



## DEPARTMENT OF COMMUNITY DEVELOPMENT SERVICES

*Planning Division*

m e m o r a n d u m

**TO:** The Urbana Plan Commission

**FROM:** Marcus Ricci, AICP, Planner II

**DATE:** April 14, 2022

**SUBJECT:** **Plan Case 2425-T-21:** An application by the Urbana Zoning Administrator to amend the Urbana Zoning Ordinance with changes to Article II (Definitions), Article V (Use Regulations), and Article VI (Development Regulations), and other relevant sections, to facilitate solar energy system installation.

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### Introduction

The Zoning Administrator requests an amendment to Article XIII of the Zoning Ordinance to add definitions and establish use provisions for principal use solar arrays and accessory solar arrays. The requested changes would more accurately reflect the nature of solar energy systems and their operation, and would regulate them based on their intended use, construction, and location. The proposed amendment would add Section XIII-9, Solar Energy Systems, to regulate solar energy installations; it would also make minor changes to Articles II, V, and VI.

There are no specific regulations in the Zoning Ordinance governing solar energy systems, other than one paragraph that regulates ground-mounted solar panels in residential zones.<sup>1</sup> Currently, the ordinance treats solar panels as a mechanical system, with different development regulations such as screening requirements and height restrictions for residential and non-residential structures. These regulations can be overly restrictive and have discouraged development of solar energy systems. The Zoning Administrator requests this text amendment to establish guidelines for solar energy systems, and to permit them as a principal use in the AG-Agricultural Zoning District and as a special use in business, industrial, conservation/recreation/education districts and higher-intensity residential districts. This amendment would also establish guidelines for accessory solar energy systems, and would allow them in all zoning districts.

### Background

The City of Urbana has long-expressed an interest in promoting renewable energy sources such as wind and solar, including it as an objective in its 2005 Comprehensive Plan, and incorporating it into its Climate Inheritance Resolution and Climate Action Plan. Urbana's Sustainability and Resiliency Officer, Scott Tess, worked with the Great Plains Institute in 2015 to evaluate whether the City's regulations facilitate or inhibit development of solar energy systems. The Institute made several recommendations, including adding definitions and a principal use section for solar energy systems,

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<sup>1</sup> Section VI-5.B.13

similar to the existing wind energy system section of the Zoning Ordinance.<sup>2</sup> It also recommended developing standards to evaluate proposed systems as a conditional use. The proposed text amendment meets several of these recommendations, by adding definitions for principal and accessory solar energy systems, allowing principal solar energy systems as a principal use; and allowing accessory solar energy systems in all zoning districts.

Our current regulations have required Planning staff to handle proposed solar energy systems in less-than-optimal ways. A recent request to establish a principal use solar energy system at the City of Urbana's closed landfill was allowed with a Special Use Permit, as the system was treated as the "most similar use" of Electrical Substation.<sup>3</sup> This did not fully reflect the nature of the proposed system – principal solar energy systems can be much larger than substations, and their inverters have potential to cause noise issues, but it was the best option available at the time.

The Zoning Ordinance does not regulate small or accessory solar energy systems very well either, requiring staff to treat all systems as a mechanical system rather than as an accessory structure. This can create issues for solar arrays associated with non-residential uses. One costly example is a requirement to screen non-residential, ground-mounted mechanical equipment from view from public rights of way and adjacent residential districts.<sup>4</sup> Staff have received inquiries from people who would like to install small solar arrays, but have expressed concern about the additional cost of providing extensive screening of them. They have also asked why solar arrays are required to be screened from view, but large accessory structures, like a utility building, require no screening.

The current planning and zoning "best practice" is to treat small solar arrays as accessory structures rather than as mechanical systems. The American Planning Association, the National Renewable Energy Laboratory, and the Midwest Renewable Energy Association all recommend this.<sup>5</sup> The proposed text amendment will establish guidelines for principal and accessory solar energy systems, clearly differentiate between regulated and exempt systems, and explain the regulatory process.

## Discussion

The current case started as Plan Case 2359-T-18 and the Urbana Plan Commission held a public hearing in 2019. Due to time and staffing constraints, the case was withdrawn and reintroduced as 2425-T-21 last year. Planning staff brought the issue to a follow-up study session of the Plan Commission in 2021. Staff also discussed the issue with the Sustainability Advisory Commission.

Based on those discussions and our research, staff propose the following approach:

- Add a new Section XIII-9 to the Zoning Ordinance to regulate solar energy systems.
- Add definitions to distinguish between principal use ("solar farm") and accessory use ("solar array") solar energy systems.
- Apply the new regulations to ground-mounted systems only. Building-mounted systems would be exempt from the new regulations and would be regulated under current regulations for mechanical systems.

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<sup>2</sup> Exhibit A: Great Plains Institute: "Zoning Review and Recommendation," August 28, 2015.

<sup>3</sup> 2365-SU-18 City of Urbana Photovoltaic Project

<sup>4</sup> Urbana Zoning Ordinance. Section VI-6.D. Screening of Mechanical Equipment

<sup>5</sup> Exhibit B: SolSmart Zoning Best Practices. APA: Planning for Solar Energy, PAS 575, <https://www.planning.org/publications/report/9117592/>; NREL: <https://www.nrel.gov/solar/>; MREA and Grow Solar Program: <https://www.growsolar.org/>.

- Permit solar farms by right in the AG-Agricultural Zoning District and as a special use in R-4 and higher residential districts, all business districts, all industrial districts, and the CRE district.
- Permit solar arrays as accessory structures in all zoning districts.

## **Mounting Type**

Building-mounted solar energy systems that comply with building code and other zoning regulations should not be further regulated, as they do not contribute to an increased footprint, mass, or height of a structure. This aligns with current planning and industry best practices. Section XIII-9.D.1 of the amendment would codify this by requiring building-mounted solar arrays to comply with other existing regulations and exempting them from further regulation. Ground-mounted systems would be regulated by the amendment.

## **Principal and Accessory Solar Energy Systems**

The amendment defines “Solar Farms” as principal use solar energy systems, and defines “Solar Arrays” as accessory use solar energy systems. In practice, the Zoning Administrator would review a proposed solar energy system and would determine whether or not it meets the definition of “accessory use” and meets all criteria for accessory uses required by Section V-2 of the Zoning Ordinance. If a system does not meet the definition and criteria, it would be considered a “solar farm”. While these definitions are essentially just references to other definitions, adding definitions for solar farms and solar arrays will bring the amendment in line with planning and industry best practices, and will be easier to understand for anyone reading or using the ordinance.

## **Specific Conditions**

Solar farms and solar arrays should be allowed where they will not create a nuisance to neighboring districts or uses. Solar farms are proposed as a permitted use only in the AG-1 – Agricultural district and as a special use in the higher-intensity residential districts (R-4 through R-7), all commercial and industrial districts, and the CRE district (Exhibit C: Solar Farm Permitted Zoning Districts). The special permit review process would require the applicant to submit a site plan showing the location of inverters, solar panels, access drives, grid interconnection, and any other information required by the Zoning Administrator (Section XIII-9.E.3.a.iii). As written, inverters for solar farms would be required to be located at least 150’ from property lines. Solar farms would also have to comply with applicable state and local regulations, including the City of Urbana Code of Ordinances, Chapter 16 Noise and Vibrations.

Solar arrays would be a permitted use in all zoning districts as an accessory structure to a principal use, and must meet the development regulations for accessory structures in the district it is located in. Solar arrays are excluded from gross floor area calculations and may be considered open space if they meet certain criteria (Section XIII-9.E.3.b.iii & iv).

Solar farms may have screening requirements, as they would be listed as an industrial principal use. Solar farms located within 500 feet of an existing residential use would have to install a five-foot deep landscape buffer (Section XIII-9.E.3.a.iv). This is modelled after the landscape buffer requirement for industrial zones (Section VI-6.A), and also after the screening requirement for outdoor storage

(Section VI-6.D) which requires landscape plantings along required screenings (walls, berm, fences) that are longer than 40 feet.

Ground-mounted solar arrays, being treated as accessory structures, would be permitted in all districts. Yards (Section VI-5.B.9) allows accessory structures to encroach into a required side or rear yard up to 18 inches from a property line. Including solar arrays into this sub-section would allow deletion of subsection VI-5.B.13 which currently exempts solar arrays up to six feet in height in required side and rear yards in R-districts. Solar arrays in a residential district would be required to be located behind the front face of the principal structure (Section XIII-9.D.2.b.v).

### **Proposed Changes**

Staff recommends adding a new Section XIII-9. Solar Energy Systems into Article XIII: Special Development Provisions. Staff initially proposed to add language to Section V: Use Regulations but decided that the solar farms were more similar to wind energy systems and mobile home parks than to community living facilities and adult entertainment. Similar to Section XIII-7 Wind Energy Systems, this new section includes a purpose statement, solar-specific definitions, an applicability statement, use and district permissions, and specific conditions. It also includes Table XIII-4. Summary of Solar Energy Systems Allowed, addressing system types (based on mounting), use (zoning districts permitted vs. special use), minimum setback, and maximum height. The proposed changes are shown in Exhibit D, using a strikethrough and underline notation system. A strikethrough is used to indicate ~~deleted language~~, while an underline is used to indicate added language.

### **Plan Commission**

Urbana Plan Commission opened the public hearing under the original case 2359-T-18 on June 6, 2019 (Exhibit E – Minutes). Mr. Ricci presented information on: principal vs. accessory uses, permitted districts, glare and noise, effects on property value, gross floor area and open space, and concerns about trees. Discussion issues included: the difficulty of differentiating between principal and accessory uses, what should constitute a special use versus a permitted use, whether small arrays should be treated like accessory structures, what districts principal use solar arrays should be permitted in, and what districts accessory use solar arrays should be permitted in. The discussion helped guide later research and reshape questions and draft language.

The commission held a follow-up study session on July 8, 2021 (Exhibit F – Minutes). Mr. Ricci presented draft recommendations:

- Permit principal use solar arrays by right in AG districts; as a special use in R-4 and higher residential districts, all business and industrial districts, and CRE districts; and prohibit them in R1-R3 residential districts.
- Regulate principal use solar arrays as principal structures in that zoning district.
- Require principal use solar arrays to be screened from residential uses and zoning districts.
- Regulate accessory solar arrays like other accessory structures in that zoning district, exclude them from gross floor area calculations, and treat them as open space subject to a specified limit.
- Permit accessory solar arrays by right in all zoning districts.

Discussion focused on the framing of the amendment, in what districts solar arrays would be allowed, and how solar arrays would be regulated. Staff said they would reframe the amendment language so

that it focused on the existing definitions of principal use and accessory use, and add new definitions for solar farm (a principal use) and solar array (an accessory use). One member expressed concern about allowing ground-mounted solar arrays in any residential district or in the B-3 General Business zoning district, even as an accessory structure. Regarding accessory solar arrays, staff asserted that all accessory structures should be treated in the same fashion, including the districts in which they are allowed. Regarding principal use solar arrays, staff explained there is a lot of B-3-zoned land along High Cross Road, for example, that could benefit from an interim use of a solar array until a more permanent business use were proposed. Discussion shifted to the conditions that Plan Commission and City Council could place on a proposed solar farm in a non-AG zoning district, including requiring non-permanent construction techniques that would allow removal of a solar array and construction of another business/industrial use. Discussion ended with agreement on the acceptability of off-site accessory solar arrays, and a statement about working towards a SolSmart Gold designation by meeting Great Plains Institute's recommendations in the amendment.

## **Comprehensive Plan**

The following goals and objectives of the 2005 Comprehensive Plan relate to this case.

### **Goal 17.0      Minimize incompatible land uses.**

17.2    Where land use incompatibilities exist, promote development and design controls to minimize concerns.

### **Goal 33.0      Provide maximum service and dependable utilities.**

33.5    Promote the use of alternative energy sources, such as wind and solar.

The proposed text amendment would encourage the development of both principal use and accessory use solar energy systems, by designating appropriately-zoned land as suitable for development. It would also establish design controls to minimize incompatibilities with existing and future adjacent land uses.

The amendment would help the City of Urbana achieve its goal of community-wide net carbon neutrality by 2040.<sup>6</sup> The new solar farm use and accessory solar array permitting would help fulfill the City's Climate Action Plan: Goal 3 to Increase Renewable Energy Purchasing and Installation by "tuning permitting practices to minimize barriers to onsite renewable energy."<sup>7</sup>

## **Summary of Findings**

1. The Zoning Administrator proposes a text amendment to the Zoning Ordinance to add definitions and establish use provisions for principal use solar arrays and accessory use solar arrays. The requested changes would more accurately reflect the nature of solar energy systems and their operation, and would regulate them based on their construction and location.
2. The proposed amendment would add a new Section XIII-9: Solar Energy Systems to Article XIII: Special Development Provisions, with a purpose statement, solar-specific definitions, an

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<sup>6</sup> Urbana City Council. Resolution 2018-02-005R – Urbana Climate Inheritance Resolution. 2018.

<sup>7</sup> Urbana Climate Action Plan Phase 2 – 2015-2020 <http://urbanaillinois.us/sites/default/files/attachments/ucap-p2.pdf>.

applicability statement, use and district permissions, and specific conditions.

3. The proposed amendment would modify Article II to refer to the amendment for solar energy system definitions; modify Article V to add principal use solar energy systems to TableV-1, Table of Uses; and modify Article VI to address yards and screening for solar energy systems.
4. The proposed amendment would permit principal use solar energy systems (solar farms) in the AG-Agricultural Zoning District and allow them as a special use in higher-intensity residential districts (R-4, R-5, R-6, R-6B, R-7), all business and industrial districts, and in the CRE-Conservation/Recreation/Education Zoning Districts.
5. The proposed amendment would also establish guidelines for accessory use solar energy systems (solar arrays) by permitting them in all zoning districts, and exempting building-mounted systems from further regulation by the amendment.
6. The proposed amendment is consistent with the goals and objectives of the 2005 Urbana Comprehensive Plan to minimize incompatible land uses and provide maximum service and dependable utilities.
7. The proposed amendment also helps achieve City Council goals of community-wide net carbon neutrality and meeting the goals of Phase 2 of the Urbana Climate Action Plan.
8. The proposed amendment conforms to the notification and other requirements for Zoning Ordinances as required by the State Zoning Act (65 ILCS 5/11-13-14).

## Options

The Plan Commission has the following options for recommendations to the City Council regarding Plan Case 2425-T-21:

1. Recommend approval of the text amendment as presented herein;
2. Recommend approval of the text amendment as modified by specific suggested changes; or
3. Recommend disapproval of the text amendment.

## Staff Recommendation

Based on the evidence presented in the discussion above, and without the benefit of considering additional evidence that may be presented at the public hearing, staff recommends that the Plan Commission make a recommendation to City Council to **APPROVE** the proposed text amendment as presented herein.

Attachments:

- Exhibit A: Great Plains Institute – Zoning Review and Recommendation (August 28, 2015)
- Exhibit B: SolSmart Zoning Best Practices
- Exhibit C: Solar Farm Permitted Zoning Districts
- Exhibit D: Proposed Amendment – Marked-up Text
- Exhibit E: Plan Commission Public Hearing Minutes (June 16, 2019)
- Exhibit F: Plan Commission Study Session Minutes (July 8, 2021)

# Exhibit A: Great Plains Institute - Zoning Review and Recommendation



To: Scott Tess

From: Brian Ross, Great Plains Institute

Date: August 28, 2015

Re: Review of City of Urbana's development regulations and permitting process for consistency with solar-best practices

## Background

The City of Urbana Urbana created its current zoning ordinance in 1993, and has modified and updated the ordinance a number of times. The City's Comprehensive Plan was adopted in 2005. In 2012, Urbana developed a Climate Action Plan, and has maintained and staffed an active sustainability program.

Urbana is participating as a Beta community in the Grow Solar Partnership, a three-state initiative funded by the U.S. DOE under the SunShot Rooftop Solar Challenge program to reduce local barriers to solar development. As a Beta community, the City is working to identify opportunities to create "solar-ready" regulations and programs. The solar energy market has changed significantly in Illinois in the last two years and is now entering a new phase of investment with the participation of the Illinois Power Authority in encouraging solar investment.

Illinois deregulated its retail electric energy markets in 1997, allowing commercial and industrial retail customers to select alternative power suppliers. In 2007, residential customers were allowed to select power providers, and the legislature created the Illinois Power Authority (IPA) to mitigate market barriers in residential participation.

More recently, the legislature created a program to purchase "solar energy renewable energy credits" (SRECs) through the Illinois Power Authority. The IPA auction will accelerate the development of accessory use solar energy (rooftop and ground-mount) and create new economic opportunities for principal use solar energy (solar farms and gardens). Urbana is considering participating in the IPA auction to enable solar development on public buildings and residential properties.

## Review Process and Goals

We have reviewed Urbana's zoning ordinance, and the on-line documents and descriptions for permitting, for consistency with national best practices for "solar ready" communities. We make a number of suggestions and identify opportunities for making Urbana ready for solar development. However, our review is primarily a scan of the text and published documents. It did not include a complete inventory of Urbana regulations and program, nor did we interview staff and officials on how the text is typically applied. We may have misinterpreted some provisions or applications, so our recommendations need to be taken in that light.

The following analysis and recommendations are intended to help inform the City's discussion on how to accommodate the development and protection of solar energy resources. We are happy to make additional suggestions or modifications to our recommendations after review of this initial assessment.

# Exhibit A: Great Plains Institute - Zoning Review and Recommendation



## Zoning Options and Recommendations

In light of the changes to law and solar market development and business models, we have reviewed the Urbana Zoning Ordinance. The review focused on identifying barriers or ordinance language gaps that may be addressed in order to appropriately regulate and encourage solar development, and help meet local, state and federal clean energy goals.

**Definitions.** The definitions table (Section II-3) does not include any specific definitions for solar land uses or solar resources. We frequently find that users of the ordinance (land owners, contractor, staff, elected and appointed officials) are not familiar with important distinguishing characteristics of different forms of solar development. We recommend considering the following options:

1. Add a definition for accessory solar energy systems, including distinguishing between rooftop and ground-mount systems.
2. Add definitions for solar as a principal use, including distinguishing between solar farm and solar garden.
3. Consider a separate definition for “solar resource,” where the characteristics of a meaningful solar resource can be defined in order to ensure that solar development actually produces economic value. Solar energy systems require access to direct sunlight for several hours every day, usually including solar noon, both now and in the future, in order to properly function and provide economic value.
4. Consider adding a definition for “building-integrated” solar energy systems.

Definition language examples are provided in the Illinois Solar Toolkit for Local Governments.

**Use.** Section V of the Urbana zoning ordinance (Use regulations) does not identify or explicitly permit solar land uses in the use table or use standards. Accessory uses are defined generally to allow an interpretation for solar accessory uses to be permitted; the City appears not to identify specific accessory uses, but only to set criteria for defining what an accessory use is and is not (Section V.2.D). Moreover, in another section (Section VI- Yards) ground-mount solar energy systems are mentioned once in relation to allowed a partial required yard incursion.

Under the City’s accessory use standards it is implicit that both ground and roof-mounted solar energy systems are allowed in all districts where such uses are reasonably accessory to the principle use. However, a frequent barrier to rooftop and ground-mount solar development in other communities is alleged incompatibility with community character. Illinois Statutes explicitly prohibit homeowners associations from prohibiting solar installations, but there is no similar statutory right where zoning decisions might restrict some types of solar development. Urbana does identify that Neighborhood Conservation District design standards cannot include restrictions on solar panels, consistent with Illinois statutes (Section XIII-5).

**Recommendation:** The City should explicitly clarify where solar energy accessory uses are allowed, and if there are conditions for some uses, what those conditions are. For consistency with the structure of the ordinance, the City should consider creating a separate section for solar energy systems, similar to the wind energy section (Section XIII-7) where distinctions and clarifications can be drawn. Doing so would also allow the City to consolidate any other standards, including solar principal use standards, in one location. An alternative to a new section would be to add a provision to the general standards language in V.2.D such as:

*Rooftop and ground-mount solar energy systems serving the principal use are permitted*

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*accessory uses in all districts where buildings are permitted as a principal use.*

Principal use solar collection systems (solar farms and gardens) are not listed in the City's use table (V-1), which effectively prohibits freestanding solar farms or gardens throughout the City. As a land use, solar principal uses are frequently inconsistent with zoning district goals in most urban districts. While solar farms/gardens are difficult to site in urban areas, opportunities can usually be found where such uses are appropriate.

*Recommendations:* The City should consider the conditions where such a land use might be appropriate and perhaps desired. Consider the following options:

1. **Include solar collection systems as a listed (conditional or interim) principal use (solar farm or garden) where doing so does not affect the cost or expansion of urban services or conflict with surrounding land uses.** Principal solar collection systems are not generally appropriate for areas in which urban services are available or are planned to be extended, unless the site is otherwise unsuitable for development within the next 25 years. The suitability question is addressed in more detail below.
2. **Develop standards for solar principal uses.** As a principal use, the City should identify the conditions that would allow a conditional use to be granted, develop appropriate submittal requirements to be able to evaluate a development proposal against the conditions, and address unique development issues with solar installations such as appropriate mitigation of storm water. For these standards the City may want to distinguish between solar farms and community solar gardens, in anticipation that the CSG concept may ultimately be developed in Urbana.

Urbana should consider mitigating standards that are being used in some communities to capture co-benefits of solar development including creation of stormwater management opportunities and habitat. Particularly when the solar farm converts farmland to solar farm, the City has an opportunity to reduce net water quality impacts and create habitat with appropriate ground cover and maintenance performance standards, as noted in the Grow Solar Toolkit.

Some communities have used interim or temporary use standards for solar farms and gardens. Solar farms and gardens have an approximate life of 25 years (much shorter than most other forms of development), create very little "permanent" infrastructure, are much more easily removed than almost any other type of structural development, and provide landowners with an economic use for land that might be otherwise held in reserve for eventual development of some other type. However, it does not appear that Urbana uses an interim land use designation, so this concept is somewhat more difficult to integrate into the existing ordinance structure. Should the City develop a separate solar land use section as recommended above, the interim use standard may be an easier concept to integrate.

**Use Suitability for Solar Farms/Gardens.** The City may want to encourage appropriate principal solar development through a suitability analysis that would include identifying and protecting potential solar resources. There are site characteristics within urban areas that could allow for principal solar uses. Characteristics may include land that is undevelopable, buffer areas around land uses with significant nuisances, or areas slated for development only in the distant future. Examples of these include buffer areas around land uses with safety or nuisance issues such as wastewater plant or lift stations, wellhead areas and water pumping/purification sites, refineries, mining, and airports. An example of such a land use opportunity is shown below for an urban wastewater treatment facility within city boundaries (aerial photo and a

## Exhibit A: Great Plains Institute - Zoning Review and Recommendation



solar resource map). This facility has both sufficient buffer land that is inappropriate for development other than agriculture or natural systems, on an on-site electric load that provides



for relatively straightforward interconnection.

Another important layer for the suitability analysis would be the location of electric substations and three phase distribution lines, data that can be available by working in cooperation with the electric utility. Solar gardens of less than 1 MW capacity (roughly 5 acres) can sometimes be interconnected to a three phase line if capacity on the line allows. Larger solar farms will usually require a substation or similar higher capacity interconnection point. Utilities in California and New York are identifying preferred locations on the distribution grid for solar installations and providing incentives for appropriate solar development. The City of Chicago worked with its electric utility to identify where some types of solar development might create problems on the distribution grid.

**Basic Zoning Standards for Accessory Uses.** Urbana's solar accessory use standards for height, setbacks, and coverage should be considered in light of how the standards affect the property owner's access to the solar resources on the property. Article VI of the zoning ordinance addresses a number of these basic zoning issues, including yard and height requirements that affect the property owners' ability to economically capture the property's solar energy resources. The solar resource (see the definition in the Grow Solar Toolkit) is where there is sufficient daily duration of direct sunlight to justify solar energy production. Ensuring that land owners can capture the site's solar resource may require some flexibility in setbacks, coverage, and height standards.

*Recommendation* - The City has provided such flexibility in regard to incursions into required yards in selected districts for ground-mount solar systems (Section VI-5, B. 13.). We recommend that the City provide the same level of flexibility for solar energy equipment as is provided in the ordinance for other building or mechanical systems in order to allow for reasonable functionality of the system.

The zoning ordinance appears to provide for separate height standards for a variety of accessory uses (Section VI-2, C.). However, we couldn't identify separate standards in the

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ordinance. On smaller urban lots with mature trees, the property owner's solar resource may be accessible only by installing a roof mount system that is higher than the roof peak, which may require an exception to the height standard.

*Recommendation* – The City should consider whether to allow a height exception for solar energy systems, for both residential pitched roofs, and flat roof buildings. Flat and pitched roofs present should be addressed separately, as they present different issues. Options that Urbana could consider include:

- 1) Allow an explicit exemption on height standards, with a limitation on the number of feet above the roof for pitched and flat roofs.
- 2) Require a demonstration that the solar resource is inaccessible without flexibility on the height standard, in order to install a system that is above a pitched roof or higher than the height standard on a flat roof. Use either a conditional use process or an administrative process to be determined by the Planning Director
- 3) Hold rooftop installations to the height standard in residential districts, but allow limited incursions on commercial buildings if the system has limited visibility from the street.

The final basic zoning issue is lot coverage. Coverage is addressed in two ways, one being a character-based standard limiting the cumulative size of accessory uses (Section V-2.D.7.), the other being limitations on the amount of impervious surface for storm water runoff.

*Recommendation* - The City should consider whether a ground-mount accessory use should be restricted in the same manner as other accessory structures.

Options that Urbana could offer include:

- 1) Allowing coverage limits to be exceeded under a conditional use standard, where the flexibility is granted when the applicant demonstrates that flexibility is needed in order to access solar resources (such as no viable rooftop resource, while viable solar resource can be accessed in a yard.)
- 2) Exempting solar accessory uses from coverage standards, but setting a separate standard that applies uniquely to solar installations regardless of other accessory uses on the lot.
- 3) Allowing for mitigation of the impervious collector surface by setting a performance standard that the ground under the collector is maintained in vegetated, non-compacted soils.

One recommended addition is to distinguish between solar collection systems that are mounted on buildings, and those that are "building-integrated" (see the definition in the Illinois Toolkit). Best practices for building-integrated systems are to expressly define the systems as being regulated as a part of the building or accessory use, rather than as a solar collection system. In other words, a solar awning on the side of a building is regulated as an awning, not a solar collection system. A carport or deck shading structure that uses solar panels as the shading or roof element is a carport or deck structure, not a solar system. Building-integrated applications are still not common, but are likely to become more common in the future.

The ordinance could include language similar to the following:

*Building-integrated solar collection systems are exempt from these standards but shall meet all standards associated with the building component, including but not limited to roof, awning, accessory building, or deck structure.*

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## Incentives and Encouragement

Urbana has a number of opportunities to encourage solar development in existing incentive provisions of its ordinance. Zoning incentives can shape the design or characteristics of development or redevelopment, capturing opportunities to incorporate solar collection systems at the time of construction, rather than a less cost-effective later retro-fit.

Zoning and development incentives are generally limited to changing the shape of new development. Zoning is a reactive tool, working only when market conditions for development are right and private sector proposals come forward. Fortunately, Urbana has a robust development market and private sector proposals can be shaped through the use of incentives and standards.

Acknowledgement of solar resources and encouragement of solar development can, for instance, be added to Urbana's Planned Unit Development Section (Section XIII-3). The PUD ordinance purpose statement explicitly encourages "green" construction, and "green" design and buildings (XIII-3. B.). The table of recommended design features, for instance, already includes the following provision:

*Energy Efficient Construction - Whenever possible, a development should utilize building construction and site design that incorporate innovative and effective techniques in energy conservation. A development that achieves at least enough points to attain LEED "Certified" status is highly recommended.*

*Recommendation* - Under the Architectural Design category of recommended design features, the City could add:

Incorporation of Solar Energy – for all new residential or commercial buildings the rooftop solar resource should be identified and solar energy systems, either photovoltaic or thermal, should be incorporated into the building design.

Alternatively, the city could emphasize buildings that are "solar-ready." Solar-ready buildings are designed and built to allow for quick and inexpensive permitting and installation of a solar energy system. The City can refer to existing certification standards for documenting solar-ready status, as shown in the example below:

Utilization of Solar Ready Design – for all new residential or commercial buildings the rooftop solar resource should be identified and appropriate design changes made to make the building "solar ready," consistent with EPA Renewable Ready Building standards or equivalent certification.

## Other Incentives and Requirements

Urbana also uses (or has at its disposal) a wide variety of non-regulatory tools to encourage specific types of development, including assembly of parcels for redevelopment or economic development, property tax incentives, tax increment financing, provision of infrastructure or preparing sites for redevelopment through building removal or brownfield mitigation. In these examples and similar development activities the City is a financial partner in the development process. The City has a vested interest in ensuring that such development is economically, environmentally, and socially sustainable over time.

# Exhibit A: Great Plains Institute - Zoning Review and Recommendation



When the City is a financial partner in a development process, the City can choose to ensure that the development proceeds in a manner to enable the use of solar resources on the property. Such provisions can be incorporated on a case by case basis, but the transparent and predictable process would be to list priority amenities or development conditions that might be requested when the City is a financial partner. A more complete discussion of these concepts can be found in the APA Planning Advisory Service publication *Planning for Solar Energy* which is available on the National APA website (free of charge).

*Recommendation* – When the City is developing an RFP for developing a site or installing infrastructure, the City can require solar development in housing projects, commercial development, or sometimes with infrastructure development if the site has a solar resource. Similarly, the City can require building to “solar-ready” standards if a solar installation is deemed not to be currently viable.

## Permitting

Urbana has opportunities to modify its residential permit application process to be consistent with national best practices for solar development (the Grow Solar Toolkit recommendations are based on national best practices developed by the Solar America Board of Codes and Standards, <http://www.solarabcs.org/about/publications/reports/expedited-permit/>). The best practices include a number of provisions, some of which Urbana already does, including the following:

- Providing building permit information and application on-line
- Providing descriptions of the building permit and inspection process
- Providing on-line fee schedule
- A single submittal process, avoiding having to make multiple submittals to different places

Urbana does not, however, have a defined permit process for small or residential solar energy installations, such as which permits are required, what submittal information is needed to acquire the permit, and what inspections are required. Moreover, it is not clear how residential solar installations are addressed in historic review or design review, for those districts where such review is required.

The Illinois’ sample solar permit form/checklist provided in the Grow Solar Toolkit is an example of how Urbana can create a clear and predictable process for permitting solar energy. The sample permit form recognizes those circumstances when submittal or inspection requirements for small solar installations can be simplified without compromising the safety standards and other goals of the Building Code. For instance, a critical question often associated with residential rooftop solar installations is whether the contractor needs to have a structural analysis completed in order to acquire a building permit. There has been substantial analysis of this question both in the Midwest and nationally, and empirical testing of residential roof systems’ structural capacity. Code officials in several of the Grow Solar ‘Beacon’ cities have defined when permit submittal standards for a flush-mounted PV system installed on a residential roof in good condition does not warrant the cost of conducting and reviewing an engineering study (see Minneapolis example, [http://www.ci.minneapolis.mn.us/www/groups/public/@regservices/documents/webcontent/convert\\_272925.pdf](http://www.ci.minneapolis.mn.us/www/groups/public/@regservices/documents/webcontent/convert_272925.pdf)). Each local government’s code official needs to consider these studies and

# Exhibit A: Great Plains Institute - Zoning Review and Recommendation



findings in the context of their community's building stock, snow load requirements, and other local conditions.

The Beacon City examples also provide some guidance on ensuring that historic and design permitting processes are integrated into the solar application guidelines, in order to ensure a compliant but predictable permit process. Clarity on when these separate reviews are needed for solar installations, and what review criteria the contractors should consider when designing and bidding on the system help reduce time for both city staff and contractors.

Urbana also appears to charge for building and electric permits on a project valuation basis. The value of a solar energy installation is a poor indicator of the permit and inspection costs faced by the city for ensuring compliance with the building, zoning, and electric codes. National best practices for fees include the following fee options:

- a flat fee for residential solar energy installations,
- a valuation based system that excludes the elements not being inspected, such as the panels and power electronics,
- an incentive fee designed to encourage solar installations and jump start the local solar energy market.

*Recommendation* - The City should identify which permits are required for a residential or small commercial installation and the submittal requirements and review processes. Urbana can then develop a solar permitting guidance document, checklist, or separate application permit and put the document on its web site, along with other downloadable permits and guidance documents. Making sure that these standards are clear and predictable and accessible will ensure that as the solar industry continues to grow, contractors and City staff will have clear guidance for meeting Urbana's standards. We recommend using the Grow Solar model document in order to be consistent with best practices and allow for some cross-jurisdictional consistency in the region.

Urbana should also evaluate its permit fees to determine whether it can assess a single flat fee for residential solar energy installations.

## Conclusion

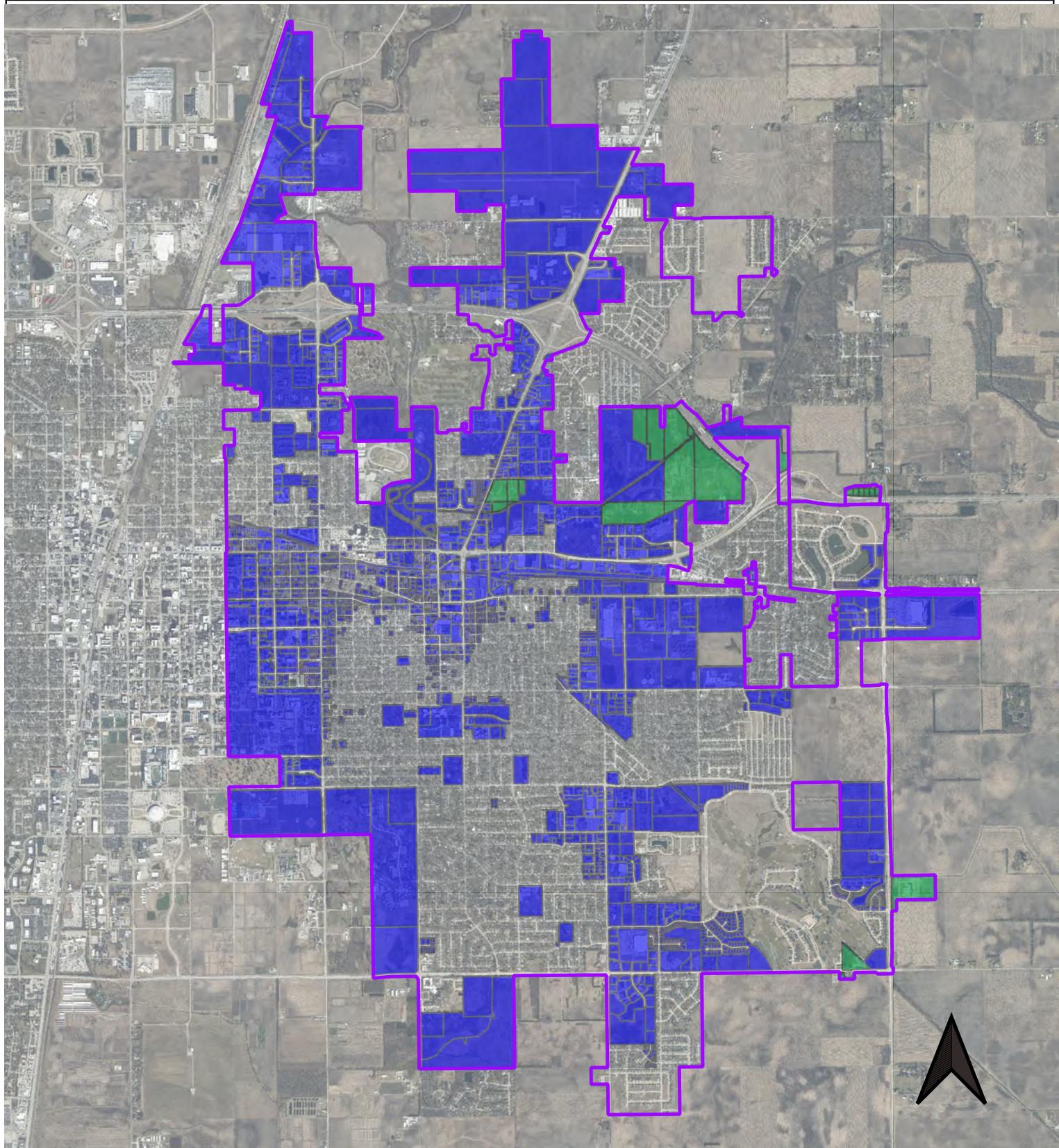
The Grow Solar Partnership can direct you to additional resources and provide some additional technical assistance with implementing these recommendations. Feel free to call or email with questions on the content here.

# Exhibit B: SolSmart Zoning Best Practices

## Best Practices in Zoning for Solar

Subject	Best Practice
<b>Definitions</b>	<ul style="list-style-type: none"> <li>Include in the definition of a solar energy system: solar collectors or solar energy devices used for space heating, space cooling, electric generation, and water heating</li> <li>Define and distinguish between large-scale or primary use installations and secondary or accessory use installations</li> </ul>
<b>Use-by-right</b>	<ul style="list-style-type: none"> <li>Allow small rooftop and ground mount solar installations in all major zoning districts as a use-by-right (allowed without special review)</li> <li>Many communities identify and allow for solar installations as accessory uses in every district</li> </ul>
<b>Height</b>	<ul style="list-style-type: none"> <li>Provide rooftop solar an exemption from or allowance above building height restrictions</li> <li>Identify a maximum allowed ground mount solar height of 10'-15'</li> </ul>
<b>Lot coverage</b>	<ul style="list-style-type: none"> <li>Exempt ground mount solar from lot coverage restrictions that apply to primary buildings</li> </ul>
<b>Accessory use maximum</b>	<ul style="list-style-type: none"> <li>Exempt solar from the maximum allowable number of accessory uses</li> </ul>
<b>Setbacks</b>	<ul style="list-style-type: none"> <li>Require a setback applicable to fences to ground mount solar, rather than a setback required of buildings, or allow solar an exemption from setback requirements</li> </ul>
<b>Aesthetic requirements</b>	<ul style="list-style-type: none"> <li>Exempt solar from rooftop equipment screening requirements</li> <li>Allow PV installations to be seen from public roadways</li> <li>Limit screening or aesthetic requirements to historic districts</li> </ul>
<b>Rooftop fire safety access and setbacks</b>	<ul style="list-style-type: none"> <li>Limit setback requirements from roof ridges to 3' and 1.5' from valleys and headwalls to allow access</li> <li>Do not restrict rooftop solar based on a percentage of rooftop coverage</li> <li>(These restrictions may be amendments to the International Fire Code or part of the development regulations instead of the zoning code)</li> </ul>
<b>Glare</b>	<ul style="list-style-type: none"> <li>Do not regulate glare from photovoltaic installations as PV modules use non-reflective glass and are designed to absorb rather than reflect sunlight. PV modules are generally less reflective than windows.</li> <li>Municipalities can defer to the Federal Aviation Administration to regulate potential glare from solar installations on or near airports</li> </ul>
<b>Ground mount solar</b>	<ul style="list-style-type: none"> <li>Allow for small ground mount installations as accessory uses and large, primary use installations through a conditional or special use permit</li> </ul>
<b>Solar access/solar rights</b>	<ul style="list-style-type: none"> <li>Establish a mechanism to protect solar access and rights (e.g. solar easement for installations)</li> <li>Include active and passive solar provisions (such as orientation) in development and subdivision regulations</li> </ul>
<b>Regulate based on the area or impact</b>	<ul style="list-style-type: none"> <li>Define and regulate solar installations based on the area (e.g. square feet) or impact of the installation rather than the capacity (kW) as efficiencies and technologies change over time</li> <li>Do not regulate based on the use of the energy generated (e.g. requiring that accessory use solar electricity generation be consumed exclusively on-site), as this is often irrelevant to the impact</li> </ul>

## Exhibit C: Proposed Solar Farm Districts: Permitted & Special Use



Case No.: 2425-T-21  
Subject: Solar Energy System  
Text Amendment  
Location: City of Urbana  
Petitioner: Urbana Zoning  
Administrator

City of Urbana Zoning  
■ Permitted Use: AG  
■ Special Use: Business,  
Industrial, R-4/R-5/R-6-B/R-7

# Exhibit D: Proposed Amendment - Marked-up Text

## Section II-1. General Provisions

For the purposes of this Ordinance, the following words and phrases shall have the meaning specified herein. Any word or phrase not a part of this listing shall be construed to have its usual definition. Definitions relating to telecommunication facilities, mobile home parks, planned unit developments, wind energy systems, and solar energy systems are located in Article XIII and definitions relating to historic preservation are located in Article XII.

Table V-1. Table of Uses

Principal Uses	R-1	R-2	R-3	R-4	R-5	R-6	R-6B	R-7	AG	B-1	B-2	B-3	B-3U	B-4	B-4E	CCD	CRE	MOR	IN-1	IN-2
<i>Industrial</i>																				
Solar Farm				S	S	S	S	S	P	S	S	S	S	S	S	S	S	S	S	

P – Permitted, C – Conditional Use Permit Required, S – Special Use Permit Required, D – Planned Unit Development

## Section VI-5. Yards

- B. Except as otherwise provided, required yards shall be kept unobstructed and open to the sky for their entire depth and area. No building, structure, or portion thereof, mechanical equipment, or swimming pool shall be erected in, occupy, or obstruct a required yard, except as follows (see Section VIII-4 for regulations regarding parking in required yards):

13. Signs, as permitted in Article IX of this Zoning Ordinance.  
14. Ramps or other structures for accessibility may encroach into required yards.

## Section VI-6. Screening

- D. Screening of Mechanical Equipment

Ground-mounted mechanical equipment for all non-residential uses shall be screened from view at ground level from public rights of way and adjacent residential districts.<sup>1</sup> Screening may consist of a wall, opaque fence, earthen berms, landscaping, or any combination thereof.

<sup>1</sup> Screening of solar energy systems is regulated by Article XIII-9.

# **Exhibit D: Proposed Amendment - Marked-up Text**

## **Section XIII-9 Solar Energy Systems**

### **A. Purpose**

The City of Urbana finds that it is in the public interest to encourage the use and development of solar energy systems as a clean, renewable energy source and to help promote local, clean jobs. The purpose of this section is to facilitate the effective and efficient use of solar energy systems while protecting the public health, safety, and welfare of residents and the general public.

### **B. Definitions**

**Solar Energy System:** A collection of photovoltaic (PV) panels or other devices that convert sunlight into electricity.

**Solar Array:** An accessory use solar energy system.<sup>2</sup>

**Solar Farm:** A principal use solar energy system.<sup>2</sup>

### **C. Applicability**

This section applies to new solar energy systems. Pre-existing solar energy systems are not required to meet the requirements of this section.

### **D. Permits Required**

Solar energy systems require all applicable permits.

### **E. Solar Energy Systems Permitted by Right and by Special Use**

1. **Use Determination.** The Zoning Administrator shall determine if a system is a Solar Farm or a Solar Array based on its intended purpose and on the criteria for Accessory Uses outlined in Section V-2.

2. **Building-Mounted Solar Energy Systems.** Building-mounted solar energy systems are permitted by right within all zoning districts and are exempt from further regulation of this Section.

3. **Ground-Mounted Solar Energy Systems.**

#### **a) Solar Farms**

i. Solar farms are permitted in the AG – Agricultural Zoning District.

ii. Solar farms are permitted as a special use in the following zoning districts:

- R-4, R-5, R-6, R-6B, and R-7 residential zoning districts

- All business zoning districts (B-1, B-2, B-3, B-4, B-4E)

- All industrial zoning districts (IN-1 and IN-2)

- CRE conservation/recreation/education zoning district

iii. Site plans for solar farms shall include the following: the number and location of inverters, solar panels, access drives, grid interconnection, and any other information required by the Zoning Administrator. Inverters shall be located at least 150' from property lines.

<sup>2</sup> See "Principal Use" and "Accessory Use" definitions in Section II-3.

## Exhibit D: Proposed Amendment - Marked-up Text

- iv. Solar farms located within 500 feet of a residential use must provide a landscape buffer meeting the requirements of Section VI-A.2.b.3, 4, 5, and 8. Existing landscaping may satisfy this requirement, subject to approval by the Zoning Administrator.
  - v. Solar farms must comply with applicable state and local regulations, including the City of Urbana Code of Ordinances, Chapter 16 Noise and Vibrations.
- b) *Solar Arrays*
- i. Solar arrays are permitted in all zoning districts.
  - ii. Solar arrays must:
    - meet all criteria for accessory structures outlined in Section V-2.C; and
    - comply with all other sections of this ordinance governing accessory structures.
  - iii. Solar arrays are excluded from Gross Floor Area calculations.
  - iv. The area beneath a solar array is considered open space if the following criteria outlined in Section VI-4.C.3 subitem 3 apply:
    - 1. it comprises no more than 50% of the lot area when combined with areas covered by paving for sidewalks, leisure, and recreational areas such as patios, tennis courts, and swimming pools; and
    - 2. it does not comprise more than 25% of the total open space; and
    - 3. there is a minimum clearance of seven feet six inches between the ground level and the underside of the solar panel assembly.
  - v. Solar arrays located in a residential district must be located behind the front face of the principal structure.

**Table XIII-3. Summary of Solar Energy Systems Allowed**

MOUNTING STYLE	USE STANDARD		MINIMUM SETBACK	MAXIMUM SYSTEM HEIGHT
	Permitted Use	Special Use		
Building-Mounted	All Zoning Districts	--	Not applicable	Not applicable
Solar Array	All Zoning Districts	--	Must comply with minimum yard requirements for accessory structures in the zoning district it is located in.	Must comply with height requirements for accessory structures in the district it is located in. <sup>3</sup>
Solar Farm	AG Zoning District	R-4, R-5, R-6, R-6B, R-7 B-1, B-2, B-3, B-4 IN-1, IN-2 CRE Zoning Districts	Must comply with yard requirements for principal structures in the zoning district it is located in. <sup>4</sup> Inverters must be at least 150' from all property lines.	Must comply with height requirements for principal structures in the district it is located in. <sup>3</sup>

<sup>3</sup> See Section VI-2. Height

<sup>4</sup> See Table VI-3. Development Regulations by District

# **Exhibit E: Plan Commission Public Hearing Minutes**

## **MINUTES OF A REGULAR MEETING**

**URBANA PLAN COMMISSION**

**APPROVED**

**DATE:** June 6, 2019

**TIME:** 7:00 P.M.

**PLACE:** Urbana City Building  
Council Chambers  
400 South Vine Street  
Urbana, IL 61801

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**MEMBERS PRESENT:** Barry Ackerson, Andrew Fell, Tyler Fitch, Jonah Weisskopf

**MEMBERS EXCUSED:** Dustin Allred, Jane Billman, Lew Hopkins, Nancy Ouedraogo

**MEMBERS UNEXCUSED:** Chenxi Yu

**STAFF PRESENT:** Lorrie Pearson, Planning Manager/Zoning Administrator; Marcus Ricci, Planner II; Lily Wilcock, Planner I

**OTHERS PRESENT:** None

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## **5. CONTINUED PUBLIC HEARINGS**

**Plan Case No. 2359-T-18 – An application by the Urbana Zoning Administrator to amend the Zoning Ordinance with changes to Article II (Definitions), Article V (Use Regulations), Article VI (Development Regulations) and other relevant section, to facilitate solar energy system installation.**

Chair Fitch announced that while the Plan Commission could not vote on the case at this meeting due to a lack of quorum, they could hear staff's presentation and have discussion. Marcus Ricci, Planner II, presented the staff report to the Plan Commission. He discussed the purpose for a text amendment, solar development issues with the existing Zoning Ordinance, other cities' regulations on solar arrays and staff's research on solar arrays and the main considerations staff has for creating a text amendment. To determine if a solar array use is a principal use or an accessory use, staff proposes to base the decision on the array user and on the array size. He talked about regulating principal and accessory structure solar arrays and where to permit solar arrays. He reviewed the questions in the written staff report for the Plan Commission. He stated that City staff requests that the Plan Commission continue the public hearing to August 8<sup>th</sup> at which time a draft text amendment will be presented.

The Plan Commission had questions about the following:

## Exhibit E: Plan Commission Public Hearing Minutes

- If a future business wanted to install a large array to power their operations, would that be considered a principal use or an accessory use?  
*Mr. Ricci replied that in model regulations and other cities' regulations, if a solar array is designed to feed a nearby use, then it would be considered an accessory use regardless of its size. Any leftover energy would go to the grid and be credited for future use for that business. If they build a solar array larger than what they would need, then it would be considered a second principal use on the same zoning lot.*
- Why not allow solar array farms in “Industrial” zoning districts?  
*Mr. Ricci replied that there would already be roads, water lines, sewer lines, etc. that would be wasted on a solar farm which does not need any of that infrastructure.*
- What does research show about how neighboring property owners feel about solar array farms?  
*Mr. Ricci replied that there were discussions about glare and noise at a Champaign County meeting. Large solar farms are typically considered less problematic than large wind farms in these two aspects. Some studies show that small-scale solar arrays help a residential property retain its property value or sell faster. City staff is also recommending any solar array larger than one acre in size would require approval of a Conditional Use Permit and any solar array larger than five acres in size would require approval of a Special Use Permit. This would allow the City to determine if the proposed use needed additional conditions such as additional setbacks, reduced height, or screening.*
- How do solar arrays effect the open space requirements?  
*Mr. Fell was concerned that allowing a solar array by right might lead to a landowner violating the open space requirement. Mr. Ricci explained that the majority of solar arrays would be roof-mounted. Those that are constructed on the ground would not be included in the open space requirements.*
- Will allowing solar arrays as a secondary use by right in all zoning districts add to the City’s responsibilities to resolve issues of residents complaining about their neighbor’s trees blocking exposure to their solar array panels or, conversely, residents being concerned that neighbors proposing solar arrays might want them to trim their trees back?  
*Mr. Ricci stated that he would research the impact a solar array would have on both the open space requirements and on neighboring properties.*

With there being no public input, Chair Fitch suggested that the Plan Commission members go through the questions in the written staff report. The questions and members responses were as such:

- 1a) Should principal use solar arrays be regulated based on their size, with smaller arrays being permitted by right, and with larger arrays being permitted with Conditional or Special Use Permits? If not, is there some other way to regulate principal use solar arrays?  
*Response:* Although Mr. Fell had concerns about the ambiguity of differentiating between “principal use” and “accessory use” solar arrays, Plan Commission members could not think of a better way to regulate solar arrays.
- 1b) If so, is the proposed breakdown acceptable (1 acre = by right, 1 – 5 acres = Conditional Use Permit, 5+ acres = Special Use Permit)? If not, are there other suggestions?  
*Response:* The Plan Commission members could not reach a consensus. Some felt that more research and examples were needed, and others believed that all principal use solar arrays should require approval of a Special Use Permit. Mr. Ricci stated that Champaign County’s

## **Exhibit E: Plan Commission Public Hearing Minutes**

recent Solar Farm Zoning Text Amendment permitted solar farms in AG-1 and AG-2 zoning districts as a Special Use, so all principal use solar arrays were treated as special uses. A straw poll indicated that the majority of the Commission were in favor of treating all principal use solar arrays as a special use, with the remaining member leaning towards in favor.

- 2) Should solar arrays be regulated the same as other accessory structures, so that they would be permitted by right if they meet the accessory structure requirements in the zoning district? If not, are there other suggestions?

*Response:* First, the majority of the Plan Commission members agreed on the principal use/accessory use differentiation in that if a solar array is designed to generate energy for the grid, then it becomes a principal use. For the main questions, the Plan Commission did not have a recommendation. They felt they needed more information, especially regarding how it impacts the Open Space Ratio (OSR) requirement.

- 3) Should ground-mounted, accessory solar arrays be excluded from gross floor area calculations?

*Response:* The Plan Commission members agreed that ground-mounted, accessory solar arrays should be excluded from gross floor area calculations.

- 4) Should principal use solar arrays be permitted only in the AG, Agricultural Zoning District, or should they be permitted in other zoning districts?

*Response:* The Plan Commission members felt that, if principal use solar arrays were treated as a Special Use regardless of their size, they should be allowed in all zoning districts except for the R-1 (Single Family Residential), R-2 (Single Family Residential) and R-3 (Single- and Two-Family Residential) Zoning Districts. They believed that a high-density residential property owner would have to construct a rather large solar array in order to go beyond being an accessory use to the principal use multifamily residential structure on their property. In addition, the Plan Commission and City Council would have the ability to review each solar array development if they require approval of a Special Use Permit for all principal use solar arrays.

- 5) Should accessory solar arrays be permitted in all zoning districts, as long as they comply with other zoning regulations? If not, does the Commission have other suggestions?

*Response:* The majority of the Plan Commission agreed that accessory solar arrays should be allowed in all zoning districts with approval of a Special Use Permit. Planning staff pointed out that accessory solar arrays (roof-mounted and ground-mounted) are currently allowed by right in the Urbana Zoning Ordinance due to a text amendment a few years ago. City staff would not want to reverse what was approved in that text amendment. The proposed text amendment is to define what makes a solar array an accessory structure and then to treat it like all other accessory structures. Mr. Fell stated that solar arrays should not be included in the aggregate accessory structure area limitations. Current building plan review procedures for solar arrays include determining if they will cause a lot and its structures to become nonconforming to zoning regulations such as Floor Area Ratio and OSR. There was discussion about accessory solar arrays and whether or not they should be included in the calculations for the OSR. Currently, a ground-mounted solar array is not considered open space, and this should be clarified in the proposed text amendment. Principal use solar arrays would meet principal use and structure development regulations (height, required yards, etc.) and accessory use solar arrays would meet accessory use and structure development regulations.

This case was automatically continued to the June 20th meeting of the Plan Commission.

# **Exhibit F: Plan Commission Study Session Minutes**

July 8, 2021

## **MINUTES OF A REGULAR MEETING**

**URBANA PLAN COMMISSION**

**APPROVED**

**DATE:** July 8, 2021

**TIME:** 7:00 P.M.

**PLACE:** City Council Chambers

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**MEMBERS ATTENDING** Dustin Allred, Jane Billman, Andrew Fell, Lew Hopkins, Debarah McFarland, Jonah Weisskopf

**MEMBER EXCUSED:** Chenxi Yu

**STAFF PRESENT:** UPTV Camera Operator, Kevin Garcia, Principal Planner; Marcus Ricci, Planner II; Kat Trotter, Planner I

**OTHERS ATTENDING** Chris Billing (Remote), Deb Reardanz

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### **11. STUDY SESSION**

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#### **Solar Energy Text Amendment**

Marcus Ricci, Planner II, gave the staff presentation for this topic. He talked about the following:

- Purpose for the proposed changes to the Zoning Ordinance would be to add language to allow principal use solar arrays and to modify existing language that regulates accessory use solar arrays;
- Principal Use versus Accessory Use Solar Arrays - If a solar array is designed to generate energy for the grid, then it would be a principal use solar array. Solar arrays designed to generate energy for a specific user would be accessory use solar arrays;
- Array Mounting Types - Current Zoning Ordinance regulations focus on ground-mounted arrays because most roof-mounted arrays are directly wired to the building's user. In the proposed text amendment, if a roof-mounted array was installed to generate energy for the grid, then City staff would recommend that it be considered a second principal use on that property;
- Off-Site Accessory Solar Arrays – If a property owner does not have room on their own property to install a solar array, then they could install one elsewhere and wire that solar array to their property. City staff recommends that this would be considered as an accessory use solar array. If a solar array is designed to meet more than the energy needs of a principal use, the solar array would be treated as a second principal use on the generating parcel.

# Exhibit F: Plan Commission Study Session Minutes

July 8, 2021

Mr. Hopkins expressed concern about the way the text amendment was being framed. He stated that he has a solar array on the roof of his house, which has a connection to his electrical box. However, most of the energy goes to the grid. With real-time solar generation, most of it goes to the grid. He gets compensated annually on the energy that goes to the grid. Mr. Ricci explained that the proposed text amendment was about the intent of the system to provide energy for the use on-site. Mr. Hopkins replied that the distinction between a principal use or an accessory use should be based on whether a solar array is being installed only to supply the grid. Most people who install solar arrays are going to be supplying a portion of the energy to the grid. So, if something is built only to serve the grid, then it would be considered a principal use. Otherwise, it is an accessory use or mechanical equipment (mechanicals). He did not see any reason for a roof-mounted solar array to be considered other than as a mechanical. Solar arrays should be treated no differently than an air conditioning unit mounted on a roof. Mr. Ricci explained that the reason City staff was trying to get away from considering solar arrays as mechanicals was because the Zoning Ordinance requires non-residential mechanicals to be screened from all public right-of-ways and residential districts. Mr. Hopkins recommended making changes to the section that requires screening for mechanicals rather than changing the language for solar arrays.

Mr. Hopkins went on to ask why the City cares if there were solar arrays mounted to the roof of a building on a property. It should not matter if roof-mounted solar arrays are for that building's use or if the energy was to supply the grid. However, we should care about ground-mounted solar arrays because they cover the ground. We should start by figuring out how solar arrays are different from other accessory structures. We should then either figure out how to make rules for solar arrays consistent with the rules for those other accessory structures or realize that in order to enable them, we need to make special rules for solar arrays.

Mr. Ricci reviewed the responses to questions that City staff had asked the Plan Commission in 2018. The discussion points were as follows:

- Size – In 2018, a majority of the Plan Commission members were in favor of treating all principal use solar arrays as a special use. The proposed text amendment would require all principal use solar arrays to obtain a Special Use Permit without regard to size, would regulate all principal use solar arrays as principal structures in that zoning district, and would require principal use solar arrays to be screened from residential uses and zoning districts.
- Solar Array Regulations – In 2018, the Plan Commission agreed that solar arrays would meet accessory use and accessory structure development regulations for that zoning district. City staff now proposes that the proposed text amendment regulate accessory use solar arrays the same as other accessory structures in that same zoning district.
- Ground-Mounted Accessory Solar Arrays Excluded from Gross Floor Area Calculations – In 2018, the Plan Commission agreed that accessory solar arrays should be excluded from gross floor area calculations. City staff again proposes that the text amendment exclude accessory solar arrays from gross floor area calculations and treat them as open space subject to a specified limit.
- Principal Use Solar Arrays Only Permitted in AG – In 2018, the Plan Commission felt that, if treated as a Special use Permit regardless of their size, solar arrays should be allowed in all zoning districts except for the R-1, R-2 and R-3 Zoning Districts. City staff now proposes that the City permit principal use solar arrays by right in the AG district; permit them by Special Use Permit in R-4 and higher residential districts, all business districts, all industrial districts, and CRE district; and prohibit them in R-1, R-2 and R-3 residential districts.

# Exhibit F: Plan Commission Study Session Minutes

July 8, 2021

- Solar Arrays Comply With Other Zoning Regulations – In 2018, the Plan Commission agreed that accessory solar arrays should meet accessory use and accessory structure development regulations. Staff now proposes that accessory use solar arrays be permitted by right in all zoning districts, provided they meet all other development regulations for accessory uses and accessory structures in that district.

Mr. Ricci stated that staff also recommended adding a new Section V-7 “Solar Energy Systems” into Article V. Use Regulations. This section would address issues such as system types, use standards, zoning districts and development regulations.

Mr. Hopkins asked if City Council had reviewed and made comments about the proposed City staff recommendation. Mr. Ricci said that City Council had not weighed in or commented on the proposed text amendment as of yet.

Mr. Hopkins stated that he did not see any reason for principal use and accessory use to be determined by where the energy is going because it does not change the form of the structure. Normally, a principal use is the use on a lot when it is the only use, or the principal use that has other accessory uses on a lot. Kevin Garcia, Principal Planner, stated that the Zoning Ordinance defines “principal use” as “the primary use on a lot or of a structure”. Accessory use is defined as “a use that is incidental to a principal use”. He felt that City staff could determine whether a solar array was a principal use or an accessory use based on these definitions in the Zoning Ordinance.

Mr. Hopkins stated that for him the defining characteristic to regulate is ground-mounted solar arrays versus roof-mounted solar arrays. If the solar arrays are roof-mounted, then we should treat them the same as other mechanicals. Ground-mounted solar arrays would be accessory buildings/structures. This leads to the question of which zoning categories they should be allowed and what makes a solar array big enough to require a Special Use Permit.

Mr. Hopkins asked why the City would not allow solar arrays by right in an industrial zoning district. Mr. Garcia stated that the City built out the infrastructure to serve industrial uses. City staff felt that a field of solar panels would not make the best use of the City’s investment. Mr. Hopkins agreed.

Mr. Hopkins stated that he would not want ground-mounted solar arrays in any residential districts, not even as accessory uses. He would not want them allowed in B-3 or B-3U either. Mr. Ricci asked if they should be prohibited or should they require Special Use Permits, where the Plan Commission and City Council can review them. There is a lot of land that is zoned B-3 around Riggs Brewery and Walmart that is being farmed.

Mr. Hopkins asked for clarification that the Plan Commission can place conditions on approval of Special Use Permits. So, for instance the land around Riggs Brewery, we could let a developer install solar arrays as long as they do not install it with structures and equipment and financial return based on a 25-year horizon. You want to be able to reverse a solar array development allowed with approval of a Special Use Permit if a better use came along.

Mr. Garcia stated that the City Zoning Ordinance really limits people’s options sometimes. There have been some really good ideas proposed that the Zoning Ordinance would not allow. With solar arrays, he would like to err on the side of permission with limitations as opposed to prohibiting them entirely. Mr. Hopkins stated that we need to focus on what the issues are and record those issues in some way so that we can use it.

# **Exhibit F: Plan Commission Study Session Minutes**

July 8, 2021

Mr. Ricci asked if the Plan Commission was okay with off-site solar arrays. Mr. Hopkins replied that, if the City is not concerned with where the power goes – which is not relevant to zoning – then off-site solar arrays should not be an issue. Mr. Ricci understood the decision to be made is that a solar array can either be a mechanical (roof-mounted) or an accessory structure to the principal structure (ground-mounted), whether or not the solar array is wired for use on the property. The Plan Commission agreed.

Mr. Ricci gave the following example: There is a 20-acre lot. The house takes up one acre. Half an acre of solar panels were used to provide energy for the house while 18-1/2 acres of solar panels provided energy for the grid. This would be a principal use solar array. Everyone agreed. Mr. Hopkins added that they are not defining anything about solar as a principal use. The City will know if it is a principal use when they see it, based on the Zoning Ordinance's existing definition of "principal use". Mr. Garcia stated that they could add definitions for "solar array principal use" and "solar array accessory use" and have the definitions point towards the existing definitions for "principal use" and "accessory use". Mr. Ricci explained that the City has been working towards a SolSmart Gold designation, which tells developers and the rest of the world that the City promotes solar. We get points for different criteria that the City meets. One of the points is that we would define "principal use solar array" and "accessory use solar array" so that any lay person can tell whether their development would be considered principal or accessory.

Mr. Ricci hoped to bring the text amendment to the Plan Commission at the August 5, 2021, regular meeting.

## **12. CLOSED SESSION**

Ms. Billman moved that the Plan Commission continue the Closed Session item to the next regular meeting. Mr. Fell seconded the motion.

Roll call on the motion was as follows:

Mr. Hopkins	-	Yes	Mr. Allred	-	Yes
Mr. Fell	-	Yes	Ms. Billman	-	Yes
Ms. McFarland	-	Yes			

The motion passed by unanimous vote.

## **13. ADJOURNMENT OF MEETING**

The meeting was adjourned at 9:09 p.m.

Respectfully submitted,

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Kevin Garcia, Secretary  
Urbana Plan Commission