

**City of Pine Island  
Planning and Zoning Commission  
Agenda**

**Tuesday – January 13<sup>th</sup>, 2015**

**7:00 PM**

Second Floor – City Hall  
250 South Main Street

- I. Roll Call
- II. Pledge of Allegiance
- III. Minutes of December 9<sup>th</sup>, 2014
- IV. Public Hearing on Solar Energy Ordinance – John Anderson
- V. Adjourn

City of Pine Island  
Planning and Zoning Commission  
Minutes  
Tuesday, December 9, 2014  
7:00 P.M. – City Hall

Meeting not called to order due to lack of a quorum.

Present: Ken Hames, Brad Rehling

Absent: Harlan Pahl, TJ Schutz, Grant Friese, Randy Bates

Also Present: Jon Eickhoff, John Anderson

Respectively Submitted,

Jon Eickhoff



## BACKGROUND DATA

**Meeting/Public  
Hearing Date:**

January 13, 2015

**Applicant:**

City of Pine Island and this is a City initiated text amendment.

**Background:**

A public hearing has been scheduled at the January 13, 2015 meeting and staff has been directed to come up with some language regarding Solar Energy Systems (SES) and amend the text under section 11.73 Alternative Energy Systems, subd. 3 Solar Energy Systems of the zoning ordinance. The text that is proposed below would regulate the different types of SES such as, Community SES, Roof or Building Mounted SES, Ground Mounted SES and Solar Farms. Solar Farms are proposed to be allowed in the Agricultural, Heavy Industrial and Light Industrial districts as interim uses, while the other types of SES's will be allowed as accessory uses within all the districts. There are some additional locations that Solar Farms and Community SES are not allowed which include wetlands, the floodplain and shoreland areas.

Definitions were also added and amended under section 11.02 and the different types of SES's were added or amended in each zoning district section as needed to allow as a either a interim use or accessory use. The proposed text amendment is below and the new text is underlined and the deleted text is striked-through.

## Section 11.02 Rules and Definitions.

"Building Integrated SES" - 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 thermal solar systems that are contained within roofing materials, windows, skylights and awnings.

"Community SES" - 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.

"Ground Mounted SES" - Freestanding solar energy system (panels) that are mounted to the ground by use of stabilizers or similar apparatus.

"Photovoltaic System" - An active solar energy system that converts solar energy directly into electricity.

"Roof or Building Mounted SES" - A solar energy system (panels) that are mounted to the roof or building using brackets, stands or other apparatus.

"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 Space"** - A view of the sun, from any point on the collector surface that is not obscured by any vegetation, building, or object located on parcels of land other than the parcel upon which the solar collector is located, between the hours of 9:00 AM and 3:00 PM Standard time on any day of the year. That airspace above all lots within the District necessary to prevent any improvement, vegetation or tree located on said lots from casting a shadow upon any solar device located within said zone greater than the shadow cast by a hypothetical vertical wall ten feet high located along the property lines of said lots between the hours of 9:30 A.M. and 3:30 P.M. Central Standard Time on December 21; provided, however, this chapter shall not apply to any improvement or tree which casts a shadow upon a solar device at the time of the installation of said device or to vegetation existing at the time of installation of said solar device.

**"Solar Collector"** - A device, or combination of devices, structure, or part of a device or structure that transforms direct solar energy into thermal, mechanical, chemical or electrical energy. ~~and that contributes significantly to a structure's energy supply.~~

**"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 Systems (SES)"** - An active solar energy system that collects or stores solar energy and transforms solar energy into another form of energy or transfers heat from a collector to another medium using mechanical, electrical, thermal or chemical means. A complete design or assembly consisting of a solar energy collector, an energy storage facility (where used), and components to the distribution of transformed energy (to the extent they cannot be used jointly with a conventional energy system). To qualify as a solar energy system, the system must be permanently located for not less than 90 days in any calendar year beginning with the first calendar year after completion of construction. Passive solar energy systems are included in this definition but not to the extent that they fulfill other functions such as structural and recreational.

**"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 primary land use for the parcel on which it is located.

**"Solar Skyspace"** - The space between a solar energy collector and the sun, which must be free of obstructions that shade the collector to an extent which precludes its cost effective operation.

**"Solar Skyspace Easement"** - A right, expressed as an easement, covenant, condition, or other property interest in any deed or other instrument executed by or on behalf of any landowner, which protects the solar skyspace of an actual, proposed, or designated solar energy collector at a described location by forbidding or limited activities or land uses that interfere with access to solar energy. The solar skyspace must be described as the three dimensional space in which obstruction is prohibited or limited, or as the times of day during which direct sunlight to the solar collector may not be obstructed, or as a combination of the two methods.

**"Structure Height"** - A distance to be measured from the mean ground level to the top of the structure.

~~**"Solar Structure"** - A structure designed to utilize solar energy as an alternate for, or supplement to, a conventional energy system.~~

## **Section 11.73 Alternative Energy Systems.**

### **Subd. 3 Solar Energy Systems.**

A. Purpose and Intent. Pine Island finds that it is in the public interest to encourage the use and development of renewable energy systems (including SES) that have a positive impact on energy conservation with limited adverse impact on nearby properties. As such, the City supports the use of Solar Collection systems and the development of Solar Farms. Pine Island also finds that the development of Solar Farms should be balanced with the protection of the public health, safety and welfare. The City intends the following standards to ensure that Solar Farms can be constructed within the City while also protecting public safety and the natural resources of the City. Consistent with the Comprehensive Plan, it is the intent of the City with this section to create standards for the reasonable capture and use, by households, businesses and property owners, of their Solar Energy resource and encourage the development and use of Solar Energy.

B. Severability The provisions of this section shall be severable and the invalidity of any paragraph, subparagraph or subdivision thereof shall not make void any other paragraph, subparagraph or subdivision of this section.

C. Applicability These regulations are for all SES and Solar Farms on properties and structures under the jurisdiction of the zoning ordinance except that the City requires the owner or operator of solar farms that would generate more than fifty (50) megawatts of power to get approval for such a system from the Minnesota Public Utilities Commission (PUC).

D. Types of SES.

1. Roof or Building Mounted SES: accessory to the primary land use, designed to supply energy for the primary use.

a. Roof or Building Mounted SES are permitted accessory uses in all districts in which buildings are permitted.

b. No City land use or site permit is required.

c. The owner or contractor shall receive a building or mechanical permit before installing a Roof or Building Mounted SES.

2. Ground Mounted SES: accessory to the primary land use, designed to supply energy for the primary use.

a. Ground Mounted SES are permitted accessory uses in all districts in which buildings are permitted.

b. Ground Mounted SES require a City land use or site permit and are subject to the accessory use standards for the district in which it is located, including setback, height and impervious surface coverage limits.

c. The City does not consider the collector surface of a Ground Mounted SES that is not in a DNR designated Shoreland District as impervious surface. Any collector surface of a Ground Mounted SES foundation that is in a DNR designated Shoreland District and compacted soil or other component of the solar installation that rests on the ground is considered impervious surface.

d. The height of a Ground Mounted SES shall not exceed fifteen (15) feet.

e. No Ground Mounted SES shall cover or encompass more than ten percent (10%) of the total property area or lot size.

3. Community SES: Roof or Building Mounted and Ground Mounted Community SES shall be accessory to the primary land use and designed to supply energy for off-site uses on the distribution grid, but not for export to the wholesale market or connection to the electric transmission grid. These systems

shall be subject to the following conditions:

a. Roof or Building Mounted and Ground Mounted Community SES are permitted accessory uses in all districts in which buildings are permitted.

b. Prohibitions: The City prohibits Community SES within:

(1) Shoreland Districts as designated by the Department of Natural resources (DNR) and the Pine Island Zoning Map.

(2) Wetlands to the extent required by the Minnesota Wetland Conservation Act,

(3) The Floodplain Overlay District.

d. An interconnection agreement must be completed with the electric utility in whose service territory the system is located.

e. All structures must meet the setback, height and coverage limitations for the district in which the system is located.

f. Ground Mounted SES must meet all required standards for structures in the district in which the system is located.

g. Site Plan Required: The owner or operator shall submit to the City a detailed site plan for both existing and proposed conditions. These plans shall show the location of all areas where solar arrays would be placed, the existing and proposed structures, property lines, access points, fencing, landscaping, surface water drainage patterns, floodplains, wetlands, the ordinary high water mark for all water bodies, any other protected resources, topography, electric equipment and all other characteristics requested by the City.

h. Power and communication lines. Power and communication lines running between banks of solar panels and to electric substations or interconnections with buildings shall be buried underground. The City may grant exemptions to this requirement in instances where shallow bedrock, water courses or other elements of the natural landscape interfere with the ability to bury lines.

i. Decommissioning Plan: The City requires the owner or operator to submit a decommissioning plan for Community SES to ensure that the owner or operator properly removes the equipment and facilities upon the end of project life or after their useful life. The owner or operator shall decommission the solar panels in the event they are not in use for twelve (12) consecutive months. The plan shall include provisions for the removal of all structures and foundations, the removal of all electrical transmission components, the restoration of soil and vegetation and a soundly-based plan ensuring financial resources will be available to fully decommission the site. The disposal of structures and/or foundations shall meet all City requirements. The City also may require the owner or operator to post a bond, letter of credit or establish and escrow account to ensure property decommissioning.

4. Solar Farms: Solar Farms shall be Ground Mounted SES arrays that are the primary use on parcel on which it is located and are designed for providing energy to off-site uses or export to the wholesale market. Solar Farms, including those that are not permitted or regulated by the State of Minnesota Public Utilities Commission (PUC), shall be subject to the following conditions:

a. Solar Farms shall be permitted as a interim use in the Agricultural (AG), Heavy Industrial District (I-1) and Light Industrial District (I-2) zoning districts, and shall be processed according to the standards of section 11.18 of this chapter.

b. Shall be on properties of at least five (5) acres in size.

c. Stormwater management and erosion and sediment control shall meet the requirements of the City and best management practices.

d. Prohibitions: The City prohibits Solar Farms within:

(1) Shoreland Districts as designated by the Department of Natural resources (DNR) and the Pine Island Zoning Map.

(2) Wetlands to the extent required by the Minnesota Wetland Conservation Act,

(3) The Floodplain Overlay District.

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

f. Other standards and codes. All Solar Farms shall meet all applicable local, state and federal regulatory standards, including the State of Minnesota Building Code, as amended; and the National Electric Code, as amended.

g. Power and communication lines. All power and communication lines running between banks of solar panels and to electric substations or interconnections with buildings shall be buried underground. The City may grant exemptions to this requirement in instances where shallow bedrock, water courses or other elements of the natural landscape interfere with the ability to bury lines.

h. Interconnection. The owner or operator of the Solar Farm must complete an interconnection agreement with the electric utility in whose service territory the system is located.

i. Site Plan Required. The owner or operator of the Solar Farm must submit to the City a detailed site plan for both existing and proposed conditions. These plans shall show the location of all areas where solar arrays would be placed, the existing and proposed structures, property lines, access points to the site, fencing, landscaping, surface water drainage patterns, floodplains, wetlands, the ordinary high water mark for all water bodies, any other protected resources, topography, electric equipment and all other characteristics requested by the City.

j. The owner or operator of the Solar Farm must submit to the City a detailed emergency shutdown plan as part of the review process.

k. The City allows the installation of small operations, security and equipment buildings on the site of solar farms as permitted accessory uses to the Solar Farm.

l. The owner or operator shall contain all unenclosed electrical conductors located above ground within structures that control access or they must be protected from entry by a six (6) foot tall fence. Razor wire is prohibited on all fences. All electrical connections to the utility system must meet or exceed the National Electrical Safety Code.

m. Signage shall be posted at all entrance points to the property the Solar Farm is located on that includes at a minimum, the owner and operator's name, contact information and emergency phone numbers.

n. The Solar Farm owner or operator shall provide access to the Pine Island Fire Department either in the form of a lock or key to all access points to the property the Solar Farm is located on.

o. Solar Farms that have panels that would cover more than twenty (20) acres of land

must meet the review and design standards of the Public Utilities Commission (PUC) for Solar Farms.

p. Decommissioning Plan: The City requires the owner or operator to submit a decommissioning plan for Solar Farms to ensure that the owner or operator properly removes the equipment and facilities upon the end of project life or after their useful life. The owner or operator shall decommission the solar panels in the event they are not in use for twelve (12) consecutive months. The plan shall include provisions for the removal of all structures and foundations, the removal of all electrical transmission components, the restoration of soil and vegetation and a soundly-based plan ensuring financial resources will be available to fully decommission the site. The disposal of structures and/or foundations shall meet all City requirements. The City also may require the owner or operator to post a bond, letter of credit or establish and escrow account to ensure property decommissioning.

E. Additional standards. In addition to the standards allowed above, all SES shall meet the following standards.

1. The owners or operators of SES that are connected to the electric distribution or transmission system, either directly or 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. Off-grid systems are exempt from this requirement.

2. Electric SES components that are connected to a building electric system must have an Underwriters Laboratory (UL) listing.

3. All SES shall meet the standards of the Minnesota and National Electric Code.

4. All Roof or Building Mounted SES shall meet the standards of the Minnesota Building Code.

5. All SES using a reflector to enhance solar production shall minimize glare from the reflector that affects adjacent or nearby properties. Steps to minimize glare nuisance may include selective placement of the system, screening on the north side of the solar array, reducing use of the reflector system or other remedies that limit glare.

6. Roof or Building Mounted SES shall not exceed the maximum allowed height in any zoning district. For purposes of height measurement, SES 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.

7. Commercial Roof Mounted SES 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.

8. Setbacks. All equipment and structures shall meet the setback and coverage limitations for the zoning district in which the system is located, except that Solar Farms shall be setback from all property lines at least one hundred (100) feet.

~~A. Solar energy systems and solar and earth-sheltered structures shall be a accessory use in all districts provided the system is in compliance with minimum lot requirements and setbacks.~~

~~B. Solar energy systems and solar and earth-sheltered structures may be exempted from setback, height, and lot coverage restrictions in all districts by variance.~~

~~C. In a residential district 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 feet high located along the boundary line of said 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 casts a shadow upon the solar energy system at the time of installation of said solar energy system or to vegetation existing at the time of installation of said solar energy system. Violation of this standard shall constitute a private nuisance, and any owner or occupier 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.~~

~~D.—As a means of evidencing existing conditions, the owner of a solar energy system may file notarized photographs of the effected area with the City prior to installation of said system.~~

## **Section 11.27 Agricultural District (AG).**

### **Subd. 3 Accessory Uses.**

~~L. Roof or Building Mounted SES, Ground Mounted SES and Community SES Solar energy systems and solar and earth sheltered structures as regulated by section 11.73, subd. 3 of this chapter.~~

### **Subd. 5 Interim Uses.**

C. Solar Farms as regulated by section 11.73, subd. 3 of this chapter.

## **Section 11.31 Suburban Residential District (R-1).**

### **Subd. 3 Accessory Uses.**

~~K. Roof or Building Mounted SES, Ground Mounted SES and Community SES Solar energy systems and solar and earth sheltered structures as regulated by section 11.73, subd. 3 of this chapter.~~

## **Section 11.34 Multi-Family Residential District (R-4).**

### **Subd. 3 Accessory Uses.**

~~K. Roof or Building Mounted SES, Ground Mounted SES and Community SES Solar energy systems and solar and earth sheltered structures as regulated by section 11.73, subd. 3 of this chapter.~~

## **Section 11.40 Central Business District (C-1).**

### **Subd. 3 Accessory Uses.**

~~F. Roof or Building Mounted SES, Ground Mounted SES and Community SES Solar energy systems and solar and earth sheltered structures as regulated by section 11.73, subd. 3 of this chapter.~~

## **Section 11.41 Highway Commercial District (C-2).**

### **Subd. 3 Accessory Uses.**

C. Roof or Building Mounted SES, Ground Mounted SES and Community SES regulated by section 11.73, subd. 3 of this chapter.

## **Section 11.50 Heavy Industrial District (I-1).**

### **Subd. 3 Accessory Uses.**

G. Roof or Building Mounted SES, Ground Mounted SES and Community SES Solar energy systems and solar and earth sheltered structures as regulated by section 11.73, subd. 3 of this chapter.

### **Subd. 5 Interim Uses.**

D. Solar Farms as regulated by section 11.73, subd. 3 of this chapter.

## **Section 11.55 Regional Recreation District (RR).**

### **Subd. 3 Accessory Uses.**

H. Roof or Building Mounted SES, Ground Mounted SES and Community SES Solar energy systems and solar and earth sheltered structures as regulated by section 11.73, subd. 3 of this chapter.

## **Section 11.56 Public/Institutional District (PI).**

### **Subd. 3 Accessory Uses.**

F. Roof or Building Mounted SES, Ground Mounted SES and Community SES Solar energy systems and solar and earth sheltered structures as regulated by section 11.73, subd. 3 of this chapter.

## **Section 11.57 Parks and Open Space District (POS).**

### **Subd. 3 Accessory Uses.**

F. Roof or Building Mounted SES, Ground Mounted SES and Community SES Solar energy systems and solar and earth sheltered structures as regulated by section 11.73, subd. 3 of this chapter.

## **ALTERNATIVES**

### Text Amendment

1. Recommend approval of the text amendment.
2. Table the text amendment to a date specific, and provide staff with direction on the issues that have been discussed.
3. Recommend denial of the text amendment.
4. Other specific action as directed by the Planning Commission.

## **ACTION:**

After the public hearing is closed and review and discussion by the members of the Planning Commission, a motion is in order to make a recommendation to the City Council to approve or deny the solar energy systems text amendment. If you have any questions relating to this text amendment prior to the Planning Commission

meeting, please feel free to contact me at: [jandersonmdg@gmail.com](mailto:jandersonmdg@gmail.com) or call direct at 952-855-4596 or toll free at: 1-888-763-4462 ext. 3.

Best regards,

John Anderson, Associate  
Municipal Development Group, Inc.