

NOTICE
GREEN LAKE TOWNSHIP RESIDENTS

At the regular Board meeting held on October 13, 2008 the following zoning amendments ZA08-02 was adopted by the Green Lake Township Board of Trustees:

WIND TURBINE REGULATIONS

Add the following definitions relating to Wind Energy Systems to Article 3:

WIND ENERGY SYSTEM: “Wind Energy System” shall mean all, or any combination of the following:

1. A wind mill, mill or machine operated by wind acting on oblique vanes or sails that radiate from a shaft;
2. A surface area, either variable or fixed, for utilizing the wind for electrical or mechanical power;
3. A shaft, gearing, belt, or coupling utilized to convey the rotation of the surface areas into a form suitable for driving a generator, alternator, or other mechanical or electricity producing device;
4. The generator, alternator, or other device to convert the mechanical energy of the surface area into electrical energy;
5. The tower, pylon, or other structure upon which any, all, or some combination of the above are mounted, and
6. A wind monitoring station.

WIND ENERGY SYSTEM, SMALL: A wind energy system as defined herein, consisting of a wind turbine, a tower, and associated control or conversion electronics, which has a rated capacity of not more than 30 Kilowatts (kW) and which is intended to primarily reduce on-site consumption of utility power.

WIND ENERGY CONVERSION SYSTEM, LARGE: A wind energy system as defined herein, consisting of a wind turbine, a tower, and associated control or conversion electronics, which has a rated capacity of more than 30 Kilowatts (kW).

WIND MONITORING STATION: An instrument for measuring and indicating the force or speed of wind. Also known as an anemometer.

HEIGHT, WIND ENERGY SYSTEMS: For purposes of this ordinance, the height of any Wind Energy System shall be measured from the median grade at the foundation to the top of the tower and shall not include the height of the blade.

Add a new Section 4.34

SECTION 4.34 SMALL WIND ENERGY SYSTEMS

- A. Intent. It is the purpose of this section to promote the safe, effective, and efficient use of small wind energy systems installed to reduce the on-site consumption of electricity supplied by utility companies.
- B. Regulations. A small Wind Energy System or any Wind Monitoring System may be established as an accessory use in any zoning district, if it meets the standards and requirements of this section.
- C. Permit Requirements: A land use permit request filed under Section 18.1 for a Small Wind Energy System shall include a Basic Site Plan as required under Article 13 for accessory structures and additional supporting information with the following information at a minimum:
 - 1. Location of the proposed wind system tower;
 - 2. The right-of-way of any public road that is contiguous with the property;
 - 3. Any overhead utility lines;
 - 4. Wind system specifications, including manufacturer and model, rotor diameter, tower height, tower type (freestanding or guyed), and color;
 - 5. Tower foundation blueprints or drawings;
 - 6. Tower blueprint or drawing; and
 - 7. Any other information necessary to demonstrate compliance with the standards and requirements of this Section.
- D. Height: For parcels of less than 2 acres in area, the Small Wind Energy System height as defined in Article 3 shall be limited to 35 feet. For parcels with land area greater than 2 acres and located in the C-10, R-5, or M districts, the tower height shall be limited to 60 feet.
- E. Location and Setbacks: The tower shall be set back from all adjoining property lines and rights-of-way (public or private), the greater of the setback requirements of the zoning district or the combined height of the tower and the turbine blade in

its vertical position. No part of the Small Wind Energy System, including guy wire anchors, may extend into any required yard. A Small Wind Energy System shall not be located in any required or non-required front yard area.

- F. Noise: The Small Wind Energy System shall not exceed 50 dB at the property line; the system’s manufacturer shall guarantee that the noise emissions shall not exceed this limit.
- G. Approval Required: Small Wind Energy System shall bear an approval certificate from a certification program recognized by the American Wind Energy Association. The applicant shall demonstrate that all components of the proposed wind turbine meets all applicable safety standards and is UL certified.
- H. Utility Notification: No Small Wind Energy System shall be installed until evidence has been given that the utility company has been informed of the customer’s intent to install an interconnected customer-owned generator. Off-grid systems shall be exempt from this requirement.
- I. Abandonment. A Small Wind Energy System that is inoperable and has not functioned for at least twelve (12) months shall be deemed to have been abandoned and the Zoning Administrator may order the removal of the turbine and tower at the owner’s expense.
- J. Additional Towers. A Small Wind Energy System may include more than one turbine and tower or a separate tower for a wind monitoring system if all other requirements are met including the setback requirements of E., above, and the total of all turbines on the site does not exceed 30 kilowatts (kW).
- K. Lighting: A Small Wind Energy System shall be not be artificially lighted unless such lighting is required by the Federal Aviation Administration.
- L. Anemometer. Any anemometer shall be removed within one year of installation. The Township may require a financial guarantee to insure removal.

Add to Section 8.6 Table of Uses

USES	DISTRICTS												
	R-5	R-2.5	R-2	R-1	VR	LR	C-10	O	C	VC	PC	M	I
Commercial Uses (continued)													
Large Wind Energy Systems	SU						SU		SU		SU	SU	SU

Under Article 19, Special Land Uses, add Section 19.5.JJ

JJ. Large Wind Energy Systems

1. Intent. It is the purpose of this section to establish balanced regulations for the establishment of Large Wind Energy Systems in locations that will not be detrimental to the public health, safety, or welfare of neighboring property owners or occupants.
2. Impact Analysis Required. In addition to the special land use application, the applicant shall submit an evaluation of the likely impacts of the proposed facility in the following areas:
 - a. Analysis, measurements and projections of Large Wind Energy Systems noise propagation conforming to the International Electromechanical Commission (IEC) Standard 61400-11 Part 11; and
 - b. An avian study based on the US Fish and Wildlife Service's "Interim Guidelines To Avoid And Minimize Wildlife Impacts From Wind Turbines"; and
 - c. Written documentation projecting the "shadow flicker" on any existing structures located off the property on which the Large Wind Energy Systems will be constructed, and the extent and duration of the shadow flicker on these existing structures; and
3. Required Information. In addition to the site plan required for a special land use permit, the applicant shall include the following information on the site plan:
 - a. Location and elevation of all components of the proposed Large Wind Energy Systems
 - b. Location and dimensions of all existing structures and uses on the lot within 300 feet of the systems,
 - c. Height of any structures or trees over thirty-five (35) feet within a five hundred (500) foot radius on-site or off-site of the proposed Large Wind Energy Systems
 - d. Surrounding land use and all structures irrespective of height, within five hundred (500) feet of the Large Wind Energy Systems.
 - e. Location of any overhead utility lines on the parcel;
 - f. Any other information necessary to demonstrate compliance with the standards and requirements of this Section.
4. Additional Required Information. The applicant shall also submit the

following information:

- a. Wind system specifications, including manufacturer and model, rotor diameter, tower height, tower type (freestanding or guyed), and color;
- b. Standard drawings of the structural components of the Large Wind Energy Systems, including structures, tower, base, and footings. A registered engineer shall certify drawings and any necessary calculations that the system complies with all applicable local, state, and federal building, structural and electrical codes,
- c. Evidence from a qualified individual that the site is feasible for a Large Wind Energy Systems
- d. Certification from a registered engineer or qualified person that the rotor and overspeed control have been designed for the proposed use on the proposed site,
- e. For Large Wind Energy Systems of 100 kW or greater, evidence that there is a substantial need for the proposed use,
- f. Registered engineer's certification of the design and safety of the proposed tower to withstand winds of ninety (90) miles per hour, and
- g. Registered engineer's certification that if the wind turbine were to fall, no building or structure – existing or potential – would be damaged.

5. Setbacks

- a. Large Wind Energy Systems shall maintain a minimum setback from any property line of 1.25 times the combined height of the tower and blade.
- b. Large Wind Energy Systems shall maintain a minimum setback from the right-of-way line of any public road or highway of at least 2 times the combined height of the tower and blade.
- c. In all cases the Large Wind Energy System shall maintain a minimum distance of at least 1.25 times the tower and blade height from any habitable structure.
- d. In no case shall a Large Wind Energy System be located within any required setback area or in any front yard area.

6. Dimensions.
 - a. A Large Wind Energy System shall be located on a parcel at least two and one-half (2-1/2) acres in size.
 - b. A Large Wind Energy System shall not exceed a height as defined in this ordinance of one hundred ninety-nine (199) feet.
 - c. In all cases the minimum height of the lowest position of the Large Wind Energy System blade shall be at least thirty (30) feet above the ground.
7. Additional Large Wind Energy Systems may be permitted where all requirements of this Section are met, including the setback requirements.
8. General Siting and Design Standards
 - a. Large Wind Energy Systems shall be designed and placed in such a manner to minimize, to the greatest extent feasible, adverse visual and noise impacts on neighboring areas. Noise shall be limited to no more than 10 decibels above the original ambient baseline sound level beyond the property line as reported in the noise study as required above.
 - b. Colors and surface treatment of the Large Wind Energy System and supporting structures shall, to the greatest extent feasible, minimize disruption of the natural characteristics of the site and shall include no advertising of any kind.
 - c. Large Wind Energy Systems shall be equipped with air traffic warning lights or other marking lights only if so required by the Federal Aviation Administration and in which event, such light should be positioned or shielded to avoid undue visual impact on neighboring properties, and shall, if possible, be a steady white light.
9. Safety Measures.
 - a. Each Large Wind Energy Systems shall be equipped with both manual and automatic controls to limit the rotational speed of the rotor blade so it does not exceed the design limits of the rotor.
 - b. The Planning Commission shall determine the height, color, and type of fencing for the Large Wind Energy Systems installation

- c. Appropriate warning signs shall be posted. The Planning Commission shall determine the type and placement of the signs.
 - d. Each Large Wind Energy Systems shall be properly grounded to safely sustain natural lightning strikes in conformance with the National Electrical Code.
 - e. Any Large Wind Energy Systems facility shall be equipped with anti-climbing devices.
 - f. The Large Wind Energy Systems operator shall maintain a current insurance policy which will cover installation and operation of Large Wind Energy Systems. The amount of said policy shall be established as a condition of approval.
 - g. The applicant shall provide documentation or other evidence from the dealer or manufacturer that the Large Wind Energy Systems can be successfully operated in the climatic conditions found in Green Lake Township.
 - h. The Large Wind Energy Systems shall be warranted against any systems failures reasonably expected in severe weather operation conditions as condition of approval.
 - i. Large Wind Energy Systems shall include no sign or advertising of any kind, except for one sign, not to exceed two (2) square feet posted at the base of the tower, and said sign shall contain the following information:
 - i. "Warning: high voltage."
 - ii. Manufacturer's name.
 - iii. Operator's name.
 - iv. Emergency phone number.
 - v. Emergency shutdown procedures.
10. Radio and Television Interference. Large Wind Energy Systems shall be designed and constructed so as not to cause radio and television interference.
11. Removal Required. If any Large Wind Energy Systems remains non-functional or inoperative for a continuous period of one (1) year, the permittee shall remove said system at their expense. Removal of the system shall mean the entire structure, including foundations, transmission equipment, and fencing, from the property. If removal of towers and appurtenant facilities is required and the permit holder, or successors, fails to remove the towers and appurtenant facilities from the property within

30 days from the date of notification by the Zoning Administrator, Green Lake Township may proceed to remove the towers and appurtenant facilities; in which case, the salvage becomes property of the Township; and costs of removing the facilities will remain the burden of the permit holder. To assure removal of an obsolete, inoperable or abandoned facility, the Township may require of the applicant a financial guarantee as defined in this Ordinance. An anemometer and related tower shall be removed within one year of installation; the Township may require a financial guarantee to insure removal.

12. Primary Use. A Large Wind Energy System may also be considered an accessory use if it is intended and used primarily to provide electricity to an on-site use. All other Large Wind Energy Systems shall be considered a principal use.
13. Use of Current Technology: Large Wind Energy Systems shall be designed to the current state of the technology as of the date of application. Used, outdated or obsolete Wind Energy Systems equipment shall not be permitted to be constructed or installed.
14. Ice and Snow Throw: Large Wind Energy Systems shall be designed such that potential snow and ice throw shall not cross any property lines or fall on any road right-of-way.

Amend Section 4.7 to clarify exemption for agricultural “windmills”

4.7 EXEMPTIONS FROM HEIGHT PROVISIONS

The height provisions of this Ordinance shall not apply to any of the following uses:

- G. Fire training tower, or any use associated with a bona fide agricultural use including, but not limited to a barn, Barn, silo, drying elevator or tower, fire training tower, windmill, or grain elevator where associated with a bona fide agricultural use

DEVELOPMENT OPTIONS

Amend Section 11.2 Open Space Preservation Developments to clarify

C. Standards

1. The development proposed is a single family planned residential development as defined by this Ordinance.

2. The property under consideration shall be under single ownership or control. ~~An open space preservation development shall be permitted when a landowner, or group of owners acting jointly, can plan and develop a tract of land as an entity and thereby qualify for regulation of that tract of land as one complex land use unit, rather than an aggregation of individual buildings located on separate, unrelated lots.~~
3. The residential density of a single family planned residential development shall not exceed the base residential density calculated in accordance with Section 11.1 above.

Amend procedures under Article 11 DEVELOPMENT OPTIONS to allow for phased approval of Planned Unit Developments

11.4 PROCEDURE

A. Open Space Preservation Development

Open space preservation developments are permitted uses within the R-5, R-2.5, R-2, R-1, LR, C-10 and I Districts.

B. Planned Unit Development

1. A planned unit development is permitted as a special use in any Zoning District. The review and approval of a planned unit development shall take place in accordance with the provisions of Article 9, subject also to the provisions of this Article.
2. Any Planned Unit Development may be approved for phased development.
 - a. Planned Unit Developments proposed to be phased shall include a phasing plan to be approved by the Planning Commission and a Conceptual Plan meeting the requirements of a Medium Site Plan under the requirements of Section 13.6 in lieu of the detailed site plan required in accordance with B.1, above. The Conceptual and Phasing Plan shall, however, otherwise be processed in accordance with the provisions of Article 9, Special Land Uses.
 - b. Each phase of the phased Planned Unit Development must be subsequently approved by the Planning Commission. Each phase must comply with the approved Conceptual Plan and Phasing Plan, and any other conditions of conceptual approval. Each phase will be processed as a Detailed Site Plan under the provisions of Article 13.

- c. If any phase of a phased Planned Unit Development includes a use that is listed as a special land use under Table 8.6, and such use was not specifically approved as part of the conceptual plan, final approval shall be processed as a special land use under the provisions of Article 9.

11.5 AMENDMENTS

Significant amendments to an open space preservation development or a planned unit development as determined by the Zoning Administrator, including a change to the conceptual plan or phasing as part of a phased planned unit development, shall be handled in the same manner as the initial application. Minor, non-substantive changes may, however, be made to the special use permit by mutual agreement between the Township and the applicant without further public hearing, if done prior to the issuance of an occupancy permit for the use affected by such change.

Amend Article 13, SITE PLAN REVIEW to be consistent with the changes to Article 11 DEVELOPMENT OPTIONS

13.5 TYPES OF SITE PLANS [amended by ZA #07-02, adopted 4/14/08, effective 5/25/08]

There shall be three types of site plans required, depending on the complexity of the land use(s) proposed in the application:

- A. Basic Site Plan required for a completed application for:
 1. construction of a dwelling
 2. addition to or alteration of a dwelling
 3. construction of an accessory structure in any residential zoning district
- B. Medium Site Plan required for a completed application for any permitted use not listed in A above, or any matter before the Board of Appeals which does not need a Detailed Site Plan. A Medium Site Plan shall be submitted for the required conceptual plan as part of a phased Planned Unit Development as allowed under Section 11.4
- C. Detailed Site Plan required for a completed application for:
 1. any Special Use or Conditional Use

2. any Multiple Family Dwelling
3. any use in the O, C, VC, PC, M or I Districts
4. any Open Space Preservation or final submittal for a Planned Unit Development

RETREAT/CONFERENCE FACILITY

USES	DISTRICTS												
	R-5	R-2.5	R-2	R-1	VR	LR	C-10	O	C	VC	PC	M	I
Commercial Uses (continued)													
Retreat/Conference Facility	SU						SU		SU				

Add Section 9.5.KK

KK. Retreat or Conference, ~~or Banquet~~ Facility

1. Such facility may include lodging designed for use by attendees, but not for use by the general public.
2. This use may include living quarters for an on-site manager or caretaker.
3. This use may also include food service or banquet facility for exclusive use attendees. This shall not include a restaurant open to the general public.
4. This use shall be located on a parcel that is a minimum of five acres in area.

Add the following definition to Article 3:

RETREAT OR CONFERENCE FACILITY A facility used for planned retreats or conferences which may include lodging, food service, and conference or educational facilities. Retreat or conference facilities do not include lodging for the general public or banquet or event facilities for weddings or other similar public events.

This amendment will take effect on the eighth day after the publication.

**Rita Dinger
Township Clerk**