

## **5.18 Transmission Towers, Windmills, and Wind Energy Systems**

### A. Transmission Towers

1. Setbacks. A transmission tower allowed under Section 5.14 must be located such that its distance from all property lines is at least equal to the height of the tower and any antenna structures that extend above the top of the tower, plus ten feet. The Code Enforcement Officer may modify or waive this requirement where necessary to accommodate the reasonable operation of a federally licensed amateur radio station.

2. Abandonment/Decommissioning. A transmission tower that has not been utilized for twelve consecutive months and fallen into disrepair may be deemed abandoned, and shall be removed by the facility owner/operator within 120 days of receipt of notice from the Town. The Town may require that the owner/operator post a performance guaranty in order to assure funds for tower removal and site restoration in case of abandonment or other cessation of operations.

### B. Windmills

1. Wind powered systems that convert wind energy to mechanical energy for the pumping of water for agricultural or other uses are considered accessory structures, and may be permitted by the Code Enforcement Officer if the system is 35 feet or less in height at its greatest extent. Systems taller than 35 feet in height require Planning Board review and approval.

2. A windmill tower must be located such that its distance from all property lines is at least equal to the height of the structure at its greatest extent, plus ten feet.

### C. Small Wind Energy Systems (SWES)

1. Definition. Small wind energy systems have a generating capacity of 100kW or less, and are intended primarily for the generation of electrical power for on-site use. A SWES is typically composed of a wind turbine (blades, generator, tail), a tower or roof mount for support, and associated controls and conversion electronics.

2. Site and System Dimensional Requirements.

a. Minimum site area. Minimum site area for a SWES shall be one-half acre unless the system is roof mounted. Each additional free standing SWES shall require an additional two acres. No more than three SWES are allowed on any one lot regardless of area.

b. Safety setbacks. A SWES shall be set back at least the total system height at its maximum extent, plus ten feet, from the nearest property line, public road, or public utility line.

c. Visual impact. A SWES shall not be placed so as to make a significant adverse impact on an important local scenic view, as defined by the most recent Comprehensive Plan for the Town of Wilton.

### 3. System Design Requirements.

#### a. Mount structures.

- 1) For a free-standing system, the mounting tower and its ground installations (foundations, anchors) shall be designed and constructed to adequately support both the weight and the operational stresses of the SWES.
- 2) Roof or building-mounted systems shall have mounting/attachment systems designed and constructed to adequately support both the weight and the operational stresses of the SWES.

#### b. Safety.

- 1) All associated electrical and control equipment shall be labeled and secured to prevent unauthorized access.
- 2) The SWES shall be installed so that no step bolts or ladders are less than 12 feet above ground, to prevent public access.
- 3) The blades of a free standing SWES shall have a minimum clearance of 25 feet from the ground.
- 4) All on-site electrical wiring to or from the SWES shall be installed underground, except for necessary tie-ins to public utility poles, towers, or lines.
- 5) The SWES shall not cause audible noise in excess of 5 dBA, or low frequency noise in excess of 20 dBC, above ambient, non-operating noise levels as measured at the nearest property line.
- 6) SWES shall be equipped with both manual and automatic over-speed controls.
- 7) The SWES shall be located and operated in such a way that it will not disrupt the transmission or reception of electromagnetic signals beyond the site. If a SWES can be demonstrated to cause disruptive interference beyond its site, the system operator shall promptly eliminate the interference or cease operation of the system.

#### c. Visual appearance.

- 1) No signs are permitted on the SWES or its mounting except those appropriate for manufacturer or installer identification and information, or for safety warnings.
- 2) No SWES or its mounting shall be lighted unless required by the FAA.

4. Abandonment. A SWES that has not generated electricity for twelve consecutive months and fallen into disrepair may be deemed abandoned, and shall be removed by the property owner within 120 days of receipt of notice from the Town.

### D. Large Wind Energy Systems (LWES)

1. Definition. Large wind energy systems have a generating capacity greater than 100kW, and are intended primarily for the commercial generation of electrical power. More than one LWES on one or adjacent sites constitutes a wind farm. A LWES is typically composed of a wind

turbine (blades, generator, tail), a tower mount for support, and associated controls and conversion electronics.

2. Special Considerations. Given the potential long-term impact of large wind energy systems on the Town and its environment, the Planning Board may use the provisions of Section 6.3 of this ordinance to require an escrow fund or other performance guaranty from the applicant to pay for independent engineering, consulting, or legal studies or reviews of the proposed project. Such studies may include, but are not limited to: 1) pre-construction studies of the impact of the proposed project on the environment, wildlife, habitat, or noise levels, and 2) post-construction studies to monitor and address any negative impacts with respect to the environment or public health and safety.

### 3. Site Requirements.

a. Setbacks. A LWES must have a minimum setback of 1.5 times its maximum height from the nearest property line, publicly traveled road, or public utility line, and a minimum setback of 13 times its maximum height from the nearest occupied structure existing at the time of submission of the site plan.

b. Visual impact. A LWES shall not be placed so as to make a significant adverse impact on an important local scenic view, as defined by the most recent Comprehensive Plan for the Town of Wilton.

### 4. System Design Requirements.

#### a. Safety.

1) All associated electrical and control equipment shall be labeled and secured to prevent unauthorized access.

2) The LWES shall be installed so that no step bolts or ladders are less than 15 feet above ground, to prevent public access.

3) The blades of a free standing LWES shall have a minimum clearance of 25 feet from the ground.

4) All on-site electrical wiring to or from the LWES shall be installed underground, except for necessary tie-ins to public utility poles, towers, or lines.

5) LWES shall be equipped with both manual and automatic over-speed controls.

#### b. Visual appearance.

1) The LWES shall be of a solid, neutral, non-reflective color, such as off-white or light gray.

2) No signs are permitted on the LWES or its mounting except those appropriate for manufacturer or installer identification and information, or for safety warnings.

3) No LWES or its mounting shall be lighted unless required by the FAA.

### 5. Public Health and Safety

a. Noise. The LWES shall not cause audible noise in excess of 5 dBA, or low frequency noise in excess of 20 dBC, above ambient, non-operating noise levels as measured at the nearest property line.

b. Shadow Flicker/Reflections. A LWES shall be designed and sited such that shadow flicker/reflections (changes in light intensity or shadows on the ground or structures caused by LWES blade rotation) shall not affect an off-site occupied structure for more than 10 hours per year.

- c. Electromagnetic Interference. The LWES shall be located and operated in such a way that it will not disrupt the transmission or reception of electromagnetic signals beyond the site.
  - d. If a LWES can be demonstrated to cause excessive noise, excessive shadow flicker at an affected structure, or disruptive electromagnetic interference beyond its site, the system operator shall promptly take steps to eliminate the problem or cease operation of the system.
  - e. An owner of property adjacent to the LWES site may waive any applicable noise, signal transmission, or shadow flicker/reflection restrictions by entering into a legal agreement with the LWES developer. A copy of any such agreement(s) must be provided to the Planning Board.
6. Abandonment/Decommissioning. A LWES that has not generated electricity for twelve consecutive months and fallen into disrepair may be deemed abandoned, and shall be removed by the facility owner/operator within 120 days of receipt of notice from the Town. The Town may require that the owner/operator post a performance guaranty in order to assure funds for turbine removal and site restoration in case of abandonment or other cessation of operations of the facility.
- Proposed additions to Table A, Outdoor Resource Base Uses

**The Planning Board recommends: Yes.**