Caledonia Township

Solar Energy Zoning Ordinance Provisions – Public Hearing

Article 2 DEFINITIONS

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.

SOLAR COLLECTOR: A device or combination of devices, 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: Radiant energy (direct, diffuse, and reflected) received from the sun.

SOLAR ENERGY SYSTEM: A solar collector or other device or structural design feature 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.

RACKING: Racking is any structure or building material used in the mounting of a solar panel. (Figure 1)

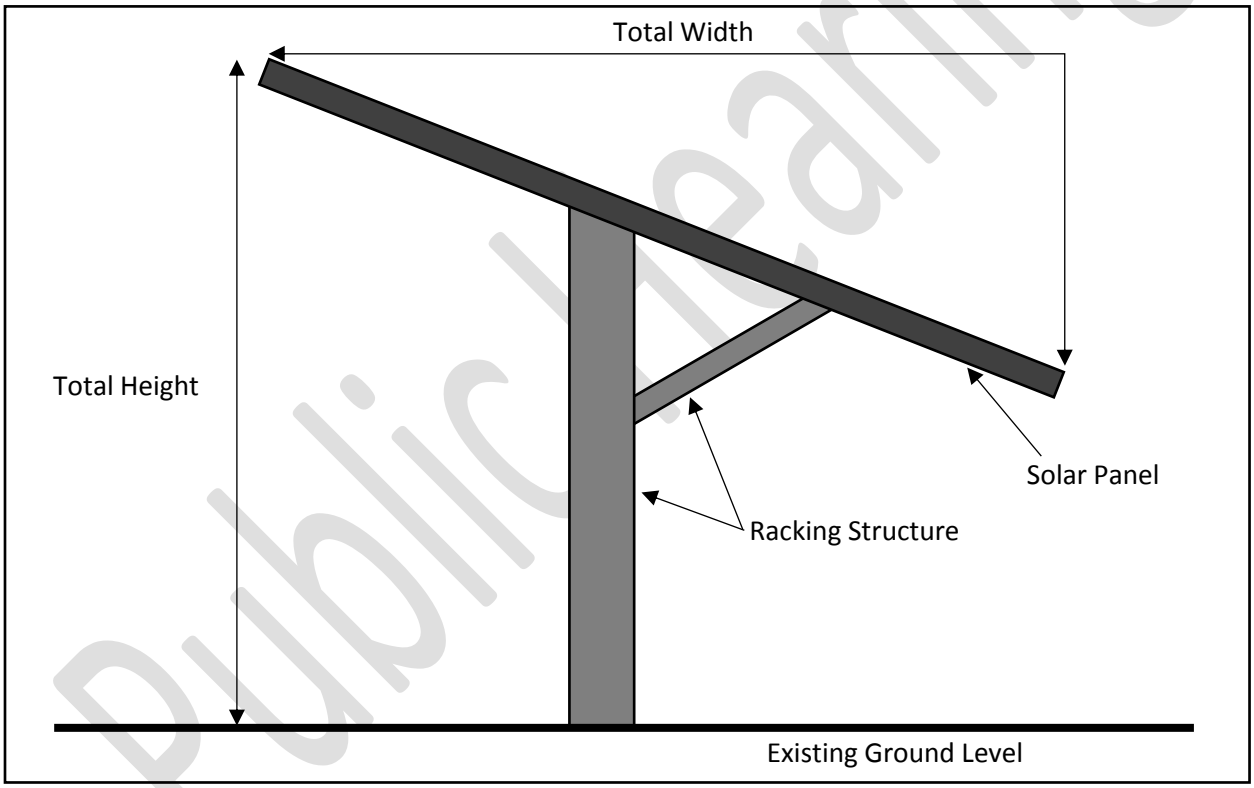

Figure 1

BUILDING-MOUNTED SOLAR ENERGY COLLECTOR: A solar energy collector that is attached to a structure or building on the parcel of land including solar shingles.

GROUND-MOUNTED SOLAR ENERGY COLLECTOR: 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)

COMMERCIAL SOLAR ENERGY SYSTEM: A utility-scale facility of solar energy collectors with the primary purpose of wholesale or retail sales of generated electricity. Commonly referred to as solar farms.

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

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SOLAR SHINGLES: A roofing product made by combining thin film solar technology (which converts sunlight to electricity) with a durable backing to provide a structural roof shingle comparable to traditional roofing shingles.

Article 9 ZONING DISTRICTS, MAP, AND SCHEDULE OF REGULATION

Sec. 9.5 – A-1 District: Agricultural Production

9.5.2 Uses Permitted by Right

J.1. On-site Building-mounted solar energy collectors

J.2. On-site Ground mounted solar energy collectors with a does not exceed a ratio per acre 96 square feet of solar energy system area.

9.6.3 Uses Permitted by Special Use Permit Pursuant to Article 7 of this Ordinance

MM. Commercial Solar Energy System

Sec. 9.6 – A-2 District: Agricultural Production/Rural Residential

9.6.2 Uses Permitted by Right

K.1. On-site Building-mounted solar energy collectors.

K.2. On-site Ground mounted solar energy collectors does not exceed a ratio per acre 96 square feet of solar energy system area.

9.6.3 Uses Permitted by Special Use Permit Pursuant to Article 7 of this Ordinance

FF. Commercial Solar Energy System

Sec. 9.7 – R-1A District: One-family Rural Residential

9.7.2 Uses Permitted by Right

C.1. On-site Building-mounted solar energy collectors.

C.2. On-site Ground mounted solar energy collectors with a total of 96 square feet.

Sec. 9.8 – R-1B District: One- family Low Density Residential

9.8.2 Uses Permitted by Right

C.1. On-site Building-mounted solar energy collectors.

C.2. On-site Ground mounted solar energy collectors with a total of 96 square feet.

Sec. 9.9 – R-1C District: One-family Medium Density Residential

9.9.2 Uses Permitted by Right

C.1. On-site Building-mounted solar energy collectors.

C.2. On-site Ground mounted solar energy collectors with a total of 96 square feet.

Sec. 9.10 – R-1D District: Two-Family Residential District

9.10.2 Uses Permitted by Right

C.1. On-site Building-mounted solar energy collectors.

C.2. On-site Ground mounted solar energy collectors with a total of 96 square feet.

Sec. 9.11 – R-M1 District: Multiple Family Residential

9.11.2 Uses Permitted by Right

C.1. On-site Building-mounted solar energy collectors.

C.2. On-site Ground mounted solar energy collectors with a total of 96 square feet.

Sec. 9.12 – R-T District: Mobile Home Development

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9.12.2 Uses Permitted by Right

F.1. On-site Building-mounted solar energy collectors.

F.2. On-site Ground mounted solar energy collectors with a total of 96 square feet.

Sec. 9.13 – O-1 District: Office and Administrative

9.13.2 Uses Permitted by Right

J.1. On-site Building-mounted solar energy collectors.

J.2. On-site Ground mounted solar energy collectors does not exceed a ratio per acre 96 square feet of solar energy system area.

9.13.3 Uses Permitted by Special Use Permit Pursuant to Article 7 of this Ordinance

I. Commercial Solar Energy System

Sec. 9.14 – B-1 District: Commercial

9.14.2 Uses Permitted by Right

K.1. On-site Building-mounted solar energy collectors.

K.2. On-site Ground mounted solar energy collectors does not exceed a ratio per acre 96 square feet of solar energy system area.

9.14.3 Uses Permitted by Special Use Permit Pursuant to Article 7 of this Ordinance

P. Commercial Solar Energy System

Sec. 9.15 – B-2 District: General Business

9.15.2 Uses Permitted by Right

L.1. On-site Building-mounted solar energy collectors.

L.2. On-site Ground mounted solar energy collectors does not exceed a ratio per acre 96 square feet of solar energy system area.

9.15.3 Uses Permitted by Special Use Permit Pursuant to Article 7 of this Ordinance

BB. Commercial Solar Energy System

Sec. 9.16 – B-3 District: Rural Commercial

9.16.2 Uses Permitted by Right

R.1. On-site Building-mounted solar energy collectors

R.2. On-site Ground mounted solar energy collectors does not exceed a ratio per acre 96 square feet of solar energy system area.

9.16.3 Uses Permitted by Special Use Permit Pursuant to Article 7 of this Ordinance

LL. Commercial Solar Energy System

Sec. 9.17 – M-1 District: Light Industrial

9.17.2 Uses Permitted by Right

R.4.a. On-site Building-mounted solar energy collectors.

R.4.b. On-site Ground mounted solar energy collectors does not exceed a ratio per acre 96 square feet of solar energy system area.

9.17.3 Uses Permitted by Special Use Permit Pursuant to Article 7 of this Ordinance

Y. Commercial Solar Energy System

Sec. 9.18 – M-2 District: Heavy Industrial

9.18.2 Uses Permitted by Right

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J.1. On-site Building-mounted solar energy collectors.

J.2. On-site Ground mounted solar energy collectors does not exceed a ratio per acre 96 square feet of solar energy system area

9.18.3 Uses Permitted by Special Use Permit Pursuant to Article 7 of this Ordinance

H. Commercial Solar Energy System

Article 15 DESIGN STANDARDS

Sec. 15.60 Solar Energy 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 storm water 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 equipment shall be repaired, replaced, or remove 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. Onsite Building-Mounted Solar Energy Collector
   1. Solar energy collectors shall be such a weight to be safely supported by the structure. Building inspector approval is required.
   2. Solar energy collectors shall be installed on any roof surface of an existing structure.
   3. Structure or Building- mounted solar systems shall not exceed the maximum allowed height in any zoning district.
   4. Solar energy collectors shall not project more than 2 feet above highest point of roof or exceed maximum building height limitations allowed in that zoning district.
   5. Solar energy collectors shall not be located within 3 feet of any peak, eave, or valley to maintain adequate accessibility.
   6. Solar energy collectors may be permitted to be mounted on a sign, but may not exceed 96 square feet.

C. Onsite Ground-mounted Solar Energy Collector
   1. Permitted in the rear and side yards, but not permitted in rear and side yard required setbacks. The Planning Commission can waive to allow in the front yard or required rear and side yard, in which case the Planning Commission shall require buffers from the adjacent property.

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2. Ground-mounted solar energy systems may not extend into the side-yard or rear setback when oriented at minimum design tilt.
3. Ground-mounted solar energy collectors shall not exceed 9 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. The total area of ground-mounted solar energy collections shall be included in calculations to determine lot coverage and shall not exceed the maximum lot coverage.

D. Commercial Solar Energy Collector
1. Commercial solar energy collector systems that have all structures related to the solar energy collector system shall be 50 feet from the property line or right-of-way line.
   (a) Commercial solar energy collector systems shall be screened from residential dwelling units and/or residential zoning districts by providing either greenbelt with two (2) deciduous canopy trees or one (1) deciduous canopy tree and one (1) evergreen tree and four (4 large) per twenty-five (25) linear feet along the property line, a 5 foot high wall, fence, or berm.
2. The planting of native ground covers that shall be maintained on site during the operation, until the site is decommissioned.
3. Provide verification that adequate infrastructure exists to transport the electricity generated into the larger grid system.
4. Power and communication lines running between the banks of the solar panels may be placed above ground, provided the lines are placed no higher than top of the solar panels.
5. Power and communication lines to electric substations or interconnections with buildings shall be buried underground.
6. Exception for underground power communication lines:
   (a) Where shallow bedrock, water courses, or other elements of the natural landscape interfere with the ability to bury lines.
   (b) When required by the utility company.
   (c) Unless otherwise determined by the Planning Commission.
7. The installation of the solar energy collectors shall not disturb the existing topography or soil.
8. A decommissioning plan shall be required to ensure that facilities are properly removed after their useful life. Decommissioning of solar panels must occur in the event they are not in use for 12 consecutive months. The plan shall include provisions for removal of all structures, foundations, electrical equipment and internal or perimeter access roads, restoration of soil and vegetation, and a plan ensuring financial resources will be available to fully decommission the site. The applicant shall submit a financial guarantee in the form of a letter of credit, cash deposit or bond in favor of the municipality equal to 125 percent of the costs to meet the requirements of the decommissioning plan. The type of guarantee is subject to the Planning Commission's approval.

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9. Aviation Analysis. If the project is within 2 miles of an airport, the applicant must complete and provide the results of the Solar Glare Hazard Analysis Tool (SGHAT) for the Airport Traffic Control Tower cab and final approach paths, consistent with the Interim Policy, FAA Review of Solar Energy Projects on Federally Obligated Airports, or successor policy. The applicant must also complete the Air Space Case Analysis (Form 7460) and provide the results.

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