SUSTAINABILITY CODE AMENDMENTS: SOLAR DEVELOPMENT STANDARDS

Comment [AU1]: Per the 9/18 SCC meeting, the ground-mounted solar collection system was deleted as a proposed permitted use because existing TEP regulations prohibit the off-site transfer of power from other than TEP facilities. As a result, the changes to the permitted use tables in Article 4 have been removed from the draft.

Section 1: The Tucson Code, Chapter 23B, Unified Development Code, Article 6, is amended to read as follows:

ARTICLE 6, DIMENSIONSAL STANDARDS AND MEASUREMENTS
DIVISION 4, RULES OF MEASUREMENT AND EXCEPTIONS TO DIMENSIONAL STANDARDS

***

6.4.5 Perimeter Yards

D. Exceptions

Encroachment into the required perimeter yard is allowed as follows:

1. Side and Rear~~Interior~~ Property Lines

Along side and rear~~interior~~ property lines, the following may extend two feet into the required width, provided the side or rear yard is not reduced to less than three feet.

a. Chimney;

b. Roof overhang;

c. Bay window;

d. External shade covering attached to principal structure (e.g., window shade, awning), but not including carports; or

e. Wall-mounted solar collectors.

2. Street Property Lines

Along street property lines, the following may extend into the required width as provided below.

a. Within established areas, the following may extend two feet into the required street yard.

(1) Chimney;

(2) Roof overhang;

(3) Stairs;

(4) Bay window;

(5) Open structures; or,

(6) Window shade on principal structure.

b. On any corner lot, no fence, structure, object, or planting shall be erected or maintained to interfere with the sight visibility triangle provisions set forth in the Technical Standards Manual.

c. An awning may project five feet into the street yard.

Section 2: The Tucson Code, Chapter 23B, Unified Development Code, Article 6, is amended to read as follows:

ARTICLE 6, DIMENSIONSAL STANDARDS AND MEASUREMENTS
DIVISION 6, ACCESSORY USE, BUILDINGS, AND STRUCTURES

***

6.6.1 ACCESSORY USES

In all zones, an accessory use shall comply with the following:

***

G. Solar Collection Systems~~Other Accessory Uses~~

1. General Standards

The following standards apply to ground-, roof-, and wall-mounted solar collection systems:

a. Solar collection systems are permitted in all zones as an accessory use in accordance with this Section 6.6.1.G.

b. Solar collections systems shall not be include in computing lot coverage.

c. Solar energy systems shall be located such that prolonged and/or substantial concentrated solar radiation or glare shall not be directed onto abutting properties or roadways.

d. Any solar collection system that becomes inoperable shall at the owner's expense be made operational or shall be removed from the property within one year of the date the system became inoperable.

DRAFT

e. Solar collection systems shall comply with all applicable building and electrical codes contained in the Tucson Building Code (ADD CITATION) except as specifically permitted otherwise by Section 6.6.1.G.2, .3, .or .4.

Comment [AU2]: Will this require amending the Building Code?

f. A property owner who has installed a solar collection system shall be protected from shadowing of surrounding structures according to the requirements of Sec. 7.3.2, Shadows from Multistory Structures and Sec. 7.3.3, Shadows from Trees.

g. If there is any conflict between the requirements of this section and any other requirements of the zoning, site plan, and subdivision ordinances, the requirements of this section shall take precedence, except for solar collection systems installed on structures subject to historic preservation commission review.

2. Ground-mounted Solar Collections System

a. Ground-mounted solar collection systems are permitted in accordance with the standards in this section and the general standards provided in Section 6.6.1.G.1.

b. An accessory ground-mounted solar collection systems in any district shall not exceed the greater of one-half the footprint of the principal structure or 1,000 square feet, whichever is greater. A larger accessory ground-mounted solar collection system may be approved if written approval is obtained from all adjacent property owners.

c. A ground-mounted solar collection system shall not be located in the front yard between the principal structure and the public right-of-way, except if the landowner can demonstrate that the ground-mounted solar collection system is entirely hidden by a screening device from the view of any adjacent property owners and the public from the public ROW.

d. A ground-mounted solar collection system shall be located a minimum of six feet from all property lines and other structures.

e. A ground-mounted solar collection system shall not exceed 10 feet in height, except that systems up to 16 feet shall be allowed in the IR (institutional reserve), RH (rural homestead), SR (suburban ranch), and SH (suburban homestead) zones and all commercial and industrial zones, except that an additional 3 feet in height shall be allowed only to accommodate the movement of pole-mounted trackers.

DRAFT

f. Ground-mounted solar energy systems located within the R-1, R-2, R-3 (single residence zones), RH (rural homestead zone), SR (suburban ranch zone), or SH (suburban ranch estate zone) and located less than fifty feet from an abutting property line, shall require a wall or opaque fence (no chain link fencing) on the side abutting the neighbor(s) equal to the height of the system up to six feet or vegetative screening capable of growing up to or greater than the height of the system. The intent is to help obscure the solar system from the abutting neighbors' ground-level views. The applicant may obtain an exception from this screening requirement to allow no fencing or chain link fencing with written consent from all abutting property owners submitted to the chief zoning inspector or their designee. The applicant must specify to the abutting property owners whether the exception is for no fencing or chain link fencing.

Comment [AU3]: In the previous draft, these standards were located in Article 4 and merely referenced in this section.

2. Roof- ~~and Wall~~-mounted Solar Collection System

Roof-mounted Solar Collection Systems are permitted in accordance with the standards in this section and the general standards provided in Section 6.6.1.G.1.

a. Setbacks~~, Location, Height, and Other Standards~~

A roof-mounted solar collection system shall be located a minimum of six feet from all property lines and structures on adjacent properties.

b. Location

A roof-mounted solar collection system is permitted as an accessory use as follows:

(1) On the roof of the principal structure or building; or,

(2) Except as provided in Section 6.6.1.G.2.b.(3), on an accessory structure, provided the accessory structure serves some function (e.g., carport, shed) other than to mount solar panels, otherwise the system is defined as "ground-mounted" and subject to all such applicable standards; or,~~.~~

(3) The system itself may also serve as shade structure over a parking lot, the roof of a carport, or as the roof of another type of shade structure, such as a ramada. Railing and access space or decking underneath a roof-

mounted solar collection system is not required in these instances provided the system can be accessed from underneath.

c. Height

Consistent with Sec. 6.4.4.C.4, roof-mounted solar collection systems may exceed the allowable height limit by no more than ten feet. On accessory structures in residential zones, roof-mounted solar collection systems may use this ten foot height exception to either 1) add an additional ten feet of solar equipment to the roof of the accessory structure or 2) add ten feet of structure height to the accessory structure itself — for a structure height of 22 feet — if the solar equipment is fully integrated into the roof of the accessory structure and adds no additional height to the structure. In addition, the required height of a primary structure may be raised three feet to accommodate a solar-tracking roof deck that moves vertically to maximize sun exposure provided the solar equipment is integrated into the roof and adds no additional height to the structure.

Comment [AU4]: This section will have be re-evaluated for possible revision given the changes to the location standards.

3. Wall-mounted Solar Collection Systems

(1) Wall-mounted solar collection systems are permitted in accordance with the standards in this section and the general standards provided in Section 6.6.1.G.1.

(2) Wall-mounted solar collection systems may encroach into the required perimeter yard in accordance with 6.4.5.D, Exceptions to Perimeter Yards.

Comment [AU5]: Wall-mounted systems was separated from the roof-mounted section for a clearer distinction between the standards.

***

6.6.2 ACCESSORY BUILDINGS AND STRUCTURES

***

~~F. The use of solar energy collectors for the purpose of providing energy for heating or cooling shall be permitted in all zones, whether as part of a principal building or as an accessory building. Such solar collection devices shall not be included in computing lot coverage;~~

Comment [AU6]: The deletion of this standard will require the renumbering of the rest of the section.

Section 3: The Tucson Code, Chapter 23B, Unified Development Code, Article 7, is amended to read as follows:

ARTICLE 7, DEVELOPMENT STANDARDS
DIVISION 3, SOLAR ~~CONSIDERATIONS~~DEVELOPMENT STANDARDS

***

7.3. SOLAR ~~CONSIDERATIONS~~ DEVELOPMENT STANDARDS

7.3.1. SOLAR ENERGY COLLECTORS ALLOWED

The use of solar energy collectors for the purpose of providing collection, inversion, storage, and distribution of solar energy for electricity generation, space heating, space cooling, or water heating~~energy for heating or cooling~~ is permitted in all zones, whether as part of a principal structure or as an accessory structure.

7.3.2. SHADOWS FROM MULTISTORY STRUCTURES

Shadows cast from any proposed multistory structure shall minimize shading on existing solar energy collectors ~~of be taken into consideration as to their effect~~ on adjacent properties to the extent possible. An analysis is required to determine whether the proposed multistory structure adversely affects the solar energy collector on the adjacent property. Where such shadows adversely affect solar energy systems between the hours of 9:00 a.m. and 3:00 p.m., a plot plan shall show that the multistory structure has been reoriented on the site to mitigate this effect or that other measures have been taken to minimize the adverse effects of the shading. The development potential of any property shall not be reduced by compliance with this section. (See Figure 7.3.2-A.)

Comment [AU7]: 9/18/13 SCC mtg – Should this be expanded to include the prospective placement of solar collectors?

Comment [AU8]: 9/18/13 SCC mtg – Provide more details re: when and from what direction shadows are going to be measured. Staff needs more clarification from the committee.

7.3.3. SHADOWS FROM TREES

Trees and shrubs shall be selected and located so that, at maturity, they do not interfere with existing solar access, as defined in Sec. 11.4, to an adjacent property. Vegetation found in violation of this requirement shall be trimmed or removed at landowner's expense to restore required solar access.

7.3.4. VIOLATIONS

When a multistory structure or tree is found to be in violation of Section 7.3.2 or 7.3.3, respectively, the PDSD Director shall determine how the violation shall be remedied. The PDSD Director may take into consideration the feasibility and/or expense of altering, removing, or relocating the object in violation when rendering a decision versus the benefit the owner of the solar energy collector receives. The PDSD Director's decision may include, but is not limited to, removal or alteration of the object in violation, relocating the solar energy collector at the violator's expense, or other remedy. The PDSD Director's decision may be appealed to the Board of Adjustment in accordance with Sections 3.10.1 and 3.10.2. The Board of Adjustment may use the same criteria as that used by the PDSD Director when making its decision.

Comment [AU9]: In the previous draft, this section referenced the Residential Solar-Ready Ordinance. It is proposed for deletion since the ordinance does not establish specific regulations. Instead, it directs PDSD to revise the Building Code to incorporate solar-ready standards.

Comment [AU10]: This section is in response the SCC's interest in codifying some sort of way to resolve violations that would take into consideration the cost/benefit of any possible remedy. Staff will have to consult with the City Attorney to see if the PDSD Director or Board of Adjustment are proper channels through which to resolve this type of issue.

DRAFT

Section 4: The Tucson Code, Chapter 23B, Unified Development Code, Article 11, is amended to read as follows:

ARTICLE 11, DEFINITIONS AND RULES OF CONSTRUCTION
DIVISION 3, DEFINITIONS OF LAND USE GROUPS, CLASSES, AND TYPES

***

11.3.11 UTILITIES USE GROUP

Comment [AU11]: The ground source heat pump system and small wind energy system definitions have been removed per the recommendation at the 9/18 SCC meeting. Both are seen as infeasible sources of energy systems in Tucson.

The Utilities Use Group includes Land Use Classes that involve the generation, transmission, and/or distribution of basic services, such as sanitation, water, gas, and electrical services. The following Land Use Classes comprise the Utilities Use Group.

***

C. Ground-mounted Solar Collection System

A free-standing, ground-mounted solar array consisting of either a linked series of photovoltaic modules, or one or more solar hot water collectors, and including pole-mounted and tracker system, the primary purpose of which is to provide for the collection, inversion, storage, and distribution of solar energy for electricity generation, space heating, space cooling, or water heating. It may be an accessory or primary use.

***

J. Roof-or Wall-mounted Solar Collection System

A roof- or wall-mounted solar array consisting of either a linked series of photovoltaic modules, or one or more solar hot water collectors, and including skin-integrated systems (Building Integrated Photovoltaic-BIPV), the primary purpose of which is to provide for the collection, inversion, storage, and distribution of solar energy for electricity generation, space heating, space cooling, or water heating.

[Note: this definition will replace the current definition for "Solar Energy System" in Sec. 11.4.20, which would be deleted from the UDC as shown below]

***

Section 4: The Tucson Code, Chapter 23B, Unified Development Code, Article 11, is amended to read as follows:

ARTICLE 11, DEFINITIONS AND RULES OF CONSTRUCTION
DIVISION 4, OTHER TERMS DEFINED

***

11.4.20 DEFINITIONS-S:

~~**Solar Energy System**~~

~~Includes: (1) A design using natural and architectural features to cool or heat a structure or (2) a mechanical assembly which may include a solar collector, storage facility, and any other components needed to cool or heat a structure.~~

DRAFT