

Date: January 29, 2020

To: Jessica Damon, MDEP

From: Paula Kelso

Cc: Clifton Planning Board

Re: Silver Maple application Figures 27 and 28

#1) If a picture is worth a thousand words, these two figures are worth a whole bunch of words that I wouldn't say around my grandchildren. Having worked closely with the Clifton Planning Board in drafting and preparing their Land Use Ordinance for it to be helpful and instrumental in the Town satisfactorily handling an industrial wind energy project, I feel I have some knowledge to review a sound study. Not at a consultant level of course, but as an interested party in these monstrous turbines moving into my neighborhood.

#2) After trying to comprehend the import of the Silver Maple figures for some time, I got out the sound contour maps submitted by Pisgah Mountain in their application. I tried to figure out the significant differences in the modeled sound levels of five 1.8 megawatt turbines vs five 4.0 megawatt turbines. I'm hindered some in the Pisgah maps by the faintness of the color guides in the little boxes. But if you're persistent you can come out with some idea of the projected sound levels in relation to properties in the study area.

#3) Now to look at the Silver Maple maps. All the parcel boundaries and the roads are obscured by the dark green background. Yes, you can see little blue boxes of individual residences, but no handy dandy little chart showing predicted sound levels and distances from those receivers to nearest turbine. After many hours of studying the figures, I still don't know how the predicted Silver Maple sound contours compare to the predicted Pisgah sound contours. My immediate objective being of course to compare Pisgah projected to Pisgah operational and make inferences about SWEB. Apparently RSG conducted the compliance study and the application study at the same time in Nov. 2017. After hours of study, I've no idea what the figures supposedly show and how to put that information into context. I have no idea of the noise impact that the expanded project will have on my property or any one else's.

#4) Another observation, it also seems to me to be somewhat questionable to include the entire Bangor Water District parcel as a 'project parcel'. I have not looked up the SWEB

and BWD agreement yet, but will do that. Easements on unowned parcels or legal agreements with participating parcels are not ownership. As a matter of fact that project parcel boundary in the Figures also includes the entire Pisgah Mountain LLC land. Hmm. I thought this was not an expansion of Pisgah. This was a stand alone project. Did Pisgah file a revised site plan when they sold off land to SWEB?? Hmm. Did the DEP and the Planning Board determine that the new ownership configuration met all the standards for the original permitting of Pisgah Mountain LLC? Hmm.

#5) And then there's the 'Area Ownership Plan' in Section 1 and dated February 9, 2010. The table is neither organized alphabetically nor numerically, so you have to hunt for parcels. And the residences on Lower Springy Pond have neither map and parcel labels nor residence dots; although the table does include some of the map and lot and owners names. There may well be other errors on that 'Area Ownership Plan'. Otis and Dedham land within the encircled project area is not labeled at all. Bottom line, it's an essentially useless 'Plan'. *

#6) I have already communicated to the Planning Board my concern that the sound study got a less than stellar review by the MDEP consultant. Since then, I was able to access Mr. Hessler's review. It seems he wants to call the kettle black and white at the same time. I'm reminded of his Skype remark at the Pisgah public hearing. "It's only trees." You Maine dummies, trees don't have ears. He did not approve of the way the CLUO is written and he made that perfectly clear years ago. So I am not sure why the Town would go back to him for another go round. I am aware that SWEB responded to the DEP review but not whether all the points made were addressed and ironed out. So, in my mind the sound modeling and noise impact assessment are still very much in limbo.

#7) For the most part, I will leave it to others to address the visual and natural resources impacts of this huge project. I will say a little bit more though. I grew up in downeast Maine with extended family who all hunted, fished, some trapped, some owned blueberry land and some had wood lots. As kids, we spent most of our free time outdoors. We walked or rode bikes to Alamoosook, Toddy, Craigs Ponds and Great Pond Mountain. We swam all summer and spent a lot of time at camp. [Yes, we used pesticides and herbicides on the blueberry fields. I can't do anything about that now.]

#8) We grew up with an embedded connection to the land and the birds and the animals that you can't get in urban areas. My children and grandchildren haven't had quite as extensive or intensive immersion in Maine's natural bounty but they thoroughly appreciate it. My 15 year old granddaughter is contemplating a career in environmental policy. With each new generation we get farther from that Maine connection to nature that we treasure. We have always willingly let out-of-staters come and experience it.

They used to go home by Labor Day but now they stay around and since they love Maine like we do, we let them. But, when do we Mainers draw the line and say enough already. We don't need your 20 megawatts of electricity. We don't want your robotic skyscrapers blocking the view from Eagle Bluff and hovering over our neighbors on Rebel Hill. We don't want your blinking red lights in our windows all night. Go back to Nova Scotia and leave us alone.

#9) The 2005 Clifton Comprehensive Plan recognized the town's natural appeal to tourists and camp owners as it's greatest asset. It put a resource protection area around Pisgah Mountain in the Land Use Ordinance. My biggest mistake was to include industrial wind energy facilities as a 'utility use' with lenient locations instead of the 'industrial use' that they are and that would have limited their ability to mar our landscape and harm our citizens. I'm sorry that I did that and I apologize for that mistake. However, it is not too late to protect Clifton and neighboring towns from further desecration.

#10) As I read the DEP version of the application and checked again what the standards and guidelines are, it was a big hunh? We have all these submissions and guidelines for protecting the environment but where are the guidelines for protecting the community? There are setbacks and noise limits and visual impact rules, but where is the rule for protecting the community of Clifton? The ability to do that protection is in your hands.

#11) Last August, my husband went to Oregon for 2 weeks, so I took advantage and did a cleaning out and made a trip to the Salvation Army store. A car drove in behind me and Mrs. Fuller got out. We nodded and went about our business. Eventually however, she came over to me and asked if the sound from the turbines was as bad as I had worried it would be. I told her it was not the sound that concerned me the most from the application process and now the existence of the Pisgah facility. What was the most upsetting to me was the way the project has torn apart the community. She looked at me for a bit; she looked at the ground for a bit; she turned without saying anything and returned to her car.

#12) Clifton has always, at least in my 40 years here, been cliquy; but underneath that there was a feeling of ownership of the community. We could criticize each other, but don't let outsiders come in and do that. That's gone now. Personal boundaries are now set and very few take pride in what was once an attractive little Maine town on the border between Bangor-Brewer and downeast Maine. Clifton has now been sold out to be part of the downeast invasion of wind energy scams. We may have to settle for the 5 we have, but we can say no to 5 more and bigger blights on our landscape.

#13) At the very least, the people of Clifton and their neighbors deserve a rigorous and open review process with ample opportunities for landowners and residents to get information, make comments, and be part of the process. Boards may make decisions, but ultimately boards are accountable to the citizens they serve.

Thank you Jessica Damon and the DEP for this opportunity.

Thank you for your attention.

Attached:

Figure 27: Map of Model Results, 105 meter hub; sect. 5, p. 29

Figure 28: Map of Model Results, 117 meter hub; sect. 5, p. 30

Area Ownership Plan; section 1, p. 2

Pisgah Mountain Contour Model Maps (2)

*Please be advised that the Clifton tax maps have a large discrepancy along the Otis and Dedham boundary line. It seems to be off up to 750 feet in some places. This came to light when we had the tax maps digitized several years ago. So all 'maps' using the existing tax maps as a base should be taken with a grain of salt.

Response to the DEP's noise review.

I am disappointed with the quality of the work by Tech Environmental.

It appears that both Hessler and RSG agree that using a ground factor of $G = .5$ and add 2 DB to the sound power level of the wind turbines versus using a ground factor of $G = 0$ and not adding the 2 DB to the sound power level will result in an negligible difference in the sound levels at protected locations. The problem may be that the DEP sound consultant may be unwilling to entertain the alternate inputs to the model and there may be no choice but to rerun the model with DEP approved parameters.

There is also a possible discrepancy in the DEP noise review. Under the section, **Review Standard and Receptors**, in paragraph one it states: **“The nighttime sound limit at a Protected Location is 42 dBA (1-hour L_{eq}) and applies on portions of a Protected Location within 500 feet of a residence or other sleeping quarters, or at the property boundary of the Protected Location, whichever is closer to the dwelling.”**

In paragraph three it states: **“First, in the instance where a non-participating parcel contains a residence, and the property line is 500 feet from the residence, the 42 dBA MDEP limit for a Protected Location applies at that property line while the Town Ordinance sets a less stringent limit of 45 dBA.”**

The town ordinance is immaterial to the possible discrepancy. The first question is, under DEP standards as paragraph three could be interpreted, what is the DEP sound limit at a property line that is greater than 500 feet from the residence, such as 1000 feet or even 1500 feet. I believe the standard stated in paragraph one is the correct interpretation but I would ask DEP to clarify its language in paragraph three. The second question is in the DEP discussion in paragraph four are they applying the 42 DBA sound limit as described in paragraph one or are they applying it at property lines at distances exceeding 500 feet from a residence as could be a possible interpretation of the statement in paragraph three.

The sound study indicates that all protected locations as described in the Clifton ordinance have a sound impact of 35 DBA or less. The protected location is designated as within 100 feet of a sensitive receptor. I believe all of these locations are at distances exceeding 4000 feet from the nearest wind turbine. It is hard to believe that there could be an increase of 7 DBA, from 35 DBA to 42 DBA with what amounts to a 400 foot reduction of distance to the wind turbines that would result using the DEP standard stated in paragraph one. However, if the DEP applies the 42 DBA standard to property lines that may be hundreds of feet closer to the wind turbines as could be interpreted in a possible interpretation of paragraph three then there could well be a problem with meeting the 42 DBA standard. It appears they are confusing or combining the town standard regarding compliance at property lines with the state standard that says to use the lesser of 500 feet or the property line.

And this brings us to paragraph four where they state: **“For assessment of property line sound levels, the RSG Report relies on two decibel contour maps (Figures 27 and 28), and concludes on page 28 that “modeled sound levels all along the project boundary are 45 dBA or less.”** Figure 27 shows a triangular area north-east of the combined wind parks where

project property-line sound levels are above 42 dBA. The detail in the figures is not adequate to judge whether any of this land is classified as a Protected Location.” This interpretation of possible noncompliance is only true if you apply the 42 DBA DEP sound limit at the property line border of a nonparticipating parcel no matter how far that border is from the sensitive receptor or residence and ignore the 500 foot limit.

Looking at the large map supplied the town it is obvious that the 45 DBA iso contour lies completely within project and participating parcel boundaries. It is also obvious that sensitive receptors are all well over 500 feet from the 40 DBA iso contour line, never mind the 42 DBA iso contour line.

I'm not sure how to interpret the differences of opinion in the choice of "Reflection = None" versus 2 or 3 reflections. It depends on what you are reflecting from and if you are taking into consideration sound absorption at the reflecting surfaces. If the model is measuring sound reflected off the ground then choosing none would indicate to me one thing while if it is measuring sound reflected off vertical surfaces or other hills and valleys I would have a completely different interpretation. I'll leave this one for the experts to discuss but frankly unless someone has intimate knowledge of how the sound modeling is done internally in the program I would question their opinion on this one.

In general I agree with RSG's response to Tech Environmental's assessment.

With regard to short duration repetitive sounds my understanding is that the penalty is applied when these are detected or predicted at the protected location boundary measurement point. Please correct me if I am wrong on this point. At the distances from the wind turbines that we are evaluating a short duration repetitive sound would have to be extremely loud at the source to trigger the penalty at the protected location. To my knowledge there is no evidence that such extreme sound events repetitively occur.

I agree with RSG's interpretation of sound levels versus wind speed with regard to NRO operation. I'll let the experts argue about the 22.5° versus 45° implementation of NRO operation.

I agree with tech environmental's comment regarding the need for at least one additional test location for post-construction sound level testing and maybe 2.

Wind turbine sound modeling, its limitations, and SDRS

What is amazing is that post construction sound testing for compliance is as accurate as it is when you compare the measured sound levels of operating wind turbines with the predicted sound levels.

Let's compare some of the inputs into the sound modeling program versus the real world sources of sound production from the wind turbine. My understanding is that the sound

produced by a wind turbine is modeled as a point source with a certain amount of directionality and that directionality is primarily modeled as the sound being “carried downwind”. The sound being effectively carried downwind is a simplified but reasonably accurate explanation of why the sound is louder downwind from a wind turbine. What is completely inaccurate is modeling wind turbine sound as being a point source.

The sound from a wind turbine is actually the combination of several individual sound emissions. The closest source of sound from a wind turbine that can be considered a point source is sound emanating from the nacelle itself consisting of a multitude of sources including bearings, transmissions, drivetrain, pumps, and fans. The largest source of sound emissions are from the blades themselves. But these are not simple point sources. What you really have are three rotating sources of sound each having two distinct emission points that are in fact directional having distinct sound propagation patterns. Each blade generates sound on its trailing edge as one source and a distinct second source created at the blade tip. The vast majority of the sound is a result of turbulence created by the passage of the blade through the air. This directionality aspect of sound emission results in the characteristic rhythmic “whooshing” sound of a wind turbine especially apparent when you’re close to it. This is often described as amplitude modulation of the sound. Actually the sound emission itself is not strongly amplitude modulated; it only appears so to a fixed observer.

The second layer of complexity is that the sound emissions from the blades are not the same throughout a blades rotation. Wind shear, differences in wind speed between the ground and the highest point the blades rotate through, means that the sound emitted from a blade will be different at the top of its rotation versus at the bottom. Now let’s add in the complexity caused by the fact that most sound generated by the blades is considered white noise while sound generated in the nacelle is much more likely to be tonal in nature. And we haven’t even started to consider the effects of days when the wind is gusting versus steady. And if I took into account temperature inversions, fronts, etc. and their effects on sound propagation this discussion would go on for a long time.

What I consider to be one of the biggest deficiencies in the sound modeling software is the failure to recognize that sound from the wind turbine is not omnidirectional but has a distinct radiation pattern. Studies addressing this have been done.

See:

https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=4&cad=rja&uact=8&ved=2ahUKEwjwYorW_bbnAhVaknIEHbCFA_0QFjADegQIBBAB&url=http%3A%2F%2Fciteseerx.ist.psu.edu%2Fviewdoc%2Fdownload%3Fdoi%3D10.1.1.692.4197%26rep%3Drep1%26type%3Dpdf&usq=AOvVaw3HzQTsJ8AzfqtB3TToM9cl

Directivity of sound from wind turbines

https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=5&cad=rja&uact=8&ved=2ahUKEwjwYorW_bbnAhVaknIEHbCFA_0QFjAEegQIAxAB&url=https%3A%2F%2Fwww.istage.is

[t.go.jp%2Farticle%2Fast%2F36%2F5%2F36_E1471%2F_pdf&usg=AOvVaw3bxxcVji9V9U9kK538ZFT5](https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&cad=rja&uact=8&ved=2ahUKEwjwyoW_bbnAhVaknIEHbCFA_QQFjAAegQIBRAB&url=https%3A%2F%2Fwww3.nd.edu%2F~tcorke%2Fw.WindTurbineCourse%2FAcoustics_Presentation.pdf&usg=AOvVaw3bxxcVji9V9U9kK538ZFT5)

Radiation characteristics of noise generated from a wind turbine

https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&cad=rja&uact=8&ved=2ahUKEwjwyoW_bbnAhVaknIEHbCFA_QQFjAAegQIBRAB&url=https%3A%2F%2Fwww3.nd.edu%2F~tcorke%2Fw.WindTurbineCourse%2FAcoustics_Presentation.pdf&usg=AOvVaw1AAmeHtjdS9XQEFStx24pn

Wind Turbine Acoustics

So with all of these serious deficiencies in the sound modeling how is it that the results are as accurate as they are?

The simple answer is distance and the additive nature of multiple sound sources. Given sufficient distance multiple emission sources of sound can no longer be differentiated and the result is effectively the same as a point source. The second reason is the additive nature of having multiple similar sound emitters. This mostly affects the apparent amplitude modulation of the sound. Simply put, the amplitude peaks of one sound emitter occur during an amplitude minimum of another sound emitter. So in this one aspect having many sound emission sources, wind turbines, is better than having only a few. Statistically the peaks and minimums of sound power emissions from multiple wind turbines will blend together and the amplitude modulation distinctly discernible from a single wind turbine will become difficult to hear. However, like all good things there is also a downside. The more emission sources you have with apparent amplitude modulation the more possible it is that on rare occasions sound emission peaks from multiple turbines will all arrive in phase at the same spot at the same time resulting in an apparent SDRS. Making this even more random is that because this is a result of sound arriving in phase at a given spot someone even a short distance away from that spot almost certainly will not experience the SDRS.

There is one common example of this effect of sound arriving in phase from multiple sources and appearing to be much louder than expected or predicted. And this example is ocean waves. Most of us have spent time on the seashore just watching the waves come in. There are days when it is readily apparent that waves are arriving from two or more different directions. The result is a pattern where some waves arriving on the shore are distinctly stronger than others. Most of us have seen video where someone is standing on rocks near the ocean and suddenly a huge wave much larger than expected washes over the unprepared individual.

I have just described one source of an SDRS and that generally this type will be random and more likely could be described as an SDS.

Reading the DEP chapter 375: no adverse environmental effects standards of the site location of development act, SDRS is detected at the compliance measurement locations. If I'm wrong

about this please inform me. It is defined as a 5 DBA increase of sound level during the SDRS. As defined by the DEP the source of an SDRS will have to be the wind turbines themselves. Compliance measurements will be taken at distances to determine sound levels of 35 DBA for the Clifton ordinance, and or 42 DBA for the state ordinance. To produce a 5 DBA measured SDRS at the measurement point would require approximately a 12 DBA SDRS at the source to trigger the state standard and approximately a 15 DBA SDRS at the source if you use the 35 DBA standard of the Clifton ordinance. There is no evidence that the modern wind turbines being discussed produce anywhere near these levels of SDRS. So while you can require a discussion of the issue it's really a moot point.

All I can say is, isn't physics both wonderful and strange.

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Letter to Maine DEP regarding Silver Maple Wind Farm and Clifton informational meeting Feb. 3, 2020

Let me start by saying I am presently the chairman of the Clifton planning board. That said, everything I am presenting to you in this letter is entirely my personal opinion and in no way represents any official position of the Clifton planning board.

Before getting to specifics I would like to add my comments regarding wind power in general. By the way, this applies to solar as well.

I believe wind power is a boondoggle and economically a long term disaster foisted on the public by environmental activists. It is been passed into law by politicians pandering to those activists in order to get their votes and who failed to educate themselves on the underlying facts. I am diametrically against all government subsidies at the federal, state, or local level promoting wind power or any other so-called sustainable or green energy. And God help us from what electricity will cost per kilowatt hour from offshore floating wind turbines. And never mind how the average Maine citizen will be able to afford an electric car or how the state will deal with disposing or recycling millions of pounds of toxic batteries. That said, the people in their wisdom (sarcasm intended) have elected people to office at the federal and state level who have made wind and other renewable sources of energy legal and subsidized by our tax dollars.

I have specific comments regarding some of the testimony you heard from the public Monday, February 3, 2020.

First is my response to Paula Kelso's submission to the DEP. I have numbered my responses to match specific sections of her submission. Excerpts from her submission are in bold italics below.

1. ***Having worked closely with the Clifton planning Board in drafting and preparing their land-use ordinance for it to be helpful and instrumental in the town satisfactorily handling an industrial wind energy project, I feel I have some knowledge to review a sound study.***

I worked with Paula Kelso in drafting the original large wind energy facility section of the Clifton LUO and I have to say that Paula Kelso's contribution was instrumental in the necessity of rewriting large parts of the LUO that were adopted later. And during the Pisgah Mountain application process I spent an inordinate amount of time having to respond to Paula Kelso's comments. I am embarrassed to admit I helped Paula Kelso in drafting that part of the original version of the Clifton LUO. At that time Paula was acting as a "consultant" to the PB although not a member and actually wrote the majority of the first Clifton LUO. The list of problems and mistakes in that first version was so large that only 3 years later the PB decided it was better to pass the revised version as a complete package repealing and replacing the earlier version.

2. The Pisgah Mountain sound contour maps are immaterial to the Silver Maple application.

3. Comparing the Pisgah Mountain sound contour maps to the Silver Maple sound contour maps is effectively useless. The Silver Maple sound contour maps include the sound contributed by all 10 turbines, 5 of which are in different locations from the Pisgah mountain turbines resulting in a completely different sound iso-contour map.

I have no idea of the noise impact that the expanded project will have on my property or anyone else's.

Appendix D of the Silver Maple predicted sound study contains a table of over 140 sensitive receivers and the predicted worst-case sound impact at that receiver. I believe Paula lives at 254 Airline Rd. and the predicted sound impact at her location is 28 DBA.

4. The Bangor water district parcel is designated a participating parcel on the updated area ownership map. The mitigation waiver associated with this parcel applies to the whole parcel. My understanding is that the DEP has determined that Silver Maple is an expansion of the Pisgah Mountain windfarm. SWEB owns 49% of the Pisgah Mountain windfarm. I believe the legal documents and mitigation waivers submitted in the application cover everything. One important point is that the Pisgah Mountain windfarm permitting applies to the wind farm itself essentially irrespective of who owns the land it sits on.
5. Deficiencies in the area ownership plan were addressed by the planning board several months ago and the board has since received an updated area ownership plan that replaces the earlier one. It should be noted that the original Pisgah Mountain application 1.5 mile line also extended into Otis and Paula raised no objections about this subject then. The Pisgah mountain application area ownership map only detailed the names and lot numbers of 25 properties and she had no problem with that either.
6. Referring to Mr. Hessler, Paula said: ***he did not approve of the way the CLUO is written and he made that perfectly clear years ago.***

Let me refresh Paula's memory. To be more accurate Mr. Hessler did not approve of how the original Clifton LUO was written with regard to sound standards and procedures. Items that Paula was instrumental in drafting. Items that were technically impossible to comply with. Items so flawed that it required rewriting to make them scientifically and technically valid. In the interim Paula had been appointed as a member of the PB and unbeknownst to other members of the PB had been working closely with a local anti-wind group. She resigned just before this became public knowledge.

7. Immaterial.

8. It is hard to know how to respond to such anger and bias.

The best I can do is to respond with my own experience. I have lived in Clifton and experienced the changes in this town longer than you have Paula. I grew up in this town and my parents and grandparents before me grew up here. A good friend lived in the house that you now live in, in fact he was an usher at my first wedding. I remember when there was no year-round residences on our ponds. Scott Point Rd., Getchell Road, and other roads were not plowed in the winter and if you wanted to visit your camp you snowshoed in. There is not one spot now that to get to the brook I used to fish regularly where I would not have to pass right through someone's front yard. I could go on for pages like this but it is immaterial today. Change has happened and will continue to happen.

9. I can't say the last time I saw tourists in Clifton. If Paula is referring to the people who come to Clifton to climb peaked Mountain or rock climb then okay. I have run into some of those. I do wish they would stop having campfires on the mountain tops or leaving their trash there for me to pick up and too many of them are noisy and rude. And I'm so impressed that Paula thinks that SHE should decide what is and is not allowed in Clifton or what she decides is destructive.
10. Pretty ambiguous term, protecting the community of Clifton. I guess again that Paula believes she knows what is best for Clifton and all its residents.
11. Frankly this paragraph is uncalled for. But talk about the pot calling the kettle black with regard to tearing apart the community.
12. I don't buy into that idea of not letting outsiders come in and criticize. Sounds a lot to me like a form of bigotry. Then again, as someone who grew up in this town I could consider Paula to be an outsider. LOL I'm being specious here but I take it you get the point. And yes, there were things about this attractive little Maine town that I loved and that are now gone. The brook I used to fish. The place I used to hunt that took an hour to walk into and you would never see even one footprint from another person in the snow. The last time I went there I drove in to my favorite spot in my car, got out and spotted three hunters in blaze orange positioned where they couldn't see each other and might end up shooting each other, got back in my car and went home. And I remember Route 9 as this winding country road between beautiful trees, not the superhighway it is now. But some of us are able to accept change and to take pride in the progress and changes.
13. The process is completely open and anyone who wants information or make comments is free to do so.

Teresa Davis and Anita Findlen testimony

Some of this applies to testimony submitted by others as well but in the interest of holding down the length of these comments I will not attempt to address comments by all individuals, as many of them were somewhat repetitive.

Several people brought up the issue of the 1989 Maine's finest Lakes study. This study is repeatedly portrayed as being the be-all and end-all of studies regarding Maine lakes and that it should be used as justification to limit wind power developments. Although I have never seen any of these individuals try to use the same study to limit or prevent logging operations, or their building new or massively expanding lakefront cottages into year-round residences.

That said, while Maine's finest Lakes study is a good start at evaluating Maine's lakes it also is highly flawed and in no way as comprehensive as portrayed. The study really needs to be redone.

The introduction of the finest Lakes study says that **"Within the state there are over 6000 Lakes"** implying that this comprehensive study was of all 6000 Lakes. In fact the study was much more limited. First of all, 3000 of the 6000 Lakes were evaluated in a previous study in 1987 called the **Maine Wildlands Lake Assessment**. This is important because the criteria and procedures used in the **Maine's finest Lakes study** were developed in the **Maine Wildlands Lake Assessment**. **Maine Wildlands Lake Assessment** actually included only 1500 of the 3000 in its jurisdiction. It included all

Lakes in Maine that even part of them was in LURC jurisdiction at the time. Of the 1500 in this earlier study 118 Lakes were rated outstanding in scenic quality and another 166 were rated Significant. 30 were rated outstanding in shore character and another 132 were rated significant.

The Maine's finest Lakes study only applies to the approximately 3000 Lakes entirely in organized townships and a much smaller number of lakes were actually evaluated for several of the resource categories inventoried. Only 867 Lakes of the 3000 in organized townships were actually evaluated. (Page 28, findings) On page 29 under findings,

“These findings clearly indicate a disparity between the value of lakes in the unorganized territories and those in the organized towns. This, however, is not altogether surprising. The lake resources of southern Maine and other organized areas of the state differ from those in more remote areas. They differ both in terms of physical characteristics and adjacent development. Lakes in the unorganized territories tend to be found in . mountainous terrain or in areas with shallow bedrock. They are almost always less developed than their counterparts in organized towns which translates to more pristine wildlife habitat and oftentimes higher scenic value. Lakes in organized towns, by way of contrast, are largely located in lowland areas near centers of population. In these areas there are fewer lakes and those that do exist have less pronounced shoreline features, more access roads, and fewer miles of undeveloped shoreline. Natural resource features associated with these lakes often have affected by prior development.”

Note the bias towards undeveloped shorelines.

“It is important to note that both the LURC project and the current project relied heavily on existing information to rate lake resource features. Due to the large number of lakes in the state, as well as the relative lack of field surveys on these lakes, it is quite possible that some important features have been overlooked. Because of this, these lake ratings should be regarded as minimal findings. Some class 3, 2 or 1B lakes may be more significant than their rating indicates.”

What this means is that many more lakes may have significant or even outstanding ratings than the small number identified in this study.

In the Maine's finest Lakes study the standards used for determining scenic quality are described on pages 15 and 16. Standards used for determining shoreline character are listed on pages 17 and 18. On page 17 under standards.

“Lacking an established base of information for Maine lake shorelines, lakes included in the shoreline character evaluation were limited to the 115 lakes flown for scenic assessment. In addition to aerial evaluation, resource experts were consulted about shoreline information. Given the lack of information, the resulting list of lakes may be incomplete and some lakes with significant or outstanding shoreline characteristics may

have gone unreported.”

Note that only 115 lakes were actually evaluated either for scenic assessment or shoreline character.

To give you an idea of how many lakes may have been left out of the study I looked at Fitts Pond here in Clifton. It has two areas of significant relief exhibiting a 300 foot change in relief within .5 miles of the lake as described under standards used to evaluate scenic quality on page 15 however it received no rating. Neither cranberry Pond or upper springy Pond are even listed in appendix D of the report despite the report stating that all lakes that are 10 acres or more in size are listed alphabetically by Township. Lower springy pond received a significant rating for shoreline in the study.

Regarding Hopkin's pond the report said:

“Shore Character: The shoreline character is also outstanding despite being partially developed in 1 cove, and shallow. The shore is 40% forested, and 60% bouldered, with small or few protruding slabs.”

Note that since this study was done that Hopkins Pond now has significant development in two coves and along a significant section of the Clifton shoreline.

It is important to note that these studies were implemented in response to heavy development pressure around lakes and ponds in the early 1980's and that the purpose was to support implementing protections and limiting development around what were considered high-value lakes. It is obvious when reading the entire reports that there was a strong bias when rating lakes as outstanding or significant for Lakes with limited or no development around them.

Since the date that Maine's finest Lakes study was done, in October 2008 the Maine state planning office published the scenic assessment handbook, state planning office, Maine coastal program. This handbook provides a detailed and comprehensive method for analyzing scenic resources. The following quotes are from the introduction in this handbook.

“The methodology was developed to evaluate scenic resources in coastal locations. However, it should be applicable to inland areas as well, since it is based upon an assessment of landforms, vegetation, water bodies, and cultural patterns that define the visible landscape throughout Maine.”

“By definition, scenic resources are public areas, features, and sites that are recognized, visited, and enjoyed by the general public for their inherent visual qualities. With this understanding, the methodology is limited to scenic resources viewable from public places (e.g., roads, parks, scenic turnouts, coastal waterbodies, great ponds, public hiking trails, etc.). There are a multitude of scenic resources in Maine that are only visible from private lands or structures. However, the State has historically limited its consideration of scenic areas and visual impacts to places to which the public has access.”

Regarding Visual Impact in general.

I do understand how passionate some people are about anything that affects their personal property or in this case what they perceive as their enjoyment of their home. I live near peaked Mountain in Clifton and the view from my deck and front yard is of big peaked and Little peaked Mountain. I remember when they built the 300 foot tall cell tower on top of big peaked. And yes, I was not happy about it and at first I was upset with that constant blinking red light. But you know, I came to accept it and in the overall scheme of things it's no big deal. On top of that I don't own peaked Mountain nor do I believe I have the right to tell the person who does own it what they can or cannot do on their own land provided it has no direct negative impact on me. And I do not believe my being annoyed or unhappy is sufficient justification to tell the owner of peaked Mountain what they can or cannot do on their property.

The fact is that there is no truly objective criteria to address this issue. It always comes down to someone's subjective judgment on what is or is not acceptable. There have been many attempts to somehow make an objective determination but in the end it amounts to one person doesn't think it's any big deal and another person thinks it's a moral outrage.

To give you an idea of how difficult I believe this is in practice legally I give you the following excerpts from the Maine supreme judicial Court decision in the case of Kosalka v. Town of Georgetown.

"On February 21, 1997, Eric and Patricia Kosalka submitted an application to the Georgetown Planning Board (GPB) for a permit to construct a nine-trailer recreational vehicle campground{1} on property owned by Eric's mother, Ruth Kosalka."

" The GPB denied the Kosalkas' application, concluding that the proposed site was located in Resource Protection District of the shoreland zone because it was within the 100-year flood plain and was not developed. The GPB also found that the proposed campground did not satisfy the conditional use guidelines because it did not "conserve the natural beauty" of the area."

(Can we substitute "protect the natural scenic resource" or "protect our view from our camp" for "conserve the natural beauty".)

"Developers are entitled to know with reasonable clarity what they must do under state or local land use control laws to obtain the permits or approvals they seek."

"(the public should not have to guess at the meaning of a statute "leaving them without assurance that their behavior complies with legal requirements")

"Here, the Georgetown Ordinance requires that all development "conserve natural beauty." However, all development, to some extent, destroys or impairs "natural beauty." If the provision means that all natural beauty must be conserved, then all development must be banned. Because the provision cannot reasonably be interpreted to ban all development, the question becomes: How much destruction is okay? Or, put another way:

How much conservation is required? On this question, however, the Georgetown Ordinance, like the ordinance in Stucki, is silent. Neither developers nor the ZBA are given any guidance on how to interpret the "conserve natural beauty" requirement. Instead, developers are left guessing at how much conservation is necessary, and the ZBA is free to grant or deny permits as it sees fit."

Also note:

It is not legally permissible to include a review standard in the ordinance which requires a board to find that a project will be "compatible with the neighborhood" or "harmonious with the surrounding environment." Compare *Wakelin v. Town of Yarmouth*, 523 A.2d 575 (Me. 1987), *American Legion, Field Post #148 v. Town of Windham*, 502 A.2d 484 (Me. 1985), *In Re: Spring Valley Development*, 300 A.2d 736 (Me. 1973), and *Secure Environments, Inc. v. Town of Norridgewock*, 544 A.2d 319 (Me. 1988).

I believe these legal opinions by the highest Maine court make the majority of the Visual Impact Assessment requirements of the Site Law questionable.

Re: stormwater management and soils.

It was a poor choice of words by CES to say that the Silver Maple wind project is not located within a Lake watershed since effectively every spot in Maine is in the watershed of some lake, river, or the ocean. But it is frankly ridiculous to consider that the small area of impervious ground this project will have will generate any significant runoff. The distance that the wind towers will be from either floods Pond or springy pond along with the extensive buffer areas makes contamination of these waters a vanishingly small chance. I know some opponents want that chance to be absolute zero but in the real world that is not possible. Someone building a new Camp or converting a seasonal camp to a year-round residence located on the shore would have a greater chance of contributing either phosphorus or other pollutants into the lakes. The statement by one individual that the tower closest to the floods Pond watershed area could fall over and therefore endanger Bangor's public water supply is almost ludicrous. I cannot find even one example where a wind tower has "fallen over". I would have to say the possibility of this happening is roughly equivalent to a tornado coming through the area, picking up a fuel delivery truck, and dropping it into floods Pond right on top of a rock and breaking it open.

There was a comment by another individual who lives 3 miles from the existing wind turbines implying that the flashing red lights on top of the turbines shine into her bedroom. All I can say is that this is a gross exaggeration at best. I do not deny that the flashing red lights are visible from her bedroom but to imply that they shine in obtrusively cannot be taken seriously. I take it this individual has no problem with all of the lights visible from her property at all the other lakeside residences. My understanding is that there is a lighting system available now using radar that these lights will only come on when there is an aircraft within 5 miles. I also understand that this is a decision to be made by the FAA. **I would ask the Maine DEP to file a request with the FAA to authorize this system for the silver Maple project.**

Re: Property values

This issue appears to come up with all major developments and especially with windfarms.

I direct you to “ **A Spatial Hedonic Analysis of the Effects of Wind Energy Facilities on Surrounding Property Values in the United States**” by **ERNEST ORLANDO LAWRENCE BERKELEY NATIONAL LABORATORY.**

Download from <http://emp.lbl.gov/reports/re>

To quote:

Abstract

Previous research on the effects of wind energy facilities on surrounding home values has been limited by small samples of relevant home-sale data and the inability to account adequately for confounding home-value factors and spatial dependence in the data. This study helps fill those gaps. We collected data from more than 50,000 home sales among 27 counties in nine states. These homes were within 10 miles of 67 different wind facilities, and 1,198 sales were within 1 mile of a turbine—many more than previous studies have collected. The data span the periods well before announcement of the wind facilities to well after their construction. We use OLS and spatial-process difference-in-difference hedonic models to estimate the home-value impacts of the wind facilities; these models control for value factors existing before the wind facilities’ announcements, the spatial dependence of unobserved factors effecting home values, and value changes over time. A set of robustness models adds confidence to our results. Regardless of model specification, we find no statistical evidence that home values near turbines were affected in the post-construction or post-announcement/pre-construction periods. Previous research on potentially analogous disamenities (e.g., high-voltage transmission lines, roads) suggests that the property-value effect of wind turbines is likely to be small, on average, if it is present at all, potentially helping to explain why no evidence of an effect was found in the present research.

The conclusions on pages 37 and 38 go into more detail.

I also direct you to:

**WIND FARM PROXIMITY AND PROPERTY VALUES:
A POOLED HEDONIC REGRESSION ANALYSIS OF
PROPERTY VALUES IN CENTRAL ILLINOIS**

Jennifer L. Hinman

**In partial fulfillment of the requirements for the degree of
Master of Science in Applied Economics
Electricity, Natural Gas, and Telecommunications Economics Regulatory
Sequence**

**Illinois State University
Department of Economics**

Abstract

The objectives of this study are to examine whether proximity to the 240-turbine, Twin Groves wind farm (Phases I and II) in eastern McLean County, Illinois, has impacted nearby residential property values and whether any impact on nearby property values remains constant over different stages of wind farm development with the different stages corresponding to different levels of risk as perceived by nearby property owners. This study uses 3,851 residential property transactions from January 1, 2001 through December 1, 2009 from McLean and Ford Counties, Illinois. This is the first wind farm proximity and property value study to adopt pooled hedonic regression analysis with difference-in-differences estimators. This methodology significantly improves upon many of the methodologies found in the wind farm proximity and property value literature. This study finds some evidence that supports wind farm anticipation stigma theory and the results strongly reject the existence of wind farm area stigma theory.

A longer conclusion is available on pages 85 and 86 of the study.

I believe several people also commented on the fact that power from wind farms is sold out of state. This is immaterial and irrelevant to the entire decision process. Selling power out of state is no different than selling potatoes, forest products, blueberries, art work, etc. Exports are a net benefit to the state. Period.

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