

# I. Solar Energy Systems

## Amendment #01

**Summary:** Modify use table to allow for ground-mounted solar as a principal use, either by-right or by Conditional Use Permit (CUP).

**Amend Section 151.111/Use Table to read as follows:**

Use Category	Use Types	Residential												Nonresidential							CUP Decision
		AG	RE	E	R1	R2	R3	R4	R4a	R5	R6	RR	GO	LC	RC	GC	LI	II	OS	Use Standard	
<u>Solar Energy Systems</u>	<u>Solar Energy System, Large-Scale<sup>7</sup></u>	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	P	P	C	<u>151.112(UU)</u> <u>151.113(U)</u>	ZBA
	<u>Solar Energy System, Medium-Scale<sup>7</sup></u>	C	C	C	C	C	C	C	C	C	C	P	P	P	P	P	P	P	C	<u>151.112(UU)</u> <u>151.113(U)</u>	ZBA
	<u>Solar Energy System, Small-Scale<sup>7</sup></u>	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	<u>151.112(UU)</u> <u>151.113(U)</u>	

<sup>7</sup> Accessory use ground-mounted solar energy systems of all sizes (small, medium, or large) shall be permitted in all zoning districts for those institutional, commercial, or industrial uses with campuses comprised of 10 acres or more.

**Summary:** Modify use standards to regulate solar energy systems as a principal use.

**Amend Section 151.112/Use Standards to read as follows and renumber subsequent sections accordingly:**

(UU) Solar Energy Systems. Medium and large-scale solar energy systems are permitted as a principal use in the LI and II districts and shall require a conditional use permit in all other zoning districts. Small-scale solar energy systems are permitted as a principal use in all zoning districts. Except as expressly provided for in this section, the following standards shall apply to all principal use solar energy systems:

- (1) Approval. Medium and large-scale solar energy systems in all zoning districts shall be subject to the Site Capacity Calculation/Site Plan review procedures of 151.070. Site Capacity/Site Plan Review shall be conducted concurrently with any required conditional use permit review.
- (2) Fencing. Medium and large-scale solar energy systems shall be enclosed with an approved fence that restricts access to the public. Such fencing shall, at a minimum, encompass the entire system's facility, contain a locking mechanism, and be subject to the fence regulations of 151.113(J)(1).
- (3) Height. The total height shall not exceed 15 feet, as measured from grade to the highest point of the solar arrays.

- (4) *Lot coverage.* Ground mounted solar panels are not subject to Impervious Surface Ratio (ISR) calculations of Sections 151.125, 151.233(C)(1)(e), and 151.233(C)(2)(f).
- (5) *Site Development Permits.* A site development permit may be required, per regulations set forth in Section 151.145(B), depending on proposed foundation, footings, and/or site disturbance.
- (6) *Location and setbacks.* Principal use solar energy systems must meet the setback requirements for a principal structure in the underlying zoning district.
- (7) *Concentrated solar technology.* No solar energy system may utilize concentrated solar thermal technology in any zoning district.

## **Amendment #02**

**Summary:** Modify accessory use standards to regulate solar energy systems as an accessory use in all zoning districts.

**Amend Section 151.113/Accessory Uses to read as follows and renumber subsequent sections accordingly:**

### (U) Accessory Solar Energy Systems.

#### (1) Types

- (a) *Roof-mounted.* Building-mounted solar energy systems may be mounted on accessory or principal structures in all zoning districts. All applicable accessory or principal structure requirements apply to building-mounted solar energy systems.
- (b) *Building-integrated.* Building-integrated solar energy systems may be integrated into accessory or principal structures in all zoning districts. Solar energy systems that are integrated into any structure shall be regulated as architectural features, including applicability of setback exceptions of 151.131(C)(3)(l)
- (c) *Ground-mounted.* Ground-mounted solar energy systems which meet the definition of an accessory structure as defined in Section 151.271 shall be permitted as an accessory use based on the underlying zoning district as follows:
  1. *Residential Districts.* Small-scale solar energy systems are permitted as an accessory use in all residential zoning districts. Accessory use medium and large-scale solar energy systems shall require a conditional use permit in all residential zoning districts.
  2. *Nonresidential Districts.* Small and medium-scale solar energy systems are permitted as an accessory use in all nonresidential districts. Large-scale solar energy systems are permitted as an accessory use in the II and LI zoning districts and shall require a conditional use permit in all other nonresidential zoning districts.
  3. *Campus Settings.* Accessory use ground-mounted solar energy systems of all sizes (small, medium, or large) shall be permitted in all zoning districts for those institutional, commercial, or industrial uses with campuses comprised of 10 acres or more.

(2) Approval. Accessory use medium and large-scale solar energy systems in all zoning districts shall be subject to the Site Capacity Calculation/Site Plan review procedures of 151.070. Site Capacity/Site Plan Review shall be conducted concurrently with any required conditional use permit review.

(3) Street setbacks. Accessory use ground-mounted solar energy systems located in residential zoning districts shall not be located between the principal building and any road right-of-way. In the case of an unimproved right-of-way, this provision may be modified by the Planning, Building and Development Department Director in consultation with the appropriate local roadway authority.

(4) Location. Accessory use ground-mounted solar energy systems must meet the setback requirements for an accessory structure in the underlying zoning district.

(5) Height. The total height shall not exceed 10 feet, as measured from grade to the highest point of the solar arrays. In instances when greater height is deemed necessary to allow for maximum efficiency of the solar energy system, or when necessary to address site constraints such as topography, the Planning Director shall be authorized to allow a maximum height of 15 feet.

(6) Lot coverage. Ground mounted solar panels are not subject to Impervious Surface Ratio (ISR) calculations of Sections 151.125, 151.125, 151.233(C)(1)(e), and 151.233(C)(2)(f).

(7) Site Development Permits. A site development permit may be required, per regulations set forth in Section 151.145(B), depending on proposed foundation, footings, and/or site disturbance.

(8) Maximum area.

(a) Residential. Accessory use ground-mounted solar energy systems accessory to residential uses located in residential zoning districts shall not exceed 5% of the net buildable area of a lot, or 500 square feet, whichever is less.

(b) Nonresidential. There shall be no limit to the area or number solar panels in relation to a nonresidential development for those uses which meet the definition of accessory structure as defined in Section 151.271.

(9) Concentrated solar technology. No solar energy system may utilize concentrated solar thermal technology in any zoning district.

## **Amendment #03**

**Summary:** Amending terms defined to include terminology used in solar ordinance

**Amend Section 151.271/Terms Defined to read as follows:**

**Building-integrated Solar Energy System:** An active solar energy system that is an integral part of a principal or accessory structure, rather than a separate mechanical device, replacing or substituting for an architectural or structural component of the building. Building-integrated

systems include, but are not limited to, photovoltaic or hot water solar energy systems that are contained within roofing materials, windows, skylights, or awnings.

**Concentrated Solar Thermal Technology:** A solar energy technology that uses lenses or mirrors, and often tracking systems, to focus or reflect a large area of sunlight into a small area.

**Ground-mounted Solar Energy System:** A solar energy system mounted on a rack or pole that is attached to or ballasted on the ground. Ground-mounted systems can be either accessory or principal uses.

**Rated Nameplate Capacity:** The maximum rated output of electric power production of the photovoltaic system in watts of Direct Current (DC).

**Roof-mounted Solar Energy System:** A solar energy system that is fastened to or ballasted on a building roof. Roof-mounted systems are accessory to the principal use.

**Solar Array:** A solar array is a group of solar panels wired together. An array consists of multiple solar modules (solar panels).

**Solar Energy System:** A device or structural design feature to provide for the collection, storage, and distribution of solar energy for space heating or cooling, electricity generation, or water heating.

**Solar Energy System, Large-Scale:** A ground-mounted solar energy system that occupies more than 40,000 square feet of surface area (equivalent to a rated nameplate capacity of about 250kW DC or greater).

**Solar Energy System, Medium-Scale:** A ground-mounted solar energy system that occupies more than 1,750 but less than 40,000 square feet of surface area (equivalent to a rated nameplate capacity of about 10 - 250 kW DC).

**Solar Energy System, Small-Scale:** A ground-mounted solar energy system that occupies 1,750 square feet of surface area or less (equivalent to a rated nameplate capacity of about 10 kW DC or less).

**Solar Panel:** A device that is used to convert radiant solar energy into electrical current.

## **Amendment #04**

**Summary:** Create section to address decommissioning and abandonment of medium and large-sale ground mounted solar energy systems

**Create Section [151.259/Solar Energy Systems](#) to read as follows:**

**(A) General.** The provisions in this section are in addition to the general violation, penalties, and enforcement provisions of this subchapter. Lake County shall retain authority to enforce the height and setbacks for solar energy systems in 151.112(WW) and 151.113(R), and additional requirements and standards for solar energy systems as identified in Appendix R.

**(1) Decommissioning Plan and Assurances**

(a) Prior to permit issuance, the operator shall prepare a decommissioning plan which shows the final site conditions after a principal use or accessory use medium/large scale ground-mounted solar energy system has been removed from the property. Decommissioning shall include the removal of all elements listed in Section 121.259(2)(a) below. Access roads, fencing, groundcover, and landscaping may remain only if it can be shown to be compatible with the future use of the property.

(b) Prior to permit issuance, the operator shall submit an engineer's estimate of probable cost for decommissioning the principal use or accessory use medium/large scale ground-mounted solar energy system and restoring the site in accordance with the approved decommissioning plan. Upon review and approval of the estimate by the Planning Director, the operator shall obtain a bond, letter of credit, or other form of surety that meets the requirements of Section 151.203 (A) in the amount of 130% of the engineer's estimate.

(2) Removal Requirements

(a) Any ground-mounted solar energy system which has reached the end of its useful life or has been abandoned shall be removed. The owner or operator shall physically remove the installation no more than 150 days after the date of discontinued operations. The owner or operator shall notify the county by certified mail of the proposed date of discontinued operations and plans for removal. Decommissioning shall consist of:

1. Physical removal of all solar energy systems, structures, equipment, security barriers and electrical wiring lines from the site, and;
2. Disposal of all solid and hazardous waste in accordance with local, state, and federal waste disposal regulations, and;
3. Stabilization or re-vegetation of the site as necessary to minimize erosion. The county may allow the owner or operator to leave landscaping or designated below-grade foundations or electrical wiring in order to minimize erosion and disruption to vegetation.

(b) Absent notice of a proposed date of decommissioning or written notice of extenuating circumstances, a principal use or accessory use medium/large scale ground-mounted solar energy system shall be considered abandoned when it fails to operate for more than one year without the written consent of the county. If the owner or operator of the solar energy system fails to remove the installation in accordance with the requirements of this section within 150 days of abandonment or the proposed date of decommissioning, the county may seek a court order to require the property owner to remove an abandoned, hazardous, or decommissioned ground-mounted solar energy system. The county also retains the right, after the receipt of an appropriate court order, to enter and remove the ground-mounted solar energy system and lien the property for such costs. As a condition of Site Plan and/or Special/Conditional Use Permit approval, the applicant and landowner shall agree to allow entry to remove an abandoned or decommissioned installation.

## **Amendment #05**

**Summary:** Create appendix for application requirements for solar energy systems.

Create **APPENDIX R/Solar Energy Systems** to read as follows:

### **§1.0 APPLICATION REQUIREMENTS FOR SOLAR ENERGY SYSTEMS**

See Section 151.112(WW) Solar Energy Systems and Section 151.113(R) Accessory Solar Energy Systems for information on Height, Setbacks and Lot Coverage Requirements. See Section 151.250 through 151.259 for Violations, Penalties and Enforcement. Other local and state regulations shall apply.

#### **A. Project proposal**

- 1) Owner name, address, and phone number
- 2) Photos of existing site conditions for proposed facility
- 3) Project summary including the manufacturer information, number of proposed solar modules, and proposed height of the solar arrays.

#### **B. Site plan (drawn to scale)**

- 1) Existing and proposed contours, at a minimum of two-foot intervals
- 2) Location, setbacks, exterior dimensions, and square footage of all structures on the owner's property and abutting properties within 100 feet.
- 3) Location and size of existing waterways, wetlands, one hundred-year floodplain, sanitary sewers, field drain tiles, storm sewer systems, and water distribution systems.
- 4) Location of any overhead or underground power lines and utility easements.

#### **C. Waivers**

- 1) All landscape transition yard waiver agreements shall be submitted with the application for the solar energy system.
- 2) Any landscape transition waiver agreement between the property owner and adjacent property owner shall be recorded against the impact properties with the Lake County Recorder of Deeds.

#### **D. Engineering plans, drawings, and schematics.**

1. Manufacture's specifications of the solar modules, foundation, and detailed drawing of electrical components and installation details.
2. All electrical wire and lines connecting modules and any related structures.

E. Utility connection.

1. Developers of principal use solar energy systems connected to the utility grid must provide written authorization from the local utility company acknowledging and approving such connection prior to building permit issuance.

F. Native plantings.

1. In order to prevent erosion, manage run-off, and provide ecological benefit, medium and large-scale ground-mounted solar energy systems shall be planted with "low-profile" native prairie species, and use a mix appropriate for this region and site-specific soil conditions.

Commentary: Pollinator Friendly Solar Site Act, 525 ILCS 55/1, establishes a scorecard for solar site vegetation that provides foraging habitat for game birds, songbirds, and pollinators, and prevents weeds, reduces storm water runoff, and erosion.

G. Signage.

1. Signs on ground-mounted solar energy systems shall comply with the signage requirements of the underlying zoning district. A sign consistent with the standards of Section 151.173 shall be required to identify the owner and provide a 24-hour emergency contact phone number.

H. Lighting.

1. Lighting of ground-mounted solar energy systems shall be consistent with Section 151.168. Lighting of other parts of the installation, such as appurtenant structures, shall be limited to that required for safety and operational purposes, and shall be reasonably shielded from abutting properties. Where feasible, lighting of the solar energy system shall be directed downward and shall incorporate full cut-off fixtures to reduce light pollution.

## **Amendment #06**

**Summary:** Amend zoning exceptions to account for solar energy systems requirements.

**Amend Section 151.113/Accessory Uses/General Standards to read as follows:**

151.113(B)(7)(c) Hoophouses or greenhouses, exclusively used for growing plants for local food production in residential zoning districts, open gazebos, swimming pools, cabanas, ground-mounted accessory solar energy systems, or similar structures shall not be counted as buildings for purposes of this provisions (See Figure 151.113.)

**Amend Section 151.131/Measurements and Exceptions/Setbacks/Features Allowed within Setbacks to read as follows:**

151.131(C)(3)(j) Heating units, cooling units, ~~and~~ generators, and mechanical and electrical storage systems associated with solar energy systems may encroach into required setbacks, provided they do not encroach more than three feet into a required setback and are located at least four feet from all lot lines.

**Amend Section 151.131/Measurements and Exceptions/Height/General exceptions to height limitations to read as follows and renumber subsequent sections accordingly:**

151.131(E)(2)(c) Chimneys, ~~solar panels~~, and cupolas on residential dwelling units, not to exceed six feet above the height of the building, or the minimum height required to meet applicable building, fire, or environmental regulations.

151.131(E)(2)(d) Roof-mounted solar energy systems are exempt from zoning district height limits. However, roof-mounted solar energy systems shall not exceed six feet above the height of the building, or the minimum height required to meet applicable building or fire regulations.

**Amend Section 151.233/Nonconforming Lots/Uses to read as follows:**

151.233(B)(1) In AG, RE, E, R1–6, and RR Districts, vacant nonconforming lots may be developed with a detached house, government uses or structures containing no assembly space, ~~or~~ basic utility structures, or ground-mounted solar energy systems provided that the use complies with the minimum standards of this section and the requirements of the Lake County Health Department or other agency providing sewer service.

**Amend Section 151.233/Nonconforming Lots/Development standards for nonconforming recorded lots/Consolidation of parcels to read as follows:**

151.233(D)(2)(b) Construction of accessory structures such as decks, porches, gazebos, sheds, ground-mounted solar panels, and pools shall be exempt from the consolidation requirement, provided that these structures meet the setback requirement from the common lot line.

## **Amendment #07**

**Summary:** Amend Site Capacity/Site Plan Review procedures to require process for all medium and large-scale solar energy systems, regardless of lot size.

**Amend Section 151.070/Site Capacity Calculations/Site Plan Review Procedures/Applicability to read as follows:**

151.070(A)(2) All of the following shall be subject to the site plan review procedures of this section regardless of the size of the subject parcel, unless otherwise expressly exempted:

- (a) Service stations;
- (b) Any nonresidential use with drive-through service;
- (c) Convenience stores;
- (d) Car washes;
- (e) Motor vehicle display, sales, rental, or service;
- (f) Shopping centers;
- (g) Taverns; ~~and~~
- (h) Marinas: ~~and~~
- (i) Medium and large-scale solar energy systems