

EFFECTS OF WINDFARMS

– Lincoln Township, Kewaunee County, Wisconsin

Excerpts from the *Final Report of the Township of Lincoln's Wind Turbine Moratorium Committee*. Prepared by Elise Bittner-Mackin, former Chicago Tribune reporter. For additional information Dale Massey, Lincoln Township clerk: 920-837-7298

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Introduction

After the wind turbines went online in Kewaunee County, Wisconsin, the Lincoln Township Board of Supervisors approved a moratorium on new turbine construction. The purpose of the moratorium was to delay new construction of wind turbines for eighteen months, giving the township the opportunity to assess the impacts of the 22 turbines installed by Wisconsin Public Service Corporation (WPSC) and Madison Gas and Electric (MG&E), which went online in June, 1999.

The following document summarizes some of the problems the Moratorium Committee faced in trying to address problems the township hadn't faced prior to turbine construction and some of the resulting changes the committee proposed as a result of its study. Verification of this information can be obtained from Lincoln Township officials.

The Moratorium Committee met 39 times between January 17, 2000, and January 20, 2002, to 1) study the impact of wind factories on land, 2) study the impact on residents and 3) review conditional use permits used to build two existing wind factories in Lincoln Township.

Survey

The committee conducted a survey on the perceived impacts of the wind turbines that was sent out to all property owners residing in the township. Each household received one vote. The results were presented on July 2, 2001, to the town board, two years after the wind factory construction. (NOTE ADDED: Responses were reported and differed somewhat depending on distance of residents from the turbine site.)

Question: Are any of the following wind turbine issues currently causing problems in your household?

a. Shadows from the blades

Residents living within 800 ft – ¼ mile	33% yes
Residents living within ¼ - ½ mile	41% yes

Here are additional write-in comments from the survey:

- "We get a 'strobe effect' throughout our house and over our entire property (40 acres)."
- "Shadows are cast over the ground and affect my balance."
- "We installed vertical blinds but still have some problems."
- "They catch my eye and I look at them instead of the road. They are dangerous."
- "Strobe light, headaches, sick to the stomach, can't shut (sic) everything up enough to stop the strobe coming into the house."

An additional comment from Lincoln Township Supervisor John Yunk:

"The strobing effect is so terrible that turbines should not be any closer than 1 mile from schools, roads and residences . . . They should never be set on East-West."

Dr. Jay Pettegrew, researcher, neurologist and professor for the University of Pittsburgh, testified before the Bureau County Zoning Board of Appeals that strobe effect could cause drivers to have seizures, which could result in fatal traffic accidents. At the very least, drivers could become disoriented and confused, he said. He testified that the turbine spacing (sited on top of hills instead of in a single field in orderly rows) would increase the likelihood of seizures.

It is important to know that according to Lincoln Township Chairperson Arlin Monfils, the wind developers publicly stated that strobe and shadow effect would not occur once the turbines were operating. In reality, strobe and shadow effects were problem enough that residents vehemently complained and the power company anted up for awnings, window treatment blinds and small trees to block the light at certain times of the day. Strobe and shadow effects take place for about 40 minutes during sunrise or sunset if the angle of the sun and the light intensity create the right conditions. Mr. Jeff Peacock, Bureau County highway engineer, has recommended denying permits for 8 turbines due to safety concerns, including strobe effect.

Diane Heling, whose property is adjacent to the WPSC turbines, said the utility purchased blinds for her home, but especially in the spring and fall when there are no leaves on the trees, the strobing is at its worst in her home. "It's like a constant camera-flashing in the house. I can't stand to be in the room," Mrs. Heling said. Her neighbor, Linda Yunk, whose property is adjacent to the WPSC turbines, describes the strobe effect as unsettling. "It's like somebody turning something on and off, on and off, on and off . . . It's not a small thing when it happens in your house and when it affects your quality of life to that extent," Mrs. Yunk said.

b. TV reception

Residents living within 800 ft – ¼ mile	33% yes
Residents living within ¼ - ½ mile	37% yes

Additional write-in comments from survey:

- "Ever since they went up our reception is bad."
- "At times you can see shadowing on the TV that imitates the blades' moves, also poor reception."
- "Minimum of 50' antenna tower proposed but no guarantee that would be high enough. Such a tower is unacceptable."
- "At times we get black and white TV. Two channels come in hazy!!"

c. Blinking lights from on top of the towers

Residents living within 800 ft – ¼ mile 9% yes

Residents living within ¼ - ½ mile 15% yes

Additional write-in comments from survey:

- "Blinking red lights disrupt the night sky. They make it seem like we're living in a city or near a factory."
- "At night it is very irritating because they flash in the windows."
- "We have to keep drapes closed at night."
- "Looks like a circus, live in the country for peace and quiet."

d. Noise

Residents living within 800 ft – ¼ mile 44% yes

Residents living within ¼ - ½ mile 52% yes

Additional write-in comments from survey:

- "Sounds like a gravel pit crushing rock nearby."
- "Sometimes so loud it makes it seem like we live in an industrial park. The noise dominates the 'sound scape.' It's very unsettling/disturbing especially since it had been so peaceful here. It is an ongoing source of irritation. Can be heard throughout our house even with all the windows and doors closed."
- "The noise can make it impossible to fall asleep. It makes an uneven pitch not like the white noise of a fan. Can be heard through closed windows making it hard to fall asleep anytime of the year."
- "You can hear them at times as far as two miles away."
- "It is the annoyance of never having a quiet evening outdoors. When the blades occasionally stop its (sic) like pressure being removed from my ears. You actually hear the quiet, which is a relief."

The most illustrative description of turbine noise was that of reverberating bass notes from a neighbor's stereo that penetrate the walls and windows of a home. Now imagine having no recourse for asking anyone to turn down that noise, whether it's during the day or in the middle of the night.

As the result of so many noise complaints, WPSC paid for a noise study. However, residents are still upset that the study was inadequate in that it measured decibel levels for a maximum of five days per season, sometimes only for a few minutes at some sites, and included days when rain and high winds blotted out the noise from the turbines. In addition, many measurements were taken when the turbines were not running. WPSC claimed it did not have the funds for a more comprehensive study, according to resident Mike Washechek, whose home is victim to some of the worst noise caused by the turbines, due to its location downhill and downwind from the WPSC turbines.

e. Other problems

On the survey, several residents showed concern over the perceived problem of increased lightning strikes in the area.

Additional write-in comments from survey:

- ". . . bring lighting (sic) strikes closer to our home."
- "More concern over seeing more lightening (sic) than in the past -- before generators were erected."

According to Township Chairperson Monfils, the wind developers declared prior to construction that lightning would not affect the turbines; however, lightning later struck and broke a blade that had to be replaced.

In addition, Mrs. Yunk said that one month after the turbines went online, in July, 1999, a lightning and thunderstorm sent enough electricity through the power grid that Mrs. Yunk and Mrs. Heling both lost their computers to what the service technician called a "fried electrical system" -- even though both computers were surge protected. The reason that Mrs. Yunk attributes the electrical surge to lightning striking a turbine on that particular night is that on the night of the storm, her relative, Joseph Yunk, whose television set was also "fried" that same evening, reported seeing lightning move from one of the turbines along the power grid to the nearby homes, which is a common occurrence with wind factories since nearby strikes to either turbines, external power systems or the ground can send several tens of kilovolts along telephone and power lines. Replacements for the computers and television were paid by the residents.

On the survey, several residents showed concern over hazardous traffic conditions during and after construction of the turbines.

Additional write-in comments from survey:

- "People driving and stopping."
- "While they were being installed the destroying of the roads, noise, and extra traffic have been negative."
- "More traffic and have to back out of driveways (live on hill, hard to see)."
- "More traffic. I used to feel safe walking or riding bike (sic)."

In addition, Mrs. Yunk said that especially when the turbines first went up, other drivers would be looking up at them and they would "dead stop in front of you." She said she narrowly avoided colliding with a car that had stopped abruptly in front of her.

Question: In the last year, have you been awakened by sound coming from the wind turbines?

Residents living within 800 ft – ¼ mile	67% yes
Residents living within ¼ - ½ mile	35% yes

Additional write-in comments from survey:

- "Enough to go to the doctor because I need sleeping pills. Sometimes it absolutely drives you 'nuts.' "
- "I wake up with headaches every morning because of noise. Causes my (sic) to have very restless sleep at night!"
- "We have no way of knowing long-term affects (sic). Growing concerns with stray voltage and its affect (sic) on health. We've had frequent headaches, which we didn't have before. Especially in the morning, after sleeping at night. We need answers!"
- "Not awakened but found it hard to fall asleep!!!"

Question: How close to the wind turbines would you consider buying or building a home?

The results for all survey respondents in the study, including those living over 2 miles away are as follows:

- 61% would not build or buy within 1/2 mile of turbines
- 41% would have to be 2 or more miles away from turbines in order for them to build or buy
- 74% would not build or buy within 1/4 mile of turbines

These are people who know first-hand about the problems caused by the wind factories. They have lived with the turbines for three years. Again, 74% responded that they would not build or buy within 1/4 mile of turbines. Common sense dictates that if a 38-story skyscraper is built next

to any home and it obstructs the view, that home would not be as valuable on the market as an equivalent home sited away from such an obstruction. Common sense also dictates that if the skyscraper had moving parts that contribute to or have the potential to contribute to blinking lights, strobing, noise, stray voltage, ice throws, and health problems, that home would not be as valuable as it had been previously. The above numbers from Lincoln Township corroborate that common sense.

Additional write-in comments from surveys:

- "Ugly, would not buy in this area again."
- "25+ miles. They can be seen from this distance."
- "Would never consider it. Plan on moving if we can sell our house."
- "No where near them never ever!! Not for a million dollars."

A sampling of some of the overall write-in comments from the survey is as follows:

- "I live approximately 1 1/2 miles from the windmills. On a quiet night with the right wind direction, I can hear the windmill noise. People living within a 1/4 mile should probably be compensated for the noise and the nuisance."
- "The noise, flashing lights, interrupted TV reception, strobe effect and possible effect of stray voltage has created a level of stress and anxiety in our lives that was not present before the turbines' installation. From the beginning there has been a lack of honesty and responsibility."
- "Let other counties or communities be the guinea pigs with the long-term effects or disadvantages of having the windmills. All the landowners who put the windmills up have them on property away from their own homes but on the fence lines and land near all other homeowners."
- "Our whole family has been affected. My husband just went to the doctor because of his stomach. He hates them. We have fights all the time about them. It's terrible. Why did you put them so close to our new home and expect us to live a normal life. If it isn't the shadows it's the damn noise. The only people that think they are so great and wonderful are those who really don't know."
- "When we were dating back in the 1970's we always said that someday we were going to build a home here. It was great and then you guys did this . . . This should have never happened. If only you would have taken the time and study this more. Everyone was thinking about themselves and money. No one cared about anything else."

WPSC's buyout offer

During the two years of the Moratorium Committee work, Wisconsin Public Service Corporation made offers to buy houses and property to six property owners around the WPSC wind factory site. Offers were made to property owners who vocalized complaints about the wind factory's effects on their quality of life after construction. According to Lincoln Township Supervisor John Yunk, some of these residents were identified on the Noise Complaint Log record kept by the township. Over 90 complaints were logged in one year.

According to the Moratorium Committee report, WPSC publicly stated the buyout was to establish a buffer zone around the wind factory. The Noise Complaint Log was discontinued by WPSC after the buyout offer.

According to the Moratorium Committee report, WPSC's intention was to bulldoze the houses and subsequently keep the property from being developed for rural residences. Owners were allowed only one month to consider the offer.

According to the Moratorium Committee report, "This tactic did not sit well with the Committee. In response the Committee drafted and approved a resolution condemning the

WPSC ploy, and requesting that WPSC meet with the town board to develop a better solution for the township."

WPSC officials met with the town board and concerned citizens at the August 6, 2001, regular board meeting, reiterated their policy to purchase property and destroy the homes, and stated that they had no intention of meeting with the town board or changing their policies at the request of the town board.

Mrs. Heling was offered the buyout, but she said she and her family were allowed only one month to make the decision and only six months to move. In addition, the buyout offer was based solely on an appraisal by someone hired by WPSC. Mrs. Heling said WPSC refused to consider independent appraisals. Mrs. Heling said she couldn't obtain another property within six months, so she and her family rejected the buyout.

- The Gabriel household was set back 1000 feet from the nearest turbine. The family took the buyout. The county no longer receives property taxes on that raised homestead. The family no longer lives in the area.
- The Kostichka household was set back 1200 feet from the nearest turbine. The family took the buyout. The county no longer receives property taxes on that raised homestead. The family no longer lives in the area.
- Four remaining homeowners are suing WPSC.

The most recent development is that one homeowner contacted Township Supervisor Yunk during the week of September 11, 2002, and asked what the process would be to request MG&E to buy out her home. She said she has a new baby and two other young children and that she does not want to live in her house any longer because she is too scared about the effects on her family by electronic radiation, stray voltage and other electricity associated with the turbines.

Property values

The following information will directly refute the "Market Analysis: Crescent Ridge Project, Indiantown & Milo Townships, Bureau County, Illinois" report submitted by Michael Crowley to this board.

Mr. Crowley, a paid consultant to the Crescent Ridge developers, alleges in his report that property values won't be affected in Bureau County, based on his analysis, in part, of property values in Kewaunee County.

However, Town of Lincoln zoning administrator Joe Jerabek compiled a list of properties that have been sold in the township, and their selling prices. The list compared the properties' selling price as a function of the distance to the wind factories, using real estate transfer returns and the year 2001 assessment roll.

Conclusions were as follows:

- "Sales within 1 mile of the windmills prior to their construction were 104 percent of the assessed values, and properties selling in the same area after construction were at 78 percent, a decrease of 26 points."
- "Sales more than 1 mile away prior to construction were 105 percent of the assessed values, and sales of properties 1 mile or more after the construction of the turbines declined to 87 percent of the assessed value, an 18 point decline."

Furthermore, not taken into account in Mr. Jerabek's conclusion are the homes that were bought out and bulldozed by WPSC.

Also not taken into account is the fact that of the homes that sold within one mile of the turbines since their construction, four of them were owned within the Pelnar family as the family members shuffled houses. One brother sold to another brother. One brother purchased his father's home. The father built a new home. And a sister purchased land from one brother and

built a home. It is important to note that two of the family members are turbine owners themselves.

Subsequent to the zoning administrator's report, homes have gone on the market that are still for sale.

- 1 home, sited across the road from the wind factory, was constructed after the turbines were built and has been on the market for over 2 years.
- 2 homeowners adjacent to the turbines are contemplating selling to WPSC, which may bulldoze the homes, according to neighbor Scott Srnka.
- 1 homeowner is in the process of finding out if MG&E will buy out her home.
- 1 homeowner, Mrs. Heling, who previously was offered the WPSC buyout, said she would sell if she thought she could get fair value for her home and if it would sell quickly enough that she wouldn't be paying on two properties at once. She said she doesn't believe that can happen, so she has not put up her home for sale.
- 1 homeowner, Mrs. Yunk, who lives across from the WPSC turbines, said she and her husband have decided that after having lived in their home for 28 years, they will be putting it up for sale to move to property farther away from the turbines. She said they are worried about selling their current property because of its proximity to the turbines. They will have to find a buyer who doesn't mind the turbines, she said.

Stray voltage

Another issue addressed by the Moratorium Committee is that of stray voltage and earth-current problems that may be exacerbated by the wind factories. This issue was brought to the attention of the Lincoln Town Board by the committee and concerned residents. An ordinance was passed by the Town Board to study the potential effects and to declare a moratorium on any further turbine development. The Committee agreed that any study of earth currents and stray voltage issues must include an analysis of the distribution system, analysis of the wiring from the utility's grid to the wind turbines, and an analysis of the grounding system used for the wind turbines. They also drafted a request for proposals to identify an expert that could help pinpoint the issues surrounding stray voltage and earth currents. The issue has yet to be resolved.

In the meantime, farmers and their livestock in Lincoln Township have been suffering. There are over four farms that are battling -- among other problems -- herd decline due to diseases that were not present in the herds prior to turbine construction, but are present now, according to farmer Scott Srnka. These problems are not limited to non-participating leaseholders. Farms with turbines have been affected as well, as evidenced by the trucks, which have grown more and more frequent, hauling away animal carcasses, Mr. Srnka said.

Mr. Srnka is a former supporter of the WPSC wind power project that is across the road from his family farm. His dairy herd is about 175 cows on 800 acres of land. Mr. Srnka said, "Thirteen turbines were proposed for my land, but we decided to wait. Thank goodness we did or we'd be out of farming."

Mr. Srnka has traced the decline of milk production and increase of cancer and deformities in his formerly award-winning herd to an increase of electrical pollution on his farm after turbine construction. He also has seen the same chronic symptoms that are in his herd in his family.

Animal health problems in the Srnkas' formerly award-winning herd include cancer deaths, ringworm, mange, lice, parasites, cows not calving properly, dehydration, mutations such as no eyeballs or tails, cows holding pregnancy only 1 to 2 weeks and then aborting, blood from nostrils, black and white hair coats turning brown, mastitis, kidney and liver failure.

Within a few months in the first year after the turbines were erected, 8 cows died of cancer. No previous cases of cancer were detected ever before in the Srnka herd, which is a closed herd, according to Mr. Srnka.

Mr. Srnka also detected a change in well water on his property, and there has been a definite change in taste, he said, which has contributed to the decrease in water consumption by his herd. In the past his cows consumed 30 gallons of water a day, but that figure declined to 18 to 22 gallons of water a day after turbine construction. As a result, cows became dehydrated and terminally ill.

· "Our whole family has been affected. My husband just went to the doctor because of his stomach. He hates them. We have fights all the time about them. It's terrible. Why did you put them so close to our new home and expect us to live a normal life. If it isn't the shadows it's the damn noise. The only people that think they are so great and wonderful are those who really don't know."

· "When we were dating back in the 1970's we always said that someday we were going to build a home here. It was great and then you guys did this . . . This should have never happened. If only you would have taken the time and study this more. Everyone was thinking about themselves and money. No one cared about anything else."

Video: What the Zoning Board of Appeals members saw was a brief, unedited video interview with Mr. Srnka in his dairy barn, taken this spring. In it there were some of the cows in his herd and Mr. Srnka talking about some of the rewiring that he has had to install to try to combat problems of electrical pollution. Mr. Srnka said that he has had to resort to insulating the farm through electrical wiring to put his farm, in effect, on what he calls its own island.

Dr. Pettegrew, testifying before the Bureau County Zoning Board of Appeals, said he would be remiss as a doctor if he didn't tell the board that he thought the weaknesses and illness he saw in the cows in the video were most likely caused by EMFs or electrical pollution. Dr. Pettegrew also said the risk would be greater in Indiantown and Milo for animals and humans to become ill than in Wisconsin because the proposed turbines would be taller and would produce more electricity.

Back to what Mr. Srnka has personally experienced. Mr. Srnka and neighbors report serious health effects on not just dairy cows. Health problems in residents include

- sleep loss
- diarrhea
- headaches
- frequent urination
- 4 to 5 menstrual periods per month
- bloody noses: Mr. Srnka had cows bleed to death from uncontrollable bleeding from the nostrils
- inability to conceive

Sometimes even short-term visitors to the farms or homes contract the symptoms, including construction workers on the Srnka property who broke out in nosebleeds after only a few hours. One of the workers left and refused to return.

The Srnkas are so concerned with health effects that they "aren't going to have kids anymore because we're so afraid."

At the time of his testimony before the Bureau County ZBA in October, Mr. Srnka said he had spent upwards of \$50,000 of his own money to try to remedy the electrical pollution in his home and on his farm. Mr. Srnka stated that in his opinion, there were three other farms in the area facing enough problems with their herds in the aftermath of the turbines going online that those three farms are "almost ready to sell out."

Representatives of WPSC have denied that there are stray voltage or earth currents affecting Mr. Srnka's family or livestock and will not compensate him for his family health bills, electrical system upgrades, loss of herd or decrease in milk production.

How did the situation become so grave when wind factory developers swore there would be no problems?

Even if a wind developer may claim that the wind factories, substations and power grids will not contribute to stray voltage or electrical pollution because 1) insulated cable will be used, 2) all cable will be buried feet beneath the surface, and 3) cables are laid in thick beds of sand -- these statements should be viewed with suspicion because of poor project track records, according to Larry Neubauer, a master electrician with Concept Electric Inc., in Appleton, Wisconsin. Mr. Neubauer, who has customers who are dairy producers, who are homeowners with stray voltage problems, and who are farmers with turbines on their property, said that currents from each ground on the cables and project substations, as well as the regional transmission lines that receive electrical energy and that are electrically tied together, do not harmlessly dissipate into the soil. Energy disperses in all directions through the soil and these currents seek out other grounded facilities, such as barns, mobile homes and nearby residences. Only in California is it illegal to use the ground as an electricity conductor. In the rest of the country, including Wisconsin and Illinois, power companies are allowed to dump currents into the ground, according to Mr. Neubauer.

Residential properties that are in a direct line between substations and the ground conduits are particularly at high risk since electricity takes the path of least resistance. Mr. Neubauer said that burying the cables, as the Illinois Wind Energy, LLC, project intends to do, "makes it worse," citing the short lifespans of buried cables, frosts that wreak havoc on the cables, and the problems of locating trouble spots that cannot be seen without digging up the cables.

Two of Mr. Neubauer's clients, who were interviewed in October, are dairy farmers who have spent over \$250,000 and \$300,000 trying to rewire their farms to reduce stray voltage. That cost does not include herd loss or losses from diminished milk production. Mr. Russ Allen owns 550 dairy cows in DePere, Wisconsin. His farm is in a direct line between nearby WPSC turbines and a substation. Mr. Russ said he was losing one or two cows a day during the three years prior to his installing electrical equipment to help reduce currents on his farm. About 600 cows died, he said. Mr. Russ said he has so much electrical current on his farm that he laid a No. 4 copper wire around his farm for 5,000 feet. The wire is not attached to any building or additional wires; yet it can light up a lightbulb from contact with the soil alone. Mr. Russ has scheduled a media day on October 24 to draw awareness to the problems of stray voltage and he said to encourage everyone in Bureau County to attend.

"What scares me more is that I know . . . they're pumping current through people. They're pumping current through kids," Mr. Allen said.

It is important to note that Mr. Noe and his electrical engineer, Mr. Pasley, deny that there will ever be EMFs or stray voltage resulting from the proposed Indiantown/Milo turbines. Just as WPSC has dismissed any problems in the face of mounting evidence, Mr. Noe testified that he will never implement electrical pollution studies and that he thinks they would be a waste of money.