

**REPORT FOR  
MONTCALM COUNTY, MICHIGAN**

**Estimated Net Annual  
Community Financial Impact  
for the Proposed  
“Montcalm Wind” Project:**

**An Estimated ANNUAL LOSS of  
\$36.6± Million for  
Montcalm County**

3-29-21

To Local Legislators:

The primary rationale for the Township & County Official's current support of the proposed Montcalm industrial wind project (projected to be 75± turbines, each 600+ feet tall), is that the developer claimed that this would be a financial windfall for our community.

Clearly such an assertion is self-serving. The only way the Officials can make an **informed decision** about the community economics for this wind project, is to fully assess ALL its local financial **pros and cons**.

In other words, it is the Montcalm County & Township Officials' responsibility to perform an **objective** and **comprehensive** assessment of ALL potential economic impacts to the entire community — *before* giving any approvals to this complex, long-term project. To date, we have no such assessment being performed by the Townships or County to examine the overall impact of this proposed industrial wind turbine project on our community.

We would hope that such information would be readily available from State agencies. For example, the Dept. of Health should be monitoring wind turbine health effects on State citizens. Similarly, for the Departments of Agriculture, Tourism, etc. But for political reasons, no State agency is keeping such data.

Since our local, county and state representatives are not providing this information, concerned citizens have prepared this ballpark analysis. **PLEASE NOTE: This report includes LOW estimates & is based primarily upon only the 11 proposed townships (Cato, Day, Douglass, Home, Maple Valley, Montcalm, Pierson, Pine, Richland, Sidney, & Winfield) currently being approached by Apex for inclusion in their Montcalm Wind project at this time.**

The estimates presented here are supported by **over 100 sample studies and reports** referenced below. Note that these are typically from **independent experts** — as compared to the material frequently cited by the wind industry. (Additional references on any of the above-mentioned issues, are also available on request. A superior website to do additional research, is [WiseEnergy.org](http://WiseEnergy.org).)

Sincerely,

**Concerned Residents of Montcalm County Opposed to Irresponsible Wind Turbine Placement in OUR Communities!**

(Including over 2600+ members of the group, **Montcalm County Citizens United**, formed by Sidney Township residents, Erik & Chantelle Benko, to help inform fellow Montcalm County citizens of the proposed wind turbine project in our county.)

Please contact Erik or Chantelle Benko at [MontcalmCountyCitizensUnited@gmail.com](mailto:MontcalmCountyCitizensUnited@gmail.com) for any questions, to submit well-documented corrections, or to support a balanced economic assessment of this exceptionally important community matter.

# Estimated Annual Community Financial Impact for the Proposed Apex / “Montcalm Wind” Project

Subject	Comments	Annual Income/Cost	References
<b>Apex / Montcalm Wind</b> (75± turbines, each 600± feet high)	<ul style="list-style-type: none"> <li>The community benefits claimed by the wind developer are accepted at face value, even though none are guaranteed.</li> <li>The \$2 million provided here is a generous estimate as Apex refuses to provide an actual report outlining the project’s anticipated annual financial benefit to Montcalm County.</li> </ul>	<p style="color: green;"><b>+ \$2± Million</b></p> <p>Estimated income from property taxes, lease payments, misc. employment, etc.</p>	Developer’s documents & statements
<b>Agricultural Losses Due to Bats</b>	<ul style="list-style-type: none"> <li>It is well-documented that turbines can kill large numbers of bats.</li> <li>The main solution the wind industry has is to shut off turbines.</li> <li>Bats are prodigious insect eaters. An individual bat can consume 1000± insects an hour.</li> <li>When wind turbines come to a community, the bat population can take a substantial hit.</li> <li>Decreased bat population means many more insects, which results in a decrease in crop yields.</li> </ul>	<p style="color: red;"><b>— \$4.9± Million</b></p> <p><i>Note 1:</i> Bats can travel 100± miles a day, and easily 10± miles from a wind project site.  <i>Note 2:</i> A 10-mile radius from the project site (+ site itself) equals roughly 89% of our county area. (see “Impact Map”)  <i>Note 3:</i> Take a low-standard range county impact with 80% due to turbines (Reference #2).  <i>Note 4:</i> Approximate annual loss:  <b>\$7±M x 89%± x 80%± = \$4.9M±</b></p>	1-5
<b>Agricultural Losses Due to Local Weather Changes</b>	<ul style="list-style-type: none"> <li>Industrial wind turbines can alter the weather up to 14± miles away.</li> <li>Temperature and humidity can be adversely affected.</li> <li>Temperature and humidity changes can lower crop yields.</li> </ul>	<p style="color: red;"><b>— \$.1± Million</b></p> <p><i>Note:</i> There are no good numbers for this type of loss (as the MI Dept. of Agriculture has not monitored or studied this), so this is a low, rough estimate.</p>	6-10
<b>Residential Property Devaluation</b>	<ul style="list-style-type: none"> <li>This is a major Property Rights issue.</li> <li>The elected officials have the obligation to fully protect what is likely its citizens most valuable financial asset.</li> <li>Due to negative visual impact, residential property SALE value will decline within AT LEAST a 2-mile radius of the project site.</li> <li>As local property tax revenue is lowered due to lost home values, ALL local property owners will end up paying a higher property tax rate.</li> <li>Some property abandonment has happened near other wind projects.</li> <li>This est. of -\$6 million does NOT account for vacant land devaluation within the project footprint</li> </ul>	<p style="color: red;"><b>— \$6± Million</b></p> <p><i>Note 1:</i> Based on 9,700 ± HOMES* in the 11 proposed townships included in the Montcalm Wind project footprint. (See “Impact Map” for 2-mile radius)  <i>Note 2:</i> Average home value in Montcalm Co. is \$124,000±**  <i>Note 3:</i> Assumes low-end value loss (10%±) = \$12,400±/ home.  <i>Note 4:</i> Total property sale value loss:            9,700± x \$12,400 ± = \$120.2M ±  <i>Note 5:</i> Annual loss (averaged over 20± year life of project):  <b>\$120.2±M / 20± = \$6±M</b></p>	11-16
<b>Tourism Reduction</b>	<ul style="list-style-type: none"> <li>Multiple studies indicate that tourism can decrease in communities with visible industrial wind turbines (esp. those that are vacation destinations).</li> <li>NC State University (a pro-wind source) did a very applicable survey. Their results were that 80%± of tourists would not come back to where turbines are visible (Ref #17).</li> <li>\$149.16 million is the amt for Montcalm County from the 2019 Report for: Michigan Tourism Office Department of Community &amp; Economic Development (Ref #16)</li> </ul>	<p style="color: red;"><b>— \$26.8± Million</b></p> <p><i>Note 1:</i> Per (Ref #16, pg 12), Montcalm County tourism is \$149± M/year.  <i>Note 2:</i> Properties located within at least a 2-mile radius, or 36%+ of our county, will see these tall wind turbines if they are placed in the proposed footprint of the wind project. (see “Impact Map”).  <i>Note 3:</i> A very low impact of only 50% (vs 80%) is assumed here.  <i>Note 4:</i> Estimated annual loss:  <b>\$149±M x 36% x 50% = \$26.8±M</b></p>	17-21

<b>Subject</b>	<b>Comments</b>	<b>Annual Income/Cost</b>	<b>References</b>
<b>Adverse Health Effects</b>	<ul style="list-style-type: none"> <li>• The World Health Organization has gone on record saying that the effects of infrasound can be much worse than those of audible noise.</li> <li>• Some impacts of infrasound and shadow flicker include: cardiac effects, anxiety, sleep disturbances, mental and emotional health decline, etc.</li> <li>• Studies show that these impacts can result in an inability to perform daily tasks, compromised quality of life, and an increased risk of suicide.</li> </ul>	<p><b>— \$.2± Million</b></p> <p><i>Note 1:</i> Not everyone is affected the same way by these health problems — just like not all smokers get cancer.</p> <p><i>Note 2:</i> Human health is priceless, so there is no accurate way to give the full value of wind turbine caused human ailments. Here, a VERY LOW, rough estimate was made.</p>	22-31
<b>Hydrogeological Impacts (Drinking water and wells)</b>	<ul style="list-style-type: none"> <li>• Turbine base excavation (which can be over 40 feet deep), and related project construction, has been shown to put water wells at risk.</li> <li>• Some communities have seen dramatic or yet-to-be reversed damage including sediment and contaminants in ground water.</li> <li>• Risk of well water loss, can result in the additional cost to connect more residents to town water.</li> <li>• The seriousness of these issues depends on local aquifer depth, soil percolation, etc.</li> </ul>	<p><b>— \$.1± Million</b></p> <p><i>Note:</i> There are no hard numbers for this type of loss as it is a very localized matter (i.e. dependent on local hydro-geological conditions, quantity of private wells, depth of private and community wells, etc.). This is a conservative, approximate estimate.</p>	32-36
<b>Ecological Impacts, e.g.: Wildlife Ecosystems</b>	<ul style="list-style-type: none"> <li>• Disruption of wildlife (birds, deer, bears, etc.) habitats due to road, power line, etc. fragmentation.</li> <li>• Displacement of animals (e.g. due to tree removal).</li> <li>• Direct negative impact to organisms' environment.</li> <li>• Increased parasitic infections in certain populations (e.g. raccoon).</li> <li>• Permanent soil erosion can impact local species.</li> <li>• A single significant change in an ecosystem can result in a chain reaction that can be irreversible.</li> </ul>	<p><b>— \$.2± Million</b></p> <p><i>Note:</i> This amount of this loss is very dependent on the local terrain, degree of forestation, bodies of water, etc. Since no study has been done locally, this is a low, rough estimate.</p>	37-41
<b>Miscellaneous, e.g.: Agricultural (misc.) Livestock Hunting Communication Military Leaseholders</b>	<ul style="list-style-type: none"> <li>• Loss of employment, plus less seed and equipment, etc., purchases due to reduced farming operations.</li> <li>• Reduction of pollinating insects.</li> <li>• A variety of livestock ailments.</li> <li>• Hunting restrictions and reduced available wildlife.</li> <li>• EMS and communication expenses.</li> <li>• Losses to turbine leaseholders.</li> </ul>	<p><b>— \$.3± Million</b></p> <p><i>Note:</i> This is an approximate, low estimate of the financial consequences of several other possible negative results of this industrial wind project.</p>	42-51
<b>NET TOTAL</b>	<b>Community Net Amount:</b>	<b>— \$36.6± Million per Year</b>	

# Sample References for Some Wind Energy Local Economic Impacts

## *Agriculture and Bats* —

1. [http://wiseenergy.org/Energy/Wind\\_Economics/Bats\\_and\\_Agriculture.pdf](http://wiseenergy.org/Energy/Wind_Economics/Bats_and_Agriculture.pdf)
2. [http://wiseenergy.org/Energy/Wind\\_Other/Bat\\_County\\_Data.pdf](http://wiseenergy.org/Energy/Wind_Other/Bat_County_Data.pdf) (agricultural loss by county)  
State: MICHIGAN County: MONTCALM Harvested Land (acres): 166,345  
Estimated Value of Bats Assuming LOW Crop Pest Survival (U.S.\$): 2,012,775  
Estimated Value of Bats Assuming STD Crop Pest Survival (U.S.\$): 12,326,165 **Estimated down to \$7 million**  
Estimated Value of Bats Assuming HIGH Crop Pest Survival (U.S.\$): 28,694,513
3. [https://www.dec.ny.gov/docs/administration\\_pdf/batsofny.pdf](https://www.dec.ny.gov/docs/administration_pdf/batsofny.pdf)
4. <https://academic.oup.com/jmammal/article/94/2/506/914006>
5. [http://wiseenergy.org/Energy/Wind\\_Economics/Bats\\_and\\_Turbines.pdf](http://wiseenergy.org/Energy/Wind_Economics/Bats_and_Turbines.pdf) (Collection of studies, etc.)

## *Agriculture and Local Weather* —

6. <https://www.sciencedirect.com/science/article/pii/S0167610510001467>
7. <https://www.nature.com/articles/nclimate1505>
8. <http://www.co2science.org/articles/V20/aug/a17.php>
9. [http://www.atmos.albany.edu/facstaff/mathias/pubs/Slawsky\\_et\\_al\\_2015.pdf](http://www.atmos.albany.edu/facstaff/mathias/pubs/Slawsky_et_al_2015.pdf)
10. <http://iopscience.iop.org/article/10.1088/1748-9326/11/4/044024/>

## *Residential Property Values* —

11. [http://wiseenergy.org/Energy/Wind\\_Economics/Clarkson\\_Henderson\\_PV\\_Study.pdf](http://wiseenergy.org/Energy/Wind_Economics/Clarkson_Henderson_PV_Study.pdf)
12. <http://www.spatial-economics.ac.uk/textonly/SERC/publications/download/sercdp0159.pdf>
13. <https://tinyurl.com/y6cx2k7q>
14. <https://tinyurl.com/y4nhhcq6>
15. [http://wiseenergy.org/Energy/Wind\\_Ordinance/REValues.pdf](http://wiseenergy.org/Energy/Wind_Ordinance/REValues.pdf) (Collection of studies, etc.)

## *Tourism* —

16. <https://medc.app.box.com/s/6kjtxi5pofnh1134n1n3fnodsvrbr4es>
17. <https://cenrep.ncsu.edu/2016/04/03/offshore-wind-tourism/>
18. <https://www.sciencedirect.com/science/article/pii/S0301421515300495>
19. <https://tinyurl.com/y5tx4vr9>
20. [http://wiseenergy.org/Energy/Wind\\_Economics/Tourism.pdf](http://wiseenergy.org/Energy/Wind_Economics/Tourism.pdf) (Collection of studies, etc.)

## *Human Health* —

21. <https://asa.scitation.org/doi/pdf/10.1121/2.0000653>
22. [https://file.scirp.org/pdf/OALibJ\\_2018122013570614.pdf](https://file.scirp.org/pdf/OALibJ_2018122013570614.pdf)
23. <https://tinyurl.com/y2huzqgs>
24. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3653647/>
25. <https://www.intechopen.com/books/acoustics-of-materials/acoustics-and-biological-structures>
26. <https://docs.wind-watch.org/Zou-suicide-2017-Oct.pdf>
27. [http://www.waziristan-calc.igsz.de/infra/Weichb\\_2017.pdf](http://www.waziristan-calc.igsz.de/infra/Weichb_2017.pdf)
28. [http://www.epaw.org/documents/Wind\\_Turbine\\_Noise\\_Sleep\\_Health.pdf](http://www.epaw.org/documents/Wind_Turbine_Noise_Sleep_Health.pdf)
29. <https://puc.sd.gov/commission/dockets/electric/2018/EL18-026/prefiledexhibits/davenport/i32.pdf>
30. [http://wiseenergy.org/Energy/Health/Sample\\_Wind\\_Noise\\_Studies.pdf](http://wiseenergy.org/Energy/Health/Sample_Wind_Noise_Studies.pdf) (Collection of studies, etc.)

## ***Hydro-geological —***

31. <https://tinyurl.com/z2sbyrs>
32. [http://wiseenergy.org/Energy/Timbermill/Hydrogeological\\_Assessment.pdf](http://wiseenergy.org/Energy/Timbermill/Hydrogeological_Assessment.pdf)
33. <http://www.windconcernsontario.ca/wind-turbines-to-blame-for-well-water-problems-hydrogeologist>
34. <https://www.wind-watch.org/news/2017/02/22/could-wind-turbines-taint-area-aquifer>
35. <https://tinyurl.com/1nuzguqe>

## ***Ecological —***

36. <https://www.nap.edu/read/11935/chapter/5>
37. <https://wcfm.org/2016/10/02/wind-turbines-effects-on-animals/>
38. <https://www.spectator.co.uk/2013/01/wind-farms-vs-wildlife/>
39. <https://wildlife.org/wp-content/uploads/2014/05/Wind07-2.pdf> (Collection of studies, etc.)
40. <http://npshistory.com/publications/sound/wildlife-noise-bibliography.pdf> (Collection)

## ***Miscellaneous —***

41. [http://wiseenergy.org/Energy/Wind\\_Other/Wind&Hunting.pdf](http://wiseenergy.org/Energy/Wind_Other/Wind&Hunting.pdf) (Collection of studies, etc.)
42. [http://wiseenergy.org/Energy/Wind\\_Other/Wind\\_Energy\\_Communication\\_Interference.pdf](http://wiseenergy.org/Energy/Wind_Other/Wind_Energy_Communication_Interference.pdf)
43. <https://www.mprnews.org/story/2009/10/15/reimer>
44. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5846843/>
45. <https://www.ncbi.nlm.nih.gov/pubmed/24597302>
46. <https://canadafreepress.com/article/open-letter-windfarms-and-animals-e.g.-birth-defects>
47. <https://greenliving.lovetoknow.com/environmental-issues/effects-clear-cutting>
48. [http://wiseenergy.org/Energy/Military/Military-Wind\\_Overview.pdf](http://wiseenergy.org/Energy/Military/Military-Wind_Overview.pdf)
49. [http://swkroa.com/docs/wind\\_energy\\_speech\\_6.pdf](http://swkroa.com/docs/wind_energy_speech_6.pdf)
50. <http://docs.wind-watch.org/CALT-Legal-Brief-Wind-Energy-Production.pdf>

## ***Additional citations and information contained in the report -***

[http://cms5.revize.com/revize/montcalm/document\\_center/Economy%20and%20Planning/Demographics/montcalm\\_2000\\_census\\_demographic\\_profile\\_1.pdf](http://cms5.revize.com/revize/montcalm/document_center/Economy%20and%20Planning/Demographics/montcalm_2000_census_demographic_profile_1.pdf)

\*Number of households impacted: Averaged 9719 down to 9700.

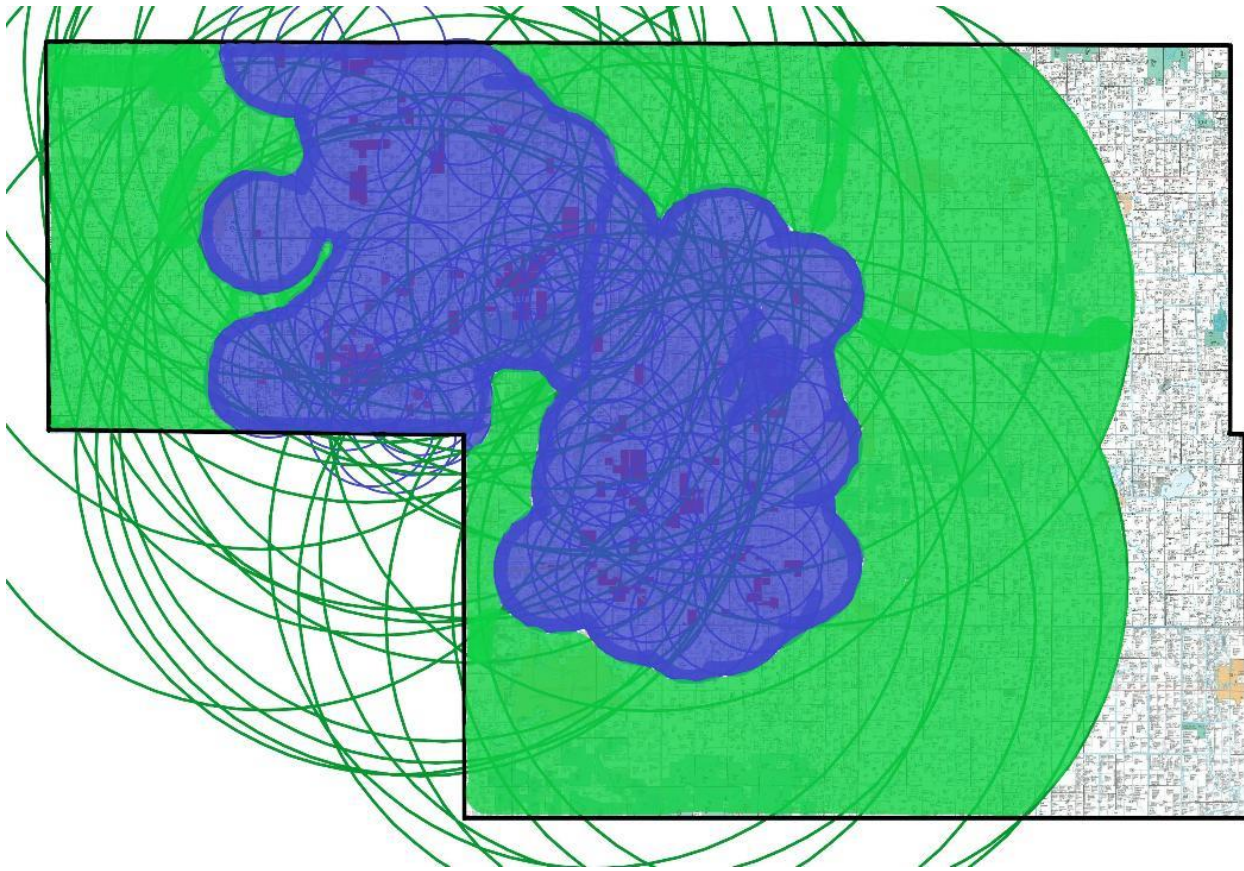
<b>Township</b>	<b>Total Households</b>
Sidney	966
Douglass	891
Montcalm	1154
Pine	610
Cato	1073
Winfield	709
Maple Valley	755
Pierson	1015
Day	461
Home	1033
Richland	1052
<b>Total</b>	<b>9719</b>

[http://www.city-data.com/county/Montcalm\\_County-MI.html](http://www.city-data.com/county/Montcalm_County-MI.html)

Est. median house/condo value in Montcalm Co. in 2019. \$124,709 (it was \$83,300 in 2000) Montcalm: \$124,709.

\*\*Averaged \$124,709 down to \$124,000.

## IMPACT MAP (MONTCALM COUNTY)



Category	Estimated Area Affected Around Known Leaseholder	Color on map	Low estimated % of Montcalm County Affected
RESIDENTIAL PROPERTY SALE VALUE & TOURISM	2-mile radius	Blue	36%
BATS	10-mile radius	Green (+ blue region)	89%

### About the Impact Map for Montcalm County:

APEX has remained very vague about WHERE they propose to place their 75+ Industrial Wind Turbines in our County so we have provided our map based upon the provided information available at this time.

This map is based ONLY on the known parcels of land that currently have registered land leases recorded with the Montcalm County Registrar of Deeds within the proposed Montcalm Wind Project "footprint". We have been made aware that APEX has ONLY registered approximately 50% of the land leases that they have signed with landowners in Montcalm County at this time. Therefore, this map represents a VERY LOW estimate of the amount of land in our county that would be negatively affected.

The use of a 2-mile radius for affected PROPERTY SALE VALUE is a LOW estimate (based upon studies included in the reference section of this report). It is worth noting that several additional studies have shown a negative impact on property sale values located within more than a 4-mile radius of an industrial wind turbine in lieu of the 2-mile radius utilized in this report ([lakeontarioturbines.com](http://lakeontarioturbines.com)).

Something additional to consider is that the county directly to the East of Montcalm County (Gratiot County) already has numerous Industrial Wind Turbines placed there. These Industrial Turbines will also likely provide a negative impact on neighboring townships (that fall within a 10-mile radius of existing turbines already located in Gratiot County) across the county line into Richland Township, Ferris Township, Crystal Township, and Bloomer Township.