

CITY OF LACONIA

In the Year of our Lord two thousand and ten

AN ORDINANCE AMENDING CHAPTER 235 ZONING

The City of Laconia ordains:

That the ordinances of the City of Laconia, as amended, be and are further amended in **Chapter 235** as follows:

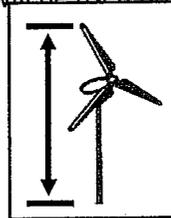
Insert new Article VII-A with new §235-44.1 as follows:

§235-44.1 Small Wind Energy Systems.

- I. Purpose:
This small wind energy systems ordinance is enacted in accordance with RSA 674:62-66, and the purposes outlined in RSA 672:1-III-a. The purpose of this ordinance is to accommodate small wind energy systems which are intended to reduce on-site consumption of utility power in appropriate locations, while protecting the public's health, safety and welfare. In addition, this ordinance provides a permitting process for small wind energy systems to ensure compliance with the provisions of the requirements and standards established herein.
- II. Definitions:
 - A. **Fall zone:** The potential fall area for the small wind energy system. It is measured by using 120% of the total system height as the radius around the center point of the base of the tower. *E.g.* If the total system height is 60 feet, the fall zone would be defined by a circle with a radius of 120% of 60 feet = 72 feet around the tower (as measured from the center of the base of the tower.)
 - B. **Flicker:** The moving shadow created by the sun shining on the rotating blades of the wind turbine.
 - C. **Meteorological tower (met tower).** Includes the tower, base plate, anchors, guy wires and hardware, anemometers (wind speed indicators), wind direction vanes, booms to hold equipment for anemometers and vanes, data loggers, 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. For the purpose of this ordinance, met towers shall refer only to those whose purpose are to analyze the environmental factors needed to assess the potential to install, construct or erect a small wind energy system.

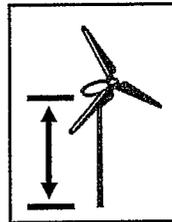
- D. **Modification.** Any change to the small wind energy system that materially alters the size, type or location of the small wind energy system. Like-kind replacements shall not be construed to be a modification.
- E. **Net metering.** The difference between the electricity supplied to a customer over the electric distribution system and the electricity generated by the customer's small wind energy system that is fed back into the electric distribution system over a billing period.
- F. **Power grid.** The transmission system, managed by ISO New England, created to balance the supply and demand of electricity for consumers in New England.
- G. **Shadow flicker.** The visible flicker effect when rotating blades of the wind generator cast shadows on the ground and nearby structures causing a repeating pattern of light and shadow.
- H. **Small wind energy system.** A wind energy conversion system consisting of a wind generator, a tower, and associated control or conversion electronics, which has a rated capacity of 100 kilowatts or less and will be used primarily for onsite consumption.

- I. **System height.** The vertical distance from ground level to the tip of the wind generator blade when it is at its highest point.



- J. **Tower.** The monopole, guyed monopole, or lattice structure that supports a wind generator.

- K. **Tower height.** The height above grade of the fixed portion of the tower, excluding the wind generator.



- L. **Wind generator.** The blades and associated mechanical and electrical conversion components mounted on top of the tower whose purpose is to convert kinetic energy of the wind into rotational energy used to generate electricity.

III. Procedure for Review:

- A. **Building Permit:** Small wind energy systems and met towers are an accessory use permitted in all zoning districts where structures of any sort are allowed. No small wind energy system shall be erected, constructed, or installed without first receiving a building permit from the building inspector. A building permit shall be required for any physical modification to an existing small wind energy system. Met towers that receive a building permit shall be permitted on a temporary basis not to exceed 18 months.

B. Roof top units: Small wind energy systems to be installed on buildings shall be reviewed and approved by the Planning Department pursuant to Architectural Design Regulations. For those systems which are proposed to exceed the height restriction within the zoning district they are to be installed, wind energy systems shall be reviewed and approved as a Conditional Use. The proposed roof top systems shall comply with subsections (c) through (k) in *Section (D) Standards*.

C. Meteorological (Met) Towers: The construction of a met tower for the purpose of collecting data to develop a small wind energy system is exempt from all provisions of this ordinance, however, the met tower shall abide with the following requirements:

1. The construction, installation or modification of a met tower shall require a building permit and shall conform to all applicable sections of the NH State Building Code and the building codes adopted by the City of Laconia. The information required by section C(2) of this ordinance shall be submitted with the application for a building permit.
2. Met towers shall be permitted on a temporary basis not to exceed 18 months.
3. Met towers shall comply with all setback requirements

D. Application:

A development plan with the following information shall be submitted:

1. Property lines and physical dimensions of the applicant's property.
2. Location, dimensions, and types of existing structures on the property.
3. Location of the proposed small wind energy system, foundations, guy anchors, and associated equipment.
4. Tower foundation blueprints or drawings; engineered plans may be required.
5. Tower blueprints or drawings; engineered plans may be required.
6. Setback requirements as outlined in this ordinance.
7. The right-of-way of any public road that is contiguous with the property.
8. Utility lines.
9. Wetlands and/or waterbodies and buffers.
10. Small wind energy system specifications, including manufacturer, model, rotor diameter, tower height, tower type, nameplate, and generation capacity.
11. Small wind energy systems that will be connected to the power grid shall include a copy of the application for interconnection with their electric utility provider.
12. Sound level analysis prepared by the wind generator manufacturer or qualified engineer.
13. Electrical components in sufficient detail to allow for a determination that the manner of installation conforms to all applicable building codes adopted by the City of Laconia.
14. Evidence of compliance or non-applicability with Federal Aviation Administration requirements.

15. The Building Inspector/Planning Department may require the applicant to submit a computer enhanced viewshed analysis.
16. List of abutters to the applicant's property.
17. Method of connecting to the structure(s) on the site and to the grid. Power lines for such connections shall be located underground.

E. Abutter and Regional Notification: In accordance with RSA 674:66 -A municipal building inspector shall notify all abutters by certified mail upon application for a building permit to construct a small wind energy system. Abutters shall be afforded a 30-day comment period prior to the issuance of a building permit. An appeal may be made to the building code board of appeals pursuant to RSA 674:34 or to the zoning board of adjustment pursuant to RSA 676:5, as may be appropriate.

1. The cost of abutter notification shall be borne by the applicant.
2. The building inspector shall provide notice of the application for a building permit to the City Council.
3. The building inspector, acting as a local land use board pursuant to RSA 672:7, shall review an application for a small wind energy system pursuant to RSA 36:56 to determine whether it is a development of regional impact, as defined in RSA 36:55. If the building inspector determines that the proposal has the potential for regional impact, he or she shall follow the procedures set forth in RSA 36:57, IV.

IV. Standards:

- A. Small wind energy systems must be related to onsite consumption of power and accessory to the primary use(s) on the lot.
- B. The building inspector shall evaluate the application for compliance with the following standards;
 1. Minimum Setback Requirements: The setback shall be calculated by multiplying 1.2 by the system height. This setback is applicable to Occupied Buildings on Abutting Property; Property Lines; Overhead Utility Lines; Public Roads; Rail Roads. The setback is measured from the center of the tower base to the applicable structures/utilities previously mentioned. The setback is not applicable to occupied structures on the participating landowner's property.

Example:

150-foot tall wind energy system requires a setback of 180 feet = (150' x 1.2).

- a) Small wind energy systems must meet all setbacks for principal structures for the zoning district in which the system is located.
- b) Guy wires used to support the tower are exempt from the small wind energy system setback requirements.

- c) Setbacks from property lines can be waived only if the affected land owner provides written permission through a recorded easement allowing the small wind energy system's fall zone to overlap with the abutting property.
2. **Number of Towers:** Towers are limited to one per lot.
 3. **Tower Height:** The maximum tower height shall be restricted to 35 feet above the tree canopy that is within 300 feet of the small wind energy system. In no situation shall the tower height exceed 150 feet.
 4. **Sound Level:** The small wind energy system shall not exceed 60 decibels using the A scale (dBA), as measured at the site property line, except during short-term events such as severe wind storms and utility outages.
 5. **Shadow Flicker:** Small wind energy systems shall be sited in a manner that does not result in significant shadow flicker impacts. Significant shadow flicker is defined as more than 30 hours per year on abutting occupied buildings. The applicant has the burden of proving that the shadow flicker will not have significant adverse impact on neighboring or adjacent uses. Potential shadow flicker will be addressed either through siting or mitigation measures.
 6. **Signs/Advertising:** All signs and/or advertisements including flags, streamers, symbols, and decorative items, both temporary and permanent, are prohibited on the small wind energy system except for appropriate warning signs.
 7. **Telecommunication Attachments:** All telecommunication features must be concealed inside the small wind energy system.
 8. **Code Compliance:** The small wind energy system shall comply with all applicable sections of the New Hampshire State Building Code.
 9. **Aviation:**
 - a) The small wind energy system shall be built to comply with all applicable Federal Aviation Administration regulations including but not limited to 14 C.F.R. part 77, subpart B regarding installations close to airports, and the New Hampshire Aviation regulations, including but not limited to RSA 422-b and RSA 424. Applicants are encouraged to contact the Federal Aviation Administration prior to submitting an application to the City.
 - b) No small wind energy system shall be located within 300 feet of the heliport that is located at Lakes Region General Hospital's 85 Spring St lot, MBL reference as 431-204-57.
 10. **Visual Impacts:** It is inherent that small wind energy systems may pose some visual impacts due to the tower height needed to access wind resources. The purpose of this section is to reduce the visual impacts, without restricting the owner's access to the optimal wind resources on the property.

- a) The applicant shall demonstrate through project site planning and proposed mitigation that the small wind energy system's visual impacts will be minimized for surrounding neighbors and the community. This may include, but not be limited to information regarding site selection, wind generator design or appearance, buffering, and screening of ground mounted electrical and control equipment. Where wind characteristics permit, wind towers shall be set back from the tops of visually prominent ridgelines to minimize the visual contrast from any public access. All electrical conduits shall be underground.
- b) The design of the system shall, to the extent reasonably possible, use non reflective materials and colors, textures, screening, and landscaping that will blend the system into the natural setting and existing environment. White, off-white, gray, or neutral subdued tones, such as earth tones of green or brown are also permissible. Most stock colors are also permissible.
- c) A small wind energy system shall not be artificially lit unless such lighting is required by the Federal Aviation Administration (FAA). If lighting is required, the applicant shall provide a copy of the FAA determination to establish the required markings and/or lights for the small wind energy system.
- k) **Approved Wind Generators:** The manufacturer and model of the wind generator to be used in the proposed small wind energy system must have been approved by the California Energy Commission or the New York State Energy Research and Development Authority, or a similar list approved by the state of New Hampshire, if available.
- l) **Utility Connection:** If the proposed small wind energy system is to be connected to the power grid through net metering, it shall adhere to RSA 362-A:9; any new utility lines required to accomplish this shall be placed underground.
- m) **Access:** The tower shall be designed and installed so as not to provide step bolts or a ladder readily accessible to the public for a minimum height of 8 feet above the ground. All ground-mounted electrical and control equipment shall be labeled and secured to prevent unauthorized access.
- n) **Clearance of Blades:** No portion of the residential wind energy system's blades shall extend within twenty feet of the ground.
- o) **Clearing:** Clearing of natural vegetation shall be limited to that which is necessary for the construction, operation and maintenance of the small wind energy system and as otherwise prescribed by applicable laws, regulations, and ordinances.

V. Compliance:

- A) An as-built plan may be required; this plan may be required to include notation of the structure height and setbacks may be required.
- B) Verification of sound decibel levels at the property line may be required.

VI. Abandonment:

- A. At such time that a small wind energy system is scheduled to be abandoned or discontinued, the applicant will notify the building inspector by certified U.S. mail of the proposed date of abandonment or discontinuation of operations.
- B. Upon abandonment or discontinuation of use, the owner shall physically remove the small wind energy system within 90 days from the date of abandonment or discontinuation of use. This period may be extended at the request of the owner and at the discretion of the building inspector. "Physically remove" shall include, but not be limited to:
 - 1. Removal of the wind generator and tower and related above-grade structures.
 - 2. Restoration of the location of the small wind energy system to its natural condition, except that any landscaping, grading or below-grade foundation may remain in its same condition at initiation of abandonment
- C. In the event that an applicant fails to give such notice, the system shall be considered abandoned or discontinued if the system is out-of-service for a continuous 12-month period. After the 12 months of inoperability, the building inspector may issue a Notice of Abandonment to the owner of the small wind energy system. The owner shall have the right to respond to the Notice of Abandonment within 30 days from Notice receipt date. After review of the information provided by the owner, the building inspector shall determine if the small wind energy system has been abandoned. If it is determined that the small wind energy system has not been abandoned, the building inspector shall withdraw the Notice of Abandonment and notify the owner of the withdrawal.
- D. If the owner fails to respond to the Notice of Abandonment or if, after review by the building inspector, it is determined that the small wind energy system has been abandoned or discontinued, the owner of the small wind energy system shall remove the wind generator and tower at the owner's sole expense within 3 months of receipt of the Notice of Abandonment. If the owner fails to physically remove the small wind energy system after the Notice of Abandonment procedure, the building inspector may pursue legal action to have the small wind energy system removed at the owner's expense.

VII. Violation:

It is unlawful for any person to construct, install, or operate a small wind energy system that is not in compliance with this ordinance. Small wind energy systems installed prior to the adoption of this ordinance are exempt from this ordinance except when modifications are proposed to the small wind energy system.

VIII. Penalties:

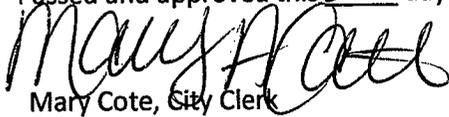
Any person who fails to comply with any provision of this ordinance or a building permit issued pursuant to this ordinance shall be subject to enforcement and penalties as allowed by NH Revised Statutes Annotated Chapter 676:17.

This ordinance amendment shall take effect upon its passage.



Michael Seymour, Mayor

Passed and approved this 25th day of October, 2010



Mary Cote, City Clerk