Calumet County Clerk

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March 12, 2008

TO THE MEMBERS OF THE CALUMET COUNTY BOARD OF SUPERVISORS:

The County Board of Supervisors of Calumet County, Wisconsin, will meet pursuant to Section 59 of the Wisconsin Statutes in an adjourned session on Tuesday, March 18, 2008, at 8:30 A.M. at the Courthouse in the County Board Room 019, to transact any and all business as may properly come before said meeting. You as a member are requested to be present.

AGENDA FOR MARCH MEETING

1. Call to Order
2. Roll Call
3. Pledge of Allegiance
4. Approval of Agenda
5. Approval of the Minutes of the February 19, 2008 meeting
6. Petitions
7. Communications
8. Public Participation

9. **SPECIAL BUSINESS:**
   - A. Eugene McLeod will present a summary of the annual report to DNR for MSR4 General Stormwater Permit.
   - B. Discuss capital improvement plan as it relates to the AP/LP Projects.

10. **RESOLUTIONS:**

RESOLUTION 2007-37	RESOLUTION DESIGNATING THE WEEK OF APRIL 7TH THROUGH APRIL 11TH AS "WORK ZONE SAFETY AWARENESS WEEK" IN CALUMET COUNTY IN 2008
RESOLUTION 2007-38	RESOLUTION ACKNOWLEDGING THE FIRST DONATED CONSERVATION EASEMENT TO A LAND TRUST IN CALUMET COUNTY
RESOLUTION 2007-39	RESOLUTION ADJUSTING THE 2008 BUDGET TO REFLECT THE AWARD OF THE FOX VALLEY PUBLIC HEALTH PREPAREDNESS CONSORTIUM GRANT

Any person wishing to attend who, because of disability, requires special accommodations, should contact the County Clerk at 920-849-1458 or 920-989-2700 EXT 458 at least 24 hours before the scheduled meeting time so appropriate arrangements can be made.

RESOLUTION 2007-40	RESOLUTION OPPOSING THE PROPOSAL BY THE WISCONSIN OFFICE OF JUSTICE ASSISTANCE TO RETAIN MONIES FROM THE PUBLIC SAFETY INTEROPERABLE COMMUNICATIONS GRANT PROGRAM AND NOT PASS-THROUGH 80% OF THE FUNDING TO LOCAL AGENCIES
RESOLUTION 2007-41	RESOLUTION TO INCREASE THE HOURLY RATE OF PAY AND MILEAGE REIMBURSEMENT FOR CALUMET COUNTY CONDEMNATION COMMISSIONERS

11. **ORDINANCES:**

ORDINANCE 2007-13	ORDINANCE TO AMEND THE CALUMET COUNTY CODE OF ORDINANCES CHAPTER 79 OF ORDINANCE 2003-5 AMENDING SEC. 79-19. NOISE.*
ORDINANCE 2007-14	ORDINANCE TO AMEND THE CALUMET COUNTY CODE OF ORDINANCES CHAPTER 79 OF ORDINANCE 2003-5 AMENDING SEC. 79-40. SETBACKS AND SEC. 79-60. SETBACKS. PERTAINING TO SETBACK DISTANCE.
ORDINANCE 2007-21	ORDINANCE TO AMEND THE CALUMET COUNTY CODE OF ORDINANCES ~ CHAPTER 79 OF ORDINANCE 2003-5 AMENDING SEC. 79-4. SPECIFIC WORDS AND PHRASES. AND CREATING SEC. 79-24. CONSTRUCTION SITE EROSION CONTROL.
ORDINANCE 2007-22	ORDINANCE TO AMEND THE CALUMET COUNTY CODE OF ORDINANCES ~ CHAPTER 79 OF ORDINANCE 2003-5 CREATING SEC. 79-23. BLASTING STANDARDS.
ORDINANCE 2007-29	ORDINANCE TO AMEND CERTAIN SECTIONS (CHAPTER 32) OF ORDINANCE 2003-5, CHAPTER 32, ARTICLE 3, ACCESS TO COUNTY TRUNKS, SECTION 32-15. STANDARDS FOR ACCESS.
ORDINANCE 2007-30	ORDINANCE TO AMEND THE CALUMET COUNTY CODE OF ORDINANCES, TO REPEAL SECTION 10-1, UNIFORM DWELLING CODE
ORDINANCE 2007-31	ORDINANCE TO AMEND THE CALUMET COUNTY CODE OF ORDINANCES BY CREATING ARTICLE II, CHAPTER 10, CONSTRUCTION SITE EROSION CONTROL
ORDINANCE 2007-32	ORDINANCE TO AMEND THE CALUMET COUNTY CODE OF ORDINANCES BY CREATING ARTICLE III, CHAPTER 10, POST-CONSTRUCTION STORMWATER MANAGEMENT
ORDINANCE 2007-33	ORDINANCE TO AMEND THE CALUMET COUNTY CODE OF ORDINANCES, CHAPTER 79, OF ORDINANCE 2003-5 AMENDING SECTION 79-40(a)(4) AND SECTION 79-60(a)(4) PERTAINING TO ROAD SETBACKS
ORDINANCE 2007-34	ORDINANCE TO AMEND THE CALUMET COUNTY CODE OF ORDINANCES, BY CREATING ARTICLE 1, CHAPTER 10, BLASTING

* Rick James of E-Coustic Solutions will be available to answer questions.

12. **SUPERVISORS' REPORTS:**
    A. Reports of Official Meetings held in the Prior Month
    B. Upcoming Events

13. **SPECIAL BUSINESS (CONTINUED):**
    C. Health Savings Account Side Letter of Agreement for represented employees.
    D. County Administrator recruitment update.
    E. Discuss County Board orientation.

14. The next regular meeting date is April 15, 2008 at 8:30 A.M.

15. **SPECIAL COUNTY BOARD MEETING:**
    The Special County Board meeting for County Administrator interviews has been changed to March 31, 2008 at 1:00 P.M.

16. **ADJOURNMENT**

Beth A. Hauser,
County Clerk

ORDINANCE 2007-13
ORDINANCE TO AMEND THE CALUMET COUNTY CODE OF ORDINANCES
CHAPTER 79 OF ORDINANCE 2003-5 AMENDING SEC. 79-19. NOISE.

The Board of Supervisors of Calumet County, does hereby amend the Calumet County Code of Ordinances as follows:

Motion:	Adopted:
1st	Lost:
2nd	Tabled:
Yes: No:	Absent:

Number of votes required:

[x] Majority [ ] Two-thirds

Reviewed by: Pamela Captain Corp Counsel

		YES	NO	A
1	BALLERING			
2	BARRIBEAU			
3	BROCK			
4	CONNORS			
5	CRITER			
6	DRAHEIM			
7	DIETZEN			
8	GENTZ			
9	KOENIG			
10	KRAUSE			
11	LAUGHRIN			
12	LEHRER			
13	LEONHARDT			
14	PHIPPS			
15	SCHOLZ			
16	SCHWOBE			
17	SCHUH			
18	SOMMERS			
19	STANKE			X
20	STECKER			
21	STILLMAN			

1. **Sec. 79-19. Noise.**

~~(a) Audible noise due to Wind Energy Facility operations shall not exceed fifty (50) dBA for any period of time, when measured at any residence, school, hospital, church or public library existing on the date of approval of any Wind Energy Siting Permit.~~

~~(b) In the event audible noise due to Wind Energy Facility operations contains a steady pure tone, such as a whine, screech, or hum, the standards for audible noise set forth in subparagraph (a) of this subsection shall be reduced by five (5) dBA. A pure tone is defined to exist if the one-third (1/3) octave band sound pressure level in the band, including the tone, exceeds the arithmetic average of the sound pressure levels of the two (2) contiguous one-third (1/3) octave bands by five (5) dBA for center frequencies of five hundred (500) Hz and above, by eight (8) dBA for center frequencies between one hundred and sixty (160) Hz and four hundred (400) Hz, or by fifteen (15) dBA for center frequencies less than or equal to one hundred and twenty-five (125) Hz.~~

~~(c) In the event the ambient noise level (exclusive of the development in question) exceeds the applicable standard given above, the applicable standard shall be adjusted so as to equal the ambient noise level. The ambient noise level shall be expressed in terms of the highest whole number sound pressure level in dBA, which is succeeded for more than five (5) minutes per hour. Ambient noise levels shall be measured at the exterior of potentially affected existing residences, schools, hospitals, churches and public libraries. Ambient noise level measurement techniques shall employ all practical means of reducing the effect of wind-generated noise at the microphone. Ambient noise level measurements may be performed when wind velocities at the proposed project site are sufficient to allow Wind Energy Facility operation, provided that the wind velocity does not exceed thirty (30) mph at the ambient noise measurement location.~~

~~(d) Any noise level falling between two whole decibels shall be the lower of the two.~~

~~(e) In the event the noise levels resulting from the Wind Energy Facility exceed the criteria listed above, a waiver to said levels may be granted by the Code Administrator provided that the following has been accomplished:~~

~~(1) Written consent from the affected property owners has been obtained stating that they are aware of the Wind Energy Facility and the noise limitations imposed by this Chapter, and that consent is granted to allow noise levels to exceed the maximum limits otherwise allowed; and~~

~~(2) If the applicant wishes the waiver to apply to succeeding owners of the property, a permanent noise impact easement has been recorded in the office of the Calumet County Register of Deeds which describes the benefited and burdened properties and which advises all subsequent owners of the burdened property that noise levels in excess of those permitted by this Chapter may exist on or at the burdened property.~~

~~(f) The burden of proof that a Wind Energy Facility is exceeding the allowed decibel levels shall be the responsibility of the party making such allegations.~~

~~(g) It is understood Wind Energy Systems - Small occasionally exceed these limits during power outages. The above regulations shall not apply to Wind Energy Systems - Small during power outages or storm occurrences.~~

(a) Sound and Vibration.

(1) Sound Regulations Compliance: A Wind Energy System shall be considered in violation of the permit unless the applicant demonstrates that the project complies with all sound level limits. Sound levels in excess of the limits established in this ordinance shall be grounds for the Code Administrator to order immediate shut down of all non-compliant Wind Energy Systems.

(2) Post Construction Sound and Vibration Measurements: Within twelve months of the date when the project is fully operational, and within two weeks of the anniversary date of the pre-construction background noise measurements, repeat the existing sound and vibration environment measurements taken before the project approval. Post-construction sound level measurements shall be taken both with all Wind Energy Systems running and with all Wind Energy Systems off. At the discretion of the County the Pre-construction background sound levels (L_{90}) can be substituted for the "all Wind Energy Systems off' tests if a random sampling of 10% of the pre-construction study sites shows that background L_{90} conditions have not changed more than +/- 5 dB (A and C). Report post-construction measurements to the County Board (available for public review) using the same format as used for the pre-construction sound and vibration studies. Post construction noise studies shall be conducted by a firm chosen by the County. Costs of these studies are to be reimbursed by the Permittee.

(3) Setbacks: The County Board may impose a setback that exceeds the other setbacks set out in this ordinance if it deems that such greater setbacks are necessary to protect the public health, safety, and welfare of the community.

(4) Audible Sound Standard: The audible sound emitted by Wind Energy System operations shall not be greater than 5 dBA above the background noise level (L_{90}) for the quietest period of the day measured during the pre-build noise study. Procedures are provided in Appendix. All measurements must be taken using procedures meeting American National Standard Institute Standards including: ANSI S12.18-1994 (R 2004) American National Standard Procedures for Outdoor Measurement of Sound Pressure Level and (ANSI) S12.9-Parts 1-5:

- Part 1: American National Standard Quantities and Procedures for Description and Measurement of Environmental Sound.
- Part 2: Measurement of Long-Term, Wide-Area Sound.
- Part 3: Short-Term Measurements with an Observer Present.
- Part 4: Noise Assessment and Prediction of Long-Term Community Response.
- Part 5: Sound Level Descriptors for Determination of Compatible Land Use.

Measurements must be taken with qualified acoustical testing instruments meeting ANSI Type 1 standards, and Class 1 filters. The windscreen recommended by the instrument's manufacturer must be used and measurements conducted only when wind speeds are less than 10 mph at the microphone. The microphone must be located at a height of 1.2 to 1.5 meters from the ground.

(5) Low Frequency Sound or Infrasound: No low frequency sound or infrasound from wind energy system operations shall be created which causes the sound pressure level both within the project boundary at any sensitive receptor and within a one-mile radius beyond the project boundary to exceed the following limits:

Band No.	1/3 Octave Band Center Frequency (Hz)	Limits for 1/3 Octave Bands	Limits for 1/1 Octave Bands
1	1.25 and below	65	
2	1.6	65	
3	2	65	70
4	2.5	65	
5	3.15	65	
6	4	65	70
7	5	65	
8	6.3	65	
9	8	65	70
10	10	65	
11	12.5	61	
12	16	61	65
13	20	61	
14	25	60	
15	31.5	58	63
16	40	58	
17	50	58	
18	63	55	61
19	80	53	
20	100	52	
21	125	50	55

(6) Measurements must be conducted in accordance with the ANSI standards and conditions referenced in Rule 4 and the Appendix to this License.

(7) Pure Tone Penalty: In the event audible noise due to wind energy system operations contains a steady pure tone, such as a whine, screech, or hum, the standards for Audible Sound shall be reduced by five (5) dB(A). A pure tone is defined to exist when: the one-third octave band sound pressure level in the band, including the tone, exceeds the arithmetic average of the sound pressure levels on the two (2) contiguous one-third octave bands by five (5) dB(A) for center frequencies of 500 Hz and above, and eight (8) dB(A) for center frequencies between 160 and 400 Hz, and by fifteen (15) dB(A) for center frequencies less than or equal to 125 Hz.

(8) Repetitive, Impulsive Sound Penalty: In the event the audible noise due to wind energy system operations contains repetitive impulsive sounds, the permitted sound pressure level for Audible Sound (Rule 4) shall be reduced by five (5) dB.

(9) Pure Tone and Repetitive, Impulsive Tone Penalty: In the event the audible noise due to wind energy system operations contains both a pure tone and repetitive impulsive sounds, the standards for Audible Noise (Rule 4) shall be reduced by a total of seven (7) dB.

(10) Operations – Low Frequency Noise: A Wind Energy System that emits sound (or causes structural or human body vibration) with strong low-frequency content where the time-average C-weighted sound level exceeds the A-weighted sound level by at least 20 dB when measured inside a structure and adversely affects the subjective habitability or use of any existing dwelling unit, hospital, school, library, nursing home, or other sensitive noise receptor shall be deemed unsafe and must be shut down immediately. Exceedances of any of the limits of the Table in Section 79-19 (a)(5) will also be considered as proof that the Wind Energy System is unsafe and must be shut down immediately.

(b) Appendix

Calumet County Measurement Protocol for Sound and Vibration Assessment of Proposed and Existing Wind Energy Systems.

(1) Introduction.

The potential sound and vibration impact associated with the operation of wind powered electric generators is often a primary concern for citizens

living near proposed WIND ENERGY SYSTEMS. This is especially true of projects located near homes, residential neighborhoods, businesses, schools, and hospitals. Determining the likely sound and vibration impacts is a highly technical undertaking and requires a serious effort in order to collect reliable and meaningful data for both the public and decision makers.

This protocol is based in part on criteria published in the Standard Guide for Selection of Environmental Noise Measurements and Criteria.[1] and the Public Service Commission of Wisconsin publication Measurement Protocol for Sound and Vibration Assessment of Proposed and Existing Electric Power Plants (February 2002).[2] It also includes by reference the procedures of American National Standards S12.9 - Quantities and Procedures for Description and Measurement of Environmental Sound, and S12.18 and S12.19, for the measurement of sound pressure level and impulse sound outdoors.

The purpose is to first, establish a consistent and scientifically sound procedure of evaluating existing background levels of audible sounds and Low Frequency Sound in a WIND ENERGY SYSTEM project area, and second to use the information provided by the Permittee in its Application showing the predicted over-all sound pressure levels in terms of dBA, dBC and dBZ (linear) over the frequency range from the Blade Passage Frequency through at least 10,000 HZ and the corresponding 1/1 or 1/3 Octave Band sound pressure levels for the same frequency range. These values shall be presented in graphic contours of the iso-levels and in tabular form at sufficient sites to permit comparison of the baseline results to the predicted levels. This comparison will use the level limits of (a)(4) and (5) to determine the likely impact that operation of a new wind energy system project will have on the existing environment. If the comparison demonstrates that the WIND ENERGY SYSTEM project will not exceed any of the level limits for over-all or 1/1 or 1/3 Octaves the project will be considered to be within allowable limits for safety and health. If the Permittee submits only partial information required for this comparison the burden to establish the operation as meeting safety and health limits will be on the Permittee.

Third, if the project is approved, this Appendix covers the study needed to compare the post-build sound levels to the predictions and the baseline study. The level limits in (a)(4) and (5) apply to the post-build study. In addition, if there have been any complaints about WIND ENERGY SYSTEM sound or low frequency noise emissions by any resident of an occupied dwelling that property will be included in the post-build study for evaluation against the rules of (a).

The characteristics of the proposed WIND ENERGY SYSTEM project and the features of the surrounding environment will influence the design of the sound and vibration study. Site layout, types of WIND ENERGY SYSTEM(s) selected and the existence of the significant local sound and low frequency noise sources and sensitive receptors should be taken into consideration when designing a sound and vibration study. It will be necessary to have a qualified independent consultant conduct the pre-construction background and post-construction sound (and vibration) studies.

(2) Instrumentation.

All instruments and other tools used to measure audible sounds and low frequency noise shall meet the requirements for ANSI Type 1 performance and accuracy. Measurements shall be made with a manufacturer's approved wind screen protecting the microphone and only when winds are less than 10 mph at the microphone that has been designed to maintain the Type 1 accuracy requirements. The microphone shall be located at a height of 1.2 to 1.5 meters for all tests unless circumstances require a different measurement position. In that case the reasons shall be documented and include any adjustments needed to make the results correspond to the preferred measurement location.

(3) Measurement of the Existing Sound and Vibration Environment.

An assessment of the proposed WIND ENERGY SYSTEM project areas existing sound and vibration environment is necessary in order to predict the likely impact resulting from a proposed project. The following guidelines must be used in developing a reasonable estimate of an area's existing sound and vibration environment. All testing is to be performed by an independent acoustical testing engineer or other qualified noise consultant approved by the County Board. The WIND ENERGY SYSTEM applicant may file objections detailing any concerns it may have with the County Board's selection. These concerns will be addressed in the study. Objections must be filed prior to the start of the noise study. All measurements are to be conducted with industry certified testing equipment[4]. All test results must be reported to the County Board.

(4) Sites with No Existing Wind Energy Systems.

A. Sound level measurements shall be taken as follows:

1. The results of the model showing the predicted worst case sound emissions of the proposed WIND ENERGY SYSTEM project will be overlaid on a map of the project area. A grid comprised of one (1) mile boundaries (each grid cell is one square mile) will be used to identify between five (5) to ten (10) measurement points. The grid shall extend to 2500 feet beyond the perimeter of the project boundary. The measurement points will be selected to represent the noise sensitive receptor sites that will be most likely to be negatively affected by the WIND ENERGY SYSTEM project's sound emissions. These sites may include sites adjacent to occupied dwellings or other noise sensitive receptor sites and, if deemed appropriate by the Calumet County, the inside occupied structures. Sites shall be selected to represent the locations where the background soundscapes reflect the quietest locations of the sensitive receptor sites. Background sound levels and sound pressure levels shall be obtained according to the definition provided in Chapter 79 definitions and generally recognized acoustical testing practice and standards.

2. All properties within the proposed WIND ENERGY SYSTEM project boundaries will be considered for this study.[5]

3. One test shall be conducted during period defined by the months of April through November with the preferred time being the months of June through August. Unless directed otherwise by Calumet County the season chosen for testing will represent the background soundscape for other seasons. At the discretion of Calumet County, tests may be scheduled for other seasons.

4. All measurement points (MPs) shall be located in consultation with the County staff and property owner(s) and such that no significant obstruction (building, trees, etc.) blocks sound and vibration from the nearest proposed WIND ENERGY SYSTEM site.

5. Duration of measurements shall be a minimum of ten continuous minutes for each criterion at each location. The duration must include at least 6 minutes that are not affected by transient sounds from non-nature sources. Longer durations such as 30 minutes or one (1) hour are preferred to improve the reliability of the L_{90} values.

6. The tests at each site selected for this study shall be taken during the expected 'quietest period of the day or night' as appropriate for the site. For the purpose of determining background sound characteristics the preferred testing time is from 8pm until 4 am. If circumstances indicated that a different time of the day should be sampled the test may be conducted at the alternate time if approved by Calumet County.

7. Sound level measurements must be made on a weekday of a non-holiday week.

8. Measurements must be taken at 1.2 to 1.5 meters above the ground and at least 15 feet from any reflective surface[3].

9. For each Measurement Point and for each measurement period, provide each of the following measurements:

a. Un-weighted octave-band analysis (from Blade Passage Frequency up to 16, 31.5, 63, 125, 250, 500, 1K, 2K,4K, and 8K Hz and over-all linear or dBZ level)

i. L_{Aeq}, L_{10}, L_{50}, and L_{90}, in dBA
ii. L_{Ceq}, L_{10}, L_{50}, and L_{90}, in dBC
iii. L_{Zeq}, L_{10}, L_{50}, and L_{90}, in dBLinear (sometimes referred to as 'Z' weighting)

b. A narrative description of any intermittent sounds registered during each measurement.

c. A narrative description of the steady sounds that form the background soundscape.

d. Wind speed and direction at the Measurement point, humidity and temperature at time of measurement will be included in the documentation.

10. Measurements taken when wind speeds exceed 5 mph at the microphone location will not be considered valid for this study. A windscreen of the type recommended by the monitoring instrument's manufacturer meeting Type 1 standards must be used for all data collection.

B. Provide a map and/or diagram clearly showing:

1. The layout of the project area, including topography, the project boundary lines[5], and property lines.

2. The locations of the Measurement Points.

3. The minimum and maximum distance between any Measurement Points.

4. The location of significant local sound and vibration sources

5. The distance between all Measure Points and significant local sound vibration and sources.

6. The location of all sensitive receptors including but not limited to: schools, day-care centers, hospitals, residences, residential neighborhoods, places of worship, and elderly care facilities.

(5) Sites with Existing Wind Energy Systems.

A. Two complete sets of sound level measurements must be taken as defined below:

1. One set of measurements with the wind generator(s) off unless Calumet County elects to substitute the sound data collected for the background sound study as permitted in Section (a)(2).

2. One set of measurements with the wind generator(s) running with wind speed at hub height sufficient to meet nominal power output or higher. Conditions should reflect the worst case sound emissions from the WIND ENERGY SYSTEM project.

B. Sound level measurements shall be taken as follows:

1. At all properties within the proposed WIND ENERGY SYSTEM project boundaries that were selected for the background sound study. Additional points may be added at the discretion of Calumet County. [5]

2. One test shall be conducted during period defined by the months of April through November with the preferred time being the months of June through August. Unless directed otherwise by the Calumet County the season chosen for testing will represent the background soundscape for other seasons. At the discretion of Calumet County, tests may be scheduled for other seasons.

3. All measurement points (MPs) shall be located in consultation with Calumet County and property owner(s) and such that no

significant obstruction (building, trees, etc.) blocks sound and vibration from the nearest proposed WIND ENERGY SYSTEM site.

4. Duration of measurements shall be a minimum of ten continuous minutes for each criterion at each location. The duration must include at least 6 minutes that are not affected by transient sounds from non-nature sources. Longer durations such as 30 minutes or one (1) are preferred to improve the reliability of the L_{90} values.

5. The tests at each site selected for this study shall be taken during the expected worst-case WIND ENERGY SYSTEM sound emissions as appropriate for the site. For the purpose of determining sound characteristics when WIND ENERGY SYSTEM are operating, the preferred testing time is from 8pm until 4 am. If circumstances indicated that a different time of the day should be sampled the test may be conducted at the alternate time if approved by Calumet County.

6. Sound level measurements must be made on a weekday of a non-holiday week.

7. Measurements must be taken at 1.2 to 1.5 meters above the ground and at least 15 feet from any reflective surface[3].

C. For each Measurement Point and for each measurement period, provide each of the following measurements:

1. Un-weighted octave-band analysis (from Blade Passage Frequency up to 16, 31.5, 63, 125, 250, 500, 1K, 2K,4K, and 8K Hz and over-all linear or dBZ level)
   a. L_{Aeq}, L_{10}, L_{50}, and L_{90}, in dBA
   b. L_{Ceq}, L_{10}, L_{50}, and L_{90}, in dBC
   c. L_{Zeq}, L_{10}, L_{50}, and L_{90}, in dBLinear (sometimes referred to as 'Z' weighting)

2. A narrative description of any intermittent sounds registered during each measurement.

3. A narrative description of the steady sounds that form the ambient with WIND ENERGY SYSTEM operating soundscape.

4. Wind speed and direction at the Measurement point, humidity and temperature at time of measurement will be included in the documentation,

D. Measurements taken when wind speeds exceed 10 mph at the microphone location will not be considered valid for this study. A windscreen of the type recommended by the monitoring instrument's manufacturer meeting Type 1 standards must be used for all data collection. If measurements must be conducted with wind speeds in excess of 10 mph at the microphone to meet the worst-case requirement for WIND ENERGY SYSTEM sound emission, the method used to isolate the microphone from the effects of wind and turbulence must be approved

by Calumet County and meet procedures generally recognized as appropriate by acoustical standards for measurement under those conditions.

(6) Provide a map and/or diagram clearly showing:

A. The layout of the project area, including topography, the project boundary lines[5], and property lines

B. The locations of the Measurement Points.

C. The minimum and maximum distance between any Measurement Points

D. The location of significant local sound and vibration sources

E. The distance between all MPs and significant local sound vibration and sources

F. The location of all sensitive receptors including but not limited to: schools, day-care centers, hospitals, residences, residential neighborhoods, places of worship, and elderly care facilities.

(7) Sound level Estimate for Proposed Wind Energy Systems.

A. In order to estimate the sound and vibration impact of the proposed WIND ENERGY SYSTEM project on the existing environment an estimate of the sound and vibration produced by the proposed WIND ENERGY SYSTEM(s) under worst-case conditions for producing sound emissions must be provided. This study may be conducted by a firm chosen by the WIND ENERGY SYSTEM operator with oversight provided by the County Board. The qualifications of the firm should be presented along with details of the procedure that will be used, software applications, and any limitations to the software or prediction methods.

B. Provide the manufacturer's sound power level (L_w) characteristics for the proposed WIND ENERGY SYSTEMIES operating at full load for Blade Passage Frequency up to 16, 31.5, 63, 125, 250, 500, 1K, 2K,4K, and 8K Hz and over-all linear or dBZ level. Include an unweighted octave-band from Blade Passage Frequency up to 16, 31.5, 63, 125, 250, 500, 1K, 2K,4K, and 8K Hz and over-all linear or dBZ level. Sound pressure levels predicted for the WIND ENERGY SYSTEMS at full operation and at maximum sound power output shall be provided for distances of 500, 1000, 1500, 2000, 2500 feet from the WIND ENERGY SYSTEMIES.

C. Estimate the sound levels for the proposed WIND ENERGY SYSTEMS in dBA, dBC and dBZ at distances of 500, 1000, 1500, 2000, 2500 feet from the WIND ENERGY SYSTEMS. For projects with multiple WIND ENERGY SYSTEMS, the combined sound level impact for all WIND ENERGY SYSTEMS operating at full load must be estimated.

D. The above two requirements should be presented in a table that includes the impact of the WIND ENERGY SYSTEM operations on all residential and other noise sensitive receiving locations within the project boundary. To the extent possible, the tables should include the sites

tested in the background study.

E. Provide a contour map of the expected sound level from the new WIND ENERGY SYSTEMS, using 5 dBA increments created by the proposed WIND ENERGY SYSTEMS extending out to a distance of 2500 feet from the project boundary.

F. Determine the impact of the proposed sound and vibration from the WIND ENERGY SYSTEM project on the existing environment. The results should anticipate the receptor sites that will be most negatively impacted by the WIND ENERGY SYSTEM project and to the extent possible provide data for each Measuring Point that are likely to be selected in the background sound study (note the sensitive receptor Measuring Points):

1. Report expected changes to existing sound levels for L_{Aeq}, L_{10}, L_{50}, and L_{90}, in dBA

2. Report expected changes to existing sound levels for L_{Ceq}, L_{10}, L_{50}, and L_{90}, in dBC

3. Report expected changes to existing sound levels for L_{Zeq}, L_{10}, L_{50}, and L_{90}, in dBZ

4. Report the predicted sound pressure levels for each of the 1/1 or 1/3 octave bands included in the table of VI.F.5 of the License and those not included up to the 8000 Hz octave band.

5. Report all assumptions made in arriving at the estimate of impact, any limitations that might cause the sound levels to exceed the values of the estimate, and any conclusions reached regarding the potential effects on people living near the project area.

6. Include an estimate of the number of hours of operation expected from the proposed WIND ENERGY SYSTEMS and under what conditions the WIND ENERGY SYSTEMS would be expected to run. Any differences from the information filed with the Application should be addressed.

(8) Post-Construction Measurements.

Post Construction Measurements should be conducted by a qualified noise consultant selected by and under the direction of the County. The requirements of this Appendix for Sites with Existing Wind Energy Systems shall apply.

1. Within twelve months of the date when the project is fully operational, and within two weeks of the anniversary date of the Pre-construction ambient noise measurements, repeat the existing sound and vibration environment measurements taken before the project approval. Post-construction sound level measurements shall be taken both with all WIND ENERGY SYSTEMS running and with all WIND ENERGY SYSTEMS off except as provided in (a)(2).

2. Report post-construction measurements to the County Board using the same format as used for the background sound (and vibration) study.

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[1] Standard Guide for Selection of Environmental Noise Measurements and Criteria (Designation E 1686-96). July 1996. American Society for Testing and Measurements.

[2] Measurement Protocol for Sound and Vibration Assessment of Proposed and Existing Electric Power Plants. February 2002. Public Service Commission of Wisconsin.

[3] Environmental Noise Guidelines: Wind Farms. (ISBN 1 876562 43 9). February 2003. Environment Protection Authority, Adelaide SA.

[4] The Public Service Commission of Wisconsin Staff acknowledges that few sound level meters are capable of measurement of the 16 Hz center frequency octave band. However, because noise complaints from the public most likely involve low frequency noise associate with proposed WIND ENERGY FACILITY [power plants], we encourage applicants to pursue the collection of this important ambient noise data. If obtaining the 16 Hz and lower data presents a problem contact PSCW Staff prior to collection of any field ambient measurement data.

[5] Project Boundary: A continuous line encompassing all WIND ENERGY FACILITIES and related equipment associated with the WIND ENERGY FACILITY project.

REFERENCES

- **ANSI S12.9-1988/Part 1 (R 2003)** American National Standard Quantities and Procedures for Description and Measurement of Environmental Sound, Part 1.
- **ANSI S12.9-1992/Part 2 (R 2003)** American National Standard Quantities and Procedures for Description and Measurement of Environmental Sound, Part 2: Measurement of Long-Term, Wide-Area Sound.
- **ANSI S12.9-1993/Part 3 (R 2003)** American National Standard Quantities and Procedures for Description and Measurement of Environmental Sound, Part 3: Short-Term Measurements with an Observer Present.
- **ANSI S12.9-2005/Part 4** American National Standard Quantities and Procedures for Description and Measurement of Environmental Sound, Part 4: Noise Assessment and Prediction of Long-Term Community Response.
- **ANSI S12.9-1998/Part 5 (R 2003)** American National Standard Quantities and Procedures for Description and Measurement of Environmental Sound, Part 5: Sound Level Descriptors for Determination of Compatible Land Use.

• **ANSI S12.9-2000/Part 6 (R 2005)** American National Standard Quantities and Procedures for Description and Measurement of Environmental Sound, Part 6: Methods for Estimation of Awakenings Associated with Aircraft Noise Events Heard in Homes.

• **ANSI S12.17-1996 (R 2006)** American National Standard Impulse Sound Propagation for Environmental Noise Assessment.

• **ANSI S12.18-1994 (R 2004)** American National Standard Procedures for Outdoor Measurement of Sound Pressure Level.

This amendment to the Code of Ordinances shall take effect upon passage as provided by law.

Dated this 18th day of March 2008.

INTRODUCED BY:

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Merlin Gentz

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Patrick Laughrin

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Duaine Stillman

_____
Alice Connors

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Donald Schwobe

_____
Kristopher Krause

COUNTERSIGNED BY:

_____
Bill Barribeau, County Board Vice-Chair

ORDINANCE 2007-14
ORDINANCE TO AMEND THE CALUMET COUNTY CODE OF ORDINANCES
CHAPTER 79 OF ORDINANCE 2003-5 AMENDING SEC. 79-40. SETBACKS AND SEC. 79-60. SETBACKS. PERTAINING TO SETBACK DISTANCE.

The Board of Supervisors of Calumet County, does hereby amend the Calumet County Code of Ordinances as follows:

Motion:	Adopted:	
1st	Lost:	
2nd	Tabled:	
Yes: No:	Absent:	

Number of votes required:

[x] Majority [ ] Two-thirds

Reviewed by: Pamela Captain Corp Counsel

		YES	NO	A
1	BALLERING			
2	BARRIBEAU			
3	BROCK			
4	CONNORS			
5	CRITER			
6	DRAHEIM			
7	DIETZEN			
8	GENTZ			
9	KOENIG			
10	KRAUSE			
11	LAUGHRIN			
12	LEHRER			
13	LEONHARDT			
14	PHIPPS			
15	SCHOLZ			
16	SCHWOBE			
17	SCHUH			
18	SOMMERS			
19	STANKE			X
20	STECKER			
21	STILLMAN			

1. **Sec. 79-40. Setbacks.**

(a) The following setbacks and separation requirements shall apply to all Wind Energy Systems - Small.

(1) Each Wind Energy System shall be set back from the nearest residence, school, hospital, church or public library, a distance no less than ~~1.1 times its Total Height~~ one thousand eight hundred (1,800) feet, unless appropriate easements are secured from adjacent property owners for a lesser setback. The easement must be recorded with the Register of Deeds.

2. **Sec. 79-60. Setbacks.**

(a) The following setbacks and separation requirements shall apply to all Wind Energy Systems - Large.

(1) Each Wind Energy System shall be set back from the nearest residence, school, hospital, church or public library, a distance no less than one thousand eight hundred (1,~~0~~800) feet, unless appropriate easements are secured from adjacent property owners for a lesser setback. The easement must be recorded with the Register of Deeds.

This amendment to the Code of Ordinances shall take effect upon passage as provided by law.

Dated this 15th day of January 2008.

INTRODUCED BY:

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Merlin Gentz

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Patrick Laughrin

_____
Duaine Stillman

Alice Connors

Donald Schwobe

Kristopher Krause

COUNTERSIGNED BY:

Bill Barribeau, County Board Vice-Chair