

Exhibit #1

Wind Turbine Setbacks and Property Values

posted: July 1, 2010 • [Aesthetics](#), [Illinois](#), [Noise](#), [Property values](#), [Regulations](#)

# Wind Turbine Setbacks

Author: [McCann, Michael](#)

On behalf of my clients and as a real estate valuation advisor to the elected officials of Adams County, I am hereby submitting my written testimony as a professional real estate appraiser. ...

1. Residential property values are adversely and measurably impacted by close proximity of industrial-scale wind energy turbine projects to the residential properties, with value losses measured up to 2-miles from the nearest turbine(s), in some instances.

2. Impacts are most pronounced within “footprint” of such projects, and many ground-zero homes have been completely unmarketable, thus depriving many homeowners of reasonable market-based liquidity or pre-existing home equity.

3. Noise and sleep disturbance issues are mostly affecting people within 2-miles of the nearest turbines and 1-mile distances are commonplace, with many variables and fluctuating range of results occurring on a household by household basis.

4. Real estate sale data typically reveals a range of 25% to approximately 40% of value loss, with some instances of total loss as measured by abandonment and demolition of homes, some bought out by wind energy developers and others exhibiting nearly complete loss of marketability.

5. Serious impact to the “use & enjoyment” of many homes is an on-going occurrence, and many people are on record as confirming they have rented other dwellings, either individual families or as a homeowner group-funded mitigation response for use on nights when noise levels are increased well above ambient background noise and render their existing homes untenable.

6. Reports often cited by industry in support of claims that there is no property value, noise or health impacts are often mischaracterized, misquoted and/or are unreliable. The two most recent reports touted by wind developers and completed in December 2009 contain executive summaries that are so thoroughly cross-contingent that they are better described as “disclaimers” of the studies rather than solid, scientifically supported conclusions. Both reports ignore or fail to study very relevant and observable issues and trends.

7. If Adams County approves a setback of 1,000 feet, 1,500 feet, or any distance less than 2-miles, these types of property use and property value impacts are likely to occur to the detriment of Adams County residences and citizens for which the nearest turbines are proposed to be located.

8. The approval of wind energy projects within close proximity to occupied homes is tantamount to an inverse condemnation, or regulatory taking of private property rights, as the noise and impacts are in some respects a physical invasion, an easement in gross over neighboring properties, and the direct impacts reduce property values and the rights of nearby neighbors.

9. A market value reduction of \$6.5 million is projected for the residential property located in the footprint and within 2-miles of the pending Prairie Mills project located in east Adams County.

[Download original document: “Wind Turbine Setbacks and Property Values”](#)

Exhibit 2

Impact of Wind Turbine Generators on Property Values

MATUREN & ASSOCIATES, INC.  
Real Estate Appraisers - Consultants  
1125 E. Milham Avenue  
Portage, Michigan 49002  
269-342-4800

DT: September 9, 2004  
TO: Michigan Wind Working Group  
c/o John Sarver, Energy Office  
RE: Impact of Wind Turbine Generators on Property Values

First of all I wish to thank you for including me in your email distribution list relative to the proceedings of the Wind Working Group. I have an interest in the topic as a Kalamazoo County Commissioner concerned with land use and regulation and as real estate appraiser interested in the issue of external obsolescence (loss or depreciation to property value from outside the property boundary). That economic obsolescence can come from adverse (nuisance) impacts such as visual (loss of viewshed), blade flicker (strobe effect), noise, ice throw from blades in winter, and other environmental impacts from ancillary installations. I am not aware of any plans to put a wind farm in the vicinity of any property that I own, so I have no personal interest one way or the other in this matter, other than wanting the rights all parties to be respected and protected.

I understand that you have as an item of discussion at your September 9, 2004 meeting the issue of property values. I have had some experience with research on this matter. Unfortunately, I have a prior commitment that day and will likely not be able to attend your meeting. Perhaps your committee is already aware of these valuation issues and studies, but I think that they are important to note in the context of promoting wind farms in our state.

As the Vice Chair of the International Right of Way Association's Valuation Committee, I had the opportunity to moderate a session at our International Education Conference in Philadelphia this June. I invited the authors of the two most often quoted studies on the issue of wind farms and property values. Fred Beck of the Renewable Energy Policy Project (REPP) and Dr. David Tuerck of the Beacon Hill Institute at Suffolk College both presented the findings of their respective studies. Both studies are available on the internet: [www.repp.org](http://www.repp.org) and [www.beaconhill.org](http://www.beaconhill.org).

The REPP study, *The Effect of Wind Development on Local Property Values*, is a 78 page report which was published in May 2003. They studied 10 areas of the country. The study surveyed assessed values and properties within 5 miles of a wind farm and showed no diminution in value to those properties due to the presence of the wind farms. Critiques have been made regarding the methodology used in that study.

The Beacon Hill Institute issued an initial 53 page report in October 2003 - *Blowing in the Wind: Offshore Wind and the Cape Cod Economy* and a follow up 34 page report in March 2004 - *Free but Costly: An Economic Analysis of a Wind Farm in Nantucket Sound*. The studies focus on Nantucket Sound in Massachusetts relative to the Cape Wind Associates proposed 130 wind turbine generator (WTG) offshore wind farm. The 2003 study projected 1) a small decline in tourism resulting in a loss of 1,173 to 2,533 jobs and 2) a decline in property values of 4.6% (10.9% for waterfront property) or \$1.35 billion and a concomitant loss in tax revenue to the area of \$8 million. Criticisms of that report have also been made.

The Tennessee Valley Authority (TVA) study on a proposed wind farm in Tennessee consisting of 13 to 16 WTGs reviewed literature on the issue. Appendix F of the study cites several studies on wind farms and their impacts. Among those are:

1. The April 1996 Danish study: *Social Assessment of Windpower - Visual Effect and Noise from Windmills - Quantifying and Evaluation*. It concluded that 13% of people living near windmills considered them a nuisance. Property values

showed a loss in housing prices from \$2,900 (for one WTG) to \$16,000 (for a 12 unit wind farm).

2. The ongoing study in Wisconsin thought to be done in 2003. My conversation with Steve Brick of the Energy Center of Wisconsin indicated that as of this Spring their study was not finished.
3. The TVA study does mention the value of a viewshed as a percentage of the value of improved property at 8% in Fairfax, Virginia and a South Carolina analysis regarding vacant lot premiums of 147% for an ocean view, 115% for a creek or marsh view, and 39% for a golf course view.

The 2002 Strutt & Parker study of the Edinbane Windfarm on the Isle of Skye notes that the proposed 41 turbines would have a major impact on the locality. They estimated that nearby property values would decline by over \$1 million. They also note at 6.18 of their report that "In Germany, Estate Agents report diminution in values of between 20% to 30% for properties in sight of wind farms. We understand that FPD Savills have reported similar levels of depreciation for properties in Norfolk."

The report of the Township of Lincoln Wind Turbine Moratorium Committee, Kewaunee, Wisconsin (2000 to 2002) notes that the Town of Lincoln building inspector compiled a list of home sales. The list compared the property's selling price as a function of the distance to an existing 22 WTG farm in the area. His conclusions were:

1. Sales within 1 mile of the wind farm prior to the installation were 104% of the assessed values and
2. Properties selling after the wind farm introduction in the same area were at 78% of the assessed value.

Anecdotal evidence from real estate agents near Victoria, Australia indicates a 20% to 30% decrease in property values for homes near WTGs.

A court case referenced in the February 14, 2004 edition of the Daily Telegraph (UK) refers to a house near Askam in the Lakes District. The buyers were not informed of the pending installation of 4 WTGs which were 360' tall and 550 yards from their new home. No mention was made in the seller's disclosure form, despite the fact that the seller had protested the proposed wind farm installation to the local government indicating a large loss in value to their property. The court, after listening to chartered surveyors (appraisers) for both sides, concluded that the property had suffered a 20% decline in value.

The above listing is not exhaustive, but a brief mention of studies that discuss the impact on communities and nearby property values by WTGs.

Is the "jury" still out on the impact of WTGs on property value? Yes, though there do appear to be several indications that a loss in value to neighboring properties is real possibility. Can any state agency conclude that wind farms do not have the potential for causing a nuisance and devalue nearby properties and cause a "taking"? No. Whatever report the Wind Working Group comes up with, it should be informational only, include the differing opinions that are out there, not be used to usurp local land use authority in regulating WTGs just like any other land use nor to deny property owners their rights. In our quest for "energy independence" for our society in general, let us not forget the potential for economic loss to individuals as an unintended consequence. We should be prepared to compensate adjacent owners for any property rights (value) taken as a result of the introduction of wind farms.

Sincerely,  
David C. Maturen, SR/WA  
Certified General Real Estate Appraiser  
Kalamazoo County Commissioner

Exhibit 3

Falmouth Real Estate ~ The Turbine Effect

[Sand Dollars](#)

# Falmouth Real Estate — “The Turbine Effect”

May 14, 2013  
by [Cape Cod Wave](#)  
[5 Comments](#)





Written by [Cape Cod Wave](#)

FALMOUTH – Harriet Dugan, who has been selling real estate in Falmouth for several decades, is rarely at a loss for words. But when it comes to the incendiary issue of wind turbines in Falmouth, she makes her point carefully.

Rather than take a solid stand on whether the two town-owned wind turbines at the wastewater treatment plant have negatively affected property values in Falmouth, she focuses on the lawn signs put up by those opposed to them. (See also, [Don Quixote’s Hometown of Falmouth, an Essay](#))

The signs, which are posted on front lawns throughout town, say, in part, “Heal Our Town,” and urge voters to support Question 2 on Tuesday’s town election ballot. The vote would help to pave the way for the dismantling of the turbines, which have been the focus of such controversy since the first one began spinning four years ago.



Does the town need healing?

“I don’t think Falmouth needs to be healed,” Dugan said. “I think it could have been worded better.”

Dugan worries about what summer residents and tourists will think when they see the signs and how her clients will react.

“Who wants to buy in a town that needs healing?” she said.

Realtor Nadine Krasnow of Falmouth Fine Properties said she has no doubt that the turbines have affected property values in the West Falmouth neighborhood with views of the 400-foot high towers.

“In my opinion, it’s had a noticeably chilling affect and it has definitely become more difficult to sell houses there; and the reason is, if people have other choices, which they do, why are they going to buy in a place where value has gone down and it’s unclear what will happen in the future?”

While she admits her information is merely anecdotal, she said she has noticed that in the neighborhood near the turbines, houses have stayed on the market longer and several were withdrawn after six months on the market. One she knows about sold for \$200,000 below its original asking price: for \$400,000, down from \$600,000.

Krasnow said that slow home sales in the neighborhoods near the turbines seem to be an exception from the rest of town, which has rebounded well from the recession in recent months.

“The general market is much better and our inventory is being absorbed,” she said. There have even been a few bidding wars on houses priced well in Falmouth, she noted.

Krasnow said that for buyers who believe strongly in alternative energy, homes near the turbines may be especially appealing. Those buyers could potentially get a bigger house for less money, she said.

She said she had an architect client who was not at all phased by the view of the turbines, but she did not end up buying. “She bought some place else because of concern for the resale value,” Krasnow said.

Having heard the whoosh sound of the turbines, Krasnow was diplomatic about the health affects, like headaches and insomnia, that neighbors say they experience because of the turbines.

“I’m sure it is a problem for some people and I’m sure it isn’t a problem for others. But visually, it’s so over-whelming, it stops you cold in your tracks. It looms before you like some extra-terrestrial.”

Kevin O’Brien, a real estate agent at Jack Conway Real Estate, said he believes the turbines have made a difference in values.

“It seems to me that some of the housing prices have come down and they are having a hard time selling them.”

He said he was working with a client with a very fine “turn key” house on a street with views of the turbines and “they couldn’t get the price they needed.”

Perhaps the real estate agent with the most to say about the issue of the turbines is Annie Hart Cool, who with her husband Mark Cool have been among the most vocal opponents of the turbines.

“It’s the elephant in the real estate living room,” Cool, who works at Sotheby’s International Realty, said.

“People have said ‘stop talking about the wind turbines and it won’t affect the value,’ but ignorance isn’t bliss. They are there. They exist and they’re impacting us. Of course we’re going to talk about it,” she said.

Cool said she has done extensive research into the affect of turbines on the value of homes in neighborhoods across the country and believes it is severe.

“It drives prices down,” she said. She compared it with a “blemish” in any neighborhood, like an ugly warehouse or an unsightly parking lot.

“Values have gone down 20 to 40 percent,” she said of other neighborhoods with turbines. “It’s because of the unknown” of resale value, she said.

Gathering data locally has been problematic simply because of the few homes that have come on the market and sold, she said. There are nine to 12 on the market now, she said, but not enough sales to analyze trends.

“If they are considerably undervalued, they sell,” she said.

But the fear of resale value keeps many buyers away, Cool said.

She said she has represented a couple of houses in the Craggy Ridge neighborhood of West Falmouth where there are seven or eight properties “lingering on the market.”

“That was once a very hot neighborhood,” Cool said.

As a Realtor, Cool said she is bound by laws about full disclosure and she has no intention of skirting the issue about the turbines when she talks to clients. For that reason, she said, she has turned down some clients. “Some have asked and I’ve said, ‘Maybe I’m not the best person [to represent the home].’”

Cool said she lives on a beautiful two-acre property and can no longer use her back yard on a windy day because of the sound of the turbines.

She said the town has offered her special noise abatement windows and air conditioners, but she said that would not help.

“The vibrations get into the house,” she said.



The spin zone.

Bonnie V. O’Neill, a real estate agent in the North Falmouth office of Real Estate Associates, said she has been struck by how wide the turbines’ impact is.

She was showing an expensive oceanfront property on Point Road out on a peninsula in North Falmouth, miles away from the turbine when a prospective buyer looked up and saw them.

“He said, ‘What’s that?’ He could see them and it turned him off.” The man did not end up buying the property and O’Neill can not speculate on his reasons, but she has no doubt the view of the turbine played into the equation. “It certainly impacted him,” she said.

She said she believes properties very close to the turbines where the machine is visible have had their values affected. But she said there is a flip side. "There are a few people who are very supportive and think turbines are wonderful."

Others object to the presence of the turbines, she said, and certainly if they hear the turbines while looking at a property it does not bode well for a sale.

But she said the neighborhoods closest to the turbines are not the only ones affected.

"It has impacted the whole town I think because you can see it from so many places," she said. "I'm amazed the distance that they are visible from. I didn't think it would be that much."

Joan Baird, a real estate agent with Donohue Real Estate, said she had a client looking at a house with a clear view of the turbines.

"We stood on the front lawn and they said, 'It doesn't bother us.'"

That particular client ended up buying a house around the corner but Baird said she believes the turbine was not a factor.

Other people, though, are bothered and she believes the area's prices have been affected.

"I think it has a stigma now. I think in general it has impacted real estate in that area," she said.

She said she supports those affected by the turbines and believes they have a right to speak out about the issue.

Baird said she shows a lot of vacation rentals and people have been curious about the "Heal Our Town" signs all around town.

Having recently directed the Falmouth Theatre Guild's production of "The Music Man," Baird couldn't help but invoke the show's signature dilemma. "People are saying, 'What's the matter with you? Do you have a pool table in town or what?'"

—Laura M. Reckford

Exhibit 4

Turbines complicate sales of abutting homes

- **Turbines complicate sales of abutting homes**
- **FAIRHAVEN — When Peter Goben, 52, first met his wife Christine, he thought it was fate that they both had grown up in New Bedford but dreamed of living in Fairhaven. Together they built a house in town, raised five children there, and never thought they'd leave, Goben said, until the turbines came.**



• Comment

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By **ARIEL WITTENBERG**

Posted May. 25, 2013 at 12:01 AM

FAIRHAVEN — When Peter Goben, 52, first met his wife Christine, he thought it was fate that they both had grown up in New Bedford but dreamed of living in Fairhaven. Together they built a house in town, raised five children there, and never thought they'd leave, Goben said, until the turbines came.

Goben's Teal Circle home is located just 1,200 feet from Fairhaven's two wind turbines at the wastewater treatment plant. He lives across the street from a home where the state conducted its noise testing of the turbines and found a violation.

Goben said he believes in the need for renewable energy, and was worried about noise but willing to give it a try when the town announced it was building two so close to his backyard.

Now, after a year of sleeping on the living room couch because the turbines are too loud in his bedroom, Goben is leaving Teal Circle and moving back across the harbor.

"The kids are upset because this is their home, but they don't live here anymore," he said. "It doesn't make sense to stay here when I can only use half my house."

Goben is not the only Fairhaven resident who, after months of complaining about the turbine noise with no relief, is looking to move.

Justin Downey has lived on Timothy Street his entire life, in a home built by his great grandparents. He said his fiancée and their three children moved to Martha's Vineyard to be with her parents six months ago because the turbines were keeping their 8-year-old son up at night and affecting his schoolwork.

Downey stayed behind until he can find a job on the island and sell his home.

"I used to see my kids all the time; now it's just when I can get on the ferry," he said. "It's sad, but going back and forth all the time is too expensive."

Downey said he tried selling his home and put it on the market for what he considered to be a low asking price of \$209,000.

After a few months of "watching buyers come by, look at the turbines and drive away," Downey took it off the market and said he is now hoping to find someone to rent it.

Realtor Susan Whitehead said she has been trying to sell a property on Weeden Road for two years. That property was put on the market for reasons unrelated to the turbines, but Whitehead said buyers ask about the machines, which are visible across Little Bay, "100 percent of the time."

"They ask about the noise, they ask about the flicker, and then they don't put in an offer," she said.

Because of this, the asking price of the home has dropped from \$389,000 to \$244,900, Whitehead said.

Trying to sell a home near wind turbines is something Falmouth real estate agent Margaret Gifford said is not easy. There, residents have been battling to shut the turbines off for the past two years, and Gifford said agents swap stories of houses languishing on the market for years at a time, being passed around from broker to broker.

"The houses near the turbines are not ones that sell quickly," she said.

Real estate agents are required to inform buyers of anything about a house that might depreciate its value. In the case of turbines, Gifford said they "disclose themselves" but she does caution buyers to make sure they see homes when the turbines are spinning.

Patricia Favulli, acting director of the Falmouth Assessor's Office, said she has not seen evidence that home values have been affected by the turbines and that houses near the Falmouth turbines have been sold "close to or more than" the assessed value.

On Teal Circle in Fairhaven, Goben considers himself lucky that his home was on the market for just two weeks before an offer came in, something he attributes to the newly

built Wood Elementary School nearby. He expects the sale to close by the end of the month at a price 7 percent below what he asked. Since his house went on the market, Goben said some of his neighbors, who are also affected by noise from the turbines, have accused him of "abandoning" their cause.

"But I did my part. I voted, I went to meetings. Nothing is changing here," he said. "The only thing left to do was go."

Exhibit 5

32 lawsuits filed against Pinnacle Wind Farm

# 32 lawsuits filed against Pinnacle Wind Farm

- Cumberland Times-News
- Nov 14, 2013
- 

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KEYSER, W.Va. — Thus far, at least 32 lawsuits have been filed over the Pinnacle Wind Farm at NewPage on Green Mountain. Gary and Amy Kalbaugh are the latest to file a lawsuit in U.S. District Court for the Northern District of West Virginia at Martinsburg.

The Kalbaugh lawsuit is only the second lawsuit classified as a “torts to land” claim, with the other 30 classified as personal injury, according to The West Virginia Record.

The Kalbaugh lawsuit alleges that the wind farm has interfered with their use, enjoyment and value of their property.

Henry E. Wood III of Charleston is representing the Kalbaughs, as well as 38 residents who filed 23 federal lawsuits in September. The residents allege that the wind farm has caused mental and physical health problems as well as loss in the value of homes.

Mike Haywood, individually, and doing business as The Mike Haywood Group also filed a lawsuit against Pinnacle on Oct. 28 alleging that the noise and pulsations from the 23 wind turbines disturb him as well as his attempt to sell houses at a development site that is located 1.5 miles away from the wind farm, according to The West Virginia Record.

Charley Parnell, vice president of public affairs for Edison Mission Energy/Midwest Generation, has previously told the Times-News that Edison Mission Group won’t comment on litigation, except to say it “strongly denies the allegations being made against the project, and we will defend ourselves vigorously.”

“Pinnacle strongly denies the allegations being made against its wind energy project,” said Parnell in September. “Further, Pinnacle takes seriously its role as a responsible member of the Mineral County community and has worked with the turbine manufacturer to develop and install equipment which reduced the noise from the wind turbines.”

Last year, louvers were installed on all 23 of the wind turbines at Pinnacle, according to Parnell.

“By all accounts they had a dramatic impact on the noise of the wind turbines,” said Parnell.

Exhibit 6

Critics say wind turbines hurt land values

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Sept. 11, 2009

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By [Thomas Content](#) of the Journal Sentinel

Land values have fallen on properties near wind turbines built as part of the largest wind power projects in the state, a study funded by wind-power critics says.

The study found property values have fallen by at least 19% for sales of land near the We Energies wind farm in Fond du Lac County, and at least 12% for sales of land near Invenergy LLC's Forward Wind project in Fond du Lac and Dodge counties, a report by Appraisal Group One says.

The appraisal firm's study was commissioned by a Calumet County affiliate of the state Coalition for Wisconsin Environmental Stewardship, a group that is opposing We Energies' Glacier Hills wind farm project in Columbia County and seeks to preserve local control over wind-siting decisions.

The study was released days before the Legislature is expected to take up a wind-siting reform bill aimed at providing standardized permitting procedures for wind power projects across the state.

A representative of the American Wind Energy Association declined to comment on the study. We Energies spokesman Brian Manthey said the utility was still reviewing the report, but he said it's hard to judge how much the decline in property values was caused by proximity to turbines, given that the decline also occurred during the housing market's collapse and the worst economy in generations.

"The times that we are in really make it difficult to say . . . what is affecting home sales or land sales," he said.

Bob Welch, who is lobbying on behalf of the anti-wind group, said he hoped legislators will take a second look at the siting bill in light of the report, saying the bill in Madison would stop local governments from setting restrictions requiring turbines to be located far from homes.

The bill would essentially give the issue to the state Public Service Commission, which would set up a proceeding to determine proper setbacks for wind turbines and other siting issues.

Kurt Kielisch, president of Appraisal Group One, said his study found living near wind turbines has a bigger impact on property values than other studies he's done. His other studies have examined the impact of transmission lines and gas pipelines on property values.

The study found an average price decline of 30% to 40% in land values for property sales that were near turbines.

The main objection, he said, is aesthetics.

"The focus of people who move to the country is kind of to be left alone to enjoy the quiet and the scenery, and when you have things changing the scenery like windmills tend to do, that puts more of an industrial urban feel into the country," he said.

The firm's study's findings run counter to a national study that issued a preliminary finding this year that found "no statistical evidence that homes near wind facilities are stigmatized by those facilities as compared to other homes in the region."

That study, by the Lawrence Berkeley National Laboratory, reviewed wind projects in 10 states including a wind farm in Kewaunee County.

Ben Hoen, a co-author of the Berkeley study, said Friday that he could not comment on the Wisconsin case. The Berkeley study was funded by the U.S. Department of Energy, he said in an e-mail.

Supporters of the wind-permitting legislation said Friday that they don't expect the study to delay the state's action on the wind-siting reform bill.

"This is sort of the classic tactic of the wind opponents," wind industry lobbyist Curt Pawlisch said. "Come up with something and throw it in and see what happens. This is one more reason why you need to have a calm setting, through a deliberative rulemaking process at the PSC."