

Multi-Municipal Wind Turbine Working Group

Thursday, July 8, 2021 at 7:00 p.m.
via Zoom Meeting

MINUTES

A meeting of the Multi Municipal Wind Turbine Working Group was held on Thursday, July 8, 2021 via Zoom.

Participating Municipalities Present:

| Municipality | Name of Members in attendance |
|---------------------|--------------------------------------|
| Arran-Elderslie | Mark Davis, Bill Palmer |
| Brockton | Steve Adams, Philip Englishman |
| Chatsworth | Scott Mackey |
| Grey Highlands | Paul McQueen, Tom Allwood |
| Huron-Kinloss | Don Murray |
| West Lincoln | Dave Bylsma |

Participating Municipalities Absent:

| |
|---------------------------|
| Central Huron, Kincardine |
|---------------------------|

The following members of Staff were present:

Laura Fullerton

Arran-Elderslie

Zoom Meeting Host

Others in attendance who addressed the Working Group:

Warren Howard

North Perth

Vern Martin

Others in attendance as observers:

Jane Wilson

Joan

Paula Peel

David Hemingway

Central Huron

1. ADOPTION OF THE AGENDA

Moved by: Mark Davis

Seconded by: Don Murray

That the Agenda for the Multi-Municipal Wind Turbine Working Group meeting of July 8th, 2021 be received and adopted, as distributed by the Recording Secretary, with the addition of 1 item of new business as 6.1, letter from Secretary.

Carried

2. DECLARATION OF PECUNIARY INTERESTS:

No disclosures of pecuniary interests were noted by the Committee.

3. APPROVAL OF MINUTES

Moved by: Don Murray
Seconded by: Scott Mackey

That the Multi-Municipal Wind Turbine Working Group adopt the minutes of the last Committee Meeting held May 13th, 2020, as circulated.

Carried

ACCEPTANCE OF NOTES

Moved by: Philip Englishman
Seconded by: Paul McQueen

That the Multi-Municipal Wind Turbine Working Group accept for information presentations made to members present on June 10, 2021:

Presentation by Bill Palmer on 2021 Wind Turbine Noise Conference (att. 1)

Presentation by Bill Palmer on correspondence with offices of Ministers Jeff Yurek, Bill Walker, and Lisa Thompson. (att. 2)

Presentation by Warren Howard on Municipal Plans and Wind Turbines, concluding clear requirements are needed by Municipalities to address issues of Zoning By-Laws, and Setbacks. (att. 3)

Presentation by Warren Howard on changing ownership patterns of wind turbine projects across Ontario concluding municipalities need to get zoning in place and to clarify municipal role in existing project upgrades. (att. 4)

Carried

4. DELEGATIONS

- 4.1 Warren Howard presented on Capstone Skyway 8 turbine failure of June 30. (att. 5)

In discussion following the presentation Scott Mackey noted that if the Capstone turbine which failed was 195m from Grey County Road 8, what would the recommended setback be?

Bill Palmer replied that while the Ontario Wind Turbine regulations only requires a setback of blade length plus 10 metres from roadways or

neighbouring lot lines (about 60 metres for this turbine) he had recommended a setback of 550 metres from roadways or neighbouring lot lines in presentation to the Minister of the Environment and MECP staff based on the observed debris spread from the Huron Wind blade failure in 2018.

Scott Mackey noted the Mayors could ask why the county felt it was necessary to close Grey County Road 8, and what precautions were taken when the road was closed.

Paul McQueen noted he could enquire from the Grey County Road staff (but then lost internet connection.)

Scott Mackey noted the request could be sent to Pat Hoy (Grey County Director of Transportation), copying the Secretary of the MMWTWG.

Bill Palmer asked if a question to be asked might be when the wind operator had notified the Municipality, and did they notify the Fire Department or Police regarding emergency services. No emergency protocol is available on the Capstone website.

Vern Martin commended the presentation by Warren, and noted the question of what protocols are in place is relevant, as well as should the fire department be contacted in such as failure, given the quantity of oil in the turbine which had failed, noting the event would overload the gearbox. Vern added that he does failure analysis for large rotating equipment, and noted that one must assume there is a link between the addition of the power cone and the failure as it was a difficult design problem. He added that his guess is that something came off the cone and damaged the blades. From an engineering standpoint, who was responsible for the design change evaluation, as the cone was installed on a turbine designed by Vestas. Did they assess the impact on the tower or foundation?

Scott Mackey noted that Vern raises a valid point. What regulatory agency will examine this failure? Who will investigate this industrial mishap?

Vern responded that he does not know who would be responsible for the assessment. It may be done "in house" rather than by an external agency (using the example of Dofasco.)

Bill Palmer noted that the Ontario Regulations gave overall responsibility for wind turbines to the Ministry of the Environment to enable a single point of contact for developers.

Steve Adams questioned where the damaged blade will go? To Municipal landfill? How many more may be vulnerable? The Mayors of Grey County can ask for a post mortem, given the potential issues. Liability Issues, increased risk issues. Grey County Council should identify what they want to get from the post mortem.

Vern Martin added, that it is important to learn what caused the failure so if someone goes to redesign the device, or to decide if it should not be reinstalled, as both need to know what caused the failure.

Tom Allwood added that these points should be sent to the Grey Director of Transportation and added to a Grey County Council Meeting.

4.2 Warren Howard presented on Wind Turbine Setbacks. (att. 6) as a follow up to the previous presentation made on June 10 (previous att. 3).

In discussion following the presentation, Dave Bylsma added a point related to the previous presentation regarding the Skyway 8 turbine failure. Will this turbine be repaired or decommissioned? Where will the damaged parts be disposed of? In municipal landfill? There is a fear that municipal landfills will be overloaded by wind turbine parts.

Scott Mackey asked regarding the presentation on setbacks, noting it lists many different numbers, and what one should be used?

Warren noted that 1300m is defensible from the Health Canada study.

In discussion about a MMWTWG Resolution, Scott Mackey noted that a memo has already been sent to Pat Hoy, Grey County Director of Transportation, and copied to Mayor McQueen.

Moved by: Mark Davis
Seconded by: Philip Englishman

The Multi-Municipal Wind Turbine Working Group accepts the Presentations by Warren Howard on the Capstone 8 Turbine Failure and on Wind Turbine Setbacks, and recommends the subject be identified to Grey County Council.

Carried

In discussion, Paul McQueen noted that the presentation brings up many issues. The Green Energy Act is no longer in play, and it is appropriate to readdress setbacks, and noise before the issues resurface. A paper should be written which is precise on these points, as the question of more wind turbines, and green energy will hit us fast after coming elections.

Warren Howard commented that he sees the key as:

- Revise Municipal Zoning Bylaws
- Pressure the MoECP to fix regulations now

Tom Allwood notes that Grey Highlands is currently doing a bylaw review, and this may be an issue to look at.

- 4.3 Bill Palmer briefed the Working Group on the appointment of MPP David Piccini as Minister of the Environment, Conservation and Parks, replacing MPP Jeff Yurek. He was first elected in June 2018 as MPP for Northumberland – Peterborough South. Before coming to the Ministry of Environment, Conservation and Parks, Minister Piccini served as Parliamentary Assistant to the Minister of Training, Colleges and Universities and was a member of the Standing Committee on Finance and Economic Affairs.

David began his career with the federal public service, first as an international market analyst at Agriculture Canada, then as a policy advisor at Service Canada. He then joined the Office of the Minister of International Trade where he contributed to key trade files, including the Canada-Europe Free Trade Agreement. In 2015, he went to the Royal College of Physicians and Surgeons of Canada, where he advised on policy, business and operational issues for the college's international activities, as well as helping Canadian health care system providers find opportunities abroad.

He holds a Bachelor of Social Science, joint honours in Political Science and History from the University of Ottawa graduating in 2011.

5. BUSINESS ARISING FROM THE MINUTES

- 5.1 Bill Palmer reviewed the revision he had suggested to the letter drafted by Teresa to solicit new members to the Multi-Municipal Wind Turbine Working Group that had tried to incorporate suggestions made at the last meeting to demonstrate the value of belonging to the Working Group. (Att. 7)

Moved by: Dave Bylsma
Seconded by: Paul McQueen

That the Multi-Municipal Wind Turbine Working Group accept the draft letter to solicit new members.

Carried

Philip Englishman commented he would prefer to see the letter shorter and in bullet point format, but since it had already been adopted by vote, would accept it.

In discussion, as to whom to send the letter to, the suggestion was made to send it to all municipalities in Southern Ontario.

Don Murray noted that it is necessary to be clear that an election is coming, and while the intent is to not alienate anyone, it should be sent to all municipalities.

Scott Mackey queried how large does the Multi-Municipal Wind Turbine Working Group want to grow to? In discussion, the idea of hybrid meetings allowed under the Arran-Elderslie structure will permit distant municipalities to participate.

- 5.2 Paul McQueen raised the point that there is a need for a “dashboard” for the for setbacks, memberships, and to recognize that green energy and climate change will be big issues following upcoming elections

Scott Mackey agreed with Paul, noting “a lot of the heavy lifting has been done”, but there is a need to document good bylaws, and best practices. He suggested using some of the funds held by the MMWTWG to produce that document.

Don commented he liked the idea of list being in bullet form, and reminded members that it is only 2 years until the next municipal elections, and some are very supportive of green energy. While one cannot oppose climate change, there is a need to get setbacks right.

Steve Adams commented that we are in the eye of a storm. While things are very quiet right now they can change quickly with an election. If we are not prepared, then more people will be horribly impacted.

Bill Palmer offered to prepare a “straw man” of 3 or 4 pages, bullet form for comment at a future meeting.

- 5.3 An e mail had been received from Tony Clark regarding the City of Ottawa Green Energy Initiative article by Parker Gallant. ([Att. 8](#))

Moved by: Scott Mackey
Seconded by: Mark Davis

The Multi-Municipal Wind Turbine Working Group accepts the message from Tony Clark regarding the City of Ottawa Green Energy Initiative.

Carried

6. NEW BUSINESS

- 6.1 Mark Davis read an e mail received from the Recording Secretary, Teresa Gowan, noting that due to persona reasons she will forward an e mail to the Clerk of Arran Elderslie, resigning her position of Recording Secretary of the Multi-Municipal Wind Turbine Working Group, held since March 2013, to take effect as soon as a replacement can be found.

Mark noted he had spoken to the Clerk of Arran Elderslie, who advised that Municipal Staff will assume the role as Recording Secretary of the Multi-Municipal Wind Turbine Working Group.

In discussion Tom Allwood recognized the contribution Teresa had made to the Multi-Municipal Wind Turbine Working Group and recognized the personal loss suffered by Teresa's family.

Scott Mackey and Don Murray echoed Tom's comment, noting they would support Arran Elderslie clerical staff taking on the role of Secretary, adding that an appropriate departure gift from the Working Group to Teresa was called for, as well as a bereavement donation. The funds held by the Multi-Municipal Wind Turbine Working Group are an appropriate source for the gifts.

Initial discussion regarding the ongoing fee for Secretarial Services notes there are increased responsibilities during months that a meeting is held, but that there is still work between meetings, circulating information. The rate to be paid to Arran Elderslie Municipal Staff will be added as an agenda item for the next meeting of the Multi-Municipal Wind Turbine Working Group.

Moved by: Scott Mackey
Seconded by: Philip Englishman

That the Multi-Municipal Wind Turbine Working Group allocate \$50 towards a Fruit Basket to be given to the family of Teresa Gowan in recognition of her family bereavement, and \$200 for a gift certificate as a departure gift for the service of Teresa Gowan to the Multi-Municipal Wind Turbine Working Group.

Carried

7. FOR INFORMATION

7.1 Update from municipalities.

There were no updates.

8. DATE AND LOCATION OF NEXT COMMITTEE MEETING

The next meeting date is scheduled for Thursday, Sept. 9, 2021, at 7:00 p.m. on Zoom.

9. RESOLUTION TO MOVE INTO CLOSED SESSION AND GENERAL NATURE THEREOF (includes appointed Councillor(s) and citizen appointee)

Not Required.

10. RESOLUTION TO RECONVENE IN OPEN SESSION

Not Required.

**11. ADOPTION OF RECOMMENDATIONS ARISING FROM CLOSED SESSION
(if any)**

None.

12. ADJOURNMENT

Moved by: Paul McQueen
Seconded by: Don Murray

That the meeting be adjourned to the call of the Chair.
The meeting was adjourned at 9:15 p.m.

Carried

Minutes Recorded by
Bill Palmer
for Teresa Gowan, Recording Secretary

Minutes Approved by
Tom Allwood, Chair

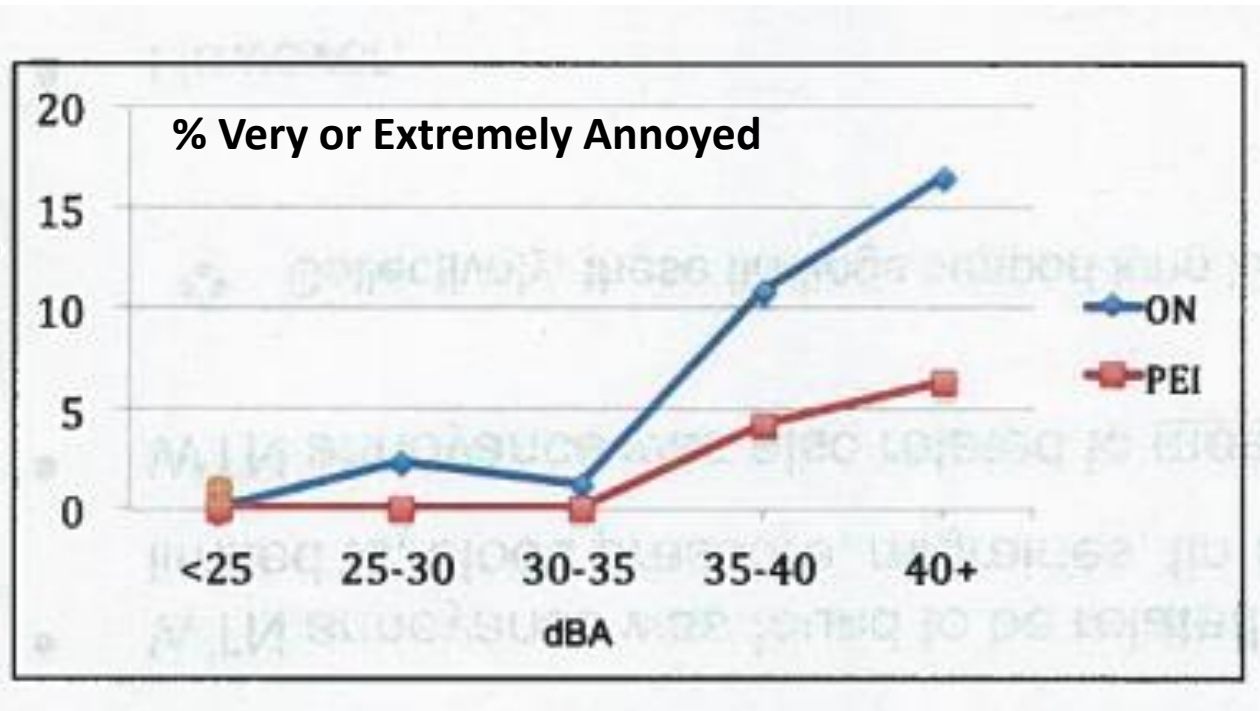
Wind Turbine Setbacks

Multi-Municipal Wind Turbine
Working Group

July 8, 2021

Findings of Health Canada 2014

“In comparison to aircraft, rail or road traffic noise, annoyance with WTN was found to begin at lower sound levels (i.e. about 35 dBA)”¹



Health Canada:
Level of Annoyance
35-40 dBA -10%+
rising to
40 dBA -15%+

¹Health Canada, Results Overview for Stakeholders, Fall 2014, pg.11

Leveraging Health Canada Findings

- “Annoyance” when used by Health Canada is a medical term used to describe stress or distress.
- Supported by physical indicators of stress - elevated blood pressure and blood cortisol levels.
- People experiencing distress:
 - 25% at 550 m.
 - 16.5% within 1 km.
- Health Canada study shows that Ontario standards based on 40 dBA are insufficient.
- Council of Canadian Academies study of Wind Turbine Noise found that dBA measures not appropriate for assessing impact of wind turbines.

Turbine Noise Levels by Distance

| Distance Range (in Metres) | Sites in Range | Average Predicted Noise Levels | | |
|-------------------------------|-------------------|--------------------------------|-----------|-----------|
| | | Predicted | +1 St Dev | -1 St Dev |
| 450 to 499 | 21 | 41.9 | 44.0 | 39.8 |
| 500 to 549 | 30 | 41.1 | 43.1 | 39.0 |
| 550 to 599 | 66 | 40.1 | 42.1 | 38.1 |
| 600 to 649 | 74 | 39.7 | 41.6 | 37.7 |
| 650 to 699 | 86 | 39.5 | 41.5 | 37.5 |
| 700 to 749 | 89 | 38.9 | 40.8 | 36.9 |
| 750 to 799 | 56 | 38.9 | 40.8 | 36.9 |
| 800 to 849 | 65 | 37.8 | 39.6 | 35.9 |
| 850 to 899 | 43 | 37.1 | 38.9 | 35.2 |
| 900 to 949 | 47 | 36.6 | 38.4 | 34.7 |
| 950 to 999 | 58 | 36.4 | 38.2 | 34.6 |
| 1000 to 1049 | 50 | 36.3 | 38.1 | 34.4 |
| 1050 to 1099 | 30 | 35.5 | 37.3 | 33.8 |
| 1100 to 1149 | 29 | 35.2 | 36.9 | 33.4 |
| 1150 to 1199 | 33 | 34.8 | 36.5 | 33.1 |
| 1200 to 1249 | 31 | 34.3 | 36.0 | 32.5 |
| 1250 to 1299 | 20 | 34.4 | 36.1 | 32.7 |
| 1300 to 1349 | 39 | 33.1 | 34.7 | 31.4 |
| 1350 to 1399 | 35 | 32.5 | 34.1 | 30.9 |

Setbacks Required for 35 dBA

- Noise levels from Health Canada study show that setbacks of at least 1,150 m are needed to protect residents.
- Increases to 1,300 m if allowance made for statistical errors in noise modeling.

Source: Derived from noise estimates for Health Canada study participants. Created by MG Acoustics. Data obtained through an Access to Information request.

European Setback Regulations Based on Noise Limits¹

| Country | Noise Level | Setback |
|---------|--------------------------------|---------|
| Belgium | 39 dB | 600 m |
| Croatia | 45 dB | 350 m |
| Czech | 40 dB night | 500 m |
| Ireland | 45 dB or 5 dB above background | 500 m |
| Latvia | 40 dB night | 500 m |

¹ European Commission Joint Research Centre Technical Report, 2018

European Setback Regulations

| Country | Set-back |
|--------------------|------------------------------------|
| Austria | 800 to 1,200 m |
| Denmark | 4 X total height – 829 m |
| Estonia | 1,000 to 2,000 m |
| France | 500 m |
| Germany | |
| - Bavaria | 10 x total height – 2,073 m |
| - Baden | 700 m |
| - Branden- burg | 1000 m |
| - Hamburg | 500 m |
| - Sachsen | 10 X hub height – 1,380 m |
| Hungary | 1,000 to 2,000 m |

| Country | Set-back |
|-------------|--|
| Italy | 200 m from single dwelling 6 X hub height - town 1,244 m |
| Netherland | 4 X hub height – 552 m |
| Poland | 10 x total height – 2,073 |
| Spain | 500 m from single dwelling 1,000 m from towns |
| Sweden | 500 m from single dwelling 1,000 m from towns |
| UK | |
| - England | Local – 700 m to 10 x height |
| - N Ireland | 10 x rotor diameter – 1,386 m |
| - Scotland | Local up to 2,000 m |

Examples of US Setbacks

| State | County | Setback (m) | Comment |
|-------------|--------------------|-------------|--------------------------------|
| Indiana | Miami | 600 | Property lines |
| Kansas | Pratt | 628 | Non-Participating Residences |
| Kentucky | Mason | 1,600 | Property Lines |
| Maine | Caratunk | 2,414 | Property Lines |
| | Clifton | 1,219 | Residences |
| Nebraska | Lancaster | 1,600 | Residences |
| N. Carolina | Newport | 1,524 | Property Lines |
| Ohio | Power Siting Board | 220 | 1.1 X Height to Property Lines |
| Oregon | Umatilla | 3,219 | Residences |
| Wisconsin | All Counties | 381 | Residences |
| Wyoming | All Counties | 1,100 | 5.5 X Height to Property Lines |

Conclusion

- In 2009, the Ontario government stated their 550 m setback offered the best protection of any jurisdiction.
- By 2021, many jurisdictions have larger setbacks.
- Ontario needs to increase minimum setbacks.
- Ontario standards not supported by Canadian research:
 - Health Canada suggested lowering dBA threshold to 35 dBA.
 - Council of Academies advised that dBA measures do not reflect the full impact of the wind turbines.
- Examples provide direction for municipalities in setting setbacks.

Municipal Resolutions?

Request that MECP increase protections in Reg. 359-09

- Bring setbacks in line with other jurisdictions.

Possible Additional Requests

- **Provincial Policy Statement**
 - Remove need for rural municipalities to support the energy needs of large urban centres.
- **Repowering Projects**
 - Include municipalities in decisions on changes to existing wind turbine projects.
- **Resolve Complaints**
 - Take concrete visible steps to address complaints being received about current wind turbine projects
- **2010 Medical Officer of Health's statement**
 - Withdraw provincial support for out of date statement on wind turbines.

Summary Report – 9th International Conference on Wind Turbine Noise
May 18 – 21, 2021 – “Remote from Europe” – Summary by Bill Palmer

The 9th Wind Turbine Noise Conference (WTN21) held under the auspices of the Institute of Noise Control Engineers - Europe, held “virtually” for the first time, saw 190 delegates from 27 countries. 39 pre-recorded presentations, and 1 poster, were presented in 9 sessions, each followed by an open discussion in which delegates could ask questions from the presenters, and venture opinions related to the subjects presented. A new feature for this conference was the inclusion of a text “chat line” which accompanied the sessions which often saw a lively exchange of ideas, sometimes diverging from the topics of the presentations. This was my 7th wind turbine noise conference, and I was surprised to be introduced in the opening session as “the one individual who has presented at the most wind turbine noise conferences”.

The most comments during the conference were offered following a “conversation” with two ladies from Scotland held with Frits van den Berg on the topic of “living with a wind farm.” The stories recounted were familiar, as Aileen Jackson from south of Glasgow, and Rosemary Milne from north of Aberdeen, spoke of complaining for years, with little result, about the disruption from noise, shadow flicker, and loss of community relationships following the installation of wind turbines. They spoke of how the special character of the sound was more important than the actual sound level. David Michaud of Health Canada observed (to paraphrase his comment), “this is the type of experience not shown in the studies, as their numbers are too small to show up in population statics. We are doing the studies wrong. Our study is not as informative as listening to people.” Frits closed the session noting, “the way out is to really look at complaints and to act on them.” I sincerely hope the delegates took the conversation to heart.

While my personal presentation, “Stymied by Standards? Arguments for Wind Turbine Noise Standards that actually measure irritant drivers” generated lively discussion, the comments were less positive. Both Chris Ollson, who appears as a witness in favour of wind turbine developers, and David Michaud from Health Canada raised the point that if standards were modified as I recommended it would not be possible to build wind turbines as we now do. At least on that point we agreed. Others raised the point that regulations in the UK were not strictly based on noise, but on the balance between noise and reducing carbon emissions, so as to benefit the wider population, and not just a few individuals. This means accepting those living near the wind turbines will suffer for the “common good” of the overall population.

Duncan Halstead of Aeroustics Canada (one of 5 papers presented by Aeroustics staff) confirming what I have been showing in my data to the MECP for some time. Sound levels are as predominant upwind or cross wind from wind turbines, as they are downwind, which is the assumption of the MECP compliance protocol, that calls for only monitoring when a resident’s home is downwind from the closest wind turbine.

Frits van den Berg presented a review to conclude there is no evidence found to show that infrasound causes diseases or afflictions different from normal sound, and that the ubiquitous presence of infrasound in the environment at levels close to or above that from wind turbines show from practice that such levels show no harm. Geoff Leventhall presented on a similar theme, that concluded people are being made sick, not by infrasound, but by anxiety and stress caused by an “illusory truth” that wind turbines cause harm.

Beyond that, there were the usual assortment of presentations of revised noise models, to show different calculations of the noise generation by and propagation from wind turbines. Several papers discussed revisions to international standards and those presenters were interested in receiving copies of the data I had presented showing that the international standards were not effective at addressing tonality or cyclical amplitude modulation, those “special qualities” that bother people more than just sound level.

If there was a low point to the conference, it was the number of presenters who raised the name Mariana Alvez-Pereira to criticize her work. It bodes ill for the future of the conference if it becomes a club of like-minded individuals, who gang up to criticize another without the person being present to defend themselves.

Letter sent to the offices of Ministers Yurek / Walker / Thompson in response to their offer for a follow up meeting (below).

Dear Ms. Yumbla, and also Ms. LaPierre in Bill Walker's Office, and Ms. Foxton in Lisa Thompson's Office:

This is a follow up to your request of April 22 for me to meet with Ministers Yurek, Walker, and Thompson on April 28.

As I noted in my reply, while I was unavailable at the time you offered, I had offered to be available if an alternate time could be scheduled. Members of the Multi Municipal Wind Turbine Working Group (MMWTWG) were also interested to learn of the previous meeting held with Minister Yurek on January 13th as a follow up to my presentation to Ministers Walker and Thompson at the MMWTWG.

In addition to discussing the issues raised by Minister Walker in his request of April 1st for the meeting with Minister Yurek, I am now able to provide a copy of my paper and presentation as delivered at the International Wind Turbine Noise Conference for review by either the Ministers or staff in their Ministries. While the paper was under "embargo" until the date of the conference, under the rules of the conference as author I retain copyright for my paper and presentation, and can now provide it, at your request. The paper outlined the need to modify the international standards to take account of the amplitude modulation and tonality which are not currently adequately assessed by the standards to address these main irritation issues. The presentation at the conference provided audible examples of the problematic situations as experienced in Ontario at the Enbridge Underwood and K2 wind power developments. Those at the conference who are involved in revisions to the International Standards were interested to receive copies of the sound files used with my presentation, which have been provided.

I certainly respect that the Ministers are busy with the issues of the pandemic, resulting in day to day decisions impacting many in the province, and the Cabinet members need to focus their attention to be effective. However, I believe a higher example was set for us all to strive to follow in that Jesus would pause at times to focus on the important needs of one, even when many jostled for his attention. Even though those impacted by wind turbines may be few compared to the overall population, it is important that the significant irritation that resulted from government decisions which continue to impact their lives be addressed. As Canada has put in place federal goals to encourage an increase in the number of wind turbines, it is important that we learn from mistakes we have made, to prevent harming many more in the future.

At the wind turbine noise conference, two ladies from Scotland were given an opportunity to participate in a conversation with one of the conference stalwarts, to outline their plight in living with wind farms. It was a familiar story, albeit spoken with a different accent, as they spoke of complaining for years of sleepless nights, with no result from their complaints. It was informative in the open discussion at the end of the conversation, that David Michaud of Health Canada observed, that these are the voices that we do not hear of in the literature studies, as their numbers are too small to appear in the overall population statistics. A common opinion expressed by the conference participants was we must listen to those impacted and address their concerns to make the industry healthy.

I am grateful that Ministers Yurek, Walker and Thompson have recognized the need to have their Ministries address the issues that impact citizens living with wind power developments in Ontario, and any information I may provide to the Ministers to help them as they try to make Ontario a better place, I'd be honoured to try to provide at a time convenient to the Ministers.

Sincerely,

Bill Palmer

Municipal Plans and Wind Turbines

Multi-Municipal Wind Turbine
Working Group
June 10, 2021

Ottawa Energy Plan – The Future?

Key Elements of Ottawa's Climate Change Plan

- Use of electricity to reduce carbon emissions
 - Car/bus transportation, heating
 - Doubling of demand for electricity
- Assuming Ontario grid is not carbon free
- Need local support for new electricity demand
 - Solution – extensive use of wind, solar panels
- Using eastern Ontario sites outside its boundaries
 - Ottawa Renewable Energy Cooperative is buying Quixote One plus Zurich Wind
- Canada Infrastructure Fund supporting \$57B cost

Provincial Policy Statement Guidance

- **Official Plans must align with PPS Guidance**
- **Helpful priorities identified in PPS**
 - Long term protection of farmland
 - Settlement area focus/land use compatibility
 - Provide opportunities for sustainable tourism
 - Buffers to protect aviation safety
 - Minimize impact on parks, nature reserves, etc.
- **Issue – Energy Supply**
 - Provide opportunities for development of renewable energy systems aligned with demand within the municipality

Zoning Aligns with Official Plans

- Official Plans set out general goals for zoning
- Many plans already have objectives reflecting PPS objectives – i.e. protecting farmland
- Need to be reviewed
 - Strengthen if required
 - Eliminate priority support for wind turbines
- Official Plans generally do not include specific details like set-backs.
 - Details provided in Zoning By-laws

Basic Content for Zoning By-laws

- **Define compatible uses for zoning designations**
 - Wind turbines are not a compatible use for prime farmland
 - Protecting scenic vistas in prime tourist areas
- **Define buffers for designated uses**
 - Designated growth areas, airports
 - Recreational trails and other natural areas
- **Define affected land uses**
 - Impacts – noise emissions, ice throw and shadow flicker
 - Residences, schools protected, add work locations, roads, etc.
 - Standard Ontario approach
 - Distance between turbine and point of concern
 - Other Option – boundary of property not controlled by project.

Options to Define Setbacks

- **Ontario's Reg. 359/09 Minimum Requirements**
 - 550 m from turbine base to centre of home
 - Blade length plus 10 m from roads, etc.
 - No restrictions on shadow flicker
- **Local zoning requirements can be greater than minimum**
- **Polish Institute of Public Health**
 - .5 to .7 km for audible noise (no provision for tonality)
 - 1.5 to 3 km for all noise emissions
 - .5 to .8 km for ice fragment throw
 - .5 to 1.4 km for turbine failure
 - 1.2 to 2.1 km for shadow flicker
- **Other jurisdictions use a wide range of set-backs**
 - 1.5 to 2.0 km or equivalent adjusted for turbine height – i.e. tower plus blade length

Approaches Reflect Local Views

- **Dutton-Dunwich**
 - Included 2 kilometre setback in official plan
- **Prince Edward County**
 - OP statement – Municipality does not support wind turbines
 - Wind turbines but only permitted in specified zones & up to 600 KW
- **West Lincoln (Current Proposal)**
 - Turbines under 10 KW allowed, larger turbines require official plan amendment
- **Kincardine**
 - Turbine policy provides good examples of setbacks/other provisions
 - Zoning needs to be amended to reflect these provisions
- **Grey Highlands**
 - Extensive policies were enacted some time ago

Conclusion

- **Clear requirements needed:**
 - Proponents review local zoning by-laws
 - Include a basic assessment in proposal:
 - **Does project meet local zoning requirements?**
 - No contact with local municipality required
 - Unwilling Host resolutions not considered
- **Questions/Comments?**

Changing Ownership of Ontario's Wind Turbine Projects

Development, Maturity and Climate Action Phases

Multi-Municipal Wind Turbine
Working Group
June 10, 2021

Development Phase

Green Energy and Green Economy Objectives

- Eliminate carbon emissions from coal plants
- Create 50,000 jobs:
 - Use high electricity rates to encourage Ontario small businesses to build projects.
 - Create new renewable energy companies to supply the world from Ontario.

Program Failed to Meet Objectives

- High electricity rates created “Energy Poverty”
- Coal plants closed before wind turbines in place.
- Few new permanent jobs created.
- Manufacturing facilities created have all closed.
 - Projects now supplied from off-shore

Who Benefited from Subsidies?

- **2/3 of capacity developed by foreign companies**
 - Mostly existing large players – Samsung, Pattern, NextERA, Capstone, EDPR, RES, wpd,
- **Canadian interest from oil and gas industry**
 - Enbridge, Suncor invested to improve environmental image
- **Some new Canadian companies**
 - Northland Power, Algonquin
- **29% of Canadian FIT contract recipients had Liberal Party connections.**
 - i.e. AIM PowerGen developed multiple projects. Company sold to large international firm.

Mature Phase

- When requirements for electricity met, the 2nd RFP process canceled and growth stopped.
- Foreign firms have taken profits from development phase; now focusing on other growth opportunities
- Organizations looking for high returns on investments acquiring projects.
 - Long term contracts with highly favourable terms
 - Perceived as no risk investments

Who Currently Benefits from Subsidies?

- CPP Investment Board and its partners now dominate the program

Share of Total FIT Revenue

| CPPIB Partnerships | CPPIB Share | Partner Share | Minority Share | Total |
|--------------------|--------------|---------------|----------------|--------------|
| Samsung | 6.8% | 6.8% | 1.3% | 14.9% |
| Axium | 3.5% | 3.3% | | 6.8% |
| Nigig | 2.8% | 2.8% | | 5.6% |
| Enbridge | 2.6% | 2.8% | | 5.4% |
| Total | 15.7% | 15.7% | 1.3% | 32.7% |

Other Major Participants

- **Axium Infrastructure**
 - Current total ownership – 17.3% of capacity
 - Increases to 19.1% when Nation Rise operational
- **Other firms with more than 5% of capacity**
 - Brookfield Renewable – 7.4%
 - NextERA – 6.8%
 - Samsung – 6.8%
 - Transalta – 6.5%
 - Boralex – 5.7%
 - Capstone – 4.7%
- **Remainder**
 - 21 companies with 23.8% of capacity

“Climate Action” Phase

- New clients created by drive to eliminate carbon emissions
 - Urban distribution companies i.e. Ottawa Hydro
 - Industrial companies/governments
- Pension and infrastructure funds meeting “green” mandates
- Cooperatives used to demonstrate community support
 - Ottawa Co-op seeking members in Huron, Bruce, Grey, Perth, Middlesex & Lambton as well as Eastern Ontario.
- Installing larger turbines would increase return from existing projects that are no longer limited by contract
 - No municipal input if using same sites

Alternate “Climate Action” Solutions

- Wind turbines as the solution failed before
 - Still unreliable; need back up
 - Costs – First Right to the Grid; Disposal of surplus power
- Ontario Power Generation plans to be 100% carbon neutral by 2040
 - Using small nuclear to replace gas plants
- Alternate carbon-free fuel sources being developed
 - Fuel cells for cars, buses and trains
- Constraints of current grid
 - Regional connection upgrades required
 - Capacity of local distribution to support increased demand
 - electric cars, electric heat, etc.

Conclusions

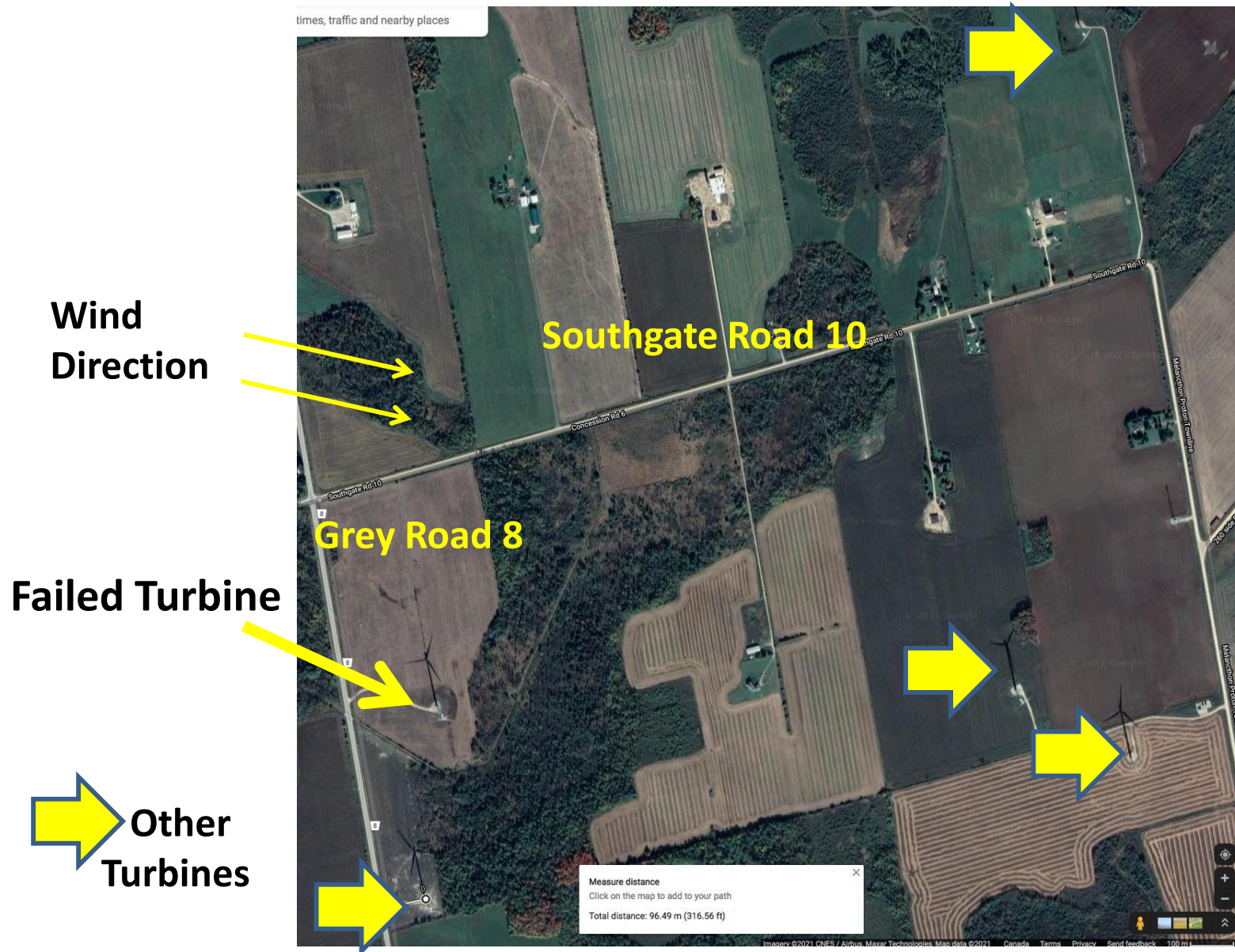
- **Learning**
 - Municipalities need to get zoning in place
 - Need municipal role in existing project upgrades
- **Questions/Discussion**

Turbine Failure: Capstone Skyway 8 Project

Multi-Municipal Wind Turbine
Working Group

July 8, 2021

Capstone Skyway 8 Project



Situation

Capstone Infrastructure's Skyway 8 Project in Southgate

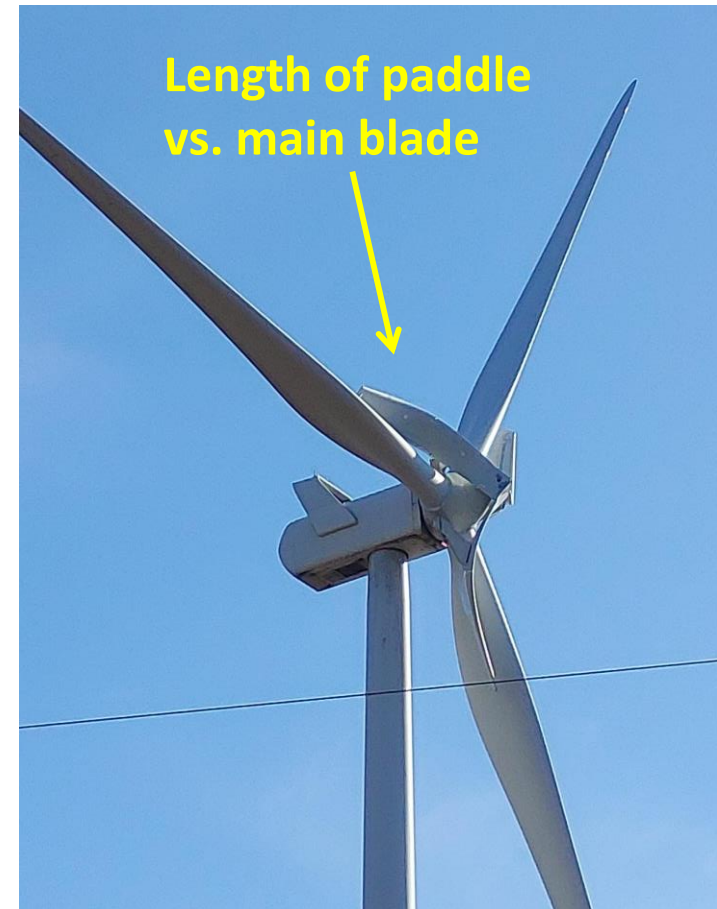
- 5 Vestas V100 turbines – 2@2.0 MW; 3@1.8 MW
- Turbine involved located about 195 m from road
- Operational since 2014

Recent Enhancements

- Secondary blades installed on one turbine.
- Capstone received \$1.9 M from federal Energy Innovation Program for a \$3.8 M project.
- MECP approved changes on September 11, 2018 and again on November 25, 2019.
- Required noise emission audits.
- Temporary upgrade to be removed by Jun 20, 2021.

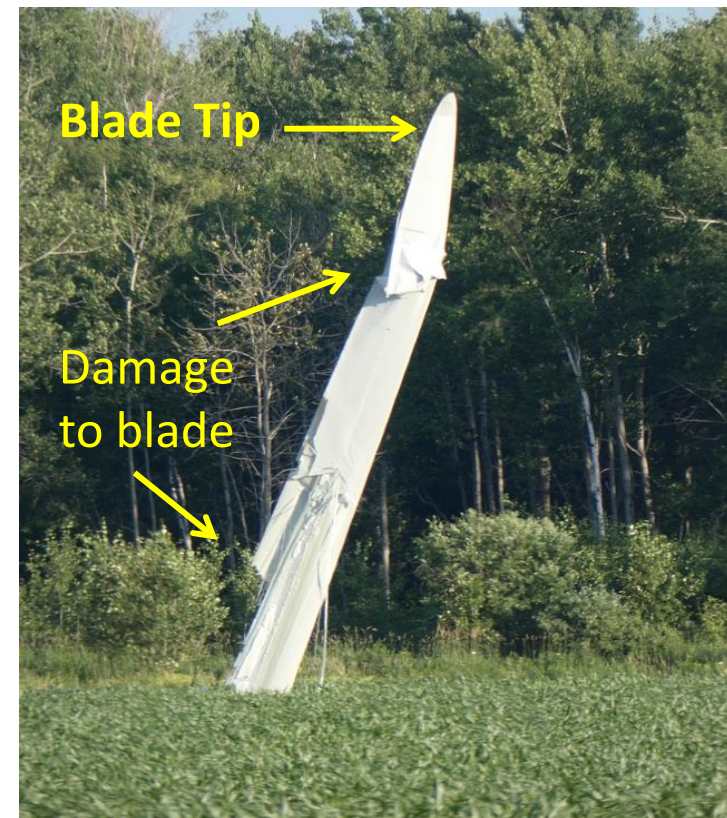
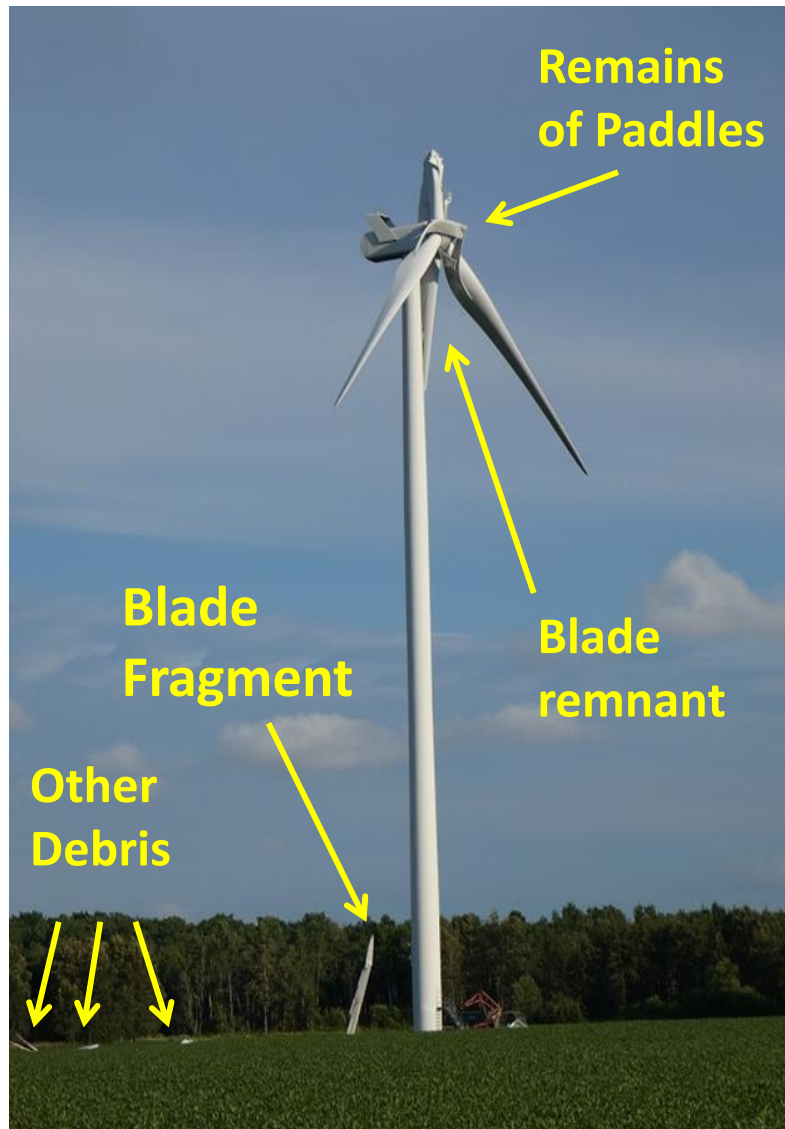
Biome Renewables – PowerCone

- Enhancement channels wind on to the blades
- Benefits claimed:
 - 13% increase in annual energy production
 - Lowers cut-in speeds, increases torque
 - Reduces turbulence, vibrations and loads



Installation as of June 15

Turbine Fails – Jun 30 9:40 a.m.



Debris field suggests that the turbine was rotating when it failed. Debris thrown rather than carried by wind.

Turbine Fails – Jun 30 9:40 a.m.

Close-up of blade stump and paddle



Road closed until Monday even though turbine meets standard setbacks.

Blade remnant hanging from stump poses safety threat



Initial Assessment

Observation

- At time of failure, wind speeds were about 7 m/s which is well below the turbine's maximum design wind speed.
 - Earlier in week, higher winds, tornados and lightning occurred in area.
 - Second turbine located immediately to the south not affected

Potential Causes

- Addition of device change both the static and dynamic loading on the IWT causing a blade failure?
- Device inadequately fastened to the hub. Did it became loose and strike the blade?
- Weather conditions before June 30 contributed to failure?
- Blade failed independent of the additional device?

Questions for Follow up

Federal Energy Innovation Program

- What engineering assessments were made of the proposal prior approval of grant?
- Did the secondary blades improve efficiency as proposed?

Ontario MECP

- What assessments of the impact of the change on turbine loading were completed before approval?
- Did the turbine operating logs indicate problems before the failure? If so, what actions were taken?
- What is the full extent of the debris field? Road closure suggests that the current setback is not sufficient to protect road users. What changes are proposed to these setbacks?

Municipal Zoning Bylaw Setbacks from Roads, Property Lines

MULTI-MUNICIPAL WIND TURBINE WORKING GROUP

TOM ALLWOOD, COUNCILLOR, GREY HIGHLANDS, CHAIR

STEVE ADAMS, COUNCILLOR, BROCKTON, VICE-CHAIR

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DRAFT LETTER TO SOLICIT NEW MEMBERS

As municipal leaders, we are aware that a wide selection of committees, forums, and working groups beckon for our time and attention. This is an invitation for your Council to participate in a working group, that as members we have found adds real value to our responsibility under the Municipal Act for the “health, safety, and well-being of persons” and the powers under the Act to regulate regarding noise and nuisance. While you might think, “but wind turbine issues do not apply to us” from experience we can attest that upper level government policies do change, and corporate and municipalities are considering wind turbine installation “to provide their needs” so protection of your citizens needs being prepared in advance.

This Committee shares municipal advice on by-laws, road use agreements, fire suppression requirements and other considerations that need to be considered before dealing with wind developers. The number of concrete trucks that travel down municipal roads to erect wind turbines takes a toll. The end of life storage of wind turbine blades can challenge landfill sites. This Committee is here to support municipalities and citizens and to become aware of issues and possible remedies regarding industrial wind turbines before it is too late to take proactive actions.

Concerned citizens have addressed this Committee advising of health problems they have experienced once wind turbines have been erected. These include lack of sleep, vibrations in the home and within the body, reverberation of sound in the home, and shadow flicker. Some individuals have such serious issues within their homes that they can no longer reside in the home. In addition, municipalities who have wind turbine projects have noted that what used to be a good sense of community has been eroded due to wind turbine projects. The issue has divided neighbours and even family members.

Landowners should be made aware of the very real possibility of liens, debentures and mortgages that may be registered upon their lands, making it difficult to obtain bank financing to maintain farming operations. Banks would be a second charge to any liens or mortgages registered on a property by wind turbine companies. Banks require that their mortgage interest be a first charge on lands and if a lien or mortgage is registered on title by a wind company, there is a real possibility that a bank may not proceed with financing.

Our Committee is currently comprised of municipalities from the Counties of Bruce, Grey, Huron and Niagara Region, but the issue of wind turbines is wider. By working together, can we share knowledge for our municipal response to protect our citizens. As a Working Group, it has given us the opportunity to invite participation at our meetings by Provincial MPPs and Ministry of the Environment officials, and to hear technical and municipal planning presentations related to the subject.

Each municipality wishing to participate appoints two elected officials and one citizen, providing the email address for each. A copy of the motion making the appointments is requested for our records.

A copy of the Working Group Terms of Reference is attached for your review. The Committee is governed by the Procedural By-laws of the Municipality of Arran-Elderslie, a copy of which is also attached for your review.

The Committee's annual fee is set at the beginning of each year. The fee has been waived for this year, and would permit your Council to participate on a "trial basis" from now to June 2022 without having to budget for a fee midway through the year. Annual membership rates are determined at the beginning of each year to be paid by June 1st. (Waved until June 2022). This yearly fee covers the cost of the Recording Secretary's salary, a donation to the Chesley Fire Hall for the use of their boardroom for our meetings, and miscellaneous costs for preparation of material for circulation. A small surplus is maintained for donation to a defence fund in case any municipal bylaw might be challenged by a developer. The yearly fee is paid to the "Municipality of Arran-Elderslie"; and sent directly to the Municipal Office c/o Clerk.

The group usually meets once a month on the second Thursday evening. Pre-pandemic we met in person at the Chesley Fire Hall, in the Municipality of Arran-Elderslie. During the pandemic we have met virtually by Zoom, and foresee that in the future, post-pandemic a hybrid meeting format might be possible to allow nearer members to meet in person, while remote members might participate by Zoom to avoid long distance or adverse weather travel.

Agendas are circulated to members and the Clerks of the participating municipalities prior to each meeting and approved minutes are distributed similarly.

We extend this invitation to your Council to participate in the Multi-Municipal Wind Turbine Working Group. Should you have any questions or concerns, please do not hesitate to contact me.

Yours truly,

Teresa Gowan,
Recording Secretary, on behalf of the Chair, Tom Allwood

(With recommendation that letter be sent by the Chair, rather than the Secreatry)