

# REQUEST FOR BOARD ACTION

## HENDERSON COUNTY BOARD OF COMMISSIONERS

**Meeting Date:** July 6, 2009

**Subject:** Continued Discussion on Proposed Land Development Code 2008 Annual Text Amendment 12 (TX-2008-05), Accessory Wind Mills/Turbines

**Attachments:** 1. Staff Memo

### **SUMMARY OF REQUEST:**

The Board held a public hearing on the proposed Land Development Code Text Amendments (TX-2008-05) on April 6, 2009 and voted unanimously to approve all of the proposed text amendments except for amendments 12, 17, 21 and 22. On May 4, 2009, the Board adopted the remaining text amendments (text amendments 17, 21 and 22) with the exception of text amendment 12 concerning wind mills/ turbines as accessory uses permitted by right in all zoning districts.

Based on the Board's discussion during the public hearing on April 6, 2009 and its meeting on May 4, 2009, the Board indicated that it was not opposed to wind mills/turbines permitted as accessory uses, but was concerned with the impact to surrounding neighbors in regards to height, setback, noise and safety among others. The Board agreed to continue its discussion on text amendment 12 at its July meeting. A Staff memo (See Attachment 1) is attached with additional information on this remaining text amendment (text amendment 12) including a detailed description of the proposed text amendment for the Board's review.

### **BOARD ACTION REQUESTED:**

Planning Staff recommends that the Board of Commissioners approve, approve with modifications, or deny proposed text amendment 12 (Land Development Code 2008 Annual Text Amendments (TX-2008-05)). The following motion has been provided if the Board supports the proposed text amendment to the LDC.

### **Suggested Motion:**

I move that the Board approve the proposed Land Development Code 2008 Annual Text Amendment 12 (TX-2008-05) and that this proposed text amendment is in general compliance with the recommendations of the 2020 Henderson County Comprehensive Plan.

**MEMORANDUM**

**TO: Board of Commissioners**  
**Steve Wyatt, County Manager**  
**Selena Coffey, Assistant County Manager**

**FROM: Autumn Radcliff, Senior Planner**  
**Anthony Starr, Planning Director**

**DATE: July 6, 2009**

**SUBJECT: Continued Discussion on Proposed Land Development Code 2008 Annual Text Amendment 12 (TX-2008-05), Accessory Wind Mills/Turbines**

On April 6, 2009, the Board of Commissioners held a public hearing on the proposed Land Development Code 2008 Annual Text Amendments (TX-2008-05), the first annual review since the LDC's adoption on September 19, 2007. After hearing public comments the Board voted to adopt all proposed text amendments to the LDC with the exception of text amendments 12, 17, 21 and 22. At its meeting on May 4, 2009, the Board voted to adopt the remaining text amendments (text amendments 17, 21 and 22) with the exception of text amendment 12, accessory wind mills/turbines.

Based on the Board's discussion during the public hearing on April 6, 2009 and its meeting on May 4, 2009, the Board indicated that it was not opposed to wind mills/turbines permitted as accessory uses, but was concerned with the impact to surrounding neighbors in regards to height, setback, noise and safety among others. The Board discussed restricting the height of the wind turbines in dense residential areas or requiring a special use permit for all proposed will turbines. A special use permit would help elevate the Boards concerns with adjacent residential uses and would allow the County to place certain agreed upon restrictions on wind turbines specific to the site location. Based on the Board's discussion, Staff has provided the following suggestions to address the Board's concerns.

**Recommendation:** Amend §200A-62 Table of Permitted and Special Uses and add an SR 3.16 and SR 3.17 for accessory wind mills/turbines. The new proposed language is highlighted in yellow for the Board's consideration.

**§200A-62. Table of Permitted and Special Uses**

USE TYPE	GENERAL USE DISTRICT											
	P=Permitted; S=Special Use Permit											
	R1	R2	R2R	R3	R4	OI	MU	LC	CC	RC	I	SR
<b>3. ACCESSORY STRUCTURES</b>												
Wind Mill/Turbine, Accessory ≤ 40 ft height	P	P	P	P	P	P	P	P	P	P	P	3.16
Wind Mill/Turbine, Accessory > 40 ft height	S	S	P	P	P	P	P	S	P	P	P	3.17

\*Add as a special use in the R-40 and WR zoning districts with supplemental requirements.

## §200A-63. Supplemental Requirements to the Table of Permitted and Special Uses

### SR 3.16. Wind Mill/Turbine, Accessory ≤ 40 ft height

- (1) Principal Structure/Use Requirement. Accessory wind mills/turbines shall only be permitted in conjunction with a principal residential dwelling unit or business.
- (2) Height. Wind turbine height shall be no more than 40 feet.
- (3) Rotor Blades. Rotor blades shall not exceed eight (8) feet in radius measured from the center of the support structure and shall maintain a minimum ground clearance of ten (10) feet. Wind turbines proposing a rotor blade exceeding eight (8) feet in radius shall require a special use permit and shall also meet the requirements for SR 3.17.
- (4) Setback. The base of the wind turbine shall be at least ten (10) feet from surrounding property lines and setback a distance equivalent to 110 percent of the height of the wind turbine at its highest point from the property line.
- (5) Color. Wind turbines must be a color that is consistent with *existing development* or natural conditions.
- (6) Compliance with FAA Regulations. Wind turbines must comply with applicable FAA regulations, including any necessary approvals for installation close to *airports*. Evidence of compliance or non-applicability shall be submitted to the *Zoning Administrator*.
- (7) Compliance with FCC Regulations. Wind turbines must comply with applicable FCC regulations. Evidence of compliance or non-applicability shall be submitted to the *Zoning Administrator*.
- (8) Structure Requirements. Wind turbines shall require a building permit to insure that the foundation is designed and constructed with a concrete foundation per the manufacturing requirements. Sealed engineering drawings shall be required prior to the issuance of a building permit. These standards shall not preempt the State Building Code standards or requirements to insure structural stability.
- (9) Survival Wind Speed. Wind turbines shall be designed to withstand wind speeds as required by the State Building Code.

### SR 3.17. Wind Mill/Turbine, Accessory > 40 ft height

- (1) Principal Structure/Use Requirement. Accessory wind mills/turbines shall only be permitted in conjunction with a principal residential dwelling unit or business.
- (2) Height. Wind turbine height shall be no more than 40 feet above any obstruction (*structure, tree, etc. (excluding communication towers)*) within a 200 foot radius of the base of the wind turbine. In no case shall the height exceed 100 feet.
- (3) Rotor Blades. Rotor blades shall maintain a minimum ground clearance of ten (10) feet.
- (4) Setback. The base of the wind turbine shall be at least ten (10) feet from surrounding property lines and setback a distance equivalent to 110 percent of the height of the wind turbine at its highest point from the property line.
- (5) Color. Wind turbines must be a color that is consistent with *existing development* or natural conditions.
- (6) Compliance with FAA Regulations. Wind turbines must comply with applicable FAA regulations, including any necessary approvals for installation close to *airports*. Evidence of compliance or non-applicability shall be submitted to the *Zoning Administrator*.
- (7) Compliance with FCC Regulations. Wind turbines must comply with applicable FCC regulations. Evidence of compliance or non-applicability shall be submitted to the *Zoning Administrator*.

- (8) Structure Requirements. Wind turbines shall require a building permit to insure that the foundation is designed and constructed with a concrete foundation per the manufacturing requirements. Sealed engineering drawings shall be required prior to the issuance of a building permit. These standards shall not preempt the State Building Code standards or requirements to insure structural stability.
- (9) Survival Wind Speed. Wind turbines shall be designed to withstand wind speeds as required by the State Building Code.
- (10) Other Considerations. In addition to the standard review for special use permits, the Zoning Board of Adjustment shall consider noise and appearance criteria as factors when reviewing special use permit applications for wind turbines.

## Pictures of Small Scaled Wind Mills/Turbines

According to the NC Wind Energy, Appalachian State University, small scale wind mill/turbines can either be connected to the utility grid or stand-alone as an "off-grid" application, normally providing electrical power for home, farm, school, or business applications. Small scale wind mills/turbines can have blade length between 3ft-30ft, with a 100ft tower, and can power between 1/4 to 6 average American homes (and even more if they are energy conscious). The standard guideline is to site a wind mill/turbine at least 30 feet above anything within 300-500 feet in order to utilize the wind currents for energy purposes. The pictures below illustrate what a small wind turbine utilized for residential purposes might look like.



Above pictures from NREL's Wind Graphics Library

The BlueSun Renewable Energy in Asheville is selling the Windspire (see pictures below). The Windspire has an annual energy production of 2,000 kWh. The standard height is 30 feet and weighs 600 lbs and is typically located on a concrete foundation 2 ft in diameter by 6 ft base. The rotor blades have a radius of 2 ft and are 20 feet in height and have a sound level of 20 decibels at 40 ft.



Above pictures from BlueSun Renewable Energy in Asheville. ([www.bluesunrenew.com](http://www.bluesunrenew.com))