Proposed Ripley County Solar Energy Systems Ordinance

Amend to add Section 80.50 Solar Energy Systems (SES)

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(A) **Applicability.** This section applies to all solar energy installations within the jurisdiction of the Ripley County Area Plan Commission.

(B) **Purpose.** Ripley County has adopted this regulation for the following purposes in addition to ensuring impacts to adjacent parcels are properly mitigated and prevent land use conflicts with current and future development.

(C) **Accessory Solar Energy Systems (SES).**

(D) **Accessory SES General Standards.** Ground-Mounted SES shall not count toward the maximum number of accessory structures permitted.

(1) **Accessory SES Height.**

(a) Heights of all Accessory SES are measured from the lowest point of the base of the device (or ground elevation if ground or Pole-Mounted) or to the highest point at maximum design tilt.

(b) No Accessory SES shall exceed the maximum allowed height of the zoning district in which the parcel is located or the maximum height requirements for building-mounted mechanical devices or equipment, with the least restrictive applying, except for the following:

(i) Ground-Mounted SES and Pole-Mounted SES shall not exceed fifteen (15) feet in height.

(ii) Solar Carports SES in non-residential districts shall not exceed twenty (20) feet in height.

(2) **Accessory SES Setbacks.**

(a) **Zoning District Applies.** Accessory SES shall comply with the accessory structure setbacks for the zoning district and primary land use associated with the lot on which the system is located, and subject to certain conditions set forth by this ordinance. All setbacks are measured at maximum design tilt.

(3) **Building-Integrated SES and Roof-Mounted SES.**

(a) The collector surface and mounting devices for Building-Integrated SES and Roof-Mounted SES shall not extend beyond the exterior perimeter of the building on which the system is mounted or built unless it has been designed by a Professional Engineer licensed to practice in the State of Indiana to safely extend beyond the perimeter, and it complies with all required setbacks.

(b) Exterior piping for solar hot water systems may extend beyond the perimeter of the building on a side or rear yard if the minimum setbacks are met.

(c) Solar collectors mounted on the sides of buildings and serving as awnings are considered to be Building-Integrated SES and are regulated as awnings under this Ordinance.

(4) **Ground-Mounted SES.** Ground-Mounted SES cannot be located in a front yard and must comply with the side yard and rear setbacks, except as otherwise allowed for building mechanical systems.

(5) **Accessory SES Visibility.** Accessory SES in residential districts shall be designed to minimize visual impacts from the public right-of-way, as to the extent that it does not affect the cost or efficacy of the system, consistent with *IC 36-7-2-8*. Visibility standards do not apply to systems in non-residential districts.

(6) **Building-Integrated Photovoltaic SES.** Building integrated photovoltaic systems shall be allowed regardless of visibility from any public right-of-way, provided the building component in which the system is integrated meets all required setback, land use, and performance standards for the district in which the building is located.

(7) **Aesthetic Restrictions.** Roof-Mounted SES and ground-mounted SES shall not be restricted for aesthetic reasons if the system is not visible from a public right-of-way other than an alley or if the system meets the following standards:

(a) Roof-Mounted systems on pitched roofs that are visible from a public right-of-way shall have the same finished pitch as the roof and be no more than ten (10) inches above the finished roof.

(b) Roof-Mounted systems on flat roofs that are visible from a public right-of-way shall not be more than five (5) feet above the finished roof and are exempt from any rooftop equipment or mechanical system screening requirements.

(8) **Reflectors.** All systems using a reflector to enhance solar production shall minimize glare from the reflector affecting adjacent or nearby properties.

(9) **Accessory SES Lot Coverage.** Ground-mounted SES shall meet the maximum lot coverage restrictions for the zoning district in which the parcel is located, except as defined below:

(a) Ground-mounted SES shall be exempt from and not included in maximum lot coverage or impervious surface calculations if the soil under the collector is maintained with vegetation and not compacted.

(b) Solar Carport SES in non-residential districts shall be exempt from and not included in maximum lot coverage calculations.

(10) **Accessory SES Site Plan Required.** All Accessory SES are required to obtain site plan approval and shall provide a site plan for review as part of the building permit process.

(a) The site plan shall include scaled horizontal and vertical (elevation) drawings. The drawings must show the location of the system on the building, if building-mounted, and location on property, including the property lines.

(b) Site plans that meet the design requirements of this ordinance shall be approved administratively by the Administrator as part of the building permit process. Approval of the site plan does not indicate compliance with Building Code or Electric Code.

(11) **Accessory SES Approved Solar Components.** Electric solar energy system components must have an Underwriters Laboratory (UL) or equivalent listing and solar hot water systems must have a Solar Rating & Certification Corporation (SRCC) or equivalent rating

(12) **Accessory SES Compliance with Applicable Codes.**

(a) Building Code. All accessory use solar energy systems shall meet approval of local building code officials, consistent with the State of Indiana Building Code, and solar thermal systems shall comply with HVAC-related requirements of the Energy Code.

(b) State Electric Code. All photovoltaic systems shall comply with the Indiana State Electric Code.

(c) State Plumbing Code. Solar thermal systems shall comply with applicable Indiana State Plumbing Code requirements.

(13) **Accessory SES Utility Notification.** It is recommended that the interconnection application be submitted to the utility prior to applying for required permits. Grid-tied solar energy systems shall comply with interconnection requirements of the electric utility, if applicable. Off-grid systems are exempt from this requirement.

(E) **Primary Solar Energy Systems (SES).**

(1) **Primary SES Site Location**. No Primary commercial SES project shall be located within one-half (1/2) mile of any then existing incorporated city or town limits. An incorporated city or town may withdraw the one-half (1/2) mile location restriction for a specific Primary SES by issuing an express written waiver to be included in the Primary SES's application information.

(2) **Primary SES Minimum Acreage**. No Primary SES project shall be located on a site that is less than five (5) acres in size.

(3) **Primary SES Height.** No Primary SES shall exceed twenty (20) feet in height as measured at maximum design tilt.

(4) **Primary SES Setbacks.**

(a) Setback distance shall be measured from the edge of the solar energy system array at maximum design tilt, including security fencing, screening, or berm, to the right-of-way or edge of pavement if right-of-way does not exist.

(b) Setbacks of all Primary SES structures from any non- participating landowner's non-residential use property line shall be a minimum of one-hundred (100) feet. A non-residential use property is defined below as a property ten (10) acres or more in size.

(c) Setbacks of all Primary SES structures from the property line of any non-participating residential use property line shall be a minimum of two-hundred (200) feet. A residential use property is defined below as a property less than ten (10) acres in size.

(d) Setbacks of all Primary SES structures between separate parcels, both of which are participating in the project, may be waived upon mutual agreement of all the property owner(s) by filing a written consent/waiver with the zoning administrator or body regardless of whether the parcels are residential use or non-residential use properties.

(e) Setbacks of all Primary SES structures from all rights-of-way including but not limited to any state highway, any county/state aid highways (CSAHs), any county or city streets, or any private drive, lane or right of way shall be a minimum of one hundred (100) feet. Setbacks from any utility rights-of-way or ingress/egress easement may be waived by the beneficiary of the right-of-way or easement by filing a written consent/waiver with the zoning administrator or body.

(f) Setbacks of all Primary SES structures from any housing or dwelling unit of a non-participating landowner shall be a minimum of two-hundred and fifty (250) feet. Setbacks of all Primary SES structures from any housing or dwelling unit of a participating landowner shall be a minimum of one hundred (100) feet. For Primary SES structures the distance, measured as a straight line, from the nearest outer edge of the SES system to the nearest point on the outer wall of a dwelling.

(g) Setbacks for all Primary SES structures from a cemetery shall be a minimum of one hundred feet (100) feet.

(5) **Primary SES Screening.** All Primary SES shall be fully screened on all sides of the SES site. Any visual buffer must be approved by the Board of Zoning Appeals.

(a) A landscape plan shall be submitted that identifies the type and extent of proposed buffer and screening. Vegetation or another type of buffer can be proposed if it fully screens the SES.

(b) SES screening shall be considered a Primary SES structure and shall meet all set-back requirements for Primary SES structures provided by this ordinance. See Section E(4).

(c) Screening shall be consistent with the following:

(i) All vegetation used for screening shall XXX

(ii) All earthen berms used for screening shall XXX

(iii) All fencing used for screening shall XXX and be otherwise complaint with the fencing requirements of this ordinance.

(d) Non-participating parcel owners, not including owners of parcels that are across rights-of-way from the SES site, may waive landscaping requirements by filing a written consent/waiver with the zoning administrator or body.

(6) **Primary SES Wildlife Habitat Non-Interference**. The construction of a Primary SES shall not result in the destruction, removal, or cutting down of existing wooded areas or areas recognized as habitats for wildlife.

(7) **Primary SES Ground Cover.** Primary SES that are mounted on the ground are required to install one of the following alternatives for ground cover. Detailed plans showing compliance with one alternative shall be submitted as part of a Development Plan application.

(a) <u>Alternative A: Perennial Ground Cover.</u> Additional site-specific conditions may be required by the BZA as part of a Special Exception approval in addition to the following:

(i) The site around and under solar panels and within all setback or buffer areas shall be planted, established, and maintained for the life of the SES project in perennial ground cover. To the extent feasible for site conditions and height requirements so plantings do not interfere with solar equipment, perennial ground cover shall include a diverse seed mix of native species consistent with guidance specific to the local area provided by the Soil and Water Conservation District office or the Indiana Native Plant Society.

(ii) The owner/operator shall outline site maintenance practices that are intended to manage and mitigate invasive or noxious plant species, as

listed by the Indiana Invasive Species Council, without harming perennial ground cover.

(b) Alternative B: Pollinator Friendly Ground Cover. Additional site-specific conditions may be required by the BZA as part of a Special Exception approval in addition to the following:

(i) The site around and under solar panels and within all setback or buffer areas shall be planted, established, and maintained for the life of the SES project in perennial ground cover that complies with the definition of Pollinator-Friendly Solar Energy.

(ii) Primary SES that are mounted on the ground that propose to install, establish, and maintain pollinator-friendly ground cover must demonstrate the quality of the proposed habitat based on guidance from sources such as Purdue University 2020 Indiana Solar Site Pollinator Habitat Planning Scorecard or other third party solar-pollinator scorecards designed for Midwestern eco- systems, soils, and habitat.

(iii) All applicants shall submit a completed pollinator-friendly solar scorecard such as the 2020 Indiana Solar Site Pollinator Habitat Planning Scorecard developed by Purdue University, or a similar third-party solar pollinator standard designed for Midwest eco- systems and conditions.

(iv) If the project does not qualify as pollinator-friendly, the applicant shall submit a landscaping plan detailing site conditions that prevent the site from being qualified and alternative means of meeting the water quality and habitat goals of the pollinator- friendly standard.

(v) The owner/operator shall outline site maintenance practices that are intended to manage and mitigate invasive or noxious plant species, as listed by the Indiana Invasive Species Council, without harming perennial ground cover.

(8) **Primary SES Foundations.** A Professional Engineer licensed to practice in the State of Indiana shall certify that the foundation and design of the solar panel racking, foundations, and support is within accepted professional standards, given local soil and climate conditions prior to application for building permits.

(9) **Primary SES Power and Communication Lines.**

(a) All power and communication lines on the site shall be buried underground. Exemptions may be granted by the BZA 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.

(b) Power and communication lines between the project and the point of interconnection with the transmission system can be overhead.

(10) **Primary SES Fencing.** Perimeter fencing for the site shall not include barbed wire designs and shall preferably use wildlife-friendly fencing standards that include clearance at the bottom. Perimeter fencing is required on all sides of a Primary SES project. All fencing must be approved by the Board of Zoning Appeals.

(a) A perimeter fencing plan shall be submitted that identifies the type of fencing and location of fencing.

(b) SES fencing shall be considered a Primary SES structure and shall meet all set-back requirements for Primary SES structures provided by this ordinance. See section E(4).

(c) Fencing plans that provide for straight lines of fencing or fencing that provides for continuity of the land are preferred.

(d) Primary SES operators shall maintain all fencing in good repair at all times.

(11) **Primary SES Lighting.** No Primary SES project shall produce noxious glare or light on non-participating properties or rights-of-way. All security and other lighting at the SES project site shall be certified as dark sky friendly. Emergency lighting systems shall not be subject to this provision but must comply with industry standards.

(12) **Primary SES Unreasonable Noise.** At all times, the noise level of a Primary SES shall be no greater than fifty (50) decibels measured from each surrounding property line.

(13) **Primary SES Stormwater.** A detailed drainage plan prepared and certified by a licensed engineer shall be submitted and approved by the Board of Zoning Appeals prior to the issuance of any permit for the construction of an SES. The preliminary drainage plan shall describe the owner's overall approach for managing stormwater runoff on the project site, including pre and post construction runoff calculations. Post-construction stormwater runoff shall be at least eighty percent (80%) of pre-construction stormwater runoff.

(14) **Primary SES Fire Protection**: All Primary SES projects shall comply with industry standards for fire protection and suppression. SES developers, owners, or operators are responsible for providing professional training to all fire departments servicing the SES location if said departments have not already received specific training.

(15) **Primary SES Applicable Codes.** All Primary SES projects shall comply with all applicable local, state, and federal regulatory codes, including the State of Indiana Uniform Building Code, as amended; and the National Electric Code, as amended.

(16) **Primary SES Aviation Protection.** For Primary SES projects located within five hundred (500) feet of an airport or within any approach zones of an airport, the applicant must complete and provide the results of a glare analysis through a qualitative analysis of potential impact, field test demonstration, or geometric analysis of ocular impact in consultation with the Federal Aviation Administration (FAA) Office of Airports, consistent with the Interim Policy, FAA Review of Solar Energy Projects on Federally Obligated Airports, or most recent version adopted by the FAA.

(17) **Decommissioning Plan**

(a) Prior to receiving approval under this Ordinance, the Board of Zoning Appeals and the applicant, County Commissioners, and owner and/or operator shall formulate a decommissioning plan approved and signed by the County Commissioners and the applicant, outlining the anticipated means and cost of removing a SES at the end of their serviceable life or upon becoming a discontinued or abandoned use to ensure that the SES is properly decommissioned.

(b) Surety Bond-Commercial SES

(i) Applicant for a commercial SES shall provide a bond, or other proof of financial responsibility that is of an amount determined by the County Commission to be sufficient to satisfy the decommissioning agreement requirements.

(ii) Other proof of financial responsibility may be:

(01) Cash advance to county to be released upon completion of decommissioning plan.

(02) An arrangement whereby the county would have access to the funds in an escrow account or other type of account held by a bank, until the completion of the decommissioning plan.

(iii) Bond or financial responsibility review. The applicant shall agree that every five (5) years an updated Cost estimate, as outlined below including Cost adjustments, shall be provided at the developer's, owner's, or operator's expense and the bond or financial responsibility amount shall be adjusted accordingly.

(iv) Bond shall be released upon receipt of a certificate of inspection by the office of the Area Planning Executive Director indicating that the decommissioning plan is complete with no unresolved issues related to the plan.

(c) A decommissioning plan shall include, at a minimum, language to the following:

(i) Assurance: Written assurance that the facilities will be properly decommissioned upon the project life or in the event that the facility is abandoned.

(ii) Cost estimates: The applicant shall provide a contractor cost estimate for demolition and removal of the SES facility which cost estimate shall include any offsetting effects of salvage value. The cost estimates shall be made by a competent party: such as a professional engineer, a contractor capable of decommissioning or a person with suitable expertise or experience with decommissioning SES, at the applicant's, owner's or operator's cost.

(iii) Cost adjustments: Terminology shall be included in the plan that provides cost estimate adjustments derived from the US Bureau of Labor Statistics Consumer Price Indexes (CPI) to protect against inflation.

(d) No Storage of Industrial or Hazardous Material

(i) Owners and/or operators of SES facilities shall not store any hazardous, industrial, or waste materials on the property at any time. Additionally, Owners and/or operators shall not store any materials on the property that are not currently in use for the purposes of electrical production.

(e) Discontinuation and Abandonment

(i) Discontinuation: All SES shall be considered a discontinued use after six (6) months without energy production, unless a plan is developed and submitted to the Executive Director and approved by the Board of Zoning Appeals outlining the steps and schedule for returning the SES to service.

(ii) Abandonment by the owner or operator: All SES shall be considered an abandoned use after three (3) months without maintenance of SES structures, including fencing and screening.

(iii) Enforcement of Decommission Plan: In the event of discontinuation or abandonment by the owner or operator, the Executive Director shall provide written notice to the owner or operator that the County considers the use discontinued or abandoned and shall demand immediate compliance with the decommission plan. Failure to comply with the decommission plan will result in a forfeiture of the bond or other financial assurance which shall be

converted to the County's ownership and use for the purpose of completing the decommission plan.

(f) Removal

(i) An applicant's obligations shall include removal of all physical material pertaining to the project improvements, including everything that is placed on the property by the developer, owner, or operator, to no less than a depth of six (6) feet below ground level within three hundred sixty-five (365) days of the discontinuation or abandonment of the facility. An applicant shall also be obligated to restore the project area to, as near as practicable, the condition of the site immediately before construction of such improvements by the operator at the operator's expense, unless otherwise agreed to by the property owner in writing and approved by the Board of Zoning Appeals.

(g) Written Notices

(i) Prior to implementation of the existing procedures for the resolution of such default(s), the Executive Director 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).

(17) **Primary SES Development Plan Required.** All Primary SES are required to obtain development plan approval and shall provide a development plan prepared and certified by a licensed engineer for approval.

(a) A detailed development plan shall be submitted that includes both existing and proposed uses, residential and non-residential structures, conditions, locations of all solar arrays and all other structures/equipment, property lines, rights-of-way, driving areas or service roads, floodplains, wetlands, protected natural resources, topography, and all other characteristics requested by the Administrator to determine compliance. The development plan should show all existing uses, residential and non-residential structures, conditions, property lines, rights-of-way, and driving areas for all neighboring properties. The development plan should show distances from all property lines, rights-of-way, and structures. The development plan should show all zoning districts and/or overlay districts of the subject and adjoining properties.

(18) **Primary SES Inspections & Permits Required.**

(a) Development plans that meet the design requirements of this ordinance and Special Exception approval are required prior to the issuance of any building

permits. Approval of the development plan does not indicate compliance with Building Code or Electric Code.

(b) The Board of Zoning Appeals shall adopt a fee schedule for all Primary SES applications and permits.

(c) The applicant shall be responsible for paying for a third-party inspector, who is qualified to inspect solar systems and is approved by the County, to inspect all solar structures prior to the issuance of a Certificate of Occupancy. The fee schedule adopted by the Board of Zoning Appeals shall include the reasonable costs of inspection.

(F) **DEFINITIONS**:

(1) RESIDENTIAL USE LOT. Any lot under 10 acres in area.

(2) SOLAR ENERGY SYSTEM (SES). A device, array of devices, or structural design feature, the purpose of which is to provide for generation or storage of electricity from sunlight, or the collection, storage, and distribution of solar energy for space heating or cooling, daylight for interior lighting, or water heating. For purposes of this ordinance, an SES is classified as Accessory SES or Primary SES.

(3) ACCESSORY SES. A solar energy system that is an integral part of a primary or accessory building. Accessory SES include Building-Integrated SES, Ground-mounted SES, Pole-mounted SES, Roof-Mounted SES, and Solar Carport SES.

(4) BUILDING-INTEGRATED SES. An accessory solar energy system that is an integral part of a primary 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.

(5) GROUND-MOUNTED SES. An accessory solar energy system mounted on a rack that rests on or is attached to the ground.

(6) POLE-MOUNTED SES. An accessory solar energy system mounted on a pole.

(7) ROOF-MOUNTED SES. An accessory solar energy system mounted on a rack that is fastened to or ballasted on a structure roof.

(8) SOLAR CARPORT SES. An accessory solar energy system of any size that is installed on a carport structure that is accessory to a parking area, and which may include electric vehicle supply equipment or energy storage facilities.

(9) GRID-TIED SES. A photovoltaic solar energy system that is connected to an electric circuit served by an electric utility company.

(10) OFF-GRID SES. 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.

(11) PHOTOVOLTAIC SES. A solar energy system that converts solar energy directly into electricity.

(12) PRIMARY SES. A solar energy system that is free-standing and serves as the primary land use for the parcel(s) on which it is located. Primary SES include Community-scale SES and Large-scale SES.

(13) COMMUNITY-SCALE SES. A primary solar energy system that covers less than ten (10) acres and converts sunlight into electricity for the primary purpose of serving electric demands offsite from the facility, either retail or wholesale.

(14) LARGE-SCALE SES. A primary solar energy system that covers 10 acres or more and converts sunlight into electricity for the primary purpose of wholesale sales of generated electricity. It can include collection and feeder lines, substations, ancillary buildings, solar monitoring stations and accessory equipment or structures thereto, that capture and convert solar energy into electrical energy, primarily for use in locations other than where it is generated.

(15) POLLINATOR-FRIENDLY SES. A community- or large-scale solar energy system that meets the requirements of the 2020 Indiana Solar Site Pollinator Habitat Planning Scorecard (as amended) developed by Purdue University or another pollinator-friendly checklist developed by a third-party as a solar-pollinator standard designed for Midwestern eco-systems, soils, and habitat.

(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. The collector does not include frames, supports, or mounting hardware.