

Chapter 13 Solar Energy Systems
Ordinance # 2022-85-4
An Ordinance Regulating Solar Energy Systems

13.1. PURPOSE. This chapter is to assure that the development and production of solar-generated electricity in Wabash County, Indiana, is safe and effective, to facilitate economic opportunities for local residents, to provide standards for solar generated energy, utilize natural resources and ecologically sound energy sources, and to support Indiana’s alternative energy sources potential and other such economic development tools.

13.2 NON- COMMERCIAL SOLAR ENERGY SYSTEMS (NC-SES)

13.2.1. . Interference. When selecting a site for solar panels, all applicants shall take into consideration the potential maximum allowable structure height and possible landscaping of the adjacent properties to avoid interference and potential loss of efficiency from the sun to the solar panel surface. As part of the application process a written disclaimer is required acknowledging an issued permit does not imply any solar access rights.

13.2.2. Permitted Use Districts NC-SES. An NC-SES shall be permitted in Districts A, FR, R1, R2, LR, AB, LB, GB, and I DISTRICTS.

13.2.3. Setback Requirements for NC-SES.

13.2.3.1. Ground Mounted Solar Equipment. The minimum setback from side and rear property lines shall be thirteen (13) feet from the property line for all solar associated equipment.

a. Freestanding solar panels shall only be permitted in the rear and side yard in any Residential Zoned District.

13.2.4. Roof Mounted and Wall Mounted NC-SES. The following shall apply to all roof and wall mounted NC-SES.

a. A roof mounted or wall mounted NC-SES may be located on a principal or accessory building.

b. Roof-mounted solar panels installed on a building or structure with a sloped roof shall not project vertically more than the height requirements for the district in which they are located. The panels shall not be located within two feet (2’) of any peak, eave, or valley of the roof in order to maintain pathways of accessibility.

c. Wall mounted NC-SES shall comply with the setbacks for principal or accessory structures in said zoning districts.

d. Roof mounted solar panels shall be located only on rear or side-facing roofs as viewed from any adjoining street unless the applicant demonstrates to the PC that, due to solar access limitations, no location exists other than the street-facing roof, where the solar energy system can perform effectively.

e. For roof and wall mounted systems, the applicant shall provide written evidence that the plans comply with the Indiana Residential Code and adopted building codes of Wabash County, and that the roof or wall is capable of supporting the load imposed on the structure.

13.2.5. Ground Mounted NC-SES. The following shall apply to ground mounted NC-SES.

a. Ground mounted NC-SES located in an A, FR, or I zoned district shall not exceed fifteen (15) feet in height, when oriented at maximum tilt, above the ground elevation surrounding the system. In any other zoning district, where a ground mounted NC-SES is permitted, the maximum height of the NC-SES shall not exceed ten (10) feet when oriented at maximum tilt, above the ground elevation surrounding the system.

b. Safety/warning signage as required by applicable law concerning voltage shall be placed with ground mounted electrical devices, equipment, and structures.

c. Ground-mounted NC-SES shall not be placed within any legal easement or right-of-way location, or be placed within any storm water conveyance system, or floodplain, or in any other manner that would alter or impede storm water runoff from collecting in a constructed storm water conveyance system, except when permission is granted in writing by the Wabash County Drainage Board, and/or Floodplain Administrator and/or owner of the land and/or right-of-way and/or easement. This would include but not be limited to state, county and/or privately owned waterways, ditches, drainage tiles, retention areas and designed swells.

13.2.6. Electrical Components:

a. Electrical components of all NC-SESs shall conform to applicable local, state and federal safety codes for similar NC-SESs.

b. All on-site utility, transmission lines, and plumbing shall be placed underground.

c. When solar storage batteries are included as part of the solar energy collector system, they must be placed in a secure container or enclosure and installed and maintained as required by applicable law.

13.2.7. Utility Interconnection. All NC-SES, interconnected to a utility system, shall meet the requirements for interconnection and operate as required by applicable law.

a. All roof, wall, and ground mounted systems shall be equipped with a rapid disconnect to ensure a safe condition in the event of any emergency situation.

13.2.8. Color, Finish and Glare. To the extent reasonably possible, the NC-SES shall be designed using such features as colors, materials, textures, placement, screening and landscaping so as to blend into their settings and avoid significant glare and visual impact. The NC-SES shall remain painted or finished in the color or finish that was originally applied by the manufacturer.

a. The applicant has the burden of mitigating any glare produced so as not to have significant adverse impact on adjacent uses. Mitigation is accomplished by panel siting, panel orientation, landscaping and/or other means.

13.2.9. Signage. No portion of the NC-SES shall contain or be used to display advertising. The manufacturer's name and equipment information or indication of ownership shall be allowed on any equipment of the NC-SES along with any required information, warning or safety signs.

13.2.10. Landscaping / Vegetation. An appropriate ground cover shall be maintained under and around all solar arrays and any associated equipment.

13.2.11. Maintenance. The NC-SES must be properly maintained and kept free from all hazards, including but not limited to, faulty wiring, loose fastenings, cracked glass, being in an unsafe condition or detrimental to public health, safety or general welfare.

13.3. APPLICATION FOR AN ILP FOR A NC-SES. An application for a NC-SES shall include, but not be limited to the following information.

13.3.1. Contact Information of NC-SES Applicant. The name(s), address(es), telephone number(s) and e-mail address(es) of the applicant(s).

13.3.2. Legal Description. The legal description, the 911 Emergency Address and the County parcel ID number of the real property upon which the NC-SES is to be located,

13.3.3. NC-SES Project Description. A detailed description and site plan of the following:

- a. Type of solar technology (e.g., solar panels, thermal solar, solar shingles, etc.),
- b. Solar panel mounting technique (e.g., ground-mount, roof- mount, wall mount etc.),
- c. Solar arrays and associated equipment layout including array height,
- d. Name plate generating capacity,
- e. The means of interconnecting with the electrical grid,
- f. The equipment manufacturer(s) including information sheets and installation manuals,
- g. All associates accessory structures,
- h. Demonstration of energy need,
- i. Interconnection agreement with public utility company,
- j. Line drawings that illustrate that the manner of installation conforms to the National Electric Code.
- k. Certification by a manufacturer's engineer or another qualified registered professional engineer that all proposed structural aspects of the NC-SES design are within accepted professional standards, and the structure that the solar technology will be affixed to, will tolerate the installed weight and wind load of said technology. (e.g., roof walls, soils, etc.).

13.4. NC-SES DISCLAIMER. Applicants must acknowledge in writing that the NC-SES will not create in the property owner, its, his, her or their successors and assigns in title, or, create in the property itself:

13.4.1. The right to remain free of shadows and/or obstructions to solar energy caused by development of adjacent or other property, or the growth of any trees or vegetation on such property, or

13.4.2. The right to prohibit the development on, or growth of any trees or vegetation on such property. This disclaimer is secondary to any solar easements entered into with adjacent land owners and subject to the terms agreed to therein.

13.5. NC-SES SOLAR EASEMENTS.

13.5.1. When an applicant seeks to construct a NC-SES in a subdivision or land development, solar easements may be provided; said easements shall be in writing, and shall be subject to the same conveyance and instrument recording requirements prescribed in IC 32-23-2-5 or subsequent amendment(s).

13.5.2. Any such solar easements shall be appurtenant, shall run with the land benefited and burdened, and shall be defined and limited by conditions stated in the instrument of conveyance. Instruments creating solar easement shall meet the requirements of IC 32-23-4- 4 and 32-23-4-5 and shall include, but not be limited to, the following:

13.5.3. A description of the dimensions of the easement including vertical and horizontal angles measured in the degrees at which the solar easement extends over the real property that is subject to the solar easement, and a description of the real property to which the solar easement is appurtenant.

- a. Restrictions on the placement of vegetation, structures, and other objects which may impair or obstruct the passage of sunlight through the easement.
- b. Enumerate any terms and conditions, under which the easement is granted, and may be revised or terminated.

13.5.4. If necessary, a NC-SES owner and/or operator must obtain any solar easements necessary to guarantee unobstructed solar access by separate civil agreement(s) with adjacent property owner(s).

13.6 COMMERCIAL SOLAR ENERGY SYSTEMS (C-SES)

13.7. SETBACKS, C-SES

13.7.1. Horizontal Extension for C-SES. The furthest horizontal extension of a C-SES, excepting the C-SES collection system, C-SES transmission lines, ingress/egress road and C-SES access roads/lanes, shall not extend into a setback which is otherwise required for the zoning district in which the C-SES is located, or into a required buffer area or into a setback required for an adjacent zoning district nor be less than 15 feet from any structure or public right-of-way easement for any above-ground telephone line, electrical transmission line, electrical distribution line or other above ground communication or transmission line.

13.7.2. Setback requirements. The following set-back requirements shall apply:

- a. The minimum setbacks for all equipment, buffering, fencing and access roads/lanes associated with the C-SES shall be as listed in Setback Chart 13.7.2. f. and 13.7.2. g.. Setbacks shall be measured from the center of the road, or from the adjoining property line. Setbacks apply to solar arrays, racking, inverters, battery storage facilities, substations, accessory buildings, buffering, fence, access roads/lanes and any other power equipment or meteorological towers.
- b. For all poles carrying overhead wiring and for any underground wiring connecting the racks and components of a C-SES and/or to connect a C-SES to a battery storage facility or substation or other direct connection to a utility's electric transmission line, there are no setback requirements from property lines of adjoining landowners so long as the poles and underground wiring are located within a recorded easement for such purpose or in right-of-way.
- c. Except as permitted in writing by the Wabash County Drainage Board, and/or Floodplain Administrator and owner of the land and/or owner of a right-of-way and/or easement, ground-mounted, C-SES shall not be placed within:

- i. any legal easement or right-of-way location,
- ii. any storm water conveyance system,
- iii. any floodplain, or flowage easement, or
- iv. placed in any other manner that would alter or impede storm water runoff from collecting in, and/or conveyance through, and/or discharge from, a constructed storm water conveyance system (including, without limitation any swale, regulated drain, water course or drainage tile).

d. This would include, but not be limited to, state, county and/or private owned waterways, ditches, drainage tiles, retention areas and designed swells. Notwithstanding the foregoing, nothing in the preceding sentence shall prevent the replacement, repair, reconstruction and/or relocation of any such water conveyance system as necessary to develop and install the C-SES with any necessary approvals from the County Drainage Board.

e. Setback Charts 13.7.2. f. and 13.7.2. g.

SETBACK CHART FOR C-SES. CHART # 13.7.2. f.					
C-SES PERMITTED IN ZONES A, FR, I					
C-SES Site Acreage Designation Including Road / Drive	Property Line Setback	Residential or Business Structure Setback	Public Facilities, Outdoor Facilities, Parks, Camp Grounds, Recreational, FR District	Screening/ Buffering Setback From Property Line, Roads	Can Waive Setback With Adjoining Participating Land Owner
0 to 2,000 ACRES	100 FT	350 FT	350 FT	25 FT P.L. 25 FT R.R.O.W.	YES
SEC CO RD	65 FT	65 FT	65 FT	25 FT FROM R.R.O.W.	NO
PRI CO RD	95 FT	95 FT	95 FT	25 FT FROM R.R.O.W.	NO
STRD	105 FT	105 FT	105 FT	25 FT FROM R.R.O.W.	NO
INGRESS EGRESS DRIVE	All ingress/egress drives shall meet/exceed the minimum setback from adjoining property lines				

SETBACK CHART FOR C-SES, CHART # 13.7.2. g.							
C-SES PERMITTED IN ZONES A, FR, I							
C-SES Site Acreage Designation Including Road / Drive	Property Line Setback	Residential or Business Structure Setback	Public Facilities, Outdoor Facilities, Parks, Camp Grounds, Recreational, FR District	Secondary County Road	Primary County Road	State Road	Can Waive Setback With Adjoining Participating Land Owner
INVERTER	100 FT	660 FT	660 FT	65 FT	95 FT	105 FT	NO
BATTERY STORAGE	100 FT	1320 FT	1320 FT	65 FT	95 FT	105 FT	NO
SUBSTATION	100 FT	1320 FT	1320 FT	65 FT	95 FT	105 FT	NO
INGRESS EGRESS DRIVE	All ingress/egress drives shall meet/exceed the minimum setback from adjoining property lines						

13.8. BUFFERING AND SCREENING, C-SES

Each non-participating residential or business land owner location within the project area may request and receive screening around the perimeter of his/her residential or business structure.

13.8.1. All eligible non-participating property owners requesting buffers/landscaping/screening shall have a Visual Barrier as defined in 13.8.1. a.

a. **“Visual Barrier”** For C-SES it is landscaping in height and density that will provide a visual barrier to camouflage visual contact with solar arrays and the associated solar equipment. Barrier may be a variation of landscape trees, landscape shrubs and landscape mounds as selected by the land owner under the supervision and guidance of a certified professional landscape designer.

13.8.2. All requested visual buffer strips are to be shown in a certified landscape plan.

13.8.3. Landscaping/Screening/Buffer Requirements: Landscaping/screening shall be placed on all sides adjacent to C-SES equipment. A visual barrier may be composed of landscaping, landscaped berm, or combination thereof.

13.8.4. The buffer strips, landscaping/screening shall be done in accordance with the certified landscape plan that shows the predicted height and girth that will be achieved within two (2) years, and at full maturity by the selected species, under normal growing conditions.

13.8.5. All requested buffer strips, screening shall be constructed on the property of the solar project and , at planting, be no closer than twenty five (25) feet to the property line.

13.8.6. An existing vegetated area located on the same property as the solar project that;

a. is within or includes the required buffer;

- b. is of sufficient height, length, and depth; and
- c. contains adequate and sufficient healthy vegetation to provide a visual barrier where required;

may, upon recommendation by the USDA Farm Bill Biologist or local Soil and Water Conservation District professional that the natural visual buffers along with the additional placement of visual buffers will be sufficient screening, buffer accordingly.

13.9. VEGETATION, C-SES

A natural vegetative ground cover shall be maintained under and around all solar arrays. Only non-invasive species shall be used and native species are recommended. In the interest of protecting pollinators and providing for potential grazing, seed mixes consisting of native meadow grasses and pollinator-friendly wildflower forbs and/or clover species shall be used, in consultation with a USDA Farm Bill Biologist or local Soil and Water Conservation District professional, on the area under and around the solar arrays.

13.9.1. Grass or ground cover shall be planted on all areas not occupied by solar equipment, structures, drives or other landscaped material.

13.9.2. Any existing vegetated area located on the same property as the solar project, that contains adequate and sufficient healthy vegetation as required by the landscape plan, may, upon recommendation by the USDA Farm Bill Biologist or local Soil and Water Conservation District professional be used as part of the ground cover.

13.9.3. The Wabash County Plan Commission, in conjunction with the project land owners, are open to discussion of alternative vegetation, crops as ground cover.

13.10. BUFFER, SCREENING AND VEGETATION MAINTENANCE, C-SES

All buffer, screening, landscape, vegetation materials shall be installed and maintained according to accepted USDA Farm Bill Biologist or local Soil and Water Conservation District industry practices.

13.10.1. A minimum height of twenty (20) feet is to be maintained for all visual barriers over the life of the project. Height is to be measured from original grade.

13.10.2. All unhealthy (60% or greater dead) and dead plants shall be replaced at the earliest appropriate planting season. The determination of whether a plant is unhealthy shall be at the discretion of a recognized landscape professional.

13.10.3. The C-SES applicant, owner, operator shall be responsible for the continued property maintenance of all landscaping materials throughout the life of the solar project and shall keep properties in a proper, neat, and orderly appearance free from refuse and debris at all times.

13.10.3.1. The C-SES Owner, operator shall be responsible for the control of all vegetation and removal of all debris in all project perimeter fence rows.

13.10.3.2. Maintenance shall include eradication of all noxious weeds and plants prior to the weeds seeding and spreading.

13.11. FENCE, C-SES

For security, all above ground C-SES equipment shall be completely enclosed by a minimum seven (7) foot high fence with locking gates accessible only by a key pad or Knox Box with key. Fencing shall be located around the entire perimeter of the project site meeting the required setbacks.

13.11.1. Any high voltage substation or battery storage facility shall be safeguarded at minimum by an eight (8) foot high fence with at least two (2) strands of barbed wire at the top and locking gates accessible only by a key pad or Knox Box with key. Fencing shall meet the required setbacks.

13.11.2. Solid Fencing or walls constructed of materials making a solid visual barrier shall not be permitted as a use by the solar project applicant, owner, operator for screening, fencing or gates.

13.11.3. It shall be the sole responsibility of the C-SES applicant, owner, operator to maintain all fencing, post, and gates in order to remain free from rust, corrosion, sag.

13.12 EQUIPMENT TYPE, C-SES

All C-SESs shall conform to applicable industry standards, as well as all local, state and federal regulations. An applicant, owner, operator shall submit certificates of design obtained by the solar manufacturers from Underwriters Laboratories, Det Norske Veritas, Germanischer Lloyd Solar Energie, or an equivalent third party.

13.12.1. All C-SES shall be constructed of commercially available equipment and in conformance with this Ordinance. Material Safety Data Sheets and/or Safety Data Sheets shall be submitted for each model of solar panel and components to be used.

a. The project applicant, owner, operator shall provide signed written assurance that all solar arrays used in the project do not contain materials, in amounts, that would be classified as hazardous materials by OSHA or the EPA, and that through the process of collecting sunlight to convert to electricity said process will not create any classified hazardous materials currently listed by OSHA or the EPA.

13.12.2. All C-SES project sub-stations and transmission battery storage facilities must be located on land owned by the C-SES owner or utility company.

13.12.3. When solar storage batteries are included as part of the solar energy collector system, they must be placed in a secure containment area or enclosure meeting or exceeding the requirements of Indiana Building Code and IDEM regulations.

a. Batteries and battery components that will no longer be used shall be disposed of, in a timely manner, in accordance with all applicable laws and regulations and the applicant, owner, operator shall provide written proof of proper disposal.

13.12.4. Experimental or proto-type equipment, still in testing, which does not fully comply with industry standards, may be considered for use, by the BZA after notice and hearing pursuant to the variance procedures of BZA Rules of Procedure.

13.13. ELECTRICAL COMPONENTS, C-SES

Electrical components of all C-SES shall conform to applicable local, state and national safety codes for C-SES.

13.13.1. All transmission cables and lines on site within the fenced area shall follow the current Indiana Electric Code (identified in 675 IAC 17).

a. Transmission cables and lines outside the fenced area shall be buried no less than forty-eight (48) inches underground with a warning mesh located twelve (12) inches above the buried transmission cables and lines.

b. For streams, waterways, creeks, and river beds, transmission cables and lines shall be buried a minimum of sixty (60) inches below the existing flow line with a warning mesh located twelve (12) inches above the buried transmission cables and lines.

c. No plow type installations shall be permitted, only open trenching or boring installations.

13.13.2. All underground cabling will be marked at road crossings, creeks, river beds and property lines with an identifiable metal or fiberglass post standing at least five (5) feet in height above ground level.

a. Maintenance of the identification post shall be required by the project applicant, owner, operator throughout the life of the C-SES.

13.13.3. A C-SES, interconnected to a utility system, shall meet the requirements for interconnection and operate as prescribed by the interconnection agreement with the electrical utility, as any applicable federal and state regulations now exist and as the same are from time to time amended.

13.14. SIGNAGE, C-SES

Signs shall comply with the following standards and any other reasonable submittals:

a. An identification sign relating to a C-SES development may be located on all sides of the fenced project area, provided that there shall be no more than one (1) sign located per one hundred (100) yards of the C-SES fenced facility area,

b. A sign shall be securely posted on each gate entry point clearly displaying:

1. Emergency telephone number(s),
2. Applicant, Owner, Operator contact information,
3. Electric utility provider contact information,
4. The site locations E-911 address and GPS coordinates.

c. All ingress/egress lanes/drives for a C-SES project site shall have posted, in a conspicuous location, an E- 911 Address sign indicating the assigned address for that ingress/egress location,

d. Warning signs shall comply with applicable laws and be posted accordingly,

e. No signage shall be permitted to be posted for non- related solar advertising purpose,

f. All signage required or permitted by this Ordinance shall be made of materials and constructed in a manner to be durable and long lasting.

13.15. GLARE AND LIGHTING, C-SES

In addition to any applicable FAA requirements that now exist and the same are amended from time to time, the following shall also apply:

a. To the extent reasonably possible, solar arrays, regardless of how they are mounted, shall be oriented and/or screened year-round so that glare is directed away from adjacent properties, structures and roadways.

b. The solar energy components shall remain the color or finish that was originally applied by the manufacturer provided the exterior surface of any visible components are non-reflective and non-obtrusive. Finishes shall be matte or non-reflective.

c. The C-SES applicant, owner, operator shall have the burden of mitigating any glare produced so as not to have significant adverse impact on adjacent uses.

d. The determination of the Wabash County Commissioners shall be conclusive relative to applicant's compliance with this standard.

13.15.1. The ground mounted C-SES arrays shall not be artificially lit except to the extent required for safety or applicable federal, state, or local regulation. Such lighting shall be shielded and downcast so as not to adversely affect adjacent properties.

13.16. NOISE VIBRATION INTERFERENCE, C-SES

No part of an operating C-SES shall produce noise that exceeds any of the following limitations except during construction. Adequate setbacks, barriers, enclosures, use of quieter equipment, or other effective means of reducing noise shall be used to comply with these limitations:

a. A maximum of a 10-minute fifty five decibels (55 dB) from the Project on the A weighted LEQ scale shall be permitted, as measured immediately outside the closest point of the nearest residential or business structure. Modeling to evaluate compliance with respect to this limit shall be conducted according to ISO 9613-2 which is the international standard for sound propagation. If a monitoring is conducted, it should follow applicable American National Standard Institute (ANSI) methods. For monitoring, a sound level meter meeting ANSI Type 1 specifications shall be utilized.

b. Any proposed C-SES or associated features shall not produce vibrations humanly perceptible beyond the property on which it is located or cause vibration that could be detected in nearby structures or damage underground wells during construction, operation, decommissioning or restoration.

c. All solar arrays shall be constructed and operated so that they do not interfere with television, microwave, agricultural GPS use, military defense radar, navigational or radio reception to neighboring areas.

13.17. ARRAYS HEIGHT, C-SES

Ground mounted C-SES arrays shall not exceed twenty (20) feet in height when oriented at maximum tilt.

13.17.1. Request for increased height of arrays may be considered by the BZA after notice and hearing pursuant to the variance procedures of the BZA Rules of Procedure.

a. Under a hearing process for increased height of arrays the BZA may apply conditions subject to the proposed height increase.

13.18. INGRESS/EGRESS AND PERIMETER LANES, C-SES

At minimum, a sixteen (16) foot wide ingress/egress lane must be provided from a public road or a legally established access drive, into the site. This ingress/egress lane shall be stoned or paved.

3.18.1. All stoned ingress/egress lanes and perimeter access lanes shall be treated for dust control and monitored for control of detrimental plants, (weeds) during the construction phase and thereafter.

13.19. APPLICATION FOR AN ILP FOR A C-SES

All C-SES applications shall be submitted under the Special Exception Application process. All application requirements, together with all other applicable requirements of this Chapter 13 and the Zoning Ordinance, shall be completed and approved by all required authorities, (federal, state and local), before an Improvement Location Permit may be issued. As part of the ILP application process the following, at minimum, shall be submitted, addressed: (Chapter 13, Section 19 through Chapter 13, Section 26).

13.19.1. Contact Information of C-SES. The name(s), address(es), telephone number(s) and e-mail address(es) of the C-SES applicant(s), owners(s), operator(s), together with a description of the applicant(s), owner(s), operator(s) business structure and overall role in the proposed C-SES, and documentation of real estate ownership of any real property upon which any part of the proposed C-SES is to be located.

13.19.2. Location Identification. Provide the Legal Descriptions, Deeded owner names, Eighteen (18) digit tax ID numbers, E-911 Emergency Addresses for all real property the C-SES is to be located on.

13.9.2.1. A list of all non-participating property owners with land adjoining leased solar parcels, the deeded property owner names, residing tenant names, eighteen (18) digit tax ID numbers and E-911 Emergency Addresses.

13.19.3. C-SES Project Description. A description of the proposed C-SES project including, but not limited to, the following:

- a. Project name,
- b. Project generating capacity,
- c. Project location, (Section, Township, Range,) Acreage,
- d. Proposed project timeline for development, construction and operation,
- e. Planned project life span,
- f. Type of solar technology,
- g. Battery Storage capacity,
- h. The means of interconnecting with the electrical grid,
- i. Substation capacity,
- j. The potential equipment manufacturer(s); including information sheets and installation manuals.

13.19.4. Site Plan. The project site plan drawn to scale, including distances pertaining to all applicable setback and buffer requirements. All drawings shall be at a scale of one (1) inch equals thirty (30) feet. Any other scale must be approved by the PC. No individual sheet or drawing shall exceed twenty-four (24) inches by thirty-six (36) inches without the prior consent of the PC. The Preliminary Site Plan shall illustrate the following:

- a. Property lines upon tract(s) subject to the application, together with property lines and the names of owners of record of each adjacent tract(s),
- b. Location and name/number of public roads surrounding, abutting, and/or traversing the C-SES and all C-SES ingress/egress lanes,,
- c. Location of all substations, battery storage units, inverters, arrays, arrays mounting equipment and all other associated project equipment.
- d. Location of all electrical cabling inside and outside of fenced areas,
- e. All Ancillary equipment,

- f. All structures within one half (1/2) mile of the proposed C-SES boundary,
- g. The location of any airport within three (3) miles of the proposed C-SES boundary,
- h. Setback lines: All setback distances identified for arrays, sub-stations, battery storage, roads, property lines, buffers, and easements for setback requirements listed in this Ordinance,
- i. The listing of any historic or heritage sites as recognized by the Division of Historic Preservation and Archeology of the Indiana Department of Natural Resources, within one half (1/2) mile of a proposed C-SES,
- j. The location of any wetlands based upon a delineation plan prepared in accordance with the applicable U.S. Army Corps of Engineers requirements and guidelines, within one (1) mile of a proposed C-SES,
- k. Location of any floodway, floodplain within one (1) mile of the proposed C-SES, based upon a delineation plan prepared in accordance with the applicable FEMA, DNR mapping,
- l. Location of any flowage easement within one (1) mile of the proposed C-SES based on a delineation plan prepared in accordance with the applicable ASACE mapping,
- m. Location of any tiles, creeks, streams, ditches, channels, spillways, retention ponds, water course within one (1) mile of a proposed C-SES,
- n. Location of fencing, gates, access roads,
- o. Location of any landscaping associated with required visual barriers,
- p. Location and spacing of panels/arrays and key components, and
- q. All other information reasonably requested by the BZA, or PC.

13.19.5. Topographic Map. A topographical (topo) map, of the property and the surrounding area, with contours of not more than two (2) foot intervals shall be provided.

13.19.6. Landowner Agreements.

- a. A Memorandum of Agreement for all agreements of any description signed by participating landowners authorizing the placement of the identified C-SES on landowner's property,
- b. An executed, signed and notarized copy of any waiver agreement with adjacent landowners.
- c. An executed, signed and notarized copy of any recorded Solar Easements with adjacent landowners, and
- d. A fully executed, signed and notarized copy of any setback waiver agreements.

13.19.7. Engineering Certification. For all C-SES equipment and C-SES facilities, the manufacturer's engineer or another qualified registered professional engineer shall certify, as part of the

Improvement Location Permit (ILP) Application, that all structural aspects of the C-SES design are within accepted professional standards, and the structure, or substrate the solar technology will be affixed to, will tolerate the installed weight of said technology.

13.19.8. Disclaimer. Prior to the issuance of an (ILP), C-SES applicants must acknowledge in writing that the issuing of said permit shall not and does not create in the property owner, its, his, her or their successors and assigns in title or, create in the property itself:

- a. the right to remain free of shadows and/or obstructions to solar energy caused by development of adjacent or other property or the growth of any trees or vegetation on such property, or
- b. the right to prohibit the development on or growth of any trees or vegetation on such property.

13.20.8.1. Any such disclaimer is subordinate to any solar easements entered into with adjacent land owners and subject to the terms agreed to therein.

13.19.9. Solar Easements. A signed and notarized copy of all Solar Easements entered into between affected parties as described in this Section 13.19.9. of Chapter 13 must be submitted.

a. All solar easements shall be in writing, and shall be subject to the conveyance and instrument recording requirements prescribed in IC 32-23-2-5 or subsequent amendment.

b. Any such easements shall be appurtenant; shall run with the land benefited and burdened; and shall be defined and limited by conditions stated in the instrument of conveyance. Instruments creating solar easement shall include but not be limited to:

i. A description of the dimensions of the easement including vertical and horizontal angles measured in the degrees at which the solar easement extends over the real property that is subject to the solar easement, and a description of the real property to which the solar easement is appurtenant,

ii. Restrictions on the placement of vegetation, structures, and other objects which may impair or obstruct the passage of sunlight through the easement;

iii. Enumerate any terms and conditions under which the easement is granted, and may be revised or terminated.

13.19.9.1. If necessary, a C-SES applicant, owner and/or operator must obtain any solar easements necessary to guarantee un-obstructed solar access by separate civil agreement(s) with the adjacent property owner(s).

a. Copies of such easements shall be submitted as part of the application process with proof of appropriate recording in the Wabash County Recorder's Office.

13.19.9.2. A C-SES applicant, owner, operator shall complete a solar easement, with each deeded land owner, for all buried transmission cables and lines outside the fenced area that traverse the deeded owner's property. Said easements shall be in writing, and shall be subject to the conveyance and instrument recording requirements prescribed in IC 32-23-2-5 or subsequent amendment.

13.19.10. Plan and Agreement Fees.

Written confirmation that all reasonable attorney fees incurred in the preparation of any agreements or plans required under this Chapter 13 shall be borne by the applicant.

13.19.11. Emergency Services Plan.

A plan including, but not limited to the project summary, electrical schematic, site plan, and a project emergency contact list shall be prepared for the appropriate local safety officials including the Wabash County Homeland Security Emergency Management, Sheriff Department, the responding Fire Department, the responding law enforcement department, and the Wabash County selected engineering firm.

13.19.11.1. Upon request the owner or operator shall cooperate with local safety officials and selected engineering firm in developing an emergency response plan.

a. A warranty that specialized emergency/fire training will be provided to the required entities at the applicants, owners, operator's expense.

13.19.11.2. Knox boxes, keys, or key pad combinations shall be provided to the required emergency personnel for locked entrance access.

a. A current listing of the solar project names and phone numbers to contact for emergency response purposes shall be maintained and provided to all above listed departments.

13.19.12. Operation and Maintenance Plan. The C-SES applicant, owner, operator shall submit a plan for the operation and maintenance of the C-SES, which shall include measures for maintaining safety as well as general procedures for the operation and maintenance of the installation.

13.19.12.1. Repairs. The C-SES applicant, owner, operator shall repair, maintain and replace defective, damaged, and inoperable C-SES related solar equipment during the operational life of the C-SES in a manner consistent with industry standards as needed to keep the C-SES in good repair and operating condition.

13.19.12.2. Physical Modification. Any physical modification to any C-SES or a part thereof which materially alters the mechanical load, mechanical load path, or major electrical components shall require re-certification by all appropriate regulatory authorities. Like-kind replacements shall not require re-certification, unless required by a regulatory authority. Prior to making any material physical modification, other than a like-kind modification, the applicant, owner or operator of such C-SES shall confer with the Plan Commission and any other appropriate regulatory authority as to whether or not the proposed physical modification requires re-certification of such C-SES.

13.19.12.3. Declaration of Public Nuisance. Any C-SES declared unsafe, by the PC, by being in breach of, or, out of compliance with its C-SES permit(s) may seek to be rehabilitated and declared safe by appropriate repair(s) and other essential steps necessary to eliminate the breach(es) so as to be in compliance with such C-SES permit(s).

a. A C-SES declared by the PC, by reason of inadequate maintenance, dilapidation, obsolescence, fire hazard, damage, abandonment or as provided herein to be determined unsafe, is hereby declared to be a public nuisance. A Rehabilitation Plan shall be submitted to the PC within forty five (45) days of notice of the Declaration of Public Nuisance. This plan shall provide procedures to rehabilitate the C-SES in a time not to exceed one hundred eighty (180) days except in the event of force majeure, including but not limited to unavailability of components or parts, strikes, and moratoriums which said majeure may extend said time to three hundred sixty five (365) days total or a reasonable extension agreed to by the PC. In the absence of an approved Rehabilitation Plan or meeting the

agreed to time schedule(s), or failure to execute the required repair(s), in the time determined reasonable by the PC, such C-SES shall be demolished and removed in accordance.

13.19.13. Public Nuisance Waiver. In the instance that an un-avoidable Act of God inhibits, damages, or destroys part of, or the majority of the C-SES, the one hundred eighty (180) day public nuisance removal timeline may be revised so long as the C-SES applicant, owner and/or operator provides a Rehabilitation Plan to remedy the damage and said plan is submitted to, and approved by, the PC. Said plan will outline the necessary protocol and time schedule for returning the C-SES to energy production and must be submitted to the County within forty five (45) days of the date the damage was incurred.

13.19.14. Decommissioning-Restoration Plan and Agreement. A Decommissioning-Restoration Plan and Agreement with the PC outlining the anticipated means, costs and method of payment of all costs in carrying out such Decommissioning Restoration Plan and Agreement at the end of the C-SES life or the life of any part of a C-SES, upon becoming an abandoned use, or being declared a public nuisance. The plan shall be recorded with the Wabash County Recorder, cross referenced to the deed(s) to all associated project parcels, and shall contain the following provisions:

13.19.14.1. Discontinuation and abandonment. The C-SES applicant, owner, operator shall submit written notice, to the PC, of intent to abandon use of a C-SES facility at least 60 days prior to the discontinuation of electrical production.

13.19.14.2. A C-SES or portion of a C-SES shall be considered an abandoned use after one (1) year without energy production unless a Rehabilitation Plan developed by the C-SES applicant, owner and/or operator is submitted to, and approved by, the PC outlining the necessary procedures and time schedule for commencing or returning the C-SES to energy production.

a. Failure by the C-SES applicant, owner and/or operator to commence energy production at the identified C-SES site, or return such C-SES to energy production within the time schedule which has been approved by the PC, said C-SES or portion of C-SES shall be considered an abandoned use and/or a public nuisance.

13.19.14.3. Removal and Restoration. The C-SES owner and/or the C-SES operator is required to remove all physical material pertaining to the C-SES above ground level and all improvements of said C-SES below ground level to a depth of 50" for all C-SES's declared irreparably damaged, abandoned, and/or a public nuisance. All materials shall be so removed and C-SES site restored within 180 days of the discontinuation of energy production or in accordance with agreements developed under this Ordinance.

a. All C-SES underground wiring that is forty eight (48) inches or deeper below the natural ground surface shall be permitted to remain provided all lines are disconnected from any electrical grid.

b. A C-SES which is irreparably damaged, abandoned or declared to be a public nuisance shall within such time limit, one hundred eighty (180) days, be restored to the original condition of the C-SES site prior to the development of such C-SES by the applicant, owner, and/or operator. If any portion of the C-SES is found to be hazardous in nature by state or federal regulatory agencies or required to be recycled, the C-SES applicant, owner and/or operator shall be required to remove such in a manner as prescribed by law.

13.19.14.4. Identification and Removal of Hazardous Materials. As part of the application process the C-SES applicant, owner and/or operator shall identify any currently listed hazardous materials as regulated by state and federal regulatory agencies (such as the EPA

and IDEM) as well as non-hazardous materials and indicate the appropriate handling, storage and transport of said materials during Disposal and/or Diversion of both.

13.19.14.5. Performance Guarantee. A performance guarantee in the form of a bond, irrevocable letter of credit and agreement, or other financial security acceptable to the Wabash County Commissioners in the amount of one hundred twenty five (125) % of the estimated decommission and restoration cost shall be required. Estimates shall be determined by licensed engineers selected by the county.

a. Unless otherwise agreed to by all parties, every five (5) years, said engineer shall calculate a new estimate of probable cost of Decommissioning and Restoration that shall be submitted for approval in the same manner as the initial submission, and the bond, letter of credit, or other financial security acceptable to the county shall be adjusted upward or downward as necessary. A new estimate shall be submitted to the APC prior to the sale of any portion of the C-SES and the Performance Guarantee adjusted appropriately and made part of the sales contract,

b. All fees associated with the engineer's calculation and review of decommissioning and restoration cost shall be paid by the C-SES applicant, owner, operator,

c. Failure to negotiate in good faith the calculated decommissioning and restoration cost during the operational life of the C-SES shall be just cause for the county commissioners to declare the C-SES a nuisance and require the C-SES applicant, owner, operator to cease operation of the C-SES and complete the Decommissioning and Restoration process,

d. All expenses involved in such Decommissioning and Restoration shall be paid by the C-SES applicant, owner, and/or operator, or removal and restoration will be completed by Wabash County at the C-SES applicant's, owner's, operator's expense as specifically provided by the Decommissioning-Restoration Plan and Agreement.

13.19.15. Drainage Agreement Plan and Erosion Control Plan.

13.19.15.1. A Drainage Agreement shall be established and approved by the Wabash County Commissioners or their designees. The Drainage Agreement must prescribe or reference provisions to address:

a. Field tile damages and repairs during the life of the C-SES, the decommissioning process and two (2) years beyond the completion of the site decommissioning and restoration,

b. Removal and restoration for repair of any damaged field tile within the development site.

c. Damages or alterations to creeks, streams, ditches, channels, spillways, retention ponds, water courses within the proposed C-SES project area and thirteen hundred twenty (1320) feet beyond.

d. The Wabash County Commissioners may request a performance guarantee as part of the drainage agreement in which all parts of Section 13.19.14.5. a. - d. shall apply as applicable to the drainage agreement.

13.19.15.2. An erosion control plan developed in accordance with the Natural Resources Conservation Services (NRCS) guidelines, IDEM Rule 5, and any storm water quality management plan adopted by the applicable jurisdiction(s) shall be submitted.,

a. The area beneath the ground mounted C-SES is considered pervious cover. However, use of impervious construction materials within the C-SES could cause areas to be subject to the impervious surface limitations for the applicable Zoning District. Natural (pervious) ground covers are required beneath the solar arrays.

b. The relocation or removal of top soil for construction purposes is prohibited.

13.19.16 Road Use, Maintenance, and Public Infrastructure Agreement.

13.19.16.1. A Road Use and Maintenance Agreement shall be established and approved by the Wabash County Commissioners or their designees. The agreement shall, at minimum, include:

a. A list of all roads to be used during the construction, operation, maintenance, decommissioning and restoration of the solar project.

b. A listing of all culverts, bridges, ditches, streams, creeks, crossing listed roads to be used during the construction, operation, maintenance, decommissioning and restoration of the solar project.

c. Pre-construction survey. The applicant, owner and/or operator in coordination with the County selected highway engineer shall conduct a pre-construction baseline survey to determine existing road conditions for assessing current needed improvements and potential future damage. The survey shall include, but not be limited to, photographs, videos , or a combination thereof, and a written agreement to document the condition of the public facility as the same exists on the date of the baseline survey. This survey shall be the basis for determining the minimum width of roads (not platted width) when repair or replacement is required in the Road Use and Maintenance Agreement.

d. Any road damage caused by the transport of any matter or material utilized in any way regarding the C-SES, in the construction of the C-SES, the installation of the same, operation of C-SES and/or the removal, decommissioning and restoration of the same, shall be repaired to the satisfaction of the Wabash County Commissioners.

i. The county shall require remediation of C-SES damaged roads throughout the life of the C-SES including the completion of site decommissioning and remediation.

e. A surety bond or letter of credit in an amount to be determined by a professional highway engineer selected by the commissioners shall be required by the County to ensure that future repairs are completed to the satisfaction of the Wabash County Commissioners.

i. The cost of such bond or letter of credit shall be paid by the C-SES owner and said bond shall remain in full force and affect until the decommissioning and restoration is fully completed as prescribed by this Ordinance and the Decommissioning-Restoration Plan and Agreement.

ii. Unless otherwise agreed to by all parties, every five (5) years, said engineer shall calculate a new estimate of probable cost of road repair ,

maintenance that shall be submitted for approval in the same manner as the initial submission, and the bond, letter of credit, or other financial security acceptable to the county shall be adjusted upward or downward as necessary.

iii. A new estimate shall be submitted to the plan commission for review prior to the sale of any portion of the C-SES and the Performance Guarantee adjusted appropriately and made part of the sales contract,

13.19.17. Development Taxation Agreement. For any project seeking tax abatement or other economic considerations for the project from a governmental entity, the applicant shall submit an Economic Development Agreement approved by the Wabash County Council. The Economic Development Agreement must be developed in consultation with the Wabash County Economic Development Authority (WCEDA), the Wabash County Council, the Wabash County Plan Commission and the Wabash County Commissioners.

a. An Economic Development Agreement may be entered into between the Solar Applicant and Wabash County for funding alternatives in lieu of tax payments.

b. The Economic Development Agreement shall include at minimum:

i. estimated property taxes, estimated tax abatement benefits,

ii. the anticipated number of new employees, jobs, during construction phase and operation phase.

iii. any estimated economic development payments, any estimated lease payments,

iv. an estimate of the overall cost and tax revenue impact on the County,

v. the estimated current economic impact of the project area in its current use.

13.19.18. Proof of Correspondence and Cooperation with Wildlife Agencies: For the purposes of demonstrating compliance with required permits, the applicant shall provide written documentation that the applicant is in direct correspondence, cooperation and in compliance and shall remain in compliance with all applicable regulations and requirements of the U.S. Fish and Wildlife Service and the Indiana Department of Natural Resources. All such correspondence must include job title, contact name, phone number, and e-mail address of those verifying compliance with all applicable regulations and requirements.

13.20. Amendments and Changes to the Site Plan and Operating Practices, C-SES.

Any material change associated with the solar project or an change in the approved operating practices of the solar project shall be furnished to the Wabash County Commissioners for review.

13.20.1. It shall be the duty and responsibility of the applicant, owner and/or operator to obtain any variance required by such change and to comply with any other requirement necessitated by such change.

a. Any variance required by this Section 13.20.1. shall be obtained prior to construction or implementation of such change.

13.21. Materials Handling, Storage and Disposal, C-SES.

13.21.1. Solid wastes: All solid wastes whether generated from supplies, equipment, parts, packaging, operation, maintenance, rehabilitation, decommissioning, restoration of the facility, or otherwise, including, but not limited to, old parts and equipment related to the maintenance, rehabilitation,

decommissioning, or restoration of any C- SES shall be removed from the site promptly and disposed of in accordance with all federal, state and local regulations, laws and ordinances. The C-SES applicant, C-SES owner and C-SES operator shall have the same responsibility for compliance hereof.

13.21.2. **Hazardous Materials:** All hazardous materials or hazardous waste related to the construction, operation, maintenance, rehabilitation, decommissioning, or restoration of any C-SES or otherwise generated by the facility shall be handled, stored, transported and disposed of in accordance with all applicable local, state and federal regulations and laws. The C-SES applicant, C-SES owner and the C-SES operator shall have the same responsibility for compliance hereof. The C-SES owner shall be responsible for all clean-up cost and shall be bonded accordingly for all clean-up of a C-SES site, including the leased ground in the event of an environmental spill creating any environmental hazard(s).

13.22. Sewer, Septic and Water. All C-SES facilities shall comply with the sewer, septic and well regulations as currently required or as hereinafter amended, by the Wabash County Health Department and the Indiana State Department of Health.

13.23. Contact Information. The C-SES applicant, owner and/or operator shall maintain and provide to the plan commission a list of current personnel, with corresponding phone numbers and e-mail addresses, to contact with public inquiries or complaints throughout the life of the project. The C-SES applicant, owner and/or operator shall respond to the public inquiries and complaints submitted by the plan commission.

13.24. As-Built Plans Requirement. Where upon completion of all development, the exact measurements of the location of utilities, structures and components, erected during the development, necessary for public record shall therefore be recorded. The applicant, owner, and/or operator shall submit a copy of the final as built survey to the APC with the locations of the C-SES facilities shown thereon. The selected engineering firm, after being satisfied that the locations of the C-SES facilities are substantially similar to the locations on the originally approved final plan(s) or as the same were from time to time amended and have so indicated in writing, the Wabash County Commissioners shall approve, date and sign said as-built survey for the C-SES, which the applicant, owner, and/or operator shall then have recorded in the office of the Wabash County Recorder and provide the APC with a copy of said recorded plans.

13.25. Change in Ownership. It shall be the duty and responsibility of the C-SES applicant, C-SES owner and/or C-SES operator and any subsequent C-SES owner and C-SES operator, in addition to the notice requirements of any C-SES plan(s) and C-SES agreement(s) to notify, by written notice, the plan commission of any change in the ownership of the C-SES or any part of the ownership thereof to and through the time that the final Decommissioning- Restoration Plan and Agreement are concluded and all applicable acceptances, releases and performance standards of any description have been met and concluded and accepted by the appropriate local, state, federal or private authority, department, agency, and person(s) and all financial payments or other financial obligations are fully satisfied and all appropriate parties are in receipt thereof. In order for the owner and/or operator to inform said APC of the required information regarding changes as herein provided, said notice shall be sent by certified mail with certified funds for any required recording fees and any other applicable fee(s) to the PC or by personally delivering the same to the PC office. Said changes shall be reviewed by the PC Director and the C-SES owner/operator during the next regular scheduled board meeting to ensure all requirements of this ordinance are compliant.

13.26. Liability Insurance. The owner and operator of a C-SES shall maintain a commercial general liability policy covering death, bodily injury and property damage, which may be combined with umbrella coverage, and shall be required to name Wabash County, Indiana as an additional insured solely to the extent of liabilities arising under this Ordinance, and said policy shall carry dollar amounts satisfactory to the County Commissioners and with agreed upon dollar amount limits per occurrence, aggregate coverage, and deductible amounts, all of which shall be agreed upon by the C-SES applicant, owner, operator and County Commissioners and provided in the Decommissioning-Restoration Plan and Agreement or other appropriate plan or agreement between the County Commissioners and C-SES applicant, owner and operator. The C-SES applicant, owner, operator shall furnish the county with a certificate of insurance and annual renewal certificate of insurance pursuant to this provision. The County Commissioners may require the certificate of insurance and any renewal certificate at a time agreed between the County

Commissioners and C-SES applicant, owner, operator, provided, however, the County Commissioners may require the certificate of insurance as part of the application procedures or at such earlier time that said Commissioners believe the same to be necessary and appropriate.

13.27 Definitions

Adjacent: lying near, close; contiguous; adjoining; neighboring.

Adjoining: being in contact at some point or line; contiguous; bordering.

Accessory Use: A use customarily incidental and subordinate to the primary use or building and located on the same lot therewith. A use which dominates the primary use or building in area, extent, or purpose shall not be considered an accessory use.

Battery Back-Up: A battery system that stores electrical energy from a solar PV system, making the electricity available for future use. Battery Back-Up systems are common in Off-Grid Systems and Hybrid Systems.

Buffer Strip: An area of land maintained to provide screening by use of permanent, different configurations of grasses, trees, shrubs, soil for the purpose of concealing a C-SES.

Concentrated Solar Thermal Power (CST): A Solar Energy Systems that use lenses or mirrors, and often tracking systems, to focus or reflect a large area of sunlight into a small area. The concentrated energy is absorbed by a transfer fluid or gas and used as a heat source for either a conventional power plant, such as a steam power plant, or a power conversion unit, such as a sterling engine. Although several concentrating solar thermal technologies exist, the most developed types are the solar trough, parabolic dish and solar power tower.

Electricity Generation (aka production, output): - The amount of electric energy produced by transforming other forms of energy, commonly expressed in kilowatt-hours (kWh) or megawatt-hours (MWh).

Economic Development Agreement: An agreement between the applicant, owner and/or operator and the county setting forth the applicant, owner and/or operator's financial commitment to support economic development and/or provide other financial assistance in the county.

Ground-Mount System: A solar energy system that is directly installed on specialized solar racking systems, which are attached to an anchor in the ground and wired to connect to an adjacent home, building or utility. Ground-mount systems may be applicable when insufficient space, structural and shading issues, or other restrictions prohibit rooftop solar.

IAC: Indiana Administrative Code

Indiana Electric Code: Identified in 675 IAC 17 Indiana Residential Code- Identified in 675 IAC 14 Indiana Building Code- Identified in 675 IAC 13

Inverter: A device that converts the Direct Current (DC) electricity produced by a solar photovoltaic system is converted to useable alternating current (AC).

Megawatt (MW) Equal to 1000 Kilowatts, or 1,000,000 Watts a measure of the use of electrical power.

Megawatt-hour (MWh): A unit of energy equivalent to one Megawatt (1 MW) of power expended for 1 hour of time.

National Electric Code (NEC): Sets standards and best practices for wiring and electrical systems.

Net Metering: A billing arrangement that allows customers with grid-connected solar electricity systems to receive credit for any excess electricity generated on-site and provided to the utility grid.

Off-Grid Solar Photovoltaic Systems with battery back-up: Solar photovoltaic electricity systems designed to operate independently from the local utility grid and provide electricity to a home, building, boat, RV (or remote agricultural pumps, gates, traffic signs, etc.). These systems typically require a battery bank to store the solar electricity for use during nighttime or cloudy weather (and/or another back-up generation). Typical system components include: PV panels, battery bank, a charge controller, inverter(s), required disconnects, and associated electrical safety gear.

Passive Solar: Techniques, design, and materials designed to take advantage of the sun's position throughout the year (and the local climate) to heat, cool, and light a building with the sun. Passive solar incorporates the following elements strategically to maximize the solar potential of any home or building (namely, maximizing solar heat gain in winter months and minimizing solar heat gain in summer months to reduce heating/cooling demand; and maximizing the use of daylighting to reduce demand for electricity for lighting): strategic design and architecture, building materials, east-west and building lot orientation, windows, landscaping, awnings, ventilation

Photovoltaic (PV) System: A solar energy system that produces electricity by the use of semiconductor devices, called photovoltaic cells, which generate electricity when exposed to sunlight. A PV system may be roof-mounted, ground-mounted, or pole-mounted.

PV-Direct Systems: The simplest of solar photovoltaic electric systems with the fewest components (no battery back-up and not interconnected with the utility) designed to only provide electricity when the sun is shining. Typical system components include: PV panels, required electrical safety gear, and wiring.

Racking: Solar energy systems are attached securely and anchored to structural sections of the roof-mounted or pole-mounted systems. Specially designed metal plates called flashings prevent leaks and are placed under shingles and over bolts to create a water-tight seal.

Roof-Mount System (aka rooftop mounted, building mounted): A solar energy system consisting of solar panels are installed directly on the roof of a home, commercial building, and/or an accessory structure, such as a garage, pergola, and/or shed. Solar panels are mounted and secured using racking systems specifically designed to minimize the impact on the roof and prevent any leaks or structural damage. Roof-mount systems can be mounted flush with the roof or tilted toward the sun at an angle.

Solar Access: the ability of one property to continue to receive sunlight across property lines without obstruction from another's property (buildings, foliage or another impediment).

Solar Array: Multiple solar panels combined together to create one system.

Solar Collector: A solar PV cell, panel, or array, or solar thermal collector device, that relies upon solar radiation as an energy source for the generation electricity or transfer of stored heat.

Solar Easement: An easement recorded pursuant to Chapter IC 32-23-4, obtained for the purpose of insuring exposure of a solar energy device or a passive solar energy system to the direct rays of the sun. Solar Easements are further described and regulated in subsections 19-6-2-9 & 19-7-6-6 Solar easements are to follow the state requirements of recording (IC32-23-2-5).

Solar Energy System (SES): Solar Energy System ("SES") means the components and subsystems required to convert solar energy into electric or thermal energy suitable for use; the area of the system includes all the land inside the perimeter of the system, which extends to any fencing, buffer and landscaping. The term applies, but is not limited to, solar photovoltaic (PV) systems, solar thermal systems, and solar hot water systems. A regulated SES fits into one of two

system types: Commercial (C-SES) or Noncommercial (NC-SES) (as hereinafter defined). For purposes of this ordinance an SES does not include concentrated solar thermal systems and such systems are not permitted.

Solar Energy System, Commercial (C-SES): means a utility-scale commercial facility that converts sunlight into electricity with the primary purpose of wholesale or retail sales of generated electricity. A Concentrated Solar Thermal (CST) is not permitted or considered a C-SES for the purposes of this Ordinance.

Solar Energy System, Noncommercial (NC-SES): include any photovoltaic, solar thermal, or solar hot water devices that are accessory to, and incorporated into the development of an authorized use of the property, and which are designed for the purpose of reducing or meeting on-site energy needs.

Solar Glare: The potential for solar panels to reflect sunlight, with intensity sufficient to cause annoyance, discomfort, or loss in visual performance and visibility.

Solar Photovoltaic (Solar PV) System: Solar systems consisting of photovoltaic cells, made with semiconducting materials, that produce electricity (in the form of direct current (DC)) when they are exposed to sunlight. A typical PV system consist of PV panels (or modules) that combine to form an array; other system components may include racks and hardware, wiring for electrical connections, power conditioning equipment, such as an inverter and/or batteries.

Solar Photovoltaic Systems, Hybrid (aka grid-tied PV with battery back-up): Solar photovoltaic electricity generation systems designed to serve the electricity needs of the building to which it is connected, thus offsetting a home's or business's electricity usage, while also utilizing a battery back-up in the event of a power outage. This is the only system that provides the ability to have power when the utility grid is down. Typical system components include: PV panels, inverter(s), and required electrical safety gear, battery bank, and a charge controller.

Solar Panel (or module): A device for the direct conversion of sunlight into useable solar energy (including electricity or heat).

Solar Thermal System (aka Solar Hot Water or Solar Heating Systems): A solar energy system that directly heats water or other liquid using sunlight. Consist of a series of tubes that concentrate light to heat either water or a heat-transfer fluid (such as food- grade propylene glycol, a non-toxic substance) in one of two types of collectors (flat- plate collectors and evacuated tube collectors). The heated liquid is used for such purposes as space heating and cooling, domestic hot water, and heating pool water.

a. **“Visual Barrier”** For C-SES it is landscaping in height and density that will provide a visual barrier to camouflage visual contact with solar arrays and the associated solar equipment. Barrier may be a variation of landscape trees, landscape shrubs and landscape mounds as selected by the land owner under the supervision and guidance of a certified professional landscape designer.

Waiver: Waiver Agreement – An agreement to modify a standard required in this Ordinance which is entered into by and between the landowner burdened by lessening the standard required by the Ordinance and the landowner requesting the modification of the standard required by this Ordinance. An agreement to modify a standard required by this Ordinance, or “waiver agreement”, is permissible only when a waiver of such standard is specifically authorized by this Ordinance. In order to be valid, a “waiver agreement” must be in writing, specifically state that the document is a waiver agreement, briefly describe the standard or requirement which is being modified, briefly describe the standard agreed upon by the parties to the waiver agreement, be executed in a manner free from coercion or duress, be executed by both parties to the waiver agreement, be subject to the approval of the PC Director, and filed with the PC office.

Watts (W): A measure of the use of electrical power (power (Watts) = voltage (volts) X current (Amps)).

All other terms used in this Ordinance, but not specifically defined herein shall have the meaning contained in the Wabash County Zoning Ordinance (“Zoning Ordinance”) or shall have the meaning inferred from their context or their ordinarily accepted definitions.

