

Town of Fort Fairfield
Wind Energy Technical Review Committee
Council Chambers
Monday, February 23, 2015
6:00 P.M.

Members: Dick Langley, Jim Everett, Carl Young, Todd Maynard, John Herold,
Tim Goff, Michael Bosse, Heather Cassidy, David McCrea
and Phil Christensen

Excused: Brent Churchill

Also Present: Tony Levesque

Citizens: 1

I. Call to Order – Richard Langley, Esq. – Committee Chair

II. Review/Acceptance of Minutes of February 9, 2015.

Motion: Carl Young moved to approve Minutes of February 9, 2015 as presented.

Second: Phil Christensen

Vote – All affirmative

Discussion: Tim – I would just like to point out that there is a change to these minutes from the minutes that you received via email. We changed the last page to reflect a little bit of what was going on in a cross conversation at the end of the last meeting we held. Phil had asked what happened to the comments that come into the wind committee via the website. I would assume you might want to bring that up under “Other”, what the protocols are and if the committee wants to change the way those emails are handled in the future. That conversation kind of occurred so we want to reflect that in the minutes.

III. Old Business –

A. Review / Discuss – Permit and Operational License Requirements-

Dick - Didn't we do this last week?

Tim – We brought this forward at the last meeting when we were asked to add the state model language to what we had already proposed. So Tony and I sat down and we hammered it out. You will see sections underlined because we felt this section would all be subject to what the actual numbers are changed to in the future. Anything that is in bold, reflect things that may impact how this document is read. There isn't a lot that we changed, I believe if you go under “9.7” some language in “1” is really one of the bigger changes that we made. And we changed from 10 to 14 days the amount time by which something would have to be mailed out, because that's how our land use regulation is. So that is the major change in there and there are a few other minor changes, a lot of it required some creative use of type 1, type 2, and type 3 because the state model went 1A, 1B, 2, 3 and we have adopted a chart that goes 1, 2, 3, and 4.

Dick – Am I correct, I think we talked about this in the context of how we do that, Carl don't you want to talk about the language?

Carl – That's fine, now that I understand after the last meeting how that is supposed to work. What I provided was work that I had done on those two sections prior to the last meeting and I just felt that I didn't want to waste that time and effort because there

are some differences. So I sent them to Tim just to have them distributed so people would have them when we eventually get to going back to the nitty- gritty nuts and bolts kind of thing. That's all that is.

Tony - So everybody should have gotten copies of what Carl's notes and suggestions were.

Carl – I sent them to Tim and he transmitted them, everybody has them and they can see what the differences are and what not, like Dick's says when we come back later.

Dick – So with that in mind is there any other old business?

B. Review/Discuss – Permitting Authority – No discussion

IV. New Business

A. Discussion – Decibel Levels – Day/Night –

Dick – My thinking on this was we kind of bounced around this for some time, but we talked about it a lot. Do you think that you can put some numbers out there that may or may not be the consensus. But at least we would have some numbers out there thinking it might lead us to the tunnel quicker. First, I have two questions, I think we have got to decide if we are going to adopt a flat decibel level, night level/day level which is the typical ordinance structure or the ambient sound level at a given location plus a number. I don't know if people are comfortable taking a position on this now and if they are I will just go around the table. I think the first question I would ask is which way we are going to measure, ambient plus or outright decibel levels. Anyone want to volunteer, if not I will start with Heather.

John – I think if we have ambient plus that is going to vary obviously from location to location, from area to area and it's probably going to make it much more difficult if not impossible to have one technical level or technical body for the project as a whole. As each generator or parts of the project will be possibly subjected to different ambient plus standards. I think they should all be able to run at the same level regardless of what the ambient is.

Dick – I suppose what you are saying by definition, limit the closest turbine to a neighboring boundary line to ambient plus and every other turbine by definition would be further away.

John – No, not exactly, I am going to say if you take a stretch of road, let's take the Murphy Road for an example that may not be a bad example either. An ambient plus at the southern end of it would be rather quiet, there is little activity. But if you take ambient plus in the northern end of it, out by the landfill, there is a lot of activity there and it's going to raise the ambient level.

Carl – So you are suggesting that we should just go with a decibel level.

John - Well, that seems to be a rather expedient way to do it. It simplifies things a lot in my mind any way. If we plan at every location you are going to have different standards for each generator. Which isn't necessarily a bad thing, but it certainly complicates the whole

thing.

Carl - Yeah, but I think that because of what you just said, if we set a standard and I will just pick a number, "42" decibels across the board. There is going to be places where that doesn't work. Because of things like topography and what not, barriers, trees, hills all of those kinds of things that affect the level and I think it might be important to have to meet the ambient plus at any given location, pure and simple. If that means 3 of 20 turbines have to be different and placed differently and set differently so be it. That's on the project developer.

Todd – But when you say ambient plus, how are you measuring it. Is it going to be a scale from different times of the year to come up with an average number? Or is it going to be whenever someone comes to test that site? Because you're talking a lot of range there.

Carl – I am inclined to require four measurements before anything ever starts, or seasonal if you will. Measurements to determine ambience and go from there. That might be a significant difference between winter, summer and whatever. I think from the stand point of non-participant proprietor, I think it is important, that be done. It's not unreasonable in the sense that there are other ordinances that have in fact required those kinds of multiple measurements of ambience. That's just my position to go with the ambience with like I said four, pre-project measurements and not only the four but also the day and night. Also it is a lot of work on the project people.

Todd – So you are suggesting four separate measurements at four times of the year, different times of the day.

Carl – Yes, minimum of eight, you have day, night and I think that is very important and four times a year simply because of seasonal difference that we have.

Todd – So your suggestion is that it would have to be an engineering firm of some sort.

Carl – Absolutely.

John - So what do you do if you encounter a particularly noisy, loud area and that ambient reading in that area average is pretty high.

Carl – So be it.

John – So do you let it, maybe its already ambient at your 55 decibels. So now you want to raise it up and let it be 60.

Carl - You can put a number, you can put a maximum if you care to. That's one way to handle that, you can always say its ambient plus 5 not to exceed 50, and that is just picking a number. You can take care of it that way.

John – To allow a generator or turbine, two or three on one end of the project where ambient is high to exceed that by whatever amount and may be the whole thing is 60. Whereas on the other end of the project maybe the ambient is 35 and your requiring it to be 40.

Carl – Yes and I may put a maximum on the upper end. I may say that no matter where you are regardless of ambient you can never exceed “X” decibels.

John – That was my other point to begin with, that maybe the best way to do it.

Carl - But see that with the ambient changes from one end of the project to the other. Where the ambient is 35 and you say it can't exceed 50. Well that's pretty noisy for the 35 ambient.

John - Yes it is but if you call it 40 project wide you are taking care of the interest of 35 and you haven't appreciatively added to the intrusiveness of the noise from the noisy end.

Carl – But then on the north end you can't have any turbines because they are going to exceed.

Tony - You may not add to it.

Mike – As someone who lives on the south end of the Murphy Road and since you used that as an example. The ambient noise level from yesterday to today is dramatic, so I guess how, maybe this is up to the engineer. I am asking not to be argumentative, but I am just asking the questions because I don't know how you would account for that? The fact that yesterday was an extremely calm day and this morning you go out there and you have a hard time to hear yourself think.

Carl - That's the engineering firm that takes that into account.

Phil – They have the L90

Todd – They wouldn't measure in inclement weather.

Carl – No, but as Phil suggested you can handle that with this L90 kind of thing and its probably going to be that no matter what standards we use its going to be “X” percentage of the time that somebody is going to say it's noisy and we also have to take into account A and C weighted. Can't just say A weight, got to have A weighted and C Weighted.

John - Well based on the demonstration that we had we couldn't measure lower than 42 decibels, which was the noise the projector was omitting. I have, along with several others that I have talked to, 35 night is going to preclude the project. I would say somewhere between 40-42 at night would be a starting point and barring people who do shift work at night and sleep during the day, things like that. It seems that most of the other standards are around 50 or 55. A question was raised, why not have the same standards for day and night? I guess you are getting back to baseline plus whatever. So I guess I would say 40/50.

Jim – When we were at Mars Hill, and listening to them explaining that when you are at the low-end that is improbable for them to even come and build or we are just saying we don't want them.

John – That was my impression of the ordinance that requires 35 at night.

Jim – He was talking 40-45, you get below that and for a company to come in and a town holds them to that restriction, the company says it's not worth for them to even attempt.

Carl – If you work with ambience then it is on the project developers to come in and say “Yeah I really think I want to do this and I am willing to pay the \$25,000 or whatever the price is to hire a firm to come in and determine whether or not they can meet these ambient levels or not. Rather than just say 35 and he says I can't meet that so I am history. Or you say 50 and everyone on the planet says I can meet that, but the town's people are going nuts because of it all.

Dick – I thought the guy you were talking about Jim was a little defensive, his attitude seemed to be this is all good and if you don't see that you have a problem. I would tend to take that 42 comment with a grain of salt. That was my attitude at the time, he was pretty pro-turbine not objective.

Tony – Your duty is to establish a standard that's enforceable that reflects the majority of the interest in Fort Fairfield, if not a super majority. So that you are not saying that we can't create something that improves their bottom line, then we will change it. I think the message should be based upon the information provided to you, these standards appears to low or too high and come to some consensus as to where the comfort level should be in our Town and then that company will make the economic decision whether they do want to or don't want to offer noise easements so that those people that are closer than the proximity for that decibel will either make the decision whether they will or will not sign the noise easement. I don't think anybody is going to get a license in the State of Maine if they exceed the States rules.

Dick – What are those now?

Tony – I don't know off the top of my head, but I thought 45 or 55 which was on the high side.

Todd – The State model says that at a protected location with living and sleeping quarters within 500 feet it is 45 dBA between 7pm and 7am and 55 dBA between 7 AM and 7 PM.

Tony - I think you guys are trying to have a decibel level at the property line not quarters. I don't agree with 45 or 55, I think it is up to you guys to discern what you think is reasonable based on the facts and figures that been provided to you by either others studies or your own. But I wouldn't worry about their economic bottom line. Make their decision on standards.

Phil – I think this is the most important discussion that we will have. I say somewhere around 90% of the public are concerned about windmills, their noise. The developers know that and that is why they are trying to reduce the production of noise from their equipment. That's the biggest complaint, sure there is ice and flicker and all of that, most people perceive this as a problem with noise. I did a little reconnaissance too and it varies a lot right here in Fort Fairfield. I looked at the north end of Center Limestone Road its quiet, it's very quiet. Out there yesterday you could hear the crow's wings across the road. Then I looked out on the Forest Ave. and that's quite a bit nosier, you can hear all of the traffic over on 1A. It varies a lot and that's why I think Carl is absolutely right, it has to be some level above because we are asking people if they are not participants to give up something, some sort of increase above

what they are used to. If they are used to 25 out on the other end of the Center Limestone Road asking them to go to 45 that's about 16 times as loud as it is now. One of the things I learned the most about Professor Horton's presentation you can perceive a 5 decibel increase whether it's 45 to 50 or 50 to 55 the human ear can perceive that very easily. 2 or 3 decibels you don't notice it, but 5 you notice it. I can tell you that a 5 decibel increase out where I live I won't hear the, not that I need to, but you won't hear the wings of the Canadian Geese in the summer time. We are asking people who are non-participants to change and I think Carl is right if you ask them to suffer with a 5 decibel increase it's significant, whether they have 25 now or 45 now.

Carl – Not only that, if you pick a number, is it going to be A weighted or C weighted? I think you have to do both so you're into that kind of stuff anyway.

Phil – Now down here on Main Street, I can't carry on a conversation with any one across the street. I live 1200 to 1500 feet from Glenn Campbell and I can talk to him a lot of times. There is a huge difference in different place around town, not that there is going to be windmills in town.

Carl – That's another question that I had in my mind, when we talk about non-participating border, are we going to differentiate between the urban area of town, is it all considered to be non-participating, right from square one? So that whole outline is where we are starting to talk from or are we going to be talking non-participant each individual residence all through the town?

Tony – A good way to look at it might be the urban growth area compared to the rural area.

Carl – And the commercial industrial.

Tony – I think the industrial is 100% in the urban, except for Lucerne Farms.

Carl – That was just another question that I had, would it come into play relative to defining non-participant, as the whole urban boundary going to be non-participating inside of that?

Mike – Why would there need to be a need to even take that into consideration, there are so many properties that could be non-participant in this community that could rule out a project coming in anyway.

Carl – Just from the stand point, the only thing that came into my mind was because of the citizenry. If we said the boundary is all urban area and the inside of that is non-participating that was just a question that came up.

Phil - That's probably a good idea, because they are going to draw a decibel map of the various property lines and they are going to measure the decibels 8 times and they are going to draw a map of 45 decibels at existing conditions. I would say that most of the area that you are talking about is between 40 and 45 all the time. Then they will draw different decibel lines and they can just locate their wind mills accordingly, just like they will have lines too, distance from roads, distance from non-participants.

Carl - That comes into play there, it goes on, and it hasn't got anything to do with decibels

and sound and noise. But like the Aroostook River, would that become set back issue later. There are all kinds of things to run through, but from the noise stand point and the non-participating how are we going to define that, it just comes to mind. Is the whole urban area non-participatory?

Dick – Tony I have a philosophical question, it just happen to be in the back of my head and you just pricked it. You said in your comment about, we need to reflect the majority and not a super majority. I suppose that if you stand back there are the non-participating land owners, the neighbors who are really concerned with this decibel. Then there are the land owners who are going to make a buck leasing their land for the turbines. Other than that there is the general population and if prior projects are any indication, there is some sort of tax benefit. So even though I live down on Lower Fort Hill Street, my economic interest is a lower tax bill. How do we now decide what the majority wants.

John – If you look at that concept from another direction and think of the term “democracy is the tyranny of the majority”, 51% rules over 49%. But there is a lot of other interest than that 49% and I think our job ought to be to look out for the ones that are most diversely affected by the installation. Because we are really protecting a small, small, small majority of the town’s population. People living in the urban zone shouldn’t be affected one way or another by it.

Tony – John, but this is a small Town and we are all friends and family and there are at least two proposals that would go from North to South east to west, depending on the wind channels that are going there. That’s what I mean if you are going to create a standard, you have to make sure that you think it might be acceptable to more than a few.

Dick – Do you mean there are two tentative proposals?

Tony – Horizons had over 10,000 acres, that’s over 25% of the town, which happened in 2008 we are along ways away from that. But it was real, there were people that entered into agreements with Horizons on the potential for a wind development.

Dick – And the other one is the current one, Irish Ridge, is there another one in addition to that?

Tony – There are all kinds of rumors out there and I don’t have enough knowledge that I can speak openly about that. It’s going to depend probably on how the standards are developed and it can’t be whether it helps your tax base.

Dick – When you talk about what the majority of the citizens of Fort Fairfield feel about this, what do you mean by that? Is it about protecting the abutting landowners or philosophically.

Tony - Let me give you a real life example. The last 40 years there was a classification in our river section after the clean water act and because of this classification they could do certain things for discharge. One by one all of the starch factory’s up stream and potato processors up stream were eliminated and our water became almost pristine. Nobody asked the question, is this going to help you or not help you in economic development. Except that was our only argument to get them to leave it alone. Now that there is no user that needs a

license to discharge. They are discharging distilled water, I believe from the energy plant. The limited amount of discharge that we have that is untreated if any from the utility district. But I think that is all treated before discharge. So the argument always was, if you take away the level of standard that we now have in place, more of a problem there then we will lose potential development. We never won that argument because legislation was, if it meets this classification that's where it is going to go.

Todd – There was a statement made that everyone in Town would receive a tax benefit, have you seen that in other projects before?

Dick – Well I am thinking in the Oakfield project in particular there is an open benefit contract.

Tony - \$500,000.00 something like that.

Todd – But that's paid for by the developer.

Dick – I know if I am setting at home and all I am thinking about is my taxes or if I am a town councilor and I am worried about tax increases. All of a sudden somebody is going to give me a quarter of a million dollars per year for 2 years, That's going to go a long way in paying the bills here.

Todd – Does the quarter of a million offset any other funding that they would get?

Dick – Who the Town?

Phil – Wasn't this Oakfield thing part of a TIF though or is that a separate from a TIF?

Tony – They had to offer that to them on the side besides the TIF.

Mike – That was some sort of public benefit contract.

Tony – Correct.

Dick – Am I correct, isn't that pretty common in these projects?

Mike – It depends on the deal, but yes there is a public benefit tied to the project. For example in Mars Hill, it's kind of gone away because they lost school funding based on that project.

Todd – That's what I am talking about.

Dick – But if you do it with a TIF that should not be the case.

John – Until the TIF expires.

Mike –Exactly.

Jim – If you increase your town's value that's less subsidy the State will give you.

Todd – That’s why I asked the question, you had some other information there saying that there are arguments both ways. I don’t think we should be looking at that. But you are right I think community members are thinking, “Hey I don’t live out there”.

Dick – The average comment on the street is, “how come light bills won’t go down?”

Phil – Or, “how come I can’t use some of that electricity?”

Carl – Well that’s another question right there, if we are going to go down the path of benefit to the community, tax bases all that kind of stuff. There is another thought process that says, “Oh by the way, because of this project the electricity rate in the Town has to go down so much or we have got to receive some sort of benefit on our electricity bill.” I know, nobody does that.

Dick – Yes they do, Oakfield required a direct payment to every tax payer in Town.

Tony – As an offset.

Carl – You can take the money and put it against your electric bill. I use that wording, but if we are going to start down various paths, when we start down that tree branch, there are a lot of branches out there that we have to talk about relative to town benefit as opposed to what we were talking about. I think we have to come up with something reasonable by whatever definition. You can have X percentage of the Town that’s not going to like it, a percentage that will love it and the rest of them are going to be in the middle.

Jim – So we have to pick a number.

Dick – A method and a number.

Carl – Maybe a method, maybe a number also, maybe both.

Jim – John had one.

Dick – John says 40 night time and 50 day.

Jim – I am not opposed to that, it’s like Carl says, you have to deal with it from there. If you use ambient plus 5, it depends on where you are at.

Carl – I would think that ambient plus 5 not to exceed some level night and day period. But that’s only as the limit I am still weighted into the ambient first with a not to exceed.

Heather – The State already puts their high level for day time at 55 so like Tony said they are not going to issue anything. So I think you can already bump the day time up to 55, Right?

Dick – And get away with it.

Tony – Were you here when they did the sound?

Heather – No I wasn't, that's why I am asking, because you were the one who stated you didn't think they would get a license from the State.

Tony – That was my observation of a review of their standards.

John – They would get one at 55

Carl- But you also have got to remember that the State model was written back in 2009. There is a lot of information out there that says that 55 is way too high.

Phil – The national park service studied a million places in the country. They wanted to find out if the ambient level in their national parks is changing. They have an interesting decibel map of the United States and we are in one of the areas that's in the 40's in general. A typical office setting is about 40, New York City was 60. Some of the national parks out west were close to 20. Very few places are under 30, but some of the rural agricultural areas that are not heavily forested are under 30.

Carl – I don't think I would go, regardless of the State's model or whatever, I don't think I would go any higher than 50 at any time.

Todd – Montville sets the Maximum level at 50 not to exceed it

Carl – I think that is reasonable these days from everything that I read, reading ordinance after ordinance from various parts of the country trying to get a cross section, trying to understand better the difference between a Fort Fairfield and a Bangor or some place in Wisconsin. 50 seem to be the now industry accepted standards as the maximum on top of the ambient requirement. I wouldn't be in favor of going any higher than 50.

Phil – I think what Carl says makes a lot of sense, I agree with Carl. Ambient plus 5 not to exceed 50 in day time and at night I think it should be less.

Carl – Absolutely, that was just the day time max, at night you have got to lower that.

Phil – And that's not hard for them to meet because they typically are not operating at peak power at night any way.

Todd –Listening to everyone talking it seems like everyone is stuck with this ambient sound, my question is we have heard numbers on one side of the road and this side of the town that side of the town. I would be curious to see what the average ambient sound would be in some of the areas that they are looking at. I agree with Carl on it, but what would that level and a number as far as the maximum I would have to do some more research to further understand the theory behind it. Whether it's an A or C maximum or night or day.

Carl – I don't know that as a committee that we have sufficient information in front of us, it's pretty much at this point what each individual has gone out and studied and discerned for themselves. We have no documentation in front of us as far as what the high number should be, I have read a lot about 50 that's why I said 50.

Todd – I do agree with Phil the person has a place they are used to their evening noise

or their morning noise, changing that to a too high of a level will affect their equality.

Carl – Yes, for me, ambient noise out there at the pond is way different than somebody else somewhere else.

John – I don't exactly know how we would address this in the ordinance, even if we can or ought to but, in any discussion of sound and noise and so forth you have got to take into account the characteristics and quality of the sound or noise. For example you might get 60 decibels in your house, it may be wind blowing in the trees and things like that, it's all nice and ok this is temporary it's not constant the noise goes up and down. It's basically your natural existence wherever you are and you are pretty much used to it and it doesn't bother you. What you're introducing with the potential for windmills is something that is pretty constant, you're also introducing the sound of the rotor blades. That is over a fairly long duration period of time, so it may not exceed in decibels what you are used to accommodating yourself to throughout your life but it's not going to change the quality of that sound to some extent that maybe very unhappy for you or it may not bother some people. People's house and accommodations are quite different. Does that make sense?

Carl – Yes, you accommodate that to some great extent in your initial measurements, A weighted and C weighted over periods of time and typically when they take those measurements you can set a minimum amount of time that they have to take those measurements like over an hour. Ten different days over an hour, each of those days different time period, etc. There is a lot of stuff that can go into that and some of what you are talking about will come into play and be taken care of through the A and C weighted. As long as it's enough time you can't set that time measurement to be like 5 minutes it has to be an hour, that's a for instance. Once you do that, that's when that starts covering what you are suggesting because that's when it takes into account the blade noise, the swish of the tip of the blade and those kinds of things. That's when you get into the rubber meets the road nitty-gritty of this. That's why you hire somebody.

John – Physiological and psychological experiments, testing and examination that I don't see much around that point to it and say that 40 decibels of (John whistles) is one thing and 40 decibels of something else is another.

Carl – That's where you note the sampling time and the different weighted factors.

John- We don't have any way of measuring the effects of the different characteristics is what I am saying, so we are kind of shooting blind here and everybody else's regulations and ordinances have done the same thing, I don't think there is enough information about that. I am afraid that the nature of that type of sound is liable to adversely affect more people.

Phil - There is a lot written about that.

Carl – Oh yeah, there is a bunch of information about that very subject out there. And the way the engineering staff takes care of that the standards that they have set for their measurements. There is a ton of information out there.

Phil- But you hit it right on the head, I asked a few people what noise are you exposed to that your glad when its stops, lawn mowers and potato harvesters.

Carl – Again that is why you have the difference of night and day, the difference between the seasons and all of that comes into the standards that are out there by the acoustical firms that are doing these measurements. There is just a ton of these kinds of requirements for the measurements in order to get some kind of level.

John -My questions I guess is what studies have been done regarding physiological and psychological effects of exposure to this type of sound over a longer period of time. I know there is a lot of stuff out there, but anything specific addresses that.

Phil - There is some about the ultrasound. I was confused by Montville, they talk about maximum amount not to exceed 50 decibels C for the ultrasound, but I didn't see anything for the A level.

Carl- Well typically the A level would be less than the C regardless of where it would be on the curve, the C level is always higher than the A.

Phil – That is why, then they talk about octave here.

Carl - That's what the professor was talking about when she showed us the varies octaves' and its, I have forgotten now, what 5th or 8th that's the predominant one.

Phil – It says here in dba, dbc at 1/3 octave the blade passage frequency.

Carl – It's that thump, thump, and thump.

John - It's been a while, but it seems to me that I have come across information that says this sort of thing will affect your heart rate. Your heart tends to beat and your respiration tends to come into conformity with the rhythm of the sound.

Carl – That's the infrasound, that ultra-low frequency that they are talking about more and more these days. There are studies out there that claim that it affects your psych, it affects your heart rate, it affects your whole body.

John – That's where I am starting to get concerned.

Carl- Well that's where they start getting into the C weighted, that is why A is almost meaningless anymore.

Dick – David, do you have a methodology?

David – You have some knowledge here that I don't have and I would like to know if someone here can help me with it. So lets supposed we come back with some setbacks, no wind and we don't have any ambient from 1200 feet or 1000 feet. What is the decibel level of just the turbine?

Carl – It depends on the manufacturer.

David – Ok, but what is a logical one, an average one, a good one. Is it a 40, is it

a 45 or is it 10.

Carl –It is changing all the time.

David – I mean we are talking certain setbacks right?

Carl – Well we have not gotten to setbacks yet.

David – Well no, we are just saying, if we are talking numbers it's got to have some type of relationship to setbacks.

Todd - Each manufacture has a chart that they present with their package, GE has one that has kind of a flowing chart, it has a lawnmower, microwave and a mixer just so it shows the different levels. The only thing it doesn't show, what kind of a day is it, is that turbine running at peak performance. Every manufacturing has a different range. They are trying to insulate them, trying to make them more efficient.

Phil – Carl what you are getting at there is a difference between these other comparisons with lawn mowers and other stuff is that they don't have the power of a turbine. A turbine is a very powerful machine and if you are close to a turbine and it is working at its full efficiency it is very loud.

David – Yes, I understand that.

Phil – If you get 1000 feet away from a turbine you are still going to get 45 -50 decibels. If you stand 1000 feet away from a vacuum cleaner which can make the same decibels close to it but your 1000 feet away from it you won't hear it. The problem is the turbines have so much power that their decibels are very high.

Carl - Todd has the right answer to your questions, it depends on the manufacture. If you look up there are three or four major manufactures on turbines these days and if you go on-line and look at their specs, guarantee every single one is different as to what they are saying is their normal sound level, they all vary.

Todd – Most of the average numbers that I see are between 45 and 55 range and it depends on what size and it depends on what side of the turbine you are if you are in the air flow on the back side of it , it travels further than if you were on the front side of it.

Carl – You have to understand that when you say turbine in this particular instance you are also talking not just that big box up there, it includes the blades and all the gearing that's in the blades and what not.

Dick - Supposed its 45, is that measured at the turbine or a distance away?

Tim passed out a GE decibel chart to the group

Dick – 500 meters is 1500 feet so its 40 dba at 500 meters.

Todd- But you have to keep in mind this does not show it as running full capacity or ½

capacity.

David – that was where I was going to go, that's all I wanted was the numbers so lets just say 40 at 1500 feet. Well if the ambient sound there was 30 and we go by this increase of 5 or 2 5's up to 40 that is a major impact on what those people at 1500 feet away from that turbine.

Tony – So they are going to have to move them further away.

David – That's my point, which says on the north end of this project it may not exist, because if we say ambient plus 10.

Carl – When you are doubling you are quadrupling.

David – Oh I know but if you say, ok lets suppose the ambient is 25 and we would have to have 2500 feet probably.

Carl – Yes and this you will notice is A weighted, if you start talking C weighted you probably are going to be 1 ¼ miles at least maybe up to 1 ½ miles.

David – But if we are talking about places that have a 25 ambient basically we can't be talking 40 & 50. I mean Johns numbers were 40 & 50.

Tony - It might not be acceptable, that's his whole point, you wouldn't allow that to be sited in that location if it's going to exceed the ambient by more than 5.

David – So what I was getting at is when you were going ambient plus, I am thinking ambient plus what. You were talking 5 we weren't talking ambient and their decibels.

Tony – No, their yield at that distance could not exceed ambient plus 5.

David – So it seems to me that rather than talking 40 or 50, it seems that the way to go would just be an ambient plus 5 instead, put an upper maximum on it of whatever. If you happened to live in a place that is 50 normal.

Todd – But you have to notice one thing this is in the A weighted.

Dick – David did you reach a conclusion?

David – Well I guess what this fostered, made me completely not want to look at a 40/50 or something like that. But I guess I hate to say it, but I think I am starting to agree with Carl.

Dick – There is quite a spread between John's standard and ambient plus 5.

David – So I guess an answer to your question I am inclined not to say 40/50. Certainly I think we need to come up with an upper limit as to what it would be project wide, 50, 55 or even 52 ½ I don't know.

Tony - Montville had 2 standards, one that it would never exceed more than 20 ambient

plus 20 and the second one they. Would never be more than 50. Lets say they have a 25, Montville would have exceeded a 45. Lets say they had a 35, Montville would not exceed any more than 50.

David – Now I am starting to be more comfortable with ambient plus.

Tony - But what your proposing is altogether different than what Montville was in my mind. You would propose ambient plus 5 than have an upper limit of “X”.

Phil – But it would be the lower of the two.

Carl – Yes, it would be the lower.

Tony – That’s how I understood it.

John – Ambient plus 5 not to exceed “X”.

Tony - To be determined, lets move on.

Todd – Are we still looking at A and C?

Dick – We have two more voters.

Carl – We also got to be A and C weighted and I am into C big time.

Mike – I am listening to everyone speak and the more you speak the more I am seeing that this community is going to be by passed by wind energy, bottom line. You guys are putting in criteria that they will just by-pass Fort Fairfield. That’s fine, if that’s what this community wants. But, every one of you is talking and I am seeing a stake being driven in my heart, that’s fine. We need to look for other sources of income.

Dick - I think you are right too. I look at that Irish Ridge diagram of 5 or 6 turbines and I think that was based on the states setback of 1200 feet.

Mike – It wasn’t the States setback, it was their own.

Tony – That was their manufactures, how they were told and their engineers were set to this model. That’s how they charted it.

Phil – I don’t necessarily think it’s the end of windmills, it might be the end of current technology all over town. There are places in Fort Fairfield where you can meet this standard that we have talked about. With participating landowners, there are some places in Fort Fairfield that you can have some windmills. This wouldn’t rule it out entirely.

Mike – A developer needs a critical mass in order to bring a product into the community. What you are taking about is maybe two or four windmills, which is not enough of a critical mass to do that. Don’t get me wrong I am not talking as a proponent of wind power here.

Phil - To eliminate the Horizons of the world, it might not eliminate a better Shamrock.

Mike - I think it would be difficult for a better Shamrock with only 4 – 6 turbines. Because of the locations that they are talking about. No you have to take into consideration the accessibility to hook up somewhere. Because of the proximity of Irish Ridge to one hook up that is near the border patrol station which was their primary hook up. They were considering going across to the steam plant, these were their two considerations. So now take it and put it on the end of the Murphy Road suddenly you have a transmission problem, because you have got to trench that whole distance.

Phil - Actually what we learned down in Mars Hill is that line from the turbines to the DH line it wasn't a big thing, like he said lines would need to be buried.

Todd - The majority of the reasons why they bury lines is because if there are trees or maintenance, to put overhead line its feasible for the liability. Keeping it under ground is for the reliability, the expense to put it underground, your building a road any way.

Phil – They were so close there to the 34 KBA that they went over head, plus it is manned.

Todd - Right, the way they did that they want to save some money and then when they brought it down to the collector sub it was cheaper for them to bring it above ground because they didn't have to build a road there. One of the things that Mike was talking about, connecting here or connecting there. These parks before they even enter a community they should be doing their homework to see where the availability and opportunities are to connect and the majority of the developers are looking for a so-called industrial type park. Where the transmission lines are already close. It's more difficult for these developers to try and find a spot to tie to the transmission line. I know Horizons dealt with it for a number of years trying to tie into line one that needs to go to Tinker Dam. They have tried to find a way to do that and it has not been available to them. But to say its going to keep developers out of Fort Fairfield , I don't know if that would be a fact or not. I do know one of the reasons they haven't been so involved here is it's a transmission issue. It's tough to find lines to tie into.

Mike - Its one of the considerations for Irish Ridge that made Irish Ridge plausible for them.

Phil- The technology changes a lot, this whole think could change. Our discussion about sound doesn't necessary have to be the end of wind power development.

Dick – If you were a committee of one what would you suggest?

Mike – I don't know, well except Carl, I will give Carl the benefit of doubt because he has done a lot of research. I don't know if we have established that everyone understands the way sound implants.

Dick – No but, whatever we do is going to impose a burden on somebody who has a house that they like to live in and the ambient plus a number is a simple way for a non-scientist. That's imposing a 5 decibel burden

Mike –Every word that you are saying you're right, you are 100% right and I don't disagree with you.

Dick – I understand that, then that leads me back to Tony’s remark about majority and super-majority. I am still struggling with that one. The ordinance is going to impose a cost on somebody and I get the sense that it drives a stake in the turbine business man, it’s a balancing act between that question and do we impose a higher burden on landowners. I don’t know that the majority would agree with that but probably would in a referendum I think people in general are not prepared to sacrifice a whole lot.

Mike – I guess of anything that I would disagree with Phil on is the number one thing is sound. I don’t agree with that, I think the number one thing is site.

John - Well the people in down town Mars Hill complain about is the sound, probably not, but those living around the hill or on the back do because they are the ones affected by it.

Mike – One of the reasons why the Composite Center down at the University is talking about going off shore was because of the site. The whole reason they are going 16 miles out is because it is beyond the horizon. People just don’t want to look at the turbines, they are not worried about transmission because they are going to run a cable all the way out there.

Tim -- There are some interesting arguments being made here and I guess I was coming to the table prepared more with a number in mind and not so much how we would reach that number. Oddly enough that number was pretty much the same number that the projector was. So jokingly I say we would bring the projector to all the property lines turn it on and if you can’t hear it, it’s not too loud, but that’s about 43 db. I am listening to the refrigerator now as we are setting here talking. It is funny how much my perception of noise and sound has changed from that presentation. So coming here with a specific number in mind, it really was 43. Now not to set here and defend that because I don’t think it’s plausible. I feel swayed, the last person that speaks is who I am going to vote for. When you are talking ambient plus 5 and you lay it out there it really does make a lot of sense. For my concern over that is I am assuming is more the process of how we get there then what the actual numbers end up being. Because I worry about what has been discussed here in terms of, how loud it is when you are taking those ambient measurements. If you are imposing too many times to do it, nobody is going to come in any way and invest the time, effort and energy. But who is that group that comes in and administers those test and when? For me that is really where I am hung on this whole issue. I would have no problem if it was the groups wish and we wanted to move forward and nail it down today. To do ambient plus 5 with 50 as the maximum because that seems reasonable. But I agree with Mike I don’t know enough right now to say that, so I would move forward. If I had to vote on something, sure.

Dick – Mike did you have a number that you were comfortable with?

Mike – Only because I have heard it so many times from the others, 43 overnight is a number that kind of stuck in my mind. I picked up this neat little AP that is called “decibel to the 10th”, it is available free of charge on smart phones. (Mike than passed around his phone to give everyone an opportunity to see what the decibels were of various noises, such as talking, coughing and whistling) It gives you a sense as to what sound is. I guess I don’t mind the ambient plus 5, I am a little concerned that it ends up being too low at some point during the day. Because if it’s ambient at 25 and you’re trying to keep them down to 30 it’s just not even possible.

David – That’s what I was trying to nail down with mine if it’s already low, you are ruling out such large piece of land to any possible turbine

Mike – Personally if its 25 at my house and I have got to listen to something all day that is 50, I am not going to like it. I get that.

David – Boy, let me tell you, if it went from 25 to 50 at your house the check had better be big.

Tony – The reason I mentioned that little bit about majority and super majority we have had only two other referendums that I know of in Fort Fairfield during my career. The first one was to fund the new elementary school. Everybody thought everybody was just going to charge forward and oppose it. But everyone starting thinking it’s for the kids. We had delapidated structure that the kids were still in. They were going to build this school and they needed the permission of the community. They forced that referendum because council couldn’t take legislative action. The second one was when they were going to build the dike and Mrs. Novak was opposed to it personally and she was even working for FEMA at the time. She went around and got a petition signed, they signed the petition but they didn’t vote for it because of the perception of the good for all.

Dick – Phil, we are ready for a motion and I am not sure, you probably could articulate the A and C application on the decibels.

Phil- One way is to have a motion that we use the Montville outline and fine tune some of these things as Carl added, evaluating the L90 during the four seasons or something. I guess we can’t have a motion on the frame work but to build in the technical frame work details of the nuts and bolts of it later.

Dick – How are we going to decide the technical details?

Phil – There are plenty of papers that describe why they select L90 and why these various towns pick these numbers. A lot of them hire engineers to help them fill in the details. Whether we need to do that or just go to the findings from some of these other towns.

Dick – The alternative that I can see would not to entertain a motion tonight. To do it at the next meeting where somebody can put together an appropriate detailed job including the L90, the A and C weighted. However, you are going to do that, bring it in here and present it, prepared to answer some questions. We are going to have to be educated and defer a vote until next time. Because of that you are going to be doing it in two or three steps.

Phil – Unless we want to vote on what you just said that we adopt the ambient plus 5 to fill in details later.

Carl - Well that’s what we have kind of done on other things. Well here is what we are doing for tonight, understanding that it can change later. That’s what we have done in the past. I wouldn’t see anything wrong with saying the motion should be. We are going to go with ambient plus 5 on a C weighted scale with the L90 consideration with a maximum of 50 decibel dba that would be my notional motion to go as we have in the past on subjects.

Jim – You just made the motion right?

Carl – I will make the motion
Second - Phil

Tim- In terms of discussion, I guess I have got to go back to Mike's point. How do we protect that absolute lowest low end that is just impossible to meet. Because it does seem to be an interesting component of this and we seem focused on this. What the highest range of it could be. But I am confused with that. Are we saying that if its 25 is 30 the maximum?

John – You are defining an area, a real quite zone much in the same way you would define a national park and not allow vehicular traffic into it. You know it's the National Park of sound, it's a wilderness area not to be trampled on or driven on or built on, whatever. We are defining the zone beyond that, above that where yes its ok its going to be appropriate to set turbines up within the sound guidelines we have. So I don't see why that's unreasonable.

Dick – I am going to suggest we take a roll call vote of this, because this is going to be looked at.

Jim – yes, David- yes, Todd – yes, Tim – nay, John – yes, Mike-nay, Phil – yes,
Heather –yes and Carl – yes. (Totaling 7 yes and 2 no)

Tony – You may want to have a motion to table the other agenda items to allow for public comments period.

Carl – Yes, because those are going to be lengthy discussions also.

- B. Discussion – Setback for Ice Throw – assigned as homework for the next meeting.
- C. Discussion – General Setback Standards – assigned as homework for the next meeting.
- D. List of Topics to be researched in Advance of Next Meeting – Setback for Ice Throw and General setback standards.

Phil – Ice throw should be easy, what I did find was there were some cases of ice throw or parts of the turbines up to 1700 feet from the stem. Most pieces of one comprehensive study have been 600 feet away, but there are random pieces around there from 600 ft. to 1200 ft. So it seems to me that somewhere between 1200 and 1700 feet.

Carl – But depending on topography that can change.

Phil – But there are none of them that I saw that did a comprehensive set back based on topography. If the road is 300 feet lower than the base of the turbine that's one setback. No other ordinance has come with a way to account for topography. So they have set the ice throw back from the roads, some multiple of the height. Montville is 4 times, some say 3 times and others 1 ½ times.

Carl – I would like to move that we table that one to the next meeting.

Phil – I would say just read, there is lots of things out there.

Dick – Lets do B and C for homework, that will be enough for one meeting.

- E. Other - Tim – There is something that I would like to address, it goes back to something that wasn't mentioned in the minutes, Phil brought this up. Currently if somebody does email the town through the website that email goes to Dick, Tony, myself and Mike. Phil's question was when and if we do receive feedback from the community how does the committee want that in-seminated to them. Would it be sent out with the agenda? If its spam that's not pertinent to the conversation do we just make a note that we receive "X" number of spam messages from this address?

Dick - Have we had any fee back yet?

Tim – Rick was the only one that tried to send me a note and all I got was his email address, what do you want us to do with these emails?

Dick - So there isn't much interest out there and you're probably not going to get a lot.

Todd – How is the website promoted, how does the community know about it?

Tim – We put it out on social media channels a couple of times and it is right on the front page of the Town's website.

Mike – We also announced it to the public at the Town Council meeting.

Carl – I would be willing to let those four evaluate them. If it seems to be pertinent that the rest of the committee should know. Forward it to us with the agenda. I would be comfortable with that.

Tony – With the thought process that if you have comments, and then give us feedback so we can prepare our answer.

Carl – I have one follow up on one thing. I would really prefer to see the agenda and any attachments three business days before the meeting so we would have time to look at it, not to get it the day of the meeting.

Tony – We sent this out 10 days ago.

Tim – Yeah, I would say that we sent this out, most of the time we try to send out the Tuesday before.

Carl - Initially, unfortunately I can't tell you if I am basing that on current experience or right at the onset of this whole thing. Would like to have it Wednesday, just to ensure that we have enough time to look at it.

C. Public Comment Period - NONE

D. Other – NONE

February 23, 2015

Wind Energy Technical Review Committee

Next meeting is March 9, 2015 at 6:00 pm – Council Chambers

Motion: Phil Christensen moved to adjourn at 7:53PM

Second: Jim Everett

Vote – All affirmative

Respectfully submitted,

Rebecca J. Hersey
Secretary Pro-Tem