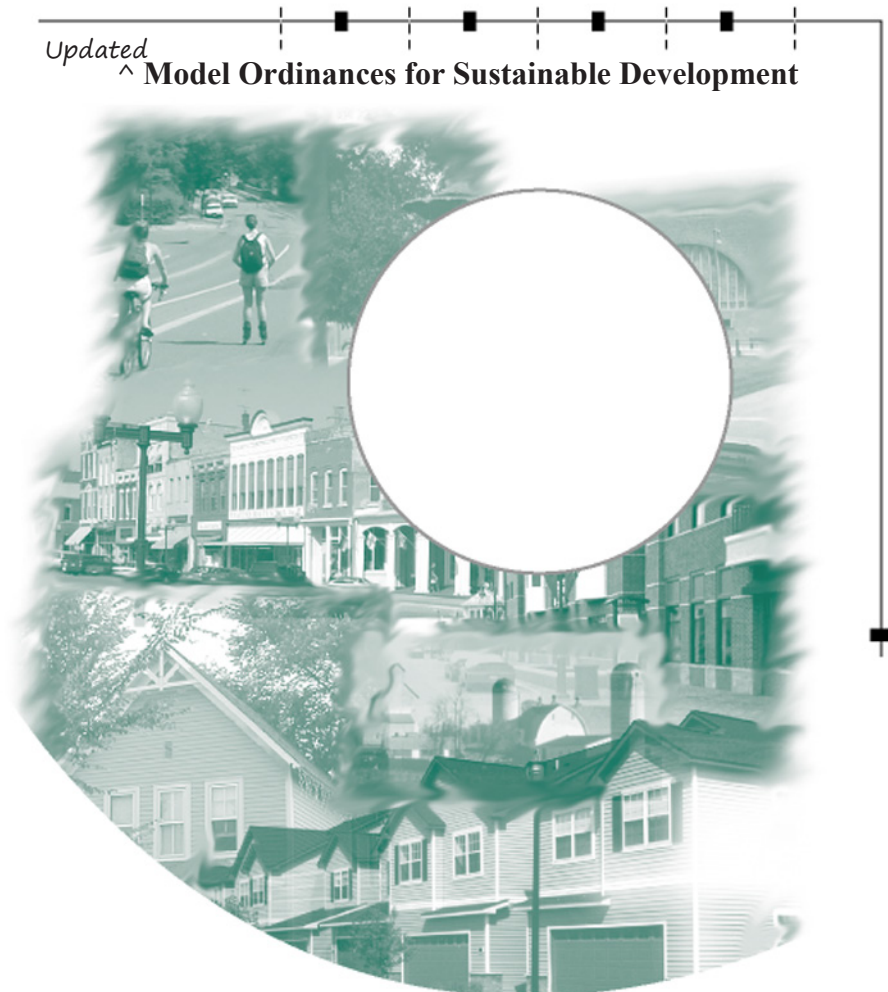


From Policy to Reality



2013
Minnesota Department of
Commerce, Division of
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Prepared for the Minnesota Department of Commerce by:



Brian Ross

501 Main Street SE #711
Minneapolis, MN 55414
612-588-4904
bross@crplanning.com

INTRODUCTION

In spite of its cold and dark reputation, Minnesota has good solar potential, as good as Houston, Texas and many parts of Florida. As solar energy system components have become more efficient and less costly an increasing number of solar energy installations have been installed in Minnesota. Since 2005, the interest in solar energy has rapidly increased such that many communities have had to address solar installations as a land use issue. Moreover, starting in 2014 many utilities will be making new investments in large-scale solar “farms,” and Minnesota has started to see new “community-shared” solar projects. Solar energy components continue to improve in efficiency and decline in price; the U.S. Department of Energy forecasts that solar energy will start to reach widespread cost parity with retail electric costs by 2016; solar is already a cost-competitive option in some locations.

Solar energy offers retail customers an alternative (or supplement) to utility power. Solar energy has become a symbol of energy self-sufficiency and environmental sustainability. The growth in solar installations is attributable more to the non-economic benefits than as an economic substitute to the utility. Households and businesses wanting to reduce their carbon footprint see solar energy as a strong complement to energy efficiency. Volatility in natural gas or propane prices makes free solar fuel look attractive as a price hedge.

Solar energy issues

Local governments will need to address solar energy installations in their development regulation in the near future. Three primary issues tie solar energy to development regulations:

- 1) *Protecting access to solar resources.* Development regulations can limit a property owner’s ability to access their solar resource. Moreover, solar access can be limited by buildings or vegetation on adjacent lots, and should be a consideration in zoning districts that allow tall buildings or in developing communities where subdivisions should enhance or protect homeowner’s access direct sunlight.
- 2) *Nuisance and safety considerations.* Solar energy systems have few nuisances, but visual impacts and safety concerns by neighbors sometimes create opposition to solar installations. Good design and attention to aesthetics can answer most concerns. But the misperception that solar energy systems are ugly and unsafe, rooted in poorly designed 1970s solar installations, have sometimes resulted in unnecessary regulation or outright prohibitions.
- 3) *Climate protection goals.* Local governments that have committed to meeting climate protection goals can meet some of their commitment by removing regulatory barriers to solar energy and incorporating low or no-cost incentives in development regulations to spur solar investment.

Model Solar Energy Standards

This ordinance was developed for the Minnesota Solar Challenge program, co-funded by the U.S. DOE Rooftop Solar Challenge. It was developed as a county/rural community version of the Minnesota model Urban Solar Energy Standards, and was last updated February, 2014

Statutory Solar Access Requirement

Local governments within the seven-county metropolitan region are required under state law to address solar access in their comprehensive plans, and thus indirectly in their development regulation that implements the comprehensive plan (Minn. Stat. 473.859, Subd. 2[b]). Refer to the Metropolitan Council Land Planning Handbook for more information.

Components of a solar standards ordinance

Solar energy standards should consider the following elements:

- Remove regulatory barriers and create a clear regulatory path (an as-of-right installation) to solar development for both accessory and (if appropriate) principal uses such as solar farms and ground-mount community shared solar installations.
- Address solar access issues within the subject property to ensure reasonable access not unduly limited by height, setback, or coverage limitation, recognizing the distinct design and function of solar technologies.
- If there are urban density developments, define aesthetic standards that retain an as-of-right installation while balancing design concerns.
- Encourage solar-ready subdivision and building design.
- Incorporate regulatory incentives that can spur private-sector solar investment.

Urban and rural communities

The model ordinance language addresses concerns that are primarily in counties, townships, and rural areas rather than cities and urban areas. The incentive portion of the urban model ordinance can be applied in rural areas, as are provisions addressing solar access and aesthetic considerations in those rural areas with development patterns at an urban scale (typically lots smaller than 1 acre).

Principal and accessory uses

This ordinance addresses solar energy as both a principal use and as an accessory use to the primary residential or commercial use. Counties and rural areas are much more likely to see “solar farms” or ground-mounted “community solar” installations. These solar installations are large arrays of hundreds or thousands of ground or pole-mounted panels covering anywhere from a few acres to over 100 acres. These land uses have different issues and need to be addressed in a substantially different manner than discussed in the urban model ordinance standards.

- I. Scope** - This article applies to all solar energy installations in Model County.
- II. Purpose** - Consistent with the County Comprehensive Plan, the intent of this Section is to allow reasonable capture and use, by households, businesses, and property owners, of their solar energy resource, and encourage the development of renewable energy businesses, consistent with community development standards. Model County has adopted this ordinance for the following purposes:
- A. Comprehensive Plan Goals** - To meet the goals of the Comprehensive Plan and preserve the health, safety and welfare of the County's citizens by promote the safe, effective and efficient use of active solar energy systems installed to reduce the on-site consumption of fossil fuels or utility-supplied electric energy. The following solar energy standards specifically implement the following goals from the Comprehensive Plan:
1. **Goal** – Encourage the use of local renewable energy resources, including appropriate applications for wind, solar, and biomass energy.
 2. **Goal** – Promote sustainable building design and management practices in residential, commercial, and industrial buildings to serve the needs of current and future generations.
 3. **Goal** – Assist local businesses to lower financial and regulatory risks and improve their economic, County, and environmental sustainability.
 4. **Goal** – Efficiently invest in and manage public infrastructure systems to support development and growth.
- B. GHG Reduction Goals** - Model County has committed to reducing carbon and other greenhouse gas emissions in its GHG Reduction Plan. Solar energy is an abundant, renewable, and nonpolluting energy resource and its conversion to electricity or heat will reduce our dependence on nonrenewable energy resources and decrease the GHG emissions and other air and water pollution that results from the use of conventional energy sources.
- C. Local Resource** - Solar energy is an under used local energy resource and encouraging the use of solar energy will diversify the community's energy supply portfolio and exposure to fiscal risks associated with fossil fuels.
- D. Improve Competitive Markets** - Solar energy systems offer additional energy choice to consumers and will improve competition in the electricity and natural gas supply market.

Comprehensive Plan Goals

Tying the solar energy ordinance to Comprehensive Plan goals is particularly important when the solar standards include regulatory incentives or solar requirements as described in the last section of this ordinance. If the Comprehensive Plan does not include goals that could address solar energy, and the community does not have some of policy foundation for encouraging private investment in solar energy (such as climate protection goals) the community should consider creating a local energy plan.

Climate Protection Strategies

Solar energy should be part of every community's portfolio for addressing climate change or energy independence considerations. Local governments that are participating in climate protection programs or the Cool Cities/ Cool Counties program can use private solar investment as a vehicle for meeting goals. Additional community benefits that improve sustainability are also spelled out in the findings section.

III. Definitions

Building-integrated Solar Energy Systems - An active solar energy 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 hot water solar energy systems that are contained within roofing materials, windows, skylights, and awnings.

Community Solar - 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, consistent with Minn. Statutes 216B.1641 or successor statute. A community solar system may be either an accessory or a principal use.

Grid-intertie Solar Energy System - A photovoltaic solar energy system that is connected to an electric circuit served by an electric utility company.

Off-grid Solar Energy System - 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 an electric utility company.

Passive Solar Energy System - A solar energy system that captures solar light or heat without transforming it to another form of energy or transferring the energy via a heat exchanger.

Photovoltaic System - A solar energy system that converts solar energy directly into electricity.

Renewable Energy Easement, Solar Energy Easement - An easement that limits the height or location, or both, of permissible development on the burdened land in terms of a structure or vegetation, or both, for the purpose of providing access for the benefited land to wind or sunlight passing over the burdened land, as defined in Minn Stat. 500.30 Subd. 3 or most recent version.

Renewable Energy System - A solar energy or wind energy system. Renewable energy systems do not include passive systems that serve a dual function, such as a greenhouse or window.

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 - Unobstructed access to the solar resource (see definition below) on a lot or building, including access across adjacent parcel air rights, for the purpose of capturing direct sunlight to operate a solar energy system.

Solar Definitions

Not all these terms are used in this model ordinance, nor is this a complete list of solar definitions. As a community develops its own design standards for solar technology, many of the concepts defined here may be helpful in meeting local goals. For instance, solar daylighting devices may change the exterior appearance of the building, and the community may choose to distinguish between these devices and other architectural changes.

Solar Resource - A view of the sun from a specific point on a lot or building that is not obscured by any vegetation, building, or object for a minimum of four hours 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 a part of a device or structure for which the primary purpose is to transform solar radiant energy into thermal, mechanical, chemical, or electrical energy.

Solar Collector Surface - Any part of a solar collector that absorbs solar energy for use in the collector's energy transformation process. Collector surface does not include frames, supports and mounting hardware.

Solar Daylighting - A device specifically designed to capture and redirect the visible portion of the solar spectrum, while controlling the infrared portion, for use in illuminating interior building spaces in lieu of artificial lighting.

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 Device - A system or series of mechanisms designed primarily to provide heating, cooling, electrical power, mechanical power, solar daylighting or to provide any combination of the foregoing by means of collecting and transferring solar generated energy into such uses either by active or passive means. Such systems may also have the capability of storing such energy for future utilization. Passive solar energy systems are designed as a solar energy device, such as a trombe wall, and not merely a part of a normal structure such as a window.

Solar Energy System - A device 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.

Solar Farm - A commercial facility that converts sunlight into electricity, 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 principal land use for the parcel on which it is located.

Solar Heat Exchanger - A component of a solar energy device that is used to transfer heat from one substance to another, either liquid or gas.

Solar Hot Air System - An active solar energy system that includes a solar collector to provide direct supplemental space heating by heating and re-circulating conditioned building air. The most efficient performance typically uses a vertically mounted collector on a south-facing wall.

Solar Resource

Understanding what defines a "solar resource" is foundational to understanding how land use regulation affects solar development. Solar energy resources are not simply where sunlight falls. A solar resource has minimum spatial and temporal characteristics, and needs to be considered not only today but also into the future. Solar energy equipment can not function as designed if installed in partial shade, with too few hours of daily or annual direct sunlight, or without southern or near-southern exposure. Many provisions of the model ordinance are predicated on the concept that a solar resource has definable characteristics that are affected by local land use decisions and regulation.

Interconnection

Nearly all solar electric systems are “grid-connected,” meaning that the system is connected to into the electric system of a building that is connected to the grid, or the solar installation is connected directly to the grid (such as a solar farm). In all cases, grid-connected systems need to have an interconnection agreement with the electric utility.

Glare

Solar collectors (the panels) have glass surfaces and thus can create glare. However, the glare is no different than glare from a glass window, and as panels are pitched toward the sun reflections are almost always upward. Moreover, solar panels are specifically designed to be anti-glare, as reflected light lowers the panel efficacy.

Reflectors

Unlike the solar collector, systems that use a reflector do create a potential glare situation that may be greater than building windows. Reflectors are designed to reflect, not absorb, light. However, the glare risk is intermittent and seasonal (usually only in the summer, early morning or late evening, and only for a limited amount of time). Counties may want to include provisions regarding reflector glare in the event that a glare nuisance situation arises in order to provide guidance for addressing the nuisance.

Solar Hot Water System (also referred to as Solar Thermal) - 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 processes.

Solar Mounting Devices - Racking, frames, or other devices that allow the mounting of a solar collector onto a roof surface or the ground.

Solar Storage Unit - A component of a solar energy device that is used to store solar generated electricity or heat for later use.

IV. General standards - All solar energy systems shall comply with the following standards.

- A. Interconnection agreement** - All electric solar energy systems that are connected to the electric distribution or transmission system through the existing service of the primary use on the site shall obtain an interconnection agreement with the electric utility in whose service territory the system is located. Solar energy systems connected directly to the distribution or transmission system must obtain an interconnection agreement with the interconnecting electric utility. Off-grid systems are exempt from this requirement.
- B. UL listing** - Electric solar system components that are connected to a building electric system must have an Underwriters Laboratory (UL) listing.
- C. Electric code** - All solar installations must comply with the Minnesota and National Electric Code.
- D. Building code** - All rooftop solar systems shall comply with the Minnesota Building Code.
- E. Plumbing Code** - Solar thermal hot water systems shall comply with applicable Minnesota State Plumbing Code requirements.
- F. Reflectors** - All solar energy systems using a reflector to enhance solar production shall minimize glare from the reflector affecting adjacent or nearby properties. Measures to minimize glare include selective placement of the system, screening on the north side of the solar array, modifying the orientation of the system, reducing use of the reflector system, or other remedies that limit glare.
- G. Height limit** - Building- or roof- mounted solar systems shall not exceed the maximum allowed height in any zoning district. For purposes of height measurement, solar systems other than building-integrated systems shall be considered to be mechanical devices and are restricted consistent with other building-mounted mechanical devices for the zoning district in which the system is being

installed, except that solar energy systems shall not be required to be screened.

H. Visibility, commercial installations - Commercial rooftop systems shall be placed on the roof to limit visibility from the public right-of-way or to blend into the roof design, provided that minimizing visibility still allows the property owner to reasonably capture solar energy.

V. Standards for specific solar uses. The following standards apply to specific types of solar uses:

A. Rooftop solar energy systems - accessory to the primary land use, designed to supply energy for the primary use.

- (1) These systems are permitted accessory uses in all districts in which buildings are permitted.
- (2) No land use permit is required.

B. Ground-mount solar energy systems - accessory to the primary land use, designed to supply energy for the primary use.

- (1) Ground-mount systems are permitted accessory uses in all districts where buildings are permitted.
- (2) Ground-mount systems require a land use permit and are subject to the accessory use standards for the district in which it is located, including setback, height, and coverage limits.
- (3) The collector surface of a ground-mount system and any foundation, compacted soil, or other component of the solar installation that rests on the ground is considered impervious surface. Vegetated ground under the collector surface can be used to mitigate stormwater runoff.

C. Community solar energy systems - Roof or ground-mount solar energy systems, may be either accessory or primary use, designed to supply energy for off-site uses on the distribution grid, consistent with Minn. Statutes 216B.1641 or successor statute.

- (1) Rooftop community systems are permitted in all districts where buildings are permitted.
- (2) Ground-mount community solar energy systems are conditional uses in all districts.
- (3) An interconnection agreement must be completed with the electric utility in whose service territory the system is located.
- (4) All structures must comply with setback, height, and coverage limitations for the district in which the system is located.
- (5) Ground-mount systems must comply with all required standards for structures in the district in which the system is located.

Height Standards

In rural areas the height standards that apply to the principal and accessory uses are unlikely to constrain solar development. Solar resources are unlikely to be constrained by trees or buildings on adjacent lots, and is likely to have adequate an solar resource for a ground-mount application even if the roof is shaded.

Visibility and Aesthetic Considerations

Not all counties use design or aesthetic standards for commercial buildings. This standard is provided as an example for counties that do regulate commercial building design or the aesthetics of rooftop equipment. Solar arrays should be treated similar to other rooftop equipment, while accommodating the functioning of the system (screening requirements render the system useless).

Impervious Surface and Stormwater

The county should consider an important distinction between a ground-mount solar array and the roof of an accessory building; the uncompacted and vegetated ground under the array can be used to infiltrate stormwater. Having the infiltration area does not eliminate all the impacts of the collector surface, but should be considered as a significant mitigating factor.

Community Solar or Solar Gardens

Community solar systems differ from rooftop or solar farm installations primarily in regards to system ownership and disposition of the electricity generated, rather than land use considerations. There is, however, a somewhat greater community interest in community solar, and thus counties should consider creating a separate category.

Stormwater and NPDES Standards

As noted with ground-mount accessory use installations, the county needs to understand the distinction between a ground-mount solar array and the roof of an accessory building as regards impervious surfaces. The collector surface is impervious, but the uncompacted and vegetated ground under the array can be used to infiltrate stormwater. A solar farm will almost always require an NPDES permit. However, greater attention should be given, in developing the SWPPP, to how the applicant manages the ground under the panels than to the panels themselves. Perennial grasses planted under the panels and between arrays will substantially mitigate the effect of the panels on rainwater.

Site Plan

Solar farm developers should provide a site plan similar to that required by the county for any other development. Refer to your existing ordinance to guide site plan submittal requirements.

Aviation Standards

This standard was developed for the FAA for solar installations on airport grounds. It can also be used for surrounding areas, particularly for solar farm installations.

Agricultural Protection

If the county has ordinances that protect agricultural soils, this provision applies those same standards to solar development. Counties should understand, however, that solar farms do not pose the same level or type of risk to agricultural practices as does housing or commercial development.

D. Solar farms - Ground-mount solar energy arrays that are the primary use on the lot, designed for providing energy to off-site uses or export to the wholesale market.

- (1) **Conditional use permit** - Solar farms require a conditional use permit.
- (2) **Stormwater and NPDES** - Solar farms are subject to the County's stormwater management and erosion and sediment control provisions and NPDES permit requirements.
- (3) **Foundations** - A qualified engineer shall certify that the foundation and design of the solar panels racking and support is within accepted professional standards, given local soil and climate conditions.
- (4) **Other standards and codes** - All solar farms shall be in compliance with all applicable local, state and federal regulatory codes, including the State of Minnesota Uniform Building Code, as amended; and the National Electric Code, as amended.
- (5) **Power and communication lines** - Power and communication lines running between banks of solar panels and to nearby electric substations or interconnections with buildings shall be buried underground. Exemptions may be granted by the County in instances where shallow bedrock, water courses, or other elements of the natural landscape interfere with the ability to bury lines, or distance makes undergrounding infeasible, at the discretion of the zoning administrator.
- (6) **Site Plan Required** - A detailed site plan for both existing and proposed conditions must be submitted, showing location of all solar arrays, other structures, property lines, rights-of-way, service roads, floodplains, wetlands and other protected natural resources, topography, electric equipment, and all other characteristics requested by the County. The site plan should also show all zoning districts, and overlay districts.
- (7) **Aviation Protection** - For solar farms located within 500 feet of an airport or within the A or B safety zones of an airport, the applicant must complete and provide the results of the Solar Glare Hazard Analysis Tool (SGHAT) for the Airport Traffic Control Tower cab and final approach paths, consistent with the Interim Policy, FAA Review of Solar Energy Projects on Federally Obligated Airports, or most recent version adopted by the FAA.
- (7) **Agricultural Protection** - Solar farms must comply with site assessment or soil identification standards that are intended to protect agricultural soils.
- (8) **Decommissioning** - A decommissioning plan shall be required to ensure that facilities are properly removed after their useful life. Decommissioning of solar panels must occur in the event they are not in use for 12 consecutive months. 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. Disposal of structures and/or founda-

tions shall meet the provisions of the County Solid Waste Ordinance. The County may require the posting of a bond, letter of credit or the establishment of an escrow account to ensure proper decommissioning.

V. Non-Conforming Accessory Installations - Model County encourages the installation of productive solar energy systems and recognizes that dimensional standards, height standards, and other standards to retain desired character and aesthetic must be balanced with the reasonable desire of building owners to harvest their renewable energy resources. Where the standards in Section IV. G., or H., cannot be met without diminishing the minimum reasonable performance of the solar energy system as defined in Section V. A., a non-conforming installation can be, if the County so chooses, permitted under a conditional use permit (CUP).

A. Minimum Performance Design Standards - The following design thresholds are necessary for efficient operation of a solar energy system:

1. **Fixed-Mount Solar Energy Systems** - Solar energy systems must be mounted to face within 45 degrees of south (180 degrees azimuth).
2. **Solar Electric (photovoltaic) Systems** - Solar collectors must have a pitch of between 20 and 65 degrees.
3. **Solar Hot Water Systems** - Solar collectors must have a pitch between 40 and 60 degrees.
4. **System Location**- The system is located where the lot or building has a solar resource, as defined in this ordinance.

B. Standards for granting a CUP - A CUP shall be granted by the zoning official if the applicant meets the following safety, performance and aesthetic conditions:

1. **Aesthetic Conditions** - The solar energy system must be designed to blend into the architecture of the building or be screened from routine view from public right-of-ways to the maximum extent possible while still allowing the system to achieve efficient performance.
2. **Safety Conditions** - All applicable health and safety standards are met.
3. **Non-Tracking Ground-Mounted Systems** - Pole-mounted or ground-mounted active solar energy systems must be set back from the property line by three feet.

VI. Restrictions on Solar Energy Systems Limited - No homeowners' agreement, covenant, common interest community, or other contract between multiple property owners within a subdivision of Model County shall forbid installation of solar energy systems or create design standards that effectively preclude solar energy installations.

Decommissioning Standards

Solar farms should file a decommissioning plan with the county. Requiring financial surety for decommissioning may not be justified for small solar farms, as some farms could be too small to be able to acquire a bond or similar instrument. These standards could also apply to Community Solar installations.

Non-Conforming Accessory Installations

This provision allows property owners (usually in small lot areas) who have a solar resource to apply for a conditional use permit if dimensional standards or height limits restrict installations where the resource is located. On large lots dimensional or height standards are unlikely to limit the solar installation.

Homeowners' Associations

This provision would apply to new subdivisions and HOAs, and provides very general language for protecting solar development rights. Alternatively, the county could set aesthetic standards for solar development and limit the HOA from being more restrictive than the county (see the urban solar design standards for examples).

Solar Easements

Minnesota allows the purchase and holding of easements protecting access to solar and wind energy. Examples of what the easement must specify are noted below; see the statute for a complete list:

Required Contents - Any deed, will, or other instrument that creates a solar or wind easement shall include, but the contents are not limited to:

- (a) A description of the real property subject to the easement and a description of the real property benefiting from the solar or wind easement; and
- (b) For solar easements, a description of the vertical and horizontal angles, expressed in degrees and measured from the site of the solar energy system, at which the solar easement extends over the real property subject to the easement, or any other description which defines the three dimensional space, or the place and times of day in which an obstruction to direct sunlight is prohibited or limited . . .

Source: Minnesota Stat. 500.30 Subd. 3.

Renewable Energy Conditions

The community can use traditional development tools such as conditional use permits, PUDs, or other discretionary permits to encourage solar energy development. This model ordinance notes these opportunities for consideration by local governments. In most cases, additional ordinance language would need to be inserted into the community's ordinances. For instance, a provision that PUDs incorporate solar energy or ensure the buildings in the PUD are solar-ready construction, the provision should be included in the community's PUD ordinance.

VII. Solar Access - Model County encourages solar access to be protected in all new subdivisions and allows for existing solar to be protected consistent with Minnesota Statutes.

- A. **Easements Allowed** - Model County has elected to allow solar easements to be filed, consistent with Minnesota Stat. Chapter 500 Section 30. Any building owner can purchase an easement across neighboring properties to protect access to sunlight. The easement is purchased from or granted by owners of neighboring properties and can apply to buildings, trees, or other structures that would diminish solar access.
- B. **Subdivision Solar Easements** - Model County may require new subdivisions to identify and create solar easements when solar energy systems are implemented as a condition of a PUD, subdivision, conditional use, or other permit, as specified in Section 8 of this ordinance.

VIII. Renewable Energy Condition for Certain Permits

- A. **Condition for Rezoning or Conditional Use Permit** - Model County may, in an area where the local electric distribution system was installed more than twenty years ago, or where the local electric utility has documented a near-term need for additional distribution substation or conductor capacity, require on-site renewable energy systems as a condition for a rezoning or a conditional use permit.
 1. The renewable energy condition may only be exercised for new construction or major reconstruction projects.
 2. The renewable energy condition may only be exercised for sites that have 90% unimpeded solar or wind energy access, and for which the renewable energy system can reasonably meet all performance standards and building code requirements.
- B. **Condition for Planned Unit Development (PUD) Approval** - Model County may require on-site renewable energy systems as a condition for approval of a PUD permit, in order to mitigate for:
 1. Risk to the performance of the local electric distribution system,
 2. Increased emissions of greenhouse gases,
 3. Other risks or effects inconsistent with Model County's Comprehensive Plan.

IX. Solar Roof Incentives - Model County has identified the following incentives for development applications or subdivisions that will include buildings using active solar energy systems.

- A. **Density Bonus** - Any application for subdivision of land in the ___ Districts that will allow the

development of at least four new lots of record shall be allowed to increase the maximum number of lots by 10% or one lot, whichever is greater, provided all building and wastewater setbacks can be met with the increased density, if the applicant enters into a development agreement guaranteeing at each two kilowatts of PV or 64 square feet of solar hot water collector installed for each new residence.

- B. **Solar-Ready Buildings** – Model County encourages builders to use solar-ready design in buildings. Buildings that submit a completed U.S. EPA's Renewable Energy Ready Home Solar Photovoltaic Checklist and associated documentation will be certified as a Model County solar ready home, a designation that will be included in the permit home's permit history.
- C. **Solar Access Conditions** - On a site where the solar access standards of the subdivision ordinance are difficult to meet due to topography or road connectivity, the county shall consider non-conforming development patterns as a conditional use provided the applicant meets the following conditions:
1. **Solar Access Lots Identified** - At least ___% of the lots, or a minimum of ___ lots, are identified as solar development lots.
 2. **Covenant Assigned** - Solar access lots are assigned a covenant that homes built upon these lots must include an active solar energy system. Photovoltaic systems must be at least one (1) KW in capacity and solar thermal systems must have at least 64 square feet of collector area.
 3. **Additional Fees Waived** - Model County will waive any additional fees for filing of the covenant.

Solar Roof Incentives

This section of the model ordinance provides examples of incentives that can be incorporated into development regulation. Most cities and many counties use incentives to encourage desired public amenities in new development. These same tools and incentives can be used to encourage private investment in solar energy. Communities will not want to use all these incentives, but should select which ones make the most sense in their community (or create some other incentive that encourages solar energy). As with any incentive, an important element of creating the incentive is to engage planning or economic development staff in the creation of the incentive, so that staff can assist the developer in taking advantage of the provisions.

Solar Access in Subdivisions

Some local governments require solar orientation of new subdivisions (requiring a south-facing building or lot line to accommodate solar design in the buildings). Designing the subdivision around natural features or contours can make these provisions difficult to meet. This language offers an alternative to simply granting a variance to the solar orientation requirement.