

AS APPROVED OCTOBER 15, 2009

MINUTES OF REGULAR MEETING

CHAMPAIGN COUNTY ZONING BOARD OF APPEALS

1776 E. Washington Street

Urbana, IL 61801

DATE: July 16, 2009

PLACE: Lyle Shields Meeting Room
1776 East Washington Street

TIME: 7:00 p.m.

Urbana, IL 61802

MEMBERS PRESENT: Doug Bluhm, Catherine Capel, Thomas Courson, Roger Miller, Melvin Schroeder, Eric Thorsland

MEMBERS ABSENT : Paul Palmgren

STAFF PRESENT : John Hall, Leroy Holliday, J.R. Knight

OTHERS PRESENT : Phillip Geil, Herb Schildt, Sherry Schildt, Steve Burdin, Bill Fabian, Mike Miller, Birgit McCall, Ben McCall, Mike Miller

1. Call to Order

The meeting was called to order at 7:03 p.m.

2. Roll Call and Declaration of Quorum

The roll was called and a quorum declared present.

3. Correspondence

None

4. Approval of Minutes (June 11, 2009)

Mr. Thorsland moved, seconded by Mr. Courson to approve the June 11, 2009, minutes as submitted. The motion carried by voice vote.

5. Continued Public Hearing

Case 632-AM-08 Petitioner: Mike Trautman Request: Amend the Zoning Map to allow for the development of one single family residential lot in the AG-1, Agriculture Zoning District by adding the Rural Residential Overlay (RRO) Zoning District. Location: A 1.66 acre tract that is in the East Half of the Southwest Quarter of the Southwest Quarter of Section 35 of Newcomb Township and commonly known as the land east of Trautman's Section 35 Subdivision approximately at 420 CR 2425N, Mahomet.

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Mr. Hall stated the Supplemental Memorandum dated April 9, 2009, included an e-mail from David Atchley, the Petitioner’s Engineer indicating that the Petitioner has elected to withdraw his case at this time.

Case 634-AT-08, Part B. Petitioner: Zoning Administrator Request: Amend the *Champaign County Zoning Ordinance* as follows: 1. Add definitions for “SMALL WIND TURBINE TOWER” and “BIG WIND TURBINE TOWER”; and 2. Amend paragraph 4.3.1E. to add new height regulations that apply to “SMALL WIND TURBINE TOWER” and “BIG WIND TURBINE TOWER”; and 3. In Section 5.2 replace “wind turbine” with “BIGWIND TURBINE TOWER”; and 4. In Section 6.1.3 add new standard conditions for “BIG WIND TURBINE TOWER” that are similar to the standard conditions for WIND FARM; and 5. Add new subsection 7.7 making “SMALL WIND TURBINE TOWER” as an authorized accessory use “by-right” in all zoning districts and add requirements including but not limited to: (a) the turbine must be located more than one and one-half miles from the nearest municipal zoning jurisdiction; and (b) minimum required yards that are the same as for other accessory structures in the district provided that the overall height is not more than 100 feet; and (c) an overall height limit of 200 feet provided that the separation from the nearest property line is at least the same as the overall height and authorize private waivers of the separation by adjacent neighbors; and (d) a limit of no more than two turbine towers per lot; and (e) allowable noise limits; and (f) a requirement for engineer certification; and (g) a requirement to notify the electrical power provider if interconnected to the electrical grid; and (h) a requirement for no interference with neighboring TV, radio, or cell phone reception; and (i) a requirement for the removal of inoperable wind turbines.

Mr. Hall distributed a new handout for the Board’s review. He said that Mr. Knight went to two subdivisions in the County and did an analysis of setback from the nearest principal structure and in the AG-1 Subdivision, with 200 foot wide lots with lot area that is a little larger than one acre, that the 150 foot maximum height appeared to be feasible based on the required separations. He said that the analysis in Penfield, which includes zoning lots consisting of two non-conforming lots with a lot width of 132 feet and lot depth of 130 feet, found that 79 feet would be the maximum height for a wind tower in that area. He said that staff has received comments that the analysis in Penfield may need to be revised due to the potential need for guy wires but at this point, in Penfield, the maximum height may be 80 feet with a maximum rotor diameter of 15 feet. He said that staff has not measured any trees in Penfield but it is assumed that most trees stand between 50 to 60 feet high so this is not uncommon for an area such as this and the height needed to get above the trees generally agrees with the general requirement, which is very common, that the turbine be far enough away from the nearest principal building under separate ownership that it does not pose any problems.

Mr. Hall stated that staff is not ready for final action for this case at tonight’s public hearing because fees need to be added. He said that if the *Ordinance* stays as it is currently, permitting the small wind turbines will require staff to verify distances to the nearest principal dwelling which is a practice that staff does not perform with any other permit that is issued. He said that the volume of information that is required to permit a small wind turbine tower, as per the current Draft, will require that people submit more information than almost anything else that staff does on a daily basis. He said that as the Board saw in the comparison of other county ordinances, Champaign County is not unique in that situation and almost every county that was

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1 reviewed requires this much detail. He said that Macon County is the simplest and in some ways the most
2 restrictive amount of information required in that they do require the minimum separation from the nearest
3 principal dwelling, they do not require engineering certification, and there is no mention of noise limit, they
4 do not require utility company notice, which is legally required, or removal of the wind turbine when it is
5 deemed inoperable. He said that he has not called Macon County to see how their rules are working out but
6 they appear to be getting by with fewer requirements.

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8 Mr. Hall stated that the changes to the proposed amendment are extensive and therefore the Board may want
9 to walk through those changes. He said that the basic idea was what could be found in the current *Zoning*
10 *Ordinance* to peg the maximum size of a residential wind turbine to and the only thing that was really
11 obvious was the height of accessory buildings. He said that it is not to say that wind turbine rotors and
12 accessory buildings are at all alike in any way but it was a start. He said that he hopes that the Board does
13 not take final action at tonight's public hearing and he would really like to know what they think about the
14 overall limits that have been added to the amendment at this point.

15
16 He said that the limits on rotor diameter and height have been added to the proposed amendment and the
17 allowance of two turbines on one property was bumped up to three acres or more. He said that the more that
18 he thought about the allowance of two turbines on a lot in a subdivision that was less than one acre the more
19 it seemed like a bad idea for neighbors. He said that the requirement of safety balls on guy cables is only
20 necessary on property which is adjacent to farmland and this week he received information as to how many
21 safety balls would be required for a tower. He said that safety balls will also be relevant to met towers. He
22 said that when the Board considers a continuance date he would like to change definition of a wind farm and
23 make it clear that a wind farm is anything that isn't "SMALL WIND" or "BIG WIND." He said that
24 currently the definition has a 10 megawatt cutoff for a wind farm and it is likely that there could be a wind
25 tower that is smaller than 10 megawatts. He said that he regrets adding the 10 megawatt limit earlier and it
26 needs to be eliminated. He said that fees should be included in the advertisement and those fees can be
27 discussed later during the hearing.

28
29 Mr. Hall stated that over one page of text was added regarding what an applicant needs to do in order to
30 identify if there is likely to be electromagnetic interference so that later if someone comes to get a permit for
31 a wind tower there is proof that the applicant has checked into it. He said that almost of the comparison
32 counties have required that any interference be corrected and Ford County went as far as to state in their
33 ordinance that removal will be required if necessary. He said that he is really uncomfortable in have
34 something be "by-right" but subject to required removal if necessary or being concerned about
35 electromagnetic interference in the first place and not giving the applicant any guidance regarding the
36 evaluation. He said that electromagnetic interference can be a problem although he does not know any
37 magic way to identify ahead of time what needs to be done if that is the case and he hasn't found any
38 guidance from any other ordinance in the comparison counties, although they make it an issue, to assist him.
39 He said that he has not had time to check with the comparison counties to see if they have had any
40 complaints about electromagnetic interference from small wind turbines. He said that if staff could find that
41 it is not an issue then, in his opinion, it would be great if it did not need to be included in the *Ordinance*.

42
43 Mr. Hall stated that the State law removes the county regulatory authority for any wind turbine within one
44 and one-half miles of a municipality. He said that Champaign and Urbana are currently trying to draft

1 ordinances for that area outside of their municipal boundary and he is not so naïve to think that we can all
2 three agree on similar standards but to the extent that the Board continues this case staff may have time to sit
3 down with municipal staffs and try, as much as possible, to try to have standards that are as similar as
4 possible because if there is a lot of dissimilarity there will be justification for a variance. He said that it is
5 unusual for all three entities to be working on the same kind of standard at the same time and actually the
6 County is ahead of the municipalities. He said that if the Board would like to slow this case down even
7 more it would give time to allow a more complete cooperation in that regard and he believes that it would be
8 a good thing although just one continuance would allow a little bit of time.

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10 Mr. Bluhm asked the Board if there were any questions for Mr. Hall.

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12 Mr. Courson asked Mr. Hall if staff had received any applications for small wind towers within the last six
13 months.

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15 Mr. Hall stated no. He said that the only application that staff did receive was from Arends Brothers which
16 was received by Urbana.

17
18 Mr. Thorsland asked Mr. Hall if he was aware as to what Urbana gave Arends Brothers.

19
20 Mr. Hall stated that as far as he knows Urbana gave Arends Brothers a permit and they set the turbine back
21 at a minimum distance from the property line, which, with as much land as was available, that was the only
22 issue, therefore that permit was pretty easy.

23
24 Mr. Bluhm asked Mr. Hall if a small wind turbine had been permitted outside of St. Joseph.

25
26 Mr. Hall stated that there have been some agricultural turbines permitted but he does not recall any non-
27 agricultural turbines.

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29 Mr. Bluhm asked the Board if there were any additional questions for Mr. Hall.

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31 Mr. Bluhm called Mr. Phillip Geil to testify and Mr. Geil declined to speak at this time.

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33 Mr. Bluhm called Bill Fabian to testify.

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35 Mr. Bill Fabian, who resides at 4501 Goldfinch Rd, Champaign stated that he owns Mid-State Renewable
36 Energy Services which contracts solar and small wind energy systems throughout central Illinois. He said
37 that he has been involved in the business since 1998 and established his incorporated business in 2002. He
38 commended the Planning and Zoning staff for proactively addressing a lot of concerns related to residential
39 scale small wind turbines. He said that in his years of working with residential scale unites he has had to
40 address many of the Board’s concerns regarding setbacks from property lines, structures and utility
41 easements and clients wanting good standards of construction to bring down the price. He said that he has
42 had to walk away and refuse to initiate several wind energy projects as a result that the project did not meet
43 the standards of many of the items currently being listed in the proposed amendment. He said that as good
44 as the current proposed amendment is he would like to address a few issues.

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2 Mr. Fabian stated that the requirement of safety balls could cause some hardship and unnecessary expense to
3 some clients. He said that understandably if a wind tower is proposed to be constructed in the area of an
4 airport then they would be necessary within the FAA jurisdictional area but if the tower is to be placed on
5 agricultural farmland where there are adequate setbacks from the property line, as proposed in the
6 amendment, the turbine should be adequately away from any active fly path of a crop duster and the guy
7 wires will be set away from the property line. He said that the possible expense for re-engineering for 9 or
8 12 inch safety balls on a tower does not seem necessary and they will place an added vertical and horizontal
9 load on the guy wires that may not be addressed in the original engineering plans. He said that he would
10 like the Board to amend and fine tune this portion of the proposed amendment. He said that if the Board
11 decides to make the safety balls necessary then please consider the placement because it would nice if the
12 safety balls were only required to be up 50% of the guy wires. He said that if the Board requires such he
13 could explain the added expense and re-engineering of the plans.

14
15 Mr. Fabian stated that he is concerned with the tower fencing and anti-climb devices. He said that the
16 typical monopole and guyed tubular towers cannot be climbed unless they have some sort of climbing rungs
17 on them, which can be removed. He said that for most residential scale wind turbines, typically up to 10
18 kilowatts, do not have climbing rungs and having wrestled around with monopole towers for awhile he can
19 guarantee that they cannot be hung on to. He said that larger monopoles that have climbing rungs on them
20 for the larger than 10 kilowatt turbines can have their climbing rungs removed. He said that lattice towers
21 should have some type of anti-climb device on them and those devices can be readily obtained. He said that
22 it would be good for the Board to differentiate the types of towers when requesting anti-climb devices or any
23 type of fencing that is required. He said that Mr. Hall spoke about the EMI interference and most reputable
24 turbine companies have their turbines and invertors certified under E1 and EEE guidelines and that also
25 includes FCC Part 15 standards for any kind of interference which is typically short range. He said that in
26 the past any interference that has come off of any turbine has been typically confined to larger turbines with
27 metal blades and most residential turbines which are below 10 kilowatts use a carbon fiber or fiberglass
28 blades with low reflectivity as far as any radio signals. He said that with the metal casings surrounding the
29 rotors and the armatures, the induction motors are permanent magnetic induction alternators of the turbines
30 that typically provide the necessary shielding to eliminate any kind of problems. He said that to have a
31 homeowner or the homeowner's contractor contact every radio station, METCAD, Verizon, ATT, or
32 whoever would also create a hardship. He said that normally it would be a liability on an installer to put in a
33 gridline system without obtaining approval from the utility because the utility will pull the meter which will
34 make the homeowner very unhappy. He said that his company will typically contact the utility company to
35 make sure that the homeowner has a contract in place before they start a project. He said that it may be
36 good to have confirmation from the contractor also that there have been arrangements made with the utility.
37 He said that most digital meters will indicate an error if there is any back feeding or it won't even register
38 therefore it is almost a waste of time to try to sneak one in.

39
40 Mr. Bluhm asked the Board if there were any questions for Mr. Fabian.

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42 Mr. Miller asked Mr. Fabian to clarify if the highest point of the guy wire would still be significantly lower
43 than the tallest point of the tower.

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1 Mr. Fabian stated that Mr. Miller is correct because it has to actually clear the blade tip.
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3 Mr. Miller stated that an orange safety ball is not serving any purpose for aerial planes if it is not at its
4 highest point.
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6 Mr. Fabian stated that the concern that the Board has is with low flying planes. He said that he has seen
7 crop dusters that skim the top of the blades and if there is a 100 foot tower the anchor point will be typically
8 60 to 80 feet from the base of the tower. He said that if the plane is going to be close enough to hit the guy
9 wire they are going to be a good 40 or 50 feet into that resident's yard spraying their trees and flowers. He
10 said that typically pilots will not do that unless there are significant cross winds and most pilots will allow
11 for the drift. He said that if the wind turbine was near an airport where there are airplanes coming in and the
12 turbine is located within the landing pattern then there are FAA guidelines which will limit the height of the
13 tower to, most likely, less than 100 feet.
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15 Mr. Thorsland asked Mr. Fabian if anyone's wind turbine, that he has installed, caused any type of
16 interference.
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18 Mr. Fabian stated no.
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20 Mr. Bluhm asked the Board if there were any additional questions for Mr. Fabian and there were none.
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22 Mr. Bluhm asked if staff had any questions for Mr. Fabian.
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24 Mr. Hall stated that he appreciates Mr. Fabian's comments at tonight's hearing. He asked Mr. Fabian if
25 metal blades are used.
26
27 Mr. Fabian stated that metal blades are not used on any commercially produced product. He said that there
28 are home built units which will use metal blades but the industry learned a long time ago that there are
29 fatiguing factors involved. He said that someone does not want a blade snapping off under the forces that
30 are typically seen during a storm which will actually bend and break a blade. He said that the industry has
31 found that it is better to stick with the protruded fiberglass, carbon fiber or foam filled fiberglass blades or
32 even wood blades. He said that the turbine that he currently has at his residence has foam filled fiberglass
33 blades that are very stout and the blades are configured for centrifugal over-speed control to where they will
34 actually pitch and go into a stall mode to regulate the turbine. He said that some units will have a carbon
35 fiber configuration where the blade tips are very thin and run under a high RPM and under high RPM forces
36 they will actually twist which causes the blade to go into a stall environment, which is quite noisy. He said
37 that some of the units have an electromagnetic shut down which will brake the turbine so that the blades are
38 subject to the minimal amount of forces that they will typically see during a storm. He said that most
39 commercial and residential turbines will not put out any kind of product that will put out any kind of EMF
40 and all turbines should come with a UL certificate and in their manual there should a page that states that the
41 unit meets FCC, Part 15 requirements. He said that anyone that has a good unit with that has the proper
42 certification and should be able to provide the proper documentation.
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44 Mr. Hall asked if the same documentation would be available for the larger units.

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Mr. Fabian stated that he would think so.

Mr. Bluhm asked if the paint color had been changed in the proposed amendment.

Mr. Fabian stated that most manufacturers like to have some sort of identifying paint scheme or lettering to identify their brand over someone else's unit. He said that the companies will use a marine gray polyurethane enamel that is baked on and if it has to be re-painted or painted over there is a lot of prep work that must be done. He said that there are some jurisdictions that do require, and are very firm, that units be of a non-reflective gray color and most wind turbine manufacturers will offer that option. He said that he hasn't run into this issue and the unit that he has at his residence is white with a very light blue coloring and it can be seen but does not appear to be offensive. He said that the larger units, 10 kilowatts, have a yellow spinner on the nose cone and yellow coloring on the tail and after a while you get used to it because it is not in anyone's face. He said that some jurisdictions are concerned that people will paint shark's teeth and other coloring and he can understand that concern but most of the units which are from reputable manufacturers have subdued graphics and coloring on them.

Mr. Hall stated that the proposed amendment was revised to indicate that the coloring shall either be supplied by the manufacturer or painted white or gray or another non-reflective color.

Mr. Fabian stated that the warranty remains if the turbine is not painted. He said that the wind turbine that was permitted with the County outside of St. Joseph was the first turbine that went on line with Eastern Illini Electric Coop. He submitted his semi-prepared statement as a Document of Record.

Mr. Bluhm asked if staff had any additional questions for Mr. Fabian and there were none.

Mr. Bluhm called Mr. Steve Burdin to testify.

Mr. Steve Burdin, who resides at 2527 N CR 450E, Mahomet stated that the guidelines for electromagnetic interference maybe a little tough. He said that the issues that the Board is concerned about such as radio communications, microwave communications, television communications are probably thousands of times higher frequency than anything that these turbines would generate. He said that it would be pretty difficult for those two different wave forms to interact much less interfere. He said that RPM values are at 100 versus microwave communications at hundreds of megahertz to thousands of megahertz. He said that induction motors may generate magnetic fields but the fields tend to fall off very quickly with distance. He said that satellite television is received by microwave signals and placing a turbine in the way of a satellite dish is like putting a toothpick at arms length and not being able to see the toothpick therefore very little interference should be expected.

Mr. Bluhm asked the Board if there were any questions for Mr. Burdin and there were none.

Mr. Bluhm asked if staff had any questions for Mr. Burdin and there were none.

Mr. Bluhm asked the audience if anyone desired to sign the witness register to present testimony regarding

1 Case 634-AT-08, Part B.

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3 Mr. Bluhm called Mr. Herb Schildt to testify.

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5 Mr. Herb Schildt, who resides at 398 CR 2500N, Mahomet stated that if a wind turbine did cause a
6 disruption which caused another homeowner harm then it should be up to either the owner of the turbine or
7 the installer's responsibility to correct the disruption. He said that the met tower that is approximately four
8 and one-half miles from his residence is 198 feet high and the orange safety balls do not go to the top and
9 only go approximately half or two-thirds of the way up and there is no light at the top of that same met tower
10 either.

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12 Mr. Bluhm asked the Board if there were any questions for Mr. Schildt and there were none.

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14 Mr. Bluhm asked if staff had any questions for Mr. Schildt and there were none.

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16 Mr. Bluhm called Ben McCall to testify.

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18 Mr. Ben McCall, who resides at 1085 CR 2200N, Champaign expressed his support for the general concept
19 of small wind because it is a very important thing for our community, country and the world and he
20 encourages people to adopt small wind technology. He said that as a homeowner he is considering adopting
21 small wind energy himself and he appreciates the Board and staff's efforts in establishing very clear
22 guidelines regarding the implementation of small wind in the County. He said that he is not an electrical
23 engineer but there are many devices available on the market that have some sort of specification for
24 regulating the electromagnetic interference that they can produce. He said that when you purchase a
25 telephone, television, refrigerator there are guidelines that they cannot emit enough EMI to cause problems
26 with other applications and he would suggest that if there are comparable specifications for wind turbines
27 that might suffice as opposed as to having separate zoning regulations. He said that small wind is defined as
28 turbines less than 100 kilowatt capacity and the rotor diameter cannot exceed 24 feet. He said that the rotor
29 diameter determines the maximum possible power generation of the turbine because that determines the
30 swept area that turbine intercepts. He said that based on the specification that were presented it appears that
31 all of the available turbines with a rotor diameter of less than 24 feet only output 10 kilowatts. He said that
32 it seems the proposed text intends to limit small wind to 100 kilowatts but main in practice limit it to 10
33 kilowatts because of the rotor diameter restriction.

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35 Mr. Bluhm asked the Board if there were any questions for Mr. McCall and there were none.

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37 Mr. Bluhm asked if staff had any questions for Mr. McCall.

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39 Mr. Hall stated that the intent is that small wind is 100 kilowatts or less and rotor diameter is limited based
40 on the land use therefore a residential turbine would be 15 feet on less than one acre and 24 feet is the
41 maximum rotor diameter for anything over one acre. He said that for non-residential land use the rotor
42 diameter starts off at 24 feet but can increase as the separation from the nearest principal dwelling is larger.

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44 Mr. McCall stated that as written the residential use is effectively limited to 10 kilowatts not 20 kilowatts

1 because a 20 kilowatt wind turbine would have a larger rotor diameter.

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3 Mr. Bluhm asked staff if there were any additional questions for Mr. McCall and there were none.

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5 Mr. Bluhm called Mr. Phillip Geil

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7 Mr. Phillip Geil, who resides at 2060B CR 125E, Mahomet stated the height limit of 150 feet might create a
8 problem because the turbine that he currently has can be mounted on a tower that is 140 feet high and with a
9 12 foot diameter blade perhaps 155 feet might be more accurate. He said that he will not be affected by the
10 requirement of the orange safety balls because his turbine is presumably grandfathered in. He said he
11 noticed that at the corner of I-72 and U.S. 47 there is an approximately 200 foot cell phone tower sitting in
12 the middle of farmland with five or six guy wires without orange safety balls therefore they must not be
13 required on a tower that is relatively close to farmland. He said that he is concerned that the orange safety
14 balls detract from the appearance of the tower more so than having some color on the turbine itself. He said
15 that he is happy with the regulations as written because if he were required to place the safety balls on his
16 turbine he could put them at ground level and it wouldn't make any difference. He said that the regulations
17 do not indicate how high the safety balls have to be located. He said that Item #7.7.E.2 indicates that no
18 more than two small wind turbine towers shall be authorized on a lot that is bigger than three acres but if
19 you are going to put two turbines on it you have to have the second turbine at least 1,200 feet from the
20 nearest residential principal structure or principal building under different ownership. He said that this is
21 going to be a lot more than three acres therefore he wonders what that restriction really means.

22
23 Mr. Hall stated that Item #7.7.E.2 applies to non-residential small wind turbines therefore, for example,
24 when Mr. Geil as a resident could expect to have as many as two 72 foot diameter small wind turbine rotors
25 to look at would only be when that turbine is at least 1,200 feet away.

26
27 Mr. Geil asked Mr. Hall if he could put a second wind turbine on his property without any restriction other
28 than the regular setbacks.

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30 Mr. Hall stated yes.

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32 Mr. Bluhm asked the Board if there were any questions for Mr. Geil and there were none.

33
34 Mr. Bluhm asked if staff had any additional questions for Mr. Geil.

35
36 Mr. Hall stated that he anticipated Mr. Geil's testimony regarding the 150 foot height and he could imagine
37 that the Board could increase the maximum height to 160 feet or being prepared for Administrative
38 Variances which would allow a 15 foot increase over 150 foot.

39
40 Mr. Geil stated that 150 feet is what he would have needed if he had gone to the 140 foot actual tower
41 height.

42
43 Mr. Hall stated that the basis of the 150 foot requirement had something to do with using a setting like Mr.
44 Geil's and determining the height that would be needed to get a 24 foot rotor a couple of feet over the

1 existing trees. He said that 150 feet might be accurate but it could be 155 or 160 feet that is required.

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3 Mr. Geil stated that the 155 foot height would fit the model that he has better.

4
5 Mr. Hall stated that there is a more general reason why the Board could go above 150 feet other than it
6 would be more convenient for Mr. Geil using the model that he current has.

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8 Mr. Bluhm asked the audience if anyone desired to sign the witness register to present testimony regarding
9 Case 634-AT-08, Part B.

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11 Mr. Bluhm called Mr. Mike Miller to testify.

12
13 Mr. Mike Miller, representing Arends Brothers, stated that he supports the idea of considering simplifying
14 the tower height requirement. He said that some of his clients have larger residential properties with bigger
15 homes with bigger power requirements and would like to consider towers that are taller than 150 feet. He
16 said that it might be wise to consider when finalizing the *Ordinance* to simplify the tower height
17 requirement in some way that it is just related to the size of the property that each individual has in each
18 residential setting. He said that also with regard to rotor blade length and diameter, he has a residential
19 client in Champaign County that owns a large home with attached shop that is interested in a larger model
20 turbine that has a blade length of 29 feet which would be about a 60 feet diameter for the rotor. He said he
21 would ask that the Board consider this portion of the *Ordinance* carefully and perhaps simplify things so that
22 if the residence is big enough and has enough property to accommodate this big of a tower then just let the
23 200 feet height be the overall limit and let the property boundaries guide the rest of it. He said that there are
24 a lot of other things that go on in residential settings that could be rather noisy such as LP, natural gas or
25 diesel powered stand-by generators. He said that he is not knowledgeable about what the *Zoning Ordinance*
26 states about an accessory like the generators in a residential setting but he can assure the Board that a stand-
27 by generator with the motor running would be substantially louder than anything a wind turbine would
28 produce. He said that it would be advisable to consider the possibility of simplifying that out of the
29 *Ordinance* because he is not sure that it is really fair to place that restriction on wind turbines when there do
30 not seem to be other restrictions on other home accessories.

31
32 Mr. Bluhm asked the Board if there were any questions for Mr. Miller.

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34 Mr. Bluhm asked Mr. Miller what happened to the tower located at the Arends Brothers Urbana location
35 after the area received a strong storm. He said that he noticed that the turbine did not operate for two weeks.

36
37 Mr. Miller stated that a sensor failure occurred. He said that there has been previous discussion about fail
38 safe modes and he cannot speak for the other manufacturers of turbines but he can speak for the
39 manufacturer of the turbines sold at Arends Brothers and their turbines have numerous fail safe sensors built
40 into the machine and one of those is a rotor speed sensor. He said that when the storm went through and
41 electrically they had a surge back from the grid, not from lightning, and that surge affected one of the
42 sensors. He said that the computerized system detected that it was not getting the signal that it thought it
43 should be receiving from the sensor therefore it locked up tight and would not run until everything is assured
44 to be safe.

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2 Mr. Bluhm asked if staff had any questions for Mr. Miller.
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4 Mr. Hall asked Mr. Miller how much property is owned by the client that desires the 60 foot diameter
5 residential rotor.
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7 Mr. Miller stated that he is not sure but he believes that the client resides on a five acre lot.
8
9 Mr. Hall asked Mr. Miller if the client was surrounded by other five acre lots.
10
11 Mr. Miller stated that the client does have some other lots surrounding his property but he was not sure of
12 their acreage.
13
14 Mr. Hall stated that anything that goes out from the Board is up to the Board and it appears that the goal is
15 for a perfect amendment but that is untrue because the goal is to achieve an amendment that will work in
16 most cases. He said that writing an ordinance that would allow a 60 foot residential rotor when there are
17 other residences near by seems to be extreme, but it is the Board's call.
18
19 Mr. Miller stated that certainly he can understand the very important requirement that regardless the height
20 of the tower or the size of the rotors there must be enough room on the property in case the tower falls down
21 because it should not and cannot fall on someone else's property. He said that to simplify things if the
22 property is large enough to support the tower height and the blade diameter then maybe the size of the
23 property could dictate what could and could not be done with the rotor rather than trying to make the
24 *Ordinance* too complicated and unintentionally restrict someone from doing something that would otherwise
25 be reasonable.
26
27 Ms. Capel asked Mr. Hall if this would be a situation where an Administrative Variance could be requested.
28
29 Mr. Hall stated that such a height would exceed an Administrative Variance and would require a full
30 variance. He said that Mr. Miller has a point because he could imagine such a standard but it is unknown
31 what that secret number would be for such a standard.
32
33 Mr. Bluhm asked the audience if anyone desired to sign the witness register to present testimony regarding
34 Case 634-AT-08, Part B and there was no one.
35
36 Mr. Bluhm closed the witness register.
37
38 Mr. Hall stated that he would like to have this case continued to the maximum allowed date which is
39 October 15, 2009. He said that this continued date would allow staff maximum opportunity to coordinate
40 with Champaign and Urbana. He said that the changes to the amendment that are required would not take
41 very long but the earliest that he would like to see this case return to the Board would be August 27, 2009.
42 He said that Champaign is wrapping up their first in-house draft for review and it is not clear that Urbana
43 has condensed their thinking into a draft form to date.
44

1 Mr. Bluhm stated that if staff re-advertises the amendment for fees staff would need enough time to
2 coordinate with the cities so that the re-advertisement would not need changed. He said that he does not
3 know if the wind retailers are aware if staff will be receiving a lot of permits in the next few months but to
4 date staff has only received two. He said that it is clear that initially this was started with hopes of getting
5 beyond the 100 feet and we have good justification for going beyond 100 feet and he believes that it will be
6 a successful amendment. He said that he would appreciate a continuance to October 15, 2009.

7
8 Mr. Bluhm asked Mr. Miller how tall the tower at Arends Brothers was to the tip of the blade.

9
10 Mr. Miller stated that that the tower is 105 feet and the blade height is nine feet.

11
12 Mr. Hall stated that in the AG and CR district the average tree height is 60 or 70 feet and the maximum
13 height of a building in the AG district is 50 feet therefore just providing for the maximum height that is
14 allowed for a building in the AG-1 district, it would make sense to have a maximum height for the tower to
15 be more than 100 feet.

16
17 Mr. Thorsland asked if the case is continued to October he would like to take time at this public hearing to
18 review some of the changes. He stated that in regard to interference the unit comes with a UL certification
19 sticker or a page in the instructions indicating the UL certification therefore if the unit does not have that
20 certification then the tower should not be allowed. He said that he agrees with the possible changes to the
21 maximum height requirement and 200 foot could be the maximum height dependent upon the lot size. He
22 asked what determines if a turbine is residential or non-residential.

23
24 Mr. Hall stated that the principal use determines the residential or non-residential status.

25
26 Mr. Thorsland asked Mr. Hall if the Board could allow a variance for someone who wants a larger turbine
27 than what is allowed under the residential status.

28
29 Mr. Hall stated that anything in Section 7.7 is subject to a variance.

30
31 Mr. Thorsland stated good because there will be an instance where people will fall into this situation. He
32 said that if a home is destroyed then more than likely the home could be rebuilt without jumping through too
33 many hoops. He said that technology continues to improve therefore if a 10 or 15 year old turbine is
34 destroyed for some reason the turbine should be able to be reconstructed up to 120%.

35
36 Mr. Hall stated that the property owner could always rebuild to the new standard and take advantage of the
37 greater height. He said that the existing height currently means that if a turbine falls on a neighbor's house
38 the turbine could be rebuilt.

39
40 Mr. Thorsland stated that the biggest concern that people have, whether it is warranted or not, is that it may
41 fall on someone else's house. He said that the Board has, within reason, the ability to say that none of the
42 turbines will fall on someone's house.

43
44 Mr. Hall stated that the property owner's maximum will still be the maximum under the new rules.

1
2 Mr. Thorsland stated yes, but due to technology they could put up a bigger unit.
3
4 Mr. Hall stated that, regarding the example for the Tower Height allowed in Penfield, a 100 foot turbine
5 could be placed in Penfield with no problem but under the current rules it is a problem and the turbine could
6 not be rebuilt to the 100 foot height without a variance. He said that the draft would allow the owner to
7 rebuild to the 100 foot height even though the current rules would not.
8
9 Mr. Bluhm stated that if the unit falls down and the owner desires to put up a bigger unit and they fall within
10 the new guidelines they could.
11
12 Mr. Hall stated no. He said that the draft that is currently before the Board would let someone rebuild a 100
13 foot high turbine in areas where the current rules would not allow a new one to be built.
14
15 Mr. Bluhm stated that someone who has plenty of room only puts up an 80 foot tower and wished that they
16 had put up a 100 foot tower and the 80 foot tower falls the current rules indicate that it could be rebuilt to
17 the original dimensions. He said that this same property owner is limited to putting up an 80 foot tower
18 again unless that property owner gets a new permit to raise that tower height.
19
20 Mr. Thorsland stated that if someone loses a unit and they choose to rebuild a larger, improved unit they
21 would not have to request a variance because they would be allowed to build the larger unit. He said that
22 the Administrative Variance would allow an increase up to 15%.
23
24 Mr. Hall asked the Board what they want to do in the cases where the maximum indicates that the turbine
25 cannot be rebuilt to the same height as before. He said that he does not know how much investment remains
26 once the tower crumbles and maybe there is no value to recapture therefore it would not be unreasonable to
27 get a new turbine under the new rules. He said what if someone had a 100 foot turbine which is 20 years old
28 and needs replaced but the height of the old tower is higher than what is allowed under the new rules. He
29 said that he would suggest that this person could go ahead and put a new turbine on top of the old tower. He
30 said the way that the draft is written the new wind turbine could fall on the neighbor's garage and the
31 County is not concerned because the County will only be worried about the house.
32
33 Mr. Bluhm asked Mr. Hall if a new 80 foot turbine was constructed under the new rules and it was destroyed
34 by a tornado could it be rebuilt, if there is adequate area, at a higher height under a new permit.
35
36 Mr. Hall stated yes.
37
38 Mr. Bluhm asked Mr. Hall if the Board discussed a maximum height of 199 feet due to the FAA standards
39 regarding lighting requirements.
40
41 Mr. Hall stated that the FAA standards clearly state a height of more than 200 feet. He asked Mr. Thorsland
42 if he proposed to raise the maximum height requirement for residential up to 200 feet if it meets all other
43 guidelines.
44

- 1 Mr. Thorsland stated that if a 200 foot turbine is requested then a variance would be available for that
2 request but there could be a lot of variances before this Board for increased height.
3
- 4 Mr. Courson stated that he does not believe that the average person will want a 200 foot tower.
5
- 6 Mr. Thorsland stated Mr. Fabian made some good points about the utility notice from the installer rather
7 than the property owner. He said that it was indicated that the safety balls on the guy wire would be a bigger
8 source of noise than the wind tower because they do not oscillate with the wind. He said that testimony was
9 received tonight that there are no safety balls on the cell towers and he is not sure if the Board should
10 require such.
11
- 12 Mr. Hall stated that at the last meeting when this case was discussed Mr. Rick Reed made it very clear that
13 he does not spray over residential properties although he has no hesitation to fly over them at the end of the
14 field and he added that the orange safety balls were a good idea.
15
- 16 Mr. Hall stated that today he received the new guidelines for the Illinois Agricultural Aviation Association
17 and many of the wind farm developers have settled on marking the met tower cables which consists of
18 orange safety balls, orange flags and actually painting the top of the met tower.
19
- 20 Mr. Miller stated that the County has miles and miles of overhead power transmission lines and with the
21 exception of the section of line that is in the path of the landing strip are not marked therefore we will be
22 going over our jurisdiction if we required something that the FAA does not.
23
- 24 Mr. Hall stated that there are a lot of things at the level of the guy wires that are not marked that are out
25 there where the pilots are flying therefore this is not the only thing that they need to be concerned about.
26
- 27 Mr. Miller stated that if a trained or untrained pilot misses the ball on the guy wire then there are far greater
28 things that might happen.
29
- 30 Mr. Bluhm stated that although he understands the purpose of the orange balls for the aerial applicators but
31 the two met towers that are located in his area are eyesores.
32
- 33 Mr. Bluhm stated that perhaps we should not require the orange safety balls unless they are required by the
34 FAA.
35
- 36 Mr. Thorsland stated that Mr. Fabian indicated that most residential turbines are constructed on monopoles
37 and the climbing rungs can be removed.
38
- 39 Mr. Bluhm asked if there should be a special condition regarding such.
40
- 41 Mr. Bluhm stated that the climbing rungs must be removed up to 12 feet and if a lattice structure exists an
42 anti-climbing device must be installed.
43
- 44 Mr. Miller asked if the Board is going overboard again since these will be built a private property.

1
2 Mr. Hall stated that this is only in the residential zoning districts and in the agricultural districts there are
3 other things to worry about.
4
5 Mr. Miller asked if a fenced in yard would supersede.
6
7 Mr. Hall stated that a four feet non-climbable fence is all that is required for a pool.
8
9 Mr. Bluhm stated that in a residential area the anti-climbing requirements should apply.
10
11 Mr. Miller stated that he is looking at it as private property.
12
13 Mr. Bluhm stated that if the yard is fenced and there is a climbable structure then perhaps the fence will
14 serve as the barrier. He said that if there are a couple of teenage kids that have access to private property
15 things could happen.
16
17 Mr. Thorsland stated that the Board is focusing so much on the wind turbines that we are leaving out the
18 uninspected, unengineered abandoned grain bins, grain elevator legs, etc. He said that he has been attacked
19 twice by trampolines that fly across onto his lot in a swift wind and there are no safety requirements set by
20 the County for such an instance.
21
22 Mr. Bluhm stated that he is just going by Mr. Fabian's comments.
23
24 Mr. Hall noted that these only apply to the residential zoning districts.
25
26 Mr. Thorsland asked if there are stickers on a wind tower indicating "Don't Climb." He said that there are
27 warnings on everything else. He said that he would like to make this amendment so good that when it goes
28 to ELUC all they can do is recommend approval.
29
30 Mr. Hall stated that Mr. Miller raised the issue of noise therefore asked the Board if the noise regulations
31 should stay in the amendment.
32
33 Ms. Capel stated yes.
34
35 Mr. Thorsland stated that we would just default to the Illinois noise regulations, which is fine.
36
37 Mr. Hall stated that the Board could take the position that if it is so fine and if it already exists why does it
38 need to be in the *Zoning Ordinance*. He said that he plans to discuss with the State's Attorney how to make
39 it clear that if the County has to take down an inoperable wind turbine the County will charge the owner for
40 its costs.
41
42 Mr. Thorsland asked Mr. Hall if the County will step in if a property is sold with a wind turbine on it and the
43 new owner decides not to operate the turbine. He said that he does not believe that the County should step
44 in unless the wind turbine is a safety hazard because there are many other structures such as an old silo,

1 barn, grain bin, etc, that the County does not require to be torn down on a property.

2
3 Mr. Hall stated that if the wind turbine is inoperable and is a safety hazard then it should be removed from
4 the property.

5
6 Mr. Thorsland stated that when the Board wanted to do something about dead trees property owners had a
7 fit. He said that if he wanted to have two windmills that he does not operate, on his property and call it
8 "Twin Windmills Farm" then he would not want someone to tell him that he had to remove them.

9
10 Mr. Hall asked Mr. Thorsland if he would change his opinion if the wind turbine was inoperable for more
11 than two years.

12
13 Mr. Thorsland stated no, because if someone has such a structure for their own private use and is too lazy to
14 utilize it then when it falls it will fall on their property. He said that it is no different if the same property
15 owner decided to let maple trees grow up around their barn the County should not step in to tell that
16 property owner to take those maples down.

17
18 Mr. Hall requested comments from the Board.

19
20 Mr. Miller stated that Mr. Thorsland poses a good case.

21
22 Mr. Thorsland stated that if a wind turbine becomes damaged in a way that it could pose imminent danger
23 then the property owner should be notified that the structure must be removed.

24
25 Mr. Hall stated that staff cannot determine if a 200 foot wind turbine will pose imminent danger.

26
27 Ms. Capel stated that the County should have the jurisdiction to determine if a wind turbine is derelict.

28
29 Mr. Hall stated that the determining if a wind turbine is derelict is a lot easier than if it poses imminent
30 danger. He asked the Board how long a wind turbine can be derelict before staff can act.

31
32 Mr. Thorsland stated that there are old abandoned barns and personal antenna units that are over 100 foot
33 tall, abandoned irrigation windmill units, unused grain bins, etc. that the County does not require
34 decommissioning therefore it appears that we are singling out wind towers.

35
36 Mr. Bluhm stated that agriculture is not regulated by the County.

37
38 Mr. Hall stated that if the Board wanted to update the County's antenna regulations he would propose that if
39 antennas are no longer in use then they must be taken down.

40
41 Mr. Miller stated that a property owner should reserve the right to not operate a wind turbine whether it is
42 because it is too expensive to operate or maintenance is too costly but there is still a value in the wind
43 turbine. He said that if in one, two or six years the owner decides to sell the property he should be able to
44 keep the wind turbine until such time or until it becomes a dangerous structure.

1
2 Mr. Thorsland stated that he does not believe that the County should tell the current owner that he has to
3 take it down if he is not using it because a new owner of the property may find value in the new wind
4 turbine. He asked Mr. Hall to define derelict.
5
6 Mr. Hall stated that if there is an indication from 200 feet off the ground that the wind turbine is broken then
7 it would be determined to be derelict.
8
9 Mr. Thorsland asked how long will the property owner have to rectify the issue.
10
11 Ms. Capel stated six months.
12
13 Mr. Thorsland asked Mr. Hall what the County will do with enforcement of the old 100 foot irrigation
14 windmills that are missing half of their blades.
15
16 Mr. Hall stated no.
17
18 Mr. Bluhm stated that if a wind turbine is derelict because it is missing a blade then the County should not
19 give the property owner six months, unless the owner can indicate just cause for not rectifying the situation
20 immediately.
21
22 Mr. Hall stated that if the Board determines that six months is the cutoff then nothing will happen for at least
23 one year.
24
25 Mr. Bluhm asked Mr. Courson how long his wind turbine was out of commission.
26
27 Mr. Courson stated that his turbine was at the factory for eight months for repairs.
28
29 Mr. Bluhm stated that if a property owner could show just cause as to why the wind turbine has not been
30 repaired then the derelict issue does not apply.
31
32 Mr. Hall stated that Mr. Bluhm is correct.
33
34 Mr. Bluhm stated that the Board previously discussed the UL nameplate requirement. He noted that at-
35 home kits are available to consumers for purchase for personal installation of a wind turbine.
36
37 Mr. Thorsland stated that if the turbine does not have the UL certification then it should not be allowed. He
38 said that very few items are available that do not have the UL certification.
39
40 Mr. Bluhm stated that perhaps the Board could ask Mr. Fabian which parts and pieces have UL certification
41 to assure that the wind turbine meets specifications.
42
43 Mr. Courson stated that roof mount tower kits are also available for purchase. He said that he would not put
44 a wind turbine on a house but he could see someone place one on a barn or silo so that it is up in the air. He

1 asked Mr. Hall if this placement would infringe on the maximum accessory building requirement.

2
3 Mr. Hall stated that the accessory building must meet the accessory building height requirement and the roof
4 mounted turbine could not exceed a height of 15 feet. He said that he is not sure if 15 feet is reasonable
5 because it may not be an adequate height.

6
7 Mr. Courson stated that a vertical tower should have a fence around it because he drove by the vertical tower
8 located at the drive-in at Gibson City and it is only 7 or 8 feet to the ground.

9
10 Mr. Bluhm stated that he agrees that staff should coordinate with Champaign and Urbana so that there are
11 not 30 different ordinances regarding wind towers.

12
13 **Mr. Thorsland moved, seconded by Ms. Capel to continue Case 634-AT-08, Part B to October 15,**
14 **2009. The motion carried by voice vote.**

15
16 **6. New Public Hearings**

17
18 None

19
20 **7. Staff Report**

21
22 Mr. Hall reported that one new case has been added to the docket for a hearing date. He reminded the Board
23 that monitoring of the new cases will have to be done very closely as we get closer to the anticipated
24 submission date in October for the wind farm case. He said that he will place this issue on the ELUC
25 agenda so that they are aware that some petitioners may be delayed so that the Board has sufficient time to
26 deal with the wind farm.

27
28 **8. Other Business**

29
30 None

31
32 **9. Audience Participation with respect to matters other than cases pending before the Board**

33
34 None

35
36 **10. Adjournment**

37
38 **Mr. Miller moved, seconded by Mr. Schroeder to adjourn the July 16, 2009, meeting. The motion**
39 **carried by voice vote.**

40
41 The meeting adjourned at 8:57

42
43
44

7/16/09

AS APPROVED OCTOBER 15, 2009

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Respectfully submitted

Secretary of Zoning Board of Appeals

ZBA //

DRAFT SUBJECT TO APPROVAL DRAFT

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