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# REAL ESTATE ADJACENT PROPERTY VALUE IMPACT CONSULTING REPORT:

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

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Andrew R. Lines, MAI Erin C. Bowen, MAI

August 28, 2023

# LETTER OF TRANSMITTAL

August 28, 2023

Ryan Bailey Director of Development New Leaf Energy, Inc. 55 Technology Drive, Suite 102 Lowell, MA 01851

SUBJECT: Property Value Impact Consulting Report An Analysis of Existing Wind Farms

To Whom it May Concern:

CohnReznick is pleased to submit the accompanying property value impact consulting report for the proposed wind energy use known as Villenova Wind Farm (the "Project"). CohnReznick researched property transactions adjacent to existing wind farms, researched and analyzed articles and other published studies, and interviewed real estate professionals and Township/County Assessors active in the market where wind farms are located, to gain an understanding of actual market transactions in the presence of wind energy uses. A summary of CohnReznick's Solar Findings has been included in this report.

The purpose of this consulting assignment is to determine whether proximity to a renewable energy use (wind farm) has an impact on adjacent property values. The intended use of our findings and conclusions is to address certain criteria related to impacts on adjacent property values, in an application for a Wind Energy Conversion System (WECS) permit for the proposed wind energy generation use. 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 New Leaf Energy, Inc. 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:



# Prepared for New Leaf Energy, Inc.

#### WIND FINDINGS

- I. Published Studies (pages 16-19): CohnReznick reviewed and analyzed published academic studies that specifically analyzed the impact of wind facilities on nearby property values. These studies include multiple regression analyses of hundreds and thousands of sales transactions for both residential homes and farmland properties in rural communities. The vast majority of studies with large-scale data sets concluded existing wind facilities have had no negative impact on adjacent property values.
- II. CohnReznick Studies (pages 20-66): Further, CohnReznick has evaluated 4 existing wind farms and sales of adjacent residential properties, in which we have determined that the existing wind facilities have not caused any consistent and measurable negative impact on property values. These existing wind farms are most similar to the Project in terms of general location and size, summarized as follows:

	CohnReznick - Existing Wind Farms Studied											
Wind Farm#	Wind Farm	Date Placed in Service	County, State	Approximate Project Area (Acres)	MW AC	Turbine Rated Capacity	Turbines					
1	Harbec Plastics Wind Farm	Dec-01 & Dec- 11	Wayne County, NY	1	1.2	0.3 MW and 0.9 MW	2					
2	Montfort Wind Farm	Jun-02	lowa County, WI	240	30.0	1.5 MW	20					
3	Rail Splitter Wind Farm	Aug-09	Tazewell and Logan Counties, IL	11,000	100.5	1.5 MW	67					
4	Quilt Block Wind Farm	Nov-17	Lafayette County, WI	12,000	98.0	2.0 MW	49					
5	Camp Grove Wind Farm	Dec-07	Mashall and Stark Counties, IL	14,000	150.0	1.5 MW	100					

It is noted that proximity to the wind farms has not deterred sales of residential single-family homes.

III. Market Participant Interviews (*pages 67-69*): Our conclusions also consider interviews with County and Township Assessors, who have at least one wind farm in their jurisdiction, and in which they have determined that wind farms have not negatively affected adjacent property values.

With regards to the Project, we specifically interviewed Assessors with wind farms in their jurisdictions:

- Erin Gratch, a <u>Town of Lowville, Lewis County, New York</u> Assessor, reported that wind farms in Lowville have not impacted residential property values and there is no assessment discount given for proximity to wind turbines.
- Kevin Okerlund, Assessor for <u>Cherry Creek, Chautauqua County, New York</u>, noted that there has not been justification to give any assessment discounts for proximity to or view of wind farms or wind turbines.



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

IV. Wind Farm Factors on Harmony of Use (page 70): In the course of our research and studies, we have recorded information regarding the compatibility of these existing wind facilities and their adjoining uses, including the continuing development of land adjoining these facilities.

# CONCLUSION

Considering all of the preceding, the data indicates that wind energy 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

Andrew R. Lines, MAI Principal Certified General Real Estate Appraiser New York License No. 1528740 Expires 6/16/2024 Illinois License No. 553.001841 Expires 9/30/2023

Erin C. Bowen, MAI Senior Manager



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# **SCOPE OF WORK**

#### CLIENT AND INTENDED USERS

The Client and Intended Users of this report is New Leaf Energy, Inc.

#### INTENDED USE

The intended use of our findings and conclusions is to address certain criteria required for the granting of approvals for proposed wind farm uses in Chautauqua County, New York. 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 wind 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**

August 28, 2023 (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 Wind 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

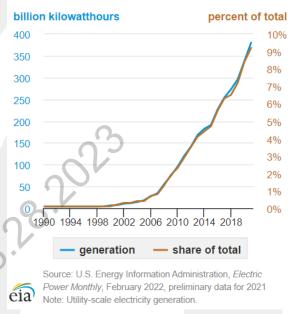
Andrew R. Lines, MAI, and Erin C. Bowen, MAI have viewed the exterior of all comparable data referenced in this report in person, via photographs, or aerial imagery.



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

With the recent passing of the Inflation Reduction Act, the United States continues to be home to one of the largest and fastestgrowing wind markets in the world. In August 2022, the Inflation Reduction Act (IRA) was passed by Congress, extending the Production Tax Credit (PTC) and Investment Tax Credit (ITC) for wind projects through 2024. The ITC provision provides up to a 30% tax credit for offshore wind projects that begin construction before January 1, 2026. Additionally, the IRA provides a new tax credit for the domestic production of wind components and related goods of up to 10% of the sales price. The U.S. Department of Energy's (DOE) Wind Energy Technology Office (WETO) confirms that with technological advancements driving projected cost reductions, in combination with continued siting and transmission development, wind energy can provide cost-effective electricity across the United States. Total annual U.S. electricity generation from wind energy increased from about 6 billion kilowatt-hours (kWh) in 2000 to about 380 billion kWh in 2021. In 2021, wind turbines were the source of about 9.2% of total U.S. utility-scale electricity generation. Utility-scale includes facilities with at least one megawatt (1,000 kilowatts) of electricity generation capacity.

Wind electricity generation and share of total U.S. electricity generation, 1990-2021



By 2050, wind technology is projected to generate 404.25 GW of power across the continental United States, which is three times the amount of the existing generating capacity. With the increase of wind generating facilities across the country, wind 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.

Along with the development of new related technology over the past several years, the relative height of turbines has been increasing. To produce more power, larger rotors and blades cover a wider area and increase the capacity of the turbine. More power is also produced when the blades are higher in the atmosphere, where the wind blows more steadily, increasing how often it runs. According to the US Office of Energy Efficiency & Renewable Energy's report, "Land-Based Wind Market Report: 2022 Edition," long-term improvements in the cost and performance of wind power technologies, along with the Production Tax Credit, have driven wind energy capacity additions. Wind turbines continued to grow in size and power, with the average nameplate capacity of newly installed wind turbines at 3.0 MW—up 9% from 2020 and 319% since 1998–1999. The average rotor diameter of newly installed turbines in 2021 was 418 feet, a 4% increase over 2020 and 164% over 1998–1999.

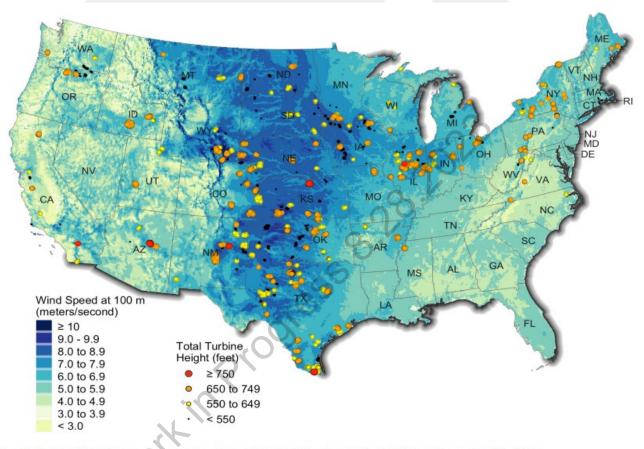
The average "tip height" (from ground to blade tip extended directly overhead) among projects that came online in 2021 is 517 feet, and FAA data suggest that future projects, including those under construction and in advanced development, will deploy even taller turbines. Among proposed turbines in the FAA permitting process, the average tip height reaches more than 643 feet. Historically, 500 feet was considered a ceiling due to moreinvolved FAA permitting and approval processes for turbines above that height. The tallest turbines in the

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permitting process—those with a tip height of at least 750 feet—are proposed for southern California, Arizona, New Mexico, south Texas, Kansas and central Illinois, but turbines of at least 650 feet appear likely to be installed in every region of the United States (see the following figure).



Note: Figure includes FAA data on under-construction, advanced development, pending, and proposed turbines Sources: FAA Obstacle Evaluation / Airport Airspace Analysis files, AWS Truepower, ACP, Berkeley Lab

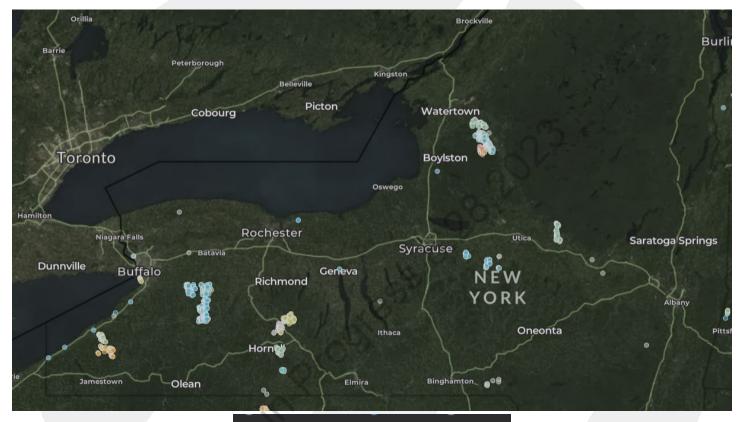
## Figure 31. Total turbine heights proposed in FAA applications, by location

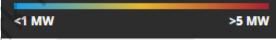
Winds farms throughout the US have setback requirements defined by distances from non-participating structures or in relation to the turbine structure height, whichever distance is shorter. For example, Illinois requires the distance from the property line to a wind turbine at 110% of the height of the wind turbine. LaSalle County requires a setback of 1,200 feet from a residence, 1.25 times the height of the turbine to property lines, and 1.50 times the height of the turbine from other structures and public roads. While some states have statewide standards, most do not have state-level regulations. Siting and permitting decisions typically take place at the local level. Setback requirements range from 1,000 to 3,250 feet throughout the US.



# OVERVIEW OF WIND DEVELOPMENT IN NEW YORK

According to the U.S. Energy Information Administration, there are 38 wind energy developments in the state of New York and they generate approximately 2,526.6 megawatts (MW) of power. The following map illustrates the regional concentration of wind farms according to the U.S. Wind Turbine Database.

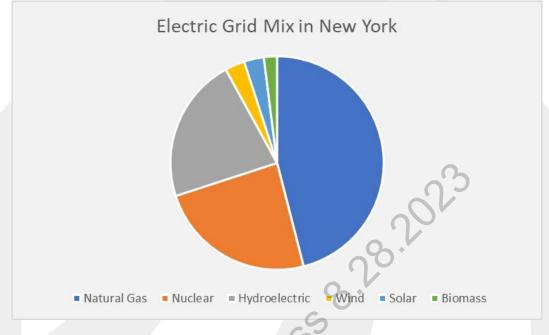






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As illustrated following, the state's net electricity generation by source is 46% natural gas, 24% nuclear, 22% hydroelectric, 3% wind, 3% solar and 2% biomass.



Source: U.S. Energy Information Administration's Open Data API, Electricity Net Generation

The nameplate capacity (or rated capacity) of a wind turbine is the amount of energy the turbine would produce if it ran 100 percent of the time at optimal wind speeds, according to the New York State Energy Research & Development Association (NYSERDA). <sup>2</sup> Of the wind developments in New York, the highest nameplate capacity, as measured in megawatts (MW), is the Marble River Wind Energy Project located in Clinton County. Marble River Wind Energy Project turbines generate 215.3 megawatts of power and became operational in November 2012.

On average, the wind farms in New York produce 66.5 megawatts of power each. Installations of wind farm developments date from 2000 to 2023 in the state. There are currently five wind farms under construction in New York: the largest being Alle-Cat Wind Farm with a capacity of 340.0 MW expected to become operational in late 2025.

CohnReznick has considered the long history of wind farms within the state, as well as experience with active wind farms.



<sup>&</sup>lt;sup>2</sup> Wind Energy Basics – New York State Energy Research & Development Association

# APPRAISAL THEORY – ADJACENT PROPERTY'S IMPACT ON VALUE

According to Randall Bell, Ph.D., MAI, author of the 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>3</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."<sup>4</sup>

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 to support the primary method, or a check of reasonableness, such as the utilization of more than one approach to value, conducting a literature review, or having discussions (testimony) with market participants.<sup>5</sup> CohnReznick implemented the scientific method<sup>6</sup> to determine if a detrimental condition of proximity to a wind farm exists, further described in the next section.

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



<sup>&</sup>lt;sup>3</sup> Bell, Randall, PhD, MAI. Real Estate Damages. Third ed. Chicago, IL: Appraisal Institute, 2016. (Pages 1-2)

<sup>&</sup>lt;sup>4</sup> Ibid, Page 314

<sup>&</sup>lt;sup>5</sup> Ibid, Pages 7-8

<sup>&</sup>lt;sup>6</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:

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

## METHODOLOGY

The purpose of this report is to determine whether proximity to the proposed wind facility will result 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 wind 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 <u>measurable and consistent difference</u> 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."<sup>7</sup>

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>8</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>9</sup> to determine if a detrimental impact has occurred.



<sup>&</sup>lt;sup>7</sup> Bell, Randall, PhD, MAI. Real Estate Damages. Third ed. Chicago, IL: Appraisal Institute, 2016. (Page 33)

<sup>&</sup>lt;sup>8</sup> The Appraisal of Real Estate 14<sup>th</sup> Edition. Chicago, IL: Appraisal Institute, 2013.

<sup>&</sup>lt;sup>9</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 wind farms as follows:
  - 2.1. Identify existing wind 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 wind farms.

It should be noted that our impact report methodology has been previously reviewed by our peers in the field.

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

- Due to the limited number of existing smaller community scale projects in the state of New York, we have incorporated other smaller scale projects in other states.
- Test Area Sales consists of sales that are adjacent to an existing wind facility, within 1.00 mile of a wind turbine. Ownership and sales history for each adjoining property to an existing wind 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 wind farm were excluded from further analysis.
- Control Area Sales are generally located in the same market area, outside 3.0 miles of any wind turbine, although varies based on the general location of the existing wind farm under analysis. In rural areas, sales are identified first within the township, and the search 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.
- 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>10</sup> the analysis relies upon market conditions trends tracked by credible agencies such as the Federal Housing Finance Agency ("FHFA"), which maintains a House Price Index ("HPI")<sup>11</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 wind 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.

A summary of the analyses completed is presented on the following pages in the section entitled Technique 2: Paired Sale Analyses. Detail of these analyses is retained within our workfile.



<sup>&</sup>lt;sup>10</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>11</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**

We have also examined various studies that consider the impact of wind farms on surrounding property values. The studies range from formal and robust statistical analyses by appraisers and economists, to less formal survey-based and qualitative research, and are summarized in a table on the following page.

Of the most cited 18 wind studies in North America, all but four concluded that the proximity of a wind farm to a residential home has no negative impact on property value. Most of these studies included data sets in the hundreds, and several in the thousands, of home sale transactions, and resulted in this conclusion: there is no statistical evidence that wind farms decrease property values.

Ben Hoen, Research Scientist at Lawrence Berkeley National Laboratory ("LBNL"), and a prolific expert on wind farms and property values, wrote of his own literature review in his 2016 study (see Study 1 in Summary table on the following page) that "One of the overall conclusions that can be drawn from this literature is that wind facilities are often predicted to negatively impact residential property values in pre-construction surveys, but **negative impacts have largely failed to materialize post-construction when actual transaction data become available for analysis.**"<sup>12</sup>

It is noted that the 2016 study, which focused on urban areas in Massachusetts, resulted in a conclusion consistent with the LBNL 2013 study which utilized 51,276 home sales from 27 U.S. counties related to 67 wind facilities, and 1,198 home sales were within one mile of a wind turbine.

The Springfield-Sangamon County Regional Planning Commission (SSCRPC), in Illinois, reviewed some of the most often cited literature concerning the effect of wind farms on property values and found that there was no compelling research indicating that proximity to a wind farm results in a measurable decline in property values over time. Research was found indicating that people might *believe* it would lead to such a decline, which may result in a short-term decline prior to property owners gaining experience with a wind farm.<sup>13</sup> Once a community lives with a wind farm in operation, property owners' fears are put to rest and any fluctuation in value stabilizes.

The SSCRPC agreed with the National Association of Realtors who report in their *Field Guide to Wind Farms and their Effect on Property Values*, "Although the research remains scant, wind farms appear to have a minimal or at most transitory impact on property values" (National Association of Realtors, 2009)." The following page summarizes the 18 most cited wind studies; we have also addressed each study which concludes to an impact, on subsequent pages.

<sup>13</sup> https://www.ilarconline.org/file/67/InfoBrief-WECS-and-PropertyValue-March-2012-Update\_doc.pdf

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<sup>&</sup>lt;sup>12</sup> https://pages.jh.edu/jrer/papers/pdf/past/vol38n04/9867-01.473\_504.pdf

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	Study Title	Author	Date	Methodology	Location	Impact Found
1	Wind turbines, amenities, and disamenities: a study of home value impacts in densely populated Massachusetts	Hoen, et al.	2016	Hedonic Regression Analysis of 122,000 home sales from 1998 - 2012	Massachusetts	No Impact
2	Impact of Industrial Wind Turbines on Residential Property Assessment in Ontario	Moore, et al.	2016	Multiple Regression Analysis of 25 market areas	Ontario, Canada	No Impact
3	Brookings County 2015 Property Value Survey	Prevailing Winds	2015	Simple observation of increase/decrease in value of 233 proximate and non-proximate properties (Ag & Res)	Brookings County, SD	No Impact
4	A Spatial Hedonic Analysis of the Effects of Wind Energy Facilities on Surrounding Property Values in the United States	Hoen, et al.	2013	Spatial-process difference-in-difference hedonic models of 50,000 home sales	27 Counties in 9 U.S. States	No Impact
5	Case Study: Effects of Wind Turbine Facility	Lansink	2012	Five sales & re-sales of SFR homes	Melancthon, Ontario (Canada)	Negative Impact
6	The Effect of Wind Farms on Residential Property Values in Lee County, Illinois	Carter	2011	Hedonic Regression Analysis on proximate and regional sales data of 1,298 homes from 1998 - 2010	Lee County, IL	No Impact
7	Values in the Wind: A Hedonic Analysis of Wind Power Facilities	Heintzelman & Tuttle	2011	Hedonic Regression Analysis of 11,331 home sales over 9 years	Clinton, Franklin, and Lewis Counties in New York	Negative Impact
8	Wind energy facilities and residential properties: the effect of proximity and view on sales prices	Hoen, et al.	2011	Hedonic Regression Analysis of 7,500 home sales	24 existing wind facilities in the United States	No Impact
9	Wind Energy Study - Effect on Real Estate Values	Canning (MAI)	2010	Multiple Regression Analysis, Paired Sale Analysis of 83 homes	Chatham-Kent, Ontario (Canada)	No Impact
10	Wind farm proximity and property values: a pooled hedonic regression analysis of property values in central Illinois	Hinman	2010	Hedonic Regression Analysis with Difference-in-Difference Estimators of 3,851 sales from 2001 - 2009	McLean County, IL	No Impact
11	Written Testimony	McCann	2010	home sales) and > 2 miles from turbines (38 home sales).	Near Mendota Hills Wind Farm, Lee County, IL	Negative Impact
12	The Impact of Wind Power Projects on Residential Property Values in the United States: A Multi-Site Hedonic Analysis	Hoen, et al.	2009	Hedonic Regression analysis & Repeat Sales Models of 7,500 home sales	24 existing wind facilities in the United States	No Impact
13	Wind Turbine Impact Study	Kielisch	2009	Compared values of vacant residential lots using regression analysis	Dodge & Fond Du Lac Counties, WI	Negative Impac
14	A Real Estate Study of the Proposed White Oak Wind Energy Center, McLean & Woodford Counties, Illinois	Poletti	2007	Statistical analysis of 256 home sales in close proximity and those not proximate	McLean & Woodford Counties, IL	No Impact
15	Impacts of windmill visibility on property values in Madison County, New York	Hoen	2006	Hedonic Regression Analysis of 280 home sales from 1996 - 2005	Madison County, NY	No Impact
16	A Study on the Impact of Windmills on Property Values in Tucker County, West Virginia	Goldman	2006	Qualitative interviews	Tucker County, WV	No Impact
17	Market Impact Analysis	MaRous (MAI)	2005	Matched Pair Analysis and Interviews	Bureau County, IL	No Impact
18	The Effect of Wind Development on Local Property Values	Sterzinger	2003	Linear Regression Analysis of 25,000 home sales near 10 wind farms	7 U.S. States	No Impact

\*Notes on studies located on the following pages.



Study 5, Case Study: Effects of Wind Turbine Facility by Ben Lansink of Lansing Appraisals and Consulting, published in 2012 is often cited as an example of a wind farm having a negative impact on property values. The Lansink report studied five single family homes that were purchased by Canadian Hydro Developments Inc. in 2007. Later in 2009, Canadian Hydro Developments Inc. sold these same five homes at a loss, averaging -29 percent, according to Lansink. Lansink also calculates that average values in the area of the subject homes increased over the same two-year period an average of 16.22 percent. Canada also experienced the Great Recession from approximately 2007 through 2009. Lansink's assertion that the market for these homes should have appreciated rather than fallen may be flawed. Additionally, Lansink does not subject his home sales data to any sort of control group study or statistical analysis. Overall, this study uses a small amount of data and uses broad averages about property appreciation that could be flawed and does not adjust or account for any differences in the homes analyzed.

Study 7, Values in the Wind: A Hedonic Analysis of Wind Power Facilities by Heintzelman and Tuttle (2011) in Clinton, Franklin, and Lewis Counties in New York presents a larger sample of data than had previously been studied (11,391 home sales over nine years). Subsequent research has studied even more data in larger magnitudes (Study 4: Hoen, et al. 2013 studied 50,000 home sales, and Study 1: Hoen et al. 2016 studied 122,000 home sales), coming to the conclusion that there is no negative impact on property values after construction of a wind farm. CohnReznick believes this study contains significant weaknesses including:

- Most of the transactions identified took place BEFORE Wind turbines were installed
- Study includes sales of property occurring after the start of the Great Recession, with no qualifiers or variables to compensate for market conditions adjustment
- Study extracts conclusions that are not consistent with basic real estate principles:
  - o "Lot size is, unusually, not a significant factor" (p. 20)
  - "Homes with open water or wetlands are more valuable" (p.20)
  - "Strangely, homes classified as having 'excellent' construction quality appear to sell for less than those with average quality..." (p. 21)
- Study assumes that a sale of properties occurring "very close" to a turbine "expect that future wind development may be possible on their parcels, which would necessitate easement payments."
- Suggests there may be negative property value effects in the post-announcement/pre-construction phase; however, these anticipation effects (sometimes described as "anticipation stigma") are transitory and disappear once the operation of the wind farm commences.

The sum of these exceptions may indicate that the study was poorly put together and contains flaws that make it unreliable.

Study 11, Written Testimony from Michael McCann from 2010, about the supposed negative impacts on property values near the Mendota Hills Wind Farm, in Lee County, Illinois was disproven by the actual facts that have unfolded over time. The Lee County Tax Assessor, Wendy Ryerson, told us in an interview in March 2020, that the County has not noticed any difference in values of homes since the wind farm was completed in 2003. "We don't even see people coming forward to say, 'Reduce the assessment for my taxes'." Ryerson said. Ryerson is considered an expert in the assessment community regarding wind farms and developed the formula for assessing wind farms in 2003 that was accepted as a standard by the State of Illinois in 2007.



In addition, McCann was rebutted by the testimony of Mark A. Thayer, Ph.D., Department of Economics at San Diego State University, in 2017 where he testified that "[McCann's] alternative literature has formed the basis for testimony by Michael McCann, who has offered basically the same testimony in a multitude of settings – specifically, residential properties located within three miles (or possibly greater distances) of wind turbines will experience a minimum 25-40 percent reduction in value for homes.

- Note that this is a minimum expected loss as McCann has on several occasions suggested that the loss could be significantly greater. In fact, in a publication/statement entitled "I Predict a Series of Rural Ghettos Abandoned, Unmaintained Homes (III)," McCann stated in 2010 that the only thing worse than wind turbines for creating the physical and health-driven need to relocate is a nuclear reactor meltdown (e.g., Chernobyl) and indicated that damages to homes could be in the 60 80 percent range. Of course, no justification was provided for that damage range.
- The expected reductions in value are based on (1) McCann's own analysis; (2) an alternative literature; and (3) McCann's willful misinterpretation / misunderstanding of the existing hedonic literature in which he demonstrates a complete lack of knowledge concerning statistics and hedonic methods and draws erroneous conclusions that are exactly opposite of the conclusions drawn by the authors of specific reports.

CohnReznick concurs with Thayer's conclusions that McCann's conclusions are misinformed and should be disregarded, especially in light of the data discussed by Tax Assessor Wendy Ryerson.

Study 13, Wind Turbine Impact Study by Kurt C. Kielisch of Appraisal Group One, compared vacant residential lot sales within the wind turbine farm area to comparable sales of vacant residential lots and supposes that the negative impact observed would translate to improved single-family land. This leap is, frankly, unfounded in the appraisal community. Improved properties do not necessarily react to external influences or experience changes in value in the same way, or with the same magnitude, as vacant land.

Ultimately, the overwhelming scientific data and measurements indicate no negative impact on adjacent residential real estate – conclusions developed by industry experts using regression models, paired sales analysis, and surveys with market participants.



# **TECHNIQUE 2: PAIRED SALE ANALYSIS**

#### WIND FARM 1: HARBEC PLASTICS WIND FARM, WAYNE COUNTY, NEW YORK

Coordinates: Latitude 43.22731, Longitude -77.36409

PINs: 61117-00-282664, 61117-00-341669

Project Area: Approximately 1 acre

Date Project Announced: July 2001

**Date Project Completed:** First Turbine Completed December 2001, Second Turbine Completed December 2011

Output: 1.2 MW AC

The Harbec Plastics Wind Turbines consist of a 2-turbine wind farm comprised of one 0.3 MW wind turbine which was constructed in 2001, and one 0.9 MW wind turbine which was constructed in 2011, in northwestern Wayne County, New York. The turbine constructed in 2001 is 130 feet from base to tip of the apex and the turbine constructed in 2011 is approximately 300 feet from base to tip of the apex. The wind farm is located approximately 12 miles northeast of the city of Rochester and 63 miles northwest of the city of Syracuse. The Project area is primarily industrial and residential, adjacent to the east of the town of Webster and to the west of the town of Ontario.

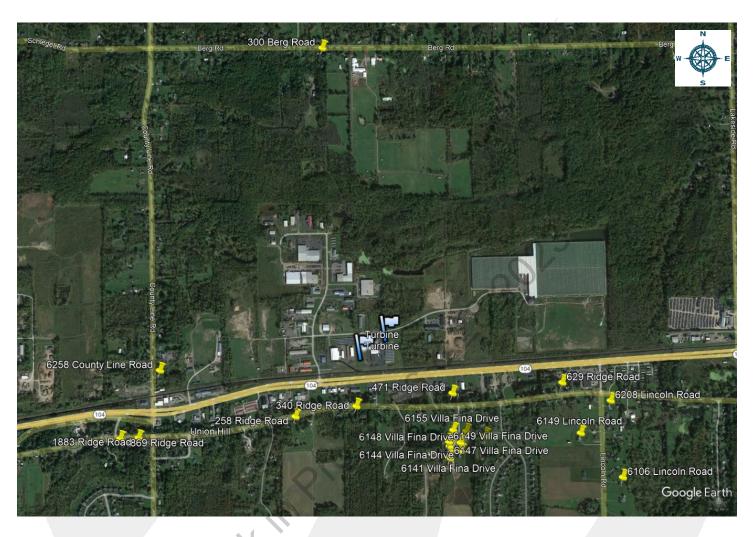
The wind farm was announced in July 2001 and completed in December 2001 and December 2011. The Project sits on approximately 1 acre of land utilized for Harbec Plastic's Manufacturing facility and helps offset energy costs for the facility.

We have analyzed all single-family residential sales data from properties that sold in the previous five years, beginning in August 2018. We searched for homes in close proximity to a wind turbine, within one mile. We identified 39 single-family residential homes that qualified for a paired sales analysis that were in close proximity to a wind turbine and were open-market, arm's length transactions.

The aerial imagery on the following page displays the Test Area Properties in relation to the closest turbines.



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Harbec Plastics Wind Farm: Test Area Properties



We have considered only one type of paired sales analysis, which was comparing sales of properties not proximate to the wind farm (Control Area Sales) to the sales of adjoining properties after the completion of the wind farm project (Test Area Sales). We searched for all homes that sold within a one-mile radius of the turbines within a five-year period. We identified 35 sales, which ranged in construction from 1870 to 2021 on lots ranging from 0.14 acres to 7.38 acres. We grouped these properties into categories, resulting in seven distinct groups of Test Area Sales feautring similar characteristics. We have analyzed sales of homes that occurred in the previous five years, beginning in August 2018.

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

A single-family residence built in 1910 located at 247 Ridge Road in Ontario sold in October 2022 for \$120,000 or \$113.64 per square foot of finished living area. The property consists of a two-story home with an unfinished basement and two detached garages on a 0.34-acre lot. The dwelling sold in need of exterior and interior repairs, which is less common for the area, and there was limited sales in the area in similar condition to categorize as Control Area Sales and this sale has been excluded from our paired sales analysis.

In October 2022 a single-family residence located at 84 Vande Lane in Ontario sold for \$205,000 or \$150.29 per square foot of finished living area. The property, built in 1860, is located on a 0.34-acre lot and has an attached garage, detached garage and unfinished basement. The dwelling was extensively renovated and nearly rebuilt, therefore, there were limited sales to categorize as Control Area Sales with similar original year of construction and condition, 84 Vande Lane was excluded from further analysis.

At 312 Berg Road in Ontario, a single-family residence built in 1963 sold in November 2018 for \$169,900 or \$71.99 per square foot of finished living area. The property is comprised of a 1.75-story residence with an unfinished basement, pole barn and swimming pool on a 0.71-acre lot. As the property contains farm structures on a smaller sized lot there were limited sales to categorize as Control Area Sales with similar lot sizes and improvements, therefore, 312 Berg Road was excluded from our analysis.

A single-family residence located at 426 Ridge Road in Ontario sold in September 2021 for \$348,500 or \$194.48 per qaure foot of finished the living. The property was constructed in 1870 and consists of a 2-story residence, detached garage, four pole barns and a grain silo on a 3.0-acre lot. We searched for, but could not find properties with similar improvements, lot size and year of construction that sold within twelve to eighteen months of the sale of 426 Ridge Road, therefore, it has been excluded from our analysis.

Three possible groups of Test Area Sales have been excluded from our analysis due to an insufficient amount of possible sales to categorize as Control Area Sales. The following single-family residences were built prior to 1910, contain at least four bedrooms, range from 1,943 square feet of living area to 2,656 square feet of living area, with a median of 2,236 square feet of living area and all are built on lot sizes less than two-acres:

- 1868 Ridge Road, Webster (May 26, 2020 for \$160,000 or \$65.52 per square foot of living area)
- 645 Ridge Road, Ontario (February 13, 2020 for \$150,000 or \$67.08 per square foot of living area)
- 1863 Ridge Road, Ontario (March 26, 2020 for \$106,500 or \$71.09 per square foot of living area)



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- 354 Ridge Road, Ontario (August 9, 2021 for \$156,800 or \$59.04 per square foot of living area)
- 107 Ridge Road, Ontario (April 2, 2019 for \$144,000 or \$74.11 per square foot of living area)

We have not included these Test Area Sales in our analysis as our search for Control Area Sales resulted in a set of sales consisting of primarily three-bedroom properties with between 1,120 sqaure feet of living area and 2,421 square feet of livining area, with a median of 1,567 square feet of living area. Additionally, the year built for the Test Area Sales was 1875, ranging from 1860 to 1903, while the Control Area Sales had a median year built of 1895, ranging from 1855 to 1905. There were not sufficient sales to categorize as Control Area Sales with similar square foot living areas and year of construction to the Test Area Sales and therefore, we have excluded this group from our analysis.

The second group of Test Area Sales that have been excluded from our analysis is also due to an insufficient amount of possible sales to categorize as Control Area Sales. This group included four single-family residences that were constructed between 1931 and 1948 on lots less than one-acre in size. Additionally, the Test Area Sales consisted of between 1,134 square feet of finished living area and 1,600 square feet of finished living area with a median of 1,409 square feet of finished living area.

- 140 Ridge Road, Ontario (October 10, 2018 for \$125,163 or \$110.37 per square foot of living area)
- 6358 County Line Road, Ontario (April 30, 2019 for \$130,000 or \$81.25 per square foot of living area)
- 6350 County Line Road, Ontario (September 27, 2022 for \$140,000 or \$100.86 per square foot of living area)
- 87 Vande Lane, Ontario (December 4, 2018 for \$118,600 or \$82.94 per square foot of living area)

Only three possible Control Area Sales with similar property characteristics to the Test Area Sales were located more than three-miles but less than ten-miles from the wind turbines and sold for a range of \$91.66 per square foot of finished living area to \$101.74 per square foot of finished living area with a median of \$94.09 per square foot of finished living area. Additional possible Control Area Sales with similar improvements to the Test Area Sales were identified, but all were located along Lake Ontario with lake frontage and were not considered comparable to the Test Area Sales' location. Due to the insufficient amount of Control Area Sales, we have excluded this group from our analysis.

The third group of Test Area Sales that have been excluded from our analysis is due to an insufficient amount of possible sales to categorize as Control Area Sales with similar locations to the Test Area Sales. The Test Area Sales in this group were built between 1990 and 2010, consisted of between 1,500 and 3,000 square feet of finished living area, at least three bedrooms, and were constructed on lots less than one acre in size:

- 6060 Southbrook Drive, Ontario (April 19, 2021 for \$390,000 or \$238.97 per square foot of living area)
- 6099 Southbrook Drive, Ontario (December 17, 2021 for \$295,000 or \$192.43 per square foot of living area)
- 6130 La Frank Drive, Ontario (May 7, 2021 for \$320,000 or \$183.38 per square foot of living area)
- 6154 La Frank Drive, Ontario (November 25, 2020 for \$417,000 or \$157.95 per square foot of living area)
- 500 Berg Road, Ontario (May 6, 2020 for \$610,000 or \$231.76 per square foot of living area)



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Our search for Control Area Sales resulted in a set of sales consisting of 40 single-family residences ranging in size from 1,504 and 2,808 square feet of living area, constructed between 1990 and 2009 with a median year built of 1999, and with lot sizes between 0.43-acres and 1.0-acre. The Control Area Sales sold for between \$93.38 per square foot of living area to \$202.32 per square foot of living area with a median of \$136.66 per square foot of living area. However, all of the Test Area Sales were located closer to the Wayne County Expressway, within one-mile, providing direct access to Rochester to the west, while the possible Control Area Sales were primarily located in areas with less accessibility to the surrounding areas and were not considered comparable to the Test Area Sales location. For this reason, we have excluded this group of Test Area Sales from our analysis.

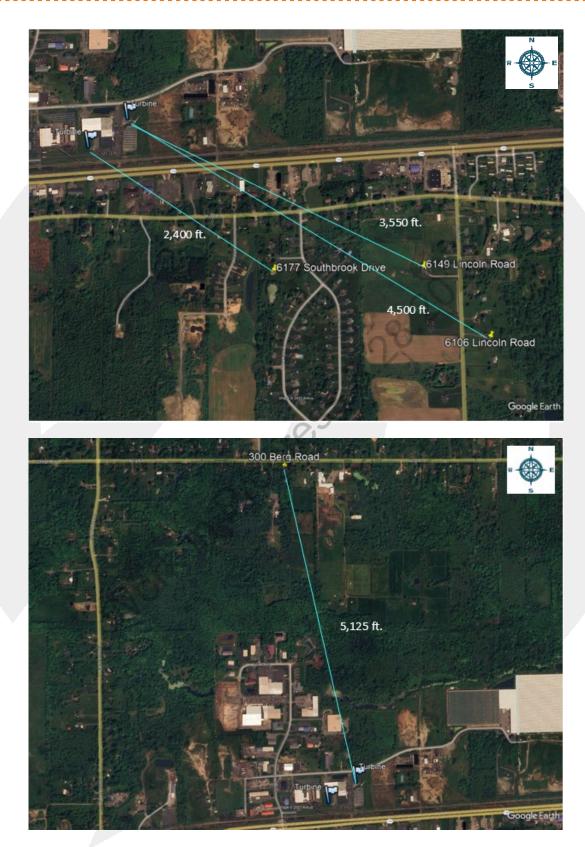
	Harbec Plastics Wind Farm, Group 1 - Test Sales												
Test Area Sale No.	Address	Township	Sale Price	GLASF	Туре	Bedrooms	Bathrooms	Year Built	Lot Size (AC)	Sale Date	Sale Price/SF		
1-1	6149 Lincoln Road	Ontario	\$307,000	2,096	1-Story SFH with Attached Garage, Pole Barn and Unfinished Basement	3	2.0	2011	7.38	12/4/2020	\$146.47		
1-2	6177 Southbrook Drive	Ontario	\$365,000	2,367	2-Story SFH with Attached Garage, Machine Shed and Unfinished Basement	<b>B</b> <sub>4</sub>	2.5	2000	3.14	12/22/2021	\$154.20		
1-3	6106 Lincoln Road	Ontario	\$426,000	2,589	2-Story SFH with Attached Garage and Finished Basement	4	2.5	1994	6.21	6/5/2023	\$164.54		
1-4	300 Berg Road	Ontario	\$280,005	1,684	2-Story SFH with Pole Barn, Machine Shed and Unfinished Basement	3	2.0	<u>1980</u>	3.90	9/2/2022	\$166.27		

# Group 1 – Improved Single-Family Residential Properties

In Group 1, four Test Area Sales were considered for analysis, each consisting of single-family homes located on lots ranging from 3.90-acres to 7.38-acres. The Test Area sales were constructed between 1880 and 2011, however, Test Area Sale 4, which was originally constructed in 1880 has been extensively renovated and has an effective year built of 1980 per the Wayne County Assessor's Office and therefore has been included in this grouping. The four Test Area properties sold between Decemeber 2020 and June 2023 and are located within the same school district. The average proximity to the two wind turbines is approximately 3,895 feet from the nearest turbine, as shown on the following page.



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We analyzed 19 Control Area Sales of single-family homes with similar construction and use that were not located in close proximity to a wind farm, more than three miles from the nearest turbine within Ontario County and in the same school district as the Test Area Sales, and that sold within a similar time frame from the sale date of the Test Area Sales. The Control Area Sales are single-family homes with three to six bedrooms and one to four baths, consisting of between 1,512 square feet and 2,945 square feet of gross living area, have an effective year built between 1972 and 2021, with lot sizes of between 3.06 and 9.81 acres. All of the Control Area Sales are located in rural areas, similar to the Test Area Sale.

For all Control Area Sales, the median price per square foot of building area (above grade) was adjusted for marketing condition using the Federal Housing Finance Agency's House Price Index (HPI), a weighted, repeated-sales index measuring the average price changes in repeat sales or refinancing of the same properties. The FHFA HPI serves as a timely, accurate indicator of house price trends at various geographic levels. The result of our analysis for Group 1 is presented below, including the physical characteristics of the Test Area Sale and range of characteristics of the Control Area Sales.

				aired Sale Analysis /ind Farm - Group		
	No. of Sal	No. of Sales			Adjusted Medi Price Per SF	
	Test Area Sal	es (4)	Adj	oining wind farm	\$159.37	
	Control Area Sa	lles (19)	No: No	t adjoining wind far	m \$155.92	
	Difference betwe Adjusted Media			est Area Sales an ontrol Area Sales	d 2.22%	
		Harbec Pla	astics v	Vind Farm - Group	D 1	
	X	Gross Fir Living Are		Land Size (AC)	Year Built	Beds / Baths
Test Area Sa	les (Range)	1,684 - 2	2,589	3.14 - 7.38	1980 - 2011	3 - 4 / 2.0 - 2.5
Control Area	Sales (Range)	1,512 - 2	2,945	3.06 - 9.81	1972 - 2021	3 - 6 / 1.0 - 4.0

The days on market for the Test Area Sales was 67 days (ranging from 40 days to 98 days), while the median days on market for the Control Area sales was 55 days (ranging from 30 to 244 days), <u>and we note no significant marketing time differential.</u>

**<u>Noting no negative price differential</u>**, it does not appear that the proximity Harbec Plastics Wind Farm use impacted the sale price of the Test Area Sales in Group 1. The Control Area Sales indicate a slightly lower unit sales price than the Test Area Sales, but the difference is relatively nominal.



	Harbec Plastics Wind Farm, Group 2 - Test Sales										
Test Area Sale No.	Address	Township	Sale Price	GLASF	Туре	Bedrooms	Bathrooms	Year Built	Lot Size (AC)	Sale Date	Sale Price/SF
2-1	6208 Lincoln Road	Ontario	\$180,000	1,435	1-Story SFH with Attached Garage, Swimming Pool and Unfinished Basement	3	1.5	1987	1.12	8/16/2021	\$125.44
2-2	258 Ridge Road	Ontario	\$194,500	1,554	1-Story SFH with Attached Garage, Swimming Pool and Finished Basement	3	1.5	1980	0.62	9/7/2022	\$125.16
2-3	471 Ridge Road	Ontario	\$230,000	1,603	1-Story SFH with Attached Garage, Swimming Pool and Unfinished Basement	4	3.0	1966	0.42	9/2/2021	\$143.48
2-4	629 Ridge Road	Ontario	\$128,500	1,344	1-Story SFH with Finished Basement	3	2.0	1964	0.41	10/2/2019	\$95.61
2-5	340 Ridge Road	Ontario	\$165,000	1,232	1-Story SFH with Attached Garage and Unfinished Basement	4	1.5	1963	0.44	10/25/2021	\$133.93
2-6	6258 County Line Road	Ontario	\$150,000	1,224	1-Story SFH with Attached Garage and Unfinished Basement	2	1.0	1955	1.06	6/22/2022	\$122.55

# Group 2 – Improved Single-Family Residential Properties

In Group 2, six Test Area Sales were considered for analysis, each consisting of one-story single-family homes with garage parking, basements, and were constructed between 1955 and 1987. The six Test Area properties sold between October 2020 and September 2022 and are located within the same school district. The average proximity to the two wind turbines is approximately 2,375 feet from the nearest turbine, as shown on the following page.

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We analyzed 69 Control Area Sales of single-family homes with similar construction and use that were not located in close proximity to a wind farm, more than three miles from the nearest turbine within Wayne County and within the same school district as the Test Area Sales, and that sold within a similar time frame from the sale date of the Test Area Sales. The Control Area Sales are single-family homes with two to six bedrooms and one to two and a half baths, consisting of between 1,024 square feet and 1,993 square feet of gross living area, built between 1950 and 1990, with lot sizes of between 0.14 and 1.92 acres. Additionally, the Control Area Sales are between one and two stories and have basements. All of the Control Area Sales are located in rural areas, similar to the Test Area Sale.

For all Control Area Sales, the median price per square foot of building area (above grade) was adjusted for marketing condition using the Federal Housing Finance Agency's House Price Index (HPI), a weighted, repeated-sales index measuring the average price changes in repeat sales or refinancing of the same properties. The FHFA HPI serves as a timely, accurate indicator of house price trends at various geographic levels. The result of our analysis for Group 2 is presented below, including the physical characteristics of the Test Area Sale and range of characteristics of the Control Area Sales.



CohnReznick Paired Sale Analysis Harbec Plastics Wind Farm - Group 2									
No. of Sales	Potentially Impacted by Wind Farm	Adjusted Median Price Per SF							
Test Area Sales (6)	Adjoining wind farm	\$125.30							
Control Area Sales (69)	No: Not adjoining wind farm	\$127.83							
Difference between Unit Pr Adjusted Median Unit Pri	-1.98%								

Harbec Plastics Wind Farm - Group 2										
	Gross Finished Living Area (SF)	Land Size (AC)	Year Built	Beds / Baths						
Test Area Sale	1,224 - 1,603	0.41 - 1.31	01955 - 1987	2 - 4 / 1.0 - 3.0						
Control Area Sales (Range)	1,024 - 1,993	0.14 - 1.92	1950 - 1990	2 - 6 / 1.0 - 2.5						

The median days on market for the Test Area Sales was 75 days (ranging from 63 to 102 days), while the median days on market for the Control Area sales was 62 days (ranging from 24 to 122 days), <u>and we note that the</u> <u>marketing time period was generally consistent between the two groups.</u>

<u>Noting no negative price differential</u>, it does not appear that the proximity to the Harbec Plastics Wind Farm use impacted the sale price of the Test Area Sales in Group 2. The Control Area Sales indicate a slightly higher unit sales price than the Test Area Sales, but the difference is relatively nominal.



	Harbec Plastics Farm, Group 3 - Test Sales											
Test Area Sale No.	Address	Township	Sale Price	GLA SF	Туре	Bedrooms	Bathrooms	Year Built	Lot Size (AC)	Sale Date	Sale Price/SF	
3-1	6141 Villa Fina Drive	Ontario	\$284,560	1,350	1-Story SFH with Attached Garage and Unfinished Basement	2	2.0	2021	0.25	4/19/2021	\$210.79	
3-2	6153 Villa Fina Drive	Ontario	\$345,562	1,678	1-Story SFH with Attached Garage and Unfinished Basement	3	2.5	2021	0.32	12/17/2021	\$205.94	
3-3	6151 Villa Fina Drive	Ontario	\$320,100	1,575	1-Story SFH with Attached Garage, Machine Shed and Unfinished Basement	3	2.0	2021	0.32	5/7/2021	\$203.24	
3-4	6147 Villa Fina Drive	Ontario	\$317,500	1,642	1-Story SFH with Attached Garage and Unfinished Basement	3	2.0	2020	0.25	11/25/2020	\$193.36	
3-5	6154 Villa Fina Drive	Ontario	\$315,000	1,675	1-Story SFH with Attached Garage and Unfinished Basement	3	2.0	2020	0.28	5/6/2020	\$188.06	
3-6	6149 Villa Fina Drive	Ontario	\$290,988	1,675	1-Story SFH with Attached Garage and Unfinished Basement	30	2.0	2020	0.29	11/6/2020	\$173.72	
3-7	6155 Villa Fina Drive	Ontario	\$367,052	1,883	1-Story SFH with Attached Garage and Unfinished Basement	<b>)</b> *3	2.0	2019	0.33	12/23/2019	\$194.93	
3-8	6144 Villa Fina Drive	Ontario	\$270,610	1,408	1-Story SFH with Attached Garage and Unfinished Basement	2	2.0	2019	0.22	2/1/2019	\$192.19	
3-9	6148 Villa Fina Drive	Ontario	\$358,800	2,095	1-Story SFH with Attached Garage and Unfinished Basement	3	2.0	2019	0.25	9/4/2019	\$171.26	

Group 3 – Improved Single-Family Residential Properties

In Group 3, nine Test Area Sales were considered for analysis, each consisting of single-family homes with unfinished basements, attached garage parking, and all are located on lots less than one-acre in size. The nine Test Area properties sold between February 2019 and December 2021 and are located within the same school district. The average proximity to the two wind turbines is approximately 1,935 feet from the nearest turbine, as shown below.



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We analyzed 15 Control Area Sales of single-family homes with similar construction and use that were not located in close proximity to a wind farm, more than three miles from the nearest turbine within Wayne County and within the same school district as the Test Area Sales, and that sold within a similar time frame from the sale date of the Test Area Sales. The Control Area Sales are single-family homes with two to five bedrooms and two to three baths, consisting of between 1,550 square feet and 2,250 square feet of gross living area, built between 2015 and 2022, with lot sizes of between 0.22 and 0.92 acres. Additionally, the Control Area Sales are between one and two stories, have garage parking, and basements. All of the Control Area Sales are located in rural areas, similar to the Test Area Sale.

For all Control Area Sales, the median price per square foot of building area (above grade) was adjusted for marketing condition using the Federal Housing Finance Agency's House Price Index (HPI), a weighted, repeated-sales index measuring the average price changes in repeat sales or refinancing of the same properties. The FHFA HPI serves as a timely, accurate indicator of house price trends at various geographic levels. The result of our analysis for Group 3 is presented below, including the physical characteristics of the Test Area Sale and range of characteristics of the Control Area Sales.

		ick Paired Sale Analy tics Wind Farm - Grou	
No.	of Sales	Potentially Impacted Wind Farm	by Adjusted Median Price Per SF
Test A	ea Sales (9)	Adjoining wind farm	\$210.79
Control A	rea Sales (15)	lo: Not adjoining wind fa	arm \$185.14
		e of Test Area Sales a of Control Area Sale	<u> 4 44%</u>
	X		
	Harbec Plast	tics Wind Farm - Gr	oup 3
	Gross Finishe Living Area (Sl	I and Size (AC)	Year Built

Control Area Sales (Range)	1,550 - 2,250	0.22 - 0.92	2015 - 2022	2 - 3 / 2.0 - 3.0
median days on market for th	a Tast Araa Sak	es was 133 days	(ranging from 7	2 to $246$ days) w

0.22 - 0.33

2019 - 2021

The median days on market for the Test Area Sales was 133 days (ranging from 72 to 246 days), while the median days on market for the Control Area sales was 83 days (ranging from 39 to 356 days), <u>and we note that</u> <u>the marketing time period was generally consistent between the two groups.</u>

**Noting no negative price differential**, it does not appear that the proximity Harbec Plastic Wind Farm use impacted the sale price of the Test Area Sales in Group 3. The Control Area Sales indicate a lower unit sales price than the Test Area Sales, but the difference is relatively nominal.

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**Test Area Sale** 1,350 - 2,095



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2 - 3 / 2.0 - 2.5

Harbec Plastics Farm, Group 5 - Test Sales												
Test Area Sale No.	Address	Township	Sale Price	GLA SF	Туре	Bedr	rooms	Bathrooms	Year Built	Lot Size (AC)	Sale Date	Sale Price/SF
5-1	1869 Ridge Road	Webster	\$165,000	1,572	1.5-Story SFH with Machine Shed and Unfinished Basement		3	2.0	1988	0.48	8/28/2018	\$104.96
5-2	1883 Ridge Road	Webster	\$165,000	1,440	2-Story SFH with Detached Garage and Unfinished Basement		3	1.0	1950	0.50	9/4/2020	\$114.58

Group 4 –	Improved	Single-Family	v Residential	Properties
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In Group 4, two Test Area Sales were considered for analysis, each consisting of single-family homes with unfinished basements and located on lots less than one-acre in size. The two Test Area properties sold between August 2018 and September 2020 and are located within the same school district in Monroe County. The average proximity to the two wind turbines is approximately 4,260 feet from the nearest turbine, as shown below.



We analyzed 253 Control Area Sales of single-family homes with similar construction and use that were not located in close proximity to a wind farm, more than three miles from the nearest turbine within Monroe County and within the same school district as the Test Area sales, and that sold within a similar time frame from the sale date of the Test Area Sales. The Control Area Sales are single-family homes with three to five bedrooms and



one to two baths, consisting of between 1,200 square feet and 1,794 square feet of gross living area, built between 1950 and 1990, with lot sizes of between 0.48 and 0.74 acres. All of the Control Area Sales are located in rural areas, similar to the Test Area Sale.

For all Control Area Sales, the median price per square foot of building area (above grade) was adjusted for marketing condition using the Federal Housing Finance Agency's House Price Index (HPI), a weighted, repeated-sales index measuring the average price changes in repeat sales or refinancing of the same properties. The FHFA HPI serves as a timely, accurate indicator of house price trends at various geographic levels. The result of our analysis for Group 4 is presented below, including the physical characteristics of the Test Area Sale and range of characteristics of the Control Area Sales.

	CohnReznick Paired Sale Analysis Harbec Plastics Wind Farm - Group 4						
	No. of S	Sales	Potentially Impacted Wind Farm	Adjusted Me Price Per			
	Test Area Sales (2)		Adjoining wind farm	Adjoining wind farm			
	Control Area	Sales (253)	lo: Not adjoining wind f	farm	\$111.15		
			e of Test Area Sales of Control Area Sale	l -1.24%			
		·					
		Harbec Plas	tics Wind Farm - Gro	oup 4			
		Gross Finishe Living Area (S	$\sim$ L and Size (AC)	Y	Year Built		ls / Baths
Test Area S	Sale	1,440 - 1,572	2 0.48 - 0.50	19	950 - 1988	3/	1.0 - 2.0
Control Are (Range)	a Sales	1,200 - 1,794	0.48 - 0.74	19	950 - 1990	3 - 4	/ 1.0 - 2.0

The median days on market for the Test Area Sales was 60 days (ranging from 50 to 69 days), while the median days on market for the Control Area sales was 57 days (ranging from 23 to 340 days), <u>and we note no</u> <u>significant marketing time differential.</u>

**Noting no negative price differential**, it does not appear that the proximity Harbec Plastics Wind Farm use impacted the sale price of the Test Area Sales in Group 4. The Control Area Sales indicate a slightly higher unit sales price than the Test Area Sales, but the difference is relatively nominal.



# WIND FARM 2: MONTFORT WIND ENERGY CENTER, IOWA COUNTY, WISCONSIN

Coordinates: Latitude 42.962500, Longitude -90.386670

**PINs:** Multiple

Project Area: Approximately 240 Acres

Date Project Announced: August 2001

Date Project Completed: June 2002

Output: 30.0 MW AC

The Montfort Wind Energy Center is a 20-turbine wind farm comprised of 1.5 MW wind turbines in Iowa County, Wisconsin. The turbines are 329 feet tall from base to tip of the apex. The wind farm Is located approximately 50 miles west of the city of Madison and 35 miles northeast of the city of Dubuque, Iowa. The Project area is primarily rural, adjacent to the east of the town of Montfort and to the west of the town of Cobb.

The wind farm was announced in August 2001 and completed in June 2002. The Project sits on agricultural land in the Town of Eden and is under lease with six land owners. The facility generates enough electricity to power the equivalent of 9,000 average Wisconsin homes, according to the US Energy Information Administration. The wind farm is in agreement to sell its power to We Energies, a regional utility company serving 2.2 million customers.

In 2011 the Montfort Wind Energy Center was purchased by Wisconsin Energy Corporation for \$27 million from NextEra Energy Resources Incorporated, who still operates the wind farm. The Wisconsin Energy Corporation purchased the property with the intention to eventually rebuild the wind farm with turbines that can generate more power.

We have analyzed all single-family residential sales data from properties that sold in the previous five years, since February 2018. We searched for homes in close proximity to a wind turbine, within one mile. We identified three single-family residential homes that qualified for a paired sales analysis that were in close proximity to a wind turbine and were open-market, arm's length transactions.

The aerial imagery on the following page displays the Test Area Properties in relation to the closest turbines.



# Prepared for New Leaf Energy, Inc.



# Montfort Wind Energy Center: Test Area Properties

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### PAIRED SALES ANALYSIS

We have considered only one type of paired sales analysis, which was comparing sales of properties not proximate to the wind farm (Control Area Sales) to the sales of adjoining properties after the completion of the wind farm project (Test Area Sales). We identified one group of Test Area Sales based primarily on location and home type. We have analyzed sales of homes that occurred in the past five years, beginning in Febrauary 2018.

We have excluded one home sale that was initially considered for Test Area Sales due to the lack of comparable transactions in the surrounding area. This single-family home with a finished basement and attached garage, which sits on a 0.18-acre lot, sold in October 2021 after 82 days on market for \$185,000 or \$103.28 per square foot.

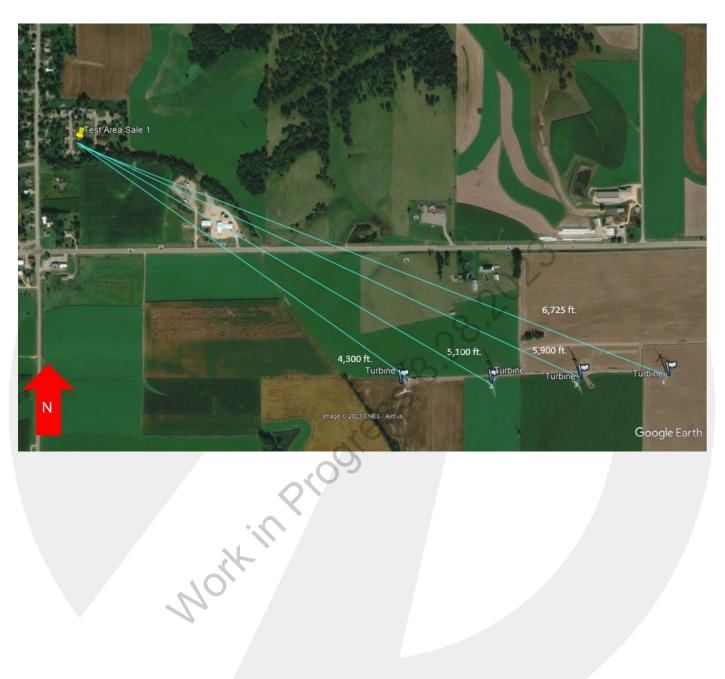
### Group 1 – Improved Single-Family Residential Properties

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	Montfort Wind Energy Center, Group 1 - Test Sales											
Test Area Sale No.	Address	Township	Sale Price	GLA SF	Туре	Bedrooms	Bathrooms	Year Built	Lot Size (AC)	Sale Date	Sale Price/SF	
1	405 Ridge Road	Montfort	\$165,000	2,640	1.5-Story SFH with Finished Basement and Attached Garage	4	2.0	1973	0.24	6/18/2018	\$62.50	
2	405 S. County Road I	Montfort	\$160,000	2,849	1.5-Story SFH with Finished Basement and Detached Garage	3	1.5	1975	0.48	12/28/2018	\$56.16	

In Group 1, Test Area Sale 1, a single-family home, was considered for a paired sales analysis, and sold in June 2018 after the completion of the wind farm. The home is within 1.25 miles of 4 wind turbines, as shown below.







In Group 1, Test Area Sale 2, a single-family home was considered for a paired sales analysis, and sold in December 2018 after the completion of the wind farm. The home is approximately 4,650 feet from the nearest turbine as shown below.



We identified five Control Area Sales of single-family homes with similar construction and use that were not located in close proximity to a wind farm, more than three miles from the nearest turbine within Iowa County and that sold within a similar time frame from the sale date of the Test Area Sale. The Control Area Sales are single-family homes with three to four bedrooms and two to two and a half baths, consisting of between 2,090 square feet and 2,472 square feet of gross living area, built between 1948 and 1980, with lot sizes of between 0.24 and 1.47 acres. Additionally, the Control Area Sales are between one to one and a half stories, have garage parking, and have full finished or partially finished basements. All of the Control Area Sales are located in towns, similar to the Test Area Sales.

For all Control Area Sales, the median price per square foot of building area (above grade) was adjusted for marketing condition using the Federal Housing Finance Agency's House Price Index (HPI), a weighted, repeated-sales index measuring the average price changes in repeat sales or refinancing of the same properties. The FHFA HPI serves as a timely, accurate indicator of house price trends at various geographic levels. The result of our analysis for Group 1 is presented below, including the physical characteristics of the Test Area Sale and range of characteristics of the Control Area Sales.



	CohnReznick Paired Sale Analysis Montfort Wind Energy Center - Group 1									
No. of Sales	Adjusted Median Price Per SF									
Test Area Sales (2)	Adjoining wind farm	\$59.33								
Control Area Sales (5)	No: Not adjoining wind farm	\$57.89								
Difference between Unit Pri Adjusted Median Unit Pric	2.48%									

Montfort Wind Energy Center - Group 1										
	Gross Finished Living Area (SF)	Land Size (AC)	Year Built	Beds / Baths						
Test Area Sales	2,640 - 2,849	0.24 - 0.48	1973 - 1975	3 - 4 / 1.5 - 2.0						
Control Area Sales (Range)	2,090 - 2,472	0.24 - 1.47	1948 - 1980	3 - 4 / 2.0 - 2.5						

The days on market for Test Area Sale 2 was 205 days, while the median days on market for the Control Area sales was 106 days (ranging from 68 to 178 days).

<u>Noting no negative price differential</u>, it does not appear that the proximity Montfort Wind Energy Center use impacted the sale price of the Test Area Sales in Group 1. The Test Area Sales indicate a slightly higher unit sales price than the Test Area Sales, but the difference is relatively nominal.



### Before & After Analysis – Montfort Wind Farm

We note the Test Area Sale in Group 1 of the Montfort Wind Farm (Test Area Sale 1) has sold twice over the past 5 years. To determine if any of the rates of appreciation for these identified home sales were affected by the proximity to the Montfort Wind Farm, we prepared a Repeat-Sales Analysis on Test Area Sale 1. First, we calculated the total appreciation between each sale of the 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 Wisconsin's 535 Three-Digit Zip Code over the same period. The index for the County is measured on a quarterly basis and is presented below.

535 Three-Digit Zipe over C		ing Price Index easonally Adjus	
Three-Digit Zip Code	Year	Quarter	НРІ
535	2017	1 0	183.30
535	2017	2	189.32
535	2017	3	190.51
535	2017	<b>4</b>	192.24
535	2018	51	193.00
535	2018	2 2	197.86
535	2018	3	201.31
535	2018	4	200.98
535	2019	1	203.54
535	2019	2	206.04
535	2019	3	208.83
535	2019	4	210.58
535	2020	1	211.66
535	2020	2	213.33
535	2020	3	216.58
535	2020	4	221.06
535	2021	1	224.13
535	2021	2	235.46
535	2021	3	248.22
535	2021	4	253.05
535	2022	1	258.06
535	2022	2	280.63
535	2022	3	285.33

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



				Repeat Sal	es Analysis						535 Three-Di	git Zip Code - I	FHFA House Pric	e Index Change
Propert ID	<sup>y</sup> Address			Most Recent Sale Date	Most Recent Sale Price	Prior Sale Date		Total Appreciation	Months Elapsed Between Sales	Monthly Appreciation Rate	Index Level During Quarter of Most Recent Sale	Prior Sale Quarter Index Level	Total Appreciation	Monthly Appreciation Rate
1	405 Ridge Road, Montfort	0.24	2,640	6/19/2018	\$165,000	2/26/2015	\$125,000	32.00%	40	0.70%	197.86	168.00	17.77%	0.41%

### Conclusion

When compared to the FHFA home price index for the three-digit zip code, the extraction rate for the resale of Test Area Sale 1 that sold twice in the previous five years exhibited a higher rate of appreciation than the Home Price Index for the 535 Three-Digit Zip Code. As such, we have concluded that there does not appear to be a consistent detrimental impact on properties adjacent to the Montfort Wind Farm.

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### WIND FARM 3: RAIL SPLITTER WIND FARM, TAZEWELL & LOGAN COUNTIES, IL

Coordinates: Latitude 40.369200, Longitude -89.402200

**PINs:** Multiple

Project Area: Approximately 11,000 acres

Date Project Announced: 2008

Date Project Completed: August 2009

Output: 100.5 MW AC

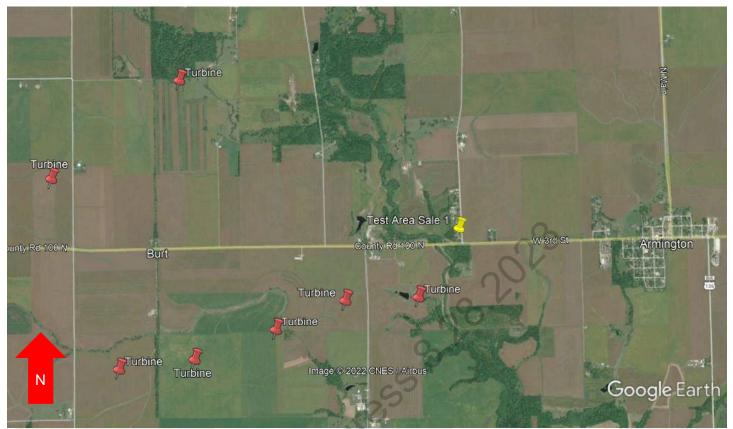
The Top Crop Wind Farm is a 67-turbine wind farm comprised of 1.5 MW wind turbines in portions of Tazewell County and Logan County, Illinois. The turbines are 328 feet tall from base to tip of the apex. The wind farm Is located approximately 20 miles southwest of the city of Bloomington and 40 miles northeast of the city of Springfield. The Project area is primarily rural, adjacent to the northwest of the town of Armington and to the south of the town of Hopedale.

The wind farm began operations in August 2009. The facility generates enough electricity to power the equivalent of 35,000 average Illinois homes, according to the US Energy Information Administration. In 2014, it was announced that the Rail Splitter Wind Project entered an agreement to sell 25 MW of energy to Hoosier Energy Rural Electric Cooperative for a period of 15 years.

We have analyzed all single-family residential sales data from properties that sold in the past five years, beginning in July 2017. We searched for homes in close proximity to a wind turbine, within one mile. We identified eight single-family residential homes that qualified for a paired sales analysis that were in close proximity to a wind turbine and were open-market, arm's length transactions.

The aerial imagery on the following page displays the Test Area Properties in relation to the closest turbines.





Rail Splitter Wind Farm: Test Area Property

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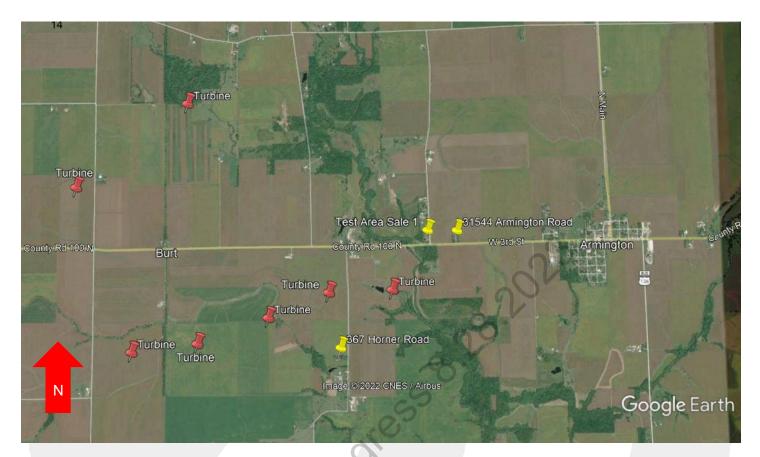




Rail Splitter Wind Farm: Test Area Property

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Rail Splitter Wind Farm: Test Area Property

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Rail Splitter Wind Farm: Test Area Property

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Rail Splitter Wind Farm: Test Area Property

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Rail Splitter Wind Farm: Test Area Property

### PAIRED SALES ANALYSIS

We have considered only one type of paired sales analysis, which was comparing sales of properties not proximate to the wind farm (Control Area Sales) to the sales of adjoining properties after the completion of the wind farm project (Test Area Sales). We identified two groups of Test Area Sales based primarily on location and home type. We have analyzed sales of homes that occurred in the previous five years, beginning in July 2017.

We have excluded six home sales that were initially considered for Test Area Sales due to the lack of comparable transactions in the surrounding area.



	Rail Splitter Wind Farm - Group 1, Test Sale										
Test Area Sale No.	Address	Township	Sale Price	GLA SF	Туре	Bedrooms	Bathrooms	Year Built	Lot Size (AC)	Sale Date	Sale Price/SF
1	1103 Dale Road	Armington	\$95,000	1,280	Single-Family Home with unfinished basement, attached garage, and large shed	2	1.5	1986	1.01	5/14/2020	\$74.22

Group 1 – Improved Single-Family Residential Properties

In Group 1, Test Area Sale 1, a single-family home, was considered for a paired sales analysis, and sold in May 2020 after the completion of the wind farm. The home is adjacent to several wind turbines and is approximately 2,500 feet from the nearest turbine, as shown below.



We analyzed four Control Area Sales of single-family homes with similar construction and use that were not located in close proximity to a wind farm, more than 3 miles from the nearest turbine within Tazewell County or Logan County, and that sold within a similar time frame from the sale date of the Test Area Sale. The Control Area Sales are single-family homes with two to three bedrooms and one to two baths, consisting of between 1,000 square feet and 1,600 square feet of gross living area, built between 1965 and 2000, with lot sizes of



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Prepared for New Leaf Energy, Inc.	Page   51

between 0.5 and 5.0 acres. Additionally, the Control Area Sales are between one and two stories, have garage parking, and unfinished basements. All of the Control Sales are located in rural areas, similar to the Test Sale.

For all Control Area Sales, the median price per square foot of building area (above grade) was adjusted for marketing condition using the Federal Housing Finance Agency's House Price Index (HPI), a weighted, repeated-sales index measuring the average price changes in repeat sales or refinancing of the same properties. The FHFA HPI serves as a timely, accurate indicator of house price trends at various geographic levels. The result of our analysis for Group 1 is presented on the following page, including the physical characteristics of the Test Area Sales and range of characteristics of the Control Area Sales.

CohnReznick Paired Sale Analysis Rail Splitter Wind Farm - Group 1									
No. of Sales	Adjusted Median Price Per SF								
Test Area Sale (1)	Adjoining wind farm	\$74.22							
Control Area Sales (4)	\$75.49								
Difference between Unit Pri Adjusted Median Unit Price	-1.69%								

Rail Splitter Wind Farm - Group 1										
	Gross Finished Living Area (SF)	Land Size (AC)	Year Built	Beds / Baths						
Test Area Sale	1,280	1.01	1986	2/2						
Control Area Sales (Range)	1,440 - 1,584	0.60 - 4.55	1965 - 1979	3 / 1-2						

The days on market for the Test Area Sales was 70 days, while the median days on market for the Control Area sales was 112 days (ranging from 34 to 249 days), *and we note no significant marketing time differential.* 

**Noting no negative price differential**, it does not appear that the proximity Rail Splitter Farm use impacted the sale price of the Test Area Sale in Group 1. The Test Area Sale indicates a slightly lower unit sale price than the Control Area Sales, but the difference is relatively nominal.



	Rail Splitter Wind Farm - Group 2, Test Sale										
Test Area Sale No.	Address	Township	Sale Price	GLA SF	Туре	Bedrooms	Bathrooms	Year Built	Lot Size (AC)	Sale Date	Sale Price/SF
2	25330 Boynton Road	Delavan	\$162,375	1,488	Single-Family Home with finished basement and attached garage	3	2.0	1972	2.50	1/13/2021	\$109.12

### Group 2 – Improved Single-Family Residential Properties

Test Area Sale 2, a single-family home was considered for a paired sales analysis, and sold in January 2021 after the completion of the wind farm. The home is adjacent to several wind turbines and is approximately 1,650 feet from the nearest turbine, as shown below.



We analyzed four Control Area Sales of single-family homes with similar construction and use that were not located in close proximity to a wind farm, more than 3 miles from the nearest turbine within Tazewell County, or Logan County, and that sold within a similar time frame from the sale date of the Test Area Sale. The Control Area Sales are single-family homes with three to four bedrooms and one and a half to two baths, consisting of between 1,200 square feet and 2,000 square feet of gross living area, built between 1960 and 1980, with lot sizes of between 1.0 and 6.0 acres. Additionally, the Control Area Sales are between one and two stories, have



garage parking, and finished basements. All of the Control Sales are located in rural areas, similar to the Test Sale.

For all Control Area Sales, the median price per square foot of building area (above grade) was adjusted for marketing condition using the Federal Housing Finance Agency's House Price Index (HPI), a weighted, repeated-sales index measuring the average price changes in repeat sales or refinancing of the same properties. The FHFA HPI serves as a timely, accurate indicator of house price trends at various geographic levels. The result of our analysis for Group 2 is presented on the following page, including the physical characteristics of the Test Area Sale and range of characteristics of the Control Area Sales.

	znick Paired Sale Analysis itter Wind Farm - Group 2	<u> </u>
No. of Sales	Adjusted Median Price Per SF	
Test Area Sale (1)	Adjoining wind farm	\$109.12
Control Area Sales (4)	No: Not adjoining wind farm	\$103.21
Difference between Unit Pric Adjusted Median Unit Pric	5.73%	

Rail Splitter Wind Farm - Group 2										
	Gross Finished Living Area (SF)	Land Size (AC)	Year Built	Beds / Baths						
Test Area Sale	1,488	2.50	1972	3/2						
Control Area Sales (Range)	1,384 - 1,985	1.50 - 5.96	1969 - 1977	3 - 4 / 1.5 - 2.0						

The days on market for the Test Area Sale was 57 days, while the median days on market for the Control Area sales was 249 days (ranging from 48 to 414 days), *and we note no significant marketing time differential.* 

<u>Noting no negative price differential</u>, it does not appear that the proximity Rail Splitter Wind Farm use impacted the sale price of Test Area Sale 3, 25330 Boynton Road. The Control Area Sales indicate a lower unit sales price than the Test Area sale.



### WIND FARM 4: QUILT BLOCK WIND FARM, LAFAYETTE COUNTY, WISCONSIN

Coordinates: Latitude 42.673333, Longitude -90.265280

**PINs:** Multiple

Project Area: Approximately 12,000 acres

Date Project Announced: June 2016

Date Project Completed: November 2017

Output: 98.0 MW AC

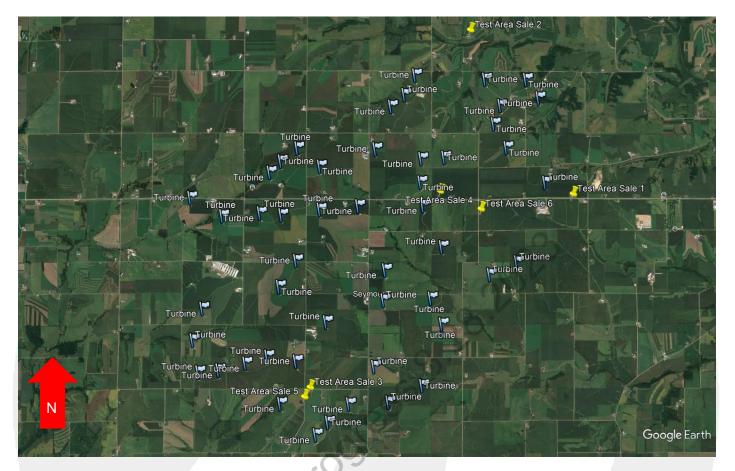
The Quilt Block Wind Farm is a 49-turbine wind farm comprised of 2.0 MW wind turbines in portions of Lafayette County, Wisconsin. The turbines are 380 feet tall from base to tip of the apex. The wind farm Is located approximately 20 miles northeast of the city of Dubuque, Iowa and 50 miles southwest of the city of Madison. The Project area is primarily rural, adjacent to the north of the town of Shullsburg and to the west of the town of Darlington.

The wind farm was announced in June 2016 and completed in November 2017. The Project sits on approximately 12,000 acres under lease with 44 land owners. The facility generates enough electricity to power the equivalent of 36,000 average Wisconsin homes, according to the US Energy Information Administration. In 2016, it was announced that the Quilt Block Wind Project entered an agreement to sell the annual output of energy to Dairyland Power Cooperative, a regional utility company serving approximately 600,000 customers, under a 20 year agreement.

We have analyzed all single-family residential sales data from properties that sold since the wind farm became operational in November 2017. We searched for homes in close proximity to a wind turbine, within one mile. We identified six single-family residential homes that qualified for a paired sales analysis that were in close proximity to a wind turbine and were open-market, arm's length transactions.

The aerial imagery on the following page displays the Test Area Properties in relation to the closest turbines.





Quilt Block Wind Farm: Test Area Properties

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We have considered only one type of paired sales analysis, which was comparing sales of properties not proximate to the wind farm (Control Area Sales) to the sales of adjoining properties after the completion of the wind farm project (Test Area Sales). We identified one group of Test Area Sales based primarily on location and home type. We have analyzed sales of homes that occurred since the wind farm began operations in November 2017.

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

A single-family residence built in 1913 located at 14849 Woods Branch Road in Darlington sold in October 2021 for \$300,000 or \$149.70 per square foot of finished living area. The property consists of a two-story home with a partially finished basement, attached garage and detached garage as well as multiple barns, a cattle lien, a chicken coop and a storage shed on a 6.02-acre lot. We conducted a search in the area for comparable single-family homes with a finished or partially finished basement and agricultural improvements but did not find sufficient data to yield reliable conclusions in a paried sale analysis. Due to limited sales in the area to categorize as Control Area Sales, 14849 Wood Branch Road was excluded from further analysis.

At 22963 County Road Q in Shullsburg, a single-family residence built in 1927 sold in January 2021 for \$130,000 or \$101.88 per square foot of finished living area. The property is comprised of a two-story residence with an unfinished basement and a large steel shed on a 9.78-acre lot. The property does not contain garage parking and the dwelling sold in need of repairs. Without garage parking, which is less common for the area, there was limited sales in the area to categorize as Control Area Sales and this sale has been excluded from our paired sale analysis.

In August 2020 a single-family residence located at 20920 Wisconsin 81 in Darlington sold for \$176,000 or \$106.08 per square foot of finished living area. The property consists of a two-story single family home with a insulated and detached four-car garage and a large storage shed on a 2.25-acre property. Another single-family residence located at 8775 Prairie Road in Shullsburg sold in November 2020 for \$190,500 or \$115.45 per square foot of finished living area. The property has a partially finished basement, an attached garage and a utility shed. However, the owners of both the properties have entered a lease agreement with Quilt Block Wind Farm and due to the participation in the wind farm as well as the additional rental income from the land, these properties were excluded from the paired sale analysis.

Additionally, a single-family residence located at 11768 County Road U in Darlington sold in March 2020 for \$171,000 or \$126.48 per square foot of finished living area. This property is located on a 1.31-acre lot has a partially finished basement, an attached garage and a large utility shed. Most of the homes in the area, while similar in gross living area, are located on larger lots and have unfinished basements. Due to limited sales in the area to categorize as Control Area Sales, 11768 County Road U was excluded from further analysis.



Quilt Block Wind Farm, Group 1 - Test Sale								-			
Test Area Sale No.	Address	Township	Sale Price	GLA SF	Туре	Bedrooms	Bathrooms	Year Built	Lot Size (AC)	Sale Date	Sale Price/SF
1	18741 Wisconsin 81	Darlington	\$183,000	2,380	SFH with Attached Garage, Detached Garage, and Finished Basement	3	2.5	1979	0.99	4/8/2019	\$76.89

### Group 1 – Improved Single-Family Residential Properties

In Group 1, Test Area Sale 1, a single-family home, was considered for a paired sales analysis, and sold in April 2019 after the completion of the wind farm. The home is in proximity to two wind turbines and is approximately 2,230 feet from the nearest turbine, as shown below.



We analyzed six Control Area Sales of single-family homes with similar construction and use that were not located in close proximity to a wind farm, more than three miles from the nearest turbine within Lafayette County or Grant County, and that sold within a similar time frame from the sale date of the Test Area Sale. The Control Area Sales are single-family homes with three to five bedrooms and one and a half to three and a half baths, consisting of between 2,024 square feet and 4,581 square feet of gross living area, built between 1975 and 2002, with lot sizes of between 1.00 and 5.05 acres. Additionally, the Control Area Sales are between one and two



stories, have garage parking, and have full finished or partially finished basements. All of the Control Area Sales are located in rural areas, similar to the Test Area Sale.

For all Control Area Sales, the median price per square foot of building area (above grade) was adjusted for marketing condition using the Federal Housing Finance Agency's House Price Index (HPI), a weighted, repeated-sales index measuring the average price changes in repeat sales or refinancing of the same properties. The FHFA HPI serves as a timely, accurate indicator of house price trends at various geographic levels. The result of our analysis for Group 1 is presented below, including the physical characteristics of the Test Area Sale and range of characteristics of the Control Area Sales.

CohnRe Quilt B		
No. of Sales	Adjusted Median Price Per SF	
Test Area Sale (1)	\$76.89	
Control Area Sales (6)	No: Not adjoining wind farm	\$78.50
Difference between Unit Pri Adjusted Median Unit Pri		-2.05%

Test Area Sale 2,380 0.99 1979 3 / 2.5	Quilt Block Wind Farm - Group 1									
			Land Size (AC)	Year Built	Beds / Baths					
Control Area Sales (Range) 2,024 - 4,581 1.00 - 5.05 1975 - 2002 3 - 5 / 1.5 - 3.	Test Area Sale	2,380	0.99	1979	3 / 2.5					
	Control Area Sales (Range)	2,024 - 4,581	1.00 - 5.05	1975 - 2002	3 - 5 / 1.5 - 3.5					

The days on market for the Test Area Sale was 65 days, while the median days on market for the Control Area sales was 172 days (ranging from 57 to 441 days), *and we note no significant marketing time differential.* 

Additionally, we spoke with the listing agent involved in the sale of 18741 Wisconsin 81, Ms. Christina Weitzel, who noted that the property received multiple offers and that those interested in purchasing the property were not concerned by the proximity to the Quilt Block Wind Farm. In Ms. Weitzel's opinion, the nearby wind farm did not impact the value of the property.

**Noting no negative price differential**, it does not appear that the proximity Quilt Block Wind Farm use impacted the sale price of the Test Area Sales in Group 1. The Control Area Sales indicate a slightly higher unit sales price than the Test Area Sales, but the difference is relatively nominal.



### Before & After Analysis – Quilt Block Wind Farm

We note the Test Area Sale in Group 1 of the Quilt Block Wind Farm (Test Area Sale 1) has sold twice over the past 5 years. To determine if any of the rates of appreciation for the identified home sale was affected by the proximity to the Quilt Block Wind Farm, we prepared a Repeat-Sales Analysis on the Test Area Sale. 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 Wisconsin's 473 Three-Digit Zipe Code over the same period. The index for the Three-Digit Zipe Code is measured on a quarterly basis and is presented below.

473 Three-Digit Zipe over C		ing Price Index easonally Adjus	
Three-Digit Zip Code	Year	Quarter	НРІ
473	2017	1	152.38
473	2017	2	151.03
473	2017	<b>C</b> 3	156.31
473	2017	4	155.79
473	2018	ζ 1	157.53
473	2018	2	158.44
473	2018	3	160.89
473	2018	4	162.69
473	2019	1	165.10
473	2019	2	167.44
473	2019	3	168.49
473	2019	4	173.74
473	2020	1	173.68
473	2020	2	175.55
473	2020	3	173.68
473	2020	4	183.84
473	2021	1	188.41
473	2021	2	198.62
473	2021	3	205.71
473	2021	4	216.01
473	2022	1	217.68
473	2022	2	231.02
473	2022	3	236.76

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



			Repeat Sa	les Analysis						473 Three-Di	git Zip Code - F	HFA House Pric	e Index Change
Property ID Address			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 Quarter of Most Recent Sale	Prior Sale Quarter Index Level	Total Appreciation	Monthly Appreciation Rate
1 18741 Wisconsin 81, Darlington	0.99	2,380	4/8/2019	\$183,000	8/17/2015	\$145,000	26.21%	44	0.53%	206.04	171.56	20.10%	0.42%

### Conclusion

When compared to the FHFA home price index for the local three-digit zip code, the extraction rate for the resale of Test Area Sale 1 that sold twice in the previous five years exhibited a higher rate of appreciation than the Home Price Index for local Three-Digit Zip Code. As such, we have concluded that there does not appear to be a consistent detrimental impact on properties adjacent to the Quilt Block Wind Farm.

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WIND FARM 5: CAMP GROVE WIND FARM, STARK AND MARSHALL COUNTIES, ILLINOIS

Coordinates: Latitude 41.09058, Longitude -89.63981

**PINs:** Multiple

Owner of Record: Orion Energy Group, LLC

Date Project Announced: 2005

Date Project Completed: December 2007

Project Area: Approximately 14,000 acres

Output: 150 MW AC

The Camp Grove Wind Farm is a 100-turbine wind farm composed of 1.5MW wind turbines (for a nameplate capacity of 150 megawatts), in Marshall County and Stark County, approximately 25 miles north of the city of Peoria. Sixty of the turbines are located in Marshall County, and 40 in Stark County, adjacent to the west. The nearest village is Camp Grove, Marshall County, for which the wind farm is named.

The wind farm began operations in November 2007. Approximately half of the power generated by Camp Grove is sold pursuant to a 20-year contract to American Electric Power, a multi-state electrical generation holding company.

Altogether we analyzed all sales data from properties that sold from January 2008 to March 2020, after completion of the wind farm, in both Stark and Marshall Counties. We analyzed single-family residential homes in the three townships that contain the wind turbines, Penn Township in Stark County and La Prairie and Saratoga Townships in Marshall County, as well as the eight surrounding townships that do not contain wind turbines. We searched for homes in close proximity to a wind turbine. We identified two single-family residential homes in Stark County that qualified for a paired sales analysis that were in close proximity to a wind turbine. While there are homes in close proximity to wind turbines that sold in Marshall County since the wind farm was completed, there was insufficient comparable data to perform a paired sale analysis.

The aerial image on the following page displays the two Test Area properties in relation to the closest turbines.



Prepared for New Leaf Energy, Inc.	Page   62





	Camp Grove Wind Farm Group 1									
Test Area Sale #	Address	Township	Sale Date	Sale Price	Above Grade SF	Beds	Baths	Year Built	Median Site Size (Acres)	Price/ SF
1	8585 TWP Rd 1600E	Wyoming	01/01/2015	\$60,000	1,208	3	1.0	1957	1.71	\$49.67

Test Area Sale 1, in Group 1, a single-family home, was considered for a paired sales analysis, and sold in 2015, after the completion of the wind farm. The home is approximately 2,100 feet from the nearest turbine.



We analyzed six Control Area properties that sold within a reasonable time frame from the sale date of the Test Area Property and that were similar in several key physical characteristics, but removed geographically from the wind turbines in Stark County. For all Control Area Sales, the median price per square foot of building area (above grade) was adjusted for market conditions using regression analysis to identify the appropriate monthly market conditions adjustment. We utilized the Federal Housing Finance Agency House Price Index (FHFA HPI) for Stark County, Illinois for the average monthly rate of appreciation in the market conditions adjustment. 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 re-financings on the



same properties. The FHFA HPI serves as a timely, accurate indicator of house price trends at various geographic levels.<sup>14</sup>

The result of our analysis is presented below, including the physical characteristics of the Test Area Sale and range of characteristics of the Control Area Sales.

CohnReznick Paired Sale Analysis - Camp Grove Wind Farm							
Group 1							
	Potentially Impacted by Wind Farm	Adjusted Median Price Per SF					
Test Area Sale (1)	Adjoining wind farm	\$49.67					
Control Area Sales (6)	No: Not adjoining wind farm	\$49.04					
Difference between Unit Price of Test Area Sale and Adjusted Median Unit Price of Control Area Sales							

Camp Grove Wind Farm - Group 1									
	Home Size (SF)	Land Size (AC)	Year Built	Beds / Baths					
Test Area Sale	1,208	1.7	1957	3 / 1					
Control Area Sales (Range)	1,104 - 1,300	0.18 - 0.58	1954 - 1962	3 / 1-1.5					

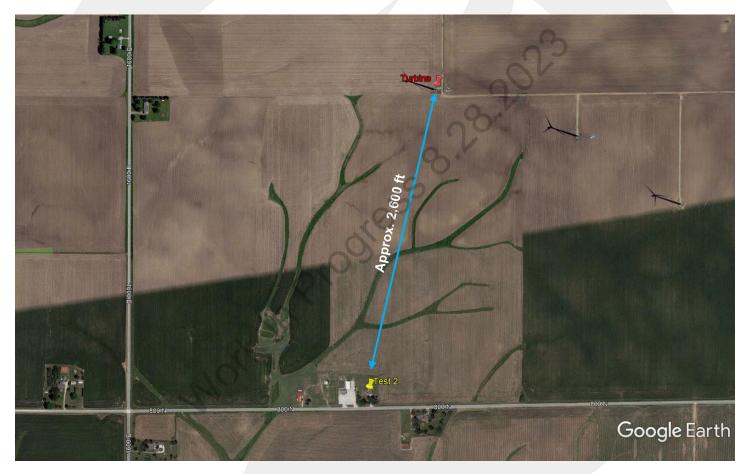
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<sup>&</sup>lt;sup>14</sup> https://www.fhfa.gov/DataTools/Downloads/Pages/House-Price-Index.aspx

	Camp Grove Wind Farm Group 2									
Test Area Sale #	Address	Township	Sale Date	Sale Price	Above Grade SF	Beds	Baths	Year Built	Median Site Size (Acres)	Price/ SF
2	16387 TWP Rd 1600E	Wyoming	11/01/2013	\$139,500	1,672	4	1.5	1964	1.71	\$83.43

Test Area Property 2, in Group 2, a single-family home, was considered for a paired sales analysis, and sold in 2013, after the completion of the wind farm. The home is approximately 2,600 feet from the nearest turbine, as shown below.



We analyzed seven Control Area properties that sold within a reasonable time frame from the sale date of the Test Area Property and that were similar in several key physical characteristics, but removed geographically from the wind turbines in Stark County. For all Control Area Sales, the median price per square foot of building area (above grade) was adjusted for market conditions using regression analysis to identify the appropriate monthly market conditions adjustment. Again, we utilized the FHFA HPI for our market conditions adjustment.



The result of our analysis is presented below, including the physical characteristics of the Test Area Sale and range of characteristics of the Control Area Sales.

CohnReznick Pa	CohnReznick Paired Sale Analysis - Camp Grove Wind Farm						
Group 2							
	Adjusted Median Price						
	Per SF						
Test Area Sale (1)	\$83.43						
Control Area Sales (7) No: Not adjoining wind farm \$79.71							
Difference between Unit Adjusted Median Unit F	4.67%						

	Camp Grove Wind Farm - Group 2									
	Home Size (SF)	Land Size (AC)	Year Built	Beds/Baths						
Test Area Sale	1,624	0.5	1977	3/2						
Control Area Sales (Range)	1,448 - 1,730	0.35 - 2.85	1960 - 1999	3-4 / 1.5-2.5						

<u>Noting only a nominal price differential</u>, with the Test Area Sales having very slightly different unit sale price than the median adjusted unit sale price of the Control Area Sales, it does not appear that the proximity to a wind farm had any negative impact on proximate property values in the Camp Grove Wind Farm study.



### **TECHNIQUE 3: MARKET COMMENTARY**

We have additionally contacted county officials (Tax Assessors, Zoning Administrators) familiar with property values around wind farms in Illinois, Iowa, Missouri, and Colorado as well as local real estate brokers. Our conversations with these market experts are noted below.

We spoke with Billy Shelby with the <u>Adair County, Iowa</u> Assessor who remarked that the county has not noted any impact on sales due to proximity to wind turbines. The county has 533 wind turbines and Mr. Shelby mentioned that homes are selling above what they can assess properties at. Mr. Shelby remarked that no reductions have been given to residences adjacent to wind turbines for assessed property values. <u>He further</u> <u>indicated that homes near wind turbines have since sold at or above assessed values.</u>

We spoke with Tanya Zimmerman with the <u>**DeKalb County, Missouri</u>** Assessor who indicated that reassessments of a property are only based on condition of the home and land itself and that proximity to a wind turbine is not a consideration for reduction in assessment. According to Zimmerman, <u>there is no measurable</u> <u>value difference based on proximity to a wind turbine.</u></u>

We spoke with Nikki Carrick with the <u>Guthrie County, Iowa</u> Assessor who indicated that no homeowners have asked for a reduction in assessments because there is no measurable difference between the values of homes close to and far from wind turbines. <u>Properties are not assessed differently based on the proximity to wind turbines because there is no measurable difference in value.</u>

We spoke with Peggy Michaels, the <u>Logan County, Colorado</u> Tax Assessor, who remarked, <u>"Using a market</u> <u>approach, we have not seen any documentation of detrimental values as a result of nearby wind</u> <u>turbines."</u>

Melissa Ihnen with Meyer and Gross Real Estate Company in <u>Atlantic Iowa</u> remarked that she has not noticed an impact in listing or sale prices for homes located next to wind turbines. Ms. Ihnen indicated that <u>being next</u> to a wind turbine did not have a negative effect on exposure time and that homes were selling quickly.

We spoke with the <u>Stark County, Illinois Tax Assessor</u>, Renee Johnson, regarding the Camp Grove Wind Farm and she reported that she <u>could not see a difference in the home prices between current values and</u> <u>before the wind farm was built in 2007.</u> Johnson also remarked that they had not had any complaints from the public after the wind farm was completed. In fact, two new houses were built close to the turbines, after completion of the wind farm. Individual families built new homes, on land they already owned, but reportedly, these two families had multiple parcels in multiple townships, in those townships with wind turbines and those without, and <u>chose to locate their new homes next to wind turbines.</u> One home was built in approximately 2018, and the other between approximately 2012 and 2013. Karmella Reining, the Stark County Deputy Tax Assessor, added, "I wouldn't mind if there was a turbine sitting in my back yard, it's just not a big deal. It really doesn't block a view up there in the air like that."



Bridget Nodurft, Chief Deputy of the Supervisor of Assessments Office in <u>Dekalb County, Illinois</u>, reported that in the beginning of wind farm developments, they had some groups that talked publicly about the pros and cons of allowing wind farms to locate in the county. The FPL Energy Illinois Wind LLC (also known as the Lee-DeKalb Wind Energy Center, capacity 217.5 MW) began operations in December 2009 and there were some residents that did sell their homes near the wind farm because they didn't want to live near the turbines. "I can recall one of those property owners was very vocal before the wind farm was developed, they had moved to the county to be far away from everyone. After the development of the wind farm they sold their home and moved out of state, to be even further from any other people." Nodurft reported that those initial sales were right at market values, *being near the turbines did not cause harm to values.* "Now after 11 years, no one in the county complains about home values being impacted by the wind farm", said Nodurft.

Alan and Marcy Kinney, real estate brokers who work together in <u>DeKalb County, Illinois</u>, reported that Test Area Sale 1 studied for the Lee-DeKalb Wind Energy Center (Wind Farm 2), was sold again as of March 31, 2020 and the seller accepted an offer close to the asking price. The selling price was \$71,900 higher than the sale price of this home in 2013, a 43 percent increase over the seven-year hold period which calculates to an average annual rate of appreciation of 6.7 percent. <u>The brokers reported that there was not even one</u> <u>comment or question about the proximity of the wind turbine to the home (approximately 2,315 feet).</u> The proximity of this home to the wind turbine was not an issue for anyone in the market.

**Lee County, Illinois** was the home of the first wind farm developed in Illinois, the Mendota Hills wind farm (50.4 MW) in 2003. Originally the development had 63 turbines with a capacity of 0.85 MW per turbine. In 2018, ownership took down the old turbines and re-powered, or rebuilt, the project with 29 turbines in the same general area which produces the same gross capacity of megawatts of energy. The new wind farm is not exactly in the same footprint, it needed less land after re-development, and it came back online in late 2019. The Mendota Hills development was the first wind farm built in Illinois and the first to be re-powered, a fact that Lee County is proud of, according to the Chief County Assessment Officer, Wendy Ryerson. Ryerson has <u>not noticed any difference in values of homes that are near wind turbines.</u> "These wind turbines are put in rural areas, in the middle of farm country in our county. A lot of this surrounding land is vacant farmland, and it really sells on the ability of the land to produce a crop. Any single-family residences that are not part of a farm are few and far between, so home sales are scarce around wind farms."

When discussing recent wind farm development in the county, Shelly Renken, Supervisor of Assessments in *Livingston County, Illinois* reported that the potential impact on home values is always a concern of some people. "People ask the same questions, like when the Minonk Wind Farm was developed in 2012, they asked, 'Will this affect my house's value?'. But *there's no documentation that shows that's happening, that values have gone down or up as a result of being near a wind farm.*"

<u>Henry County, Illinois</u>, is the home of the Bishop Hill wind farm development that was built in three phases (with 200 and 81 megawatts developed in 2012 and 119 MW developed in 2018). Tracey Vinavich, Chief County Assessor of Henry County, told us that <u>there have been no changes in values because of the wind farms</u> <u>that have been developed</u>, and "There wasn't enough resistance to the wind farms from property owners to even begin to stop the development, especially after the first two phases were operational."



Christine Anderson, GIS Coordinator in the Tax Assessor's office in <u>Bureau County, Illinois</u>, reported that they had <u>never received any complaints about potential changes in home values, before or after any of the</u> <u>wind farms were built</u>. At the time of the interview, Bureau County has five wind farms in operation, including Big Sky Wind Farm with a nameplate capacity of 240 MW, and the Assessor's office keeps folders with surrounding home sale data for each of them.

Susan Fisher is a Broker with Coldwell Banker Realty and reported that she has over 30 years of experience as a real estate agent in the *Ford County, Kankakee County, and Iroquois County, Illinois* area. She also reported that she lives near a wind farm in Stelle, which is in Ford County. Ms. Fisher said, "*I haven't seen any negative impact on real estate values from the turbines* even though it was predicted by many who were anxious about installing them. Of course, we've had significant increases in values as has most of the U.S. in recent years, but even before then I did not experience any negative feedback from buyers looking at homes in the area."

We spoke with Colleen Benson, Broker with Coldwell Banker Realty in the *Ford County and Kankakee County*. *Illinois* region has worked as a local real estate agent since 2003. Ms. Benson was the List Broker for the sale of a property in Ford County located within one mile of a turbine. She stated that the turbines did not impact the sale and the buyer was unconcerned about them. Ms. Benson stated that as a broker in the area, some buyers have mentioned concerns about the turbines but <u>she has not seen any changes in property values or interest</u> in regard to the turbines.

Fred Majors, Assessor for Patton, Button, and Drummer Townships in *Ford County, Illinois*, said that properties might not be selling for less, but they are not selling for more. He stated that assessments have never been lowered or changed regarding the wind turbines and that he cannot say the turbines have had any impact on property values.

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### WIND FARM FACTORS ON HARMONY OF USE

Concerns about certain physical issues in the areas of proposed wind farms can lead to questions about the compatibility of wind turbine installations in a rural agricultural and residential setting. Property Compatibility and Harmony of Use are real estate concepts that can impact real estate values, both positively and negatively. The information compiled below summarizes National and International research on specific physical characteristics that clearly indicates that wind farms are generally a compatible use with agricultural and residential uses.

**Appearance:** Most wind farms are developed with Horizontal-Axis Wind Turbines (HAWT), with three blades and operate "upwind," with the turbine pivoting at the top of the tower so the blades face into the wind.<sup>[1]</sup> Wind turbines vary in height. Generally, the taller the turbine, the longer the blades, and the greater power capacity generated. Taller turbines also command increased spacing between turbines. Wind turbines are generally off-white and have a visibility sensor (red blinking light) as mandated by the Federal Aviation Authority (FAA). The physical characteristics of wind farms are compatible with adjoining agricultural and residential uses.

**Sound:** According to a document prepared by the U.S. Department of Energy's Office of Energy Efficiency and Renewable Energy (EERE), wind turbines produce little sound. Some noise is emitted when the turbine blades encounter turbulence in the air, producing a 'whooshing' sound, but this sound is generally masked by background noise of the blowing wind. Some sound is emitted by the gears inside the transmission or from the hum of the generator. As technology has improved, sound produced by wind turbines has also decreased over the years and equipment inside the wind turbine is better soundproofed. At distances of 750 to 1,000 linear feet from a turbine, the wind turbine is equivalent to the hum of a kitchen refrigerator. As such, some ordinances have increased the setbacks from wind turbines to 1,500 linear feet to reduce the sound detected.

Odor: Wind turbines do not produce any byproduct or odor.

**Traffic:** The wind farm requires general and preventive maintenance only two to three times per year from onsite employees and thus does not attract traffic during daily operation aside from the initial construction and installation of the farm.

**Hazardous Material:** Modern wind turbines are constructed to U.S. government standards, maintained in accordance with recommended practices, and monitored and documented with technical reports.

**Health Issues:** According to an article published by NOVA Science Trust, "Twenty-five peer-reviewed studies have found that living near wind turbines does not pose a risk on human health.<sup>[2]</sup>

<sup>[2]</sup> NOVA Science Trust. https://www.pbs.org/wgbh/nova/article/can-wind-turbines-make-you-sick/



<sup>&</sup>lt;sup>[1]</sup> U.S. Department of Energy. https://www.energy.gov/eere/wind/how-do-wind-turbines-work

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### SUMMARY AND FINAL CONCLUSIONS

The purpose of this property value impact consulting report is to determine whether the presence of a wind 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 wind 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 wind farms.

CohnReznick Impact Study Analysis Conclusions								
Wind Farm #	Wind Farm	Adjoining Test Sale Properties	Adjoining Property Sale (Test Area) Median Price per SF	Control Area Sales Median Price per SF	% Difference	Avg Linear Feet from Turbine to House	Impact Found	
1	Harbec Plastics Wind Farm	Group 1 (4)	\$159.37	\$155.92	2.22%	3,895	No Impact	
		Group 2 (6)	\$125.30	\$127.83	-1.98%	2,375	No Impact	
		Group 3 (9)	\$210.79	\$185.14	4.44%	1,935	No Impact	
		Group 4 (2)	\$109.77	\$111.15	-1.24%	4,260	No Impact	
2	Montfort Wind Farm	Group 1 (2)	\$59.33	\$57.89	2.48%	4,650	No Impact	
3	Rail Splitter Wind Farm	Group 1 (1)	\$74.22	\$75.49	-1.69%	2,500	No Impact	
		Group 2 (1)	\$109.12	\$103.21	5.73%	1,650	No Impact	
4	Quilt Block Wind Farm	Group 1 (1)	\$76.89	\$78.50	-2.05%	2,230	No Impact	
5	Camp Grove Wind Farm	Group 1 (1)	\$49.67	\$49.04	1.28%	2,105	No Impact	
		Group 2 (1)	\$83.43	\$79.71	4.67%	2,650	No Impact	
Median Varia	ance in Sales Prices for Test to	o Control Areas			1.75%			

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

28 Adjoining Test Area Sales studied and compared to 388 Control Area Sales

The wind farms analyzed reflected sales of property adjoining an existing wind 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 wind farm. The conclusions support that there is no negative impact on improved residential homes adjacent to wind farms. This was confirmed with market participant interviews, which provided additional insight as to how the market evaluates farmland and single-family homes with views of the wind farm.

It can be concluded that since the Adjoining Property Sales (Test Area Sales) were not adversely affected by their proximity to the wind farm, properties surrounding other proposed wind 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 wind 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 wind farm</u>, with regard to unit sale prices or other influential market indicators. 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

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Andrew R. Lines, MAI Principal **Certified General Real Estate Appraiser** Norkin New York License No. 1528740 Expires 6/16/2024 Illinois License No. 553.001841 Expires 9/30/2023

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Erin C. Bowen, MAI Senior Manager



### 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. Andrew R. Lines, MAI, and Erin C. Bowen, MAI have viewed the exterior of all comparable data referenced in this report in person, via public right-of-ways, 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. Joseph Ficenec 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, Andrew R. Lines, MAI, and Erin Bowen, MAI have completed the continuing education program of the Appraisal Institute for designated members.



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

Respectfully submitted,

CohnReznick LLP

MA

Andrew R. Lines, MAI Principal Norkin **Certified General Real Estate Appraiser** New York License No. 1528740 Expires 6/16/2024 Illinois License No. 553.001841 Expires 9/30/2023

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Erin C. Bowen, MAI Senior Manager



### **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 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.
- 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 New Leaf Energy, Inc.	Page   79

work in Progress 9.28.2023 **ADDENDUM A: APPRAISER QUALIFICATIONS** 





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

1 S. Wacker Drive, Suite 3550 Chicago, IL 60606 312-508-5892 (w) 917-696-9636 (m) andrew.lines@cohnreznick.com www.cohnreznick.com

Andrew R. Lines, MAI, is a Principal for CohnReznick Advisory's Valuation Advisory Services practice who has been a CohnReznick employee for over ten years. Andrew has been involved in the real estate business for more than 20 years and has performed valuations on all real estate classes (industrial, commercial, residential, development land). Special-use valuations include affordable housing, student housing, senior housing, cannabis facilities (indoor/outdoor, processing and dispensaries), landfills, waste transfer stations, golf courses, marinas, hospitals, universities, telecommunications facilities, data centers, self- storage facilities, racetracks, and corridors. Impact Study Reports have also been generated for zoning hearings related to the development of solar facilities, wind powered facilities, landfills, big box retail, waste transfer stations, private mental health clinics, cannabis dispensaries and day care centers. He is also experienced in the valuation of leasehold, leased fee, and partial interests, as well as purchase price allocations (GAAP, IFRS and IRC 1060) for financial reporting.

Valuations have been completed nationwide for a variety of assignments including mortgage financing, litigation, tax appeal, estate gifts, asset management, workouts, and restructuring, as well as valuation for financial reporting including purchase price allocations (ASC 805), impairment studies, and appraisals for investment company guidelines and REIS standards. Andrew has qualified as an expert witness, providing testimony for eminent domain cases in the states of IL, VA and MD, and for zoning hearings in IL, IN, MI, NY, HI, OH, KY, and MO. Andrew has also performed appraisal review assignments for accounting purposes (audit support), asset management, litigation and as an evaluator for a large Midwest regional bank.

Andrew has earned the professional designation of Member of the Appraisal Institute (MAI). He has also qualified for certified general commercial real estate appraiser licenses in AZ, CA, IL, IN, WI, MD, OH, NY, NJ, FL,GA, KY and DC. Temporary licenses have been granted in CT, CO, PA, ID, MS, KS, MT and SC.

### **Education**

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

### Professional Affiliations

- Chicago Chapter of the Appraisal Institute
- International Real Estate Management (IREM)
- National Council of Housing and Market Analysts (NCHMA)

### Community Involvement



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Work in Progress

- Syracuse University Regional Council Active Member
- Chicago Friends School Board Member (Treasurer)





# Erin C. Bowen, MAI

Senior Manager, Valuation Advisory Services

404-847-7740 erin.bowen@cohnreznick.com www.cohnreznick.com

Ms. Bowen specializes in lodging, cannabis, seniors housing, large scale retail and multifamily conversion properties. Lodging work includes all hotel property types and brand segments including limited, full service and resort properties; additionally, Ms. Bowen has appraised numerous hotel to multifamily conversion properties including market rate and affordable housing. Cannabis work includes dispensaries, cultivation facilities including specialized indoor facilities and greenhouse properties, processing and manufacturing facilities. Senior's housing assignments include assisted living, skilled nursing facilities and rehabilitation centers. Retail work spans power centers, lifestyle centers, outlet centers and malls. She has appraised numerous additional properties including multifamily, office, medical office, industrial, churches, and vacant land.

Ms. Bowen has expertise in appraising properties at all stages of development, including existing as is, proposed, under construction, renovations and conversion to alternate use. Valuations have been completed nationwide for a variety of assignments including mortgage financing, litigation, eminent domain, tax appeal, estate gifts, asset management, as well as valuation for financial reporting including purchase price allocations (ASC 805). Ms. Bowen has worked on numerous appraisal assignments for eminent domain use for both condemner and land owner.

Additionally, Ms. Bowen has specialized in Property Value Impact Analysis, measuring the possible detrimental impact of economic and environmental influences on property values for a variety of property types, including cell towers, stadiums, behavioral health centers with an emphasis on renewable energy facilities including solar and wind. She has qualified as an expert witness and testified in front of power siting boards, zoning boards and planning commissions in New Mexico, Ohio, Michigan, Kentucky, Indiana and Illinois.

### **Education**

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

### Professional Affiliations

Designated Member of the Appraisal Institute

### **Licenses**

- State of Arizona (Certification #32052)
- State of California (Certification #AG3004919)
- State of Nevada (Certification #A.0208032-CG)
- State of Oregon (Certification #C001551)

