SECTION 1107.18 ENERGY SYSTEMS (WIND AND SOLAR)

1107.18 SUBD. 1. PURPOSE.

The purpose of this Section is to establish standards and procedures by which the installation and operation of Wind Energy Conversion Systems (WECS) shall be governed within the City within any zoning district of the City, subject to the regulations and requirements of this Section, provided the property upon which the system is to be located is zoned agricultural, commercial or industrial or is constructed and maintained on any parcel of land of at least two and one-half (2 1/2) acres in size.

1107.18 SUBD. 2. DECLARATION OF CONDITIONS.

The Planning Commission may recommend and the Council may impose such conditions on the granting of WECS conditional use permit as may be necessary to carry out the purpose and provisions of this Section.

1107.18 SUBD. 3. SITE PLAN DRAWING.

All applications for WECS conditional use permit shall be accompanied by a detailed site plan drawn to scale and dimensioned, displaying the following information:

1. Lot lines and dimensions.

2. Location and height of all buildings, structures, above ground utilities and trees on the lot, including both existing and proposed structures and guy wire anchors.

3. Locations and height of all adjacent buildings, structures, above ground utilities and trees located within three hundred fifty (350) feet of the exterior boundaries of the property in question.

4. Existing and proposed setbacks of all structures located on the property in question.

5. Sketch elevation of the premises accurately depicting the proposed WECS and its relationship to structures on adjacent lots.

1107.18 SUBD. 4. COMPLIANCE WITH STATE BUILDING CODE.

Standard drawings of the structural components of the WECS and support structures, including base and footings shall be provided along with engineering data and calculations to demonstrate compliance with the structural design provisions of the State Building Code. Drawings and engineering calculations shall be certified by a registered engineer.

1107.18 SUBD. 5. COMPLIANCE WITH NATIONAL ELECTRICAL CODE.

WECS electrical equipment and connections shall be designed and installed in adherence to the National Electrical Code as adopted by the City.

1107.18 SUBD. 6. MANUFACTURER WARRANTY.

Applicant shall provide documentation or other evidence from the dealer or manufacturer that the WECS has been successfully operated in atmospheric conditions similar to the conditions within the City. The WECS shall be warranted against any system failures reasonably expected in severe weather operation conditions.

1107.18 SUBD. 7. DESIGN STANDARDS.

1. Height. The permitted maximum height of a WECS shall be determined in one of two ways. In determining the height of the WECS, the total height of the system shall be included. System height shall be measured from the base of the tower to the highest possible extension of the rotor.

   A. A ratio of one (1) foot to one (1) foot between the distance of the closest property line to the base of the WECS to the height of the system.
   B. A maximum system height of one hundred seventy-five (175) feet.
   C. The shortest height of the two (2) above-mentioned methods shall be used in determining the maximum allowable height of a WECS system. The height of a WECS must also comply with Federal Aviation Administration and State regulations.

2. Setbacks. No part of a WECS (including guy wire anchors) shall be located within or above any required front, side or rear yard setback. WECS towers shall be setback from the closest property line one (1) foot for every one (1) foot of system height. WECS shall not be located within thirty (30) feet of an above ground utility line.

3. Rotor Size. All WECS rotors shall not have rotor dimensions greater than twenty-six (26) feet.

4. Rotor Clearance. Blade-arcs created by the WECS shall have a minimum of thirty (30) feet of clearance over any structure or tree within a two hundred (200) foot radius.

5. Rotor Safety. Each WECS shall be equipped with both a manual and automatic braking device capable of stopping the WECS operation in high wind, forty miles per hour (40 MPH) or greater.

6. Lightning Protection. Each WECS shall be grounded to protect against natural lightning strikes in conformance with the National Electrical Code as adopted by the City.

7. Tower Access. To prevent unauthorized climbing, WECS towers must comply with one of the following provisions:

   A. Tower climbing apparatus shall not be located within twelve (12) feet of the ground.
   B. A locked anti-climb device shall be installed on the tower.

   C. Tower capable of being climbed shall be enclosed by a locked, protective fence at least six (6) feet high.

8. Signs. WECS shall have one (1) sign, not to exceed two (2) square feet posted at the base of the tower and said sign shall contain the following information:

   A. Warning high voltage.
   B. Manufacturer's name.
   C. Emergency phone number.
   D. Emergency shutdown procedures.

9. Lighting. WECS shall not have affixed or attached any lights, reflectors, flashers or any other illumination, except for illumination devices required by FAA.

10. Electromagnetic Interference. WECS shall be designed and constructed so as not to cause radio and television interference.

11. Noise Emissions. Noises emanating from the operation of WECS shall be in compliance with and regulated by the State of Minnesota Pollution Control Standards.

12. Utility Company Interconnection. No WECS shall be interconnected with a local electrical utility company until the utility company has reviewed and commented upon it. The interconnection of the WECS with the utility company shall adhere to the National Electrical Code as adopted by the City.

1107.18 SUBD. 9. ORNAMENTAL WIND DEVICES.

Ornamental wind devices that are not a WECS shall be exempt from the provisions of this Section and shall conform to other applicable provisions of this Ordinance.

1107.18 SUBD. 10. INSPECTION.

The City hereby reserves the right upon issuing any WECS conditional use permit to inspect the premises on which the WECS is located. If a WECS is not maintained in operational condition and poses a potential safety hazard, the owner shall take expeditious action to correct the situation.

1107.18 SUBD. 11. ABANDONMENT.

Any WECS or tower which is not used for six (6) successive months shall be deemed

abandoned and shall be dismantled and removed from the property at the expense of the property owner.

1107.18 SUBD. 12. SOLAR ENERGY SYSTEMS

1. Findings. The City finds:

    A. Solar energy is an abundant, clean, and renewable energy resource.
    B. The use of renewable and alternative energy sources reduces greenhouse gas emissions and protects the natural environment.
    C. Access to solar energy and the capture and use of solar energy contributes to the public health, safety, and welfare.

2. Purpose. The purpose of this Section is to provide for the reasonable capture and use of solar energy through uniform standards, regulations, and procedures governing the type, size, structure, location, height, erection, and use of solar energy systems.

3. Definitions. Certain words, terms, and phrases used in this Section are defined below or in Chapter 1101 of the City Code.

4. Existing Solar Energy Systems are allowed to continue as legal non-conforming uses as provided for under Chapter 1102 (Non-Conforming Lots, Uses, and Structures) of the City Code. Any expansion or intensification of an existing Solar Energy System shall conform to the standards contained in this Section (1107.18, Subd. 12) as may be amended from time to time.

5. Solar Energy Systems as an Accessory Use.

    A. Rooftop and building integrated solar energy systems are allowed as an accessory use in all zoning districts provided:

        i. If building integrated, the solar energy system shall meet the definition of “Solar Energy System, Building Integrated” as defined in Chapter 1101 of the City Code.
        ii. If affixed to the rooftop, the solar energy system shall meet the definition of “Solar Energy System, Rooftop” as defined in Chapter 1101 of the City Code.
        iii. The solar energy system shall be designed to supply solar energy only to the principal use of the subject property.
        iv. A maximum of one (1) solar energy system per lot or parcel shall be allowed.
        v. The Design Committee shall review/approve solar energy systems accessory to commercial and industrial principal uses.
        vi. Solar energy systems which visually or aesthetically impact buildings with local historic significance or historic character are discouraged in favor of retaining the historical significance

and/or character of the subject structure.

vii. Building and electrical permits shall be secured.

viii. Solar energy systems shall be placed to limit visibility from the public right-of-way or to blend into the building design, provided that minimizing visibility still allows the owner to reasonably capture solar energy.

ix. Rooftop solar energy systems:
    1. Shall not cover greater than eighty (80) percent of each side of the roof to which they are affixed.
    2. Shall not exceed the maximum height allowed in the applicable zoning district, except that rooftop solar energy systems installed on flat roofs may exceed the district height limit by six (6) feet.
    3. Shall not extend beyond the exterior perimeter of the building on which the system is mounted or affixed, except that exterior piping is allowed to extend beyond the perimeter of the building on an interior side yard exposure.
    4. Shall be flush mounted parallel to the roofline, except that rooftop solar energy systems installed on flat roofs may be tilted, provided the district height limit as provided under Section 1107.18, Subd. 12(5)A)(ix)(2), as may be amended, is maintained.
    5. Shall not extend above the peak or ridge of the roof.
    6. In residential districts, solar arrays shall be setback a minimum of six inches from every roof edge, peak, ridge, and valley.

x. Glare from solar energy systems to adjacent or nearby properties shall be minimized. Steps to minimize glare may include selective placement of the system, selective orientation of the panels, or rooftop screening. A glare study shall be conducted prior to system construction. Applicants may use the Solar Glare Hazard Analysis Tool (SGHAT) or equivalent. The purpose of the glare study is to identify potential impacts and mitigation strategies. Once installed, if the solar energy system creates glare onto neighboring properties and/or public rights of way and the City determines that such a glare may constitute a nuisance, the City shall require a more detailed glare study, prepared by a third-party consultant mutually acceptable to the City and Applicant to identify additional actions and/or screening that may be required to substantially eliminate or block the glare from entering adjacent or nearby property and/or public rights of way.

xi. Solar energy system annual power output (kWh) shall be no more than one hundred twenty (120) percent of the total energy used by the lot or parcel over the previous year. The City, at its discretion, may allow an array designed to produce

more than 120% of the energy used provided an interim use permit is issued.

6. Ground-mounted solar energy systems and wall mounted solar energy systems are not allowed as accessory or principal uses of property, except as provided in Section 1107.18, Subd. 12(8) of the Code.

7. Solar Access.

A. Easements allowed. The City elects to allow solar easements to be filed consistent with Minnesota Statutes Chapter 500.30, as may be amended from time to time. Owners of land or solar skyspace are responsible for negotiating, drafting, and executing solar easements. Solar easements shall be filed with the City and the Scott County Recorder's Office.
B. Subdivision Solar Easements. The City may require that developers of new subdivisions identify and create solar easements when solar energy systems are implemented as a component or a condition of a property subdivision.

8. Ground-mounted solar energy systems are allowed as principal uses within the A-2, Rural Residential District, provided:

A. An interim use permit as provided under Section 1103.12 of the Code (as may be amended) shall be issued and shall be subject to the following minimum standards:
    i. All equipment and structures shall meet the required setbacks for principal structures in the A-2 Rural Residential District.
    ii. Ground mounted systems shall not exceed fifteen (15) feet in height at maximum design tilt.
    iii. Site access shall be from a public right of way.
    iv. All on-site power and communication lines running between banks of solar panels and buildings, and all off-site lines running between the solar energy system to electric substations or interconnections shall be buried underground.
    v. Solar energy systems shall meet requirements established by the City and/or state for stormwater management and erosion and sediment control and A-2 District standards for lot coverage. Impervious surface coverage shall be calculated on the aggregate, combined surface area of all solar panels plus any principal or accessory structures plus any additional impervious surfaces such as access drives and parking areas.
    vi. The owner, developer, or operator of the solar energy system shall provide an executed interconnection agreement with the electric utility in whose service territory the system is located prior to building permit issuance, except that off-grid systems are exempt from this requirement. The property owner and system operator are required to provide written notice in the event the executed interconnection agreement is cancelled, renegotiated, expired, etc. Failure of the property owner and system operator to

notify the City of a change in the executed agreement or status thereof may result in revocation of the applicable interim use permit.

vii. A decommissioning plan shall be provided and approved prior to issuance of the required IUP ensuring that the facilities shall be properly removed after their useful life and that the site shall be properly restored. Decommissioning of solar panels and all system components above and underground shall occur in the event the system is not used for twelve (12) consecutive months. "Used" shall mean a meaningful amount of energy is being transferred to the grid (i.e. system is operating at greater than 10% production the majority of days per week over a one-month period.). The SES Owner/Operator and/or the utility company with which the SES Owner/Operator has an established interconnection agreement shall file a regular report of energy produced/sold to the City as requested. The decommissioning plan shall include provisions for removal of all structures and foundations, restoration of soil and vegetation, and a plan ensuring financial resources will be available to fully decommission the site. Failure of the system operator or property owner to provide written notice to the City of cessation of system use may result in revocation of the applicable interim use permit.

viii. A bond, a letter of credit, or an escrow account to ensure proper decommissioning, shall be established prior to the issuance of an IUP and thereafter maintained in an amount equal to 125% of the estimated amount of the decommissioning cost. The estimated cost of decommissioning shall be reviewed on a regular basis, but not less than once every five years, and the bond, letter of credit, or established escrow account shall be adjusted to ensure the amount thereof is equal to 125% of the estimated amount required to decommission the Solar Energy System. In the event the bond, letter of credit, or escrow account is not equal to 125% of the estimated cost of decommissioning the Solar Energy System, said amount shall be adjusted accordingly.

ix. Glare from solar energy systems to adjacent or nearby properties shall be minimized. Steps to minimize glare may include selective placement of the system, selective orientation of the panels, or rooftop screening. A glare study shall be conducted prior to system construction. Applicants may use the Solar Glare Hazard Analysis Tool (SGHAT) or equivalent. The purpose of the glare study is to identify potential impacts and mitigation strategies. Once installed, if the solar energy system creates glare onto neighboring properties and/or public rights of way and the City determines that such a glare may constitute a nuisance, the City shall require a more detailed glare study, prepared by a third-party consultant mutually acceptable to the City and Applicant to identify additional actions and/or screening that may be required to substantially eliminate or block the glare from entering adjacent or

nearby property and/or public rights of way.

x. Current emergency contact information for system owner/operator shall be posted at the site.
xi. Fencing shall be subject to Section 1107.02 of the City Code.
xii. A berm and/or continuous evergreen vegetative buffer shall be provided and maintained at all times around the perimeter of the solar energy system. The berm and/or continuous evergreen vegetative buffer shall provide a minimum of eighty (80) percent opacity meaning the berm and/or continuous evergreen vegetative buffer must block 80% of the view of the SES from a public right of way or abutting residential use or residential district. Berming and/or continuous evergreen vegetative buffers are required for areas facing:
    1. A public right of way.
    2. An abutting residential use or district.

B. A ground mounted solar energy system shall not be located:
    i. Within a shoreland or floodplain overlay district or as designed by the Department of Natural Resources.
    ii. Within wetlands to the extent prohibited by the Minnesota Wetlands Conservation Act.
    iii. Within a recorded easement.
    iv. Within or on a steep slope or bluff as defined in Section 1101 of the City Code.
C. No more than one (1) solar energy system per lot or parcel shall be permitted, and shall not exceed a generating capacity of five (5) megawatts.
D. Building and electrical permits are secured.

9. Definitions. The following terms shall have the meanings.

A. Solar Energy System, Building Integrated: An active solar energy system that is an integral part of a structure or structural component rather than a separate mechanical device.

B. Solar Energy System, Rooftop: An active solar energy system that is structurally mounted to a code-compliant roof of an existing building or structure.

C. Solar Energy System, Off-Grid: A photovoltaic solar system in which the circuits energized by the solar system are not electrically connected in any way to electric circuits that are served by an electric utility company

D. Solar Energy System: A device, combination of devices, or structural design feature, a substantial purpose of which is to provide daylight for interior lighting or provide for the collection, storage, and distribution of solar energy for space heating or cooling, electricity generating, or water heating.

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

F. Solar Easement: An easement that limits the height or location or both of permissible development on burdened land on which the easement is placed in terms of a structure or vegetation, or both, for the purpose of providing access for the benefited land to sunlight passing over the land on which the easement is placed, as defined in Minnesota Statutes Section 500.30, Subd. 3 as may be amended.

G. Solar Energy System, Ground Mounted: A solar energy system structurally mounted to the ground which is not roof mounted.

(Ord. 16-07, Section 1107.18, Adopted May 16, 2016.)
(Ord. 19-01, Section 1107.18, Subd. 12(5)(ix), Adopted Jan. 22, 2019.)