

CHARTER TOWNSHIP OF MONROE

ORDINANCE NO. 145

ADOPTED: 4/19/2022

EFFECTIVE: EIGHT DAYS AFTER PUBLICATION AFTER ADOPTION

SOLAR ENERGY SYSTEMS ORDINANCE

THE CHARTER TOWNSHIP OF MONROE

MONROE COUNTY, MICHIGAN

ORDAINS:

SECTION I

**ADDITION OF SECTION 8.1545 TO THE CHARTER TOWNSHIP OF MONROE
ZONING ORDINANCE**

The Monroe Charter Township Zoning Ordinance No. 52-2010 is hereby amended to add Section 8.1545 to Chapter 8 USE STANDARDS as follows:

Section 8.1545 - Solar Energy Systems (SES) Ordinance - Small-Scale SES, Building-Mounted SES, Ground-Mounted SES, and Large-Scale SES.

Solar Energy Systems shall conform and be subject to the following.

A. INTENT

The Charter Township of Monroe promotes the effective and efficient use of solar energy systems. It is the intent of the Township to permit these systems by regulating their siting, design, and installation to protect public health, safety, and welfare, and to ensure their compatibility with adjacent land uses. Solar Energy Systems shall comply with the provisions of this section and all other applicable ordinances, and are only permitted as authorized by this section.

It shall be unlawful to construct, erect, install, alter, or locate any SES within the Charter Township of Monroe except in compliance with this Ordinance.

B. DEFINITIONS

The following words and phrases shall have the following definitions when used in this section.

- (1) Ancillary Solar Equipment: Any accessory part or device of a solar energy system that does not require direct access to sunlight, such as batteries, electric meters, converters, racking/supports, plumbing, or water heater tanks.
- (2) Photovoltaic (PV) System: A semiconductor material that generates electricity from sunlight.
- (3) Solar Array: Solar cells or photovoltaic cells grouped together to make solar panels.
- (4) Solar Collector: A solar photovoltaic cell, panel, or array, or solar hot air device, that relies upon solar radiation as an energy source for the generation of electricity.
- (5) 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 consists of the front of the SES, and does not include frames, supports, and mounting hardware.
- (6) Solar Energy: Radiant energy received from the sun that can be collected in the form of heat or light by a Solar Energy System.
- (7) Solar Energy System (SES): A system (including Solar Collector Surfaces and Ancillary Solar Equipment) either affixed to a permanent principal or accessory building or functioning as a free-standing structure, that collects and converts solar radiant energy into thermal, chemical, or electrical energy. Such energy may or may not be stored on site prior to distribution. Solar Energy Systems include, but are not limited to, photovoltaic (PV) electric power systems and Solar Thermal Heating Systems.
- (8) Small-Scale SES: A ground-mounted or building-mounted SES that is accessory to the principal use on the parcel of land and with the primary purpose to generate electricity for the principal use on the site.
- (9) Large-Scale SES: An SES is the principal and primary use on the parcel of land. The sale and distribution of generating electricity for sale and distribution to an authorized public utility through the electrical grid or through export to the wholesale market.
- (10) Building-Mounted SES: A Solar Energy System that is attached or an integral part of a primary or accessory building or structure as the principal method of physical support.
- (11) Ground-Mounted SES: A freestanding Solar Energy System that is not attached to and is separate from any building or structure on the same parcel of land on which the Solar Energy System is located. A ground-mounted SES is considered a structure permanently affixed to the ground, regardless of the ease with which it can be moved.
- (12) Solar Thermal Heating System: A system of equipment that converts sunlight into heat.
- (13) Wildlife-Friendly Fencing: A fencing system with openings that allow wildlife to traverse over or through a fenced area.

C. SMALL-SCALE (SES)- GROUND-MOUNTED AND BUILDING-MOUNTED.

The following shall apply to all small-scale SES in the Township, except as otherwise permitted in this Ordinance.

1. **Permitted Zoned Districts.** Small-Scale SES shall be permitted as an accessory use or accessory structure in all zoning districts, and subject to the following conditions.

A. Ground Mounted Small-Scale SES Area Conditions, including Placement, Height, Screening, and Glare Prevention. Ground Mounted Small-Scale SES shall be located in the rear yard for the Zoning District in which it is located, not in the required front yard, side yard, or corner side yard setback of any parcel of land. For waterfront lots, the required yard setback from the street frontage must be met.

i. A Ground Mounted Small-Scale SES shall not occupy more than 800 square feet of ground floor area on any parcel of land and must conform to the limitations of the maximum lot coverage allowed in that Zoning District.

ii. A Ground Mounted Small-Scale SES shall not be located within a dedicated easement or right-of-way.

iii. A Ground Mounted Small-Scale SES shall not exceed 6 feet in height as measured from grade to the top of the system when oriented at maximum tilt.

iv. A Ground Mounted Small-Scale SES must be screened when possible and practicable using architectural features, landscaping, or other screening that will harmonize with the character of the property and surrounding area.

v. A Ground Mounted Small-Scale SES shall have protective measures designed to avoid or reduce glare. This may include solar panels treated with anti-reflective measures, such as black-on-black monocrystalline solar panels, an anti-reflective coating to mitigate glare and increase light absorption in the solar cell, and/or siting, angling and orientation of the solar panels for glare prevention.

B. Building Mounted Small-Scale SES Area Conditions, including Placement, Height, Nonconformities and Glare Prevention. Building Mounted Small-Scale SES shall not occupy more area than the square footage of the building it is attached to and in no case shall overhang or dangle from the building.

i. A Building Mounted Small-Scale SES shall not exceed the height limitations for accessory buildings or for the zoning district in which the primary building is located.

ii. Placement of Building Mounted Small-Scale SES on flat roofs shall be allowed provided that panels do not extend horizontally past the roof line.

iii. A Building Mounted Small-Scale SES installed on a nonconforming building, structure, or use shall not be considered an expansion of the nonconformity, other than height, which must meet the requirements herein.

iv. The Zoning Board of Appeal shall have the authority to consider appeals for Building Mounted Small-Scale SES to exceed the height limitations.

iv. A Building Mounted Small-Scale SES shall have protective measures to avoid or reduce glare. This may include solar panels treated with anti-reflective measures such as black-on-black monocrystalline solar panels, an anti-reflective coating to mitigate glare and increase light absorption in the solar cell, and/or siting, angling and orientation of the solar panels for glare prevention.

2. Zoning Approval and Building permit required: All Small-Scale SES require zoning approval from the Zoning Enforcement Officer and a building permit issued by the Building Official meeting the following requirements.

A. The installation of Building Mounted Small-Scale SES, including poles and other structures, to not total more than square footage of the building it is attached to and to be used to power incidental lighting or other fixtures on the site.

B. The installation of Ground Mounted Small-Scale SES shall not exceed 6 feet in height from grade to the top of the system when oriented at maximum tilt and have a Solar Collector Surface of less than 800 square feet used to power incidental lighting and other fixtures on the site.

C. Repair or replacement of existing SES and Ancillary Solar Equipment, provided that there is no expansion to the size or coverage area of the Solar Energy System.

D. An SES shall be installed, maintained and used only in accordance with the manufacturer's specifications.

E. Any and all solar equipment must comply with Michigan State Building Codes.

F. The plans of the solar equipment construction shall be certified by a registered structural engineer.

G. A separate electrical permit is required.

3. Relocation: An SES shall not be moved to another location without first complying with the approval process of the ordinance for the new location of the SES.

D. LARGE-SCALE (SES) DEVELOPMENT AND DESIGN STANDARDS.

The following shall apply to all new Large-Scale SES in the Township, except as otherwise permitted in this Ordinance.

1. **Special Land Use.** All Large-Scale SES require special land use and site plan approval from the Planning Commission in accordance with Article 17 and subject to the requirements in this Section D.

2. **Permitted Zoned Districts.** Large-Scale SES shall be located only in the LI (Light Industrial) Zoned District.

a. The Zoning Board of Appeal shall not have the authority to consider appeals for Large-Scale SES to be located in any other zoning district.

3. **Height.** A Large-Scale SES shall not exceed 20 feet in height as measured from grade to the top of the system when oriented at maximum tilt.

4. **Setbacks.** The setback distance of a Large-Scale SES shall be measured from the property line or road right-of-way to the closest point of the SES at minimum tilt or any SES components and as follows.

a. In accordance with the minimum required setbacks for principal buildings or structures in the LI (Light Industrial) Zoning District, pursuant to Article 5.

b. A Large-Scale SES is not subject to property line setbacks for common property lines of two or more participating lots, except road right-of-way setbacks shall apply.

c. A Large-Scale SES shall not be located within a dedicated easement or right-of-way.

5. **Lot Coverage.** Large-Scale SES are exempt from maximum lot coverage requirements or impervious surface standards.

6. **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.

7. **Access Drives.** New access drives within the Large-Scale SES shall be designed to minimize 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 construction of the SES is permitted, provided that the geotextile fabrics and gravel are removed once the SES is in operation.

8. **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.

9. **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.

10. **Glare Prevention.** Large-Scale SES shall have protective measures designed to avoid or reduce glare. This may include solar panels treated with anti-reflective measures such as black-on-black monocrystalline solar panels, an anti-reflective coating to mitigate glare and increase light absorption in the solar cell, and/or siting, angling and orientation of the solar panels for glare prevention.

11. **Sound.** The sound pressure level of a Large-Scale SES and all Ancillary Solar Equipment shall not exceed 45 dBA at the property line of an adjoining non-participating lot.

a. To reduce noise impacts on adjoining property owners, methods such as placing inverters closer to the center of the project or covering axis motors shall be included on the site plan with sound isolines showing predicted sound levels.

b. Sound isolines are similar to contour lines on a topographical map. Sound levels shall be shown in 5 decibel increments, starting at the sound source and extending to the property lines to demonstrate compliance with this standard

12. **Perimeter Fencing.** Large-Scale SES require wire perimeter fencing (barbed wire prohibited) and shall be in compliance with the National Electrical Code (NEC) standards as follows.

a. Perimeter Fencing shall be 7 feet in height.

b. Perimeter Fencing shall be Wildlife-Friendly Fencing made with smooth wiring to prevent injury with openings that allow wildlife to move through.

c. Perimeter Fencing shall be elevated by a minimum of 5 inches.

d. Perimeter Fencing shall be bonded to the grounding electrode system if the fencing is within 16' of any exposed electrical conductors or equipment.

13. **Screening / Landscaping.** All Large-Scale SES screening and landscaping shall be placed outside the perimeter fencing.

a. Large-Scale SES screening or landscaping along rear or side property lines shall be required from all adjacent uses.

b. Screening/landscaping detail shall be submitted as part of the site plan that identifies the type and extent of screening which may include plantings or strategic use of berms, pursuant to Article 10.

c. 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 residential uses and residential zoning districts.

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

14. **Signage.** Signage, including any text, company insignia, advertising, graphics or other inscriptions or designs shall not be located on any part of the Large-Scale SES. All other signage on the site shall comply with the standards of Article 11.

15. **Disrepair and Decommissioning.** If the Large-Scale SES ceases to operate or is abandoned for a period of six months or is deemed by the Building Official to be unsafe or not consistent with code, the Applicant shall repair and restore the system to good working order within a year or, if no longer operating or no longer in compliance with federal, state or local codes, it shall remove the system in its entirety. This shall include removing posts, equipment, panels, foundations and other items so that the ground is restored to its preconstruction state.

SECTION II
ADDITION OF SECTION 8.1545 TO THE CHARTER TOWNSHIP OF MONROE ZONING
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SECTION III
ADDITION TO SECTION 2.02 DEFINITIONS TO THE CHARTER TOWNSHIP OF
MONROE ZONING ORDINANCE

The Monroe Charter Township Zoning Ordinance is hereby amended to add the following to Section 2.02 Definitions:

Solar Energy Systems (SES). “Refer to Article 8, Section 8.1545”.

- P. Sign Height. The vertical distance measured from the average grade at the sign location to the highest point of the sign.
- Q. Site Entry Feature with Signage. A sign located at the entrance to a residential development, industrial park or similar development for the purpose of identifying an entrance, defining a gateway or creating a common identity for the development.
- R. Temporary Sign. Display signs, banners, balloons, festoons or other advertising devices constructed of cloth, canvas, fabric, plastic or other light temporary material, with or without a structural frame or any other sign intended for a limited period of display, but not including decorative displays for holidays or public demonstration.
 - 1. Balloon. Any air filled or gas filled object tethered to a fixed location and used as a means of directing attention to any business, profession, commodity, service, product or entertainment.
 - 2. Banner. A temporary sign made of fabric or other non-rigid material with no enclosing framework.
 - 3. Festoons. A string of ribbons, tinsel, small flags or pinwheels.
- S. Unlawful Sign. A sign for which no valid permit was issued by the Township at the time such sign was erected or a sign that is not in compliance with the current zoning ordinance and does not meet the definition of a nonconforming sign.
- T. Unsafe Sign. A sign that is not properly secured, in danger of falling or otherwise in a condition that is hazardous to the public health, safety or welfare.

Site Plan. A scaled drawing illustrating existing conditions, detailing the proposed use and development of a zoning lot, and including all required elements applicable to the proposed development to ensure compliance with this Ordinance.

Solar Energy Systems (SES). Refer to Article 8, Section 8.1545.

Stable, Commercial. A structure accessible by the general public in which horses or other domestic animals or livestock used for pleasure riding or driving are housed or kept for hire and may include a riding track, public arena or trail riding.

Stable, Private. A structure accessory to a principal use not accessible by the general public, and used for the exclusive stabling, breeding, care, training or riding of horses or other domestic animals or livestock owned by the occupants or boarded by private arrangement. A private stable may include a private arena used exclusively for the exercising, riding or schooling of animals housed or boarded on-site.

State Licensed Residential Facility. A structure or facility constructed for residential purposes to provide resident services and 24 hour supervision or care for six (6) or fewer persons in need of supervision or care, or as licensed by the State of Michigan under the Adult Foster Care Facility Licensing Act, P.A. 218 of 1979, as amended or Child Care Organizations Act, P.A. 116 of 1973, as amended.

Steep Slopes. Slopes with a grade of 12 percent or more.

SECTION IV
ADDITION TO SECTION 4.302 TABLE OF PERMITTED USES BY DISTRICT OF THE CHARTER
TOWNSHIP OF MONROE ZONING ORDINANCE

The Monroe Charter Township Zoning Ordinance is hereby amended to add the following text to Section 4.302 Table of Permitted Uses by District:

Under Industrial Uses

Key to Symbols		Zoning Districts											Use Standards	
P	Principal Use	AG	R-1	R-2	R-3	R-4	R-5	M-U	C-1	C-2	L-I	H-I		M-D
S	Special Use													
A	Accessory Use													
	Prohibited Use													
Industrial Uses														
	Cement, concrete, lime, and gypsum manufacturing											S		§ 8.126
	Contractor's yards										P	P		
	Dry cleaning plant, Industrial laundries										S	S		§ 8.126
	Forging and stamping										S	S		§ 8.126
	Heating/Electrical power plants											P		§ 8.126
	Junkyard; salvage yards										S	S		§ 8.132
	Laboratories for research and development										P	P		
	Lumber yards										P	P		§ 8.140 & 8.141
	Millwork, lumber, planing mills											S		§ 8.126
	Machine shops										P	P		
	Manufacturing, processing, assembly, fabrication of product w/o odor & other negative										P	P		§ 8.126
	Manufacturing of chemicals, machinery, petroleum products and other like use											S		§ 8.126
	Self-storage Warehouses										S	S		§ 8.152
	Outdoor sales/ storage of materials, or equipment, or vehicles									S	S	S		§ 8.140, 8.141
	Quarry/Extractive										S	S		§ 8.116

Zoning Districts

Research & development										P	P		
Racetracks										S	S		§ 8.148
Solar Energy Systems (SES)										S			8.1545
Slaughter house, rendering plant											S		§ 8.155
Truck terminals										S	S		§ 8.159
Warehousing and Wholesale										P	P		§ 8.159

SECTION V
ADDITION TO SECTION 7.201.B PERMITTED USES AND PERMITTED USES AFTER SPECIAL APPROVAL IN THE LI (LIGHT INDUSTRIAL) OF THE CHARTER TOWNSHIP OF MONROE ZONING ORDINANCE

The Monroe Charter Township Zoning Ordinance is hereby amended to add the following to Section 7.201.A.B Permitted Uses after Special Approval in the LI (Light Industrial) under subpart B. Permitted Uses After Special Approval:

“16. Large-Scale Solar Energy Systems (SES)”.

Section 7.200 Industrial Districts

Section 7.201 L-I, Light Industrial District

The L-I, Light Industrial district is hereby established for the purpose of permitting certain industries of a light manufacturing, office, research, laboratory, warehousing or wholesaling character to locate in planned areas of the Township where such uses would not have a detrimental impact on surrounding uses and districts, and may operate 24 hours per day, 7 days per week unless specifically stated otherwise in this Ordinance.

The District is intended, in accordance with the Township Master Plan, to limited locations suitable for industrial, manufacturing, research, and technology-oriented land uses. To meet the purpose and intent of this district, certain land uses are prohibited; including uses that would create excessive or unusual danger of fire, explosion, toxicity, or exposure to radiation or other unusually noxious, offensive, unhealthy and harmful odors, fumes, dust, smoke, light, waste, noise or vibration.

Uses in this District shall be subject to appropriate design and development standards (including bulk, setback and separation standards; and provisions for sufficient light, air, and privacy) intended to reduce hazards to life and property, provide basic amenities, and ensure compatibility between land uses.

A. Permitted Uses

1. Data processing and computer centers
2. Essential services
3. Nurseries and greenhouses
4. Laboratories involved in basic research, experiment, design, testing, or prototype product development.
5. Lumber yards or building material sales establishments that have storage in partially open structures.
6. Manufacturing, compounding, bottling, processing, packaging, treatment, or fabrication of products that do not involve the creation of odors or have other offensive impacts.
7. Vehicle or equipment repair garage - minor
8. Tool, die, gauge, and machine shops.
9. Warehousing and wholesale activities.
10. Recreation facilities, public and private

11. Contractor's yard
12. Other research or light manufacturing uses similar to the above.
13. Tractor-trailer storage as an accessory use to the above.

14. Uses and structures accessory to the above, Accessory office and sales operations may be permitted where such activities are clearly incidental to the principal industrial use, and private fueling stations incidental to the principal industrial use.

B. Permitted Uses after Special Approval

1. Central dry-cleaning plants and laundries provided that such plants do not deal directly with the customer at retail.
2. Vehicle or equipment repair garage - major
3. Outdoor storage and sales of equipment vehicles, materials, etc.
4. Mini-warehouse storage facilities.
5. Municipal buildings.
6. Institutional uses
7. Wireless communication facilities
8. Retail or service accessory uses that are clearly intended to serve the occupants and patrons of the principal use, provided that any such use shall be an incidental use occupying no more than 10 percent of a building that accommodates a principal permitted use. Permitted accessory retail and service uses shall be limited to the following:
 - a) Child care services that are intended to serve families of workers in the district.
 - b) Financial institutions, including banks, credit unions, and savings and loan associations.
 - c) Personal service establishments which are intended to serve workers or visitors in the district, such as dry-cleaning establishments, travel agencies, tailor shops, or similar service establishments.
 - d) Restaurants, cafeterias, or other places serving food and beverages for consumption within the building.
 - e) Retail establishments that deal directly with the consumer and generally serve the convenience shopping needs of workers and visitors, such as convenience stores, drug stores, uniform supply stores, or similar retail businesses.
 - f) Other accessory uses determined to be incidental to the principle use upon completion of site plan review by the Planning Commission.
9. Gas Stations with or without convenience store and/or restaurant
10. Kennels
11. Truck Terminals
12. Forging and Stamping- with odor control system
13. Race Tracks
14. Cemeteries
15. Wind Energy Conversion Systems
16. Large Scale Solar Energy Systems (SES)
17. Accessory buildings and uses customarily incidental to the above uses

C. Development Standards

Buildings and uses in the L-I, Light Industrial district shall be subject to all applicable standards and requirements set forth in this Ordinance, including the following:

1. Site Plan Review. Site plan review and approval where applicable.
2. Outdoor Storage and Trailers. There shall be no outside storage of any goods, inventory, or equipment except in designated areas that shall be enclosed on all sides with a screening fence or wall. Use of trailers for storage is prohibited, unless licensed and roadworthy according to the Motor Vehicle Code of the State of Michigan.

SECTION VI
SEVERABILITY

The provisions of this ordinance are hereby declared to be severable. If any clause, sentence, word, section or provision is hereafter declared void or unenforceable for any reason by a court of competent jurisdiction, it shall not affect the remainder of such ordinance which shall continue in full force and effect.

SECTION VII
REPEAL

All ordinance or parts of ordinances in conflict herewith are hereby repealed.

SECTION VIII
EFFECTIVE DATE

This ordinance shall take effect (8) eight days after publication upon adoption.

Christina Smith, Clerk
Charter Township of Monroe