

# ***RAVENNA TOWNSHIP ZONING COMMISSION***

JAMES MYERS, CHAIRMAN VICKI JOYNER, VICE CHAIRMAN  
RUTH SCHELL, JIM JUST, AND BILL STONE

The Ravenna Township Board of Zoning Commission met on Tuesday, April 13, 2010 at 7:00 p.m., at the Ravenna Township Trustees Meeting Room at 705 Oakwood Street, Suite 105 Ravenna, Ohio.

J.P. Myers called the meeting to order at 7:09 p.m. Roll Call was taken present were: J.P. Myers, Ruth Schell, Jim Just, Bill Stone, Jim DiPaola, Zoning Inspector, Carolyn Chambers, Secretary, Vince Coia, Trustee, Todd Peetz, of Regional Planning and Greg Courtney from Wind Turbines of Ohio.

Ruth Schell made a motion that the minutes from the March 23, 2010 meeting be approved and Jim Just seconded it. Minutes approved, motion passed.

There was no one to speak from the public.

Old business was the discussion of Wind and Solar Power.

Todd Peetz started off with the discussion on the rough draft for the Zoning Code that was made. This started in May of last year when basically we were ask to put together a standardized draft for all the Townships and villages to potentially utilize, we didn't want to force solar wind on anybody so we kind of left the height up to everybody to decide on and one of the criteria we decided to use was setbacks because it will be a variance from your heights, kind of like cell towers they don't bother your heights and wind towers wouldn't bother your heights. Solar panels we didn't feel the same way cause they can go on top of roofs and stuff like that. What we did feel was important was the fall area so we didn't impact in someone else's property. We decided that the height of the wind tower had to be 1.1 the distance so if it was 100 ft. high it would have to be 110 feet away from all the setbacks. He passed out Deerfield's proposal and followed along their terms. J.P. asks the height is the tower or the blade and Todd said it is the top of the blade. What they were trying to do is limit the height. Some communities said they didn't care how high it is as long as it meets the setback requirements. As far as the farm areas why should we limit the size on the bigger properties? The other thing we have in here is we included information about the accessory uses we didn't want to create utilities. Now you are taking agriculture and turning it into a utility. The majority has to be used on site and still sell some of the power back to the grid. The idea isn't that you become your own utility and supply your neighbors with power that isn't the purpose.

J.P. : Yet they do that with gas wells.

Todd: As far as providing gas for people

J.P.: That house is designated the hookup house. Is this pretty much the same?

Todd: Yes, basically but we didn't want to create a wind farm. They will generate 100 KW per day.

J.P.: Your 10 thousand to 12 thousand average houses would be an average draw on a house. The gas well they go 40 acres per well now.

Todd: We talk about the height being 20 feet higher than the building basically. We also mentioned the closeness to an airport you have to have the lights on it. It also covers the 110% of the height from the setback. Also talked about having incentives for new development.

J.P.: Just so everyone is aware this 5KW, a water heater is 5 to 550kw an hour for one of the heating elements to be on a dryer is 5,000kw so you can either run a dryer so the cost output is

\$315 gas generator at your local farm store for a 5kw which isn't much of an output. When your 10 to 12 thousand to run a house.

Todd: retail value of a kilowatt

J.P.: 6.3 or 8 cents for an all electric home. That is total when you're home. A 5kw is not going to run that.

Todd: they are running 55 to 6,000.00 to install one of these things and divide that by 8 cents and you can figure out how long it would take to pay that off.

J.P.: Doesn't the government give money though?

Todd: Oh yeah it's a tax credit from the federal government. Some townships didn't want the incentive section in cause they didn't care about giving incentives to business so we left it open ended. There is all kind of other things in here such as variance to give them more space. This will help with side or front yard variance. One thing is going way back when cell phones were new they were expensive and no one had one it is the same now with wind energy it is kind of an expensive technology more and more people are realizing the value of it. We are always going to have sunshine and always going to have wind. What's going to happen is the price of solar wind is going to come down.

J.P.: Is there a stipulation of how big it has to be to get the credit?

Jim Just: Is there a limited cap on these?

Greg: The cap was removed two years ago. But there is a whole bunch of other paper work to do. Passed out a wind chart for Ohio. In Portage County you don't have a whole lot of wind. There is a State grant for these. 50% of the cost up to 25,000.00 there is a lot of catches to that. First of all you can't put one up for less than a 100 foot tower. Last I seen they had 300 and 50 million dollar grant for this.

J.P.: Do you have to go through the Edison people to sell back.

Jim Just: You are not going to put one up in Portage County for over 100 feet. Is that what you are saying?

Greg: No that's not true I have one going up in Portage County now. On 30 acres of land. No one is putting up a turbine to sell back to Ohio Edison. It isn't going to happen. Everyone that pays an invest on utilities are paying \$4.00 a month into the grant fund. That right on your bill it says customer charge \$4.00 and no one knows what it is. Commercial or anything non residential the State of Ohio Energy office has a grant there that is 40% of the cost up to 200,000.00. I am putting up a lot of Burgee's towers now. If I was a farmer and was told I couldn't put up a lattice tower I would not like that. That's not right. Mono poll may be in a residential location I understand that but, as a farmer I should be able to put up any pole I want. This wind chart that you are looking at is the wind chart I submit to the State of Ohio for a grant to justify that. There is a residential, non-residential grant, there is a 30% federal renew tax credit and Ohio Edison came out with an energy credit. If you produce 1 mega watt or more a year, for every kilo watt hour that you can send and produce the percent is you would buy the carbon credit from First Energy if you sign up for that program. So not only are you able to keep the electric and consumed it they will pay you .15 kw hour and for the carbon credit.

Jim Just: So you get 6.3 cents plus that? So that pretty good that 24 cents an hours instead of just the six.

Greg: They won't pay you for any electric that you didn't consume. You have to consume this. There is an over speed thing here, every turbine in order to get under writers certification has to have this by the Federal Government. I have to send a copy of this certification to First Energy. Their engineers look at it and they have to approve it. If a turbine is disconnected from the grid it shuts down automatic. That is part of the underwriter's certification. If the grid goes down the turbine locks up. Ohio Energy and all the ones around here have this certification. They are required and they are picky about it. All turbines need to be 150 feet apart if they are not far enough apart the wind won't catch up. I've had people call me and wanted to know why the middle turbine is not running. A half acre should be the minimum requirement. If someone had

a very narrow lot I can see where there would be a problem. Somehow you have to legislate that so you don't have a problem.

J.P.: That's why the oil well guys haven't got two on a parcel.

Greg: Yeah same sort of thing one guy is going to rob the other guy of wind and someone is going to get mad.

Todd: I see what you mean by the 150 feet apart.

J.P.: If they are on a hill can you stagger them?

Greg: No, there is a thing Beth's law it states a turbine can only reach 59% of that wind blowing through the blade that is the maximum amount of energy you can get out of it that's the maximum amount of efficiency. But it takes 150 feet passed that to reorganize and get that energy again. Once it goes through that blade it lost 59% of the energy.

Bill: Does this turbine spin with the wind?

Greg: Some of them are down wind rotators some of them are up wind rotators the ones with the tail are up wind rotators. If it doesn't have a tail it's a downwind rotator. The big mega watt ones don't have a tail because they have an anemometer up there with a computer inside telling them which way to turn.

Todd: A single family house a prop will not be as attractive as a vertical blade.

Greg: Nobody in Portage County will put up a vertical, if they call me. A vertical is quite different than a horizontal turbine. A horizontal turbine has a lift blade like a prop on an airplane and the power relationship verses the wind is cubicle. It can go as much as 8 times because of the blade design. A vertical access is a drag turbine it will never go faster than the wind speed ever, it can't. You will never get your money back. You will never get your money back in your life time.

Tim: What is the typical amount of time on your investment?

Greg: The ones that I am doing now is \$66,000.00 installed on a 100 foot lattice tower and takes 40 yards of concrete, it's big. Each blade on a Burgee is 11foot 2 so it's really 112 actually from the ground.

Bill: Is that on a good soil?

Greg: We have in Newcomers town now that we are having problems with because it was on sand and we will just have to expand the foundation and it will be huge and it is an elementary school and is government funded. Anyway, it's \$66,000.00 for these turbines, they get a \$26,000.00 state grant, they are going to get another 30% off the gratuitous, because they are going to get a 1099 from the State of Ohio and they're going to pay income tax on the \$26,000.00.

J.P.: Do you have 5 or 7 years to do that in? I think they will let you break it out as long as you are selling it back to Edison.

Greg: No one is going to sell to Edison, not going to happen. We are doing chicken barns that they have huge electric bills. If you have First Energy with the carbon credit program they say it's for residential they do extend it to agriculture. They don't do it for Commercial and Industrial. They can use the full tax credit; if they use all the incentive grants and everything else available they can have their money back in a couple of years. Three at the most. You have to figure a Burgee is going to produce, in Portage County, 25,000kw hours a year and at .15 kw hour that roughly \$4,000.00 a year.

J.P. If I put in anything bigger than that it's not going to run.

Greg: Yea, if you put in bigger than that you are wasting your time. Because of the low wind speeds in Portage County there are locations you will get only 55% of the energy in the wind. So if you have two or three turbines you are going to get a lot more energy than one big one. I have some farms that put up two of them to make a lot more electric. Can you do that in Portage County?

Todd: You can do it if you get a conditional use for the second one as long as you have the room.

J.P.: Can they regulate it on agriculture? The County

Greg: Agriculture is exempt. Edison is really pushing these things. They are mandated and so are Townships to produce 25% of electric by renewed energy sources by the year 2025. Then fines start kicking in by the Federal Government. They didn't see any way they could meet that. When they are buying carbon credits for their customers they are saving millions of dollars.

J.P.: They said in two years you would have your money back between what the tax breaks are and what they will give you to put it in.

Greg: Agriculturally the USDA just came out with a 25% grant just this week.

J.P.: On top of this?

Greg: Yea, pretty soon they will be paying you to put up these things.

Bill: Do you every have to get up on there to have the bearings greased or how does that work?

Greg: There is no maintenance for the first 25 years. Burgee is just a plain work horse. They build everything on their plant in Oklahoma.

Bill: Any comment on the wind noise?

Gregg: If you put up a wind tower on a lattice you won't hear it at all, but if you put in on a mono pole and you put it 100 feet in the air it is going to be 5 inches at the top and 2 feet at the bottom that's a big blow horn for everything it does. I put up skystreams 100 ft tower, I have one at my Dad's house, what little bit of noise that wind stream makes is amplified when it gets to the bottom that is one disadvantage about mono pole, I have had a couple of complaints about that. There is a way to stop the noise you stuff the bottom with Styrofoam.

Bill: With the lattice pole do they have to be anchored down then?

Greg: They are self supporting towers.

J.P.: Does Edison have free transformers, because if it fell and hit the neighbor's house we have to insure the pole and we own part of the transformer.

Greg: I don't know. Anything we are doing with a grant is going to be well engineered, in fact when I submit a grant I have to submit all the engineering for the turbine and the foundation and I have to submit a contract by an independent even if there is a building department in the county, I still have to submit a signed contract by the independent engineer that he is going to inspect the soil samples at the bottom of the hole and inspect the ree bar and inspect the construction of the tower before it is set up and he has to submit a report to the State before the reimbursement of the grant. But that's a granted project because of the law suits.

J.P.: The ones on 480 you cannot hear them at all and that's on a mono pole.

Greg: No, you can't hear them at all except on a really windy day you might hear a whoosh, whoosh, but it has to be going pretty good to do that. Wind farms, they are noisy, but you shouldn't be able to hear them. On bird kills, on the smaller winds being 100kw and less there isn't any, the big mega watt ones there is some bird kills but it is not because the birds are smacking into the blades, when the blades are going around of 120 mph it creates a low pressure field and when the birds fly into that low pressure field it cause their lungs to hemorrhage. Most small wind turbine can't go over 400 rpm and they don't have a long enough blade to at the tip going 120 mph so they don't have that same issue and birds aren't typically flying into the blades.

Jim Just: There is a shadow flicker too.

Greg: Yea, there is a shadow flicker and people think that is weird it doesn't cause epilepsy and stuff like that.

Jim Just: If they shadow flicker why don't they just shut their blinds.

Greg: I don't remember having a flicker every at my house.

J.P.: Does your company supply if somebody comes in to get a permit to go out and do a wind study for these people or is that a up front project.

Greg: We don't do it, if you buy the turbine you can do the wind study at the price you have to pay. We have these wind charts and they are supposed to be accurate. You can buy all kinds of wind studies without doing that. They are done at different height at 50 meters and 80 meters.

J.P.: Do you have a problem of mono pole going over easier than a lattice pole?

Greg: There will be stronger because the pole at the bottom is 10 feet apart and have more strength. The mono poles have less concrete than the lattice pole. I've never had one blow over. Randolph Township just redid all of theirs and that would be a good one to get if you haven't gotten it. You should legislate the colors, particularly on the blades; you don't want multi colored blades going on up there. Black would be good for a ice storm, with ice on the blades it is not going to turn. The turbine will sense that and shut it down.

J.P.: There is nothing you can do to deice it or something like that?

Greg: The turbines are designed none of them are going to go over 400 rpm, because a 1,000 rpm blades do fly off so if that breaking mechanism isn't there that's what causes the blade to do that if there is failure in the breaking system. While ice is on it, it may go a revolution or two but it will sense it's off balance. Turbines today are pretty smart all the electronics in them they are incredible safe. We have only had five that had one or two breakage, they are all made in America we have no China made. We have only had one that the bearing blew. It will be noisy if the bearing goes out, you'll know. If there is going to be something that goes wrong with a turbine it will go within the first 10 days and they will last up to 25 years.

J.P.: When you service one of these do you have a bucket truck or is it all done by climbing inside?

Greg: We don't climb towers we either get a bucket truck or crane with a basket, or we bring it down. A lot of towers are hinged and have 100 foot guide wires. I don't think you need to fine tune the mega watt because I don't think that is going to happen here.

Todd: Somebody is going to say how did we let this happen when someone puts up a 100 foot tower, so we need some kind of guideline so some people will understand it and that's why the 110% and that kind of thing.

Greg: That's ok, that's a good idea. Maybe you need the mega watt in there just for some kind of physiological perception; you'll never have to deal with it though.

J.P.: Given the area we are in it doesn't condone itself for that type.

Greg: You can't spend 3 to 5million dollars you will never get that money back. If you produce more than you are using you don't get the carbon credit. The value of that carbon credit is going to come down as more and more towers go up.

J.P.: It is at least 3 years out before it's going to drop below.

Greg: It's more than that. Renewable energy is going to be far bigger than .com thing is for the first time we can be energy independent in our homes. It will continue to go that way with fuel cells by everyone house. It is going to be a combination of fuel cells and wind solar and everything not just one individual thing.

J.P.: Do you see that if someone puts one up that the neighbors can tie on or don't they allow that?

Greg: There is no way to do it; there is one interconnection point and one interconnection agreement no way to do it. You don't have the wind speed to justify that cause. If you put up a 10kw it's not going to eliminate you 1,600 dollar bill.

J.P.: So as far as one tower supplying 6 homes

Greg: Never going to happen. There isn't that much wind here. The solar will come along way you will probably have a lot more of that. Another one to look at is Green theirs is also a good one to look at.

J.P.: Did any of them go with the lattice towers or did any go with a mono pole?

Greg: Not that I'm aware of.

J.P.: You take them right back to the panel box and put in the switching gear and all not just the tower. If you aren't drawing the meter is feeding backwards. They don't want to put anything in to what is feeding back.

Greg: Usually there is no net, the meter is going to go back and forth, back and forth

J.P.: If you're out of town for days at a time its going

Greg: I do have one guy that goes to Florida every winter and when he gets back in the spring he has a huge credit off of his bill. Once you sign the inter connection agreement Ohio Edison will

come out and put a bi-directional meter on your house. Ohio has a net metering law they really don't have a choice. The only thing I hate to see is if all these grants and credits are going to happen please don't let our townships say no. We need legislation because I don't want people fighting over their turbine being over 50 feet.

Bill: What is the rule of thumb on those guide wires you got a 60 foot tower 100 foot tower the height and the distance out how do you determine that?

Greg: I have a 70 foot tower at my house and it's a guide wire tower and its 70 foot wide. If we put up a 100 foot tower we have an 84 foot footprint. The higher you go the less footprints it needs it's big numbers you have to have a big area.

J.P.: When you see guide wires you don't have parking or anything like that under it.

Greg: No, it's hard to put up guide wires towers because you can't put them on a rolling area, each point has to be all the same elevation it has to be perfectly plumb or it will lose production, with the temperature difference that we have in Ohio that galvanized steel guide wire it's going to spin and contract a little bit and pull that out of plumb.

J.P.: Did you bring cards for everybody?

Greg: Passed out flyers to all of us and explained it.

Bill: Are they all grounded for lighten strikes

Greg: I just had a guy draw up a diagram with a lighten rod on top of this turbine. These lattice towers have three legs and each leg is a lighten rod and we couldn't change his mind. I think I covered everything, if you need me to come back just let me know.

J.P.: There is an internet sight that we can go to that will tell us what the wind is?

Greg: You can go to awstruwind or go to 3tiergroup.com. Those are the two most accurate. We use awstruwind because we have to buy a membership support our grant.

Bill: What does it cost to take one down?

Greg: I don't know we have never had to do that.

J.P.: With a guide wire just cut one of them.

Greg: I don't see anyone in Portage County putting up one bigger than Bonner has, he has a 50 foot one and is putting up another one.

No new business

The next meeting was set for May 11, 2010

Ruth Schell motioned the meeting be adjourned and Bill Stone second it. Meeting adjourned at 8:35 p.m.

Respectfully submitted by  
Carolyn Chambers  
Zoning secretary

cc: Trustees (Coia, Artz, Gibson)  
Clerk (Rich)  
Zoning Inspector (DiPaola)  
Zoning Commission (5)  
File