

Buffalo County Solar Ordinance

2024-1.00 Solar Panel and Solar Farm Ordinance

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2023-1.01 Title

This ordinance shall be known as, referred to, or cited as the Solar Panel Ordinance, County of Buffalo, Wisconsin.

2023-1.02 Purpose

The purpose of this ordinance is to provide a regulatory means for the siting, construction, and operation of both small- and large-scale solar installations in the County of Buffalo, subject to reasonable restrictions, which will preserve the public health and safety.

2023-1.03 Findings of Fact

1. These regulations are adopted under the authority granted pursuant to Wisconsin Statute 66.0401 (2009) which provides regulation related to solar and wind energy systems.
 - a. Sec. 66.0401 Wis. Stats: Authority to Restrict Systems Limited. No political subdivision may place any restriction, either directly or in effect, on the installation or use of a solar energy system, as defined in Wis Statutes 13.24 (2)(h)1. g. Wis Stats, unless it satisfies one of the following conditions:
 - i. Serves to preserve or protect public health or safety.
 - ii. Does not significantly increase the cost of the system or significantly decrease its efficiency.
 - iii. Allows for an alternative system of comparable cost and efficiency.

2023-1.04 Definitions

1. As used in this Ordinance, the following terms shall have the meanings indicated:
 - a. ACCESSORY SOLAR ENERGY SYSTEM (ASES): An area of land or other area used for a solar collection system used to capture solar energy, convert it to electrical energy or thermal power and supply electrical or thermal power primarily for on-site use. An accessory solar energy system consists of one (1) or more free-standing ground, or roof mounted solar arrays or modules, or solar related equipment and is intended to primarily reduce on-site consumption of utility power or fuels.

- b. GLARE: The effect produced by light with intensity sufficient to cause annoyance, discomfort, or loss in visual performance and visibility.
- 2. ONSITE: The power generated on a parcel to be used on this same parcel.
- 3. PRINCIPAL SOLAR ENERGY SYSTEM (PSES): An area of land or other area used for a solar collection system principally used to capture solar energy, convert it to electrical energy or thermal power and supply electrical or thermal power primarily for off-site use. Principal solar energy systems consist of one (1) or more free-standing ground, or roof mounted solar collector devices, solar related equipment and other accessory structures and buildings including light reflectors, concentrators, and heat exchangers, substations, electrical infrastructure, transmission lines and other appurtenant structures.
- 4. Screening
- 5. STAND ALONE ENERGY SYSTEM: Any solar system that does not tie into the power grid or to a habitable structure.
- 6. SOLAR EASEMENT: A solar easement means a right, expressed as an easement, restriction, covenant, or condition contained in any deed, contract, or other written instrument executed by or on behalf of any landowner for the purpose of assuring adequate access to direct sunlight for solar energy systems.
- 7. SOLAR ENERGY: Radiant energy (direct, diffuse and/or reflective) received from the sun.
- 8. SOLAR PANEL: That part or portion of a solar energy system containing one or more receptive cells or modules, the purpose of which is to convert solar energy for use in space heating or cooling, for water heating and/or for electricity.
- 9. SOLAR RELATED EQUIPMENT: Items including a solar photovoltaic cell, module, panel, or array, or solar hot air or water collector device panels, lines, pumps, batteries, mounting brackets, framing and possibly foundations or other structures used for or intended to be used for collection of solar energy.
 - a. Solar Array: A grouping of multiple solar modules with the purpose of harvesting solar energy.
 - b. Solar Cell: The basic solar device which collects solar energy.
 - c. Solar Module: A grouping of solar cells with the purpose of harvesting solar energy.

2023-1.04 General Requirements

- 1. Both ASES and PSES shall be referred to as a “solar energy system”.
- 2. Structural and electrical engineering is required for both ASES, PSES and any other solar energy system that co-mingles with utility power.
- 3. The solar layout, design, installation, and ongoing maintenance shall conform to applicable industry standards, such as those of the American National Standards Institute (ANSI), Underwriters Laboratories (UL), the American Society for Testing and Materials (ASTM), Institute of Electrical and Electronics Engineers (IEEE), Solar Rating and Certification Corporation (SRCC), Electrical Testing Laboratory (ETL), National Electrical Code (NEC), and State of Wisconsin Electrical Code or other similar certifying organizations, and shall comply with the WI Uniform Construction Code as enforced by Buffalo County Zoning Department, and with all other applicable fire and life safety requirements. The manufacturer specifications for the key components of the system shall be submitted as part of the application. Upon completion of installation, the solar system shall be maintained in good

working order under which the solar array was constructed. Failure of the property owner to maintain the solar energy system in good working order is grounds for appropriate enforcement actions by the Buffalo County Zoning Department in accordance with applicable ordinances. It shall be the responsibility of the installing company to train and/or cover the costs of training for all local emergency services on responding to on-site emergencies.

4. Solar energy system installers must certify they are listed as a certified installer on the WI Department of Environmental Protection's approved solar installer list or that they meet the criteria to be a DEP approved installer by meeting or exceeding one of the following requirements:
 - a. Is certified by the North American Board of Certified Energy Practitioners.
 - b. Has completed an Interstate Renewable Energy Council Institute of Sustainable Power Quality accredited PV training program or a PV manufacturer's training program and successfully installed a minimum of three PV systems.
5. Permit Requirements
 - a. Zoning /building permit applications shall document compliance with this Section and shall be accompanied by drawings showing the location of the system on the building or property, including property lines.
 - i. Permits must be kept on the premises where the solar energy system is constructed.
 - ii. Setbacks are fifty (50) feet from any property line for ground mounted systems, unless applicant can provide proof of a hardship through a conditional use application, with a final review to be conducted by the Board of Adjustment.
 - b. The zoning/building permit shall be revoked if the solar energy system, whether new or pre-existing, is moved or otherwise altered, either intentionally or by natural forces, in a manner which causes the solar energy system not to be in conformity with this Ordinance.
 - c. The solar energy system must be properly maintained according to industry standards as needed to keep the solar energy system in good repair and operating condition, and that it shall be kept free from all hazards, including but not limited to, faulty wiring, loose fastenings, being in an unsafe condition or detrimental to public health, safety, or general welfare. In the event of a violation of any of the foregoing provisions, the Zoning Department shall give written notice specifying the violation to the owner of the solar energy system to conform or to remove the solar energy system.
 - d. If the power is to mingle with the existing utility grid, a contract with the utility company shall be provided to the Zoning Department.
 - e. A certified plan must be stamped and approved by a Professional Engineer and on file with the Buffalo County Zoning Department to ensure safety of all wiring and energy transference.
6. Decommissioning & Demolition
 - a. A permit is required for all decommissioning/demolition.

- b. Any foundations, equipment or wiring must be removed at the close of the decommissioning.
- c. Any easement created for the construction or use of a solar energy system will cease to be in effect upon the completion of the decommissioning/demolition. It is the responsibility of the owner of the solar energy system to record the cessation of the easement.

18-13.06- Accessory Solar Energy Systems (ASES)

Regulations Applicable to All Accessory Solar energy systems:

1. Best management practices shall be used to minimize erosion on and off the site. Any development over 12% shall submit a steep slopes development plan prior to permit issuance.
2. Any and all disputes shall go before the Board of Adjustments for final determination.
3. ASES shall be permitted as a use in all zoning districts.
4. Exemptions
 - a. ASES constructed prior to the effective date of this Section shall not be required to meet the terms and conditions of this Ordinance. Any physical modification to an existing ASES whether or not existing prior to the effective date of this Section that materially alters the ASES shall require approval under this Ordinance.
Routine maintenance or like-kind replacements do not require a permit.
5. All on-site utility, transmission lines, and piping/plumbing shall be placed inside the structure or underground to the extent feasible.
6. The owner of an ASES shall provide the Zoning Department written confirmation that the public utility company to which the ASES will be connected has been informed of the customer's intent to install a grid connected system and approved of such connection. Off-grid systems shall be exempt from this requirement.
7. The display of advertising is prohibited except for reasonable identification of the manufacturer of the system.
8. Glare
 - a. All ASES shall be placed such that concentrated solar radiation or glare does not project onto nearby structures or roadways. b. The applicant has the burden of proving that any glare produced does not have significant adverse impact on neighboring or adjacent uses either through siting or mitigation.
9. **Solar Easements**
 - a. Where a subdivision or land development involves the use of solar energy systems, solar easements shall be provided. Said easements shall be in writing and shall be subject to the same conveyance and instrument recording requirements as other easements.
 - 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 or the hours of the day, on

- specified dates, during which direct sunlight to a specified surface or structural design feature may not be obstructed.
 - 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 terms and conditions, if any, under which the easement may be revised or terminated.
 - iv. Explain the compensation for the owner of the real property subject to the solar easement for maintaining the easement and for the owner of the real property benefiting from the solar easement.
 - c. If required, an ASES 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).
10. Prior to the issuance of a zoning permit, and in the case of no easement, applicants must acknowledge in writing that the issuing of said permit for a solar energy system 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 adjoining or other property or the growth of any trees or vegetation on such property; or
 - b. The right to prohibit the development of or growth of any trees or vegetation on such property.
11. Decommissioning
- a. The ASES owner is required to notify the County immediately upon cessation or abandonment of the operation. The ASES shall be presumed to be discontinued or abandoned if output falls below a continuous twenty-five (25) percent of designed output for a period of twelve (12) continuous months.
 - b. The ASES owner shall then have twelve (12) months in which to dismantle and remove the ASES including all solar related equipment or appurtenances related thereto, including but not limited to buildings, cabling, electrical components, roads, foundations, and other associated facilities from the property. If the owner fails to dismantle and/or remove the ASES within the established timeframes, Buffalo County may complete the decommissioning at the owner's expense.
 - c. The ASES owner shall, at the request of the County, provide information concerning the amount of energy generated by the ASES in the last twelve (12) months.
12. Roof Mounted and Wall Mounted Accessory Solar energy systems:
- a. A roof mounted or wall mounted ASES may be located on a principal or accessory building.
 - b. A Professional Engineer must certify the location of the ASES and that it does not compromise the structural integrity nor interfere with proper venting, natural lighting, or egress.

- c. A Professional Engineer must certify that the electrical power of the building will not be compromised by the placement of the ASES. Off-grid systems shall be exempt from this requirement.
- 13. The total height of a building with an ASES shall not be exceeded by more than 2 feet above the maximum building height specified for principal or accessory buildings within the applicable zoning district.
- 14. Wall mounted ASES shall comply with the setbacks for principal and accessory structures in the underlying zoning districts. (Accessory Structure setbacks)
- 15. For roof and wall mounted systems, the applicant shall provide engineering evidence that the plans comply with the Uniform Construction Code and adopted building code of the County that the roof or wall is capable of holding the load imposed on the structure; those include, but are not limited to wind load, snow load and dead load or any additional loads that may be applied onto that structure.
- 16. Ground Mounted Accessory Solar energy systems:
 - a. **Setbacks**
 - i. Must meet the required setback for an accessory structure per the equivalent zoning district.
 - ii. Zoning Department may authorize the installation of a ground mounted ASES in front of the principal building, outside the required front yard, if the applicant demonstrates that, due to solar access limitations, no location exists on the property other than the front yard where the solar panel can perform effectively. A vegetative screen may be required.
 - b. Height
 - i. Ground mounted ASES shall not exceed fifteen (15) feet in height above the ground elevation surrounding the systems.
 - c. Coverage
 - i. The area beneath the ground mounted ASES is considered pervious cover. However, use of the impervious construction materials under the system could cause the area to be considered impervious.
 - ii. The total surface area of the arrays of ground mounted ASES on the property shall not exceed more than twenty (20) percent of the lot area.
 - iii. The applicant shall submit a Storm Water Management Plan that demonstrates compliance with the Buffalo County Storm Water Management regulations.
 - d. Screening
 - i. Ground mounted ASES shall be screened from any adjacent property that is residentially zoned or used for residential purposes.
 - ii. Appropriate safety/warning signage concerning voltage shall be placed at ground mounted electrical devices, equipment, and structures. All electrical control devices associated with the ASES shall be locked to prevent unauthorized access or entry.
 - e. Ground-mounted ASES shall not be placed within any legal easement or right-of-way location or be placed within any storm water conveyance system or in any other

manner that would alter or impede storm water runoff from collecting in a constructed storm water conveyance system.

18-13.07 Principal Solar Energy Systems (PSES)

1. Buffalo County Land Management shall have the authority for on-site and aerial inspections during the entirety of the permit duration.
2. Any and all disputes shall go before the Board of Adjustments for final determination.
3. Best management practices shall be used to minimize erosion on and off the site. Any development over 12% shall submit a steep slopes development plan prior to permit issuance.
4. Regulations applicable to all principal solar energy systems
5. PSES shall be permitted by conditional use in all Zoning Districts
6. Exemptions
 - a. PSES constructed prior to the effective date of this section shall not be required to meet the terms and conditions of this ordinance. Any physical modification to an existing PSES, whether or not existing prior to the effective date of this section that materially alters the PSES shall require approval under this ordinance. Routine maintenance or like-kind replacements do not require a permit.
7. All on-site wiring, cabling, and piping/plumbing lines shall be placed inside the structure or underground within the shortest practical distance.
8. The owner of a PSES shall provide the Buffalo County Zoning Department with written confirmation that the public utility company to which the PSES will be connected has been informed of the customer's intent to install a grid connected system and approved of such connection.
9. No portion of the PSES 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 PSES provided they comply with the prevailing sign regulations.
10. Glare
 - a. All PSES shall be placed such that concentrated solar radiation or glare does not project onto nearby structures or roadways.
 - b. The applicant has the burden of proving that any glare produced does not have significant adverse impact on neighboring or adjacent uses either through siting or mitigation.
11. A noise study shall be carried out and included in the application. The noise study shall be performed by an independent noise study expert and paid for by the applicant. Noise from a PSES shall not exceed five (5) decibels (DBA) above ambient, as measured at the property line.
12. The PSES owner and/or operator shall maintain a phone number and identify the person responsible for the public to contact with inquiries and complaints throughout the life of the project and provide this number and name to the Zoning Department. The PSES owner and/or operator shall make reasonable efforts to respond to the public's inquiries and complaints.

- a. Maintenance, condition and output records must be submitted to the town biannually for review. The records will be kept on file and available for public inspection.

13. Decommissioning/Demolition

- a. The PSES owner is required to notify Zoning Department immediately upon cessation or abandonment of the operation. The PSES shall be presumed to be discontinued or abandoned if output falls below a continuous twenty-five (25) percent of designed output for a period of twelve (12) continuous months.
- b. A permit from the Zoning Department is required for all decommissioning and demolition.
- c. The PSES owner shall then have twelve (12) months in which to dismantle and remove the PSES including all solar related equipment or appurtenances related thereto, including but not limited to buildings, cabling, electrical components, roads, foundations, and other associated facilities from the property. If the owner fails to dismantle and/or remove the PSES within the established timeframes, Buffalo County may complete the decommissioning at the owner's expense.
- d. At the time of issuance of the permit for the construction of the PSES, the owner shall provide financial security in the form and amount acceptable to the County to secure the expense of dismantling and removing said PSES and restoration of the land to its original condition.

14. Prior to the issuance of zoning and conditional use permits, PSES applicants must acknowledge in writing that the agreement binds and benefits the parties and their respective heirs, executors, administrators, legal representatives, successors, and assigns.

- a. The solar energy system owner has the right to remain free of shadows and/or obstructions to solar energy caused by development of adjoining or other property or the growth of any trees or vegetation on such property according to the original use of the agreement.

15. Permit Requirements

- a. PSES shall comply with Buffalo County Land Management plan. The installation of PSES shall be in compliance with all applicable permit requirements, codes, and regulations.
- b. The PSES owner and/or operator shall repair, maintain, and replace the PSES and related equipment during the term of the permit in a manner consistent with industry standards as needed to keep the PSES in good repair and operating condition.
- c. PSES shall be effectively fenced around the perimeter with a minimum of eight (8) foot fencing made of steel wire. The wire shall not be of barbed wire or woven wire designs. The fencing shall preferably use wildlife friendly fencing standards that includes passage of small animals such as rabbits and raccoons. Such fencing shall effectively keep large animals such as deer out of the enclosure. If wild animals such as deer have entered the enclosure, those animals shall fall under captive wildlife regulations and must be reported immediately to Local wildlife authorities. It shall be upon the operator to see that entrapped animals are immediately released. The fencing shall not cross navigable waters.

- d. Any such system including but not limited to solar panels, fencing, access roads, etc. shall all adhere to Floodplain and Shoreland Ordinances
- e. The County shall be notified before any permit transfer takes place. The new permit holder is responsible for acquiring financial assurance and assuming decommissioning standards. Financial assurance will not be released until the new operator is in compliance.

16. Ground Mounted Principal Solar energy systems:

- a. **Setbacks**
 - i. PSES shall be setback fifty (50) feet from all property lines.
 - 1. However. Setbacks shall be 250 feet from all non-participating dwellings and structures.
 - ii. PSES setbacks shall be 150 feet off of State and County roads. The setback shall be 100 feet from all other roads.
 - iii. Setbacks from roadways may be reduced to standard zoning setbacks (accessory structure) only if fully screened from said roadway.
- b. Height
 - i. Ground mounted PSES shall not exceed fifteen (15) feet in height.
- c. Impervious Coverage
 - i. The area beneath the ground mounted PSES is considered pervious cover. However, use of impervious construction materials under the system could cause the area to be considered impervious and subject to the impervious surfaces limitations.
 - ii. The applicant shall submit a storm water management plan that demonstrates compliance with Buffalo County municipal storm water management regulations. Any disturbance over one (1) acre requires issuance of a WDNR stormwater permit before permit issuance.
 - iii. PSES owners are encouraged to use low maintenance and low growing vegetative surfaces under the system as a best management practice for storm water management.

17. Ground mounted PSES shall be screened from adjoining residential uses or zones.

18. Ground-mounted PSES shall not be placed within any legal easement or right-of-way location or be placed within any storm water conveyance system or in any other manner that would alter or impede storm water runoff from collecting in a constructed storm water conveyance system.

19. Security

- a. All ground mounted PSES shall be completely enclosed by a minimum eight (8) foot high fence with a self-locking gate.
- b. A clearly visible warning sign shall be placed at the base of all pad-mounted transformers and substations and on the fence surrounding the PSES informing individuals of potential voltage hazards.

20. Access

- a. At a minimum, a twenty-two (22) feet wide access road must be provided from a state/county or Township for an access to the site. Meet driveway standards.

- b. At a minimum, a twenty-two (22) feet wide cart way shall be provided between the solar arrays to allow access for maintenance vehicles and emergency management vehicles including fire apparatus and emergency vehicles. Cartway width is the distance between the bottom edges of solar panel frames to the top edges of the solar panel frame directly across from it.
- 21. The ground mounted PSES shall not be artificially lit except to the extent required for safety or applicable federal, state, or local authority.
- 22. If a ground mounted PSES is removed, any earth disturbance resulting from the removal must be graded and reseeded, returning it to the condition it was in prior to the PSES installation.
- 23. Any easements initiated upon the installation of the PSES must be voided at the conclusion of decommissioning and removal of the PSES.
- 24. Roof and Wall Mounted Principal Solar Energy Systems:
 - a. A Professional Engineer must certify that the electrical system of the building will not be compromised by the placement of the solar energy system. Stand Alone Energy Systems shall be exempt from this requirement.
 - b. PSES mounted on the roof or wall of any building shall be subject to the maximum height plus two (2) feet of the underlying zoning district.
- 25. Decommissioning/Demolition
 - a. The PSES owner is required to notify the Zoning Department immediately upon cessation or abandonment of the operation. The PSES shall be presumed to be discontinued or abandoned if output falls below a continuous twenty-five (25) percent of designed output for a period of twelve (12) continuous months.
 - b. A permit from the Zoning Department is required for all decommissioning and demolition.
 - c. The PSES owner shall then have twelve (12) months in which to dismantle and remove the PSES including all solar related equipment or appurtenances related thereto, including but not limited to structural repair of buildings, cabling, electrical components, roads, foundations, and other associated facilities from the property. If the owner fails to dismantle and/or remove the PSES within the established timeframes, Buffalo County may complete the decommissioning at the owner's expense.
 - d. At the time of issuance of the permit for the construction of the PSES, the owner shall provide financial security in the form and amount acceptable to the County to secure the expense of dismantling and removing said PSES and restoration of the land to its original condition, including forestry plantings of the same type/variety and density as the original.