

**REQUEST FOR CITY COUNCIL CONSIDERATION**

Meeting Date: Monday, April 5, 2010

Agenda Item:	Prepared By: Jim Wood, AICP
Agenda Section: Old Business: Ordinance: 2 <sup>nd</sup> Reading	Date: April 1, 2010
Subject: Create Article VII.1 Environmental Stewardship, Section. 23-129.3, in the Zoning Ordinance, allowing “Small Wind Energy Systems” [ZTX-10-02]	Division: Planning & Development

**Background:**

Attached is an ordinance that would permit small wind turbines to be placed on any property for purposes of energy production. There are several criteria that must be adhered to, including:

1. No more than two such turbines can be placed on any residentially zoned property.
2. The entire turbine must be set back from all property lines a minimum distance at least equal to the total height of the unit.
3. The definition of total height depends on where and how the facility is constructed, as follows:
  - For free-standing units anchored into the ground, total height is measured from the ground to the highest reach of any blade tip or support apparatus.
  - For units anchored into the ground, but also attached to a building by some support mechanism, the total height is measured from the highest point where the unit is attached to the structure, to the highest reach of any blade tip.
  - For units attached entirely to a building, with no attachment to the ground, total height is measured from the lowest point where the unit is attached to the building, to the highest reach of any blade tip.
4. A maximum noise level of 50 decibels, measured when the turbine is rotating at its highest design speed, is permissible. The noise level is measured at the property lines.
5. For non-residential turbines, an inspection is required at least once every three years.
6. The unit has to be approved by the electric utility serving the premises.
7. The ordinance originally contained language requiring the original color and finish applied by the manufacturer to remain, unaltered. A citizen comment to a Council member *after* First Reading suggested that this language be strengthened, so it has been altered slightly to clarify that it must be a color and finish normally offered by the manufacturer, as opposed to a special order color or finish, and that it must be white, or an earth tone color.

**Planning Commission Action**

The Planning Commission conducted a public hearing on March 2, 2010. The Planning Commission voted unanimously to forward a recommendation of approval to City Council, with one condition:

- Prohibit the placement of wind turbines in the front yards of single family residential sites, unless it can be proven that no other location on the property is feasible for reasonable operation of the turbine. The ordinance in your packet reflects this change.

A proposed Ordinance is attached for Council's convenience, with the change in Section 23-129.3 (3)(f) to read as follows:

*(f) Appearance, Color, and Finish. The wind generator and tower shall remain painted or finished in a standard white or earth-tone color or finish originally offered and applied by the manufacturer, unless approved in the building permit.*

Reviewed by Division Head	Reviewed by City Manager	Reviewed by City Attorney
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Council Action:  
Motion By \_\_\_\_\_ 2<sup>nd</sup> By \_\_\_\_\_ To \_\_\_\_\_

## ORDINANCE

AN ORDINANCE OF THE CITY OF NORTH MYRTLE BEACH PROVIDING THAT THE CODE OF ORDINANCES, CITY OF NORTH MYRTLE BEACH, SOUTH CAROLINA, BE AMENDED BY ADDING ARTICLE VII.1 TO CHAPTER 23.

BE IT ORDAINED BY THE MAYOR AND COUNCIL OF THE CITY OF NORTH MYRTLE BEACH, SOUTH CAROLINA, IN COUNCIL DULY ASSEMBLED, THAT:

### Section 1:

That Chapter 23, Zoning be amended by adding Article VII.1 Environmental Stewardship (*new matter underlined, deleted matter struck-through*).

### ARTICLE VII.1 ENVIRONMENTAL STEWARDSHIP

#### Sec. 23-129.3 Small Wind Energy Systems.

(1) Purpose: The purpose of this ordinance is to oversee the permitting of small wind energy systems and to protect public health and safety without significantly increasing the cost or decreasing the efficiency of a small wind energy system.

(2) Definitions: For purposes of this section, the following terms are defined:

Meteorological tower (MET tower) is defined to include the tower, base plate, anchors, guy cables and hardware, anemometers (wind speed indicators), wind direction vanes, booms to hold equipment anemometers and vanes, data logger, instrument wiring, and any telemetry devices that are used to monitor or transmit wind speed and wind flow characteristics over a period of time for either instantaneous wind information or to characterize the wind resource at a given location.

Rotor diameter means the cross sectional dimension of the circle swept by the rotating blades.

Small wind energy system means a wind energy system that

- (a) is used to generate electricity;
- (b) has a nameplate capacity of 100 kilowatts or less; and
- (c) has a total height of 170 feet or less.

Total height means the following:

1. The vertical distance from ground level to the tip of a wind generator blade when the tip is at its highest point, for all free-standing structures not constructed upon or attached to a building in any manner (see graphic illustrating total height).

2. When the structural integrity of a small wind energy system's support tower or pole is designed to be partially reliant on attachment or anchoring of the support tower or pole to a building or other structure, then the total height shall mean the vertical distance measured from the highest point of such attachment, to the tip of a wind generator blade when the tip is at its highest point. For example, if a small wind energy system measures 40 feet above grade, and its support tower is secured or anchored to a building at a height of 20 feet, then the total height shall be measured from the attachment point to the highest blade tip, or 20 feet (see graphic illustrating total height).

3. When a small wind energy system is entirely attached to the wall or roof of a building or other structure, with no portion touching the ground, the total height shall be measured from the lowest point of attachment to the tip of a wind generator blade when the tip is at its highest point (see graphic illustrating total height).

Tower means the monopole, freestanding, or guyed structure that supports a wind generator.

Vertical Access Wind Turbine (VAWT) means a small wind device designed so that its main rotor shaft runs transverse to the prevailing wind flow streamlines.

Wind energy system means equipment that converts and then stores or transfers energy from the wind into usable forms of energy. This equipment includes any base, blade, foundation, generator, nacelle, rotor, tower, transformer, vane, wire, inverter, batteries or other component used in the system.

Wind generator means blades and associated mechanical and electrical conversion components mounted on top of the tower.

(3) Standards. A small wind energy system shall be a permitted use in all zoning districts subject to the following requirements:

(a) Setbacks. A wind tower for a small wind system shall be set back a distance equal to its total height from:

(1) any overhead utility lines, unless written permission is granted by the affected utility;

(2) all property lines.

(b) Access.

(1) All ground mounted electrical and control equipment shall be labeled or secured to prevent unauthorized access.

(2) The tower shall be designed and installed so as to not provide step bolts or a ladder readily accessible to the public for a minimum height of 8 feet above the ground.

(c) Location on Residential Properties. Wind turbines shall not be permitted in the front yards of single family residential properties.

(d) Electrical Wires. All electrical wires associated with a small wind energy system, other than wires necessary to connect the wind generator to the tower wiring, the tower wiring to the disconnect junction box, and the grounding wires shall be located underground.

(e) Lighting. A wind tower and generator shall not be artificially lighted unless such lighting is required by the Federal Aviation Administration.

(f) Appearance, Color, and Finish. The wind generator and tower shall remain painted or finished in a standard white or earth-tone color or finish originally offered and applied by the manufacturer, unless approved in the building permit.

(g) Signs. All signs, other than the manufacturer's or installer's identification, appropriate warning signs, or owner identification on a wind generator, tower, building, or other structure associated with a small wind energy system visible from any public road shall be prohibited.

(h) Code Compliance. A small wind energy system including tower shall comply with all applicable state construction and electrical codes, and the National Electrical Code. In addition, the system must be certified by the manufacturer or a structural engineer to be able to withstand sustained winds of 130 miles per hour without structural failure of any component. If the specifications indicate that the system needs to be immobilized and secured prior to a storm event in order to meet this standard, a detailed plan for doing so shall be submitted and periodically updated, to include all of the following:

1. Exact location of the small wind energy system on the property.
2. Contact information (email, telephone) for all persons authorized to and/or responsible for securing the system.
3. Procedures to be followed in the event of a pending storm event likely to necessitate the securing of the system (timing of notification, personnel responsible, chain of command, sequence of events, etc.)
4. Information provided by the manufacturer on the steps required to secure the system.
5. In the event the system is located in a secure area (fenced, gated, in a locked area of a building, etc.) access codes and/or combinations, or a copy of any key needed to gain access to the system for purposes of securing it.

(i) Utility notification and interconnection. Small wind energy systems that connect to the electric utility shall comply with the utility's adopted interconnection standards. An executed letter of approval from the utility such shall be provided as part of the building permit application.

(j) MET towers shall be permitted under the same standards, permit requirements, restoration requirements, and permit procedures as a small wind energy system.

(4) Permit Requirements: A building permit shall be required for the installation of a small wind energy system.

(a) Documents: The building permit application shall be accompanied by a site plan that satisfies all applicable requirements of the Site Specific Development Plan requirements of the Land Development Regulations, and which also includes the following:

- (1) Location, dimensions, and types of existing major structures on the property.
- (2) Location of the proposed wind system tower.
- (3) The right-of-way of any public road that is contiguous with the property.
- (4) Any overhead utility lines.
- (5) Wind system specifications, including manufacturer and model, rotor diameter, tower height, tower type (freestanding or guyed).
- (6) Tower foundation blueprints or drawings.
- (7) Tower blueprint or drawing
- (8) An analysis of the noise levels generated by any and all components of the system, certified by the manufacturer or the installing contractor.
- (9) For VAWT systems mounted on existing buildings, a structural engineer shall certify that the portion of the building to which the turbine is attached can adequately and safely support the weight and mechanical loading of all components associated with the system. Further, the system must be designed so that the blades and rotor can be immobilized and secured before and during any storm event where wind speeds are likely to equal or exceed the design limitations of the system.
- (10) A letter of approval for installation and operation of the small wind energy system by the electric utility provider of record for the subject property.

(5) Fees: The application for a building permit for a small wind energy system must be accompanied by the fee required for a building permit for a Permitted Accessory Use.

(6) Inspection: The owners of wind turbine installations attached to non-residential structures shall have the unit and all its support apparatus inspected by any one of the following: the installing contractor, the manufacturer, or a structural engineer, not less than once every three years, and a report detailing the inspection findings shall be submitted to the Building Official. In addition, the inspecting agent must certify in his or her report that detailed instructions for securing all equipment against wind loads exceeding its design operating limits are posted at all times within close proximity of the equipment; and that the owner and/or one or more persons with full access to the equipment is trained in how to perform the securing procedures. Failure to provide such a report shall be considered grounds for the Zoning Administrator to issue an order to cease operation of the unit until the report is provided. If the report indicates that repairs or maintenance is needed to permit continued safe operation of the unit, the Zoning Administrator shall issue an order to cease operation of the unit immediately until the repairs are made and certified via a re-inspection.

(7) Noise: No component of any small wind system may generate noise levels in excess of 50 decibels at its maximum designed rotation speed, measured from any portion of a property line of the parcel upon which the system is located. If the Zoning Administrator determines that this standard is being violated, he or she shall issue an order to immediately cease operation of the system until the noise levels are permanently attenuated to 50 decibels or less.

(8) Screening: All grade level equipment or structures associated with the system shall be screened on all sides by a dense landscape buffer or fence, or combination thereof, except for the minimum-sized area necessary for maintenance access to the equipment or structure.

(9) Abandonment:

(a) A small wind energy system that is out-of-service for a continuous 12-month period will be deemed to have been abandoned. The Zoning Administrator may issue a Notice of Abandonment to the owner of a small wind energy system that is deemed to have been abandoned. The Owner shall have the right to respond to the Notice of Abandonment within 30 days from Notice receipt date. The Zoning Administrator shall withdraw the Notice of Abandonment and notify the owner that the Notice has been withdrawn if the owner provides information that demonstrates the small wind energy system has not been abandoned.

(b) If the small wind energy system is determined to be abandoned, the owner of a small wind energy system shall remove the wind generator from the tower at the Owner's sole expense within 3 months of receipt of Notice of Abandonment. If the owner fails to remove the wind generator from the tower, the Zoning Administrator may pursue a legal action to have the wind generator removed at the Owner's expense.

(10) Maximum number of wind turbines on single-family residential sites: In general, the maximum number of wind turbines that may be permitted on one single-family residential site shall be one (1); however, the Zoning Administrator may waive the requirement when an engineering analysis provided by the applicant demonstrates that two (2) wind turbines are necessary to achieve the electric generating goals of the applicant, and which further demonstrates that having two smaller units will be less visually obtrusive than having one larger unit that would otherwise be approvable for the site. In no circumstances shall more than two (2) wind turbines be permitted on a single-family residential site.

**Section 2:**

That the North Myrtle Beach Planning Commission has provided the required public notice of this request and has held the necessary public hearings in accordance with applicable State Statutes and City Ordinances.

DONE, RATIFIED AND PASSED, THIS \_\_\_\_\_ DAY OF \_\_\_\_\_, 2010.

ATTEST:

\_\_\_\_\_  
Mayor Marilyn Hatley

\_\_\_\_\_  
City Clerk

APPROVED AS TO FORM:

\_\_\_\_\_  
City Attorney

FIRST READING: \_\_\_\_\_

SECOND READING: \_\_\_\_\_

REVIEWED:

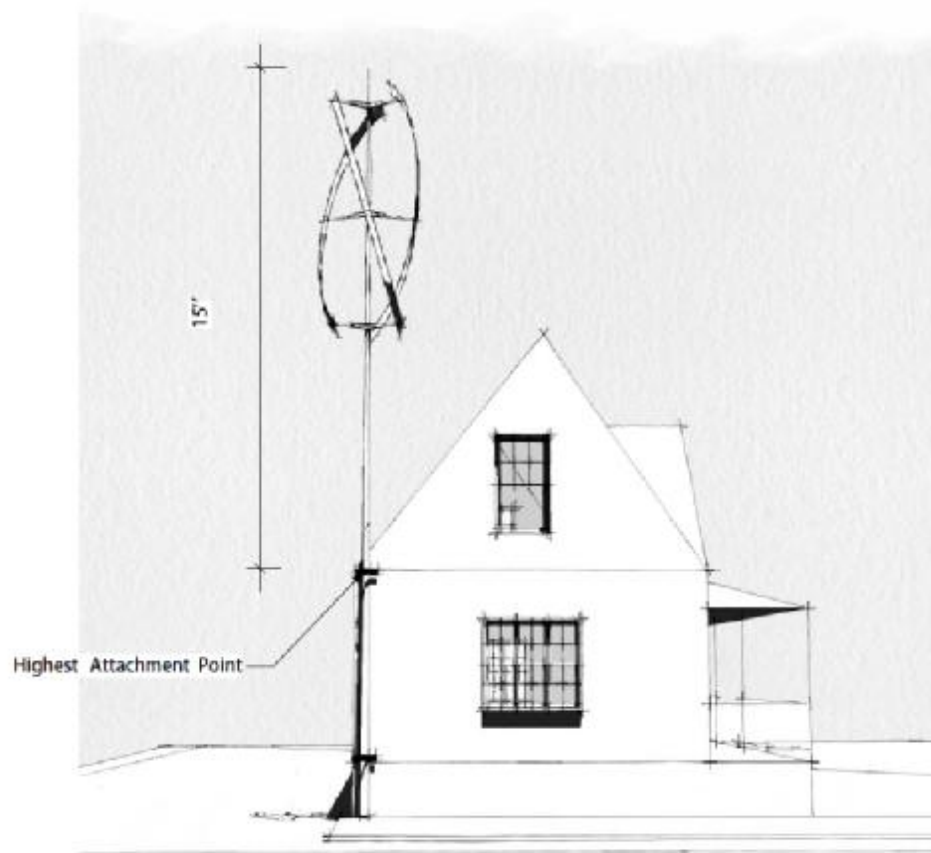
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City Manager





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Sec. 23-129.3 Small Wind Energy Systems Ordinance  
Graphic Illustration Total Height, Definition 1



2 Sec. 23-129.3 Small Wind Energy Systems Ordinance  
Graphic Illustration Total Height, Definition 2



3 Sec. 23-129.3 Small Wind Energy Systems Ordinance  
Graphic Illustration Total Height, Definition 3

**5.C. ZONING TEXT AMENDMENT ZTX-10-02: Proposed Amendment of the Zoning Ordinance regarding Wind Turbines.**

**Background:**

Attached is an ordinance that would permit small wind turbines to be placed on any property, for purposes of energy production. There are several criteria that must be adhered to, including:

1. No more than two such turbines can be placed on any residentially zoned property.
2. The entire turbine must be set back from all property lines a minimum distance at least equal to the total height of the unit.
3. The definition of total height depends on where and how the facility is constructed, as follows:
  - For stand-alone units anchored into the ground, total height is measured from the ground to the highest reach of any blade tip or support apparatus.
  - For units anchored into the ground, but also attached to a building by support brackets, the total height is measured from the highest point where the unit is attached to the structure, to the highest reach of any blade tip.
  - For units attached entirely to a building, with no attachment to the ground, total height is measured from the lowest point where the unit is attached to the building, to the highest reach of any blade tip.
4. A maximum noise level of 50 decibels, measured when the turbine is rotating at its highest design speed, is permissible. The noise level is measured at the property lines.
5. For non-residential turbines, an inspection is required at least once every three years.
6. The unit has to be approved by the electric utility serving the premises.

**Recommendation:**

Staff recommends forwarding this ordinance amendment to City Council with a recommendation of approval.