

**BEFORE
THE OHIO POWER SITING BOARD**

In the Matter of the Application of Firelands Wind,)
LLC for a Certificate of Environmental Compatibility)
and Public Need to Construct a Wind-Powered) Case No. 18-1607-EL-BGN
Electric Generation Facility in Huron and Erie)
Counties, Ohio.)

DIRECT TESTIMONY OF

**Michael MaRous,
President
MaRous & Company**

**on behalf of
Firelands Wind, LLC**

September 11, 2020

/s/ Christine M.T. Pirik

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

2 My name is Michael MaRous. I am the owner and president of MaRous & Company. My
3 business address is 300 South Northwest Highway, Suite 204, Park Ridge, Illinois 60068.
4

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

7 I graduated from the University of Illinois at Urbana-Champaign with a B.S. in Urban
8 Land Economics and began my career working with a Chicago real estate appraisal and
9 consulting firm. I founded MaRous & Company in 1980. During my career, I have
10 appraised real estate located in more than 25 states, reflecting a total value in excess of
11 \$15 billion. Properties include general industrial, commercial, and residential parcels, as
12 well as vacant land and specialized properties and interests, including air/development
13 rights, billboards, cemeteries, easements, golf courses, gambling facilities, schools, streets,
14 tank farms, waste transfer stations, utility and railroad rights-of-way, and energy-related
15 projects. Energy-related projects include a number of proposed natural gas-fired electric
16 plants in various locations; the Neosho Ridge Wind Project in Neosho County, Kansas;
17 the Roaming Bison Wind Project in Montgomery County, Indiana; the Grand Ridge V
18 and Otter Creek wind farms in LaSalle County, the Pleasant Ridge Wind Farm in
19 Livingston County, the Walnut Ridge Wind Farm in Bureau County, the McLean County
20 Wind Farm in McLean County, the Twin Forks Wind Farm in Macon County, the Midland
21 Wind Farm Project in Henry County, the Harvest Ridge Wind in Douglas County, and the
22 Alta Wind Farm in DeWitt County, all in Illinois; the Freeborn County Wind Farm
23 in Freeborn County, Minnesota; the Ida II Wind Farm in Ida County and the Palo Alto
24 County Wind Farm in Palo Alto County, both in Iowa; the Orangeville Wind Farm in
25 Wyoming County and the Alle-Catt Wind Farm in northern Cattaraugus and Allegany
26 counties, both in New York; the Dorchester County Solar Farms in Dorchester County,
27 Maryland; the Badger Hollow Solar Farm in Iowa County, Wisconsin; and the Republic
28 Wind Farm in Seneca and Sandusky counties, Ohio. In addition, I have completed market
29 impact studies for multiple wind projects in South Dakota. My statement of
30 qualifications is included at the end of the September 11, 2020 Market Impact Analysis
31 ("Market Analysis") for the Emerson Creek Wind Project ("Project") that is attached to

1 my testimony as Attachment MM-1.

2
3 **3. What is your role in the Project?**

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

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

13 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. My testimony, together with the other witnesses for Firelands
16 testifying in this case, supports the Board’s adoption of the Joint Stipulation and
17 Recommendation (“Stipulation”), which was filed in this docket on September 11, 2020,
18 and is being offered in this proceeding as Joint Exhibit 1.
19

20 **5. What studies will you be discussing in your testimony?**

21 In addition to my Market Impact Analysis, Attachment MM-2, my testimony includes a
22 discussion regarding the following studies:

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

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

7
8
9 **6. Did you prepare Attachment MM-2, which is the Market Impact Analysis Report the**
10 **Emerson Creek Wind Project?**

11 Yes.

12
13 **7. Are the findings, conclusions, and opinions in the Market Impact Analysis true and**
14 **correct to the best of your belief?**

15 Yes.

16
17 **8. Could you discuss in more detail the matched paired sales analysis you conducted**
18 **while preparing the Market Impact Analysis?**

19 Yes. I reviewed sales transactions in Paulding County, Ohio to try to identify matched
20 paired sales to use for comparison, meaning sales of similar rural residential properties
21 where one property was near a wind farm and one property was not. Paulding County,
22 while slightly more rural than the subject area, has approximately 500 megawatts of wind
23 farm capacity. In addition, the household income levels and property values are
24 somewhat similar to the subject area. Given a lack of proximate/not proximate paired
25 sales data for Ohio, I reviewed matched paired sales data in rural areas of Pennsylvania,
26 New York, Minnesota, Iowa, Indiana, South Dakota, and Illinois. As detailed in the
27 Market Impact Analysis, when adjustments were made to the sales prices of the matched
28 pairs to account for their physical differences and differences in amenities, the per square
29 foot sales prices were essentially the same, indicating that proximity to a wind farm did
30 not impact the price of the proximate sale.

31

32

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

In July 2019, MaRous & Company conducted a survey of the County Auditors or a deputy auditor in three counties in which wind farms with more than 25 turbines currently are operational. 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 auditors 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 auditor'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; and
- Agricultural properties are taxed based upon a productivity formula that is not impacted by market data and external influences.

10. Based on your analysis, what conclusions did you reach?

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.

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

3 Yes. The 2009 and 2013 Lawrence Berkeley National Laboratory ("LBNL") studies are
4 the leading studies on this subject. LBNL is a member of the national laboratory system
5 supported by the U.S. Department of Energy through its Office of Science. It is managed
6 by the University of California and is charged with conducting unclassified research across
7 a wide range of scientific disciplines. LBNL conducted regression studies on a nationwide
8 basis in 2009 and 2013 to study the potential effects of the proximity of wind turbines on
9 property values (Ernest Orlando Lawrence Berkeley National Laboratory, *The Impact of*
10 *Wind Power Projects on Residential Property Values in the United States: A Multi-Site*
11 *Hedonic Analysis* (December 2009) and Ernest Orlando Lawrence Berkeley National
12 Laboratory, *A Spatial Hedonic Analysis of the Effects of Wind Energy Facilities on*
13 *Surrounding Property Values in the United States* (August 2013).
14

15 **12. What methodologies did the LBNL Studies employ?**

16 The 2009 study included an analysis of 7,489 sales within ten miles of eleven wind farms
17 and 125 post-construction sales within one mile of a wind turbine. The 2009 study used
18 rural settings and wind farms with more than 50 turbines. The 2013 study included
19 51,276 sales located in nine states and proximate to 67 wind farms, and 376 post-
20 construction sales within one mile of a wind turbine. Like the 2009 study, all were located
21 in rural settings and near wind farms of more than 50 turbines. The 2013 study "used a
22 number of sophisticated techniques to control for other potential impacts on home prices,
23 including collecting data that spanned well before the wind facilities' development was
24 announced to after they were constructed and operating. This allowed the researchers to
25 control for any pre-existing differences in home sales prices across their sample and any
26 changes that occurred due to the housing bubble."
27

28 **13. Please discuss the conclusions of the LBNL Studies.**

29 Neither study found statistical evidence that values of homes near wind turbines were
30 affected. Specifically, with respect to the 2013 study, LBNL states that "[t]his study, the
31 most comprehensive to-date, builds on both the previous Berkeley Lab study as well as a

number of other academic and published United States studies, which also generally find no measureable impacts near operating turbines.” “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/>. *Id.*

14. Do you agree with the conclusions of the LBNL Studies?

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

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

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

16. Please describe these other studies.

The studies I was referencing are summarized below:

- The Municipal Property Assessment Corporation’s (“MPAC”) studies on the *Impact of Industrial Wind Turbines on Residential Property Assessment in Ontario*. This study was originally conducted in 2008 and updated in 2012 (“MPAC 2012”) and 2016 (“MPAC 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.” (MPAC 2012 at 5.) Using 2,051 properties and generally accepted time adjustment techniques, MPAC “cannot conclude any loss in price due to the proximity of an IWT.” (MPAC 2012 at 29.) Further, Appendix G of the MPAC 2012 study “Re-sale Analysis” states in the “Summary of Findings” that “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.” (MPAC 2012, Appendix E.)

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

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

31 I am not aware of any peer-reviewed study that has concluded that wind turbines have an
32 impact on property values.

1 **18. Does this conclude your testimony?**

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

CERTIFICATE OF SERVICE

The Ohio Power Siting Board's e-filing system will electronically serve notice of the filing of this document on the parties referenced in the service list of the docket card who have electronically subscribed to these cases. In addition, the undersigned certifies that a copy of the foregoing document is also being served upon the persons below this 11th day of September, 2020.

/s/ Christine M.T. Pirik

Christine M.T. Pirik (0029759)

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Attachment MM-1

Property Report

MARKET IMPACT ANALYSIS
EMERSON CREEK WIND FARM
ERIE, HURON, AND SENECA COUNTY, OHIO

September 8, 2020

Firelands Wind, LLC
Apex Clean Energy, Inc.
310 4th Street Northwest – Suite 200
Charlottesville, Virginia 22902

Attention: Nate Pedder – Project Developer

Subject: Market Impact Analysis
Emerson Creek Wind Farm
Erie, Huron, and Seneca County, Ohio

Dear Mr. Pedder,

In accordance with your request, the proposed development of the Emerson Creek Wind Farm in Erie, Huron, and 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 for several 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:

- ✧ **Ohio** - Seneca Wind in Seneca County and Republic Wind in Seneca County and Sandusky County.
- ✧ **New York** - Orangeville Wind Farm in Wyoming County and Alle-Catt Wind Farm in Allegany County, Cattaraugus County, and Wyoming County.
- ✧ **Indiana** - Tippecanoe County Wind Farm in Tippecanoe County and Roaming Bison Wind Farm in Montgomery County.
- ✧ **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, Lincoln Land Wind in Morgan County, Bennington Wind Project in Marshall County, Goose Creek Wind in Piatt County, and Shady Oaks II in Lee County.
- ✧ **Iowa** - Ida County Wind Farm in Ida County and Palo Alto County Wind Farm in Palo Alto County.
- ✧ **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, Prevailing Wind Park in Charles Mix County, Bon Homme County, and Hutchinson County, Triple-H Wind Project in Hyde County, Crowned Ridge Wind II in Codington County, Deuel County, and Grant County, Tatanka Ridge Wind Farm in Deuel County, and Sweetland Wind Farm in Hand County.
 - ✧ **Kansas** - Neosho Ridge Wind Farm in Neosho County and Jayhawk Wind in Bourbon County and Crawford County.

The solar-related projects include the following by state:

- ✧ **Illinois** - Hickory Point Solar Energy Center in Christian County and Mulligan Solar in Logan County.
- ✧ **Indiana** - Lone Oak Solar Farm in Madison County.
- ✧ **Wisconsin** - Badger Hollow Solar Farm in Iowa County, Paris Solar Energy Center in Kenosha County, Darien Solar Energy Center in Rock County and Walworth County, and Grant County Solar in Grant County.
- ✧ **Maryland** - Dorchester County Solar Farms in Dorchester County.
- ✧ **Solar Projects of the Western Regions of the United States of America** - Arizona, Colorado, Nevada, New Mexico, and Utah in the Southwest Region; Idaho and Oregon in the Northwest Region; Texas in the Southern Great Plains Region; General Research in the Northern Great Plains Region.

We also have 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 Information	
Project Name	Emerson Creek Wind Farm
Location	Erie, Huron, and Seneca County, Ohio
<i>Townships</i>	Groton, Lynne, Norwich, Oxford, Reed, Richmond, Ridgefield, Sherman, and Venice
Property Type	Wind Farm
Project Developer	Apex Clean Energy, Inc.
Wind Farm Description	
Total Project Area Land Acreage	≈ 41,000 Acres
<i>Actual Land Acreage Used by Turbines</i>	≈ 84.5 Acres or 0.3% of Leased Land
Number of Turbines	Up to 71 Turbines
Turbine Specifications	
<i>Type</i>	To Be Determined
<i>Capacity</i>	3.0-5.7 Megawatts
<i>Tip Height</i>	Up to 656.0 Feet
Total Capacity	Up to 297.7 Megawatts
Setbacks/Sound/Shadow Flicker	Setbacks: ✧ 1,125 Feet plus Blade Length – <i>Non-Participating Parcel Lines and State Roads</i> ✧ 1.1x Tip Height – <i>Participating Parcel Lines, electric transmission lines, and pipelines</i> Sound: ✧ The Facility has been designed to comply with the requirements of OAC Rule 4906-4-09(F), which limits Project-related sound levels at non-participating residences. Shadow Flicker: ✧ The Facility has been designed to comply with the requirements of OAC Rule 4906-4-09(H), which requires that turbines be operated so that shadow flicker does not exceed 30 hours/year at non-participating residences.
Number of Participants	≈ 250 Landowners
Participant Acreage	≈ 32,000 Acres
Ancillary Construction	
Project substation	Operations and maintenance building
Underground collector lines	Laydown yard
Meteorological towers	Gravel access roads
Total Cost	≈ \$350,000,000-\$450,000,000

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, 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 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 the result of considerable study of 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 to 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 in other areas of the state with wind farms did not support any findings 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 Auditors 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 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 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 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 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 summary of the findings in literature on peer-reviewed studies of wind farms in North America, although not specific to Ohio, 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 conditions' requisite to a fair sale, the buyer and seller each acting prudently and knowledgeably, and assuming the price is not affected by undue stimulus. Implicit in this definition 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.
- ∴ The price represents the normal consideration for the property sold unaffected by special or creative financing or sales concessions granted by anyone associated with the sale.¹

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 Erie, Huron, and Seneca County Wind Energy Ordinances, and other public documents.
- ∴ 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 Erie, Huron, and 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 Erie, Huron, and 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 development of the matched pairs were physically inspected on the exterior, and photographs of the interiors were reviewed where available.
- ∴ Inspections were performed of the project area and the areas in nearby counties with existing wind farms by Michael S. MaRous on March 30, 2020.

¹ (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)

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, I have considered the following:

- ∴ The character and the value of the residential and agricultural properties in the general area of the proposed wind farm.
- ∴ Agricultural land values in Erie, Huron, and 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

Emerson Creek Wind Farm Location				
Project Area Cities/Towns	Bellevue	Willard	Monroeville	Attica
2010 Population	12,655	11,123	4,052	2,313
2019 Population	12,438	10,729	4,082	2,170
Median Household Income in 2019	\$55,400	\$50,586	\$63,083	\$56,461
Number of Households in 2019	4,916	4,083	1,534	860
Number of Housing Units in 2019	5,439	4,803	1,652	968
Number of Vacant Housing Units in 2019	523	720	118	108
Unemployment Rate	2.3%	4.6%	1.8%	2.4%
Townships – Groton, Lynne, Norwich, Oxford, Reed, Richmond, Ridgefield, Sherman, and Venice				
2010 Population	11,098 Persons			
2019 Population	10,899 Persons			
Median Household Income in 2019	\$62,407			
Number of Households in 2019	4,154 Households			
Number of Housing Units in 2019	4,539 Units			
Number of Vacant Housing Units in 2019	385 Units			
Unemployment Rate	1.7%			
Erie County, Ohio				
2010 Population	77,079 Persons			
2019 Population	76,015 Persons			
Median Household Income in 2019	\$57,504			
Number of Households in 2019	31,717 Households			
Number of Housing Units in 2019	37,845 Units			
Number of Vacant Housing Units in 2019	6,128 Units			
Unemployment Rate	3.9%			
Huron County, Ohio				
2010 Population	59,626 Persons			
2019 Population	59,775 Persons			
Median Household Income in 2019	\$51,049			
Number of Households in 2019	22,970 Households			
Number of Housing Units in 2019	25,589 Units			
Number of Vacant Housing Units in 2019	2,619 Units			
Unemployment Rate	4.0%			
Seneca County, Ohio				
2010 Population	56,745 Persons			
2019 Population	56,253 Persons			
Median Household Income in 2019	\$50,689			
Number of Households in 2019	21,743 Households			
Number of Housing Units in 2019	24,122 Units			
Number of Vacant Housing Units in 2019	2,379 Units			
Unemployment Rate	4.5%			
Main Roadway Arterials				
North/South	Ohio Route 4 extend through the center of the footprint			
East/West	Interstate 80/90 extends along the northern boundary of the footprint and U.S. Route extends through the southern portion of the footprint			

Nearest Cities within the Market Area of Emerson Creek Wind Farm

Norwalk, Ohio *≈ 6 Miles East of Project Footprint*

2010 Population	17,012 Persons
2019 Population	17,309 Persons

Sandusky, Ohio *≈ 7 Miles North of Project Footprint*

2010 Population	25,793 Persons
2019 Population	24,800 Persons

Clyde, Ohio *≈ 7 Miles West of Project Footprint*

2010 Population	6,350 Persons
2019 Population	6,392 Persons

Shelby, Ohio *≈ 12 Miles Southeast of Project Footprint*

2010 Population	9,317 Persons
2019 Population	8,895 Persons

Fremont, Ohio *≈ 14 Miles West of Project Footprint*

2010 Population	16,716 Persons
2019 Population	16,674 Persons

Tiffin, Ohio *≈ 16 Miles West of Project Footprint*

2010 Population	17,963 Persons
2019 Population	18,017 Persons

Lorain, Ohio *≈ 24 Miles Northwest of Project Footprint*

2010 Population	64,097 Persons
2019 Population	65,104 Persons

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

Top Employers Near Erie, Huron, and Seneca County, Ohio

Business Name	Business Type
Mercy Tiffin Hospital	Health Care
Ameriwood Industries	Manufacturing
Church & Dwight	Manufacturing
Heidelberg University	Education
Mennel Milling	Manufacturing
Pepperidge Farm	Food Manufacturing
Muck Crops Agricultural Research Station	Agricultural
New Horizons Baking Company	Food Manufacturing
Fisher Titus Medical Center	Health Care
Mercy Health Willard Hospital	Health Care

Largest Private Employers in Seneca County - <https://senecasuccess.wordpress.com/2015/08/28/largest-private-employers-in-seneca-county/>
Infrastructure, Manufacture, Craftsmanship. - <https://www.hcdc.net/business-industry>

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 the Emerson Creek Wind Farm. A map illustrating the location of each of these sales is included in the addenda to this market impact study.

**MOST RECENT SINGLE-FAMILY RESIDENTIAL SALES SUMMARY
NEAREST TO THE FOOTPRINT OF EMERSON CREEK WIND FARM**

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	6188 Townline Road #12 Willard, Ohio	\$135,000	7/31/19	3.22	1987	2,076	\$65.03
2	5295 Sherman Norwich Road Willard, Ohio	\$136,000	10/3/19	3.50	1972	1,550	\$87.74
3	5807 Townline Road #12 Willard, Ohio	\$138,500	6/18/19	2.00	1920	1,316	\$105.24
4	4783 Scottwood Road Willard, Ohio	\$194,900	7/5/18	1.20	1920	2,096	\$92.99
5	6260 State Route 162 Willard, Ohio	\$214,000	8/16/19	2.00	2000	1,798	\$119.02
6	3821 Prairie Road Bellevue, Ohio	\$235,000	1/30/20	0.68	1961	1,776	\$132.32
7	4920 Sandhill Road Bellevue, Ohio	\$286,000	2/5/18	3.00	1998	2,076	\$137.76
8	2638 State Route 4 Bellevue, Ohio	\$420,200	10/30/19	13.26	1991	2,616	\$160.63

Project Description

The project is proposed to consist of up to 71 turbines with an individual capacity of 3.0 up to 5.7 megawatts; the turbines have a tip height of up to 656.0 feet. The total capacity of the wind farm will be up to 297.7 megawatts, with a footprint consisting of approximately 32,000 acres leased land within the total project acreage of approximately 41,000 acres.

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 approximately \$350,000,000 to \$450,000,000. Ancillary construction includes gravel access roads, underground collector lines, a project substation, an operations and maintenance building, and a laydown yard.

Project Benefits

Taxes	
Property Taxes	Estimated total to be approximately \$73,462,777 over the 30 year life of the project
Beneficiaries	Erie County, Huron County, Lyme Township, Groton Township, Oxford Township, Sherman Township, Norwich Township, Ridgefield Township, Richmond Township, Seneca East Schools, Edison Local Schools, Willard City School District, Bellevue City School District, Perkins School District, Monroeville City School District, Margaretta School District
Land Agreements	
Participating Landowner Lease Payments	Participating landowner payments will be made over the first 30 years of the project
Good Neighbor Agreements	Individual good neighbor agreement payments will be made over the first 30 years of the project
Job Creation	
Temporary/Construction	≈ 300 Construction Jobs
Permanent	≈ 10 Permanent Jobs
Induced Impacts due to Construction	
Indirect Impacts	Permit payments to the county and anticipated increase in household spending to local businesses

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 in the Midwest and the Northeast, specifically, Pennsylvania, New York, Indiana, Illinois, Iowa, South Dakota, Minnesota, and Kansas.
- ⋄ The value of agricultural land in Erie, Huron, and Seneca County and in other counties with existing wind farms.
- ⋄ Interviews of local and national real estate professionals.
- ⋄ The results of a survey of assessors in Ohio, New York, Indiana, Illinois, Iowa, Kansas, South Dakota, and Minnesota, with existing wind farms in their respective jurisdictions.
- ⋄ 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.² 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 market 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 Midwestern states that have a strong presence of wind turbines, similar demographics, similar economics, and similar agricultural characteristics, have also been analyzed.

Adjustment grids are included with each matched pair analysis to compare each variable of sale. The adjustment comparisons in the following analyses are qualitative. A qualitative analysis involves using quality ratings based on how the non-proximate sales compare to the proximate sales and does not require using dollar adjustments.³ The non-proximate sales are adjusted with the notations of superior (-), similar (o), and inferior (+). The superior variables are given downward adjustments to meet the related variables of the proximate residences. The similar variables do not require adjustments. The inferior variables are given upward adjustments in order to meet the related variables of the proximate residences.

Details of the sales included in this analysis are retained in the MaRous & Company 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.

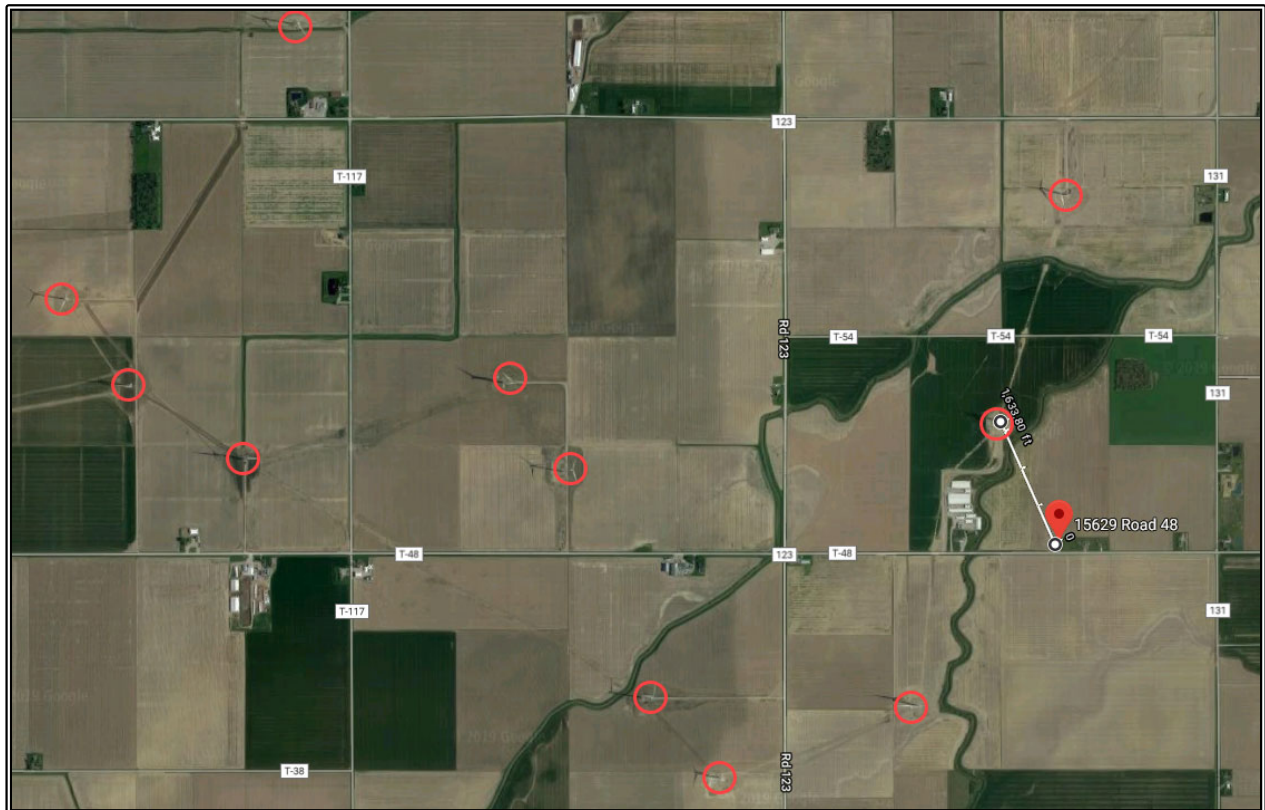
² See the discussion "Paired Sales Analysis" and "Sale/Resale Analysis" in Bell, Randall, MAI, *Real Estate Damages, Applied Economics and Detrimental Conditions, Second Edition*, Appraisal Institute, 2008, pages 25-27.

³ Horn, T. (2015, September 3). *What qualitative analysis is and how agents can use it to price their listings* • Birmingham Appraisal Blog. Retrieved from <https://birminghamappraisalblog.com/appraisal/what-qualitative-analysis-is-and-how-agents-can-use-it-to-price-their-listings/>

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

	1A - Proximate to a Wind Turbine	1A - Prior Sale	1B - Not Proximate to a Wind Turbine
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

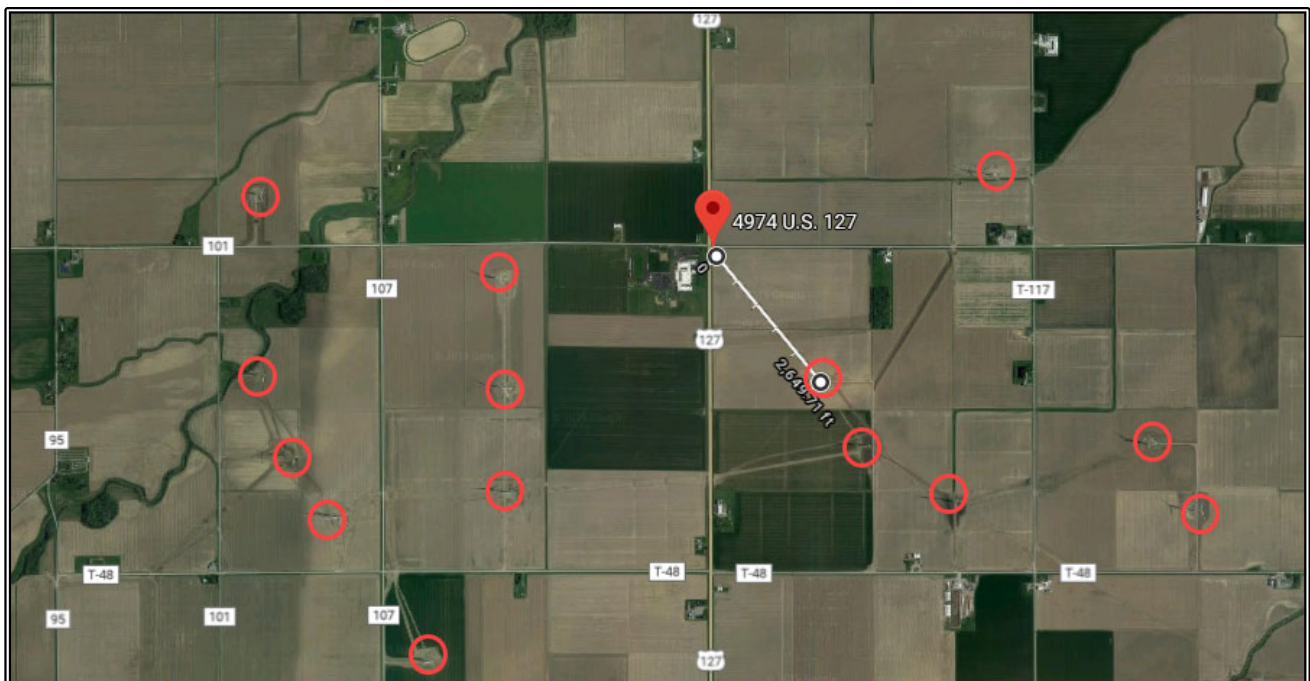
SALE NO.	ADDRESS	SALE DATE	YEAR BUILT	BUILDING SIZE	LOT SIZE	LOCATION	STYLE	BASEMENT	UTILITIES	OUT-BUILDINGS
1B	11388 State Route 613 Paulding, OH 45879	+	-	-	-	o	o	+	o	o
+	Positive adjustment based on comparable being inferior in comparison to property #1A									
-	Negative adjustment based on comparable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



PAULDING COUNTY MATCHED PAIR NO. 2

	2A - Proximate to a Wind Turbine	2B - Not Proximate to a Wind Turbine
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



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.

Ohio Analysis - Paulding County Matched Pair No. 3

Paulding County Matched Pair No. 3 considers the recent sale of a property located at 3803 Road 48, Payne, Ohio, that is 1,705 feet from the nearest wind turbine located within the Northwest Ohio wind farm, with approximately fifteen additional turbines visible from the property in multiple directions. This property sold on September 5, 2019.

This sale is compared with a similar property located at 11627 Road 137, Paulding, Ohio, that sold on January 11, 2018. The salient details of these two properties are summarized in the table below.



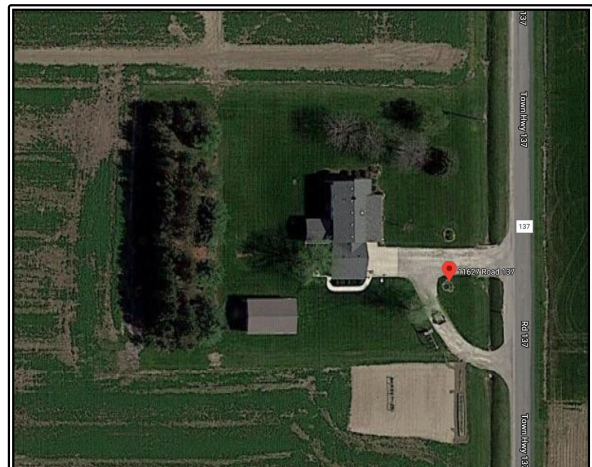
PAULDING COUNTY MATCHED PAIR NO. 3

	3A - Proximate to a Wind Turbine	3B - Not Proximate to a Wind Turbine
Address	3803 Road 48 Payne, OH 45880	11627 Road 137 Paulding, OH 45879
Distance from Turbine (Ft.)	1,705	N/A
Sale Date	September 5, 2019	January 11, 2018
Sale Price	\$235,000	\$175,000
Sale Price/Sq. Ft. (A.G.)	\$81.34	\$77.16
Year Built	1950	1979
Building Size (Sq. Ft.)	2,889	2,268
Lot Size (Acres)	5.00	5.04
Style	One-story, frame (vinyl) 4 bedrooms, 2 bath	1.5-story, frame (vinyl) 4 bedrooms, 2 bath
Basement	Full, partially finished	Full, partially finished
Utilities	Central air Other heat Well & septic	Geothermal cooling/heat Electric heat Well & septic
Other	3-car detached garage Machine shed and deck	2-car attached garage Shed and porch



3803 Road 48

11627 Road 137



The house at 3803 Road 48, is located approximately 1,705 feet away from the nearest turbine, in a rural area. Both houses have similar lot sizes, in a similar rural location, have similar basements, and have similar outbuildings. The 11627 Road 137 property is of superior vintage, of similar style, and superior utilities. The 3803 Road 48 property is of superior market conditions and superior building size.

ADJUSTMENT GRID MATCHED PAIR NO. 3

SALE NO.	ADDRESS	SALE DATE	YEAR BUILT	BUILDING SIZE	LOT SIZE	LOCATION	STYLE	BASEMENT	UTILITIES	OUT-BUILDINGS
3B	11627 Road 137 Paulding, OH 45879	+	-	+	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									

Downward adjustments were made for the superior vintage, style, and utilities of the 11627 Road 137 property compared to the 3803 Road 48 property. Upward adjustments were made for the superior market conditions and building size of the 3803 Road 48 property compared to the 11627 Road 137 property. The two properties have essentially the same lot size, location, basement, and outbuildings. Therefore, although the 11627 Road 137 property give the impressions of being superior in more categories, the higher per square foot sale price for the 3803 Road 48 property appears to support the conclusion that there is not any negative impact in value resulting from the proximity of the 3803 Road 48 property to a wind turbine.

Ohio Analysis - Paulding County Matched Pair No. 4

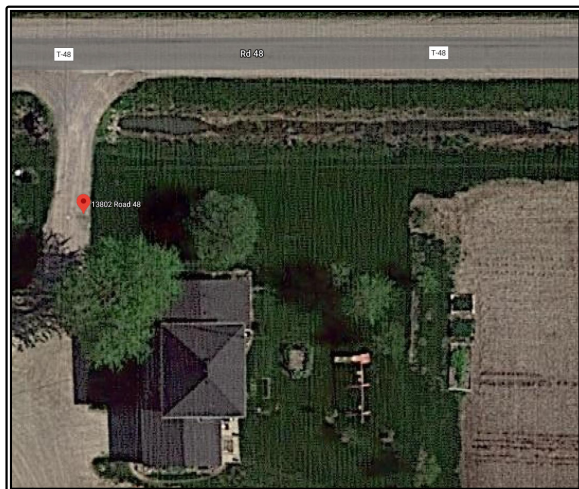
Paulding County Matched Pair No. 4 considers the recent sale of a property located at 13802 Road 48, Haviland, Ohio, that is 1,240 feet from the nearest wind turbine located within the Northwest Ohio wind farm, with approximately fifteen additional turbines visible from the property multiple directions. This property sold on June 18, 2017.

This sale is compared with a similar property located at 6279 Road 180, Antwerp, Ohio, that sold on August 29, 2019. The salient details of these two properties are summarized in the table below.



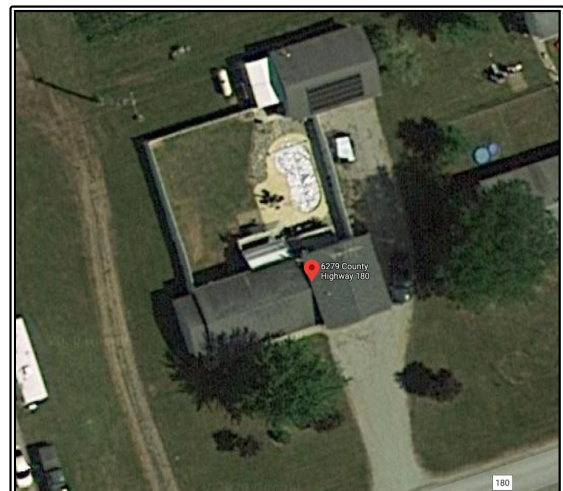
PAULDING COUNTY MATCHED PAIR NO. 4

	4A - Proximate to a Wind Turbine	4B - Not Proximate to a Wind Turbine
Address	13802 Road 48 Haviland, OH 45851	6279 Road 180 Antwerp, OH 45813
Distance from Turbine (Ft.)	1,240	N/A
Sale Date	June 18, 2017	August 29, 2019
Sale Price	\$172,500	\$165,000
Sale Price/Sq. Ft. (A.G.)	\$90.27	\$76.53
Year Built	1900	1972
Building Size (Sq. Ft.)	1,911	2,156
Lot Size (Acres)	1.01	0.36
Style	Two-story, frame (vinyl) 4 bedrooms, 1.1 bath	Two-story, frame (vinyl) 3 bedrooms, 2 bath
Basement	Full, partially finished	N/A
Utilities	Central air Other heat Well & septic	Central air Other heat Well & septic
Other	2-car attached garage Patio	3-car attached garage Deck and pool



13802 Road 48

6279 Road 180



The house at 13802 Road 48, is located approximately 1,240 feet away from the nearest turbine, in a rural area. Both houses are in a similar rural location and have similar utilities. The 6279 Road 180 property is of superior market conditions, superior vintage, superior building size, and superior outbuildings. The 13802 Road 48 property has superior lot size, superior style, and has a superior basement.

ADJUSTMENT GRID MATCHED PAIR NO. 4

SALE NO.	ADDRESS	SALE DATE	YEAR BUILT	BUILDING SIZE	LOT SIZE	LOCATION	STYLE	BASEMENT	UTILITIES	OUT-BUILDINGS
4B	6279 Road 180 Antwerp, OH 45813	-	-	-	+	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									

Downward adjustments were made for the superior market conditions, vintage, building size, and outbuildings of the 6279 Road 180 property compared to the 13802 Road 48 property. Upward adjustments were made for the superior lot size, style, and basement of the 13802 Road 48 property compared to the 6279 Road 180 property. The two properties have essentially the same location and utilities. Therefore, although the 6279 Road 180 property gives the impression of being superior in more categories, the higher per square foot sale price for the 13802 Road 48 property appears to support the conclusion that there is not any negative impact in value resulting from the proximity of the 13802 Road 48 property to a wind turbine.

Matched Pair Analysis – Pennsylvania, New York, Indiana, Illinois, Iowa, South Dakota, Minnesota, and Kansas

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, Iowa, South Dakota, Minnesota, and Kansas 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 my 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.

SOMERSET COUNTY MATCHED PAIR NO. 1

	1A - Proximate to a Wind Turbine	1B - Not Proximate to a Wind Turbine
Address	1291 Huckleberry Hwy. Central City, PA 15926	3034 Stutzmantown Rd. Somerset, PA 15501
Distance from Turbine (Ft.)	2,106	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



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 (Ft.)	2,231	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 reflects 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									

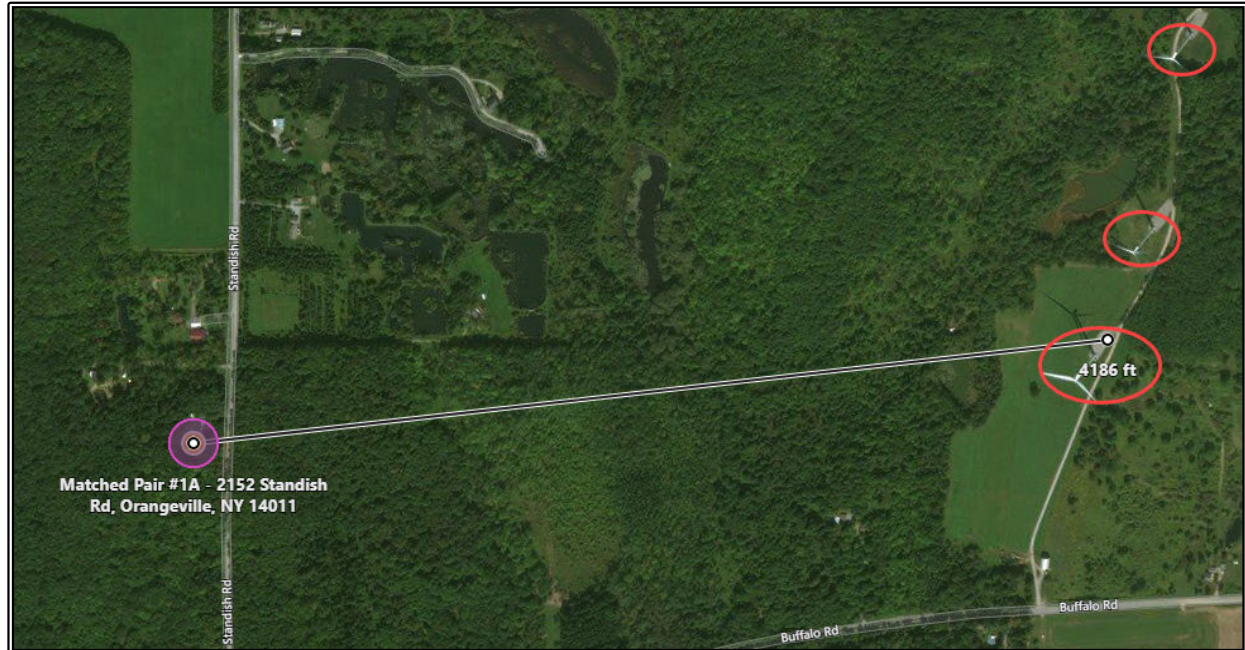
The analysis of the sales at 1259 Huckleberry Highway and 507 Beans Cove Road do not support a finding that the proximity to the wind turbines had a negative impact on value; the superior sale price of the Beans Cove Road property is supported by the superior features of that house.

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 (Ft.)	4,186	4,186	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	1.86	3.16
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									

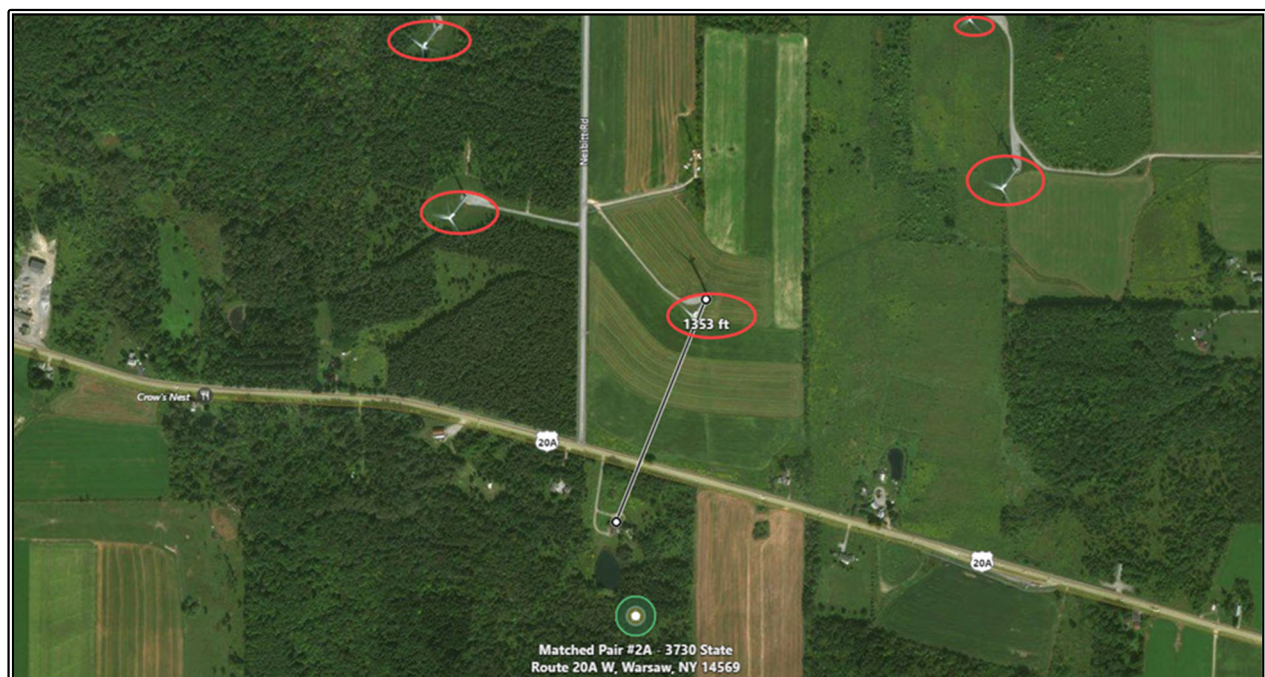
Considering the similarities of the two properties, the analysis of the sales at 2152 Standish Road and at 1673 Folsomdale Road does not support a finding that the proximity to the wind turbines had a negative impact on the value of the 2152 Standish Road property.

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 (Ft.)	1,353	1,353	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	24.34	9.07
Style	Two-story, frame (wood) 3 bedrooms, 4 bath	Two-story, frame (wood) 3 bedrooms, 4 bath	Two-story, frame (vinyl) 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									

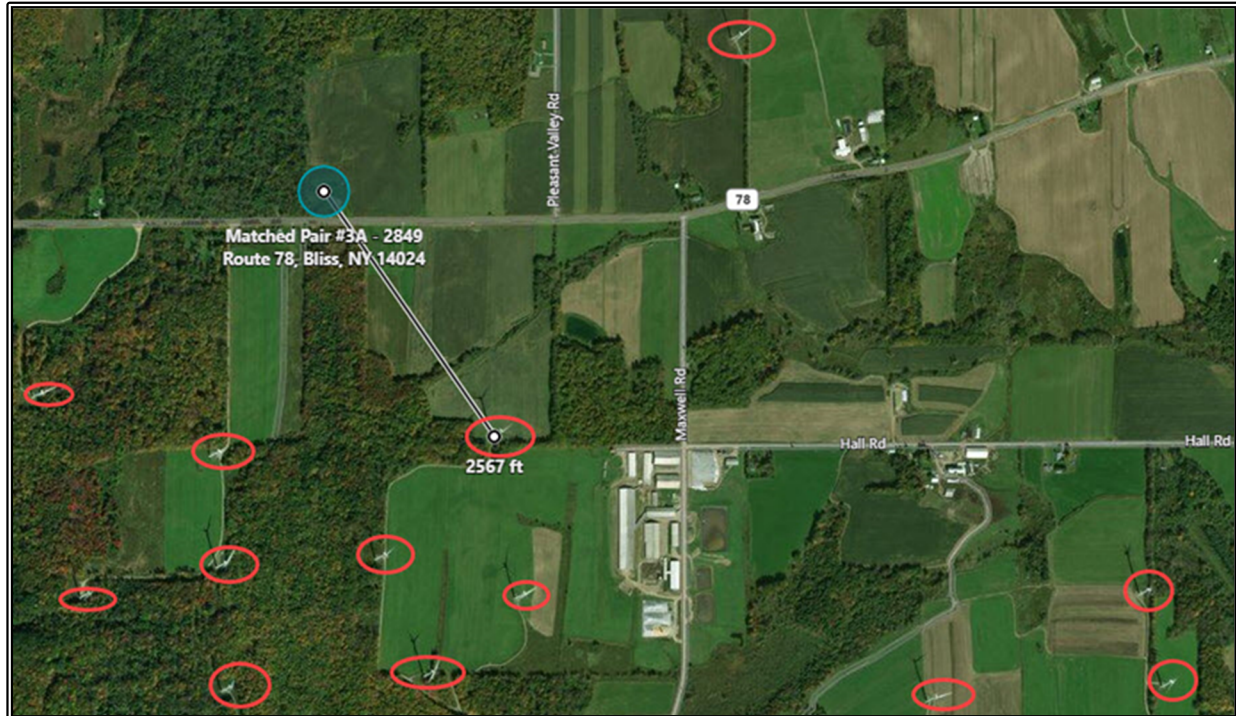
Given the similarities of the two properties, despite the lot size and vintage, the analysis of the sales at 3730 State Route 20a W and at 4062 Plowe Road does not support a finding that the proximity to the wind turbines had a negative impact on the value of the 3730 State Route 20a W property.

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 (Ft.)	2,567	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	3.51
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									

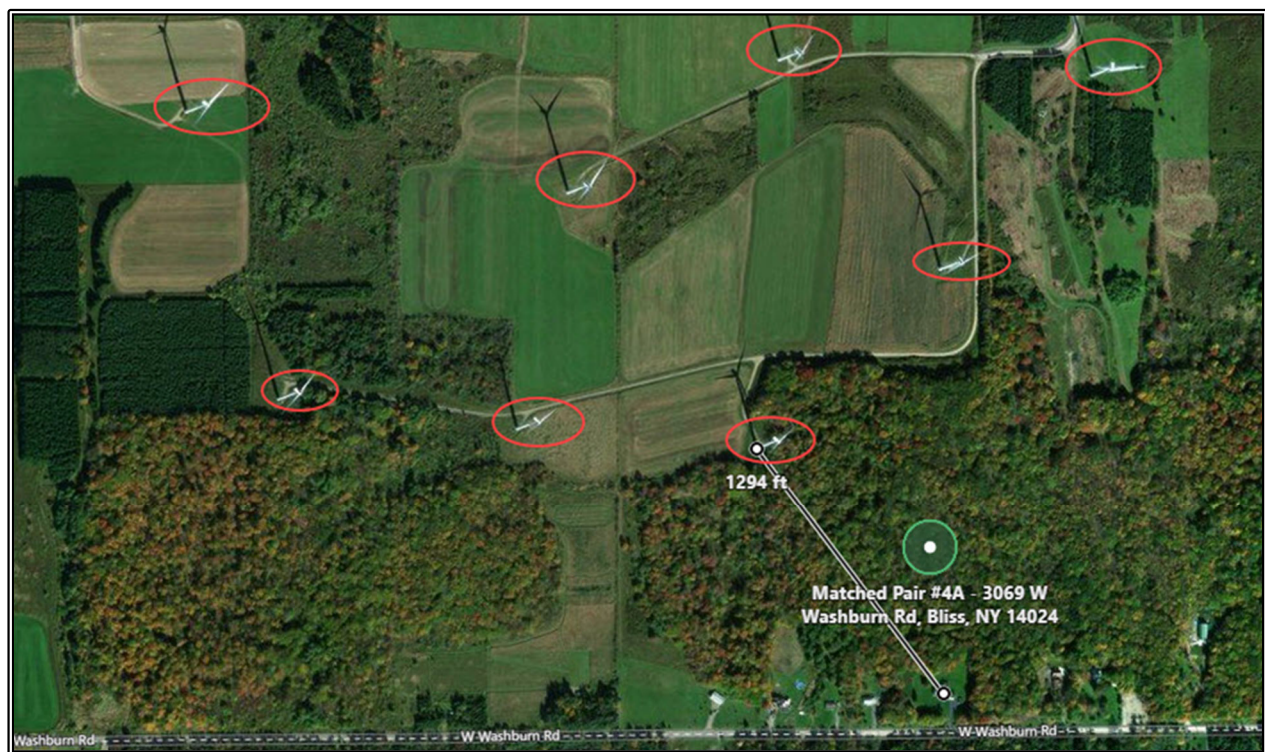
Given the similarities of the two properties, despite the vintage, the analysis of the sales at 2849 Route 78 and at 7320 Route 98 does not support a finding that the proximity to the wind turbines had a negative impact on the value of the 2849 Route 78 property.

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.



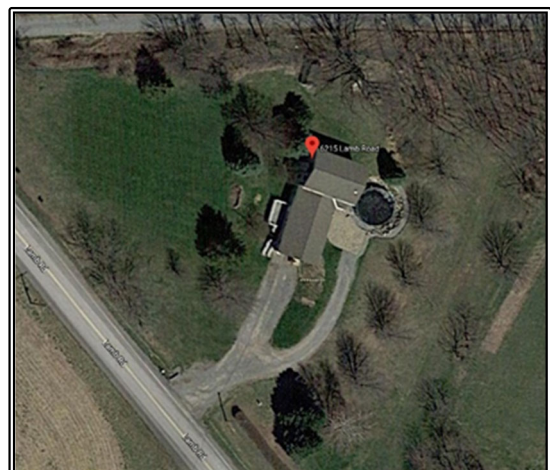
WYOMING COUNTY MATCHED PAIR NO. 4

	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 (Ft.)	1,294	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	14.00	5.65
Style	Two-story, frame (vinyl) 5 bedrooms, 2.1 bath	Two-story, frame (vinyl) 5 bedrooms, 2.1 bath	Two-story, frame (vinyl) 4 bedrooms, 3 bath
Basement	Full, unfinished	Full, unfinished	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

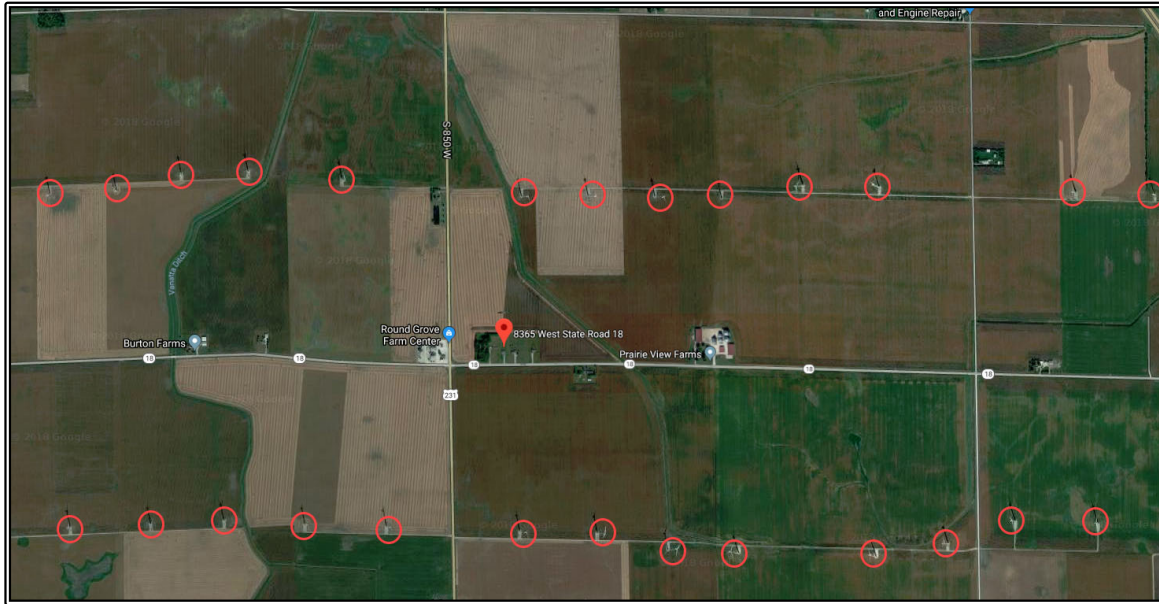
SALE NO.	ADDRESS	SALE DATE	YEAR BUILT	BUILDING SIZE	LOT SIZE	LOCATION	STYLE	BASEMENT	UTILITIES	OUT-BUILDINGS
4B	6215 Lamb Road Wyoming, New York	+	o	o	+	+	o	+	o	o
+	Positive adjustment based on comparable being inferior in comparison to property #3A									
-	Negative adjustment based on comparable 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, which came online in 2009, and there are several turbines visible in each direction. The photograph below 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 following table.



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 Forced-air heat well & septic	Central air 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 located in a similar rural location, have similar utilities, and were sold in similar market conditions. The 8365 West State Road 18 property is of superior age and has a superior lot size. The 1105 South Airport Road property has a superior building size, a superior building style, and has a superior basement and outbuildings.

ADJUSTMENT GRID MATCHED PAIR NO. 1

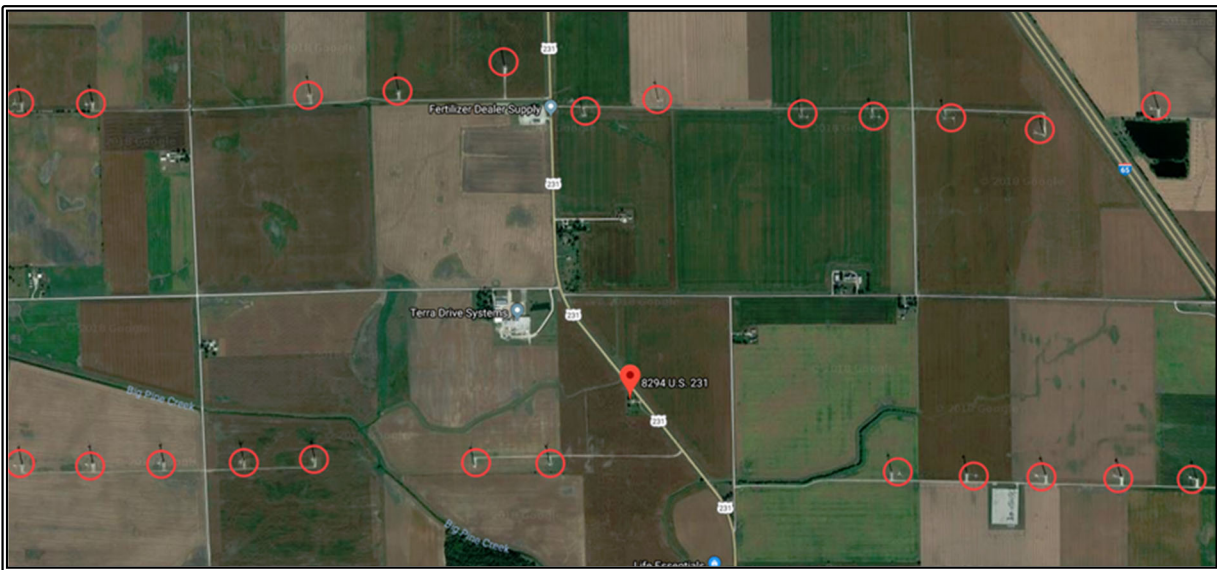
Sale No.	Address	Sale Date	Year Built	Building Size	Lot Size	Location	Style	Basement	Utilities	Out-Buildings
1B	1105 S Airport Rd. Monticello, IN 47960	O	+	-	+	O	-	-	O	-
+	Positive adjustment based on comparable being inferior in comparison to property #1A									
-	Negative adjustment based on comparable being superior in comparison to property #1A									
O	No adjustment necessary									

Upward adjustments are made to the 1105 South Airport Road property for the superior age 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 those features of 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, which came online in 2009, 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 6288 East Ash Court, Monticello, that sold in June 2017 for \$150,800. 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.



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)
	5 bedrooms, 2 bath	5 bedrooms, 2.5 bath
Basement	Crawlspace	Crawlspace
Utilities	Central air Forced-air heat Well & septic	Central air Forced-air heat 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 have a similar lot size, a similar rural location, have similar basements, and similar utilities. The 6288 East Ash Court property is of superior building size, building style, age, 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, age, 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 - Lee County Matched Pair No. 1

Lee County Matched Pair No. 1 considers the sale of a house located at 956 Bingham Road, Steward, that sold in November 2017 for \$185,000. This house is located approximately 735 feet from the nearest turbine of the Mendota Hills Wind Farm, which originally came online in 2003 and was subsequently renewed in 2019. The photograph below is an aerial view of the multiple turbines visible each direction of the house.

This property is compared with a similar property located at 3535 Elva Road, Steward, that sold in June 2018 for \$180,000. 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 following table.



LEE COUNTY MATCHED PAIR NO. 1

	1A - Proximate to a Wind Turbine	1B - Not Proximate to a Wind Turbine
Address	956 Bingham Rd. Steward, IL 60553	3535 Elva Rd. Steward, IL 60553
Distance from Turbine (Ft.)	735	N/A
Sale Date	November 29, 2017	June 24, 2018
Sale Price	\$185,000	\$180,000
Sale Price/Sq. Ft. (A.G.)	\$100.00	\$87.89
Year Built	1900	1972
Building Size (Sq. Ft.)	1,850	2,048
Lot Size (Acres)	2.41	3.22
Style	Two-story; frame (vinyl) 4 bedrooms, 2 bath	One-story; frame (vinyl) 4 bedrooms, 2 bath
Basement	Full	Full, partially finished
Utilities	Wall-unit air Radiant heat Well & septic	Hydronic heating; well & septic
Other	2-car detached garage; Storage shed Deck, porch, and patio	3-car attached garage Storage shed, horse paddock Porch, and patio



956 Bingham Road



3535 Elva Road

The house at 956 Bingham Road, is located approximately 735 feet away from the nearest turbine, in a rural area. Both houses were sold in similar market conditions, have similar lot sizes, located in a similar rural location, and have similar basements. The 956 Bingham Road property has a superior building style and has superior utilities. The 3535 Elva Road property is of a superior age, superior building size, and has superior outbuilding.

ADJUSTMENT GRID MATCHED PAIR NO. 1

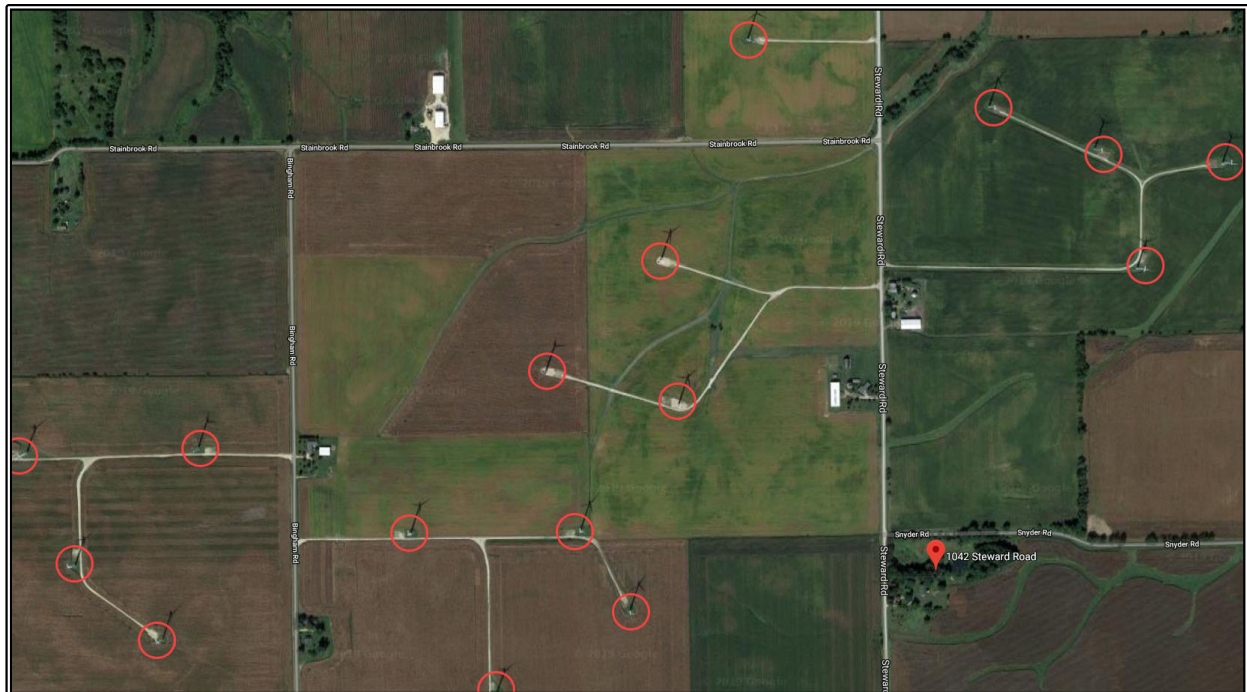
Sale No.	Address	Sale Date	Year Built	Building Size	Lot Size	Location	Style	Basement	Utilities	Out-Buildings
1B	3535 Elva Rd. Steward, IL 60553	O	-	-	O	O	+	O	+	-
+	Positive adjustment based on comparable being inferior in comparison to property #1A									
-	Negative adjustment based on comparable being superior in comparison to property #1A									
O	No adjustment necessary									

Upward adjustments are made to the 3535 Elva Road property for the superior building style and utilities of the 956 Bingham Road. Downward adjustments are made for the superior age, building size, and outbuildings of the 3535 Elva Road property compared to those features of the 956 Bingham Road property. The two properties have essentially the same market conditions, lot size, location, and basements. Therefore, although the 3535 Elva Road property gives the impression of being superior, the higher per square foot sale price for the 956 Bingham Road property appears to not support a finding that there is a negative impact on value resulting from the proximity of the 956 Bingham Road property to a wind turbine.

Illinois Analysis - Lee County Matched Pair No. 2

Lee County Matched Pair No. 2 considers the sale of a house located at 1042 Steward Road, Steward, that sold in July 2017 for \$320,000. This house is located approximately 1,780 feet from the nearest turbine of the Mendota Hills Wind Farm, which originally came online in 2003 and was subsequently renewed in 2019. The following photograph is an aerial view of the multiple turbines visible to the west of the house.

This property is compared with a similar property located at 3377 Willow Creek Road, Lee, that sold in February 2018 for \$319,000. 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 following table.



LEE COUNTY MATCHED PAIR NO. 2

	2A - Proximate to a Wind Turbine	2B - Not Proximate to a Wind Turbine
Address	1042 Steward Rd. Steward, IL 60553	3377 Willow Creek Rd. Lee, IL 60530
Distance from Turbine (Ft.)	1,780	N/A
Sale Date	July 27, 2017	February 15, 2018
Sale Price	\$320,000	\$319,000
Sale Price/Sq. Ft. (A.G.)	\$181.82	\$141.34
Year Built	1936	2002
Building Size (Sq. Ft.)	1,760	2,257
Lot Size (Acres)	9.08	2.00
Style	Two-story; frame (brick) 4 bedrooms, 2 bath	One-story; frame (vinyl) 6 bedrooms, 2 bath
Basement	Full	Full, finished 2,000 sq. ft. walkout
Utilities	Central air Forced-air heating Well & septic	Central and geothermal air Geothermal heating Well & septic
Other	2-car detached garage Pole barn Pond, porch, and patio	2-car attached garage Machine shed with 1-car garage Two-tiered deck, porch, patio, and pool



1042 Steward Road



3377 Willow Creek Road

The house at 1042 Steward Road, is located approximately 1,780 feet away from the nearest turbine, in a rural area. Both houses were sold in similar market conditions and located in a similar rural location. The 1042 Steward Road property has a superior lot size. The 3377 Willow Creek Road property is of a superior age, has a superior building size, is of a superior building style, has a superior basement, has superior utilities, and has superior outbuildings.

ADJUSTMENT GRID MATCHED PAIR NO. 2

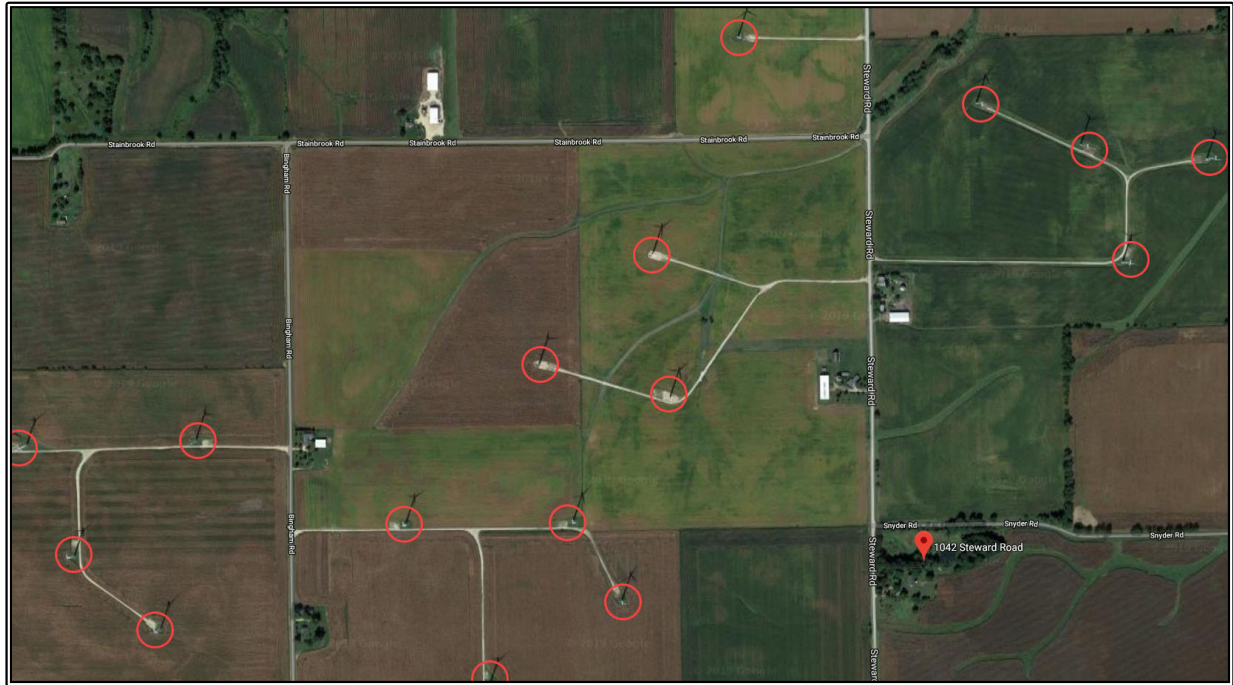
Sale No.	Address	Sale Date	Year Built	Building Size	Lot Size	Location	Style	Basement	Utilities	Out-Buildings
2B	3377 Willow Creek Rd. Lee, IL 60530	O	-	-	+	O	-	-	-	-
+	Positive adjustment based on comparable being inferior in comparison to property #1A									
-	Negative adjustment based on comparable being superior in comparison to property #1A									
O	No adjustment necessary									

Upward adjustments are made to the 3377 Willow Creek Road property for the larger lot size of the 1042 Steward Road property. Downward adjustments are made for the superior age, building size, style, basement, utilities, and outbuildings of the 3377 Willow Creek Road property compared to those features of the 1042 Steward Road property. The two properties have essentially the same market conditions and location. Therefore, although the 3377 Willow Creek Road property gives the impression of being superior, the higher per square foot sale price for the 1042 Steward Road property appears to not support a finding that there is a negative impact on value resulting from the proximity of the 1042 Steward Road property to a wind turbine.

Illinois Analysis - Lee County Matched Pair No. 3

Lee County Matched Pair No. 3 considers the prior sale of a house located at 1042 Steward Road, Steward, that sold in August 2009 for \$240,000. This house is located approximately 1,780 feet from the nearest turbine of the Mendota Hills Wind Farm, which originally came online in 2003 and was subsequently renewed in 2019. The photograph below is an aerial view of the multiple turbines visible to the west of the house.

This property is compared to the prior sale of a similar property located at 3535 Elva Road, Steward, that sold in June 2013 for \$96,253. As well as a prior sale of a similar property located at 3377 Willow Creek Road, Lee, that sold in February 2014 for \$150,000. These property are not located near wind turbines. All three of the properties are situated in rural locations. The salient details of these three properties are summarized in the following table.



**LEE COUNTY MATCHED PAIR NO. 3
(PRIOR SALES)**

	3A - Proximate to a Wind Turbine	3B - Not Proximate to a Wind Turbine	3B - Not Proximate to a Wind Turbine
Address	1042 Steward Rd. Steward, IL 60553	3535 Elva Rd. Steward, IL 60553	3377 Willow Creek Rd. Lee, IL 60530
Distance from Turbine (Ft.)	1,780	N/A	N/A
Sale Date	August 13, 2009	March 22, 2013	December 15, 2014
Sale Price	\$240,000	\$96,253	\$150,000
Sale Price/Sq. Ft. (A.G.)	\$136.36	\$47.00	\$66.46
Year Built	1936	1972	2002
Building Size (Sq. Ft.)	1,760	2,048	2,257
Lot Size (Acres)	9.08	3.22	2.00
Style	Two-story; frame (brick) 4 bedrooms, 2 bath	One-story; frame (vinyl) 4 bedrooms, 2 bath	One-story; frame (vinyl) 6 bedrooms, 2 bath
Basement	Full	Full, partially finished	Full, finished 2,000 sq. ft. walkout
Utilities	Central air Forced-air heating Well & septic	Hydronic/steam heating Well & septic	Central and geothermal air; geothermal heating; well & septic
Other	2-car detached garage Pole barn Pond, porch, and patio	3-car attached garage Storage shed, horse paddock Porch, and patio	2-car attached garage Machine shed with 1-car garage Two-tiered deck, porch, patio, and pool



1042 Steward Road



3535 Elva Road



3377 Willow Creek Road

Both the 1042 Steward Road and the 3535 Elva Road properties are located in a similar rural location, have a similar building style, and have similar basements. The 1042 Steward Road property has a superior lot size and has superior utilities. The 3535 Elva Road property was sold in superior market conditions, is of a superior age, has a superior building size, and has superior outbuildings.

Both the 1042 Steward Road and the 3377 Willow Creek Road properties are located in a similar rural location. The 1042 Steward Road property has a superior lot size. The 3377 Willow Creek Road property was sold in superior market conditions, is of a superior age, has a superior building size, is of a superior building style, has a superior basement, has superior utilities, and has superior outbuildings.

**ADJUSTMENT GRID MATCHED PAIR NO. 3
(PRIOR SALES)**

Sale No.	Address	Sale Date	Year Built	Building Size	Lot Size	Location	Style	Basement	Utilities	Out-Buildings
3B	3535 Elva Rd. Steward, IL 60553	-	-	-	+	O	O	O	+	-
3C	3377 Willow Creek Rd. Lee, IL 60530	-	-	-	+	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 3535 Elva Road property for the larger lot size and the superior utilities of the 1042 Steward Road property. Downward adjustments are made for the superior market conditions, age, building size, and outbuildings of the 3535 Elva Road property compared to those features of the 1042 Steward Road property. The two properties have essentially the same location, style, and basements.

Upward adjustments are made to the 3377 Willow Creek Road property for the larger lot size of the 1042 Steward Road property. Downward adjustments are made for the superior market conditions, age, building size, style, basement, utilities, and outbuildings of the 3377 Willow Creek Road property compared to those features of the 1042 Steward Road property. The two properties have essentially the same location.

The 2013 prior sale of the 3535 Elva Road and the 2014 prior sale of the 3377 Willow Creek Road properties give the impression of being superior including, selling during the recovery of the housing market recession, compared to selling during the peak of the recession, such as the 2009 prior sale of the 1042 Steward Road property. However, the higher per square foot sale of the 2009 prior sale for the property appears to not support a finding that there is a negative impact on value resulting from the proximity of the 1042 Steward Road property to a wind turbine.

Illinois Analysis - Macon County Matched Pair No. 1

Macon County Matched Pair #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, Radford's Run, 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	1,855 Feet	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% 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 within six weeks, for greater than the asking price.

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 Hunters View Drive property, the two properties have essentially the same sale price per square foot value. Therefore, although the Hunters View Drive house is larger, the higher per foot sales price for the Glasgow Road house 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 photograph below 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 following table.

MCLEAN COUNTY MATCHED PAIR NO. 1

	1A - Proximate to a Wind Turbine	1B - Not Proximate to a Wind Turbine
Address	29394 E 850 North Rd. Ellsworth, IL 61737	26298 E 1000 North Rd. Downs, IL 61736
Distance from Turbine	1,865 Feet	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



29394 E 850 North Road

26298 E 1000 North Road



Both houses are of similar construction type, age, 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.

ADJUSTMENT GRID MATCHED PAIR NO. 1

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	○	○	○	-	○	○	○	○	-
+	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									

Downward adjustments are made for the superior lot size and outbuildings of the 26298 E 1000 North Road property. When the adjustments noted above are made to the sale price of the 26298 E 1000 North Road property, the two properties have essentially the same sale price per square foot value. Thus, the difference in the sales price does not support the conclusion that there is any negative impact on value resulting from the proximity of the 29394 E 850 North Road property to wind turbines.

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 photograph below 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 following table.

MCLEAN COUNTY MATCHED PAIR NO. 2

	2A - Proximate to a Wind Turbine	2B - Not Proximate to a Wind Turbine
Address	25156 E 1400 North Rd. Ellsworth, IL 61737	787 E 1300 North Rd. Sibley, IL 61773
Distance from Turbine	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	Two-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



25156 E 1400 North Road

787 E 1300 North Road



Both houses are of similar construction type, age, and size. Both have been remodeled in the recent past. The E 1400 North Road house 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 house. Also, the site size of the E 1400 North Road house is approximately $\frac{3}{4}$ acre larger than the E 1300 North Road house. 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	○	○	+	+	○	○	○	○	○
+	Positive adjustment based on comparable being inferior in comparison to property #2A									
-	Negative adjustment based on comparable being superior in comparison to property #2A									
○	No adjustment necessary									

Upward adjustments are made for the larger building size and the larger lot size of the E 1400 North Road property. When the adjustments noted above are made to the sale price of the E 1300 North Road property, the two properties have a similar sale price per square foot value. Thus, the difference in the sales price does not support the conclusion that there is any negative impact on value resulting from the proximity of the E 1400 North Road property to wind turbines.

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 photograph below 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 following table.

MCLEAN COUNTY MATCHED PAIR NO. 3

	3A - Proximate to a Wind Turbine	3B - Not Proximate to a Wind Turbine
Address	25017 E 1400 North Rd. Ellsworth, IL 61737	10837 Yankee Town Rd. Farmer City, IL 61842
Distance from Turbine	1,573 Feet	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



25017 E 1400 North Road

10837 Yankee Town Road



Both houses are of similar construction type, age, 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 house has a site that is approximately 1.25 acres larger than that of the E 1400 North Road house.

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	-	0	0	-	0	0	0	0	0
+	Positive adjustment based on comparable being inferior in comparison to property #3A									
-	Negative adjustment based on comparable being superior in comparison to property #3A									
0	No adjustment necessary									

Downward adjustments are made for the superior market conditions and larger lot size of the E 1400 North Road property. When the adjustments noted above are made to the sale price of the Yankee Town Road property, the E 1400 North Road property appears to have a superior sale price per square foot value to that of the Yankee Town Road property. Thus, the difference in the sales price does not support the conclusion that there is any negative impact on value resulting from the proximity of the E 1400 North Road property to wind turbines.

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 photograph below illustrates the location of this house, on the right side of the frame, 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 following table.

LIVINGSTON COUNTY MATCHED PAIR NO. 1

	1A - Proximate to a Wind Turbine	1B - Not Proximate to a Wind Turbine
Address	23090 N 2500 East Rd. Odell, IL 60460	16101 E 1400 North Rd. Pontiac, IL 61764
Distance from Turbine	2,322 Feet	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



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 age 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.

ADJUSTMENT GRID MATCHED PAIR NO. 1

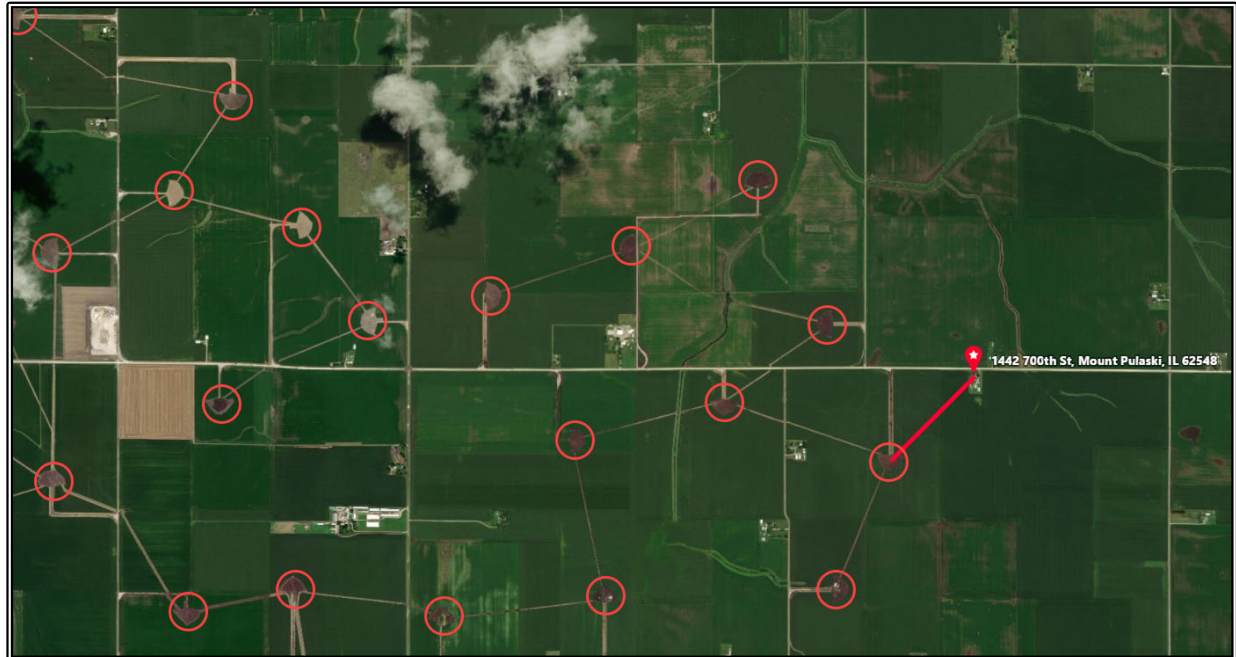
SALE NO.	ADDRESS	SALE DATE	YEAR BUILT	BUILDING SIZE	LOT SIZE	LOCATION	STYLE	BASEMENT	UTILITIES	OUT-BUILDINGS
1B	16101 E 1400 North Rd. Pontiac, Illinois	○	○	○	○	○	○	+	○	○
+	Positive adjustment based on comparable being inferior in comparison to property #1A									
-	Negative adjustment based on comparable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

An upward adjustment is made for the superior basement of the N 2500 East Road property. When the adjustments noted above are made to the sale price of the E 1400 North Road property, the N 2500 East Road property appears to have a superior sale price per square foot value to that of the E 1400 North Road property. Thus, the difference in the sales price does not support the conclusion that there is any negative impact on value resulting from the proximity of the N 2500 East Road property to wind turbines.

Illinois Analysis - Logan County Matched Pair No. 1

Logan County Matched Pair No. 1 considers the sale of a house located at 1442 700th Street, Mount Pulaski, that sold in April 2018 for \$170,000. This house is located approximately 2,080 feet from the nearest turbine of HillTopper, which came online in 2018. The photograph below is an aerial view of the multiple turbines visible to the west of the house.

This property is compared with a similar property located at 488 100th Avenue, Athens, that sold in July 2017 for \$158,000. 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 following table.



LOGAN COUNTY MATCHED PAIR NO. 1

	1A - Proximate to a Wind Turbine	1B - Not Proximate to a Wind Turbine
Address	1442 700 th St. Mount Pulaski, IL 62548	488 100 th Ave. Athens, IL 62613
Distance from Turbine (Ft.)	2,080	N/A
Sale Date	April 15, 2019	July 31, 2017
Sale Price	\$170,000	\$158,000
Sale Price/Sq. Ft. (A.G.)	\$82.68	\$81.61
Year Built	1910	1901
Building Size (Sq. Ft.)	2,056	1,936
Lot Size (Acres)	2.00	4.94
Style	Two-story; frame (vinyl/wood) 4 bedrooms, 2 bath	Two-story; frame (vinyl/brick) 4 bedrooms, 2 bath
Basement	N/A	Full, unfinished
Utilities	Central air Heat pump Well & septic	Central air Forced-air heating Well & septic
Other	Barn with two parking spaces Deck, porch, and patio	2-car detached garage Deck, porch, and patio



488 100th Avenue

1442 700th Street



The house at 1442 700th Street, is located approximately 2,080 feet away from the nearest turbine, in a rural area. Both houses are of similar age, similar building size, located in a similar rural location, have a similar building style, have similar utilities, and have similar outbuildings. The 1442 700th Street property was sold in slightly superior market conditions. The 488 100th Avenue property has a superior lot size and has a superior basement.

ADJUSTMENT GRID MATCHED PAIR NO. 1

Sale No.	Address	Sale Date	Year Built	Building Size	Lot Size	Location	Style	Basement	Utilities	Out-Buildings
1B	488 100th Ave. Athens, IL 62613	+	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									

Upward adjustments are made to the 488 100th Avenue property for the superior market conditions of the 1442 700th Street property. Downward adjustments are made for the larger lot size and superior basement of the 488 100th Avenue property compared to the basement of the 1442 700th Street property. The two properties have essentially the same age, building size, location, style, utilities, and outbuildings. Therefore, although the two properties give the impression of being similar in many categories, the higher per square foot sale price for the 1442 700th Street property appears to not support a finding that there is a negative impact on value resulting from the proximity of the 1442 700th Street property to a wind turbine.

Iowa Analysis - Boone County Matched Pair No. 1

Boone County Matched Pair No. 1 considers the sale of a house located at 1002 B Avenue, Grand Junction, that sold in August 2019 for \$208,000. This house is located approximately 1,415 feet from the nearest turbine of the Beaver Creek Wind Farm, which came online in 2017. The photograph below is an aerial view of the multiple turbines visible to the north and west of the house.

This property is compared with a similar property located at 455 270th Street, Ogden, that sold in February 2019 for \$186,000. 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 following table.



BOONE COUNTY MATCHED PAIR NO. 1

	1A - Proximate to a Wind Turbine	1B - Not Proximate to a Wind Turbine
Address	1002 B Ave. Grand Junction, IA 50107	455 270 th St. Ogden, IA 50212
Distance from Turbine (Ft.)	1,415	N/A
Sale Date	August 14, 2019	February 26, 2019
Sale Price	\$208,000	\$186,000
Sale Price/Sq. Ft. (A.G.)	\$120.44	\$120.16
Year Built	1908	1933
Building Size (Sq. Ft.)	1,727	1,548
Lot Size (Acres)	2.73	1.02
Style	Two-story; frame (vinyl) 4 bedrooms, 2 bath	1.5-story; frame (metal) 4 bedrooms, 1 bath
Basement	Partial, finished	Full, finished
Utilities	Central air Forced-air heat Well & septic	Other heating well & septic
Other	2-car attached garage 3-car detached garage Machine shed, pole barn Well house, and porch	2-car detached garage Porch



1002 B Avenue

455 270th Street



The house at 1002 B Avenue, is located approximately 1,415 feet away from the nearest turbine, in a rural area. Both houses were sold in similar market conditions, have similar building sizes, and located in a similar rural location. The 1002 B Avenue property has a superior lot size, has a superior building style, has superior utilities, and has superior outbuildings. The 455 270th Street property is of a superior age and a superior basement.

ADJUSTMENT GRID MATCHED PAIR NO. 1

Sale No.	Address	Sale Date	Year Built	Building Size	Lot Size	Location	Style	Basement	Utilities	Out-Buildings
1B	455 270 th St. Ogden, IA 50212	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									

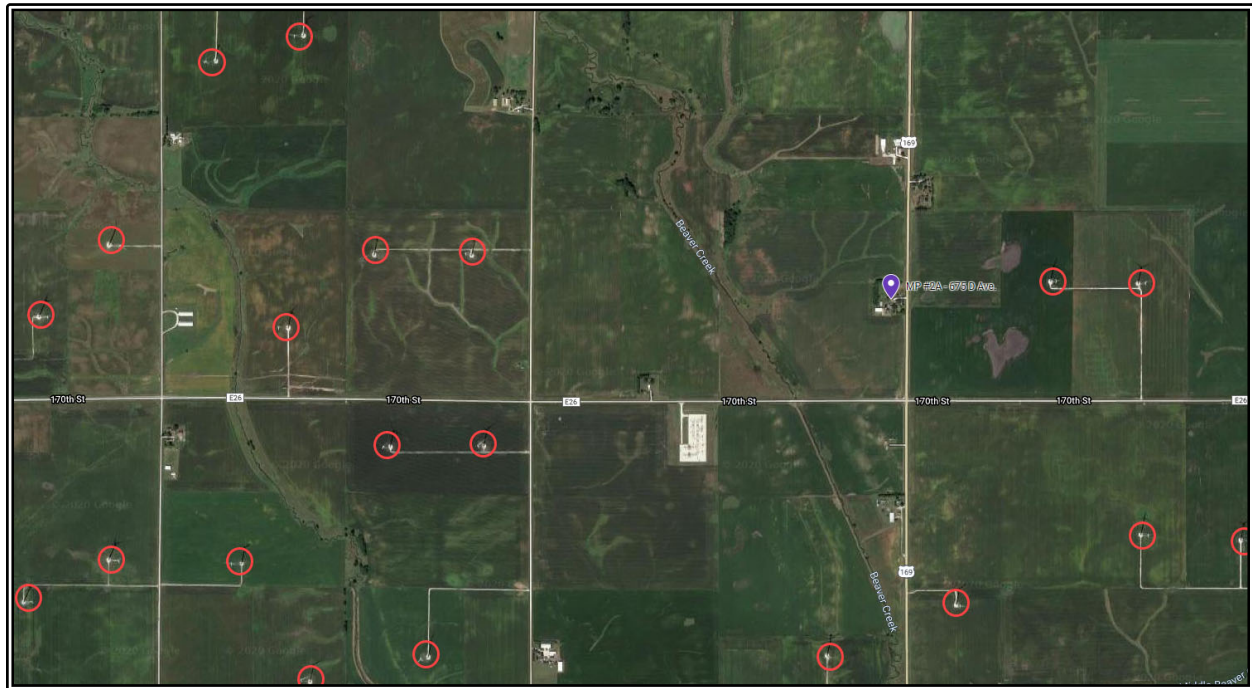
Upward adjustments are made to the 455 270th Street property for the superior lot size, style, utilities, and outbuildings of the 1002 B Avenue property. Downward adjustments are made for the superior age and basement of the 455 270th Street property compared to those features of the 1002 B Avenue property. The two properties have essentially the same market conditions, building size, and location.

Considering the adjustments noted in the following table for the superior lot size, style, utilities, and outbuildings of the 455 270th Street property and for the younger age and superior basement of the 1002 B Avenue property, the two properties give the impression of being essentially similar. Therefore, the per square foot sale price for the two properties are similar, the data concerning the 1002 B Avenue sale appears to not support a finding that there is a negative impact on value resulting from the proximity of the 1002 B Avenue property to a wind turbine.

Iowa Analysis - Boone County Matched Pair No. 2

Boone County Matched Pair No. 2 considers the sale of a house located at 675 D Avenue, Ogden, that sold in October 2017 for \$195,000. This house is located approximately 2,130 feet from the nearest turbine of the Beaver Creek Wind Farm, which came online in 2017. The following photograph is an aerial view of the multiple turbines visible in various directions from the house.

This property is compared with a similar property located at 375 335th Street, Perry, that sold in June 2017 for \$160,000. 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 following table.



BOONE COUNTY MATCHED PAIR NO. 2

	2A - Proximate to a Wind Turbine	2B - Not Proximate to a Wind Turbine
Address	675 D Ave. Ogden, IA 50212	375 335 th St. Perry, IA 50220
Distance from Turbine (Ft.)	2,130	N/A
Sale Date	October 20, 2017	June 15, 2017
Sale Price	\$195,000	\$160,000
Sale Price/Sq. Ft. (A.G.)	\$101.67	\$78.51
Year Built	1924	1978
Building Size (Sq. Ft.)	1,918	2,038
Lot Size (Acres)	4.67	2.72
Style	Two-story; frame (wood) 3 bedrooms, 1.1 bath	One-story; frame (wood) 3 bedrooms, 1.2 bath
Basement	Full, finished	Partial, finished
Utilities	Other heating Well & septic	Forced-air heating Well & septic
Other	2-car attached garage	2-car attached garage



675 D Avenue



375 335th Street

The house at 675 D Avenue, is located approximately 2,130 feet away from the nearest turbine, in a rural area. Both houses were sold in similar market conditions, located in a similar rural location, and have similar outbuildings. The 675 D Avenue property has a superior lot size, has a superior building style, and has a superior basement. The 375 335th Street property is of a superior age, has a superior building size, and has superior utilities.

ADJUSTMENT GRID MATCHED PAIR NO. 2

Sale No.	Address	Sale Date	Year Built	Building Size	Lot Size	Location	Style	Basement	Utilities	Out-Buildings
2B	375 335 th St. Perry, IA 50220	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									

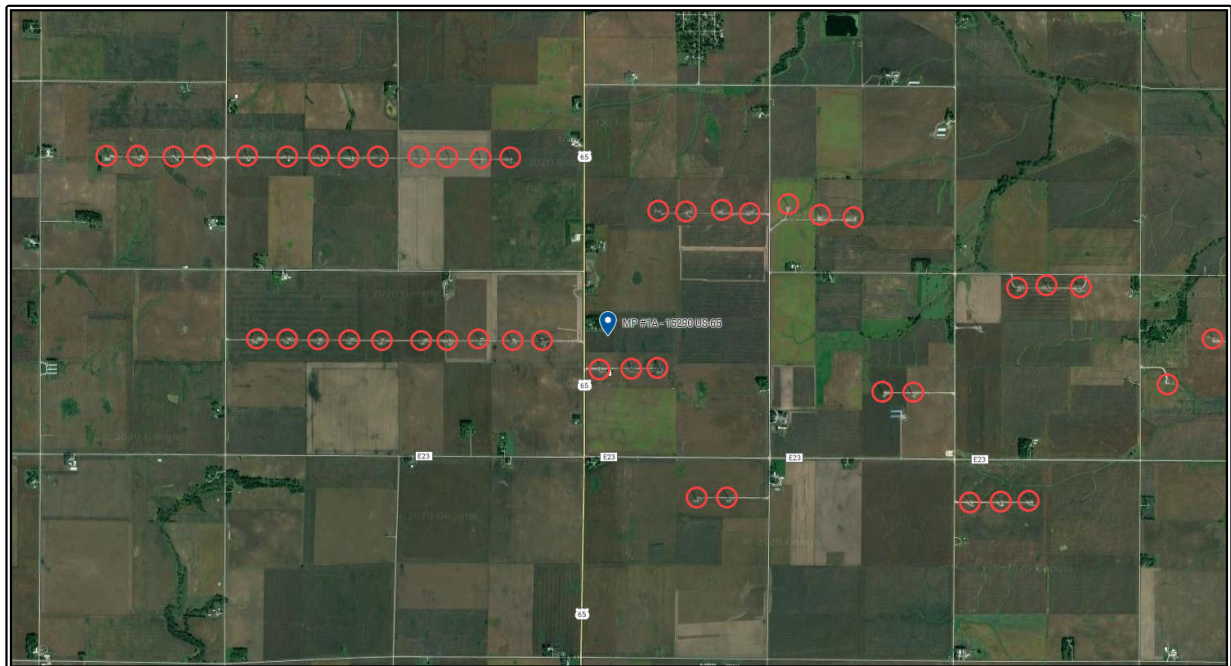
Upward adjustments are made to the 375 335th Street property for the superior lot size, style, and basement of the 675 D Avenue property. Downward adjustments are made for the superior age, building size, and utilities of the 375 335th Street property compared to those features of the 675 D Avenue property. The two properties have essentially the same market conditions, location, and outbuildings.

Considering the adjustments noted in the following table for the superior age, building size, and utilities of the 375 335th Street property and for the superior lot size, style, and basement of the 675 D Avenue property, the two properties give the impression of being essentially similar. Therefore, although the two properties give the impression of being similar, the higher per square foot sale price for the 675 D Avenue property appears to not support a finding that there is a negative impact on value resulting from the proximity of the 675 D Avenue property to a wind turbine.

Iowa Analysis - Story County Matched Pair No. 1

Story County Matched Pair No. 1 considers the sale of a house located at 15290 U.S. Highway 65, Zearing, that sold in November 2018 for \$172,000. This house is located approximately 1,426 feet from the nearest turbine of Story County Wind, which came online in 2008. The photograph below is an aerial view of the multiple turbines visible in various directions from the house.

This property is compared with a similar property located at 57576 East Lincoln Highway, Ames, that sold in January 2018 for \$280,000. This property is not considered to be proximate to wind turbines; however, the property is located 8,976 feet from the nearest turbine of the Iowa DG Portfolio Project, which came online in 2017. Both properties are situated in rural locations. The salient details of these two properties are summarized in the following table.



STORY COUNTY MATCHED PAIR NO. 1

	1A - Proximate to a Wind Turbine	1B - Not Proximate to a Wind Turbine
Address	15290 U.S. Highway 65 Zearing, IA 50278	57576 E. Lincoln Hwy. Ames, IA 50010
Distance from Turbine (Ft.)	1,426	8,976
Sale Date	August 17, 2017	January 8, 2018
Sale Price	\$172,000	\$280,000
Sale Price/Sq. Ft. (A.G.)	\$90.81	\$87.50
Year Built	1948	1939 (Remodel: 1984)
Building Size (Sq. Ft.)	1,894	3,200
Lot Size (Acres)	4.46	4.65
Style	1.5-story; frame (metal) 3 bedrooms, 2 bath	One-story; frame (wood) 6 bedrooms, 2.2 bath
Basement	Full, finished	Partial, finished
Utilities	Central air Forced-air heat Well & septic	Central air Forced-air heat Well & septic
Other	2-car attached garage 2-car detached garage Deck	3,504 S.F. detached garage RV parking 2,500 S.F. shop/office Deck, porch, and patio



15290 U.S. Highway 65

57576 East Lincoln Highway



The house at 15290 U.S. Highway 65, is located approximately 1,426 feet away from the nearest turbine, in a rural area. Both houses were sold in similar market conditions, have similar lot sizes, located in a similar rural location, and have similar utilities. The 15290 U.S. Highway 65 property has a superior basement. The 57576 East Lincoln Highway property is of a superior age, has a superior building size, has a superior building style, and has superior outbuildings.

ADJUSTMENT GRID MATCHED PAIR NO. 1

Sale No.	Address	Sale Date	Year Built	Building Size	Lot Size	Location	Style	Basement	Utilities	Out-Buildings
1B	57576 E. Lincoln Hwy. Ames, IA 50010	○	-	-	○	○	-	+	○	-
+	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									

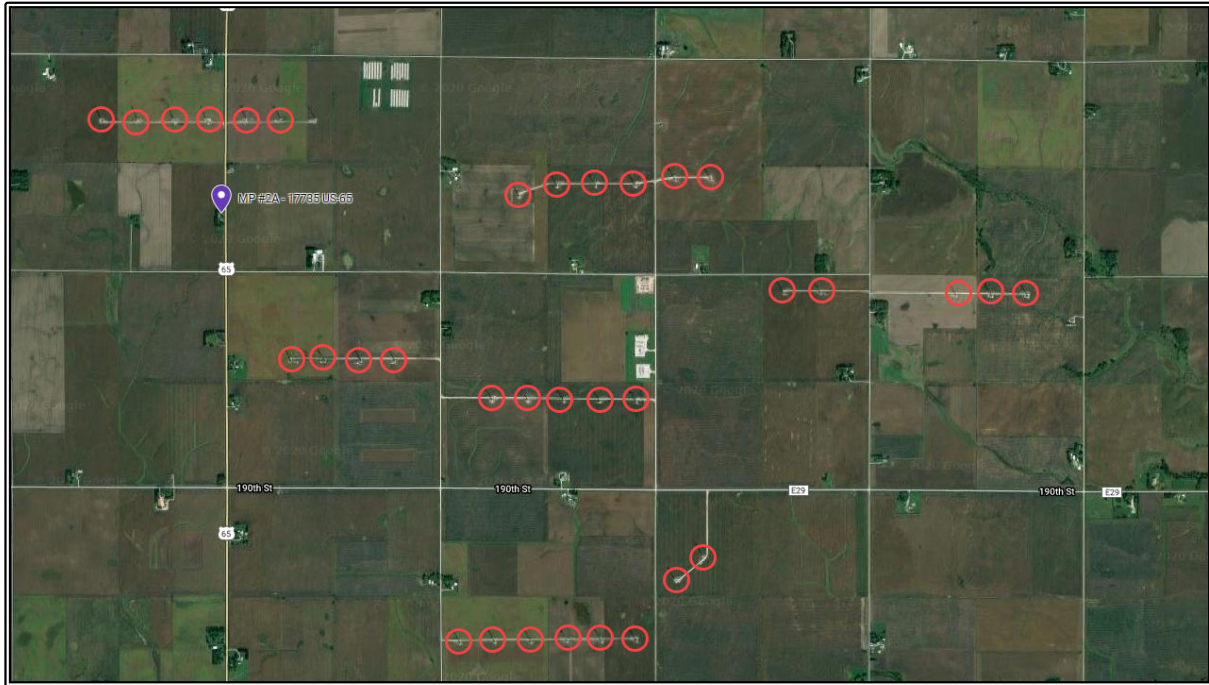
Upward adjustments are made to the 57576 East Lincoln Highway property for the superior basement of the 15290 U.S. Highway 65 property. Downward adjustments are made for the superior age, building size, style, and outbuildings of the 57576 East Lincoln Highway property compared to those features of the 15290 U.S. Highway 65 property. The two properties have essentially the same market conditions, lot size, location, and utilities.

Considering the adjustments noted in the following table for the superior age, building size, style, and outbuildings of the 57576 East Lincoln Highway property and for the superior basement of the 15290 U.S. Highway 65 property, the 57576 East Lincoln Highway property appears to be superior. Therefore, although the 57576 East Lincoln Highway property gives the impression of being superior, the higher per square foot sale price for the 15290 U.S. Highway 65 property appears to not support a finding that there is a negative impact on value resulting from the proximity of the 15290 U.S. Highway 65 property to a wind turbine.

Iowa Analysis - Story County Matched Pair No. 2

Story County Matched Pair No. 2 considers the sale of a house located at 17735 U.S. Highway 65, Zearing, that sold in November 2018 for \$170,000. This house is located approximately 2,300 feet from the nearest turbine of Story County Wind, which came online in 2008. The following photograph is an aerial view of the multiple turbines visible in various directions from the house.

This property is compared with a similar property located at 12894 530th Avenue, Story City, that sold in August 2018 for \$258,000. 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 following table.



STORY COUNTY MATCHED PAIR NO. 2

	2A - Proximate to a Wind Turbine	2B - Not Proximate to a Wind Turbine
Address	17735 U.S. Highway 65 Zeasing, IA 50278	12894 530 th Ave. Story City, IA 50248
Distance from Turbine (Ft.)	2,300	N/A
Sale Date	November 14, 2018	August 5, 2018
Sale Price	\$170,000	\$258,000
Sale Price/Sq. Ft. (A.G.)	\$126.39	\$127.53
Year Built	1974	1918
Building Size (Sq. Ft.)	1,345	2,023
Lot Size (Acres)	1.18	5.88
Style	One-story; frame (brick) 3 bedrooms, 1.1 bath	Two-story; frame (wood) 5 bedrooms, 1 bath
Basement	Full, finished	Partial, finished
Utilities	Other cooling Baseboard heating Well & septic	Other cooling Forced-air heating Well & septic
Other	4-car detached garage Machine shed Deck	2-car detached garage Machine shed Deck



17735 U.S. Highway 65



12894 530th Avenue

The house at 17735 U.S. Highway 65, is located approximately 2,300 feet away from the nearest turbine, in a rural area. Both houses were sold in similar market conditions and are located in a similar rural location, and have similar outbuildings. The 17735 U.S. Highway 65 property is of a superior age and has a superior basement. The 12894 530th Avenue property has a superior building size, has a superior lot size, has a superior building style, and has superior utilities.

ADJUSTMENT GRID MATCHED PAIR NO. 2

Sale No.	Address	Sale Date	Year Built	Building Size	Lot Size	Location	Style	Basement	Utilities	Out-Buildings
2B	12894 530 th Ave. Story City, IA 50248	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									

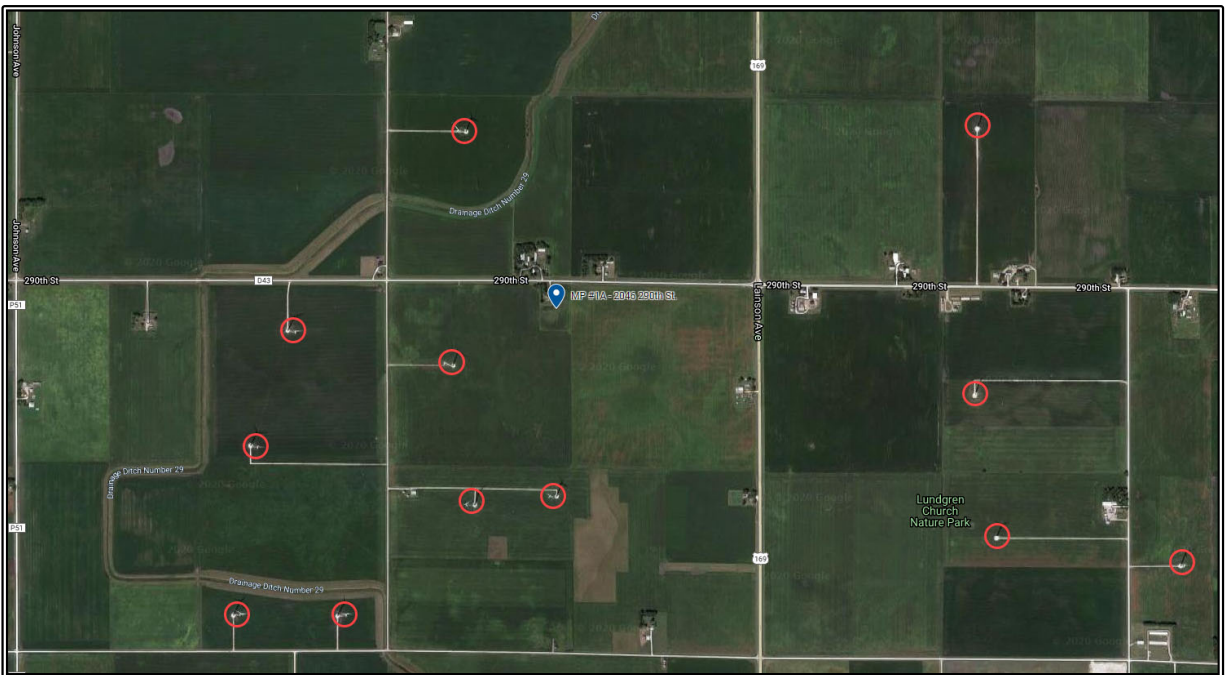
Upward adjustments are made to the 12894 530th Avenue property for the superior age, basement, and outbuildings of the 17735 U.S. Highway 65 property. Downward adjustments are made for the superior building size, lot size, style, and utilities of the 12894 530th Avenue property compared to those features of the 17735 U.S. Highway 65 property. The two properties have essentially the same market conditions and location. Therefore, although the two properties give the impression of being similar, the similar per square foot sale price for the 17735 U.S. Highway 65 property compared to the 12894 530th Avenue property appears to not support a finding that there is a negative impact on value resulting from the proximity of the 17735 U.S. Highway 65 property to a wind turbine.

Considering the adjustments noted in the following table for the superior building size, lot size, style, and utilities of the 12894 530th Avenue property and for the superior age, basement, and outbuildings of the 17735 U.S. Highway 65 property, the two properties give the impression of being essentially similar. Therefore, although the two properties give the impression of being similar, the similar per square foot sale price for the 17735 U.S. Highway 65 property compared to the 12894 530th Avenue property appears to not support a finding that there is a negative impact on value resulting from the proximity of the 17735 U.S. Highway 65 property to a wind turbine.

Iowa Analysis - Webster County Matched Pair No. 1

Webster County Matched Pair No. 1 considers the sale of a house located at 2046 290th Street, Fort Dodge, that sold in November 2017 for \$134,000. This house is located approximately 1,615 feet from the nearest turbine of the Lundgren Wind Farm, which came online in 2014. The photograph below is an aerial view of the multiple turbines visible in various directions from the house.

This property is compared with a similar property located at 2611 180th Street, Fort Dodge, that sold in May 2017 for \$215,000. 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 following table.



WEBSTER COUNTY MATCHED PAIR NO. 1

	1A - Proximate to a Wind Turbine	1B - Not Proximate to a Wind Turbine
Address	2046 290 th St. Fort Dodge, IA 50501	2611 180 th St. Fort Dodge, IA 50501
Distance from Turbine (Ft.)	1,615	N/A
Sale Date	November 14, 2017	May 26, 2017
Sale Price	\$134,000	\$215,000
Sale Price/Sq. Ft. (A.G.)	\$104.04	\$93.80
Year Built	1960	1915
Building Size (Sq. Ft.)	1,288	2,292
Lot Size (Acres)	6.71	12.00
Style	One-story; frame (vinyl) 3 bedrooms, 1.1 bath	Two-story; frame (vinyl) 4 bedrooms, 2 bath
Basement	Partial, finished	Full, unfinished
Utilities	Other Cooling Forced-air heat Well & septic	Other Cooling; forced-air heat; well & septic
Other	1-car attached garage 1-car detached garage	1-car detached garage Pole barn and patio



2046 290th Street

2611 180th Street



The house at 2046 290th Street, is located approximately 1,615 feet away from the nearest turbine, in a rural area. Both houses were sold in similar market conditions, located in a similar rural location, have similar basement, have similar utilities, and have similar outbuildings. The 2046 290th Street property has a superior age. The 2611 180th Street property is of a superior building size, has a superior lot size, and a superior building style.

ADJUSTMENT GRID MATCHED PAIR NO. 1

Sale No.	Address	Sale Date	Year Built	Building Size	Lot Size	Location	Style	Basement	Utilities	Out-Buildings
1B	2611 180 th St. Fort Dodge, IA 50501	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									

Upward adjustments are made to the 2611 180th Street property for the superior age of the 2046 290th Street property. Downward adjustments are made for the superior building size, lot size, and style of the 2611 180th Street property compared to those features of the 2046 290th Street property. The two properties have essentially the same market conditions, location, basement, utilities, and outbuildings. Therefore, although the 2611 180th Street property gives the impression of being superior, the higher per square foot sale price for the 2046 290th Street property appears to not support a finding that there is a negative impact on value resulting from the proximity of the 2046 290th Street property to a wind turbine.

Considering the adjustments noted in the following table for the superior building size, lot size, and style of the 2611 180th Street property and for the superior age of the 2046 290th Street property, the 2611 180th Street property appears to be superior. Therefore, although the 2611 180th Street property gives the impression of being superior, the higher per square foot sale price for the 2046 290th Street property appears to not support a finding that there is a negative impact on value resulting from the proximity of the 2046 290th Street property to a wind turbine.

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 th Street. Hartland, MN 56042	70308 240 th 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 240th Street requiring a downward adjustment. An upward adjustment for the full basement of 305th Street compared to the partial basement of 240th Street.

The house on 240th Street has a site size approximately 1.5 acres smaller than that of the 305th 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.

ADJUSTMENT GRID MATCHED PAIR NO. 1										
SALE NO.	ADDRESS	SALE DATE	YEAR BUILT	BUILDING SIZE	LOT SIZE	LOCATION	STYLE	BASEMENT	UTILITIES	OUT-BUILDINGS
1B	70308 240 th 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									

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.

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.

COFFEY COUNTY MATCHED PAIR NO. 1

	1A - Proximate to a Wind Turbine	1B - Not Proximate to a Wind Turbine
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 age, a superior building size, a superior building style, and has superior outbuildings.

ADJUSTMENT GRID MATCHED PAIR NO. 1

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	0	-	-	+	0	-	0	0	-
+	Positive adjustment based on comparable being inferior in comparison to property #1A									
-	Negative adjustment based on comparable being superior in comparison to property #1A									
0	No adjustment necessary									

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 age, 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 150th 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. The following photograph is an aerial view of the turbines visible surrounding the house.

This property is compared with a similar property located at 750 Northeast 110th 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.



HARPER COUNTY MATCHED PAIR NO. 1

	1A - Proximate to a Wind Turbine	1B - Not Proximate to a Wind Turbine
Address	330 NW 150 th Rd. Harper, KS 67058	750 NE 110 th 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 150th Road

750 Northeast 110th Road



The house at 330 Northwest 150th Road, is located approximately 1,330 feet away from the nearest turbine, in a rural area. The 330 Northwest 150th Road property is of superior age and superior building size. The 750 Northeast 110th Road property has superior outbuildings compared to 330 Northwest 150th 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.

ADJUSTMENT GRID MATCHED PAIR NO. 1

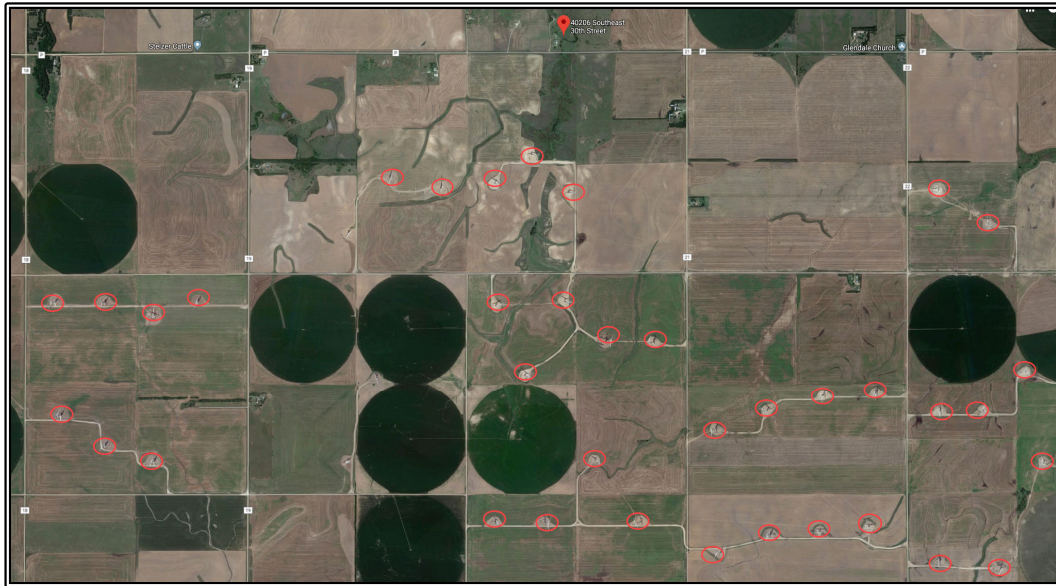
Sale No.	Address	Sale Date	Year Built	Building Size	Lot Size	Location	Style	Basement	Utilities	Out-Buildings
1B	750 NE 110 th Rd. Danville, KS 67036	O	+	+	O	O	O	O	O	-
+	Positive adjustment based on comparable being inferior in comparison to property #1A									
-	Negative adjustment based on comparable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

Upward adjustments were made for the superior age and building size of the 330 Northwest 150th Road property compared to the 750 Northeast 110th Road property. Downward adjustments were made for the superior outbuildings of the 750 Northeast 110th Road property compared to those of the 330 Northwest 150th 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 150th Road property appears to support the conclusion that there is not any negative impact in value resulting from the proximity of the 330 Northwest 150th 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 30th 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.

PRATT COUNTY MATCHED PAIR NO. 1

	1A - Proximate to a Wind Turbine	1B - Not Proximate to a Wind Turbine
Address	40206 SE 30 th 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, and creek	2-car attached garage Cul-de-sac Porch and deck



40206 Southeast 30th Street

1517 Eastland Place



The house at 40206 Southeast 30th 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 age, and were sold in similar market conditions. The 40206 Southeast 30th 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.

ADJUSTMENT GRID MATCHED PAIR NO. 1

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									

Upward adjustments are made to the 1517 Eastland Place property for the larger lot size and superior outbuildings of the 40206 Southeast 30th 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 30th Street property. The two properties have essentially the same style, age, 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 30th Street property appears to not support a finding that there is a negative impact on value resulting from the proximity of the 40206 Southeast 30th Street property to a wind turbine.

Matched Pair Analysis Conclusions

Studies in Ohio and studies in rural counties of Pennsylvania, New York, Indiana, Illinois, Iowa, South Dakota, Minnesota, 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

According to the farming news outlet, Morning AgClips,⁴ “[t]he 2019 average Ohio farm real estate value, including land and buildings, averaged \$6,290 per acre, according to Cheryl Turner, State Statistician of the USDA, NASS, Ohio Field Office⁵.” “Farm real estate values in Ohio were up 1.5% from 2018. Ohio is in the Corn Belt region, which also includes Illinois, Indiana, Iowa, and Missouri. The Corn Belt region value was \$6,100 per acre, down slightly from 2018. The value of farmland in States bordering Ohio were: Indiana, \$6,580 per acre; Kentucky, \$3,820 per acre; Michigan, \$4,960 per acre; Pennsylvania, \$6,470 per acre; and West Virginia, \$2,680 per acre.” The article also states, “Ohio’s cropland value increased 1.3% from the previous year to \$6,400 per acre. The Corn Belt region’s average value fell slightly to \$6,360 per acre. The average value of cropland in the U.S. increased \$50 from 2018 to \$4,100 per acre. Ohio’s pasture value was \$3,350 per acre, down 1% from 2018.”

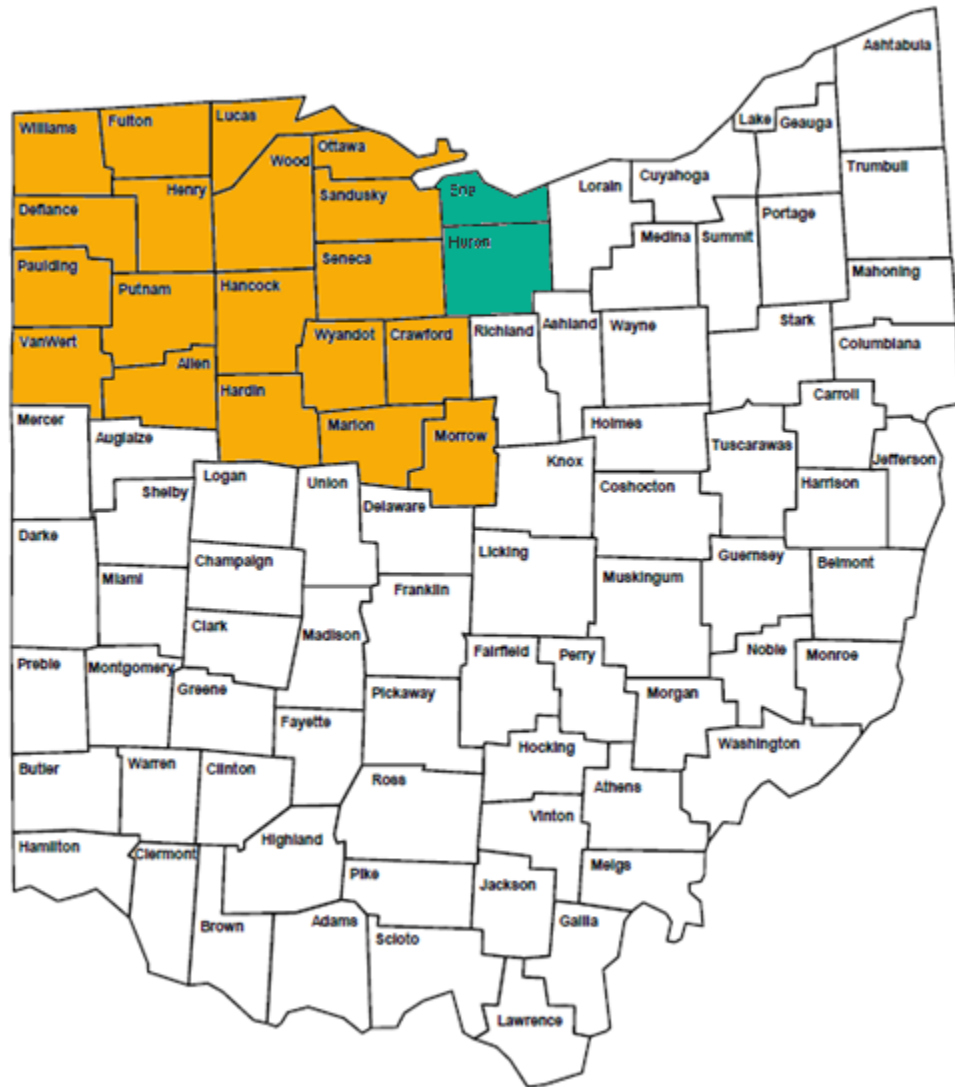
The *Western Ohio Cropland Values and Cash Rents 2018-19*, produced by The Ohio State University Extension Agricultural & Natural Resources,⁶ reported top-quality agricultural cropland values in the northwest region of Ohio, which only includes Seneca County, yet Erie County and Huron County are considered to have similar values, 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.

⁴ <https://www.morningagclips.com/ohio-farm-real-estate-values-cash-rents/>

⁵ https://www.nass.usda.gov/Statistics_by_State/Ohio/Contact_Us/index.php

⁶ <https://farmoffice.osu.edu/sites/aglaw/files/site-library/farmmgtpdf/WesternOhioCroplandValuesCashRents2018-19.pdf>, *Western Ohio Cropland Values and Cash Rents 2018-19*

Figure 2: Northwest Ohio



- Counties included in Northwest Ohio study
- Project Counties not included in Northwest Ohio study, yet values are considered similar

**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	\$6,629	\$917	\$7,545	\$5,712
Rent per Acre	2018	\$184	\$12	\$195	\$172
	2019	\$182	\$15	\$198	\$167
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	\$8,214	\$1,196	\$9,411	\$7,018
Rent per Acre	2018	\$234	\$23	\$256	\$211
	2019	\$231	\$26	\$257	\$206
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	\$5,159	\$1,172	\$6,331	\$3,987
Rent per Acre	2018	\$140	\$17	\$157	\$123
	2019	\$139	\$21	\$161	\$118
Transition Land	2018	\$12,567	\$4,648	\$17,215	\$7,919
	2019	\$13,033	\$5,030	\$18,063	\$8,003
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 EMERSON CREEK WIND FARM						
No.	Owner Mailing Address & Parcel Identification	Sale Price	Sale Date	Land Area (Acres)	NCCPI	Sale Price Per Acre
1	5918 Hayes Avenue Sandusky, Ohio 44870 Erie County, OH APN: 32-00397-000					
	Land Sale #1 - 1 Parcel	\$132,000	12/30/19	153.73	83.5	\$ 858.65
2	1457 Field Road Norwalk, Ohio 44857 Huron County, OH APN: 29-0030-04-073-0100, 41-0020-01-008-0000, -009-0000, -03-003-0000, -004-0000					
	Land Sale #2 - 5 Parcels	\$214,500	1/17/20	152.99	69.2	\$1,402.05
3	10567 Calla Lily Way Plain City, Ohio 43064 Huron County, OH APN: 37-0020-01-090-0000, -091-0000, -092-0000, -093-0000, -094-0000					
	Land Sale #3 - 5 Parcels	\$390,000	12/9/19	100.88	64.2	\$3,865.98
4	7296 State Route 18 Bellevue, Ohio 44811 Seneca County, OH - 3N 17E - 4, 9 APN: N46000764600000, N46000764640000					
	Land Sale #4 - 2 Parcels	\$450,500	6/28/19	123.29	61.1	\$3,653.99
5	1. 744 Seminary Road Norwalk, Ohio 44857 2. 744 State Route 61 East Berlin Heights, Ohio 44814 3. 6907 State Route 113 East Berlin Heights, Ohio 44814 Erie County, OH APN: 01-00559-000, -00961-000, -00963-000, -002, -003, -004, -007, -008					
	Land Sale #5 - 8 Parcels	\$525,308	12/26/19	104.29	69.4	\$5,036.99
6	1673 Niver Road Willard, Ohio 44890 Huron County, OH APN: 14-0030-02-003-0000, -004-0000, -005-0000, -006-0000					
	Land Sale #6 - 4 Parcels	\$668,400	4/24/19	200.21	59.8	\$3,338.49
7	1335 Lovell Crossing Way, 105 Knoxville, Tennessee 37932 Huron County, OH APN: 37-0040-A1-103-0000, -01-104-0000, -01-105-0000, -01-106-0000, -01-107-0000					
	Land Sale #7 - 5 Parcels	\$749,400	1/10/20	141.99	66.0	\$5,277.84
8	12003 Wikel Road Milan, Ohio 44846 Erie County, OH APN: 50-00996-000, -002					
	Land Sale #8 - 2 Parcels	\$840,000	4/29/19	121.23	50.9	\$6,928.98
9	2124 Wallbrook Drive Lewis, Texas 75067 Erie County, OH APN: 50-00007-000, -001, -00053-000					
	Land Sale #9 - 3 Parcels	\$1,064,470	12/6/19	204.10	59.2	\$5,215.43
10	1. 3697 McElrath Pike Beavercreek, Ohio 45432 2. 3312 Bogart Road Huron, Ohio 44839 Erie County, OH APN: 39-00307-000, -00874-000					
	Land Sale #10 - 2 Parcels	\$2,300,000	5/20/19	300.03	72.0	\$7,665.90
Summary Averages:					69.5	\$4,324.43
Erie County Summary Averages:					67.0	\$5,141.19
Huron County Summary Averages:					64.8	\$3,471.09
Seneca County Summary Averages:					61.1	\$3,653.99

The above analysis includes land sales that are nearest to the project footprint in Erie, Huron, and Seneca County, Ohio.⁷ The above summary of land sales in Erie County reveal that the agricultural land nearest to the area of the project footprint is of below-average quality for the county, with an average National Crop Commodity Productivity Index of 67.0 compared to the county's overall average National Crop Commodity Productivity Index of 65.5. The above summary of land sales in Huron County reveal that the agricultural land nearest to the area of the project footprint is of below-average quality for the county, with an average National Crop Commodity Productivity Index of 64.8 compared to the county's overall average National Crop Commodity Productivity Index of 71.2. The above summary of land sales in Seneca County reveal that the agricultural land nearest to the area of the project footprint is slightly above-average quality for the county, with an average National Crop Commodity Productivity Index of 61.1 compared to the county's overall average National Crop Commodity Productivity Index of 60.1. Adding wind turbines and land leases should only add value to the land prices and farm revenue benefit of the above-average land, and then benefit the land prices and farm revenue of the parcels with below-average land by adding an extra steady income stream.

Agricultural Land Sales near Wind Farms

The research was not exhaustive, however, in Illinois there was one reported sale of agricultural land close to wind turbines located in McLean County, Illinois, in March 2013. The farm, comprised of two tracts, was considered "highly desirable" with a productivity rating of 135 and 132 respectively (the low end of the excellent range.) The report commented, "...the wind turbine lanes were not a nuisance as they ran the same direction as the farm is planted (north-south.)" In 2014, there were three sales of farms with wind turbines in Region 4, which includes the counties of Marshall, Woodford, Mason, Putnam, Livingston, McLean, and Tazewell. The report stated, "In general, investors may have paid a premium for the wind turbine. High quality farmland with wind turbines is stable."⁸

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.

⁷ AcreValue Pro - <https://www.acrevalue.com/>

⁸ Klein, David E., and Schnitkey, Gary, 2014 *Illinois Land Values and Lease Trends*, Illinois Society of Professional Farm Managers and Rural Appraisers

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.⁹ 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.¹⁰

A report was discovered for 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.”¹¹ 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.”¹² The report notes that the premium is related directly to the number of years left on the lease.

An updated report was discovered for Illinois, 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.

Understanding Illinois and its major involvement in wind energy have allowed for several positive side effects besides allowing for cleaner energy. The first benefit is that it appears to impact land values in a positive way significantly. 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 township and county officials 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.¹³

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.

⁹ 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, 2017.

¹⁰ <http://www.agriculture.com/farm-management/farm-land/farmland-sales-hard-to-find-as-growers-hold-tight-keeping-land-value> Accessed September 18, 2017.

¹¹ Klein, David E., and Schnitkey, Gary, 2016 *Illinois Land Values and Lease Trends*, Illinois Society of Professional Farm Managers and Rural Appraisers, Page 38.

¹² *Ibid.* Page 42.

¹³ Klein, D., Baker, S., Sherrick, B., & Haight, B. (2018). *Wind Energy and Farmland Values*. 2018 *Illinois Land Values and Lease Trends*.

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

Real estate professionals from the surrounding market areas and in the Midwest and the Northeast 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.

Joy Boyd, a local Illinois licensed broker in Christian County, has observed rural residential property values near the existing wind farm, Radford's Run, have not been negatively impacted due to the proximity to a wind turbine. Ms. Boyd also states that during peak farming season, other energy systems, such as solar panels, essentially disappear behind the crops on the land. Ms. Boyd also reported that rural residential properties in the general area overall are accepting of alternative uses for the land due to the proximity of existing intense agricultural uses: agricultural and industrial type buildings, gravel roads, and other intrusive uses of the land. It has been observed that the residents within Christian County and the surrounding counties have consistently agree that the only negative land use possibly impacting property values and buyers' decisions are the existing hog containment facilities within the county.

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.

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.

Kansas broker, Mandy Collum of United Country Real Estate Professionals, states that the Neosho County residential market is very stable and has been stable over the past couple years. She also states that the county is very rural; therefore, residential sales are limited. Her view on the market indicates that the highest end for the residential market values range is typically \$250,000 and the highest end for the agricultural land values is typically \$3,300 per acre. Ms. Collum also pointed out that the market is demanding residential properties that are modern (which include modern energy sources, such as wind), well maintained, and show well to potential buyers. Properties with these features can be typically valued greater than \$100,000.

Kansas broker, Stephanie Tuggle of Keller Williams Realty Select, states that Neosho County's residential market was affected heavily by the housing crisis that began in 2008 and continued through 2012; however, since 2012 the Neosho market has been slowly recovering and appears to be stable and at the peak of its market potential due to the discovery of some declining values throughout the county and due to values in the state trending downwards. Ms. Tuggle did not comment on her opinion of the range of values for residential properties; however, her opinion of the highest end for the agricultural land values is typically \$3,000 per acre.

David Engelman, Kansas General Certified Appraiser, Wilson County, Kansas, was consulted. Mr. Engelman has had extensive experience with agricultural, commercial, and residential values in the Neosho County area, as well as the broader southeast Kansas market area.

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.

Interviews with brokers proximate to wind farms in Ohio, Pennsylvania, New York, Illinois, Indiana, Iowa, and Kansas 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.

Ohio Auditors Survey – July 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.

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.

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.¹⁴
- ∴ 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.

¹⁴ 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.

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.

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.

South Dakota Assessors Survey - November 2017, Updated April 2018

In November 2017 my office 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, my office 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.

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 study 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.¹⁵

¹⁵ 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 wind farm 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, in Iowa and other midwestern states, 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 Illinois, South Dakota, Iowa, Minnesota, Kansas, and Indiana indicate that wind turbine leases add value to agricultural land.
- ∴ A survey of County Assessors in 26 Iowa counties, 18 Illinois counties, 5 Indiana Counties, 21 Kansas counties, 8 South Dakota counties, 8 Minnesota counties, and 3 Ohio 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 30, 2020. This market impact study has been prepared specifically for the use of the client and to support the development of the Emerson Creek Wind Farm, in Erie, Huron, and 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 - #2020001160 (Temporary)
Illinois Certified General - #553.000141 (9/21 expiration)

CERTIFICATE OF REPORT

I do hereby certify that:

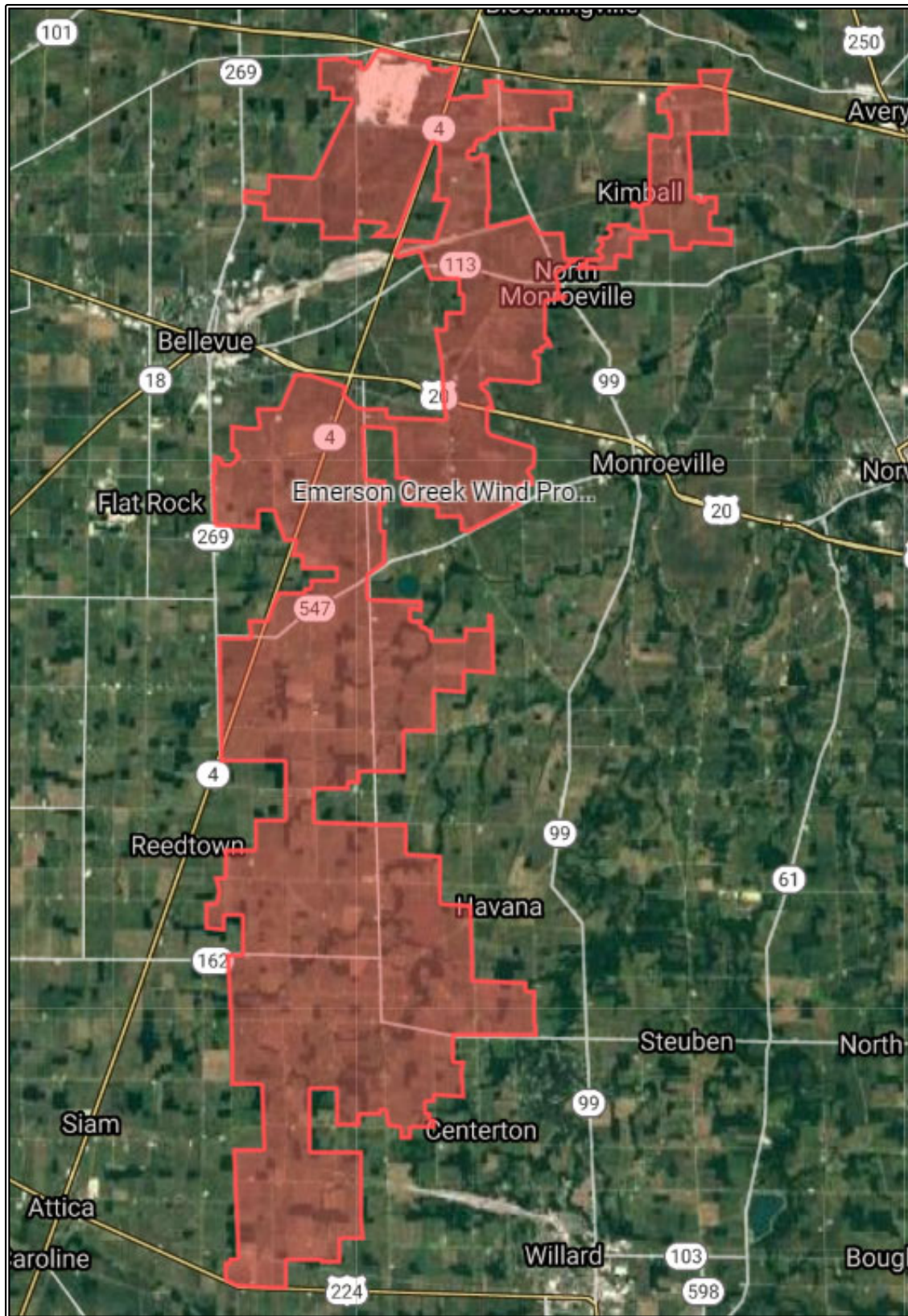
- ✧ The statements of fact contained in this report are true and correct.
- ✧ The reported analyses, opinions, and conclusions are limited only by the reported assumptions and limiting conditions and are my personal, impartial, and unbiased professional analyses, opinions, conclusions, and recommendations.
- ✧ 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.
- ✧ 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.
- ✧ 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.
- ✧ My engagement in this assignment was not contingent upon developing or reporting predetermined results.
- ✧ 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.
- ✧ My analyses, opinions, and conclusions were developed, and this report has been prepared in conformity with the *Uniform Standards of Professional Appraisal Practice*.
- ✧ I have made a personal inspection of the subject of the work under review.
- ✧ Joseph M. MaRous provided significant appraisal review assistance to the person signing this certification.
- ✧ 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.
- ✧ The use of the report is subject to the requirements of the Appraisal Institute relating to review by its duly authorized representatives.
- ✧ 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

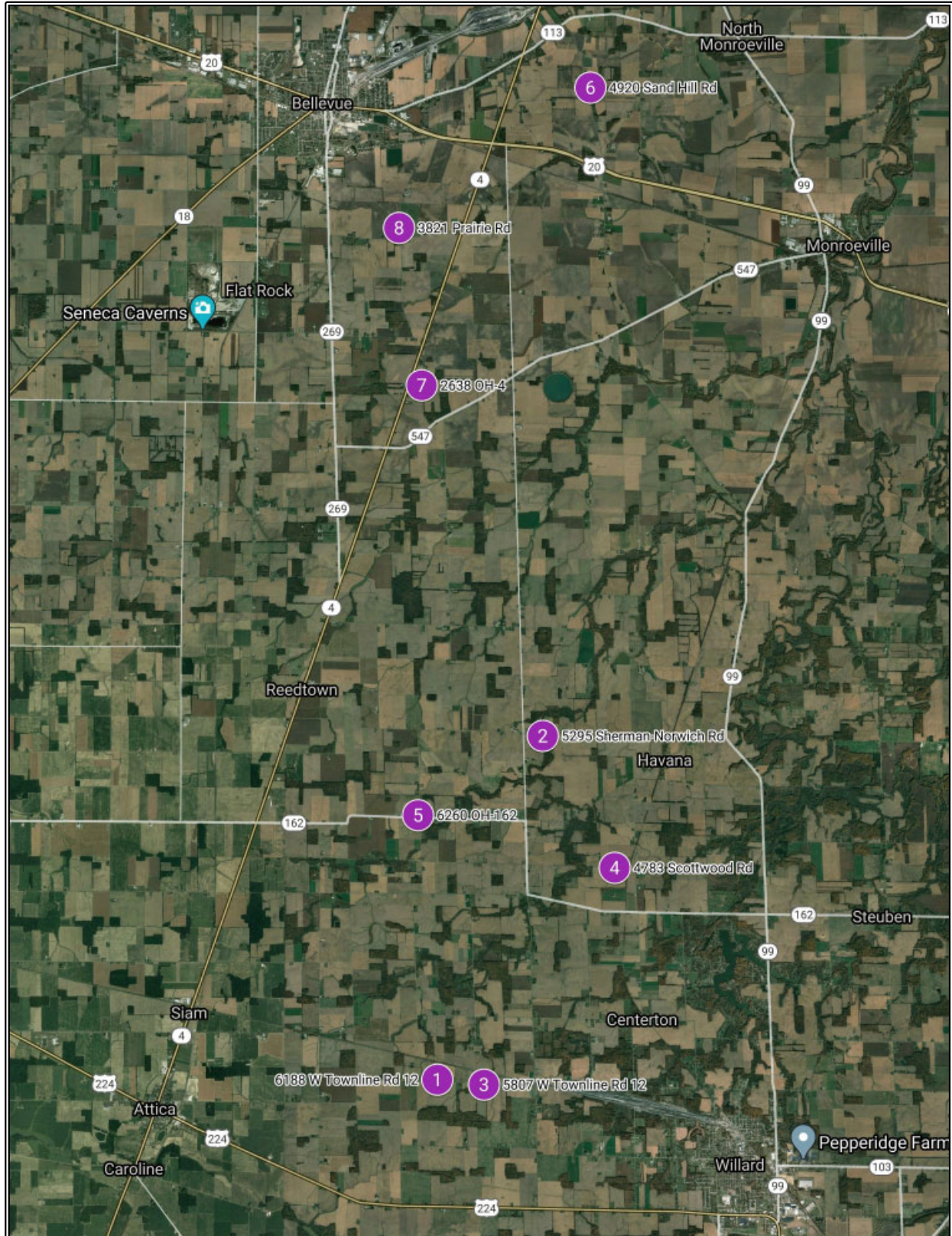


Michael S. MaRous, MAI, CRE
Ohio Certified General - #2020001160 (Temporary)
Illinois Certified General - #553.000141 (9/21 expiration)

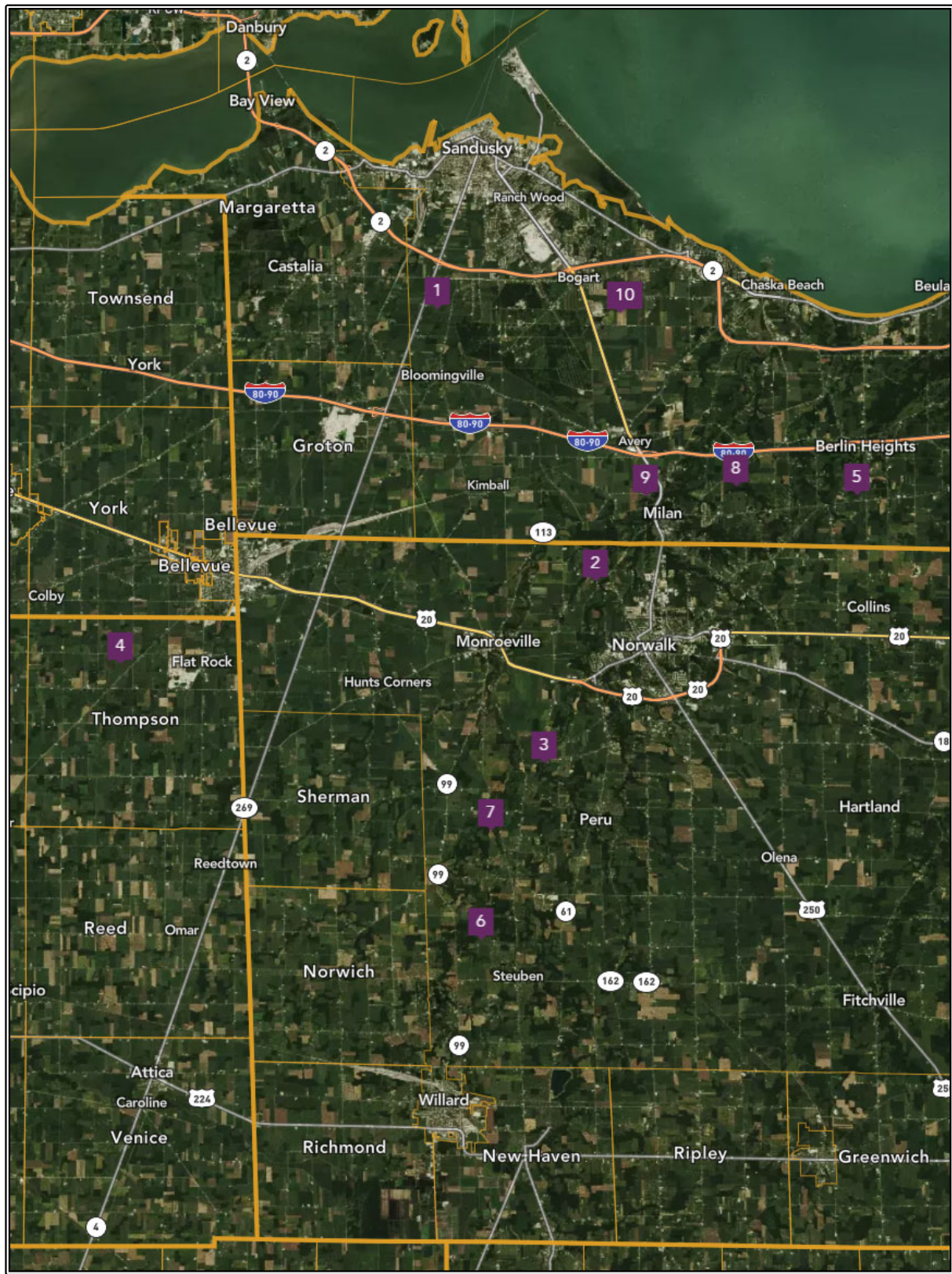
ADDENDA



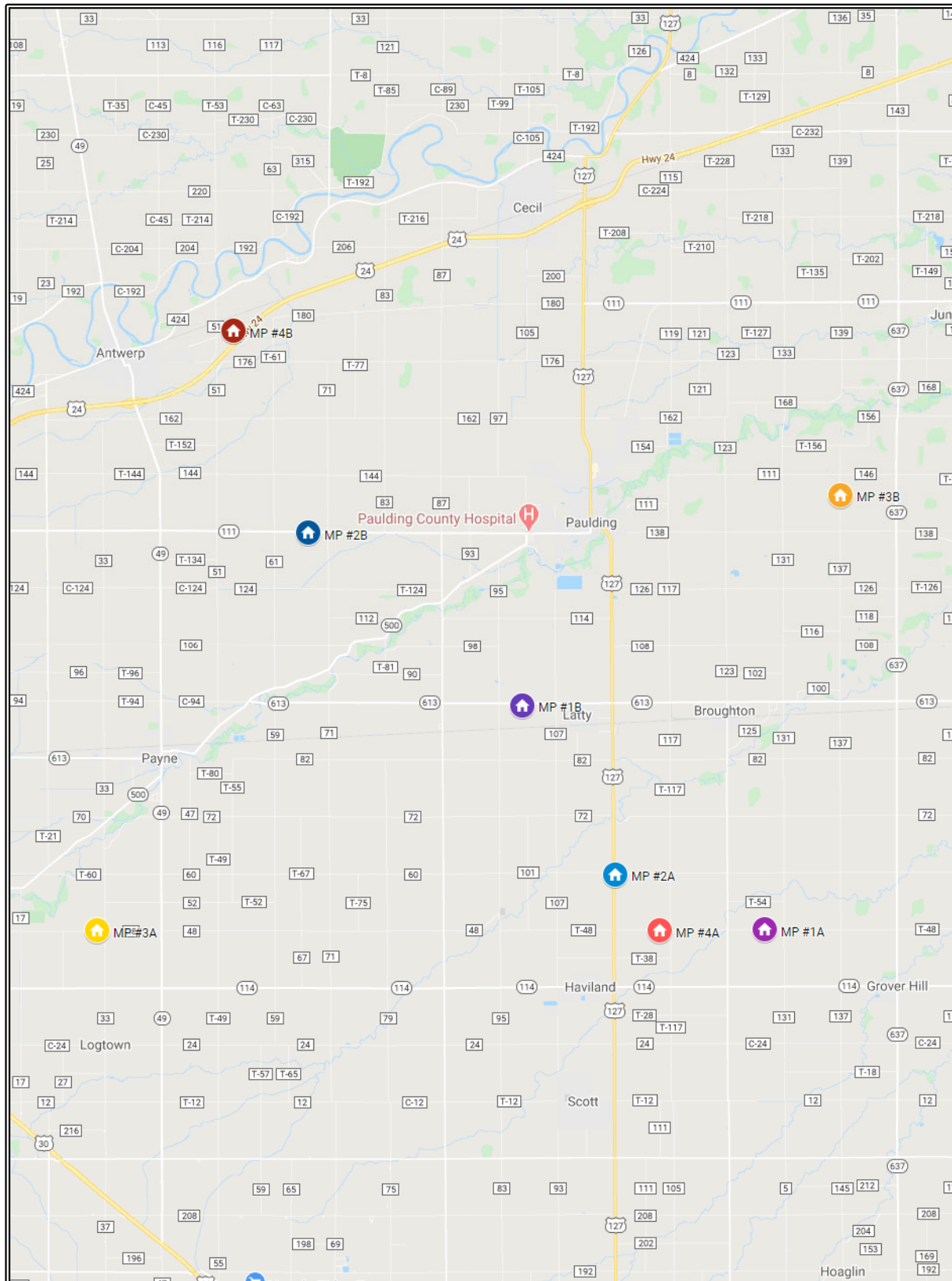
EMERSON CREEK WIND FARM FOOTPRINT



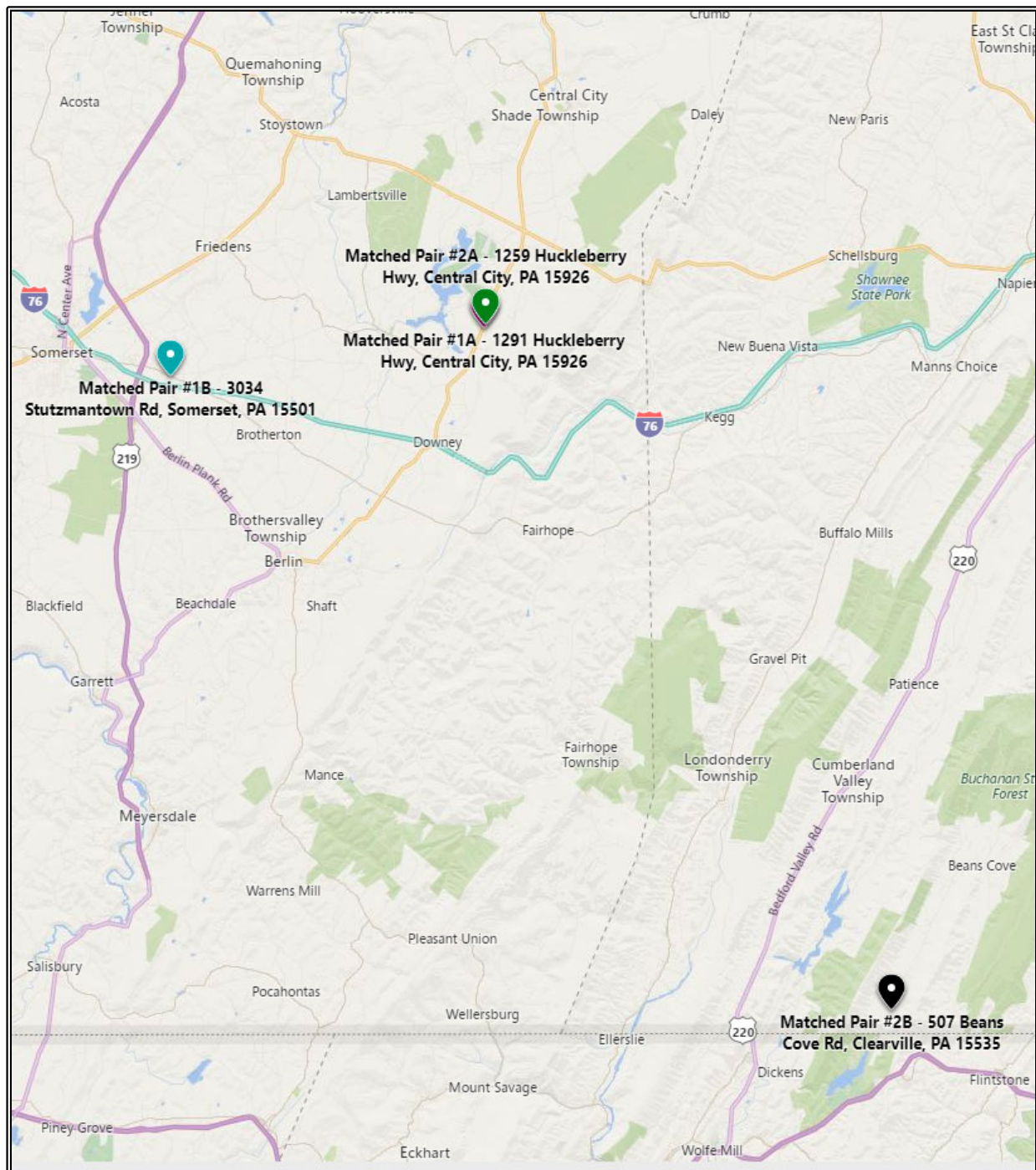
RECENT SINGLE-FAMILY HOUSE SALES LOCATION MAP



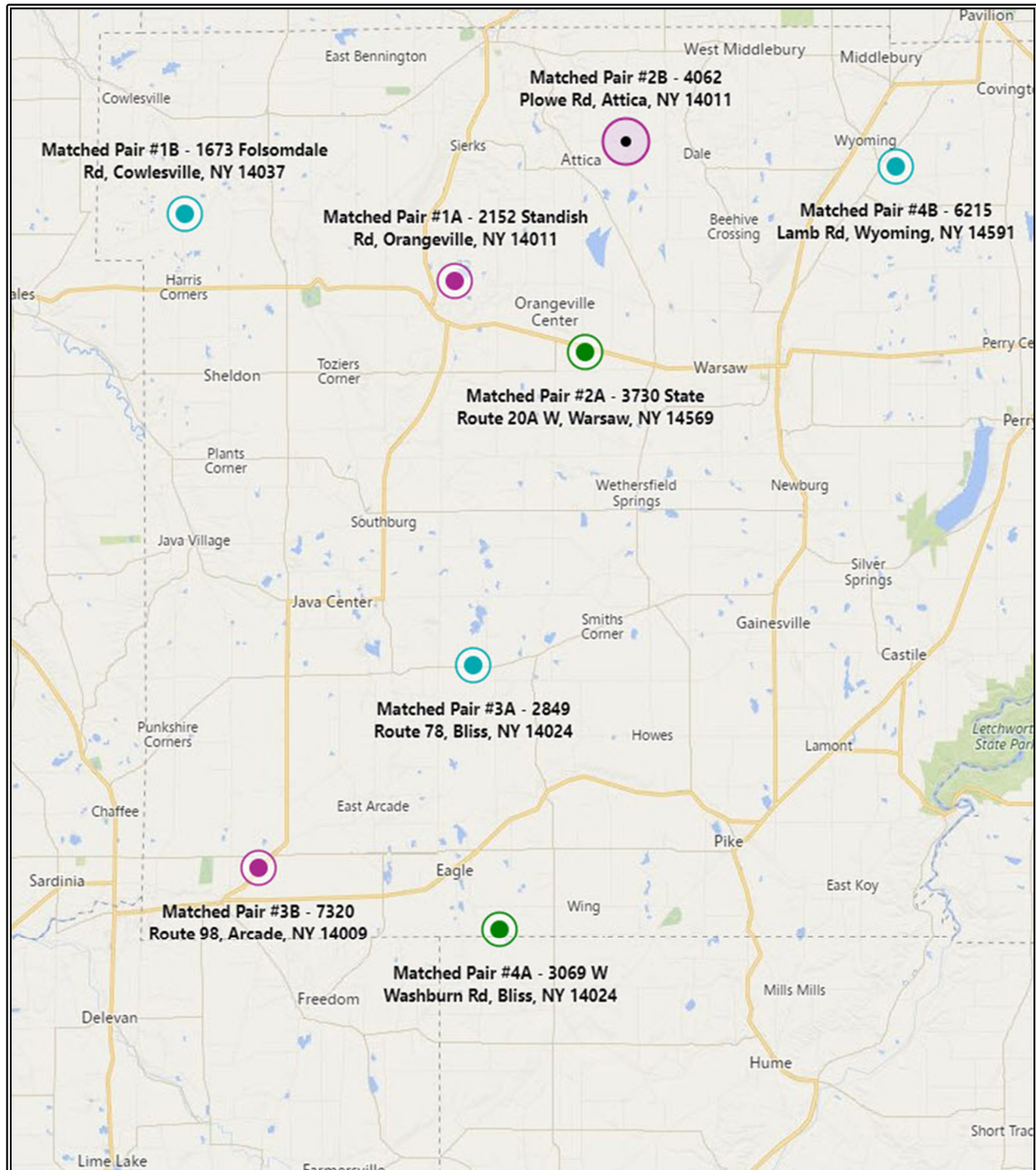
LAND SALES LOCATION MAP



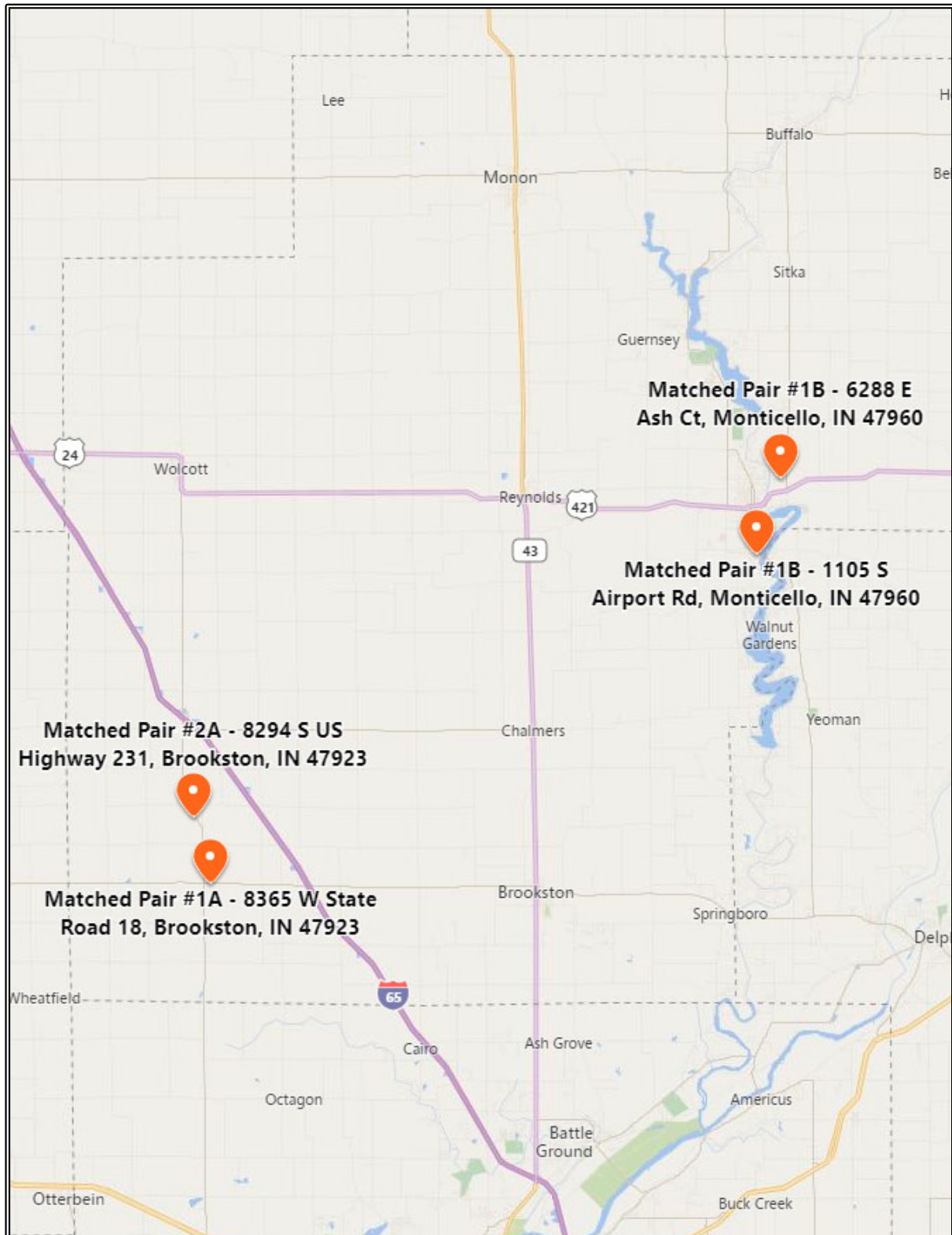
PAULDING COUNTY, OHIO MATCHED PAIR LOCATION MAP



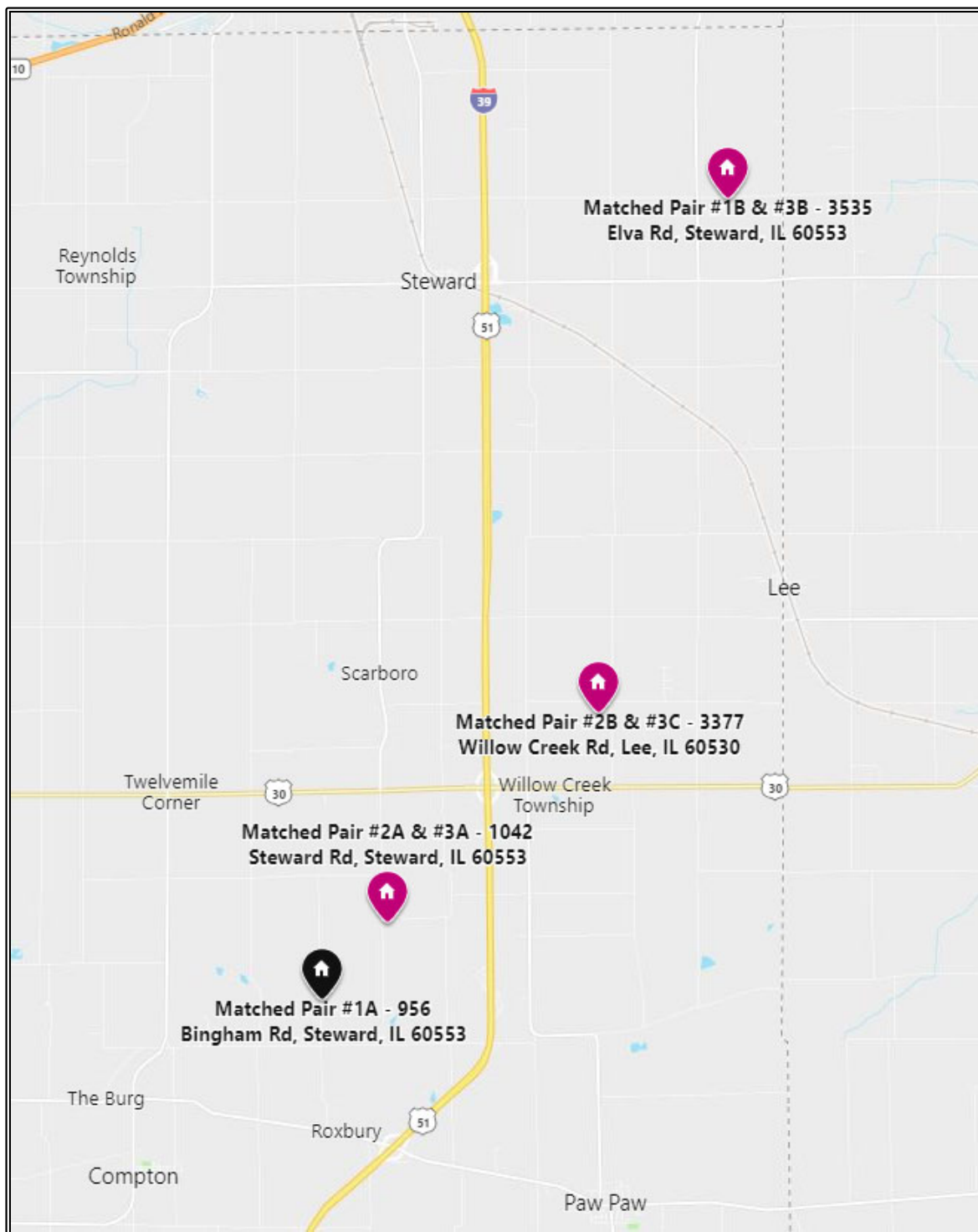
SOMERSET COUNTY, PENNSYLVANIA MATCHED PAIR LOCATION MAP



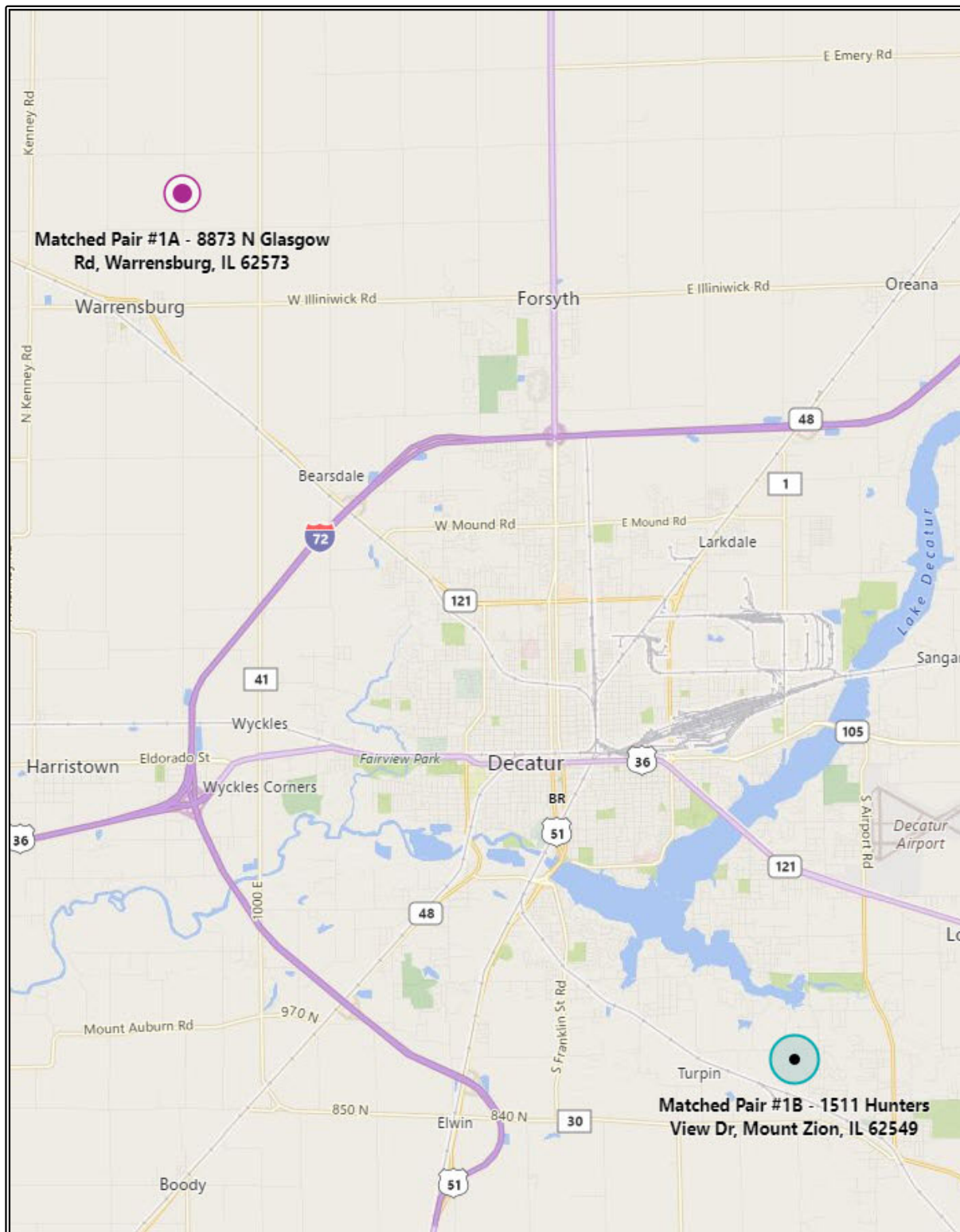
WYOMING COUNTY, NEW YORK MATCHED PAIR LOCATION MAP



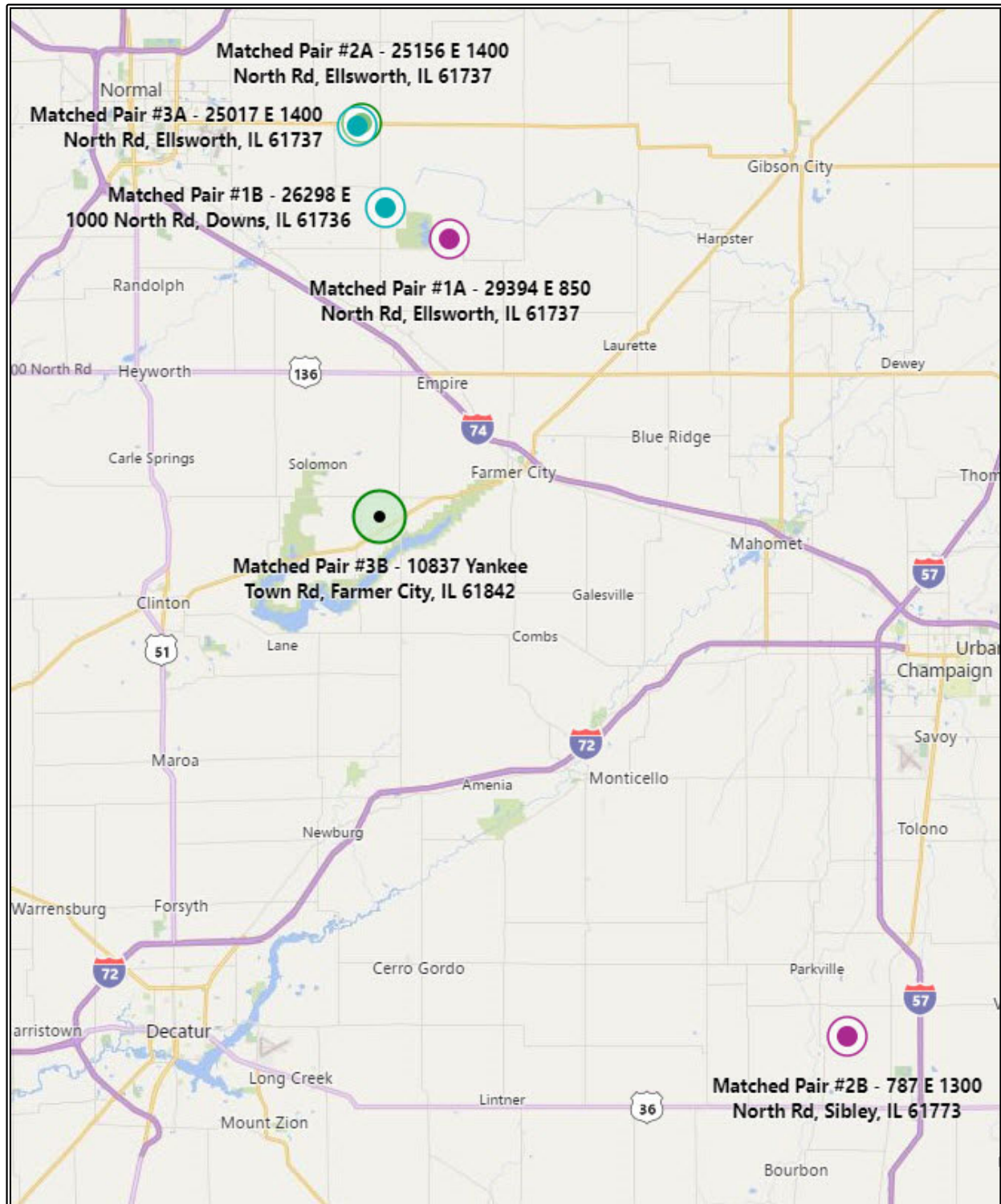
WHITE COUNTY, INDIANA MATCHED PAIR LOCATION MAP



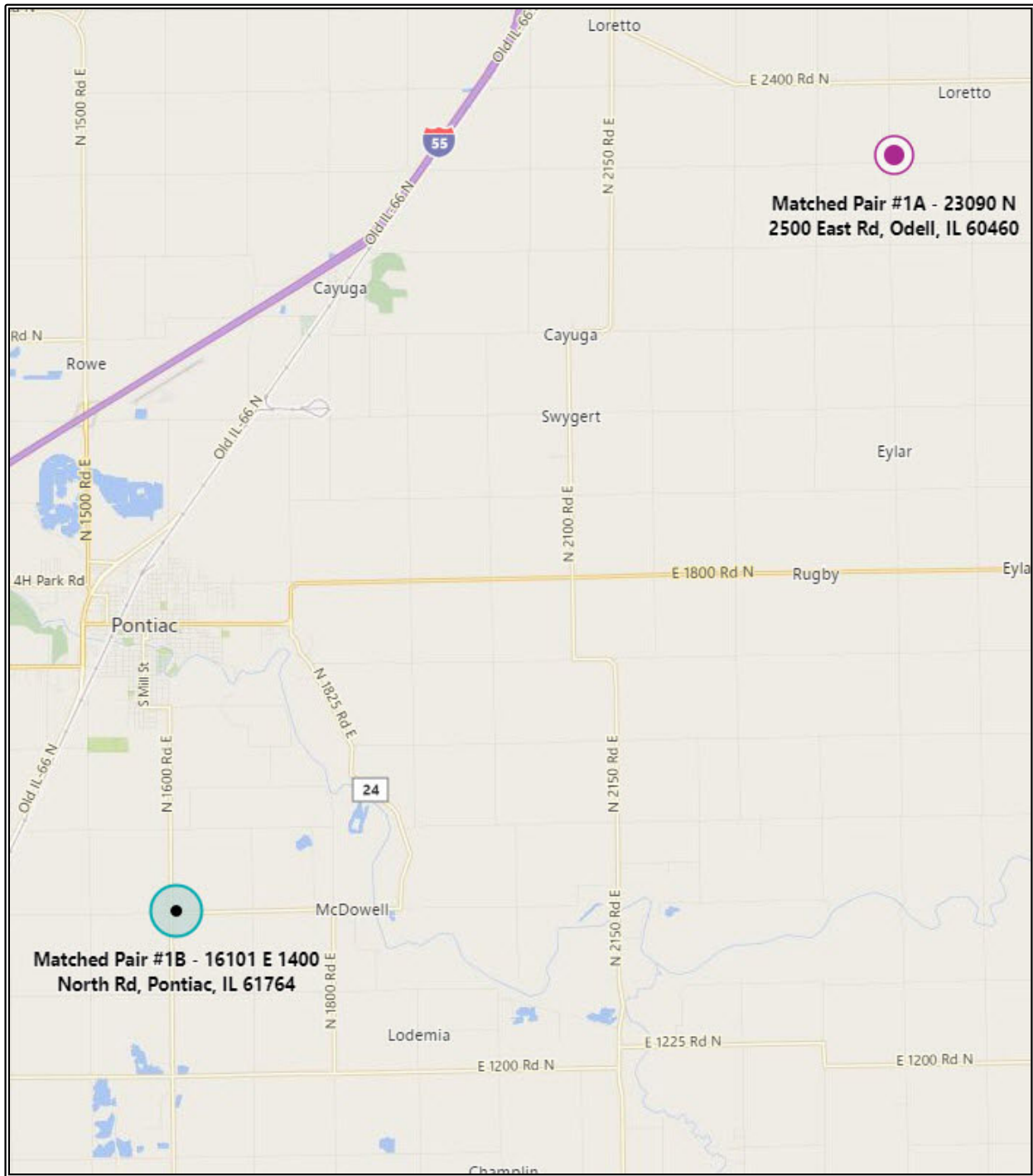
LEE COUNTY, ILLINOIS MATCHED PAIR LOCATION MAP



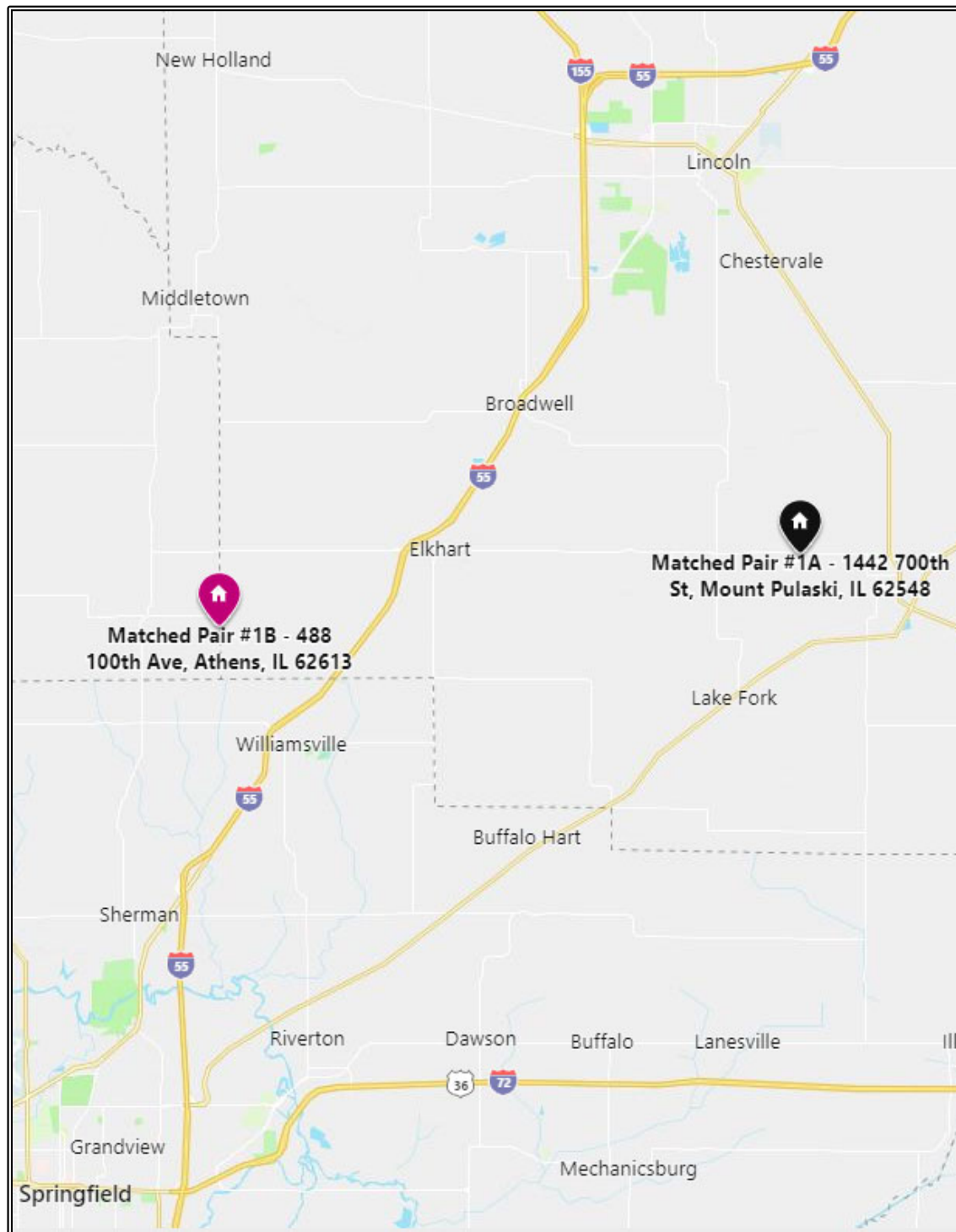
MACON COUNTY, ILLINOIS MATCHED PAIR LOCATION MAP



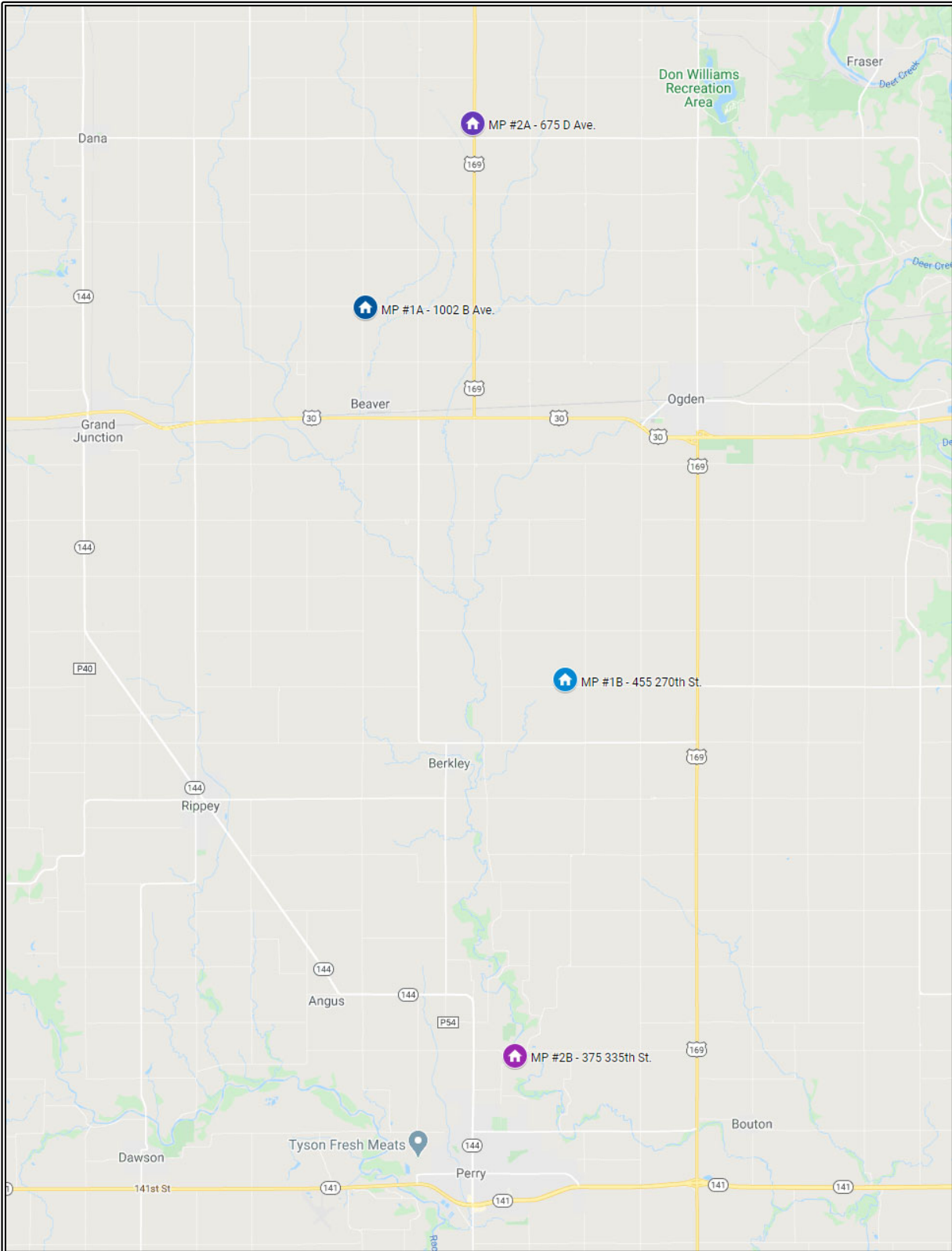
MCLEAN COUNTY, ILLINOIS MATCHED PAIR LOCATION MAP



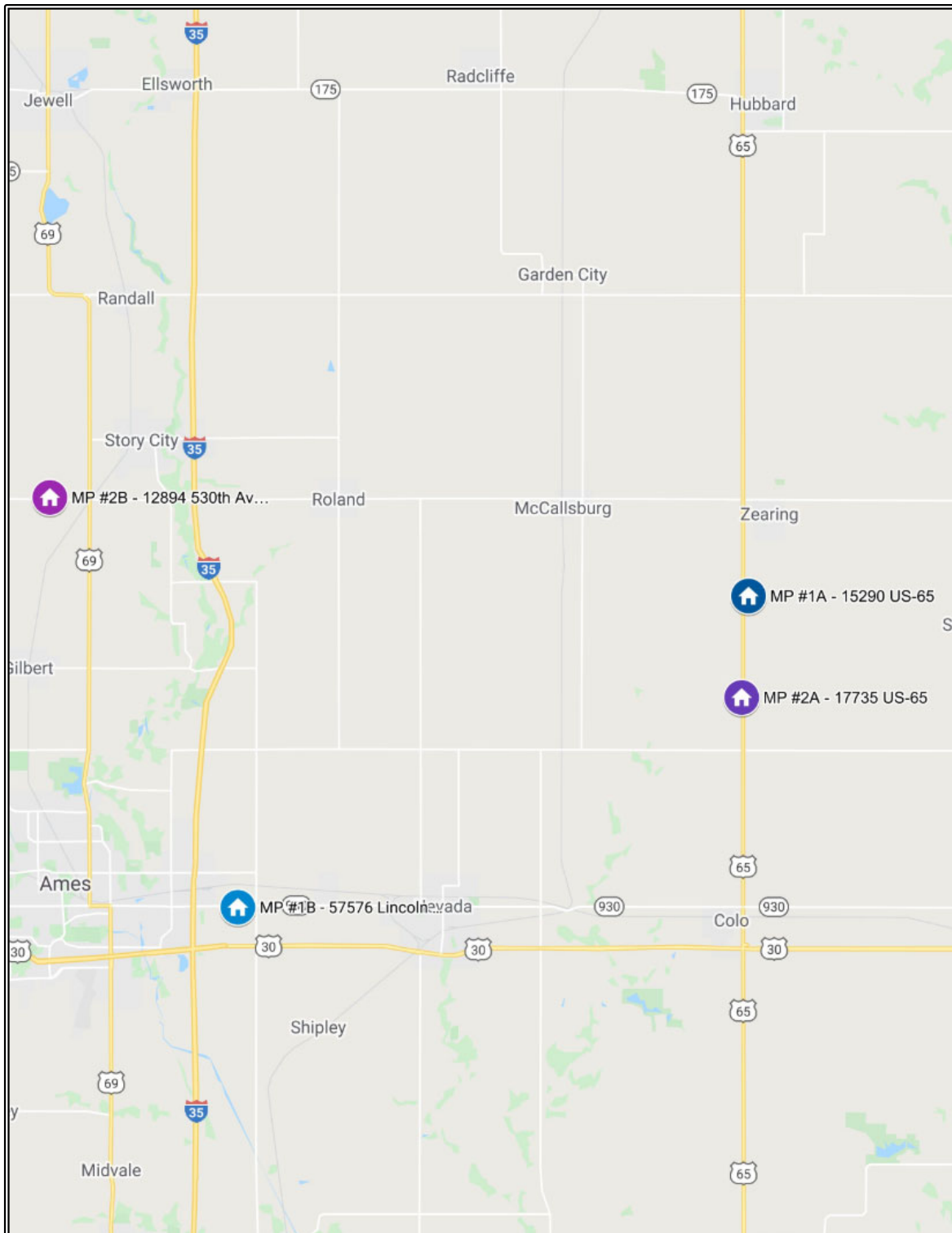
LIVINGSTON COUNTY, ILLINOIS MATCHED PAIR LOCATION MAP



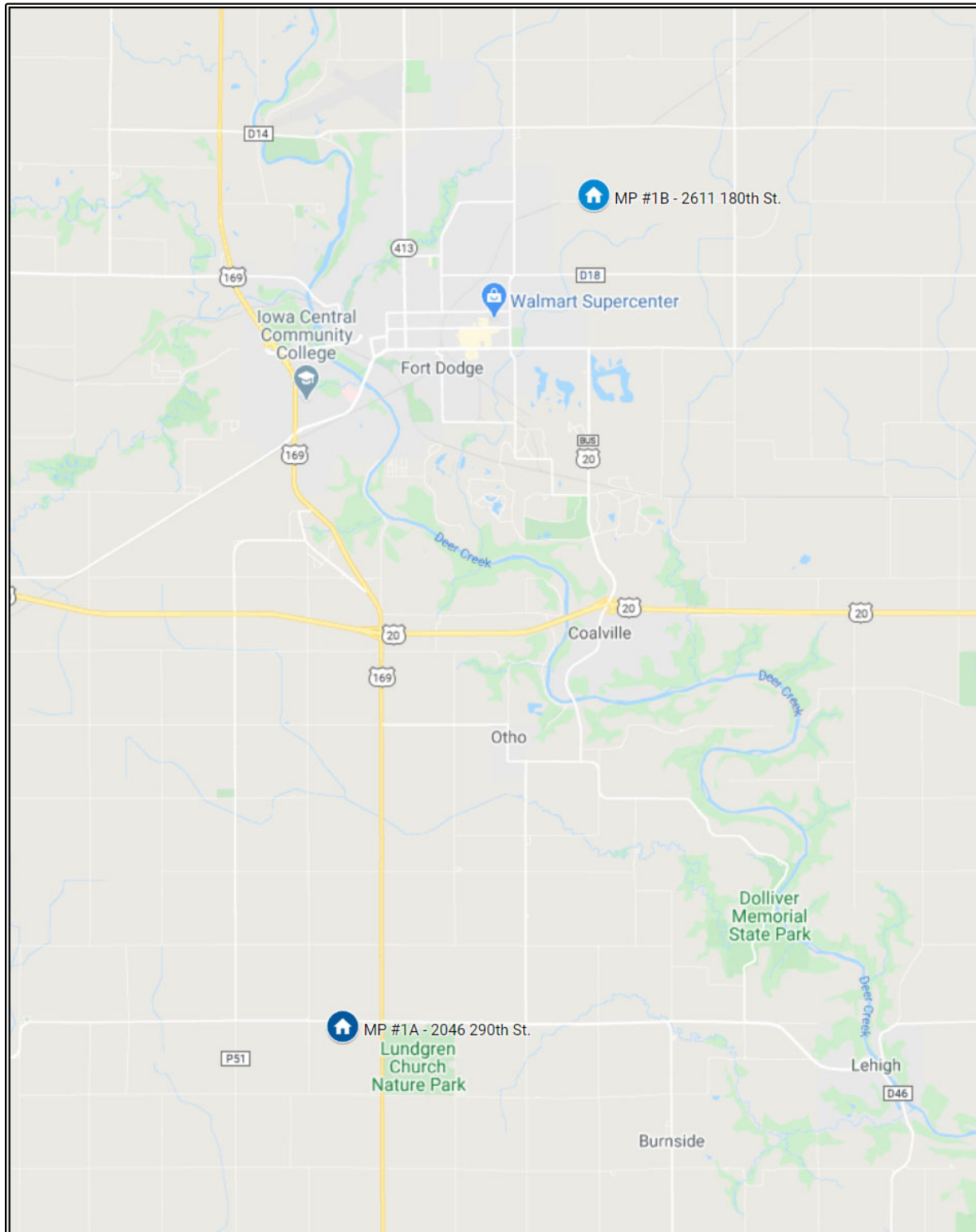
LOGAN COUNTY, ILLINOIS MATCHED PAIR LOCATION MAP



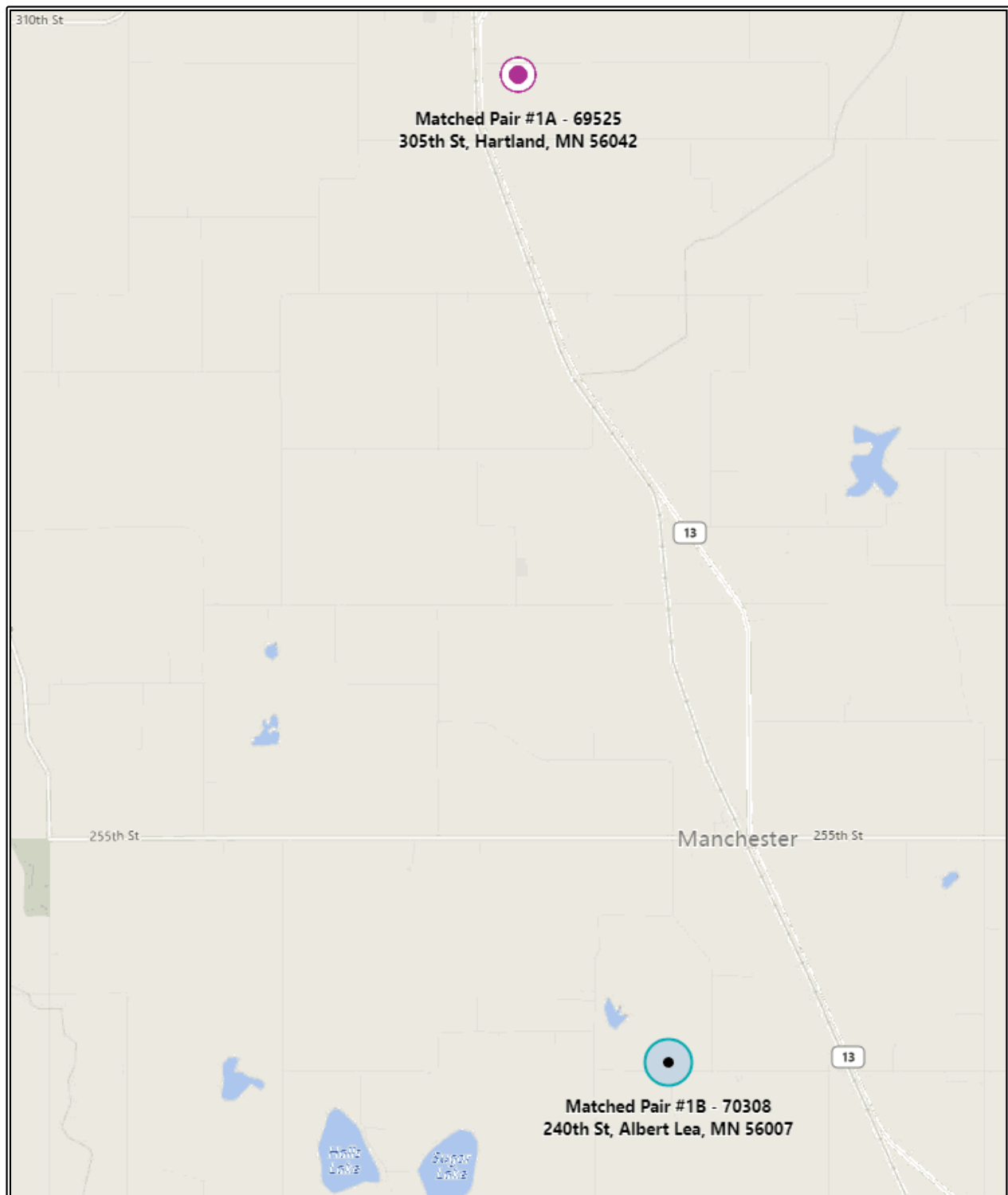
BOONE COUNTY, IOWA MATCHED PAIR LOCATION MAP



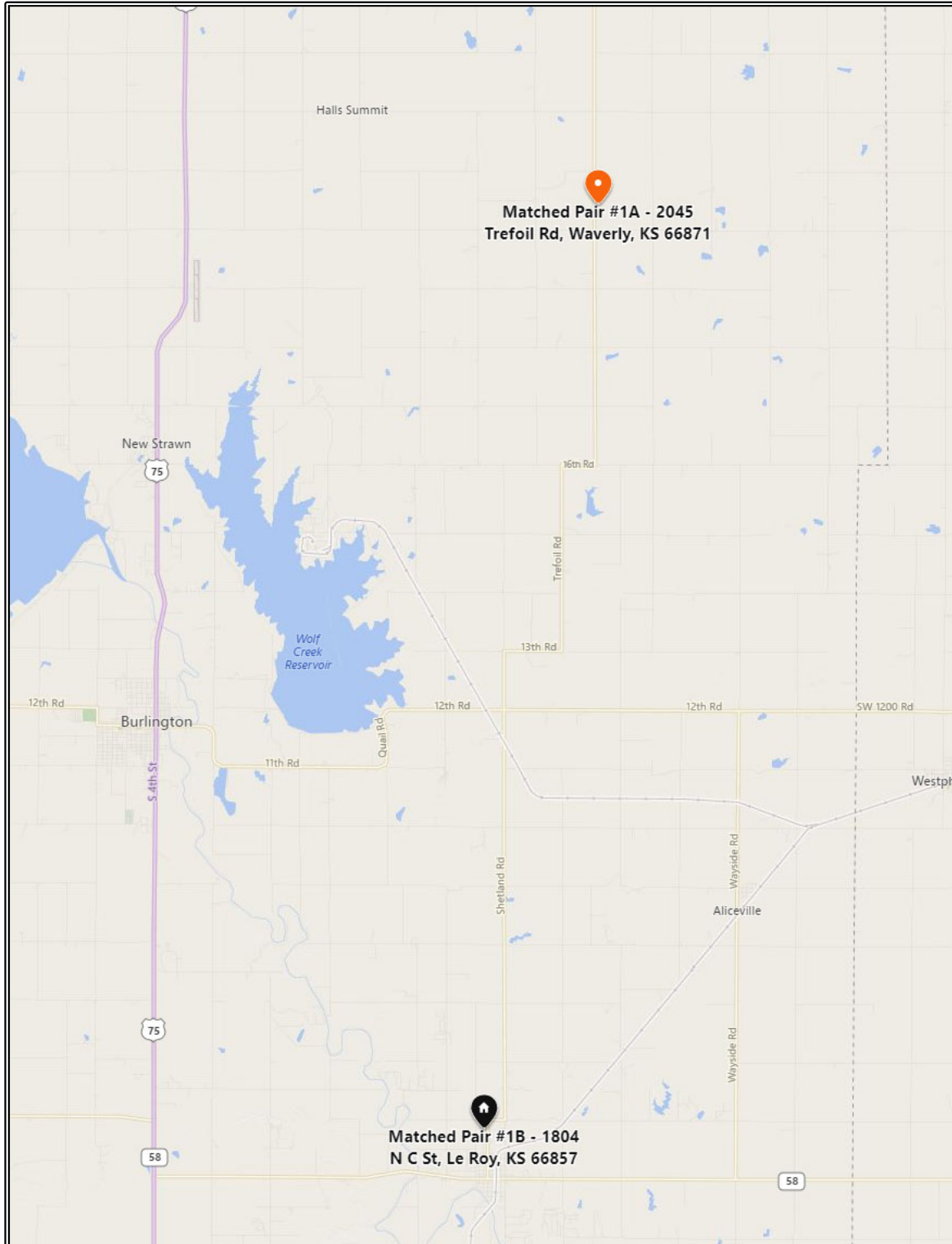
STORY COUNTY, IOWA MATCHED PAIR LOCATION MAP



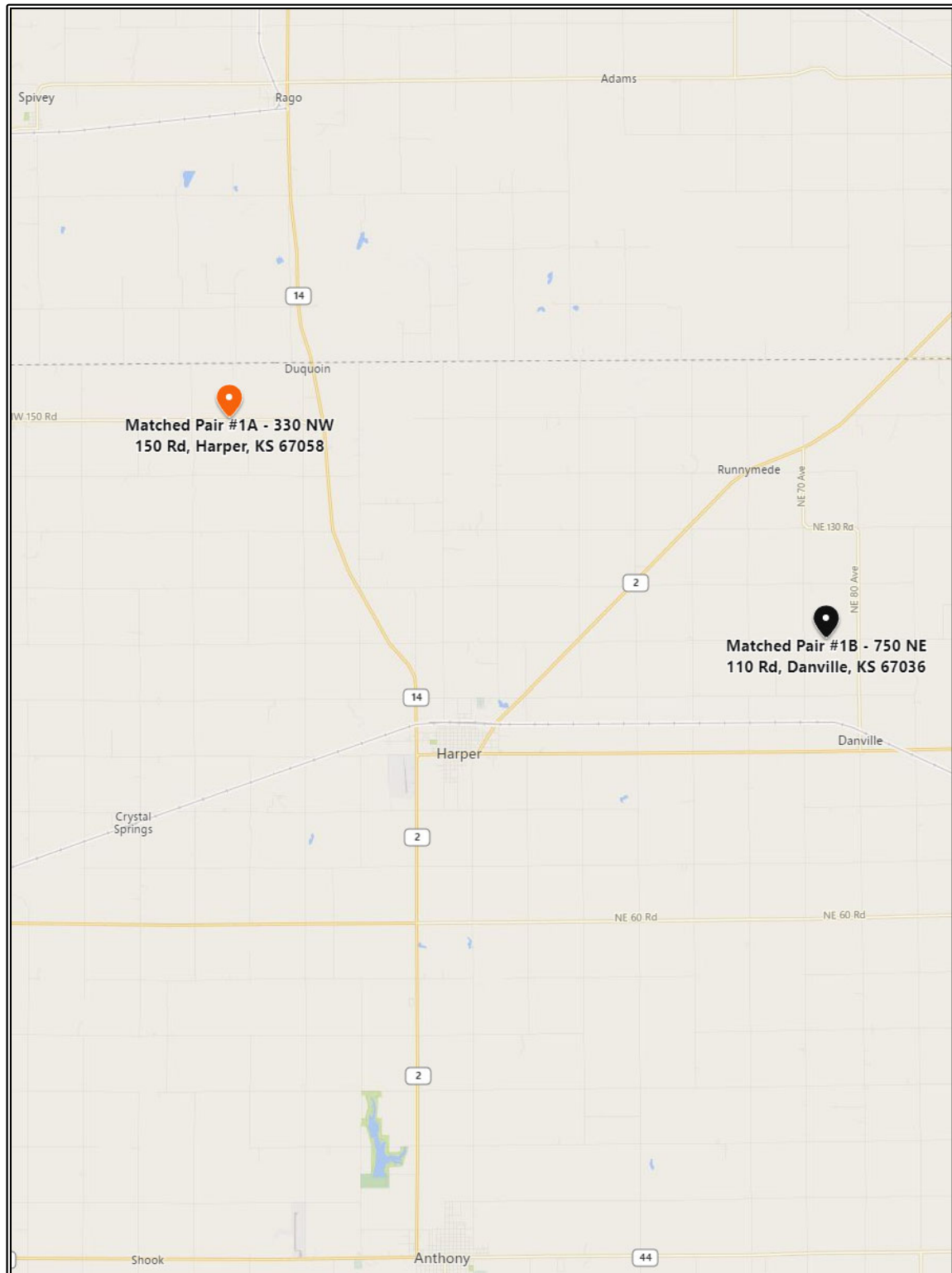
WEBSTER COUNTY, IOWA MATCHED PAIR LOCATION MAP



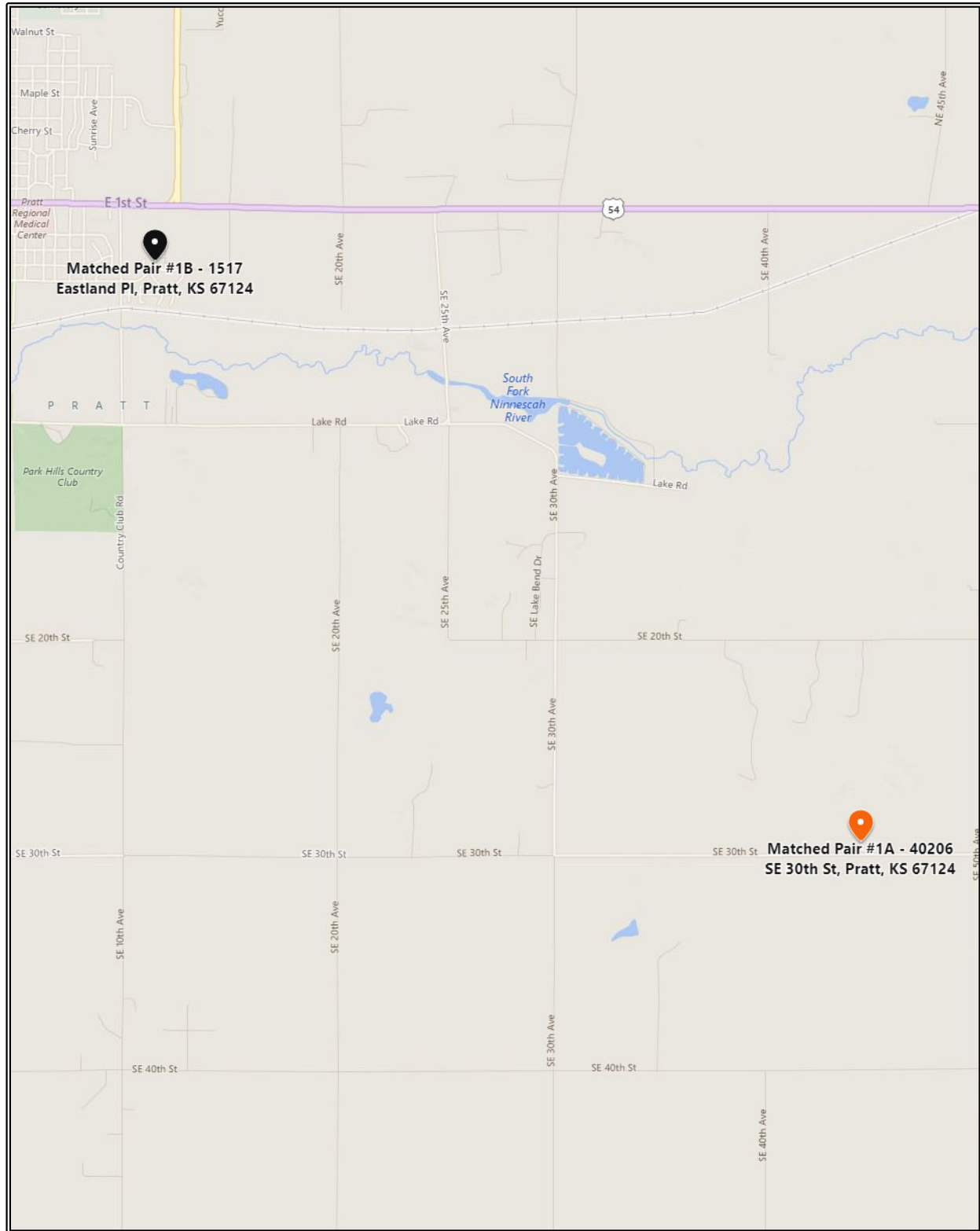
FREEBORN COUNTY, MINNESOTA MATCHED PAIR LOCATION MAP



COFFEY COUNTY, KANSAS MATCHED PAIR LOCATION MAP



HARPER COUNTY, KANSAS MATCHED PAIR LOCATION MAP



PRATT COUNTY, KANSAS MATCHED PAIR LOCATION MAP

IMPROVED SALE PHOTOGRAPHS



6188 Townline Road #12



5295 Sherman Norwich Road



5807 Townline Road #12

4783 Scottwood Road





6260 State Route 162



3821 Prairie Road



4920 Sandhill Road

2638 State Route 4



Ohio County Auditor Survey Analysis

A survey of auditors 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	42	105.0	2018
				Northwest Ohio	55	99.0	2011
Van Wert	28,703	Philip Baxter	(419) 238-0843	Timber Road II	152	304.0	2012

Residential Market Values and Appraised Values

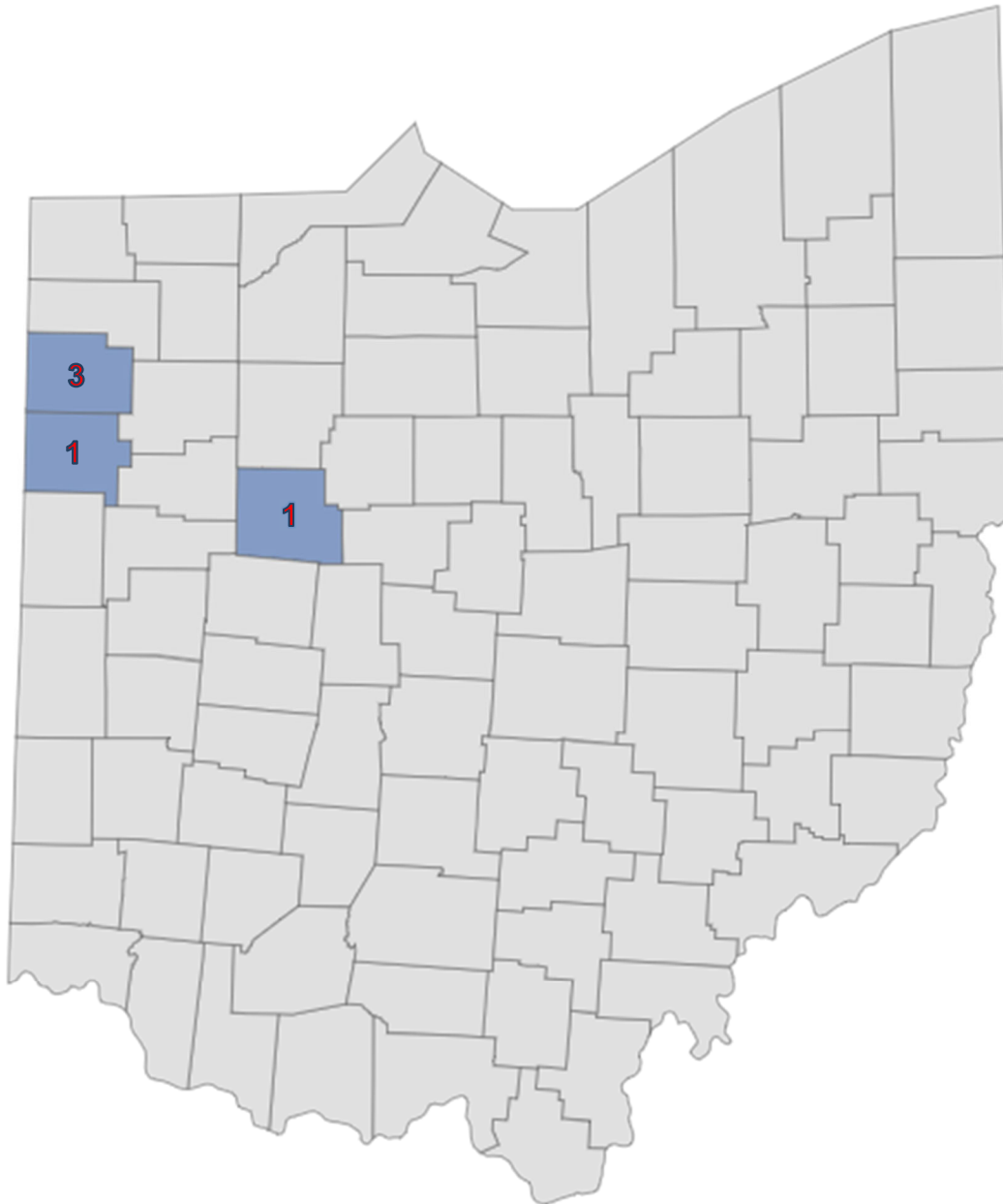
Without exception, the interviewees reported that there was no market evidence to support a negative impact upon residential property values as a result of the development of and the proximity to a wind farm facility. Either as a request by a county board in an attempt to appropriately appraise newly 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.

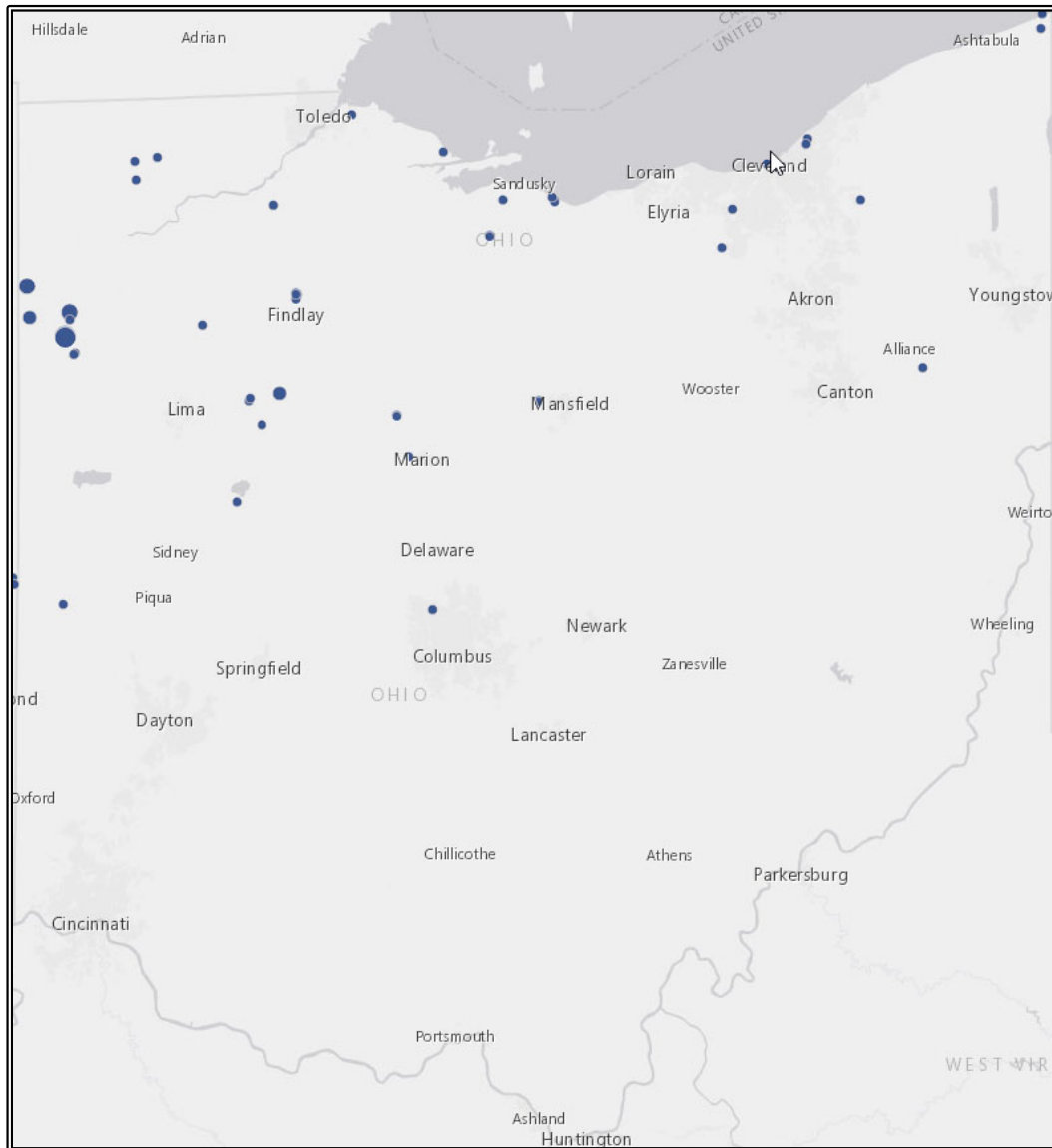
Based on this survey, it does not appear that the county appraisers in any of the counties in Kansas in which wind farms are operational have reason to believe that the location of wind turbines in their counties has had a negative impact on property values.



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	Industrial Properties Manufacturing Facilities Research Facilities	Self-storage Facilities Warehouses
Auto Sales/Service Facilities Banquet Halls Big Box Stores	Commercial Properties Gasoline Stations Hotels and Motels Office Buildings	Restaurants Shopping Centers Theaters
Bowling Alleys Cemeteries Farms Golf Courses Lumber Yards	Special-Purpose Properties 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	Residential Properties Condominium Developments Single-family Residences	Subdivision Developments Townhouse Developments
Agricultural Alleys Commercial	Vacant Land Easements Industrial Residential	Rights of Way Streets Vacations
Corporations Financial Institutions	Clients 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 (9/21)
Indiana Certified General Real Estate Appraiser, License Number CG41600008 (6/20)
Wisconsin Certified General Real Estate Appraiser, License Number 1874-10 (12/21)
Minnesota Certified General Real Estate Appraiser, License Number 40330656 (8/20)
Pennsylvania Certified General Real Estate Appraiser, License Number GA004181 (6/21)
Iowa Certified General Real Estate Appraiser, License Number CG03468 (6/21)
South Dakota Certified General Real Estate Appraiser, License Number 1467CG (9/20)
Kansas Certified General Real Estate Appraiser, License Number 20 TP.86 (4/20)
Texas Certified General Real Estate Appraiser, License Number 1380817 (8/20)
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

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 Racetrack, Major Industrial Property in Manawa, Class A Office Buildings and Vacant Land

Energy Related Projects

Oakwood Hills Energy Center, McHenry County, Illinois
Lackawanna Power Plant, Lackawanna County, Pennsylvania
Commonwealth Edison, high tension lines

Wind Projects

Illinois

Alta Farms Wind Project II, Dewitt County
Bennington Wind Project, Marshall County
Goose Creek Wind, Piatt County
Harvest Ridge Wind Farm, Douglas County
Lincoln Land Wind Farm, Morgan County
Midland Wind Farm, Henry County
McLean County Wind Farm, McLean County
Otter Creek Wind Farm, LaSalle County
Pleasant Ridge Wind Farm, Livingston County
Radford's Run Wind Farm, Macon County
Shady Oaks II, Lee County
Twin Groves Wind Farm, McLean County
Walnut Ridge Wind Farm, Bureau County

Indiana

Roaming Bison Wind Farm, Montgomery County
Tippecanoe County Wind Farm, Tippecanoe County

Iowa

Great Pathfinder Wind Project, Boone & Hamilton County
Ida Grove II Wind Farm, Ida County

Kansas

Neosho Ridge Wind Farm, Neosho County
Jayhawk Wind, Bourbon County & Crawford County

New York

Alle-Catt Wind, Allegany County, Cattaraugus County, & Wyoming County
Orangeville Wind Farm, Wyoming County

Ohio

Seneca Wind, Seneca County
Republic Wind, Seneca County & Sandusky 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
Crowned Ridge Wind II, Deuel 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 Ridge Wind Project, Deuel County

Solar Projects

Illinois

Hickory Point Solar Energy Center, Christian County
Mulligan Solar, Logan County

Indiana

Lone Oak Solar Farm, Madison County

Maryland

Dorchester County Solar Farm, Dorchester County

Wisconsin

Badger Hollow Solar Farm, Iowa County
Darien Solar Energy Center, Rock County & Walworth County
Grant County Solar, Grant County
Paris Solar Energy Center, Kenosha County

South Dakota

Brookhaven Solar Energy Production Facility, Brookings County
Western Regions of the United States of America
Southwest Region – Arizona, Colorado, Nevada, New Mexico, & Utah
Northwest Region – Idaho and Oregon
Southern Great Plains Region – Texas
Northern Great Plains Region – General Research

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, Coblenz &
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 Qualified

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*
 - Bennington Wind Project, *Marshall County*
 - Goose Creek Wind, *Platt County*
 - Harvest Ridge Wind Farm, *Douglas County*
 - Lincoln Land Wind Farm, *Morgan County*
 - Midland Wind Farm, *Henry County*
 - McLean County Wind Farm, *McLean County*
 - Radford's Run Wind Farm, *Macon County*
 - Shady Oaks II, *Lee County*
- Indiana
 - Roaming Bison Wind Farm, *Montgomery County*
 - Tippecanoe County Wind Farm, *Tippecanoe County*
- Iowa
 - Great Pathfinder Wind Project, *Boone & Hamilton County*
 - Ida Grove II Wind Farm, *Ida County*
- Kansas
 - Jayhawk Wind, *Bourbon & Crawford County*
 - Neosho Ridge Wind Farm, *Neosho County*
- New York
 - Alle-Catt Wind, *Allegany, Cattaraugus, & Wyoming County*
 - Orangeville Wind Farm, *Wyoming County*
- Ohio
 - Republic Wind, *Seneca & Sandusky County*
 - Seneca Wind, *Seneca County*
- South Dakota
 - Crocker Wind Farm, *Clark County*
 - Crowned Ridge Wind II, *Codington, Deuel, & Grant County*
 - Dakota Range Wind Project I-III, *Codington, Grant, & Roberts County*
 - Deuel Harvest Wind Farm, *Deuel County*
 - Prevailing Wind Park, *Bon Homme, Charles Mix, & Hutchinson County*
 - Sweet Land Wind Farm, *Hand County*
 - Triple H Wind Farm, *Hyde County*
 - Tatanka Ridge Wind Project, *Deuel County*

Solar Projects

- Illinois
 - Hickory Point Solar Energy Center, *Christian County*
 - Mulligan Solar, *Logan County*
- Indiana
 - Lone Oak Solar Farm, *Madison County*
- Maryland
 - Dorchester County Solar Farm, *Dorchester County*
- Western Regions of the United States of America
 - Southwest Region – *Arizona, Colorado, Nevada, New Mexico, & Utah*
 - Northwest Region – *Idaho and Oregon*
 - Southern Great Plains Region – *Texas*
 - Northern Great Plains Region – *General Research*
- Wisconsin
 - Badger Hollow Solar Farm, *Iowa County*
 - Darien Solar Energy Center, *Rock & Walworth County*
 - Grant County Solar, *Grant County*
 - Paris Solar Energy Center, *Kenosha County*

Appraisal Assistance

- Vacant Land
- Industrial
- Commercial
- Office
- Retail
- Residential
- Auto Dealerships
- Religious Facilities
- Hotel/Motel

This foregoing document was electronically filed with the Public Utilities

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in

Case No(s). 18-1607-EL-BGN

Summary: Testimony - Direct Testimony of Michael MaRous electronically filed by Christine M. T. Pirik on behalf of Firelands Wind, LLC