

To all Participants:

Thank you again for participating in Lawrence Technological University's Delphi Inquiry into Wind Turbine's Wildlife Impact issues. As I explained during the presentation, a Delphi Inquiry is an iterative series of discussions and surveys.

Although the ice storm reduced our attendance, we have received enthusiastic participation from several wildlife conservation professionals. This has helped the process considerably. They have helped us identify several important questions regarding wind turbines and wildlife. To all of you, thank you.

Now it is time to proceed with the second survey. Here we address the questions raised in the first part of the inquiry. For this reason, I've put together this information packet.

This packet contains:

- a) the second wildlife survey
- b) links to additional reference material online

If you have any questions on the material, please post them to our discussion list at [mwwg@topica.com](mailto:mwwg@topica.com). Or contact me at my email address [dja1701@nethere.com](mailto:dja1701@nethere.com). Those of you who haven't joined the list may still do so at <http://lists.topica.com/lists/mwwg>.

Please take the time to consider this information, fill out the second survey and return the surveys to the address below by May 15, 2005.

Thank you.

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A Delphi Inquiry into  
**Wind Turbines' Impact on Wildlife  
and the Environment**

**2nd Iteration**      April 11, 2005

Participant Name: \_\_\_\_\_



## Project Summary

The Energy Office of Michigan and the Michigan Wind Working Group asked Lawrence Technological University (LTU) to conduct a Delphi Inquiry into wind turbine siting issues. A Delphi Inquiry is an iterative series of open dialogs and surveys that leads to a consensus of informed opinions. Our goal is to provide a structured forum that helps state and local policy makers collect, understand and analyze the technical data that they need to consider to develop wind turbine siting guidelines.

LTU initiated our inquiry into wind turbine noise with a teleconferenced presentation on December 3, 2005. We followed up with two surveys. The results of the first survey on noise issues is available from our web site. We are still collecting the second noise survey.

LTU initiated our inquiry into wind turbine's impact on wildlife with a teleconference presentation on February 14, 2005. This introduced our participants to some of the research that has been conducted in other states and to many recommendations for minimizing impact. At this presentation, we asked participants to help us develop questions that need to be addressed for the Michigan siting Guidelines. The surveys that were return identified a number of good questions. In this second round we ask many, but not all, of those questions. Two reasons why we chose to omit some of the questions are:

- a) Our electronic discussion or some research resolved the issue.
- b) The question seemed to be beyond the expertise of participants.

Now it is time to proceed with the second survey; where we will address the questions raised in the first part of the inquiry. For this reason, I've put together this information packet.

## Survey 2

Please note that in this second survey the instructions are a little different. For the first wildlife survey, we asked you to help us develop questions that needed to be asked. In this survey, we ask many of those questions. Where possible we provide some additional background material to help with your understanding. Please circle only one answer for each question.

Remember that our goal is to collect and analyze issues related that need to be addressed in developing Michigan's Wind Turbine Siting Guidelines.

## Instructions

1. Write your name on the title page.
2. Please circle only one answer for each question.
3. Return the survey in the enclosed self-addressed-stamped envelope.

## Project Impact Index (PII)

The US Fish and Wildlife (USFW) Interim Guidelines recommend that wind energy developers compare potential sites by developing a Project Impact Index (PII). However, these guidelines are voluntary.

For more information on the PII, visit <http://www.fws.gov/r9dhcbfa/windenergy.htm>

1. Should the Michigan Wind Turbine Siting Guidelines specify that developers must provide a PII prior to constructing a wind farm?

Yes

No

2. The PII requires a comparison to a reference or baseline site. Should comparisons be made to a reference or baseline site within:

- a) the local county
- b) a region of the state of Michigan
- c) the State of Michigan
- d) the USA

3. Should the Michigan Siting Guidelines specify a reference or a baseline site for PII comparisons?

Yes

No

4. The procedure for developing the PII (as stated in the US FWS Interim Guidelines) is a model that needs to be modified for different sites. Who should develop the final version?

- a) Michigan Energy Office
- b) Michigan Dept of Natural Resources
- c) Michigan Dept of Environmental Quality
- d) An independent board of environmental consultants appointed by the State of Michigan
- e) Local communities

### **Tower Design and Construction**

5. The USFW recommends that towers be lighted with only white lights. Red lights should be avoided. Should the Michigan Wind Turbine Siting Guidelines include this recommendation?

Yes

No

6. The American Bird Conservancy recommends that Any lighting should be with strobe lights, either white or red. The pulse rate should be kept to 20 pulses per minute, if possible, and the pulses should be synchronized. Should the Michigan Wind Turbine Siting Guidelines include this recommendation?

Yes

No

7. Should the Michigan Siting Guidelines recommend that turbine blades be painted to make them more visible to birds?

Yes

No

8. American Bird Conservancy recommends that wind turbine power lines be underground; power lines should at a minimum comply with Avian Power Line Interaction Committee (APLIC) Standards to Prevent Avian Electrocutions. Should the Michigan Wind Turbine Siting Guidelines include this recommendation?

Yes

No

For more information on APLIC, visit <http://www.aplic.org/resources.htm>

### **Tower Operation**

9. Should wind turbines be shut down during the peak migrations of certain endangered species like the Kirkland Warbler?

Yes

No

For more information on the Kirkland Warbler, visit [http://www.michigan-sportsman.com/non-game/kirkland\\_warbler.htm](http://www.michigan-sportsman.com/non-game/kirkland_warbler.htm) or <http://www.avianweb.com/warblers.htm>

10. If wind turbines can be shutdown during peak migration periods, how much notice needs to be given?

- a) one day
- b) three days
- c) one week
- d) one month

11. If you answer yes to Question 9, should the Michigan Wind Turbine Siting Guidelines specify a penalty for non-compliance?

Yes

No

### **Wildlife Monitoring**

12. The USFW recommend a minimum of three years of monitoring wildlife. Some researchers have suggested that for agricultural areas a single season of monitoring is sufficient.

13. Should the Michigan Siting Guidelines recommend a minimum period of wild life monitoring **prior** to wind turbine construction?

Yes

No

14. If you answered yes, what should that minimum period be?

- e) one season
- f) two seasons
- g) one year
- h) two years
- i) other \_\_\_\_\_

15. Should the Michigan Siting Guidelines recommend a minimum period of wild life monitoring **after** wind turbine construction?

Yes

No

16. If you answered yes, what should that minimum period be?

- a) one season
- b) two seasons
- c) one year
- d) two years
- e) other \_\_\_\_\_

17. Who should conduct the wildlife monitoring?

- a) The wind energy developers
- b) The State of Michigan
- c) Local municipalities
- d) An independent board of wildlife professionals

18. Should wind energy developers be required to pay for the wildlife monitoring regardless of who conducts the studies?

Yes

No

19. Should all wildlife monitoring data be made public?

Yes

No

20. Should the State of Michigan appoint a committee to collect and distribute all wildlife data relating to wind farms in the State of Michigan?

Yes

No

### **Geographic Restrictions**

21. Bat Conservation International has recommends that no turbines be built on wooded ridge tops. Should Michigan's guidelines include this recommendation?

Yes

No

22. Many birds follow Michigan's coastline while migrating. Should wind turbines be prohibited within a certain distance (onshore) of Michigan's coastline?

Yes

No

23. If you answered 'yes', what should that minimum distance be?

- a) 1/4 mile
- b) 1/2 mile
- c) 1 Mile
- d) 5 miles

