SOLAR ZONING MEMO

Friday, February 18, 2022

Scott Annis
International City/County Management Association
777 North Capitol St. NE, Ste. 500
Washington, DC 20002

Theresa Perry
Interstate Renewable Energy Council
125 Wolf Road, Suite 207
Albany, NY 12205

Dear Scott Annis and Theresa Perry:

In 2017, the City of Hopkins with technical assistance from our regional SolSmart representative began the process of updating our City's Zoning Code to adhere to solar best practices, using the Sate of Minnesota Model Solar ordinance. Adopted by the City Council on May 15, 2018, Ordinance No. 2018-1132 made the following changes to our zoning code:

- Established the purpose and intent behind the proposed regulations
- Defined specific terms associated with solar energy systems
- Allowed solar by-right or as an accessory use in all districts
- Created specific performance standards for solar energy systems
- Outlined a review process and necessary application materials
- Placed reasonable limits on private groups to restrict solar energy systems and encouraged protection of solar access through easements

These items are consistent with the SolSmart program goals to eliminate any restrictions that intentionally or unintentionally restrict solar access and allow by-right or accessory use solar in all areas of our community. These changes have been in place for the past four years, and we have had many residents take advantage of adding solar to their properties. In 2021, we began an update of the entirety of the City's Zoning Code and these changes remain in effect.

Attached you will find the second reading of the ordinance for your review.

Many thanks,

PeggySue Imihy Bean, AICP

MEMO

To: Honorable Mayor and City Council

From: Jason Lindahl, City Planner

Date: May 15, 2018

Subject: Second reading of Ordinance 2018-1132 – Solar Energy Systems

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Proposed Action: Move to adopt Resolution 2018-047, approving the second reading of Ordinance 2018-036 amending Section 520 of the City Code related to Solar Energy Systems and authorizing its publication.

Overview. In late 2017 staff presented information from the SolSmart program, a national designation program intended to recognize communities that take steps to address local barriers to the implementation of solar energy systems. During that review, staff identified the need for a zoning text amendment to promote the use of solar energy systems, remove regulatory barriers and create a clear regulatory path for approval. City staff studied this issue and reviewed various items with the Planning & Zoning Commission during the first quarter of 2018. Based on information from the SolSmart program, the City's sustainability goals, existing energy conditions in Hopkins and research on solar energy systems standards in other communities, staff has prepared the attached Solar Energy Systems Ordinance. The ordinance is based on the Minnesota Model Solar Ordinance but has been modified to address specific needs and conditions in Hopkins.

The Planning & Zoning Commission reviewed this item during their April 24 meeting and recommend approval by the City Council. The City Council also approved the first reading of this ordinance during their May 1st meeting. Should the City approve the proposed ordinance, it would set Hopkins on a path to become a certified SolSmart Community and make the following zoning changes:

- Establish the purpose and intent behind the proposed regulations.
- Define specific terms associated with solar energy systems.
- Detail allowable uses by zoning district.
- Create specific performance standards for solar energy systems.
- Outline a review process and necessary application materials.
- Place reasonable limits on private groups to restrict solar energy systems and encourage protection of solar access through easements.

Supporting Documents

- City Council Resolution 2018-047
- Interim Ordinance 2018-1132

CITY OF HOPKINS
Hennepin County, Minnesota

RESOLUTION NO: 2018-047

A RESOLUTION APPROVING THE SECOND READING OF ORDINANCE 2018-1132 AMENDING SECTIONS 520 OF THE CITY CODE RELATED TO SOLAR ENERGY SYSTEMS AND AUTHORIZING ITS PUBLICATION

WHEREAS, the City of Hopkins initiated an application to amend the Zoning Ordinance related to Solar Energy Systems; and

WHEREAS, the procedural history of the application is as follows:

1. The Hopkins Planning & Zoning Commission reviewed the SolSmart Program during their July and August 2017 meetings; and

2. That the Hopkins City Council reviewed and discussed this item during their September 5, 2017 meeting; and

3. That an application to amend the Zoning Ordinance related to Solar Energy Systems was initiated by the City of Hopkins on December 22, 2017; and

4. That the Hopkins Planning & Zoning Commission reviewed and heard presentations on such application during the January 23 and February 27, 2018 meetings; and

5. That the Hopkins Planning & Zoning Commission, pursuant to published notice, held a public hearing to review such application on March 27, 2018 and all persons present were given an opportunity to be heard; and

6. That during the March 27 meeting, the Hopkins Planning & Zoning Commission voted to continue this item until their April 24, 2018 meeting to allow more time for study; and

7. That the Hopkins Planning & Zoning Commission, continued the public hearing to review such application on April 24, 2018 and all persons present were given an opportunity to be heard; and

8. That written comments and analysis of City staff were considered; and

9. That the Hopkins Planning & Zoning Commission voted 5-0 to recommend the Hopkins City Council approve an ordinance amending the zoning standards for Solar Energy Systems; and

10. That the City Council approved the first reading of this item on May 1, 2018; and

11. The City Council of the City of Hopkins held a second reading of this ordinance during the May 15, 2018 City Council meeting; and

12. The written comments and analysis of City staff were considered.

WHEREAS, Minnesota Statutes, Section 412.191, Subd. 4, allows publication by title and summary in the case of lengthy ordinances; and

WHEREAS, the City Council finds that the following summary would clearly inform the public of the intent and effect of the Ordinances.

NOW, THEREFORE, BE IT RESOLVED that the City Council of the City of Hopkins hereby approves the second reading of Ordinance 2018-1132 amending Sections 520 the City Code related to Solar Energy Systems based on the findings detailed in City Council Report 2018-051.

NOW, THEREFORE, BE IT FURTHER RESOLVED, that the City Clerk shall cause the following summary of Ordinance 2018-1132 to be published in the official newspaper in lieu of the entire ordinance:

Public Notice

In summary, Ordinance 2018-036 makes the following changes to Sections 520 the City Code related to Solar Energy Systems:

1. Establishes the purpose and intent behind the proposed regulations.
2. Defines specific terms associated with Solar Energy Systems.
3. Details allowable uses by zoning district.
4. Creates specific performance standards for Solar Energy Systems.
5. Outlines a review process and necessary application materials.
6. Places reasonable limits on private groups to restrict Solar Energy Systems and encourages protection of solar access through easements.

Adopted by the City Council of the City of Hopkins this 15th day of May 2018.

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Molly Cummings, Mayor

ATTEST:

_____
Amy Domeier, City Clerk

CITY OF HOPKINS
Hennepin County, Minnesota

ORDINANCE NO. 2018-1132

AN ORDINANCE AMENDING SECTIONS 520 OF THE CITY CODE RELATED SOLAR ENERGY SYSTEMS

THE COUNCIL OF THE CITY OF HOPKINS DOES HEREBY ORDAIN AS FOLLOWS:

SECTION 1. Section 520, General Provisions, is hereby amended to add the following:

520.10. Solar Energy Systems. Subd 1. Purpose & Intent. It is the goal of the city council, as expressed in the comprehensive plan, for Hopkins to become a more sustainable community by encouraging activities that conserve energy and result in less/no pollution. In accordance with this objective, the city finds that it is in the public interest to encourage the safe, effective and efficient use of alternative energy systems that have a positive impact on energy production and conservation while not having an adverse impact on the community. Therefore, the purposes of this section include:

- Implement the solar resource protection element required under the Metropolitan Land Planning Act by promoting rather than restrict development of alternative energy sources, removing regulatory barriers and creating a clear regulatory path for approving alternative energy systems.
- To create a livable community where development incorporates sustainable design elements such as resource and energy conservation and use of renewable energy.
- Protect and enhance the environment, limit the effects of climate change and decrease the use of fossil fuels.
- To encourage alternative energy development in locations where the technology is viable and environmental, economic and social impacts can be mitigated.
- Support additional energy choice for consumers and promote competition in the electricity and natural gas supply market.

Subd 2. Definitions. The following word, terms, and phrases, when used in this title, shall have the meanings ascribed to them in this section:

COMMUNITY SOLAR GARDEN (SOLAR GARDEN): A roof or ground mounted 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.

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 direct sunlight on a lot or building through the entire year, including access across adjacent parcel air rights, for the purpose of capturing direct sunlight to operate a solar energy system.

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 SYSTEM: A device or structure design feature, the 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 or cooling, electricity generation, or water heating.

SOLAR ENERGY SYSTEM, ACTIVE: A solar energy system whose primary purpose is to harvest energy by transferring solar energy into another form of energy or transferring heat from a solar collector to another medium using mechanical, electrical, or chemical means.

SOLAR ENERGY SYSTEM, BUILDING INTEGRATED: A 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.

SOLAR ENERGY SYSTEM, GRID INTERTIE: A photovoltaic solar energy system that is connected to an electric circuit served by an electric utility company.

SOLAR ENERGY SYSTEM, GROUND MOUNTED: A freestanding solar system mounted directly to the ground using a rack or pole rather than being mounted on a building.

SOLAR ENERGY SYSTEM, OFF GRID: 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.

SOLAR ENERGY SYSTEM, PASSIVE: A system that captures solar light or heat without transforming it to another form of energy or transferring the energy via a heat exchanger.

SOLAR ENERGY SYSTEM, PHOTOVOLTAIC: A solar energy system that converts solar energy directly into electricity.

SOLAR ENERGY SYSTEM, ROOF MOUNTED: A solar energy system mounted on a rack that is fastened to or ballasted on the roof of a principal or accessory building.

SOLAR FARM: A ground mounted 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.

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: (also referred to as Solar Air Heat or Solar Furnace) – A 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 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 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 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 all days of the year.

Subd. 3. Allowable Uses. Solar energy systems shall be allowed as an accessory use in various zoning districts throughout the city as prescribed below. Solar Farms or Solar Gardens shall require a conditional use permit as prescribed in Section 525.13 (Conditional Use Permit).

A. Roof Mounted Solar Energy Systems are a permitted accessory use in all zoning districts.

B. Roof Mounted Solar Energy Systems part of a Solar Garden are a permitted accessory use in all non-residential districts.

C. Ground Mounted Solar Energy Systems part of a Solar Farms or Solar Gardens are a conditional accessory uses in the Closed Landfill Restricted District, subject to:

1. Conformance with the standards of the Closed Landfill Restricted District.

2. Stormwater. Solar farms are subject to the City's stormwater management and erosion and sediment control provisions and National Pollutant Discharge Elimination System (NPDES) permit requirements.

3. Ground Cover and Buffer Areas. The following provisions shall be met related to the clearing of existing vegetation and establishment of vegetated ground cover. Additional requirements may apply as required by the City.

    a. The project site design shall include the installation and establishment of ground cover meeting the beneficial habitat standard consistent with Minnesota Statutes, Section 216B.1642, or successor statutes and guidance as set by the Minnesota Board of Water and Soil Resources.

    b. Beneficial habitat standards shall be maintained on the site for the duration of operation, until the site is decommissioned.

    c. The applicant shall submit a financial guarantee in the form of a letter of credit, or other form acceptable to the City Attorney equal to one hundred twenty-five (125) percent of the costs to meet the beneficial habitat standard. The financial guarantee shall remain in effect until vegetation is sufficiently established.

4. 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.

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 City 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. Aviation Protection. For solar farms located within 500 feet of an airport or within approach 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. 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 may 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 City may require the posting of a bond, letter of credit or the establishment of an escrow account to ensure proper decommissioning.

Subd. 4. Performance Standards

A. Height. Solar energy systems shall comply with the following height requirements:

1. Roof Mounted Solar Energy Systems shall comply with the height standards of the applicable zoning district.

2. Ground Mounted Solar Energy Systems part of a Solar Farms or Solar Garden shall not exceed fifteen feet (15') in height when oriented at maximum tilt.

B. Setback. Solar energy systems shall comply with the following setback requirement.

1. Roof Mounted Solar Energy Systems shall comply with the setbacks requirement for the applicable zoning district and structure type (principal or accessory) on which they are mounted.

2. Ground Mounted Solar Energy Systems part of a Solar Farms or Solar Garden shall comply with the principal front yard setback requirements of the abutting zoning district.

3. Setback encroachments shall be permitted as allowed under Section 520.09, Subdivision 2.a (Not Encroachments) provide the applicant demonstrates the collector and mounting system has been explicitly engineered to safely extend beyond the roof edge

C. Visibility. Solar energy systems shall be designed to blend into their surroundings or the architecture of the associated building provided mitigating for visual impacts will allow the system to function within expected industry standards. The color of the solar collector is not required to be consistent with other roofing materials.

1. Pitched Roofs. Systems mount on pitched roofs that are visible from the nearest edge of the right-of-way, other than an alley, shall not have a highest finished pitch steeper than the roof pitch on which the system is mounted and shall be no higher than ten (10) inches above the roof.

2. Flat Roofs. System mounted on flat roof may be attached at an angle to improve their efficiency, provided the highest point of a solar panel is not visible from the nearest edge of the public right-of-way, other than an alley.

3. Ground Mounted Solar Energy Systems. Ground Mounted Solar Energy Systems part of a Solar Farm or Solar Gardens and visible from the public right-of-way shall include buffering features such as setback, berming, landscaping, fences, walls or a combination thereof to soften the appearance of the system and improve visual aesthetics.

4. 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.

D. Coverage. Roof Mounted Solar Energy Systems, excluding building-integrated systems, shall allow for adequate roof access for fire-fighting purposes to the south-facing or flat roof upon which the panels are mounted. Ground-mount systems shall be exempt from building coverage standards if the soil under the collector is not compacted and maintained in vegetation. Foundations, gravel, or compacted soils are considered impervious.

E. Certifications. Solar electric system components shall be certified by Underwriters Laboratories, Inc., and solar thermal systems shall be certified by the Solar Rating and Certification Corporation, or other appropriate certification(s) as determined by the city. The city reserves the right to deny a building permit for proposed solar energy systems deemed to have inadequate certification.

F. Compliance with Building Code. All solar energy systems shall meet approval of Building Officials, consistent with the State of Minnesota Building Code, and solar thermal systems shall comply with HVAC-related requirements of the Energy Code.

G. Compliance with State Electric Code. All photovoltaic systems shall comply with the Minnesota State Electric Code.

H. Compliance with State Plumbing Code. Solar thermal systems shall comply with applicable Minnesota State Plumbing Code requirements.

I. Utility Connection: All grid intertie systems shall have an agreement with the local utility prior to the issuance of a building permit. A visible external disconnect must be provided if required by the utility. Off grid systems are exempt from this requirement.

J. Abandonment. 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 a demolition permit has been obtained. Removal includes the entire structure including transmission equipment.

Subd. 5. Review Process & Materials. Except as provided below, no solar energy system shall be erected, altered, improved, reconstructed, maintained or moved in the city without first securing a permit from the city. Roof Mounted Solar Energy Systems that meet the design requirements of this ordinance shall be granted administrative approval by the Zoning Official and shall not require Planning & Zoning Commission review or City Council Approval. Roof Mounted Solar Gardens or Solar Farms shall require a conditional use permit as prescribed under Section Plan 525.13. Planning approval does not indicate compliance with Building Code or Electric Code.

A. Elevation Drawings Required. All solar energy system applications shall include horizontal and vertical building elevation draw at an Architects scale. The drawings must show the location of the system on the building and the applicable information detailed below.

    1. Pitched Roof Mounted Solar Energy Systems. The drawings shall show the highest finished slope of the solar collector and the slope of the finished roof surface on which it is mounted.

    2. Flat Roof Mounted Solar Energy Systems. The drawings must shows the distance to the roof edge and any parapets on the building. They shall also identify the height of the building on the street frontage side, the shortest distance of the system from the street frontage edge of the building, and the highest finished height of the solar collector above the finished surface of the roof.

B. Site Plan Required. All solar energy system applications shall include site plan drawn at an Engineer's scale. The site plan must show the 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 City.

C. Exemptions. The following solar energy systems are exempt from the requirements of this section.

    1. Passive and building integrated systems. These systems shall be regulated as any other building element.
    2. Solar energy collector devices less than one (1) square foot in area and generally used for garden decoration, exterior accent lighting for residential homes, lawns, and flagpoles.

    3. Accessory systems installed by a government agency on light poles, signs, transit shelters or within public right-of-way.

D. Deviations. Deviation from the required standards of this section may be allowed through a conditional use permit in accordance with Section 525.13 provided that request to reduce minimum setback requirements shall be by variance. In granting a conditional use permit, the

city council shall consider the criteria in said Section 525.13 of this title and the following additional criteria unique to solar energy systems:

1. That the deviation is required to allow for the improved operation of the Solar Energy System.
2. That the Solar Energy System has a net energy gain.
3. That the Solar Energy System does not adversely affect solar access to adjacent properties.
4. That the Solar Energy System complies with all other engineering, building, safety and fire regulations; and
5. That the Solar Energy System is found to not adversely impacts on the surrounding area, including the health, safety and general welfare of occupants of neighboring properties and users of public rights of way.

Subd. 6. Restrictions on Solar Energy Systems Limited. As of (adoption date for this ordinance) new homeowners' agreements, covenant, common interest community standards, or other contract between multiple property owners within a subdivision of Hopkins shall not restrict or limit solar energy systems to a greater extent than Hopkins solar energy standards.

Subd. 7. Solar Access. The City of Hopkins encourages protection of solar access. Solar access easements may be filed consistent with Minnesota State Statute 500.30. Any property owner can purchase an easement across neighboring properties to protect access to sunlight. The easement can apply to buildings, trees, or other structures that would diminish solar access.

SECTION 2. This ordinance shall take effect and be in force upon its publication, in accordance with Section 3.07 of the City Charter.

First Reading:	May 1, 2018
Second Reading:	May 15, 2018
Date of Publication:	May 24, 2018
Date Ordinance Takes Effect:	May 24, 2018

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Molly Cummings, Mayor

ATTEST:

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Amy Domeier, City Clerk