

Blair Township
Zoning Ordinance Amendment #104-05-09-01

Amendment to amend section 2.02 Definitions of the Blair Township Zoning Ordinance and add sections 18.47 Wind Energy Systems, 18.48 Small Wind Energy Systems 35 feet in height or less, and 18.49 Large Wind Energy Systems, Small Wind Energy Systems over 35 feet in height and Anemometer Towers to the Blair Township Zoning Ordinance.

1. Amend Section 2.02 to add following definitions in their appropriate alphabetic locations.

Anemometer Tower: An instrument for measuring and recovering the speed of wind; a wind monitoring station.

Wind Energy System: (Commonly known as wind turbines or windmills, and anemometer towers.) A tower, pylon, or other structure, including all accessory facilities and all associated pertinences, upon which any, all, or some combination of the following are mounted:

1. A wind vane, blade, or series of wind vanes or blades, or other devices mounted on a rotor for the purposes of converting wind into electrical or mechanical energy.
2. A shaft, gear, belt, or coupling device used to connect the rotor to a generator, alternator, or other electrical or mechanical energy producing device.
3. A generator, alternator, or other device used to convert the energy created by the rotation of the rotor into electrical or mechanical energy.
4. See also wind energy system-small and wind energy system-large

Wind Energy System-Height: The distance between the ground and the highest point of the tower, excluding blades.

Wind Energy System-Separation: The distance between the bases of two or more towers that is determined by the height of the tower plus the length of the blade when fully extended vertically.

Wind Energy System-Small: Wind energy system as defined herein, used primarily to generate electricity or produce mechanical energy for use on the property and generates 25 kilowatts (kW) or less of electricity. Sale of electric power via Net Metering is allowed.

Wind Energy System-Large: Wind energy system used as defined herein, used to generate electricity or produce mechanical energy for use on or off the property and generates more than 25 kilowatts (kW) of electricity.

2. Amend Section 2.02 to add following language to the essential services definition;

This definition shall not include Wind Energy Systems or anemometer towers.

3. Amend Section 4.02, Uses allowed with site plan approval by the Zoning Administrator- add 10. Small Wind Energy System 35 feet in height or less.

4. Amend Section 4.05, Uses allowed by Special Use Permit- add 2. Small Wind Energy System over 35 feet in height, 3. Large Energy System.
5. Amend Section 5.02, Uses allowed with site plan approval by the Zoning Administrator- add 14. Small Wind Energy System 35 feet in height or less.
6. Amend Section 5.05, Uses allowed by Special Use Permit- add 6. Small Wind Energy System over 35 feet in height, 7. Large Energy System.
7. Amend Section 6.02, Uses allowed with site plan approval by the Zoning Administrator- add 14. Small Wind Energy System 35 feet in height or less.
8. Amend Section 6.05, Uses allowed by Special Use Permit- add 20. Small Wind Energy System over 35 feet in height, 21. Large Energy System.
9. Amend Section 9.02, Uses allowed with site plan approval by the Zoning Administrator- add 15. Small Wind Energy System 35 feet in height or less.
10. Amend Section 9.04, Uses allowed by Special Use Permit- add 19. Small Wind Energy System over 35 feet in height, 20. Large Energy System.
11. Amend Section 10.02, Uses allowed with site plan approval by the Zoning Administrator- add 22. Small Wind Energy System 35 feet and under.
12. Amend Section 10.05, Uses allowed by Special Use Permit- add 31. Small Wind Energy System over 35 feet in height, 32. Large Energy System.
13. Amend Section 11.02, Uses allowed with site plan approval by the Zoning Administrator- add 19. Small Wind Energy System 35 feet in height or less.
14. Amend Section 11.05, Uses allowed by Special Use Permit- add 2. Small Wind Energy System over 35 feet in height, 3. Large Energy System.
15. Amend Section 12.02, Uses allowed with site plan approval by the Zoning Administrator- add 2. Small Wind Energy System 35 feet in height or less.
16. Amend Section 12.04, Uses allowed by Special Use Permit- add 8. Small Wind Energy System over 35 feet in height, 9. Large Energy System.
17. Amend Article 18 to add **Section 18.47 Wind Energy Systems, Section 18.48 Small Wind Energy Systems 35 feet in height or less, and Section 18.49 Large Wind Energy Systems, Small Wind Energy Systems over 35 feet in height and Anemometer Towers.**

Section 18.47 Wind Energy Systems

The purpose of sections 18.47, 18.48, and 18.49 is to establish requirements for the location of Wind Energy Systems. The Township recognizes that it is in the public interest to permit the location of wind turbine generators within the Township. The Township also recognizes the need to protect the scenic beauty of Blair Township from unnecessary or unreasonable visual interference. As such, this section seeks to:

- Regulate the development of renewable energy resources in a prudent manner;
- Protect all areas of the Township from any potential adverse impacts of wind energy systems and anemometer towers;
- Regulate the location of wind energy systems and anemometer towers in the Township;
- Protect the public health, safety and welfare of Blair Township residents;
- Avoid potential damage to adjacent property from the failure of wind energy systems and anemometer towers or the result of natural occurrences (ice throw)

All wind energy systems shall meet the following standards: (See also Section 18.48 Small Wind Energy Systems 35 feet in height or less and Section 18.49 Large Wind Energy Systems, Small Wind Energy Systems over 35 feet and Anemometer Towers)

1. Setback, for wind energy systems, from all adjoining property lines and rights-of-way shall be the greater of the setback requirements of the zoning district or one and a half times the combined height of the tower and the diameter of the rotor ($1.5 \times (h+d)$). Anemometer towers shall be setback the height of the tower as measured from the highest point. No part of the wind energy systems, including guy wire anchors, shall extend into any required setback.
2. The site area shall be of a size that meets the required setback and any other standards of this section.
3. Wind energy systems shall not be artificially lighted unless required by the FAA or other applicable authority. Where the FAA requires lighting, the lighting shall be the lowest intensity allowable under FAA regulations. All fixtures shall be shielded and directed, to the greatest extent possible, to minimize glare and visibility from the ground. Strobe lighting shall be strictly prohibited unless specifically required by the FAA.
4. Wind energy systems shall be equipped with controls to limit the rotational speed of the blades within design limits for the specific wind energy system.
5. On-site electrical transmission lines shall be located underground.
6. Wind energy systems shall be designed and sited to minimize shadow flicker on roadways and existing structures located off site.

7. Wind energy systems, subject to any applicable standards of the FAA, shall be painted a neutral color so as to reduce visual obtrusiveness. No part of the wind energy system may include advertising.
8. Wind energy systems shall comply with all applicable state construction and electrical codes and local building permit requirements.
9. Wind energy systems and anemometer towers that are not operated or maintained for a period of twenty four (24) consecutive months shall be deemed abandoned. The system and all associated pertinences shall be entirely removed at the owner's expense within one year upon receiving written notice from the Zoning Administrator. If removal of the wind energy system is not completed within designated time, the Township may remove the wind energy system and the costs remain the burden of the property owner.
10. Wind energy systems shall be designed to the current state of technology. Used, outdated or obsolete equipment shall not be permitted to be constructed or installed.
11. A performance guarantee shall meet requirements of Section 21.07.
12. Shall have posted no more than one sign, not to exceed four (4) square feet, at an accessible location, at the service drive entrance of the tower that shall contain emergency phone number and contact information. The emergency telephone number shall allow a caller to contact a responsible individual to address emergencies at any time during or after regular business hours and on weekends and holidays.
13. These regulations pertaining to large or small wind energy systems are intended to respond to equipment available at the time of adoption. Blair Township recognizes that this is an emerging technology and that new means of collecting wind energy, including but not limited to vertical axis wind energy systems, are under development. Accordingly, these standards will be reviewed and may be amended as technology advances.

Section 18.48 Small Wind Energy Systems 35 feet in height or less

Small wind energy systems 35 feet in height or less shall meet the following requirements:

1. Requirements of Section 18.47 for this Ordinance.
2. Small wind energy systems shall be an accessory structure.
3. Blade clearance shall be fifteen (15) feet from the ground.
4. Rotor blade shall be twenty (20) feet or less in diameter.
5. Shall not be attached to dwelling or accessory structure.

6. Noise from a small wind energy system shall not exceed 50 dB(A), at any given time, as measured at the property line.
7. The applicant shall submit a site plan with the following information:
 - a. Property lines, physical dimensions of the property and required yard setbacks
 - b. Location, dimensions, and types of existing major structures on the property
 - c. Location of proposed wind energy system
 - d. All right-of-ways, utilities, and easements
 - e. Wind energy system specifications, including manufacturer and model, rotor diameters, tower height, tower type and color
 - f. Tower and tower foundation blueprints or drawings
 - g. Any additional information, requested by the township to demonstrate compliance with Sections 18.47 and this section of the Ordinance (noise, shadow flicker, etc.)

Section 18.49 Large Wind Energy Systems, Small Wind Energy Systems over 35 feet in Height and Anemometer Towers

Large wind energy systems, small wind energy systems over 35 feet in height and anemometer towers shall meet the following requirements:

1. Requirements of Section 18.47 of this Ordinance.
2. Blade clearance shall be twenty five (25) feet from the ground for small wind energy systems over 35 feet in height and fifty (50) feet from the ground for large wind energy systems.
3. Maximum height of 300 feet. The Planning Commission may approve an increased height of a wind energy system if the following conditions are met:
 - a. The height increase is necessary for the preservation of a substantial stand of trees, existing land forms or structures that would otherwise be removed to increase wind velocity.
 - b. To improve noise level at the property lines.
 - c. It is the minimum necessary variance to meet a and b above.
4. Shall be designed and sited to minimize adverse visual and noise impacts on neighboring areas. Noise shall be limited to no more than 10 dB(A) above the original ambient baseline sound level at the property lines as reported in the noise study as required under 18.49.8.d below.
5. Shall be designed and constructed to limit access, to the extent possible, to authorized personnel only.
6. Shall be constructed and operated so that it does not interfere with television, radio, cellular telephone or microwave reception in neighboring areas.

7. Shall be a monopole or monotube style construction, not lattice style tower, and shall not utilize guy wires.
8. In addition to the application requirements of Article 22 and Section 18.47, an application for a special use permit shall include all of the following information, unless expressly indicated otherwise:
 - a. A detailed analysis by a professional engineer, experienced in wind energy systems, licensed in the State of Michigan, describing the specific wind energy system structure(s) or anemometer tower proposed and all phases for implementing the development.
 - b. A study prepared by a professional engineer, experienced in wind energy systems licensed in the State of Michigan, documenting that the site of the wind energy system has sufficient wind resources for the proposed wind energy system equipment. This regulation shall not apply to anemometer towers.
 - c. A resume or other written summary of the education, experience, and other qualifications of all experts providing information concerning the wind energy system or anemometer tower project.
 - d. Analysis, measurements and projections of the wind energy system noise propagation conforming to the International Electromechanical Commission Standard 61400-11 Part 11, to include:
 - i. Existing ambient background noise levels;
 - ii. Prediction of the wind energy system noise levels at the property borders;
 - iii. Identification and support for a model for sound propagation;
 - iv. A comparison of calculated wind sound pressure levels with and without the wind energy system.

This regulation shall not apply to anemometer towers.

- e. A detailed written statement, with supporting evidence, demonstrating how the proposed wind energy system or anemometer tower will comply with all the standards for approval.
- f. Elevation drawings, computer generated sound models or simulations and other aids or documentation projecting the sound reaching off the property on which the wind energy system will be constructed, and the extent and duration of the sound. This regulation shall not apply to an anemometer tower.
- g. Elevation drawings, computer generated photographic simulations or other images and visual aids that depict how the wind energy system tower and all accessory structures will appear as constructed on the proposed site from vantage points north, south, east, and west of the wind energy system tower. This regulation shall not apply to an anemometer tower.

- h. Any additional information as determined by the Planning Commission and/or Township Board to demonstrate compliance with Sections 18.47 and this section of the Ordinance

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