

**BEFORE  
THE OHIO POWER SITING BOARD**

In the Matter of the Application of **SENECA** )  
**WIND, LLC** for a Certificate of )  
Environmental Compatibility and Public Need ) Case No. 18-488-EL-BGN  
for a Wind-Powered Electric Generating )  
Facility in Seneca County, Ohio. )

**DIRECT TESTIMONY OF**

**Michael MaRous,  
President  
MaRous & Company**

**on behalf of**

**Seneca Wind, LLC**

**August 6, 2019**

**I. INTRODUCTION AND QUALIFICATIONS**

**Q-1. Please state your name, current title, and business address.**

**A-1.** My name is Michael MaRous. I am the owner and president of MaRous & Company. My business address is 300 South Northwest Highway, Suite 204, Park Ridge, Illinois 60068.

**Q-2. Briefly describe your educational and professional background and your current work for MaRous & Company.**

**A-2.** I graduated from the University of Illinois at Urbana-Champaign with a B.S. in Urban Land Economics and began my career working with a Chicago real estate appraisal and consulting firm. I founded MaRous & Company in 1980. During my career, I have appraised real estate located in more than 25 states, reflecting a total value in excess of \$15 billion. Properties include general industrial, commercial, and residential parcels, as well as vacant land and specialized properties and interests, including air/development rights, billboards, cemeteries, easements, golf courses, gambling facilities, schools, streets, tank farms, waste transfer stations, utility and railroad rights-of-way, and energy-related projects.

Energy-related projects include a number of proposed natural gas-fired electric plants in various locations; the Neosho Ridge Wind Project in Neosho County, Kansas; the Roaming Bison Wind Project in Montgomery County, Indiana; the Grand Ridge V and Otter Creek wind farms in LaSalle County; the Pleasant Ridge Wind Farm in Livingston County, the Walnut Ridge Wind Farm in Bureau County, the McLean County Wind Farm in McLean County; the Twin Forks Wind Farm in Macon County; the Midland Wind Farm Project in Henry County; the Harvest Ridge Wind in Douglas County; and the Alta Wind Farm in DeWitt County, all in Illinois; the Freeborn County Wind Farm in Freeborn County, Minnesota; the Ida II Wind Farm in Ida County; and the Palo Alto County Wind Farm in Palo Alto County, all in Iowa; the Orangeville Wind Farm in Wyoming County, New York; the Dorchester County Solar Farms in Dorchester County, Maryland; and the Badger Hollow Solar Farm in Iowa County, Wisconsin. In addition, I am in the process of completing market impact studies for multiple wind projects in South Dakota.

1 My statement of qualifications is included at the end of the April 1, 2018 Market Impact  
2 Analysis (“Market Analysis”) for the Seneca Wind Project (“Project”) attached as  
3 Attachment MM-1.

4 **Q-3. What is your role in the Project?**

5 **A-3.** I was retained by Seneca Wind, LLC (“Seneca Wind” or “Applicant”) to prepare an  
6 independent market analysis of the potential impact, if any, the Project would have on  
7 the value of the properties in the general area of the Project. Specifically, the analysis  
8 addresses the question of whether market data indicates that the Project will have an  
9 effect on the value of residential uses and/or agricultural land in proximity to the  
10 proposed wind turbines. When I use the phrase “proximity to wind turbines,” I generally  
11 mean turbines within three to five times the tip height of a wind turbine.

12 **Q-4. What is the purpose of your testimony?**

13 **A-4.** The purpose of my testimony is to provide information specific to Ohio and the Project  
14 area with respect to the potential impact of wind turbines on the value of rural residential  
15 and agricultural property.

16 **Q-5. What studies will be discussing your testimony?**

17 **A-5.** In addition to my Market Impact Analysis, Attachment MM-1, my testimony includes a  
18 discussion regarding the following studies:

- 19 • Brian Guerin, Jason Moore, Jamie Stata, and Scott Bradfield (2012). *Impact of*  
20 *Industrial Wind Turbines on Residential Property Assessment in Ontario: 2012*  
21 *Assessment Base Year Study*. Municipal Property Assessment Corporation.
- 22 • Moore, Jamie Stata, and Scott Bradfield (2016). *Impact of Industrial Wind Turbines*  
23 *on Residential Property Assessment in Ontario: 2016 Assessment Base Year Study*.  
24 Municipal Property Assessment Corporation.
- 25 • Corey Lang and James Opaluch (2013). *Effects of Wind Turbines on Property Values*  
26 *in Rhode Island*. Environmental and Natural Resource Economics, University of  
27 Rhode Island.

- Richard J. Vyn and Ryan M. McCullough (2013). *The Effects of Wind Turbines on Property Values in Ontario: Does Public Perception Match Empirical Evidence?* University of Guelph, Canada.
- Carol Atkinson-Palombo and Ben Hoen (2014). *Relationship between Wind Turbines and Residential Property Values in Massachusetts*. University of Connecticut and Lawrence Berkeley National Laboratory.

## **II. MARKET ANALYSIS FOR SENECA WIND PROJECT**

**Q-6. Did you prepare Attachment MM-1, which is the Market Impact Analysis Report the Seneca Wind Project?**

**A-6.** Yes.

**Q-7. Are the findings, conclusions, and opinions in the Market Impact Analysis true and correct to the best of your belief?**

**A-7.** Yes.

**Q-8. Could you discuss in more detail the matched paired sales analysis you conducted while preparing the Market Impact Analysis?**

**A-8.** Yes. I reviewed sales transactions in three counties in Ohio to try to identify matched paired sales to use for comparison, meaning sales of similar rural residential properties where one property was near a wind farm and one property was not.

Given a lack of proximate/not proximate paired sales data for Ohio, I reviewed matched paired sales data in rural areas of Pennsylvania, New York, Minnesota, Iowa, Indiana, South Dakota, and Illinois. As detailed in the Market Impact Analysis, when adjustments were made to the sales prices of the matched pairs to account for their physical differences and differences in amenities, the per square foot sales prices were essentially the same, indicating that proximity to a wind farm did not impact the price of the proximate sale.

1 **Q-9. As part of your Market Impact Analysis, your company interviewed auditors in**  
2 **Ohio that had more than 25 turbines in their counties. Please provide an overview**  
3 **and the results of that survey effort.**

4 **A-9.** In July 2019, MaRous & Company conducted a survey of the County Auditors or a  
5 deputy auditor in three counties in which wind farms with more than 25 turbines  
6 currently are operational. The interviews were intended to allow the assessment officials  
7 to share their experience regarding the wind farm(s) impact upon the market values  
8 and/or assessed values of surrounding properties. The following is a summary of the  
9 results of that survey:

- 10 • Without exception, the auditors reported that there was no market evidence to support  
11 a negative impact upon residential property values as a result of the development of  
12 and the proximity to a wind farm facility. In some counties, this results from the very  
13 rural nature of the area in which the projects are located;
- 14 • In the past 18 months, the auditor's offices have not experienced a real estate tax  
15 appeal based on wind farm-related concerns. There have been no reductions in  
16 assessed valuations related to wind turbines;
- 17 • As the available market data do not support the claim of a negative impact upon  
18 residential values, residential assessed values have fluctuated consistently within  
19 counties as influenced by market conditions, with no regard for proximity to a wind  
20 farm; and
- 21 • Agricultural properties are taxed based upon a productivity formula that is not  
22 impacted by market data and external influences

23 **Q-10. Based on your analysis, what conclusions did you reach?**

24 **A-10.** There was no market evidence to support a negative impact upon residential property  
25 values as a result of the development of and the proximity to a wind farm and that there  
26 were no reductions in assessed valuation.

1    **III.    PEER-REVIEWED LARGE-SCALE STUDIES**

2    **Q-11. Are you aware of any peer reviewed studies that address the potential effects of**  
3    **wind turbines on property values?**

4    **A-11.** Yes. The 2009 and 2013 Lawrence Berkeley National Laboratory (“LBNL”) studies<sup>1</sup>  
5        are the leading studies on this subject. LBNL is a member of the national laboratory  
6        system supported by the U.S. Department of Energy through its Office of Science. It is  
7        managed by the University of California and is charged with conducting unclassified  
8        research across a wide range of scientific disciplines. LBNL conducted regression  
9        studies on a nationwide basis in 2009 and 2013 to study the potential effects of the  
10       proximity of wind turbines on property values.

11   **Q-12. What methodologies did the LBNL Studies employ?**

12   **A-12.** The 2009 study included an analysis of 7,489 sales within ten miles of eleven wind farms  
13        and 125 post-construction sales within one mile of a wind turbine. The 2009 study used  
14        rural settings and wind farms with more than fifty turbines. The 2013 study included  
15        51,276 sales located in nine states and proximate to sixty-seven wind farms, and 376  
16        post-construction sales within one mile of a wind turbine. Like the 2009 study, all were  
17        located in rural settings and near wind farms of more than fifty turbines. The 2013 study  
18        “used a number of sophisticated techniques to control for other potential impacts on  
19        home prices, including collecting data that spanned well before the wind facilities’  
20        development was announced to after they were constructed and operating. This allowed  
21        the researchers to control for any pre-existing differences in home sales prices across  
22        their sample and any changes that occurred due to the housing bubble.”<sup>2</sup>

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<sup>1</sup> Ernest Orlando Lawrence Berkeley National Laboratory, *The Impact of Wind Power Projects on Residential Property Values in the United States: A Multi-Site Hedonic Analysis* (December 2009) and Ernest Orlando Lawrence Berkeley National Laboratory, *A Spatial Hedonic Analysis of the Effects of Wind Energy Facilities on Surrounding Property Values in the United States* (August 2013).

<sup>2</sup> “No Evidence of Residential Property Value Impacts Near U.S. Wind Turbines, a New Berkeley Lab Study Finds” (August 27, 2013), <http://newscenter.lbl.gov/2013/08/27/no-evidence-of-residential-property-value-impacts-near-u-s-wind-turbines-a-new-berkeley-lab-study-finds/>.

1 **Q-13. Please discuss the conclusions of the LBNL Studies.**

2 **A-13.** Neither study found statistical evidence that values of homes near wind turbines were  
3 affected. Specifically, with respect to the 2013 study, LBNL states that “[t]his study, the  
4 most comprehensive to-date, builds on both the previous Berkeley Lab study as well as a  
5 number of other academic and published United States studies, which also generally find  
6 no measureable impacts near operating turbines.”<sup>3</sup>

7 **Q-14. Do you agree with the conclusions of the LBNL Studies?**

8 **A-14.** Yes. The studies found no statistically significant relationship between wind turbines and  
9 property value, which is consistent with my conclusions noted above.

10 **Q-15. Are there any other peer-reviewed studies that conclude there is no significant**  
11 **evidence of negative impact on property values from wind turbines?**

12 **A-15.** Yes. There are several studies that, combined, reviewed more than 2,500 transactions  
13 within one mile of operating turbines. They all found no evidence of value impact.

14 **Q-16. Please describe these other studies.**

15 **A-16.** The studies I was referencing are summarized below:

- 16 • The Municipal Property Assessment Corporation’s (“MPAC”) studies on the *Impact*  
17 *of Industrial Wind Turbines on Residential Property Assessment in Ontario*. This  
18 study was originally conducted in 2008 and updated in 2012 (“MPAC 2012”) and  
19 2016 (“MPAC 2016”). The conclusions in both studies are similar: “there is no  
20 statistically significant impact on sale prices of residential properties in these market  
21 areas resulting from proximity to an IWT [Industrial Wind Turbine], when analyzing  
22 sale prices.” (MPAC 2012 at 5.) Using 2,051 properties and generally accepted time  
23 adjustment techniques, MPAC “cannot conclude any loss in price due to the  
24 proximity of an IWT.” (MPAC 2012 at 29.) Further, Appendix G of the MPAC 2012  
25 study “Re-sale Analysis” states in the “Summary of Findings” that “MPAC’s own re-  
26 sale analysis using a generally accepted methodology for time adjustment factors

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<sup>3</sup> *Id.*

1 indicates no loss in price based on proximity to the nearest IWT.” (MPAC 2012,  
2 Appendix E.)

- 3 • Corey Lang and James Opaluch (2013). *Effects of Wind Turbines on Property Values*  
4 *in Rhode Island*. Environmental and Natural Resource Economics, University of  
5 Rhode Island. Structured similarly to the LBNL Studies, this study included 48,554  
6 total sales proximate to ten wind farms, and 412 post-construction sales within one  
7 mile of a turbine. These wind farms were mostly small facilities in urban settings. The  
8 study included nuisance and scenic vista stigmas. The report stated, “Both the whole  
9 sample analysis and the repeat sales analysis indicate that houses within a half mile  
10 had essentially no price change . . .” after the turbines were erected. (*Id.* at 18.)
- 11 • Richard J. Vyn and Ryan M. McCullough (2013). *The Effects of Wind Turbines on*  
12 *Property Values in Ontario: Does Public Perception Match Empirical Evidence?*  
13 University of Guelph, Canada. This study analyzed two wind farms in Melancthon  
14 Township, Ontario, Canada, using 5,414 total sales and eighteen post-construction  
15 sales within one kilometer of a wind turbine. The study included nuisance and scenic  
16 vista stigmas. The study concluded that: “these results do not corroborate the  
17 concerns regarding potential negative impacts of turbines on property values.” (*Id.* at  
18 2.)
- 19 • Carol Atkinson-Palombo and Ben boen (2014). *Relationship between Wind Turbines*  
20 *and Residential Property Values in Massachusetts*. University of Connecticut and  
21 Lawrence Berkeley National Laboratory. This study included 312,677 total sales  
22 proximate to twenty-six wind farms, and 1,503 post-construction sales within one  
23 mile of a wind turbine. These wind farms were located in urban settings and were  
24 primarily proximate to small wind farms. The study included wind turbines and other  
25 environmental amenities/dis-amenities (including beaches and open spaces/landfills,  
26 prisons, highways, and major roads) together, for nuisance stigma. “Although the  
27 study found the effects from a variety of negative features . . . and positive features . .  
28 . the study found no net effects due to the arrival of turbines.” (*Id.* at 1.)



1 **Q-17. Are you aware of any peer-reviewed studies that have found a connection between**  
2 **wind turbines and property values?**

3 **A-17.** I am not aware of any peer-reviewed study that has concluded that wind turbines have an  
4 impact on property values.

5 **VI. CONCLUSION**

6 **Q-18. Does this conclude your testimony?**

7 **A-1.** Yes. However, I reserve the right to supplement my direct testimony or submit rebuttal  
8 testimony.

## **CERTIFICATE OF SERVICE**

I hereby certify that the foregoing Direct Testimony of Michael MaRous was served upon the following parties of record via regular or electronic mail this 6<sup>th</sup> day of August 2019.



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## **MARKET IMPACT ANALYSIS**

### **SENECA WIND SENECA COUNTY, OHIO**

August 5, 2019

Seneca Wind, LLC  
c/o Bricker & Eckler LLP  
100 South Third Street  
Columbus, Ohio 43215

Attention: Devin Parram, Attorney at Law

Subject: Market Impact Analysis  
Seneca Wind  
Seneca County, Ohio

Dear Mr. Parram,

In accordance with your request, the proposed development of the Seneca Wind in Seneca County, Ohio, has been analyzed, and this market impact analysis has been prepared.

MaRous & Company has conducted similar market impact studies for a variety of clients and a number of different proposed developments over the last 39 years. Clients have ranged from municipalities, counties, and school districts, to corporations, developers, and citizen's groups. The types of proposals analyzed include: commercial developments such as shopping centers and big-box retail facilities; religious facilities such as mosques and mega-churches; residential developments such as high-density multifamily and congregate-care buildings and large single-family subdivisions; recreational uses such as skate parks and lighted high school athletic fields; and industrial uses such as waste transfer stations, landfills, and quarries.

MaRous & Company has conducted numerous market studies of energy-related projects. The wind-related projects include the following by state:

- ✧ **Illinois** - Grand Ridge V and Otter Creek wind farms in LaSalle County, Pleasant Ridge Wind Farm in Livingston County, Walnut Ridge Wind Farm in Bureau County, McLean County Wind Farm in McLean County, Radford's Run Wind Farm in Macon County, Midland Wind Project in Henry County, Harvest Ridge Wind Project in Douglas County, Alta Farms Wind Project II in DeWitt County;
- ✧ **Indiana** - Tippecanoe County Wind Farm in Tippecanoe County and Roaming Bison Wind Farm in Montgomery County;
- ✧ **Iowa** - Ida County and Palo Alto County Wind Farms;
- ✧ **Minnesota** - Freeborn County Wind Farm in Freeborn County;
- ✧ **South Dakota** - Dakota Range Wind Project I, II, & III, in Codington County, Grant County, and Roberts County, Deuel Harvest Wind Farm in Deuel County, Crocker Wind Farm in Clark County, and Prevailing Wind Park in Charles Mix County, Bon Homme County, and Hutchinson County;
- ✧ **Kansas** - Neosho Ridge Wind Farm in Neosho County;
- ✧ **New York** - Orangeville Wind Farm in Wyoming County.

The solar-related projects include the following by state:

- ✧ **Illinois** - Hickory Point Solar Energy Center in Christian County
- ✧ **Indiana** - Lone Oak Solar Farm in Madison County;
- ✧ **Wisconsin** - Badger Hollow Solar Farm in Iowa County; and
- ✧ **Maryland** - Dorchester County Solar Farms in Dorchester County.

MaRous & Company also has analyzed the impact of transmission lines on adjacent residential uses and a number of proposed natural gas-fired electric plants in various locations.

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## Project Summary

Project	
Property Name	Seneca Wind
Location	Seneca County, Ohio
Townships	Scipio, Reed, Venice, Eden, & Bloom
Property Type	Wind Farm
Project Developer	sPower Development Company, LLC
Wind Farm Description	
Footprint Land Acreage	≈56,819 Acres
Number of Turbines	≈77 Turbines
Turbine Specifications	
Type	<b>General Electric:</b> GE 2.3-116 & GE 2.8-127 <b>Vestas:</b> Vestas 110-2.2 <b>Siemens/Gamesa:</b> SG 2.7-129
Capacity	2.2-2.82 Megawatts
Tip Height	453-584 Feet
Total Capacity	≈212 Megawatts
Setbacks	<ul style="list-style-type: none"> <li>✧ Non-Participating Parcels - <i>1,125 Feet + ½*RD</i></li> <li>✧ Setback Parcels Lines - <i>Either Up to Property Line or 1.1x System Height from the Property Line (depending on the version of the land agreement)</i></li> <li>✧ Occupied Residences - <i>1000 Feet</i></li> <li>✧ Structures - <i>1.1x System Height</i></li> <li>✧ State Roads - <i>1,125 Feet + ½*RD from Right of Way</i></li> <li>✧ Other Roads - <i>1.1x System Height from Right of Way</i></li> <li>✧ Railroads - <i>1.1x System Height</i></li> <li>✧ Pipelines - <i>1.1x System Height from Right of Way</i></li> <li>✧ Microwave Paths - <i>no interference with Fresnel Zone</i></li> <li>✧ Wetlands - <i>100 Feet from edge of high-water</i></li> <li>✧ Eagle Nests - <i>1 mile</i></li> </ul>
Participant Acreage	≈24,010 Acres
Ancillary Construction	
Project substation & 138 kV gen-tie line	Gravel access roads
Permanent meteorological towers	Electrical collector cables
Operations and maintenance building	Temporary staging laydown yards
<b>Total Cost</b>	≈\$275,000,000-\$300,000,000



## **Purpose and Intended Use of the Study**

The purpose of this appraisal assignment is to analyze the impact, if any, on the value of the surrounding rural residential and agricultural properties due to the development of the wind farm. Specifically, this study is designed to address the question of whether the development of the wind farm has an effect on the value of residential uses and/or agricultural land in proximity to the turbines. Any other use or user of this report is considered to be unintended.

## **Executive Summary**

As a result of the market impact analysis undertaken, the conclusion made is that there is no market data indicating the project will have a negative impact on either rural residential or agricultural property values in the surrounding area. Further, market data from Ohio supports the conclusion that the project will not have a negative impact on rural residential or agricultural property values in the surrounding area. Finally, for agricultural properties that host turbines, the additional income from the wind lease may increase the value and marketability of those properties. The foregoing general conclusions are built upon the following information and data:

- ✧ The use will meet or exceed all the required development and operating standards;
- ✧ Controls are in place to ensure on-going compliance;
- ✧ There are significant financial benefits to the local economy and the local taxing bodies from the development of the wind farm;
- ✧ The wind farm will create well-paid jobs in the area which will benefit overall market demand;
- ✧ An analysis of recent residential sales proximate to existing wind farms, which includes residential sales within five times turbine tip height, did not support any finding that proximity to a wind turbine had any impact on property values;
- ✧ An analysis of agricultural land values in the area and other areas of the state with wind farms did not support any finding that the agricultural land values are negatively impacted by the proximity to wind turbines;
- ✧ Studies indicate that wind turbine leases add value to agricultural land;
- ✧ A survey of County Assessors in 3 Ohio counties in which wind farms are located determined that there was no market evidence to support a negative impact upon residential property values as a result of the development of and the proximity to a wind farm and that there were no reductions in assessed valuations;
- ✧ A survey of County Assessors in 6 New York counties and City/Town Assessors in 7 New York cities/towns in which wind farms are located determined that there was no market evidence to support a negative impact upon residential property values as a result of the development of and the proximity to a wind farm and that there were no reductions in assessed valuations;

- ✧ A survey of County Assessors in 5 Indiana counties in which wind farms are located determined that there was no market evidence to support a negative impact upon residential property values as a result of the development of and the proximity to a wind farm and that there were no reductions in assessed valuations;
- ✧ A survey of County Assessors in 18 Illinois counties in which wind farms are located determined that there was no market evidence to support a negative impact upon residential property values as a result of the development of and the proximity to a wind farm and that there were no reductions in assessed valuations;
- ✧ A survey of County Assessors in 8 South Dakota counties in which wind farms are located determined that there was no market evidence to support a negative impact upon residential property values as a result of the development of and the proximity to a wind farm and that there were no reductions in assessed valuations;
- ✧ A survey of County Assessors in 21 Kansas counties in which wind farms are located determined that there was no market evidence to support a negative impact upon residential property values as a result of the development of and the proximity to a wind farm and that there were no reductions in assessed valuations;
- ✧ A survey of County Assessors in 26 Iowa counties in which wind farms are located determined that there was no market evidence to support a negative impact upon residential property values as a result of the development of and the proximity to a wind farm and that there were no reductions in assessed valuations;
- ✧ A survey of County Assessors in 8 Minnesota counties in which wind farms are located determined that there was no market evidence to support a negative impact upon residential property values as a result of the development of and the proximity to a wind farm and that there were no reductions in assessed valuations;
- ✧ A survey of County Assessors in 21 Kansas counties in which wind farms are located determined that there was no market evidence to support a negative impact upon residential property values as a result of the development of and the proximity to a wind farm and that there were no reductions in assessed valuations; and
- ✧ A summary of the findings in literature on peer-reviewed studies of wind farms in North America, although not specific to Ohio; the literature and studies reported conclusions that are consistent with our findings.

## Definition of Market Value

*When discussing market value, the following definition is used:*

The most probable price a property should bring in a competitive and open market under all condition's 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 is the consummation of a sale as of a specified date and the passing of title from seller to buyer under conditions whereby:

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

## Scope of Work and Reporting Process

Information was gathered concerning the real estate market generally and the market of the area surrounding the proposed wind farm specifically. The uses in the surrounding area were considered. The following summarizes the actions taken:

- ❖ Review and analysis of the Seneca County zoning ordinance, Ohio Public Utilities Commission documents of case #18-0488-EL-BGN, and other public documents;
- ❖ Review and analysis of the Application for a Facility Permit submitted by Seneca Wind, LLC, to the Ohio Public Utilities Commission;
- ❖ Review and analysis of the demographics in the area of the proposed wind farm;
- ❖ Review and analysis of data on the general market area of the wind farm, and on the other areas in Ohio and/or Seneca County in which existing wind farms are located;
- ❖ Review and analysis of data on the market for single-family houses in the immediate area of the proposed wind farm and from other areas in each of the counties from public sources, and from the Seneca County and/or Ohio public records;
- ❖ Interviews of local real estate professionals concerning recent sales in the area, local market conditions, and the impact of wind turbines on property values in the area;
- ❖ Properties used for the development of the matched pairs were physically inspected on the exterior, and photographs of the interiors were reviewed where available;

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<sup>1</sup> (12 C.F.R. Part 34.42(g); 55 Federal Register 34696, August 24, 1990, as amended at 57 Federal Register 12202, April 9, 1992; 59 Federal Register 29499, June 7, 1994)

- ✧ Inspections were performed of the project area and the areas in nearby counties with existing wind farms by Michael S. MaRous March 14, 2019. Inspections were also performed of the project area and the areas in nearby counties with existing wind farms by Joseph M. MaRous March 14, 2019.

This document is considered to conform to the requirements of the *Uniform Standards of Professional Appraisal Practice and Advisory Opinions* (USPAP). This letter is a brief recapitulation of the appraisal data, analyses, and conclusions. Additional supporting documentation is retained in the MaRous and Company office file. There are no extraordinary assumptions or hypothetical conditions included in the market study.

In order to form a judgment concerning the potential impact, if any, on the value of the surrounding residential properties of the approval of the conditional use for the wind farm, the following has been considered:

- ✧ The character and the value of the residential and agricultural properties in the general area of the proposed wind farm;
- ✧ Agricultural land values in Seneca County, and in other Ohio counties in which wind farms are located;
- ✧ Market trends for both residential and agricultural land up to the past 5 years;
- ✧ The economic impact the proposed wind farm would have on the larger community; and
- ✧ The potential impact on the value of the surrounding residential and agricultural properties.

## Description of Area Demographics and Development Area Analysis

<b>Seneca Wind Location</b>	
<b>Bloomville, Ohio</b>	
2010 Population	956 Persons
2019 Population	939 Persons
Median Household Income in 2019	\$38,312
Number of Households in 2019	347
Number of Housing Units in 2019	382
Number of Vacant Housing Units in 2019	35
Unemployment Rate	5.0%
<b>Attica, Ohio</b>	
2010 Population	899 Persons
2019 Population	812 Persons
Median Household Income in 2019	\$52,923
Number of Households in 2019	331
Number of Housing Units in 2019	389
Number of Vacant Housing Units in 2019	58
Unemployment Rate	4.7%
<b>Melmore, Ohio</b>	
2010 Population	153 Persons
2019 Population	161 Persons
Median Household Income in 2019	\$78,656
Number of Households in 2019	73
Number of Housing Units in 2019	78
Number of Vacant Housing Units in 2019	5
Unemployment Rate	4.5%
<b>Townships - Scipio, Reed, Venice, Eden, &amp; Bloom</b>	
2010 Total Population	8,322 Persons
2019 Total Population	8,190 Persons
<b>Seneca County</b>	
2010 Population	56,745 Persons
2019 Population	56,253 Persons
Median Household Income in 2019	\$50,689
Number of Households in 2019	21,743
Number of Housing Units in 2019	24,122
Number of Vacant Housing Units in 2019	2,379
Unemployment Rate	4.5%
<b>Main Roadway Arterials</b>	
North/South	OH-100 and OH-67 extend along the eastern portion of the footprint; OH-19 extends through the center of the footprint; OH-4 extend along the western portion of the footprint
East/West	US-19 extends through the center of the footprint

### Nearest Cities within the Market Area of the Seneca Wind

<b>Republic, Ohio</b> <i>≈ 0.1 Miles North of Project Footprint</i>	
2010 Population	549 Persons
2019 Population	549 Persons
<b>Tiffin, Ohio</b> <i>≈ 3 Miles North of Project Footprint</i>	
2010 Population	17,963 Persons
2019 Population	18,017 Persons
<b>Willard, Ohio</b> <i>≈ 5 Miles East of Project Footprint</i>	
2010 Population	6,236 Persons
2019 Population	5,958 Persons
<b>New Washington, Ohio</b> <i>≈ 6 Miles South of Project Footprint</i>	
2010 Population	967 Persons
2019 Population	947 Persons
<b>Upper Sandusky, Ohio</b> <i>≈ 13 Miles Southwest of Project Footprint</i>	
2010 Population	6,421 Persons
2019 Population	6,222 Persons
<b>Bucyrus, Ohio</b> <i>≈ 13 Miles South of Project Footprint</i>	
2010 Population	12,365 Persons
2019 Population	11,858 Persons
<b>Mansfield, Ohio</b> <i>≈ 25 Miles Southeast of Project Footprint</i>	
2010 Population	48,184 Persons
2019 Population	46,681 Persons

Site to do Business - <https://www.stdb.com/>

### Top Private Employers in Seneca County, Ohio

Business Name	Business Type
Mercy Tiffin Hospital	Health Care
Ameriwood Industries	Manufacturing
Church & Dwight	Manufacturing
Heidelberg University	Education
Mennel Milling	Manufacturing
National Machinery	Manufacturing
ProMedica Fostoria Community Hospital	Health Care
Seneca Medical	Health Care Distribution
St. Francis Community	Health Care
Tiffin University	Education

Largest Private Employers in Seneca County - <https://senecasuccess.wordpress.com/2015/08/28/largest-private-employers-in-seneca-county/>

## Other Existing Wind Farms Near the Project Area

The closest existing wind farm to the project is the Hog Creek Wind Farm, located in Hardin County, Ohio, and approximately 30 miles southwest of the project footprint. The wind farm is made up of a total of 30 turbines with a total capacity of approximately 66 megawatts and came online in 2017. Northwest Ohio Wind Farm is located in Paulding County, Ohio, and approximately 70 miles west of the project footprint. The wind farm is made up of a total of 42 turbines with a total capacity of approximately 105 megawatts and came online in 2018. Blue Creek Wind Farm is located in Paulding County & Van Wert County, Ohio, and approximately 75 miles west of the project footprint. The wind farm is made up of a total of 152 turbines with a total capacity of approximately 304 megawatts and came online in 2012. Timber Road Wind Farm is located in Paulding County, Ohio, and approximately 90 miles west of the project footprint. The wind farm is made up of a total of 48 turbines with a total capacity of approximately 100.8 megawatts and came online in 2016.

## Residential Sales Nearest to the Project Area

Like the majority of Ohio, this area is primarily rural in nature. In addition to farms, there are single-family houses situated on either smaller lots or larger farmsteads. The following table summarizes examples of the most recent single-family residential sales in the general area of Seneca Wind. A map illustrating the location of each of these sales is included in the addenda to this market impact study.

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**MOST RECENT SINGLE-FAMILY RESIDENTIAL SALES SUMMARY  
IN THE AREA NEAREST TO SENECA WIND**

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No.	Location	Sale Price	Sale Date	Site Size (Acres)	Year Built	Building Size (Sq. Ft.)	Sale Price Per Sq. Ft. of Bldg. Area Incl. Land
1	16651 E. Township Road 12 Attica, Ohio	\$118,000	12/16/16	6.09	1880	2,855	\$41.33
2	6720 E. County Road 16 Bloomville, Ohio	\$122,500	10/30/17	1.52	1968	1,732	\$70.73
3	9762 E. Township Road 58 Bloomville, Ohio	\$153,100	7/5/16	3.28	1900	2,910	\$52.61
4	2016 S Township Road 79 Attica, Ohio	\$215,000	7/14/17	10.00	2002	2,117	\$101.56
5	3235 S. State Route 19 Bloomville, Ohio	\$218,000	7/3/18	7.54	2007	1,920	\$113.54

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## Project Description

The project is proposed to consist of 77 primary turbines and 16 alternate turbines with an individual capacity between 2.2 and 2.82 megawatts; the turbines will have a tip height of approximately 453 feet and up to 584 feet. The total capacity of the wind farm will be approximately 212 megawatts, covering a total of approximately 24,010 acres.

The proposed project will use a combination of General Electric GE 2.3-116 and GE 2.8-127 turbines, Siemens/Gamesa SG 2.7-129 turbines, and/or Vestas V110-2.2 turbines. The turbines will be constructed to meet applicable standards and will be monitored to ensure compliance with those standards and to limit the impact of noise, and shadow flicker. Additional efforts are being made to limit the impact on avian and wildlife resources in the area.

Roads will be improved both before and after construction to accommodate the installation of the turbines and to repair any damage caused by the construction. Decommissioning Phase road repairs will be undertaken.

The total project cost will be between \$275,000,000 and \$300,000,000. Ancillary construction includes gravel-covered access roads, underground collector lines and communication lines, a project substation, an approximately up to four meteorological towers, an operations and maintenance building, and a temporary laydown yards.

## Project Benefits

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### Taxes

Total Revenue	The project will participate in the PILOT program (Payment in Lieu of Taxes program)
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### Land Agreements

Participating Landowner Lease Payments	Payments made to participating landowners will be approximately \$104,539 paid annually divided between 204 agreements, while in current Preconstruction Term
Wind Farm Setback Waiver Agreement	Payments made to participating landowners will be approximately \$38,500 annually divided between 33 agreements
Wind Farm Neighbor Easement Agreement	Payments made to participating landowners will be approximately \$38,500 annually divided between 33 agreements

### Job Creation

Temporary/Construction	≈175-250 Construction Jobs
Permanent	≈11 Permanent Jobs

### Induced Impacts due to Construction

Indirect Impacts	Permit payments to the county and anticipated increase in household spending to local businesses
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## Market Impact Analysis

A market impact analysis is undertaken to develop an opinion as to whether the proposed wind farm will have an effect on the value of residential uses and/or agricultural land in proximity to the turbines. This analysis includes:

- ∴ A matched pair analysis considering the impact on value of residential properties proximate to a wind farm in Ohio, as well as matched pairs developed and analyzed of residential properties in counties with similar demographics, land use, and economic characteristics of other states, specifically, Pennsylvania, New York, South Dakota, Illinois, Minnesota, Iowa, Kansas, and Indiana;
- ∴ The value of agricultural land in Seneca County and in other counties with existing wind farms;
- ∴ Interviews with local and national real estate professionals;
- ∴ The results of a survey of assessors in Ohio, South Dakota, Illinois, Minnesota, Iowa, Kansas, and Indiana with existing wind farms in their respective jurisdictions; and
- ∴ The results of several academic and peer-reviewed studies on the impact of wind turbines on residential property values.

## Matched Pair Analysis

A matched pair analysis is a methodology which analyzes the importance of a selected characteristic, in this instance, proximity to a wind turbine, to the value of a property.<sup>2</sup> This technique compares the sale of a property in proximity to the selected characteristic to the sale of a similar property in the same market area and under similar market conditions but without the proximity to the selected characteristic.

It is difficult to find properties that are identical except for proximity to a wind turbine, and which also occurred under substantially similar market conditions, especially in rural areas. Many sales in the area are also conducted privately from family member to family member, or passed down from generation to generation, causing there to be a lack of sale information. Additionally, in many cases, the properties in these types of transactions do not sell at full value. The matched pair analysis accounts for different adjustments that must be made to account for the differences in the paired properties.

Data from similar states that have a strong presence of wind turbines, similar demographics, similar economics, and similar agricultural characteristics, have also been analyzed.

Details of the sales included in this analysis are retained in my office files; maps in the addenda to this report illustrate the location of the properties. Unless otherwise indicated, none of the purchasers in these transactions appear to own any other property in proximity, and none of the transactions appear to have a wind turbine lease associated with the property.

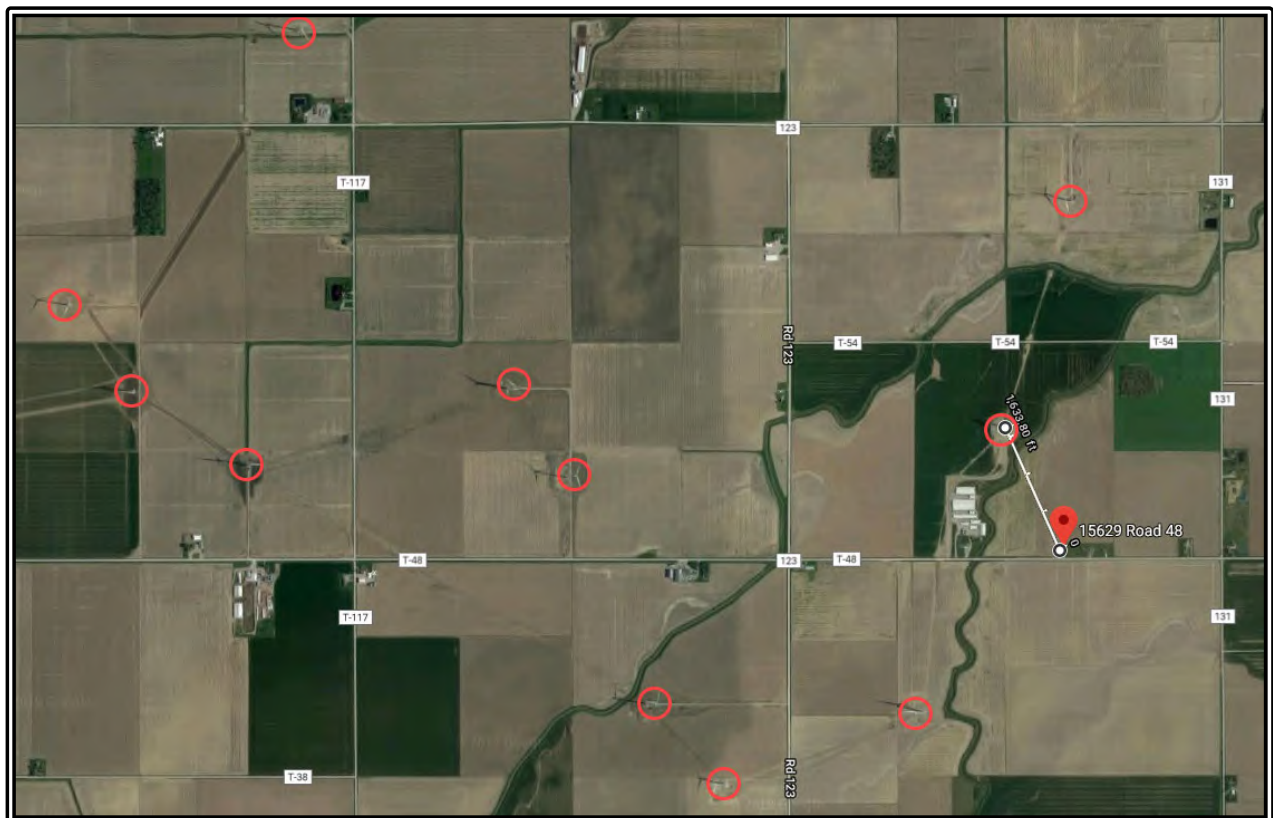
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<sup>2</sup> See the discussion “Paired Sales Analysis” and “Sale/Resale Analysis” in Bell, Randall, MAI, *Real Estate Damages, Applied Economics and Detrimental Conditions*, Second Edition, Appraisal Institute, 2008, pages 25-27.

### Ohio Analysis - Paulding County Matched Pair No. 1

Paulding County Matched Pair No. 1 considers the recent sale of a property located at 15629 Road 48, Haviland, Ohio, that is 1,633 feet from the nearest wind turbine located within the Northwest Ohio wind farm, which went online in 2018, with approximately fifteen additional turbines visible from the property to the north, south, and west. This property sold on October 30, 2017, and then again on May 19, 2019.

This sale is compared with a similar property located at 11388 State Route 613, Paulding, Ohio, that sold on September 28, 2018. The salient details of these two properties are summarized in the table below.



**PAULDING COUNTY MATCHED PAIR NO. 1**

	<b>1A - Proximate to a Wind Turbine</b>	<b>1A - Prior Sale</b>	<b>1B - Not Proximate to a Wind Turbine</b>
Address	15629 Road 48 Haviland, OH 45851	15629 Road 48 Haviland, OH 45851	11388 State Route 613 Paulding, OH 45879
Distance from Turbine (Ft.)	1,633	N/A	N/A
Sale Date	May 19, 2019	October 30, 2017	September 28, 2018
Sale Price	\$110,000	\$85,000	\$133,000
Sale Price/Sq. Ft. (A.G.)	\$95.65	\$70.22	\$67.75
Year Built	1963	1963	1980
Building Size (Sq. Ft.)	1,150	1,150	1,963
Lot Size (Acres)	0.45	0.45	2.97
Style	One-story; frame (stone/vinyl)	One-story; frame (stone/vinyl)	One-story; frame (brick)
	3 bedrooms; 1 bath	3 bedrooms; 1 bath	3 bedrooms; 2 bath
Basement	Crawlspace	Crawlspace	N/A
Utilities	Wall unit cooling; Radiant heating; Well & septic	Wall unit cooling; Radiant heating; Well & septic	Central air; Other heat; Well & septic
Other	1-car detached garage; shed and barn	1-car detached garage; shed and barn	2-car attached garage



15629 Road 48

11388 State Route 613



The house at 15629 Road 48, is located approximately 1,633 feet away from the nearest turbine, in a rural area. Both houses are of similar styles, similar rural location, have similar basements, have similar utilities, and have similar outbuildings. The 11388 State Route 613 property is of superior building size, lot size, and vintage.

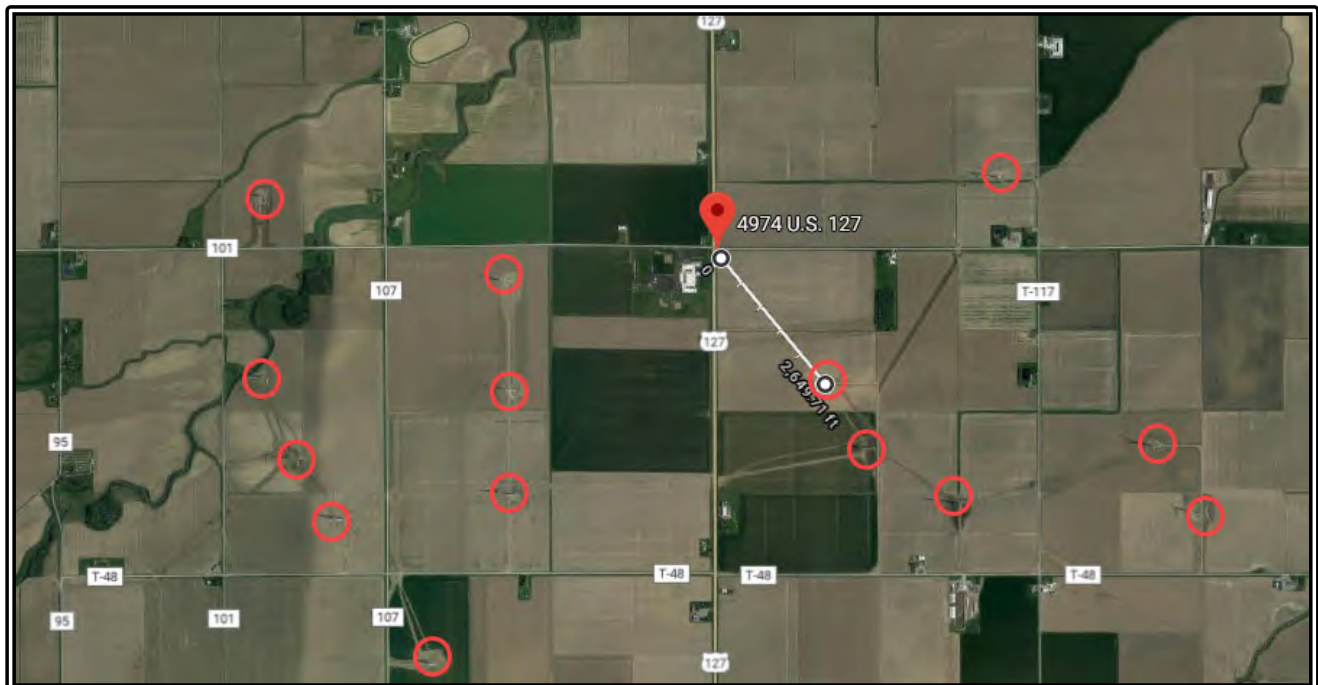
ADJUSTMENT GRID MATCHED PAIR NO. 1										
SALE NO.	ADDRESS	SALE DATE	YEAR BUILT	BUILDING SIZE	LOT SIZE	LOCATION	STYLE	BASEMENT	UTILITIES	OUT-BUILDINGS
1B	11388 State Route 613 Paulding, OH 45879	+	-	-	-	o	o	+	o	o
+	Positive adjustment based on comparable being inferior in comparison to property #1A									
-	Negative adjustment based on comparable being superior in comparison to property #1A									
o	No adjustment necessary									

Downward adjustments were made for the superior vintage, building size, and lot size of the 11388 State Route 613 property compared to the 15629 Road 48 property. Upward adjustments were made for the superior market conditions and basement of the 15629 Road 48 property compared to the 11388 State Route 613 property. The two properties have essentially the same location, style, utilities, and outbuildings. Therefore, although the 11388 State Route 613 property give the impressions of being superior in more categories, the much higher per square foot sale price for the 15629 Road 48 property appears to support the conclusion that there is not any negative impact in value resulting from the proximity of the 15629 Road 48 property to a wind turbine.

## Ohio Analysis - Paulding County Matched Pair No. 2

Paulding County Matched Pair No. 2 considers the recent sale of a property located at 4974 U.S. Route 127, Haviland, Ohio, that is 2,650 feet from the nearest wind turbine located within the Northwest Ohio wind farm, with approximately fifteen additional turbines visible from the property to the north, south, and west. This property sold on June 12, 2019.

This sale is compared with a similar property located at 7658 State Route 111, Paulding, Ohio, that sold on August 9, 2018. The salient details of these two properties are summarized in the table below.





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**PAULDING COUNTY MATCHED PAIR NO. 2**

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	<b>2A - Proximate to a Wind Turbine</b>	<b>2B - Not Proximate to a Wind Turbine</b>
Address	4974 U.S. Route 127 Haviland, OH 45851	7658 State Route 111 Paulding, OH 45879
Distance from Turbine (Ft.)	2,650	N/A
Sale Date	June 12, 2019	August 9, 2018
Sale Price	\$234,000	\$239,000
Sale Price/Sq. Ft. (A.G.)	\$93.30	\$68.96
Year Built	1977	2000
Building Size (Sq. Ft.)	2,508	3,466
Lot Size (Acres)	1.20	4.89
Style	One-story; frame (brick) 2 bedrooms; 2.1 bath	1.5-story; frame (vinyl) 4 bedrooms; 3 bath
Basement	Full; partially finished	N/A
Utilities	Central air; Other heat; Well & septic	Central air; Forced-air heat; Well & septic
Other	2-car attached garage; patio	3-car attached garage; shed and pond

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4974 U.S. Route 127

7658 State Route 111



The house at 4974 U.S. Route 127, is located approximately 2,650 feet away from the nearest turbine, in a rural area. Both houses are in a similar rural location. The 7658 State Route 111 property is of superior vintage, building size, lot size, style, utilities, and outbuildings.

ADJUSTMENT GRID MATCHED PAIR NO. 2										
SALE NO.	ADDRESS	SALE DATE	YEAR BUILT	BUILDING SIZE	LOT SIZE	LOCATION	STYLE	BASEMENT	UTILITIES	OUT-BUILDINGS
2B	7658 State Route 111 Paulding, OH 45879	+	-	-	-	o	-	+	-	-
+	Positive adjustment based on comparable being inferior in comparison to property #2A									
-	Negative adjustment based on comparable being superior in comparison to property #2A									
o	No adjustment necessary									

Downward adjustments were made for the superior vintage, building size, lot size, style, utilities, and outbuildings of the 7658 State Route 111 property compared to the 4974 U.S. Route 127 property. Upward adjustments were made for the superior market conditions and basement of the 4974 U.S. Route 127 property compared to the 7658 State Route 111 property. The two properties have essentially the same location. Therefore, although the 7658 State Route 111 property give the impressions of being superior in more categories, the much higher per square foot sale price for the 4974 U.S. Route 127 property appears to support the conclusion that there is not any negative impact in value resulting from the proximity of the 4974 U.S. Route 127 property to a wind turbine.

### **Matched Pair Analysis- Pennsylvania, New York, Indiana, Illinois, South Dakota, Minnesota, and Iowa Counties**

In addition to analyzing sales in the subject project area, we have researched sales in proximity to several existing wind farms in rural areas of Pennsylvania, New York, Indiana, Illinois, South Dakota, Minnesota, and Iowa in order to discover whether residential property values in these areas were impacted by their locations. The following are the results of the most recent of these studies.

As with the research from Ohio, details of these sales are retained in our office files; maps in the addenda to this report illustrate the location of these matched pairs. Unless otherwise indicated, none of the purchasers in these transactions appear to own any other property in proximity, and none of the transactions appear to have a wind turbine lease associated with the property.

#### **Pennsylvania Analysis - Somerset County Matched Pair No. 1**

Somerset County Matched Pair No. 1 considers the sale of a house located at 1291 Huckleberry Highway, Central City, that sold in August 2014, for \$179,000. This house is located approximately 2,106 feet from the nearest turbine, and there are additional turbines visible from the rear of the property. The following photograph is of the turbines visible from the house.



This property is compared with a similar property located at 3034 Stutzmantown Road, Somerset, that sold in June 2015 for \$165,000. This property is not located near wind turbines. Market conditions are considered to be similar. Both properties are situated in similar locations along paved roads. The salient details of these two properties are summarized in the following table.



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**SOMERSET COUNTY MATCHED PAIR NO. 1**

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	<b>1A - Proximate to a Wind Turbine</b>	<b>1B - Not Proximate to a Wind Turbine</b>
Address	1291 Huckleberry Hwy. Central City, PA 15926	3034 Stutzmantown Rd. Somerset, PA 15501
Distance from Turbine	2,106 Feet	N/A
Sale Date	August 11, 2014	June 5, 2015
Sale Price	\$179,000	\$165,000
Sale Price/Sq. Ft. (A.G.)	\$68.01	\$58.93
Year Built	1920	1920
Building Size (Sq. Ft.)	2,632	2,800
Lot Size (Acres)	3.00	2.84
Style	Two-story, frame (vinyl) 3 bedrooms; 3 bath	Two-story, frame (vinyl) 5 bedrooms; 2 bath
Basement	Full, finished	Partial, finished
Utilities	Central air; Propane heat; well & septic	Central air; Propane heat; well & septic
Other	2-car detached garage; patio, porch deck, pool; barn, fenced pasture	2-car attached garage; shed and out-buildings; pool

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1291 Huckleberry Highway

3034 Stutzmantown Road



Both houses are of similar construction type and vintage and are situated on similarly sized sites. The Stutzmantown Road property is larger; however, the additions appear to be of different ages, styles, and utility. The size differential also is offset by the smaller amount of finished basement. Both appear to be in average condition. The fenced pasture of the Huckleberry Highway property is considered a superior feature. Both houses are located on paved roads.

ADJUSTMENT GRID MATCHED PAIR NO. 1										
SALE NO.	ADDRESS	SALE DATE	YEAR BUILT	BUILDING SIZE	LOT SIZE	LOCATION	STYLE	BASEMENT	UTILITIES	OUT-BUILDINGS
1B	3034 Stutzmantown Rd. Somerset, Pennsylvania	-	o	o	o	o	-	+	o	+
+	Positive adjustment based on comparable being inferior in comparison to property #1A									
-	Negative adjustment based on comparable being superior in comparison to property #1A									
o	No adjustment necessary									

The analysis of the sales at 1291 Huckleberry Highway and 3034 Stutzmantown Road supports the conclusion that the proximity to the wind turbines did not have a negative impact on the sale price of the property at 1291 Huckleberry Highway.

### Pennsylvania Analysis - Somerset County Matched Pair No. 2

Somerset County Matched Pair No. 2 considers the sale of a house located at 1259 Huckleberry Highway, Central City, that sold in June 2016 for \$149,000. This house is located approximately 2,231 feet from the nearest turbine, and there are several turbines visible at the rear of the property. The following photograph is of the turbines visible from the Huckleberry Highway property.



This property is compared with a similar property located at 507 Beans Cove Road, Clearville, that sold in August 2015 for \$165,000. This property is not located near wind turbines. Market conditions are considered to be similar. Although this property is located some distance from Central City, both properties have similar, rural locations. The salient details of these two properties are summarized in the table below.

## SOMERSET COUNTY MATCHED PAIR NO. 2

	2A - Proximate to a Wind Turbine	2B - Not Proximate to a Wind Turbine
Address	1259 Huckleberry Hwy. Central City, PA 15926	507 Beans Cove Rd. Clearville, PA 15535
Distance from Turbine	2,231 Feet	N/A
Sale Date	June 3, 2016	August 13, 2015
Sale Price	\$149,000	\$165,000
Sale Price/Sq. Ft. (A.G.)	\$85.63	\$99.16
Year Built	1974	1981
Building Size (Sq. Ft.)	1,740	1,664
Lot Size (Acres)	11.97	1.38
Style	One-story; frame (vinyl) 3 bedrooms, 1.5 bath	One-story; frame (vinyl) 5 bedrooms, 3 bath*
Basement	Full, finished, walkout	Full, finished, walkout
Utilities	Coal/electric heat; well & septic	Propane heat; well & septic
Other	2-car attached garage; 40 x 70 heated detached garage; wooded, pond	2-car detached garage; deck & shed; wooded, stream

\*includes below-grade apartment



1259 Huckleberry Highway

507 Beans Cove Road



Both houses are situated on similarly sized large properties; however, the Beans Cove Road property has a more rural location than that of the Huckleberry Highway property. The Beans Cove Road property is of newer construction, and of superior quality; the Huckleberry Highway house is described as “modular.” Both are considered to be in average condition. The difference in the number of bedrooms and bathrooms is a reflection of the different finishes in the lower level, with the Huckleberry Highway house having a family room in that space and the Beans Cove Road property has an apartment, considered a superior feature. The Beans Cove Road property is also considered superior because of its propane gas heating system compared to the coal-fired heating system of the Huckleberry Highway house.

ADJUSTMENT GRID MATCHED PAIR NO. 2										
SALE NO.	ADDRESS	SALE DATE	YEAR BUILT	BUILDING SIZE	LOT SIZE	LOCATION	STYLE	BASEMENT	UTILITIES	OUT-BUILDINGS
2B	507 Beans Cove Rd. Clearville, Pennsylvania	+	o	o	o	+	-	o	-	+
+	Positive adjustment based on comparable being inferior in comparison to property #2A									
-	Negative adjustment based on comparable being superior in comparison to property #2A									
o	No adjustment necessary									

The analysis of the sales at 1259 Huckleberry Highway and 507 Beans Cove Road do not support a finding that the proximity to the wind turbines had a negative impact on value; the superior sale price of the Beans Cove Road property is supported by the superior features of that house.

### **New York Analysis - Wyoming County Matched Pair No. 1**

Wyoming County is the home of the subject, Orangeville Wind Farm. Multiple properties that sit in the footprint of the project were analyzed. A property located at 2152 Standish Road, Attica, New York, sold in October 2017, for \$150,000. The property previously sold in November 2015 for \$150,000 and February 1996 for \$78,000. The nearest turbine is approximately 4,186 feet to the east of this property

This property is compared with a similar property located at 1673 Folsomedale Road, Cowleville, New York, that sold in February 2015, which is not located proximate to any wind turbines. The salient details of these two properties are summarized in the table below.

The following aerial map illustrates the relationship of the 2152 Standish Road property to the closest wind turbines.



### WYOMING COUNTY MATCHED PAIR NO. 1

	1A - Proximate to a Wind Turbine	1A - Prior Sale	1B - Not Proximate to a Wind Turbine
Address	2152 Standish Rd. Attica, NY 14011	2152 Standish Rd. Attica, NY 14011	1673 Folsomedale Rd. Cowlesville, NY 14037
Distance from Turbine	4,186 Feet	4,186 Feet	N/A
Sale Date	October 19, 2017	November 18, 2015	February 27, 2015
Sale Price	\$150,000	\$150,000	\$150,000
Sale Price/Sq. Ft. (A.G.)	\$70.22	\$70.22	\$67.93
Year Built	1971	1971	1980
Building Size (Sq. Ft.)	2,136	2,136	2,208
Lot Size (Acres)	1.86 acres	1.86 acres	3.16 acres
Style	Ranch; frame (wood) 3 bedrooms; 2 bath	Ranch; frame (wood) 3 bedrooms; 2 bath	Two-story; frame (wood) 3 bedrooms; 2 bath
Basement	N/A	N/A	N/A
Utilities	Central air; Propane & forced-air heat; Well & septic	Central air; Propane & forced-air heat; Well & septic	Central air; Forced-air heat; Well & septic
Other	2.5-car attached garage; above-ground pool	2.5-car attached garage; above-ground pool	Attic; patio and deck





2152 Standish Road



1673 Folsomdale Road

Although the Standish Road property is a ranch-style house, and the Folsomdale Road property is technically a two-story farmstead, both properties have very similar square footage, have similar amenities, and are of similar vintage. In the case of the Standish Road property, there is a large 2.5-car attached garage and an above-ground pool. The property is in a less agricultural area of the county and sits proximate to a higher density forest. In the case of the Folsomdale property, there is a deck and patio. The property sits in a more agricultural area of the county compared to the Standish Road property. Both properties are of similar vintage, and both properties are considered to be in normal condition by the Wyoming County Assessor.

#### ADJUSTMENT GRID MATCHED PAIR NO. 1

SALE NO.	ADDRESS	SALE DATE	YEAR BUILT	BUILDING SIZE	LOT SIZE	LOCATION	STYLE	BASEMENT	UTILITIES	OUT-BUILDINGS
1B	1673 Folsomedale Road Cowlesville, New York	+	o	o	+	+	o	+	o	o
+	Positive adjustment based on comparable being inferior in comparison to property #1A									
-	Negative adjustment based on comparable being superior in comparison to property #1A									
o	No adjustment necessary									

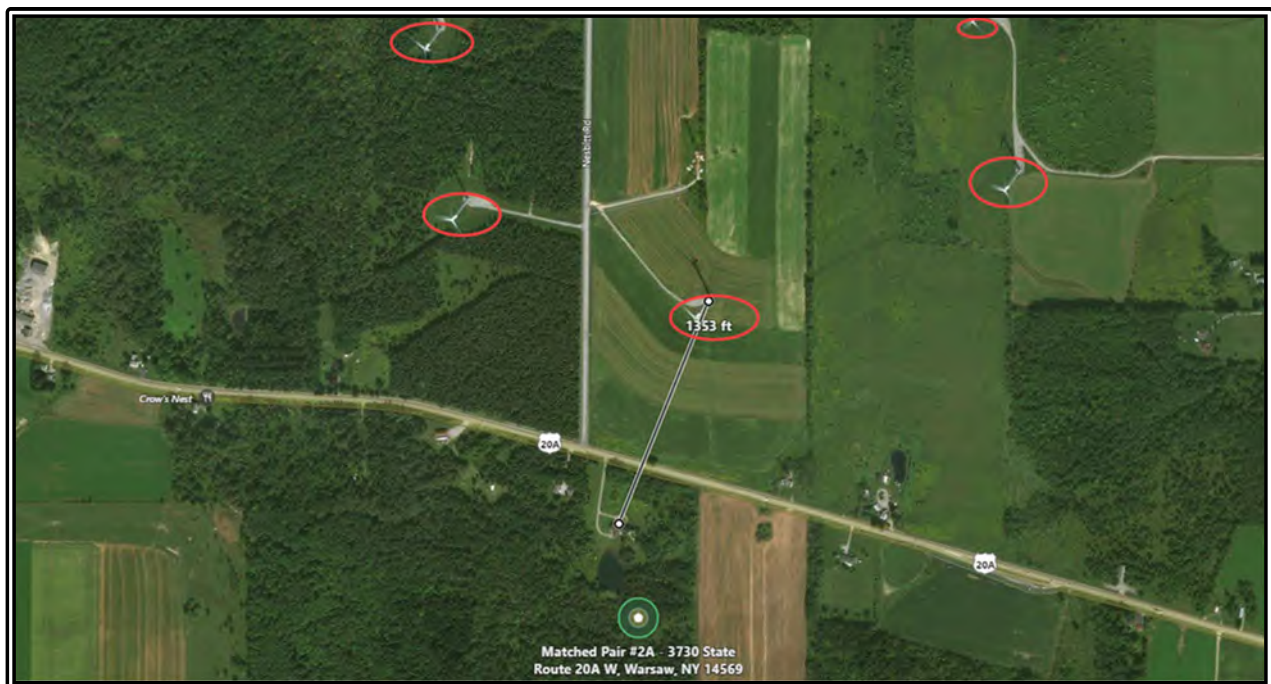
Considering the similarities of the two properties, the analysis of the sales at 2152 Standish Road and at 1673 Folsomdale Road does not support a finding that the proximity to the wind turbines had a negative impact on the value of the 2152 Standish Road property.

## New York Analysis - Wyoming County Matched Pair No. 2

A property located at 3730 State Route 20a W, Warsaw, New York, sold in November 2015, for \$157,500. The property previously sold in January 2015 for \$140,333. The nearest turbine is approximately 1,353 feet to the north of this property.

This property is compared with a similar property located at 4062 Plowe Road, Attica, New York, that sold in September 2016, which is not located proximate to any wind turbines. The salient details of these two properties are summarized in the table below.

The following aerial map illustrates the relationship of the 3730 State Route 20a W property to the closest wind turbines.



## WYOMING COUNTY MATCHED PAIR NO. 2

	2A - Proximate to a Wind Turbine	2A - Prior Sale	2B - Not Proximate to a Wind Turbine
Address	3730 State Route 20a W Warsaw, NY 14569	3730 State Route 20a W Warsaw, NY 14569	4062 Plowe Rd. Attica, NY 14011
Distance from Turbine	1,353 Feet	1,353 Feet	N/A
Sale Date	November 5, 2015	January 20, 2015	September 28, 2016
Sale Price	\$157,500	\$140,333	\$169,900
Sale Price/Sq. Ft. (A.G.)	\$55.09	\$49.08	\$83.28
Year Built	1991	1991	1975
Building Size (Sq. Ft.)	2,859	2,859	2,040
Lot Size (Acres)	24.34 acres	24.34 acres	9.07 acres
Style	Two-story; frame (wood)	Two-story; frame (wood)	Two-story; frame (vinyl)
	3 bedrooms; 4 bath	3 bedrooms; 4 bath	3 bedrooms; 2 bath
Basement	N/A	N/A	Full, unfinished
Utilities	No Cooling; Fireplace & other heat; Well & septic	No Cooling; Fireplace & other heat; Well & septic	No Cooling; Fireplace & other heat; Well & septic
Other	2-car attached garage; in-ground pool and pond	2-car attached garage; in-ground pool and pond	2-car attached garage; patio, deck, pond, dock; basketball court



3730 State Route 20a W

4062 Plowe Road





Although the State Route 20a property and the Plowe Road property differ slightly in vintage and in lot size, both properties are located in similar surroundings. They also have very similar amenities, or lack thereof, in the case of heating and air conditioning. In the case of the State Route 20a property, there is a large two-car attached garage, an in-ground pool, and a smaller pond that all sit on a larger lot. The property is in a more residential area of the county. In the case of the Plowe Road property, there a deck, a patio, and a basketball court that sit next to an acre-sized pond with a dock for access. The property also sits in a more residential area of the county. Both properties are of similar use, and both properties are considered to be in normal condition by the Wyoming County Assessor.

ADJUSTMENT GRID MATCHED PAIR NO. 2										
SALE NO.	ADDRESS	SALE DATE	YEAR BUILT	BUILDING SIZE	LOT SIZE	LOCATION	STYLE	BASEMENT	UTILITIES	OUT-BUILDINGS
2B	4062 Plowe Rd. Attica, New York	-	+	-	+	+	o	-	o	o
+	Positive adjustment based on comparable being inferior in comparison to property #1A									
-	Negative adjustment based on comparable being superior in comparison to property #1A									
o	No adjustment necessary									

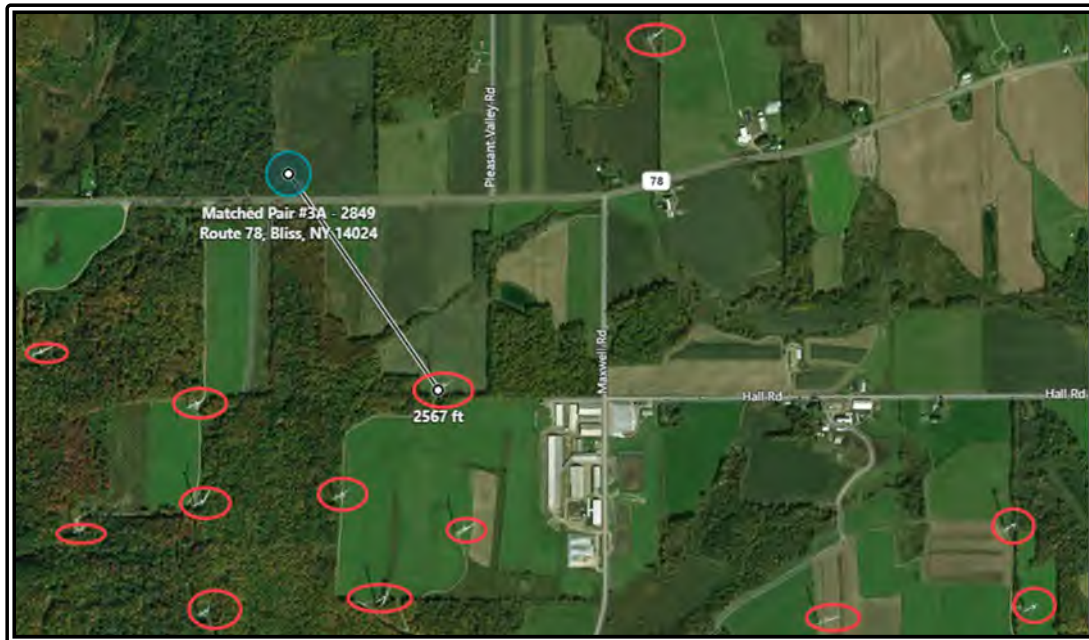
Given the similarities of the two properties, despite the lot size and vintage, the analysis of the sales at 3730 State Route 20a W and at 4062 Plowe Road does not support a finding that the proximity to the wind turbines had a negative impact on the value of the 3730 State Route 20a W property.

### **New York Analysis - Wyoming County Matched Pair No. 3**

A property located at 2849 Route 78, Bliss, New York, sold in December 2016, for \$180,000. The nearest turbine is approximately 2,567 feet to the north of this property.

This property is compared with a similar property located at 7320 Route 98, Arcade, New York, that sold in August 2017, which is not located proximate to any wind turbines. The salient details of these two properties are summarized in the table below.

The following aerial map illustrates the relationship of the 3730 State Route 20a W property to the closest wind turbines.



### WYOMING COUNTY MATCHED PAIR NO. 3

	3A - Proximate to a Wind Turbine	3B - Not Proximate to a Wind Turbine
Address	2849 Route 78 Bliss, NY 14024	7320 Route 98 Arcade, NY 14009
Distance from Turbine	2,567 Feet	N/A
Sale Date	December 12, 2016	August 31, 2017
Sale Price	\$180,000	\$186,600
Sale Price/Sq. Ft. (A.G.)	\$72.12	\$86.39
Year Built	1994	1957
Building Size (Sq. Ft.)	2,496	2,160
Lot Size (Acres)	3.37 acres	3.51 acres
Style	Two-story; frame (vinyl) 4 bedrooms, 2.2 bath	Two-story; brick and frame (vinyl) 4 bedrooms, 2.1 bath
Basement	Full, finished	N/A
Utilities	No Cooling; Baseboard & Propane heat; Well & septic	No Cooling; Forced-air heat; Well & septic
Other	2-car detached garage; deck, above-ground pool; shed	1-car attached garage; Florida/sunroom; agricultural land - livestock permitted



2849 Route 78



7320 Route 98

Although the Route 78 property and the Route 98 property differ in vintage, both properties are of similar size, are located on similar size lots, have similar amenities, and are located in similar surroundings. In the case of the Route 78 property, there is a two-car detached garage and an above-ground pool. The property is located in a more residential area of the county. In the case of the Route 98 property, there are limited exterior amenities. However, the lot has an agricultural and livestock designation that allows horses to be raised on-site, which is uncommon on a solely residential property. Both properties are of similar size and function, and both properties are considered to be in normal condition by the Wyoming County Assessor.

#### ADJUSTMENT GRID MATCHED PAIR NO. 3

SALE NO.	ADDRESS	SALE DATE	YEAR BUILT	BUILDING SIZE	LOT SIZE	LOCATION	STYLE	BASEMENT	UTILITIES	OUT-BUILDINGS
3B	7320 Route 98 Arcade, New York	-	-	o	o	o	o	+	o	o
+	Positive adjustment based on comparable being inferior in comparison to property #2A									
-	Negative adjustment based on comparable being superior in comparison to property #2A									
o	No adjustment necessary									

Given the similarities of the two properties, despite the vintage, the analysis of the sales at 2849 Route 78 and at 7320 Route 98 does not support a finding that the proximity to the wind turbines had a negative impact on the value of the 2849 Route 78 property.

### **New York Analysis - Wyoming County Matched Pair No. 4**

A property located at 3069 West Washburn Road, Bliss, New York, sold in May 2017, for \$175,000. The property previously sold in November 1996 for \$95,000. The nearest turbine is approximately 1,294 feet to the northwest of this property.

This property is compared with a similar property located at 6215 Lamb Road, Wyoming, New York, that sold in May 2015, and which is not located proximate to any wind turbines. The salient details of these two properties are summarized in the table below.

The following aerial map illustrates the relationship of the 3069 West Washburn Road property to the closest wind turbines.





## WYOMING COUNTY MATCHED PAIR NO. 4

	4A - Proximate to a Wind Turbine	4A - Prior Sale	4B - Not Proximate to a Wind Turbine
Address	3069 W. Washburn Rd. Bliss, NY 14024	3069 W. Washburn Rd. Bliss, NY 14024	6215 Lamb Rd. Wyoming, NY 14591
Distance from Turbine	1,294 Feet	N/A	N/A
Sale Date	May 24, 2017	November 8, 1996	May 6, 2015
Sale Price	\$175,000	\$95,000	\$175,000
Sale Price/Sq. Ft. (A.G.)	\$62.50	\$33.93	\$65.89
Year Built	1980	1980	1986
Building Size (Sq. Ft.)	2,800	2,800	2,656
Lot Size (Acres)	14.00 acres	14.00 acres	5.65 acres
Style	Two-story; frame (vinyl)	Two-story; frame (vinyl)	Two-story; frame (vinyl)
Basement	5 bedrooms; 2.1 bath Full, unfinished	5 bedrooms; 2.1 bath Full, unfinished	4 bedrooms; 3 bath N/A
Utilities	No Cooling; Baseboard & wood pellet heat; Well & septic	No Cooling; Baseboard & wood pellet heat; Well & septic	No Cooling; Forced-air heat; Well & septic
Other	2-car attached garage; 1-car detached garage; deck and pool; Wind Farm Lease - \$6,744/yr.	2-car attached garage; 1-car detached garage; deck and pool	1-car attached garage; porch, patio, pole barn; above-ground pool; remodeled in 2008



3069 West Washburn Road



6215 Lamb Road

Although the Washburn Road property and the Lamb Road property differ in lot size, both properties are of similar size, are of similar vintage, have similar amenities, and located in similar surroundings. In the case of the Washburn Road property, it has a wind turbine associated with the lot with a yearly lease of \$6,744 per year, guaranteed for 32 years from the date of sale. Also, the Wyoming County Assessor gave the property a value of \$145,000 without the wind turbine lease attached to the property. In the case of the Lamb Road property, there is a pole barn, and the residence was remodeled in 2008. Both properties are of similar size and function, and both properties are considered to be in normal condition by the Wyoming County Assessor.

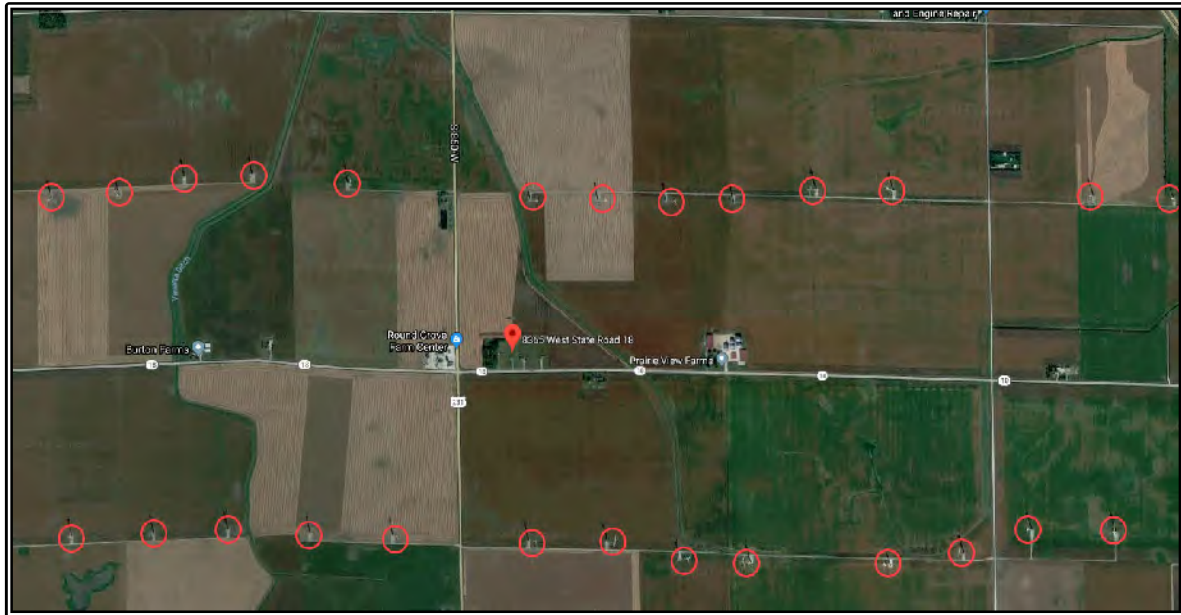
ADJUSTMENT GRID MATCHED PAIR NO. 4										
SALE NO.	ADDRESS	SALE DATE	YEAR BUILT	BUILDING SIZE	LOT SIZE	LOCATION	STYLE	BASEMENT	UTILITIES	OUT-BUILDINGS
4B	6215 Lamb Road Wyoming, New York	+	o	o	+	+	o	+	o	o
+	Positive adjustment based on comparable being inferior in comparison to property #3A									
-	Negative adjustment based on comparable being superior in comparison to property #3A									
o	No adjustment necessary									

Given the similarities of the two properties, despite the lot size and 3069 Washburn Road being associated with a wind turbine, the analysis of the sales at 3069 Washburn Road and at 6215 Lamb Road does not support a finding that the proximity to the wind turbines had a negative impact on the value of the 3069 Washburn Road property.

#### Indiana Analysis - White County Matched Pair No. 1

White County Matched Pair No. 1 considers the sale of a house located at 8365 West State Road 18, Brookston, that sold in December 2017 for \$159,900. This house is located approximately 2,340 feet from the nearest turbine of the Meadow Lake Wind Farm, and there are several turbines visible in each direction.

The following photograph is an aerial view of the turbines visible surrounding the house.



This property is compared with a similar property located at 1105 South Airport Road, Monticello, that sold in December 2017 for \$173,200. This property is not located near wind turbines. Both properties are situated in rural locations. The salient details of these two properties are summarized in the table below.

#### WHITE COUNTY MATCHED PAIR NO. 1

	1A - Proximate to a Wind Turbine	1B - Not Proximate to a Wind Turbine
Address	8365 W State Road 18 Brookston, IN 47923	1105 S Airport Rd. Monticello, IN 47960
Distance from Turbine (Ft.)	2,340	N/A
Sale Date	December 27, 2017	December 18, 2017
Sale Price	\$159,900	\$173,200
Sale Price/Sq. Ft. (A.G.)	\$90.34	\$70.78
Year Built	2003	1927
Building Size (Sq. Ft.)	1,770	2,447
Lot Size (Acres)	2.09	1.64
Style	One-story; frame (brick) 3 bedrooms, 2 bath	Two-story; frame (vinyl) 5 bedrooms, 2.5 bath
Basement	Crawlspace	Partial/Crawlspace
Utilities	Central-air cooling; forced-air heating; well & septic	Central-air Cooling; other heating; well & septic
Other	2-car attached garage; deck	1-car attached garage; 2-car detached garage; pool



8365 West State Road 18



1105 South Airport Road

The house at 8365 West State Road 18, is located approximately 2,400 feet away from the nearest turbine, in a rural area. Both houses are of a similar rural location, have similar utilities, and were sold in similar market conditions. The 8365 West State Road 18 property is of superior vintage and superior lot size. The 1105 South Airport Road property is of superior building size, superior building style, and has a superior basement and outbuildings.

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**ADJUSTMENT GRID MATCHED PAIR NO. 1**

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SALE NO.	ADDRESS	SALE DATE	YEAR BUILT	BUILDING SIZE	LOT SIZE	LOCATION	STYLE	BASEMENT	UTILITIES	OUT-BUILDINGS
1B	1105 S Airport Rd. Monticello, IN 47960	o	+	-	+	o	-	-	o	-
+	Positive adjustment based on comparable being inferior in comparison to property #1A									
-	Negative adjustment based on comparable being superior in comparison to property #1A									
o	No adjustment necessary									

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Upward adjustments are made to the 1105 South Airport Road property for the superior vintage and the larger lot size of the 8365 West State Road 18 property. Downward adjustments are made for the superior building size, building style, basement, and outbuildings of the 1105 South Airport Road property compared to the 8365 West State Road 18 property. The two properties have essentially the same location, utilities, and were sold in similar market conditions. Therefore, although the 1105 South Airport Road property give the impressions of being superior in many categories, the much higher per square foot sale price for the 8365 West State Road 18 property appears to not support a finding that there is a negative impact on value resulting from the proximity of the 8365 West State Road 18 property to a wind turbine.

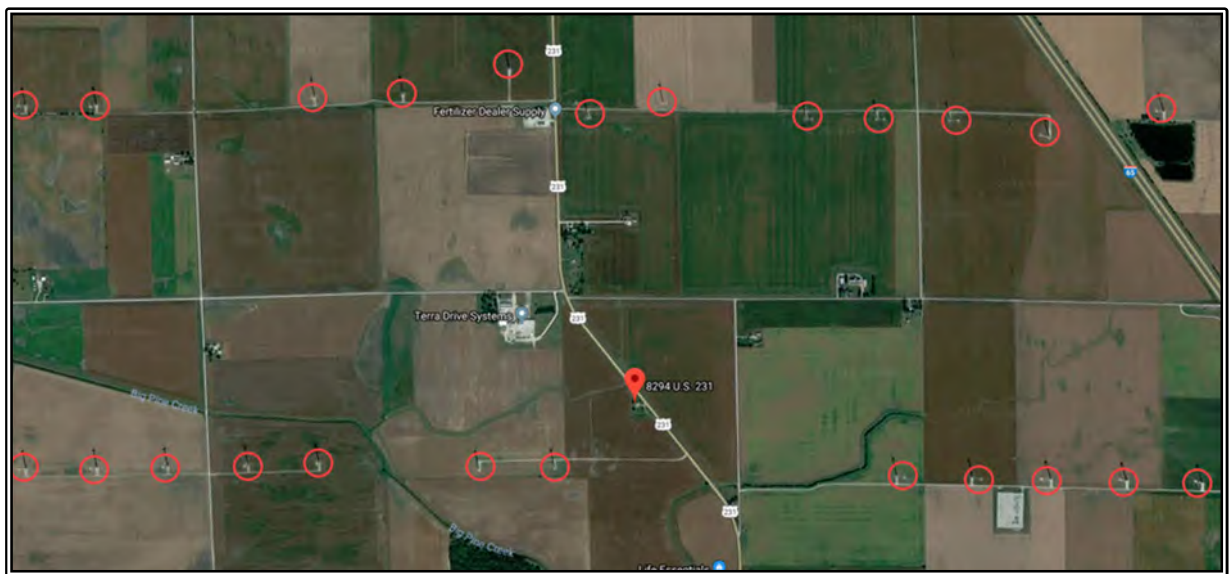


## Indiana Analysis - White County Matched Pair No. 2

White County Matched Pair No. 2 considers the sale of a house located at 8294 South US Highway 231, Brookston, that sold in September 2016 for \$157,000. This house is located approximately 1,410 feet from the nearest turbine of the Meadow Lake Wind Farm, and there are several turbines visible in each direction.

This property is compared with a similar property located at 6288 East Ash Court, Lynn Center, that sold in December 2016 for \$259,000. This property is not located near wind turbines. Market conditions are considered to be similar. The salient details of these two properties are summarized in the following table.

The following photograph is an aerial view of the turbines visible surrounding the house.



## WHITE COUNTY MATCHED PAIR NO. 2

	2A - Proximate to a Wind Turbine	2B - Not Proximate to a Wind Turbine
Address	8294 S US Highway 231 Brookston, IN 47923	6288 E Ash Ct. Monticello, IN 47960
Distance from Turbine (Ft.)	1,410	N/A
Sale Date	September 23, 2016	June 22, 2017
Sale Price	\$157,000	\$150,800
Sale Price/Sq. Ft. (A.G.)	\$80.60	\$59.23
Year Built	1926	1968
Building Size (Sq. Ft.)	1,948	2,546
Lot Size (Acres)	1.35	1.44
Style	One-story; frame (vinyl)	Two-story; frame (vinyl/brick)
Basement	5 bedrooms, 2 bath Crawlspace	5 bedrooms, 2.5 bath Crawlspace
Utilities	Central-air Cooling; forced-air heating; well & septic	Central-air Cooling; forced-air heating; well & septic
Other	2-car attached garage	1-car attached garage; 2-car detached garage; deck



8294 South US Highway 231

6288 East Ash Court



The house at 8294 South US Highway 231, is located approximately 1,410 feet away from the nearest turbine, in a rural area. Both houses are of similar lot size, similar rural location, have similar basements, and have similar utilities. The 6288 East Ash Court property is of superior building size, building style, vintage, outbuildings, and was sold in superior market conditions.

ADJUSTMENT GRID MATCHED PAIR NO. 2										
SALE NO.	ADDRESS	SALE DATE	YEAR BUILT	BUILDING SIZE	LOT SIZE	LOCATION	STYLE	BASEMENT	UTILITIES	OUT-BUILDINGS
2B	6288 E Ash Ct. Monticello, IN 47960	-	-	-	o	o	-	o	o	-
+	Positive adjustment based on comparable being inferior in comparison to property #2A									
-	Negative adjustment based on comparable being superior in comparison to property #2A									
o	No adjustment necessary									

Downward adjustments were made for the superior market conditions, vintage, building size, building style, and outbuildings of the 6288 East Ash Court property compared to the 8294 South US Highway 231 property. The two properties have essentially the same location, lot size, basement, and utilities. Therefore, although the 6288 East Ash Court property give the impressions of being superior in many categories, the much higher per square foot sale price for the 8294 South US Highway 231 property appears to support the conclusion that there is not any negative impact in value resulting from the proximity of the 8294 South US Highway 231 property to a wind turbine.

### Illinois Analysis - Macon County Matched Pair No. 1

Macon County Matched Pair No. 1 considers the recent sale of a property located at 8873 North Glasgow Road, Warrensburg, that is 1,855 feet from the nearest wind turbine located within the subject, the Seneca Wind Farm, with approximately four additional turbines visible from the property to the north and west.

This sale is compared with a similar property located at 1511 Hunters View Drive, Mount Zion, that sold in June 2013. The location is in a suburban setting, but the area is still very rural in nature. The salient details of these two properties are summarized in the table below.

### MACON COUNTY MATCHED PAIR NO. 1

	1A - Proximate to a Wind Turbine	1A - Prior Sale	1B - Not Proximate to a Wind Turbine
Address	8873 North Glasgow Rd. Warrensburg, IL 62573	8873 North Glasgow Rd. Warrensburg, IL 62573	1511 Hunters View Dr. Mount Zion, IL 62549
Distance from Turbine (Ft.)	1,855	NA	NA
Sale Date	June 12, 2017	March 25, 2014	June 31, 2013
Sale Price	\$214,000	\$184,000	\$193,000
Sale Price/Sq. Ft. (A.G.)	\$124.35	\$106.91	\$91.90
Year Built	2006	2006	2006
Building Size (Sq. Ft.)	1,721	1,721	2,100
Lot Size (Acres)	1.04	1.35	0.21
Style	1-story, frame (vinyl) 4 bedrooms, 2 bath	1-story, frame (vinyl) 3 bedrooms, 2 bath	2-story, frame (vinyl/brick) 4 bedrooms; 2.1 bath
Basement	Full; partially finished	Full; unfinished	Full; finished
Utilities	Geothermal heat & cooling; Well & septic	Geothermal heat & cooling; Well & septic	Central Air; Forced-air heat; Public Sewer
Other	2.5-car attached garage; front porch and deck	2.5-car attached garage; front porch	3-car attached garage; patio



8873 North Glasgow Road

1511 Hunters View Drive



The house at 8873 North Glasgow Road, is located approximately 8 miles northwest of Decatur, in a rural area. According to the Macon County Assessor's records, this house previously sold in March 2014 for \$184,000. This indicates an increase in value of approximately 16 percent during a period in which residential sale prices generally were not increasing. There is no lease for a wind turbine on this property. According to the most recent selling broker, there was an issue with the well test; the yard was dug up to find the well and to treat the problem. The yard has since returned to normal condition. The broker also stated that the house is in excellent condition and showed very well. The sellers added a wrap-around deck and finished part of the basement to add a fourth bedroom. The seller was being relocated and was offered a low price for the relocation fee; the sellers put the house on the market on their own and were able to sell it almost immediately for greater than the asking price. The broker stated that the turbine being installed proximate to the property is a possible reason for the quick sale at a higher price, which indicates that having a turbine close to this property potentially had a positive effect on the sale.

The house on Hunters View Drive has a similar, rural location, yet is situated in a suburban setting, and is approximately 4 miles south of Decatur. Although this house sits on a smaller lot than the Glasgow Road property, this is offset by the extra bedroom and by the second floor. The property is not near a wind farm.

ADJUSTMENT GRID MATCHED PAIR NO. 1										
SALE NO.	ADDRESS	SALE DATE	YEAR BUILT	BUILDING SIZE	LOT SIZE	LOCATION	STYLE	BASEMENT	UTILITIES	OUT-BUILDINGS
1B	1511 Hunters View Drive Mount Zion, Illinois	+	o	-	+	-	o	o	+	o
+	Positive adjustment based on comparable being inferior in comparison to property #1A									
-	Negative adjustment based on comparable being superior in comparison to property #1A									
o	No adjustment necessary									

The comparison will be made to the June 2017 date of sale because it is most similar to the sale of the Hunters View Drive property.

Upward adjustments are made for the superior market conditions, larger lot size, and geothermal heating and cooling system of the Glasgow Road property. Downward adjustments are made for the superior building size of the Hunters View Drive property. When the adjustments noted above are made to the sale price of the Glasgow Road property, the two properties have essentially the same per square foot value. Therefore, although the Hunters View Drive house is larger, the higher per foot sales price for the Glasgow Road property is justified by its superior condition and amenities, and its larger lot size. Thus, the difference in the sales price does not support the conclusion that there is any diminution in value resulting from the proximity of the Glasgow Road property to wind turbines. This is further supported by the subsequent sale of the Glasgow Road property, at which time the 2017 sale price increased by \$17.44 per square foot over the 2014 sale price.

### Illinois Analysis - McLean County Matched Pair No. 1

McLean County Matched Pair No. 1 considers the sale of a house located at 29394 E 850 North Road, Ellsworth, that sold in November 2015 for \$207,000. This house is located approximately 1,865 feet from the nearest turbine, and there are several turbines visible to the north and east. The following photograph is of the turbines visible from the house, with the majority visible in the distance.



This property is compared with a similar property located at 26298 E 1000 North Road, Downs, that sold in March 2015 for \$220,000. This property is not located near wind turbines; however, there are some visible more than 1 mile to the east. Market conditions are considered to be similar. Both properties are situated in rural locations. The salient details of these two properties are summarized in the table below.



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**MCLEAN COUNTY MATCHED PAIR NO. 1**

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	<b>1A - Proximate to a Wind Turbine</b>	<b>1B - Not Proximate to a Wind Turbine</b>
Address	29394 E 850 North Rd. Ellsworth, IL 61737	26298 E 1000 North Rd. Downs, IL 61736
Distance from Turbine (Ft.)	1,865	N/A
Sale Date	November 17, 2015	March 11, 2015
Sale Price	\$207,000	\$220,000
Sale Price/Sq. Ft. (A.G.)	\$86.25	\$82.71
Year Built	1978	1978
Building Size (Sq. Ft.)	2,400	2,660
Lot Size (Acres)	1.70	2.49
Style	Two-story, frame (vinyl/brick) 4 bedrooms; 2 bath	Two-story, frame (vinyl) 4 bedrooms; 2 bath
Basement	Full, finished	Full, finished
Utilities	Central air; Propane heat; Well & septic	Central air; Propane heat; Well & septic
Other	2.-car detached garage; patio, deck, small shed	2.5-car attached garage; large storage shed

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29394 E 850 North Road



26298 E 1000 North Rd.

Both houses are of similar construction type, vintage, and size. Both had been updated recently, with the house at 29394 E 850 North Road having been updated more extensively than the other. Both have finished basements; however, basement build-out in the house at 26298 E 1000 North Road is not completely finished. The house at 26298 E 1000 North Road has a large shed with a drive-in door. The superior interior features and the larger shed are offset by the approximately ½-acre larger site size of the property at 26298 E 1000 North Road. Both houses are located on paved roads.

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**ADJUSTMENT GRID MATCHED PAIR NO. 1**

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SALE NO.	ADDRESS	SALE DATE	YEAR BUILT	BUILDING SIZE	LOT SIZE	LOCATION	STYLE	BASEMENT	UTILITIES	OUT-BUILDINGS
1B	26298 E 1000 North Rd. Downs, Illinois	o	o	o	-	o	o	o	o	-
+	Positive adjustment based on comparable being inferior in comparison to property #1A									
-	Negative adjustment based on comparable being superior in comparison to property #1A									
o	No adjustment necessary									

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The analysis of the sales at 29394 E 850 North Road and at 26298 E 1000 North Road does not support a finding that the proximity to the wind turbines had a negative impact on value.

**Illinois Analysis - McLean County Matched Pair No. 2**

McLean County Matched Pair No. 2 considers the sale of a house located at 25156 E 1400 North Road, Ellsworth, that sold in November 2015 for \$196,000. This house is located approximately 2,210 feet from the nearest turbine, but there are several turbines proximate to the south, southeast, and southwest.

The following photograph is of the turbines visible from the property.



This property is compared with a similar property located at 787 E 1300 North Road, Sibley, that sold in March 2015 for \$125,000. This property is not located near wind turbines. Market conditions are considered to be similar. Although this property is located in Ford County, both properties have similar, rural locations. The salient details of these two properties are summarized in the table below.



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**MCLEAN COUNTY MATCHED PAIR NO. 2**

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	<b>2A - Proximate to a Wind Turbine</b>	<b>2B - Not Proximate to a Wind Turbine</b>
Address	25156 E 1400 North Rd. Ellsworth, IL 61737	787 E 1300 North Rd. Sibley, IL 61773
Distance from Turbine (Ft.)	2,210	N/A
Sale Date	November 1, 2015	March 13, 2015
Sale Price	\$196,000	\$125,000
Sale Price/Sq. Ft. (A.G.)	\$66.58	\$49.56
Year Built	1890	1900
Building Size (Sq. Ft.)	2,944	2,522
Lot Size (Acres)	4.14	3.36
Style	1.5-story, frame (vinyl) 4 bedrooms; 2 bath	Two-story, frame (vinyl) 4 bedrooms; 2 bath
Basement	Full, finished	Full, partially finished
Utilities	Central air; Propane heat; Well & septic	Central air; Propane heat; Well & septic
Other	1-car attached garage; porch; machine shop	2.-car detached garage; deck, large shed

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25156 E 1400 North Road

787 E 1300 North Road



Both houses are of similar construction type, vintage, and size. Both have been remodeled in the recent past. The E 1400 North Road property has a large freestanding garage/machine shed that has water and electricity, which is superior to the older shed on the site of the E 1300 North Road property. Also, the site size of the E 1400 North Road property is approximately  $\frac{3}{4}$  acre larger than the E 1300 North Road property. Both factors are reflected in its higher sale price.

ADJUSTMENT GRID MATCHED PAIR NO. 2										
SALE NO.	ADDRESS	SALE DATE	YEAR BUILT	BUILDING SIZE	LOT SIZE	LOCATION	STYLE	BASEMENT	UTILITIES	OUT-BUILDINGS
2B	787 E 1300 North Rd. Sibley, Illinois	o	o	+	+	o	o	o	o	o
+	Positive adjustment based on comparable being inferior in comparison to property #2A									
-	Negative adjustment based on comparable being superior in comparison to property #2A									
o	No adjustment necessary									

The analysis of the sales at 25156 E 1400 North Road and 787 E 1300 North Road does not support a finding that the proximity to the wind turbines had a negative impact on value.

### Illinois Analysis - McLean County Matched Pair No. 3

McLean County Matched Pair No. 3 considers the sale of a house located at 25017 E 1400 North Road, Ellsworth, that sold in September 2015 for \$159,000. This house is located approximately 1,573 feet from the nearest turbine, and there are several turbines proximate to the south, southeast, and southwest.

The following photograph is of the turbines visible from the property.



This property is compared with a similar property located at 10837 Yankee Town Road, Farmer City, that sold in October 2016 for \$134,000. This property is not located near wind turbines. Market conditions are considered to be slightly superior at the date of sale of this property. Although this house is located in DeWitt County, both properties have similar rural locations. The salient details of these two properties are summarized in the table below.

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**MCLEAN COUNTY MATCHED PAIR NO. 3**

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	<b>3A - Proximate to a Wind Turbine</b>	<b>3B - Not Proximate to a Wind Turbine</b>
Address	25017 E 1400 North Rd. Ellsworth, IL 61737	10837 Yankee Town Rd. Farmer City, IL 61842
Distance from Turbine (Ft.)	1,573	N/A
Sale Date	September 3, 2015	October 3, 2016
Sale Price	\$159,000	\$134,000
Sale Price/Sq. Ft. (A.G.)	\$81.45	\$68.37
Year Built	1880	1908
Building Size (Sq. Ft.)	1,952	1,960
Lot Size (Acres)	2.87	4.00
Style	Two-story, frame (vinyl) 4 bedrooms; 2 bath	Two-story, frame (vinyl) 4 bedrooms; 2 bath
Basement	Full, finished	Full, finished
Utilities	Central air; Propane heat; Well & septic	Central air; Propane heat; Well & septic
Other	No separate garage; large shed with drive-in doors; other farm buildings	No separate garage; large shed with drive-in doors; other farm buildings

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25017 E 1400 North Road

10837 Yankee Town Road



Both houses are of similar construction type, vintage, and size. Both have been remodeled and updated. Neither property has a garage; both have large buildings with drive-in doors for cars and other equipment. Both properties have other farm buildings on the site. The Yankee Town Road property has a site that is approximately 1.25 acres larger than that of the E1400 North Road property.

ADJUSTMENT GRID MATCHED PAIR NO. 3										
SALE NO.	ADDRESS	SALE DATE	YEAR BUILT	BUILDING SIZE	LOT SIZE	LOCATION	STYLE	BASEMENT	UTILITIES	OUT-BUILDINGS
3B	10837 Yankee Town Rd. Farmer City, Illinois	-	o	o	-	o	o	o	o	o
+	Positive adjustment based on comparable being inferior in comparison to property #3A									
-	Negative adjustment based on comparable being superior in comparison to property #3A									
o	No adjustment necessary									

The analysis of the sales at 25017 E 1400 North Road and 10837 Yankee Town Road does not support a finding that the proximity to wind turbines had a negative impact on value.

### **Illinois Analysis - Livingston County Matched Pair No. 1**

Livingston County Matched Pair No. 1 considers the sale of a property in Livingston County that is located proximate to the Cayuga Ridge Wind Farm. Cayuga Ridge construction began in 2009, and the wind farm came fully online in March 2010. The house at 23090 N 2500 East Road, Odell, is 2,322 feet east of a wind turbine, 3,229 feet west of a wind turbine, and 3,440 feet south of a wind turbine. The following photograph illustrates the location of this house (on the right in the picture) relative to the nearest turbines.



This sale is compared with a similar property located at 16101 E 1400 North Road in Pontiac that is not proximate to a wind turbine. The salient details of these two properties are summarized in the table below.

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**LIVINGSTON COUNTY MATCHED PAIR NO. 1**

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	<b>1A - Proximate to a Wind Turbine</b>	<b>1B - Not Proximate to a Wind Turbine</b>
Address	23090 N 2500 East Rd. Odell, IL 60460	16101 E 1400 North Rd. Pontiac, IL 61764
Distance from Turbine (Ft.)	2,322	N/A
Sale Date	August 15, 2013	November 18, 2013
Sale Price	\$205,000	\$167,500
Sale Price/Sq. Ft. (A.G.)	\$108.41	\$89.33
Year Built	1971	1967
Building Size (Sq. Ft.)	1,891	1,875
Lot Size (Acres)	3.63	3.27
Style	One-story; brick 4 bedrooms, 1.1 bath	One-story; brick 3 bedrooms, 2 bath
Basement	Full, partially finished	Crawlspace
Utilities	Central air; Electric heat; Well & septic	Central air; Propane heat; Well & septic
Other	2.-car detached garage; 2 pole barns; 60 x 90 shed (subsequently demolished)	1-car attached garage; 30 x 40 shed; 64 x 42 machine shop

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23090 N 2500 East Road



16101 E 1400 North Road

Both properties are located in the Pontiac High School district. The lot sizes are similar; however, the Odell property is approximately 1/3-acre larger. The houses are of similar construction vintage and are of equivalent size. The condition of both is assumed to be similar. The Odell property has an additional bedroom and is superior in that it has a full, partially finished basement and a larger garage. However, the Pontiac property has two full bathrooms, a first-floor laundry room, and propane gas heat. The outbuildings of the Odell property were in poor condition and were demolished subsequent to the sale; therefore, the Pontiac property is considered superior in that regard, which offsets the smaller size of the garage.

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**ADJUSTMENT GRID MATCHED PAIR NO. 1**

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SALE NO.	ADDRESS	SALE DATE	YEAR BUILT	BUILDING SIZE	LOT SIZE	LOCATION	STYLE	BASEMENT	UTILITIES	OUT-BUILDINGS
1B	16101 E 1400 North Rd. Pontiac, Illinois	o	o	o	o	o	o	+	o	o
+	Positive adjustment based on comparable being inferior in comparison to property #1A									
-	Negative adjustment based on comparable being superior in comparison to property #1A									
o	No adjustment necessary									

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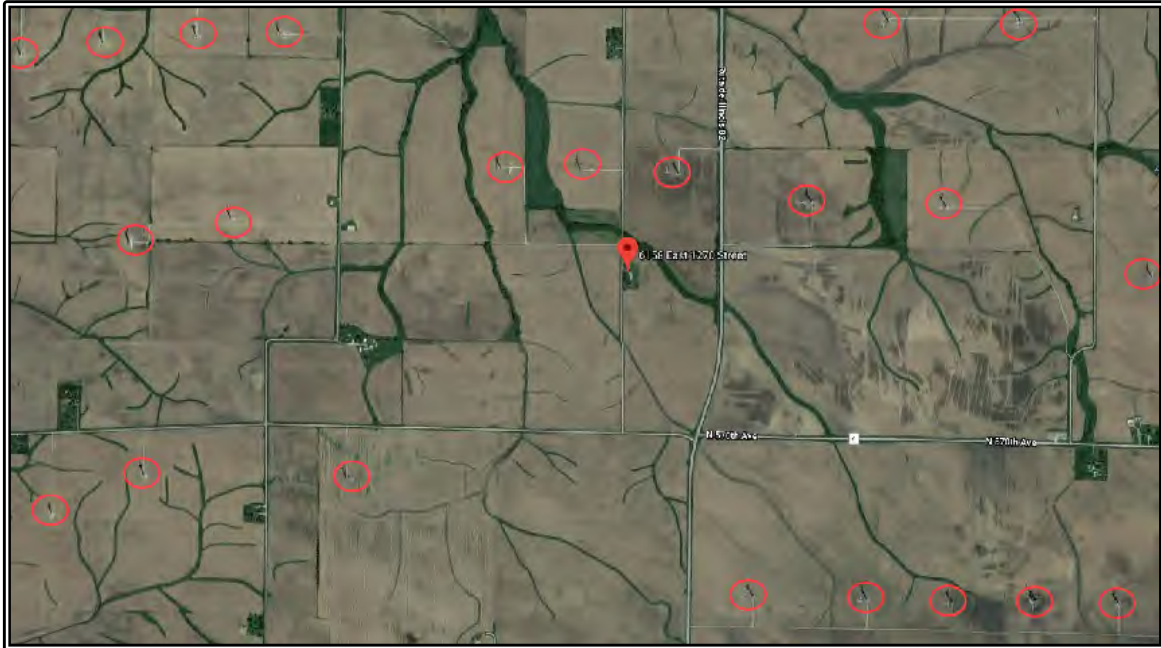
Overall, although the Odell property is somewhat superior to the Pontiac property, the differences do not justify a finding that there is any diminution in value resulting from the proximity of the Odell sale to wind turbines.

### **Illinois Analysis - Henry County Matched Pair No. 1**

Henry County Matched Pair No. 1 considers the sale of a house located at 6158 East 1270<sup>th</sup> Street, Cambridge, that sold in April 2016 for \$120,000. This house is located approximately 1,610 feet from the nearest turbine, and there are several turbines visible in each direction.

The following photograph is an aerial view of the turbines visible surrounding the house.





This property is compared with a similar property located at 17675 N 400th Avenue, Cambridge, that sold in March 2017 for \$110,000. This property is not located near wind turbines; however, there are some visible more than 1 mile to the west. Market conditions are considered to be similar. Both properties are situated in rural locations. The salient details of these two properties are summarized in the table below.



## HENRY COUNTY MATCHED PAIR NO. 1

	1A - Proximate to a Wind Turbine	1B - Not Proximate to a Wind Turbine
Address	6158 E 1270 <sup>th</sup> St. Cambridge, IL 61238	17675 N 400 <sup>th</sup> Ave. Cambridge, IL 61238
Distance from Turbine (Ft.)	1,610	N/A
Sale Date	April 29, 2016	March 1, 2017
Sale Price	\$120,000	\$110,000
Sale Price/Sq. Ft. (A.G.)	\$63.03	\$73.33
Year Built	1907	1907
Building Size (Sq. Ft.)	1,904	1,500
Lot Size (Acres)	1.20	5.00
Style	Two-story; frame (vinyl) 3 bedrooms, N/A bath	Two-story; frame (vinyl) 3 bedrooms, 2 bath
Basement	N/A	N/A
Utilities	Well & septic	Forced-air heat; Well & septic
Other	2-car detached garage; workshop attached to garage; pole barn	2-car detached garage; Chicken coop; Tree farm and small orchard



6158 E 1270<sup>th</sup> Street



17675 N 400<sup>th</sup> Avenue

Both houses are of similar construction type, vintage, and market condition. Both houses were constructed in 1907, but the 400<sup>th</sup> Avenue house appears to be in better condition. Both do not have basements; however, both have the same number of bedrooms. The 1270<sup>th</sup> Street house has a large two-car garage with an added large area on the north end of the garage that could be used as a workshop and a separate barn. The superior size and the superior outbuildings of the 1270<sup>th</sup> Street property are offset by the approximately 4½-acre larger site size, the superior utilities, and the site amenities of the 400<sup>th</sup> Avenue property.

ADJUSTMENT GRID MATCHED PAIR NO. 1										
SALE NO.	ADDRESS	SALE DATE	YEAR BUILT	BUILDING SIZE	LOT SIZE	LOCATION	STYLE	BASEMENT	UTILITIES	OUT-BUILDINGS
1B	17675 N 400th Ave. Cambridge, Illinois	O	O	+	-	O	O	O	+	O
+	Positive adjustment based on comparable being inferior in comparison to property #1A									
-	Negative adjustment based on comparable being superior in comparison to property #1A									
O	No adjustment necessary									

The analysis of the sales at 6158 East 1270<sup>th</sup> Street and at 17675 N 400<sup>th</sup> Avenue does not support a finding that the proximity to the wind turbines had a negative impact on value.

### South Dakota Analysis - Brookings County Matched Pair No. 1

The Buffalo Ridge Wind Farms are located in Brookings County in the East-Central region of South Dakota and consist of 129 turbines that began commercial operations in 2009. Both phases I and II are located primarily in Brookings County. Phase I came online in 2009 with 24 turbines generating approximately 50.4 MW of power. Phase II was much larger, following the first phase the next year in 2010 with 105 turbines generating approximately 210 MW of power. A property located at 21088 487<sup>th</sup> Avenue, Elkton, South Dakota, sold in October 2016 for \$183,000. The nearest turbine is approximately 1,028 feet to the south of this property.

This property is compared with a similar property located at 5705 Rathum Loop, Brookings, South Dakota, that sold in June 2015, which is not located proximate to any wind turbines. The salient details of these two properties are summarized in the table below.

The following aerial map illustrates the relationship of the 487<sup>th</sup> Avenue property to the closest wind turbines.



## BROOKINGS COUNTY MATCHED PAIR NO. 1

	1A - Proximate to a Wind Turbine	1B - Not Proximate to a Wind Turbine
Address	21088 487 <sup>th</sup> Ave. Elkton, SD 57026	5705 Rathum Loop Brookings, SD 57006
Distance from Turbine	1,028 Feet	N/A
Sale Date	October 14, 2016	June 5, 2015
Sale Price	\$183,000	\$142,000
Sale Price/Sq. Ft. (A.G.)	\$66.64	\$68.33
Year Built	2003	1973
Building Size (Sq. Ft.)	2,746	2,078
Lot Size (Acres)	8.00	0.49
Style	One-story, frame (vinyl) 5 bedrooms, 3 bath	One-story; frame (vinyl) 3 bedrooms, 1 bath
Basement	Partial	Crawlspace/Partially finished
Utilities	Central air; Forced-air heat; Well & septic	Central air; Forced-air heat; Well & septic
Other	1-car attached garage patio, deck, utility buildings	1-car attached garage; 3-car detached garage; patio, deck, utility buildings



21088 487<sup>th</sup> Avenue

5705 Rathum Loop



Both the 487<sup>th</sup> Avenue property and the Rathum Loop property are ranch-style houses. However, Rathum Loop appears to contain only three bedrooms, whereas 487<sup>th</sup> Avenue has five bedrooms. An upward adjustment of Rathum Loop for the superior building style of 487<sup>th</sup> Avenue is required. In the case of the Rathum Loop property, there are utility buildings, a detached three-car garage, and a one-car attached garage; however, the 487<sup>th</sup> Avenue property has a just one larger utility building and an attached one-car garage. A downward adjustment for the superior outbuildings of Rathum Loop is required. The 487<sup>th</sup> Avenue building is of newer construction, and Rathum Loop is approximately 50 years old. Both properties are considered to be in normal condition by the Brookings County Assessor. An upward adjustment of Rathum Loop is required due to 487<sup>th</sup> Avenue's newer vintage. An upward adjustment is made for the larger building size of the 487<sup>th</sup> Avenue property. The 487<sup>th</sup> Avenue property is also situated on a much larger lot than that of the Rathum Loop property requiring an upward adjustment; however, both lots are surrounded by agricultural and pastureland, which mitigates the size differential to some degree. The Rathum Loop property has a superior location to the 487<sup>th</sup> Street property due to its close proximity to the town of Brookings, requiring a downward adjustment.

Considering the adjustments noted in the following table for the older vintage and smaller size of the Rathum Loop property and for the superior market conditions of the 487<sup>th</sup> Avenue property, the difference in the sale price does not support the conclusion that proximity to the wind turbines had a negative impact on the value of the 487<sup>th</sup> Avenue property.

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**ADJUSTMENT GRID MATCHED PAIR NO. 1**

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SALE NO.	ADDRESS	SALE DATE	YEAR BUILT	BUILDING SIZE	LOT SIZE	LOCATION	STYLE	BASEMENT	UTILITIES	OUT-BUILDINGS
1B	5705 Rathum Loop Brookings, South Dakota	+	+	+	+	-	+	O	O	-
+	Positive adjustment based on comparable being inferior in comparison to property #1A									
-	Negative adjustment based on comparable being superior in comparison to property #1A									
O	No adjustment necessary									

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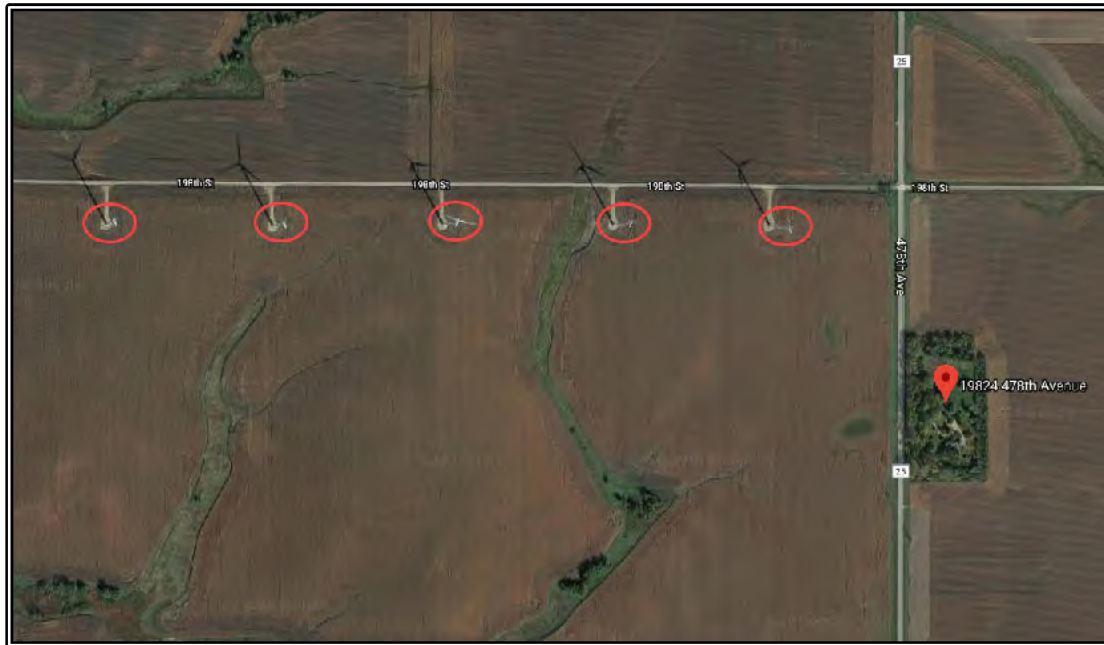
**South Dakota Analysis - Brookings County Matched Pair No. 2**

A property located at 19824 478<sup>th</sup> Avenue, Toronto, South Dakota, sold in March 2011 for \$235,000. The nearest turbine is approximately 1,548 feet to the northwest of this property.

This property is compared with a similar property located at 20485 475<sup>th</sup> Avenue, Brookings, South Dakota, that sold in August 2016, which is not located proximate to any wind turbines. The salient details of these two properties are summarized in the table below.

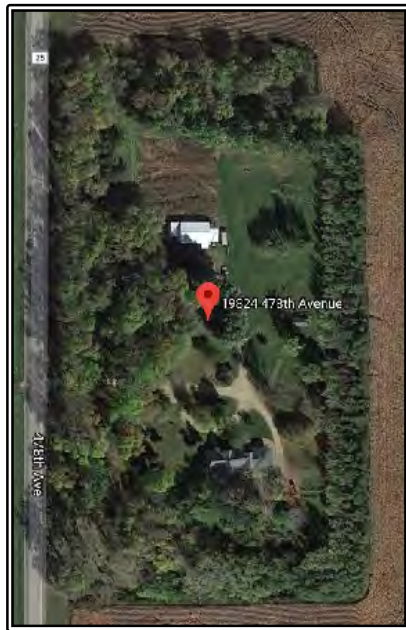
The following aerial map illustrates the relationship of the 478<sup>th</sup> Avenue property to the closest wind turbines.





## BROOKINGS COUNTY MATCHED PAIR NO. 2

	2A - Proximate to a Wind Turbine	2B - Not Proximate to a Wind Turbine
Address	19824 478 <sup>th</sup> Ave. Toronto, SD 57268	20485 475 <sup>th</sup> Ave. Brookings, SD 57002
Distance from Turbine	1,548 Feet	N/A
Sale Date	March 14, 2011	August 10, 2016
Sale Price	\$235,000	\$300,000
Sale Price/Sq. Ft. (A.G.)	\$100.38	\$129.53
Year Built	1998	2016
Building Size (Sq. Ft.)	2,341	2,316
Lot Size (Acres)	9.50	19.10
Style	1.5-story, frame (stone/vinyl) 3 bedrooms, 1.2 bath	One-story; frame (vinyl) 4 bedrooms, 3 bath
Basement	Partial	Full
Utilities	Radiant floor heat; Well & septic	Central air; Geothermal heat; Well & septic
Other	1-car attached garage	3-car attached garage



19824 478<sup>th</sup> Avenue

20485 475<sup>th</sup> Avenue



Although the 478<sup>th</sup> Avenue property is a 1.5-story house and the 475<sup>th</sup> Avenue property is a ranch-style house, the two houses are of equivalent size. In the case of the 475<sup>th</sup> Avenue property, there is an attached three-car garage, while the 478<sup>th</sup> Avenue property has an attached one-car garage. A downward adjustment for the superior outbuildings of 475<sup>th</sup> Avenue is required. The 475<sup>th</sup> Avenue building is of newer construction than 478<sup>th</sup> Avenue property. Both properties are considered to be in normal condition by the Brookings County Assessor. A downward adjustment of 475<sup>th</sup> Avenue is required for its newer vintage, as well as a downward adjustment of 475<sup>th</sup> Avenue for its superior market conditions. The 475<sup>th</sup> Avenue property is situated on a much larger lot than that of the 478<sup>th</sup> Avenue property requiring a downward adjustment; however, both lots are surrounded by agricultural and pastureland, which mitigates the size differential to some degree. The 475<sup>th</sup> Avenue property has a superior location to the 478<sup>th</sup> Avenue property due to its close proximity to the town of Brookings, requiring a downward adjustment.

#### ADJUSTMENT GRID MATCHED PAIR NO. 2

SALE NO.	ADDRESS	SALE DATE	YEAR BUILT	BUILDING SIZE	LOT SIZE	LOCATION	STYLE	BASEMENT	UTILITIES	OUT-BUILDINGS
2B	20485 475 <sup>th</sup> Ave. Brookings, South Dakota	-	-	O	-	-	O	-	-	-
+	Positive adjustment based on comparable being inferior in comparison to property #2A									
-	Negative adjustment based on comparable being superior in comparison to property #2A									
O	No adjustment necessary									

Considering the adjustments noted in the following table for the newer vintage and superior market conditions of the 475<sup>th</sup> Avenue property, the difference in the sale price does not support the conclusion that proximity to the wind turbines had a negative impact on the value of the 478<sup>th</sup> Avenue property.

### South Dakota Analysis - Brookings County Matched Pair No. 3

A property located at 20937 486<sup>th</sup> Avenue, Elkton, South Dakota, sold in December 2011 for \$175,000. The nearest turbine is approximately 1,433 feet to the northeast of this property.

This property is compared with a similar property located at 518 West 44<sup>th</sup> Street S, Brookings, South Dakota, that sold in October 2017, which is not located proximate to any wind turbines. The salient details of these two properties are summarized in the table below.

The following aerial map illustrates the relationship of the 486<sup>th</sup> Avenue property to the closest wind turbines.





### BROOKINGS COUNTY MATCHED PAIR NO. 3

	3A - Proximate to a Wind Turbine	3B - Not Proximate to a Wind Turbine
Address	20937 486 <sup>th</sup> Ave. Elkton, SD 57026	518 W. 44 <sup>th</sup> St. S Brookings, SD 57006
Distance from Turbine	1,433 Feet	N/A
Sale Date	December 1, 2011	October 9, 2017
Sale Price	\$175,000	\$175,900
Sale Price/Sq. Ft. (A.G.)	\$79.26	\$104.70
Year Built	1918	1990
Building Size (Sq. Ft.)	2,208	1,680
Lot Size (Acres)	14.28	4.55
Style	Two-story, frame (vinyl) 4 bedrooms, 2 bath	One-story; frame (vinyl) 3 bedrooms, 2 bath
Basement	Partial	Crawlspace
Utilities	Central air; Forced-air heat; Well & septic	Central air; Forced-air heat; Well & septic
Other	2-car attached garage	2-car detached garage



20937 486<sup>th</sup> Avenue

518 W. 44<sup>th</sup> Street S



The 486<sup>th</sup> Avenue property is a two-story house, and the 44<sup>th</sup> Street South property is a one-story house, and the 486<sup>th</sup> Avenue has an extra bedroom. The superior style and number of bedrooms of the 486<sup>th</sup> Avenue property require an upward adjustment. In the case of the outbuildings, both properties have a two-car garage. The 44<sup>th</sup> Street South building is of newer construction than 486<sup>th</sup> Avenue property, which is 100 years old. Both properties are considered to be in normal condition by the Brookings County Assessor. A downward adjustment of 44<sup>th</sup> Street South is required for its newer vintage, as well as a downward adjustment of 44<sup>th</sup> Street South for its superior market conditions. The 486<sup>th</sup> Avenue property is situated on a much larger lot than that of the 44<sup>th</sup> Street South property requiring an upward adjustment; however, both lots are surrounded by agricultural and pastureland, which mitigates the size differential to some degree.

Considering the adjustments noted in the following table for the newer vintage and superior market conditions of the 44<sup>th</sup> Street South property, the difference in the sale price does not support the conclusion that proximity to the wind turbines had a negative impact on the value of the 486<sup>th</sup> Avenue property.

ADJUSTMENT GRID MATCHED PAIR NO. 3										
SALE NO.	ADDRESS	SALE DATE	YEAR BUILT	BUILDING SIZE	LOT SIZE	LOCATION	STYLE	BASEMENT	UTILITIES	OUT-BUILDINGS
3B	518 W. 44 <sup>th</sup> St. S. Brookings, South Dakota	-	-	+	+	O	+	+	O	O
+	Positive adjustment based on comparable being inferior in comparison to property #3A									
-	Negative adjustment based on comparable being superior in comparison to property #3A									
O	No adjustment necessary									

#### South Dakota Analysis - Brookings County Matched Pair No. 4

A property located at 19636 475<sup>th</sup> Avenue, Toronto, South Dakota, sold in November 2013 for \$530,000. The nearest turbine is approximately 2,309 feet to the southeast of this property.

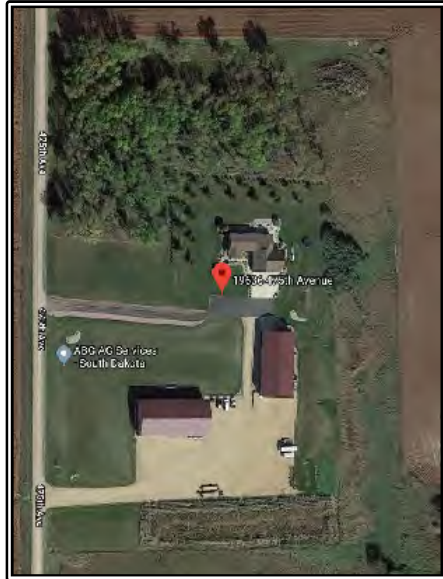
This property is compared with a similar property located at 46246 214<sup>th</sup> Street, Volga, South Dakota that sold in December 2016, which is not located proximate to any wind turbines. The salient details of these two properties are summarized in the table below.

The following aerial map illustrates the relationship of the 475<sup>th</sup> Avenue property to the closest wind turbines.



#### BROOKINGS COUNTY MATCHED PAIR NO. 4

	4A - Proximate to a Wind Turbine	4B - Not Proximate to a Wind Turbine
Address	19636 475 <sup>th</sup> Ave. Toronto, SD 57268	46246 214 <sup>th</sup> St. Volga, SD 57071
Distance from Turbine	2,309 Feet	N/A
Sale Date	November 21, 2013	December 21, 2016
Sale Price	\$530,000	\$317,000
Sale Price/Sq. Ft. (A.G.)	\$151.60	\$182.81
Year Built	1989	2001
Building Size (Sq. Ft.)	3,496	1,734
Lot Size (Acres)	13.00	10.43
Style	One-story; frame (vinyl) 5 bedrooms, 3 bath	One-story; frame (vinyl) 4 bedrooms, 3 bath
Basement	Partial	Full
Utilities	Central air; Forced-air heat; Well & septic	Central air; Geothermal heat; Well & septic
Other	3-car attached garage; two commercial utility buildings; gazebo	1-car attached garage; 2-car detached garage



19636 475<sup>th</sup> Avenue



46246 214<sup>th</sup> Street

Both the 475<sup>th</sup> Avenue property and the 214<sup>th</sup> Street property are a one-story ranch style house. In the case of the outbuildings, the 475<sup>th</sup> Avenue property is superior with two large commercial-style utility buildings and a three-car attached garage compared to the 214<sup>th</sup> Street property with a two-car detached garage and a one-car attached garage. The superiority of the 475<sup>th</sup> Avenue buildings requires an upward adjustment. The 214<sup>th</sup> Street building is of newer construction than 475<sup>th</sup> Avenue property. Both properties are considered to be in normal condition by the Brookings County Assessor. A downward adjustment of 214<sup>th</sup> Street is required for its newer vintage, as well as a downward adjustment of 214<sup>th</sup> Street for its superior market conditions. The 475<sup>th</sup> Avenue property is situated on a larger lot than that of the 214<sup>th</sup> Street property requiring an upward adjustment; however, both lots are surrounded by agricultural and pastureland, which mitigates the size differential to some degree.

Considering the adjustments noted in the following table for the newer vintage and superior market conditions of the 214<sup>th</sup> Street property, the difference in the sale price does not support the conclusion that proximity to the wind turbines had a negative impact on the value of the 475<sup>th</sup> Avenue property.

ADJUSTMENT GRID MATCHED PAIR NO. 4										
SALE NO.	ADDRESS	SALE DATE	YEAR BUILT	BUILDING SIZE	LOT SIZE	LOCATION	STYLE	BASEMENT	UTILITIES	OUT-BUILDINGS
4B	46246 214 <sup>th</sup> St. Volga, South Dakota	-	-	+	+	O	O	-	-	+
+	Positive adjustment based on comparable being inferior in comparison to property #4A									
-	Negative adjustment based on comparable being superior in comparison to property #4A									
O	No adjustment necessary									

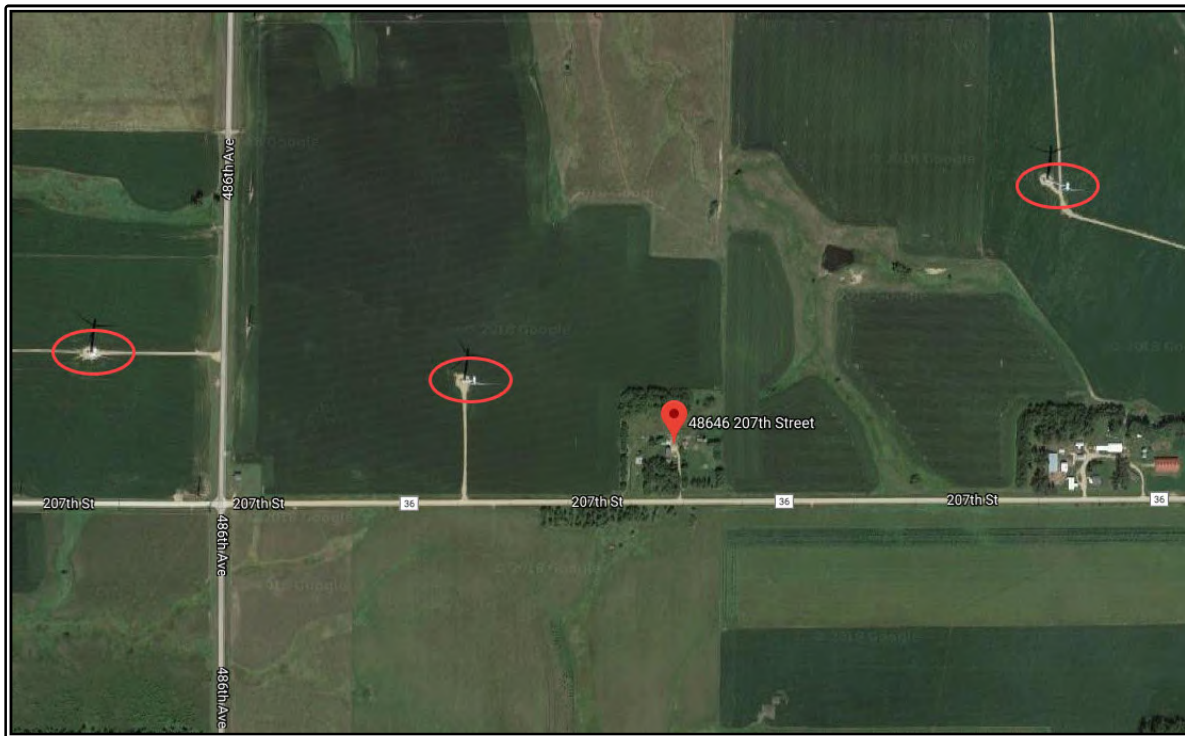


### South Dakota Analysis - Brookings County Matched Pair No. 5

A property located at 48646 207<sup>th</sup> Street, Elkton, South Dakota, sold in March 2014 for \$190,000. The nearest turbine is approximately 1,118 feet to the west of this property.

This property is compared with a similar property located at 5705 Rathum Loop, Brookings, South Dakota, that sold in June 2015, which is not located proximate to any wind turbines. The salient details of these two properties are summarized in the table below.

The following aerial map illustrates the relationship of the 207<sup>th</sup> Street property to the closest wind turbines.



## BROOKINGS COUNTY MATCHED PAIR NO. 5

	5A - Proximate to a Wind Turbine	5B - Not Proximate to a Wind Turbine
Address	48646 207 <sup>th</sup> St. Elkton, SD 57026	5705 Rathum Loop Brookings, SD 57006
Distance from Turbine	1,118 Feet	N/A
Sale Date	March 26, 2014	June 5, 2015
Sale Price	\$190,000	\$142,000
Sale Price/Sq. Ft. (A.G.)	\$87.96	\$68.33
Year Built	1936	1973
Building Size (Sq. Ft.)	2,160	2,078
Lot Size (Acres)	6.95	0.49
Style	Two-story, frame (vinyl) 3 bedrooms, 3 bath	One-story; frame (vinyl) 3 bedrooms, 1 bath
Basement	Partial	Crawlspace/Partially finished
Utilities	Central air; Forced-air heat; Well & septic	Central air; Forced-air heat; Well & septic
Other	1-car attached garage; 2-car detached garage	1-car attached garage; 3-car detached garage; patio, deck, utility buildings



48646 207<sup>th</sup> Street

5705 Rathum Loop



Although the 207<sup>th</sup> Street property is a two-story house and the Rathum Loop property is a ranch-style house, the two houses are of equivalent size. However, an upward adjustment to Rathum Loop is required for the superior building style of 207<sup>th</sup> Street property. In the case of the Rathum Loop property, there are utility buildings, a detached three-car garage, and a one-car attached garage. In comparison, the 207<sup>th</sup> Street property has an attached one-car garage and a detached two-car garage. A downward adjustment for the superior outbuildings of Rathum Loop is required. Although the Rathum Loop building is of newer construction, it is still approximately 50 years old. The 207<sup>th</sup> Street property is closer to 80 years old. Both properties are considered to be in normal condition by the Brookings County Assessor. A downward adjustment of Rathum Loop is required for its newer vintage, as well as a downward adjustment of Rathum Loop for its superior market conditions. The 207<sup>th</sup> Street property is situated on a much larger lot than that of the Rathum Loop property requiring an upward adjustment; however, both lots are surrounded by agricultural and pastureland, which mitigates the size differential to some degree. The Rathum Loop property has a superior location to the 207<sup>th</sup> Street property due to its close proximity to the town of Brookings, requiring a downward adjustment.

Considering the adjustments noted in the following table for the newer vintage and superior market conditions, yet smaller lot size of the Rathum Loop property, the difference in the sale price does not support the conclusion that proximity to the wind turbines had a negative impact on the value of the 207<sup>th</sup> Street property.

ADJUSTMENT GRID MATCHED PAIR NO. 5										
SALE NO.	ADDRESS	SALE DATE	YEAR BUILT	BUILDING SIZE	LOT SIZE	LOCATION	STYLE	BASEMENT	UTILITIES	OUT-BUILDINGS
5B	5705 Rathum Loop Brookings, South Dakota	-	-	O	+	-	+	O	O	-
+	Positive adjustment based on comparable being inferior in comparison to property #5A									
-	Negative adjustment based on comparable being superior in comparison to property #5A									
O	No adjustment necessary									

### South Dakota Analysis - Brookings County Matched Pair No. 6

A property located at 20922 485<sup>th</sup> Avenue, Elkton, South Dakota, sold in August 2010 for \$180,000. The nearest turbine is approximately 1,959 feet to the south, as well as twelve other turbines within approximately a half-mile to the east, of this property.

This property is compared with a similar property located at 46464 218<sup>th</sup> Street, Volga, South Dakota, that sold in November 2014, which is not located proximate to any wind turbines. The salient details of these two properties are summarized in the table below.



The following aerial map illustrates the relationship of the 485<sup>th</sup> Avenue property to the closest wind turbines.



### BROOKINGS COUNTY MATCHED PAIR NO. 6

	6A - Proximate to a Wind Turbine	6B - Not Proximate to a Wind Turbine
Address	20922 485 <sup>th</sup> Ave. Elkton, SD 57026	46464 218 <sup>th</sup> St. Volga, SD 57071
Distance from Turbine	1,959 Feet	N/A
Sale Date	August 4, 2010	November 14, 2014
Sale Price	\$180,000	\$190,600
Sale Price/Sq. Ft. (A.G.)	\$107.14	\$113.45
Year Built	1992	1918
Building Size (Sq. Ft.)	1,680	1,680
Lot Size (Acres)	13.35	15.00
Style	One-story; frame (vinyl) 4 bedrooms, 2 bath	Two-story; frame (vinyl) 5 bedrooms, 2 bath
Basement	Partial	Full
Utilities	Central air; Geothermal heat; Well & septic	Central air; Forced-air heat; Well & septic
Other	1-car attached garage	1-car detached garage



20922 485<sup>th</sup> Avenue



46464 218<sup>th</sup> Street

The 218<sup>th</sup> Street property is a two-story house with five bedrooms, and the 485<sup>th</sup> Avenue property is a one-story ranch style house with four bedrooms. The superior style of the 218<sup>th</sup> Street property requires a downward adjustment. In the case of the outbuildings, both properties have a one-car garage. The 485<sup>th</sup> Avenue building is of newer construction than the 218<sup>th</sup> Street property, which is 100 years old. Both properties are considered to be in normal condition by the Brookings County Assessor. An upward adjustment of 218<sup>th</sup> Street is required for 485<sup>th</sup> Avenue's newer vintage, as well as a downward adjustment of 218<sup>th</sup> Street for its superior market conditions. The 218<sup>th</sup> Street property is situated on a larger lot than that of the 485<sup>th</sup> Avenue property requiring an upward adjustment; however, both lots are surrounded by agricultural and pastureland, which mitigates the size differential to some degree.

Considering the adjustments noted in the following table for the older vintage, yet superior market conditions of the 218<sup>th</sup> Street property, the difference in the sale price does not support the conclusion that proximity to the wind turbines had a negative impact on the value of the 485<sup>th</sup> Avenue property.

#### ADJUSTMENT GRID MATCHED PAIR NO. 6

SALE NO.	ADDRESS	SALE DATE	YEAR BUILT	BUILDING SIZE	LOT SIZE	LOCATION	STYLE	BASEMENT	UTILITIES	OUT-BUILDINGS
6B	46464 218 <sup>th</sup> St. Volga, South Dakota	-	+	O	O	O	-	-	+	O
+	Positive adjustment based on comparable being inferior in comparison to property #6A									
-	Negative adjustment based on comparable being superior in comparison to property #6A									
O	No adjustment necessary									

## Minnesota Analysis - Freeborn County Matched Pair No. 1

Freeborn County, Minnesota, is located north adjacent to central Iowa. Matched Pair #1 considers the sale of a property in the footprint of the Bent Tree Wind Farm in Freeborn County, which has been operational since February 2011. The house is located at 69525 305th Street, Hartland, sold in March 2016. This house is approximately 2,375 feet from the nearest turbine; there are several turbines located to the south and southeast.

This sale is compared with a similar property located at 70308 240th Street, Albert Lea, that sold in May 2016. Wind turbines are visible from the house, but the turbines are more than 1.5 miles away. The location is very rural in nature. Market conditions are considered to be substantially similar at the dates of sale. The salient details of these two properties are summarized in the table below.

FREEBORN COUNTY MATCHED PAIR NO. 1		
	1A - Proximate to a Wind Turbine	1B - Not Proximate to a Wind Turbine
Address	69525 305 <sup>th</sup> Street. Hartland, MN 56042	70308 240 <sup>th</sup> Street. Albert Lea, MN 56007
Distance from Turbine	2,375 Feet	NA
Sale Date	March 31, 2016	May 16, 2016
Sale Price	\$89,000	\$100,000
Sale Price/Sq. Ft. (A.G.)	\$57.12	\$61.80
Year Built	1880	1925
Building Size (Sq. Ft.)	1,558	1,618
Lot Size (Acres)	5.51	4.01
Style	Farmhouse; frame (vinyl) 3 or 4 bedrooms, 2 bath	Farmhouse; frame (vinyl) 3 bedrooms, 2 bath
Basement	Full, unfinished	Partial, unfinished
Utilities	No central air; propane heat; Well & septic	Central air; natural gas heat; Well & septic
Other	2-car detached garage; deck, outbuildings	2.5-car detached garage; deck, outbuildings



69525 305th Street



70308 240th Street

Both properties are older, farm-house style and of frame construction with vinyl siding. They are somewhat similar in size. However, the 240th Street house is superior to the 305th Street house in condition; it is classified by the Assessor as being in better condition and is described in the online listing as having been renovated recently. The 305th Street house does not have central air conditioning, and does not have natural gas available; however, the 240th Street house has both. Both the central air conditioning and the availability of natural gas are considered superior factors for 240<sup>th</sup> Street requiring a downward adjustment. An upward adjustment for the full basement of 305<sup>th</sup> Street compared to the partial basement of 240<sup>th</sup> Street.

The house on 240<sup>th</sup> Street has a site size approximately 1.5 acres smaller than that of the 305<sup>th</sup> Street house. However, this is more than offset by its location on a hard-surface road, as well as the proximity to Interstate 90 access and to the city of Albert Lea.

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**ADJUSTMENT GRID MATCHED PAIR NO. 1**

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SALE NO.	ADDRESS	SALE DATE	YEAR BUILT	BUILDING SIZE	LOT SIZE	LOCATION	STYLE	BASEMENT	UTILITIES	OUT-BUILDINGS
1B	70308 240 <sup>th</sup> St. Albert Lea, Minnesota	O	-	O	O	-	O	+	-	O
+	Positive adjustment based on comparable being inferior in comparison to property #1A									
-	Negative adjustment based on comparable being superior in comparison to property #1A									
O	No adjustment necessary									

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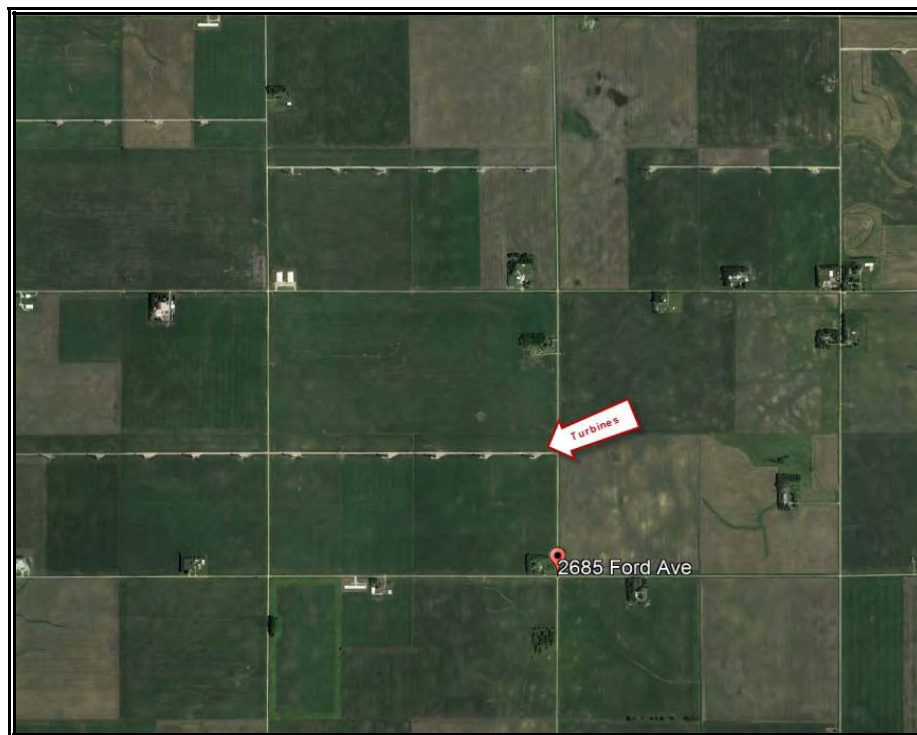
When the adjustments noted above for superior condition, air conditioning, and the availability of natural gas are made to the sale price of the 240th Street house, the two properties have essentially the same per square foot value. In other words, the higher per foot sale price for the 240th Street house is justified by its superior condition and amenities. Thus, the difference in the sale price does not support the conclusion that proximity to the wind turbines had a negative impact on the sale price of the property at 69525 305th Street.

### **Iowa Analysis - Hancock County Matched Pair No. 1**

Hancock County is located in northern Iowa and is a largely rural county, primarily agricultural in nature. The county has two areas of wind turbines, the Hancock County Wind Farm in the southeast portion of Hancock County and the Crystal Lake Energy Center in the northwest portion of Hancock County.

Crystal Lake I Wind Farm is located in Hancock County in north-central Iowa and consists of 100 turbines that began commercial operations in 2008. Phases II and III located primarily in Winnebago County, added another 80 and 44 turbines, respectively, and began operations in approximately 2009. A property located at 2685 Ford Avenue, Britt, sold in May 2016, for \$155,400. The sale previously sold in October 2012 for \$150,000. The nearest turbine is approximately 2,000 feet to the north and west of this property.

The following aerial map illustrates the relationship of the Ford Avenue property to the closest wind turbines.





This property is compared with a similar property located at 2855 Taft Avenue that sold in December 2014 and is not located proximate to any wind turbines. Market conditions between December 2014 and May 2016 are considered to have been stable in this area of Iowa. The salient details of these two properties are summarized in the table below.

<b>HANCOCK COUNTY MATCHED PAIR NO. 1</b>		
	<b>1A - Proximate to a Wind Turbine</b>	<b>1B - Not Proximate to a Wind Turbine</b>
Address	2685 Ford Ave. Britt, IA 50423	2855 Taft Ave. Garner, IA 50438
Distance from Turbine	2,020 Feet	NA
Sale Date	May 20, 2016	December 22, 2014
Sale Price	\$155,400	\$190,000
Sale Price/Sq. Ft. (A.G.)	\$81.62	\$94.25
Year Built	1959	1975
Building Size (Sq. Ft.)	1,904	2,016
Lot Size (Acres)	2.08	1.22
Style	Ranch; frame (metal siding) 3 bedrooms, 2 bath	Split level; frame 3 bedrooms, 2 bath
Basement	Full, finished	None; slab
Utilities	Central air; Well & septic	In-wall air; Electric heat; Well & septic
Other	2-car attached garage; 1-car detached garage; patio, porch, shed	2.5-car attached garage; patio, deck, utility buildings



2685 Ford Avenue



2855 Taft Avenue

Although the Ford Avenue property technically is a ranch-style house, and the Taft Avenue property is a split-level-style house, both properties have lower levels that comprise a family room and an additional room. An upward adjustment for the superior market condition of the Ford Avenue property is made. In the case of the Ford Avenue property, the additional lower-level room is a kitchen, and the basement square footage is not included in the building size, and an upward adjustment is made for this feature. In the case of the Taft Avenue property, the lower level is not below grade, and the area, which includes a family room and a bedroom, is included in the square footage. The Taft Avenue building is of newer construction, and a downward adjustment is made; however, the Ford Avenue property has been adequately maintained. Both properties are considered to be in normal condition by the Hancock County Assessor. An upward adjustment is made for the central air of Ford Avenue compared to the in-wall air of Taft Avenue. The Ford Avenue property is situated on a larger lot than that of the Taft Avenue property; however, both lots have wooded areas along the rear property line, which mitigate the size differential to a large degree.

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**ADJUSTMENT GRID MATCHED PAIR NO. 1**

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SALE NO.	ADDRESS	SALE DATE	YEAR BUILT	BUILDING SIZE	LOT SIZE	LOCATION	STYLE	BASEMENT	UTILITIES	OUT-BUILDINGS
1B	2855 Taft Ave. Garner, Iowa	+	-	O	O	-	+	-	+	O
+	Positive adjustment based on comparable being inferior in comparison to property #1A									
-	Negative adjustment based on comparable being superior in comparison to property #1A									
O	No adjustment necessary									

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When the adjustments noted above for newer construction and the superior above-grade location of the second family room are made to the sale price of the Taft Avenue house, the two properties have essentially the same per square foot value. In other words, the higher per foot sales price for the Taft Avenue house is justified by its superior condition and location. Thus, the difference in the sale price does not support the conclusion that proximity to the wind turbines had a negative impact on the value of the Ford Avenue property.

### **Kansas Analysis - Coffey County Matched Pair No. 1**

Coffey County Matched Pair No. 1 considers the sale of a house located at 2045 Trefoil Road Northeast, Waverly, that sold in November 2018 for \$162,500. This house is located approximately 1,960 feet from the nearest turbine of the Waverly Wind Farm, which came online in 2016, and there are several turbines visible in each direction.

The following photograph is an aerial view of the turbines visible surrounding the house.





This property is compared with a similar property located at 1804 North C Street, Le Roy, that sold in June 2018 for \$120,000. This property is not located near wind turbines. Both properties are situated in rural locations. The salient details of these two properties are summarized in the table below.

<b>COFFEY COUNTY MATCHED PAIR NO. 1</b>		
	<b>1A - Proximate to a Wind Turbine</b>	<b>1B - Not Proximate to a Wind Turbine</b>
Address	2045 Trefoil Rd. NE Waverly, KS 66871	1804 North C St. Le Roy, KS 66857
Distance from Turbine (Ft.)	1,960	N/A
Sale Date	November 19, 2018	June 15, 2018
Sale Price	\$162,500	\$120,000
Sale Price/Sq. Ft. (A.G.)	\$113.80	\$39.53
Year Built	1977	2002
Building Size (Sq. Ft.)	1,428	3,036
Lot Size (Acres)	12.00	0.50
Style	One-story; frame (vinyl) 3 bedrooms, 2 bath	One-story; frame (brick) 4 bedrooms, 3 bath
Basement	Full, unfinished walkout	Full, partial finished
Utilities	Central air; forced-air heat/heat pump; well & septic	Central air; forced-air heating; well & septic
Other	Fully stocked pond	2-car attached garage; 2-car detached garage; porch



2045 Trefoil Road Northeast



1804 North C Street

The house at 2045 Trefoil Road Northeast, is located approximately 1,960 feet away from the nearest turbine, in a rural area. Both houses are located in a similar rural location with paved roads, have similar utilities, have similar basements, and were sold in similar market conditions. The 2045 Trefoil Road Northeast property has a superior lot size. The 1804 North C Street property has a superior vintage, a superior building size, a superior building style, and has superior outbuildings.

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**ADJUSTMENT GRID MATCHED PAIR NO. 1**

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Sale No.	Address	Sale Date	Year Built	Building Size	Lot Size	Location	Style	Basement	Utilities	Out-Buildings
1B	1804 North C St. Le Roy, KS 66857	O	-	-	+	O	-	O	O	-
+	Positive adjustment based on comparable being inferior in comparison to property #1A									
-	Negative adjustment based on comparable being superior in comparison to property #1A									
O	No adjustment necessary									

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Upward adjustments are made to the 1804 North C Street property for the larger lot size of the 2045 Trefoil Road Northeast property. Downward adjustments are made for the superior vintage, building size, building style, and outbuildings of the 1804 North C Street property compared to those features of the 2045 Trefoil Road Northeast property. The two properties have essentially the same location, utilities, and were sold in similar market conditions. Therefore, although the 1804 North C Street property gives the impression of being superior in many categories, the much higher per square foot sale price for the 2045 Trefoil Road Northeast property appears to not support a finding that there is a negative impact on value resulting from the proximity of the 2045 Trefoil Road Northeast property to a wind turbine.

### **Kansas Analysis - Harper County Matched Pair No. 1**

Harper County Matched Pair No. 1 considers the sale of a house located at 330 Northwest 150<sup>th</sup> Road, Harper, that sold in July 2017 for \$385,000. This house is located approximately 1,330 feet from the nearest turbine of the Flat Ridge II Wind Farm, which came online in 2013, and there are several turbines visible in each direction.

This property is compared with a similar property located at 750 Northeast 110<sup>th</sup> Road, Danville, that sold in January 2017 for \$174,900. This property is not located near wind turbines. Market areas are considered to be similar. The salient details of these two properties are summarized in the following table.

The following photograph is an aerial view of the turbines visible surrounding the house.



## HARPER COUNTY MATCHED PAIR NO. 1

	1A - Proximate to a Wind Turbine	1B - Not Proximate to a Wind Turbine
Address	330 NW 150 <sup>th</sup> Rd. Harper, KS 67058	750 NE 110 <sup>th</sup> Rd. Danville, KS 67036
Distance from Turbine (Ft.)	1,330	N/A
Sale Date	July 14, 2017	January 1, 2017
Sale Price	\$385,000	\$174,900
Sale Price/Sq. Ft. (A.G.)	\$120.46	\$73.49
Year Built	1997	1955
Building Size (Sq. Ft.)	3,196	2,380
Lot Size (Acres)	5.20	5.92
Style	One-story; frame (stone)	Two-story; frame (brick)
Basement	5 bedrooms, 4 bath Partial, finished	4 bedrooms, 2 bath N/A
Utilities	Other cooling; forced-air heat; well & septic	Other cooling; other heat; well & septic
Other	2-car attached garage; farm building; pond, deck, patio, fire pit	1-car attached garage; 2-car detached garage; round top building & extra structure



330 Northwest 150<sup>th</sup> Road

750 Northeast 110<sup>th</sup> Road



The house at 330 Northwest 150<sup>th</sup> Road, is located approximately 1,330 feet away from the nearest turbine, in a rural area. The 330 Northwest 150<sup>th</sup> Road property is of superior vintage and superior building size. The 750 Northeast 110<sup>th</sup> Road property has superior outbuildings compared to 330 Northwest 150<sup>th</sup> Road. Both houses were sold in similar market conditions, located in a similar rural location, have similar lot sizes, similar building styles, similar basements, and have similar utilities.

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**ADJUSTMENT GRID MATCHED PAIR NO. 1**

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Sale No.	Address	Sale Date	Year Built	Building Size	Lot Size	Location	Style	Basement	Utilities	Out-Buildings
1B	750 NE 110 <sup>th</sup> Rd. Danville, KS 67036	○	+	+	○	○	○	○	○	-
+	Positive adjustment based on comparable being inferior in comparison to property #1A									
-	Negative adjustment based on comparable being superior in comparison to property #1A									
○	No adjustment necessary									

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Upward adjustments were made for the superior vintage and building size of the 330 Northwest 150<sup>th</sup> Road property compared to the 750 Northeast 110<sup>th</sup> Road property. Downward adjustments were made for the superior outbuildings of the 750 Northeast 110<sup>th</sup> Road property compared to those of the 330 Northwest 150<sup>th</sup> Road property. The two properties have essentially the same market conditions, location, style, basement, and utilities. Therefore, although the two properties give the impression of being similar in many categories, the much higher per square foot sale price for the 330 Northwest 150<sup>th</sup> Road property appears to support the conclusion that there is not any negative impact in value resulting from the proximity of the 330 Northwest 150<sup>th</sup> Road property to a wind turbine.

**Kansas Analysis - Pratt County Matched Pair No. 1**

Pratt County Matched Pair No. 1 considers the sale of a house located at 40206 Southeast 30<sup>th</sup> Street, Pratt, that sold in January 2018 for \$195,000. This house is located approximately 2,710 feet from the nearest turbine of the Ninnescah Wind Farm, which came online in 2016, and there are several turbines visible towards the southern direction of the property.

The following photograph is an aerial view of the turbines visible surrounding the house.





This property is compared with a similar property located at 1517 Eastland Place, Pratt, that sold in December 2017 for \$230,000. This property is not located near wind turbines. Both properties are situated in rural locations. The salient details of these two properties are summarized in the table below.

<b>PRATT COUNTY MATCHED PAIR NO. 1</b>		
	<b>1A - Proximate to a Wind Turbine</b>	<b>1B - Not Proximate to a Wind Turbine</b>
Address	40206 SE 30 <sup>th</sup> St. Pratt, KS 67124	1517 Eastland Pl. Pratt, KS 67124
Distance from Turbine (Ft.)	2,710	N/A
Sale Date	January 29, 2018	December 11, 2017
Sale Price	\$195,000	\$230,000
Sale Price/Sq. Ft. (A.G.)	\$106.56	\$59.85
Year Built	2002	2010
Building Size (Sq. Ft.)	1,830	3,843
Lot Size (Acres)	10.01	0.29
Style	One-story; frame (brick) 3 bedrooms, 2 bath	One-story; frame (brick) 5 bedrooms, 3 bath
Basement	N/A	Full, finished
Utilities	Central air; propane gas heat; well & septic	Central air; forced-air heating; public water & sewer
Other	2-car attached garage; 3-bay work shed & storage building; deck, patio, pool, pond, creek	2-car attached garage; cul-de-sac; porch & deck



40206 Southeast 30<sup>th</sup> Street



1517 Eastland Place

The house at 40206 Southeast 30<sup>th</sup> Street, is located approximately 2,710 feet away from the nearest turbine, in a rural area. Both houses are of similar building styles, are of similar vintage, and were sold in similar market conditions. The 40206 Southeast 30<sup>th</sup> Street property has a superior lot size and superior outbuildings. The 1517 Eastland Place property has a superior building size, a superior basement, a superior location on a paved cul-de-sac, and has superior utilities.

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**ADJUSTMENT GRID MATCHED PAIR NO. 1**

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Sale No.	Address	Sale Date	Year Built	Building Size	Lot Size	Location	Style	Basement	Utilities	Out-Buildings
1B	1517 Eastland Pl. Pratt, KS 67124	O	O	-	+	-	O	-	-	+
+	Positive adjustment based on comparable being inferior in comparison to property #1A									
-	Negative adjustment based on comparable being superior in comparison to property #1A									
O	No adjustment necessary									

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Upward adjustments are made to the 1517 Eastland Place property for the larger lot size and superior outbuildings of the 40206 Southeast 30<sup>th</sup> Street property. Downward adjustments are made for the superior building size, location, basement, and utilities of the 1517 Eastland Place property compared to those features of the 40206 Southeast 30<sup>th</sup> Street property. The two properties have essentially the same style, vintage, and were sold in similar market conditions. Therefore, although the 1517 Eastland Place property gives the impression of being superior in many categories, the much higher per square foot sale price for the 40206 Southeast 30<sup>th</sup> Street property appears to not support a finding that there is a negative impact on value resulting from the proximity of the 40206 Southeast 30<sup>th</sup> Street property to a wind turbine.



### **Kansas Analysis - Ford County Matched Pair No. 1**

Ford County Matched Pair No. 1 considers the sale of a house located at 12396 Backtrail Road, Spearville, that sold in March 2017 for \$235,000. This house is located approximately 6,705 feet, or approximately 1.27 miles, from the nearest turbine of the Spearville Wind Farm, which came online in 2006; however, any distance greater than 4,000 feet, or approximately 0.75 miles, from a turbine cannot be considered proximate and is not considered viable for use in a proper matched pair analysis. Although the distance to the nearest turbine does not allow for a viable analysis, the lack of population and sales performed at arm's length created the need for the analysis of data that is beyond what is deemed typical for a matched pair sales analysis.

This property is compared with a similar property located at 11447 U.S. Highway 50, Wright, that sold in February 2016 for \$145,000. This property is not located near wind turbines. Both properties are situated in rural locations. The salient details of these two properties are summarized in the table below.

The following photograph is an aerial view of the turbines visible surrounding 12396 Backtrail Road.



## FORD COUNTY MATCHED PAIR NO. 1

	1A - Proximate to a Wind Turbine	1B - Not Proximate to a Wind Turbine
Address	12396 Backtrail Rd. Spearville, KS 67876	11447 U.S. Hwy. 50 Wright, KS 67882
Distance from Turbine (Ft.)	6,705	N/A
Sale Date	March 17, 2017	February 8, 2016
Sale Price	\$235,000	\$145,000
Sale Price/Sq. Ft. (A.G.)	\$167.86	\$92.47
Year Built	2001	1999
Building Size (Sq. Ft.)	1,400	1,568
Lot Size (Acres)	6.62	9.00
Style	One-story; frame (wood) 3 bedrooms, 3 bath	One-story; frame (vinyl) 3 bedrooms, 2 bath
Basement	Full, finished	Partial
Utilities	Other cooling; other heating; well & septic	Other cooling; other heating; well & septic
Other	10-car attached garage; deck	2-car attached garage; carport; deck



12396 Backtrail Road

11447 U.S. Highway 50



The house at 12396 Backtrail Road, is located approximately 6,705 feet away from the nearest turbine, in a rural area. Both houses are located in a similar rural location, have a similar building style, have similar utilities, and have similar vintage. The 12396 Backtrail Road property was sold in superior market conditions, has a superior basement, and has superior outbuildings compared to the 11447 U.S. Highway 50 property. The 11447 U.S. Highway 50 property has a superior building size and a superior lot size compared to the 12396 Backtrail Road property.

ADJUSTMENT GRID MATCHED PAIR NO. 1										
Sale No.	Address	Sale Date	Year Built	Building Size	Lot Size	Location	Style	Basement	Utilities	Out-Buildings
1B	11447 U.S. Hwy. 50 Wright, KS 67882	+	O	-	-	O	O	+	O	+
+	Positive adjustment based on comparable being inferior in comparison to property #1A									
-	Negative adjustment based on comparable being superior in comparison to property #1A									
O	No adjustment necessary									

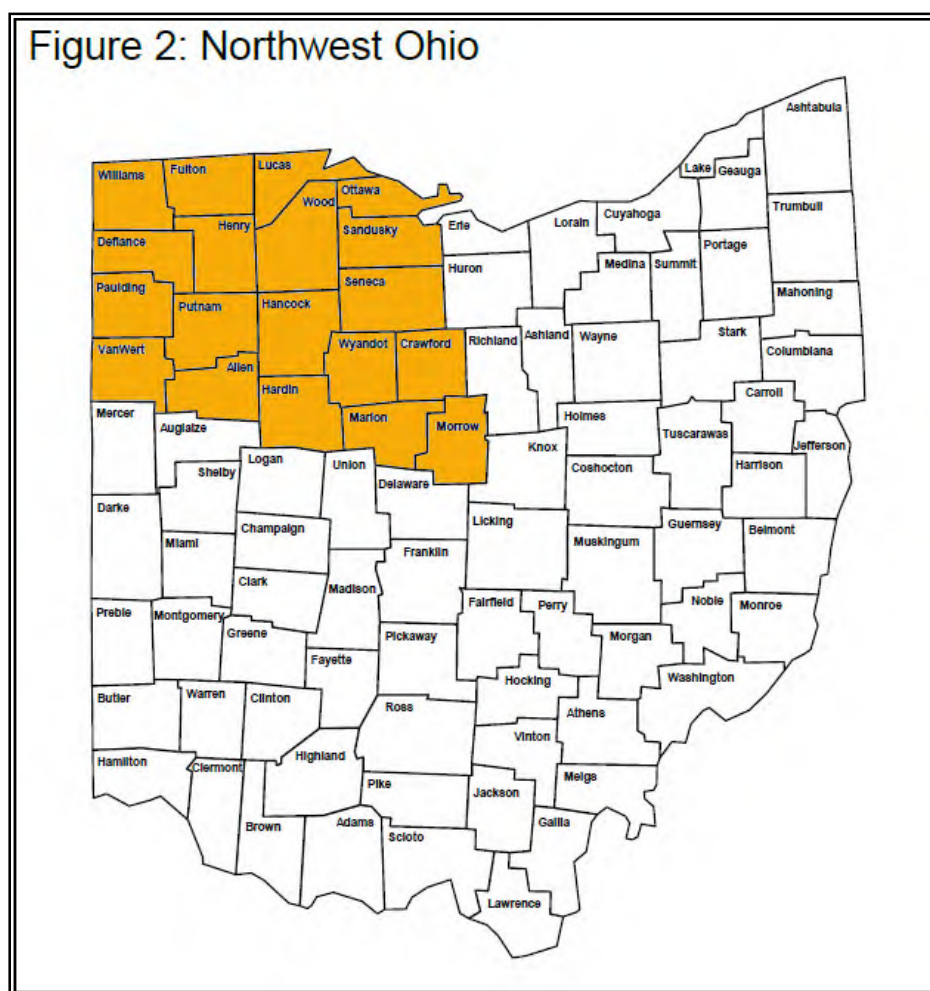
Upward adjustments are made to the 11447 U.S. Highway 50 property for the superior market conditions, basement, and outbuildings of the 12396 Backtrail Road property. Downward adjustments are made for the superior building size and lot size of the 11447 U.S. Highway 50 property compared to those features of the 12396 Backtrail Road property. The two properties have essentially the same location, vintage, style, and utilities. Therefore, although the two properties give the impression of being similar in many categories, the much higher per square foot sale price for the 12396 Backtrail Road property appears to not support a finding that there is a negative impact on value resulting from the distance of the 12396 Backtrail Road property to a wind turbine.

### Matched Pair Analysis Conclusions

Studies in Ohio and studies in rural counties of Pennsylvania, New York, Indiana, Illinois, South Dakota, Minnesota, Iowa, and Kansas comparing sales of properties proximate to wind turbines with similar properties selling under similar market conditions without proximity to wind turbines have not discovered any sales in which proximity to wind turbines appears to have had a negative impact on property values. Therefore, the conclusion is that there does not appear to have been any measurable negative impact on surrounding residential property values due to the proximity of a wind farm.

## Agricultural Land Values

The *Western Ohio Cropland Values and Cash Rents 2018-19*, produced by The Ohio State University Extension Agricultural & Natural Resources,<sup>3</sup> reported top-quality agricultural cropland values in the northwest region of Ohio, which includes Seneca County, averaged \$8,463 per acre in 2018 and are projected to decrease 2.9% down to \$8,214 per acre in 2019. Average-quality agricultural cropland values averaged \$6,793 per acre in 2018 and are projected to decrease 2.4% down to \$6,629 per acre in 2019. Poor-quality agricultural cropland values averaged \$5,312 per acre in 2018 and are projected to decrease 2.9% down to \$5,159 per acre in 2019. Pastureland is projected to be \$3,637 per acre in 2019. The most likely buyer of agricultural land in Ohio is an existing farmer or investor, with neighboring farmers paying higher prices than investors. The following map and table illustrate values between February 2018 and April 2019, within the northwest region of Ohio.



<sup>3</sup> <https://farmoffice.osu.edu/sites/aglaw/files/site-library/farmmgtpdf/WesternOhioCroplandValuesCashRents2018-19.pdf>, *Western Ohio Cropland Values and Cash Rents 2018-19*



**Table 2: Ohio Cropland Values and Cash Rents  
Northwest Ohio Results**

Land Class		Average	Std	Range*	
Average	Avg Corn Yield (b/a)	177.8	10.5	188.2	167.3
	Avg Soybean Yield (b/a)	54.0	5.0	59.1	49.0
Market Value per Acre	2018	\$6,793	\$867	\$7,660	\$5,926
	2019	<b>\$6,629</b>	<b>\$917</b>	<b>\$7,545</b>	<b>\$5,712</b>
Rent per Acre	2018	\$184	\$12	\$195	\$172
	2019	<b>\$182</b>	<b>\$15</b>	<b>\$198</b>	<b>\$167</b>
Top	Avg Corn Yield (b/a)	215.4	20.4	235.8	194.9
	Avg Soybean Yield (b/a)	65.8	5.4	71.1	60.4
Market Value per Acre	2018	\$8,463	\$1,179	\$9,642	\$7,284
	2019	<b>\$8,214</b>	<b>\$1,196</b>	<b>\$9,411</b>	<b>\$7,018</b>
Rent per Acre	2018	\$234	\$23	\$256	\$211
	2019	<b>\$231</b>	<b>\$26</b>	<b>\$257</b>	<b>\$206</b>
Poor	Avg Corn Yield (b/a)	142.5	18.3	160.8	124.2
	Avg Soybean Yield (b/a)	41.3	5.2	46.4	36.1
Market Value per Acre	2018	\$5,312	\$1,004	\$6,316	\$4,309
	2019	<b>\$5,159</b>	<b>\$1,172</b>	<b>\$6,331</b>	<b>\$3,987</b>
Rent per Acre	2018	\$140	\$17	\$157	\$123
	2019	<b>\$139</b>	<b>\$21</b>	<b>\$161</b>	<b>\$118</b>
Transition Land	2018	\$12,567	\$4,648	\$17,215	\$7,919
	2019	<b>\$13,033</b>	<b>\$5,030</b>	<b>\$18,063</b>	<b>\$8,003</b>
Five Year Projected Percent Change in Cropland Value		-2.78%	6.74%	3.96%	-9.52%
Five Year Projected Percent Change in Cash Rent		-1.76%	6.78%	5.01%	-8.54%
Mortgage Interest Rate - 20 Year Fixed - Projected 2019		5.68%	0.70%	6.38%	4.98%
Operating Loan Rate - Projected 2019		6.00%	0.71%	6.71%	5.29%
Pasture Land Value - Projected 2019 - Improved, Non-Rotation		\$3,267	\$784	\$4,051	\$2,482
Pasture Cash Rent - Projected 2019 - Improved, Non-Rotation		\$68	\$25	\$94	\$43

\* Range - One standard deviation above and below the average (mean).  
Approximately two-thirds of the responses fall within this range.

**SUMMARY OF RECENT LAND SALES  
NEAREST TO SENECA WIND**

No.	Owner Mailing Address & Parcel Identification	Sale Price	Sale Date	Land Area (Acres)	NCCPI*	Sale Price Per Acre
1	11651 East County Road 36 Republic, Ohio Seneca County - 2N 17E – 30 APN: K40000626080000 Land Sale #1 - 1 Field	\$120,000	4/29/15	25.02	63.5	\$4,796.16
2	4364 North Township Road 179 Republic, Ohio Seneca County - 2N 16E – 21 APN: L42000681040000 & L41000655880000 Land Sale #2 - 2 Fields	\$250,900	6/12/14	50.78	56.7	\$4,940.92
3	15120 County Road 46 Bellevue, Ohio Seneca County - 2N 16E – 28 APN: L41000649240000 Land Sale #3 - 1 Field	\$313,720	6/6/14	75.9	46.6	\$4,133.33
4	1709 South County Road 43 Tiffin, Ohio Seneca County - 2N 16E – 29, 32 APN: L41000644840000 Land Sale #4 - 1 Field	\$400,000	7/13/18	57.93	48.9	\$6,904.89
5	5108 South County Road 43 Tiffin, Ohio Seneca County - 1N 15E – 3, 4 APN: E18000252880000 Land Sale #5 - 1 Field	\$571,000	2/17/17	109.58	63.8	\$5,210.80

\*National Commodity Crop Productivity Index - Seneca County average NCCPI = 60.1

The above land sales reveal that the agricultural land nearest to the area of the project footprint is of below-average quality for Seneca County, Ohio, with an average National Commodity Crop Productivity Index of 55.9 compared to the county's overall average National Commodity Crop Productivity Index of 60.1, and adding wind turbines and land leases to the area should only benefit the land prices and farm revenue.



## Agricultural Land Sales near Wind Farms

Wind turbines typically are considered to be of significant benefit to farmers. For example, Iowa farmers interviewed by the *Omaha World-Herald*, were positive about the stable income as opposed to the vicissitudes of commodity prices.<sup>4</sup> Franklin County, Iowa reported lowering real estate taxes for the county as a whole because of the taxes generated by the wind turbines in that county. Support for good prices comes from the lack of land for sale, stable commodity prices, and low-interest rates. Marginal land in areas where wind turbines are located or proposed is popular with investors.<sup>5</sup>

Although there has been no discovery of any studies of the impact of wind turbines on agricultural land sales for Ohio, a report in Illinois, the *2016 Illinois Land Values and Lease Trends*, indicated that the impact of wind turbine leases is being experienced in McLean, Livingston, and Woodford counties, where turbine leases have provided “income diversification, beyond agriculture, which makes these tracts more attractive to an outside investor.”<sup>6</sup> Further, they noted that “investors are still paying a little more of a premium for the wind turbines just as they had in the past few years.”<sup>7</sup> The report notes that the premium is related directly to the number of years left on the lease.

An article titled *Wind Energy and Farmland Values* in the *2018 Illinois Land Values and Lease Trends*, indicated that as of March 22, 2018, Illinois was home over to 27 wind projects that individually have a nameplate capacity of 50 megawatts or greater. Illinois’ involvement in wind energy has had several positive side effects besides cleaner energy. The first benefit is that it appears to impact significantly land values in a positive way. The typical capitalization rate for well-managed farmland in Illinois is usually between 2.5% to 3.5%. The capitalization rate for land with lease payments associated with wind projects is approximately 9%; appearing to be both far more lucrative and more efficient use of the land. A few more of the positive improvements that are associated with wind projects is that the municipalities and local governments within the project area typically create plans with the project developers to repair and improve roads that were used during construction. In addition, the land that is undeveloped by the project developer is available for the discretionary use of the landowners. Different improvements like paved areas around turbines and gravel roads are left once the work is completed. With any improvements, there are always concerns and potential issues that may come to mind, but it appears that with each wind turbine project completed in Illinois derives a far better outcome than worse, when speaking of land values.<sup>8</sup>

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<sup>4</sup> [http://www.omaha.com/money/turning-to-turbines-as-commodity-prices-remain-low-wind-energy/article\\_2814e2cf-83a3-5 47d-a09e-f039e935f399.html](http://www.omaha.com/money/turning-to-turbines-as-commodity-prices-remain-low-wind-energy/article_2814e2cf-83a3-5 47d-a09e-f039e935f399.html) Accessed September 18, 2107.

<sup>5</sup> <http://www.agriculture.com/farm-management/farm-land/farmland-sales-hard-to-find-as-growers-hold-tight-keeping-land-value> Accessed September 18, 2017.

<sup>6</sup> Klein, David E., and Schnitkey, Gary, 2016 *Illinois Land Values and Lease Trends*, Illinois Society of Professional Farm Managers and Rural Appraisers, Page 38.

<sup>7</sup> *Ibid.* Page 42.

<sup>8</sup> Klein, D., Baker, S., Sherrick, B., & Haight, B. (2018). *Wind Energy and Farmland Values*. 2018 *Illinois Land Values and Lease Trends*.

Another reported sale in November 2017 was to be associated with wind turbines within Jerauld County, South Dakota, which is home to the Wessington Springs Wind Farm and has similar demographics as the project area. The property is situated on pastureland of poor quality with significant topography issues, which would reflect a lower price per acre than the region's average price of \$2,011 per acre. However, the sale included multiple wind turbine leases and sold with an above-average price per acre of \$2,800, which signifies a direct correlation to the benefit associated with the turbines on the land.

Overall, it appears that there is little or no relationship between agricultural land values and the location of wind farms, with productivity being the driving force behind land values. However, wind farm lease revenue does appear to increase the marketability and value of the land benefiting from the lease.

## **Real Estate Professionals & Auditor/Assessor/Appraiser Surveys 2016-2019**

Real estate professionals from the surrounding market areas and in the Midwest were contacted to discuss market conditions, specific market transactions, and to investigate whether they had experience with or knowledge of any impact of wind farms on residential property values.

Donna J. Schiener, a New York Certified Residential Real Estate Appraiser of Zientek Appraisals, was consulted. Ms. Schiener has provided detailed appraisals of six residences in the area of Orangeville Wind Farm.

Jim Aesoph of Aesoph Real Estate, Inc. is a broker with 27 years of experience in northeast South Dakota. MaRous and Company contacted Mr. Aesoph due to his highly regarded reputation in the region. He stated that he contacted the assessors of the adjacent Codington, Grant, and Roberts counties to discuss land prices in each respective county, and each of them informed Mr. Aesoph that they are not aware of any effect on land prices due to new wind projects in the area. He also stated that 5 years ago, land prices were roughly \$6,000 per acre, and now the average acre price is approximately \$4,000. The reduction in land prices, he mentioned, is not due to the wind project, but due to the production of corn on the land.

Interviews were conducted with six auctioneers throughout South Dakota. Marshall Hansen of Bob Hansen Auction stated that while turbines closer to home could possibly keep a buyer away, in areas of low population the development of turbines has a positive effect on the area. Mr. Hansen also stated that chemicals, such as insecticides, pose a larger impact on wildlife and game birds than turbines. Lenny Burlage of Burlage-Peterson Auctions stated that turbines do not negatively affect residential values but can affect each individual person differently. Jackson Hagerfeld of Advantage Land Company stated that he does see any impact on land from wind turbines, and the recent land sale prices are driven up by the limited amount of properties on the market. Jim Thorpe of Thorpe Realty & Auction stated that turbine leases have positively impacted landowners with turbines on their land. Mr. Thorpe also stated that he had noticed a movement of buyers from larger cities buying properties that are being sold off by the aging population that is moving out of the area. Jeff Juffer of Juffer Incorporated stated that from the existing turbines within the Beethoven Wind Farm footprint have not had any effect, positive or negative, on the local market. Mr. Juffer also states that Avon and the immediate surrounding area is lacking in industry and would benefit from an outside influence to attract businesses to the area. Lastly, Glen Peterson of Peterson Auctioneers states that in the past two years there has been a demand for land that is not dependent on if a turbine is on the land or not, which can be assumed that turbines do not affect land sales in any way, positively or negatively.

Rick Mummert of Ron Holton Real Estate reported that residential conditions in both Freeborn and Mower counties in Minnesota had been stable through the last 3 years, primarily due to the very rural nature of the area; however, the area is benefitting from the low-interest rates. He reported that the Highway 14 corridor had experienced increases in residential values; in his opinion, the difference was due to the more developed nature of the area and the availability of jobs.

Real estate professional, Joseph M. Webster, MAI, of Webster & Associates, Inc., Decatur, Illinois, was previously consulted within 2016 and 2017 for his extensive experience with agricultural, commercial, and residential values in the Decatur, and Macon County area, as well as the broader market area. Mr. Webster provided background information on the economic conditions as well as information on agricultural and residential values of the central Illinois area.

Interviews with brokers proximate to wind farms in Illinois yielded similar results. Although a number of them wished to remain anonymous, they stated that they did not believe that the proximity to wind turbines had any bearing on the sale prices of residential properties in the area. Michael Crowley, Sr., SRA of Real Estate Consultants, Ltd., Spring Valley, Illinois was consulted. Mr. Crowley has had extensive experience with wind farm development in Central Illinois, including projects in counties with similar demographics and character, such as Bureau, Whiteside, and Lee counties. Mr. Crowley has been unable to document any loss in property values attributable to the proximity of wind turbines.

### **Ohio Auditors Survey – May 2019**

In July 2019, MaRous & Company conducted a survey of the County Auditors or a deputy auditor in 3 counties in which wind farms with more than 25 turbines currently are operational. Of the wind farms with more than 25 turbines, Ohio has more than 5 wind farms with more than 327 wind turbines. As of April 2019, the AWEA reported there were approximately 38 wind projects with approximately 382 wind turbines in the state with additional farms being added each year. The interviews were intended to allow the assessment officials to share their experience regarding the wind farm(s) impact upon the market values and/or assessed values of surrounding properties. The detailed analysis is attached in the addenda at the end of this report. The following is a summary of the results of that survey:

- ✧ Without exception, the interviewees reported that there was no market evidence to support a negative impact upon residential property values as a result of the development of and the proximity to a wind farm facility. In some counties, this results from the very rural nature of the area in which the projects are located;
- ✧ In the past 18 months, the assessor's offices have not experienced a real estate tax appeal based on wind farm-related concerns. There have been no reductions in assessed valuations related to wind turbines;
- ✧ As the available market data do not support the claim of a negative impact upon residential values, residential assessed values have fluctuated consistently within counties as influenced by market conditions, with no regard for proximity to a wind farm;
- ✧ Agricultural properties are taxed based upon a productivity formula that is not impacted by market data and external influences.

### **New York Assessors Survey – May 2019**

In May 2019, MaRous & Company conducted a survey of the supervisor of assessments or a deputy supervisor in six counties and the supervisor of assessments or a deputy supervisor in seven cities/towns in New York in which wind farms with more than 25 turbines currently are operational, and New York has more than 14 wind farms with more than 940 wind turbines within those parameters. As of 2019, the AWEA reported there were approximately 29 wind projects with approximately 1,128 wind turbines in the state with additional farms being added each year. The interviews were intended to allow the assessment officials to share their experience regarding the wind farm(s) impact upon the market values and/or assessed values of surrounding properties. The detailed analysis is attached in the addenda at the end of this report. The following is a summary of the results of that survey:

- ✧ Without exception, the interviewees reported that there was no market evidence to support a negative impact upon residential property values as a result of the development of and the proximity to a wind farm facility. In some counties, this results from the very rural nature of the area in which the projects are located;

- ✧ In the past 18 months, the assessor's offices have not experienced a real estate tax appeal based on wind farm-related concerns. There have been no reductions in assessed valuations related to wind turbines;
- ✧ As the available market data do not support the claim of a negative impact upon residential values, residential assessed values have fluctuated consistently within counties as influenced by market conditions, with no regard for proximity to a wind farm;
- ✧ Agricultural properties are taxed based upon a productivity formula that is not impacted by market data and external influences.

### **Kansas Appraiser Survey – January 2019**

In January 2019, MaRous & Company conducted a survey of the county appraiser or a staff member in 21 counties in Kansas in which wind farms with more than 25 turbines currently are operational. Of the wind farms with more than 25 turbines, Kansas contains more than 29 wind farms with more than 2,856 wind turbines. As of 2018, the AWEA reported there were approximately 37 wind projects with approximately 2,996 wind turbines in the state with additional farms being added each year. The interviews were intended to allow the assessment officials to share their experience regarding the wind farm(s) impact upon the market values and/or assessed values of surrounding properties. The following is a summary of the results of that survey:

- ✧ Without exception, the interviewees reported that there was no market evidence to support a negative impact upon residential property values as a result of the development of and the proximity to a wind farm facility. In some counties, this results from the very rural nature of the area in which the projects are located;
- ✧ In the past 18 months, the assessor's offices have not experienced a real estate tax appeal based upon wind farm-related concerns. There have been no reductions in assessed valuations related to wind turbines;
- ✧ As the available market data does not support the claim of a negative impact upon residential values, residential assessed values have fluctuated consistently within counties as influenced by market conditions, with no regard for proximity to a wind farm;
- ✧ Agricultural properties are taxed based upon a productivity formula that is not impacted by market data and external influences.



### **Indiana Assessors Survey – January 2019**

In January 2019, MaRous & Company conducted a survey of the supervisor of assessments or a staff member in 5 counties in Indiana in which wind farms with more than 25 turbines currently are operational. Of the wind farms with more than 25 turbines, Indiana contains more than 14 wind farms with more than 1,190 wind turbines. As of 2018, the AWEA reported there were approximately 16 wind projects with approximately 1,203 wind turbines in the state with additional farms being added each year. The interviews were intended to allow the assessment officials to share their experience regarding the wind farm(s) impact upon the market values and/or assessed values of surrounding properties. The following is a summary of the results of that survey:

- ∴ Without exception, the interviewees reported that there was no market evidence to support a negative impact upon residential property values as a result of the development of and the proximity to a wind farm facility. In some counties, this results from the very rural nature of the area in which the projects are located;
- ∴ In the past 18 months, the assessor's offices have not experienced a real estate tax appeal based upon wind farm-related concerns. There have been no reductions in assessed valuations related to wind turbines;
- ∴ As the available market data does not support the claim of a negative impact upon residential values, residential assessed values have fluctuated consistently within counties as influenced by market conditions, with no regard for proximity to a wind farm;
- ∴ Agricultural properties are taxed based upon a productivity formula that is not impacted by market data and external influences.

### **South Dakota Assessors Survey - November 2017, Updated April 2018**

In November 2017, MaRous & Company conducted a survey of the supervisor of assessments or a deputy supervisor in eight counties in South Dakota, then two additional counties in April 2018, in which wind farms with more than 25 turbines currently are operational, and South Dakota has more than nine wind farms with more than 510 wind turbines. As of the third quarter of 2018, the AWEA reported there were 14 wind projects online with 583 wind turbines in the state with additional farms being added each year. The interviews were intended to allow the assessment officials to share their experience regarding the wind farm(s) impact upon the market values and/or assessed values of surrounding properties. The detailed analysis is attached in the addenda at the end of this report. The following is a summary of the results of that survey:

- ∴ Without exception, the interviewees reported that there was no market evidence to support a negative impact upon residential property values as a result of the development of and the proximity to a wind farm facility. In some counties, this results from the very rural nature of the area in which the projects are located;

- ✧ In the past 5 years, the only assessor's office to have experienced a real estate tax appeal based upon wind farm-related concerns was Aurora County, but the appeal was denied by the county. There have been no reductions in assessed valuations related to wind turbines;
- ✧ As the available market data does not support the claim of a negative impact upon residential or agricultural values, residential and agricultural assessed values have fluctuated consistently within counties as influenced by market conditions, with no regard for proximity to a wind farm;
- ✧ Virtually all assessors volunteered that the wind farms provided positive economic benefits to their counties and, in fact, had a positive impact on real estate values.

### **Minnesota Assessors Survey - January 2017**

In late January 2017, MaRous & Company conducted a survey of the supervisor of assessments or a deputy supervisor in eight Minnesota counties where large numbers of wind turbines currently are operational. There are several counties with small numbers of wind turbines that were not included in the survey. As of the third quarter of 2018, the AWEA reported there were 98 wind projects online with 2,428 wind turbines in the state with additional farms being added each year. The interviews were intended to allow the assessment officials to share their experience regarding the wind farm(s) impact upon the market values and/or assessed values of surrounding properties. The following is a summary of the results of that survey:

- ✧ With one exception, the interviewees reported that there was no market evidence to support a finding that there has been a negative impact upon residential property values as a result of the development of and the proximity to a wind farm facility. In some counties, the assessors believed this to be the result of the very rural nature of the area in which the projects are located;
- ✧ The exception, the Dodge County Assessor, reported receiving two complaints from residential property owners regarding the value impact of proximity to wind turbines; however, the Assessor was unable to find data to support the contentions;
- ✧ Without exception, where there was sufficient data to analyze, the County Assessors reported that both residential and agricultural assessed property values within the wind farm footprints had fluctuated consistently within counties as influenced by market conditions, with no regard for proximity to a wind farm.

Bruce Nielson, Lincoln County Assessor, reported a recent residential transaction in a township in which wind turbines are located that sold \$70,000 higher than the assessor's opinion of market value.

### **Iowa Assessors Survey - August/September 2017**

In August and September 2017, MaRous & Company conducted a survey of the supervisor of assessments or a staff member in 26 counties in Iowa in which wind farms with more than 25 turbines currently are operational. As of the third quarter of 2018, the AWEA reported there were 107 wind projects online with 4,145 wind turbines in the state with additional farms being added each year. The interviews were intended to allow the assessment officials to share their experience regarding the wind farm(s) impact upon the market values and/or assessed values of surrounding properties. The following is a summary of the results of that survey:

- ⋈ Without exception, the interviewees reported that there was no market evidence to support a negative impact upon residential property values as a result of the development of and the proximity to a wind farm facility. In some counties, this results from the very rural nature of the area in which the projects are located;
- ⋈ In the past 18 months, the assessor's offices have not experienced a real estate tax appeal based on wind farm-related concerns. There have been no reductions in assessed valuations related to wind turbines;
- ⋈ As the available market data do not support the claim of a negative impact upon residential values, residential assessed values have fluctuated consistently within counties as influenced by market conditions, with no regard for proximity to a wind farm;
- ⋈ Virtually all assessors volunteered that the wind farms provided positive economic benefits to their counties and, in fact, had a positive impact on real estate values;
- ⋈ Agricultural properties are taxed based upon a productivity formula that is not impacted by market data and external influences.

### **Illinois Assessors Survey - Updated October 2016**

In March 2015, and updated in October 2016, MaRous & Company conducted a survey of the supervisor of assessments or a staff member in 18 counties in Illinois in which wind farms currently are operational. As of the third quarter of 2018, the AWEA reported there were 49 wind projects online with 2,632 wind turbines in the state with additional farms being added each year. The interviews were intended to allow the assessment officials to share their experience regarding the wind farm(s) impact upon the market values and/or assessed values of surrounding properties. The following is a summary of the results of that survey:

- ⋈ Without exception, the interviewees reported that there was no market evidence to support a negative impact upon residential property values as a result of the development of and the proximity to a wind farm facility. In some counties, this results from the very rural nature of the area in which the projects are located;

- ∴ In the past 18 months, the assessor's offices have not experienced a real estate tax appeal based on wind farm-related concerns. There have been no reductions in assessed valuations related to wind turbines;<sup>9</sup>
- ∴ As the available market data do not support the claim of a negative impact upon residential values, residential assessed values have fluctuated consistently within counties as influenced by market conditions, with no regard for proximity to a wind farm;
- ∴ Agricultural properties are taxed based upon a productivity formula that is not impacted by market data and external influences.

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<sup>9</sup> A lawsuit was apparently filed in 2013 against the Supervisor of Assessments in Vermilion County by a homeowner proximate to wind turbines; however, there has been no further action on the matter.

## Literature Review

I am familiar with several academic and peer-reviewed studies on the impact of wind turbines on residential property values. There are no peer-reviewed studies for the state of Ohio. However, the following studies are consistent with our findings in Ohio. These are summarized below:

### **Municipal Property Assessment Corporation (MPAC) Study, 2008, 2012, and 2016**

*Ontario, Canada*

This study originally was conducted in 2008 and was updated in 2012 and 2016. The conclusions in all three studies are similar: “there is *no statistically significant impact on sale prices* of residential properties in these market areas resulting from proximity to an IWT [Industrial Wind Turbine] when analyzing sale prices.” (2012 Study, Page 5; emphasis in original) Using 2,051 properties and generally accepted time adjustment techniques, MPAC “cannot conclude any loss in price due to the proximity of an IWT.” (2012 Study, Page 29) Further, Appendix G of the 2012 MPAC report “Re-sale Analysis” states in the “Summary of Findings” “MPAC’s own re-sale analysis using a generally accepted methodology for time adjustment factors indicates no loss in price based on proximity to the nearest IWT.”

### **Lawrence Berkeley National Laboratory (LBNL) Studies, 2009, 2010, 2013, and 2014**

*Nationwide*

The 2009 LBNL study included analysis of 7,489 sales within 10 miles of 11 wind farms and 125 post-construction sales within 1 mile of a wind turbine. The study used rural settings and wind farms of more than 50 turbines, and considered area stigma, scenic vista stigma, and nuisance stigma in varying distances from a wind turbine. The 2010 LBNL study included 7,500 single-family residential sales located in nine states and proximate to 24 wind farms, and 4,937 post-construction sales within 10 miles of a wind turbine. The 2013 LBNL study included 51,276 sales located in nine states and proximate to 67 wind farms, and 376 post-construction sales within 1 mile of a wind turbine. The 2014 LBNL study included over 50,000 sales located in nine states and proximate to 67 wind farms, and 1,198 post-construction sales within 1 mile of a wind turbine. All were located in rural settings and near wind farms of more than 0.5 megawatts. These studies concentrated on nuisance stigma in varying distances from a wind turbine. The study found no statistically significant evidence that turbines affect sale prices. Neither study found statistical evidence that home values near turbines were affected.

### **University of Rhode Island, 2013**

*Rhode Island*

Structured similarly to the LBNL studies, this study included 48,554 total sales proximate to 10 wind farms, and 412 post-construction sales within 1 mile of a turbine. These wind farms were mostly small facilities in urban settings. The study included nuisance and scenic vista stigmas. Page 421 of the report stated, “Both the whole sample analysis and the repeat sales analysis indicate that houses within a half-mile had essentially no price change ...” after the turbines were erected.

### **The University of Guelph, Melancthon Township, 2013**

*Ontario, Canada*

This study analyzed two wind farms in the township, using 5,414 total sales and 18 post-construction sales within 1 kilometer of a wind turbine. The study included nuisance and scenic vista stigmas. Page 365 of the study stated that “These results do not corroborate the concerns regarding potential negative impacts of turbines on property values.”

### **University of Connecticut/LBNL, 2014**

*Massachusetts*

This study included 312,677 total sales proximate to 26 wind farms, and 1,503 post-construction sales within 1 mile of a wind turbine. These wind farms were located in urban settings and primarily were proximate to small wind farms. The study included wind turbines and other environmental amenities/disamenities (including beaches and open spaces/landfills, prisons, highways, major road, and transmission lines) together, for nuisance stigma. “Although the study found the effects from a variety of negative features ... and positive features ... the study found no net effects due to the arrival of turbines.”

### **Wichita State University, 2019**

*Kansas*

This study strived to decipher and develop a better understanding of wind projects and their effect on rural properties in Kansas. The study’s data is based on 23 operational wind projects in Kansas, which came online between 2005 to 2015. The properties and their values, which were appraised at the county level, have sale dates ranging from 2002 to 2018. The study and its results suggest that property values do not spike once the project is completed. Rather, it was noted that they have a more “modest” growth and that the three-year average for property value growth was 0.3% after a project had been completed and operational.

These studies had a combined number of over 3,700 transactions within 1 mile of operating turbines and found no evidence of value impact.<sup>10</sup>

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<sup>10</sup> Although I have read these studies, the substance of these summaries was taken from a seminar conducted by the Appraisal Institute on March 5, 2015.



## Conclusions

As a result of the market impact analysis undertaken, I concluded that there is no market data indicating the project will have a negative impact on either rural residential or agricultural property values in the surrounding area. Further, market data from Ohio, as well as from other states, supports the conclusion that the project will not have a negative impact on rural residential or agricultural property values in the surrounding area. Finally, for agricultural properties that host turbines, the additional income from the wind lease may increase the value and marketability of those properties. These conclusions are based on the following:

- ✧ There are significant financial benefits to the local economy and to the local taxing bodies from the development of the wind farm;
- ✧ The proposed wind farm will create well-paid jobs in the area which will benefit overall market demand;
- ✧ An analysis of recent residential sales proximate to existing wind farms did not support any finding that proximity to a wind turbine had a negative impact on property values;
- ✧ An analysis of agricultural land values in Ohio did not support any finding that agricultural land values are negatively impacted by the proximity to wind turbines;
- ✧ Reports from Ohio, New York, Indiana, Illinois, South Dakota, Minnesota, Iowa, and Kansas indicate that wind turbine leases add value to agricultural land; and
- ✧ A survey of County Assessors in 3 Ohio counties, 6 New York counties and 7 New York cities/towns, 18 Illinois counties, 8 South Dakota counties, 26 Iowa counties, 8 Minnesota counties, 21 Kansas counties, and 5 Indiana Counties in which wind farms with more than 25 turbines are located determined that there was no market evidence to support a negative impact upon residential property values as a result of the development of and the proximity to a wind farm and that there were no reductions in assessed valuation.

This report is based on market conditions proposed as of March 14, 2019. This market impact study has been prepared specifically for the use of the client and to support the development of the Seneca Wind, in Seneca County, Ohio. Any other use or user of this report is considered to be unintended.

Respectfully submitted,  
MaRous & Company



Michael S. MaRous, MAI, CRE  
*Ohio Certified General - # 2019000342 (Temporary)*  
*Illinois Certified General - #553.000141 (9/21 expiration)*

## CERTIFICATE OF REPORT

I do hereby certify that:

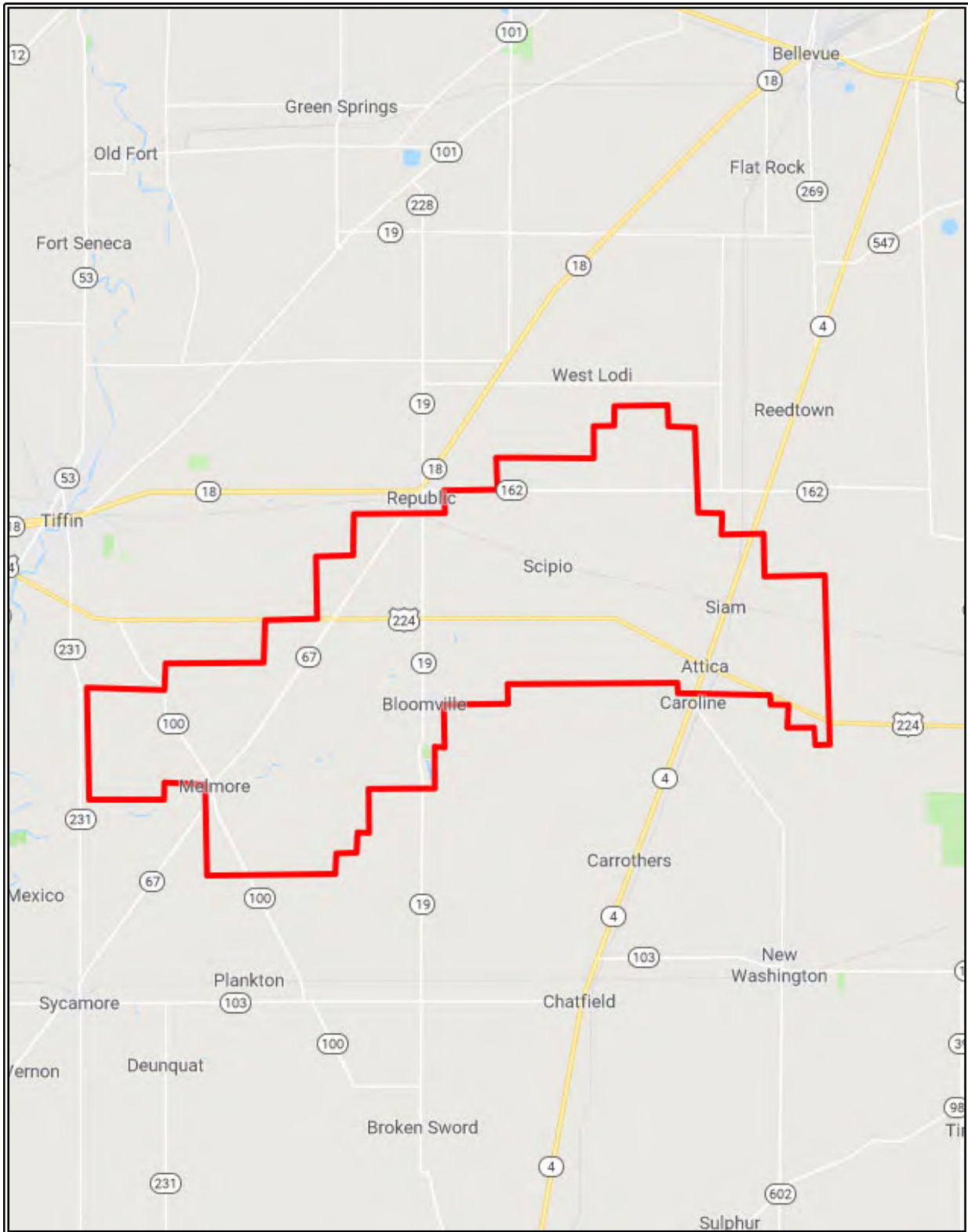
1. The statements of fact contained in this report are true and correct;
2. The reported analyses, opinions, and conclusions are limited only by the reported assumptions and limiting conditions and are my personal, impartial, and unbiased professional analyses, opinions, conclusions, and recommendations;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

Respectfully submitted,  
MaRous & Company



Michael S. MaRous, MAI, CRE  
*Ohio Certified General - # 2019000342 (Temporary)*  
*Illinois Certified General - #553.000141 (9/21 expiration)*

## ADDENDA



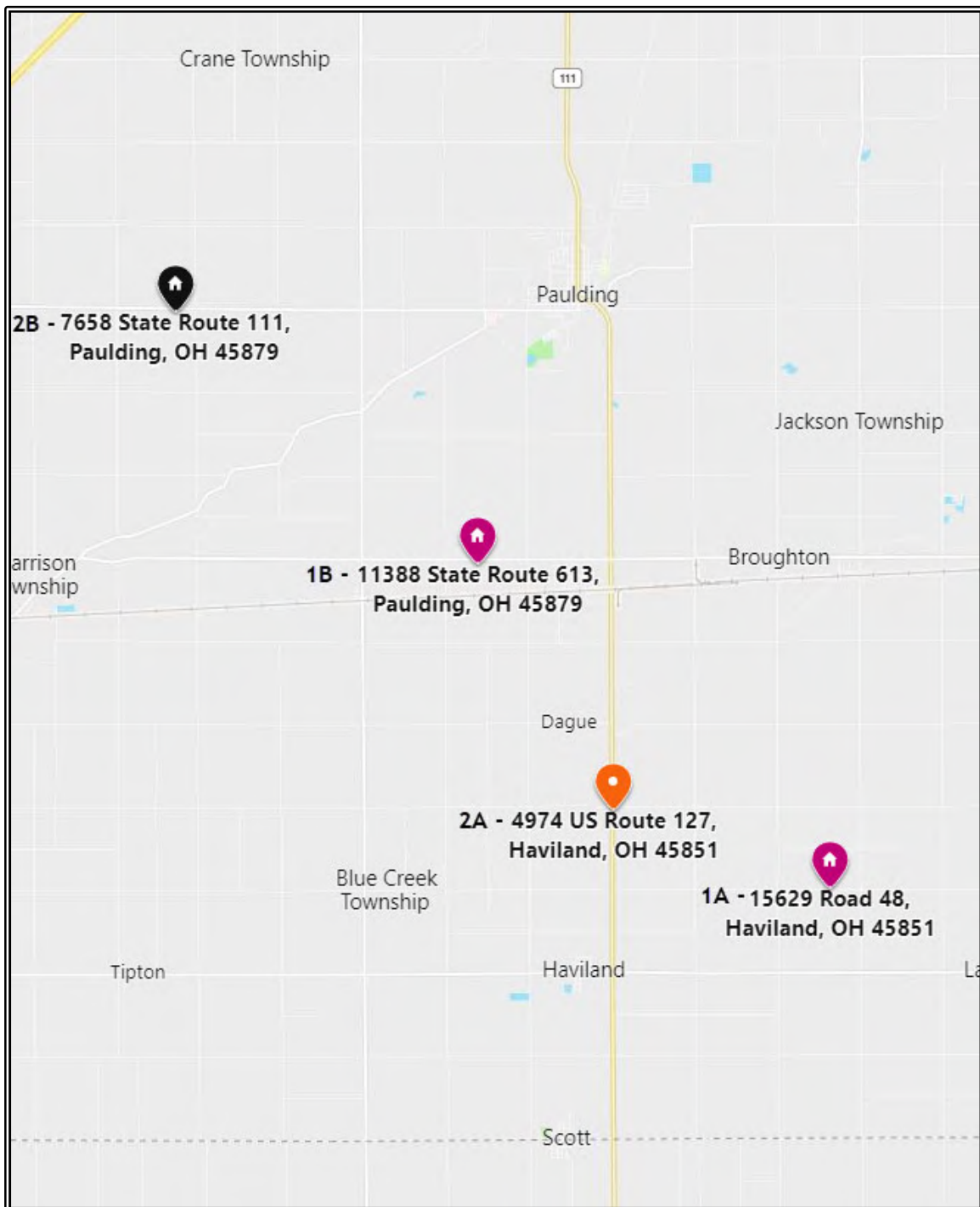
**SENECA WIND FOOTPRINT**



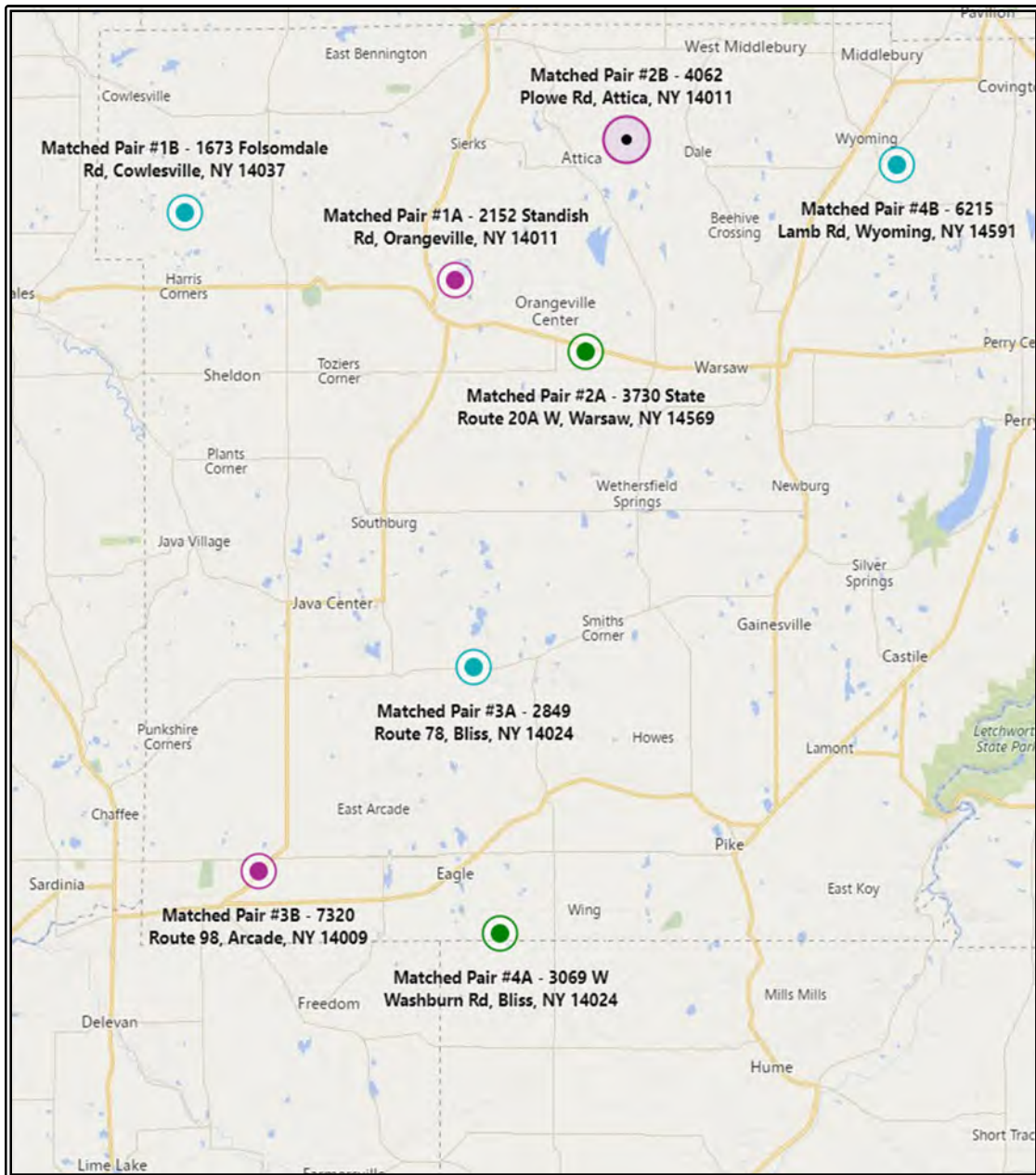
**RECENT SINGLE-FAMILY HOUSE SALES LOCATION MAP**



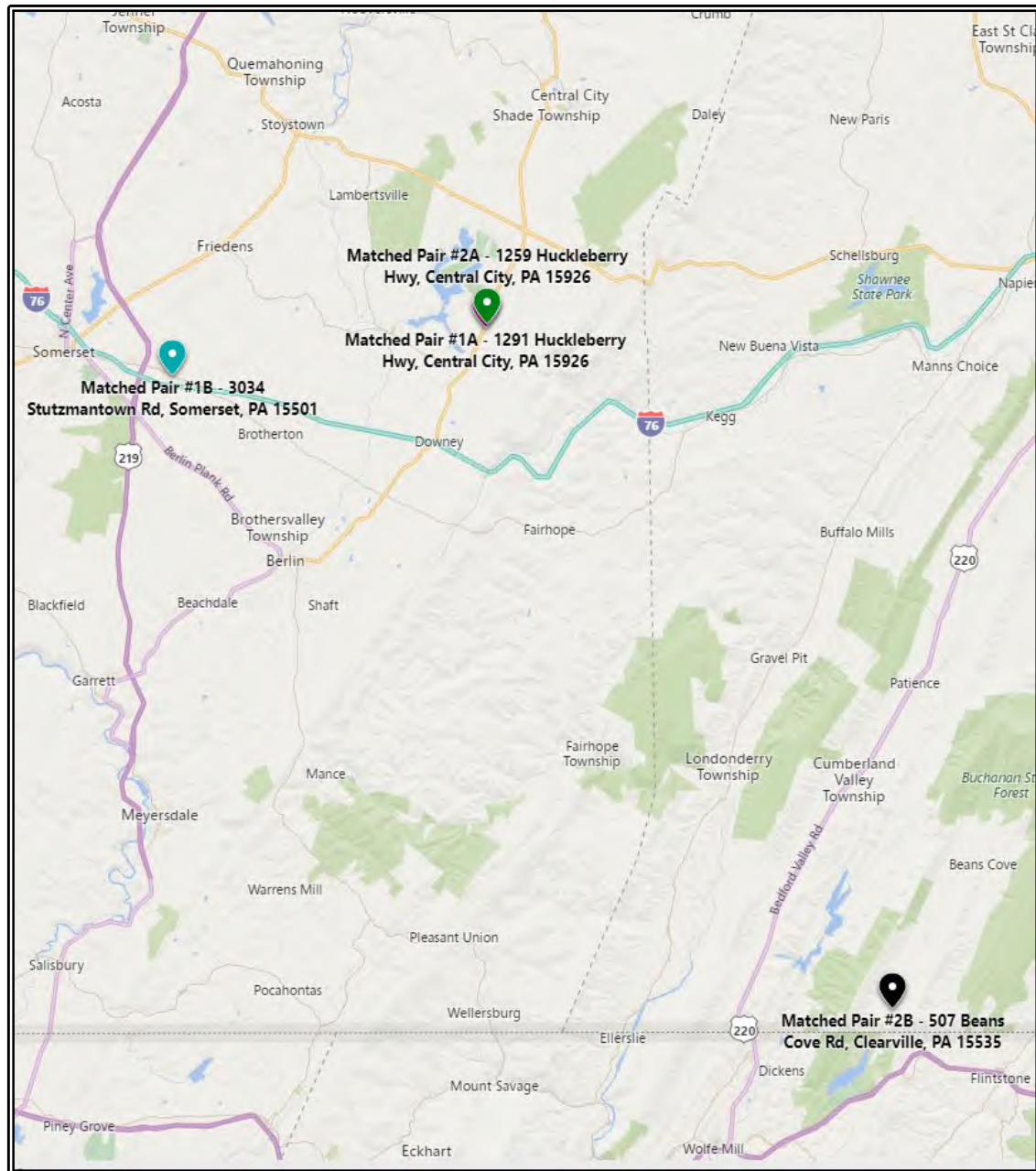




**PAULDING COUNTY, OHIO MATCHED PAIR LOCATION MAP**

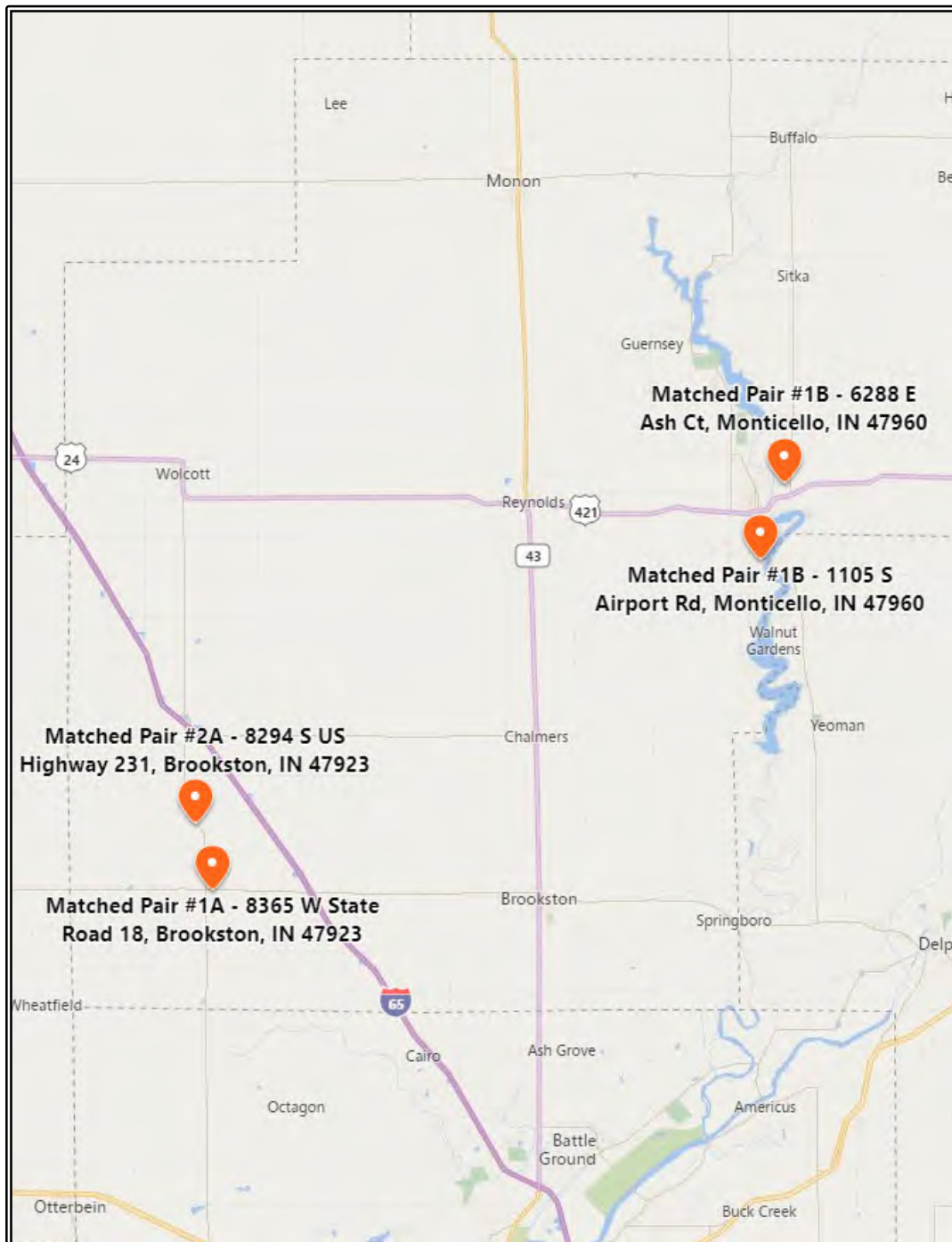


**WYOMING COUNTY, NEW YORK MATCHED PAIR LOCATION MAP**

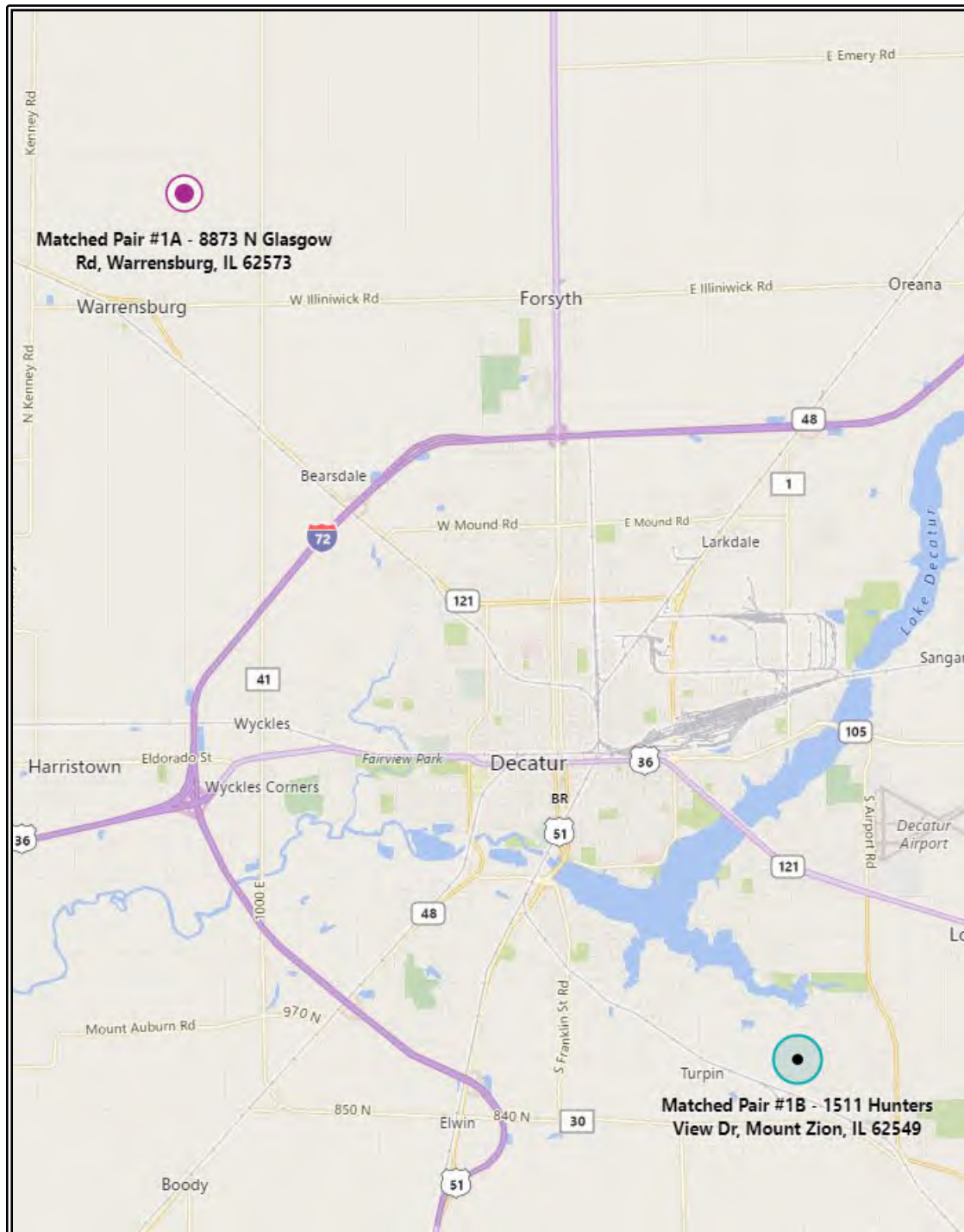


**SOMERSET COUNTY, PENNSYLVANIA MATCHED PAIR LOCATION MAP**





**WHITE COUNTY, INDIANA MATCHED PAIR LOCATION MAP**

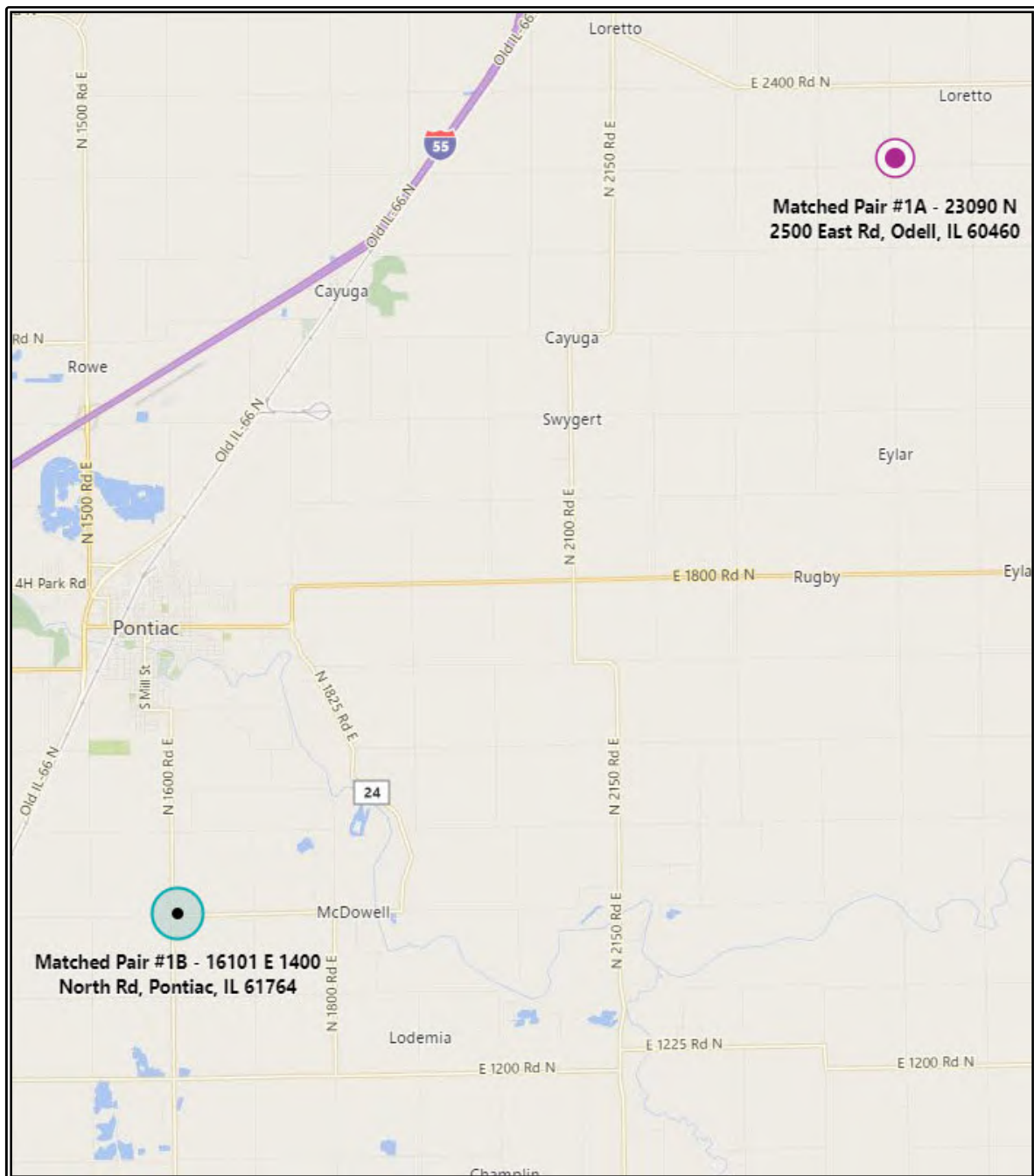


MACON COUNTY, ILLINOIS MATCHED PAIR LOCATION MAP

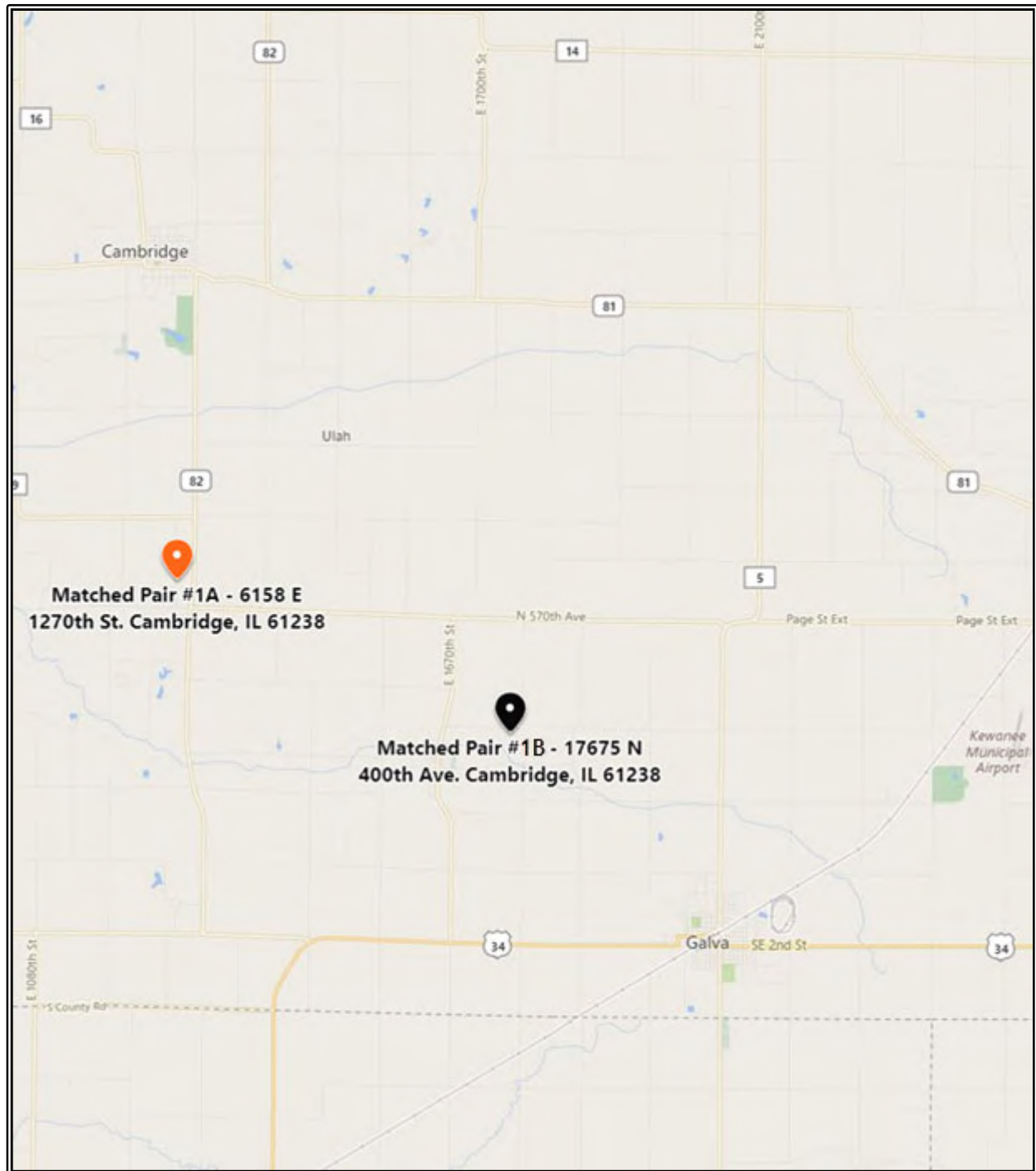


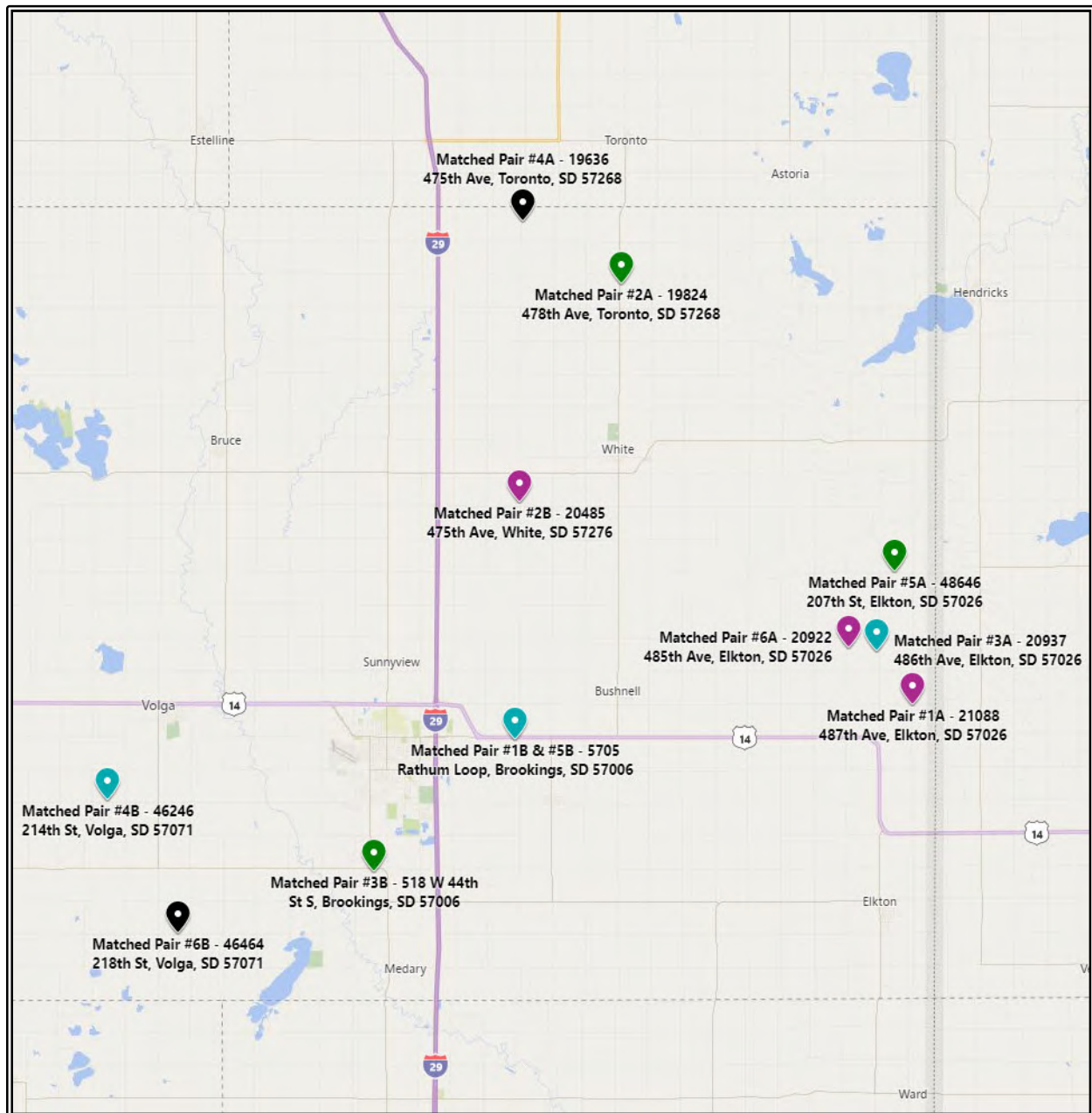
**MCLEAN COUNTY, ILLINOIS MATCHED PAIR LOCATION MAP**



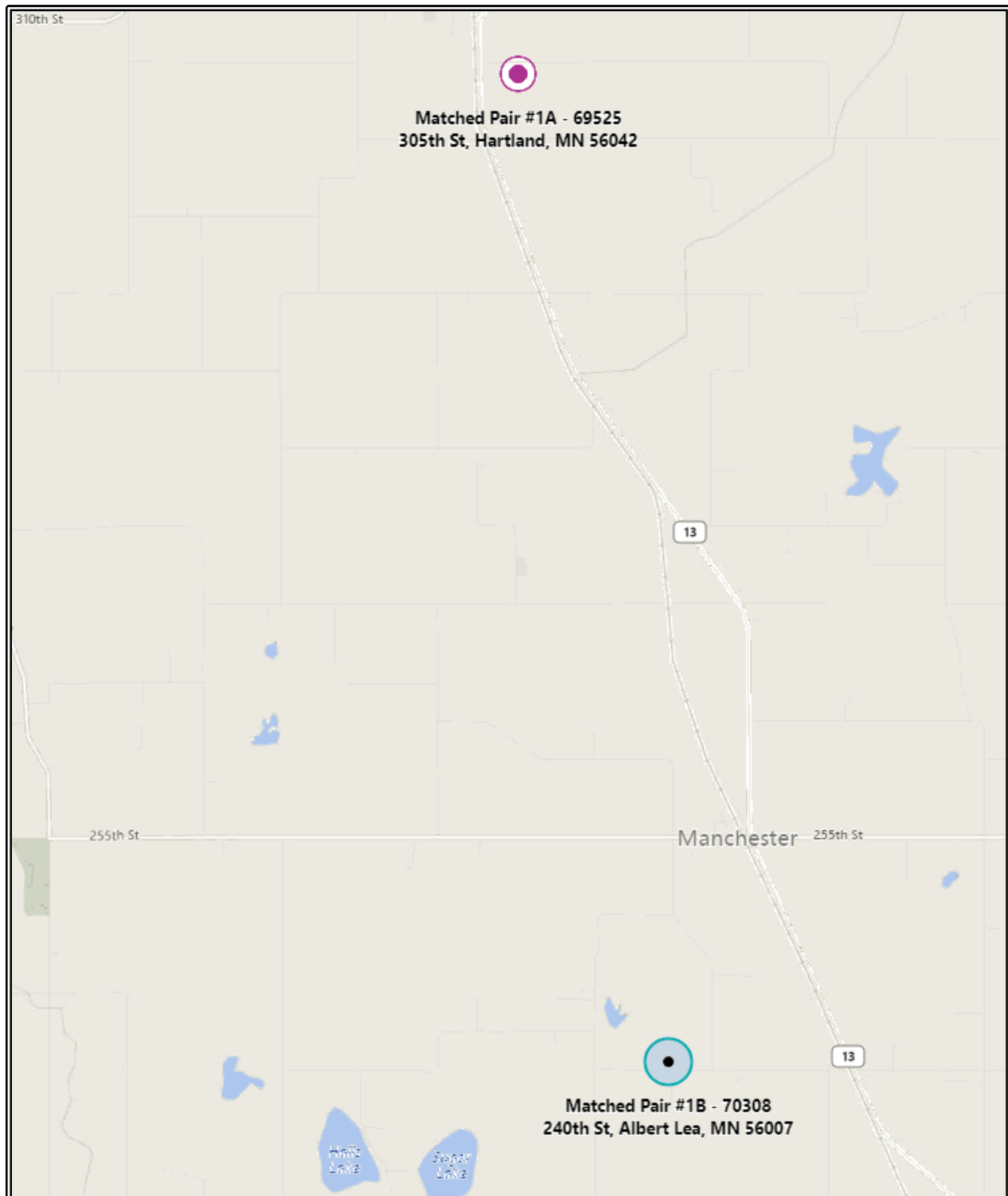


LIVINGSTON COUNTY, ILLINOIS MATCHED PAIR LOCATION MAP

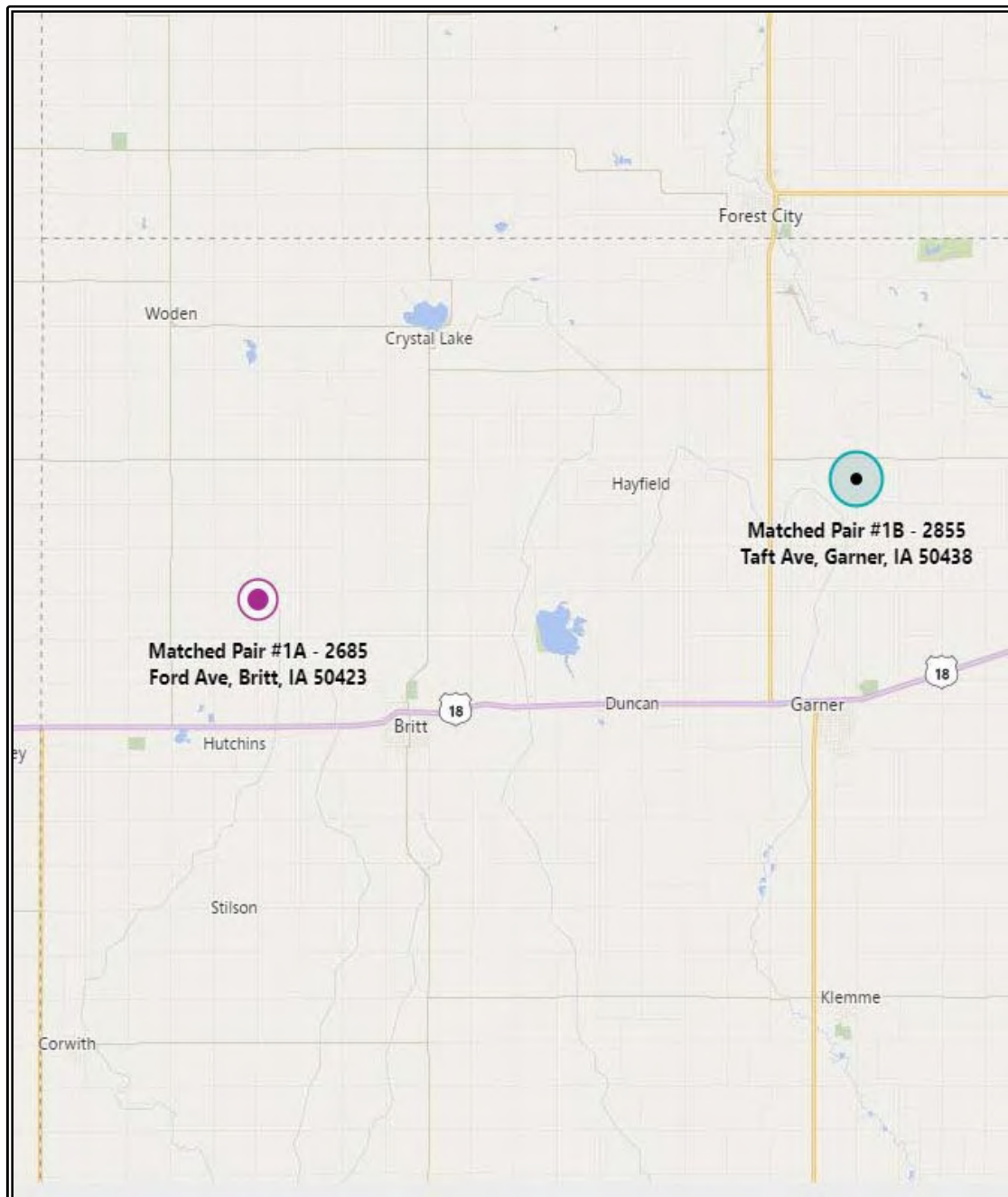




**BROOKINGS COUNTY, SOUTH DAKOTA MATCHED PAIR LOCATION MAP**

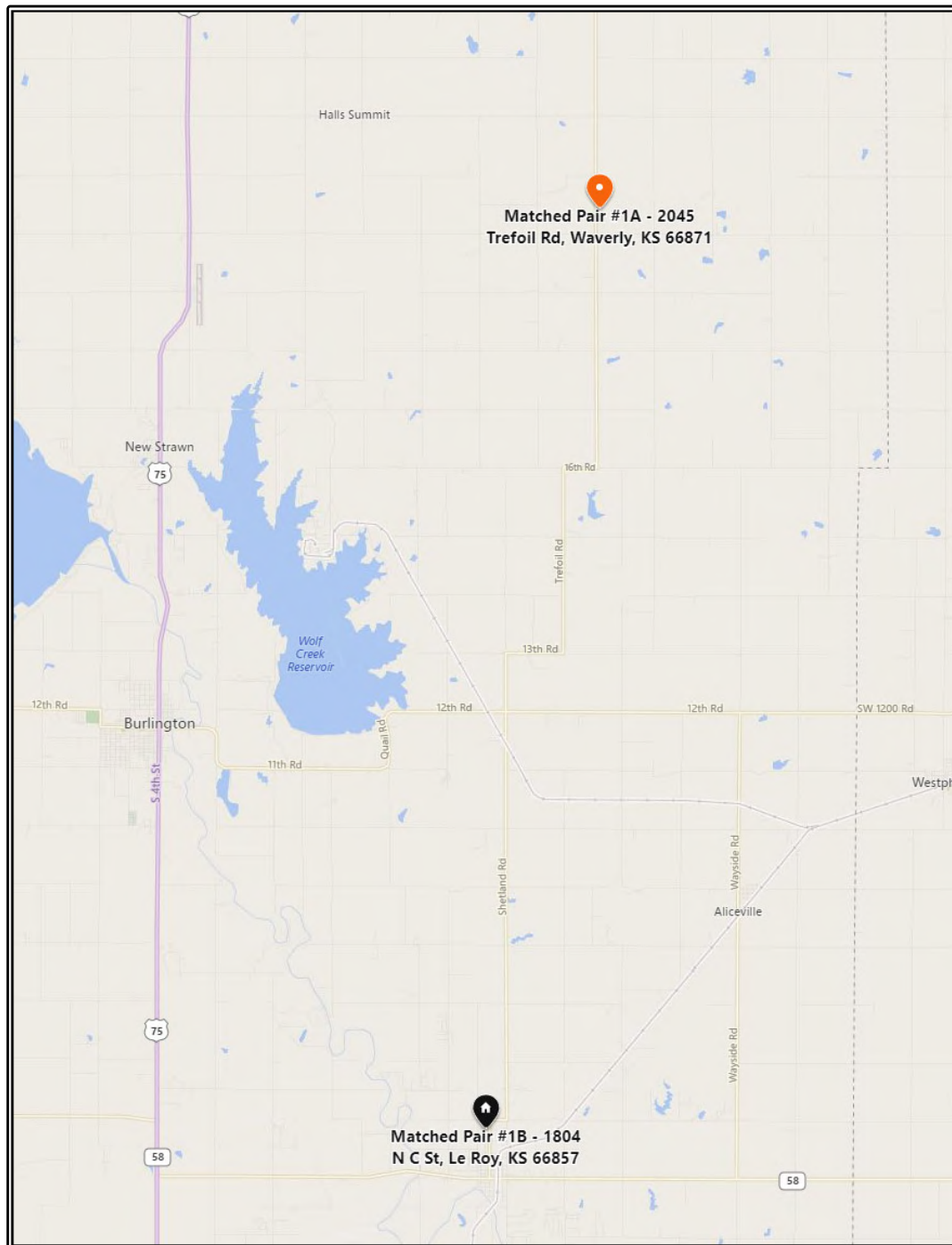


**FREEBORN COUNTY, MINNESOTA MATCHED PAIR LOCATION MAP**



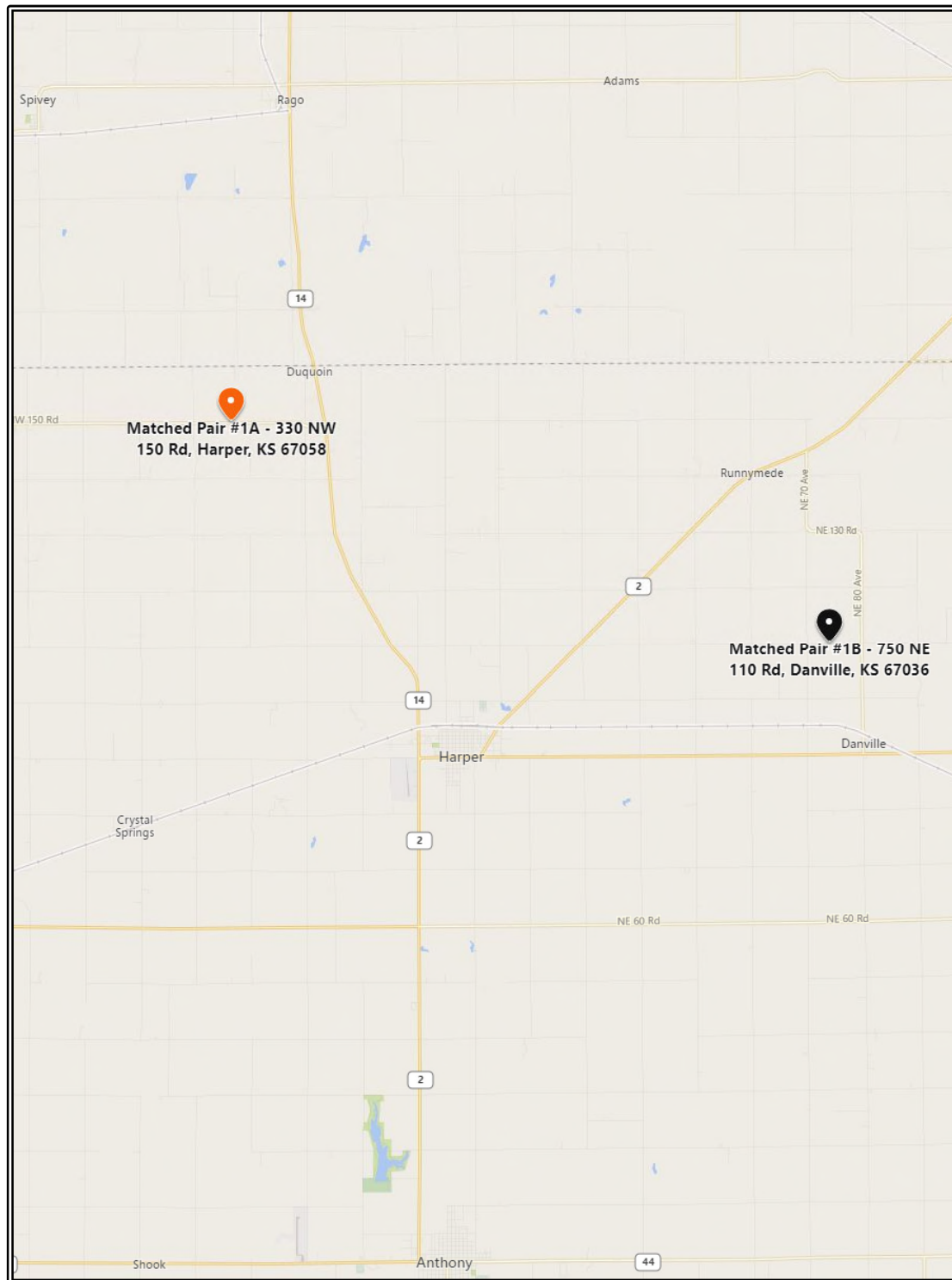
**HANCOCK COUNTY, IOWA MATCHED PAIR LOCATION MAP**



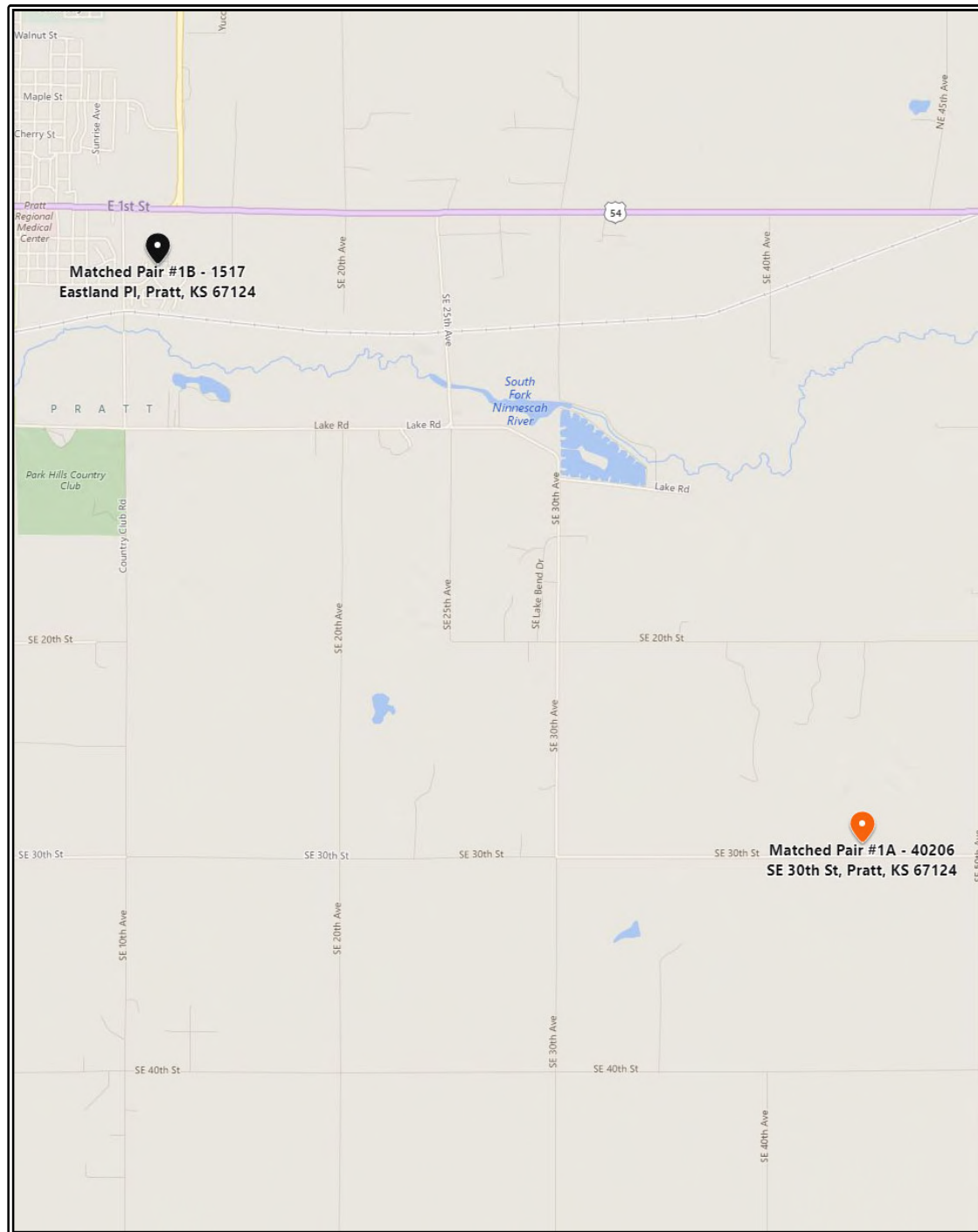


**COFFEY COUNTY, KANSAS MATCHED PAIR LOCATION MAP**

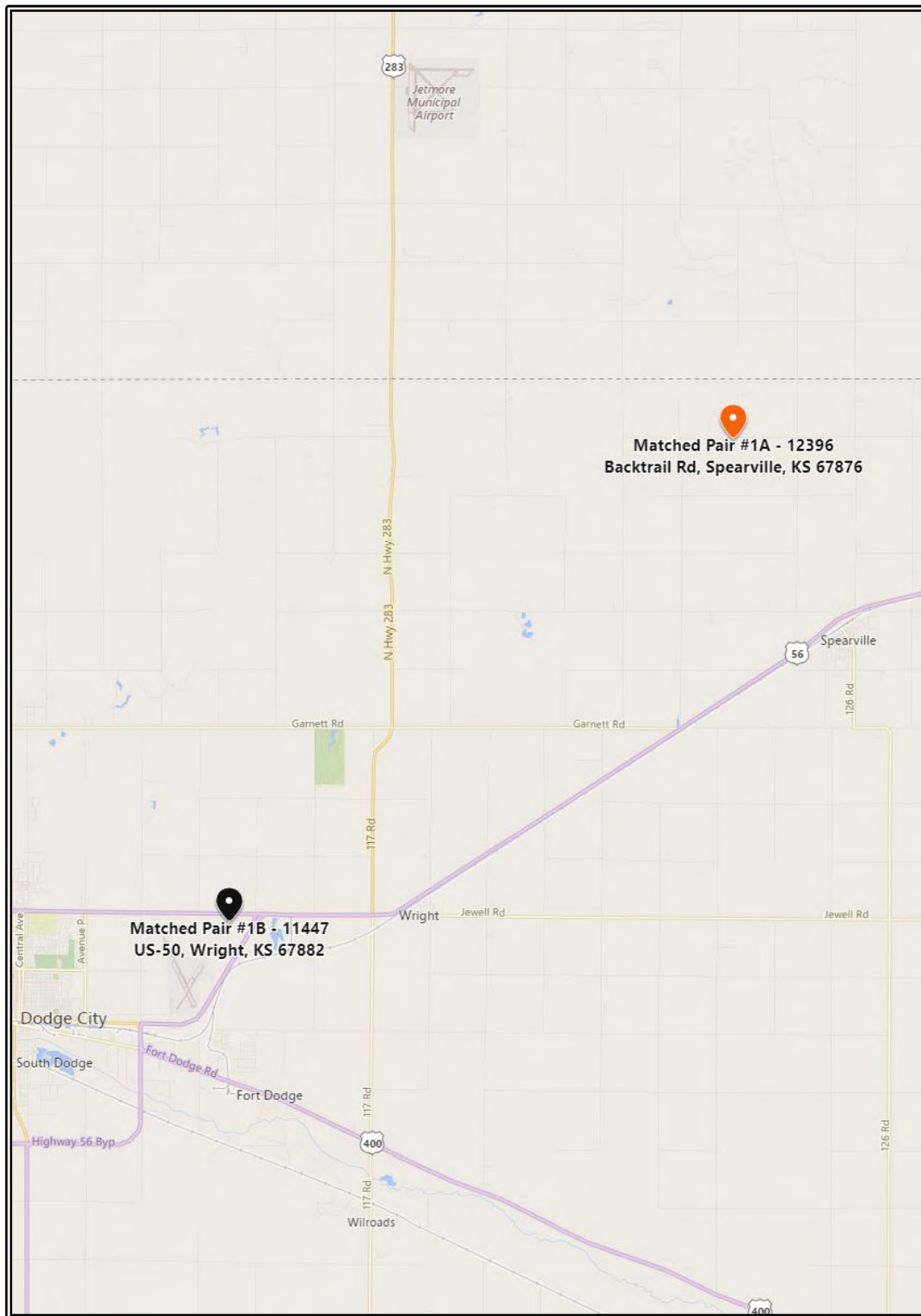




**HARPER COUNTY, KANSAS MATCHED PAIR LOCATION MAP**



**PRATT COUNTY, KANSAS MATCHED PAIR LOCATION MAP**



**FORD COUNTY, KANSAS MATCHED PAIR LOCATION MAP**

## IMPROVED SALE PHOTOGRAPHS



16651 E. Township Road 12



6720 E. County Road 16



9762 E. Township Road 58



2016 S Township Road 79



3235 S. State Route 19

## PHOTOGRAPHS OF SENECA WIND AREA





**VIEW NORTH INTO PROJECT AREA**



**VIEW EAST INTO PROJECT AREA**



**VIEW WEST INTO PROJECT AREA**



**VIEW OF HIGH SCHOOL WITHIN PROJECT AREA**

## **Ohio County Auditor Survey Analysis**

A survey of appraisers in 3 counties in Ohio in which wind farms currently are operational has been undertaken. The county auditors or deputy auditors were interviewed. The interviews were intended to allow the appraisal officials to share their experiences regarding the impact of the wind farm(s) upon the market values and/or the assessed values of surrounding properties. The interviews were intended to be conversational; however, they thoroughly discussed residential and agricultural values and impacts. The interviews were conducted in July 2019.

### **Conclusions of the Study**

Based on these interviews:

- ✧ Without exception, the interviewees reported that there was no market evidence to support a negative impact upon residential property values as a result of the development of, and the proximity to, a wind farm facility. In some counties, this results from the very rural nature of the area in which the projects are located.
- ✧ There have been no successful real estate tax appeals in any county based upon wind farm-related concerns.
- ✧ In the past 18 months, the appraiser's offices have not experienced a real estate tax appeal based upon wind farm-related concerns. There have been no reductions in appraised valuations related to wind turbines.
- ✧ As of April 2019, the AWEA reported there were a total of approximately 38 wind projects with approximately 382 wind turbines in the state with additional farms being added each year.
- ✧ Residential appraised values have fluctuated consistently countywide as influenced by market conditions, with no regard for proximity to a wind farm.
- ✧ Agricultural properties are taxed based upon a productivity formula that is not impacted by market data and by external influences.



## Scope of Project

The county auditors or deputy auditors were interviewed. Each of the interviewees was familiar with the wind farm(s) located within their respective county. A map indicating the total capacity of the wind farms in each of these counties is included in this memorandum. A second map illustrates the number of wind farms located in each of these counties. The following is the list of County Supervisors of Assessments contacted, county population, and the wind farms with greater than 25 turbines in their counties:

County	Population	County Auditor	County Auditor Phone #	Wind Farm *Over 25 Turbines*	Turbine Count	Capacity (MW)	Year Online
Hardin	31,678	Michael T. Bacon	(419) 674-2239	Hog Creek	30	66.0	2017
Paulding	19,429	Claudia J. Fickel	(419) 399-8205	Amazon Wind Farm	48	100.8	2016
				US Central Northwest Ohio	42	105.0	2018
				Timber Road II	55	99.0	2011
Van Wert	28,703	Philip Baxter	(419) 238-0843	Blue Creek	152	304.0	2012

## Residential Market Values and Appraised Values

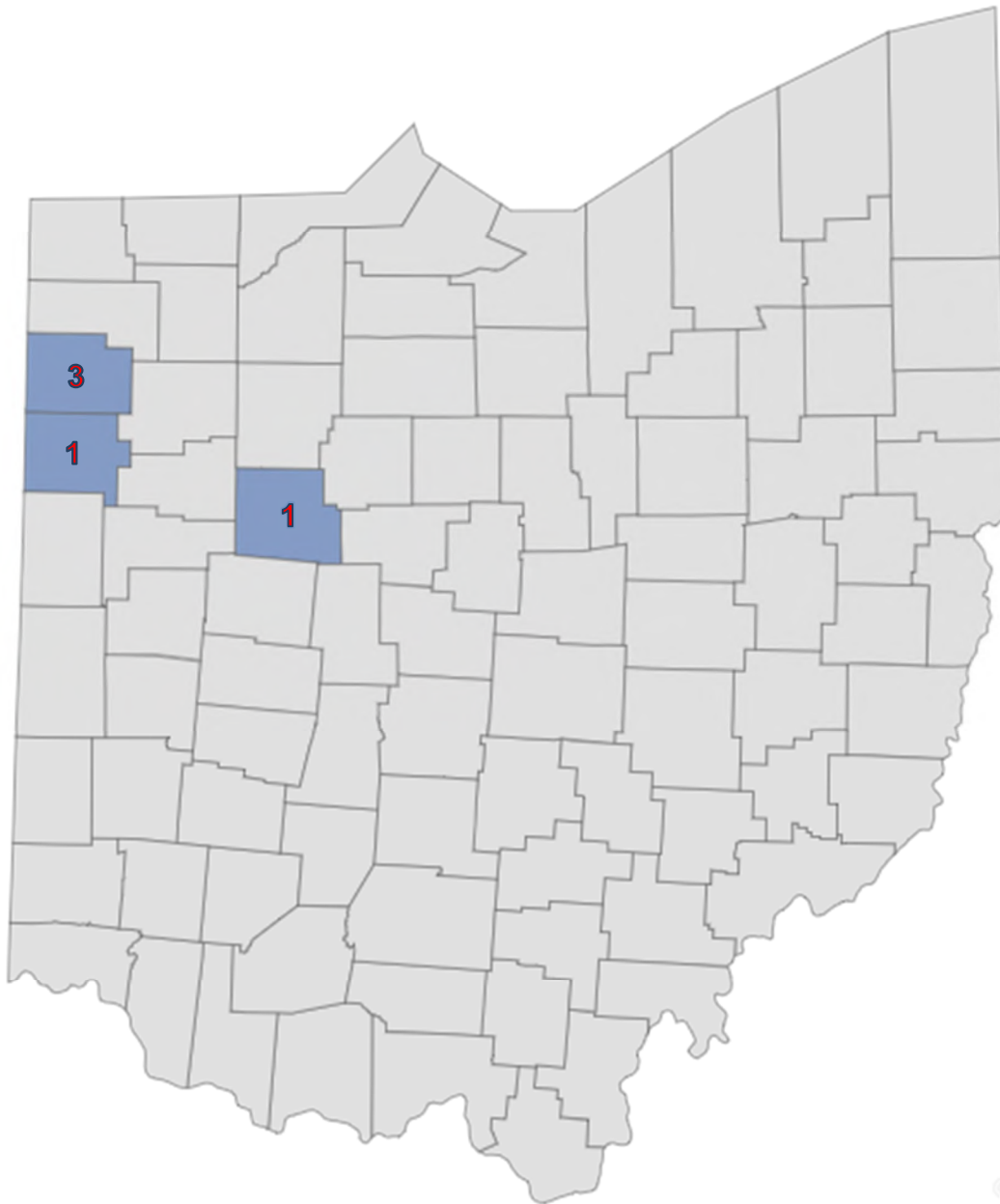
Without exception, the interviewees reported that there was no market evidence to support a negative impact upon residential property values as a result of the development of and the proximity to a wind farm facility. Either as a request by a county board in an attempt to appropriately appraise newly constructed residences or to support current appraised values, the county appraisers have been particularly attentive to market activity in the area of the wind farms.

## Agricultural Values and Assessed Values

The assessed values of agricultural properties are established based upon a productivity formula and are not driven by market data. Reportedly, assessed values of agricultural properties have been steady or increasing in recent years and are projected to continue increasing for the near future. The appraisers reported that no major complaints had been received and/or no real estate tax appeals have been filed for agricultural properties within the wind farm footprints.

Consistently, the appraisers reported that whatever initial concern there may have been regarding property values during the planning and approval stages of the various wind farms dissipated once the wind farm was constructed. Repeatedly, where initially there had been community opposition to the development of a wind farm, the resultant facility is no longer perceived as having a negative influence upon property values.

Based on this survey, it does not appear that the county appraisers in any of the counties in Kansas in which wind farms are operational have reason to believe that the location of wind turbines in their counties has had a negative impact on property values.

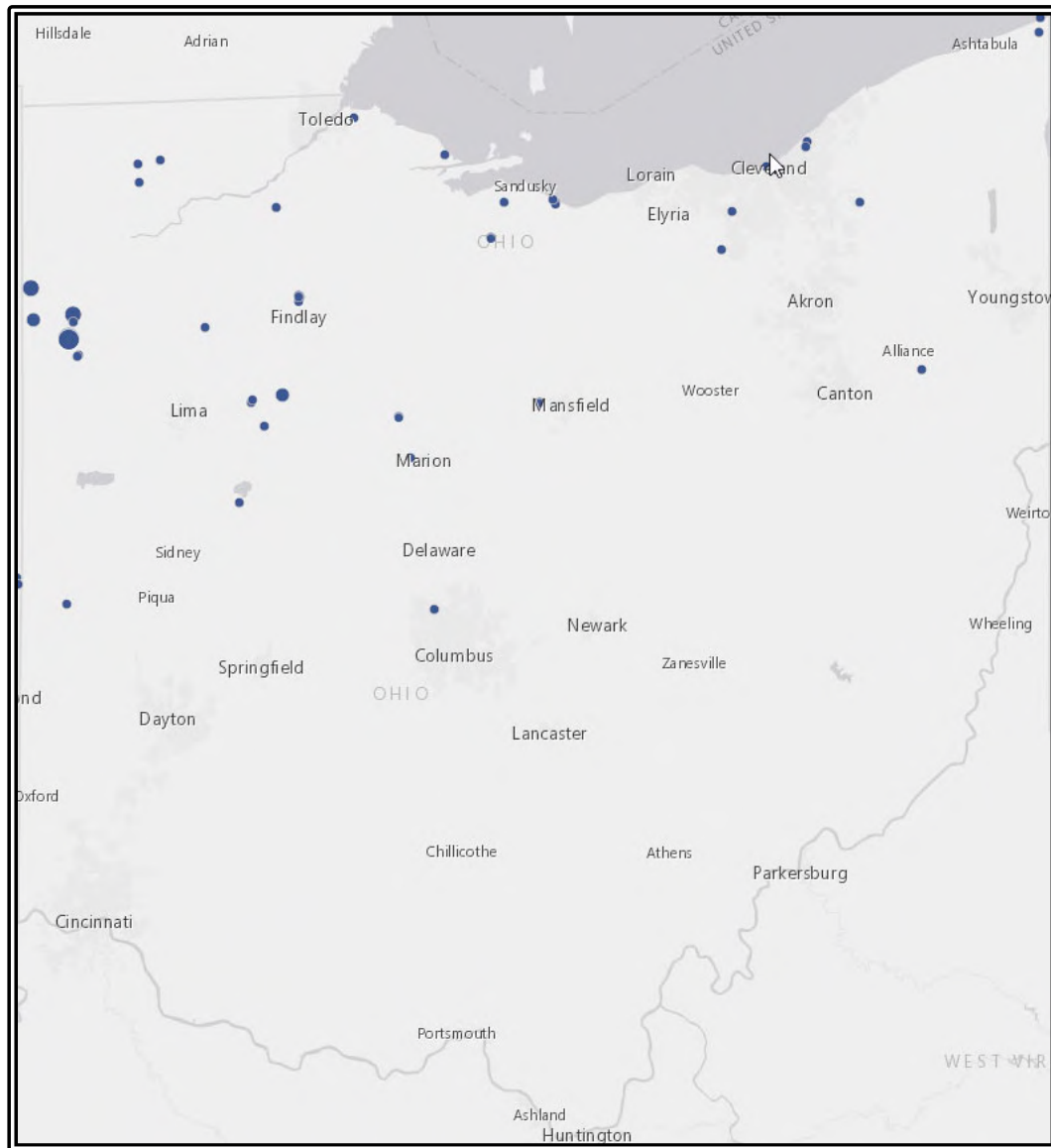


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## **Map of Ohio Counties Surveyed**

Wind Farm Count by County

\*25 Turbines or Higher\*



**Note:** As depicted on this map from the AWEA, as of the date of this survey, the locations of certain wind farms are approximations. In some instances, the wind farms are incorrectly shown to be located in adjacent counties. This map also shows the locations of smaller wind farms, but for the accuracy of this study we have only focused on the farms with 25 turbines or higher.



## **MICHAEL S. MAROUS** **STATEMENT OF QUALIFICATIONS**

Michael S. MaRous, MAI, CRE, is president and owner of MaRous and Company. He has appraised more than \$15 billion worth of primarily investment-grade real estate in more than 25 states. In addition to providing documented appraisals, he has served as an expert witness in litigation proceedings for many law firms; financial institutions; corporations; builders and developers; architects; local, state, county, and federal governments and agencies; and school districts in the Chicago metropolitan area. His experience in partial interest, condemnation, damage impact, easement (including aerial and subsurface), marital dissolutions, bankruptcy proceedings, and other valuation issues is extensive. He has provided highest and best use, marketability, and feasibility studies for a variety of properties. Many of the largest redevelopment areas and public projects, including Interstate 355, the Chicago O'Hare International Airport expansion, the Chicago Midway International Airport expansion, and the McCormick Place expansion, are part of Mr. MaRous' experience. Mr. MaRous also has experience in regard to mediation and arbitration proceedings. Also, he has purchased and developed real estate for his own account.

### **APPRAISAL AND CONSULTATION EXPERIENCE**

Business Parks Distribution Centers	<b>Industrial Properties</b> Manufacturing Facilities Research Facilities	Self-storage Facilities Warehouses
Auto Sales/Service Facilities Banquet Halls Big Box Stores	<b>Commercial Properties</b> Gasoline Stations Hotels and Motels Office Buildings	Restaurants Shopping Centers Theaters
Bowling Alleys Cemeteries Farms Golf Courses Lumber Yards	<b>Special-Purpose Properties</b> Nurseries Riverboat Gambling Facilities Schools Stadium Expansion Issues Solar Farms	Tank Farms Underground Gas Aquifers Utility Corridors Waste Transfer Facilities Wind Farms
Apartment Complexes Condominium Conversions	<b>Residential Properties</b> Condominium Developments Single-family Residences	Subdivision Developments Townhouse Developments
Agricultural Alleys Commercial	<b>Vacant Land</b> Easements Industrial Residential	Rights of Way Streets Vacations
Corporations Financial Institutions	<b>Clients</b> Law Firms Not-for-profit Associations	Private Parties Public Entities

### **EDUCATION**

B.S., Urban Land Economics, University of Illinois, Urbana-Champaign  
Continuing education seminars and programs through the Appraisal Institute  
and the American Society of Real Estate Counselors, and real estate brokerage classes

### **PUBLIC SERVICE**

Mayor, City of Park Ridge, Illinois (2003-2005)  
Alderman, City of Park Ridge, including Liaison to the Zoning Board of Appeals and Planning and Zoning and  
Chairman of the Finance and Public Safety Committees (1997-2005)

### PROFESSIONAL AFFILIATIONS AND LICENSES

Appraisal Institute, MAI designation, Number 6159  
Counselors of Real Estate, CRE designation  
Illinois Certified General Real Estate Appraiser, License Number 553.000141 (9/19)  
Indiana Certified General Real Estate Appraiser, License Number CG41600008 (6/20)  
Wisconsin Certified General Real Estate Appraiser, License Number 1874-10 (12/19)  
Minnesota Certified General Real Estate Appraiser, License Number 40330656 (8/20)  
Pennsylvania Certified General Real Estate Appraiser, License Number GA004181 (6/19)  
Iowa Certified General Real Estate Appraiser, License Number CG03468 (6/19)  
South Dakota Certified General Real Estate Appraiser, License Number 1467CG (9/19)  
Licensed Real Estate Broker (Illinois)

### PROFESSIONAL ACTIVITIES

Mr. MaRous is past president of the Chicago Chapter of the Appraisal Institute. He is former chair and vice chair of the National Publications Committee and has sat on the board of The Appraisal Journal. In addition, he has served on and/or chaired more than 15 other committees of the Appraisal Institute, the Society of Real Estate Appraisers, and the American Institute of Real Estate Appraisers.

Mr. MaRous served as chair of the Midwest Chapter of the Counselors of Real Estate in 2006 and 2007 and has served on the National CRE Board since 2011. He sat on the Midwest Chapter Board of Directors, the Editorial Board of Real Estate Issues, and on various other committees.

Mr. MaRous also is past president of the Illinois Coalition of Appraisal Professionals. He also has been involved with many other professional associations, including the Real Estate Counseling Group of America, the Northwest Suburban Real Estate Board, the National Association of Real Estate Boards, and the Northern Illinois Commercial Association of Realtors.

### PUBLICATIONS AND PROFESSIONAL RECOGNITION

Mr. MaRous has spoken at more than 20 programs and seminars related to real estate appraisal and valuation.

#### Author

"Low-income Housing in Our Backyards," *The Appraisal Journal*, January 1996  
"The Appraisal Institute Moves Forward," *Illinois Real Estate Magazine*, December 1993  
"Chicago Chapter, Appraisal Institute," *Northern Illinois Real Estate Magazine*, February 1993  
"Independent Appraisals Can Help Protect Your Financial Base," *Illinois School Board Journal*, November-December 1990  
"What Real Estate Appraisals Can Do for School Districts," *School Business Affairs*, October 1990

#### Awards

Appraisal Institute - George L. Schmutz Memorial Award, 2001  
Chicago Chapter of the Appraisal Institute – Heritage Award, 2000  
Chicago Chapter of the Appraisal Institute - Herman O. Walther, 1987 (Distinguished Chapter Member)

#### Reviewer or Citation in the Following Books

*Rural Property Valuation*, 2017  
*Real Estate Damages*, 1999, 2008, and 2016  
*Golf Property Analysis and Valuation*, 2016  
*Dictionary of Real Estate Appraisal*, Fourth Edition, 2002 and Sixth Edition, 2015  
*Market Analysis for Real Estate*, 2005 and 2014  
*Appraisal of Real Estate*, Twelfth Edition, 2001, Thirteenth Edition, 2008, Fourteenth Edition, 2013  
*Shopping Center Appraisal and Analysis*, 2009  
*Subdivision Valuation*, 2008  
*Valuation of Apartment Properties*, 2007  
*Valuation of Billboards*, 2006  
*Appraising Industrial Properties*, 2005  
*Valuation of Market Studies for Affordable Housing*, 2005  
*Valuing Undivided Interest in Real Property: Partnerships and Cotenancies*, 2004  
*Analysis and Valuation of Golf Courses and Country Clubs*, 2003  
*Valuing Contaminated Properties: An Appraisal Institute Anthology*, 2002  
*Hotels and Motels: Valuation and Market Studies*, 2001  
*Land Valuation: Adjustment Procedures and Assignments*, 2001  
*Appraisal of Rural Property*, Second Edition, 2000  
*Capitalization Theory and Techniques, Study Guide*, Second Edition, 2000  
*Guide to Appraisal Valuation Modeling Land*, 2000  
*Appraising Residential Properties*, Third Edition, 1999  
*Business of Show Business: The Valuation of Movie Theaters*, 1999  
*GIS in Real Estate: Integrating, Analyzing and Presenting Locational Information*, 1998  
*Market Analysis for Valuation Appraisals*, 1995

## **REPRESENTATIVE WORK OF MICHAEL S. MAROUS**

### **Headquarters/Corporate Office Facilities in Illinois**

Fortune 500 corporation facility, 200,000 sq. ft., Libertyville  
Corporate headquarters, 300,000 sq. ft. and 500,000 sq. ft., Chicago  
Fortune 500 corporation facility, 450,000 sq. ft., Northfield  
Major airline headquarters, 1,100,000 million sq. ft. on 47 acres, Elk Grove Village  
Former communications facility, 1,400,000 million sq. ft. on 62 acres, Skokie and Niles  
Corporate Headquarters, 1,500,000+ sq. ft., Lake County  
Former Sears Headquarters Redevelopment Project, Chicago

### **Office Buildings in Chicago**

401 South LaSalle Street, 140,000 sq. ft.  
134 North LaSalle Street, 260,000 sq. ft.  
333 North Michigan Avenue, 260,000 sq. ft.  
171 West Randolph Street, 360,000 sq. ft.  
20 West Kinzie Street, 405,000 sq. ft.  
55 East Washington Street, 500,000 sq. ft.  
10 South LaSalle Street, 870,000 sq. ft.  
222 West Adams Street, 1,000,000 sq. ft.  
141 West Jackson Boulevard, 1,065,000 sq. ft.  
333 South Wabash Avenue, 1,125,000 sq. ft.  
155 North Wacker Drive, 1,406,000 sq. ft.  
70 West Madison Street, 1,430,000 sq. ft.  
111 South Wacker Drive, 1,454,000 sq. ft.  
175 West Jackson Boulevard, 1,450,000 sq. ft.  
227 West Monroe Street, 1,800,000 sq. ft.  
10 South Dearborn Street, 1,900,000 sq. ft.

### **Hotels in Chicago**

One West Wacker Drive (Renaissance Chicago Hotel)  
10 East Grand Avenue (Hilton Garden Inn)  
106 East Superior Street (Peninsula Hotel)  
120 East Delaware Place (Four Seasons)  
140 East Walton Place (The Drake Hotel)  
160 East Pearson Street (Ritz Carlton)  
301 East North Water Street (Sheraton Hotel)  
320 North Dearborn Street (Westin Chicago River North)  
401 North Wabash Avenue (Trump Tower)  
505 North Michigan Avenue (Hotel InterContinental)  
676 North Michigan Avenue (Omni Chicago Hotel)  
800 North Michigan Avenue (The Park Hyatt)

### **Large Industrial Properties in Illinois**

Large industrial complexes, 400,000 sq. ft., 87th Street and Greenwood Avenue, Chicago  
Distribution warehouse, 580,000 sq. ft. on 62 acres, Champaign  
Publishing house, 700,000 sq. ft. on 195 acres, U.S. Route 45, Mattoon  
AM Chicago International, 700,000± sq. ft. on 41 acres, 1800 West Central Road, Mount Prospect  
Nestlé distribution center, 860,000 sq. ft. on 153 acres, DeKalb  
U.S. Government Services Administration distribution facility, 860,000 sq. ft., 76th Street and Kostner Avenue,  
Chicago Fortune 500 company distribution center, 1,000,000 sq. ft., Elk Grove Village  
Caterpillar Distribution Facility, 2,231,000 sq. ft., Morton  
Self-storage facilities, various Chicago metropolitan locations

### **Airport Related Properties**

Mr. MaRous has performed valuations on more than 100 parcels in and around Chicago O'Hare International Airport, Chicago Midway International Airport, Palwaukee Municipal Airport, Chicago Aurora Airport, DuPage Airport,  
and Lambert-St. Louis International Airport

### **Vacant Land in Illinois**

15 acres, office, Northbrook	250 acres, Island Lake
20 acres, residential, Glenview	450 acres, residential, Wauconda
25 acres, Hinsdale	475± acres, various uses, Lake County
55 acres, mixed-use, Darien	650 acres, Hawthorne Woods
68 acres, Roosevelt Road and the Chicago River	650 acres, Waukegan/Libertyville
75 acres, I-88 at I-355, Downers Grove	800 acres, Woodridge
100± acres, various uses, Lake County	900 acres, Matteson
100 acres, Western Springs	1,000± acres, Batavia area
140 acres, Flossmoor	2,000± acres, Northern Lake County
142 acres, residential, Lake County	5,000 acres, southwest suburban Chicago area
160 acres, residential, Cary	Landfill expansion, Lake County
200 acres, mixed-use, Bartlett	

### **Retail Facilities**

20 Community shopping centers, various Chicago metropolitan locations  
Big-box uses, various Chicago metropolitan locations and the Midwest  
Gasoline Stations, various Chicago metropolitan locations  
More than 50 single-tenant retail facilities larger than 80,000 sq. ft., various Midwest metropolitan locations

### **Residential Projects**

Federal Square townhouse development project, 118 units, \$15,000,000+ sq. ft. project, Dearborn Place, Chicago  
Marketability and feasibility study, 219 East Lake Shore Drive, Chicago  
Riverview II, Chicago; Old Town East and West, Chicago; Museum Park Lofts II, Museum Park Tower 4, University Commons, Two River Place, River Place on the Park, Chicago;  
Timber Trails, Western Springs, Illinois

### **Market Impact Studies**

Land-fill projects in various locations  
Quarry expansions in Boone and Kendall counties  
Commercial development and/or parking lots in various communities  
Zoning changes in various communities  
Waste transfer stations in various communities

### **Energy Projects**

Oakwood Hills Energy Center, McHenry County, Illinois	Orangeville Wind Farm, Wyoming County, New York
Walnut Ridge Wind Farm, Bureau County, Illinois	Deuel Harvest Wind Farm, Deuel County, South Dakota
Radford's Run Wind Farm, Macon County, Illinois	Dakota Range Wind Project I-III, Codington County, Grant County, & Roberts County, South Dakota
Twin Groves Wind Farm, McLean County, Illinois	Crocker Wind Farm, Clark County, South Dakota
Otter Creek Wind Farm, LaSalle County, Illinois	Prevailing Wind Park, Bon Homme County, Charles Mix County, & Hutchinson County, South Dakota
Pleasant Ridge Wind Farm, Livingston County, Illinois	Brookhaven, South Dakota, solar energy production facility
Alta Farms Wind Project II, DeWitt County, Illinois	Badger Hollow Solar Farm, Iowa County, Wisconsin
Harvest Ridge Wind Farm, Douglas County, Illinois	Dorchester County Solar Farm, Dorchester County, Maryland
Midland Wind Farm, Henry County, Illinois	Lackawanna Power Plant, Lackawanna County, Pennsylvania
McLean County Wind Farm, McLean County, Illinois	Commonwealth Edison, high tension lines
Ida Grove II Wind Farm, Ida County, Iowa	
Tippecanoe County Wind Farm, Tippecanoe County, Indiana	
Roaming Bison Wind Farm, Montgomery County, Indiana	

### **Business and Industrial Parks**

Chevy Chase Business Park, 30 acres, Buffalo Grove  
Carol Point Business Center, 300-acre industrial park, Carol Stream, \$125,000,000+ project  
Internationale Centre, approximately 1,000 acre-multiuse business park, Woodridge

### **Properties in Other States**

330,000 sq. ft., Newport Beach, California  
Former government depot/warehouse and distribution center, 2,500,000 sq. ft. on 100+ acres, Ohio  
Shopping Center, St. Louis, Missouri, Office Building, Clayton, Missouri  
Condominium Development, South Dakota, South Dakota  
Hormel Foods, various Midwest locations  
Wisconsin Properties including Lowes, Menards, Milwaukee Zoo, CVS Pharmacy's in Milwaukee, Dairyland  
Race Track, Major Industrial Property in Manawa, Class A Office Buildings and Vacant Land

### **REPRESENTATIVE CLIENT LISTING OF MICHAEL S. MAROUS**

#### **Law Firms**

Alschuler, Simantz & Hem LLC Ancel,  
Glink, Diamond, Bush,  
DiClanni & Krafthefer  
Arnstein & Lehr LLP  
Berger, Newmark & Fenchel P.C.  
Berger Schatz  
Botti Law Firm, P.C.  
Carmody MacDonald P.C.  
Carr Law Firm  
Crane, Heyman, Simon, Welch & Clar  
Daley & Georges, Ltd.  
Day, Robert & Morrison, P.C. Dentons  
US LLP  
DiMonte & Lizak LLC  
DLA Piper  
Dreyer, Foote, Streit, Furgason &  
Slocum, P.A.  
Drinker, Biddle & Reath LLP Figliulo &  
Silverman, P.C.  
Foran, O'Toole & Burke LLC Franczek  
Radelet P.C.  
Fredrikson & Byron, P.A.  
Freeborn & Peters LLP

Gould & Ratner LLP  
Greenberg Traurig LLP  
Helm & Wagner  
Robert Hill Law, Ltd.  
Hinshaw & Culbertson LLP  
Holland & Knight LLP  
Ice Miller LLP  
Jenner & Block  
Katz & Stefani, LLC  
Kinnally, Flaherty, Krentz, Loran,  
Hodge & Mazur PC  
Kirkland & Ellis LLP  
Klein, Thorpe & Jenkins, Ltd.  
McDermott, Will & Emery  
Mayer Brown  
Michael Best & Friedrich LLP  
Morrison & Morrison, Ltd.  
Bryan E. Mraz & Associates  
Neal, Gerber & Eisenberg, LLP  
Neal & Leroy LLC  
O'Donnell Haddad LLC  
Prendergast & DelPrincipe  
Rathje & Woodward, LLC

Righeimer, Martin & Cinquino, P.C.  
Robbins, Salomon & Patt, Ltd.  
Rosenfeld Hafron Shapiro & Farmer  
Rosenthal, Murphey, Coblentz &  
Donahue Rubin & Associates, P.C.  
Ryan and Ryan, P.C.  
Reed Smith LLP  
Sarnoff & Baccash  
Scariano, Himes & Petrarca, Chtd.  
Schiff Hardin LLP  
Schiller, DuCanto & Fleck LLP  
Schirott, Luetkehans & Garner, LLC  
Schuyler, Roche & Crisham, P.C.  
Sidley Austin LLP  
Storino, Ramello & Durkin  
Thomas M. Tully & Associates  
Thompson Coburn, LLP  
Tuttle, Vedral & Collins, P.C.  
Vedder Price  
von Briesen & Roper, SC  
Winston & Strawn LLP  
Worsek & Vihon LLP

#### **Financial Institutions**

AmericaUnited Bank Trust  
BMO Harris Bank  
Charter One  
Citibank  
Cole Taylor Bank  
First Bank of Highland Park  
First Financial Northwest Bank

First Midwest Bank  
First State Financial  
Glenview State Bank  
Itasca Bank & Trust Co.  
Lake Forest Bank & Trust Co.  
MB Financial Bank

Midwest Bank  
Northern Trust  
Northview Bank & Trust  
The Private Bank  
Wintrust

#### **Corporations**

Advocate Health Care System  
Alliance Property Consultants  
American Stores Company  
Archdiocese of Chicago  
Arthur J. Rogers and Company  
Avangrid Renewables, LLC  
BHE Renewables  
BP Amoco Oil Company  
Christopher B. Burke Engineering,  
Ltd. Cambridge Homes  
Canadian National Railroad  
Capital Realty Services, Inc.  
Chicago Cubs  
Children's Memorial Hospital  
Chrysler Realty Corporation

Citgo Petroleum Corporation  
CorLands  
CVS  
Edward R. James Partners, LLC  
Enterprise Development Corporation  
Enterprise Leasing Company  
Exxon Mobil Corporation  
Hamilton Partners  
Hollister Corporation  
Imperial Realty Company  
Invenergy LLC  
Kimco Realty Corporation  
Kinder Morgan, Inc.  
Lakewood Homes

Lowe's Companies, Inc.  
Loyola University Health System  
Marathon Oil Corporation  
Meijer, Inc.  
Menards  
Mesirow Stein Real Estate, Inc.  
Paradigm Tax Group  
Prime Group Realty Trust  
Public Storage Corporation  
RREEF Corporation  
Shell Oil Company  
Union Pacific Railroad Company  
United Airlines, Inc.

### **Public Entities**

#### **Illinois Local Governments and Agencies**

Village of Arlington Heights  
Village of Barrington  
Village of Bartlett  
Village of Bellwood  
Village of Brookfield  
Village of Burr Ridge  
City of Canton  
Village of Cary  
City of Chicago  
Village of Deer Park  
City of Des Plaines  
Des Plaines Park District  
Downers Grove Park District  
City of Elgin  
Elk Grove Village  
City of Elmhurst  
Village of Elmwood Park  
City of Evanston  
Village of Forest Park  
Village of Franklin Park

Village of Glenview  
Glenview Park District  
Village of Harwood Heights  
City of Highland Park  
Village of Hinsdale  
Village of Inverness  
Village of Kenilworth  
Village of Kildeer  
Village of Lake Zurich  
Leyden Township  
Village of Lincolnshire  
Village of Lincolnwood  
Village of Morton Grove  
Village of Mount Prospect  
Village of North Aurora  
Village of Northbrook  
City of North Chicago  
Village of Northfield  
Northfield Township  
Village of Oak Brook

Village of Orland Park  
City of Palos Hills  
City of Peoria  
City of Prospect Heights  
City of Rolling Meadows  
Village of Rosemont  
City of St. Charles  
Village of Schaumburg  
Village of Schiller Park  
Village of Skokie  
Village of South Barrington  
Village of Streamwood  
Metropolitan Water Reclamation  
District of Greater Chicago  
City of Waukegan  
Village of Wheeling  
Village of Wilmette  
Village of Willowbrook  
Village of Winnetka  
Village of Woodridge

#### **County Governments and Agencies**

Boone County State's Attorney's Office  
Forest Preserve of Cook County  
Cook County State's Attorney's Office  
DuPage County Board of Review

Forest Preserve District of DuPage  
County Kane County  
Kendall County Board of Review  
Lake County

Lake County Forest Preserve District  
Lake County State's Attorney's Office  
Morton Township  
Peoria County

#### **State and Federal Government Agencies**

Federal Deposit Insurance Corporation  
U.S. General Services Administration

Illinois Housing Development Authority  
Illinois State Toll Highway Authority

Internal Revenue Service  
The U.S. Postal Service

### **Schools**

Argo Community High School  
District No. 217  
Arlington Heights District No. 25  
Township High School District No. 214,  
Arlington Heights  
Barrington Community Unit District  
No. 220  
Chicago Board of Education  
Chicago Ridge District No. 127½  
College of Lake County  
Community Consolidated School  
District No. 15  
Community Consolidated School  
District No. 146  
Community School District No. 200  
Consolidated High School  
District No. 230  
Darien District No. 61  
DePaul University

Elk Grove Community Consolidated  
District No. 59  
Elmhurst Community Unit School  
District No. 205  
Glen Ellyn School District No. 41  
Glenbard High School District No. 87  
Indian Springs School District No. 109  
LaGrange School District No. 105  
Lake Forest Academy  
Leyden Community High School  
District No. 212  
Loyola University  
Lyons Township High School District  
No. 204  
Maine Township High School District  
No. 207  
Niles Elementary District No. 71  
North Shore District No. 112, Highland  
Park

Northwestern University  
Orland Park School District No. 135  
Palatine High School District #211  
Rhodes School District No. 84-1/2  
Riverside-Brookfield High School  
District No. 208  
Rosalind Franklin University  
Roselle School District No. 12  
Schaumburg Community Consolidated  
District No. 54  
Sunset Ridge School District No. 29  
Township High School District No. 211  
Township High School District No. 214  
Triton College  
University of Illinois  
Wheeling Community Consolidated  
District No. 21  
Wilmette District No. 39



## JOSEPH M. MaROUS STATEMENT OF QUALIFICATIONS

Joseph M. MaRous is an Energy Consultant with MaRous and Company, with a focus on the renewable and alternative energy industry.

For more details visit: [linkedin.com/in/joemarous](https://www.linkedin.com/in/joemarous)

### EDUCATION

Purdue University - West Lafayette, Indiana  
Bachelor of Science – Building Construction Management  
Focus in residential and green build construction

### CERTIFICATIONS

OSHA Safety Certified  
Certified Green Build Professional  
USPAP Certified

### CONSTRUCTION

Professional in the construction industry for 10 years

- Residential
- Commercial
- Industrial
- Municipal
- Tenant Improvement
- Schools
- Media Studios
- Automobile Dealerships

### MaROUS & COMPANY

#### Wind Projects

- Illinois
  - Alta Farms Wind Project II, *Dewitt County*
  - Harvest Ridge Wind Farm, *Douglas County*
  - Midland Wind Farm, *Henry County*
  - McLean County Wind Farm, *McLean County*
  - Radford's Run Wind Farm, *Macon County*
- Indiana
  - Tippecanoe County Wind Farm, *Tippecanoe County*
  - Roaming Bison Wind Farm, *Montgomery County*
- Iowa
  - Ida Grove II Wind Farm, *Ida County*
- Kansas
  - Neosho Ridge Wind Farm, *Neosho County*
- New York
  - Orangeville Wind Farm, *Wyoming County*
- South Dakota
  - Deuel Harvest Wind Farm, *Deuel County*
  - Dakota Range Wind Project I-III, *Codington County, Grant County, & Roberts County*
  - Crocker Wind Farm, *Clark County*
  - Prevailing Wind Park, *Bon Homme County, Charles Mix County, & Hutchinson County*
  - Sweet Land Wind Farm, *Hand County*
  - Triple H Wind Farm, *Hyde County*
  - Tatanka Wind Project, *Deuel County*

#### Solar Projects

- Illinois
  - Hickory Point Solar Energy Center, *Christian County*
- Indiana
  - Lone Oak Solar Farm, *Madison County*
- Maryland
  - Dorchester County Solar Farm, *Dorchester County*
- Wisconsin
  - Badger Hollow Solar Farm, *Iowa County*

#### Appraisal Assistance

- Vacant Land
- Auto Dealerships
- Religious Facilities
- Residential
- Commercial
- Retail

**This foregoing document was electronically filed with the Public Utilities**

**Commission of Ohio Docketing Information System on**

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**in**

**Case No(s). 18-0488-EL-BGN**

Summary: Testimony of Michael MaRous on behalf of Seneca Wind, LLC electronically filed by Teresa Orahod on behalf of Devin D. Parram