

(Letter in Response to inquiry about recent alterations in the Wisconsin Draft Model Ordinance)

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12 October 2007

Thank you for the ordinance information that you forwarded. Yes, suspicious is probably a very good word to describe what is occurring with Wisconsin Model Ordinance!

Before I get into that, here are some other very interesting items (that you might already have, but if not, very worthwhile):

1. **Please read** the following paper, written by Professor Terry Matilsky, who is with the Department of Physics and Astronomy at Rutgers University, in New Jersey. Don't try to follow the math; I didn't! Just read the descriptions and conclusions. In essence, ice and wind turbine debris can (and has) been thrown 1,700 feet from the base of turbines. The website address is:

[www.physics.rutgers.edu/~matilsky/windmills/throw.html](http://www.physics.rutgers.edu/~matilsky/windmills/throw.html)

2. Please also read "CLOWD: Accident Data, at:

[www.clowd.org.uk/pages/clowdAccidentData.htm](http://www.clowd.org.uk/pages/clowdAccidentData.htm)

I have attached to this letter the "full accident data" from this source, in PDF form. I have read over the full 84 pages of accident reports, and I would have to say this is one of the most disturbing and scary things I have ever read in my 64 years! **Please read all of it.** It is in easily read chart form, and details about 330 wind turbine accidents around the world, including about 45 in the U.S., including one in Lincoln Township, Wisconsin (page 25, item 126), where lightning caused blade failure which caused damage to nearby homes and property. This collection of wind turbine accident data shows that the Wisconsin setback values are woefully inappropriate, in my opinion.

I have read, thoroughly, the following papers:

- A. DRAFT-4-23-07 Model Wind Ordinance Reference Guide.
- B. Draft Model Wind Ordinance for Wisconsin – October 22, 2003
- C. Draft Model Wind Ordinance for Wisconsin – February 7 2007

In the Reference Guide "A", above, it notes that this document has been assembled with input from the "electric utilities . . . and interested regulators; representatives of private industry and local governments were included in the discussions." It would be interesting to know how many local governments and other stakeholders actually knew of the effort or were involved in the effort? Under section "A. **Wisconsin**" it states: "To ensure that its policy goals regarding renewable energy are not unduly hindered, the state legislature has enacted legislation limiting the ability of local governments to prohibit or curtail the development of wind and solar energy systems. . . . prohibits counties, cities, towns or villages from placing any restrictions, directly or indirectly, on the installation of solar or wind energy systems unless the restriction satisfies one of three

conditions: (1) the restriction serves to preserve or protect the public health or safety . . .” Well, the model ordinances for Wisconsin, in my opinion, do not have adequate sound intensity limits or setback standards to “protect the public health or safety”.

In this letter I will note only two topics within the ordinance, (a) setbacks and (b) noise. Setback refers to the minimum distance allowed from the turbines to the property of others. If the setback is great enough, danger from ice and debris throw, and noise from the units will not become an issue.

**SETBACKS:** The setback distance for both the “B” (2003) Draft Model Wind Ordinance for Wisconsin and the “C” (2007) Draft Model Wind Ordinance for Wisconsin are identical; that is, the greater of 2 times the total turbine height or 1,000 feet, whichever is greater. With current typical turbine heights, this would mean the ordinance would enforce a setback of 1,000 feet. This is not enough for protecting the public health or safety, as history shows that ice and debris throw (including turbine parts as unit destruction occurs) potentially and in recorded fact. Please refer to the websites and attached documents accompanying this letter for related history.

**NOISE:** The noise section of the two documents, “B” (2003) Draft Model Wind Ordinance for Wisconsin and the “C” (2007) Draft Model Wind Ordinance for Wisconsin, contain some significant differences. The 2003 document refers to “noise”, while the 2007 document refers to “sound”.

The identical Section 5.3-1) states “Audible noise/sound (2003/2007) due to Wind Energy Facility operations shall not exceed fifty (50) dBA for any period of time . . .” The Definitions section of the Ordinance does not define “for any period of time.” This is critical. I have had involvement in one instance where the wind turbines exceeded the noise limit 63% of the time, and the government has not, to date, ruled this as unacceptable! Without a specific guideline, this noise “limit” becomes completely unenforceable.

In Section 5.3-2) the 2003 Ordinance states “In the event audible noise . . . shall be reduced by five (5) dBA.” In Section 5.3-2) the 2007 Ordinance states “In the event audible sound . . . shall not exceed forty-five (45) dBA . . .” The 50dBA and 45dBA mean the same level, it is just a different way of expressing the same thing.

The remainder of Section 5.3-2) has been altered significantly, however, between the 2003 and 2007 Ordinance. Basically, the 2003 definition of a pure tone is more stringent than the 2007 definition, in that the noise in the lower frequencies has to be louder, overall, in the 2007 Ordinance in order to be considered a “steady” pure tone, because utilizing the db”A” weighting scale filters out significant amounts of low-frequency sound. The 2007 Ordinance is easier for the developers to meet. The 2007 Ordinance also uses the wording “for any period of time”, while the 2003 Ordinance does not contain that statement. This wording is ambiguous and makes the limit much harder to enforce; this is advantageous to the developer.

In Section 5.3-3), the 2003 Ordinance wording is clear and easy to measure in defining “ambient noise level”. It also gives a time frame for exceeding the limit, that is by more than 5 minutes per

hour. The 2007 Ordinance, however, does not state a time frame for exceeding the noise, and is expressed in what appears to me to be very poorly worded and confusing language on how to

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compute the value. The 2007 Ordinance also mixes “dBA” and “dB” in its sentences, which are two entirely different ways of measuring sound.

Basically, I find it almost humorous that if the turbines cannot meet the noise limit in 1), then one can enforce the limit and require a decrease in turbine intensity only if the turbine sound meets the definition of a pure tone. What do you do if the turbine noise is excessive but does not meet the definition of a pure tone? This is a very possible scenario. And then if the ambient noise is higher than the turbine noise, well you can adjust the turbine noise limit upwards to equal the ambient noise! Again, this appears to have been written in favor of the developer.

A note about ambient noise; ambient noise is the regular noise level that resides in an area, when the turbines are not operating. Ambient noise values should not be utilized in an ordinance, as they are meaningful only if the turbine produces a sound identical to the ambient noise in its frequency make-up. This would be exceptionally rare, as the two sounds are usually quite different in sound quality. An example would be listening to common classroom noise at 50dBA, and then a student drags their fingernails over the chalkboard at 40dBA. The fingernail screech would stand out quite strongly even though it is 10dBA quieter. Yet, according to the Ordinances, you could scratch the chalkboard even louder, up to 50dBA to equal the ambient noise!

In conclusion, I can make a few statements of opinion:

1. I do not know why the State government keeps changing which Ordinance it is going to enforce. The 2007 version appears more wind farm developer friendly. But the ambiguity and confusion and use of approaches not generally utilized in the 2007 Ordinance may make it more vulnerable in a court of law . . .
2. Although the 2003 version is more people friendly, neither version is really people friendly.
3. Neither version protects the “public health or safety”.
4. The biggest issue is that of an adequate setback. A proper, sensible setback would eliminate most noise complaints. A proper, sensible setback would eliminate most of the danger from ice throw and/or debris throw. With an unrealistic 1,000 foot setback, it is only a matter of time before someone is killed, or seriously injured. Read the literature on the attached Accident Data attached to this letter. Look especially at Germany’s abysmal record. The U.S. record is nothing to brag about, either. **This isn’t speculation, these are recent historical facts: people are being injured, people are dying, ice and turbine debris is damaging and destroying homes and cars, and debris is landing in schoolyards, ice and turbine debris are closing highways for hours or days, oil fires from lightning and other causes are destroying turbines and burning up to 80 to 100 hectares as the ignited oil is thrown over a wide area, fire departments cannot fight these fires because of their height above the ground, police are having to assist people in evacuating their homes until things are brought under control. What do we have to do? Wait until debris hits a school or schoolbus and kills dozens of children? Or kills people in their homes?**

**Enforce a setback of at least 1.5 to 2 miles, and watch the majority of problems disappear!  
The solution is so simple!**

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To reiterate the last paragraph on page one of this letter, a quotation from A. DRAFT-4-23-07 Model Wind Ordinance Reference Guide: “To ensure that its policy goals regarding renewable energy are not unduly hindered, the state legislature has enacted legislation limiting the ability of local governments to prohibit or curtail the development of wind and solar energy systems. . . . prohibits counties, cities, towns or villages from placing any restrictions, directly or indirectly, on the installation of solar or wind energy systems unless the restriction satisfies one of three conditions: (1) the restriction serves to preserve or protect the public health or safety . . . .” Sensibly developed wind turbine installations can coexist peacefully with the public, and everyone wins, the public, the wind farm developers, and the government. Why do anything else?

It has been proven, it is not speculation, setback and noise changes are needed to preserve and protect the public health and safety. If the government does nothing significant, the government is not representing the views and welfare of its citizens, and that becomes a government of tyranny, not democracy . . . .

Sincerely yours,

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