

Planning and Zoning

**ITEM:**

2008-33 Small Wind Energy Systems

**DESCRIPTION:**

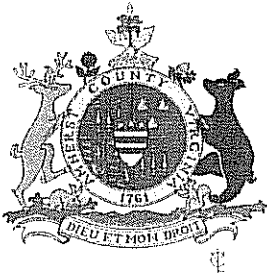
Request by the County of Amherst for a zoning text amendment to allow small wind energy systems as a special exception use in the A-1 Agricultural Residential District, B-2 General Commercial District and the M-1 Industrial District.

**RECOMMENDATION:**

Per Board of Supervisors direction.

**ATTACHMENT(S)**

- Memorandum from Jeremy Bryant, Director of Planning/Zoning.
- Proposed draft ordinance.
- Zoning Text Amendment Process



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PLANNING DEPARTMENT

## MEMORANDUM

DATE: November 10, 2009

TO: Amherst County Board of Supervisors

FROM: Jeremy Bryant, Planning/Zoning Director JB

SUBJECT: 2008-33 Wind Turbines

This is a request by the County of Amherst for a zoning text amendment to allow small wind energy systems as a special exception use in the A-1 Agricultural Residential District, B-2 General Commercial District and the M-1 Industrial District. The proposed ordinance regulates the finish of the tower; does not allow artificial lighting or signage; noise levels are regulated according to the County noise ordinance. Small wind energy systems shall not exceed a maximum height of one hundred (100) feet, and regulates that the minimum distance between the ground level and any protruding blades shall be fifteen (15) feet, and ten (10) feet from the height of any structure within one hundred and (150) feet of the base. A six (6) foot tall fence with a lockable gate or the base of the tower shall not be climbable for a distance of twelve (12) feet. Proof of liability insurance is required for small wind energy systems.

The ordinance addresses federal and state requirements to be in compliance with the Uniform Statewide Building Code, FAA regulations, National Electric Code and regulations governing net metering according to the Virginia Administrative Code. Small wind energy systems shall be setback a distance of two hundred (200) feet from all adjacent property lines or two (2) times the height of the tower height plus blade length, whichever is greater. Wind energy systems that are not operated for a continuous period of twenty-four (24) months shall be considered abandoned and removed within ninety (90) days.

At the October 15, 2009 meeting, the Planning Commission approved the zoning text amendment with one (1) modification. The amendment referenced the Amherst County Noise Ordinance.

### **302. Definition of Terms - Specific Definitions.**

***Wind Energy System, hybrid system:*** An energy system that uses more than one technology to produce energy or work (for example a wind-solar system).

***Wind Energy System, small:*** A wind energy conversion system consisting of a wind turbine, a tower, and associated control or conversion electronics that has a maximum power of at most 50kW, which will be used primarily to reduce on-site consumption of utility power.

***Wind Energy System, tower:*** With regard to wind energy system, the structure on which the wind system is mounted.

***Wind Energy System, tower height:*** With regard to wind energy system, the height above grade of the fixed portion of the tower, excluding the wind turbine itself.

***Wind Energy System, turbine:*** The parts of the wind system including the blades, generator and tail.

### **702. Agricultural Residential District A-1.**

***702.01. Intent of the Agricultural Residential District A-1.*** This district is designed to accommodate farming, forestry and limited residential use. While it is recognized that certain rural areas may logically be expected to develop residentially, it is the intent however to discourage the random scattering of residential, commercial or industrial uses in this district.

#### ***702.03. Special exceptions (A-1 zone).***

1. Public entertainment.
2. Schools.
3. Saw mills.
4. Pallet manufacturing.
5. Wood yards.
6. Feed mills.
7. Truck business.
8. Churches and related facilities.
9. Signs as provided in Section 907.

10. Planned unit developments.
11. Short-term tourist rental of dwelling.
12. Machinery sales and service.
13. Storage of biosolids as provided in Section 917.

**14. Small Wind Energy Systems as provided in Section 918.**

707. General Commercial District B-2.

*707.01. Intent of General Commercial District B-2.* This district covers those areas intended for the conduct of any retail business. Those with extended hours of operation and generating high volumes of traffic are permitted in this zone.

*707.03. Special Exceptions.*

1. Bulk storage and sale of sand, gravel and rock;
2. Automobile sales, used;
3. Building and excavating contractor facilities with outside storage;
4. Automobile laundry or car wash, provided that a paved area shall be located on the same lot for the storage of vehicles awaiting entrance to the washing process;
5. Building materials dealer, not including handling of bulk materials such as sand and gravel;
6. Farm machinery display, sales and services;
7. Machinery sales and services;
8. Arenas, auditoriums or stadiums;
9. Automotive repair garage, mechanical and body, provided all operations are conducted in a building which shall not have any opening other than a stationary window within one hundred (100) feet of a residential, agricultural or public lands district and which shall not store or otherwise maintain any parts or waste material outside such building;
10. Tire recapping, provided all operations are conducted in a building which shall not have any opening other than a stationary window within one hundred (100) feet of a residential, agricultural or school district and which shall not store or otherwise maintain any parts or waste material outside such building;

11. Adult entertainment establishments in accordance with Section 915;
12. Tattoo establishments;
13. Auction house;
14. Self-service mini-storage and warehouse facilities;

**15. Small Wind Energy Systems as provided in Section 918.**

708. Industrial District M-1.

*708.01. Intent of Industrial District M-1.* This district is to allow production, wholesale, storage or distribution of products.

*708.03. Special exceptions:*

1. Salvage yards;
2. Quarries;
3. Paper mills.
4. Wholesale and retail modular homes.

**5. Small Wind Energy Systems as provided in Section 918.**

**918. Wind Energy Systems.**

**918.01. Intent.** The purpose of this article is to regulate the placement, construction and modification of small wind energy systems while promoting the safe, effective and efficient use of small wind energy systems and not unreasonably interfering with the development of independent renewable energy sources.

**918.02. Applicability.** The requirements set forth in this division shall govern the siting of small wind energy systems used to generate electricity or perform work which may be connected to the utility grid pursuant to Virginia's net metering laws (Code Of Virginia (COV) §56-594), serve as an independent source of energy, or serve in a hybrid system.

**918.03. Siting requirements.** The requirements for siting and construction of all small wind energy systems regulated by this division shall include the following:

- (1) Small wind energy towers shall maintain a galvanized steel finish, unless FAA standards require otherwise, or if the owner is attempting

to conform the tower to the surrounding environment and architecture, in which case it may be painted to reduce visual obtrusiveness. A photo simulation may be required at the request of the Board of Supervisors.

- (2) Small wind energy systems shall not be artificially lighted unless required by the Federal Aviation Administration (FAA) or appropriate authority.
- (3) No tower should have any sign, writing, or picture that may be construed as advertising.
- (4) Noise levels associated with small wind energy systems shall not exceed the noise levels required in the Amherst County Noise Ordinance, Section 10, Article II, as measured at the closest property line. The level, however, may be exceeded during short-term events such as utility outages and/or severe windstorms.
- (5) The applicant shall provide evidence that the proposed height of the small wind energy system tower does not exceed the height recommended by the manufacturer or distributor of the system.
- (6) The applicant shall provide evidence that the provider of electric utility service to the site has been informed of the applicant's intent to install an interconnected customer-owned electricity generator. This notification will take place by having the electric utility provider sign the special exception application.
- (7) The applicant will provide information demonstrating that the system will be used primarily to reduce on-site consumption of electricity from the power grid.
- (8) The tower height shall not exceed a maximum height of one hundred (100) feet.
- (9) The minimum distance between the ground and any protruding blades utilized on a small wind energy system shall be fifteen (15) feet, as measured at the lowest point of the arc of the blades. The lowest point of the arc of the blade shall also be ten (10) feet above the height of any structure within one hundred and fifty (150) feet of the base. The supporting tower shall also be enclosed with a six (6) foot tall fence with a lockable gate or the base of the tower shall not be climbable for a distance of twelve (12) feet.
- (10) The applicant provides proof of adequate liability insurance for a small wind energy system. Whether or not the applicant is participating in the net metering program, the applicant will be

required to meet the insurance coverage requirements set forth in 20 VAC 5-315-60.

- (11) The small wind energy system generators and alternators should be constructed so as to prevent the emission of radio and television signals and shall comply with the provisions of Section 47 of the Federal Code of Regulations, Part 15 and subsequent revisions governing said emissions.
- (12) If it is determined that a proposed small wind energy system could impact the view shed of the Blue Ridge Parkway, then Parkway Officials shall be notified of the application for their comment.

**918.04. Review Process.** The landowner will adhere to the special exception process as provided by Section 1003.03.

**918.05. Federal and State Requirements.**

- (a) *Compliance with Uniform Statewide Building Code:* Building permit applications for wind energy systems shall be accompanied by standard drawings of the wind turbine structure, including the tower, base, and footings. An engineering analysis of the tower showing compliance with the Uniform Statewide Building Code and certified by a licensed professional engineer shall also be submitted.
- (b) *Compliance with FAA Regulations:* Wind energy systems must comply with applicable FAA regulations, including any necessary approvals for installations close to airports.
- (c) *Compliance with National Electric Code:* Building permit applications for wind energy systems shall be accompanied by a line drawing of the electrical components in sufficient detail to allow for a determination that the manner of installation conforms to the National Electrical Code.
- (d) *Compliance with Regulations Governing Energy Net Metering:* Wind energy systems connected to the utility grid must comply with the Virginia Administrative Code 20 VAC 5-315: Regulations Governing Energy Net Metering.

**918.06. Setbacks.**

The wind energy system shall be set back a distance of two hundred (200) feet from all adjacent property lines or two (2) times the height of the tower height plus blade length from the property line, whichever is greater. The wind energy system tower, including blade length shall be set back at a minimum distance equal to the height of the tower and blade length from all residential structures. Wind energy systems shall meet all setback requirements for primary structures for the zoning

**district in which the wind energy system is located in addition to the requirements set forth above. Additionally, no portion of the small wind energy system, including guy wire anchors, may extend closer than ten (10) feet to the property line.**

**918.07. Removal of Defective or Abandoned Wind Energy Systems.**

**Any wind energy system found to be unsafe by the building official shall be repaired by the owner to meet federal, state and local safety standards or removed within six months. Any wind energy system that is not operated for a continuous period of twenty-four (24) months shall be considered abandoned and the owner of the system shall remove the turbine within ninety (90) days of receipt of notice from the county instructing the owner to remove the abandoned wind energy system.**

Draft 12/22/08

Revised by PC 1/5/09

Revised by PC 2/5/09 (Setback provision)

Revised by PC 3/5/09

Revised by BOS 4/7/09 (Added setback provision from residential structures)

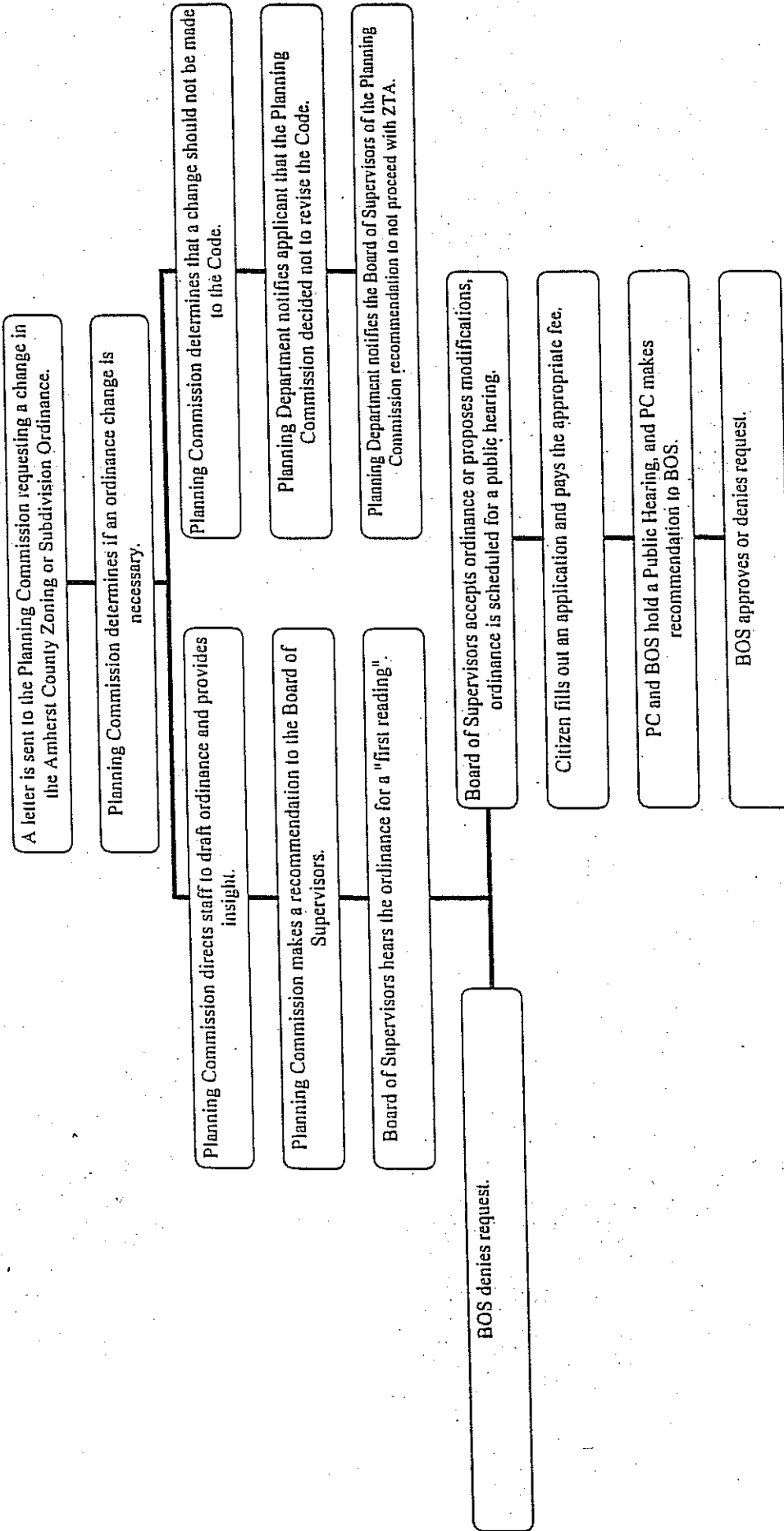
Revised by staff 5/5/09 (Added the word "small" in front of each use category in the three allowed zoning districts).

Revised by staff 5/18/09 to add the Parkway notification provision if the small wind energy system is located in the view shed of the Blue Ridge Parkway.

Revised by PC 8/6/09: 918.03 (4) referenced noise ordinance to the proposed County noise ordinance.

Revised by PC 10/15/09: Section 918.03 (4), removed: *"or a maximum of five (5) dB above background noise during the day, three (3) dB at night, whichever is greater"*.

# Amherst County - Zoning Text Amendment Process



\* Approved by the BOS by Resolution on 1/6/09