

MIDDLESEX TOWNSHIP
CUMBERLAND COUNTY, PENNSYLVANIA
ORDINANCE NO. 3 - 2010

AN ORDINANCE OF THE BOARD OF SUPERVISORS OF MIDDLESEX TOWNSHIP, CUMBERLAND COUNTY, PENNSYLVANIA, AMENDING THE MIDDLESEX TOWNSHIP ZONING ORDINANCE TO PROVIDE, AMONG OTHER AMENDMENTS, FOR REGULATING THE PLACEMENT, CONSTRUCTION, OPERATION, MAINTENANCE AND DECOMMISSIONING OF WIND TURBINES AND THE ISSUANCE OF ZONING PERMITS AND CONDITIONAL USE APPROVALS IN CONNECTION THEREWITH.

BE IT HEREBY ENACTED AND ORDAINED, and it is hereby enacted by the Board of Township Supervisors in and for the Township of Middlesex, Cumberland County, Pennsylvania, as follows:

SECTION 1: Ordinance No. 3-89 entitled "Middlesex Township Zoning Ordinance" enacted June 30, 1989, and subsequently amended, is hereby amended as follows:

A. Article II, Section 2.03, is hereby amended to include the following additional and/or revised definitions:

Facility Owner: the person, entity or entities having legal or equitable ownership interest in the wind turbine/wind energy facility, including their respective successors, assigns and heirs.

Operator: the person, entity or entities entrusted with the responsibility for the day-to-day operation and maintenance of the wind turbine/wind energy facility.

Hub Height: the distance measured from the surface of the tower foundation to the highest point of the wind turbine's hub.

Non-participating Landowner: any landowner that does not have all or any portion of a wind turbine or its appurtenances on the landowner's property.

Turbine Height: the greater of the distance measured from the base or surface of the tower foundation to either: (a) the highest point of the turbine rotor blade; or (b) the highest point of the wind turbine.

Occupied Building: a residence, school, hospital, church, public library or any other building that is occupied, intended to be occupied, is capable of human occupancy or in use when the permit application is submitted.

Wind Turbine: a wind energy conversion system that converts wind energy into electricity through the use of a wind turbine and includes the nacelle, rotor, blades or other rotating device, tower, turbine base and pad transformer, if any.

Wind Energy Facility: an electric generating facility, whose main purpose is to supply electricity for use, storage or consumption at a location other than the property where the facility is located, consisting of one or more wind turbines and other accessory structures and buildings, including substations, meteorological towers, electrical infrastructure, transmission lines and other appurtenant structures and facilities.

Shadow Flicker: the alternating changes in light intensity resulting in shadows and/or glare on the ground and stationary objects caused by the moving action of wind rotor blades.

Personal Stand-Alone Wind Turbines: wind turbines constructed primarily for generation of electricity on the property upon which the wind turbine is located.

Participating Landowner: an owner of a property whose property is subject to an agreement or lease with a facility owner or operator regarding the installation and maintenance of a wind turbine and/or wind energy facility.

B. ARTICLE V, OS Conservation/Open Space District, is hereby amended as follows:

1. Section 5.02, Permitted Uses, is hereby amended to include the following additional Paragraph:
 - I. Personal Stand-Alone Wind Turbines, subject to the requirements of Article XIV, except in the North Mountain Conservation Area.
2. New Section 5.08 is hereby added as follows:

SECTION 5.08 – CONDITIONAL USES. The following uses and activities may be permitted by conditional use upon approval of the Board of Supervisors after a public hearing and recommendation by the Planning Commission. Uses that may be permitted by conditional use shall be subject to the requirements specified in Article XIV, Article XVIII, Section 18.13 and as elsewhere specified in this Ordinance.

- A. Wind Energy Facilities, subject to the requirements of Article XIV, except in the North Mountain Conservation Area.

C. ARTICLE VI, RF Residential Farm District, is hereby amended as follows:

1. Section 6.02, Permitted Uses, is hereby amended to include the following additional Paragraph:

L. Personal Stand-Alone Wind Turbines subject to Article XIV.

2. New Section 6.08 is hereby added as follows:

SECTION 6.08 – CONDITIONAL USES. The following uses and activities may be permitted by conditional use upon approval of the Board of Supervisors after a public hearing and recommendation by the Planning Commission. Uses that may be permitted by conditional use shall be subject to the requirements specified in Article XIV, Article XVIII, Section 18.13 and as elsewhere specified in this Ordinance.

A. Wind Energy Facilities, subject to the requirements of Article XIV.

- D. ARTICLE VII, RC Residential Country District, is hereby amended as follows:

Section 7.02, Permitted Uses, is hereby amended to include the following additional Paragraph:

I. Personal Stand-Alone Wind Turbines, subject to the requirements of Article XIV.

- E. ARTICLE VIII, RS Residential Suburban District, is hereby amended as follow:

Section 8.02, Permitted Uses, is hereby amended to include the following additional Paragraph:

J. Personal Stand-Alone Wind Turbines, subject to the requirements of Article XIV.

- F. ARTICLE IX, VC Village Center District, is hereby amended as follows:

Section 9.02, Permitted Uses, is hereby amended to include the following additional Paragraph:

L. Personal Stand-Alone Wind Turbines, subject to the requirements of Article XIV.

- G. ARTICLE X, CH Commercial Highway District, is hereby amended as follows:

Section 10.03, Permitted Uses, is hereby amended to include the following additional Paragraph:

R. Personal Stand-Alone Wind Turbines, subject to the requirements of

Article XIV.

H. ARTICLE XI, LI Light Industrial District, is hereby amended as follows:

1. Section 11.03, Permitted Uses, is hereby amended to include the following additional Paragraph:

16. Personal Stand-Alone Wind Turbines, subject to the requirements of Article XIV.

2. New Section 11.10 is hereby added as follows:

SECTION 11.10 – CONDITIONAL USES. The following uses and activities may be permitted by conditional use upon approval of the Board of Supervisors after a public hearing and recommendation by the Planning Commission. Uses that may be permitted by conditional use shall be subject to the requirements specified in Article XIV, Article XVIII, Section 18.13 and as elsewhere specified in this Ordinance.

A. Wind Energy Facilities, subject to the requirements of Article XIV.

I. ARTICLE XII, IG Industrial General District, is hereby amended as follows:

1. Section 12.03, Permitted Uses, is hereby amended to include the following additional Paragraph:

20. Personal Stand-Alone Wind Turbines, subject to the requirements of Article XIV.

2. New Section 12.10 is hereby added as follows:

SECTION 12.10 – CONDITIONAL USES. The following uses and activities may be permitted by conditional use upon approval of the Board of Supervisors after a public hearing and recommendation by the Planning Commission. Uses that may be permitted by conditional use shall be subject to the requirements specified in Article XIV, Article XVIII, Section 18.13 and as elsewhere specified in this Ordinance.

A. Wind Energy Facilities, subject to the requirements of Article XIV.

J. ARTICLE XIV, Supplementary Regulations, Section 14.45 – Wind Energy Conversion

Systems, is hereby deleted and replace by the following:

Section 14.45. Personal Stand-alone Wind Turbines.

- A. Personal Stand-alone Wind Turbines are permitted in all Zoning Districts and shall conform to the procedures and requirements specified below:
1. The wind turbine shall be located in a side or rear yard only and shall conform to the following requirements, except as provided in paragraph 15 below.
 2. Any structure supporting the Personal Stand-alone Wind Turbine, including guideposts and cables shall be independent of any occupied structure and located a minimum distance of the Turbine Height plus ten (10) feet from any existing aerial utility line, and the turbine height shall not be more than seventy-five (75) feet.
 3. The minimum distance between the Personal Stand-alone Wind Turbine and any property line shall not be less than two (2) times the Turbine Height.
 4. The minimum distance between the ground and the lowest point of the Wind Rotor blade shall be twenty (20) feet.
 5. All electrical or utility lines associated with the wind turbine shall be buried underground.
 6. One Personal Stand-alone Wind Turbine shall be permitted per lot. A Special Exception may be granted for additional wind turbines on a lot.
 7. The Personal Stand-alone Wind Turbine shall be enclosed by a six (6) foot high fence with locking gate or the base of the Wind Turbine shall not be climbable for a distance of twelve (12) vertical feet.
 8. Personal Stand Alone Wind Turbines shall be sited in a manner that will not result in significant shadow flicker impacts. The applicant has the burden of proving that this effect does not have significant adverse impact on neighboring or adjacent uses either through siting or mitigation.
 9. Audible sound from a Personal Stand Alone Wind Turbine shall not exceed forty-five (45) dB(A) (decibels using the A-Weighting scale) and forty-five (45) dB(C) (L10) (decibels using the C-Weighting scale and L10, meaning not to be exceeded by more than 10% of the time), as measured at the property line between participating and non-participating landowners.
 10. All Personal Stand-alone Wind Turbines shall be equipped with a redundant braking system unless the manufacturer certifies that a braking system is not necessary. This includes both aerodynamic overspeed controls (including variable pitch, tip and other systems) and mechanical brakes. Mechanical brakes shall be operated in a fail-safe mode. Stall regulation shall not be considered a sufficient braking system for overspeed protection.

11. Personal Stand Alone Wind Turbines shall comply with the Pennsylvania Uniform Construction Code, Act 45 of 1999 as amended, and the regulations adopted by the Department of Labor and Industry.
12. Visual appearance of Personal Stand-alone Wind Turbines
 - (a) Personal Stand-alone Wind Turbines shall be a non-reflective, non-obtrusive color, such as white, off-white or gray subject to any applicable standards of the Federal Aviation Administration or other regulatory agency with jurisdiction thereof.
 - (b) Personal Stand-alone Wind Turbines shall not be artificially lighted, except to the extent required by the Federal Aviation Administration or other applicable authority. If lighting is required, the lighting alternatives and design chosen shall seek to minimize the disturbance to the surrounding views.
 - (c) Personal Stand-alone Wind Turbines shall not display advertising, except for reasonable identification of the turbine manufacturer, facility owner and operator.
13. The Personal Stand-Alone Wind Turbine shall not interfere with electromagnetic communications such as radio, telephone or television or emergency communication systems.
14. The appearance of the Personal Stand-Alone Wind Turbine and any ancillary facilities shall be maintained throughout the life of the system. Maintenance shall include but not be limited to painting, structural repairs and the integrity of safety measures.
15. In addition to the requirements noted in paragraphs 14.45.A.6. and 14.45.A.8. through 14.45.A.14 above, the following requirements shall apply to building-mounted Personal Stand Alone Wind Turbines:
 - (a) The diameter of the building-mounted Personal Stand Alone Wind Turbine, when measured from the furthest outward extensions of all moving parts, may not exceed seven feet.
 - (b) The hub height of a Personal Stand Alone Wind Turbine mounted on a roof shall not exceed 25 feet above the highest point of the building's roof, excluding chimneys, antennas and other similar protuberances.
 - (c) If more than one building-mounted Personal Stand Alone Wind Turbine is installed, a distance equal to the height of the tallest Personal Stand Alone Wind Turbine must be maintained between the bases of each Personal Stand Alone Wind Turbine.

B. Zoning Permits Required for Personal Stand-alone Wind Turbines. Zoning Permits documenting compliance with this Section 14.45 shall be required for all Personal Stand-alone Wind Turbines. Application shall be submitted along with the required application fee to the Zoning Officer on a form prescribed by the Township. Zoning Permits must be kept on the premises where the Personal Stand Alone Wind Turbine is constructed and must be produced and exhibited to the Zoning Officer upon request. In addition to Zoning Permits, Building Permits are required for all Personal Stand-alone Wind Turbines in accordance with the duly applicable building codes.

1. Zoning Permits to erect new Personal Stand Alone Wind Turbines shall be issued only after the Zoning Officer is satisfied that such Personal Stand Alone Wind Turbines will comply with all of the applicable provisions of this Ordinance. Zoning Permits are valid for 5 years after which the permit must be renewed.

2. An application for a Zoning Permit shall be made on the forms provided for above and shall contain or have attached thereto the following information and documentation:

(a) The name(s), address(es) and telephone number(s) of the applicant.

(b) A site plan drawn to scale, showing property lines and physical dimensions of the property; location dimensions and types of existing structures on the property; location of the proposed Personal Stand-alone Wind Turbine; right-of-way of any public road or right-of-way that is contiguous to the property; and over head utility lines.

(c) For a building mounted Personal Stand-alone Wind Turbine, the site plan will show the location of the building, structure or lot to which the Personal Stand-alone Wind Turbine is to be attached, and showing the position of the Personal Stand-alone Wind Turbine with reference to the adjoining buildings, property lines and streets.

(d) A drawing to scale, showing the design of the Personal Stand-alone Wind Turbine, specifications that will enable it to comply with noise, shadow flicker and electromagnetic interference provisions of this ordinance, including manufacturer and model, rotor, diameter, tower height, tower type (free standing or guyed).

(e) Tower foundation blueprints and drawings; indicating that the structure onto which the Personal Stand-alone Wind Turbine will be attached is capable of withstanding the additional load, force, torque, and vibration imposed by the Personal Stand-alone Wind Turbine; will comply with seismic and structure provisions set out in state and national building codes; all related components have been designed in accordance with generally accepted good engineering practices and in accordance with generally accepted industry standards; and if

constructed in accordance with the plans the entire facility, including the building onto which the Personal Stand-alone Wind Turbine will be connected, will be safe, will be in accordance with all applicable governmental building codes, laws, and regulations, and in accordance with generally accepted good engineering practices and industry standards, including, without limitation, acceptable standards for stability, wind and ice loads.

- (f) For a building mounted Personal Stand-alone Wind Turbine, a letter indicating that the existing structure onto which the building-mounted Personal Stand-alone Wind Turbine will be attached is capable of withstanding the additional load, force, torque, and vibration imposed by the building-mounted Personal Stand-alone Wind Turbine; will comply with seismic and structural provisions set out in applicable building codes; all related components have been designed in accordance with generally accepted good engineering practices and in accordance with generally accepted industry standards; and if constructed in accordance with the plans, the entire facility, including the building onto which the Personal Stand-alone Wind Turbine will be attached, will be safe, will be in accordance with all applicable governmental building codes, laws, and regulations, and in accordance with generally accepted good engineering practices and industry standards, including, without limitation, acceptable standards for stability, wind and ice loads.
 - (g) Name of the person, firm, corporation or association erecting said Personal Stand-alone Wind Turbine.
 - (h) Certification letter from the electric utility that is to be interconnected to the Personal Stand-alone Wind Turbine stating that all plans and procedures for interconnection are acceptable to the utility.
 - (i) Any other information as the Zoning Officer shall require in order to establish full compliance with this and all other applicable ordinances of the Township.
- 3. After a Zoning Permit has been issued, the owner of the Personal Stand-alone Wind Turbine shall promptly notify the Zoning Officer within 30 days of the completion of the permitted activity. The Zoning Officer shall inspect the Personal Stand-alone Wind Turbine and, if it is finished in accordance with the Zoning Permit, the Zoning Permit shall be validated by signature of the Zoning Officer.
 - 4. Zoning Permits for Existing Personal Stand-alone Wind Turbines – All owners of Personal Stand-alone Wind Turbines in existence at the time of the effective date of this part of the Ordinance who do not hold Zoning Permits, shall make application for a Zoning Permit within ninety (90) days of said effective date. After receipt of an application for a Zoning Permit to allow an existing Personal Stand-alone Wind Turbine, the Zoning Officer shall inspect the Personal Stand-alone Wind Turbine, and

if it is determined to be safe and in good repair, the Zoning Permit shall be issued to the applicant.

5. Zoning Permit Fees – Every applicant for a Zoning Permit hereunder shall pay to the Township a fee regulated by this part in accordance with a fee schedule adopted by resolution of the Board of Supervisors.

6. Expiration of Zoning Permit

- (a) If the Personal Stand-alone Wind Turbine authorized by any Zoning Permit has not been erected or completed within one hundred twenty (120) days from the date of issuance of that permit, the Zoning Permit shall be deemed expired.
- (b) An expired Zoning Permit may be renewed within thirty (30) days from the expiration date for good cause shown and upon payment of a Zoning Permit extension fee, as established by resolution of the Supervisors.
- (c) Zoning Permits will expire five (5) years after the date of initial issuance. Zoning Permit extensions for additional five (5) year periods will be granted after receipt of the required application and fee for a Zoning Permit extension. The Zoning Officer shall inspect the Personal Stand-alone Wind Turbine, and if it is determined to be safe, in good repair and in compliance with the requirements of this Ordinance, the Zoning Permit shall be issued to the applicant.

7. Revocation of a Zoning Permit

- (a) The Zoning Officer shall revoke any Zoning Permit if the Personal Stand-alone Wind Turbine, whether new or pre-existing, is moved or otherwise altered, either intentionally or by natural forces, in a manner which causes the Personal Stand-alone Wind Turbine not to be in conformity with this Ordinance. Personal Stand-alone Wind Turbines must be properly maintained, properly painted and be kept free from all hazards, including but not limited to, faulty wiring, loose fastenings, being in an unsafe condition or detrimental to public health, safety or general welfare. In the event of a violation of any of the foregoing provisions, the Zoning Officer shall give written notice specifying the violation to the current owner of the Personal Stand-alone Wind Turbine to conform or to remove the Personal Stand-alone Wind Turbine. The Personal Stand-alone Wind Turbine shall be made to conform to the Zoning Permit requirements within thirty (30) days from the date of the notice, or, the Zoning Officer shall revoke the Zoning Permit and the subject Personal Stand-alone Wind Turbine shall be removed by the owner of the premises within 6 months.

(b) Removal of the Violating Personal Stand-alone Wind Turbines - After issuing an enforcement notice that complies with the Municipalities Planning Code Section 616.1, as amended, the Zoning Officer shall have the power to, and may remove, cause to be removed, or order the removal of Personal Stand-alone Wind Turbines that are in violation of this Ordinance. The removal will be completed at the expense of the owner of the Personal Stand-alone Wind Turbines. Removal shall take place in the following instances.

(1) When any Personal Stand-alone Wind Turbine constructed after the adoption of this Ordinance or any amendment to it is not in conformance with the provisions of this Ordinance.

(2) If the Zoning Officer finds a Personal Stand-alone Wind Turbine which presents immediate peril to persons or property, the Personal Stand-alone Wind Turbine shall be removed.

8. Personal Stand-Alone Wind Turbines constructed prior to the effective date of this Section shall not be required to meet the terms and conditions of this Ordinance. Any physical modification to an existing Personal Stand-Alone Wind Turbine, whether or not existing prior to the effective date of this Section, that materially alters the size, type and number of wind turbines or other equipment appurtenant thereto shall require approval under this Ordinance.

K. Section XIV, Supplemental Regulations, is hereby amended to include the following new Section:

Section 14.58. Wind Energy Facilities.

A. Wind Energy Facilities shall be permitted in the OS (except not in the North Mountain Conservation Area), RF, LI and IG Zoning Districts as a conditional use subject to the following criteria and those specified in Section 18.13 and as otherwise provided in this Ordinance:

1. Any physical modification to an existing and permitted Wind Energy Facility or a Wind Energy Facility that existed prior to the effective date of this Section that materially alters the size, type and number of wind turbines or other equipment shall require a conditional use approval under this Ordinance. Like kind replacements shall not require a permit modification.
2. The design of the Wind Energy Facility shall conform to applicable industry standards, including those of the American National Standards Institute. The applicant shall submit certificate of design compliance obtained by the equipment manufacturers from Underwriters Laboratories, Det Norske Veritas, Germanischer Lloyd Wind Energies or other similar certifying organizations.

3. All wind turbines in wind energy facilities shall be equipped with a redundant braking system. This includes both aerodynamic overspeed controls (including variable pitch, tip and other systems) and mechanical brakes. Mechanical brakes shall be operated in a fail-safe mode. Stall regulation shall not be considered a sufficient braking system for overspeed protection.
4. The Wind Energy Facility shall comply with the Pennsylvania Uniform Construction Code, Act 45 of 1999 as amended, and the regulations adopted by the Department of Labor and Industry.
5. Visual appearance of wind turbines and/or wind energy facilities, as well as power lines erected therewith shall be regulated in the following manner:
 - (a) Wind turbines shall be a non-reflective, non-obtrusive color, such as white, off-white or gray subject to any applicable standards of the Federal Aviation Administration or other regulatory agency with jurisdiction thereof.
 - (b) Wind turbines shall not be artificially lighted, except to the extent required by the Federal Aviation Administration or other applicable authority. If lighting is required, the lighting alternatives and design chosen shall seek to minimize the disturbance to the surrounding views.
 - (c) Wind energy facilities shall not display advertising, except for reasonable identification of the equipment manufacturer, facility owner and operator.
 - (d) On-site transmission and power lines between wind turbines, as well as those emanating to and from wind energy facilities, to the extent practical, shall be placed underground.
 - (e) A clearly visible warning sign concerning voltage must be placed at the base of all pad-mounted transformers and substations.
 - (f) Visible, reflective, colored objects, such as flags, reflectors or tape shall be placed on the anchor points of guy wires and along the guy wires up to a height of ten (10') feet from the ground.
6. Wind turbines shall not be climbable for a distance of fifteen (15') vertical feet above ground surface.
7. All access doors to wind energy facilities, as well as electrical equipment, outbuildings and all appurtenances thereto, shall be locked or fenced, as appropriate, to prevent entry by non-authorized personnel. Said fencing shall be no less than eight (8') feet in height, and shall include a locking portal that secures the access area through the fencing.

8. Facility owner and/or operator shall ensure that the design and operation of any wind energy facility avoids disruption or loss of radio, telephone, television, cell, internet or similar signals, and shall mitigate any harm caused thereby.
9. Facility owner and/or operator shall abide by all applicable local, state and federal fire code and emergency guidelines. Upon request, the applicant, facility owner and/or operator shall cooperate with emergency services to develop and coordinate implementation of an emergency response plan for wind turbines and/or wind energy facilities.
10. All wind turbines shall be equipped with portable fire extinguishers, unless the local fire department provides written documentation establishing that the same are not necessary.
11. Set backs.
 - (a) Each wind turbine shall be set back from the nearest existing school, hospital, church, or public library a distance of no less than two thousand five hundred (2,500') feet. The set back distance shall be measured from the center of the wind turbine base to the nearest point of the foundation of such buildings.
 - (b) Each wind turbine shall be set back from all existing structures, including but not limited to residences, garages and outbuildings located within or upon land of a participating landowner, a distance of no less than one thousand five hundred (1,500') feet. The set back distance shall be measured from the center of the wind turbine base to the nearest point of the foundation of such buildings. This provision shall not include structures or other appurtenances related strictly to the wind energy facility.
 - (c) Each wind turbine shall be set back from all existing property lines adjacent to land of a participating landowner a distance of no less than two thousand (2,000') feet. The set back distance shall be measured from the center of the wind turbine base to the nearest point of the property lines.
 - (d) Each wind turbine shall be set back from all public roads a distance of no less than 2.0 times its turbine height, determined at the nearest boundary of the right-of-way for such public road. The set back distance shall be measured from the center of the wind turbine base to the nearest point of the road right-of-way. Unless conclusive evidence exists to the contrary, the public road right-of-way shall be presumed to be a distance (width) of fifty (50') feet.
 - (e) Each wind turbine shall be set back from above-ground electric power lines, public telephone lines and television cable lines a distance of no less than 2.0 times its turbine height. The set back distance shall be measured from the center of the wind turbine base to the nearest point of such lines.

- (f) Each wind turbine shall be set back from the Appalachian Trail and any historic structure, district, site or resource listed in the state inventory of historic places maintained by the Pennsylvania Historical and Museum Commission a distance no less than two thousand five hundred (2,500') feet. The set back distance shall be measured from the center of the wind turbine base to the nearest point on the foundation of an historic building, structure or resource, or the nearest property line of an historic district or site or the Appalachian Trail.

12. Noise and Shadow Flicker.

- (a) Audible sound from a wind turbine and/or wind energy facility, or addition of a wind turbine to an existing wind energy facility, shall not exceed forty-five (45) dBA and forty-five (45) dBC (L10, meaning not to be exceeded by more than 10% of the time), as measured at the property line between participating and non-participating landowners. Methods for measuring and reporting acoustic emissions from wind turbines and/or wind energy facilities shall be equal to or exceed the minimum standards for precision described in American Wind Energy Association (AWEA) Standard 2.1 - 1989 titled Procedures for the Measurement and Reporting of Acoustic Emissions from Wind Turbine Generation Systems Volume I: First Tier, as amended.
- (b) When a wind energy facility is proposed, a noise study will be performed and included in the application for a conditional use. The noise study will be performed by an independent noise study expert and paid for by the applicant. The study includes two requirements. First, in no case shall the noise exceed the level specified in paragraph 12(a) above. Second, any new broadband sound source is limited to raising noise levels no more than 5 dB(A) over the ambient baseline sound level. The ambient baseline is defined as the sound level that is exceeded 90% of the time, the L90 level. Second, "pure tones", defined here as an octave band, may be no greater than 3 dB(A) over the two adjacent octave bands. All these readings are measured at the participating landowner's property line. That is, if tonal noises are present, higher levels of broadband background noise are needed to effectively mask the tone(s). In this respect, a penalty for pure tones of 5 dB(A) is assessed. Therefore, if a wind turbine meets a sound pressure level standard of 45 dB(A), but produces a strong whistling, 5 dB(A) are subtracted from the standard. This forces the wind turbine to meet a standard of 40 dB(A).
- (c) The wind energy facility shall be designed in such a manner as to prevent shadow flicker on any existing occupied structures located off the property on which the wind turbines and/or wind energy facility is located and on any road. As part of the conditional use application, the facility owner and operator shall conduct, at the applicant's expense, and provide to Township and all non-participating landowners of occupied buildings, a modeling study demonstrating that shadow flicker shall not occur on any occupied building on

a non-participating property or on roads. If necessary to prevent shadow flicker from crossing occupied structures or roads, the wind turbine may be programmed to stop rotating during times when the wind turbine shadow crosses these structures.

13. Use of Public Roads.

- (a) Applicant shall identify all state, federal and local public roads to be used within the Township to transport equipment and parts for construction, operation and maintenance of wind turbines and/or wind energy facilities.
- (b) At the applicant's expense, the Township's engineer or the Township Road Superintendant shall document public road conditions prior to construction of the wind turbine and/or wind energy facility. The engineer or the Township Road Superintendant shall document road conditions within thirty (30) days after construction of the permitted project is complete, or as soon thereafter as weather may allow.
- (c) The Township shall require applicant to post financial security for the road(s) to be used within the Township in compliance with applicable regulations at an amount consistent therewith; or, if not provided by regulation, an amount set at the discretion of the Board of Supervisors in consultation with the Township's engineer or the Township Road Superintendant.
- (d) Any road damage caused by the applicant, facility owner, operator, or contractors shall be promptly repaired to the Township's satisfaction at the expense of the applicant and/or facility owner.
- (e) The Township shall require demonstration of appropriate financial assurance, including but not limited to requiring applicant or facility owner, to post financial security to ensure the prompt repair of damaged public roads.
- (f) Every effort should be made to use existing roads and logging roads. New deforestation and forest fragmentation should be kept to a minimum. Private entrance roads to wind turbines and/or wind energy facilities, as well as associated meteorological towers, communications towers and auxiliary buildings shall not be paved, but must be maintained in a mud-free condition.

14. Maintenance, Repair, Replacement and Removal.

- (a) Facility owner and/or operator shall repair, maintain and replace the wind turbines and associated equipment during the term of the permit in a manner consistent with wind turbine and/or wind energy facility industry standards as needed to keep the wind turbine and/or wind energy facility in good repair and operating condition.

- (b) Each wind turbine and all related improvements shall be removed within twelve (12) months of the date when the use of the particular wind turbine has been discontinued or abandoned by a facility owner and/or operator. A wind turbine shall be decommissioned as further described in this Ordinance.
- (c) At least once every thirty-six (36) months, each individual wind turbines shall be inspected by qualified operations and maintenance personnel, or a qualified agent thereof, who is regularly involved in the maintenance, inspection and/or erection of wind turbine generators, towers, antennas and all appurtenances thereto. At a minimum, this inspection shall be conducted in accordance with a wind turbine inspection check list as established by the engineers of the Township and facility owner, or duly qualified agents thereof. The applicant is responsible for costs for the Township Engineer to develop the check lists. The inspection herein required shall be considered a major inspection.
- (d) At least once every twelve (12) months a visual inspection of each wind turbine shall be conducted from the ground by operations and management personnel. This inspection shall include, but not be limited to, visual inspection of wind turbine foundations, structures, guys and connections, for evidence of settlement or lateral movement; soil erosion; condition of paint or galvanizing; rust or corrosion; loose or missing bolts; loose or corroded lightning protection connectors; wind turbine tower plumbness; significant variation in guy sags (i.e. guy tensions); and other material areas or matters relating to the structural integrity of the wind turbine. The inspection herein required shall be considered a minor inspection.
- (e) In addition to the regularly scheduled major and minor inspections herein set forth, a minor inspection shall be conducted if a wind turbine or its appurtenances are noted at any time to be visibly damaged. Additionally, a major inspection shall be conducted if the visible damage to a wind turbine is significant or when, after conducting a minor inspection, significant questions remain about the integrity of a wind turbine. The facility owner and/or operator shall notify the Township when it detects and/or learns of damage to a wind turbine that requires an inspection pursuant to this subsection.
- (f) Facility owner and/or operator shall provide an annual letter to the Township certifying compliance with the inspections requirements of this section. All inspections are to be paid for by the owner/operator.

15. Decommissioning.

- (a) Each wind turbine and all related improvements associated therewith shall be removed within twelve (12) months of the date when the use of the particular wind turbine has been discontinued or abandoned by facility owner and/or

operator, or upon termination of the useful life of same. The wind turbine shall be presumed to be discontinued or abandoned if no electricity is generated by such wind turbine for a period of twelve (12) continuous months.

- (b) Decommissioning shall include removal of wind turbines and/or wind energy facilities, as well as all improvements or appurtenances related thereto, including but not limited to buildings, cabling, electrical components, roads, foundations and other associated facilities. At the time of removal, a wind turbine shall be decommissioned and removed, including removal of the base to a depth of four (4') feet below grade.
- (c) Prior to the issuance of a conditional use provided by this Ordinance, applicant, facility owner and/or operator shall submit to the Township financial security which shall be deposited with the Township in an amount sufficient to cover the costs of decommissioning all improvements or common amenities, including but not limited to the wind turbines, all appurtenances, the base and footing, storm water detention and/or retention basins and other related drainage facilities, electrical apparatus, fencing, all auxiliary buildings, and restoration of the land to its original condition, including forestry plantings of the same type/variety and density as the original.
- (d) The amount of the financial security to be posted for decommissioning of any improvements, structures and appurtenances as required by this Ordinance shall be equal to one hundred twenty (120%) percent of the anticipated cost. Annually, the Township may adjust the required amount of the financial security by Resolution. Subsequent to said adjustment, if any, the Township may require the facility owner and/or operator to post additional financial security in order to assure that the financial security equals said one hundred twenty (120%) percent. Any additional security shall be posted by the facility owner and/or operator in accordance with this Ordinance.
- (e) The amount of financial security required shall be based upon an estimate of the cost of decommissioning of any improvements, submitted by the facility owner and/or operator and prepared by a professional engineer licensed as such in this Commonwealth and certified by such engineer to be a fair and reasonable estimate of such cost. The Township may refuse to accept such estimate for good cause shown. If the facility owner and/or operator (or the developer) and the Township are unable to agree upon an estimate, then the estimate shall be recalculated and re-certified by another professional engineer licensed as such in this Commonwealth and chosen mutually by the Township and the facility owner and/or operator (or the developer). The estimate shall be the final estimate. In the event that a third engineer is so chosen, fees for the services of said engineer shall be paid equally by the Township and the facility owner and/or operator (or the developer).

- (f) As the work of decommissioning of any improvements proceeds, the party posting the financial security may request the governing body to release, or authorize the release from time to time, such portions of the financial security necessary for payment to the contractor(s) performing the work. Any such requests shall certify in writing to the Board of Supervisors that such portion of the decommissioning of any improvements has been completed. Upon acceptance of such certification, the Board of Supervisors shall authorize the release by the financial security company of an amount as estimated fairly representing the value of the decommissioning of any improvements.
- (g) When decommissioning has been completed, the facility owner and/or operator shall notify the Board of Supervisors in writing, by certified or registered mail, of the completion of the aforesaid decommissioning or all improvements and shall send a copy thereof to the municipal engineer (or engineer hired in this instance). The Board of Supervisors shall direct and authorize the Township Engineer (or engineer hired in this instance) to inspect the site. The Township Engineer (or engineer hired in this instance) shall indicate to the Township approval or rejection of said decommissioning of all improvements, either in whole or in part, and if said improvements or a portion thereof shall not be approved or shall be rejected, said report shall contain a statement of reasons for such non-approval or rejection.
- (h) The Board of Supervisors shall notify the facility owner and/or operator as to the acceptance or rejection of the decommissioning. If the decommissioning is acceptable, the Township shall authorize release of the financial security. If the decommissioning is not acceptable or rejected, the facility owner and/or operator shall within thirty (30) days of notice by the Township of the deficiencies, correct the same and in the event said deficiencies are not so corrected within the said time period, or in the event the decommissioning is not commenced, the Township may utilize the financial security to accomplish the same as herein set forth.
- (i) In the event that any decommissioning of improvements which are required have not been completed as required in this Ordinance, the Board of Supervisors is hereby granted the power and authority to enforce any financial security by appropriate legal and equitable remedies.
- (j) If proceeds of such financial security are insufficient to pay the cost of decommissioning of improvements covered by said security, the Board of Supervisors may, at its option, proceed with decommissioning all improvements, or completing the decommissioning as necessary to satisfy the terms and provisions of this Ordinance, and may institute appropriate legal or equitable action to recover the monies necessary to complete the remainder of the decommissioning project.

- (k) The Township may prescribe that the facility owner and/or operator shall reimburse the Township for the reasonable and necessary expenses incurred for the inspection of decommissioning of improvements. Such expenses shall be reasonable and in accordance with the ordinary and customary fees and expenses charged by the Township Engineer (or engineer hired in this instance) for work performed for similar services, as well as attorney's fees incurred by the Township in connection therewith.
- (l) The owner of any participating property which is subject to decommissioning shall be given the option to keep the road(s) created on such owner's property by or in connection with the construction of any wind turbine and/or wind energy facility. In such event, the owner desiring to keep the road(s) shall inform the Township in writing of his/her intent to do so and to have the subject road(s) exempted from the decommissioning provisions of this Ordinance.

16. Public Inquiries and Complaints.

- (a) The facility owner and/or operator shall maintain a phone number and identify a person responsible for the public to contact with inquiries and complaints throughout the life of the project and provide this number and name to the Township.
- (b) The facility owner and/or operator shall make reasonable efforts to respond to the public's inquiries and complaints.

B. Wind Energy Facility Conditional Use Application.

1. The conditional use application shall demonstrate that the proposed wind energy facility shall comply with this Ordinance.
2. The conditional use application shall contain the following:
 - (a) A narrative describing the proposed wind energy facility, including an overview of the project; the project location; the approximate generating capacity of the wind energy facility; the approximate number, representative types and height or range of heights of wind turbines to be constructed, including their respective generating capacity, dimensions and respective manufacturers, and a description of ancillary facilities. The proposed site shall have documented annual wind resources sufficient for the operation of the proposed wind turbine(s). No conditional use shall be approved without submission of a wind resource study documenting wind resources on the site. The Township may retain the services of an independent, recognized expert to review the results of the wind resource study prior to the Supervisors acting on the application for conditional use. All costs for the study shall be at the applicant expense.

- (b) An affidavit or similar evidence of agreement between property owner and the facility owner or operator demonstrating that the facility owner or operator has the permission of the property owner to apply for necessary permits for the placement, construction, operation and maintenance of the wind turbine and/or wind energy facility.
- (c) Identification of the properties upon which the proposed wind turbine and/or wind energy facility will be located, and identification of the properties adjacent thereto. The applicant must provide written notice of application to all property owners and tenants occupying property within 2,500 feet of the boundaries of the property upon which the wind turbine and/or wind energy facility shall be located. Proof of service of such notice by certified mail or notarized affidavit of hand delivery must be provided with the application.
- (d) A properly scaled site plan, prepared by a professional engineer or land surveyor, depicting and showing the planned location of each wind turbine, property lines, setback lines, access road and turnout locations, substations, electrical cabling from the wind turbines to the substations, ancillary equipment, buildings and structures, including permanent meteorological towers, associated transmission lines, and layout of all structures within the geographic boundaries of any applicable setback.
- (e) Documents related to the decommissioning requirements specified in paragraph 14.58.A.15 above.
- (f) A copy of the application for those clearances and/or permits required by the Federal Aviation Administration, as well as demonstrated compliance prior to construction of any wind turbine and/or wind energy facility of all applicable local, state and federal statutes, rules and regulations.
- (g) Documentation and/or proof demonstrating compliance with the National Pollution Discharge Elimination System (NPDES) regulations, if applicable.
- (h) Documentation and/or proof demonstrating compliance with the Pennsylvania Natural Diversity Index (PNDI), or any successor thereto, to protect biological species listed as endangered, threatened, or rare as listed by the Department of Conservation and Natural Resources (DCNR), Pennsylvania Game Commission, Pennsylvania Fish and Boat Commission, U.S. Fish and Wildlife Services, and species recommended by the Pennsylvania Biological Survey. In the event such agencies issue suggested guidelines that are not required or do not have the force and effect of law, such guidelines are hereby incorporated into this Ordinance,

made a part hereof, and shall be binding so as to be required and binding, thereby having the full force and effect of law.

- (i) Documentation depicting any historic structure, district, site or resource listed in the state inventory of historic places maintained by the Pennsylvania Historical and Museum Commission within a distance of two thousand five hundred (2,500') feet. Such documentation shall include the distance from each identified structure, resource, district or site to a proposed wind turbine. Proof shall be submitted indicating that facility owner or operator has made contact with the Pennsylvania Historical and Museum Commission to verify the existence and location of all structures, resources, districts or sites within the ambit of this provision.
- (j) Documentation and/or proof of compliance with all applicable local, state and federal statutes, rules and regulations pertaining to wetlands, if applicable.
- (k) Proof that applicant has complied with the applicable ordinances of any adjoining municipality, including but not limited to those ordinances governing wind turbines and/or wind energy facilities, where a wind turbine or wind energy facility owned or operated by an applicant is located in more than one (1) municipality.
- (l) The noise study required by paragraph 14.58A.12.(b).above.
- (m) The shadow flicker study required by paragraph 14.58.A.12.(c). above.

SECTION 2: Except only as amended, modified and changed herein, the Middlesex Township Zoning Ordinance as originally enacted and as previously amended shall remain in all other respects in full force and effect.

SECTION 3: If any section, sub-section, provisions, regulations, limitation, restriction, sentence, clause, phrase or word in this Ordinance is declared by any reason to be illegal, unconstitutional, or invalid by any court of competent jurisdiction, such decision shall not affect or impair the validity of this or the Middlesex Township Zoning Ordinance as a whole or any other section,

sub-section, provisions, regulations, limitation, restriction, sentence, clause, phrase, word or remaining portion of this Ordinance or the Middlesex Township Zoning Ordinance.

SECTION 4: This Ordinance shall become effective in accordance with applicable law.

ORDAINED AND ENACTED this 1ST day of September, 2010.

ATTEST:

TOWNSHIP OF MIDDLESEX

Eileen M. Gault
Township Secretary

By: [Signature]
Chairman, Board of Township
Supervisors

(Township Seal)