

6.5 SMALL WIND ENERGY SYSTEMS

6.5.1 Purpose. The purpose of this subsection is to provide a permitting process for **Small Wind Energy Systems (SWES)** so that they may be utilized in a cost-effective, efficient, and timely manner to increase the use of distributed generation; to integrate these systems into the community in a manner that minimizes their impacts on the character of neighborhoods, on property values, and on the scenic, historic, and environmental resources of the town; and to protect health and safety, while allowing wind energy technologies to be utilized.

6.5.2 Applicability. One or two SWES on a lot, which meet all the criteria of ~~this~~ subsection 9.4, are permitted as of right with Site Plan approval on lots of less than two acres. Site Plan approval requirements are specified in subsection 9.4. One or two ~~SWES~~ **Small Wind Energy Systems** on a lot, which meet all the criteria of this subsection, are permitted as of right on lots of 2 acres or greater. More than two SWES on a lot or combination of lots of any size, which meet all the criteria of this subsection, may be allowed by Special Permit from the Planning Board. The Planning Board may grant a Special Permit only if it finds that the application complies with the provision of this subsection and is consistent with the applicable criteria for granting Special Permits as specified in subsection 9.3. The maximum permitted tower height on any given lot is subject to the design requirements specified in subsection 6.5.4.

6.5.3 Definitions.

The following definitions shall apply.

~~Special Permit Granting Authority (SPGA) shall be the Planning Board.~~

Fall Zone: The area on the ground from the base of a tower that forms a circle with a radius equal to tower height, including other appurtenances. The fall zone is the area within which there is a potential hazard from falling debris (such as ice) or collapsing material.

Small Wind Energy System (SWES): All equipment and structures utilized in connection with the conversion of wind to electricity that is intended primarily to, but not limited to, reduce on-site consumption of **commercially-provided** utility power and is less than **two hundred** feet (200') in height. This includes, but is not limited to, a wind turbine, a tower and associated control or conversion electronics.

Special Permit Granting Authority (SPGA): The SPGA shall be the Planning Board.

Tower Height: The height from the existing grade of the fixed portion of the tower to the blade tip of the turbine at the highest point of its rotation or the highest point of the ~~SWES~~ **Small Wind Energy System**.

6.5.4 Design Requirements. The following design requirements shall apply to ~~SWES~~ **Small Wind Energy Systems**:

1. **Tower Height:** The maximum permitted tower height on any given lot is subject to the design requirements specified in subsection 6.5.4 but in no instance shall any tower height be two hundred feet (200') **or** greater.
2. **Setbacks:**
 - a. The minimum horizontal distance from the base of any tower structure to any property line or road right-of-way shall be 125% of the tower height. The minimum horizontal distance to any existing residence not occupied by the SWES applicant shall be the greater of 300' or 300% of the tower height.
 - b. No part of the **SWES Small Wind Energy System**, including guy wire and anchors, may extend closer to the property boundaries than the setback ~~for the zoning district~~ in the dimensional table in subsection 4.2.
 - c. The setback distances specified in 6.5.4.2.a. and 6.5.4.2.b. for any **SWES Small Wind Energy System** may be reduced by Special Permit from ~~the SPGA the Zoning Board of Appeals~~ for **SWES Small Wind Energy System** proposed on lots of less than two (2) acres and by Special Permit from the ~~Zoning Board of Appeals~~ **SPGA** for **Small Wind Energy System** proposed on lots of two (2) acres or greater, consistent with the requirements of public health, safety, and welfare and the purposes of this subsection. If the setback distances are reduced so that the fall zone of the tower includes land on abutting and adjacent property, such reduction shall only be permitted if the affected property owner(s) executes a recorded easement allowing the fall zone onto such property(s).
 - d. Setbacks need not be cleared of trees or other vegetation.
3. **Unauthorized Access:** All **SWES Small Wind Energy Systems** ~~shall be designed and maintained to prevent unauthorized access.~~ constructed to prevent unauthorized persons from gaining access to the Small Wind Energy System.
4. **Color and finish: Appearance:** ~~A non-reflective exterior color designed to blend with surrounding environment shall be used. No decorations shall be allowed.~~ All Small Wind Energy Systems shall be finished in a neutral (white or gray) non-reflective color to minimize visual impact.
5. **Visual Impact:** The applicant shall demonstrate through project site planning and proposed mitigation that the **SWES Small Wind Energy System** minimizes impacts on the visual character of surrounding neighborhoods and the community to the extent practical. This may include, but not be limited to:
 - a. Information regarding site selection, turbine design or appearance, buffering, screening, or lighting.
 - b. To the extent practical electrical conduits shall be underground.
 - c. No logos, designs, or other signage shall exceed two square feet in total area.

6. Noise: The operation of the ~~SWES~~ Small Wind Energy System and appurtenant equipment shall not increase the noise level by greater than five (5) dBA above ambient noise levels as measured at the property lines of the ~~SWES~~ Small Wind Energy System site. ~~Small Wind Energy System shall comply with the Massachusetts noise regulation (310 CMR 7.10) and most current related DEP Policies or Guidelines.~~ Noise analysis ~~may~~ shall be required to be performed by ~~a professional engineer~~ an acoustical engineer, as designated by the SPGA.

7. ~~Compliance with Federal Aviation Administration (FAA) requirements:~~ All ~~SWES~~ shall ~~comply with applicable FAA regulations.~~ **Lighting:** A Small Wind Energy System may include lights necessary for the safe operation of the Small Wind Energy System.

8. Tower Location: Any ~~SWES~~ Small Wind Energy System site shall be subject to the Wetlands Protection Act G.L. c. 131 §40.

6.5.5 General Requirements. The following general requirements shall apply to ~~SWES~~ Small Wind Energy Systems.

- 1. An application for a ~~SWES~~ Small Wind Energy System must be prepared by a qualified person or firm, such as a licensed engineer.** This provision may be waived by the ~~appropriate permitting body~~ Planning Board if , in the opinion of the ~~permitting body~~ Planning Board, the material submitted is deemed sufficient. ~~to make a decision.~~
- 2. Construction:** The construction, operation, maintenance and removal of ~~SWES~~ Small Wind Energy Systems shall be consistent with all applicable town, state, and federal requirements, including, ~~but not limited to~~, all applicable health, safety, construction, environmental, electrical and communications ~~and aviation~~ requirements.
- 3. Operation and Maintenance:** An application for a permit for a ~~SWES~~ Small Wind Energy System shall include a plan for the general procedures for safe and effective operation and maintenance of the system, including, ~~but not limited to~~ , guy wires, anchors, support structures and lubricants.
- 4. Approved Wind Turbines:** Proposed Small Wind Energy System turbine makes and models must appear on the approved list of the California Energy Commission Lists of Eligible Small Wind Turbines or New York State Energy Research and Development Qualified Wind Generators, or a similar list approved by the Commonwealth of Massachusetts if one becomes available.
- 5. Compliance with State Building Code:** Building permit applications for small wind energy systems shall comply with the state building code and all applicable local, state and national electrical codes.

6. **Utility Notification:** All grid connected installations must comply with the Uniform Standards for Interconnecting Distributed Generation. Off- grid systems shall be exempt from this requirement.
7. **Removal:** An application for a permit for a SWES shall include a plan for its removal.

6.5.6 Abandonment and Removal.

- ~~1. **Abandonment:** A SWES shall be considered to be abandoned if it is not operated for a period of two (2) years or if it is designated a safety hazard by the Building Inspector. If the Building Inspector determines that a SWES is abandoned, the owner shall be required to physically remove the SWES within 180 days of written notice from the Building Inspector.~~
 - ~~2. The owner shall have the right to respond to the written notice of abandonment within 30 days of such notice. If the owner can provide information to demonstrate that the SWES has not been abandoned, the Building Inspector may withdraw the notice of abandonment.~~
 - ~~3. If the property owner fails to remove the small wind energy system in accordance with the requirements of this § section after 180 days of such notice and the Building Inspector has not withdrawn said notice, the Town shall have the authority to enter the property and physically remove the facility at the owner's expense. The term physically remove shall include, but not be limited to:
 - a. Removal of SWES, any equipment shelters, and security barriers from the subject property; and
 - b. Proper disposal of the waste materials from the site in accordance with local and state solid waste disposal regulations.~~
1. The most recent operator(s)/owner(s) shall remove the Small Wind Energy System, or any part thereof, at the end of its useful life or when it has been abandoned, as defined herein, and restore the site in accordance with its removal plan. The most recent owner(s)/operator(s) shall notify the Building Inspector by certified mail of the proposed date of discontinuance. Without notice of a proposed date of discontinuance, the Small Wind Energy System, or any part thereof, shall be presumed to have been abandoned if it is not in operation for a period of six (6) months. The Building Inspector may engage at the most recent operator(s) /owner(s) expense, a licensed professional engineer to help determine whether the Small Wind Energy System has been abandoned.
 2. After six (6) months of non-operation of any portion of the Small Wind Energy System, the Building Inspector shall issue a written notice of discontinuance to the most recent operator(s)/owner(s) of the Small Wind Energy System. The most recent operator(s)/owner(s) shall have thirty (30) days to rebut the presumption of abandonment raised by such non-operation by submitting information to the Building Inspector

demonstrating that the part of the Small Wind Energy System in question has operated within the six (6) month period or that it will return to operation at a date specified, not to exceed one year from discontinuance. If the most recent operator(s)/owner(s) does/do not rebut the presumption or fails to return the discontinued portion of the Small Wind Energy System to operation within six (6) months from the date of the written notice of discontinuance , or within such other time as agreed to in writing by the Building Inspector, it shall be deemed abandoned.

3. The most recent operator(s)/owner(s) shall physically remove the Small Wind Energy System and restore the site within one hundred eighty (180) days from the end of its useful life or from when it has been abandoned, as defined herein. If the most recent operator(s)/owner(s) fail/fails to remove the Small Wind Energy System within the one hundred eighty (180) day period, the town shall have the right, to the extent it is otherwise duly authorized by law, to enter onto the site and physically remove the Small Wind Energy System and restore the site at the sole expense of the most recent operator(s)/owner(s).