

APPROVED AS SUBMITTED Minutes of the **REGULAR MEETING OF THE ZONING BOARD** held on Tuesday, September 8, 2009, in the Public Meeting Room in the Village Hall, One Olde Half Day Road, Lincolnshire, IL

PRESENT: Chairman Manion, Members Rubinstein, Pratt, Soifer, and Leider

ABSENT: Alternate Kalina and Trustee Liaison McDonough

ALSO PRESENT: Stephen Robles, Planner

CALL TO ORDER: **Chairman Manion** called the meeting to order at 7:00 p.m.

1.0 ROLL CALL

The roll was called by the secretary and **Chairman Manion** declared a quorum to be present.

2.0 APPROVAL OF MINUTES

2.1 Approval of the Minutes of the Rescheduled Zoning Board Meeting held on Tuesday, August 4, 2009.

Mr. Leider moved and **Mr. Rubinstein** seconded a motion to approve the minutes as submitted. The motion passed unanimously by voice vote.

3.0 GENERAL BUSINESS

3.1 Continued workshop to discuss a proposed draft code regarding regulations for Alternative Energy Collection Systems (Village of Lincolnshire).

Stephen Robles, Planner, summarized Staff's memorandum dated September 4, 2009, and noted that Staff has conducted additional research into wind resources in Illinois and wind turbine products to further revise the proposed Code standards. In order to avoid redundancy of general information for the two types of wind systems proposed, Staff has combined these general requirements and created a new section, Section 6-17-3, General Wind Energy Systems Regulations, in the revised Draft Code. After further review of various industry terms associated with wind turbines, Staff has renamed this type of wind energy system from "Small Wind Energy Systems (SWES)" to "Micro Wind Energy Systems (MWES)", known as Section 6-17-4 in the revised Draft Code. Micro Systems are generally turbines that have less than one kilowatt in energy capacity and are typically used for building-mounted applications within residential areas. Although the name label has been changed, the intended purpose for individual residential use has remained the same. In discussions with the Village Attorney, it was pointed out that such micro wind systems should not be exclusive to the residential areas of the Village and should also be permitted within the non-residential areas, especially given their small size. Therefore, Staff has expanded the permissibility of MWES to the commercial and office/industrial zoning districts to further encourage smaller wind turbine systems within the Village. While such micro systems would be permitted by right, any non-residential use would require review by the Architectural Review Board and final approval by the Village Board prior to obtaining building permits.

With regard to Section 6-17-4-A Sound Levels, the Zoning Board had expressed concern that the proposed 60dBA limit may be too generous within the residential districts. Based on this major area of concern, Staff conducted further research on various wind turbine models and found that there are current models which can run at or below 45dBA (typical neighborhood at ambient noise levels). As a result, Staff has reduced the maximum sound level that may be produced by a MWES to measure 45dBA at 5' above grade at the property line, which is based on these manufacturer claims. This limit would also apply to MWES within non-residential developments regardless if the ambient noise within these areas may be above that of the quieter residential areas. There was consensus among the members to accept this reduction in the sound level.

Another major topic of concern discussed at the previous workshop was the acceptable locations of a MWES, as noted in Section 6-17-4-B, Building Mounted MWES, in the revised Draft Code. Previously, Staff proposed that MWES would not be permitted to be attached to a residential house, but rather must be a free-standing pole at a height no greater than the existing home or maximum height permitted by the Zoning District. However, the Zoning Board felt that a free-standing MWES at a potential height of 30'-40' located within a rear yard would be more visible and obtrusive from neighboring properties. Therefore, Staff has revised the permitted location of a MWES to be building-mounted to a roof or the side of a principal structure, which would be permitted "by right", subject to the regulations proposed in the draft code. The turbine may extend a maximum of 5' above the home for residentially zoned parcels and 20' above the principal building for non-residentially zoned parcels or the maximum building height permitted by the applicable zoning district, whichever is less. It was the consensus of the members to accept this revision to the Draft Code.

As further revised, free-standing MWES referenced in Section 6-17-4-C will be permitted only as a Special Use due to the concerns expressed by the previous Zoning Board meeting, and that Village review should be required for such turbines. Similar to building-mounted MWES, Staff has also expanded these turbines into the commercial and office-industrial districts based on the reasons previously discussed. All the previous restrictions associated with free-standing MWES have remained and the major change is the Special Use requirement. **Planner Robles** noted that following last month's meeting, Staff conducted further research on wind power data for Illinois/Chicago to determine the amount of wind power measured in this region. Included in the Staff memo is the Great Lakes Region report from the Wind Energy Resource Atlas of the United States, which states "areas of the highest wind energy potential in the region are the exposed coastal and offshore areas and islands of the Great Lakes". The Atlas further reports that "the western shore of Lake Michigan has an annual average power of Class 3. This reduced wind power on the western shore reflects the prevailing westerly winds. Thus, on the annual average, the wind power on the western shore is less than on the eastern shore but still reflects the influence of Lake Michigan". **Planner Robles** explained that Class 3 winds are "fair" winds with speeds of 14.3-15.7 mph measured at a height of 50 meters (approximately 164 feet). He referenced the Wind Resource Map for the United States/Illinois prepared by the U. S. Department of Energy-National Renewable Energy Laboratory which was also attached.

From this map, the Chicago region is classified as a Wind Power Class 1 (“Poor”), experiencing wind speeds of less than 12.5 mph at 50 meters (approximately 164 feet). A closer look at the Chicagoland area reveals that areas north and west of Chicago fall within Wind Power Class 2 (“Marginal”). Based on the approximate location of Lincolnshire, the Village is located within the “Poor” classification for wind potential. It should be noted that these wind speeds and classification are measured at a height of approximately 164 feet, far exceeding the maximum height that would be permitted by the Draft Code. Based on this, Staff believes that the height limitations proposed would further limit wind potentials, in addition to the extent of tree coverage and limited open areas in the Village, wind potential is further reduced. **Planner Robles** pointed out that there has been further Staff discussion questioning the viability of free-standing wind turbines in the Village’s residential areas, and considering the wind resource data, he noted that the Zoning Board may consider whether the viability of free-standing wind turbines in residential areas would truly function at a level of practicality for wind energy generation. After limited discussion, the Zoning Board concurred with Staff that free-standing wind turbines in residential areas would not function at a level of practicality for wind energy generation and will be deleted from the Draft Code.

With regard to Section 6-17-4-C-5, Height of MWES, **Planner Robles** noted that the height limitations for a free-standing MWES have remained unchanged as follows: *“Shall not exceed the maximum structure height permitted by the zoning district in which the facility is located or the maximum height of the principal structure, whichever is less.”* Since the aforementioned paragraph negates free-standing MWES on residential property, he explained that, as written, such height restriction is not practical for a wind turbine installed on single-story homes (as compared with two-story homes) which would effectively prohibit them due to height. Although, the same applies to a building-mounted MWES which can extend up to 5' above the house, the same effect could result on building-mounted MWES for single-story buildings. While Staff understands the concerns of height and the visible impacts that may be created, **Planner Robles** noted that consideration should be given as to whether the height limitations, as proposed, treat each lot/structure fairly or if further revisions should be considered based on structure height. Limited discussion ensued with consideration for the aesthetics from the street level and the inconsistencies in height which could occur. Also, based upon the regional area classified with a “poor” resource potential for wind speed, the overall tree heights within the residential zoning districts, etc., it was the consensus of the Zoning Board to retain the 5' extension of a building-mounted MWES above the house as proposed in the Draft Code, regardless of building height.

In conjunction with the height limitations of MWES, Section 6-17-4-C-5b, Height Exceptions, addresses the process for an applicant who desires to install an MWES greater than the maximum permitted height. **Planner Robles** noted Staff’s concern with this process, wherein an applicant must provide a Certificate of Necessity certifying the proposed wind turbine’s need to be installed at a height greater than permitted, and with sufficient supporting documentation, it could be fairly easy to provide information indicating that any turbine installed below the existing tree heights would not receive the maximum wind speeds available in the area. With the potential ease in providing the necessary documentation to support an increase in turbine height, Staff is concerned that

the result could be more turbines installed at a height taller than what would be acceptable in the residential districts. **Planner Robles** requested feedback with regard to eliminating the height exception, leaving the requirements as presented, or further modifying same making it more challenging and restrictive. Discussion ensued among the members with concerns to leaving the section as proposed or eliminating it all together. However, **Mr. Leider** suggested consideration be given to more restrictive criteria for height exceptions for the installation of MWES. In light of the fact that the moratorium has been extended and there are no interested parties applying for same, there was concurrence among the members.

Planner Robles noted that similar to the change to MWES previously described and discussed, Staff has renamed this type of wind energy system from “Commercial Wind Energy Systems (CWES)” to “Small Wind Energy Systems (SWES)” as addressed in Section 6-17-5, Small Wind Energy Systems (SWES). The SWES generally refer to turbines producing 100 kilowatt in energy or less and are typically suited for small businesses, farms, and similar small-scale establishments. He added that it is not Staff’s intention to have anything larger in the Village. The Zoning Board offered immediate consensus to this change.

With regard to Section 6-17-5-C (SWES Sound Levels), Staff has reduced the permitted sound level of a SWES to 55 dBA as measured at a height 5 feet above any adjoining property line. This was based on the concerns expressed that 60 dBA maximum sound level may be too generous within the Village. **Planner Robles** pointed out that the noise level was not reduced to match the 45 dBA of the residential districts since the commercial and office/industrial areas have a generally louder ambient noise level due to heavily traveled arterials and commercial/industrial activity. After limited discussion ensued, the Zoning Board concurred that this was a reasonable reduction in the sound level.

As previously proposed in Section 6-17-5-F, Height of a SWES, the height of a SWES was limited to the maximum structure height permitted by the applicable zoning district, regardless of the principal structure height. **Planner Robles** noted that, after concerns were expressed by the Zoning Board, Staff has revised the maximum permitted height for SWES to extend no more than 20' above the principal structure or the maximum height permitted by the zoning district in which the facility is located, whichever is less. **Mr. Soifer** questioned the tallest building height allowed in the O/I District, to which **Planner Robles** stated it was 80 feet. **Chairman Manion** stated that he had viewed the 120' turbines located at Aldridge Electric in Libertyville, he does not envision that 80' would be too high, especially in office/industrial area, and it is not as obtrusive as he once thought. It seemed reasonable to him. He suggested that the other Board members also view the 120' turbines for height comparison purposes. **Mr. Soifer** expressed concern that the height standards are too strict and suggested Staff explore revising these standards in conjunction with the maximum heights permitted by the zoning district and building heights. **Chairman Manion** encouraged the other Board members to view the wind turbines located in Lake County in order to make a more informed decision in this regard.

Lastly, **Planner Robles** referenced Section 6-17-6-B-1c, Placement of a Solar Energy System (SES), and noted that, in order to address the potential aesthetic concerns regarding roof-mounted Solar Energy Systems (SES), Staff previously proposed that no such SES may be installed on a roof which faces a street, except when such roof is flat. After further Staff discussion, it was agreed that many buildings within the Village may be at a disadvantage based on their lot or building orientation to the sun. Therefore, in order for a SES to be installed on a roof facing a street, a written statement prepared by the manufacturer or certified installer must be submitted demonstrating that such pitched roof is oriented toward the preferred geographic director for maximum sun exposure. **Planner Robles** noted that, while such data can be easily obtained to support a proposed location, this information should be provided for Staff review in order to ascertain that the location is truly the only viable location. Discussion ensued among the Zoning Board with regard to viable location and aesthetics of roof-mounted SES on single-family residences, as there was a consensus to restrict SES from being seen from the street. It was noted that often times the SES resemble the size of dark-colored skylights and the potential of a smaller version of same mounted on the front roof of a single-family residence would be feasible dependent upon a manufacturer's suggested installation. **Planner Robles** eluded to the graphic illustration in the proposed Draft Code and offered consideration be given to installation of SES on a percentage basis of the total roof area. **Chairman Manion** suggested Staff research manufacturer installation and appearance of roof-mounted SES on various types of roof applications, to which the members concurred.

Based upon on the small amount of information requested of Staff, **Planner Robles** asked the Zoning Board if they were comfortable in scheduling a Public Hearing next month, with the understanding that more information will be presented at the next meeting. After a brief discussion ensued, there was a consensus to schedule a Public Hearing for the October Zoning Board meeting.

Based upon the direction of the Zoning Board, Staff presented additional research and technical data with regard to the proposed draft code regulations for Alternative Energy Collection Systems. After continued review and discussion of same, the Zoning Board directed Staff as follows:

- 1. Consider more restrictive criteria for height exceptions for the installation of Micro Wind Energy Systems (MWES);*
- 2. Explore revising the height standards of Small (Commercial) Wind Energy Systems (SWES) in conjunction with the maximum heights permitted by the zoning districts and building heights;*
- 3. Research manufacturer suggested installation and appearance of roof-mounted Solar Energy Systems (SES) on single-family residences for viable location and aesthetics.*

The Zoning Board reached a consensus to consider the revisions for the proposed draft code regulations for Alternative Energy Collection Systems and return for a Public Hearing at the next regularly scheduled Zoning Board meeting in October.

4.0 UNFINISHED BUSINESS (None)

5.0 NEW BUSINESS (None)

6.0 CITIZEN COMMENTS (None)

7.0 ADJOURNMENT

There being no further business, **Mr. Pratt** moved and **Mr. Leider** seconded a motion to adjourn, **Chairman Manion** adjourned the meeting at 8:34 p.m.

Respectfully submitted,

Linda Jones, Secretary