Flushing Township
Solar Energy Zoning Ordinance Provisions
AMENDED DECEMEBER, 2022

Article 2 DEFINITIONS

LANDSCAPED BERM: An earth mound designed to provide visual interest on a site, screen undesirable views, reduce noise, or fulfill other such purposes.

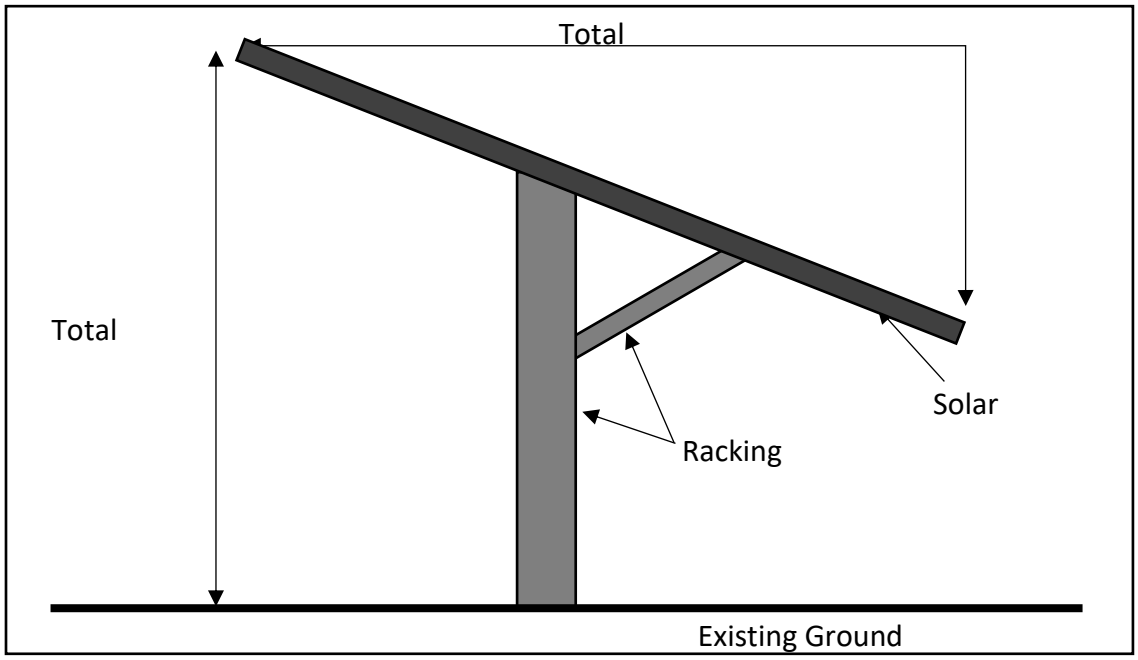
GREENBELT: An open area which may be cultivated or maintained in a landscaped state surrounding development or used as a buffer between land uses or to mark the edge of an urban or developed area.

SOLAR ENERGY COLLECTOR: A device, structure, or part of a device or structure that transforms direct solar energy into thermal, chemical, or electrical energy and that contributes significantly to a structure's energy supply.

SOLAR ENERGY COLLECTOR, GROUND MOUNTED: A solar energy collector that is not attached to and is separate from any building on the parcel of land on which the solar energy collector is located (Figure 1).

SOLAR ENERGY COLLECTOR, ROOF-MOUNTED: A solar energy collector that is attached to a building's roof on the parcel of land including solar shingles.

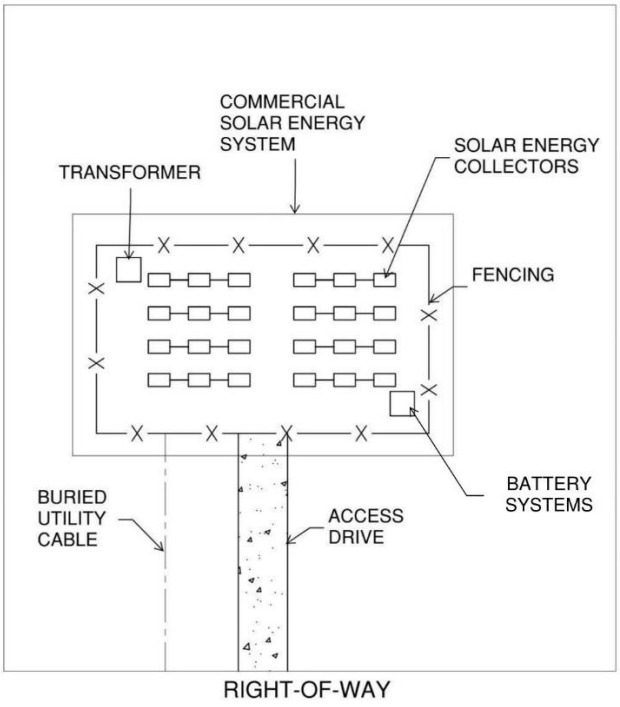
Figure 1: Ground Mounted Solar Energy Collector Illustration



SOLAR ENERGY SYSTEM: One or more solar energy collectors or structural design features of a structure that relies upon sunshine as an energy source and is capable of collecting, distributing, and storing (if appropriate to the technology) the sun's radiant energy for a beneficial use.

SOLAR ENERGY SYSTEM, COMMERCIAL: A utility-scale facility of ground-mounted solar energy collectors with the primary purpose of wholesale or retail sales of generated electricity, commonly referred to as solar farms. A commercial solar energy system includes the solar panels, internal and perimeter roadways, spacing for service, fencing, and any other structure, transformer, or devices of the like needed for solar production or operation of the system. See Figure 2.

Figure 2: Commercial Solar Energy System Illustration



SOLAR ENERGY SYSTEM, ON-SITE: A solar energy system designed to help meet the electrical needs within the limits of the area encompassed by the tract area or parcel of record on which the activity is conducted. An on-site solar energy system may include ground-mounted, roof-mounted solar energy collectors, or a combination of the two. The majority of the electricity generated by an on-site solar energy system must remain on the site, and not be utilized for wholesale or retail sale.

RACKING: Racking is any structure or building material used in the mounting of a solar panel.

SOLAR PANEL: A panel consisting of an array of solar cells used to generate electricity directly from sunlight.

Article 3 GENERAL REGULATIONS

Section 20-324 Landscaping and Screening

The planning commission may require the installation of a Landscaped Berm and/or Greenbelt to visually screen special land uses from the right-of-way or other uses, and when a commercial, industrial, or multi-family land use or zoning district abuts a single-family residential zoning district or use. The following are minimum standards and may be amended by the Planning Commission during site plan review.

(a) **Greenbelt:** Where required, greenbelts shall conform to the following standards:
   (1) A required greenbelt or greenbelt buffer may be interrupted only to provide for roads or driveways for vehicular access.
   (2) Grass, ground cover, or other suitable live plant material shall be planted over the entire greenbelt area, with the exception of sidewalks and driveways.
   (3) A minimum of two (2) deciduous trees or two (2) evergreen trees shall be planted for each thirty (30) linear feet or portion thereof of required greenbelt length. Required trees shall be at least five (5) feet tall and may be planted at uniform intervals, at random, or in groupings.
   (4) A minimum of four (4) eighteen (18) inch-high shrubs shall be required for each thirty (30) linear feet of greenbelt area. Required shrubs may be planted at uniform intervals, at random, or in groupings.
   (5) For the purpose of determining required plant material, required greenbelt area length shall be measured along the exterior periphery of the greenbelt area inclusive of all driveways.
   (6) Trees or shrubs shall be planted at least three (3) feet from any property line.

(b) **Landscaped Berms:** Where required, landscaped berms shall conform to the following standards:
   (1) The berm shall be at least three (3) feet above the grade elevation and shall be constructed with slopes no steeper than one (1) foot vertical for each three (3) feet horizontal. For the purposes of this provision, grade elevation shall be the ground elevation at the property line adjacent to the proposed berm.
   (2) The berm area shall be planted with grass or other suitable ground cover to ensure that it withstands wind and weather and retains its height and shape.
   (3) A minimum of one (1) deciduous or one (1) evergreen tree shall be planted for each thirty (30) linear feet or portion of required berm.
   (4) Eight (8) shrubs may be planted as substitute for each tree required in Subsection 20-324(b)(3) if the same visual screening effect is achieved.

(5) Required trees and shrubs may be planted at uniform intervals, at random, or in groupings.
(6) For the purpose of determining required plant material, required berm length shall be measured along the exterior periphery of the berm.
(7) The edge of the berm shall be at least three (3) feet from any property line and shall not cause any additional stormwater runoff onto adjacent properties.

(c) **Maintenance:** All required landscaping shall be maintained in a healthy, neat, and orderly state, free from refuse and debris. Dead or diseased trees or shrubs shall be removed and replaced.

Article 4 SITE REGULATIONS

Section 20-420 Solar Energy System Regulation

(a) All Solar Energy Collectors
(1) The installation of any solar panel (on-site or commercial) shall not negatively impact adjacent properties with additional or excessive stormwater runoff and/or drainage.
(2) It shall be shown that all panels are adequately secured to the surface upon which they are mounted and that the mounting structure has the capability of supporting the panels.
(3) All panels shall have tempered, non-reflective surfaces.
(4) Solar energy collectors shall be repaired, replaced, or removed within three months of becoming nonfunctional.
(5) Each system shall conform to applicable industry standards including those of the American National Standards Institute (ANSI).
(6) Solar energy collectors shall be installed, maintained, and used only in accordance with the manufacturer's directions. Upon request, a copy of such directions shall be submitted to the building inspector prior to installation. Building inspector approval is required.
(7) Solar energy collectors and installation and uses shall comply with construction code, electrical code, and other state requirements.

(b) On-Site Roof-Mounted Solar Energy Collectors shall:
(1) Be such a weight to be safely supported by the building. Building inspector approval is required.
(2) Be considered part of the building and meet all the required building height and setback requirements.
(3) Not project more than 2 feet above highest point of roof or exceed maximum building height limitations allowed in that zoning district.

(4) Not be located within 3 feet of any peak, eave, or valley to maintain adequate accessibility.

(c) On-Site Ground-Mounted Solar Energy Collectors:

(1) Are only permitted in the side and rear yards, unless permitted in front yard by issuance of a discretionary special use permit pursuant to Section 20-1804(A) of the Ordinance.
(2) Shall not extend into the side yard or rear setback when oriented at any designed tilt angle.
(3) Shall not exceed 12 feet in height measured from the ground at the base of such equipment. The height of the ground-mounted solar energy collector shall be measured from ground level to the highest point of the solar panel.
(4) Shall be a minimum of 25 feet from all-natural features including water courses, wood lots, wetlands, and 100-year floodplains.
(5) Shall be included in calculations to determine lot coverage and shall not exceed the maximum lot coverage permitted in the relevant zoning district.
(6) Shall be considered an accessory use in the RU-1, RU-2, RU-4, RSA, C-1, C-2, C-3, M-1, and M-2 zoning districts if the total area of ground mounted solar energy collectors and other elements of the on-site solar energy system account for fifteen (15%) percent or less of total lot coverage.
(7) Shall require a Discretionary Special Use Permit if the total area of ground mounted solar energy collectors and other elements of the on-site solar energy system account for more than fifteen (15%) percent of total lot coverage.
(8) Ground-mounted solar energy collectors and other elements of an on-site solar energy system shall meet the requirements of Section 20-400 Accessory Structures.

Article 7 DISTRICT REGULATIONS

Section 20-701 Zoning District Uses

ZONING DISTRICT USES **SCHEDULE OF USES - Uses Permitted by Right (P), Uses Permitted by Non-Discretionary Special Use Permits (NS), Uses Permitted by Discretionary Special Use Permit (DS), Accessory Uses and Buildings (A)**									
TYPE OF USES	DISTRICTS								
	RSA	RU-1	RU-2	RU-4	C-1	C-2	C-3	M-1	M-2
ACCESSORY USES, STRUCTURES, AND BUILDINGS									
On-Site Roof-Mounted Solar Energy Collector	A	A	A	A	A	A	A	A	A
On-Site Ground-Mounted Solar Energy Collector (15 percent Lot Coverage or Less)	A	A	A	A	A	A	A	A	A
On-Site Ground-Mounted Solar Energy Collector (Over 15 percent of Lot Coverage)	DS	DS	DS	DS	DS	DS	DS	DS	DS
INDUSTRIAL AND RELATED USES									
Commercial Solar Energy Collector	DS							DS	DS

Article 18 SPECIAL USE PERMITS

Section 20-1804 Requirements for Permitted Special Land Uses

(OO) Commercial Solar Energy System

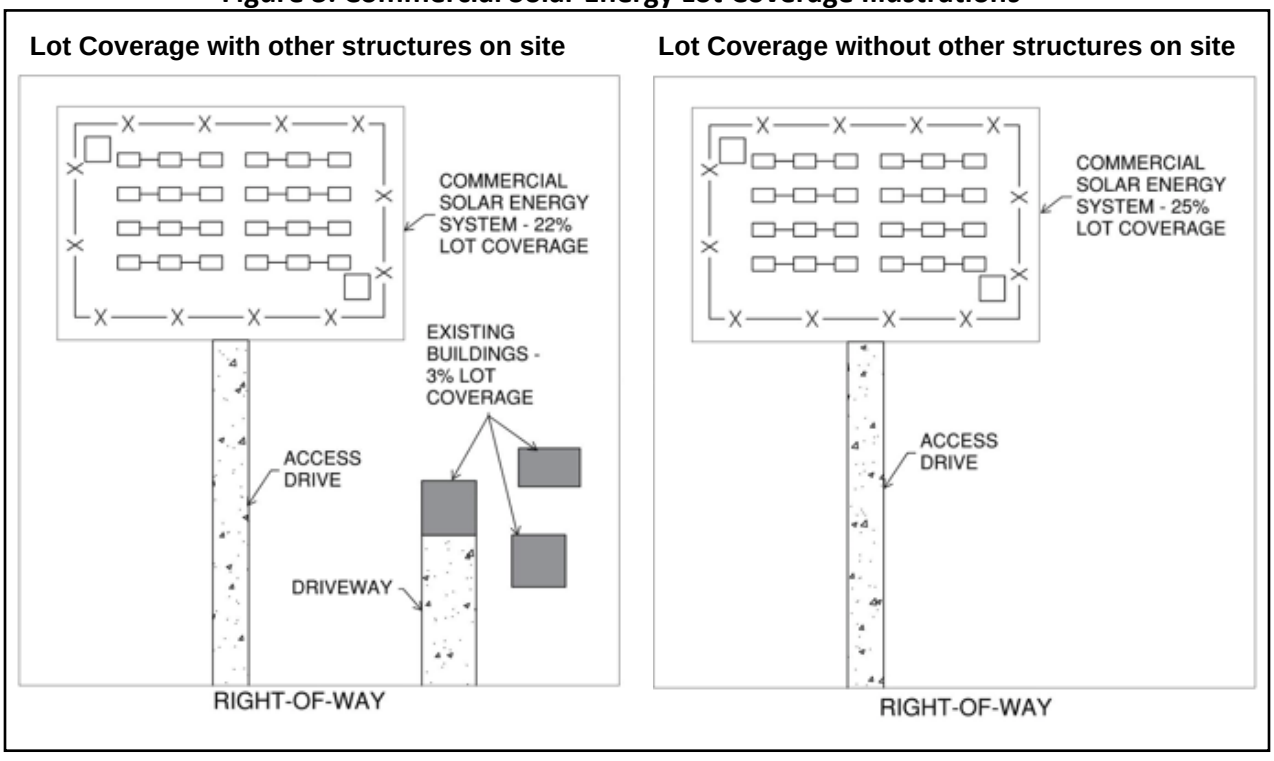
(a) The commercial solar energy system must meet all requirements in Section 20-420 (a) all solar energy collectors.

(b) All commercial solar energy systems shall follow the following requirements:

(1) Ground-mounted solar energy collectors shall not exceed 12 feet in height measured from the ground at the base of such equipment. The height of the ground-mounted solar energy collector shall be measured from ground level to the highest point of the solar panel.

(2) The total area of the commercial solar energy system shall be included in calculations to determine lot coverage and shall not exceed a maximum lot coverage of twenty-five (25%) percent regardless of the residing zoning district (Figure 3).

Figure 3: Commercial Solar Energy Lot Coverage Illustrations



(3) Commercial solar energy systems must be located on lots larger than 2 acres.

(4) Visual Buffer Requirements:

(i) **Residential Property:** When a commercial solar energy system is adjacent to a residential use, the system shall be set back at least three hundred (300) feet from the property line and at least five hundred (500) feet from any dwelling unit. A landscaped visual buffer shall be provided within the setback area that obscures the commercial solar energy system from view.

(ii) **Street Frontage:** Commercial solar energy systems shall be setback at least three hundred (300) feet from any road right-of-way. A landscaped visual buffer shall be provided within the setback area that obscures the commercial solar energy system from view.

(iii) **Visual Buffer:** A required landscaped visual buffer, including a greenbelt and/or landscaped berm, that meets the minimum standards of Section 20-324 shall be installed to effectively screen the commercial solar energy system from view. The visual buffer shall be installed prior to the placement of solar collectors to the extent feasible and must be maintained by the property owner. The Planning Commission may require the installation of additional vegetation and other landscaping or visual screening in excess of the minimum requirements to screen residential districts and uses. The planting of native ground covers shall be maintained on site during the operation, until the site is decommissioned.

(iv) **Setback:** Required setback areas and visual buffers may be used for agricultural purposes or left in a natural state. In addition to the residential and street frontage setback requirements in this Section, commercial solar energy systems shall meet the required front, side, and rear setbacks for the RSA zoning district. If a commercial solar energy system is located on a site that includes multiple parcels owned by the same property owner that form a single contiguous site, some setback requirements may be waived by the Planning Commission during site plan review.

(v) The Planning Commission may approve substitution of vegetation for an obscuring fence, wall, and other protective barriers as long as it meets requirements in Section 20-408.

(vi) The planting of native ground covers shall be maintained on site during the operation, until the site is decommissioned.

(5) The applicant shall provide verification that adequate infrastructure exists to transport the electricity generated by the commercial solar energy system into the larger grid system.

(6) Power and communication lines running between banks of solar energy collectors may be placed above ground, provided the lines are placed no higher than the top of the solar panels.

(7) Power and communication lines to electric substations or interconnections with buildings shall be buried underground. The requirement for underground power and communication lines may be waived in the following circumstances.

(i) Where shallow bedrock, water courses, or other elements of the natural landscape interfere with the ability to bury lines.

(ii) When required by the utility company.

(iii) When granted a waiver by the Planning Commission during site plan review.

(8) The installation of the ground-mounted solar energy collectors shall not disturb the existing topography.

(9) Commercial solar energy systems shall be centrally located on a property, or in the least visibly intrusive location whenever possible.

(10) Upon submittal of a special land use application and site plan for review by the township, the applicant shall deposit funds into an escrow account to address the costs of professional planning, engineering, legal, and other required reviews. The amount of the deposit shall be determined in the township's fee schedule, which is reviewed annually. Any remaining funds will be returned to the applicant following final action. The township may request additional funds be deposited if the escrow is expended prior to final action on the application.

(c) Decommissioning:

(1) Any commercial solar energy system that is not operated or found to be inoperable due to disrepair for a continuous period of six (6) months shall be considered abandoned. If it is found abandoned, the Planning Commission, upon notice by the Zoning Administrator, shall provide written notice to the applicant/owner/operator of a hearing before the Planning Commission to hear evidence that the commercial solar energy system should not be decommissioned.

(2) If a commercial solar energy system is repaired, a Licensed Professional Engineer (hired at the expense of the owner or operator) shall certify its safety prior to the resumption of operation.

(3) Within ninety (90) days of the hearing where the Planning Commission has determined that a commercial solar energy system is abandoned or inoperable, the owner/operator shall obtain a permit from the township, and any other necessary entities to remove all structures and equipment, consistent with the approved decommissioning plan.

(4) Failure to obtain necessary permits within the 90-day period provided in this subsection shall be grounds for the township to remove the commercial solar

energy system at the Owner's expense, consistent with the decommissioning plan.

(5) Decommissioning shall include removal of all equipment, including all materials above and below ground, and internal or perimeter access roads. The site shall be restored to a condition that reflects the character of the site prior to installation of the commercial solar energy system including topography, vegetation, soils, drainage, and any unique environmental features.

(6) The restoration shall include road repair and hazardous waste cleanup, if any, all re-grading, soil stabilization, and re-vegetation necessary to return the subject property to a stable condition consistent with conditions existing prior to establishment of the commercial solar energy system.

(7) The restoration process shall comply with all state, county, or local erosion control, soil stabilization, and/or runoff requirements or ordinances and shall be completed within one year. Extensions may be granted upon request to the Planning Commission prior to expiration of the one-year requirement for completed decommissioning.

(d) Decommissioning Plan:

(1) Prior to site plan approval, a commercial solar energy system shall have a plan approved by the township for decommissioning the site that describes the expected duration of the project, how the improvements will be decommissioned, a Professional Engineer's estimated cost of decommissioning, and the financial resources necessary to accomplish decommissioning. The decommissioning plan shall address all applicable items in the previous subsection as well as the following.

(i) The financial resources for decommissioning shall be in the form of a bond or similar financial instrument with a replenishment obligation and shall be deposited by an agent acceptable to the township.

(ii) The financial resources for decommissioning shall be one hundred twenty-five (125%) percent of the estimated removal and restoration cost. The Planning Commission shall require independent verification of the adequacy of this amount from a Professional Engineer.

(iii) The Planning Commission, Building Official, and Zoning Administrator shall annually review the amount deposited for removal, site restoration, and administration costs to ensure it is adequate for these purposes. If the Planning Commission determines that these amounts are not adequate, the township shall require the owner/operator to make additional deposits to increase the amount of the surety bond to cure such inadequacy.

(iv) If decommissioning is not completed by the applicant within one year of receiving the necessary permits for decommissioning, the township shall

have access to the financial resources for the expressed purpose of completing decommissioning. Funds may be used for administrative fees and costs associated with decommissioning.

(v) The township is granted the right of entry onto the site, pursuant to reasonable notice, to effect or complete decommissioning.

(vi) The township is granted the right to seek injunctive relief to effect or complete decommissioning, as well as the right to seek reimbursement from the applicant or applicant's successor for decommissioning costs in excess of the amount provided for in the decommissioning plan and to file a lien against any real estate owned by applicant or applicant's successor, or in which they have an interest, for the amount of the excess, and to take all steps allowed by law to enforce said lien.

(e) Change in Ownership

(1) The township must be notified in advance of any change in ownership of a commercial solar energy system. The following information shall be provided in the notification:

(i) The current owner's name, address, and contact information (email and phone number).

(ii) The proposed new owner's name, address, and contact information (email and phone number).

(iii) The property address, including Parcel ID number.

(iv) If there is to be a change in responsibility for oversight and operation of the system, the name, address, and contact information for the new operator (email and phone number) will be required as well.