Article III. Wind Farm Overlay (WFO) District

20.30.130 WFO district intent, effect on uses, and effect on standards.

A. *District Intent.* The wind farm overlay (WFO) district allows a wind farm as a permitted use in remote and otherwise appropriate regions of the County.

Application of District.

- This WFO district applies to parcels that, in combination, comprise a wind farm.

B. *Effect on Uses.* All permitted uses in the base zoning district are permitted as such in the WFO district. All special exception uses permitted in the base zoning district are permitted as such in the WFO. Additional permitted uses are listed as follows.

The following land uses shall be permitted in the WFO district:

- Wind farm

C. *Effect on Standards.* The development standards from the base zoning district shall apply to all non-wind farm improvements. The wind turbine standards for wind farms, in the wind farm overlay district, shall apply to all turbines and other improvements associated with the wind farm. [Ord. 12-27-11 § 3.13.]

20.30.140 WFO prerequisites.

A. *Base Zoning.* The base zoning for this overlay district to be applied to a lot shall be an A1, A2, or A3 district.

B. *Minimum Lot Size.* The minimum lot area for this overly district to be applied to a lot shall be ten (10) acres.

C. *Advisory Opinion.* The applicant shall obtain an advisory opinion from the Jasper County Airport Authority prior to filing for rezoning to apply the WFO district to any lot.

D. *Special Exception.* The application for the WFO district to any lot does not relieve the requirement for a special exception for each utility-grade wind turbine location. Aggregated projects may jointly submit a single application and be reviewed under joint proceedings, including notices, hearings, reviews and, as appropriate, approvals.

E. *Location Restrictions.*

1. *Setback Measurements.* All measurements for setbacks between a structure and a wind turbine system shall be measured between the structure foundation and the center of the wind turbine system. All measurements between a property line and a utility-grade wind turbine system shall be measured from the center of any utility-grade wind turbine structure and the nearest property line of a property as defined.

2. *Utility-Grade Wind Turbine System Setbacks.*

a. *Setback from Property Line.*

i. Each utility-grade wind turbine system shall be a minimum of one and one-tenth (1.1) times the tip height of the turbine from any property line of a participating landowner (signed contract with Wind Company).

ii. Each utility-grade wind turbine system shall be located at least one thousand seven hundred sixty (1,760) feet from any nonparticipating property line.

iii. *Property Line Setback Flexibility.* Utility-grade wind turbine systems within a wind farm may encroach into property line setbacks upon approval of the two (2) property owners.

b. *Setback from Public Road, Railroad, or Above-Ground Utility.* Each utility-grade wind turbine system shall be a minimum distance of one and one-half (1.5) times the tip height from any public road, railroad, or above-ground utility.

c. *Setback from On-Site Buildings.* A utility-grade wind turbine system shall be required to be set back one and one-half (1.5) times the tip height of the turbine from any on-site building.

d. *Setback from Off-Site Land Uses.* A utility-grade wind turbine system shall be required to be set back a minimum of:

i. Two thousand four hundred (2,400) feet from any existing nonparticipating residential dwellings, multiple-family residential dwellings, or place of worship. The owner of said dwelling unit may grant permission, in writing and recorded with the Jasper County Recorder, waiving the setback requirement to their home. However, under no circumstances shall a utility-grade wind turbine system be closer than two (2) times the tip height to a dwelling unit.

ii. Two thousand four hundred (2,400) feet from any existing land currently zoned R1, R2, VR, M1, and M2.

iii. Two thousand four hundred (2,400) feet from any platted residential subdivision with ten (10) or more lots.

iv. One-half (0.5) mile from each end and one-quarter (0.25) mile from each side of all FAA recognized airstrips.

(A) Airstrips must be on property owned by a licensed pilot.

(B) An operable licensed aircraft must be housed on site.

v. Six (6) miles from the center of the paved runway at the Jasper County Airport.

e. *Setback from Municipalities.* A utility-grade wind turbine system located within two (2) miles of the corporate limits of a city or town shall be permitted by said city or town.

f. *No Turbine Zone.* To protect the Jasper-Pulaski Fish and Wildlife Area and to protect/provide an Aviation Buffer in respect to the Jasper County Airport and established Department of Defense MOA (Military Operations Area) within the County, a "No Turbine Zone" is established for the area of Jasper County that lies north of County Road 1200S. No wind turbines are permitted in this area. [Ord. 5-6-19B § 1; Ord. 2-4-19B §§ 1 – 3; Ord. 12-27-11 § 3.14.]

20.30.150 WFO district applicability.

The following requirements apply to all land within the WFO district as defined in JCC 20.30.160, WFO district boundary. Under no circumstances shall a planned development or rezoning of property change the applicability of the WFO district's land use restrictions and additional development standards. [Ord. 12-27-11 § 3.15.]

20.30.160 WFO district boundary.

The boundaries for the WFO district shall be any lot rezoned to apply this overlay and as shown on the official zoning map as a hatched or textured pattern and noted on the map legend as WFO district. [Ord. 12-27-11 § 3.16.]

20.30.170 WFO district development standards.

The base zoning district's development standards shall apply to all improvements except all structures and improvements associated with a wind farm development. The development standards for any structure or improvement associated with a wind farm development shall comply with the development standards in this wind farm overlay district.

A. *Permitted Systems.*

1. *Wind Turbines.* A wind farm may utilize horizontal axis and/or vertical axis utility-grade wind turbine systems.

2. *Meteorological Towers.* A wind farm may utilize one (1) or more meteorological towers prior to or after construction of utility-grade wind turbine systems.

3. *Rated Power Limits.* There shall be no limit on rated power for any single wind turbine system in a wind farm, nor for the gross energy production.

B. *Prerequisites.*

1. *Energy Production Purpose.* Wind farms shall be installed for the purpose of generating energy for distribution by a utility.

2. *Manufacturer Installation Specifications.* Any permitted utility-grade wind turbine system shall be installed according to the manufacturer's specifications unless in conflict with applicable standards in the Jasper County Unified Development Code. When conflicts exist, the following standards shall apply:

a. *Manufacturer Specifications Are Stricter.* When the manufacturer's specifications are stricter than this chapter, the manufacturer's specifications shall be followed.

b. *Zoning Standards are Stricter.* When this chapter is stricter than the manufacturer's specifications, this chapter shall prevail, and if that particular utility-grade wind turbine system cannot be adapted to meet the applicable regulations it shall be considered not permitted.

3. *Proof of Correspondence with Wildlife Agencies.*

a. The applicant must submit written documentation that the applicant is in direct correspondence with the U.S. Fish and Wildlife Services, the Indiana Department of Natural Resources, and any other applicable local, State and/or Federal wildlife agencies to demonstrate that the applicant is working with these agencies to identify required State or Federal regulations that govern the protection of wildlife species.

b. *Avian Impact Study and Analysis.* The applicant shall submit written documentation that the project is in compliance with all Federal and State wildlife regulations.

4. *FAA Permit Application and Indiana Regulation of Tall Structures.*

a. The applicant must submit written documentation that the applicant is in direct compliance with all FAA permitting requirements and setback regulations.

b. The applicant must fully comply with the Indiana Regulation of Tall Structures, IC 8-21-10 et seq.

C. *Turbine System Limitations.*

1. *Minimum Ratings.* A utility-grade wind turbine system shall be manufactured to meet all applicable industry standards for manufacturing practices, safety, and connecting to the electrical grid.

2. *Uniform Building Code.* To the extent applicable, a utility-grade wind turbine system shall comply with the Indiana Uniform Building Code, as amended, and the regulations adopted by the State of Indiana.

3. *Electrical Components.* All electrical components for each utility-grade wind turbine system shall conform to relevant and applicable local, State, and national codes, and relevant and applicable international standards.

4. *Minimum Certification.* The design of each utility-grade wind turbine system shall conform to applicable industry standards, including those of the American National Standards Institute (ANSI) and the Underwriters Laboratories (UL) or equivalent international standard.

5. *Experimental Turbines.* A wind turbine system that does not meet the minimum ratings, Uniform Building Code, electrical components, or minimum certification standards shall be considered experimental and shall not be permitted.

D. *Supporting Structure.*

1. *Tower Mounted.* A horizontal axis utility-grade wind turbine system designed for tower mounting shall be mounted on a monopole. Lattice towers and towers with guy wires shall not be permitted.

2. *Ground Mounted.* All vertical axis utility-grade wind turbine system designed for ground mounting shall be mounted on the ground.

E. *Height Limitations.*

1. *Tower Mounted.* A utility-grade wind turbine shall have a maximum tip height of five hundred seventy-five (575) feet.

2. *Ground Mounted.* The maximum height of all components of a vertical axis ground mounted utility-grade wind turbine system shall be one hundred fifty (150) feet.

F. *Maximum Number of Turbine Systems.*

1. *Wind Farms.* Any number of utility-grade wind turbine systems may be permitted within a wind farm.

2. *Ownership of Land.* Any number of participating land owner's property may be used for the wind farm.

3. *Ownership of Wind Farm.* All utility-grade wind turbine systems used by a wind farm shall be owned by a single entity.

G. *Wind Load.* A utility-grade wind turbine system shall be engineered to survive a one hundred ten (110) mph wind load or greater.

H. *Rotor Diameter.* No rotor diameter restrictions shall be applicable to utility-grade wind turbines.

I. *Location Restrictions.*

1. *Setback Measurements.* All measurements for setbacks between a structure and a wind turbine system shall be measured between the structure foundation and the center of the wind turbine system. All measurements between a property line and a utility-grade wind turbine system shall be measured from the center of any utility-grade wind turbine structure and the nearest property line of a property as defined.

2. *Utility-Grade Wind Turbine System Setbacks.*

a. *Setback from Property Line.*

i. *Property Line Setback Flexibility.* Each utility-grade wind turbine system shall be a minimum of 1.1 times the tip height of the turbine from any property line of a participating landowner (signed contract with Wind Company).

ii. Each utility-grade wind turbine system shall be located at least one thousand three hundred twenty (1,320) feet from any nonparticipating property line.

iii. *Property Line Setback Flexibility.* Utility-grade wind turbine systems within a wind farm may encroach into property line setbacks between two (2) owners' properties.

b. *Setback from Public Road, Railroad, or Above-Ground Utility.* Each utility-grade wind turbine system shall be a minimum distance of 1.1 times the tip height from any public road, railroad, or above-ground utility.

c. *Setback from On-Site Buildings.* A utility-grade wind turbine system shall be required to be set back one and one-half (1.5) times the tip height from any on-site building.

d. *Setback from Off-Site Land Uses.* A utility-grade wind turbine system shall be required to be set back:

i. A minimum of one-third (1/3) mile (one thousand seven hundred sixty (1,760) feet) from any existing nonparticipating residential dwellings, multifamily residential dwellings, or place of worship. The owner of said dwelling unit may grant permission, in writing and recorded with the Jasper County Recorder, waiving the setback requirement to their home. However, under no circumstances shall a utility-grade wind turbine system be closer than two times the tip height to a dwelling unit.

ii. A minimum of one-third (1/3) mile (one thousand seven hundred sixty (1,760) feet) from any existing land currently zoned R1, R2, VR, M1, or M2.

iii. A minimum of one-third (1/3) mile (one thousand seven hundred sixty (1,760) feet) from any platted residential subdivision with ten (10) or more lots.

iv. A minimum of one-half (1/2) mile from each end and one-quarter (1/4) mile from each side of all FAA recognized airstrips.

(A) Airstrips must be on property owned by a licensed pilot.

(B) An operable, licensed aircraft must be housed on site.

v. A minimum of six (6) miles from the center of the paved runway at the Jasper County Airport.

e. *Setback from Municipalities.* A utility-grade wind turbine system located within two (2) miles of the corporate limits of a city or town shall be permitted by said city or town.

f. *Setback from Jasper-Pulaski Fish and Wildlife Area.* To protect the Jasper-Pulaski Fish and Wildlife Area, a "No Turbine Zone" is established for the area of Jasper County that lies north of Division Road. No wind turbines are permitted in this area.

J. *Safety.*

1. *Ground Clearance.* The rotors (i.e., blades) of a horizontal axis utility-grade wind turbine system mounted on a tower shall not extend vertically to within thirty (30) feet of the ground.

2. *Anti-Icing Technology.* A utility-grade wind turbine system shall utilize best industry accepted standards for protecting against shedding of significant pieces of ice capable of damaging nearby buildings, public roads, railroads or above-ground utilities.

3. *Controls and Brakes.* A utility-grade wind turbine system in a wind farm shall be equipped with a redundant braking system that includes both aerodynamic over speed controls (e.g., variable pitch, tip, and other similar systems) and mechanical brakes.

4. *Local Emergency Services.* The wind farm operator shall provide a copy of the as-installed site plan and specification to local emergency services. Upon request from local emergency services, the wind farm operator shall provide training to local emergency services for potential situations and shall prepare an emergency response plan for the wind farm. Any expenses in association with this training and planning shall be borne by the wind farm operator.

K. *Nuisance Prevention.*

1. *Noise.* A utility-grade wind turbine system shall not generate more than forty-five (45) dBA modeled at a residence. Noise analysis shall follow the ISO 9613-2 standards.

2. *Illumination.* A utility-grade wind turbine system shall not be illuminated in any way unless required by Federal Aviation Administration (FAA) regulations to be utilized. Compliance with FAA regulations shall be demonstrated to the Zoning Administrator prior to installation. The use of automated lighting technology to only turn on lights when an airplane is approaching shall be required whenever permissible by FAA regulations.

3. *Color.* A utility-grade wind turbine system shall be a nonintrusive color such as white, off-white, gray, earth tones, or similar nonreflective colors and shall be maintained to the color.

4. *Signage.* No utility-grade wind turbine system shall be used to display a commercial message. All other sign standards shall be per applicable sign standards.

5. *Signal Interference.* The wind farm operator shall make reasonable efforts to avoid any disruption or loss of radio, telephone, television, or similar signals, and shall mitigate any harm caused by the wind turbine system.

6. *Shadow Flicker.* The flickering effect caused by sunlight combined with the turning of the rotor shall not exceed thirty (30) hours a year at a nonparticipating residence.

L. *Appurtenances.* A utility-grade wind turbine system shall not have any appurtenances (e.g., exterior lighting, wireless communication antennas, or ornamentation). Weather monitoring devices and safety equipment shall not be considered appurtenances.

M. *Public Inquiries and Complaints.*

1. *Contact Number.* The wind farm operator shall maintain a phone number and identify a responsible person for the public to contact with inquiries and complaints throughout the life of the project.

2. *Response to Injury and Complaints.* The wind farm operator shall make reasonable efforts to respond to inquiries and complaints raised by the public.

N. *Substation, Meteorological Tower, and Building.*

1. *Quantity.* Any quantity of substations, meteorological towers, or buildings may be permitted if they provide a vital component to the wind farm operations.

2. *Setback from Property Line.* Any structures associated with a wind farm, excluding a utility-grade wind turbine system, feeder line, or transmission line, shall be a minimum of 100 feet from any property line, railroad, public road, single-family residence, or multiple-family residence. Meteorological towers shall also be subject to the same setback requirements as are applicable to a utility-grade wind turbine system.

3. *Maximum Height.*

a. *Meteorological Tower.* A meteorological tower shall comply with all applicable FAA requirements.

b. *Buildings.* A building associated with a wind farm operation shall not exceed 35 feet in height.

4. *Feeder Lines.* To the extent practicable, all feeder lines for the entire wind farm (e.g., between wind turbines and substations) shall be placed underground. All underground transmission lines shall be at a depth consistent with or greater than local utility and telecommunication underground lines standards, or as negotiated with the property owner, whichever is greater.

O. *Drainage.*

1. *Drainage Tile.* Any private or public drainage tile or any County drain within one and one-half (1.5) times the tip height of any wind turbine location or other construction activities shall be inspected and scoped prior to and after completion of installation, at the expense of the developer and/or turbine owner. Any private or public drainage tile damaged or removed during the construction process shall be repaired or replaced with material approved by the County Surveyor. Any alterations to public tiles or drains must have detailed profile and approval by the County Drainage Board prior to alteration. Any public or private drain affected by the proposed development shall be maintained by said developer and/or turbine owner for the life of the project.

2. *Access Roads and Utility-Grade Wind Turbine Systems.* Any access road or utility-grade wind turbine system that may change the drainage on a construction site or adjacent property shall have its design reviewed by the County Drainage Board prior to issuance of a building permit. A building permit shall only be issued if the County Drainage Board approves a design for drainage first.

P. *Public Improvements and Repairs.*

1. *Street Capacity.* During construction, streets shall remain open at all times except for periods of time less than ten (10) minutes. Expected loss of capacity (i.e., temporary closures) greater than ten (10) minutes shall either require notice to neighboring and affected property owners twenty-four (24) hours prior to the temporary closure, shall require a detour to be established, or shall require personnel to redirect traffic to alternate routes during the temporary closure. Any necessary temporary closures and proposed detours shall be made known to the Highway Department at least twenty-four (24) hours prior to the temporary closure or as otherwise agreed.

2. *Route and Transportation Planning.* The operator shall submit a transportation plan to the Highway Department that identifies all roads that will be used for delivery, maintenance, or decommissioning. The

Highway Department shall have the right to designate a primary route for heavy vehicles or to restrict heavy vehicle traffic on specific roads not able to support such loads. These restrictions may include seasonal restrictions. The designated routes assigned shall be utilized for all heavy traffic to and from each utility-grade wind turbine system.

3. *Pre-Construction Survey.* The applicant shall submit a preconstruction detailed profile showing the Commissioners and Drainage Board the route of anything being buried in County rights-of-way acceptable to the Highway Superintendent to determine existing road conditions for assessing potential future damage. The survey shall include photographs, video, or a combination thereof, and a written agreement to document the condition of the public facility.

4. *Responsibility for Road Repairs after Construction.* Any road damage caused by the construction of project equipment, the installation or maintenance of the same or the removal of the same, shall be repaired to the satisfaction of the Jasper County Highway Superintendent and/or Jasper County Commissioners. The Superintendent may require remediation of road repair upon completion of the project and 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 ensure 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.

5. *Significant Damage during Construction.* Any street damaged during construction that poses a risk to motorists, or that makes a street impassable for passenger vehicles, shall immediately have warning signs placed alongside the street, or barriers placed to block traffic. The damage shall then be repaired as soon as practicable. The determination of risk to motorists and/or impassibility shall be made by the County Highway Superintendent.

6. *Maintenance of Roads during Construction, Maintenance and Decommissioning.* Any gravel or otherwise unimproved roads allowed to be utilized during construction, maintenance, and decommissioning shall be treated with calcium or other equally effective method to reduce dust, upon request by the Highway Department.

7. *Surety for Damages.* A surety (e.g., bond) shall be posted for the estimated cost to repair and resurface all lineal feet of streets approved for use during construction. Any street damage caused by heavy equipment, heavy trucks, or the construction of the wind farm or the removal of the same, shall be repaired to the condition documented in the pre-construction baseline survey. The cost to repair and resurface all designated streets shall be calculated and certified by a professional engineer.

8. *Commitment to Avoid Disruptions.* In addition to a surety, the wind farm operator shall sign an affidavit indicating they will strive to avoid:

a. Damage to streets;

b. Unreasonable disruption of vehicular circulation around the development site; and

c. Unreasonable disruption of power or other utility services to surrounding areas.

9. *Public Notice.* The wind farm operator shall identify all State highways and local streets to be used in the transport of equipment and parts for construction, operation, or maintenance of the wind farm. It shall also prepare a time line and phasing plan for construction, and identify any known street closures. This information shall be released to the local newspapers as notice to persons whom may be affected. This information shall also be conveyed to local law enforcement, emergency services, public school corporations, the United States Postal Service, and the regional office of the Department of Transportation.

10. *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 Planning Administrator with the exact measurements thereon shown. The Planning Administrator, 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.

11. *Change in Ownership.* It is the responsibility of the owner or operator listed in the application to inform the advisory plan staff of all changes in ownership and operation during the life of the project, including the sale or transfer of ownership or operation.

Q. *Abandoned Systems.* Upon determination that one (1) or more utility-grade wind turbine system(s) has been discontinued, inoperable, or abandoned for eighteen (18) months or more, the owner shall provide the Zoning Administrator a timeline and detailed plan for demolition and removal of the utility-grade wind turbine system. The timeline for demolition shall indicate beginning the removal within four (4) months and completing the removal within one (1) year. For every five (5) utility-grade wind turbine systems that have to be removed, the completion date may extend one (1) additional month beyond the one (1) year completion date previously noted.

1. *Detailed Plan for Demolition.* The detailed plan for demolition shall include the following:

a. A description of how the utility-grade wind turbine system will be demolished, disassembled, or otherwise removed from its location.

b. A description of where the components of the utility-grade wind turbine system and waste material (e.g., scrap metal or concrete) will be taken.

c. A description of a staging area or temporary location for contractors to base their operations. This shall also include any temporary improvements to the site.

d. A description of potential risks to life and property, on site and off site, and methods for mitigating those risks.

e. A description of which streets will be utilized and a detailed description of anticipated load size (i.e., dimension of trucks and components being moved off site) and anticipated gross weight and axle weight of trucks used to remove components, material, and other machinery. This shall also indicate the general timeline for each route to be in use.

f. A description of the hours for decommissioning and removal operations on any given day.

2. *Responsibility for Repair after Decommissioning.* All damage to roads during decommissioning shall be repaired and resurfaced back to their pre-decommissioning condition if damaged by deconstruction vehicles and heavy trucks.

3. *Significant Damage during Decommissioning.* Any street damaged during decommissioning and removal that poses a risk to motorists, or that makes a street impassable for passenger vehicles, shall immediately have warning signs placed alongside the street, or barriers placed to block traffic. The damage shall then be repaired as soon as practicable. The determination of risk to motorists and/or impassibility shall be made by the County Highway Superintendent.

4. *Surety for Damages Related to Decommissioning.* The operator of any utility-grade wind turbine shall secure and provide a performance bond or submit an escrow deposit in an amount determined by a third-party engineering firm per turbine to ensure the proper decommissioning and removal of the turbine, as well as restoration of topsoil prior to installation. The applicant will have the financial assurance mechanism in place prior to operation and will reevaluate the decommissioning cost and financial assurance at the end of years five (5), ten (10) and fifteen (15). Every five years after the start of construction, updated proof of acceptable financial assurance must be submitted to Jasper County for review. Proof of acceptable financial assurance will be required prior to the start of commercial operation. [Ord. 2-4-19B §§ 4 – 22; Ord. 12-4-17A §§ 1 – 7; Ord. 12-27-11 § 3.17.]

20.50.930 WT-02 – Large wind turbine systems.

This wind turbine system standards (WT) section applies to the following zoning districts:
CO PR A1 A2 A3 IS CP I1 I2 HI

The following standards shall apply:

A. *Permitted Systems.*

1. *Horizontal Axis Wind Turbine.* A horizontal axis large wind turbine system shall be permitted as per the standards in this section.

2. *Vertical Axis Wind Turbine.* A vertical axis large wind turbine system shall be permitted as per the standards in this section.

B. *Prerequisites.*

1. *Energy Production Purpose.* Large wind turbine systems shall be primarily sized and installed for the purpose of generating energy for an on-site use (e.g., a school, industry, office building). The large wind turbine system shall be sized to not produce more than two hundred percent (200%) of the annual on-site electricity needs.

2. *Rated Power Limits.* A large wind turbine system shall have a minimum rated power of eleven kilowatts (11kW) and shall have a maximum rated power level of five hundred kilowatts (500kW).

3. *Lot Size.* A minimum two (2) acre lot shall be required for a large wind turbine system to be installed.

4. *Manufacturer's Installation Specifications.* Any permitted large wind turbine system shall be installed according to the manufacturer's specifications unless in conflict with applicable standards in the Jasper County Unified Development Code. When conflicts exist, the following standards shall apply:

a. *Manufacturer's Specifications Are Stricter.* When the manufacturer's specifications are stricter than this section, the manufacturer's specifications shall be followed.

b. *Zoning Standards Are Stricter.* When this section is stricter than the manufacturer's specifications, this section shall prevail, and that particular large wind turbine system shall be considered not permitted.

C. *Meteorological Tower.* Where a large wind turbine is permitted, a meteorological tower may first be installed, but it shall meet setback requirements, and not exceed the height (maximum blade height) allowances applicable to the large wind turbine.

1. *Time Frame.* A meteorological tower shall be permitted for up to eighteen (18) months.

2. *Notification.* A notification shall be made to the Planning Department prior to installation of the meteorological tower. If notification is not provided, a violation will occur.

3. *Removal.* The meteorological tower shall be removed prior to construction of the large wind turbine.

D. *Turbine System Limitations.*

1. *Minimum Ratings.* A large wind turbine system shall be manufactured to meet all applicable industry standards for manufacturing practices and safety.

2. *Experimental Turbines.* A large wind turbine system that does not meet the applicable minimum ratings shall be considered experimental and shall not be permitted.

3. *Connection to the Grid.* A large wind turbine system that is intended to be connected to the power grid shall be IEEE 1547 compliant (Institute of Electrical and Electronics Engineers Standard for Interconnecting Distributed Resources with Electric Power Systems).

E. *Supporting Structure.*

1. *Tower Mounted Systems.* A horizontal axis large wind turbine system designed for tower mounting shall be mounted on a monopole. Lattice towers and towers with guy wires shall not be permitted.

2. *Roof Mounted.* A large wind turbine system shall not be permitted to be mounted on a roof.

3. *Ground Mounted Systems.* A vertical axis large wind turbine system designed for ground mounting shall be mounted on the ground.

F. *Height Limitations.*

1. *Tower Mounted.* The maximum tower height for a large wind turbine system shall be 120 feet for lots under five (5) acres, and 140 feet for lots five (5) acres or greater.

2. *Roof Mounted.* Large wind turbine systems are not permitted to be mounted on a roof.

3. *Ground Mounted.* The maximum height of all components of a ground mounted large wind turbine system shall be sixty (60) feet.

G. *Maximum Number of Turbine Systems.*

1. *Small Lot.* A lot with fifteen (15) acres or less shall be restricted to one (1) horizontal axis or vertical axis large wind turbine system.

2. *Large Lots.* A lot with more than fifteen (15) acres may have up to two (2) horizontal axis or vertical axis large wind turbine systems.

H. *Wind Load.* A large wind turbine system shall be engineered to survive a 110 mph wind load or greater.

I. *Rotor Diameter.* The maximum rotor diameter shall be 200 feet for a large wind turbine system.

J. *Location Restrictions.*

1. *Setback from Property Line.* A large wind turbine system shall be a minimum of 100 feet or two hundred percent (200%) of the hub height from the property line, whichever is greater.

2. *Setback from On-Site Buildings.* A large wind turbine system shall be required to be setback 100 feet from any on-site primary building. There is no required setback from accessory structures.

3. *Setback from Off-Site Land Uses.* A large wind turbine system shall be a minimum of 1,000 feet from a platted residential subdivision, multiple-family residential development, institutional use (e.g., school or church), land zoned single-family residential, land zoned multiple-residential, or land zoned institutional. These standards only apply to off-site properties and should not be construed as restricting any of the above listed types of development (e.g., school or multiple-family development) from choosing to have an on-site large wind turbine system.

4. *Setback from Utilities.* A large wind turbine system shall be a minimum of 200 feet or two hundred percent (200%) of the hub height from above ground transmission lines, utility lines, or substations, whichever is greater.

K. *Safety.*

1. *Ground Clearance.* The rotors (i.e., blades) of a horizontal axis large wind turbine system mounted on a tower shall not extend vertically to within thirty (30) feet of the ground.

2. *Anti-icing Technology.* A large wind turbine system shall be equipped with technology able to detect icing on rotors that causes the system to shut down when experiencing a significant icing event; or shall utilize another industry accepted standard for protecting against shedding of significant pieces of ice capable of damaging nearby buildings and/or injuring persons or animals on the ground.

3. *Controls and Brakes.* A large wind turbine system shall be equipped with a redundant braking system that includes both aerodynamic overspeed controls (i.e., variable pitch, tip, and other similar systems) and mechanical brakes.

L. *Nuisance Prevention.*

1. *Noise.* A large wind turbine system shall not generate more than pre-construction ambient sound level plus 5 dBA (dBA L_{90} + 5dBA) or forty (40) decibels (40dBA L_{90}) whichever is greater at the property line.

2. *Illumination.* A large wind turbine system shall not be illuminated in any way unless required by Federal Aviation Administration (FAA) regulations. Federal Aviation Administration (FAA) regulations shall be demonstrated to the Zoning Administrator prior to installation. If signal lighting is required on the top of a large wind turbine system, then it shall be shielded to prevent light below the horizontal plain.

3. *Shadow Flicker.* The flickering effect caused by a Federal Aviation Administration (FAA) required signal light or sunlight combined with the turning of the rotor shall be mitigated to the extent possible with the best known technology or practice.

4. *Color.* A large wind turbine system shall be a nonobtrusive color such as white, off-white, gray, earth tones, or similar nonreflective colors.

5. *Signage.* No large wind turbine system shall be used to display a commercial message.

6. *Signal Interference.* The owner shall make reasonable efforts to avoid any disruption or loss of radio, telephone, television or similar signals, and shall mitigate any harm caused by the large wind turbine system.

7. *Feeder Lines.* Feeder lines for wind turbines (e.g., between wind turbines and the on-site structure which utilizes the power) shall be placed underground.

8. *Spin Direction.* Horizontal axis wind turbines shall have a rotor that spins clockwise when viewed from an upwind position. Vertical axis wind turbines shall spin clockwise when viewed from above.

M. *Abandoned Systems.* A large wind turbine system shall be considered abandoned if its use as a wind turbine system is discontinued for more than six (6) months. The large wind turbine system shall be removed within nine (9) months after being abandoned.

N. *Appurtenances.* A large wind turbine system shall not have any appurtenances (e.g., exterior lighting, wireless communication antennas, or ornamentation). Weather monitoring devices and safety equipment shall not be considered appurtenances. [Ord. 12-27-11 § 5.93.]

20.50.950 CS-01 – Commercial solar energy systems.

The commercial solar energy systems standards apply to the following zoning districts:
CO A1 A2 A3 A4 I1 I2 HI

A. *Purpose.* It is the purpose of these performance standards to enable Jasper County to: regulate the permitting of commercial solar energy systems; be informed of the placement of commercial solar energy systems; preserve and protect public health and safety; allow for the orderly development of land; and protect property values in Jasper County.

B. "Commercial solar energy systems (CSES)" is defined in Chapter 20.110 JCC.

C. *Permitted Districts.* See the respective districts in Chapter 20.20 JCC.

D. *Parcel Line Setbacks.* Any CSES equipment, excluding any security fencing, poles, roads, and wires necessary to connect to facilities of the electric utility, must be set back in accordance with the accessory structure standards for each zoning district. Ground mounted solar panels/arrays shall be set back a minimum of fifty (50) feet from any adjoining property line. These setbacks shall not apply between adjoining participating parcels. Additionally, such CSES equipment must be set back a minimum of two hundred (200) feet from the foundation of a primary dwelling unit. These setbacks may be waived in writing by adjacent property owners.

E. *Height Limit.* The height of any CSES ground mounted solar equipment is limited to thirty-five (35) feet, as measured from the highest natural grade below each solar panel. If a substation is required to connect the project to the electrical grid, the substation's design, including height, will be in accordance with applicable electrical codes.

F. *Noise Limit.* A noise study shall be performed and included in the application – noise from an operational CSES shall not exceed fifty-five (55) dBA, as measured at a dwelling unit measured on an hourly average basis (Leq) (one (1) hour). These limits may be waivable by any adjoining property owners.

G. *Landscape Buffer.* Any CSES shall be required to meet the landscape standards as listed in JCC 20.50.520, LA-06 – Buffer yard landscaping standards. All CSES installations shall meet the minimum requirements of:

1. Buffer yard "D" where the subject parcel abuts a residential parcel; and

2. Buffer yard "A" where the subject parcel abuts a parcel with an equal or lower intensive zoning category than the subject parcel.

H. *Application Procedure.* Applications for CSES permits shall be filed on forms provided by the Zoning Administrator.

I. *Application and Permits.* Any CSES shall be required to submit a preliminary commercial site plan to the Technical Advisory Committee for review in accordance with JCC 20.90.140. Such review shall occur within thirty (30) days of filing.

For CSES facilities requiring a special exception: Per Table 1, refer to JCC 20.90.140, Special exception. In addition to the Technical Advisory Committee submittal, the applicant shall submit the required site plan to the Board of Zoning Appeals (BZA) to be reviewed during the special exception public hearing. Construction of the CSES shall begin within three (3) years of BZA approval.

Once a special exception has been approved, an improvement location permit shall be issued in accordance with JCC 20.90.060, Improvement location permit. The following shall also be required:

1. Solar system specifications, including typical manufacturer and model.

2. Array/module design and site plans.

3. Certification that layout, design, and installation conform to and comply with all applicable industry standards, such as the National Electrical Code (NEC) (NFPA-70), the American National Standards Institute (ANSI), the Underwriters Laboratories (UL), the American Society for Testing and Materials (ASTM), the Institute of Electric and Electronic Engineers (IEEE), the Solar Rating and Certification Corporation (SRCC), the Electrical Testing Laboratory (ETL), and other similar certifying organizations, the Federal Aviation Administration (FAA), the Indiana Building Code (IBC), and any other standards applicable to solar energy systems. The manufacturer specifications for the key components of the CSES shall be submitted with the application.

4. All ground mounted electrical and control equipment for CSES shall be labeled and secured to prevent unauthorized access.

5. All CSES shall be installed so as not to cause wire or wireless communication signal disturbance.

6. All CSES shall be situated to eliminate concentrated glare onto abutting structures and roadways.

7. All ground mounted electrical and control equipment for CSES shall be fenced and labeled or secured to prevent unauthorized access. The solar array and/or modules shall be designed and installed to prevent access by the public, and access to same shall be through a locked gate.

8. To the greatest practical extent, all electrical wires and utility connections for CSES shall be installed underground, except for transformers, inverters, substations, and controls. The Planning Director will take into consideration prohibitive cost and site limitations in making his or her determination.

9. Exterior lighting for CSES shall be limited to that required for safety and operational purposes.

10. All signs, other than the manufacturer's or installer's identification, appropriate warning signs, or owner identification on a solar panel array and/or modules, building, or other structure associated with a CSES, shall be prohibited.

11. The CSES applicant shall certify that the applicant will comply with the utility notification requirements contained in Indiana law and accompanying regulations through the Indiana Public Utility Commission, unless the applicant intends, and so states on the application, that the system will not be connected to the electricity grid.

12. A decommissioning agreement must be executed by the applicant which stipulates that decommissioning of the entire facility will begin upon the occurrence of twelve (12) consecutive months of no power generation at the facility. In order to facilitate and ensure appropriate removal of the energy generation equipment of a CSES when it reaches the end of its useful life, or if the applicant ceases operation of the facility, applicants must file a decommissioning agreement which details the means by which decommissioning will be accomplished and the timeline for completion. This agreement must include a description of implementing the decommissioning, a description of the work required, a cost estimate for decommissioning, a schedule for contributions to its decommissioning fund, and a demonstration of financial

assurance. Salvage value shall be considered in determining decommissioning cost. In the event of a force majeure or other event which results in the absence of electrical generation for twelve (12) months, by the end of the twelfth month of nonoperation the applicant must demonstrate to Jasper County that the project will be substantially operational, producing electricity within twenty-four (24) months of the force majeure or other event. If such a demonstration is not made to Jasper County's satisfaction the decommissioning must be initiated eighteen (18) months after the force majeure or other event. The County considers a force majeure to mean fire, earthquake, flood, tornado, or other acts of God and natural disasters, and war, civil strife or other similar violence. The operator of any CSES shall secure and provide a performance bond or submit an escrow deposit in an amount determined by a third party engineering firm to ensure the proper decommissioning and removal of the CSES. The applicant will have the financial assurance mechanism in place prior to the issuance of an improvement location permit and will reevaluate the decommissioning cost and financial assurance at the end of years five (5), ten (10) and fifteen (15). Every five (5) years after the start of construction, updated proof of acceptable financial assurance must be submitted to Jasper County for review. Proof of acceptable financial assurance will be required prior to the start of commercial operation.

13. The site plan should be submitted in accordance with the plan requirements of the Jasper County Storm Drainage, Erosion and Sediment Control Ordinance (Rule 5), JCC 20.50.250(D)(5).

14. Drainage Board approval.

15. Applicant agrees to pay all attorney fees and costs in the enforcement of the terms of this section.

J. *Public Improvements and Repairs.*

1. *Road Capacity.* During construction, roads shall remain open at all times except for periods of time less than ten (10) minutes. Expected loss of capacity (i.e., temporary closures) greater than ten (10) minutes shall require notice to neighboring and affected property owners twenty-four (24) hours prior to the temporary closure, and either a detour to be established or personnel to redirect traffic to alternate routes during the temporary closure. Any necessary temporary closures and proposed detours shall be made known to the Highway Department at least twenty-four (24) hours prior to the temporary closure or as otherwise agreed.

2. *Commitment to Avoid Disruptions.* In addition to a surety, the CSES operator shall sign an affidavit indicating they will strive to avoid:

a. Damage to roads;

b. Unreasonable disruption of vehicular circulation around the development site; and

c. Unreasonable disruption of power or other utility services to surrounding areas.

K. *Public Notice.* The CSES operator shall identify all State highways and local roads to be used in the transport of equipment and parts for construction, operation, or maintenance of the solar farm. It shall also prepare a timeline and phasing plan for construction and identify any known road closures. This information shall be released to the local newspapers as notice to persons who may be affected. This information shall also be conveyed to local law enforcement, emergency services, public school corporations, the United States Postal Service, and the regional office of the Department of Transportation.

L. *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 Planning Administrator with the exact measurements thereon shown. The Planning Administrator, after being satisfied that the measurements are substantially the same as indicated on the originally approved final plans, shall approve, date and sign said construction plans for the project, which the applicant, owner, or operator shall then record.

M. *Change in Ownership.* It is the responsibility of the owner or operator listed in the application to inform the advisory plan staff of all changes in ownership and operation during the life of the project, including the sale or transfer of ownership or operation. [Ord. 3-4-19A § 1.]

The Jasper County Code is current through Ordinance 7-6-21G, passed July 6, 2021.