

SOLAR ENERGY SYSTEMS DRAFT

DEFINITIONS.

BUILDING-INTEGRATED SOLAR ENERGY SYSTEM. A solar energy system that is an integral part of a principal or accessory building, rather than a separate mechanical device, replacing or substituting for an architectural or structural component of the building. Building-integrated systems include but are not limited to active photovoltaic or hot water systems that are contained within roofing materials, windows, walls, skylights, and awnings, or passive systems that are designed to capture direct solar heat.

BUILDING-MOUNTED SOLAR ENERGY SYSTEM. A solar energy system affixed to a principal or accessory building.

FLUSH MOUNTED SOLAR ENERGY SYSTEM. A solar energy system that is installed on the roof of a building in which the solar panels are parallel with the finished roof materials.

FREESTANDING SOLAR ENERGY SYSTEM. A solar energy system with a supporting framework that is placed on, or anchored in, the ground and that is independent of any building or other structure. Garages, carports or similar structures that incorporate building-integrated or building-mounted solar energy systems shall not be classified as freestanding solar energy systems and shall instead be subject to regulations governing accessory structures.

SOLAR COLLECTOR SURFACE. Any part of a solar energy system that absorbs solar energy for use in the system's transformation process. The collector surface does not include frames, supports, and mounting hardware.

SOLAR ENERGY. Radiant energy received from the sun that can be collected in the form of heat or light by a solar collector.

SOLAR ENERGY SYSTEM. A device, set of devices, or structural design feature intended to provide for collection, storage, and distribution of solar energy for purposes including heating or cooling buildings or other energy-using processes, electricity generating by means of any combination of collecting, transferring, solar-generated energy, or water heating.

SOLAR ENERGY SYSTEMS

(A) *Purpose.* Regulations governing solar energy systems are established to provide for appropriate locations for solar energy systems, to ensure compatibility with surrounding uses, and to promote safe and effective use of solar energy to increase opportunities for generation of renewable energy. The City of Tonka Bay finds that it is in the public interest to encourage the use and development of renewable energy systems that enhance energy conservation efforts, but

result in limited adverse impacts on nearby properties. As such, the City supports the use of solar energy systems.

(B) *Permitted Uses and Specific Standards*

(1) *In general.* Solar energy systems shall be permitted in those zoning districts where permitted as an accessory use, subject to the standards of this article. Solar collector surfaces and all mounting devices shall comply with the minimum yard requirements of the district in which they are located. Screening of solar collector surfaces shall not be required.

(2) *Building-mounted solar energy systems.*

(a) Zoning district standards.

(1) Residential zoning districts. Notwithstanding the height limitations of the zoning district, building mounted solar energy systems shall not extend higher than three (3) feet above the ridge level of a roof on a principal structure with a gable, hip, or gambrel roof as long as they are not visible from the nearest edge of the street frontage right-of-way other than an alley. Solar energy systems are not permitted on accessory structures. Solar roof and shall not extend higher than ten (10) feet above the surface of a flat roof. Solar energy systems are permitted on accessory structures, only if they are flush mounted and shall be no higher than twelve (12) inches above the roof.

Solar panels on principal structures shall be mounted to align with the slope of the roof and shall not deviate more than ten (10) percent from the roof angle of a gable, hip, or gambrel roof. Flush mounted solar energy systems that are visible from the nearest edge of the street frontage right-of-way shall not have a highest finished pitch steeper than the roof pitch on which the system is mounted, and shall be no higher than twelve (12) inches above the roof.

Building integrated solar energy systems shall be allowed regardless of whether the system is visible from the public right-of-way, provided the building component in which the system is integrated meets all required setbacks, land use or performance standards for the district in which the building is located.

(2) Commercial and park zoning districts. Notwithstanding the height limitations of the zoning district, building mounted solar energy systems shall not extend higher than three (3) feet above the ridge level of a roof on a principal structure with a gable, hip, or gambrel roof and shall not extend higher than ten (10) feet above the surface of the roof when installed on a flat roof or shed roof. A conditional use permit is required for any solar installation in the commercial district. Solar energy systems are permitted on accessory structures, only if they are flush mounted and shall be no higher than twelve (12) inches above the roof.

Solar panels on principal structures shall be mounted to align with the slope of the roof and shall not deviate more than ten (10) percent from the roof angle of a gable, hip, or gambrel roof.

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Commented [AL2]: Accessory structures were not previously addressed in the commercial and park districts.

(b) The solar collector surface and mounting devices for building-mounted solar energy systems shall be set back not less than one (1) foot from the exterior perimeter of a roof for every one (1) foot that the system extends above the roof surface on which the system is mounted to ensure ready roof access in the event of a fire or other safety related occurrence whereby roof access is needed. Solar energy systems that extend less than one (1) foot above the roof surface shall be ~~exempt from this provision, however shall be~~ set back from the roof edge by a minimum of ~~one (1)~~ foot.

(c) The collector surface and mounting devices for building-mounted solar energy systems shall not extend beyond the exterior perimeter of the building on which the system is mounted or built.

~~(d) Solar energy systems shall be designed to blend into the architecture of the building to the maximum extent practical or be screened from routine view from public rights of way other than alleys. The color of the solar collector is not required to be consistent with the roofing materials.~~

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(ed) Building-mounted systems, excluding building-integrated systems, shall not cover more than 80% of the roof upon which the panels are mounted to ensure ready roof access in the event of a fire or other safety occurrence whereby roof access is needed.

(ee) The structure upon which the solar energy system is mounted shall have the structural integrity to carry the weight of the solar energy system. A statement verifying the structural integrity shall be submitted with the building permit application.

(3) *Freestanding solar energy systems ~~are not permitted.~~*

~~(a) Freestanding solar energy systems, measured to the highest point of the system, shall not exceed ten (10) feet in height and shall meet double the minimum setback requirements of an accessory structure as outlined in §152.176, as measured from the outermost perimeter of the solar panel to the property line. Freestanding solar energy systems are only permitted in rear yards.~~

~~(b) In all residential districts, the area of the solar collector surface of freestanding solar energy systems shall not exceed three (3) percent of the lot area. In all other districts, the area of the solar collector surface of freestanding solar energy systems shall not exceed five (5) percent of the lot area. Notwithstanding any other provision to the contrary, the maximum area of solar energy systems shall be calculated independently of the floor area of all other accessory structures on the zoning lot.~~

~~(c) The supporting framework for freestanding solar energy systems shall not include unfinished lumber.~~

~~(d) A conditional use permit is required for any solar installations in the commercial district.~~

(4) Lightpole mounted solar energy systems:

~~(a) Any solar installation on a light pole shall require the issuance of a conditional use permit, and shall take into account the surrounding land uses, the proposed visual impact, and the structural integrity relative to size and height of the proposed solar installation. Any solar installation mounted to a light pole shall not exceed three (3) square feet~~

-(C) Design and Performance Standards. In addition to the standards required above, the following standards shall apply to all solar energy systems.

~~(1) Compatibility with nearby properties. The visual impact of rooftop equipment on nearby properties shall be minimized through such means as location on the roof, flush mounting to the roof, screening, or other integration into the roof design. Screening shall be of durable permanent materials that are compatible with the primary building materials. Screening shall be done to the extent possible without reducing the systems efficiency.~~

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~~(2) Feeder lines. Any lines accompanying a solar energy system, other than those attached to on-site structures by leads, shall be buried within the interior of the subject parcel, unless there are existing lines in the area which the lines accompanying a solar energy system can be attached. The Zoning Administrator may grant exemptions to this requirement in instances where shallow bedrock, water courses, or other elements of the natural landscape interfere with the ability to bury lines.~~

~~(3) Maintenance. Solar energy systems shall be kept in good repair and free from damaged supports, mounts, framework, or other components.~~

~~(4) Abandonment. A solar energy system that is allowed to remain in a nonfunctional or inoperative state for a period of twelve (12) consecutive months, and which is not brought in operation within the time specified by the City shall be presumed abandoned and may be declared a public nuisance subject to removal at the expense of the operatorowner.~~

~~(5) Compliance. All solar energy systems shall be designed, constructed, and operated in compliance with any applicable federal, state, and local laws, codes, standards, and ordinances, as well as adhere to the requirements of local utilities if connected to utility lines, including, but not limited to the State of Minnesota Building Code, Minnesota State Electric Code, and Minnesota State Plumbing Code.~~

~~(6) Interference. Solar energy systems shall be designed to not cause electrical, radio frequency, television, and other communication signal interference.~~

~~(7) Installation. Solar energy systems shall be installed only by licensed contractors.~~

(D) Administrative Review Process

(1) In general. Applications that meet the design requirements of this policy shall be granted administrative approval by the Zoning Administrator or other Authorized Agent. Plan approval does not indicate compliance with Building Code or Electric Code. All systems shall comply with the Minnesota State Building and Electric Code.

(2) *Submittal requirements.* An application for a solar energy system shall be filed on a form provided by the City. In addition, the applicant shall submit the following:

- (a) Plan application for solar energy systems shall be accompanied by scaled horizontal and vertical (elevation) drawings. The drawings must show the location of the system on the building, ~~or on the property for a ground-mounted system;~~ including the property lines.
 - 1. For all building-mounted systems other than a flat roof the elevation drawings shall show the highest finished slope of the solar collector and the slope of the finished roof surface on which it is mounted.
 - 2. For flat-building-building systems a drawing shall be submitted showing the distance to the roof edge and any parapets on the building and shall identify the height of the ~~building on the street frontage side, the shortest distance of the system from the street frontage edge of the building,~~ ~~and building and~~ the highest finished height of the solar collector above the finished surface of the roof.
- (b) Written evidence that the electric utility service provider that serves the proposed site has been informed of the applicant's intent to install a solar energy system, unless the applicant does not plan, and so states so in the application, to connect the system to the electricity grid.
- (c) Written evidence that the electric solar energy system components have a UL listing.

~~(E) Conditional uses.~~ Solar energy systems that do not comply with the standards as stated in provision 1011.xx (Solar Energy Systems) above may be allowed by conditional use permit, subject to the provisions of Section xxx, Conditional Use Permits, provided that requests to exceed the permitted amount of impervious surface shall be by variance.

~~(FE) Solar access.~~ Solar access easements may be filed consistent with Minn. Statute Section 500.30 as may be amended from time to time. Any property owner may purchase an easement across nearby properties to protect access to sunlight. The easement is purchased or granted by owners of nearby properties and can apply to buildings, trees, or other structures that would diminish solar access.

Accessory Uses (Residential District)

Subject to the provisions of 1011.xx through 1011.xx, the following accessory uses are permitted in the R-1A District:

- a. Solar energy systems, subject to the provisions of 1011.xx (Solar Energy Systems).

Accessory Uses (Residential District)

Subject to the provisions of 1011.xx through 1011.xx, the following accessory uses are permitted in the R-1B District:

- b. Solar energy systems, subject to the provisions of 1011.xx (Solar Energy Systems).

Accessory Uses (Residential District)

Subject to the provisions of 1011.xx through 1011.xx, the following accessory uses are permitted in the R-2A District:

- c. Solar energy systems, subject to the provisions of 1011.xx (Solar Energy Systems).

Accessory Uses (Residential District)

Subject to the provisions of 1011.xx through 1011.xx, the following accessory uses are permitted in the R-3 District:

- d. Solar energy systems, subject to the provisions of 1011.xx (Solar Energy Systems).

Accessory Uses (Commercial District)

Subject to the provisions of 1011.xx through 1011.xx, the following accessory uses are permitted in the C-1 District:

- a. Solar energy systems, subject to the provisions of 1011.xx (Solar Energy Systems).

Accessory Uses (Commercial District)

Subject to the provisions of 1011.xx through 1011.xx, the following accessory uses are permitted in the C-2 District:

- b. Solar energy systems, subject to the provisions of 1011.xx (Solar Energy Systems).

Accessory Uses (Park District)

Subject to the provisions of 1011.xx through 1011.xx, the following accessory uses are permitted in the P District:

- c. Solar energy systems, subject to the provisions of 1011.xx (Solar Energy Systems).