

COMMUNITY DEVELOPMENT DEPARTMENT STAFF REVIEW
PLAN COMMISSION / ZONING BOARD OF APPEALS
May 9, 2019, revised on May 23, 2019

ZONING ORDINANCE TEXT AMENDMENTS

INTRODUCTION:

The City of Warrenville enrolled in SolSmart, which is a national designation program for municipalities to streamline the process of solar development. SolSmart experts performed a detailed review of the City's Zoning Ordinance and identified regulatory barriers and gaps that could unintentionally impede solar development in Warrenville. The report is attached on Exhibit A. Based on the information contained in the report, Community Development Department staff identified specific sections of the Zoning Ordinance that should be modified in order to support effective and efficient interpretation and enforcement as it relates to potential solar installations. The City Council authorized staff and the Plan Commission to consider the amendments to the Zoning Ordinance outlined further in this staff report.

The legal notice of public hearing for the proposed Zoning Ordinance text amendments was published in the Daily Herald newspaper on April 24, 2019. The public hearing for this request was held May 9, 2019 and continued until May 23, 2019. It is important to note that this Staff Report does not currently reflect any public input that might be provided at the May 23, 2019, public hearing, and therefore should be reviewed with this fact in mind. Any additional information concerning the application that might be provided at the public hearing needs to be reviewed by staff before a revised recommendation can be made.

ANALYSIS:

Currently, the City of Warrenville Zoning Ordinance #1018 does not include any specific provisions related to solar energy systems. By default, solar energy systems are categorized as "other accessory structures", which may unintentionally limit the installation of new solar energy systems in the City.

At the request of the Plan Commission at the public hearing on May 9, 2019, staff provides the following additional information on some of the aspects of solar systems installation and height:

- 1. Solar systems projections above the roof ridge.** Installation of solar systems on sloped, gable, and hip roofs above the ridge is not practical. Based on staff research and discussion with installers, typical solar energy systems are not mounted on or above roof ridges because a pathway is required between the ridge and the roof eaves to allow for firefighters to access the roof. It is not recommended from both a safety and aesthetic standpoint.
- 2. Roof rack system mounting height.** Typical commercial roof rack systems are one foot tall or less. The solar panels are usually set at a ten degree angle. The new structure-mounted solar energy system at Target is one foot tall and set at a ten degree angle.

3. **Ground-mounted systems height.** The minimum height of poles holding ground-mounted solar systems is typically eight feet. Other ground mounted systems with racks typically stand from twelve to fourteen feet tall because of shadow and snow effects.

The following proposed Zoning Ordinance text amendments would define solar energy systems, list them as a permitted accessory use, and establish various bulk requirements, i.e., maximum height, setbacks and allowed encroachments.

Based on the input provided at the May 9, 2019, public hearing, staff recommends the following amendments to the Zoning Ordinance:

1. Definition of Solar Energy System

Purpose: Define "Solar Energy System" and their types for the purpose of the Zoning Ordinance regulations. Currently, the Zoning Ordinance does not provide a definition of a solar energy system. To avoid confusion and provide clarity, a definition of a solar energy system should be included in the Zoning Ordinance. Staff is recommending the following definitions to be included in the Zoning Ordinance:

Solar Energy System - A system intended to convert solar energy into thermal, mechanical or electrical energy.

Solar Energy System, Structure-Mounted - A solar energy system that is mounted on the façade or roof of either a principal or accessory structure.

Solar Energy System, Ground-Mounted - A solar energy system mounted on the ground and not attached to any other structure other than structural supports.

Proposed Ordinance Modifications: Add the following new definitions to Section 13 *DEFINITIONS* of the Zoning Ordinance (new text is in **bold**):

Solar Energy System: A system intended to convert solar energy into thermal, mechanical or electrical energy.

Solar Energy System, Ground-Mounted: A solar energy system mounted on the ground and not attached to any other structure other than structural supports.

Solar Energy System, Structure-Mounted: A solar energy system that is mounted on the façade and/or roof of either a principal or accessory structure.

2. Solar Energy System Parameters

Purpose: Modify applicable sections of the Zoning Ordinance to (i) clearly document that solar energy systems are permitted accessory uses in all zoning districts, (ii) include general regulations for solar energy systems, and (iii) include regulations specific to structure-mounted and ground-mounted solar energy systems. Staff recommends the following parameters for consideration:

Solar Energy Systems

General Regulations:

1. Solar energy system (structure-mounted and/or ground-mounted) shall be a permitted accessory use to a permitted principal use in all zoning districts subject to the standards set forth in the Zoning Ordinance.

2. Solar energy systems must comply with all applicable building, electrical code requirements and stormwater management ordinance requirements.
3. Owners of solar energy systems are solely responsible for negotiating with other property owners for any desired solar easements to protect access to sunlight.

Structure-mounted solar energy systems:

1. Structure-mounted solar energy systems may be mounted on principal and accessory structures.
2. Current building and structure setback regulations shall apply to structure-mounted solar energy systems. Systems mounted on building awnings and canopies may project into required yards by a maximum of three feet (3'). Systems mounted on the roof over the enclosed deck and/or patio may project into required yards by a maximum of ten feet (10').
3. Systems installed on sloped, gable and hip roofs shall not extend beyond three feet (3') parallel to the roof surface, provided that they do not exceed the height of the ridge. Systems installed on flat roofs shall not extend beyond six feet (6') parallel to the roof surface of a flat roof and may extend above the maximum established building height by six feet (6').

Ground-mounted solar energy systems:

1. Ground-mounted solar energy systems may not be located in a required front and corner side yard building setbacks.
2. Ground-mounted solar energy systems may be located within required interior side and rear setbacks, provided they are setback a minimum of five feet (5') from the rear/interior property line.
3. Ground-mounted solar energy systems shall not exceed eight feet (8') in height.
4. Ground-mounted solar energy systems may not be located in any easement.
5. Ground-mounted solar energy systems shall be excluded from lot coverage and yard coverage calculations.

Proposed Ordinance Modifications:

1. Add the following provisions to Section 10.A.3 *ACCESSORY STRUCTURES* of the Zoning Ordinance (new text is in **bold**):

D. Solar Energy Systems

Solar energy system (structure-mounted and/or ground-mounted) shall be a permitted accessory use to a permitted principal use in all zoning districts subject to the standards set forth in the Zoning Ordinance. Solar energy systems must comply with all applicable building, electrical code requirements and stormwater management ordinance requirements. Owners of solar energy systems are solely responsible for negotiating with other property owners for any desired solar easements to protect access to sunlight.

Structure-mounted solar energy systems:

Current building and structure setback regulations shall apply to structure-mounted solar energy systems. Systems mounted on building awnings and canopies may project into required yards by a maximum of three feet (3'). Systems mounted on the roof over the enclosed deck and/or patio may project into required yards by a maximum of ten feet (10'). Systems installed on sloped, gable, and hip roofs shall not extend beyond three feet (3') parallel to the roof surface, provided that they do not exceed the height of the ridge. Systems shall not extend beyond six feet (6') parallel to the roof

surface of a flat roof, and may extend above the maximum established building height by six feet (6').

Ground-mounted solar energy systems:

Ground-mounted solar energy systems may not be located in a required front and corner side yard building setback. Ground-mounted solar energy systems may be located within required interior side and rear setbacks, provided they are setback a minimum of five feet (5') from the rear/interior property line. Ground-mounted solar energy systems shall not exceed eight feet (8') in height. Ground-mounted solar energy systems may not be located in any easement. Ground-mounted solar energy systems shall be excluded from lot coverage and yard coverage calculations.

2. Modify Section 10.B.2 *OBSTRUCTIONS* of the Zoning Ordinance to read as follows (new text is in **bold**):

Court yards and required yards may be obstructed by accessory uses or building projections only as provided in Table 10B, **unless otherwise specified**. (Ord. 2894, 11-3-14)

The actual language of the proposed Zoning Ordinance text amendments outlined in this Staff Report may be modified by the City Attorney as needed.

CONCLUSION:

Staff recommends the Plan Commission recommends City Council approval of the text amendments outlined in this Staff Report.

Exhibit A: Solsmart Review



ZONING REVIEW – Warrenville, IL

PZD-1a: Review zoning requirements and identify restrictions that intentionally or unintentionally prohibit solar PV development. Compile findings in a memo. (Required)

To assist your community, the national solar experts at SolSmart have conducted a review of your community’s zoning code to assess possible barriers (i.e. height restrictions, set-back requirements, etc.) and gaps related to solar PV development. Below, please find the outcome of their review. By reading the narrative, reviewing the example code language provided, and signing the statement at the bottom of the page, your community will satisfy PZD-1a and be one step closer to achieving SolSmart designation.

Potential barriers in current code language

Section(s)	Element	Reviewer Comments	Example(s) from other codes	Priority level
	Ex. Setbacks, Height Restrictions, Definition, etc.			

Potential gaps in current code language

Element	Reviewer Comments	Example(s) from other codes	Priority level
Ex. Setbacks, Height Restrictions, Definition, etc.			
Definition	The ordinance provides no definition of solar energy system.	More permissive: “Solar Energy System: An energy system that consists of one or more solar collection devices, solar energy related ‘balance of system’ equipment, and other associated infrastructure with the primary intention of generating electricity, storing electricity, or otherwise converting solar energy to a different form of energy. Solar energy systems may generate energy in excess of the energy requirements of a property if it is to be sold back to a public utility in accordance with the law.” (<u>Renewable Energy Ordinance Framework, DVRPC</u>)	High (Establishing a clear foundation with an inclusive and comprehensive definition will prevent future misinterpretation.)

		<p>Less permissive: “Solar Energy System: An energy system which converts solar energy to usable thermal, mechanical, chemical, or electrical energy to meet all or a significant part of a structure’s energy requirements.” <u>(Renewable Energy Ordinance Framework, DVRPC)</u></p>	
<p>Accessory Use</p>	<p>It is best practice to include solar energy systems as an accessory use in all major zones.</p>	<p>More permissive: “Solar Energy Systems as described in this Article are permitted in all zoning districts as an accessory use to a permitted principal use subject to the standards for accessory uses in the applicable zoning district and the specific criteria set forth in this article.” <u>(Renewable Energy Ordinance Framework, DVRPC)</u></p> <p>Less permissive: “Solar Energy Systems shall be considered an accessory use and permitted by right if mounted to an existing structure and if any percentage of the energy is used for one or more of the principal uses on the same lot.” <u>(Renewable Energy Ordinance Framework, DVRPC)</u></p>	<p>High (Allowing solar energy systems as an accessory use should significantly reduce installation times and costs, which should encourage further development of solar energy.)</p>
<p>Height</p>	<p>It is a best practice to either exempt solar energy systems from height limits or permit solar energy systems to exceed the maximum building height in all applicable districts. For buildings that are already built to the maximum height limit – especially buildings with flat roofs - this may limit their ability to install solar. This is particularly critical on flat buildings, because solar installations on these structures are typically done at an angle to maximize system efficiency (generally at the same angle as the latitude at which the system is installed). Therefore, additional height is often necessary.</p>	<p>Most permissive option: “For a roof-mounted system installed on a flat roof, the highest point of the system shall be permitted to exceed the district’s height limit of up to fifteen (15) feet above the rooftop to which it is attached.” <u>(Renewable Energy Ordinance Framework, DVRPC)</u></p> <p>Less permissive option: Municipalities can be more restrictive than this, though it is not recommended that they limit to less than six (6) feet above the rooftop surface.” <u>(Renewable Energy Ordinance Framework, DVRPC)</u></p>	<p>Medium (Allowing the solar energy system to exceed the district’s maximum height limit is critical, especially to allow for solar energy systems to be installed where buildings may have already met the maximum building height. It is also important for system efficiency, as discussed in the column to the left.)</p>

<p>Setbacks</p>	<p>The zoning ordinance allows accessory uses a slight encroachment into the setback of only a few inches. It is a best practice to allow ground-mounted solar energy systems a modest encroachment (e.g. a few feet) into the setback to allow more flexibility in the placement of these systems.</p>	<p>More permissive option: (1) Small- and medium-scale ground-mounted solar energy systems accessory to principal use may be located no closer than [1/2 of the setback that would otherwise apply] from the front, side or rear lot line. All ground-mounted solar energy systems in residential districts shall be installed either in the side yard or rear yard to the extent practicable (Massachusetts Dept. of Energy Resources, <u>Model Zoning for the Regulation of Solar Energy Systems</u>)</p> <p>Less permissive option: (2) Small- and medium-scale ground-mounted solar energy systems accessory to a principal use may be located no closer than [twenty (20) feet] from the front, side or rear lot line. All ground-mounted solar energy systems in residential districts shall be installed either in the side yard or rear yard to the extent practicable. (Massachusetts Dept. of Energy Resources, <u>Model Zoning for the Regulation of Solar Energy Systems</u>)</p>	<p>Low (The City may want to consider reducing the setback requirements for solar energy systems and/or allow them to encroach reasonably into the setback so that they can receive adequate sunlight to make them efficient.)</p>
<p>Impervious surface/lot coverage</p>	<p>It is a best practice to exempt ground-mounted solar energy systems from lot coverage calculations as long as the area beneath the system is pervious (e.g. grass).</p>	<p>Most Permissive: “For purposes of determining compliance with building coverage standards of the applicable zoning district, the total horizontal projection area of all ground-mounted and free-standing solar collectors, including solar photovoltaic cells, panels, arrays, inverters, shall be considered pervious coverage so long as pervious conditions are maintained underneath the solar photovoltaic cells, panels, and arrays.” (<u>Renewable Energy Ordinance Framework, DVRPC</u>)</p> <p>Less Permissive: “For purposes of determining compliance with building coverage standards of the</p>	<p>Medium (Counting solar energy systems as lot coverage could limit the implementation of solar systems, especially if many of the current lots at or are near the maximum lot coverage allowed under the code.)</p>

		<p>applicable zoning district, the total horizontal projection area of all ground-mounted and free-standing solar collectors, including solar photovoltaic cells, panels, arrays, inverters and solar hot air or water collector devices, shall be considered ___% impervious coverage. For example, if the total horizontal projection of a solar energy system is 100 square feet, XX square feet shall count towards the impervious coverage standard. For a tracking array or other moveable system, the horizontal projection area shall be calculated at a 33 degree tilt angle.” (<u>Renewable Energy Ordinance Framework, DVRPC</u>)</p>	
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Additional notes

I, _____, as _____ of _____, _____, have received the zoning review and read its findings.

Signature _____

Date _____

