ORDINANCE NO. 1

WHEREAS, the Whiteside County Planning and Zoning Administrator duly filed with the Planning and Zoning Commission, his petition praying that the following amendments be made to the Whiteside County Zoning Ordinance found in Chapter 39, Article II of the Whiteside County Code; and

WHEREAS, the Whiteside County Planning and Zoning Commission held the required public hearing on the proposed amendments on October 20, November 17 and December 15, 2016 and January 19, 2017, and has recommended to the County Board that said amendment be adopted as follows:

Sec. 39-268. Solar Power

(a) *Scope.*

(1) This article applies to all solar energy installations in unincorporated Whiteside County.

(b) *Purpose.*

(1) Whiteside County has adopted this regulation to meet the goals of the Comprehensive Plan and preserve the health, safety, and welfare of the County's citizens by promoting the safe, effective, and efficient use of active solar energy systems installed to reduce the on-site consumption of fossil fuels or utility-supplied electric energy.

(c) *Definitions.*

(1) *Active Solar Energy System*: A solar energy system whose primary purpose is to harvest energy by transforming solar energy into another form of energy or transferring heat from a collector to another medium using mechanical, electrical, or chemical means.

(2) *Building-integrated Solar Energy Systems*: An active solar energy system that is an integral part of a principal or accessory building, rather than a separate mechanical device, replacing or substituting for an architectural or structural component of the building. Building-integrated systems include but are not limited to photovoltaic or hot water solar energy systems that are contained within roofing materials, windows, skylights, and awnings.

(3) *Grid-intertie Solar Energy System*: A photovoltaic solar energy system that is connected to an electric circuit served by an electric utility company.

(4) *Ground-Mount*: A solar energy system mounted on a rack or pole that rests or is attached to the ground. Ground-mount systems can be either accessory or principal uses.

(5) *Off-grid Solar Energy System*: A photovoltaic solar energy system in which the circuits energized by the solar energy system are not electrically connected in any way to electric circuits that are served by an electric utility company.

(6) *Passive Solar Energy System*: A solar energy system that captures solar light or heat without transforming it to another form of energy or transferring the energy via a heat exchanger.

(7) *Photovoltaic System*: An active solar energy system that converts solar energy directly into electricity.

(8) *Renewable Energy Easement, Solar Energy Easement*: An easement that limits the height or location, or both, of permissible development on the burdened land in terms of a structure or vegetation, or both, for the purpose of providing access for the benefited land to wind or sunlight passing over the burdened land.

(9) *Renewable Energy System*: A solar energy or wind energy system. Renewable energy systems do not include passive systems that serve a dual function, such as a greenhouse or window.

(10) *Roof-Mount*: A solar energy system mounted on a rack that is fastened to or ballasted on a building roof. Roof-mount systems are accessory to the principal use.

(11) *Roof Pitch*: The final exterior slope of a building roof calculated by the rise over the run, typically but not exclusively expressed in twelfths such as 3/12, 9/12, 12/12.

(12) *Solar Access*: Unobstructed access to direct sunlight on a lot or building through the entire year, including access across adjacent parcel air rights, for the purpose of capturing direct sunlight to operate a solar energy system.

(13) *Solar Farm*: A commercial facility that converts sunlight into electricity, whether by photovoltaics (PV), concentrating solar thermal devices (CST), or other conversion technology, for the primary purpose of wholesale sales of generated electricity. A solar farm is the principal land use for the parcel on which it is located.

(14) *Solar Garden*: A commercial solar-electric (photovoltaic) array, of no more than 5 acres in size, that provides retail electric power (or a financial proxy for retail power) to multiple households or businesses residing in or located off-site from the location of the solar energy system. A county solar garden may be either an accessory use, when a part of an existing or a proposed subdivision or a special use if it is a stand-alone garden.

(15) *Solar Resource*: A view of the sun from a specific point on a lot or building that is not obscured by any vegetation, building, or object for a minimum of four hours between the hours of 9:00 AM and 3:00 PM Standard time on all days of the year.

(16) *Solar Collector*: A device, structure or a part of a device or structure for which the primary purpose is to transform solar radiant energy into thermal, mechanical, chemical, or electrical energy.

(17) *Solar Collector Surface*: Any part of a solar collector that absorbs solar energy for use in the collector's energy transformation process. Collector surface does not include frames, supports and mounting hardware.

(18) *Solar Daylighting*: A device specifically designed to capture and redirect the visible portion of the solar spectrum, while controlling the infrared portion, for use in illuminating interior building spaces in lieu of artificial lighting.

(19) *Solar Energy*: Radiant energy received from the sun that can be collected in the form of heat or light by a solar collector.

(20) *Solar Energy System*: A device, array of devices, or structural design feature, the purpose of which is to provide for generation of electricity, the collection, storage and distribution of solar energy for space heating or cooling, daylight for interior lighting, or water heating.

(21) *Solar Heat Exchanger*: A component of a solar energy device that is used to transfer heat from one substance to another, either liquid or gas.

(22) *Solar Hot Air System*: An active solar energy system (also referred to as Solar Air Heat or Solar Furnace) that includes a solar collector to provide direct supplemental space heating by heating and re-circulating conditioned building air. The most efficient performance typically uses a vertically mounted collector on a south-facing wall.

(23) *Solar Hot Water System*: A system (also referred to as Solar Thermal) that includes a solar collector and a heat exchanger that heats or preheats water for building heating systems or other hot water needs, including residential domestic hot water and hot water for commercial processes.

(24) *Solar Mounting Devices*: Racking, frames, or other devices that allow the mounting of a solar collector onto a roof surface or the ground.

(25) *Solar Storage Unit*: A component of a solar energy device that is used to store solar generated electricity or heat for later use.

(d) *Permitted Accessory Use*: Active solar energy systems shall be allowed as an accessory use in all zoning classifications where structures of any sort are allowed, subject to certain requirements as set forth below. Active solar energy systems that do not meet the visibility standards in (3) below will require a special use permit, except as provided in Section (f) Special Accessory Uses.

(1) *Height*: Active solar energy systems must meet the following height requirements:

a. Building or roof-mounted solar energy systems shall not exceed the maximum allowed height in any zoning district. For purposes of height measurement, solar energy systems other than building- integrated systems shall be given an equivalent exception to height standards as building-mounted mechanical devices or equipment.

b. Ground or pole-mounted solar energy systems shall not exceed 20 feet in height when oriented at maximum tilt.

(2) *Set-back*: Active solar energy systems must meet the accessory structure setback for the zoning district and primary land use associated with the lot on which the system is located.

a. Roof or Building-mounted Solar Energy Systems. In addition to the building setback, the collector surface and mounting devices for roof-mounted solar energy systems shall not extend beyond the exterior perimeter of the building on which the system is mounted or built, unless the collector and mounting system has been explicitly engineered to safely extend beyond the edge, and setback standards are not violated. Exterior piping for solar hot water systems shall be allowed to extend beyond the perimeter of the building on a side yard exposure. Solar collectors mounted on the sides of buildings and serving as awnings are considered to be building-integrated systems and are regulated as awnings.

b. Ground-mounted Solar Energy Systems. Ground-mounted solar energy systems may not extend into the side-yard or rear setback when oriented at minimum design tilt, except as otherwise allowed for building mechanical systems.

(3) *Visibility*: Active solar energy systems shall be designed to conform to the county comprehensive plan and to blend into the architecture of the building or be screened from routine view from public right-of-ways other than alleys provide that screening shall not affect the operation of the system. The color of the solar collector is not required to be consistent with other roofing materials.

a. *Building Integrated Photovoltaic Systems.* Building integrated photovoltaic solar energy systems shall be allowed regardless of whether the system is visible from the public right-of-way, provided the building component in which the system is integrated meets all required setback, land use or performance standards for the district in which the building is located.

b. *Solar Energy Systems with Mounting Devices.* Solar energy systems using roof mounting devices or ground-mount solar energy systems shall not be restricted if the system is not visible from the closest edge of any public right-of-way other than an alley

c. *Reflectors.* All solar energy systems using a reflector to enhance solar production shall minimize glare from the reflector affecting adjacent or nearby properties. Measures to minimize glare include selective placement of the system, screening on the north side of the solar array, modifying the orientation of the system, reducing use of the reflector system, or other remedies that limit glare.

d. *Aviation Protection.* For solar units located within 500 feet of an airport or within approach zones of an airport, the applicant must complete and provide the results of the Solar Glare Hazard Analysis Tool (SGHAT) for the Airport Traffic Control Tower cab and final approach paths, consistent with the Interim Policy, FAA Review of Solar Energy Projects on Federally Obligated Airports, or most recent version adopted by the FAA.

(4) *Coverage*: Roof or building mounted solar energy systems, excluding building-integrated systems, shall allow for adequate roof access for fire-fighting purposes to the south-facing or flat roof upon which the panels are mounted. Ground-mount systems shall not exceed half the building footprint of the principal structure, and shall be exempt from impervious surface calculations if the soil under the collector is not compacted and maintained in vegetation. Foundations, gravel, or compacted soils are considered impervious.

(5) *Historic Buildings*: Solar energy systems on buildings within designated historic districts or on locally designated historic buildings (exclusive of State or Federal historic designation) must be consistent with the standards for solar energy systems on historically designated buildings published by the U.S. Department of Interior.

(6) *Plan Approval Required*: All solar energy systems shall require administrative plan approval by the Whiteside County zoning official via the review of the application for a building permit.

a. *Plan Applications.* Plan applications for solar energy systems shall be accompanied by horizontal and vertical (elevation) drawings. The drawings must show the location of the system on the building or on the property for a ground-mount system, including the property lines.

(i) *Pitched Roof Mounted Solar Energy Systems.* For all roof-mounted systems other than a flat roof the elevation must show the highest finished slope of the solar collector and the slope of the finished roof surface on which it is mounted.

(ii) *Flat Roof Mounted Solar Energy Systems.* For flat roof applications a drawing shall be submitted showing the distance to the roof edge and any parapets on the building and shall identify the height of the building on the street

frontage side, the shortest distance of the system from the street frontage edge of the building, and the highest finished height of the solar collector above the finished surface of the roof.

(iii) *Plan Schematics*. Plan schematics will accompany each application. That schematic will point out, in the wiring diagram, where a separate shut off has been included for fire safety. Said schematic will also be made available to the appropriate fire department or district.

b. *Plan Approvals*. Applications that meet the design requirements of this ordinance, and do not require an administrative variance, shall be granted administrative approval by the planning and zoning official and shall not require Planning Commission review. Plan approval does not indicate compliance with Building Code or Electric Code.

(7) *Approved Solar Components*: Electric solar energy system components must have a UL listing or approved equivalent and solar hot water systems must have an SRCC rating.

(8) *Compliance with Building Code*: All active solar energy systems shall meet approval of county building code officials, consistent with the State of Illinois Building Code and solar thermal systems shall comply with HVAC-related requirements of the Energy Code. Any county adopted building codes will apply and take precedence where applicable.

(9) *Compliance with State Electric Code*: All photovoltaic systems shall comply with the Illinois State Electric Code.

(10) *Compliance with State Plumbing Code*: Solar thermal systems shall comply with applicable Illinois State Plumbing Code requirements.

(11) *Compliance with State Energy Co*de: All photovoltaic systems and Solar thermal systems shall comply with the Illinois State Energy Code.

(12) *Utility Notification*: All grid-intertie solar energy systems shall comply with the interconnection requirements of the electric utility. Off-grid systems are exempt from this requirement.

(e) *Principal Uses*. Whiteside County encourages the development of commercial or utility scale solar energy systems where such systems present few land use conflicts with current and future development patterns. Ground-mounted solar energy systems that are the principal use on the development lot or lots are special uses in selected districts.

(1) *Solar gardens*: Whiteside County permits the development of unincorporated county solar gardens, subject to the following standards and requirements:

a. *Rooftop Gardens Permitted*. Rooftop community systems are permitted in all zoning districts where buildings are permitted.

b. *Ground-Mount Gardens Special Use*. Ground-mount community solar energy systems must be less than five acres in total size, and are a special use in all districts. Ground-mount solar developments covering more than five acres shall be considered solar farms.

c. *Interconnection*. An interconnection agreement must be completed with the electric utility in whose service territory the system is located.

d. *Dimensional Standards*.

1. All solar garden related structures in newly platted subdivisions must comply with setback, height, and coverage limitations for the district in which the system is located, with the exception of rear and side yard requirements. The setback from rear property lines will be 2 feet and side property line setbacks in the garden may be ignored.

2. All solar garden related structures in existing platted subdivisions must comply with setback, height, and coverage limitations for the district in which the system is located, with the exception of rear and side yard requirements.

e. *Aviation Protection*. For solar gardens located within 500 feet of an airport or within approach zones of an airport, the applicant must complete and provide the results of the Solar Glare Hazard Analysis Tool (SGHAT) for the Airport Traffic

Control Tower cab and final approach paths, consistent with the Interim Policy, FAA Review of Solar Energy Projects on Federally Obligated Airports, or most recent version adopted by the FAA.

f. *Other Standards*. Ground-mount systems must comply with all required standards for structures in the district in which the system is located. All solar gardens shall also be in compliance with all applicable local, state and federal regulatory codes, including the State of Illinois Uniform Building Code, as amended; and the National Electric Code, as amended. Also, Health Department requirements for wells and septic systems must be met.

(2) *Solar farms*: Ground-mount solar energy arrays that are the primary use on the lot, designed for providing energy to off-site uses or export to the wholesale market, are permitted under the following standards:

a. *Special Use Permit*. Solar farms are special uses in agricultural districts, in airport safety zones subject to h. below, and at the landfill.

b. *Stormwater and NPDES*. Solar farms are subject to Whiteside County's Stormwater Management regulations, erosion and sediment control provisions if adopted and NPDES permit requirements.

c. *Ground Cover and Buffer Areas*. Top soils shall not be removed during development, unless part of a remediation effort. Soils shall be planted to and maintained in perennial vegetation to prevent erosion, manage run off and build soil. Due to potential county liability under the Illinois Endangered Species Protection Act (520 ILCS 10/11(b) it is required that any crops planted be in compliance with all federal and state laws protecting endangered species. This will also include pollinators such as bees.

d. *Foundations*. A qualified engineer shall certify that the foundation and design of the solar panels racking and support is within accepted professional standards, given local soil and climate conditions.

e. *Other Standards and Codes*. All solar farms shall be in compliance with all applicable local, state and federal regulatory codes, including the State of Illinois Uniform Building Code, as amended; and the National Electric Code, as amended.

f. *Power and Communication Lines*. Power and communication lines running between banks of solar panels and to nearby electric substations or interconnections with buildings shall be buried underground. Exemptions may be granted by Whiteside County in instances where shallow bedrock, water courses, or other elements of the natural landscape interfere with the ability to bury lines, or distance makes undergrounding infeasible, at the discretion of the zoning administrator.

g. *Site Plan Required*. A detailed site plan for both existing and proposed conditions must be submitted, showing location of all solar arrays, other structures, property lines, rights-of-way, service roads, floodplains, wetlands and other protected natural resources, topography, electric equipment, and all other characteristics requested by Whiteside County. The site plan should also show all zoning districts, and overlay districts.

h. *Setbacks*. A minimum setback of 50 feet must be maintained on all property lines. Solar panels will be kept at least 500 feet from a residence that is not a part of the Special Use.

i. *Aviation Protection*. For solar farms located within 500 feet of an airport or within approach zones of an airport, the applicant must complete and provide the results of the Solar Glare Hazard Analysis Tool (SGHAT) for the Airport Traffic Control Tower cab and final approach paths, consistent with the Interim Policy, FAA Review of Solar Energy Projects on Federally Obligated Airports, or most recent version adopted by the FAA.

j. *Agricultural Protection*. Solar farms must comply with site assessment or soil identification standards (LESA) that are intended to protect agricultural soils.

k. *Decommissioning*. A decommissioning plan shall be required to ensure that facilities are properly removed after their useful life. Decommissioning of solar panels must occur in the event they are not in use for 12 consecutive months. The plan shall include provisions for removal of all structures and foundations, restoration of soil and vegetation and a plan ensuring financial resources will be available to fully decommission the site. Disposal of structures and/or foundations shall meet the provisions of the Whiteside County Solid Waste Ordinance. Whiteside County may require the posting of a bond, letter of credit or the establishment of an escrow account to ensure proper decommissioning. In the event that the State of Illinois enacts a law with regard to the decommissioning of solar farms, the strictest requirements shall prevail.

l. *Endangered Species and Wetlands*. Solar farm developers shall be required to initiate a natural resource review consultation with the Illinois Department of Natural Resources (IDNR) through the department's online, EcoCat program. Areas reviewed through this process will be endangered species and wetlands. The cost of the EcoCat consultation will be borne by the developer.

(f) *Conditional Accessory Uses*. Whiteside County encourages the installation of productive solar energy systems and recognizes that a balance must be achieved between character and aesthetic considerations and the reasonable desire of building owners to harvest their renewable energy resources. Where the applicant demonstrates that the standards in Section (d) (1), (2), or (3) cannot be met without diminishing, as defined below, the minimum reasonable performance of the solar energy system, the applicant may request a special use permit. A special use permit shall be granted if the following standards are met.

(1) *Minimum Performance, Defined*: The following design thresholds are necessary for efficient operation of a solar energy system:

a. Fixed-Mount Active Solar Energy Systems. Solar energy systems must be mounted to face within 45 degrees of south (180 degrees azimuth).

b. Solar Electric (photovoltaic) Systems. Solar collectors must have a pitch of between 20 and 65 degrees.

c. Solar Hot Water Systems. Solar collectors need to be mounted at a pitch between 40 and 60 degrees.

d. System Location. The system must be located where the lot or building has a solar resource, as defined in this ordinance.

(2) *Standards for a SUP*: A special use permit shall be granted if the applicant meets the following safety, performance and aesthetic conditions:

a. *Aesthetic Conditions*. The solar energy system shall be designed to conform to the county's comprehensive plan and to blend into the architecture of the building or be screened from routine view from public right-of-ways other than alleys to the maximum extent possible while still allowing the system to be mounted for efficient performance.

b. *Safety Conditions*. All applicable health and safety standards are met.

c. *Non-Tracking Ground-Mounted Systems*. Pole-mounted or ground-mounted active solar energy systems must be set back from the property line by one foot.

(g) *Restrictions on Solar Energy Systems Limited*. Consistent with 765 ILCS 165/, no homeowners' agreement, covenant, common interest community, or other contract between multiple property owners within a subdivision of unincorporated Whiteside County shall prohibit or restrict homeowners from installing solar energy systems. No energy policy statement enacted by a common interest community shall be more restrictive than Whiteside County's solar energy standards.

Solar farms should be added to Section 39-41, Use Matrix as a Special Use in the A-1 zone under Transportation and Utilities on page CD 39:66.

And it appearing to this Commission that due and proper notice as provided by law has been given and proof of such notice filed with this Commission, and it further appearing that no protest written or otherwise was filed with the County Clerk of said County, and no objectors appeared in opposition to the proposed text amendment.

And this Commission having read said Petition and being fully advised of the contents thereof, and having heard and seen the evidence adduced at said hearings, makes the following Findings of Facts:

a. that it has jurisdiction of the parties hereto and the subject matter hereof,

b. that all persons in attendance, whether for or against the petition, were afforded an opportunity to testify,

c. the amendment consistent with the comprehensive plan. The county adopted a comprehensive plan in July of 2014. One of the purposes of the comprehensive plan is to provide for the health, safety and welfare of the residents of Whiteside County. The proposed Solar Power amendment has the same purpose to see that solar power is used safely and effectively in the county.

d. the amendment is internally consistent with other parts of this chapter and this Code. This proposed Solar Power text amendment is similar in nature to the preceding section of the ordinance which deals with Wind Power. Both are approved for individual and business uses in small scale and both require a special use for large scale production of energy for purposes of sale. Both types of "green energy" need some regulations to assure protection for the county and for its land owners.

e. the amendment is consistent with sound planning principles. The intent of planning is to avoid possible conflicts in land use which can affect property values and the safety of nearby residents. By creating a plan for orderly development through goals, objectives and policies, and based on sound planning principles, the county reduces possibilities for conflicting uses.

f. the amendment is consistent with state and federal law. This proposed amendment to Chapter 39 of the Whiteside County Code requires that any applicable state or federal laws must be complied with. This is to ensure that there are no conflicts with any laws enacted by the state or federal governments.

g. there was only one other factor deemed appropriate by the Planning and Zoning Commission and recommended to the county board. Whiteside County's Planning and Zoning Administrator, Planning and Zoning Commission and the county board, should all recognize that, under 55 ILCS County Code, Division 5-12. Zoning, a county is limited in its regulation of agricultural endeavors. However, under that same code, Whiteside County does have the state granted power to regulate non-agricultural pursuits including solar farms and future solar gardens to ensure that certain standards are upheld.

NOW, THEREFORE BE IT ORDAINED that the Whiteside County Board concurs with the Planning and Zoning Commission and hereby adopts said proposed Zoning Ordinance changes, as part of Chapter 39, Article II. of the Whiteside County Code and;

BE IT FURTHER ORDAINED that the effective date is immediately upon adoption.

Passed and Adopted, this 18th day of April, A.D. 2017, by the County Board of Whiteside County.

James C. Duffy, Chair

Attest:

County Clerk