

1. Proposed amendment (in red) to the Comprehensive Land Use Plan:

Alternative Energy Goals & Policies

Goal 2.13 Encourage options for alternative energy systems in the County

Policy 1. Review and explore standards and permitting requirements for alternative energy systems used for personal use, or by individual residences or businesses.

Policy 2. Review and explore standards and permitting requirements for distribution level alternative energy systems.

2. Proposed amendments to the Zoning Ordinance

29.8 SOLAR ENERGY SYSTEMS AND SOLAR STRUCTURES

~~**Subdivision 1. Permitted by District.** Solar energy systems and solar structures shall be a permitted use in all districts except the flood plain districts provided the system is in compliance with minimum lot requirements and setbacks. Within the flood plain district, solar structures shall be a conditional use.~~

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~~**Subdivision 2. Setback Exemptions.** Solar energy systems and solar structures may be exempted from setback, height, and lot coverage restrictions in all districts by variance.~~

~~**Subdivision 3. Access to Sun Light.** In a residential zone, no owner, occupier, or person in control of property shall allow vegetation or structures to be placed or grow so as to cast a shadow on a solar energy system which is greater than the shadow cast by a hypothetical wall ten (10) feet high located along the boundary line of the property between the hours of 9:30 a.m. and 2:30 p.m. Central Standard Time on December 21 provided, however, this standard shall not apply to vegetation or structures which cast a shadow upon the solar energy system at the time of installation of the system.~~

~~**Subdivision 4. Establishment of Right to Sun Light.** As a means of evidencing existing conditions, the owner of a solar energy system may file notarized photographs of the area with the County prior to installation of the system.~~

~~**Subdivision 5. Violation Constitutes a Private Nuisance.** Violation of this standard shall constitute a private nuisance and any owner or occupant whose solar energy system is shaded because of such violation, so that performance of the system is impaired, may have in tort for the damages sustained thereby and may have such nuisance abated.~~

29.8 SOLAR ENERGY SYSTEMS AND SOLAR STRUCTURES

Subdivision 1. Purpose. The purpose of this section is to set forth a process for permitting solar energy systems in a manner that promotes local renewable energy production and economic development while protecting property values and ensuring the protection of public health, safety, and welfare. This section also promotes renewable energy development while supporting dual-use opportunities, including conservation solar under Minnesota's habitat-friendly solar standards or agrivoltaics solar applications that maintain agricultural viability, improve soil and water health, and create community co-benefits. In no case shall the provisions of this ordinance guarantee rights to solar access.

Subdivision 2. Standards. All Solar Energy Systems (SES) shall comply with the following standards.

1. Roof-Mounted SES

- a. Roof-mounted SES are designed to supply energy for primary use and are permitted accessory uses in all districts.
- b. Roof-mounted SES **do not** require a building permit.
- ~~c. Building or roof-mounted SES shall not exceed the maximum allowed height in any zoning district.~~

2. Small SES

- a. **Uses.** Small SES are ground-mounted systems permitted as accessory uses in all districts and designed to supply energy to the primary use on the property.
- b. **Setbacks.** Small SES require a building permit and are required to meet the performance standards for the district in which it is located. Setbacks shall be measured at minimum design tilt.
- c. **Height.** Height shall not exceed the maximum allowed in any zoning district. Height shall be measured at maximum design tilt.
- d. **Setbacks.** Ground-mounted systems must meet the structural setback standards for the zoning district when oriented at minimum design tilt (shoreland, bluff, property, road setbacks, etc.).
- e. **Setback Exemptions.** Solar energy systems and solar structures may be exempted from setback, height, and lot coverage restrictions in all districts by variance.

Code compliance. Shall be in compliance with any applicable local, state and federal regulatory standards, including, but not limited to, the Federal Aviation Administration, State of Minnesota Building Code, the National Electric Code, and the state plumbing code.

3. Large SES

- a. Large SES are those with a project boundary of greater than one (1) acre and less than **(20) acres**, primarily designed to supply energy for off-site uses on the distribution grid. The production of energy may be the primary land use for the parcel or leased area on which the array is located.
- b. **Uses.** Large SES are interim uses in the agricultural protection district and cannot be located on more than **five (5)** acres of prime agricultural soils as classified in the Houston County Soil Survey. **Large SES proposed to be maintained as an agrivoltaics site for the life of the project is exempt from the prime soils requirement. It must be supported by an Agrivoltaic Management Plan and soil health protections consistent with Subdivision 2.4.**
- c. **Height.** Height shall not exceed the maximum allowed in any zoning district. Height shall be measured at maximum design tilt.

- d. **Dwelling Setbacks.** Large SES shall not be constructed within 500 feet of a neighboring dwelling, not including the home of the property owner developing the SES. Setbacks shall be measured to the nearest solar panel.
- e. **Setbacks.** A SES must meet all structural setback requirements for the zoning district in which they are located. Setbacks shall be measured at minimum design tilt.
 - i. All new substations shall meet structural setbacks from roads and property lines. Setbacks shall be measured from the fencing.
- f. **Setback Exemptions.** Solar energy systems and solar structures may be exempted from setback, height, and lot coverage restrictions in all districts by variance.
- g. **Code compliance.** Shall be in compliance with any applicable local, state and federal regulatory standards, including, but not limited to, the Federal Aviation Administration, State of Minnesota Building Code, the National Electric Code, and the state plumbing code.
- h. **Density.** No Large SES shall be allowed within a mile of another Large SES.
- i. **Lighting.** If lighting is provided, the lighting shall be focused lighting which precisely targets the system and minimizes spillover to the surrounding areas. Lighting shall not project directly onto adjacent parcels nor into the night sky.
- j. **Scenic By-ways.** Large SES shall be two (2) miles from any national, state, or local scenic byway. In the event the proposed SES will not be visible from a byway, but within the two-mile buffer, the applicant shall provide a waiver illustrating the conditions on site that would obscure the SES from the viewshed of the national or state scenic byway.
- k. **Power and communication lines.** Power and communication lines running between banks of solar collectors and to electric substations or interconnections with buildings shall be buried underground or in conduit overhead to an inverter if the system is fenced in. Exemptions may be granted in instances where shallow bedrock, water courses or other natural features interfere with the ability to bury lines.
- l. **Glare.** An SES shall be designed and operated to prevent the misdirection of reflected solar radiation or glare onto adjacent or nearby property, public roads, or areas open to the public.
- m. **Vegetative screening.** Screening shall be based on the proximity of the system to residential buildings and residentially zoned or platted property within 750 feet and to abutting public rights-of-way within 500 feet and shall incorporate adequate trees and/or shrubs in order to provide an effective visual screen.
 - i. A Screening Plan approved by the Planning Commission shall be required for the conditional use permit approval. The Plan shall be maintained in

the file and may be updated with the approval of the Zoning Administrator. The Plan shall include:

1. Identification of existing vegetation on the installation site, including type and percent of coverage.
 2. Locations of fences, residentially zoned areas, residential dwelling units and road rights-of-way on contiguous parcels.
 3. Fences installed as part of this project shall be screened.
 4. Screening shall be set back twenty (20) feet from the property line and on the parcel subject to the request.
 5. A maintenance plan for optimizing vegetative growth for the duration of the operation.
 6. Ground cover shall consist of perennial vegetation and incorporate pollinator friendly species as set by the Minnesota Board of Soil and Water Resources.
- n. **Signage.** A Large SES shall not be used to display advertising, including signage, streamers, pennants, spinners, reflectors, ribbons, tinsel, ballons, flags, banners or similar materials. The manufacturers and equipment information, warning, or indication of ownership shall be allowed on any equipment of the solar energy system provided they comply with the prevailing sign regulations.
- o. **Stormwater and erosion control.** An erosion and sediment control plan, approved by the Root River Soil and Water District, is required and shall be maintained in the file. Any updates need to be approved by the Root River Soil and Water District. If habitat-friendly or agrivoltaic grazing is in place, groundcover shall be maintained to prevent erosion, improve soil health, and support habitat-friendly functions as per the approved Agrivoltaic Management Plan.
- p. **Construction Stormwater.** Any SES that results in the creation of one (1) or more acres of impervious surface must comply with the MPCA Construction Stormwater Permit Requirements. Post construction runoff calculations shall be consistent with the University of Minnesota solar runoff calculator or equivalent calculator that incorporates measured soil bulk density between and under the arrays, soil or rooting depth of the site, and type of established ground cover.
- q. **Decommissioning.**
- i. Decommissioning process and costs shall include removal of all above-ground facilities and all underground support structures, disposal of all solid and hazardous waste in accordance with local, state and federal waste disposal regulations, the cost of returning the land to the agricultural use for which it was zoned at the time of the issuance of the IUP, the stabilization of soils and/or re-vegetation of the site as necessary to

minimize erosion and the costs of maintenance and repair of roads that may be impacted while decommissioning.

1. The interim use permit granting authority may allow the owner to leave landscaping or designated below-grade foundations in order to minimize erosion and disruption to vegetation.
- ii. A decommissioning plan is required and shall outline the anticipated means and cost of removing the system at the end of its serviceable life or upon it becoming a discontinued use. The cost estimates shall be made by a competent third party, such as a professional engineer, a contractor capable of decommissioning, or a person with suitable expertise or experience with decommissioning. The Decommissioning Plan shall also identify the financial resources that will be available to pay for the decommissioning and removal of the system. Modification of a decommissioning plan shall require an amended IUP.
- iii. Decommissioning of the system must occur within ninety (90) days from either of the following:
 1. The end of the system's serviceable life; or
 2. The system becomes a discontinued use. A system shall be considered a discontinued use after one (1) year without energy production, unless a plan is submitted and approved by the Zoning Administrator outlining the steps and schedule for returning the system to service.
- iv. The County Board may require the owner and/or operator of the Large SES to provide financial security in the form of an escrow, bond, or irrevocable letter of credit to ensure that decommissioning shall be completed if the applicant or operator for any reason fails to meet the requirements of this chapter.

4. Agrivoltaic SES

All of the standards of Large SES is applicable, along with:

- a. **Site Design and Layout.** Provide a minimum spacing of vegetated, uncompacted ground between rows, equal to the width of the solar arrays, for grazing or equipment access, and a leading-edge height of at least 2.5 feet where agricultural activity occurs.
- b. **Groundcover and Vegetation.** Establish perennial or native groundcover consistent with the Minnesota Board of Water and Soil Resources habitat-friendly solar standards. Maintain full vegetative cover by year three. If the Agrivoltaic Management Plan specifies the continued use of crops as ground cover, those areas in active crop production are exempt from the habitat-friendly standards.
- c. **Agricultural Use and Grazing.** The Agrivoltaic Management Plan shall describe grazing species, stocking density, rotational schedules, and crop types where

relevant. The Plan shall identify how the site manager will ensure continued agrivoltaic use of the site for the duration of the project.

- d. **Soil Health and Stormwater.** Conduct preconstruction baseline testing (organic matter, compaction, infiltration). Use vegetative best management practices to ensure no net increase in runoff.
- e. **Monitoring and Reporting.** The site manager must submit annual Agrivoltaic Management Plan reports summarizing vegetation or crop conditions, percentage of the site used for agricultural purposes, soil metrics, and adaptive management actions.

5. Applications

- a. All SES applications shall include the following:
 - i. A site plan of existing and proposed conditions noting locations of other underground infrastructure such as sewage treatment systems or wells.
 - ii. Number and size of solar collectors to be installed.
 - iii. Energy capacity of the SES in kw/MW.
 - iv. 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.
 - v. Planned location of underground or overhead electric lines connecting the SES to the building, substation or other electric load.
 - vi. New electrical equipment other than at the existing building or substation that is the connection point for the SES.
 - vii. Manufacturer's specifications and recommended installation methods for all major equipment, including solar panels, mounting systems and foundations for poles or racks.
- b. Additional requirements for Large SES:
 - i. Visual impact analysis. Discuss the potential visual impacts of the project including solar panels, roads and fencing and identify any measures to avoid, minimize, or mitigate visual impact. The analysis shall be of sufficient detail to provide the Planning Commission and County Board a visual representation of the site as viewed from the public roadways and neighboring receptors.
 - ii. Developer applicants must provide a lease or other agreement with the landowner.
 - iii. Stormwater and erosion control plan.
 - iv. Site Plan showing:
 - 1. Topography at two-foot intervals
 - 2. Waterways, watercourses, lakes and public water wetlands
 - 3. Delineated wetland boundaries

4. Floodplain district boundaries and 100-year elevation and regulatory flood protection elevation, if applicable.
 5. Shoreland district boundaries showing the ordinary high water level
 6. Surface water drainage patterns
 7. Proposed access roads and written approval from the applicable road authority
 - v. Vegetative screening plan.
 - vi. Soil Capability Map. Showing soil survey land capability classifications and including a calculation of acres of class I-III soils and percentage of total acres.
 - vii. A statement on the applicability of archaeological review and survey requirements.
 - viii. Identification of onsite measures that will be taken to avoid, minimize, or mitigate adverse effects to existing historical, cultural, and archaeological features identified by the State Historic Preservation Office, the County's databases, and those discovered onsite.
 - ix. Aviation analysis. If the project is within two miles of the airport, the applicant must complete and provide the results of the Solar Glare Hazard Analysis Tool (SGHAT) or equivalent glare tool.
 - x. An Emergency Response Plan filed with the Houston County Emergency Management Director.
 - xi. Decommissioning Plan.
 - xii. Any additional information required by the Zoning Administrator and/or County Board.
- c. Requirements for Agrivoltaic SES
 - i. All of the requirements for Large SES is applicable, along with:
 1. Agrivoltaic Management Plan describing site design, grazing/crop operations, vegetation management, and monitoring schedule. Agrivoltaic Management Plans should draw from current best practices identified by the Minnesota Board of Water and Soil Resources.
 2. Soil Health Plan documenting baseline soil data, monitoring intervals, and restoration practices.
 3. The Minnesota Board of Water and Soil Resources Pollinator Scorecard or equivalent verification.
6. No construction or excavation shall commence until the appropriate permits have been approved and decommissioning requirements provided.