	257	0.30%	258.67	149.86	72.61%	0.21%		
G1-8	8628 380th Street	5.00	1,842	Jul-17	\$275,000	Apr-10	\$203,000	35.47%	86	0.35%	220.28	179.99	22.38%	0.23%		
G1-9	6417 360th Street	5.00	2,346	Jul-17	\$325,009	May-08	\$270,000	20.37%	110	0.17%	220.28	223.07	-1.25%	-0.01%		
G2-1	36338 Lincoln Trail	10.00	2,641	Jun-16	\$304,000	Feb-06	\$361,036	-15.80%	124	-0.14%	203.03	251.83	-19.38%	-0.17%		
G2-10	4779 374th Street	1.25	2,252	Aug-18	\$255,000	Sep-00	\$155,860	63.61%	215	0.23%	235.98	169.13	39.53%	0.15%		
G2-2	40956 Greystone Ave	2.03	2,571	Aug-16	\$267,776	Aug-05	\$285,900	-6.34%	132	-0.05%	203.03	246.73	-17.71%	-0.15%		
G2-3	6551 372nd Street	4.98	2,552	Jun-17	\$290,000	Oct-04	\$319,990	-9.37%	152	-0.06%	220.28	226.83	-2.89%	-0.02%		
G2-6	37420 Falcon Ave	9.93	1,792	May-18	\$285,900	Mar-04	\$225,000	27.07%	170	0.14%	235.98	226.83	4.03%	0.02%		
G2-9/G9-8	38586 July Ave	6.02	3,082	Jun-18	\$308,000	Sep-05	\$275,000	12.00%	153	0.07%	235.98	246.73	-4.36%	-0.03%		
G3-10/G4-5	4360 Elk Court	2.52	1,773	Apr-20	\$299,900	Jul-99	\$163,500	83.43%	248	0.24%	258.67	149.86	72.61%	0.22%		
G3-5	9389 430th Street	9.95	2,235	Jan-21	\$340,000	Feb-95	\$110,200	208.53%	311	0.36%	260.02	121.51	113.99%	0.24%		
G3-6	40625 Finley Road	1.09	1,840	Dec-19	\$241,000	May-09	\$174,500	38.11%	126	0.26%	248.44	196.72	26.29%	0.18%		
G3-8	42155 Joywood Ave	5.00	2,180	Apr-20	\$308,300	Jun-00	\$195,000	58.10%	238	0.19%	258.67	169.13	52.94%	0.18%		
G3-9/G7-1	6836 410th Street	9.79	1,817	Oct-19	\$322,000	Sep-99	\$110,000	192.73%	242	0.45%	248.44	149.86	65.78%	0.21%		
G4-1	5584 411th Street	2.03	1,912	Feb-18	\$286,000	Jan-03	\$230,000	24.35%	181	0.12%	235.98	212.82	10.88%	0.06%		
G4-2	9672 420th Street	5.04	1,466	Nov-18	\$245,000	Apr-94	\$114,580	113.82%	296	0.26%	235.98	110.54	113.48%	0.26%		
G4-3	4403 366th Court	2.39	1,714	Nov-18	\$287,000	Jun-06	\$263,500	8.92%	149	0.06%	235.98	251.83	-6.29%	-0.04%		
G4-4	42205 Joywood Ave	5.04	1,262	Jun-19	\$234,000	Mar-99	\$133,680	75.04%	244	0.23%	248.44	149.86	65.78%	0.21%		
G5-1/G7-9	9726 420th Street	5.00	1,720	Dec-19	\$253,000	Mar-95	\$95,500	164.92%	296	0.33%	248.44	121.51	104.46%	0.24%		
G5-3	4885 366th Street	2.00	1,617	Jul-20	\$292,000	Feb-99	\$80,200	264.09%	257	0.50%	258.67	149.86	72.61%	0.21%		
G5-5	7630 393rd Court	3.09	2,325	Dec-20	\$360,000	Sep-04	\$247,000	45.75%	195	0.19%	258.67	226.83	14.04%	0.07%		
G5-6	37867 Eaglewood Ave	2.50	1,856	Dec-20	\$308,000	Nov-11	\$164,000	87.80%	109	0.58%	258.67	163.09	58.61%	0.42%		
G5-7	40620 Finley Road	2.34	1,604	May-21	\$302,000	Jul-98	\$116,982	158.16%	274	0.35%	283.31	141.08	100.81%	0.26%		
G5-8	40830 Fenian Way	2.59	2,310	Jun-21	\$356,000	Oct-96	\$127,305	179.64%	296	0.35%	287.37	127.27	125.80%	0.28%		
G6-2	44869 John Ave	9.70	3,292	Mar-20	\$340,000	Nov-05	\$340,000	0.00%	172	0.00%	258.67	246.73	4.84%	0.03%		
G6-3	7259 407th Street	1.02	3,258	Jun-21	\$430,000	Mar-98	\$199,900	115.11%	279	0.28%	287.37	141.08	103.70%	0.26%		
G7-1	7630 393rd Ct	3.09	2,325	Nov-18	\$319,900	Sep-04	\$247,000	29.51%	170	0.15%	235.98	226.83	4.03%	0.02%		
G7-10	5460 367th Ct	7.10	1,612	Feb-17	\$201,000	May-07	\$226,000	-11.06%	117	-0.10%	220.28	243.35	-9.48%	-0.08%		
G7-11	5183 366th St	2.28	1,579	Jul-16	\$201,000	Apr-07	\$207,000	-2.90%	112	-0.03%	203.03	243.35	-16.57%	-0.16%		
G7-3	8628 380th St	5.00	1,978	Jul-17	\$275,000	Nov-99	\$140,000	96.43%	211	0.32%	220.28	149.86	46.99%	0.18%		
G7-4	5967 Birch St	2.65	1,963	Oct-18	\$272,000	Jan-96	\$102,000	166.67%	273	0.36%	235.98	127.27	85.42%	0.23%		
G7-5	39088 More Ferry Rd	5.00	1,906	Mar-19	\$266,000	Sep-05	\$185,000	43.78%	162	0.22%	248.44	246.73	0.69%	0.00%		
G7-9	39779 Elk Ave	3.36	1,620	Jun-17	\$255,000	Feb-13	\$216,000	18.06%	52	0.32%	220.28	165.02	33.49%	0.56%		
G8-2	4406 366th Street	2.50	2,464	Oct-18	\$270,000	Jun-05	\$260,000	3.85%	160	0.02%	235.98	246.73	-4.36%	-0.03%		
G8-4	6670 372nd Street	4.00	2,111	Aug-19	\$255,550	Feb-07	\$238,000	7.37%	150	0.05%	248.44	243.35	2.09%	0.01%		
G9-1	6021 371st Street	5.09	3,754	Jun-19	\$385,000	Aug-98	\$109,900	250.32%	250	0.50%	248.44	141.08	76.10%	0.23%		
G9-5	39221 Edgewater Lane	0.92	2,648	Jan-18	\$275,000	Nov-10	\$185,000	48.65%	87	0.46%	235.98	179.99	31.11%	0.31%		
G9-6	40655 Harvester Cir	1.75	2,936	May-19	\$325,000	Aug-01	\$204,950	58.58%	213	0.22%	248.44	187.18	32.73%	0.13%		
G9-8	7579 397th Street	2.04	2,712	May-18	\$281,000	Jan-96	\$127,000	121.26%	269	0.30%	235.98	127.27	85.42%	0.23%		
Median - Cor	ntrol Area Sales	3.09	1,970							0.22%				0.18%		

Most home sites outside of a subdivision in this area are within the 2.00- to 5.00-acre range, as shown in the Control Area Sales table above. The median gross living area for each group differs by approximately 160 square feet of living area; however, the analysis described in this section, does not require adjustments to the sales as we are evaluating the difference in appreciation rates between a sale and resale of the same property.

### Conclusion

In our analysis of 102 resales of homes adjacent to the North Star Solar facility and in the surrounding area, when compared to the FHFA home price index for the local zip code, the median monthly appreciation rate of the Test Area Sales group and the Control Area Sales group both outperformed the average for the zip code, as depicted in the far-right column in the tables on the prior page. Additionally, there is no discernable difference between the median rates of appreciation for the Test Area Sales compared to the Control Area Sales. As such, we concur with Assessor Keefe's conclusion that there does not appear to be a consistent detrimental impact on properties adjacent to the North Star Solar Farm.



### SOLAR FARM 2: DOMINION INDY SOLAR III, MARION COUNTY, IN

**Coordinates:** Latitude 39°39'14.16"N, Longitude 86°15'35.06"W

**PIN:** 49-13-13-113-001.000-200

Population Density (2019) Marion County: 2,434 people per square mile (Largest City = Indianapolis)

Total Land Size: 129.04 acres

Date Project Announced: August 2012

Date Project Completed: December 2013

**Output:** 8.6 MW AC (11.9 MW DC)



Aerial imagery retrieved from Google Earth

### **Overview and Surrounding Area:**

The Dominion Indy III Solar Farm was developed by Dominion Renewable Energy and became operable in December 2013. This solar farm has ground-mounted solar panels and has the capacity for 8.6 Megawatts (MW) AC of power. The panels are mounted in a fixed tilt fashion with 12 inverters.



The Dominion Indy III solar farm is located in Decatur Township, in the southwest portion of Marion County, Indiana. The solar farm is approximately 10 miles southeast of the Indianapolis International Airport and approximately eight and a half miles from the center of Indianapolis.

### The Immediate Area:

The solar installation is on the southern side of West Southport Road. Adjoining parcels to the west, south, and east are agricultural in nature, actively farmed primarily with row crops and large areas of mature trees. There is one single family home on 4.78 acres of land at the northwest corner of the solar site, with frontage on West Southport Road, identified in our analysis as Adjoining Property 9.

To the north, across West Southport Road from the solar site, is the single-family residential subdivision known as Crossfield. Originally developed with over 81 acres of land by the Key Life Insurance Company, the one- and two-story homes in the subdivision were built between approximately 1998 and 2011.

All of the adjacent land parcels to the solar farm are used for agricultural or residential purposes.

The solar farm is surrounded by a chain link fence that contains all the solar panels. Additionally, there are some natural shrubs and deciduous trees on all sides of the property; this vegetation was in place before the solar farm was developed.

### Prior Use: Agricultural use

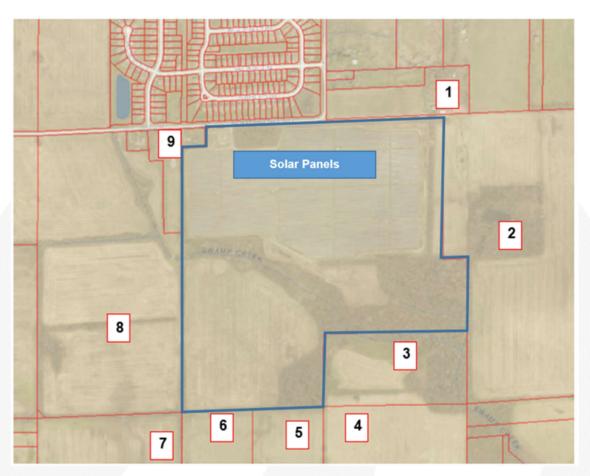
**<u>Real Estate Tax Information:</u>** Prior to development of the solar farm, in 2013, the owner of this 129-acre site paid real estate taxes of \$1,788 annually. After development of the solar farm development, in 2015, real estate taxes increased to approximately \$16,405, an 818 percent increase in tax revenue for the site.

PIN	Acres		2013 Taxes Paid				Tax 201 Increase		013 Assessed Value		5 Assessed Value	Value Increase	
Marion County, IN 49-13-13-113-001.000-200	129.04	\$	1,788	\$	16,405	818%	b	\$	89,400	\$	109,900	23%	
TOTAL	129.04	\$	1,788	\$	16,405	818%	6	\$	89,400	\$	109,900	23%	

### Paired Sale Analysis:

The maps on the following pages display the parcels within the solar farm is located (outlined in blue). Properties adjoining this site are numbered for subsequent analysis.





**Dominion Indy III - Adjoining Properties** 

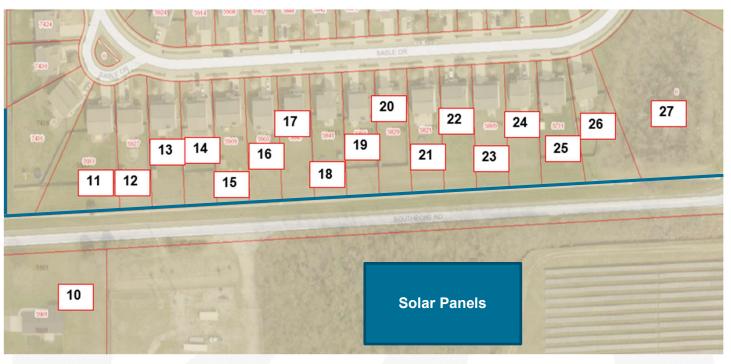
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**Dominion Indy III - Adjoining Properties** 

We have considered two types of paired sales analysis with regards to the Dominion Indy III Solar Farm. The first compares sales of Adjoining Properties to the solar farm after the completion of the solar farm site (Test Area Sales) to similar properties not proximate to the solar farm (Control Area Sales). We utilized this type of paired sale analysis for all three Groups of Adjoining Properties under study.

The second type of paired sale analysis is known as a Before and After analysis which compares sales of Adjoining Properties that occurred prior to the announcement of the solar farm with the sales of the same Adjoining Properties after the completion of the solar farm development. We were able to use home sale data from the Crossfield subdivision that is located to the north of the solar site, across West Southport Road.

### Group 1 – Agricultural Land

Adjoining Property 2 is a vacant 86.96-acre agricultural parcel located to the east of the solar site. Adjoining Property 2 sold in October 2017 and was considered for a paired sale analysis, known as a Test Area Sale, in Group 1.

The property line of this unimproved parcel is approximately 166 feet from the closest solar panel. The following table outlines the other important characteristics of Adjoining Property 2.



Test Area Sale Group 1 - Agricultural Land											
Adjoining Property #	Address	Sale Price Site Size (AC)		NCCPI Index	Wetlands	Floodplain	Sale Price/AC	Sale Date			
Adjoining Property 2	5755 W Southport Rd, Indianapolis, IN	\$738,584	89.96	63.4	1%	Zone X	\$8,210	Oct-17			

Crop yields have been the basis for establishing a soil productivity index, and are used by county assessors, farmers, and market participants in assessing agricultural land. While crop yields are an integral part in assessing soil qualities, it is not an appropriate metric to rely on because "yields fluctuate from year to year, and absolute yields mean little when comparing different crops. Productivity indices provide a single scale on which soils may be rated according to their suitability for several major crops under specified levels of management such as an average level." The productivity index, therefore, not crop yields, is best suited for applications in land appraisal and land-use planning.

The United States Department of Agriculture's (USDA) National Resources Conservation Services (NRCS) developed and utilizes the National Commodity Crop Productivity Index (NCCPI) as a national soil interpreter and is used in the National Soil Information System (NASIS), but it is not intended to replace other crop production models developed by individual states.<sup>20</sup> The focus of the model is on identifying the best soils for the growth of commodity crops, as the best soils for the growth of these crops are generally the best soils for the growth of other crops.<sup>21</sup> The NCCPI model describes relative productivity ranking over a period of years and not for a single year where external influences such as extreme weather or change in management practices may have affected production. At the moment, the index only describes non-irrigated crops, and will later be expanded to include irrigated crops, rangeland, and forestland productivity.<sup>22</sup>

Yields are influenced by a variety of different factors including environmental traits and management inputs. Tracked climate and soil qualities have been proven by researchers to directly explain fluctuations in crop yields, especially those qualities that relate to moisture-holding capacity. Some states such as Illinois have developed a soil productivity model that considers these factors to describe "optimal" productivity of farmed land. Except for these factors, "inherent soil quality or inherent soil productivity varies little over time or from place to place for a specific soil (map unit component) identified by the National Cooperative Soil Survey (NCSS)."23 The NRCS Web Soil Survey website has additional information on how the ratings are determined. The State of Indiana does not have its own crop production model and utilizes the NCCPI.



<sup>&</sup>lt;sup>20</sup> Agricultural land rental payments are typically tied to crop production of the leased agricultural land and is one of the primary reasons the NCCPI was developed, especially since the model needed to be consistent across political boundaries.

<sup>&</sup>lt;sup>21</sup> Per the User Guide for the National Commodity Crop Productivity Index, the NCCPI uses natural relationships of soil, landscape and climate factors to model the response of commodity crops in soil map units. The present use of the land is not considered in the ratings. <sup>22</sup> AgriData Inc. Docs: http://support.agridatainc.com/NationalCommodityCropProductivityIndex(NCCPI).ashx <sup>23</sup> USDA NRCS's User Guide National Commodity Crop Productivity Index (NCCPI)

In analyzing agricultural land sales for Control Area Sales with similar characteristics to Adjoining Property 12, we have excluded any parcels with NCCPI soil indices less than 50.0 and greater than 85.0.

We identified and analyzed four Control Area Sales that were comparable in location, size, and use that were not located in close proximity to the solar farm. The Control Area Sales for Adjoining Property 2 are land tracts that were larger than 20 acres and utilized specifically as farmland. We excluded sales that were bank-owned, those between related parties, split transactions, and land with significant improvements.

The Control Area Sales were adjusted for market conditions using a regression and trend analysis to identify the appropriate monthly market condition adjustment. Using the agricultural land sale data published in the *Land Sales Bulletin*,<sup>24</sup> from January 2016 through December 2017, which includes reliable and credible data for analysis, we extracted a monthly rate of change of 0.50 percent.

Group 1 - Agricultural Land									
No. of Sales	Potentially Impacted by Solar Farm	Adjusted Median Pric Per Acre							
Test Area Sale (Adjoining Property 2)	Yes: Solar Farm was completed by the sale date	\$8,210							
Control Area Sales (4)	No: Not adjoining solar farm	\$8,091							

The results of our analysis for Adjoining Property 2, in Group 1 is presented below.

It is noted that we have kept this analysis within our study despite it being the sole land-only analysis. While we have not tabulated the difference in our reconciled average of variance (from study to study), this is important because it shows that agricultural land adjacent to solar but also lying in the future path of development does not show any degradation of value.

<u>Noting the relatively low price differential</u>, in which the Test Area Sale was higher than the median for the Control Areas Sales, it does not appear that the Dominion Indy III solar farm had any negative impact on the adjoining agricultural property values.

We idenitified a total of nine Adjoining Properties that sold after the develoment of the solar farm as single-family home uses. Adjoining Properties 11, 13, 14, 15, 18, 20, 22, 24 and 26 were analyzed in two paired sales analyses



<sup>&</sup>lt;sup>24</sup> https://www.landsalesbulletin.com/

(Group 2 and Group 3). These nine properties were analyzed as single-family homes and they are located in the Crossfield subdivision, across West Southport Road from the solar site, as seen in the prior aerials.

It should be noted that Adjoining Properties 11 and 24 have sold more than once since the solar farm was constructed, and each sale is included in the analysis. Adjoining Property 11 sold first in December 2015 and later in July 2018, approximately two and a half years later. Adjoining Property 24 sold first in February 2014 and later in April 2019, approximately five years later. Our research indicated that these were arm's-length sales between typically motivated buyers and sellers.

The nine Adjoining Properties that were included in our paired sales analysis were divided into two groups, based on the sale dates of the Test Area Sales.

### Group 2

For Group 2 (sales occurring between 2014 - 2016), we analyzed four Control Area Sales with similar location, square footages, lot sizes, and ages that sold within a reasonable time frame from the median sale date of the Group 2 Test Area Sales described below.

Dominion Indy III Solar Test Area Sales										
Group 2										
Adj. Property#	Address	Median Sale Price	Median Site Size (AC)	Median Beds	Median Baths	Median Year Built	Median Square Feet	Median Sale Date	Median Price PSF	
11, 20, 22, 24	5933 Sable Dr, 5829 Sable Dr, 5813 Sable Dr, 5737 Sable Dr	\$129,375	0.23	4	2.0	2008	2,163	Jul-15	\$59.10	

The Test Area Sales in Group 2 are located between 230 feet and 404 feet from the house to the solar panels. The Control Area Sales for Group 2 are located beyond this area in other areas of the Crossfield subdivision and in other nearby subdivisions. The Control Area Sales did not have a view of the solar farm.

### Group 3

For Group 3 (sales between 2017 - 2019), we analyzed a set of seven Control Area Sales with similar locations, square footages, lot sizes, and ages that sold within a reasonable time frame from the median sale date of the Group 3 Test Area Sales described on the next page.

	Test Area Sales Group 3										
Adj. Property #	Address	Median Sale Price	Median Site Size (AC)	Median Beds	Median Baths	Median Year Built	Median Square Feet	Median Sale Date	Median Price PSF		
	5933 Sable Dr, 5921 Sable Dr, 5921 Sable Dr, 5915 Sable Dr, 5909 Sable Dr, 5841 Sable Dr, 5737 Sable Dr, 5731 Sable Dr		0.23	3	2.5	2006	2,412	Jul-18	\$72.15		



The Test Area Sales in Group 3 are located between 227 feet and 419 feet from the house to the solar panels. The Control Area Sales are located beyond this area, in other areas of the Crossfield Subdivision, and in other nearby subdivisions. The Control Area Sales did not have a view of the solar farm.

Control Area Sales in Groups 2 and 3 were adjusted for market conditions using a regression analysis to identify the appropriate monthly market condition adjustment. The results of our study are presented below.

CohnReznick Paired Sale Analysis Dominion Indy III Solar Group 2 Adjusted									
No. of Sales	Sales Potentially Impacted by Solar Farm								
Test Area Sales (4)	Adjoining solar farm	\$59.10							
Control Area Sales (8)	No: Not adjoining solar farm	\$57.84							
fference between Unit P	2.18%								
	ice of Control Area Sales	2.18%							
Adjusted Median Unit Pr CohnRe		2.18%							
Adjusted Median Unit Pr CohnRe	rice of Control Area Sales znick Paired Sale Analysis pminion Indy III Solar	2.18% Adjusted Median Price Per SF							
Adjusted Median Unit Pr CohnRe Do	rice of Control Area Sales znick Paired Sale Analysis pminion Indy III Solar Group 3 Potentially Impacted by	Adjusted Median Price							
Adjusted Median Unit Pr CohnRe Do No. of Sales	rice of Control Area Sales znick Paired Sale Analysis ominion Indy III Solar Group 3 Potentially Impacted by Solar Farm	Adjusted Median Price Per SF							

The Test Area Sales for Group 2 sold with a median of 33 days on market, while the Control Area Sales for Group 2 sold with a median of 31 days on market. The Test Area Sales for Group 3 sold with a median of 17 days on market, while the Control Area Sales for Group 3 sold with a median of 25 days on market. There is no *significant negative marketing time differential*.

**<u>Noting the relatively low price differentials</u>, it does not appear that the Dominion Indy III solar farm has had any negative impact on adjoining residential property values.** 

## Before Announcement and After Construction of the Solar Farm Analysis:



Due to the number of sales over time in the Crossfield subdivision, we were able to conduct an analysis on the unit prices of single-family homes before the solar farm announcement date in comparison to the prices of single-family homes after the construction of the Dominion Indy III solar farm. We have provided our conclusions from the data below and the following page contains a chart with the data.

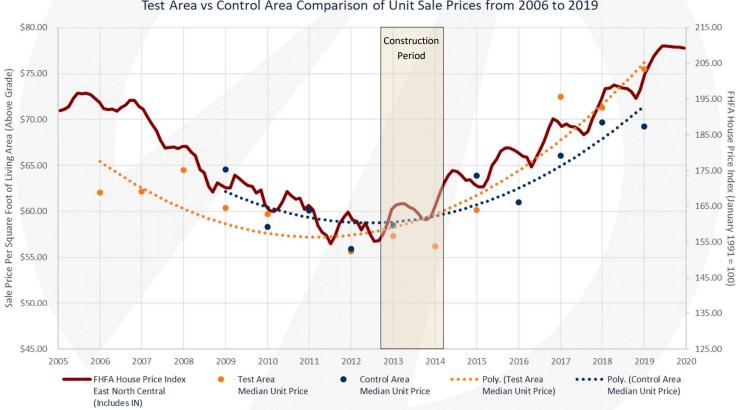
- 25 Test Area Sales were sold from 2006 to 2019 and 46 Control Area Sales sold from 2008 to 2019.
  - The Test Area Sales are homes located adjoining the Dominion Indy III Solar Farm in the Crossfield subdivision.
  - The Control Area Sales are homes located in the remainder of the Crossfield subdivision, not adjoining the solar farm.
- In both the Test Area Sales (ORANGE) and Control Area Sales (BLUE) plotted on the chart on the following page, new construction homes sold through 2011, prior to announcement of the solar farm.
- The dotted lines are polynomial trend lines plotted by Microsoft Excel in order to illustrate and approximate the "average" trend of each set of data.
- The economic climate improved in the period from 2013 to 2019 as shown by the Red line representing the Federal Housing Finance Agency's House Price Index for the East North Central region that includes Indiana. After construction of the solar farm, in parallel with the improving economic climate, it appears that unit prices for both the Test Area Sales and the Control Area Sales appreciated at a similar rate over the period from 2013 to 2019.

A difference in appreciation rates does not appear to exist between Test Area Sale homes versus the Control Area Sale homes.

Sale prices of single-family homes after the construction of the solar farm exhibit a similar appreciation trend as sales prior to the solar farm announcement. Overall, our findings indicate that there *is not a consistent and measurable difference* in prices that exists in association with homes proximate to the Dominion Indy III solar farm.







Dominion Indy III - Crossfield Subdivision: Test Area vs Control Area Comparison of Unit Sale Prices from 2006 to 2019

### Prepared for Birch Solar I, LLC, a Subsidiary of Lightsource BP Page | 56

SOLAR FARM 3: DOUGHERTY SOLAR, DOUGHERTY COUNTY, GEORGIA

Coordinates: Latitude 31.305614, Longitude 84.022637

PIN: 00144/00001/03D, 00120/00001/007,00146/00001/01B

Population Density (2019) Dougherty County: 288 people per square mile (Largest City Albany)

Total Land Size: ±1,280.93 Acres

Date Project Announced: August 2018

Date Project Completed: November 2019

Output: 120 MW AC



Aerial imagery retrieved from Google Earth

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# Prepared for Birch Solar I, LLC, a Subsidiary of Lightsource BP Page | 57

The 120 MW AC capacity, Dougherty Solar project was developed by NextEra in 2019. This solar site is expected to generate \$10 million in tax revenue over its lifetime. The project sits on a ±1,037.42-acre site which was a former agricultural land site. Georgia Power signed a 30-year Power Purchase Agreement with NextEra Energy to buy the solar generated power and NextEra Energy owns and maintains the installation. The solar facility consists of 5,232 rows of support beams for 440,535 solar panels.

<u>The Surrounding Area</u>: The Dougherty County Solar project is located in unincorporated Dougherty County, with a city of Albany mailing address, Georgia. Georgia Route 3 (Liberty Expressway) is approximately 4.5 mile west of the solar site, and connects the surrounding area to downtown Albany, which is approximately 8 miles northwest of the solar site. We note the nearest interstate, Interstate 75, is approximately 31 miles east of the solar site. The surrounding area is rural in nature with agricultural and low density residential uses surrounding the property.

<u>The Immediate Area</u>: Within a one-mile radius of the solar farm, surrounding uses mainly consist of agricultural land, with some single-family homes to the south and the northwest. Adjacent land parcels to the solar farm are mainly residential, with some agricultural uses. Additional surrounding land uses are an industrial use to the southeast of the southern-most panels. The majority of the residential housing is located to the south of the solar site, along Spring Flats Road, with some homes located along Gaissert Road to the northeast.

The solar site is built on a large, mostly flat agricultural site. The site is bounded by Spring Flats Road and Moultrie Road to the south with single family homes along these roads, agricultural land to the west, vacant land to the east, and agricultural land and more single family homes to the north. The adjoining homes sites are all buffered from the solar site by mature trees, bushes, and other shrubbery.

### Prior Use: Agricultural use

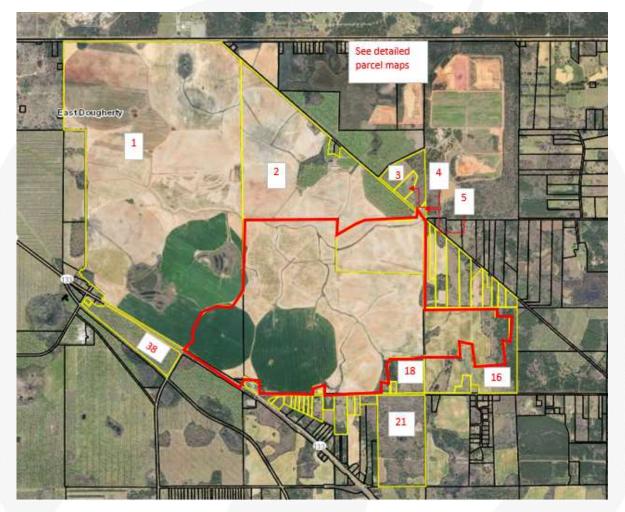
**Real Estate Tax Information:** The assessed value in Dougherty County has not changed for the solar parcel since decreased slightly from 2018, prior to the development of the solar farm, to 2020, after the development of the solar farm. We note \$61,000 of this decrease is due to the demolition of existing improvements (Parcel 00120/00001/007). Removing the improvements from the 2018 assessed value only accounts for a decrease of 0.32% from this parcel, although given the solar farm's recent construction it is possible the site would be reassessed during the next cycle. Historical real estate taxes are not available form Dougherty County public records.

PIN	Acres	20	18 Taxes Paid	20:	20 Taxes Paid	Tax Increase	201	8 Assessed Value	202	20 Assessed Value	Value Increase
Dougherty County, GA									1977 -		
00144/00001/03D	143.75	\$	9,435	\$	9,388	0%	\$	546,300	\$	546,300	0%
00120/00001/007	792.98	\$	38,909	\$	37,550	-3%	\$	2,253,000	\$	2,185,100	-3%
00146/00001/01B	100.69	\$	6,884	\$	6,850	0%	\$	398,600	\$	398,600	0%
00118/00001/07C (Post 2021 split)	125.47	No	Released	Not	Released		N	lot Released	N	lot Released	
TOTAL	1,280.93	\$	55,228	\$	53,787	-3%	\$	3,197,900	\$	3,130,000	-2%

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The maps below and following display the solar project (parcels outlined in red). Properties adjoining the solar site are outlined in yellow and numbered for subsequent analysis. We note the Dougherty County GIS has not updated its aerial imagery to include the solar panels on the solar site.



**Dougherty Solar - Adjoining Properties** 





**Dougherty Solar - Adjoining Properties** 

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Dougherty Solar - Adjoining Properties

Adjoining Properties 1-18, 20, 21, 24-31, 33-38 all sold between August 1973 and September 2019, prior to the date of completion of the subject solar site. These properties have been excluded from further analysis.

We do note Adjoining Property 27 was sold in July 2019, during the construction period of the solar farm. Since it was sold during the construction period, we have excluded it from being considered as a Test Area Sale since we cannot extract the external influence of construction on the sale price. We spoke to the selling broker for this transaction, Christy Wingate, with Parker Real Estate Group. She noted the future presence of the solar farm did not impact the sales price at all. Additionally, she noted in her experience, the presence of a solar farm is neither an attraction nor a deterrant for nearby home buyers. She noted a similar case with a new solar farm in Leesburg, Georgia, which is much smaller than the solar farm under analylsis, within a predominately residential area.

Adjoining Property 32 sold in December 2019 and we analyzed it for potential inclusion as a Test Area Sale; however, since the sale was a gift sale with no allocated sales price, we have not analyzed it further since the transaction was not a market transaction.

Adjoining Property 19 was sold in February 2020, however this sale was also a gift sale between family members with no allocated sales price. Therefore we did not analyze it.



Adjoining Property 22 sold in August 2020 for \$19,500, although according to public records does not note this sale was a "Fair Market Sale." Additionally, the county GIS marked this sale as unqualified for a market transactions. Therefore, we did not analyze this sale further.

### **Paired Sales Analysis:**

We have considered only one type of paired sales analysis, which compares sales of properties proximate to the solar farm (Control Area) to the sales of adjoining properties after the completion of the solar farm project (Test Area).

We found one adjoining property that qualified for a paired sales analysis. Adjoining Property 23 (Test Area Sale), circled in blue on the previous page, was considered for a paired sales analysis, and sold in June 2020, after the completion of the solar farm. This property was analyzed as single-family home use.

Adjoining Property 23 (Test Area Sale) was considered for a paired sales analysis, and we analyzed this property as a single-family home use, which is a 2,750 square foot home located on a 3.44- acre parcel that sold in June 2020. The property line of this parcel is approximately 202 feet from the closest solar panel, and the improvements are approximately 312 feet from the closest solar panel. The following table outlines the other important characteristics of Adjoining Property 23.

	Adjoining Property 23											
					Site Size				Square			
Status	Address	City	County	Sale Price	(AC)	Beds	Baths	Year Built	Feet	Improvements	Sale Price/SF	Sale Date
Sold	2916 SPRING FLATS RD	Albany	Dougherty	\$205,000	3.44	4	2.5	1980	2,750	1-Story SFR	\$74.55	Jun-20

We note that Adjoining Property 23 has an in-ground pool. We have found Control Area Sale data through Zillow and verified these sales through county records, conversations with brokers, and the County Assessor's Office. We excluded sales that were not arm's length, such as REO sales or those transactions between related parties. We have included only sales with a similar number of bedrooms, bathrooms, and living area, as well as land area. Additionally, we only selected Control Area Sales of single-family homes also had an in-ground pool.

It is important to note that these Control Area Sales are not adjoining a solar farm, nor do they have a view of one from the property at the time of their sales. Therefore, the announcement nor the completion of the solar farm use could not have impacted the sales price of these properties. It is informative to note that the average and median marketing time (from list date to off market date) for Control Area Sales was 83 days and 119 days, respectively. The Test Area sale had a marketing time of 99 days. This is an indication that the marketability of the Test Area sale was not negatively influenced by proximity to the Dougherty Solar project. The Control Area Sales are comparable in most physical characteristics and bracket Adjoining Property 23 reasonably.

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Control Area sales were adjusted for market conditions using the Federal Housing Finance Agency's House Price Index (HPI), a weighted, repeat-sales index measuring average price changes in repeat sales or refinancing of the same properties. The results of the paired sales analysis for the Dougherty Solar project are presented below.

CohnReznick Paired Sales Anaysis Dougherty County Solar Facility Adjoining Property 23								
No. of Sales	Potentially Impacted by Solar Farm	Adjusted Median Price Per SF						
Test Area Sale (1)	Yes: Adjoining solar farm	\$74.55						
Control Area Sales (5)	No: Not adjoining solar farm	\$76.23						
Difference between Unit Pr Adjusted Median Unit Prio	-2.21%							

The difference between the unit price of the Test Area Sale and the Adjusted Median Unit Price of the Control Area Sales is considered within the range for a typical market area. One of the Control Area Sales was 20 years newer than the Test Area Sale. A secondary analysis excluding this sale indicated an adjusted median unit sale price of \$74.47 per square foot, which is in line with the Test Area Sale unit price of \$74.55 per square foot.

**Noting no significant price differential**, it does not appear that the Dougherty Solar project impacted the sales price of the Test Sale, Adjoining Property 23.



### SOLAR FARM 4: MIAMI-DADE SOLAR ENERGY CENTER, MIAMI DADE COUNTY, FL

**Coordinates:** Latitude 25°38'34.5"N, 80°29'16.5"W

PIN: 30-5813-000-0020

Population Density (2019): 1,000 people per square mile (Largest City = Miami)

Recorded Owner: Florida Power & Light Company

Total Land Size: 465 acres

Date Project Announced: October 2017

Date Project Completed: January 2019

Output: 74.5 MW AC



2020 Aerial imagery retrieved from Google Earth



#### **Overview and Surrounding Area:**

The Miami Dade Solar Energy Center is situated in unincorporated Miami-Dade County, just west of Florida State Road 997. The site comprises approximately 300,000 solar panels on a fixed-tilt system, generating enough energy to power around 15,000 homes.

It is surrounded to the north, west, and south by rural residences and agricultural uses. The Kendall Tamiami Executive Airport is located due east, along the flight path for one of the airport's runways. A canal runs along the west side of the property, and beyond that is 306 acres of federal government land and four agricultural use lots. The predominant lot size in the surrounding area is approximately five acres and uses vary from palm tree farms, equestrian centers, citrus groves, to rural residences. These lots are zoned GU – Interim District, which categorizes land not otherwise specified in the unincorporated areas of Miami Dade County. This designation allows for uses consistent with the surrounding character, or a density of one residence for every 5 acres.<sup>25</sup> As such, development is limited to rural residences or agricultural uses

#### Prior Use: Agricultural use

**<u>Real Estate Tax Info:</u>** The chart below shows the increase from 2018 (before construction) to 2019 (after construction) in the assessed value of the parcels and the total real estate taxes.

PIN	Acres	20	18 Taxes Paid	20	)19 Taxes Paid	Tax Increase	20	18 Assessed Value	20 <sup>,</sup>	19 Assessed Value	Value Increase
Miami-Dade County 30-5813-000-0020	465.61	\$	40,777	\$	179,761	341%	\$	2,460,316	\$	10,575,924	330%
TOTAL	465.61	\$	40,777	\$	179,761	341%	\$	2,460,316	\$	10,575,924	330%

<sup>25</sup> http://www.miamidade.gov/zoning/districts.asp



# Paired Sale Analysis - Residential Land:

The following map numbers the adjoining parcels for subsequent analysis. The 39 adjoining parcels are a mix of single-family residences, agricultural land, and government land. We have identified five parcels that have transferred since the solar farm was completed, adjoining parcels 3, 13, 31, 33, and 35. Adjoining Property 3 transferred as a deed correction between related parties and is not considered a market sale. Adjoining Property 35 was bought by the owner of the adjoining parcel for assemblage purposes and was also removed from the study. The remaining three parcels, Adjoining Properties 13, 31, and 33 were considered for a paired sales analysis. These three parcels have an interim agricultural use with residential development allowed under the GU zoning.



Miami-Dade Solar Energy Center - Adjoining Properties



Prepared for Birch Solar I, LLC, a Subsidiary of Lightsource BP	Page   67

We identified six Control Area sales with similar location, square footages, lot sizes, and ages that sold from a reasonable sale time from the median sales date of the test sales. Control Area sales were adjusted for market conditions using the Federal Housing Finance Agency's House Price Index (HPI), a weighted, repeat-sales index measuring average price changes in repeat sales or refinancing of the same properties. The result of our study is presented below.

No. Sales	Potentially Impacted by Solar Farm	Adjusted Median Price Per Acre
Test Area Sales (3)	Yes: Adjoining solar farm	\$82,491
Control Area Sales (6)	No: Not adjoining solar farm	\$81,866

Noting no negative price differential, it does not appear that the Miami Dade Solar Energy Center impacted the sales price of adjoining properties 13, 31, and 33.



# SOLAR FARM 5: BAREFOOT BAY SOLAR ENERGY CENTER, BREVARD COUNTY, FL

Coordinates: Latitude 27°52'15.5"N, Longitude 80°31'38.3"W

PINs: Several

Population Density (2020): 597 people per square mile (Largest City = Palm Bay)

Recorded Owner: Florida Power & Light Company

Total Land Size: 505 acres

Date Project Announced: January 2017

Date Project Completed: May 2018

Output: 74.5 MW AC



2020 Aerial imagery retrieved from Google Earth



### **Overview and Surrounding Area:**

The Barefoot Bay Solar Energy Center is located north of Sebastian, in the unincorporated community of Micco, in coastal Brevard County, Florida. The solar installation sits on a 462-acre site, on land that was formerly an orange grove. Florida Power & Light held an open house for the area residents in January of 2017. The construction started in June of 2017 and was completed in May of 2018. The solar energy center has a capacity of approximately 74.5 MW AC. The site comprises approximately 300,000 solar panels on a fixed-tilt system, generating enough energy to power around 15,000 homes.

The solar site is approximately 450 feet south of Micco Road, an east-west arterial, approximately 1.5 miles west of U.S. 1, which runs along the shores of the Indian River. The solar installation is surrounded by trees and vegetation, and is adjoined by residential development to the north and east. Along Micco Road, to the northwest of the solar farm are several mixed-use lots, with agricultural, rural residential, and industrial uses.

The solar site is surrounded to the north and northeast primarily by the Barefoot Bay manufactured home community. Barefoot Bay is the largest manufactured home community in Florida where homes are permanently built, bought, and sold as real property. The community has three pools, a bar and restaurant, a golf course and other recreational and entertainment activities.

The population is estimated to be over 12,000 persons and approximately 80 percent of residents are over 55 years old, however, there is no age restriction in the community. The entire community sits on approximately 1,000 acres originally purchased and developed starting in 1968, with almost total absorption of lots by 1996. A total of 5,000 lots were platted and lot sizes currently range from 50 feet wide by 80 feet deep (4,000 square feet) to 75 feet wide by 100 feet deep (7,500 square feet). Homes are close together and with the standard setbacks homes can be 15 feet apart from one another.

A longtime local real estate agent and community resident at Barefoot Bay Realty said that the homes that border the solar site to the northeast, along Papaya Circle, are considered perimeter lots and are more desirable due to the lack of backyard neighbors. There is a swale (a broad and shallow ditch with water) that separates the lots from the solar site and the agent noted that many people in the community are unaware that the solar site is even there. The prices and marketing times of homes adjoining the solar farm on Papaya Circle in Barefoot Bay are not impacted by their proximity to the installation, and in fact may benefit from the increased privacy provided by the solar site.

The Barefoot Bay agent reported that small homes on small lots may sell for \$70,000 and larger homes on larger and better located lots can sell for over \$200,000. In the experience of Barefoot Bay Realty agents, there are typically 80 to 100 homes on the market at any one time and the average marketing time is considered to be 60 days.

To the east of the solar farm are rural residential lots with extended driveways. Several of these parcels are flag lots with secluded residences set back. At the southeast corner of the solar site, are approximately 441 acres of land zoned agricultural-residential by Brevard County owned by a cattle ranch operation.

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To the south of the solar site lies the Wheeler Stormwater Park which is a 300-acre stormwater management area. The site includes 163 acres of park land with dynamic walking and nature trails, which was opened to the public in 2017.

On the western boundary of the solar site is the Sottile Canal, a canal that flows into the north prong of the St. Sebastian River, a major tributary of the Indian River Lagoon. South of Micco Road west of the Canal is the new residential subdivision known as the Lakes at St. Sebastian Preserve, on land platted as Paladin Estates. The Lakes at St. Sebastian Preserve is located approximately 2.3 miles west of the Indian River. The single-family home community features new homes being built by two national homebuilders. The homes will have city water and septic, but the subdivision is outside the city limits of Sebastian in Brevard County. Several homes have been built in the community as of July 2020 but the street with lots that back onto the Sottile Canal (Lago Vista Drive) will be built in a later phase. Real estate salespeople for both builders noted that the view of the solar installation is primarily obstructed from the lots that will back to the Canal and there has been no impact on home sales or interest in the development due to its location proximate to the solar installation.

To the west of the solar site, south of Lakes at St. Sebastian Preserve, is state-owned land utilized for flood control.

# Prior Use: Agricultural use

**<u>Real Estate Tax Info:</u>** The chart below shows the increase from 2016 (before construction) to 2018 (after construction) in the assessed value of the parcels and the total real estate taxes.

PIN	Acres	Acres 2016 Taxes Paid		20	18 Taxes Paid	Tax Increase	2016 Assessed Value		2018 Assessed Value		Value Increase
Brevard County				1							
3006694	56.20	\$	1,038	\$	9,426	808%	\$	67,440	\$	618,200	817
3007862	48.51	\$	896	\$	10,859	1112%	\$	58,210	\$	727,650	1150
3008628	320.14	\$	6,077	\$	60,433	895%	\$	384,170	\$	4,001,750	942
3008630	1.00	\$	23	\$	22	-4%	\$	600	\$	600	0'
3008632	9.00	\$	162	\$	1,888	1069%	\$	10,500	\$	126,000	1100
3010467	69.90	\$	1,291	\$	13,685	960%	\$	83,880	\$	908,700	983
TOTAL	504.75	\$	9,485	\$	96,313	915%	\$	604,800	\$	6,382,900	955

# Paired Sale Analysis:

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The maps on the following pages number the adjacent parcels for subsequent analysis. We have identified thirteen sales that have transferred since the solar farm construction, adjacent parcels 6, 7, 13, 14, 18, 30, 37, 40, 47, 50, 51, 76, and 86. Adjoining property 14 was a liquidation sale and removed from consideration. Adjoining properties 37 and 50 transferred off the multiple listing service and are non-owner occupied. Adjoining property 30 has a large, converted patio and is atypical for Barefoot Bay: this sale was considered an outlier and removed from analysis. While adjoining properties 76 and 86 are technically adjacent, they are atypical flag lots with driveways that operate as de facto roads. The residence for property 76 is buffered from the solar farm by



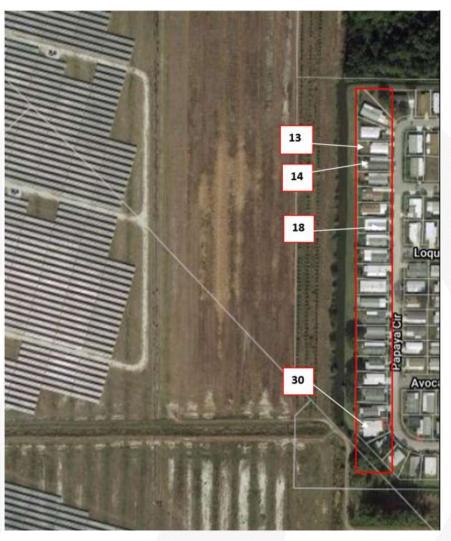
two other residences. Adjoining property 86 is atypically larger than other sales in the market area and is approximately forty percent wetland. Properties 76 and 86 were considered outliers and removed from the study.

The remaining seven parcels, adjoining properties 6, 7, 13, 18, 40, 47, and 51 were considered for a paired sales analysis. We have divided these properties into two groups as discussed further on the following pages.



Barefoot Bay Farm Adjoining Properties





Barefoot Bay Farm Adjoining Properties - Insert A

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Barefoot Bay Farm Adjoining Properties - Insert B



Barefoot Bay Farm Adjoining Properties - Insert C

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Adjoining properties 6 and 7 are residential lots. They were purchased by the same buyer from two different sellers on different sale dates. We identified seven Control Area Sales with similar location and lot sizes that sold from a reasonable sale time from the median sales date of the test sales. The test sales had a median marketing time of two to three months, as did the control sales. Control Area sales were adjusted for market conditions using the Federal Housing Finance Agency's House Price Index (HPI), a weighted, repeat-sales index measuring average price changes in repeat sales or refinancing of the same properties. The result of our study is presented below.

No. of Sales	Potentially Impacted by Solar	Adjusted Medi	
No. of Sales	Farm	Price per Ac	
Test Area Sales (2)	Yes: Adjoining Solar Farm	\$54,500	
Control Area Sales (7)	No: Not Adjoining Solar Farm	\$51,000	

Adjoining properties 13, 18, 40, 47, and 51 are improved residential dwellings. Since Barefoot Bay is a homogenous subdivision with a large number of residences, we were able to identify 126 control sales located in the Barefoot Bay manufactured home community, all manufactured homes on residential lots, with gross living areas of 1,100 SF to 1,800 SF, that sold from a reasonable sale time from the median sales date of the test sales, excluding outliers and non-arm's length transactions. Barefoot Bay has typical marketing times of two months. The test sales had a median marketing time of approximately a month and a half. Control Area sales were adjusted for market conditions using the Federal Housing Finance Agency's House Price Index (HPI), a weighted, repeat-sales index measuring average price changes in repeat sales or refinancing of the same properties. The result of our study is presented on the following page.



CohnReznick Paired Sales Analysis Barefoot Bay Solar Energy Center GROUP 2							
No. of Sales	Potentially Impacted by Solar Farm	Adjusted Media Price per SF					
Test Area Sales (5)	Yes: Adjoining Solar Farm	\$95.90					
Control Area Sales (126)	No: Not Adjoining Solar Farm	\$93.95					
	ference between Unit Price of Test Area Sales and Adjusted Median Unit Price of Control Area Sales						

Noting the relatively low price differential, in which the Test Area Sales were higher than the median for the Control Areas Sales, it does not appear that the Barefoot Bay Solar Energy Center had any negative impact on adjoining property values or marketing times.

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# Summary of Before and After Construction of the Solar Farm Analysis:

Due to the frequency of sales in the Barefoot Bay subdivision, we were able to conduct an analysis on the prices of manufactured homes before the solar farm announcement date in comparison to the prices of manufactured homes after the construction of the solar farm. We have provided our conclusions from the data below and the following page contains a chart with the data.

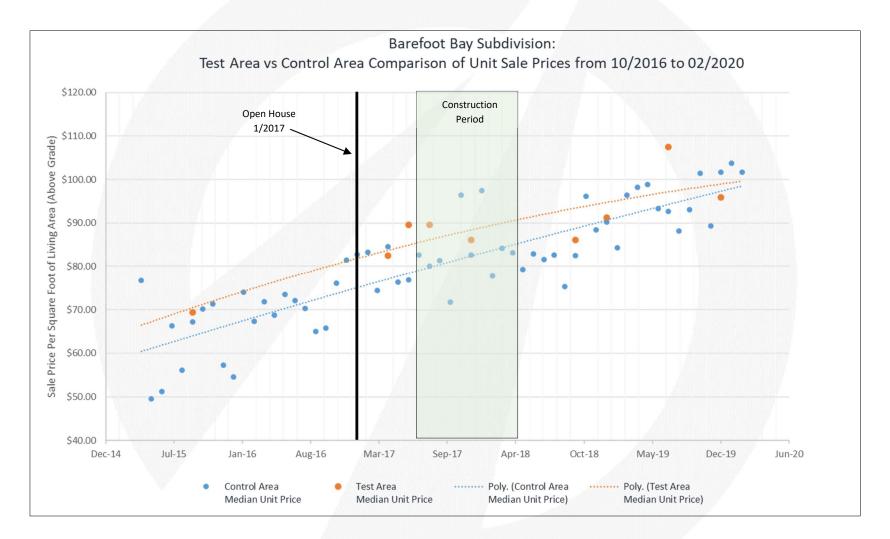
Nine Test Area sales and 903 Control Area Sales were identified from Q2 2015 to Q1 2020.

- > The Test area sales (ORANGE) are located adjoining to the Barefoot Bay Solar Energy Center.
- > The Control area sales (BLUE) are located in the remainder of the Barefoot Bay subdivision.

The dotted lines are polynomial trend lines plotted by Microsoft Excel in order to illustrate and approximate the "average" trend of each set of data. After construction of the solar farm, in parallel with the improving economic climate, it appears that unit prices for both the test and control areas appreciated at a similar rate over the period from Q2 2015 to Q1 2020. A difference in appreciation rates does not appear to exist between homes in the Test Area versus homes in the Control Area.

Sale prices of manufactured homes after the construction of the solar farm exhibit a similar appreciation trend as sales prior to the solar farm announcement. Overall, our findings indicate that there is not a consistent and measurable difference that exists in association with proximity to a solar farm.





#### SOLAR FARM 6: INNOVATIVE SOLAR 42, BLADEN AND CUMBERLAND COUNTIES, NC

Coordinates: Latitude 34.847627, Longitude -78.877360

Cumberland County PIN: 0339-67-3814

Bladen County PINs: 033900553698, 033900751483, 033900658763

Population Density (2019): 501 people per square mile (Largest City = Fayetteville, Cumberland Cty) (2018): 40 people per square mile (Largest City = Elizabethtown, Bladen Cty) Total Land Size: 414 acres

Date Project Announced: May 2014

Date Project Completed: September 2017

Output: 71 MW AC



Aerial imagery retrieved from Google Earth



# **Overview and Surrounding Area:**

Innovative Solar Farm 42 was developed by Innovative Solar Systems and became operational in September 2017. There are over 271,000 solar arrays on the farm that can generate power for approximately 12,000 homes.

Innovative Solar Farm 42 is located in unincorporated Bladen and Cumberland Counties, in North Carolina, approximately 17 miles south of Fayette, North Carolina and 21 miles north of Elizabethtown, North Carolina. The county line bisects the solar farm, with Cumberland County on the north side and Bladen County on the south side. Innovative Solar Farm is located just south of County Line Road in Cumberland County and approximately one mile west of North Carolina Highway 87.

The Immediate Area: The solar farm is surrounded by residential land to the north, residential and forest land to the west, and agricultural and forest land to the south and east.

Landscaping: The solar farm is buffered from the residences along County Line Road with a chain link fence. and tree plantings. The solar farm is clearly visible.

# Prior Use: Agricultural use

Real Estate Tax Info: The chart below shows the increase from 2017 (before construction) to 2018 (after construction) in the assessed value of the parcels and the total real estate taxes.

PIN	Acres		2017 Taxes Paid		18 Taxes Paid	Tax Increase	2017 Assessed Value		2018 Assessed Value		Value Increase
Cumberland County, NC											
0339-67-3814	261.39	\$	5,263	\$	37,699	616%	\$	541,500	\$	3,920,850	624%
Bladen County, NC											
33900553698	82.48	\$	920	\$	947	2.96%	\$	108,870	\$	108,870	0.00%
33900751483	17.92	\$	234	\$	241	2.96%	\$	27,690	\$	27,690	0.00%
033900658763	52.20	\$	622	\$	640	2.96%	\$	73,600	\$	73,600	0.00%
TOTAL	413.99	\$	7,039	\$	39,527	462%	\$	751,660	\$	4,131,010	450%

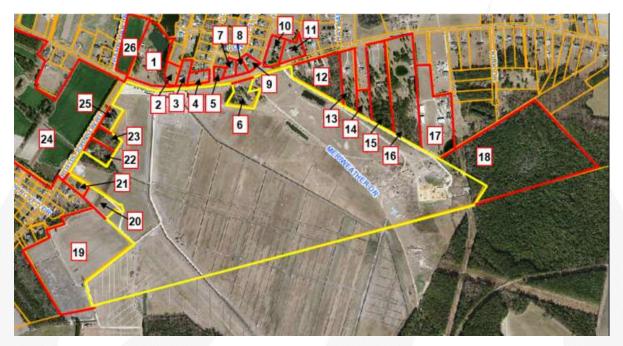
### **Paired Sale Analysis:**

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We found two Adjoining Properties that qualified for a paired sales analysis: Adjoining Property 11 and Adjoining Property 2. Adjoining Property 2 was a speculative construction home built after the completion of the solar farm (see further discussion in the Solar Farm Factors in Harmony of Use section). The map on the following page displays the parcels adjoining to the solar farm panels (outlined in red), these parcels are numbered for subsequent analysis. Note, that the GIS map views do not have updated aerial imagery that display the solar panels in the image on the following page.



# **Cumberland County Map**



Innovative Solar 42 - Adjoining Properties

# **Bladen County Map**



Innovative Solar 42 - Adjoining Properties

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# Group 1

Adjoining Property 11 was considered for a paired sales analysis, and sold during the construction period of the solar farm. The property was analyzed as a single-family home use.

The Control Area Sales were 1-story homes, with three bedrooms and two or three bathrooms with comparble sizes that sold within a reasonable time frame. We excluded sales that were bank-owned, and those between related parties.

The Control Area Sales were adjusted for market conditions using a regression analysis to identify the appropriate monthly market conditions adjustment. The result of our analysis for Innovative Solar 42 – Group 1e are presented below.

CohnReznick Paired Sale Analysis Innovative Solar 42 Group 1									
No. of Sales	Potentially Impacted by Solar Farm	Adjusted Median Price Per SF							
Test Area Sales (1)	Adjoining solar farm	\$107.09							
Control Area Sales (7)	No: Not adjoining solar farm	\$100.18							
	Difference between Unit Price of Test Area Sales and Adjusted Median Unit Price of Control Area Sales								

The Test Area Sale sold after 71 days on market (2-3 months), while the Control Area Sales ranged from 1 day on market to 175 days on market (0-6 months), with a median of 116 days on market. We note <u>**no negative**</u> <u>**marketing time differential**</u>.

<u>Noting no negative price differential</u>, with the Test Area Sale having a higher unit sale price than the median adjusted unit sale price of the Control Area Sales, it does not appear that the Innovative Solar 42 energy use had any negative impact on adjacent property values.



# Group 2

Adjoining Property 2 was considered for a paired sales analysis, and sold after completion of the solar farm. We discussed this sale with the listing broker, Kevin Grullon, who said the solar farm did not impact the sales price nor the marketing time.

The Control Area Sales were 2-story homes, with three and four bedrooms and two to four bathrooms with comparble sizes that sold within a reasonable time frame. We excluded sales that were bank-owned, and those between related parties. For Adjoining Property 2, we analyzed seven Control Area Sales.

Control Area Sales were adjusted for market conditions using regression analysis to identify the appropriate monthly market conditions adjustment. The result of our analysis for Innovative Solar 42 – Group 2 are presented below.

	nick Paired Sale Analysis vative Solar Group 2			
No. of Sales	Potentially Impacted by Solar Farm	Adjusted Median Price Per SF		
Test Area Sales (1)	Adjoining solar farm	\$111.77		
Control Area Sales (7)	No: Not adjoining solar farm	\$105.34		
Difference between Unit Pr Adjusted Median Unit Pri	6.10%			

The Control Area Sales ranged from 13 days on market to 225 days on market (0-8 months), with a median of 46 days on market. The Test Area Sale sold after 153 days on market (3-4 months) and it was listed during construction, which explains the above average time on market since closing can only occur after the home had been completed.

**<u>Noting no negative price differential</u>**, with the Test Area Sale having a higher unit sale price than the median adjusted unit sale price of the Control Area Sales, it does not appear that the Innovative Solar 42 energy use had any negative impact on adjacent property values.



# SOLAR FARM 7: RUTHERFORD FARM, RUTHERFORD COUNTY, NC

Coordinates: Latitude 35.257778, Longitude -81.830560

PIN: 1556-31-0185

Population Density (2018): 120 people per square mile (Largest City = Forest City)

Total Land Size: 489 acres

Date Project Announced: November 24, 2015

Date Project Completed: December 2016

# Output: 61 MW AC



Aerial imagery retrieved from Google Earth

# **Overview and Surrounding Area:**

The Rutherford Farm Solar use is located in unincorporated Rutherford County, North Carolina. The solar farm was developed by Cypress Creek Renewables and became operational in December 2016. Southern Power



and Turner Renewable Energy purchased the solar facility on July 8, 2016. The solar farm has over 289,000 solar modules that can generate power for approximately 12,000 homes.

The Rutherford Farm solar use is approximately 7 miles southeast of Forest City, in Rutherford County, in southwestern North Carolina. The solar facility is situated approximately 3 miles northeast of the intersection of Chase High Road and US 221, a major thoroughfare that traverses the county.

## The Immediate Area:

Surrounding land uses consists of residential and forest land to the north, forest and commercial to the east, vacant and forest land to the south. All of the adjacent land parcels to the solar farm are used for agricultural or residential purposes.

The solar farm has a hedge buffer along portions of the farms where the residential development is closest. Along all solar panels areas adjacent to residential, a row of trees buffers the view of the panels.

# Prior Use: Wooded

# **Real Estate Tax Information:**

Prior to development of the solar farm, the assessed value of the property was \$466,200 and ownership paid \$3,156 in taxes. In 2018, after the completion of the solar farm, the assessed value of the solar farm property increased to \$1,075,800 and taxes increased to \$7,391, a 131 percent increase in tax revenue.

PIN	Acres	201	l6 Taxes Paid	20	18 Taxes Paid	Tax Increase	20	)16 Assessed Value	201	8 Assessed Value	Value Increase
Rutherford County 1556-31-0185	488.84	\$	3,203	\$	7,391	131%	\$	466,200	\$	1,075,800	131%
TOTAL	488.84	\$	3,203	\$	7,391	131%	\$	466,200	\$	1,075,800	131%

# Paired Sale Analysis:

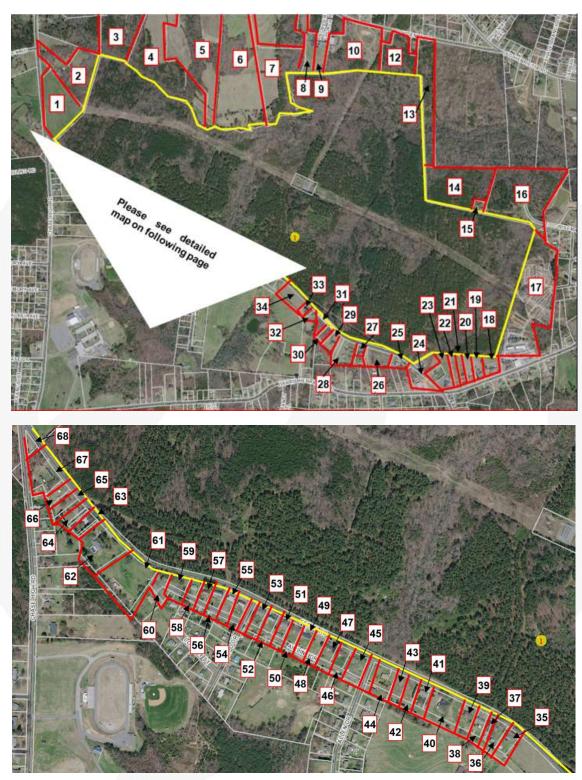
In reviewing adjoining properties to study in a Paired Sale Analysis, seven properties and sales were considered in total but six were eliminated from further consideration as discussed below.

The map on the following page displays the Adjoining Properties (outlined in red) to the solar farm parcel (outlined in yellow). Properties adjoining this parcel are numbered for subsequent analysis.



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# Prepared for Birch Solar I, LLC, a Subsidiary of Lightsource BP



Rutherford Farm Solar - Adjoining Properties

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Five Adjoining Properties (21, 22, 36, 56, and 57) were eliminated from further consideration because they were sales with no recorded sales value or property transfers in off-market transactions. Adjoining Property 2 was a transfer between related parties. Adjoining Property 55 sold in October 2020; however, this property is a duplex with one two-bedroom unit rented. We were not able to locate sales of other duplex properties in the surrounding area that are comparable to the property. As additional duplex sales occur, we will monitor and generate a paired sale analysis for this property at a later date.

We found one Adjoining Property that qualified for a Paired Sale analysis. Adjoining Property 46, the Test Area Sale, was considered for a paired sales analysis. The property was analyzed as a single-family home use. It should be noted that this sale occurred after announcement but prior to construction of the solar farm. We spoke with the selling broker for this property, Brent Washburn, who confirmed that the solar farm had not been constructed at the time of sale, and <u>said the announcement had no impact on the sale.</u>

Adjoining Property 46 was considered for a paired sales analysis, and we analyzed this properties as single-family home use. The improvements on this property are located 139 feet to the nearest solar panel.

	Test Area Sale Rutherford Farm Solar									
Adj. Property #	Address	Median Sale Price	Median Site Size (AC)	Size Median Median Yea		Median Year Built	Median Square Feet	Median Sale Date	Median Price PSF	
46	434 Ferry Rd	\$85,000	0.41	3	2.0	1977	1,590	Jan-16	\$53.46	

We analyzed six Control Area Sales, single family homes with similar location, construction, square footages, lot sizes, and ages, use that were not located in close proximity to the solar farm, that also sold within a reasonable time frame from the median sale date of the Test Area Sale. The Control Area Sales are one-story homes with 3 bedrooms and one to two bathrooms. We excluded sales that were bank-owned, and those between related parties.

The Control Area Sales were adjusted for market conditions using a regression to identify the appropriate monthly market conditions adjustment. The results of our analysis for the Rutherford Farm solar facility are presented on the next page.



CohnReznick Paired Sale Analysis Rutherford Farm Solar						
	No. of Sales	Potentially Impacted by Solar Farm	Adjusted Median Price Per SF			
	Test Area Sales (1)	Adjoining solar farm	\$53.46			
	Control Area Sales (6)	No: Not adjoining solar farm	\$52.49			
	Difference between Unit Pr Adjusted Median Unit Pri	1.85%				

Noting no significant price differential, with the Control Area Sales having a slightly lower median unit sale price than the unit sale price of the Test Area Sale, it does not appear that the Rutherford Farm Solar energy use had any negative impact on adjacent property values.

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SOLAR FARM 8: ELM CITY SOLAR FACILITY, WILSON COUNTY, NC

Coordinates: Latitude 35.781111, Longitude -77.846940

PINs: 3744-33-6758.01, 3744-11-9000.000

Population Density (2019): 221 people per square mile (Largest City = Wilson)

Total Land Size: 354 acres

Date Project Announced: September 2014

Date Project Completed: July 2012

# Output: 40 MW AC



Aerial imagery retrieved from Google Earth



### **Overview and Surrounding Area:**

The Elm City Solar use is located in Elm City, North Carolina. Duke Energy owns the solar facility and selected HelioSage Energy to develop it. The solar farm went into operation in March 2016 and can generate power for approximately 7,000 homes. Nearly a half million solar panels comprise the farm.

Wilson County is located in central North Carolina. The county is primary rural in nature, with the city of Wilson being the county seat. Elm City is actually a town with a population of less than 1,200. The Elm City Solar Farm is located to the southeast of Elm City, approximately a third of a mile to the east of State Highway 301. Surrounding land uses consist of residential and forest land to the north; forest and agricultural land to the east; vacant, forest, and residential land to the south; and residential, industrial, vacant, and forest land to the west.

#### The Immediate Area:

All of the adjacent land parcels to the solar farm are used for agricultural, residential, and/or industrial purposes.

Landscaping: The Elm City Solar Farm is buffered from the adjoining residential lots with a fence and tree plantings.

#### Prior Use: Agricultural use

**Real Estate Tax Info:** In 2016, prior to the property being assessed as a solar farm, the assessed value of the property was \$206,220 and ownership paid \$2,805 in real estate taxes. In 2017, the assessed value increased to \$1,779,830 and the real estate tax increased to \$24,206.

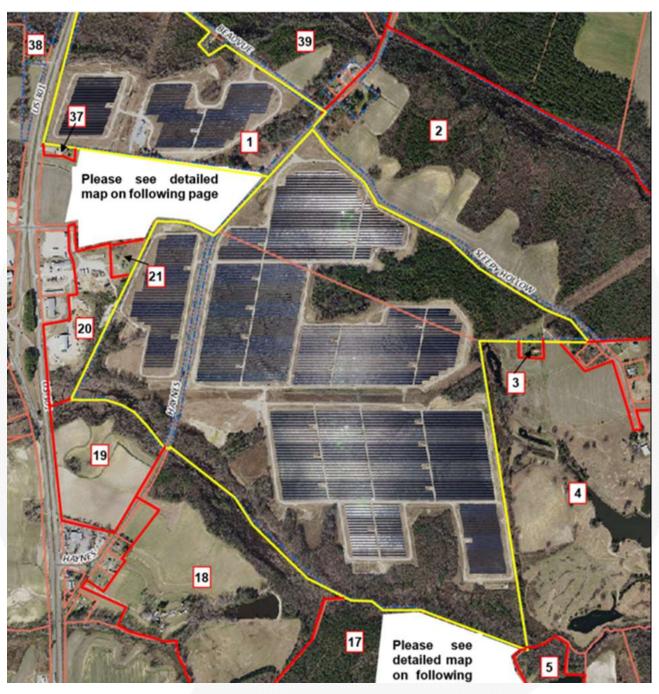
PIN	Acres	6 Taxes Paid	20	17 Taxes Paid	Tax Increase	201	6 Assessed Value	201	7 Assessed Value	Value Increase
Wilson County										
3744119000.000	249.00	\$ 2,805	\$	14,624	421%	\$	206,220	\$	1,075,330	421%
3744336758.01*	105.00	\$ 1,494	\$	9,581	541%	\$	117,881	\$	704,500	498%
TOTAL	354.00	\$ 4,298	\$	24,206	463%	\$	324,101	\$	1,779,830	449%

\* This parcel was split from it's parent prior to construction. The 2016 Assessed Value is based on the pro-rata amount for the entire 471.53 acre parent parcel.

#### Paired Sale Analysis:

The map on the following page displays the parcels adjoining the solar farm (outlined in red). Properties adjoining the solar parcels are numbered for subsequent analysis.





Elm City Solar - Adjoining Properties

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Elm City Solar - Adjoining Properties



Elm City Solar - Adjoining Properties

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Prepared for Birch Solar I, LLC, a Subsidiary of Lightsource BP	Page   92

Adjoining Property 23 (Test Area Sale) was considered for a paired sales analysis, which sold after development of the solar farm. The property was analyzed as a single-family home use. We discussed this sale with Selby Brewer with First Wilson Properties, Inc who sold the property. He said the buyers "did not even mention" the solar farm, and he saw no market difference.

For Adjoining Property 23, we analyzed eight Control Area Sales that sold within a reasonable time frame from the sale date of Adjoining Property 23. The Control Area Sales are ranch homes with three bedrooms and one and two bathrooms. We excluded sales that were bank-owned, and those between related parties.

The Control Area Sales were adjusted for market conditions using a regression analysis to identify the appropriate monthly market conditions adjustment. The result of our analysis for Elm City Solar is presented below.

CohnRez				
No. of Sales	No. of Sales Potentially Impacted by Solar Farm			
Test Area Sales (1)	Adjoining solar farm	\$56.60		
Control Area Sales (8)	No: Not adjoining solar farm	\$55.57		
Difference between Unit Pri Adjusted Median Unit Price	1.85%			

Noting no negative marketing time differential, the days on market for the Test Area Sale was 38 days (0-1 month), while the Control Area Sales ranged from five to 204 days on market (0-8 months).

Noting no negative price differential, it does not appear that the Elm City Solar impacted the sales price of the Test Sale, Adjoining Property 23. This was confirmed by the real estate agent who marketed and sold this home.



SOLAR FARM 9: WOODLAND SOLAR FARM, ISLE OF WIGHT COUNTY, VA

Coordinates: Latitude 36.890000, Longitude -76.611000

PINs: 41-02-004, 41-02-001, 41-02-001A, 41-02-005

Population Density (2018): 97 people per square mile (Largest City = Smithfield)

Total Land Size: 211.12 acres

Date Project Announced: August 4, 2015

Date Project Completed: December 2016

Output: 19.0 MW AC



Aerial imagery retrieved from Google Earth

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## **Overview and Surrounding Area:**

The Woodland Solar Farm is located in unincorporated Isle of Wight County, Virginia, and was developed by Dominion Virginia Power in 2016. This solar farm has a capacity of 19.0 Megawatts (MW) AC of power, which is enough to power 4,700 homes. The solar farm sits on 204 acres, part of Oliver Farms, a 1,000-acre site that was chosen for its flat land and proximity to power lines. The land under the solar arrays was previously farmed and used to grow broccoli, collards, peas, strawberries and butter beans. The solar installation includes 79,648 solar panels and was one of the largest of its kind at the time of construction.

Isle of Wight County is in the southeast part of Virginia and has shoreline along the James River on its eastern border. The county is predominantly rural and has two incorporated towns, Smithfield and Windsor. The Woodland Solar facility is approximately 27 miles northwest of Norfolk, Virginia, across the Elizabeth River and the Nansemond River. The solar site is also approximately 21 miles southwest of Newport News, Virginia. The town of Smithfield is approximately nine miles northeast of the solar facility and the town of Windsor is approximately 12 miles southwest. The solar facility is near the intersection of State Route 600 (Oliver Drive) and State Route 602 (Longview Drive).

### The Immediate Area:

Land uses surrounding the Woodland Solar facility include forests and agricultural land to the north, west, and south, and residential and farm land to the east.

Landscaping around the solar site consists of the naturally occurring vegetation and forests. It should be noted that the land owner that leases the land to the developer has agricultural buildings and other structures along Longview Drive and the nearest solar panels are approximately 220 feet from the property line.

# Prior Use: Agricultural use

**Real Estate Tax Info:** In 2015, prior to the property being assessed as a solar farm, the assessed value of the property was approximately \$542,200 and ownership paid \$4,609 in real estate taxes (see below). In 2016, the assessed value increased to \$3,021,600 and the real estate tax increased to \$27,844.

PIN	Acres	20	15 Taxes Paid	2(	)16 Taxes Paid	Tax Increase	2015 Assessed Value		201	16 Assessed Value	Value Increase
Isle of Wight County, VA											
41-02-004	107.32	\$	2,250	\$	15,985	610%	\$	264,700	\$	1,728,100	553%
41-02-001	62.66	\$	1,369	\$	8,601	529%	\$	161,000	\$	939,900	484%
41-02-001A	8.08	\$	230	\$	1,193	420%	\$	27,000	\$	110,700	310%
41-02-005	33.06	\$	761	\$	2,065	171%	\$	89,500	\$	242,900	171%
TOTAL	211.12	\$	4,609	\$	27,844	504%	\$	542,200	\$	3,021,600	457%

# Paired Sale Analysis:

The map below displays the Adjoining Properties to the solar farm (outlined in red). Properties adjoining the solar farm parcels are numbered for subsequent analysis.

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Woodland Solar - Adjoining Properties

In reviewing Adjoining Properties to study in a Paired Sale Analysis, several properties and sales were considered but eliminated from further consideration as discussed below.

We identified three Adjoining Properties that sold since the solar farm started operations in December 2016: Adjoining Property 3, and two parcels included in Adjoining Property 5. The two properties that were considered part of Adjoining Property 5, sold between related parties, and were sales between family members of the land lessor for the solar site. These two sales were excluded from further analysis.

Adjoining Property 3 was considered for a paired sales analysis, and we analyzed this property as single-family home use. The improvements on this property is located approximately 600 feet to the nearest solar panel.

Test Area Sale - Adjoining Property 3													
Adj. Property #	Address		Median Site Size (AC)	Median Beds	Median Baths	Median Year Built	Median GLA (SF)	Median Sale Date	Median Price PSF				
3	18146 Longview Drive	\$175,000	1.00	3	1	1978	1,210	Jun-16	\$144.63				

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# Prepared for Birch Solar I, LLC, a Subsidiary of Lightsource BP Page | 96

We analyzed five Control Area Sales of single-family homes with similar construction and use that were not located in close proximity to the solar farm, that sold within a reasonable time frame from the median sale date of the Test Area Sale. The Control Area Sales one-story homes with three bedrooms and one and two bathrooms. We excluded sales that were bank-owned, and those between related parties.

The Control Area Sales were adjusted for market conditions using a regression analysis to identify the appropriate monthly market conditions adjustment. The result of our analysis for Woodland Solar Farm is presented below.

CohnReznick Paired Sales Anaysis Woodland Solar Farm Adjoining Property 3										
No. of Sales	Adjusted Median Price Per SF									
Test Area Sale (1)	Yes: Adjoining solar farm	\$144.63								
Control Area Sales (5)	No: Not adjoining solar farm	\$137.76								
ifference between Unit Price of <sup>-</sup> Median Unit Price of C		4.99%								

The difference between the unit price of the Test Area Sale and the Adjusted Median Unit Price of the Control Area Sales is considered within the range for a typical market area.

**Noting no negative marketing time differential**, the Test Area Sale sold in 33 days (1-2 months), while the Control Area Sales sold between 17 and 37 days (0-2 months), with a median time on market of 28 days.

**<u>Noting no negative price differential</u>**, with the Test Area Sale having a higher unit sale price than the Control Area sales, it does not appear that the Woodland Solar Farm had any negative impact on adjacent property values.



#### Prepared for Birch Solar I, LLC, a Subsidiary of Lightsource BP Page | 97

SOLAR FARM 10: DTE'S LAPEER SOLAR PROJECT, LAPEER, MICHIGAN Coordinates: Latitude 43.0368219316, Longitude -83.3369986251 PINs: L20-95-705-050-00, L20-98-008-003-00 Population Density (2020): 137 people per square mile (Largest City = Lapeer) **Owner of Record:** DTE Electric Company & City of Lapeer Total Land Size: ±365 Acres Date Project Announced: 2016 Date Project Completed: May 2017 Output: 48.28 MW AC





## **Overview and Surrounding Area:**

The DTE Lapeer solar farm is located just south of the City of Lapeer, in Lapeer County, Michigan and is a joint project between the City of Lapeer and DTE Electric Company. The solar farm was developed with Inovateus Solar MI, LLC to meet Michigan renewable energy standards. The solar farm features over 200,000 panels, a power output of 48.28 MW AC, and produces enough energy to power 14,000 homes. The Lapeer solar project was developed in two phases: the Demille Solar installation and the Turrill Solar installation. For purposes of our study, taken together, both installations are considered one solar farm.



DTE's Lapeer Solar Projects Demille and Turrill Solar installations

Lapeer is considered to be in the Tri-Cities area of central Michigan and is approximately 21 miles east of the City of Flint. Interstate-69 serves Lapeer and runs east-west just south of the solar farm. The two phases of the solar installation are on the east and west sides of Michigan State Route 24 from each other.



#### The Immediate Area:

Land uses surrounding the Demille installation include a correctional facility and industrial uses to the west, buffered by a mature stand of trees, a retail center to the northeast, other commercial uses to the east along MI-24/South Lapeer Road, and residential homes to the southeast. Interstate-69 runs south of the Demille solar installation.

The Turrill installation is surrounded to the north by a residential subdivision, to the north and east by industrial uses, to the south by vacant land and residential homes, and to the west by light commercial and professional uses along MI-24/South Lapeer Road. Hunter's Creek divides two sets of solar arrays in the Turrill installation.

The Demille installation adjoins Interstate-69 to the South; while a residential subdivision adjoins the solar farm to the east. To the northeast corner of the solar panels is a senior living facility, Stonegate Health Campus, developed before the solar facility.

#### Prior Use: Agricultural use

#### **Real Estate Tax Information:**

Prior to the development of the solar farm, the land under the Demille and Turrill solar installations were municipal-owned and were not subject to property tax. After development, in 2017, the land became taxable and taxes were \$82,889 total, as shown below.

PIN	Acres	2016 Taxes Paid		17 Taxes Paid	Tax Increase	Assessed alue	201	7 Assessed Value	Value Increase	
Lapeer County, MI										
L20-98-008-003-00*	110.84	\$ -	\$	34,294	N/A	\$ -	\$	726,700	N/A	
L20-95-705-050-00*	254.84	\$ -	\$	48,595	N/A	\$ -	\$	1,029,750	N/A	
TOTAL	365.68	\$ -	\$	82,889	N/A	\$ -	\$	1,756,450	N/A	

\* Prior to development as a solar farm, the parcels were municpal property without a taxable value.



#### Prepared for Birch Solar I, LLC, a Subsidiary of Lightsource BP Page | 100

## **Paired Sale Analysis:**

The maps, below, and on the following pages display properties adjoining the solar sites that are numbered in red for subsequent analysis.

# **Demille Solar Farm**



DTE's Lapeer Solar Projects - Demille Adjoining Properties

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DTE's Lapeer Solar Projects - Demille Adjoining Properties

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## **Turrill Solar Farm**

DTE's Lapeer Solar Projects - Turrill Adjoining Properties

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DTE's Lapeer Solar Projects - Turrill Adjoining Properties



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In reviewing Adjoining Properties to study in a Paired Sale Analysis, several properties and sales were considered but eliminated from further consideration as discussed below.

We identified eight Adjoining Properties that sold since the solar farm started operations in May of 2017: Adjoining Properties 3, 4, 7, 9, 10, and 16 for the Demille Solar Farm, and Adjoining Properties 3 and 4 for the Turrill Solar Farm. Of these properties, three were considered atypical for the area.

Adjoining Property 7 adjacent to the Demille Solar farm is a split-level home with a finished walk out basement with a pool. The typical home in the area has a traditional basement and pools are atypical. The unusual nature of this sale was confirmed with the selling broker, Renee Voss (see comments below). We note that this home sold twice after the construction of the solar farm, once in September 2018 and again in August 2019. The appreciate rate between the two sale dates are analyzed further later in this section.

Adjoining Property 16 just south of the Demille Solar Farm is a 10.1-acre lot that is buffered by trees. The home is atypical for the area, as most homes are situated on lots between 1-acre and 1.5-acres in size and were built before 1980; this home was built in 2008. We interviewed the broker Josh Holbrook (see comments below) who confirmed the atypical nature of this property.

Adjoining Property 3, just west of the Turrill Solar Farm, was a ranch home with 1,348 square feet on a lot that was just over one acre. Comparables for homes of this size, type, and lot size were not available in the immediate market area. It should be noted that the price per square foot for this home (\$108.01) is significantly higher than median price per square foot of either data set we studied.

As a part of our research, we interviewed three local real estate brokers that sold homes adjacent to the Lapeer Solar farm. According to the brokers, there was no impact on the home prices or marketability due to the homes' proximity to the solar arrays.

Renee Voss of Coldwell Banker, selling broker of the raised ranch at 1138 Don Wayne Drive (Adjoining Property 7), which is adjacent to the Demille solar farm at the southeast corner, noted that there was no impact on this sale from the solar farm located to the rear. The home, which has a pool in the backyard, sold quickly with multiple offers, Voss stated.

Josh Holbrook, the selling broker of 1408 Turrill Road (known as Adjoining Property 16), located just south of the Demille Solar Farm, said the solar farm had no impact on the sale and that the community takes pride in the solar farm.

Anne Pence of National Realty Centers, the selling broker for 1126 Don Wayne Drive, a single-family home adjacent to the Demille solar farm (known as Test Area Sale 9), reported that "the solar farm did not have any effect on the sale of this home. The buyers did not care one bit about the solar field in the back yard. The fact is that you know no one is going to be behind you when they develop a solar farm in your back yard. And [sometimes the developer] put up trees to block the view. My in-laws also actually live at end of that street, even though they haven't sold or put their house on market, they don't mind the solar panels either. It's not an eyesore. And another house sold on that block, a raised ranch home, and it sold with no problems."

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# Group 1 – Demille:

Adjoining Properties 3, 4, and 9 to the Demille Solar Farm were considered for a paired sales analysis, and we analyzed these properties as single-family home uses in Group 1. The improvements on these properties are located between 275 to 305 feet to the nearest solar panel.

	Test Area Sales												
Group 1 - Demille Solar Median Median Median Median Median													
Adj. Property#	Address	Median Sale Price	Median Site Size (AC)	Median Beds	Median Baths	Year Built	Square Feet	Sale Date	Median Price PSF				
3, 4,9	1174 Alice Dr, 1168 Alice Dr, 1126 Don Wayne Drive	\$165,000	0.50	3	2.0	1973	1,672	Jan-19	\$105.26				

We analyzed six Control Area Sales of single-family homes with similar construction and use that were not located in close proximity to the solar farm, that sold within a reasonable time frame from the median sale date of the Test Area Sales in Group 1. The Control Area Sales for Group 1 are ranch homes with three bedrooms and one and a half to two bathrooms. We excluded sales that were bank-owned, and those between related parties.

Control Area sales were adjusted for market conditions using the Federal Housing Finance Agency's House Price Index (HPI), a weighted, repeat-sales index measuring average price changes in repeat sales or refinancing of the same properties. The result of our analysis for DTE's Lapeer Solar Project - Group 1 is presented below.

CohnReznick Paired Sale Analysis DTE Lapeer Solar Group 1 - Demille Solar											
No. of Sales	Potentially Impacted by Solar Farm	Adjusted Median Price Per SF									
Test Area Sales (3)	Adjoining solar farm	\$105.26									
Control Area Sales (6)	No: Not adjoining solar farm	\$99.64									
Difference between Unit Pri Adjusted Median Unit Pri		5.65%									

The days on market for the three Test Area Sales had a median of 29 days on market (ranging from 5 to 48 days), while the median days on market for the Control Area sales was 21 days (ranging from 5 to 224 days), and we note no significant marketing time differential.



# Group 2 – Demille:

Adjoining Property 10 to the Demille Solar Farm was considered for a paired sales analysis, and we analyzed this property as a single-family home use in Group 2. The improvements on this property is located approximately 315 to the nearest solar panel.

	Test Area Sale Group 2 - Demille Solar												
Adj. Property #	operty # Address S		Median Site Size (AC)	Bedrooms	Bathrooms	Year Square Built/Renovated Feet		Other Features		Price PSF			
10	1120 Don Wayne Drive	\$194,000	0.47	3	2.5	1976/2006	1,700	Above Ground Pool, Two Car Garage	Nov-19	\$114.12			

We analyzed five Control Area Sales of single-family homes with similar construction and use that were not located in close proximity to the solar farm, that sold within a reasonable time frame from the median sale date of the Test Area Sales in Group 2. The Control Area Sales for Group 2 are similarly sized homes in Lapeer County with three to four bedrooms and two to three bathrooms, with a pool and an attached garage. We excluded sales that were bank-owned, and those between related parties.

Control Area sales were adjusted for market conditions using the Federal Housing Finance Agency's House Price Index (HPI), a weighted, repeat-sales index measuring average price changes in repeat sales or refinancing of the same properties. The result of our analysis for DTE's Lapeer Solar Project - Group 2 is presented below.

CohnReznick Paired Sale Analysis DTE Lapeer Solar Group 2 - Demille Solar											
No. of Sales	Potentially Impacted by Solar Farm	Adjusted Median Price Per SF									
Test Area Sales (1)	Adjoining solar farm	\$114.12									
Control Area Sales (5)	No: Not adjoining solar farm	\$113.01									
Difference between Unit Pri Adjusted Median Unit Pric		0.98%									

The days on market for the Test Area Sales was 90 days on market, while the median days on market for the Control Area sales was 34 days (ranging from 3 to 73 days). We note the Test Area sale was initially listed above its market value, as there was a listing price decline after a month of marketing. We note since the final drop of the list price, there was only 51 days on market, which is within the range exhibited by the Control Area sales.

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# Group 3 – Turrill:

Adjoining Property 4 to the Turrill Solar Farm was analyzed separately since it is a two-story home on a larger lot as Group 2. The home on Adjoining Property 4 is 290 feet from the property line to the nearest solar panel.

	Test Area Sale Group 3 - Turrill Solar												
Adj. Property #	Address	Median Sale Price	Median Site Size (AC)	Median Beds	Median Baths	Median Year Built	Median Square Feet	Median Sale Date	Median Price PSF				
4	1060 Cliff Drive	\$200,500	1.30	4	2.5	1970	2,114	Sep-18	\$94.84				

We analyzed four Control Area single-family homes sales with similar construction that were not located in close proximity to the solar farm, that sold within a reasonable time frame from the sale date of Adjoining Property 4.

The Control Area Sales for Group 3 are 2-story homes with between two and four bedrooms and 2.5 to 3.0 bathrooms. We excluded sales that were bank-owned, and those between related parties.

Control Area sales were adjusted for market conditions using the Federal Housing Finance Agency's House Price Index (HPI), a weighted, repeat-sales index measuring average price changes in repeat sales or refinancing of the same properties. The result of our analysis for DTE's Lapeer Solar Project - Group 3 is presented below.

CohnReznick Paired Sale Analysis DTE Lapeer Solar Group 3 - Turrill Solar										
No. of Sales	Potentially Impacted by Solar Farm	Adjusted Median Price Per SF								
Test Area Sale (1)	Adjoining solar farm	\$94.84								
Control Area Sales (4)	No: Not adjoining solar farm	\$96.32								
Difference between Unit Pr Adjusted Median Unit Price		-1.53%								

The days on market for the Test Area Sale was 2 days, while the median days on market for the Control Area sales was 35 days (ranging from 11 to 177 days), and we note no negative marketing time differential.

Noting no significant price differential, it does not appear that the DTE's Lapeer Solar had any negative impact on adjacent property values.



### Before & After Analysis – Demille Solar Project:

We note two of the Test Area Sales in Group 1 of the Demille Solar project (Adjoining Properties 4 and 9), one sale in Group 2 of the Demille Solar Farm (Adjoining Property 10), as well as Adjoining Property 7 have sold at least twice over the past 15 years. To determine if any of the rates of appreciation for these identified home sales were affected by the proximity to the Demille Solar farm, we prepared a Repeat-Sales Analysis on each identified adjoining property. First, we calculated the total appreciation between each sale of the same property, the number of months that elapsed between each sale, and determined the monthly appreciation rate. Then, we compared extracted appreciation rates reflected in the Federal Housing Finance Agency (FHFA) Home Price Index for Michigan's 48446 zip code (where the identified homes are located) over the same period. The index for zip codes is measured on a yearly basis and is presented below.

48446 2	Zip Code - Ho	using Price Index Change (	Year over Yea	ar) Not Seasonally Adjus	sted
Five-Digit ZIP Code	Year	Annual Change (%)	HPI	HPI with 1990 base	HPI with 2000 base
48446	2004	2.02	438.38	206.29	111.35
48446	2005	3.68	454.53	213.89	115.45
48446	2006	-1.76	446.53	210.12	113.42
48446	2007	-6.35	418.17	196.78	106.22
48446	2008	-8.37	383.17	180.31	97.33
48446	2009	-10.62	342.49	161.16	86.99
48446	2010	-8.94	311.86	146.75	79.21
48446	2011	-6.89	290.37	136.64	73.75
48446	2012	0.29	291.22	137.04	73.97
48446	2013	7.27	312.39	147.00	79.35
48446	2014	7.10	334.56	157.43	84.98
48446	2015	5.10	351.63	165.47	89.32
48446	2016	6.10	373.08	175.56	94.76
48446	2017	6.74	398.23	187.39	101.15
48446	2018	5.96	421.96	198.56	107.18
48446	2019	5.74	446.17	209.95	113.33
48446	2020	4.99	468.43	220.43	118.98

We have presented the full repeat sales analysis on the following page.



	Repeat Sales Analysis												48446 Zip Code - FHFA House Price Index Change			
Property ID	Address	Land Area (Acres)	Total Finished Living Area (SF)	Most Recent Sale Date	Most Recent Sale Price	Prior Sale Date	Prior Sale Price	Total Appreciation	Months Elapsed Between Sales	Monthly Appreciation Rate	Index Level During Year of Most Recent Sale	Prior Sale Year Index Level	Total Appreciation	Monthly Appreciation Rate		
4	1168 Alice Drive	0.46	1,672	10/9/2019	\$176,000	12/8/2017	\$144,000	22.22%	22	0.92%	446.17	398.23	12.04%	0.52%		
4	1168 Alice Drive	0.46	1,672	12/8/2017	\$144,000	10/1/1993	\$100,000	44.00%	290	0.13%	398.23	238.05	67.29%	0.18%		
9	1126 Don Wayne Drive	0.50	1,900	5/21/2018	\$160,000	12/21/2007	\$119,000	34.45%	125	0.24%	446.17	418.17	6.70%	0.05%		
10	1120 Don Wayne Drive	0.47	1,700	11/8/2019	\$194,000	10/15/2014	\$173,200	12.01%	61	0.19%	446.17	334.56	33.36%	0.47%		
7	1138 Don Wayne Drive	0.47	2,128	9/7/2018	\$179,900	8/22/2014	\$148,500	21.14%	49	0.40%	446.17	334.56	33.36%	0.60%		
7	1138 Don Wayne Drive	0.47	2,128	8/28/2019	\$191,000	9/7/2018	\$179,900	6.17%	12	0.51%	446.17	446.17	0.00%	0.00%		
	Median - Test Area Sales	0.47	1,800				1000			0.32%				0.33%		
	Median - Before/After	0.49	2,019							0.21%				0.11%		

#### Conclusion

When compared to the FHFA home price index for the local zip code, the median monthly appreciation rate of the sales of properties adjoining the Demille Solar Farm that sold before construction of the solar farm and again after construction of the solar farm outperformed the median for the zip code, as depicted in the far-right column in the table above (and highlighted in orange). Additionally, the extract appreciation rate for the resales of Adjoining Properties 4 and 7 that sold twice after the solar farm was constructed exhibited higher rates of appreciation than the Home Price Index for the zip code (highlighted in white). As such, we have concluded that there does not appear to be a consistent detrimental impact on properties adjacent to the Demille Solar Farm.

# **TECHNIQUE 3: MARKET COMMENTARY**

Additionally, we have contacted market participants such as appraisers, brokers, and developers familiar with property values around solar farms. Commentary from our conversations with these market participants is recorded below.

Lisa Ruhlen, Real Estate Clerk in the Hardin County, Ohio Auditor's office reported that as of first quarter 2022, *there have been no complaints or petitions to lower assessed values on homes near the Hardin Solar farm.* Primarily because the solar facility went into operation in 2021 and there has not been a tri-annual reassessment of the county yet. However, in the northern part of the county, where solar facilities have been in operation longer, there have still been no complaints about property value impacts.

Bill Nichols, Chief Appraiser with the Trumbull County Auditor in Ohio, stated that he has seen <u>no effect on</u> <u>property values in properties near a solar farm</u> and no one has come in to complain to the Auditor's office about an impact on their property value.

Beth Fritz, the Valuation Specialist in the Wood County, Ohio Auditor's office <u>has seen no effect or impact on</u> <u>residential, commercial or agricultural property values on any properties with proximity to a solar farm</u>.

Jarra Underwood, Wayne County Auditor in Ohio reported that she <u>has seen no impact on property values due</u> <u>to their location near a solar farm</u>. There is one solar fam in the county near residential properties and while it is not a highly sought after location, Underwood has still not seen an effect on those property values due to the nearby solar farm.

A Clark County, Kentucky Property Valuation Administrator, Jason Neely, noted there have been no complaints regarding East Kentucky Power Cooperative, Inc.'s Cooperative Solar One project installed in November 2017 located in the county, which has a capacity to generate 8.5 MW of electricity. Additionally, Neely stated he has not seen any evidence of lowered property values in the area and <u>no reduction in assessed property values has been made due to proximity to the solar farm.</u>

A Grant County, Kentucky Assessor stated that they have not seen a reduction in assessed property values or market values for adjacency to solar farms.

A McNairy County, Tennessee Assessor stated that they have not applied reductions to assessed value for adjacency to solar farms.

A Miami Dade County, Florida Assessor stated that they <u>do not reduce assessed property values for adjacency</u> to Solar Farms.

A Putnam County, Florida Assessor stated that they <u>have not seen a reduction in assessed value for adjacency</u> to Solar Farms.

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#### Prepared for Birch Solar I, LLC, a Subsidiary of Lightsource BP Page | 111

Renee Davis, Tax Administrator for Bladen County, North Carolina, stated that she has not seen any effect on property values due to proximity to a solar farm.

We spoke with Jim Brown, an appraiser for Scotland County, North Carolina, who stated that he has seen no effect on property values due to proximity to a solar farm.

We spoke with Gary Rose, a tax assessor for Duplin County, North Carolina, who stated that he has seen no effect on property values in regard to proximity to a solar farm.

Kathy Renn, a property Valuation Manager for Vance County, North Carolina, stated that she has not noticed any effect on property values due to proximity to a solar farm.

Larry Newton, a Tax Assessor for Anson County, North Carolina, stated that there are six solar farms in the county ranging from 20 to 40 acres and he has not seen any evidence that solar farms have had any effect on property values due to proximity to a solar farm.

We spoke with Patrice Stewart, a Tax Administrator for Pasquotank County, North Carolina, and she has seen no effect on land or residential property values due to proximity to the solar farms in Pasquotank County.

We spoke with the selling broker of the Adjoining Property for Elm City Solar, in North Carolina, Selby Brewer, who said the solar farm did not impact the buyer's motivation.

We spoke with Amy Carr, Commissioner of Revenue in Southampton County, Virginia, who stated that most of the solar farms are in rural areas but she has not seen any effect or made any adjustments on property values. They have evaluated the solar farm land considering a more intense use, which increased the assessed value.

We spoke with Ken Surface, a Senior Vice President of Nexus Group. Nexus Group is a large valuation group in Indiana and has been hired by 20 counties in Indiana regarding property assessments. Mr. Surface is familiar with the solar farm sites in Harrison County (Lanesville Solar Farm) and Monroe County (Ellettsville Solar Farm) and stated he has noticed no impact on property values from proximity to these sites.

We interviewed Missy Tetrick, a Commercial Valuation Analyst for the Marion County Indiana Assessor. She mentioned the Indy Solar III sites and stated that she saw no impact on land or property prices from proximity to this solar farm.

We spoke with Dorene Greiwe, Decatur County Indiana Assessor, and she stated that solar farms have only been in the county a couple of years, but she has seen no impact on land or property prices due to proximity to this solar farm.

Connie Gardner, First Deputy Assessor for Madison County Indiana, stated that there are three solar farms in her county, and she has seen no impact on land or property prices due to proximity to these solar farms.

We spoke with Tara Shaver, Director of Administration for Marion County, Indiana Assessor/Certified Assessor, and she stated that she has seen no impact on land or property prices due to proximity to solar farms.

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Candace Rindahl of ReMax Results, a real estate broker with 16 years of experience in the North Branch, Minnesota area, said that she has been in most of the homes surrounding the North Star Solar Farm and personally sold two of them. She reported that the neighboring homes sold at market rates comparable to other homes in the area not influenced by the solar farm, and they sold within 45 days of offering, at the end of 2017, *which was in line with the market*.

Dan Squires, Chisago County Tax Assessor, confirmed that the Chisago County Assessor's Office completed their own study on property values adjacent to and in close vicinity to the solar farm from January 2016 to October 2017. From the study, the assessor determined the residential homes adjacent to the North Star Solar Farm *were in-line with the market and were appreciating at the same rate as the market.*<sup>26</sup>





# SOLAR FARM FACTORS ON HARMONY OF USE

# Zoning changes and conditional use permits often require that the proposed use is compatible with surrounding uses.

The following section analyzes specific physical characteristics of solar farms and is based on research and CohnReznick's personal solar farm site visits and indicate that solar farms are generally harmonious with surrounding property and compliant with most zoning standards.

Appearance: Most solar panels have a similar appearance to a greenhouse or single-story residence can range from 8 to 20 feet but are usually not more than 15 feet high. As previously mentioned, developers generally surround a solar farm with a fence and often leave existing perimeter foliage, which minimizes the visibility of the solar farm. The physical characteristics of solar farms are compatible with adjoining agricultural and residential uses.

Sound: Solar panels in general are effectively silent and sound levels are minimal, like ambient sound. There are limited sound-emitting pieces of equipment on-site, which only produce a quiet hum (e.g., substation). However, these sources are not typically heard outside the solar farm perimeter fence.

Odor: Solar panels do not produce any byproduct or odor.

Greenhouse Gas (GHG) Emissions: Much of the GHG produced in the United States is linked to the combustion of fossil fuels, such as coal, natural gas, and petroleum, for energy use. Generating renewable energy from operating solar panels for energy use does not have significant GHG emissions, promoting cleaner air and reducing carbon dioxide  $(CO_2)$  emissions to fight climate change.

**Traffic:** The solar farm requires minimal daily onsite monitoring by operational employees and thus minimal operational traffic.

Hazardous Material: Modern solar panel arrays are constructed to U.S. government standards. Testing shows that modern solar modules are both safe to dispose of in landfills and are also safe in worst case conditions of abandonment or damage in a disaster.<sup>27</sup> Reuse or recycling of materials would be prioritized over disposal. Recycling is an area of significant focus in the solar industry, and programs for both batteries and solar panels are advancing every year. While the exact method of recycling may not be known yet as it is dependent on specific design and manufacturer protocol, the equipment is designed with recyclability of its components in mind, and it is likely that solar panel and battery energy storage recycling and reuse programs will only improve in 25 years' time.

Examples of homes built adjoining to solar farms are presented on the following pages.

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<sup>&</sup>lt;sup>27</sup> Virginia Solar Initiative - Weldon Cooper Center for Public Service – University of Virginia (https://solar.coopercenter.org/taxonomy/term/5311)

For the Dominion Indy III solar farm, the adjacent land to the west was acquired and subsequently developed with a large estate home – after the solar panels had been in operation for years.





Dominion Indy III Solar Farm September 2014

Dominion Indy III Solar Farm October 2016



Estate home adjacent to Dominion Indy III Solar Farm

In ground pool and attached garage (home cost estimated at \$450,000 - October 2015)

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Innovative Solar 42 (2017) Cumberland County, NC



Innovative Solar 42 (2019) Cumberland County, NC

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**Developer Built Home** Sold 6/18/19 for \$265,900 (\$110.75/sf) Cumberland County, NC (adjacent to Innovative 42 solar farm)





Portage Solar Farm, IN October 2015



Portage Solar Farm, IN October 2016



4,255 square foot estate home under construction, adjacent to Portage Solar Farm located in Indiana On-site pond and attached garage (cost estimated at \$465,000) April 2018



The Brighton PV Solar farm became operational in December 2012. Located in Adams County, north of Denver, CO, this solar farm has a capacity of 1.8 MW AC and is located on a triangular parcel of land east of an area of existing custom-built estate homes. A photo of one home (15880 Jackson Street) located directly north of the circled area below is presented to the right.



In December 2012, the 2.55-acre lot encircled in red below (15840 Jackson

Street) was purchased for future development of a single-family home. This home was built in 2017, and per the county assessor, the two-story home is 3,725 square feet above ground with 4 bedrooms and 3.5 bathrooms. According to the building permit issued in August 2016, the construction cost was budgeted at \$410,000.



Brighton PV Solar, Adams County, CO June 2016



Brighton PV Solar, Adams County, CO June 2017



## SUMMARY OF ADJOINING USES

		Compos					
Solar Farm #	Solar Farm	Acreage % of Surrounding Agricultural Uses	Acreage % of Surrounding Residential Uses	Acreage % of Surrounding Industrial Uses	Acreage % of Surrounding Office Uses	Acreage % of Surrounding Other Uses	Avg. Distance from Panels to Improvements (Feet)
1	North Star	75.00%	15.00%	0.00%	0.00%	10.00%	325
2	Dominion Indy Solar III	97.70%	2.30%	0.00%	0.00%	0.00%	474
3	Dougherty Solar	76.42%	22.46%	1.12%	0.00%	0.00%	350
4	Miami-Dade Solar Energy Center	56.10%	10.00%	0.00%	0.00%	34.00%	915
5	Barefoot Bay Solar Energy Center	0.00%	9.71%	88.08%	0.00%	2.20%	734
6	Innovative Solar 42	20.00%	25.00%	0.00%	0.00%	55.00%	405
7	Rutherford Farm	10.00%	40.00%	10.00%	0.00%	40.00%	180
8	Elm City Solar	20.00%	15.00%	10.00%	0.00%	50.00%	295
9	Woodland Solar	25.00%	5.00%	0.00%	0.00%	60.00%	615
10	Lapeer Solar	60.00%	35.00%	0.00%	0.00%	5.00%	260

The table below summarizes each Existing Solar Farm's adjoining uses.

Overall, the vast majority of the surrounding acreage for each comparable solar farm is made up of agricultural land, some of which have homesteads. There are also smaller single-family home sites that adjoin the solar farms analyzed in this report. Generally, these solar farms are sound comparables to Harvey Solar I, LLC's proposed solar project in terms of adjoining uses, location, and size.



# SUMMARY AND FINAL CONCLUSIONS

The purpose of this property value impact report is to determine whether the presence of a solar farm has caused a measurable and consistent impact on adjacent property values. Under the identified methodology and scope of work, CohnReznick reviewed published methodology for measuring impact on property values as well as published reports that analyzed the impact of solar farms on property values. These studies found little to no measurable and consistent difference between Test Area Sales and Control Area Sales attributed to the solar farms.

A summary of the chosen CohnReznick impact studies prepared is presented below.

CohnReznick Solar Analysis Conclusions									
#	Solar Farm	Number of Test Area Sales	Number of Control Area Sales	Median Adjoining Property Sale (Test Area) Price per Unit	Control Area Sales Median Price per Unit	Difference (%)	Avg. Feet from Panel to Lot	Avg. Feet from Panel to House	Impact Found?
gle-Fa	mily Residential								
1	North Star Solar Group 1	3	11	\$151.93	\$139.50	+8.91%	123	358	No Impact
	North Star Solar Group 2	1	10	\$119.82	\$116.33	+3.00%	152	225	No Impact
	North Star Solar Group 3*	1	10						
	North Star Solar Group 4	1	7	\$172.41	\$170.86	+0.91%	90	180	No Impact
	North Star Solar Group 5	1	8	\$205.09	\$170.88	+20.02%	90	280	No Impact
	North Star Solar Group 6	1	4	\$114.48	\$120.49	-4.99%	130	730	No Impact
	North Star Solar Group 7	1	11	\$156.84	\$135.63	+15.64%	200	330	No Impact
	North Star Solar Group 8	1	5	\$139.70	\$132.68	+5.29%	295	800	No Impact
	North Star Solar Group 9	1	8	\$101.63	\$103.95	-2.22%	115	285	No Impact
2	Indy Solar III Group 2	4	8	\$59.10	\$57.84	+2.18%	240	350	No Impact
	Indy Solar III Group 3	7	11	\$72.15	\$71.69	+0.65%	165	300	No Impact
3	Dougherty Solar	1	5	\$74.55	\$76.23	-2.21%	202	312	No Impact
5	Barefoot Bay Solar Energy Center Group 2	5	126	\$95.90	\$93.95	+2.07%	675	750	No Impact
6	Innovative Solar 42 Group 1	1	7	\$107.09	\$100.18	+6.91%	215	405	No Impact
	Innovative Solar 42 Group 2	1	7	\$111.77	\$105.34	+6.10%	240	300	No Impact
7	Rutherford Farm	1	6	\$53.46	\$52.49	+1.85%	135	180	No Impact
8	Elm City Solar	1	8	\$56.60	\$55.57	+1.85%	255	295	No Impact
9	Woodland Solar	1	5	\$144.63	\$137.76	+4.99%	420	615	No Impact
10	DTE Lapeer Solar Group 1	3	6	\$105.26	\$99.64	+5.65%	205	285	No Impact
	DTE Lapeer Solar Group 2	1	5	\$114.12	\$113.01	+0.98%	225	315	No Impact
	DTE Lapeer Solar Group 3	1	4	\$94.84	\$96.32	-1.53%	160	290	

38 Adjoining Test Sales studied and compared to 272 Control Sales

\* Note, the paired sale analysis for this group is an outlier as determined earlier in this report and was excluded from this summary table.

			AND 251 111 111		3333366652		£1333		03333333333333333333
Land (Agricultural/Single Family Lots)									
2	Indy Solar III Group 1	1	4	\$8,210	\$8,091	+1.47%	280	-	No Impact
4	Miami-Dade Solar Energy Center	3	6	\$82,491	\$81,866	+0.76%	766	-	No Impact
5	Barefoot Bay Solar Energy Center Group 1	2	7	\$54,500	\$51,000	+6.86%	475	-	No Impact
Aedian V	ariance in Sale Prices for Test to Control Areas					+1.47%			
Adiaini	ww. Tool Cales studied and some and to 47 Cant	val Calaa			5747.				((((S)*

6 Adjoining Test Sales studied and compared to 17 Control Sales

As summarized above, we evaluated 44 property sales adjoining existing solar facilities (Test Area Sales) and 289 Control Area Sales. In addition, we studied a total of 62 Test Area Sales and 1,035 Control Area Sales in four Before and After analyses. In total, we have studied over 1,430 sale transactions.

The solar farms analyzed reflected sales of property adjoining an existing solar farm (Test Area Sales) in which the unit sale prices were effectively the same or higher than the comparable Control Area Sales that were not near a solar farm. The conclusions support that there is no negative impact for improved residential homes adjacent to solar, nor agricultural acreage. This was confirmed with market participants interviews, which



# Prepared for Birch Solar I, LLC, a Subsidiary of Lightsource BP Page | 121

provided additional insight as to how the market evaluates farmland and single-family homes with views of the solar farm.

It can be concluded that since the Adjoining Property Sales (Test Area Sales) were not adversely affected by their proximity to the solar farm, that properties surrounding other proposed solar farms operating in compliance with all regulatory standards will similarly not be adversely affected, in either the short or long term periods.

Based upon the examination, research, and analyses of the existing solar farm uses, the surrounding areas, and an extensive market database, we have concluded that <u>no consistent negative impact has occurred to</u> <u>adjacent property values that could be attributed to proximity to the adjacent solar farm</u>, with regard to unit sale prices or other influential market indicators. Additionally, in our workfile we have retained analyses of additional existing solar farms, each with their own set of matched control sales, which had consistent results, indicating no consistent and measurable impact on adjacent property values. This conclusion has been confirmed by numerous county assessors who have also investigated this use's potential impact on property values.



If you have any questions or comments, please contact the undersigned. Thank you for the opportunity to be of service.

Respectfully submitted,

CohnReznick LLP

11th

Andrew R. Lines, MAI Principal **Certified General Real Estate Appraiser** Ohio License No. 2019001053 Expires 3/25/2022 Illinois License No. 553.001841 Expires 9/30/2023 Indiana License No. CG41500037 Expires 6/30/2022

Erin C. Bowen, MAI Senior Manager **Certified General Real Estate Appraiser** Arizona License No. 32052 Expires 12/31/2022

Patricia SM Jars

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# CERTIFICATION

We certify that, to the best of our knowledge and belief:

- 1. The statements of fact and data reported are true and correct.
- 2. The reported analyses, findings, and conclusions in this consulting report are limited only by the reported assumptions and limiting conditions, and are our personal, impartial, and unbiased professional analyses, findings, and conclusions.
- 3. We 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. We have performed no services, as an appraiser or in any other capacity, regarding the property that is the subject of this report within the three-year period immediately preceding acceptance of this assignment.
- 5. We have no bias with respect to the property that is the subject of this report or the parties involved with this assignment.
- 6. Our engagement in this assignment was not contingent upon developing or reporting predetermined results.
- 7. Our 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 finding, the attainment of a stipulated result, or the occurrence of a subsequent event directly related to the intended use of this report.
- 8. Our analyses, findings, 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, which includes the Uniform Standards of Professional Appraisal Practice (USPAP).
- 9. The use of this report is subject to the requirements of the Appraisal Institute relating to review by its duly authorized representatives.
- 10. Patricia L. McGarr, MAI, CRE, FRICS, Andrew R. Lines, MAI, and Erin C. Bowen, MAI have viewed the exterior of all comparable data referenced in this report in person, via photographs, or aerial imagery.
- 11. We have not relied on unsupported conclusions relating to characteristics such as race, color, religion, national origin, gender, marital status, familial status, age, and receipt of public assistance income, handicap, or an unsupported conclusion that homogeneity of such characteristics is necessary to maximize value.
- 12. Sonia K. Singh, MAI, Michael F. Antypas, Amanda G. Edwards, and TJ Schemmel provided significant appraisal consulting assistance to the persons signing this certification, including data verification, research, and administrative work all under the appropriate supervision.
- 13. We have experience in reviewing properties similar to the subject and are in compliance with the Competency Rule of USPAP.
- 14. As of the date of this report, Patricia L. McGarr, MAI, CRE, FRICS, Andrew R. Lines, MAI, Sonia K. Singh, MAI and Erin Bowen, MAI have completed the continuing education program for Designated Members of the Appraisal Institute.

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If you have any questions or comments, please contact the undersigned. Thank you for the opportunity to be of service.

Respectfully submitted,

# CohnReznick LLP

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Andrew R. Lines, MAI Principal **Certified General Real Estate Appraiser** Ohio License No. 2019001053 Expires 3/25/2022 Illinois License No. 553.001841 Expires 9/30/2023 Indiana License No. CG41500037 Expires 6/30/2022

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Erin C. Bowen, MAI Senior Manager **Certified General Real Estate Appraiser** Arizona License No. 32052 Expires 12/31/2022

Patricia SM Jars

Patricia L. McGarr, MAI, CRE, FRICS National Director - Valuation Advisory Services **Certified General Real Estate Appraiser** Indiana License No. #CG49600131 Expires 6/30/2022 Michigan License No. 1201072979 Expires 7/31/2022 Illinois License No. #553.000621 Expires 9/30/2023



# ASSUMPTIONS AND LIMITING CONDITIONS

The fact witness services will be subject to the following assumptions and limiting conditions:

- 1. No responsibility is assumed for the legal description provided or for matter pertaining to legal or title considerations. Title to the property is assumed to be good and marketable unless otherwise stated. The legal description used in this report is assumed to be correct.
- 2. The property is evaluated free and clear of any or all liens or encumbrances unless otherwise stated.
- 3. Responsible ownership and competent management are assumed.
- 4. Information furnished by others is believed to be true, correct and reliable, but no warranty is given for its accuracy.
- 5. All engineering studies are assumed to be correct. The plot plans and illustrative material in this report are included only to help the reader visualize the property.
- 6. It is assumed that there are no hidden or unapparent conditions of the property, subsoil, or structures that render it more or less valuable. No responsibility is assumed for such conditions or for obtaining the engineering studies that may be required to discover them.
- 7. It is assumed that the property is in full compliance with all applicable federal, state, and local and environmental regulations and laws unless the lack of compliance is stated, described, and considered in the evaluation report.
- 8. It is assumed that the property conforms to all applicable zoning and use regulations and restrictions unless nonconformity has been identified, described and considered in the evaluation report.
- 9. It is assumed that all required licenses, certificates of occupancy, consents, and other legislative or administrative authority from any local, state, or national government or private entity or organization have been or can be obtained or renewed for any use on which the value estimate contained in this report is based.
- 10. It is assumed that the use of the land and improvements is confined within the boundaries or property lines of the property described and that there is no encroachment or trespass unless noted in this report.
- 11. The date of value to which the findings are expressed in this report apply is set forth in the letter of transmittal. The appraisers assume no responsibility for economic or physical factors occurring at some later date which may affect the opinions herein stated.
- 12. Unless otherwise stated in this report, the existence of hazardous materials, which may or may not be present on the property, was not observed by the appraisers. The appraisers have no knowledge of the existence of such substances on or in the property. The appraisers, however, are not qualified to detect such substances. The presence of substances such as asbestos, urea-formaldehyde foam insulation, radon gas, lead or lead-based products, toxic waste contaminants, and other potentially hazardous materials may affect the value of the property. The value estimate is predicated on the



assumption that there is no such material on or in the property that would cause a loss in value. No responsibility is assumed for such conditions or for any expertise or engineering knowledge required to discover them. The client is urged to retain an expert in this field, if desired.

- 13. The forecasts, projections, or operating estimates included in this report were utilized to assist in the evaluation process and are based on reasonable estimates of market conditions, anticipated supply and demand, and the state of the economy. Therefore, the projections are subject to changes in future conditions that cannot be accurately predicated by the appraisers and which could affect the future income or value projections.
- 14. Fundamental to the appraisal analysis is the assumption that no change in zoning is either proposed or imminent, unless otherwise stipulated. Should a change in zoning status occur from the property's present classification, the appraisers reserve the right to alter or amend the value accordingly.
- 15. It is assumed that the property does not contain within its confined any unmarked burial grounds which would prevent or hamper the development process.
- 16. The Americans with Disabilities Act (ADA) became effective on January 26, 1992. We have not made a specific compliance survey and analysis of the property to determine if it is in conformance with the various detailed requirements of the ADA. It is possible that a compliance survey of the property, together with a detailed analysis of the requirements of the ADA, could reveal that the property is not in compliance with one or more of the requirements of the Act. If so, this fact could have a negative effect on the value of the property. Unless otherwise noted in this report, we have not been provided with a compliance survey of the property. Any information regarding compliance surveys or estimates of costs to conform to the requirements of the ADA are provided for information purposes. No responsibility is assumed for the accuracy or completeness of the compliance survey cited in this report, or for the eventual cost to comply with the requirements of the ADA.
- 17. Any value estimates provided in this report apply to the entire property, and any proration or division of the total into fractional interests will invalidate the value estimate, unless such proration or division of interests has been set forth in this report.
- 18. Any proposed improvements are assumed to have been completed unless otherwise stipulated; any construction is assumed to conform with the building plans referenced in this report.
- 19. Unless otherwise noted in the body of this report, this evaluation assumes that the subject does not fall within the areas where mandatory flood insurance is effective.
- 20. Unless otherwise noted in the body of this report, we have not completed nor are we contracted to have completed an investigation to identify and/or quantify the presence of non-tidal wetland conditions on the subject property.
- 21. This report should not be used as a basis to determine the structural adequacy/inadequacy of the property described herein, but for evaluation purposes only.
- 22. It is assumed that the subject structure meets the applicable building codes for its respective jurisdiction. We assume no responsibility/liability for the inclusion/exclusion of any structural

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component item which may have an impact on value. It is further assumed that the subject property will meet code requirements as they relate to proper soil compaction, grading, and drainage.

23. The appraisers are not engineers, and any references to physical property characteristics in terms of quality, condition, cost, suitability, soil conditions, flood risk, obsolescence, etc., are strictly related to their economic impact on the property. No liability is assumed for any engineering-related issues.

# The evaluation services will be subject to the following limiting conditions:

- 1. The findings reported herein are only applicable to the properties studied in conjunction with the Purpose of the Evaluation and the Function of the Evaluation as herein set forth; the evaluation is not to be used for any other purposes or functions.
- 2. Any allocation of the total value estimated in this report between the land and the improvements applies only to the stated program of utilization. The separate values allocated to the land and buildings must not be used in conjunction with any other appraisal and are not valid if so used.
- 3. No opinion is expressed as to the value of subsurface oil, gas or mineral rights, if any, and we have assumed that the property is not subject to surface entry for the exploration or removal of such materials, unless otherwise noted in the evaluation.
- 4. This report has been prepared by CohnReznick under the terms and conditions outlined by the enclosed engagement letter. Therefore, the contents of this report and the use of this report are governed by the client confidentiality rules of the Appraisal Institute. Specifically, this report is not for use by a third party and CohnReznick is not responsible or liable, legally or otherwise, to other parties using this report unless agreed to in writing, in advance, by both CohnReznick and/or the client or third party.
- 5. Disclosure of the contents of this evaluation report is governed by the by-laws and Regulations of the Appraisal Institute has been prepared to conform with the reporting standards of any concerned government agencies.
- 6. The forecasts, projections, and/or operating estimates contained herein are based on current market conditions, anticipated short-term supply and demand factors, and a continued stable economy. These forecasts are, therefore, subject to changes with future conditions. This evaluation is based on the condition of local and national economies, purchasing power of money, and financing rates prevailing at the effective date of value.
- 7. This evaluation shall be considered only in its entirety, and no part of this evaluation shall be utilized separately or out of context. Any separation of the signature pages from the balance of the evaluation report invalidates the conclusions established herein.
- 8. Possession of this report, or a copy thereof, does not carry with it the right of publication, nor may it be used for any purposes by anyone other than the client without the prior written consent of the appraisers, and in any event, only with property qualification.

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- 9. The appraisers, by reason of this study, are not required to give further consultation or testimony or to be in attendance in court with reference to the property in question unless arrangements have been previously made.
- 10. Neither all nor any part of the contents of this report shall be conveyed to any person or entity, other than the appraiser's client, through advertising, solicitation materials, public relations, news, sales or other media, without the written consent and approval of the authors, particularly as to evaluation conclusions, the identity of the appraisers or CohnReznick, LLC, or any reference to the Appraisal Institute, or the MAI designation. Further, the appraisers and CohnReznick, LLC assume no obligation, liability, or accountability to any third party. If this report is placed in the hands of anyone but the client, client shall make such party aware of all the assumptions and limiting conditions of the assignment.
- 11. This evaluation is not intended to be used, and may not be used, on behalf of or in connection with a real estate syndicate or syndicates. A real estate syndicate means a general or limited partnership, joint venture, unincorporated association or similar organization formed for the purpose of, and engaged in, an investment or gain from an interest in real property, including, but not limited to a sale or exchange, trade or development of such real property, on behalf of others, or which is required to be registered with the United States Securities and Exchange commissions or any state regulatory agency which regulates investments made as a public offering. It is agreed that any user of this evaluation who uses it contrary to the prohibitions in this section indemnifies the appraisers and the appraisers' firm and holds them harmless from all claims, including attorney fees, arising from said use.



Prepared for Birch Solar I, LLC, a Subsidiary of Lightsource BP	Page   129

**ADDENDUM A: APPRAISER QUALIFICATIONS** 





## Patricia L. McGarr, MAI, CRE, FRICS, CRA Principal and CohnReznick Group -Valuation Advisory National Director

200 S. Wacker Drive, Suite 2600 Chicago, IL 60606 312-508-5802 patricia.mcgarr@cohnreznick.com

Patricia L. McGarr, MAI, CRE, FRICS, CRA, is a principal and National Director of CohnReznick Advisory Group's Valuation Advisory Services practice. Pat's experience includes market value appraisals of varied property types for acquisition, condemnation, mortgage, estate, ad valorem tax, litigation, zoning, and other purposes. Pat has been involved in the real estate business since 1980. From June 1980 to January 1984, she was involved with the sales and brokerage of residential and commercial properties. Her responsibilities during this time included the formation, management, and training of sales staff in addition to her sales, marketing, and analytical functions. Of special note was her development of a commercial division for a major Chicago-area brokerage firm.

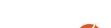
Since January 1984, Pat has been exclusively involved in the valuation of real estate. Her experience includes the valuation of a wide variety of property types including residential (SF/MF/LIHTC), commercial, industrial, and special purpose properties including such diverse subjects as quarries, marinas, riverboat gaming sites, shopping centers, manufacturing plants, and office buildings. She is also experienced in the valuation of leasehold and leased fee interests. Pat has performed appraisal assignments throughout the country, including the Chicago Metropolitan area as well as New York, New Jersey, California, Nevada, Florida, Utah, Texas, Wisconsin, Indiana, Michigan, and Ohio. Pat has gained substantial experience in the study and analysis of the establishment and expansion of sanitary landfills in various metropolitan areas including the preparation of real estate impact studies to address criteria required by Senate Bill 172. She has also developed an accepted format for allocating value of a landfill operation between real property, landfill improvements, and franchise (permits) value.

Over the past several years, Pat has developed a valuation group that specializes in the establishment of new utility corridors for electric power transmission and pipelines. This includes determining acquisition budgets, easement acquisitions, corridor valuations, and litigation support. Pat has considerable experience in performing valuation impact studies on potential detrimental conditions and has studied properties adjoining solar farms, wind farms. landfills, waste transfer stations, stone quarries, cellular towers, schools, electrical power transmission lines, "Big Box" retail facilities, levies, properties with restrictive covenants, landmark districts, environmental contamination, airports, material defects in construction, stigma, and loss of view amenity for residential high rises. Most recently, the firm has studied property values adjacent to Solar Farms to address criteria required for special use permits across the Midwest.

Pat has gualified as an expert valuation witness in numerous local, state, and federal courts.

Pat has participated in specialized real estate appraisal education and has completed more than 50 courses and seminars offered by the Appraisal Institute totaling more than 600 classroom hours, including real estate transaction courses as a prerequisite to obtaining a State of Illinois Real Estate Salesman License.

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Pat has earned the professional designations of Counselors of Real Estate (CRE), Member of the Appraisal Institute (MAI), Fellow of Royal Institution of Chartered Surveyors (FRICS) and Certified Review Appraiser (CRA). She has also been a certified general real estate appraiser in 21 states (see below).

#### Education

North Park University: Bachelor of Science, General Studies

#### **Professional Affiliations**

- National Association of Realtors •
- **CREW Commercial Real Estate Executive Women**
- IRWA International Right Of Way Association

#### Licenses and Accreditations

- Member of the Appraisal Institute (MAI) •
- Counselors of Real Estate, designated CRE •
- Fellow of Royal Institution of Chartered • Surveyors (FRICS)
- Certified Review Appraiser (CRA)
- Alabama State Certified General Real Estate Appraiser
- California State Certified General Real Estate Appraiser
- Connecticut State Certified General Real Estate Appraiser
- Colorado State Certified General Real Estate Appraiser
- District of Columbia Certified General Real Estate • Appraiser
- Illinois State Certified General Real Estate Appraiser
- Indiana State Certified General Real Estate Appraiser
- Louisiana State Certified General Real Estate Appraiser

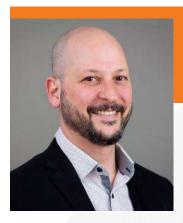
- Maryland State Certified General Real Estate Appraiser
- Massachusetts Certified General Real Estate Appraiser
- Michigan State Certified General Real Estate Appraiser
- North Carolina State Certified General Real **Estate Appraiser**
- New Jersey State Certified General Real Estate Appraiser
- Nevada State Certified General Real Estate . Appraiser
- New York State Certified General Real Estate Appraiser
- Pennsylvania State Certified General Real Estate Appraiser
- South Carolina State Certified General Real Estate Appraiser
- Tennessee State Certified General Real Estate Appraiser
- **Texas State Certified General Real Estate** Appraiser
- Virginia State Certified General Real Estate Appraiser
- Wisconsin State Certified General Real Estate Appraiser

#### **Appointments**

- Appointed by two Governors of Illinois to the State Real Estate Appraisal Board (2017 & 2021)
- Chairman of the State of Illinois Real Estate Appraisal Board (2021)

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## Andrew R. Lines, MAI Principal, CohnReznick Advisory

200 S. Wacker Drive, Suite 2600 Chicago, IL 60606 312-508-5892 andrew.lines@cohnreznick.com

Andrew R. Lines is a principal in CohnReznick's Valuation Advisory Services group where he specializes in Real Estate, Affordable Housing, Cannabis and Renewable Energy. Andrew leads a group of appraisers across the country performing valuations on a wide variety of real estate property types including residential, commercial, industrial, hospitality and special purpose properties: landfills, waste transfer stations, marinas, hospitals, universities, self-storage facilities, racetracks, CCRCs, and railroad corridors. Affordable Housing experience includes Market Studies, Rent Compatibility Studies and Feasibility Analysis for LIHTC and mixed-income developments. Cannabis assignments have covered cultivation, processing, and dispensaries in over 10 states, including due diligence for mergers and acquisitions of multi-state operational and early stage companies. Renewable Energy assignments have included preparation of impact studies and testimony at local zoning hearings in eight states.

Andrew is experienced in the valuation of leasehold, leased fee, and partial interests and performs appraisals for all purposes including financial reporting, litigation, and gift/estate planning. Andrew is a State Certified General Real Estate Appraiser in the states of Illinois, Indiana, Maryland, Georgia, Florida, Ohio, New York, New Jersey, Arizona, Kentucky, and the District of Columbia.

Before joining CohnReznick, Andrew was with Integra Realty Resources, starting as analyst support in 2002 and leaving the firm as a director in late 2011 (including two years with the Phoenix chapter). His real estate experience also includes one year as administrator for the residential multifamily REIT Equity Residential Properties Trust (ERP), in the transactions department, where he performed due diligence associated with the sale and acquisition of REIT properties and manufactured home communities.

#### Education

- Syracuse University: Bachelor of Fine Arts
- MAI Designation (Member of the Appraisal Institute)

#### **Professional Affiliations**

- Chicago Chapter of the Appraisal Institute
  - Alternate Regional Representative (2016 2018)
  - MAI Candidate Advisor (2014 Present)
  - International Real Estate Management (IREM)
- National Council of Real Estate Investment Fiduciaries (NCREIF)

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#### Community Involvement

- Syracuse University Regional Council Active Member
- Syracuse University Alumni Association of Chicago, Past Board member
- Chicago Friends School Treasurer & Board Member

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## Erin C. Bowen, MAI Senior Manager - Real Estate Valuation Valuation Advisory Services

858-349-8854 erin.bowen@cohnreznick.com www.cohnreznick.com

Erin Bowen is a senior manager in CohnReznick's Valuation Advisory Services practice. Ms. Bowen support's CohnReznick's 20 national locations virtually from Phoenix. Ms. Bowen's work in commercial real estate valuation spans over 10 years. Ms. Bowen specializes in lodging, seniors housing, cannabis, large scale retail and multifamily properties. Lodging work includes all hotel property types and brand segments including limited, full service and resort properties, seniors housing assignments include assisted living, skilled nursing facilities and rehabilitation centers. Retail work encompasses power centers, lifestyle centers, outlet centers and malls. She has appraised numerous additional properties including office, medical office, industrial, churches, fraternity houses, schools, rehabilitation centers and vacant land. Ms. Bowen has experience working with a variety of valuation problems, including proposed properties, ground leases, tax abatements, fractional interests, property conversions, impact studies and purchase price allocations. Ms. Bowen is also proficient in ARGUS software.

#### Education

University of California, San Diego: Bachelor of Arts in Psychology and Theater; College Honors

#### **Professional Affiliations**

Appraisal Institute, Designated Member

#### Licenses

Certified General Real Estate Appraiser licensed in New Mexico, Arizona, California, and Nevada

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# Sonia K. Singh, MAI Director – Valuation Advisory Services

7501 Wisconsin Avenue, Suite 400E Bethesda, Maryland 20814 301-280-5193 sonia.singh@cohnreznick.com

Sonia K. Singh, MAI is a director in CohnReznick Advisory Group's Valuation Advisory practice and based in the Bethesda office. For the past ten years, she has engaged in real estate valuation and other real estate consulting services and valued over \$5 billion in real property.

Sonia is adept at valuing a variety of commercial real estate across the United States, including the following complex property types: athletic clubs; full-service hotels and beach resorts; marinas; historic redevelopment projects; recycling facilities; single-family rental home portfolios; master planned communities; and for-sale residential units or subdivisions. She has also performed real estate appraisals involving leasehold interests, air rights ownership, and right-of-way fee simple and easement acquisitions for utility corridors. She has performed these and other appraisals others for purposes including financial reporting, estate planning, gift and estate tax, bond and conventional financing, litigation (eminent domain), and asset management, with the ability to handle appraisals of large portfolios in expedited timeframes. With significant experience in the appraisal of senior living facilities including continuing care retirement communities, skilled nursing facilities, assisted living and memory care facilities, as well as age-restricted housing, Ms. Singh has elevated the firm's modelling of complex healthcare property ownership structures to help illuminate debt/income and lease coverage ratios for federal courts, resulting in millions of dollars in recovered credits for clients.

Additionally, Sonia is experienced in purchase price allocations (GAAP, IFRS, and IRC 1060) for financial reporting, including the early adoption of ASU 2017-01. She has also provided valuation services related to highest and best use analysis, market feasibility studies, and useful life analysis. She has prepared impact studies measuring the possible detrimental impact of economic and environmental influences on property values, including those related to high-voltage transmission lines, distribution warehouses, wind farms, and solar farms. She has provided expert witness testimony at local county zoning hearings for proposed solar energy uses and their potential detrimental impacts on adjacent property values.

#### Education

University of Illinois: Bachelor of Science, Actuarial Science

#### Professional Affiliation, Licenses, and Exams

- MAI Appraisal Institute, Designated Member •
- Urban Land Institute, Associate Member •
- Certified General Real Estate Appraiser with Active Licenses in DC and the States of MD, MO, and VA
- Successful completion of the following actuarial exams: Probability (1/P), Financial Mathematics (2/FM), and Models for Financial Economics (3/MFE)

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### Awards and Recognitions

2019 National Association of Certified Valuators and Analysts (NACVA) and the Consultants Training • Institute (CTI) 40 Under Forty Honoree

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# Michael F. Antypas Manager, Valuation Advisory Services

7501 Wisconsin Ave, Suite 400E Bethesda, Maryland 20814 301-280-2741 Michael.Antypas@cohnreznick.com

Michael Antypas is a manager in CohnReznick's Valuation Advisory Services practice group and is based in the Bethesda office. He has assisted other associates and appraisers in the valuation of a variety of retail shopping centers, hotels, market rate and restricted rental apartment properties, industrial properties, Class A office complexes with GSA tenants, mixed-use properties, developable land, master planned communities, subdivisions, and single-family rental home portfolios owned by REITs. He has also completed solar farm impact studies, appraisals for eminent domain disputes, above/below market lease analyses, as well as purchase price allocations on various senior living facilities, medical office buildings, industrial buildings, retail centers, and cannabis facilities. In addition, Michael is certified in working with Argus Enterprise valuation software. He is a practicing affiliate in the Appraisal Institute and is working towards becoming a Certified General Real Estate Appraiser.

He graduated from the Villanova School of Business in May of 2016. Some of his other experience working in Real Estate originated through interning with commercial brokers. Throughout his senior year in college, Michael interned with Newmark Grubb Knight Frank as a Capital Markets intern. There he helped create and revise many marketing packages for the firm's senior managing directors. He also assisted in developing underwriting models and projections for offering memorandums. He also worked with a boutique restaurant broker in Washington D.C, Papadopoulos Properties where he compiled market research for his client's use and surveyed prospective restaurants to gauge their interest in expanding to the Washington D.C. market.

#### **Education**

 Villanova University Bachelor of Business Administration, Finance and Real Estate, Minor in Business Analytics

#### **Certifications**

• Argus Enterprise Certified

#### **Professional Affiliations**

Appraisal Institute, Practicing Affiliate

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# **TJ Schemmel**

## Manager, Valuation Advisory Services

200 S. Wacker Drive, Suite 2600 Chicago, IL 60606 312-788-6057 TJ.Schemmell@cohnreznick.com

TJ Schemmel is a manager in CohnReznick Advisory Group's Valuation Advisory Services practice and is based in the Chicago office. For the past two years, he has completed real estate valuation and other real estate consulting services valued at over \$2 billion in real property.

TJ has acquired competency in valuing a variety of commercial real estate across the United States, including the following complex property types: full-service hotels, single family rental home portfolios, cannabis cultivation facilities, hospitals, utility corridors, and for-sale residential units or subdivisions. He has also performed real estate appraisals involving leasehold interests, air rights ownership, and right-of-way fee simple and easement acquisitions for utility corridors. He has performed these and other appraisals for purposes including financial reporting, estate planning, bond and conventional financing, litigation (eminent domain and LaSalle factors), and asset management, with the ability to handle complex appraisals in expedited timeframes. TJ has also participated in assignments to determine the highest and best use of subject properties, which included determining the value of the properties under potential zoning designations and determining the likelihood of potential rezoning.

#### **Education**

University of Cincinnati: Bachelor of Business Administration

#### Professional Affiliations

- Thomas Schemmel, Practicing Affiliate, Appraisal Institute
- Routes to Success, Incorporated (HOBY Ohio West) Board President
- Chicago Tutoring Associate Board Member

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Birch Solar 1, LLC Case No. 20-1605-EL-BGN

# Attachment ARL-3 Real Estate Adjacent Property Value Impact Report – Site-specific Analysis Addendum Report for the Proposed Birch Solar 1 Solar Project to be Located in Allen & Auglaize Counties, Ohio

**CohnReznick LLP** 

May 3, 2022



www.cohnreznick.com



# REAL ESTATE ADJACENT PROPERTY VALUE IMPACT REPORT:

Site Specific Analysis Addendum Report: For the Proposed 300 Birch Solar I Solar Project To Be Located in Allen & Auglaize County, Ohio

**Prepared For:** Ms. Jacqui Kitchen Senior Manager, Development Lightsource, BP

Submitted By:

CohnReznick LLP Valuation Advisory Services 200 S. Wacker Drive, Suite 2600 Chicago, Illinois 60606 (312) 508-5900

Patricia L. McGarr, MAI, CRE, FRICS Andrew R. Lines, MAI Sonia K. Singh, MAI

May 3, 2022

Prepared for Birch Solar I, LLC, a Subsidiary of Lightsource BP Page | 2

## LETTER OF TRANSMITTAL

May 3, 2022

Ms. Jacqui Kitchen Senior Manager, Development Lightsource, BP

Addendum - Property Value Impact Report SUBJECT: Proposed 300 MW Birch Solar I Project Allen and Auglaize Counties, Ohio

Dear Mr. Kitchen:

This letter and associated report are considered an Addendum to the previously prepared property value impact report with an effective date of May 3, 2022 ("Primary Report"). All facts and circumstances surrounding the property value impact report that analyzes existing solar farm and any effect on adjacent property values are contained within the cited Primary Report. This Addendum cannot be properly understood without the cited Primary Report and should be reviewed in unison.

Per the client's request, we have researched the proposed solar farm on land located in Shawnee Township in Allen County and Logan Township in Auglaize County, Ohio. The proposed solar use, called Birch Solar I, will have a capacity of up to 300 MW AC (megawatts alternating current).

The purpose of this consulting assignment is to determine whether the proximity of the proposed renewable energy use (solar farm) will result in impact on adjacent property values.

The intended use of our opinions and conclusions is to assist the client in addressing local concerns and to provide information that permitting bodies consider in their evaluation of solar project use applications. We have not been asked to value any specific property, and we have not done so.

The client and intended user for the assignment is Birch Solar I, LLC and Lightsource BP, LLC. Additional intended users of our findings include the Ohio Power Siting Board and DickinsonWright (as Client's representation). The report may be used only for the aforementioned purpose and may not be distributed without the written consent of CohnReznick LLP ("CohnReznick").



#### Prepared for Birch Solar I, LLC, a Subsidiary of Lightsource BP Page | 3

The assignment is intended to conform to the Uniform Standards of Professional Appraisal Practice (USPAP), the Code of Professional Ethics and Standards of Professional Appraisal Practice of the Appraisal Institute, as well as applicable state appraisal regulations.

Based on the analysis in the accompanying report, and subject to the definitions, assumptions, and limiting conditions expressed in the report, our findings are as follows.

#### **FINDINGS**

I. Academic Studies: CohnReznick reviewed and analyzed published academic studies that specifically analyzed the impact of solar facilities on nearby property values. These studies include multiple regression analyses of hundreds and thousands of sales transactions, and opinion surveys, for both residential homes and farmland properties in rural communities, which concluded existing solar facilities have had no negative impact on adjacent property values.

Peer Authored Studies: CohnReznick also reviewed studies prepared by other real estate valuation experts that specifically analyzed the impact of solar facilities on nearby property values. These studies found little to no measurable or consistent difference in value between the Test Area Sales and the Control Area Sales attributed to the proximity to existing solar farms, and noted that solar energy uses are generally considered a compatible use.

П. CohnReznick Studies: Further, CohnReznick has performed 26 studies in over 15 states, of both residential and agricultural properties, in which we have determined that the existing solar facilities have not caused any consistent and measurable negative impact on property values.

For this Project, we have included 10 of these studies which are most similar to the subject in terms of general location and size, summarized as follows:

CohnReznick - Existing Solar Farms Studied							
#	Solar Farm	County	State	MW AC	Acreage		
1	North Star Solar	Chisago	MN	100.00	±1,000		
2	Dominion Indy Solar III	Marion	IN	8.60	129.04		
3	Dougherty Solar	Dougherty	GA	120.00	1,280.93		
4	Miami-Dade Solar Energy Center	Miami-Dade	FL	74.50	465.61		
5	Barefoot Bay Solar Energy Center	Brevard	FL	74.50	504.75		
6	Innovative Solar 42	Bladen & Cumberland	NC	71.00	413.99		
7	Rutherford Farm	Rutherford	NC	61.00	488.84		
8	Elm City Solar	Wilson	NC	40.00	354.00		
9	Woodland Solar	Isle of Wight	VA	19.00	211.12		
10	DTE Lapeer Solar	LaPeer	MI	48.28	365.68		

It is noted that proximity to the solar farms has not deterred sales of nearby agricultural land and residential single-family homes nor has it deterred the development of new single-family homes on adjacent land.



This report also includes four "Before and After" analyses, in which sales that occurred prior to the announcement and construction of the solar farm project were compared with sales that occurred after completion of the solar farm project, for both adjoining and non-adjoining properties. No measurable impact on property values was demonstrated.

III. Market Participant Interviews: Our conclusions also consider interviews with over 45 County and Township Assessors, who have at least one solar farm in their jurisdiction, and in which they have determined that solar farms have not negatively affected adjacent property values.

With regards to the Project, we specifically interviewed Auditors in Ohio:

- Lisa Ruhlen, Real Estate Clerk in the Hardin County, Ohio Auditor's office reported that as of first quarter 2022, there have been no complaints or petitions to lower assessed values on homes near the Hardin Solar farm.
- Bill Nichols, Chief Appraiser with the Trumbull County Auditor in Ohio, stated that he has seen . no effect on property values in properties near a solar farm and no one has come in to complain to the Auditor's office about an impact on their property value.
- Beth Fritz, the Valuation Specialist in the Wood County, Ohio Auditor's office has seen no • effect or impact on residential, commercial or agricultural property values on any properties with proximity to a solar farm.
- Jarra Underwood, Wayne County Auditor in Ohio reported that she has seen no impact on . property values due to their location near a solar farm.

To give us additional insight as to how the market evaluates farmland and single-family homes with views of solar farms, we interviewed numerous real estate brokers and other market participants who were party to actual sales of property adjacent to solar; these professionals also confirmed that solar farms did not diminish property values or marketability in the areas they conducted their business.

IV. Solar Farm Factors on Harmony of Use: In the course of our research and studies, we have recorded information regarding the compatibility of these existing solar facilities and their adjoining uses, including the continuing development of land adjoining these facilities.

### CONCLUSION

Considering all of the preceding, the data indicates that solar facilities do not have a negative impact on adjacent property values.



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If you have any questions or comments, please contact the undersigned. Thank you for the opportunity to be of service.

Very truly yours,

### CohnReznick LLP

With.

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## SCOPE OF WORK

#### CLIENT

The client for this assignment is Birch Solar I, LLC and Lightsource BP.

#### **INTENDED USERS**

Border Basin I, LLC and Tyr Energy Development Renewables, Dickinson Wright and the Ohio Power Siting Board.

#### **INTENDED USE**

The intended use of our findings and conclusions is to assist the client in addressing local concerns and to provide information that permitting bodies consider in their evaluation of solar project use applications. We have not been asked to value any specific property, and we have not done so. The report may be used only for the aforementioned purpose and may not be distributed without the written consent of CohnReznick LLP ("CohnReznick").

#### PURPOSE

The purpose of this consulting assignment is to determine whether proximity to the proposed solar facility will result in an impact on adjacent property values.

#### **DEFINITION OF VALUE**

This report utilizes Market Value as the appropriate premise of value. Market value is defined as:

"The most probable price which a property should bring in a competitive and open market under all conditions requisite to a fair sale, the buyer and seller each acting prudently and knowledgeably, and assuming the price is not affected by undue stimulus. Implicit in this definition are the consummation of a sale as of a specified date and the passing of title from seller to buyer under conditions whereby:

- 1. Buyer and seller are typically motivated;
- 2. Both parties are well informed or well advised, and acting in what they consider their own best interests;
- 3. A reasonable time is allowed for exposure in the open market.
- 4. Payment is made in terms of cash in U.S. dollars or in terms of financial arrangements comparable thereto; and

The price represents the normal consideration for the property sold unaffected by special or creative financing or sales concessions granted by anyone associated with the sale."1

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<sup>&</sup>lt;sup>1</sup> Code of Federal Regulations, Title 12, Chapter I, Part 34.42[h]

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#### **EFFECTIVE DATE & DATE OF REPORT**

May 3, 2022 (Paired sale analyses contained within each study in the Primary Report are periodically updated.)

#### **PRIOR SERVICES**

USPAP requires appraisers to disclose to the client any services they have provided in connection with the subject property in the prior three years, including valuation, consulting, property management, brokerage, or any other services.

We have not previously evaluated the Project site.

#### INSPECTION

Patricia L. McGarr, MAI, CRE, FRICS, Andrew R. Lines, MAI, and Erin C. Bowen, MAI have viewed the exterior of all comparable data referenced in this report in person, via photographs, or aerial imagery.

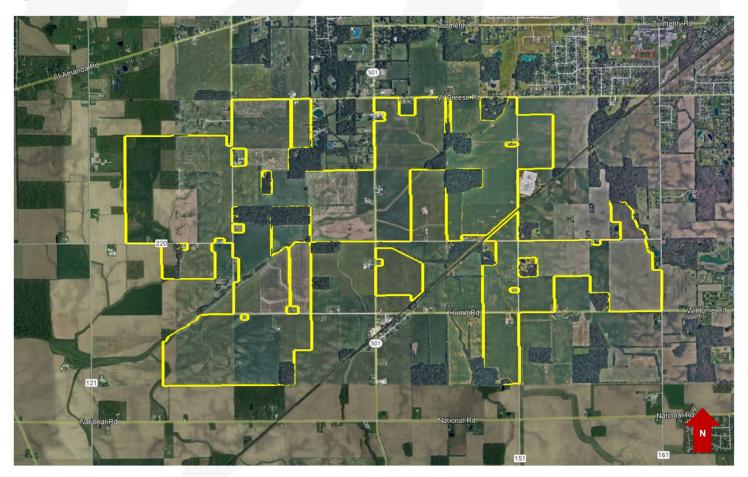


## IDENTIFICATION AND DESCRIPTION OF THE PROPOSED PROJECT

The Birch Solar Project ("Border Basin" or "the Project") is to be located on land approximately 10 miles southwest of Lima, south of Breese Road, north of National Road, west of County Road 161 and east of County Road 121, in Shawnee Township in Allen County and Logan Township in Auglaize County, Ohio.

Based on development plans for a typical solar farm, the proposed 300-megawatt solar energy center project would generally consist of solar photovoltaic arrays, electrical inverters, underground and aboveground collection lines, security fencing, safety lighting, and other auxiliary infrastructure. Setbacks will be 300 feet from residential structures. The Project anticipates using vegetative screening such as arborvitaes or similar. The Project also anticipates utilizing native, pollinator-friendly vegetation per guidance from the Ohio Farm Bureau and Ohio Department of Natural Resources (ODNR.)

The Project will be located within approximately 1,410 combined acres of non-contiguous parcels in Allen and Auglaize Counties in a rural environment. The Project will be situated on land parcels utilized for agricultural purposes and is illustrated on the following page by the yellow polygons. The Project parcels are bordered by agricultural farmland and rural homesteads.



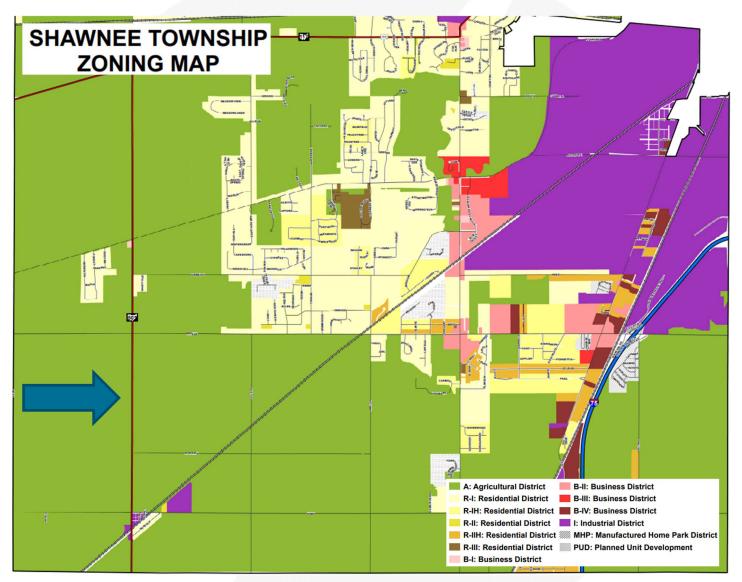
Proposed Birch Solar Project leased parcel area outlined in yellow, as provided by Lightsource BP



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#### **ZONING REGULATIONS**

The Project Area parcels in Shawnee Township in Allen County are zoned Agricultural. Allen County has a Comprehensive Plan dated October 2009. The proposed project site is located in the Agricultural generalized land use.



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### OVERVIEW OF THE SURROUNDING AREA OF THE PROJECT

The Project consists of a utility-scale, solar energy use in Shawnee Township in Allen County and Logan Township in Auglaize County, Ohio, known as the 300 MW Birch Solar Project. A surrounding area map indicating the location of the Project (red arrow) is presented below.



Aerial imagery of project area provided by Google Earth, dated April 2022



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### TRAFFIC PATTERNS AND CONNECTIVITY

The Project is located west of Interstate 75, connecting Lima from the northeast to Wapakoneta and Sidney to the south. Two-lane county roads traverse the township providing access to Shawnee, Lima and Interstate 75. The nearest major cities to the Project are Fort Wayne, approximately 60 miles northwest of the subject, Dayton 70 miles south of the subject, and Toledo, approximately 85 miles north of the Subject.

#### **DEMOGRAPHIC FACTORS**

Demographic data is presented below, as compiled by ESRI, which indicates a stable population in the area surrounding the Project, the County, and the State, as well as a predominantly owner-occupied area. Median household income is higher at the Township level than the County and State levels. These features indicate a stable economic base.

DEMOGRAPHIC PROFILE								
Shawnee and Logan Townships Auglaize County Allen County Ohio								
Population								
2026 Projection	13,207	47,178	102,417	11,966,163				
2021 Estimate	13,371	46,693	103,912	11,839,300				
2010 Census	13,546	45,949	106,331	11,536,504				
Growth 2021 - 2026	-1.23%	1.04%	-1.44%	1.07%				
Growth 2010 - 2021	-1.29%	1.62%	-2.27%	2.62%				
Total Land Area	57 square miles	402 square miles	407 square miles	44,825 square miles				
Population Density	233/sq. mile	116/sq. mile	255/sq. mile	264/sq. mile				
Households								
2026 Projection	5,241	18,835	39,682	4,823,381				
2021 Estimate	5,284	18,556	40,161	4,761,855				
2010 Census	5,273	17,972	40,619	4,603,435				
Growth 2021 - 2026	-0.81%	1.50%	-1.19%	1.29%				
Growth 2010 - 2021	0.21%	3.25%	-1.13%	3.44%				
2021 Owner Occupied (%)	80.18%	63.64%	60.28%	60.28%				
2021 Renter Occupied (%)	19.82%	36.36%	39.72%	39.72%				
2021 Med. Household Income	\$78,027	\$66,627	\$55,048	\$57,725				
2021 Avg. Household Income	\$96,018	\$80,304	\$67,979	\$79,579				

#### CONCLUSION

Land uses in the area surrounding the Project can be categorized as predominantly farmland and some residential homesteads, as well as a number of industrial egg production facilities. The factors presented previously indicate that the proposed Project would not be incompatible with surrounding uses and would not negatively impact surrounding properties.

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## OHIO SOIL PRODUCTIVITY AND VALUE TRENDS

#### NCCPI PRODUCTIVITY INDEX

Crop yields have been the basis for establishing a soil productivity index, and are used by county assessors, farmers, and market participants in assessing agricultural land. While crop yields are an integral part in assessing soil qualities, it is not an appropriate metric to rely on because "yields fluctuate from year to year, and absolute yields mean little when comparing different crops. Productivity indices provide a single scale on which soils may be rated according to their suitability for several major crops under specified levels of management, such as an optimum level."<sup>2</sup> The productivity index, therefore, not crop yields, is best suited for applications in land appraisal and land-use planning.

The United States Department of Agriculture's (USDA) National Resources Conservation Services (NRCS) developed and utilizes the National Commodity Crop Productivity Index (NCCPI) as a national soil interpreter and is used in the National Soil Information System (NASIS), but it is not intended to replace other crop production models developed by individual states.<sup>3</sup> The focus of the model is on identifying the best soils for the growth of commodity crops, as the best soils for the growth of these crops are generally the best soils for the growth of other crops.<sup>4</sup> The NCCPI model describes relative productivity ranking over a period of years and not for a single year where external influences such as extreme weather or change in management practices may have affected production. At the moment, the index only describes non-irrigated crops, and will later be expanded to include irrigated crops, rangeland, and forestland productivity.<sup>5</sup>

Yields are influenced by a variety of different factors including environmental traits and management inputs. Tracked climate and soil qualities have been proven by researchers to directly explain fluctuations in crop yields. especially those qualities that relate to moisture-holding capacity. Some states such as Illinois have developed a soil productivity model that considers these factors to describe "optimal" productivity of farmed land. Except for these factors, "inherent soil quality or inherent soil productivity varies little over time or from place to place for a specific soil (map unit component) identified by the National Cooperative Soil Survey (NCSS)."<sup>6</sup> The NRCS Web Soil Survey website has additional information on how the ratings are determined. The state of Ohio does not have its own crop production model and utilizes the NCCPI.

The solar energy project is located in Allen and Auglaize Counties, in northwest Ohio. An excerpt of a soil productivity map is presented on the following page as retrieved from the USDA Web Soil Survey, which provides an illustration of the variation in soil productivity across the local area that is based on the NCCPI. The approximate site area for the Project is within the boundary delineated in the image on the following page.

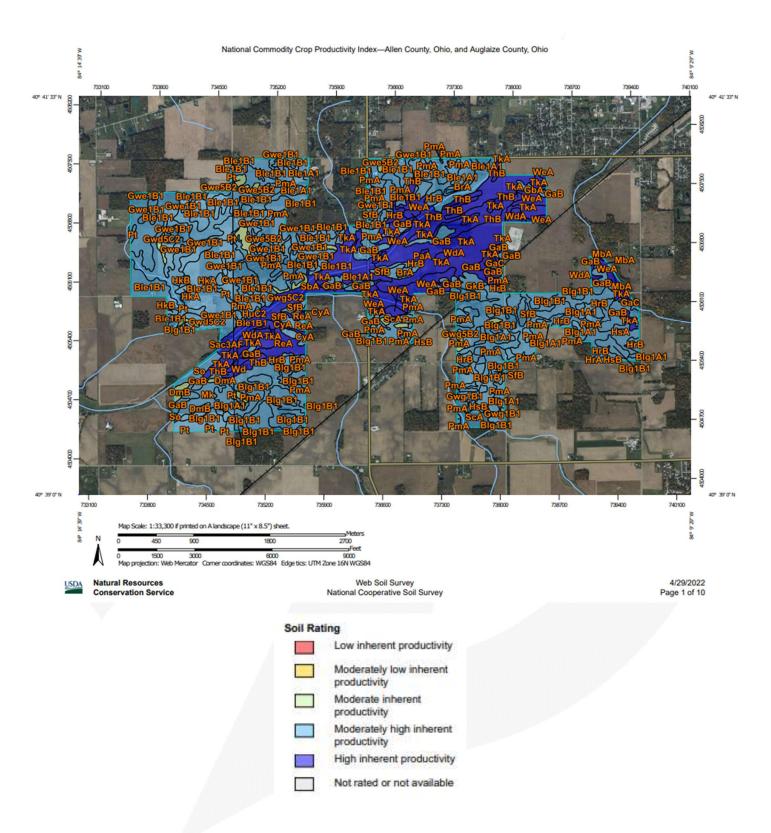


<sup>2</sup> Bulletin 811: Optimum Crop Productivity of Illinois Soils. University of Illinois, College of Agricultural, Consumer and Environmental Sciences, Office of Research. August 2000.

<sup>3</sup> Agricultural land rental payments are typically tied to crop production of the leased agricultural land and is one of the primary reasons the NCCPI was developed, especially since the model needed to be consistent across political boundaries.

<sup>4</sup> Per the User Guide for the National Commodity Crop Productivity Index, the NCCPI uses natural relationships of soil, landscape and climate factors to model the response of commodity crops in soil map units. The present use of the land is not considered in the ratings. 5 AgriData Inc. Docs: http://support.agridatainc.com/NationalCommodityCropProductivityIndex(NCCPI).ashx 6 USDA NRCS's User Guide National Commodity Crop Productivity Index (NCCPI)

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Per the NCCPI, soil productivity is measured on both a numerical scale from 0 to 100, with 0 being the worst and 100 being the best,<sup>7</sup> and by gualitative ratings. The gualitative rating classifications below are determined by the USDA NRCS and provide general comments on the productivity of the soil.

**High inherent productivity** indicates that the soil, site, and climate have features that are very favorable for crop production. High yields and low risk of crop failure can be expected if a high level of management is employed.

Moderately high inherent productivity indicates that the soil has features that are generally quite favorable for crop production. Good yields and moderately low risk of crop failure can be expected.

**Moderate inherent productivity** indicates that the soil has features that are generally favorable for crop production. Good yields and moderate risk of crop failure can be expected.

Moderately low inherent productivity indicates that the soil has features that are generally not favorable for crop production. Low yields and moderately high risk of crop failure can be expected.

Low inherent productivity indicates that the soil has one or more features that are unfavorable for crop production. Low yields and high risk of crop failure can be expected.

The weighted average soil productivity for the general area was determined to be approximately 74.70. A numerical scale that corresponds to the indicated qualitative ratings above was not available for the NCCPI; however, the soil productivity for this area is higher than the middle of the range, aligning with the "moderately high inherent productivity" category. According to the qualitative scale above, land with the moderately high inherent productivity classification is generally quite favorable for crop production with good yields.

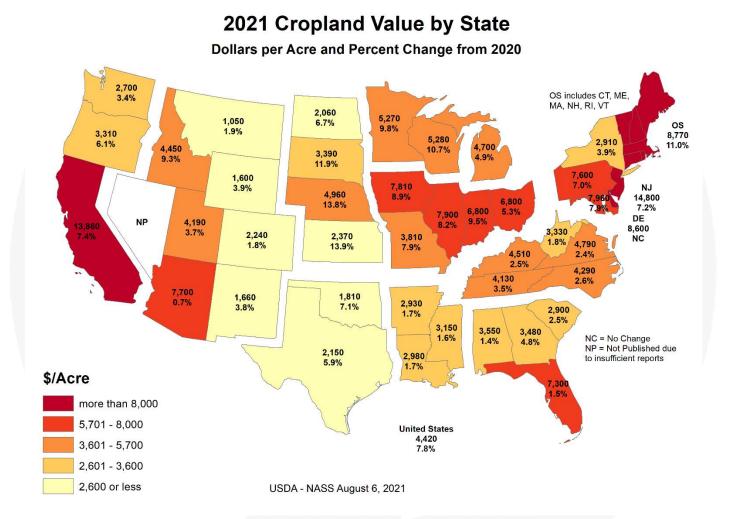


<sup>7</sup> Quantitative ratings are also show in ranges of 0.00 to 1.00. AgriData Inc. presents the NCCPI index rating multiplied by 100 in a range of 0.00 to 100.00 to show up to four significant figures.

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#### **AREA VALUE TRENDS - CROPLAND**

Agricultural land values are heavily influenced by relative crop production yields. The following exhibit compiled by the USDA National Agricultural Statistics Service (NASS) provides an illustration of how regional conditions such as weather conditions, geographies, and soil conditions can affect crop land real estate values.



Per the NASS report, the average value of cropland in Ohio for 2021 is \$6,800 per acre, which is an increase of 5.3 percent from 2020. In addition, the report indicated that the average annual growth rate for farmland values in Ohio from 2017 to 2021 was 1.96 percent.8



<sup>&</sup>lt;sup>8</sup> https://www.nass.usda.gov/Publications/Todays\_Reports/reports/land0821.pdf

#### **AREA VALUE TRENDS – RESIDENTIAL HOMES**

The proposed Project is to be located in Allen and Auglaize Counties, southwest of Lima. There has been some home sale activity in the area surrounding the proposed Project in the past year.

We researched sales in the surrounding area, from April 2021 through the end of April 2022, and identified 32 market transactions of single-family homes. We studied homes that are more similar to the rural residential homesteads in the area of the proposed Project, and that are not in the cities of Lima or Cridersville.

The sales are summarized in the table below.

Home Sales Surrounding Proposed Project Area							
(April 2021 through April 2022)							
Median LotMedianMin.MedianSingle Family HomesSizeLiving AreaSaleMax. SaleSale Price(Acres)(SF)PricePSF							
Allen & Auglaize County	2.53	2,010	\$77,500	\$595,000	\$128.99		

We surveyed the surrounding area of the proposed site to identify any transactions of homes adjacent to the site that occurred within the past year. We identified five sales of single-family residences that sold near or adjacent to the project's proposed location, ranging from \$151,900 to \$565,000, with a median sale price of \$229,000, in line with the median sale price of the area. The median price per square foot is \$127.54. Please see the table below:

	Building				Lot Size	Year
Address	Size (SF)	Sale Date	Sale Price	\$ PSF	(AC)	Built
5875 W Breese Road	3,106	10/1/2021	\$565,000	\$181.91	16.44	1989
3840 S Wapak Road	1,883	4/23/2021	\$205,000	\$108.87	2.50	1920
4060 S Wapak Road	1,191	7/9/2021	\$151,900	\$127.54	0.58	1984
4025 W Hume Road	2,496	7/8/2021	\$229,000	\$91.75	2.54	1920
4535 Bowsher Road	2,687	11/19/2021	\$432,000	\$160.77	10.11	1991

We spoke with Cody Adams with Coldwell Banker. He represented the buyer for 5875 W Breese Road, which sold for \$565,000 or \$181.91 PSF. Mr. Adams informed us that the buyers were aware about the proposed solar farm and did not care. Mr. Adams said they loved the house and were happy to buy there. The following map shows the location of the home and the location of the proposed solar farm on three sides of the property. The home sold for well above median sale price and per square foot for the region. Mr. Adams confirmed that the sale price for the property was at market.



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The table below illustrates residential home value trends for the proposed Project's Allen and Auglaize County location. The source is the Federal Housing Finance Agency's (FHFA) House Price Index (HPI), which is a weighted, repeat-sales index measuring changes in single-family house prices.

FHFA House Price Index Allen County, Ohio			FHFA House Price Index Auglaize County, Ohio		
Year	Annual Change (%)	HPI	Year	Annual Change (%)	HPI
2001	4.25	254.03	2001	4.79	363.50
2002	1.80	258.59	2002	2.40	372.24
2003	1.08	261.38	2003	0.64	374.61
2004	4.37	272.81	2004	1.79	381.32
2005	4.22	284.32	2005	6.58	406.42
2006	0.89	286.84	2006	0.43	408.17
2007	-0.35	285.85	2007	0.75	411.24
2008	-0.31	284.97	2008	0.84	414.71
2009	-2.05	279.13	2009	-0.79	411.44
2010	-3.59	269.12	2010	-3.62	396.54
2011	-2.41	262.64	2011	-2.64	386.09
2012	0.52	264.02	2012	-0.43	384.44
2013	-1.59	259.83	2013	2.16	392.72
2014	0.40	260.87	2014	1.44	398.39
2015	3.62	270.31	2015	1.48	404.28
2016	2.81	277.91	2016	3.31	417.66
2017	2.97	286.16	2017	4.51	436.49
2018	4.60	299.33	2018	7.40	468.79
2019	3.94	311.13	2019	3.09	483.26
2020	4.82	326.14	2020	4.14	503.25
2021	11.79	364.59	2021	8.94	548.24
Annual Average			Annual Average		
Compounded % Change	1.82%		Compounded % Change	2.08%	

Based on the data shown above, the trend in residential home values in Allen County have steadily increased at an average annual rate of 1.82 percent, over the past twenty years, and 2.08 percent in Auglaize County. The housing values in the county are considered to be stable.

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## LOCAL LAND DEVELOPMENT TRENDS

Land values can be driven by a site's proximity to the path of development. The closer a property is to the path of development, and without natural barriers to development, the more value a property may have in the future. The path of development in the local area has been towards Lima to the northeast of the subject. The Project area has been agricultural land for over 15 years.



Aerial Imagery dated October 2006

Aerial Imagery dated March 2021

According to the images above, there has been little new development in the local area over the past 15 years. Generally, any undeveloped agricultural land is considered to be an interim use as the intensity of uses grows in step with macroeconomic factors; however, the Project and the land surrounding are zoned for agricultural uses.



### SUMMARY AND FINAL CONCLUSIONS

The Project is located in a stable area that is predominantly agricultural in nature with some residential homesteads. The population density for the local area is 233 persons per square mile which reflects a rural environment. Local development has not been robust over the past 15 years, and the immediate land parcels have a future land use designation of agricultural. Based on our analysis of real estate taxes in the Primary Report, solar farm uses incur anywhere from 131% to ±1,000% increase in real estate tax revenue for the local area, feeding back into essential services and schools. Local land and residential home prices have remained stable over the past five years and are anticipated to align in the future with macroeconomic changes. Overall, the proposed Project is considered a locally compatible use.

The purpose of the Primary Report and this addendum is to determine whether the presence of a solar farm has caused a measurable and consistent impact on adjacent property values. Under the identified methodology and scope of work, CohnReznick reviewed published methodology for measuring impact on property values as well as published reports that analyzed the impact of solar farms on property values. These studies found little to no measurable and consistent difference between Test Area Sales and Control Area Sales attributed to the solar farms.

The chosen existing solar farms analyzed in the Primary Report reflected sales of property adjoining an existing solar farm (Test Area Sales) in which the unit sale prices were effectively the same or higher than the comparable Control Area Sales that were not near a solar farm. The conclusions support that there is no negative impact for improved residential homes adjacent to solar, nor agricultural acreage. This was confirmed with market participants interviews, which provided additional insight as to how the market evaluates farmland and singlefamily homes with views of the solar farm.

It can be concluded that since the Adjoining Property Sales (Test Area Sales) were not adversely affected by their proximity to the solar farm, that properties surrounding other proposed solar farms operating in compliance with all regulatory standards will similarly not be adversely affected, in either the short or long term periods.

Based upon the examination, research, and analyses of the existing solar farm uses, the surrounding areas, and an extensive market database, we have concluded that no consistent negative impact has occurred to adjacent property values that could be attributed to proximity to the adjacent solar farm, with regard to unit sale prices or other influential market indicators. Additionally, in our workfile we have retained analyses of additional existing solar farms, each with their own set of matched control sales, which had consistent results, indicating no consistent and measurable impact on adjacent property values. This conclusion has been confirmed by numerous county assessors who have also investigated this use's potential impact on property values.

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Respectfully submitted,

#### CohnReznick LLP

WILL

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Erin C. Bowen, MAI Senior Manager **Certified General Real Estate Appraiser** Arizona License No. 32052 Expires 12/31/2022

Patricia Mars

Patricia L. McGarr, MAI, CRE, FRICS National Director - Valuation Advisory Services **Certified General Real Estate Appraiser** Indiana License No. #CG49600131 Expires 6/30/2022 Michigan License No. 1201072979 Expires 7/31/2022 Illinois License No. #553.000621 Expires 9/30/2023



## CERTIFICATION

We certify that, to the best of our knowledge and belief:

- 1. The statements of fact and data reported are true and correct.
- 2. The reported analyses, findings, and conclusions in this consulting report are limited only by the reported assumptions and limiting conditions, and are our personal, impartial, and unbiased professional analyses, findings, and conclusions.
- 3. We 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. We have performed no services, as an appraiser or in any other capacity, regarding the property that is the subject of this report within the three-year period immediately preceding acceptance of this assignment.
- 5. We have no bias with respect to the property that is the subject of this report, or the parties involved with this assignment.
- 6. Our engagement in this assignment was not contingent upon developing or reporting predetermined results.
- 7. Our 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 finding, the attainment of a stipulated result, or the occurrence of a subsequent event directly related to the intended use of this report.
- 8. Our analyses, findings, 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, which includes the Uniform Standards of Professional Appraisal Practice (USPAP).
- 9. The use of this report is subject to the requirements of the Appraisal Institute relating to review by its duly authorized representatives.
- 10. Patricia L. McGarr, MAI, CRE, FRICS, Andrew R. Lines, MAI, and Erin C. Bowen, MAI have viewed the exterior of the Project and of all comparable data referenced in this report in person, via photographs, or aerial imagery.
- 11. We have not relied on unsupported conclusions relating to characteristics such as race, color, religion, national origin, gender, marital status, familial status, age, and receipt of public assistance income, handicap, or an unsupported conclusion that homogeneity of such characteristics is necessary to maximize value.
- 12. Sonia K. Singh, MAI, Erin Bowen, MAI, Michael F. Antypas, Amanda G. Edwards, and TJ Schemmel provided consulting assistance to the persons signing this certification, including data verification, research, and administrative work all under the appropriate supervision.
- 13. We have experience in reviewing properties similar to the subject and are in compliance with the Competency Rule of USPAP.
- 14. As of the date of this report, Patricia L. McGarr, MAI, CRE, FRICS, Andrew R. Lines, MAI, Sonia K. Singh, MAI and Erin Bowen, MAI have completed the continuing education program for Designated Members of the Appraisal Institute.

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Disclaimer: This report is limited to the intended use, intended users (Birch Solar I, LLC, Lightsource BP, the Ohio Power Siting Board and DickinsonWright as it relates to the evaluation of the Project), and purpose stated within. No part of this report may CohnReznic otherwise be reproduced or modified in any form, or by any means, without the prior written permission of CohnReznick LLP.



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If you have any questions or comments, please contact the undersigned. Thank you for the opportunity to be of service.

Respectfully submitted,

#### CohnReznick LLP

WILL

Andrew R. Lines, MAI Principal Certified General Real Estate Appraiser Ohio License No. 2019001053 Expires 3/25/2022 Illinois License No. 553.001841 Expires 9/30/2023 Indiana License No. CG41500037 Expires 6/30/2022

in

Erin C. Bowen, MAI Senior Manager **Certified General Real Estate Appraiser** Arizona License No. 32052 Expires 12/31/2022

Patricia Mars

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### ASSUMPTIONS AND LIMITING CONDITIONS

The fact witness services will be subject to the following assumptions and limiting conditions:

- 1. No responsibility is assumed for the legal description provided or for matter pertaining to legal or title considerations. Title to the property is assumed to be good and marketable unless otherwise stated. The legal description used in this report is assumed to be correct.
- 2. The property is evaluated free and clear of any or all liens or encumbrances unless otherwise stated.
- 3. Responsible ownership and competent management are assumed.
- 4. Information furnished by others is believed to be true, correct and reliable, but no warranty is given for its accuracy.
- 5. All engineering studies are assumed to be correct. The plot plans and illustrative material in this report are included only to help the reader visualize the property.
- 6. It is assumed that there are no hidden or unapparent conditions of the property, subsoil, or structures that render it more or less valuable. No responsibility is assumed for such conditions or for obtaining the engineering studies that may be required to discover them.
- 7. It is assumed that the property is in full compliance with all applicable federal, state, and local and environmental regulations and laws unless the lack of compliance is stated, described, and considered in the evaluation report.
- 8. It is assumed that the property conforms to all applicable zoning and use regulations and restrictions unless nonconformity has been identified, described and considered in the evaluation report.
- 9. It is assumed that all required licenses, certificates of occupancy, consents, and other legislative or administrative authority from any local, state, or national government or private entity or organization have been or can be obtained or renewed for any use on which the value estimate contained in this report is based.
- 10. It is assumed that the use of the land and improvements is confined within the boundaries or property lines of the property described and that there is no encroachment or trespass unless noted in this report.
- 11. The date of value to which the findings are expressed in this report apply is set forth in the letter of transmittal. The appraisers assume no responsibility for economic or physical factors occurring at some later date which may affect the opinions herein stated.
- 12. Unless otherwise stated in this report, the existence of hazardous materials, which may or may not be present on the property, was not observed by the appraisers. The appraisers have no knowledge of the existence of such substances on or in the property. The appraisers, however, are not qualified to detect such substances. The presence of substances such as asbestos, urea-formaldehyde foam insulation, radon gas, lead or lead-based products, toxic waste contaminants, and other potentially hazardous materials may affect the value of the property. The value estimate is predicated on the assumption that there is no such material on or in the property that would cause a loss in value. No

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#### Adjacent Property Value Impact Report Addendum: Proposed 300 MW Birch Solar Project Prepared for Birch Solar I, LLC, a Subsidiary of Lightsource BP Page | 26

responsibility is assumed for such conditions or for any expertise or engineering knowledge required to discover them. The client is urged to retain an expert in this field, if desired.

- 13. The forecasts, projections, or operating estimates included in this report were utilized to assist in the evaluation process and are based on reasonable estimates of market conditions, anticipated supply and demand, and the state of the economy. Therefore, the projections are subject to changes in future conditions that cannot be accurately predicted by the appraisers, and which could affect the future income or value projections.
- 14. Fundamental to the appraisal analysis is the assumption that no change in zoning is either proposed or imminent, unless otherwise stipulated. Should a change in zoning status occur from the property's present classification, the appraisers reserve the right to alter or amend the value accordingly.
- 15. It is assumed that the property does not contain within its confined any unmarked burial grounds which would prevent or hamper the development process.
- 16. The Americans with Disabilities Act (ADA) became effective on January 26, 1992. We have not made a specific compliance survey and analysis of the property to determine if it is in conformance with the various detailed requirements of the ADA. It is possible that a compliance survey of the property, together with a detailed analysis of the requirements of the ADA, could reveal that the property is not in compliance with one or more of the requirements of the Act. If so, this fact could have a negative effect on the value of the property. Unless otherwise noted in this report, we have not been provided with a compliance survey of the property. Any information regarding compliance surveys or estimates of costs to conform to the requirements of the ADA are provided for information purposes. No responsibility is assumed for the accuracy or completeness of the compliance survey cited in this report, or for the eventual cost to comply with the requirements of the ADA.
- 17. Any value estimates provided in this report apply to the entire property, and any proration or division of the total into fractional interests will invalidate the value estimate, unless such proration or division of interests has been set forth in this report.
- 18. Any proposed improvements are assumed to have been completed unless otherwise stipulated; any construction is assumed to conform with the building plans referenced in this report.
- Unless otherwise noted in the body of this report, this evaluation assumes that the subject does not 19. fall within the areas where mandatory flood insurance is effective.
- 20. Unless otherwise noted in the body of this report, we have not completed nor are we contracted to have completed an investigation to identify and/or quantify the presence of non-tidal wetland conditions on the subject property.
- 21. This report should not be used as a basis to determine the structural adequacy/inadequacy of the property described herein, but for evaluation purposes only.
- 22. It is assumed that the subject structure meets the applicable building codes for its respective jurisdiction. We assume no responsibility/liability for the inclusion/exclusion of any structural component item which may have an impact on value. It is further assumed that the subject property will meet code requirements as they relate to proper soil compaction, grading, and drainage.



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23. The appraisers are not engineers, and any references to physical property characteristics in terms of quality, condition, cost, suitability, soil conditions, flood risk, obsolescence, etc., are strictly related to their economic impact on the property. No liability is assumed for any engineering-related issues.

The evaluation services will be subject to the following limiting conditions:

- 1. The findings reported herein are only applicable to the properties studied in conjunction with the Purpose of the Evaluation and the Function of the Evaluation as herein set forth; the evaluation is not to be used for any other purposes or functions.
- 2. Any allocation of the total value estimated in this report between the land and the improvements applies only to the stated program of utilization. The separate values allocated to the land and buildings must not be used in conjunction with any other appraisal and are not valid if so used.
- No opinion is expressed as to the value of subsurface oil, gas or mineral rights, if any, and we have 3. assumed that the property is not subject to surface entry for the exploration or removal of such materials, unless otherwise noted in the evaluation.
- 4. This report has been prepared by CohnReznick under the terms and conditions outlined by the enclosed engagement letter. Therefore, the contents of this report and the use of this report are governed by the client confidentiality rules of the Appraisal Institute. Specifically, this report is not for use by a third party and CohnReznick is not responsible or liable, legally or otherwise, to other parties using this report unless agreed to in writing, in advance, by both CohnReznick and/or the client or third party.
- 5. Disclosure of the contents of this evaluation report is governed by the by-laws and Regulations of the Appraisal Institute has been prepared to conform with the reporting standards of any concerned government agencies.
- 6. The forecasts, projections, and/or operating estimates contained herein are based on current market conditions, anticipated short-term supply and demand factors, and a continued stable economy. These forecasts are, therefore, subject to changes with future conditions. This evaluation is based on the condition of local and national economies, purchasing power of money, and financing rates prevailing at the effective date of value.
- 7. This evaluation shall be considered only in its entirety, and no part of this evaluation shall be utilized separately or out of context. Any separation of the signature pages from the balance of the evaluation report invalidates the conclusions established herein.
- 8. Possession of this report, or a copy thereof, does not carry with it the right of publication, nor may it be used for any purposes by anyone other than the client without the prior written consent of the appraisers, and in any event, only with property qualification.
- 9. The appraisers, by reason of this study, are not required to give further consultation or testimony or to be in attendance in court with reference to the property in question unless arrangements have been previously made.



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- 10. Neither all nor any part of the contents of this report shall be conveyed to any person or entity, other than the appraiser's client, through advertising, solicitation materials, public relations, news, sales or other media, without the written consent and approval of the authors, particularly as to evaluation conclusions, the identity of the appraisers or CohnReznick, LLC, or any reference to the Appraisal Institute, or the MAI designation. Further, the appraisers and CohnReznick, LLC assume no obligation, liability, or accountability to any third party. If this report is placed in the hands of anyone but the client, client shall make such party aware of all the assumptions and limiting conditions of the assignment.
- 11. This evaluation is not intended to be used, and may not be used, on behalf of or in connection with a real estate syndicate or syndicates. A real estate syndicate means a general or limited partnership, joint venture, unincorporated association or similar organization formed for the purpose of, and engaged in, an investment or gain from an interest in real property, including, but not limited to a sale or exchange, trade or development of such real property, on behalf of others, or which is required to be registered with the United States Securities and Exchange commissions or any state regulatory agency which regulates investments made as a public offering. It is agreed that any user of this evaluation who uses it contrary to the prohibitions in this section indemnifies the appraisers and the appraisers' firm and holds them harmless from all claims, including attorney fees, arising from said use.



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ADDENDUM A: **APPRAISER QUALIFICATIONS** 



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# Patricia L. McGarr, MAI, CRE, FRICS, CRA Principal and CohnReznick Group – Valuation Advisory National Director

200 S. Wacker Drive, Suite 2600 Chicago, IL 60606 312-508-5802 patricia.mcgarr@cohnreznick.com

Patricia L. McGarr, MAI, CRE, FRICS, CRA, is a principal and National Director of CohnReznick Advisory Group's Valuation Advisory Services practice. Pat's experience includes market value appraisals of varied property types for acquisition, condemnation, mortgage, estate, ad valorem tax, litigation, zoning, and other purposes. Pat has been involved in the real estate business since 1980. From June 1980 to January 1984, she was involved with the sales and brokerage of residential and commercial properties. Her responsibilities during this time included the formation, management, and training of sales staff in addition to her sales, marketing, and analytical functions. Of special note was her development of a commercial division for a major Chicago-area brokerage firm.

Since January 1984, Pat has been exclusively involved in the valuation of real estate. Her experience includes the valuation of a wide variety of property types including residential (SF/MF/LIHTC), commercial, industrial, and special purpose properties including such diverse subjects as quarries, marinas, riverboat gaming sites, shopping centers, manufacturing plants, and office buildings. She is also experienced in the valuation of leasehold and leased fee interests. Pat has performed appraisal assignments throughout the country, including the Chicago Metropolitan area as well as New York, New Jersey, California, Nevada, Florida, Utah, Texas, Wisconsin, Indiana, Michigan, and Ohio. Pat has gained substantial experience in the study and analysis of the establishment and expansion of sanitary landfills in various metropolitan areas including the preparation of real estate impact studies to address criteria required by Senate Bill 172. She has also developed an accepted format for allocating value of a landfill operation between real property, landfill improvements, and franchise (permits) value.

Over the past several years, Pat has developed a valuation group that specializes in the establishment of new utility corridors for electric power transmission and pipelines. This includes determining acquisition budgets, easement acquisitions, corridor valuations, and litigation support. Pat has considerable experience in performing valuation impact studies on potential detrimental conditions and has studied properties adjoining solar farms, wind farms, landfills, waste transfer stations, stone quarries, cellular towers, schools, electrical power transmission lines, "Big Box" retail facilities, levies, properties with restrictive covenants, landmark districts, environmental contamination, airports, material defects in construction, stigma, and loss of view amenity for residential high rises. Most recently, the firm has studied property values adjacent to Solar Farms to address criteria required for special use permits across the Midwest.

Pat has qualified as an expert valuation witness in numerous local, state, and federal courts.

Pat has participated in specialized real estate appraisal education and has completed more than 50 courses and seminars offered by the Appraisal Institute totaling more than 600 classroom hours, including real estate transaction courses as a prerequisite to obtaining a State of Illinois Real Estate Salesman License.

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Pat has earned the professional designations of Counselors of Real Estate (CRE), Member of the Appraisal Institute (MAI), Fellow of Royal Institution of Chartered Surveyors (FRICS) and Certified Review Appraiser (CRA). She has also been a certified general real estate appraiser in 21 states (see below).

Education

North Park University: Bachelor of Science, General Studies

#### **Professional Affiliations**

- National Association of Realtors
- CREW Commercial Real Estate Executive Women
- **IRWA International Right Of Way Association**

### Licenses and Accreditations

- Member of the Appraisal Institute (MAI) .
- Counselors of Real Estate, designated CRE •
- Fellow of Royal Institution of Chartered Surveyors (FRICS)
- Certified Review Appraiser (CRA)
- Alabama State Certified General Real Estate Appraiser
- California State Certified General Real Estate Appraiser
- **Connecticut State Certified General Real Estate** Appraiser
- Colorado State Certified General Real Estate Appraiser
- District of Columbia Certified General Real Estate • Appraiser
- Illinois State Certified General Real Estate Appraiser
- Indiana State Certified General Real Estate Appraiser
- Louisiana State Certified General Real Estate Appraiser

- Maryland State Certified General Real Estate Appraiser
- Massachusetts Certified General Real Estate Appraiser
- Michigan State Certified General Real Estate Appraiser
- North Carolina State Certified General Real **Estate Appraiser**
- New Jersey State Certified General Real Estate Appraiser
- Nevada State Certified General Real Estate . Appraiser
- New York State Certified General Real Estate Appraiser
- Pennsylvania State Certified General Real Estate Appraiser
- South Carolina State Certified General Real Estate Appraiser
- Tennessee State Certified General Real Estate Appraiser
- **Texas State Certified General Real Estate** Appraiser
- Virginia State Certified General Real Estate Appraiser
- Wisconsin State Certified General Real Estate Appraiser

### **Appointments**

- Appointed by two Governors of Illinois to the State Real Estate Appraisal Board (2017 & 2021)
- Chairman of the State of Illinois Real Estate Appraisal Board (2021)



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# Andrew R. Lines, MAI Principal, CohnReznick Advisory

200 S. Wacker Drive, Suite 2600 Chicago, IL 60606 312-508-5892 andrew.lines@cohnreznick.com

Andrew R. Lines is a principal in CohnReznick's Valuation Advisory Services group where he specializes in Real Estate, Affordable Housing, Cannabis and Renewable Energy. Andrew leads a group of appraisers across the country performing valuations on a wide variety of real estate property types including residential, commercial, industrial, hospitality and special purpose properties: landfills, waste transfer stations, marinas, hospitals, universities, self-storage facilities, race tracks, CCRCs, and railroad corridors. Affordable Housing experience includes Market Studies, Rent Compatibility Studies and Feasibility Analysis for LIHTC and mixed-income developments. Cannabis assignments have covered cultivation, processing and dispensaries in over 10 states, including due diligence for mergers and acquisitions of multi-state operational and early stage companies. Renewable Energy assignments have included preparation of impact studies and testimony at local zoning hearings in eight states.

He is experienced in the valuation of leasehold, leased fee, and partial interests and performs appraisals for all purposes including financial reporting, litigation, and gift/estate planning. Andrew is a State Certified General Real Estate Appraiser in the states of Illinois, Indiana, Maryland, Georgia, Florida, Ohio, New York, New Jersey, Arizona, Kentucky, and the District of Columbia.

Before joining CohnReznick, Andrew was with Integra Realty Resources, starting as analyst support in 2002 and leaving the firm as a director in late 2011 (including two years with the Phoenix chapter). His real estate experience also includes one year as administrator for the residential multifamily REIT Equity Residential Properties Trust (ERP), in the transactions department, where he performed due diligence associated with the sale and acquisition of REIT properties and manufactured home communities.

#### Education

- Syracuse University: Bachelor of Fine Arts
- MAI Designation (Member of the Appraisal Institute)

#### Professional Affiliations

- Chicago Chapter of the Appraisal Institute
  - Alternate Regional Representative (2016 2018)
  - MAI Candidate Advisor (2014 Present)
  - International Real Estate Management (IREM)
- National Council of Real Estate Investment Fiduciaries (NCREIF)



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#### Community Involvement

- Syracuse University Regional Council Active Member
- Syracuse University Alumni Association of Chicago, Past Board member
- Chicago Friends School Treasurer & Board Member



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## Erin C. Bowen, MAI Senior Manager - Real Estate Valuation Valuation Advisory Services

858-349-8854 erin.bowen@cohnreznick.com www.cohnreznick.com

Erin Bowen is a senior manager in CohnReznick's Valuation Advisory Services practice. Ms. Bowen support's CohnReznick's 20 national locations virtually from Phoenix. Ms. Bowen's work in commercial real estate valuation spans over 10 years. Ms. Bowen specializes in lodging, seniors housing, cannabis, large scale retail and multifamily properties. Lodging work includes all hotel property types and brand segments including limited, full service and resort properties, seniors housing assignments include assisted living, skilled nursing facilities and rehabilitation centers. Retail work encompasses power centers, lifestyle centers, outlet centers and malls. She has appraised numerous additional properties including office, medical office, industrial, churches, fraternity houses, schools, rehabilitation centers and vacant land. Ms. Bowen has experience working with a variety of valuation problems, including proposed properties, ground leases, tax abatements, fractional interests, property conversions, impact studies and purchase price allocations. Ms. Bowen is also proficient in ARGUS software.

#### Education

University of California, San Diego: Bachelor of Arts in Psychology and Theater; College Honors

#### **Professional Affiliations**

Appraisal Institute, Designated Member

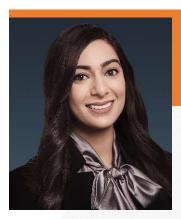
#### Licenses

Certified General Real Estate Appraiser licensed in New Mexico, Arizona, California, and Nevada



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# Sonia K. Singh, MAI Director – Valuation Advisory Services

7501 Wisconsin Avenue, Suite 400E Bethesda, Maryland 20814 301-280-5193 sonia.singh@cohnreznick.com

Sonia K. Singh, MAI is a director in CohnReznick Advisory Group's Valuation Advisory practice and based in the Bethesda office. For the past ten years, she has engaged in real estate valuation and other real estate consulting services and valued over \$5 billion in real property.

Sonia is adept at valuing a variety of commercial real estate across the United States, including the following complex property types: athletic clubs; full-service hotels and beach resorts; marinas; historic redevelopment projects; recycling facilities; single-family rental home portfolios; master planned communities; and for-sale residential units or subdivisions. She has also performed real estate appraisals involving leasehold interests, air rights ownership, and right-of-way fee simple and easement acquisitions for utility corridors. She has performed these and other appraisals others for purposes including financial reporting, estate planning, gift and estate tax, bond and conventional financing, litigation (eminent domain), and asset management, with the ability to handle appraisals of large portfolios in expedited timeframes. With significant experience in the appraisal of senior living facilities including continuing care retirement communities, skilled nursing facilities, assisted living and memory care facilities, as well as age-restricted housing. Ms. Singh has elevated the firm's modelling of complex healthcare property ownership structures to help illuminate debt/income and lease coverage ratios for federal courts, resulting in millions of dollars in recovered credits for clients.

Additionally, Sonia is experienced in purchase price allocations (GAAP, IFRS, and IRC 1060) for financial reporting, including the early adoption of ASU 2017-01. She has also provided valuation services related to highest and best use analysis, market feasibility studies, and useful life analysis. She has prepared impact studies measuring the possible detrimental impact of economic and environmental influences on property values, including those related to high-voltage transmission lines, distribution warehouses, wind farms, and solar farms. She has provided expert witness testimony at local county zoning hearings for proposed solar energy uses and their potential detrimental impacts on adjacent property values.

#### Education

University of Illinois: Bachelor of Science, Actuarial Science

#### Professional Affiliation, Licenses, and Exams

- MAI Appraisal Institute, Designated Member •
- Urban Land Institute, Associate Member •
- Certified General Real Estate Appraiser with Active Licenses in DC and the States of MD, MO, and VA •
- Successful completion of the following actuarial exams: Probability (1/P), Financial Mathematics (2/FM), and Models for Financial Economics (3/MFE)



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#### Awards and Recognitions

2019 National Association of Certified Valuators and Analysts (NACVA) and the Consultants Training Institute (CTI) 40 Under Forty Honoree



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## Case No(s). 20-1605-EL-BGN

Summary: Testimony - Direct Testimony of Andrew R. Lines electronically filed by Christine M.T. Pirik on behalf of Birch Solar 1, LLC