ADD TO DEFINITIONS

Accessory Ground-Mounted Solar Energy System: A ground-mounted solar energy system with the purpose primarily of generating electricity for the principal use on the site.

Building-Integrated Solar Energy System: A solar energy system that is an integral part of a primary or accessory building or structure (rather than a separate mechanical device), replacing or substituting for an architectural or structural component of the building or structure. Building-integrated systems include, but are not limited to, photovoltaic or hot water solar energy systems that are contained within roofing materials, windows, skylights, and awnings.

Dual Use: A solar energy system that employs one or more of the following land management and conservation practices throughout the project site:

1) Pollinator Habitat: Solar sites designed to meet a score of 76 or more on the Michigan Pollinator Habitat Planning Scorecard for Solar Sites. Alternatively, the Tier 2 Pollinator Scorecard developed by the Rights-of-Way as Habitat Working Group can be used to evaluate pollinator habitat and management practices.

2) Conservation Cover: Solar sites designed in consultation with conservation organizations that focus on restoring native plants, grasses, and prairie with the aim of protecting specific species (ex: bird habitat) or providing specific ecosystem services (ex: carbon sequestration, soil health).

3) Forage for Grazing: Solar sites that incorporate rotational livestock grazing and forage production as part of an overall vegetative maintenance plan.

4) Agrivoltaics: Solar sites that combine raising crops for food, fiber, or fuel, and generating electricity within the project area to maximize land use.

Ground-Mounted Solar Energy System: A solar energy system mounted on support posts, like a rack or pole, that are attached to or rest on the ground.

Maximum Tilt: The maximum angle of a solar array (i.e., most vertical position) for capturing solar radiation as compared to the horizon line.

Minimum Tilt: The minimal angle of a solar array (i.e., most horizontal position) for capturing solar radiation as compared to the horizon line.

Non-Participating Lot(s) or Parcels: One or more lots or parcels for which there is not a signed lease or easement for development of a principal-use SES associated with the applicant project.

Participating Lot(s) or Parcels: One or more lots or parcels under a signed lease or easement for development of a principal-use SES associated with the applicant project.

Photovoltaic (PV): A semiconductor material that generates electricity from sunlight.

Principal-Use Solar Energy System: A commercial, ground-mounted solar energy system that converts sunlight into electricity for the primary purpose of off-site use through the electrical grid or export to the wholesale market.

Principal-Use (Large) Solar Energy System: A Principle-Use SES generating up to and including 2 MW DC for the primary purpose of off-site use through the electrical grid or export to the wholesale market.

Principal-Use (Small) Solar Energy System: A Principle-Use SES generating up to and including 2 MW DC for the primary purpose of off-site use through the electrical grid or export to the wholesale market.

Repowering: Reconfiguring, renovating, or replacing an SES to maintain or increase the power rating of the SES within the existing project footprint.

Roof-Mounted Solar Energy System: A solar energy system mounted on racking that is attached to or ballasted on the roof of a building or structure.

Solar Array: A photovoltaic panel, solar thermal collector, or collection of panels or collectors in a solar energy system that collects solar radiation.

Solar Carport: A solar energy system of any size that is installed on a structure that is accessory to a parking area, and which may include electric vehicle supply equipment or energy storage facilities. Solar panels affixed on the roof of an existing carport structure are considered a Roof-Mounted SES.

Solar Energy System (SES): A photovoltaic system or solar thermal system for generating and/or storing electricity or heat, including all above and below ground equipment or components required for the system to operate properly and to be secured to a roof surface or the ground. This includes any necessary operations and maintenance building(s) but does not include any temporary construction offices, substation(s) or other transmission facilities between the SES and the point of interconnection to the electric grid.

Solar Thermal System: A system of equipment that converts sunlight into heat.

Weed: Native or non-native plant that is not valued in the place where it is growing.

Wildlife-Friendly Fencing: A fencing system with openings that allow wildlife to traverse over or through a fenced area.

ADD TO GENERAL PROVISIONS

Section 3.46 SOLAR ENERGY SYSTEMS (SES)

1) Roof-Mounted SES

   A) Height: Roof-Mounted SES shall not exceed 5 feet above the finished roof and are exempt from any rooftop equipment or mechanical system screening.

   B) Nonconformities: A Roof-Mounted SES or Building-Integrated SES installed on a nonconforming building, structure, or use shall not be considered an expansion of the nonconformity.

   C) Application: All SES applications must include a site plan. Applications for Roof-Mounted SES must include horizontal and vertical elevation drawings that show the location and height of the SES on the building and dimensions of the SES.

2) Accessory Ground-Mounted SES

   A) Height: Ground-Mounted SES shall not exceed 15 feet measured from the ground to the top of system when oriented at maximum tilt.

   B) Setbacks: A Ground-Mounted SES must be a minimum of 50 feet from the property line. Setback distance is measured from the property line to the closest point of the SES at minimum tilt.

   C) Lot or Parcel Coverage: The area of the solar array shall not exceed 15% of the square footage of the parcel.

   D) Visibility (Residential): A Ground-Mounted SES in residential districts (R-1) shall be located in the side or rear yard to minimize visual impacts from the public right-of-way(s). Ground-Mounted SES are allowed in front yard if they meet a setback of one hundred (100) feet.

      i. Ground-Mounted SES may be placed in the front yard with administrative approval, where the applicant can demonstrate that placement of the SES in the rear or side yard will:

         a. Decrease the efficiency of the SES due to topography, accessory structures, or vegetative shading from the subject lot or parcel or adjoining lots or parcels.

         b. Interfere with septic system, accessory structures, or accessory uses; or

         c. Require the SES to be placed on the waterfront side of the building housing the primary use (where applicable).

E) Exemptions: A SES used to power a singe device or specific piece of equipment such as a lawn ornament, lights, weather station, thermometer, clock, well pump or other similar device is exempt from Ground-Mounted SES provisions.

F) Nonconformities: A Ground-Mounted SES installed on a nonconforming lot or parcel or use shall not be considered an expansion of the nonconformity.

G) Application: All SES applications must include a site plan. Applications for Roof-Mounted SES must include drawings that show the location of the system on the property, height, tilt features (if applicable), the primary structure, accessory structures, and setbacks to property lines. Accessory use applications that meet the ordinance requirements shall be granted administrative approval.

3) Building-Integrated SES

A) Building-Integrated SES are subject to zoning regulations applicable to the structure of building and not subject to accessory ground or roof-mounted SES permits.

4) Small Principal-Use SES: A Small Principal-Use SES is a permitted use in all zoning districts subject to site plan review and shall meet all of the following requirements:

A) Height: Total height shall not exceed 15 feet measured from the ground to the top of the system top of the system when oriented at maximum tilt.

B) Setbacks: Setback distance shall be measured from the property line or road right-of-way to the closest point of the solar array at minimum tilt or any SES components and as follows:

i. Ground-Mounted SES shall follow the setback distance for primary buildings or structures for the district in which it is sited.

ii. Ground-Mounted SES is not subject to property line setbacks for common property lines of two or more participating lots or parcels, except road right-of-way setback shall apply.

C) Fencing: A Small Principal-Use SES may be secured with perimeter fencing to restrict unauthorized access. If installed, perimeter fencing shall be a maximum of 7 feet in height. Barbed wire is prohibited. Fencing is not subject to setbacks.

D) Screening/Landscaping: A Small Principal-Use SES shall be designed to follow the screening and/or landscaping standards for the zoning district of the project site. Any required screening and landscaping shall be placed outside the perimeter fencing.

i. In districts that call for screening or landscaping along rear or side property lines, these shall only be required where an adjoining non-participating lot or parcel has an existing residential or public use.

ii. When current zoning district screening and landscaping standards are determined to be inadequate based on a legitimate community purpose consistent with local government planning documents, the Planning Commission may require substitute screening consisting of native deciduous trees planted 30 feet on center, and native evergreen trees planted 15 feet on center along existing non-participating residential uses.

iii. The Planning Commission may reduce or waive screening requirements provided that any such adjustment is in keeping with the intent of the Ordinance and is appropriately documented (e.g. abutting participating lots or parcels; existing vegetation).

iv. Screening/landscaping detail shall be submitted as part of the site plan that identifies the type and extent of screening for a Small Principal-Use SES, which may include plantings, strategic use of berms, and/or fencing.

E) Ground Cover: A small Principal-Use SES shall include the installation of perennial ground cover vegetation maintained for the duration of operation until the site is decommissioned. The applicant shall include a ground cover vegetation establishment and management plan as part of site plan.

i. an SES utilizing agrivoltaics is exempt from perennial ground cover requirements for the portion of the site employing the dual-use practice.

ii. Project sites with majority existing impervious surface or those that are included in a brownfield plan adopted under the Brownfield Redevelopment Financing Act, PA 381 of 1996, as amended, are exempt from ground cover requirements. These sites must comply with the on-site stormwater requirements of the ordinance.

F) Lot or Parcel Coverage: A Small Principal-Use SES shall count towards the maximum lot coverage but not the impervious surface standards for the district.

G) Land Clearing: Land disturbance or clearing shall be limited to what is minimally necessary for the installation and operation of the system and to ensure sufficient all-season access to the solar resource given the topography of the land. Topsoil distributed during site preparation (grading) on the property shall be retained on site.

H) Access Drives: New access drives within the SES shall be designed to minimize the extent of soil disturbance, water runoff, and soil compaction on the premises. The use of geotextile fabrics and gravel placed on the surface of the existing soil for temporary roadways during the construction of the SES is permitted, provided that the geotextile fabrics and gravel are removed once the SES is in operation.

I) Wiring: SES wiring (including communication lines) may be buried underground. Any aboveground wiring within the footprint of the SES shall not exceed the height of the solar array at maximum tilt.

J) Lighting: Lighting shall be limited to inverter and/or substation locations only. Light fixtures shall have downlit shielding and be placed to keep light on-site and glare away from adjacent properties, bodies of water, and adjacent roadways. Flashing or intermittent lights are prohibited.

K) Signage: Any signage shall meet the size, setback, illumination, and materials/construction requirements of the zoning district for the project site.

L) Sound: The sound pressure level of a Small Principal-Use SES and all ancillary solar equipment shall not exceed 45 dBa Leg (1-hour) at the property line of an adjoining non-participating lot or parcel. The site plan shall include modeled sound isolines extending from the sound source to the property lines to demonstrate compliance with this standard.

M) Repowering: In addition to repairing or replacing SES components to maintain the system, a Small Principal-Use SES may at any time be repowered by reconfiguring, renovating, or replacing the SES to increase the power rating within the existing project footprint.

    i. A proposal to change the project footprint of an existing SES shall be considered a new application, subject to the ordinance standards at the time of the request. [Expenses for legal services and other studies resulting from an application to modify an SES will be reimbursed to Sherman Township by the SES owner in compliance with established escrow policy.]

N) Decommissioning: Upon application, a decommissioning plan shall be submitted indicating the anticipated manner in which the project will be decommissioned, including a description of which above-grade and below-grade improvements will be removed, retained (e.g. access drive, fencing), or restored for viable reuse of the property consistent with the zoning district.

    i. An SES owner may at any time:

        a. Proceed with the decommissioning plan approved by the Planning Commission and remove the system as indicated in the most recent approved plan; or

        b. Amend the decommissioning plan with Planning Commission approval and proceed according to the revised plan.

    ii. Decommissioning an SES must commence when the soil is dry to prevent soil compaction and must be complete within 12 months after abandonment. An SES that has not produced electrical energy for 12 consecutive months shall prompt an abandonment hearing.

5) Special Land-Use Standards

A) Large Principal-Use SES: A Large Principal-Use SES is a special land use in the zoning districts specified and shall meet the following requirements:

i. Height: Total height for a Principal-Use SES shall not exceed 20 feet.

ii. Setbacks: Setback distance shall be measured from the property line or road right-of-way to the closest point of the solar array at minimum tilt or any SES components and as follows:

a. In accordance with the setbacks for principal buildings or structures for the zoning district of the project site 250 feet from the property line of a non-participating lot or parcel.

b. 500 feet from any existing dwelling unit on a non-participating lot or parcel.

c. A Ground-Mounted SES is not subject to property line setbacks for common property lines of two or more participating lots or parcels, except road right-of-way setback shall apply.

iii. Fencing: A Principal-Use SES may be secured with perimeter fencing to restrict unauthorized access. If installed, perimeter fencing shall be a maximum of 7 feet in height. Barbed wire is prohibited. Fencing is not subject to setbacks.

iv. Screening/Landscaping: A Large Principal-Use SES shall follow the screening and/or landscaping standards for the zoning district of the project site. Any required screening and landscaping shall be placed outside the perimeter fencing.

a. In districts that call for screening or landscaping along rear or side property lines, these shall only be required where an adjoining non-participating lot or parcel has an existing residential or public use.

b. When current zoning district screening and landscaping standards are determined to be inadequate based on a legitimate community purpose consistent with local government planning documents, the Planning Commission may require substitute screening consisting of native deciduous trees planted 30 feet on center, and native evergreen trees planted 15 feet on center along existing non-participating residential uses.

c. The Planning Commission may reduce or waive screening requirements provided that any such adjustment is in keeping with the intent of the Ordinance.

d. Screening/landscaping detail shall be submitted as part of the site plan that identifies the type and extent of screening for a Large Principal-

Use SES, which may include plantings, strategic use of berms, and/or fencing.

v. Ground Cover: A Large Principal-Use SES shall include the installation of ground cover vegetation maintained for the duration of operation until the site is decommissioned. The applicant shall include a ground cover vegetation establishment and management plan as part of the site plan. Vegetation establishment must include invasive plant species (and noxious weed, if local regulation applies) control. The following standards apply:

   a. Sights bound by a Farmland Development Rights (PA 116) Agreement must follow the Michigan Department of Agriculture and Rural Development's Policy for allowing Commercial Solar Panel Development on PA 116 Lands.

   b. Ground Cover at sites not enrolled in PA 116 must meet one or more of the four types of Dual Use defined in this ordinance.

      i. Pollinator Habitat: Solar sites designed to meet a score of 76 or higher on the Michigan Pollinator Habitat Planning Scorecard for Solar Sites.

      ii. Conservation Cover: Solar sites designed in consultation with conservation organizations that focus on restoring native plants, grasses, and prairie with the aim of protecting specific species (e.g., bird habitat) or providing specific ecosystem services (e.g., carbon sequestration, soil health).

      iii. Forage: Solar sites that incorporate rotational livestock grazing and forage production as part of an overall vegetative maintenance plan.

      iv. Agrivoltaics: Solar sites that combine raising crops for food, fiber, or fuel, and generating electricity within the project area to maximize land use. Project sites that are included in a brownfield plan adopted under the Brownfield Redevelopment Financing Act, PA 381 or 1996, as amended, that contain pervious surface at the time of construction or soils that cannot be disturbed, are exempt from ground cover requirements.

   c. Project sites that are included in a brownfield plan adopted under the Brownfield Redevelopment Financing Act, PA 381 of 1996, as amended, that contain impervious surface at the time of construction or soils that cannot be disturbed, are exempt from ground cover requirements.

vi. Lot or Parcel Coverage: A Large Principal-Use SES shall count towards the maximum lot coverage but not the impervious surface standards for the district.

vii. Land Clearing: Land disturbance or clearing shall be limited to what is minimally necessary for the installation and operation of the system and to ensure sufficient all-season access to the solar resource given the topography of the land. Topsoil distributed during site preparation (grading) on the property shall be retained on site.

viii. Access Drives: New access drives within the SES shall be designed to minimize the extent of soil disturbance, water runoff, and soil compaction on the premises. The use of geotextile fabrics and gravel placed on the surface of the existing soil for the construction of temporary drives during the construction of ht SES is permitted, provided that the geotextile fabrics and gravel are removed once the SES is in operation.

ix. Wiring: SES wiring (including communication lines) may be buried underground. Any above-ground wiring within the footprint of the SES shall not exceed the height of the solar array at maximum tilt.

x. Lighting: Lighting shall be limited to inverter and/or substation locations only. Light fixtures shall have downlit shielding and be placed to keep light on-site and glare away from adjacent properties, bodies of water, and adjacent roadways. Flashing or intermittent lights are prohibited.

xi. Signage: Any signage shall meet the size, setback, illumination, and materials/construction requirements of the zoning district for the project site.

xii. Sound: The sound pressure level of a Large Principal-Use SES and all ancillary solar equipment shall not exceed 45 dBa Leg (1-hour) at the property line of an adjoining nonparticipating lot or parcel. The site plan shall include modeled sound isolines extending from the sound source to the property lines to demonstrate compliance with this standard.

xiii. Repowering: In addition to repairing or replacing SES components to maintain the system, a Large Principal-Use SES may at any time be repowered by reconfiguring, renovating, or replacing the SES to increase the power rating within the existing project footprint.

    a. A proposal to change the project footprint of an existing SES shall be considered a new application, subject to the ordinance standards at the time of the request. [Expenses for legal services and other studies resulting from an application to modify an SES will be reimbursed to Sherman Township by the SES owner in compliance with established escrow policy.]

xiv. Decommissioning: A decommissioning plan is required at the time of application.

a. The decommission plan shall include:

   i. The anticipated manner in which the project will be decommissioned, including a description of which above-grade and below-grade improvements will be removed, retained (e.g. access drive, fencing), or restored for viable reuse of the property consistent with the zoning district,

   ii. The projected decommissioning costs for removal of the SES (net of salvage value in current dollars) and soil stabilization, less the amount of the surety bond posted with the State of Michigan for decommissioning of panels installed on PA 116 lands,

   iii. The method of ensuring that funds will be available for site decommissioning and stabilization (in the form of surety bond, irrevocable letter of credit, or cash deposit), and

b. A review of the amount of the performance guarantee based on inflation, salvage value, and current removal costs shall be completed every 5 years, for the life of the project, and approved by the Sherman Township Board. An SES owner may at any time:

   i. Proceed with the decommissioning plan approved by the Planning Commission and remove the system as indicated in the most recent approved plan; or

   ii. Amend the decommissioning plan with Planning Commission approval and proceed according to the revised plan.

c. Decommissioning an SES must commence when the soil is dry to prevent soil compaction and must be complete within 18 months after abandonment. An SES that has not produced electrical energy for 12 consecutive months shall prompt an abandonment hearing.

6) Site Plans

A) Site Plans and supporting application materials for a Principal-Use SES shall include a detailed site plan including all applicable requirements found under ARTICLE XVIII, SITE DEVELOPMENT PLAN, of this ordinance, except that site plans for large principal-use SES shall be submitted at a scale of 1” = 200 feet.