STATE OF MINNESOTA
COUNTY OF MILLE LACS
PRINCETON TOWNSHIP

ORDINANCE NO. 2020 - 2

AN ORDINANCE AMENDING CHAPTER 300, ZONING ORDINANCE AS IT RELATES TO ADDING PROVISIONS FOR SOLAR ENERGY SYSTEMS INCLUDING SECTION 200:0202 DEFINITIONS AND TO SECTION 300:148 SOLAR ENERGY SYSTEMS TO REGULATE INDIVIDUAL SOLAR SYSTEMS, COMMUNITY SOLAR SYSTEMS AND SOLAR FARMS

THE BOARD OF SUPERVISORS OF PRINCETON TOWNSHIP ORDAINS:

SECTION 1. Section 200:0202 Definitions, is amended to include the following:

"Building-Integrated Solar System" An active system that is an integral part of a principal or accessory building, rather than a separate mechanical device, replacing or substituting for an architectural or structural component of the building. Building integrated systems include, but are not limited to, photovoltaic or thermal solar systems that are contained within roofing materials, window, skylights and awnings.

"Community Solar Energy System" A solar-electric (photovoltaic) array that provides retail electric power (or a financial proxy for retail power) to multiple community members or businesses residing or located off-site from the location of the solar energy system.

"Ground Mounted Panels" Freestanding solar panels mounted to the ground by use of stabilizers or similar apparatus.

"Photovoltaic System" An active solar system that converts solar energy directly into electricity.

"Roof or Building Mounted SES" Solar energy system (panels) that are mounted to the roof or building using brackets, stands or other apparatus.

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

"Solar Access" A view of the sun, from any point on the collector surface that is not obscured by any vegetation, building, or object located on parcels of land other than the

parcel upon which the solar collector is located, between the hours of 9:00 AM and 3:00 PM Standard time on any day of the year.

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

"Solar Energy" Radiant energy received from the sun that can be collected in the form of heat of light by a solar collector.

"Solar Energy System (SES)" An active solar energy system that collects or stores solar energy and transforms solar energy into another form of energy or transfers heat from a collector to another medium using mechanical, electrical, thermal or chemical means.

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

"Solar Hot Water System" A system that includes a solar collector and a heat exchanger that heats or preheats water for building heating systems or other hot water needs, including residential domestic hot water and hot water for commercial purposes.

"Solar Shingles" A type of building integrated solar system designed to look and function as conventional roofing material while also producing electricity.

SECTION 2. Section 300:148 Solar Energy Systems, is hereby added as follows:

300:148 SOLAR ENERGY SYSTEMS.

1. Purpose and Intent. Princeton Township finds that it is in the public interest to encourage the use and development of renewable energy systems (including solar energy systems) that have a positive impact on energy conservation with limited adverse impact on nearby properties. As such, the Township supports the use of solar collection systems and development of solar energy farms. Princeton Township also finds that the development of solar energy farms should be balanced with the protection of the public health, safety and welfare. It is the intent of the Township with this Section to create standards for the reasonable capture and use, by households, businesses and property owners of the solar energy resource, and encourage the development and use of solar energy.

2. Applicability. These regulations are for all solar energy systems and solar energy farms on properties and structures under the jurisdiction of the Princeton Township except that the owner or operator of solar farms that

would generate more than 50 megawatts of power must be approved by the Minnesota Public Utilities Commission.

3. Definitions.

A. Building-Integrated Solar System. An active system that is an integral part of a principal or accessory building, rather than a separate mechanical device, replacing or substituting for an architectural or structural component of the building. Building integrated systems include, but are not limited to, photovoltaic or thermal solar systems that are contained within roofing materials, window, skylights and awnings.

B. Community Solar Energy System. A solar-electric (photovoltaic) array that provides retail electric power (or a financial proxy for retail power) to multiple community members or businesses residing or located off-site from the location of the solar energy system.

C. Ground Mounted Panels. Freestanding solar panels mounted to the ground by use of stabilizers or similar apparatus.

D. Photovoltaic System. An active solar system that converts solar energy directly into electricity.

E. Roof or Building Mounted SES. Solar energy system (panels) that are mounted to the roof or building using brackets, stands or other apparatus.

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

G. Solar Access. A view of the sun, from any point on the collector surface that is not obscured by any vegetation, building, or object located on parcels of land other than the parcel upon which the solar collector is located, between the hours of 9:00 AM and 3:00 PM Standard time on any day of the year.

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

I. Solar Energy. Radiant energy received from the sun that can be collected in the form of heat of light by a solar collector.

J. Solar Energy System (SES). An active solar energy system that collects or stores solar energy and transforms solar energy into another form of energy or transfers heat from a collector to another medium using mechanical, electrical, thermal or chemical means.

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

L. Solar Hot Water System. A system that includes a solar collector and a heat exchanger that heats or preheats water for building heating systems or other hot water needs, including residential domestic hot water and hot water for commercial purposes.

M. Solar Shingles. A type of building integrated solar system designed to look and function as conventional roofing material while also producing electricity.

4. Types of Solar Energy Systems.

A. Rooftop Solar Energy Systems. An accessory use designed to supply energy to the onsite primary use and shall be subject to the following:

(1) Rooftop Solar Energy Systems are a Permitted Accessory Use in all districts in which buildings are permitted.

(2) No zoning or site permit is required. All systems shall meet the height requirements for the district it is located.

(3) The owner or contractor shall receive a building or mechanical permit prior to installing a rooftop solar energy system.

B. Ground-Mount Solar Energy Systems. An accessory use designed to supply energy for the onsite primary use and shall be subject to the following:

(1) Ground-mount solar energy systems are a Permitted Accessory Use in all districts in which buildings are permitted.

(2) Ground-mount solar energy systems are subject to the structure standards for the district in which it is located including setback and impervious surface requirements.

(3) The Township does not consider the collector surface of a ground-mount solar energy system that is not in a DNR designated Shoreland District as impervious surface. Any collector surface or a ground mount system foundation that is in a DNR designated Shoreland District is considered impervious surface.

(4) The height of a ground-mounted solar energy solar energy system shall not exceed fifteen (15) feet.

C. Community Solar Energy Systems and Solar Farms.

(1) Community Solar Energy Systems: Roof or ground-mount solar energy systems designed to supply energy for off-site uses on the distribution grid, but not for export to the wholesale market or connection to the electric transmission grid and shall be subject to the following:

(a) Rooftop community solar energy systems are permitted in all districts in which buildings are permitted.

(b) Ground-mount solar energy systems shall require a Conditional Use Permit, as regulated in Section 300:230 of this Ordinance, in all districts.

(2) Solar Farms: Ground-mount solar energy arrays that are the primary use on the lot or of a property, designed for providing energy to off-site users or export to the wholesale market. Those systems that are not permitted or regulated by the State of Minnesota Public Utilities Commission (PUC) shall be subject to the following:

(a) Solar Farms shall require a Conditional Use Permit, as regulated in Section 300:230 of this Ordinance, and allowed only in the Agricultural Conservation, Rural Residential and Commercial/Industrial Districts.

(b) Solar Farms shall be located on a minimum of five (5) acres.

(3) The Township prohibits Community Solar Energy Systems and Solar Farms within:

a) Shoreland Districts as designated by the Department of Natural Resources (DNR).

b) Six hundred (600) feet of areas designated or protected from development by Federal, State or County agencies as wildlife habitat or wildlife management areas.

c) Wetlands to the extent required by the Minnesota Wetland Conservation Act and Princeton Township Wetland regulations.

d) All Floodplain Districts.

(4) The manufacturer's engineer of another qualified engineer shall certify that the foundation and design of the solar panels meet accepted professional standards given local soil and climate conditions.

(5) Community Solar Energy Systems and Solar Farms shall meet all applicable local, State and Federal regulatory standards, including Building and Electrical Code.

(6) An interconnection agreement shall be completed with the electric utility in the service territory the system is located.

(7) All structures shall meet the setback, height and coverage limitations for the district in which the ground-mount system is located.

(8) The owner or operator shall submit to the Township the following as part of the Interim Use Permit Application:

a) A detailed site plan for both existing and proposed conditions, showing the location of all areas where solar energy systems are to be placed, existing and proposed structures, property lines, surface water drainage plans, floodplains, delineated wetlands, ordinary high water mark and other protected natural resources, topography, electric equipment, and all other information as requested by the Township.

b) For Community Solar Energy Systems and Solar Farms with a project size exceeding ten (10) acres, the owner or operator shall provide a Natural Resource Impact Assessment. The assessment must address impacts of the project (construction and maintenance phases) to natural resource, defined as natural vegetation, native plant communities, soils, surface waters, wetlands, wildlife and non-game species and fisheries. The assessment shall include a review of the Minnesota DNR Natural Heritage Information System (NHIS) to determine if any rare species or rare natural resource features are located in proximity to the project.

c) Community Solar Energy Systems and Solar farms utilizing a reflector system shall conduct a glare study (US Department of Energy Solar Glare Hazard Analysis Tool) to identify the impacts of the system on occupied buildings and transportation rights-of-way within a half mile of the project boundary.

d) If a Community Solar Energy Systems or Solar Farm is proposed to be located on existing agricultural land, the applicant shall provide an agricultural impact assessment that includes the total number of prime agricultural soils (as defined in the USDA National Soil Survey), the total number of actively farmed acres to be impacted, and whether the property has an existing irrigation system that will be removed.

e) If a Community Solar Energy Systems or Solar Farm is within the Princeton Municipal Airport Airspace Plan or within two miles of the airport, the owner or operator shall complete and provide results of the Solar Glare Hazard Analysis Tool (SGHAT).

f) The Township shall require the owner operator to submit a decommissioning plan for ground mounted systems to ensure that the owner or operator properly removes the equipment and facilities upon the end of project life or after the useful life of the equipment. The owner or operator shall decommission the solar panels in the event they are

not in use for twelve (12) consecutive months. The plan shall include provisions for the removal of all structures and foundations, the removal of all electrical transmission components, and the restoration of soil and vegetation with a plan ensuring financial resources shall be available to fully decommission the site. The disposal of structures and/or foundations shall meet all County, State and Federal regulations. The Township may require the owner or operator to post a bond, letter of credit or establish an escrow account to ensure proper decommissioning. The Town Board shall approve the decommissioning plan.

(9) Power and communication lines running between banks of solar panels and to electric substations or interconnections with buildings shall be buried underground. The Town Board may grant exceptions to this requirement in instances where shallow bedrock, water sources or other natural features interfere with the ability to bury lines.

(10) The owner or operator shall contain all unenclosed electrical conductors located above ground within structures that control access, or they must be protected from entry by a six (6) foot fence.

(11) If a Community Solar Energy Systems or Solar Farm include panels that cover more than twenty (20) acres of land shall meet the standards of the Minnesota Public Utilities (PUC) for Solar Farms.

5. Additional Standards. In addition to the standards address above, all solar energy systems shall comply with the following:

A. The owners and operators of solar energy systems that are connected to the electric distribution or transmission system, either directly or through the existing service of the primary use on the site shall obtain an interconnection agreement with the electric utility in the service territory the system is located. Off-grid systems are exempt from this requirement.

B. Solar energy systems components that are connected to a building electrical system shall have an Underwriters Laboratory (UL) listing.

C. All solar energy systems shall meet the standards of the Minnesota and National Electric Code.

D. All rooftop solar energy systems and buildings with solar systems shall meet the standards of the Building Code.

E. All solar energy systems using a reflector to enhance solar production shall minimize glare from the reflector that affects adjacent or nearby properties. Steps to minimize the glare may include selective placement of the system, screening the north side of the solar array, reducing the use of the reflector, or other accepted systems for reducing glare.

F. Building or roof mounted solar energy systems shall not exceed the maximum allowed height in any zoning district. For purposes of height measurement, solar energy systems, other than building integrated systems, shall be considered as a mechanical device and are restricted consistent with other building mounted devices.

G. Commercial rooftop systems shall be placed on the roof in a way to limit visibility from the public right of way or to blend with the roof design, providing that minimizing visibility allows the owner to reasonably capture solar energy.

H. All equipment and structure shall comply with the setback and coverage standards for the zoning district in which the solar energy system is located.

I. Where visible from adjacent residential properties and public right of ways, buffer screening and landscaping shall be provided to minimize visible impacts of above grade site improvements for ground mounted solar energy systems. Vegetative screening such as coniferous trees a minimum of six (6) feet in height, berms, walls or a combination thereof shall be installed subject to review and approval of the Board of Supervisors.

SECTION 3. Section 300:032 Residential R-1 District Conditional Uses, is amended to include the following:

300:032 Residential R-1 District Conditional Uses. The following uses are subject to a Conditional Use Permit in Residential R-1 Districts and shall meet a minimum lot area of at least two and one-half (2 ½) acres except for home occupations:

9. Ground mount community solar energy systems subject to the provisions found in Section 300:148 of the Zoning Ordinance.

SECTION 4. Section 300:035 Residential R-2 District Conditional Uses, is amended to include the following:

8. Ground mount community solar energy systems subject to the provisions found in Section 300:148 of the Zoning Ordinance.

SECTION 5. Section 300:042 Rural Residential District Conditional Uses, is amended to include the following:

7. Ground mount community solar energy systems subject to the provisions found in Section 300:148 of the Zoning Ordinance.

8. Ground mount solar farms subject to the provisions found in Section 300:148 of the Zoning Ordinance.

SECTION 6. Section 300:052 Agricultural Conservation District Conditional Uses, is amended to include the following:

10. Ground mount community solar energy systems subject to the provisions found in Section 300:148 of the Zoning Ordinance.

11. Ground mount solar farms subject to the provisions found in Section 300:148 of the Zoning Ordinance.

SECTION 7. Section 300:0632 River Conservation District Conditional Uses, is amended to include the following:

23. Ground Mount Community Solar Energy Systems subject to the provisions found in Section 300:148.	C	C

SECTION 8. Section 300:072 Commercial/Industrial District Conditional Uses, is amended to include the following:

17. Ground mount community solar energy systems subject to the provisions found in Section 300:148 of the Zoning Ordinance.

18. Ground mount solar farms subject to the provisions found in Section 300:148 of the Zoning Ordinance.

SECTION 9. The Planning Commission of Princeton Township held a public hearing at their February 3, 2020 meeting, took comments from the public, and recommended that the Board of Supervisors approve amendments to Chapter 300, Zoning Ordinance as it relates to adding provisions for solar energy systems including Section 200:0202 Definitions and to Section 300:148 Solar Energy Systems to regulate individual solar systems, community solar systems and solar farms.

SECTION 10. The Board of Supervisors of Princeton Township held first reading of this Ordinance at their February 18, 2020 meeting and second reading at their April 21, 2020 meeting.

SECTION 11. This Ordinance shall be in full force and effect upon its passage and publication.

ADOPTED this 21st day of April 2020 by the Board of Supervisors of Princeton Township.

PRINCETON TOWNSHIP

Eugene Stoekel, Board Chair

ATTEST:

Douglas Dahl, Town Clerk