PRESENT: Peter Bardaglio, Councilperson Mike Carpenter, Martha Fischer, Marcus Gingerich, Jude Lemke, Councilperson Michael Miles, Julie Schroeder, Rob Tesori

ABSENT: Charlies Elrod, Mimi Mehaffey, Sue Thompson

OTHER: Councilperson Henry Hansteen

Michael Miles called the meeting to order at 7:00 p.m. and lead the assemblage in the Pledge of Allegiance to the Flag.

Approval of Minutes (3-01-16)

Corrections to March 1, Wind Advisory Committee Minutes

Page 1 4th paragraph – change BOWF does not do this change to BOWF does do the hiring.

Page 2 6th paragraph – change The EIS is not available to the public until the Town Board has approved its acceptance change to The DEIS is not available to the public until the Town Board has accepted it.

Page 3 Change decommissioning of $125,000 change to decommissioning of a total of $875,000.

Page 3 Top – The compromise is a setback of 1500 ft. to the property line. The 2 kilometers would be a suggestion in the final Enfield Wind Energy law.

Mike Carpenter noted that Charles Elrod was not in attendance and they invited Julie Schroeder to step in as an alternate for Charles Elrod.

Page 3 Discussion regarding if liability insurance is required by state law. Mike Carpenter stated he did not know the law but any New York State municipalities you build in contractors carry liability insurance. Suggested Alan Teeter, Code Enforcer, might know the law. Wind law does not require insurance, but some other law may require insurance. Jude stated that it was liability insurance for the whole project.

Page 3 reference Enfield wind law states 60 decibels above ambient sound it shouldn't have been above ambient, what they meant was 60 decibels needs to be reworded.

Page 4 add statement which was also made by Mimi Mehaffey about the world statement (**needs to provide statement**).

Page 4 addition: Jude Lemke also said she felt they should focus at the moment on the BOWF project then the Committee can pick up the full law when they have more time to look at it.

Page 5 bottom paragraph - Coating on the blades to protect from breakage change to coating on the blades to protect from ice throws and corrosion.

Page 7 Judith Rothenberg - take out "the group has spoken to between 200-300 people on the wind farm project."

Motion was made by Michael Miles to approve the March 1 minutes as corrected. Motion passed to approve minutes unanimously.

Old Business

Michael Miles reminded everyone of the windadvisory@townofenfield.org e-mail to send articles/research/comments/suggestions to and the https://trello.com/enfieldwindfarmadvisorycommittee site for research articles, laws, and minutes of the Committee.

Michael Miles reminded the audience to keep all comments until the end of the meeting during the Privilege of the Floor.

Update on Technical Experts

Peter Bardaglio asked Jim Manwell, University of Massachusetts, to speak to the Committee he is waiting to hear back. He also informed the Committee that Bob Frick, GE, is having trouble pinning down a sound expert and suggested providing a set of questions for an acoustic engineer to respond to. The Committee decided that would be good to provide a set of questions to GE, Bob Frick. Bob Frick provided information regarding Wind projects involving the 2.3.07 turbines. There are wind turbines being installed in Texas, northeastern Brazil and Allegany County Maryland - Dans Mountain Wind Farm. The wind turbines have not been installed in Texas but not clear if they have been installed in Brazil but are planning on using something like 83 of the wind turbines.

Peter Bardaglio issued a concern regarding the expert for the meeting tonight. He stated that Rick James, is a member of the Institute of Noise Control Engineers. He is not certified by the INCE as an acoustical engineer and is not a registered professional engineer in any jurisdiction. He said he would be glad to pose this question to him and get a response to that. Rick James was identified by the Environmental Review Tribunal in Ontario as going beyond his area of expertise that he was trying to provide evidence beyond matters of acoustic and control engineering and he has agreed in the past not to include references to epidemiology studies and that he is simply not qualified on speaking of health impacts of wind turbines. There is a finding from the Environmental Review Tribunal of Ontario, it is not his finding:
The Tribunal considered the submissions of the parties on this issue and qualified Mr. James to given opinion evidence on matters related to acoustics and noise control engineering and wind turbines. The Tribunal excluded from its consideration evidence provided by Mr. James concerning the health effects of wind turbines, and epidemiology.

Peter Bardaglio stated he doesn't think anyone should ask Rick James any questions as an expert on health impact concerning wind turbines. This issue was a legal finding from the Environmental Tribunal in Ontario and can simply answers questions about noise and acoustics.

Jude Lemke thought this was taken a little bit out of context he was certified to speak about acoustics and they didn't ask to certify him to speak about health issues in that Tribunal. That doesn't mean he is or not, she is interested in what he has to say.

Peter Bardaglio pointed out that the Committee agreed to only invite non-biased scientists he has testified in case after case on the issue of wind power in the negative he is not even a registered professional engineer in any jurisdiction. Rick James is one of the guys in the ant wind forces funded by the Coke brothers in the Heartland Institute dragged out for every one of these cases he is not a non-biased scientist. Peter Bardaglio asked for a resolution to make it clear what his status on this point was.

Michael Miles stated that Peter Bardaglio has made objections to their expert tonight and asked how the Committee feels about going forward with those objects. They have a meeting set up, do they want to continue with the expert testimony with the understanding of Peter Bardaglio's objecting based on the bias?

Marcus Gingerich asked if the acoustic engineer from GE and other speakers also have a bias. Peter Bardaglio stated he was only asking that they limit questions to noise and acoustics.

Martha Fischer felt that Rick James was not qualified on human physiology and they should focus questions only on sound.

Rob Tesori would like to know about the sound and acoustics and that it's ok to limit it to that.

There was discussion on a [list of questions?] But they didn't think the questions are health related.

Peter Bardaglio read another passage from the Tribunal "The Approval Holder states that Mr. James has a bias against wind development and purported to give evidence beyond the scope of his expertise, and in so doing breached his obligations as an independent expert and the Tribunal's Practice Direction for Technical and Opinion Evidence."

Peter Bardaglio stated he wanted it on the record and he didn't care what the Committee decides to do, so if anything happens on down the road such as legal actions, this is on record.

Michael Miles stated that Peter Bardaglio's opposition on health issues is noted.

Jude Lemke stated that she felt Peter Bardaglio's was trying to limit testimony for legal litigation purposes and is not sure they want to limit what we get on the record either.

Michael Miles pointed out that there were a lot of conversations going on within the last few days among Committee members. He is feeling a little uncomfortable about this dispute. He doesn't want the Committee to turn into a platform about each of the disputes.

Mike Carpenter thought it was fine to talk to Rick James . He felt they needed to get real information. He has a pretty clear understanding in his mind on how to proceed with this Committee. The whole issue of noise and sound is so individually specific there is no way to meet a standard that is going to suit everyone. They are going to have to find compromises and this is going to have to happen at the Town Board level.

Michael Miles felt they should go ahead with the interview.

Julie Schroeder did not think that there was anything objectionable to any of the questions.

Peter Bardaglio stated he would like to see a list of the questions he had not seen one. Mike Carpenter stated he had not seen one. Michael Miles said they got an email it was in reference to setting up the meeting with Rick James from Jude Lemke.

The Committee decided to go ahead with the Rick James interview.

Update on Supplemental Draft EIS

It was reported that the Draft Supplemental EIS has been submitted to the Town Board. The Board will vote on if they will accept the document at their next meeting.

Proposal for Wind Farm Advisory Committee

Peter Bardaglio shared the response to the Proposal from the BOWF (handout given out).

- Proposal to ask for noise levels that are lower than are there is not a compromise.
- Fine on Shadow Flicker, very clear on setbacks and they meet they GE standards in regard to that along with the Enfield Town law.
- Light is going to be minimized.
- Can talk about inspections.
- Liability insurance can be discussed related to the liability insurance for the operation.
- No BOWF did not say yes to everything. Compromise involves some yes and no.

Discussion:

- In regard to setback if 1500 ft. it would have to be 3000 ft. in every direction. Have to lease additional land to meet the setbacks.

- Infringement on their property rights.
- Involuntary easement on property. An easement not being compensated.
- Setbacks need to be 1500 ft. from property line doesn't state participating or non-participating. This needs to be cleared up.
- Noise 40 dBa is like living in urban setting. Most measurements were made on the west side of the hill, windward site. This will push up the base line ambient is going to say it is much lower.
- BOWF like to stick to actual evidence as stated by Peter Goldberg, Tech Environ. Consultant
- Clarification on setback to property lines to non-participating can Peter Bardaglio comment on this? No BOWF will have look at it.

Michael Miles asked where the Committee goes from here. Members stated they would like to hear what Rick James has to say. It was felt that the World Health Organization document read last week needs more detail. What level details are they talking about?

Low frequency was not answered by BOWF in Proposal response. Peter Bardaglio stated that the EIS dealt with the low frequency question.

Martha Fischer felt there wasn't data on any wind farm that goes up regarding health studies. No one is funding health data studies.

Technical Expert:

Rick James, Principal. Consultant for E-Coustic Solutions, of Okemos, Michigan.

Rich James introduced himself and presented his background history. He stated a complete bio was provided to Jude Lemke to share with the Committee.

Peter Bardaglio asked Rick James as member of the Institute of Noise Control Engineers, if he was certified by the INCE as an acoustical engineer?

Yes he has. The Institute has different routes to be certified. He is a full member since 1973 this membership is before certification was done.

Is there any jurisdiction where he is a registered engineer?

No. There is no state that requires noise engineers to be registered except for Oregon.

Questions from list:
Can I (Rick James) talk about World Health Organization (WHO) designations - limited day and night.

WHO has published a series of guidelines going back to the late 60's. In 2000 the European Union funded a large medical research grant to the WHO to redo all medical research with updated equipment. They released a report in 2009 for night time guidelines. The report was labeled for European but still applies to U.S.

35 to 40 dBa is in line with the most recent medical studies done. He discussed different areas of noise levels – traffic, etc. He will send references to the cardiovascular problems with the higher dBa reports.

Is 35 dBa at night acceptable?

35 should be the level outside the home. It would allow a person to have their windows open and to sleep although it would be a dramatic change from current situation. Outside at night in a rural area you can hear sounds come from 1/2 to 1 mile away sound levels are probably around 25 dBa at night.

Martha Fischer stated if the night time sound is 25 dBa the wind is not blowing so the wind turbine is not making sound.

That is not necessarily true. No wind on the ground to mask the wind turbines and plenty of wind, above tree tops (temperature inversion) to power the wind turbines.

What is the greatest distance from wind turbines that I (Rick James) have been able to measure the acoustic energy and low frequency below 20 hertz and how does this distance measure to the audile rage?

- Blade pass frequency allows the blade pressure sensations people describe as pressure pulsations.
- Tones are pulses a sensation not an audible effect 60 dB can be sensed.
- Studies done by Paul Schomer, Illinois, how noise effects people how do sounds impact people.
- Shirley wind project Wisconsin, identified a home 3,000 ft. away from the wind turbine significant infrasound effects. Called for a setback of a 1 mile to 2 ½ miles.
- Normal sound is fainter as you go further away low infrasounds bounce off the atmosphere.
- Is entirely unpredictable can be problem in one home and not the other.

Measuring wind turbine noise how much reduction have I (Rick James) seen in noise levels, audible range noise and low infrequency noises? Is there a strong correlation between infrasound and blade length and swipe area?

Technology applied to new wind turbines in trying to design quieter ones and to have larger wind turbines, more noise, combined with technology to reduce the sound level, this has not changed the sound of the wind turbine in the past ten years.

Manufacturer smaller wind turbines are better off.

The larger wind turbines the blades move slower and will produce more of the effect of people having nausea and feel the pulses.

Blade length which defines the sweep area is the factor that has most impact. The longer blades response closer to regions to cause complaints of nausea to pressure related stuffy feeling.

I'm I (Rick James) familiar with the guidelines set up by NASA/ DOE/ NREL back in the 1980's are they still valid?

Yes I have testified to them all the time. Yes they are valid if reproduced today.

What would be a guide for our town today lacking the current studies.

Good size buffer zone to protect homes. My (Rick James) recommendations for the past 8 years have been 1 1/4 miles and no more than 35 dBa at the home of the property line. 1500 feet is not adequate distance for machines with blades as large as football fields.

For the infrasound/low frequency means much larger. Cluster the wind turbines together as far as they can get from the homes.

How has a guaranteed buy out been presented in some of these area/ fair market value?

As time goes by people are associating their health effects to the wind turbines and people are taking advantage of buy outs financially benefiting from it. It has to be carefully done, an escape clause should be added.

Do you ever see the actual measured sound levels exceeding the simulated sound levels at receptors? If so how much and how often?

Models are not designed for wind turbines the standards that define the formulas in the models they do not apply to sources 30 meters above the ground wind turbines are a lot better than 30 meters above the ground. They also have other restrictions.

David Hessler of Hessler Associates and Ontario research documents report sound 5 db above the models levels are frequently observed. When they go out to measure for complaints they find the sound levels are 5 db or more of what the model prediction said. At night when it is particularly calm at the ground and windy above at the blade level the sound level are 5 db higher than what the model predicts. It has been suggested that 5 db offset to be the minimum.

How reliable are the background noise level measurements when they are only measured at certain points?

Defined by American Nationals Standards part 12.9 #3 tells how to give a standard background noise measurement in the backyard, this is where people expect it to be quiet. That is the difference is where the reading is done. The Standards required a certain standard on how to filter out insects and certain background noise levels. Where and how readings are taken is very critical.

If you take measurement on the west side of hill where the wind is, there will be more measurement of the sound due to the winds moving thru leaves and moving around trees. It is appropriate to take measurements on the opposite side where people live.

Is there a good reason to measuring infrasound in sound pressure than using weighting?

Proper way to measure infrasound is not use any weighting at all. Making a recording using a microphone that is precise and accurate below the wind turbine blade sounds and using proper technical equipment.

Do you see the outside versus inside home noise levels as actually being higher for infrasound or vice versa?

Inside the house we block out most of the higher frequency sound from outside as where the lower or infrasound passes right through on a beta especially if there is an

open window. Wind turbine sound wave length moves through the roof of the house as it is the weakness acoustical part of the home. Homes are not designed to protect from noise sources above your head. Inside is the typical worst case for infrasound inside the home than outside.

Can I (Rick James) comment on the standards means on which sound is measured?
Different techniques for measurement of audible sounds than for infrasounds.

Do you have recommend procedure for measurement of noise for full audible spectra along with the low infrastructure sound?
American national standards S12.9 part 3 gives instruction on how to do audible sound testing. These are the kind of American national standards you want to put in a township noise ordinance to guide them on how to do testing.

Are there reliable instruments to measure sound down to 1 hert even lower.
There is a microbaromenter. Professional costs 8 to 12 thousand dollars. Can't measure any sound below 6 hertz.

Is there any value for residents to make their own base line infrasound testing.
There is always a benefit to getting a baseline. Steve Cooper, Australia, has data published on this. Would it be a waste of time of the community to do because it would be disregarded by any in authority? Yes it would be challenged.

Are there any real standards or governing bodies in place to monitor safety in wind turbines.
No these are new because of renewal and green energy. There are no good standards. There are audible noise standards in New Hampshire, Somerset, NY and Town of Hamilton, NY. Providence in Ontario have excellent standards dBa and dBc, But for the infrasound no one has handled that.

I'm I (Rick James) familiar with the GE 2.3.107?
Yes but only in general. He has not seen data yet on summary of results of the models.

How is the wind turbine infrasound different than other infrasound?
Infrasound is around us all the time. Natural infrasound doesn't have tones or pulses. Sound from wind, waves, heavy traffic are general steady and that is the big difference.

How does blade length affect the sound.
The longer the blade the deeper/lower the pitch more of the pulse.

Can individual component blades of the tower work with each other creating sound to resonante off of each other?
All of them resonant sound. Wind turbines work as a tuning fork. When all turbines are turned off, Rick James stated he could see that power resonant, in his data

results. Anything that is long and skinny that is pushed by the wind resonates. Multiple wind turbines work together, churning wind creates the problem even worse the noise.

Why is directly under the wind turbine the quietest spot?

Sound is projected off the blade and projected outwards.

What is the best configuration of multiple wind turbines to minimize the effects.

Rick James stated he was not the person to say what the best configuration was. He said the wind turbines that are mixed, scattered throughout the community is not the optimum. The optimum setup in Europe they put wind turbines in rows with enough distances between each row so the wakes can dissipate around the wind turbines and where people aren't living.

Lower frequency better or worse than higher frequency?

High frequency you hear lower frequency you feel. Better or worse is subjective.

What in your experience is the minimal decibel level at a resident that is accepted?

This should be maximum dBa level, 35 dBa at night. No more than 40 dBa at night and no more than 50 dBc that would be a functional equivalent to it. C weighted and A weighted difference needs to be 20 this is considered in compliance. The WHO says it needs to be at least 15 to avoid annoyance.

What is the difference between hills and flat land in the wind turbines, how would that effect our experience, it is hilly here?

Big difference is when a wind turbine is elevated above a home sound is coming through the roof it is a matter of proximity and elevation difference. Ridge mounted wind turbines have two complicating figures - one side has shelter from the wind so wind turbines more likely to annoy. Air over ridge is very turbulent so can create more of the infrasound and pulsing sound. A distance of 1 ¼ miles on flat land to avoid health issues and double that distance in highly elevated.

World Health Organization standard for no observed adverse effects level average is 40 dBa at night?

The 40 dBa outside a home assuming the wind turbines will run all night is the threshold for consistent effects you know when adverse health effects occur. Between 30 and 40 is when vulnerable older adults and children are disturbed. A good split level is 30 dBa.

How much does 2 dBa make to human ear?

3 dBa differences in sound are where you notice a change. Change in audibility is a protective factor to account for the lower frequency that dBa ignores.

The Enfield Final EIS was approved so that no non-participant residents will have an annual average night level of 37 dBa.

WHO 2009 document expressed their limit in the terms yearly average. In the text of the document it is not about average sound levels it is about the nights that sound levels are excessive. The levels promote conditions for people who are most in need of

sleep, children and seniors, how they get the sleep they need in short periods of time not about the annual average.

What is the 8 hour guidance from the WHO at night?
Different communities have different standard times. Average night sound should not exceed 40 dBa.

Rick James explained the different time frame of how he ran his research models.

Peter Bardaglio asked how many cases he testified in regarding wind farms. Rick James answered he had been in over 60 communities, 30 advising clinics or law suits. Peter Bardaglio asked if he could send the Committee a case where he supported a wind farm project. Rick James answered he was never hired for those.

The Committee thanked Rick James for sharing all his information.

Peter Bardaglio stated he looked up on the web, the 8 hour average recommend by the World Health Organization for night time it was 45 dBa the annual average should not be any higher than 45 and BOWF is 37 dBa. They do fall within the World Health Organization guidelines.

The Committee discussed the issue of the different "health issue" papers placed on the Trello site; reports only reviewing other reports; the fact that yes wind turbines create noise, yes people are annoyed by the noise, no they can't come up a definitive yes that wind turbine noises cause xyz diseases; someone needs to put up the money and do a study. Martha Fischer will send to Committee members a copy of the Schmidt and Kokker, Health Effects Related to Wind Turbine paper.

Privilege of the Floor
Dawn Drake, 105 Griffin Road - Our hill is so quiet at night you can hear the train in Newfield. Thinks they will have big issues at night with the Wind Turbines.

Cliff Newhart, 753 Black Oak Road - Is this in official meeting? Did not see anyone taking minutes. Michael Miles responded the minutes are being recorded. Sue Thompson is sick and Alice Linton had a previous engagement she could not cancel.

Michael Miles adjourned the meeting at 9:46 p.m.

Respectfully submitted, Sue Thompson, Recording Secretary