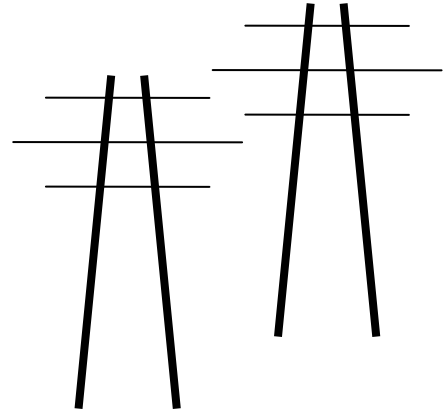


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August 18, 2014

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RE: Comments on Proposed Solar Ordinance and Termination of Mastic GIA

Dear Mr. Betcher and members of the Planning Advisory Commission:

Attached please find pdf Comments on the proposed Solar Ordinance. I am submitting these comments as an individual, and not in the course of representation of any party, and also as an individual with experience consulting on solar projects and land use issues.

Attached also please find FERC Orders in dockets ER14-1684-000 dated June 6, 2014, and ER14-1719-000 dated June 13, 2014, **TERMINATING** the AWA Goodhue/Mastic/New Era/Peter J. Mastic Holdings, LLC Generation Interconnection Agreements, H061 and H062. It has come to my attention that there have been representations made that these interconnection agreements could be an asset and used for interconnection of a solar project, and any representation that H061 and H062 could be used for any project is demonstrably **FALSE**.

It is my understanding that the Aurora Solar projects multiple sites will be under the jurisdiction of the Public Utilities Commission, Docket E6928/GS-14-515, and that Goodhue County will not have a role in permitting them (Zumbrota, 3.5 MW next to Hwy. 52 just north of Hwy. 60, or 4 MW west of Pine Island). To my knowledge, no others are proposed, and there's no reason to rush an Ordinance through. If there's pressure to get it done, a moratorium pending development of the Ordinance may be in order.

Thank you for your consideration of these matters.

Very truly yours,

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Article 19

Solar Energy System (SES) Regulations

SECTION 1. PURPOSE

Purpose – This Article of the Goodhue County Zoning Ordinance is established to regulate the installation and operation of Solar Energy Systems (SES) The purpose of these regulations along with other pertinent references found in other Articles of the Zoning Ordinance is to regulate the installation and operation of Solar Energy Systems (residential, commercial, and utility) pursuant to applicable Minnesota Statutes and Rules.

SECTION 2. DEFINITIONS

- Subd. 1. **Grid-intertie SES.** A photovoltaic solar energy system that is connected to an electric circuit served by an electric utility company.
- Subd. 2. **Ground-mounted SES.** A solar collector, or collectors, located on the surface of the ground. The collector or collectors may be physically affixed or attached to the ground; ground-mounted systems include pole-mounted systems.
- A. Residential SES.** Accessory to the primary use of the land, designed to supply energy for onsite residential use; excess energy produced may be sold back to the grid through net metering.
- B. Commercial SES.** Accessory to a permitted farm or business use of the land, designed to generate energy to offset utility costs or as an additional revenue stream.
- C. Utility Scale SES.** An energy system that is the primary use of the land, designed to provide energy primarily to off-site uses or export to the wholesale market.
- Subd. 3. **Off-grid SES.** A photovoltaic solar energy system in which the circuits energized by the solar energy system are not electrically connected in any way to electric circuits that are served by electric utility company.
- Subd. 4. **Photovoltaic SES.** An active solar energy system that converts solar energy directly into electricity.
- Subd. 5. **Reflecting SES.** A solar energy system that employs one (1) or more devices designed to reflect solar radiation onto a solar collector. This definition includes systems of mirrors that track and focus sunlight onto collectors located at a focal point. The collectors may be thermal or photovoltaic.

- Subd. 6. **Roof-mounted SES.** A solar collector, or collectors, located on the roof of the building or structure. The collector or collectors may be physically affixed, or attached to the roof.
- A. Residential SES.** Accessory to the primary use of the land, designed to supply energy for onsite residential use; excess energy produced may be sold back to the grid through net metering.
- B. Commercial SES.** Accessory to a permitted farm or business use of the land, designed to generate energy to offset utility costs or as an additional revenue stream.
- ~~**C. Utility Scale SES.** An energy system that is the primary use of the land, designed to provide energy primarily to off-site uses or export to the wholesale market.~~
- Subd. 7. **Solar Cell.** The basic unit of a photovoltaic solar panel.
- Subd. 8. **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.
- Subd. 9. **Solar Easement.** A right, whether or not stated in the form of a restriction, easement, covenant, or condition, in any deed, will, or other instrument executed by or on behalf of any owner of land or solar skyspace for the purpose of ensuring adequate exposure of a solar energy system as defined in Section 216C.06, Subdivision 17, to solar energy. Required contents of a Solar Easement are defined in Minnesota Statute Section 500.30.
- Subd. 10. **Solar Energy.** Radiant energy received from the sun that can be collected in the form of heat or light by a solar collector.
- Subd. 11. **Solar Energy System (SES).** A device set of devices, or structural design feature, a substantial purpose of which is to provide for the collection, storage and distribution of sunlight for space heating or cooling, generation of electricity, water heating, or providing daylight for interior lighting.
- Subd. 12. **Substation.** Any electrical facility containing power conversion equipment designed for interconnection with power lines. Part of the electrical transmission system converting high voltage to low voltage or converting low voltage to high voltage for incorporation into the electrical power grid.

SECTION 3. GENERAL PROCEDURES

- Subd. 1. Approval Required

All Solar energy systems require a building permit and a zoning approval in the form of an administrative review, SES Zoning Permit, or a Conditional /Interim Use Permit (see Section 7 of this Article).

- A. All reflecting solar energy systems require a conditional/interim use permit.
- B. Residential Rooftop and Ground Mounted Solar Energy Systems may be approved administratively.
- C. Commercial Rooftop and Ground Solar Energy Systems may be approved through a SES Zoning Permit or a Conditional/Interim Use Permit.
- D. Utility Scale Photovoltaic (PV) Rooftop and Ground Solar Energy Systems require a conditional/interim use permit

SECTION 4. SOLAR ENERGY SYSTEM STANDARDS

Subd. 1. General Standards

- A. Systems shall be designed and operated in a manner that protects public safety.
- B. Systems shall be in compliance with any applicable local, state and federal regulatory standards, including, but not limited to, the State of Minnesota Uniform Building Code, as amended, and the National Electric Code, as amended.
- C. Tree removal shall be minimized and mitigated in accordance with Article 11, Section 7 of this Ordinance.

Subd. 2. Roof-Mounted Solar Energy Systems

The following standards shall apply to roof-mounted solar energy systems:

- A. Roof-mounted solar shall not exceed by more than four feet the maximum allowed height in any zone district except in Shoreland areas the height limits established within Article 30 (Shoreland District) for structures may not be exceeded.
- B. In addition to the structure setback, the collector surface and mounting devices for roof-mounted solar systems shall not extend beyond the exterior perimeter of the structure on which the system is mounted or built, except for when such an extension is designed as an awning.
- C. Exterior piping for roof-mounted solar hot water systems may extend beyond the perimeter of the structure on side and rear exposures.

Subd. 3 Ground-Mounted and Pole-Mounted Solar Energy Systems

The following standards shall apply to ground and pole-mounted solar energy systems:

- A. Ground and pole-mounted systems shall not exceed ~~twenty (20)~~ feet in height when oriented at maximum design tilt.
- B. Ground and pole-mounted systems shall subject to yard setback requirements for the Zone District within which they are located.
- C. The total collector surface area of pole or ground mount systems shall not exceed fifty percent (50% of the building footprint of the principal structure in the following zone districts:
 - 1. R-1, Suburban Residence
 - 2. MXH, Mixed Use Hamlet Zone
- D. Ground and pole-mounted systems shall have natural ground cover under and between the collectors and surrounding the system's foundation or mounting device(s).
- E. Ground and pole-mounted solar energy systems do not count as an accessory structure for the purpose of meeting limits on the total square footage of accessory structures allowed in the A-1, A-2 and A-3 Zone Districts (see Article 11, Section 5).

Subd. 4. Photovoltaic Solar Energy Systems

The following standards shall apply to photovoltaic solar energy systems:

- A. The electrical disconnect switch shall be clearly identified and unobstructed.
- B. No grid-intertie photovoltaic solar energy system shall be installed until documentation has been given to the Zoning Administrator which confirms that the owner has notified the utility company of the customer's intent to install an interconnected customer-owned generator. Documentation may consist of an interconnection agreement or a written explanation from the utility provider or contractor outlining why an interconnection agreement is not necessary. Off-grid systems are exempt from this requirement.
- C. Photovoltaic solar energy system components must have an Underwriters laboratory (UL) listing and solar hot water systems must have a Solar Rating & Certification Corporation (SRCC) rating.

Subd. 5. Utility Scale Solar Energy Systems (Roof or Ground Mounted)

- A. All elements of the system shall meet or exceed all district regulations based on the applicable zoning district except as may be amended by provisions of this Article.
- B. Systems shall meet the requirements for erosion and sediment control per Article 11, Section 12 of this Ordinance.
- C. Power and communication lines running between banks of solar collectors and to electric substations or interconnections with buildings shall be buried underground. Exemptions may be granted in instances where shallow bedrock, water courses, or other elements of the natural landscape interfere with the ability to bury lines.
- D. Vegetative screening or buffering of the system may be required as part of the conditions of approval. Screening or buffering shall be based on the proximity of the system to residential buildings and to abutting public rights-of-way.

Subd. 7. Reflecting Solar Energy Systems

The following standards shall apply to Reflecting Solar Energy Systems:

- A. Systems shall be designed and operated to prevent the misdirection of reflected solar radiation onto adjacent or nearby property, public roads, or other areas open to the public.

SECTION 5. APPLICATIONS FOR SOLAR ENERGY SYSTEMS

An application to the County for a permit under this section shall contain the following information, including but not limited to the following:

Subd. 1: Application Submittal Requirements for Solar Energy Systems:

- A. A site plan of existing and proposed conditions as defined in Article 10, Section 2, Subd. 95.
- B. Number of Solar Collectors to be installed.
- C. Location and spacing of solar panels.
- D. Ground mounted system applications shall identify existing vegetation on installation site (list type and percent of coverage; i.e. grassland, plowed field, wooded areas, etc.) and a maintenance plan for controlling vegetative growth on site upon installation of the SES.

- E. A description of the method of connecting the array to a building or substation and a signed copy of the interconnection agreement with the local electric utility or a written explanation outlining why an interconnection agreement is not necessary.
- F. Planned location of underground or overhead electric lines connecting the SES to the building, substation or other electric load.
- G. New electrical equipment other than at the existing building or substation that is the connection point for the SES.
- H. Manufacturer's specifications and recommended installation methods for all major equipment, including solar panels, mounting systems and foundations for poles or racks.
- I. Existing and proposed (if existing grade will be altered) topography at 2 foot contours.

Additional application submittal requirements for Commercial and Utility Scale Roof, Ground Mounted, and all reflective Solar Energy Systems:

- J. Visual Impact Analysis: Discuss the potential visual effects from the project. Identify any measures to avoid, minimize, or mitigate visual effects.
- K. Proposed storm-water management measures: Identify specific erosion control, sedimentation control or stabilization measures to address soil limitations during and after project construction. A NPDES permit may be required.
- L. Screening or buffering plan included any site grading and/or landscape plantings proposed along public roads or abutting residential properties.
- M. Maintenance plan for grounds surrounding the systems.
- N. A plan outlining the use, storage, and disposal of chemicals used in the cleaning of the collectors and/or reflectors.
- O. Identify the onsite location and measures that will be taken to avoid, minimize, or mitigate adverse effects to existing historical, cultural, and archeological features identified by SHPO, the County's databases, and those discovered onsite.

Additional application submittal requirements for Utility Scale Roof, Ground Mounted, and all reflective Solar Energy Systems:

- P. Criteria to determine potential impacts on agricultural production due to temporary or permanent use of agricultural land for the production of solar energy:

1. Number of acres of Prime Agricultural Soils to be impacted.
2. Number of acres in A-1 Agricultural Protection Zone to be impacted.
3. Proposed duration of operation of the SES.
4. Plan for future use of affective property following end of the SES use and decommissioning.

Q. Criteria to evaluate potential environmental impacts:

1. Environmental Assessment Worksheet (EAW) determination as to the potential for any significant impacts and proposed mitigation measures (for Solar Energy Projects subject to environmental review under Minnesota Rules Chapter 4410).
2. Review of Goodhue County Environmental Constraints Land Use Model (ECLUE) Ratings for proposed Utility Scale Site Area.
3. Proximity to existing Electric Utility Lines and Substations for Grid-Intertie and existing SES projects.

SECTION 7. DECOMMISSIONING

A decommissioning plan shall be submitted with all applications for large solar energy system.

- Subd. 1 Decommissioning plans shall outline the anticipated means and cost of removing the system at the end of its serviceable life or upon its becoming a discontinued use. The cost estimates shall be made by a competent party, such as professional engineer, a contractor capable of decommissioning or a person with suitable expertise or experience with decommissioning. The plan shall also identify the financial resources that will be available to pay for the decommissioning and removal of the system. Owners of residential SES may rely on manufactures data to submit estimates.
- Subd. 2 Decommissioning of the system must occur within ninety (90) days from either of the following:
- A. The end of the system's serviceable life; or
 - B. The system becomes a discontinued use.
- Subd. 3 A system shall be considered a discontinued use after ~~one (1) year~~ without energy production, unless a plan is developed and submitted to the Zoning Administrator outlining the steps and schedule for returning the system to service.
- Subd. 4 The County Board may at its discretion require the owner and/or operator of the commercial or utility scale system to provide financial security in the form of a cash

escrow or irrevocable letter of credit in an amount equal to 125% of a cost estimate for decommissioning prepared by a competent party to ensure that decommissioning shall be completed if the applicant or operator for any reason fails to meet the requirements of this Section.

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SECTION 8. PERMITTED USES, CONDITIONAL USES OR INTERIM USES FOR SOLAR ENERGY SYSTEMS

Solar Energy Systems will be permitted, conditionally permitted or not permitted based on the generating capacity and land use district as established in the table below (P=Permitted, ZP= Zoning Permit, C=Conditionally Permitted, I=Interim Permitted, NP=Not Permitted):

District	Utility Scale Solar Energy Systems	Commercial Scale Energy Systems	Residential Scale Solar Energy Systems
Agriculture Protection (A-1)	C or I	ZP	P
Agriculture (A-2)	C or I	ZP	P
Urban Fringe (A-3)	C or I	ZP	P
Suburban Residence (R-1)	NP	ZP	P
General Business (B-1)	C or I	ZP	P
Mixed Use Hamlet (MXH)	NP	ZP	P
Highway Business (B-2)	NP	ZP	P
Industry (I)	C or I	ZP	P
Wild and Scenic River (WS)	NP	C or I	P
Commercial Recreation (CR)	NP	C or I	P
Shoreland (S)	NP	C or I	P
Floodplain Management (FP)	NP	C or I*	ZP*
Wetlands (W)	NP	NP	NP

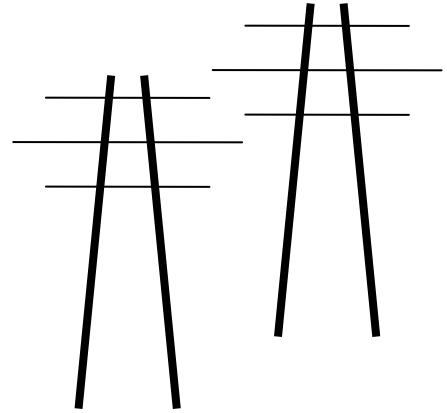
*All provisions of Article 31 (Floodplain Regulations) must be met.

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