

## **WIND ENERGY CONVERSION SYSTEMS (WECS) SITING REGULATIONS**

### **1.0 PURPOSE AND INTENT**

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#### **1.0.1 Purpose**

The purposes of this Ordinance are to:

- A. Assure that any development and production of wind-generated electricity in Warren County is safe and effective;
- B. Facilitate economic opportunities for local residents; and
- C. Promote the supply of wind energy in support of Indiana's alternative energy sources potential and other such economic development tools.

#### **1.0.2 Intent**

It is the intent of the Wind Energy Conversion Systems (WECS) siting regulations to provide a regulatory scheme for the construction and operation of WECS in the county; subject to reasonable restrictions these regulations are intended to preserve the health and safety of the public.

### **1.1 APPLICABILITY**

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The provisions of this Ordinance are applicable to those districts which allow wind energy conversion systems (WECS), govern the siting of WECS and substations that generate electricity to be sold to wholesale or retail markets, or that generate electricity for private use. A reasonable attempt shall be made to notify all property owners within the defined area of the WECS project prior to making application for a WECS permit. Notification may be done by media, separate mailings, or through the public notice requirements prescribed by IC 5-3-1 as amended from time to time. Said notice shall inform land owners of the intent to build a Commercial WECS and/or wind farm.

### **1.2 PROHIBITION**

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No applicant shall construct, operate, or locate a wind energy conversion system (WECS) within Warren County without having fully complied with the provisions of this Ordinance.

### **1.3 CONFLICT WITH OTHER REGULATIONS**

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Nothing in this Ordinance is intended to preempt other applicable state and federal laws or regulations, including compliance with all Federal Aviation Administration rules and regulations and shall comply with the notification requirements of the FAA. Further, this Ordinance is not intended to interfere with, abrogate, or annul any other ordinance, rule, or regulation, statute or other provision of law. In the event that any provision of these regulations imposes restrictions different from any other ordinance, rule, regulation, statute, or

provision of law, the provisions that are more restrictive or that imposes higher standards shall govern.

## **1.4 DISTRICT REGULATIONS**

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### **1.4.1 Location**

Commercial, non-commercial, and micro-WECS will be permitted in all zoning districts as a Special Exception only. In addition to the criteria set forth in this Ordinance, all Commercial, non-commercial, and micro-WECS will be required to satisfy the criteria for Special Exceptions as specified in the Zoning Ordinance of Warren County, Indiana.

### **1.4.2 Height**

Any NON-COMMERCIAL WECS or meteorological tower greater than two hundred (200) feet in height shall require a special exception use permit. For COMMERCIAL WECS there is no limitation on height, except those height limitations imposed by FAA rules and regulations. No Micro-WECS shall exceed sixty (60) feet in height.

### **1.4.3 Horizontal extension**

The furthest horizontal extension of a WECS (including guy wires) shall not extend into a required setback by the zoning district or be closer than twelve (12) feet to any primary structure, or right-of-way easement for any above-ground telephone, electrical transmission or distribution lines.

## 1.5 SETBACK REQUIREMENTS

### 1.5.1 Minimum setback distances for COMMERCIAL Wind Energy Conversion Systems

Distance from a...	Minimum Setback Distance
Property line, measured from the center of the WECS to the property line	Seven hundred fifty (750) feet for non-participating landowners. Subject to BZA approval, the setback requirement may be waived, in writing, by participating landowners
Residential dwellings, measured from the center of the WECS to the nearest corner of the structure	One thousand two hundred fifty (1,250) feet for non-participating landowners. <sup>1</sup> Subject to BZA approval, the setback requirement may be waived, in writing, by participating landowners
Road right-of-way, measured from the center of the WECS to the edge of the right-of-way	One thousand two hundred fifty (1,250) feet <sup>2</sup>
Other rights-of-way, such as railroads and utility easements, measured from the center of the WECS to the edge of the right-of-way	1.1 times the total height (where the blade tip is at its highest point), provided that the distance is no less than three hundred and fifty (350) feet
Public conservation lands, measured from the center of the WECS to the nearest point of the public conservation land in question	Seven hundred fifty (750) feet
Wetlands, as defined by the U.S. Army Corps of Engineers, measured from the center of the WECS to the nearest point of the wetland in question	As determined by a permit obtained from the Army Corps of Engineers
Pine Creek and the Wabash River, measured from the center of the WECS to the shoreline	One-half (1/2) mile
Incorporated limits of a municipality, measured from the center of the WECS to the corporate limits	One thousand five hundred (1,500) feet

<sup>1</sup> The setback for residential dwellings shall be reciprocal in that no residential dwelling shall be constructed within one thousand two hundred fifty (1,250) feet of a COMMERCIAL WECS.

<sup>2</sup> The setback shall be measured from future rights-of-way width if a planned road improvement or expansion is known at the time of application.

### 1.5.2 Minimum setback distances for NON-COMMERCIAL Wind Energy Conversion Systems and MICRO-Wind Energy Conversion Systems

Distance from a...	Minimum Setback Distance
Property line, measured from the center of the WECS to the property line	1.1 times the total height (where the blade tip is at its highest point), provided that the distance is no less than the required yard setback prescribed for that district
Residential dwellings, measured from the center of the WECS to the nearest corner of the structure	1.1 times the total height (where the blade tip is at its highest point)
Road right-of-way, measured from the center of the WECS to the edge of the right-of-way	1.1 times the total height (where the blade tip is at its highest point), provided that the distance is not less than the required yard setback prescribed for that district <sup>3</sup>
Other rights-of-way, such as railroads and utility easements, measured from the center of the WECS to the edge of the right-of-way	1.1 times the total height (where the blade tip is at its highest point), provided that the distance is no less than the required yard setback prescribed for that district
Public conservation lands, measured from the center of the WECS to the nearest point of the public conservation land in question	Seven hundred fifty (750) feet
Wetlands, as defined by the U.S. Army Corps of Engineers, measured from the center of the WECS to the nearest point of the wetland in question	As determined by a permit obtained from the Army Corps of Engineers
Pine Creek and the Wabash River, measured from the center of the WECS to the shoreline	One half (1/2) mile

<sup>3</sup>The setback shall be measured from future rights-of-way width if a planned road improvement or expansion is known at the time of application.

**1.5.3 Minimum setback distances for Meteorological Towers**

Distance from a...	Minimum Setback Distance
Property line, measured from the center of the WECS to the property line	1.1 times the total height (where the blade tip is at its highest point), provided that the distance is no less than the required yard setback
Residential dwellings, measured from the center of the WECS to the nearest corner of the structure	1.1 times the total height (where the blade tip is at its highest point)
Road right-of-way, measured from the center of the WECS to the edge of the right-of-way	1.1 times the total height (where the blade tip is at its highest point), provided that the distance is no less than the required yard setback <sup>4</sup>
Other rights-of-way, such as railroads and utility easements, measured from the center of the WECS to the edge of the right-of-way	1.1 times the total height (where the blade tip is at its highest point), provided that the distance is no less than the required yard setback

**1.6 SAFETY DESIGN AND INSTALLATION STANDARDS****1.6.1 Equipment type****A. Turbines**

ALL turbines shall be constructed of commercially available equipment.

**B. Meteorological towers**

Meteorological towers may be guyed.

**C. Experimental, or proto-type equipment**

Experimental or proto-type equipment still in testing which does not fully comply with industry standards, may be approved by the Board of Zoning Appeals per the variance process established by this Ordinance.

**1.6.2 Industry standards and other regulations**

ALL WECS shall conform to applicable industry standards, as well as all local, state and federal regulations. An applicant shall submit certificate(s) of design compliance that wind turbine manufacturers have obtained from Underwriters Laboratories, Det Norske Veritas, Germanishcher Lloyd Wind Energie, or an equivalent third party.

<sup>4</sup>The setback shall be measured from future rights-of-way width if a planned road improvement or expansion is known at the time of application.

### 1.6.3 Controls and brakes

#### A. Braking system

ALL WECS shall be equipped with a redundant braking system. This includes both aerodynamic over speed controls (including variable pitch, tip, and other similar systems) and mechanical brakes. Stall regulation shall not be considered a sufficient braking system for over speed protection.

#### B. Operation mode

ALL Mechanical brakes shall be operated in a fail-safe mode.

### 1.6.4 Electrical components

#### A. Standards

All electrical components of ALL WECS shall conform to applicable local, state and national codes, and any relevant national and international standards.

#### B. Collection cables

All electrical collection cables between each WECS shall be located underground wherever possible.

#### C. Transmission lines

ALL transmission lines that are buried should be at a depth consistent with or greater than local utility and telecommunication underground lines standards or as negotiated with the land owner or the land owner's designee until the same reach the property line or a substation adjacent to the property line.

### 1.6.5 Color and finish

In addition to all applicable FAA requirements, the following shall also apply:

#### A. Wind turbines and towers

ALL wind turbines and towers that are part of WECS shall be white, grey, or another non-obtrusive color.

#### B. Blades

ALL blades shall be white, grey, or another non-obtrusive color. Blades may be black in order to facilitate deicing.

#### C. Finishes

Finishes shall be matte or non-reflective.

#### D. Exceptions

Exception may be made for meteorological towers, where concerns exist relative to aerial spray applicators.

### 1.6.6 Warnings

#### A. Commercial WECS - Towers, transformers, and substations

On all towers, transformers, and substations, a sign or signs shall be posted on the tower, transformer or substation warning of high voltage. Signs with emergency contact information shall also be posted on each turbine or at another suitable point at the turbine site.

#### B. Commercial WECS - Guy wires and anchor points

For ALL guyed towers, one of the following warning mechanisms shall be used for each anchor point:

1. Visible or reflective objects

Visible and reflective objects, such as flags, plastic sleeves, reflectors, or tape placed on the anchor points of guy wires and along the innermost guy wires up to eight (8) feet above the ground.

2. Visible Fencing

Visible fencing not less than four (4) feet in height installed around anchor points of guy wires.

#### C. Non-commercial WECS and Micro-WECS

The following notices shall be clearly visible on all Non-commercial WECS, and Micro-WECS towers and accessory facilities

1. "No Trespassing" signs shall be attached to any perimeter fence.
2. "Danger" signs shall be posted at the height of five (5) feet on WECS towers and accessory structures
3. A sign shall be posted on the tower showing an emergency telephone number
4. The manual electrical and/or overspeed shutdown disconnect switch(es) shall be clearly labeled.

#### D. Meteorological towers

Consideration shall be given to paint aviation warning on all Meteorological Towers.

### 1.6.7 Climb prevention

All COMMERCIAL WECS tower designs shall include features to deter climbing or be protected by anti-climbing devices such as:

- A. Fences with locking portals at least six (6) feet in height; or
- B. Anti-climbing devices fifteen (15) feet vertically from the base of the WECS tower; or
- C. Locked WECS Tower doors.

**1.6.8 Blade clearance**

The minimum distance between the ground and any protruding blades(s) utilized on all Commercial WECS shall be twenty-five (25) feet, as measured at the lowest point of the arc of the blades. The minimum distance between the ground and any protruding blade(s) utilized on all remaining WECS shall be a minimum of fifteen (15) feet, as measured at the lowest point of the arc of the blades, provided the rotor blade does not exceed 20 feet in diameter. In either instance, the minimum distance shall be increased as necessary to provide for vehicle clearance in locations where over-sized vehicles might travel.

**1.6.9 Lighting****A. Intensity and frequency**

ALL lighting, including lighting intensity and frequency of strobe, shall adhere to but not exceed requirements established by Federal Aviation Administration permits and regulations.

**B. Shielding**

Except with respect to lighting required by the FAA, lighting may require shielding so that no glare extends substantially beyond any WECS structure.

**1.6.10 Materials handling, storage and disposal****A. Solid wastes**

All solid wastes whether generated from supplies, equipment, parts, packaging, operation or maintenance of the facility, including old parts and equipment related to the construction, operation and/or maintenance of any WECS shall be removed from the site promptly and disposed of in accordance with all federal, state, and local laws.

**B. Hazardous materials**

All hazardous materials or waste related to the construction, operation and/or maintenance of any WECS shall be handled, stored, transported and disposed of in accordance with all applicable local, state and federal laws.

**1.7 OTHER APPLICABLE STANDARDS**

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**1.7.1 Guyed wire anchors**

No guyed wire anchors shall be allowed within any required setback from road right-of-way.

**1.7.2 Sewer and water**

ALL WECS facilities shall comply with the existing septic and well regulations as required by the Warren County Health Department and/or the State of Indiana Department of Public Health.

### 1.7.3 Noise and vibration

The noise level of NON-COMMERCIAL WECS shall be no greater than sixty (60) decibels measured from the nearest residence. This level may only be exceeded during short-term events such as utility outages and/or severe wind storms. All other noise and vibration levels shall be in compliance with all county, state and federal regulations.

### 1.7.4 Utility interconnection

The WECS, if interconnected to a utility system, shall meet the requirements for interconnection and operate as prescribed by the applicable regulations of the electrical utility, as amended from time to time.

### 1.7.5 Signage

The following signage regulations and standards shall also apply. In the event that one of the following regulations or standards conflicts with another sign regulation or standard prescribed by any ordinance, the most restrictive regulation or standard shall apply.

A. Surface area

No sign shall exceed sixteen (16) square feet in surface area.

B. Height

No sign shall exceed eight (8) feet in height.

C. Manufacturer's or owner's company name and/or logo

The manufacturer's or owner's company name and/or logo may be placed upon the compartment containing the electrical equipment.

D. Development signs

An identification sign relating to the wind farm development may be located on each side of the total project area, provided that there are no more than four (4) signs located on any one project site.

E. Other signs and logos

No other advertising signs or logos shall be placed or painted on any WECS.

### 1.7.6 Feeder lines

With the exception of minimum setback distances, feeder lines installed as part of any WECS shall not be considered an essential service. All communications and feeder lines installed as part of any WECS shall be buried underground wherever possible.

### 1.7.7 Other appurtenances

No appurtenances other than those associated with the wind turbine operations shall be connected to any wind tower except with express, written permission by the Board of Zoning Appeals.

## 1.8 OPERATION AND MAINTENANCE

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### 1.8.1 Physical modifications

In general, any physical modification to any WECS that alters the mechanical load, mechanical load path, or major electrical components shall require re-certification. Like-kind replacements shall not require re-certification. Therefore, prior to making any physical modification, the owner or operator shall confer with the Zoning Office and Area Plan Commission to determine whether the physical modification requires re-certification.

### 1.8.2 General Complaints

Either in response to a complaint or in the event of any other cause for concern, inspections of any or all of the WECS may be made by the Warren County Zoning Office. All inspection fees, including any fees incurred to hire experts, shall be paid by the applicant, owner and/or operator.

- A. After construction of the WECS, if the owner or operator receives a written complaint from a person alleging to be aggrieved by a failure to comply with the Safety Design and Installation Standards of this Ordinance, the owner or operator shall take reasonable steps to remedy such complaint.
- B. If the Warren County Zoning Office determines that an owner or operator has failed to take reasonable steps to remedy a complaint within thirty (30) days thereafter, the Warren County Zoning Office may initiate proceedings seeking to revoke the owner or operator's special exception to operate a WECS.

### 1.8.3 Interference Complaints

Prior to construction, applicant shall complete a communications study to minimize interference with any public or public serving utility microwave transmissions. If necessary, the applicant, owner and/or operator shall mitigate interference with electromagnetic communications, such as radio, telephone, microwaves, or television signals caused by any WECS. In addition, the applicant, owner, and/or operator shall comply with the following:

#### A. Pre-construction

The applicant shall notify all existing communication towers within two (2) miles of the proposed WECS upon application to the County for a WECS permit.

#### B. Post-construction

If, after construction of the WECS, the owner or operator receives a written complaint related to interference with the broadcast of residential television, telecommunication, communication or microwave transmissions, the owner or operator shall take reasonable steps to mitigate said interference. Interference with private telecommunications systems such as GPS shall be between the company and the complainant.

#### C. Failure to remedy a complaint

If an agreement to remedy a known interference is not reached within ninety (90) days, appropriate action will be taken, which may result in requiring the WECS to

become inactive. This does not apply to interference with private telecommunications systems.

#### 1.8.4 Declaration of public nuisance

Any WECS declared to be unsafe by the Warren County Zoning Office by reason of inadequate maintenance, dilapidation, obsolescence, fire hazard, damage or abandonment is hereby declared to be a public nuisance and shall be abated by repair, rehabilitation, or demolition and removal in accordance with the approved Decommissioning Plan.

### 1.9 DECOMMISSIONING PLAN

Prior to receiving an Improvement Location Permit or Building Permit, or siting approval under this Ordinance, the County and the applicant, owner and/or operator shall formulate a decommissioning plan outlining the anticipated means and cost of removing a WECS at the end of their serviceable life or upon becoming a discontinued or abandoned use to ensure that the WECS is properly decommissioned.

#### 1.9.1 Content

A decommissioning plan shall include, at a minimum, language to address the following:

A. Assurance

Written assurance that the facilities will be properly decommissioned upon the project life or in the event that the facility is abandoned.

B. Cost estimates

The applicant shall provide a contractor cost estimate for demolition and removal of the WECS facility. The cost estimates shall be made by a competent party, such as a professional engineer, a contractor capable of completing the decommissioning or a person with suitable expertise or experience with decommissioning a WECS. Such estimate shall also include an adjustment factor for inflation.

C. Financial assurance

Applicant will provide financial assurance in an amount at least equal to said demolition and removal contractor cost estimate, through the use of a bond, letter of credit or other security acceptable to the County. Financial assurance shall be required for the cost of decommissioning each tower and related improvements constructed under the permit. Said security will be released when each tower is properly decommissioned as determined by the Warren County Zoning Office.

D. Abandonment by the owner or operator

The applicant will provide an affidavit to the Warren County Zoning Office representing that all easements for wind turbines shall contain terms that provide financial assurance in the event of abandonment by the owner or operator, including access to the salvage value of the equipment, for the property owners to ensure that facilities are properly decommissioned within one (1) year of expiration or earlier termination of the project.

### 1.9.2 Discontinuation

All WECS shall be considered a discontinued use after one (1) year without energy production, unless a plan is developed and submitted to the Warren County Zoning Office outlining the steps and schedule for returning the WECS to service.

### 1.9.3 Removal

An applicant's obligations shall include removal of all physical material pertaining to the project improvements to no less than a depth of four (4) feet below ground level within three hundred sixty-five (365) days of the discontinuation or abandonment of the facility, and restoration of the project area to as near as practicable the condition of the site immediately before construction of such improvements by the owner, or by Warren County at the owner's expense.

### 1.9.4 Written notices

Prior to implementation of the procedures existing for the resolution of any alleged failure to comply with the decommissioning plan, the appropriate County body shall first provide written notice to the owner and/or operator, setting forth the alleged default(s). Such written notice shall provide the owner and/or operator a reasonable time period not to exceed sixty (60) days, for good faith negotiations to resolve the alleged default(s).

### 1.9.5 Costs incurred by the County

If the County is required to remove a tower and appurtenant facilities, it may sell the salvage to defray the costs of removal. By obtaining approval of their WECS application, the permittee grants a license to Warren County to enter the property to remove a tower pursuant to the terms of the approved decommissioning plan.

## 1.10 LIABILITY INSURANCE

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The owner or operator of any WECS shall maintain a current general liability policy covering bodily injury and property damage and may be required to name Warren County as an additional insured with dollar amount limits per occurrence, in the aggregate, and a deductible, which is suitable to the County.

## 1.11 APPLICATION PROCEDURES

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Permits and variances shall be applied for and reviewed under the procedures established by this Ordinance, except that the application for a commercial WECS Improvement Location Permit shall also include the following information:

### 1.11.1 Applications for ALL Wind Energy Conversion Systems

An application for ALL WECS shall include the following information:

#### A. Contact information of project applicant

The name(s), address(es), and phone number(s) of the applicant(s), as well as a description of the applicant's business structure and overall role in the proposed project.

B. Contact information of current project owner

The name(s), address(es), and phone number(s) of the owner(s), as well as a description of the owner's business structure and overall role in the proposed project, and including documentation of land ownership or legal control of the property on which the WECS is proposed to be located. The Area Plan Commission shall be informed of any changes in ownership.

C. Contact information of project operator

The name(s), address(es), and phone number(s) of the operator(s), as well as a description of the operator's business structure and overall role in the proposed project.

D. Legal description The legal description, address, and general location of the project.

E. Project description

A WECS Project Description, including to the extent possible, information on each wind turbine proposed, including:

1. Number of turbines;
2. Type;
3. Name plate generating capacity;
4. Tower height;
5. Rotor diameter;
6. Total height;
7. Anchor base;
8. The means of interconnecting with the electrical grid;
9. The potential equipment manufacturer(s); and
10. All related accessory structures.

F. A site layout plan

A site plan, drawn to scale<sup>5</sup>, including distances and certified by a registered land surveyor.

G. Engineering certification

For all WECS, the manufacturer's engineer or another qualified registered

<sup>5</sup>All drawings shall be at a scale not smaller than one inch equals fifty feet (1"=50') with a scale of one inch equals thirty feet (1"=30') being preferred. Any other scale must be approved by the Executive Director. No individual sheet or drawing shall exceed twenty-four inches by thirty-six inches (24" x 36").

professional engineer shall certify, as part of the building permit application, that the turbine, foundation and tower design of the WECS is within accepted professional standards, given local soil and climate conditions. An engineering analysis of the tower showing compliance with the applicable regulations and certified by a licensed professional engineer shall also be submitted. The analysis shall be accompanied by standard drawings of the wind turbine structure, including the tower, base, and footings.

H. Proof of correspondence and cooperation with wildlife agencies

For the purposes of preventing harm to migratory birds and in compliance with the Migratory Bird Treaty Act, the applicant shall provide written documentation that he or she is in direct correspondence and cooperation with the U.S. Fish and Wildlife Service and the Indiana Department of Natural Resources.

### 1.11.2 Applications for NON-COMMERCIAL Wind Energy Conversion Systems

In addition to the application requirements listed in 1.11.1 for all applications for Wind Energy Conversion Systems, applications for NON-COMMERCIAL WECS shall also include the following information:

A. Demonstration of energy need

The primary purpose of the production of energy from a Non-Commercial WECS shall be to serve the energy needs of that tract. The applicant shall demonstrate how much energy is needed and how the proposed size and number of the WECS fulfills this need. Net-metering may be allowed, but shall not be the primary intent of the WECS.

B. Statement of FAA compliance

A statement of compliance with all applicable FAA rules and regulations, including any necessary approvals for installations within close proximity to an airport.

C. Utility notification

No NON-COMMERCIAL WECS shall be installed until evidence has been given that the local 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.

D. Compliance with National Electrical Code

A line drawing of the electrical components in sufficient detail to allow for a determination that the manner of installation conforms to the National Electrical Code. This information is frequently supplied by the manufacturer.

### 1.11.3 Applications for COMMERCIAL Wind Energy Conversion Systems

In addition to the application requirements listed in 1.11.1 for all applications for Wind Energy Conversion Systems, applications for COMMERCIAL WECS shall also include the following information:

A. A preliminary site layout plan

In place of the site layout plan described for applications for all Wind Energy Conversion Systems, an application for a COMMERCIAL WECS shall include a preliminary site layout plan with distances drawn to scale<sup>6</sup> illustrating the following:

1. Property lines, including identification of adjoining properties
2. Identification of the location each individual wind turbine, to include the latitude and longitude of each WECS turbine.
3. Dimensional representation of the structural components of the tower construction including the base and footings.
4. WECS access roads.
5. Substations.
6. Electrical cabling.
7. Ancillary equipment.
8. Primary structures within one quarter (1/4) mile of all proposed WECS.
9. Required setback lines.
10. Location of all public roads which abut, or traverse the proposed site
11. The location of all above-ground utility lines within a distance of two (2) times the height of any proposed WECS structure.
12. The location of any historic or heritage sites as recognized by the Division of Historic Preservation and Archeology of the Indiana Department of Natural Resources, within one (1) mile of a proposed WECS.
13. The location of any wetlands based upon a delineation plan prepared in accordance with the applicable U.S. Army Corps of Engineers requirements and guidelines, within one (1) mile of a proposed WECS.
14. A re-vegetation plan for restoring area temporarily disturbed during the construction phase.
15. A rescue and fire protection plan for both the construction phase and the operation of the facility.
16. Any other item reasonably requested by the Board of Zoning Appeals.

<sup>6</sup>All drawings shall be at a scale not smaller than one inch equals fifty feet (1"=50') with a scale of one inch equals thirty feet (1"=30') being preferred. Any other scale must be approved by the Executive Director. No individual sheet or drawing shall exceed twenty-four inches by thirty-six inches (24" x 36").

B. Topographic map

A USGS topographical map, or map with similar data, of the property and the surrounding area, including any other WECS within ten (10) rotor distance, but no less than a one quarter (1/4) mile radius from the proposed project site, with contours of not more than five (5) foot intervals.

C. Noise profile, to include without limitation:

1. The make and model of the turbines.
2. Sound Power Levels (Lw) for each turbine for each one-third octave band from 6.3 Hz up through 10,000 Hz.
3. A pre-construction noise study for each proposed Wind Turbine location (ambient noise profile) showing background dBA and dBC sound levels (L90 (10 min)) over one or more valid ten (10) minute continuous measurement periods for each turbine location, nearest dwelling and nearest non-participating owner's property line. The ambient noise levels shall be the L90A sound descriptor measured during a preconstruction noise study during the quietest time of night (10 pm until 4 am).
4. A projection showing the expected dBA and dBC sound levels computed using the one-third octave band sound power levels (Lw) with appropriate corrections for modeling and measurement accuracy tolerances and directional patterns of the WECS for all areas within and to one (1) mile from the project boundary for the wind speed, direction and operating mode that would result in the worst case WECS sound emissions. The projection may be by means of computer model but shall include a description of all assumptions made in the model's construction and algorithms. If the model does not consider the effects of wind direction, geography of the terrain, and/or the effects of reinforcement from coherent sounds or tones from the turbines these should be identified and other means used to adjust the model's output to account for these factors. These results may be displayed as a contour map of the predicted levels, but should also include a table showing the predicted levels at noise-sensitive receptor sites and residences within the model's boundaries. The predicted values must include dBA and dBC values but shall also include un-weighted octave band sound pressure levels from 8k Hz to 10k Hz in data tables.
5. The Zoning Office will refer the applicant's information and sound studies to a Qualified Independent Acoustical Consultant for review and a determination whether the proposed WECS will, based on pre-construction studies and sound modeling, comply with the sound limits set forth in this Ordinance.

D. Location of all known WECS within one (1) mile of the proposed WECS, including a description of the potential impacts on said WECS and wind resources on adjacent properties.

E. Copy of the Communications Study.

#### **1.11.4 Aggregated project applications**

Aggregated projects may jointly submit a single application and be reviewed under joint proceedings, including notices, hearing, and reviews and as appropriate, approvals.

#### **1.11.5 Fees**

COMMERCIAL WECS, NON-COMMERCIAL WECS, MICRO-WECS, and Meteorological Towers shall be charged fees as prescribed by the County's Official Fee Schedule attached as Exhibit A. Applications will be assessed fees for each construction phase within a single project, as prescribed by the County's Official Fee Schedule attached as Exhibit A .

#### **1.11.6 Permits**

COMMERCIAL WECS, NON-COMMERCIAL WECS, MICRO-WECS, and Meteorological Towers shall each require a permit issued in accordance with this Ordinance. Permits for aggregated projects will be issued by construction phases and recorded separately.

### **1.12 PRE-CONSTRUCTION REQUIREMENTS**

Prior to the issuance of any Building Permit, the following shall be submitted to and reviewed by the Zoning Office, which shall certify that the following are in compliance with all applicable regulations:

#### **1.12.1 FAA permit application**

An FAA permit application.

#### **1.12.2 Decommissioning plan**

A decommissioning plan as described in this Ordinance.

#### **1.12.3 Economic Development, Drainage, and Road Use and Maintenance Agreements**

An Economic Development Agreement, a Drainage Agreement, and a Road Use and Maintenance Agreement approved by the County Commissioners. The agreement shall be developed in conjunction with the Warren County Local Economic Development Organization. This agreement must be signed before any Building Permit is issued. The Drainage Agreement must describe or reference provisions to address crop and field tile damages.

#### **1.12.4 Erosion control plan**

An erosion control plan developed in consultation with the Natural Resources Conservation Services (NRCS), and a drainage/storm water quality management plan approved by the Warren County Drainage Board.

### 1.12.5 Utility plan

A utility plan drawn to the same scale<sup>7</sup> as the site plan illustrating the location of all underground utility lines associated with the total WECS project.

### 1.12.6 Final Site Layout Plan

Provide a copy of the Final Site Layout Plan illustrating the final location of all that is required in the preliminary site layout plan, as approved by the landowner.

### 1.12.7 Avoidance and mitigation of damages to public infrastructure

In addition to complying with the approved Road Use and Maintenance Agreement, an applicant, owner, or operator proposing to use any county road(s), for the purpose of transporting COMMERCIAL WECS or substation parts and/or equipment for construction, operation or maintenance of a COMMERCIAL WECS or substation, shall comply with the following pre-construction requirements.

#### A. Identification of roads and services

Identify all roads and services, to the extent that any proposed routes that will be used for construction and maintenance purposes shall be identified. If the route includes a public road, it shall be approved by the Warren County Highway Department.

#### B. Pre-construction survey

The applicant shall conduct a pre-construction baseline survey acceptable to the Highway Superintendent to determine existing road conditions for assessing potential future damage. The survey shall include photographs, or video, or a combination thereof, and a written agreement to document the condition of the public facility.

## 1.13 CONSTRUCTION REQUIREMENTS

During construction, the applicant shall demonstrate that the following requirements are being met:

### 1.13.1 Dust control

Reasonable dust control measures shall be required by the County during construction of a COMMERCIAL WECS.

### 1.13.2 Drainage

Reasonable storm water best management practices as required in the Drainage Plan Agreement on file with the Zoning Office and the Warren County Surveyor as approved by Warren County Drainage Board.

<sup>7</sup>All drawings shall be at a scale not smaller than one inch equals fifty feet (1"=50') with a scale of one inch equals thirty feet (1"=30') being preferred. Any other scale must be approved by the Executive Director. No individual sheet or drawing shall exceed twenty-four inches by thirty-six inches (24" x 36").

### **1.13.3 Damage to real estate**

The applicant shall provide an affidavit to the Warren County Zoning Office representing that all easements for wind turbines contain terms that provide financial assurance in the event damage is caused to real estate during the construction phase, to include damage to crops, private drainage tiles and compaction to the real estate, to ensure that damages are properly repaired within one (1) year of the completion of construction of the project or the discovery of the damage, whichever shall last occur.

## **1.14 POST-CONSTRUCTION REQUIREMENTS**

Post-construction, the applicant shall comply with the following provisions:

### **1.14.1 Road Repairs**

Any road damage caused by the construction of project equipment, the installation of the same, or the removal of the same, shall be repaired to the satisfaction of the Warren County Highway Superintendent. The superintendent may choose to require either remediation of road repair upon completion of the project or is authorized to collect fees for oversized load permits. Further, a corporate surety bond in an amount to be fixed by a professional engineer may be required by the superintendent to insure the county that future repairs are completed to the satisfaction of the unit of local government. The cost of bonding is to be paid by the applicant.

### **1.14.2 As-Built Plans Requirement**

Upon completion of all development, the exact measurements of the location of utilities and structures erected during the development are necessary for public record and shall therefore be recorded. The applicant, owner, or operator shall submit a copy of the Final Construction Plans (as-built plans), as amended, to the Zoning Office with the exact measurements thereon shown. The Zoning Office, after being satisfied that the measurements are substantially the same as indicated on the originally approved final plan(s), shall approve, date and sign said Construction Plans for the project, which the applicant, owner, or operator shall then record.

### **1.14.3 Fire and rescue training**

Upon completion of all construction and development of the WECS, the owner or operator, at their expense, shall conduct a training program with local law enforcement, fire and rescue, and other emergency response departments to ensure that such agencies are familiar with the special challenges and hazards associated with a WECS as relates to any emergency response or action which might be required as a result of the operation of the WECS.

### **1.14.4 Change in ownership**

It is the responsibility of the owner or operator listed in the application to inform the Executive Director of all changes in ownership and operation during the life of the project, including the sale or transfer of ownership or operation.

## 1.15 DEFINITIONS

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For the purposes of administering and enforcing this Ordinance, the following definitions shall apply:

1.15.1 **AGGREGATED WECS PROJECT(S)**: a WECS located on two or more parcels or properties as specified in an application for a WECS Construction or Inspection Certificate pursuant to this Chapter.

1.15.2 **APPLICANT**: the entity or person who submits to the County, an application for the construction or operation of any WECS or Substation or thereafter operates or owns a WECS.

1.15.3 **FINANCIAL ASSURANCE**: reasonable assurance from a creditworthy party, examples of which include a surety bond, trust instrument, cash escrow, or irrevocable letter of credit or combinations thereof.

1.15.4 **OPERATOR**: the entity responsible for the day-to-day operation and maintenance of a WECS, including any third party subcontractors.

1.15.5 **OWNER**: the person, firm, corporation, trust or other entity or entities with an equity interest in the WECS(s), including their respective successors and assigns. Owner does not mean (i) the property owner from whom land is leased for locating the WECS (unless the property owner has an equity interest in the WECS); or (ii) any person holding a security interest in the WECS(s) solely to secure an extension of credit, or a person foreclosing on such security interest provided that such person sells the WECS(s) within one year of such foreclosure.

1.15.7 **PROFESSIONAL ENGINEER**: a qualified individual who is licensed or registered as a professional engineer in any state in the United States.

1.15.8 **PRIMARY STRUCTURE**: for each property, the structure that one (1) or more persons occupy the majority of time on that property for either business or personal reasons. Primary Structure includes structures such as residences, commercial buildings, hospitals, and day care facilities. Primary Structure excludes structures such as hunting sheds, storage sheds, pool houses, unattached garages and barns.

1.15.9 **SUBSTATION**: the apparatus that connects the electrical collection system of the WECS(s) and increases the voltage for connection with the utility's transmission lines.

1.15.10 **SWEPT AREA**: the diameter of the least circle encompassing all blades for a WECS.

1.15.11 **SWITCHING STATION**: an apparatus or structure in the system similar to a substation but not necessarily increasing voltage into the grid.

1.15.12 **WECS CONSTRUCTION PERMIT**: the Permit issued by the Building Commissioner for construction of a Wind Energy Conversion System.

1.15.13 WECS METEOROLOGICAL TOWER: a tower, the primary or predominant purpose of which is to provide meteorological information in connection with the siting or operation of a WECS.

1.15.14 WECS PROJECT: two or more WECS on a single property or aggregate properties as specified in an application for a WECS Construction or Operating Permit pursuant to this Chapter.

1.15.15 WECS TOWER: the monopole, freestanding or guyed structure that supports the energy capture, conversion, storage or transfer components of a WECS.

1.15.16 WECS TOWER HEIGHT or TOTAL HEIGHT: the distance measured from the ground level at the base of the WECS Tower to the highest extension of the blades or rotor.

1.15.17 "WECS"; WIND ENERGY CONVERSION SYSTEM: all necessary devices that together convert wind energy into electricity and store or deliver that electricity to a utility's transmission lines, including but not limited to the rotor, nacelle, generator, WECS Tower, electrical components, WECS foundation, transformer, and electrical cabling from the WECS Tower, Substation, wind farm collection system, WECS Meteorological towers, communications facilities and other required facilities and equipment.

1.15.18 COMMERCIAL WECS or LARGE WIND SYSTEM: a Wind Energy Conversion System which has a nameplate capacity (manufacturer's rating) of more than 50 kilowatts per wind tower, or a total height of more than 140', or a swept area of more than 40'.

1.15.19 NON-COMMERCIAL WECS or SMALL WIND SYSTEM: a Wind Energy Conversion System which has a nameplate capacity (manufacturer's rating) of more than 10 kilowatts per wind tower and less than or equal to 50 kilowatts per wind tower, and a total height of more than 80' but less than or equal to 140', and a swept area of 40' or less.

1.15.20 MICRO WECS: a Wind Energy Conversion System designed to provide electric power to a home or other local site for use by the owner, which has a nameplate capacity (manufacturer's rating) less than or equal to 10 kilowatts per wind tower and a total height of 80' or less, or if building mounted, projects no more than 15' above the highest point of the roof.

1.15.21 SHADOW FLICKER: the condition which occurs when the blades of a Wind Turbine pass between the sun and an observer, casting a readily observable, moving shadow on the observer and his or her immediate environment.

1.15.22 SHADOW FLICKER RECEPTOR: any occupied structure, structure permitted for construction, or roadway where the WECS may cause shadow flicker to occur.

## 1.16 RIGHT OF ENTRY FOR INSPECTIONS.

Upon presentation of proper credentials, the Zoning Office staff, the Warren County Surveyor and the Superintendent of the Warren County Highway Department or their duly authorized representatives may enter at reasonable times any wind energy system,

structure or premises in the county to perform inspections to assure compliance with all requirements of this Ordinance, the Warren County Zoning Ordinance and any conditions of any grant of a special exception.

#### **1.17 STOP ORDER.**

Whenever work is being done contrary to the provisions of this Ordinance, the Zoning Office staff may order the work stopped by notice in writing, served on any person engaged in the doing or causing such work to be done, and any such persons shall forthwith stop such work until authorized by the Zoning Office to proceed with the work.

#### **1.18 VIOLATIONS.**

It shall be unlawful for any person, firm or corporation, whether as owner, lessee, sub-lessee, or occupant, to erect, construct, enlarge, alter, repair, improve, remove, convert, demolish, equip, use, occupy or maintain any wind energy conversion system or structure, in the county or cause or permit the same to be done, contrary to or in violation of the provisions of this Ordinance. Notwithstanding the foregoing, no WECS permit or certificate shall be revoked without fifteen (15) days prior written notice to applicant and applicant's failure to cure within thirty (30) days thereafter.

#### **1.19 RIGHT OF APPEAL.**

All persons aggrieved by a decision of the Zoning Office shall have the right to appeal the decision to the Board of County Commissioners within thirty (30) days after the decision. All persons aggrieved by a determination by the Board of County Commissioners to uphold the Zoning Office decision to revoke, deny or fail to renew a WECS permit certificate based on the standards in this Ordinance, may directly bring an action in the Warren Circuit Court for review of the decision to revoke, deny or fail to renew.

#### **1.20 REMEDIES.**

The Zoning Office shall, in the name of the County, bring actions in the Warren Circuit Court, for mandatory and injunctive relief in the enforcement of and to secure compliance with any provision of this Ordinance or any order or orders made by the Zoning Office, and any such action for mandatory or injunctive relief may be joined with an action to recover penalties in the same manner as other violations of the Zoning Ordinance of Warren County, Indiana, to include fines not to exceed five hundred dollars (\$500.00) per day for each day that a violation exists.

#### **1.21 SEVERABILITY**

The provisions of this ordinance are severable, and the invalidity of any section, subdivision, paragraph, or other part of this ordinance shall not affect the validity or effectiveness of the remainder of the ordinance.