EUREKA TOWNSHIP DRAFT SOLAR ENERGY SYSTEMS ORDINANCE
For discussion at Open House Meeting on April 12, 2016

The following new definitions and sections may be added to the Township's Zoning Ordinance to allow Solar Energy Systems as a use in the Township, identify permits needed and performance standards for these new uses:

CHAPTER 4 – New Definitions to add:

Add the following definitions to Chapter 4 of the Township's Ordinance:

Solar Collector: A device, structure or a part of a device or structure for which the primary purpose is to capture sunlight and transform it into thermal, mechanical, chemical or electrical energy.

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

Solar Energy System (SES): A device 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, cooling, electricity generation, or water heating.

Solar Energy System, Community Solar Garden: A solar-electric 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.

Solar Energy System, Ground-Mounted: A freestanding solar system mounted directly to the ground using a rack, pole, or stabilizers or similar apparatus rather than being mounted on a building.

Solar Energy System, Accessory: A solar energy system that is accessory to the primary land use, and designed to supply energy solely for the primary use.

Solar Energy System, Roof or Building-Mounted: Solar energy system (typically panels) that are mounted on the roof or building using brackets, stands or other apparatus.

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

New Section of Township Zoning Ordinance - Solar Energy Systems (SES)

A. Accessory Solar Energy System (ASES)

1. Approvals Required

a. Roof-Mounted and Building-Mounted ASES are allowed as accessory uses.

(i) No Township land use permit is required.

(ii) The owner or contractor shall obtain a building and mechanical permit before installing a Roof-Mounted or Building-Mounted ASES.

b. Ground-Mounted ASES are allowed as accessory uses in all districts. Ground-mounted RSES that are ten (10) kilowatts and under are allowed as an accessory use. Ground-Mounted RSES that are greater than ten (10) kilowatts and one hundred (100) kilowatts or less in size require a Conditional Use Permit (CUP). Ground-Mounted RSES that are larger than one hundred (100) kilowatts shall require and Interim Use Permit and shall meet the requirements for SES that are Primary Uses.

Permit requirements are summarized on the table below:

Size of Ground-Mounted ASES	**Permit Required**
10 Kilowatts (kW) or less	Building Permit
10 kW to 100 kW or less	CUP
Greater than 100 kW	IUP—requirements for SES that are Primary Uses apply

2. Performance Standards

a. Standards for all ASES

(i) Electric ASES components must have an Underwriters Laboratory (UL) listing.

(ii) All ASES shall comply with the Minnesota State Building Code and Electric Code.

b. Roof-Mounted and Building-Mounted ASES

(i) Roof-Mounted ASES shall comply with the accessory structure setbacks.

(ii) Roof-Mounted and Building-Mounted ASES shall not extend above the highest portion of the roofline on which the system is mounted.

(iii) The collector surface and mounting devices for Roof-Mounted ASES shall not extend beyond the exterior perimeter of the building on which the system is mounted or built. Exterior piping for solar hot water systems shall be allowed to extend beyond the perimeter of the building on a side or rear yard exposure.

c. Ground-Mounted ASES

(i) Ground-Mounted ASES shall comply with the accessory use standards, including setback requirements. Ground-Mounted ASES shall not be placed in front yards. Ground-Mounted ASES may not extend into the side-yard or rear-yard setback when oriented at minimum design tilt.

(ii) Ground-Mounted ASES are not permitted in Shoreland Districts.

(iii) The collector surface of a Ground-Mounted ASES located outside Shoreland Districts is not considered an impervious surface if the system has a natural vegetated ground cover under and between the collectors and surrounding the system foundations or mounting devices.

(iv) The height of a Ground-Mounted ASES shall not exceed fifteen (15) feet.

(v) Ground-Mounted ASES shall be counted as an accessory structure for the purpose of meeting limits on the total square footage of accessory structures in all zoning districts.

(vi) Ground-Mounted ASES shall meet the requirements of the Township's Stormwater Ordinance.

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

B. Solar Energy Systems that are Primary Uses. Solar Farms (SFs), Community Solar Gardens (CSGs), and SES that exceed 100 kW in size may be permitted as Primary Uses.

1. Districts and Permits

a. Solar Farms, Community Solar Gardens, and other SES that exceed 100 kW in size are permitted. The maximum size of SFs, CSGs, and other SES allowed in the Township is 10 megawatts. All SFs, CSGs, and SES that exceed 100kW require an Interim Use Permit.

b. The Interim Use Permit for SFs, CSGs, and other SES that exceed 100 kW shall expire at the same time the facility's lease expires, and in no case shall exceed thirty (30) years. The owner may apply for a new IUP based on the zoning ordinance requirements.

c. The Township prohibits SES as Primary Uses within the following Districts and areas:

(i) Within areas designated as Shoreland Districts by the Department of Natural Resources.

(ii) Within six hundred (600) feet of areas designed or formally protected from development by Federal, State or County agencies as wildlife habitat, wildlife management areas, or designed as National Wild and Scenic lands or corridors.

(iii) Within wetlands to the extent required by the Minnesota Wetlands Conservation Act.

(iv) Within Floodplain Districts.

(v) Within natural resource corridors identified in the Township's Comprehensive Plan.

d. Permit Application Requirements

(i) Existing Site Plan Required. The applicant for a SF, CSG, or an SES that exceeds 100 kW shall submit a detailed site plan of existing conditions, showing existing property lines and property lines extending two hundred (200) feet from the exterior boundaries; site boundaries; existing access roads, driveways, and easements; existing structures, wells, and septic systems; setbacks; surface water drainage patterns, floodplains, Shoreland districts, delineated wetlands, toe and top of bluffs, ordinary high water mark and other protected natural resources; existing vegetation, soil types, topography (2-foot contour intervals), and all other items required for Interim Use Permits. The Existing Site Plan shall include a graphic scale and north arrow, and shall be drawn at a scale not less than 1:100.

(ii) Proposed Site Plan required. The applicant shall also submit a site plan of proposed conditions, including the proposed number, location, and spacing of solar panels; proposed height of panels; setbacks; location of access roads, driveways, and drive aisles; planned location of underground or overhead electric lines connecting the Solar Farm/Garden to the building substation or other electric load; new electrical equipment other than at the existing building or substation that is the connection point for the Solar Farm/Garden; wetlands and required buffers; proposed stormwater management facilities; proposed erosion and sediment control measures; and other information as required by the Township. The Proposed Site Plan shall include a graphic scale and north arrow, and shall be drawn at a scale not less than 1:100.

The application shall also include a vertical sketch elevation of the premises accurately drawn to a scale identified on the drawing, depicting the proposed solar energy conversion system and maximum height of solar panels. The sketch shall depict the proposed system's relationship to structures on adjacent lots within 150 feet of the parcel boundary (if any). The sketch elevation shall include a graphic scale not less than 1:50, or as needed to clearly show the vertical relationship between the proposed solar facilities and structures on adjacent lots.

(iii) Use of public roads. The applicant shall obtain all necessary approvals from the appropriate road authority for site access and driveways.

(iv) Interconnection Agreement. The applicant shall complete an interconnection agreement with a local utility prior to the issuance of a building permit, and provide a copy of the

Agreement to the Township with the CUP application. The system operator shall provide a visible external disconnect if required by the utility.

(vi) Natural Resource Assessment. Applicants for SFs and CSGs that propose a project size exceeding forty (40) acres shall provide a Natural Resource Impact Assessment. The assessment shall identify potential project impacts to natural vegetation, native plant communities, soils, surface waters, wetlands, wildlife and non-game species, rare sources (based on data from the MN DNR Natural Heritage Information System), and fisheries on and adjacent to the site proposed for the facility.

If the Natural Resource Assessment indicates that the project may impact natural resources, the application shall include a mitigation plan to avoid, minimize, or mitigate for potential impacts.

(vii) Liability Insurance. The applicant shall maintain a current general liability policy covering bodily injury and property damage with limits of at least $1 million per occurrence and $1 million in the aggregate, and provide proof that it meets the insurance requirement to the Township.

(viii) Decommissioning Plan. The applicant shall submit a decommissioning plan to ensure that facilities are properly removed after their useful life. If the solar energy system remains nonfunctional or inoperative for a continuous period of one year, the system shall be deemed to be abandoned and shall constitute a public nuisance. The 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. The Township may require the posting of a bond, letter of credit or the establishment of an escrow account to ensure decommissioning.

2. Performance Standards

a. Solar Farms which have a generating capacity of 50 megawatts of power or more shall fall under the jurisdiction of the Minnesota Public Utilities Commission. The limitations on the number or cumulative generating capacity of Community Solar Garden facilities is regulated by Minnesota Statutes 216B.164 and related regulations.

b. SFs, CSGs, and SES that exceed 100 kW shall be located on a parcel of more than 10 acres in size, and shall not be larger than 70 acres in size.

c. SFs, CSGs, and SES that exceed 100 kW shall be in compliance with any applicable local, state and federal regulatory standards, including the State of Minnesota Uniform Building Code, as amended; the national Electric Code, as amended; the State Plumbing Code, as amended; and the Minnesota Energy Code, as amended.

d. All SFs, CSGs, and SES that exceed 100 kW shall comply with the principal structure setback standards. The Township may require a greater setback between adjoining properties if conditions warrant.

e. SFs, CSGs, and SES that exceed 100 kW shall be setback a minimum of two hundred (200) feet from the centerline or one hundred and fifty (150) feet from the right-of-way of minor arterial roadways, whichever is greater.

f. Ground-mounted solar energy systems shall not exceed fifteen (15) feet in height.

g. SFs, CSGs, and SES that exceed 100 kW shall be screened from view of the public right-of-way to the extent possible without reducing the efficiency of the facility by topography, setbacks, berming, existing vegetation, landscaping, or a combination thereof. The Township may require a buffer between SFs and CSGs and adjoining properties.

h. SFs, CSGs, and SES that exceed 100 kW are subject to stormwater management, erosion and sediment control best practices, and permit requirements, and shall obtain all required permits from the MPCA, the local Watershed Management Organization, and the Township.

i. The manufacturer's engineer or another qualified engineer shall certify that the foundation and design of the solar panels is within accepted professional standards, given local soil and climate conditions.

j. Power and communication lines running between banks of solar panels and to electric substations or interconnections with structures that are on adjacent parcels shall be buried underground. Exemptions may be granted by the Township in

instances where shallow bedrock, water courses or other elements of the natural landscape interfere with the ability to bury lines, or the distance to a substation reasonably precludes burial.

k. SFs, CSGs, and SES that exceed 100 kW facilities shall be designed and located in order to prevent reflective glare toward any inhabited buildings on adjacent properties, as well as adjacent street rights-of-way. Steps to control glare nuisance may include selective placement of the system, screening on the side of the solar array facing the reflectors, reducing the use of the reflector system, or other remedies that limit glare. SFs, CSGs, and SES that exceed 100 kW shall conduct a glare study to identify the impacts of the system on occupied buildings and transportation rights-of-way within a half mile of the project boundary.

l. The collector surface of a ground-mounted solar energy system shall have a natural vegetated ground cover under and between the collectors and surrounding the system foundations or mounting devices, and meet the coverage standards of the local Watershed District. The solar energy system shall be mounted on removal posts or anchors.

m. A clearly-visible warning sign concerning voltage must be placed at the base of all pad-mounted transformers and substations. All mechanical equipment, including any structure for batteries or storage cells, shall be completely enclosed by a minimum eight (8) foot high fence with a self-locking gate, and provided with screening in accordance with the requirements of this ordinance.

n. If the solar energy system remains nonfunctional or inoperative for a continuous period of one year, the system shall be deemed to be abandoned and shall constitute a public nuisance. The owner shall remove the abandoned system at their expense after obtaining a demolition permit. Removal includes the entire structure including transmission equipment.