Planning Commission

Planning Commission Meeting - WORK SESSION ONLY Agenda
Hartland Township Hall
Thursday, January 11, 2024
7:00 PM

1. Call to Order
2. Pledge of Allegiance
3. Roll Call
4. 2024 Annual Planning Commission Organizational Meeting
   a. Hartland Township Planning Commission Rules and Procedures (By-Laws)
   b. Election of Officers
   c. Committee Appointments
5. Approval of the Agenda
6. Approval of Meeting Minutes
   a. Planning Commission Work Session Minutes of December 14, 2023
7. Call to Public
8. Work Session
   a. Draft Ordinance Solar Energy Panels
9. Call to Public
10. Planner's Report
11. Committee Reports
12. Adjournment

Hartland Township Planning Commission Meeting Agenda Memorandum

Submitted By: Troy Langer, Planning Director

Subject: Hartland Township Planning Commission Rules and Procedures (By-Laws)

Date: January 4, 2024

Recommended Action

Move to approve the Rules and Procedures (By-Laws) as presented and dated January 11, 2024.

Discussion

The Hartland Township Planning Commission Rules and Procedures (By-Laws) outline the duties of the Planning Commission, the administrative procedures, the various officers and committees, as well as the meetings, and so forth.

These By-Laws are reviewed annually, and often there are very little changes. There were no changes for 2024.

HARTLAND TOWNSHIP PLANNING COMMISSION

RULES AND PROCEDURES (BY-LAWS)

Originally adopted December 16, 2010
Last Reviewed and Reaffirmed January 11, 2024

I. INTRODUCTION

The basic responsibilities of the Hartland Township Planning Commission are contained in the Michigan Planning Enabling Act, Public Act 33 of 2008 and the Michigan Zoning Enabling Act, Public Act 110 of 2006, each as amended. Each of these Acts grants specific jurisdiction to a Township Planning Commission in matters of land use planning and associated public concerns. These rules of procedure will be followed by the Hartland Township Planning Commission. Also presented are the general operating regulations for the Hartland Township Planning Commission. Regular meetings, special meetings, public records, agendas, quorum, disqualification, order of business and parliamentary procedures will be outlined.

II. DUTIES OF THE PLANNING COMMISSION

The Planning Commission shall perform the following duties:

- Prepare, review and update the master plan (Township Comprehensive Plan) as a guide for development. .
- Take such action on petitions, staff proposals and Township Board requests for amendments to the Zoning Ordinance as required.
- Take such action on petitions, staff proposals and Township Board requests for amendments to the master land use plan as required.
- Prepare an annual written report to the Township Board of the Planning Commission's operations and status of planning activities, including recommendations regarding actions by the Township Board related to planning and development.
- Prepare an annual work program and budget.
- Review subdivision and condominium proposals and recommend appropriate actions to the Township Board.
- Prepare special studies and plans, as deemed necessary by the Planning Commission or Township Board and for which appropriations of funds have been approved by the Township Board, as needed.
- Attend training sessions, conferences or meetings as needed to properly fulfill the duties of Planning Commissioner and for which appropriations of funds have been approved by the Township Board, as needed.
- Prepare a Capital Improvements Plan.
- Perform other duties and responsibilities or respond as requested by any Township Board or Commission.

III. RULES OF ADMINISTRATIVE PROCEDURE

The following rules of procedure were adopted and are periodically reaffirmed by the Township Planning Commission to facilitate the performance of its duties and the exercising of its responsibilities, functions and powers.

1.0 OFFICERS

A) ELECTION

The Commission shall, at its first regular meeting of the calendar year, elect from among the voting members, a Chair, Vice–Chair, and Secretary. All elected officers are eligible for re-election.

B) TENURE

The Chair, Vice-Chair and Secretary shall take office immediately following their election and shall hold office for a term of one year or until their successors are elected and assume office.

C) DUTIES OF THE CHAIR/VICE–CHAIR

- The Chair shall preside at all meetings and perform such other duties as may be ordered by the Commission.
- The Chair shall appoint all committee members, for a term of one year. The Chair may reassign members or re-designate Committee members at his/her discretion. The Chair shall be an ex-officio member of all committees.
- All communications, petitions and reports shall be globally addressed to the Commission and delivered or mailed to the Township Hall attention the Chair or Township Planner.
- The Vice-Chair shall act in the capacity of the Chair in his/her absence. In the event the office of the Chair becomes vacant, the Vice-Chair shall succeed to this office for the unexpired term and the Commission shall select a successor to the office of Vice-Chair for the unexpired term.

D) DUTIES OF THE SECRETARY

The Secretary shall execute all documents in the name of the Commission, perform the duties listed below, and shall perform such other duties as the Commission may determine.

1. MINUTES

- The Secretary shall be responsible for the minutes and they will be maintained in suitable volumes at the Township Hall. Copies of the draft minutes will be provided to all voting Commission members in the packet of information with the agenda for the meeting in which they are to be approved. The minutes shall contain a brief synopsis of the meeting, including a complete restatement of all motions and record of votes, conditions or recommendations made on any action and record of attendance.
- After minutes from a previous meeting are approved by a majority of the Commission at subsequent meeting, they will be signed by the Secretary and forwarded to the Township Clerk.
- The minutes of the Commission meetings shall be filed in the office of the Township Clerk as a public record and no official action taken by the Commission at any meeting shall be validated or effective until a copy of the minutes of the meeting at which such action was taken shall be filed with the Township Clerk.
- The Township Clerk shall keep a record of the Commission transactions, findings, and determinations, which shall be a public record. These records shall be suitably filed in the offices of Hartland Township by the Clerk's office with a duplicate copy kept in the Planning Department's files. All meetings, minutes, records, documents, correspondence and other materials of the Planning Commission shall be open to public inspection in accordance with the Freedom of Information Act, except as may otherwise be provided by law.

2. CORRESPONDENCE

When assigned, the Secretary shall be responsible for issuing formal written correspondence with other groups or persons, as directed by the Planning Commission. All communications, petitions, reports or other written materials received by the Secretary shall be brought to the attention of the Planning Commission.

3. RECORDING SECRETARY

The Commission may appoint a Recording Secretary, who shall be an employee of the Commission and be reimbursed for his/her services by the Township. The Recording Secretary shall make a record of Commission proceedings and carry out other assignments as delegated from time to time by the Commission or Secretary. The Recording Secretary under the direction of the Secretary may execute any of the Secretary responsibilities defined above.

E) DUTIES OF THE TOWNSHIP BOARD REPRESENTATIVE

The Township Board representative shall present the recommendations of the Planning Commission as required by the Zoning Ordinance, Subdivision Ordinance or other Ordinance to the Township Board prior to their consideration of such request. The representative will also update the Township Board of other efforts undertaken by the Planning Commission, such as subcommittee progress, ordinance revisions, etc.

F) DUTIES OF THE ZONING BOARD OF APPEALS REPRESENTATIVE

The Planning Commission representative to the Zoning Board of Appeals shall report the actions of the Zoning Board of Appeals to the Planning Commission and update the Zoning Board of Appeals on actions by the Planning Commission that relate to the functions and duties of the Zoning Board of Appeals.

2.0 MEETINGS

A) REGULAR MEETINGS

The regular meetings of the Hartland Township Planning Commission will be held the second and fourth Thursdays of every month at a time to be determined by the Planning Commission at the meeting in which the regular meeting schedule is adopted or as otherwise designated by the Chair of the Planning Commission. When the regular meeting day falls on a legal holiday or when an occasion of special importance takes place, the Chair shall select a suitable alternative day in the same month. Prior to the end of the year, the Chair will submit to the Planning Commission the regular meeting schedule for the upcoming year, for their approval. The adopted schedule will become the regular schedule of the subsequent year and will be posted at the Township Hall within ten (10) days after the first Planning Commission meeting of the New Year in accordance with the Open Meetings Act

Ideally, all meeting agendas will also be posted at the Township Hall at least one week prior to the meeting and will be provided to Hartland TV for advertisement on the local cable network. All meeting notices shall be in accordance with the Open Meetings Act.

B) SPECIAL MEETINGS

In addition to the bi-monthly regular meetings, the Commission may also periodically conduct special meetings. There are three kinds of Special Meetings that may be called by the Planning Commission. The various special meeting types are discussed below:

- **Special Meeting A**: A special meeting may be called to convenience applicants with matters before the Planning Commission for consideration, provided that the petitioners' application for special meeting shall be accompanied with appropriate fees, as established by resolution of the Hartland Township Board. The Planning Department shall give special meeting petitions to the applicant. Once the Planning Department verifies that the appropriate fees have been received, the Department shall forward the application to the Planning Commission Chair. The Chair shall give notice of the special meeting by means of notice delivered to each member at least seventy-two (72) hours prior to such meeting and shall state the purpose, item, and place of the meeting.
- **Special Meeting B**: A regular meeting called by the Chair or majority of the Planning Commissioners for the expressed purpose of addressing normal and typical business that comes before the Commission. For example, a special meeting may be called for urgent township business that cannot await action until the next regularly scheduled meeting. If a special meeting is required to satisfy statutory deadlines (such as required by the Subdivision Control Act), then additional applicant fees may be waived.
- **Work Session**: A work session is another form of special meeting held by the Planning Commission. Work sessions may be held for subcommittee meetings (fewer than three Planning Commission members present) or for a meeting of the full Commission for general discussion to further a specific purpose. Generally, discussion and action for items intended for Regular Meetings will not be acted on during a work session, especially since a quorum may not be present. In the interest of satisfying the Open Meetings Act, all work sessions involving the whole Planning Commission shall be duly advertised to permit the public to attend.

Notwithstanding the foregoing descriptions of the three types of special meetings held by the Planning Commission, a meeting shall be a legal meeting if enough members of the Planning Commission are present to constitute a quorum and minutes will be prepared.

C) QUORUM

Four (4) members shall constitute a quorum for the transaction of business and the taking of official action. Whenever a quorum is not present, those present may adjourn the meeting to another time and day, in accordance with the provisions of the Open Meetings Act, or hold the meeting to consider the matters on the agenda. No action shall be taken at a meeting at which a quorum is not present.

D) VOTING

An affirmative vote of the majority of the Planning Commission membership is required to adopt any part of the master plan or amendments to the plan (MCL 125.328). Unless required by statute, other actions or motions placed before the Planning Commission may be adopted by a majority vote of the membership in attendance, as long as a quorum is present. Voting shall be by voice vote; a roll call vote shall be required if requested by any commission member or directed by the Chair. Except in the case of conflict of interest, all Planning Commission members, including the Chair, shall vote on all matters.

Voting shall be recorded by verbal "yeas" and "nays" unless otherwise ordered by a PC member.

E) NOTICE

The Township Planner shall oversee the issuance of such notice as may be required by the Planning Commission, including Open meetings Act notices, as well as notice required for specific planning or zoning actions under the Michigan Planning Enabling Act of the Michigan

Zoning Enabling Act. Verification of such notice shall be provided to the Planning Commission prior to the date and time of the public hearing.

F) AGENDA

The Chair with information and documentation provided by staff and consultants shall determine when items are to be placed on the agenda. The staff shall then prepare the agenda in its written form for distribution.

All regular and special meetings shall conduct business in the following order:

1. Call to Order
2. Pledge of Allegiance
3. Roll Call and Recognition of Visitors
4. Approval of Meeting Agenda
5. Approval of Minutes for past meetings or work sessions
6. Call to Public
7. Public Hearing(s)
8. Old and New Business
9. Call to Public
10. Planner's Report
11. Committee Reports
    - Correspondence Received
    - Committee Reports from Planning Commissioners
    - Report from Township Board Representative
    - Report of Zoning Board of Appeals Representative
12. Adjournment

Note: The agenda may be modified to include a work session following a brief recess of the regular meeting.

G) PARLIAMENTARY PROCEDURES

Except where otherwise specified, meetings shall be conducted according to *Robert's Rules of Order (21st CENTURY ROBERT'S RULES OF ORDER COPYRIGHT 1995)*, except to the extent contradicted by these rules and procedures, and with the exception that the Chair shall vote.

H) MOTIONS

The Chair or Recording Secretary shall repeat complex motions before a vote is taken. The names of the persons making the motion and its second shall be recorded in the meeting minutes. The meeting minutes shall show the count of the vote with the "nays" being identified.

3.0 COMMITTEES

In order to facilitate the orderly review of matters before the Commission, the following standing committees are created:

A) SITE PLAN REVIEW COMMITTEE

The Committee shall include three (3) Planning Commission members. The Committee will review site development plans as provided by the Township Zoning Ordinance in an informal manner through meeting with the developer/applicant. Upon receiving a complete application for an informal Site Plan Review, the Planning Department will schedule a meeting with the Site Plan Review Committee and the applicant. The Committee will update its findings and brief the Planning Commission when the informal review is complete. The makeup of the Committee may vary depending on the number of site plan reviews occurring and individual Planning Commissioner time constraints.

B) OTHER COMMITTEES

The Chair may appoint other committees from time to time, which serve to assist the Planning Commission in discharging its responsibilities.

C) APPOINTMENTS AND VACANCIES

The Chair shall make appointments to these committees. The length of appointment shall be for one (1) calendar year. These committees shall meet as needed to consider the referrals given to them by the Township Planner. The Committees will review applications and make their recommendations to the Planning Commission.

If a vacancy occurs on the Planning Commission that affects the standing committee appointments, the Chair shall appoint replacement members to complete the balance of the year.

4.0 PROCEDURE FOR PUBLIC PARTICIPATION

A limit of three (3) minutes per participant during the call to the public shall be permitted for any written or oral statements. The unofficial policy of the Commission will be to accept public input during the meeting for topics under discussion. If necessary, the Chair may set time limits for public participation during any meeting to ensure an orderly meeting.

All public hearings must be held as part of a regular or special meeting of the Planning Commission. The following rules of procedure shall apply to public hearings held by the Planning Commission:

- Chair opens the public hearing and announces the subject.
- Chair summarizes the procedures/rules to be followed during the hearing.
- Township planner/engineer/other consultants present their report and recommendation.
- Applicant presents the main points of the application.
- Public at large is invited to speak in support or opposition to the application.
- Chair closes the public hearing and returns to the regular/special meeting.

To ensure everyone has the opportunity to speak, the Chair may elect to limit the time permitted to speak, except that the applicant may be permitted additional time as the Chairperson allows. The Chair may also elect to allow persons to speak only once, until all persons have had the opportunity to speak, at which time the chairperson, in his/her discretion, may permit additional comments.

All comments by the public, staff and the Planning Commission shall be directed to the Chair. All comments shall be related to the application under discussion; unrelated comments shall be ruled out of order.

5.0 CONFLICT OF INTEREST

Planning Commission members shall declare a conflict of interest and abstain from participating in a hearing or deliberations on a request when:

A) The applicant is an immediate family member or relative;

B) The Planning Commission member has a business or financial interest in the property involved in the request or has a business or financial interest in the applicant's company, agency or association;

C) The Planning Commission member owns or has a financial interest in neighboring property. For purposes of this section, a neighboring property shall include any property falling within the notification radius for the proposed development, as required by the Zoning Ordinance or other applicable ordinance, or

D) There is a reasonable appearance of a conflict of interest, as determined by the Planning Commission member declaring such conflict.

The Planning Commission member declaring a conflict of interest shall state the nature of the conflict and whether he or she believes they could impartially consider the request before the commission. He or she should individually decide to abstain from any discussion or votes relative to the matter that is the subject of the conflict. The member declaring a conflict may absent him/herself from the room in which the discussion takes place, unless doing so would violate his or her constitutionally protected rights to participate. He or she should not make any presentations to the Planning Commission as a representative of the proposal.

6.0 ANNUAL ORGANIZATIONAL MEETING

An annual organizational meeting shall occur at the first regular meeting of the year for election of a Chair, Vice-Chair and Secretary.

7.0 PLANNING COMMISSION ASSISTANCE

A) Duties of the Township Planner

- Accept applications for matters to be reviewed by the Planning Commission and ensure that such applications are complete.
- Forward application materials to the Planning Commission at least one week prior to the meeting at which the matters will be considered.
- Inform the Planning Commission of administrative and enforcement actions taken on behalf of the Township related to the zoning or other appropriate ordinance.
- Prepare amendments to the Zoning Ordinance as directed by the Planning Commission.
- Attend regular Planning Commission Meetings and Work Sessions.
- Consult with the Planning Commission and other township officials concerning interpretation, procedural questions and other matters arising from the Zoning Ordinance.
- Prepare written reviews and recommendations, if appropriate, for all requests and development proposals to be considered by the Planning Commission.

- Meet with applicants, their representatives and/or township officials as needed to properly perform project reviews.
- Prepare an annual report regarding development activities and status of projects as they relate to the Planning Commission's duties as described.
- Perform other duties as directed by the Planning Commission.

B) Assistance From Other Professionals

- The Planning Commission may be assisted by other professional or township staff as needed, including the building inspector, township attorney, township engineer, consultants or other persons or agencies.

8.0 AMENDMENTS TO RULES AND PROCEDURES

Amendments to these rules and procedures may be initiated by any member of the Planning Commission at any regular meeting and voted upon. To make certain the By-Laws reflect current Commission practice, it is recommended that they be reviewed and reaffirmed annually.

Originally adopted by the Hartland Township Planning Commission at a regular meeting dated:

- **December 16, 2010**

Reviewed and reaffirmed by the Hartland Township Planning Commission at a regular meeting dated:

- **January 12, 2012**
- **February 14, 2013**
- **January 23, 2014**
- **January 15, 2015**
- **January 14, 2016**
- **January 12, 2017**
- **January 11, 2018**
- **February 14, 2019**
- **January 9, 2020**
- **January 7, 2021**
- **January 13, 2022**
- **January 12, 2023**
- **January 11, 2024**

_____ - Chair

_____ - Vice-Chair

_____ - Secretary

HARTLAND TOWNSHIP PLANNING COMMISSION WORK SESSION

DRAFT MEETING MINUTES

December 14, 2023– 7:00 PM

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1. **Call to Order: Chair Fox called the Work Session meeting to order at 7:00 p.m.**

2. **Pledge of Allegiance:**

3. **Roll Call and Recognition of Visitors:**
   Present – Commissioners Eckman, Fox, Grissim, Mayer, McMullen, Mitchell, & Murphy
   Absent – None

4. **Approval of the Meeting Agenda:**
   A Motion to approve the December 14, 2023, Planning Commission Work Session Meeting Agenda was made by Commissioner Murphy and seconded by Commissioner Mitchell. Motion moved item 8.a. to 8.b. and the Motion moved item 8.b. to 8.a. Motion carried unanimously.

5. **Approval of Meeting Minutes:**
   a. Planning Commission Meeting Minutes of September 28, 2023
   A Motion to approve the Planning Commission Meeting Minutes of September 28, 2023, was made by Commissioner Mitchell and seconded by Commissioner Murphy. Motion carried unanimously.

6. **Approval of 2024 Planning Commission Meeting Calendar:**
   a. 2024 Planning Commission Meeting Calendar
   A Motion to approve the Planning Commission Meeting Calendar for 2024, was made by Commissioner Grissim and seconded by Commissioner Eckman. Motion carried unanimously.

7. **Call to the Public:**
   John Luke, Remax Reality, 6870 Grand River Avenue, Brighton, MI 48114, spoke in favor of permitting a Pharmacy in the GC (General Commercial) district.

8. **Old and New Business**
   a. Discussion of Pharmacies in the GC (General Commercial) zoning district.

   Director Langer gave an overview of the scope of the request stating the following:
   - Currently, the GC district does not permit Pharmacies.
   - Pharmacies are permitted in the OS (Office Service) district but limited to no larger than 2,000 square feet in area.
   - Pharmacies are not permitted in the LC (Limited Commercial) district or the NSC (Neighborhood Service Commercial) district.

Planning Commission Comments
Commissioner Murphy inquired about a similar size limitation in the LC and NSC district for pharmacies, as is outlined in the OS district.

Commissioner Murphy moved to initiate a zoning amendment to permit pharmacies in the commercial districts. Seconded by Commissioner Mitchell. Motion carried unanimously.

b. Discussion of Landscape Nurseries in the CA (Conservation Agricultural) zoning district.

Director Langer gave an overview of the scope of the request stating the following:

- The Township received a complaint of an existing business that is operating within the CA (Conservation Agricultural) District.
- There is a question on whether the proposed business would be permitted in the CA district as a Special Land Use Permit, as a Landscape Nursery.

Planning Commission Comments
The Planning Commission discussed the existing use, and other uses and outlined various definitions of Nursery.

9. Call to the Public:
None

10. Planner Report:
Director Langer outlined that Commissioner's Mitchell and Mayer were recently re-appointed to the Planning Commission. Director Langer indicated that the Township has completed a Citizen Survey and the report was presented to the Township Board at the December 12, 2024 regular meeting. Director Langer also notified the Planning Commission that the Township has received notice of the Livingston County Planning Department preparing a Master Plan. Director Langer outlined the number of projects that are slated for the upcoming year.

11. Committee Reports:
None

12. Adjournment:
A Motion to adjourn was made by Commissioner Mitchell and seconded by Commissioner Mayer. Motion carried unanimously. The meeting was adjourned at approximately 8:02 PM.

Hartland Township Planning Commission Meeting Agenda Memorandum

Submitted By: Troy Langer, Planning Director

Subject: Draft Ordinance Solar Energy Panels

Date: January 4, 2024

Recommended Action
Move to Initiate Ordinance Amendment regarding Solar Energy Panels.

Discussion
This memorandum is to briefly outline a draft ordinance regarding solar energy panels. The Planning Department and the Ordinance Review Committee of the Planning Commission have been working on a draft ordinance, which started as a draft ordinance provided by the Township Attorney, as a template.

Currently, Section 5.14.3.C. outlines the standards for solar panels in Hartland Township. The ordinance permits free-standing solar panels to be considered an accessory structure, and only in the rear yard area (which is different from other accessory structures), subject to setbacks for an accessory structure. Solar panels on the roof of a single family residential structure are not specifically called out, but would be permitted.

The draft ordinance is essentially divided into two (2) separate sections, as follows:

> **Private Solar Panels**, the draft ordinance outlines standards for residential and commercial developments that desire to have either roof-top mounted solar panels or free-standing solar panels. The private solar panel provisions imply that the solar energy is for personal consumption on that property and energy is not generally directed into the energy grid system, except for surplus energy.
>
> **Commercial Solar Panels**, the draft ordinance outlines standards for "solar farms" or energy that is used off-site.

Since this is the initial discussion of this topic by the Planning Commission, this memorandum will be kept short. Instead, there will be a number of attachments, such as other community ordinances, and reference materials. These are being sent as general background information.

Attachments:
1. Current Hartland Solar Regulations
2. Attorney Template Solar Ordinance
3. Ordinance Review Committee Template Solar Ordinance
4. MSU Extension Guide Solar Energy System
5. MTA Document
6. Renewable Energy Site Tour
7. Cohoctah Twp. Ordinance
8. Conway Twp. Ordinance
9. Davison Solar Energy Ordinance
10. Eureka Solar Template
11. Flushing Township Solar Ordinance
12. Genessee Township Ordinance

13. Gratiot County Zoning Ordinance for Solar
14. Marion Solar Ordinance
15. Montcalm Solar Amendment
16. Olive Township Ordinance

H. Conformance with Schedule of Regulations. All accessory buildings and structures in any District shall adhere to the pertinent requirements detailed in Section 3.1, Districts Established.

2. Attached Accessory Buildings. Unless otherwise specified in this Section, accessory buildings or structures which are attached to the principal building (such as an attached garage, breezeway, or workshop) shall be considered a part of the principal building for the purpose of determining conformance with area, setback, height, and bulk requirements.

3. Accessory Structures

A. General Requirements. Accessory structures (for example, tennis courts, wind generators, antennae) shall comply with height, setback, and lot coverage requirements for accessory buildings, unless otherwise permitted in this Ordinance.

B. Exceptions to Accessory Structure Standards. Antennae and wind generators shall comply with the height standards specified in Sections 5.2 and 4.8.

C. Solar Panels. Freestanding solar panels shall be considered accessory structures and shall be located in the rear yard, subject to setback requirements for accessory buildings.

D. Private Swimming Pools

i. Location. Private swimming pools shall be permitted as an accessory use in the rear or side yard in residential districts, provided that pools in the side yard of parcels that are two (2) acres or smaller shall be screened from the road. Pools shall not be located in any road or utility right-of-way or easement, except as provided in this Section. Positive drainage shall be maintained in accordance with the Township's Engineering Design Standards.

ii. Setbacks. Private swimming pools and their associated decks or hard surface surrounds shall comply with the setback requirements for an accessory structure. The pool surrounds, including all decks and impervious perimeters shall be calculated as part of the maximum lot coverage. Pools shall be constructed no closer than ten (10) feet to any building on the same parcel.

iii. Fencing. Private swimming pools shall be enclosed within a minimum four (4) foot high fence. All fences shall be subject to the requirements in Section 5.20. Entry shall be by means of a self-closing, self-latching gate. The latch shall be on the inside so that it is not readily available to children to open. Gates shall be securely locked when the pool is not in use. A fence shall not be required for pools that are wholly or partially above ground, provided that the wall of the pool is at least four (4) feet in height and that no ladder, deck or other structure provides access to the pool while it is unattended.

E. Private Play Equipment

i. Play structures or equipment may consist of climbing and sliding apparatus, swings and open air platforms and ramps that are less than fifteen (15) feet in height.

ii. A playhouse designed exclusively for use as a children's play area may be permitted, but shall not exceed eight (8) feet in height and eighty (80) square feet in floor area.

iii. Children's play equipment covering less than one hundred fifty (150) square feet of land area may be permitted in a required side or rear yard, but shall be located at least five (5) feet from any property line.

5.15 USE OF YARD SPACES AND OTHER OPEN AREAS FOR STORAGE

1. Outside Storage. There shall be no outside storage of unlicensed vehicles, which are required to be registered by law, permitted in any residential lot. This shall not be applicable to new or used car lots and junk yards. No machinery, equipment, vehicles, lumber piles, crates, boxes, building blocks or other materials either discarded, unsightly or showing evidence of a need for repairs, with or without a current license, shall be stored, parked, abandoned or junked in any open area that is visible from the street, public place or adjoining residential property.

_____ TOWNSHIP

ORDINANCE NO. _____

AN ORDINANCE TO AMEND THE ZONING ORDINANCE TO REGULATE SOLAR ENERGY SYSTEMS

The Township of _____ ordains:

Section 1. Add Definitions to Article X.

The following definitions are added to Article X, Section X of the Zoning Ordinance, and will be placed in the Zoning Ordinances so that all definitions are in alphabetical order:

A. Abandonment: A Solar Energy System is abandoned if it has not been in operation for a period of one (1) year. This includes a Solar Energy System that was never operational if construction has been halted for a period of one (1) year.

B. Building Integrated Photovoltaics (BIVPs): A small Solar Energy System that is integrated into the structure of a building, such as solar roof tiles and solar shingles.

C. Commercial Solar Energy System: A Solar Energy System in which the principal design, purpose, or use is to provide energy to off-site uses or the wholesale or retail sale of generated electricity to any person or entity.

D. Ground Mounted Solar Energy System: A Private or Commercial Solar Energy System that is not attached to or mounted to any roof or exterior wall of any principal or accessory building.

E. Private Solar Energy System: A Solar Energy System used exclusively for private purposes and not used for any commercial resale of any energy, except for the sale of surplus electrical energy back to the electrical grid.

F. Roof or Building Mounted Solar Energy System: A Private Solar Energy System attached to or mounted on any roof or exterior wall of any principal or accessory building, but excluding BIVPs.

G. Solar Energy System: Any part of a system that collects or stores solar radiation or energy for the purpose of transforming it into any other form of usable energy, including the collection and transfer of heat created by solar energy to any other medium by any means.

Section 2. Add New Section XX, entitled "Solar Energy Systems"

Section XX, entitled "Solar Energy Systems," is added to Article X of the Township's Zoning Ordinance. The section reads in its entirety as follows:

Section XX. Solar Energy Systems.

A. General Provisions. All Solar Energy Systems are subject to the following requirements:

1. All Solar Energy Systems must conform to the provisions of this Ordinance and all county, state, and federal regulations and safety requirements, including applicable building codes and applicable industry standards, including those of the American National Standards Institute (ANSI).

2. The Township may revoke any approvals for, and require the removal of, any Solar Energy System that does not comply with this Ordinance.

3. Solar Energy Systems must be located or placed so that concentrated solar glare is not directed toward or onto nearby properties or roadways at any time of the day.

4. Solar Energy Systems are permitted in the Township as follows, subject to this Section XX and other applicable provisions of the Zoning Ordinance:

Type of System	**Sub-Type of System**	**Zoning District**	**Special Use Permit**
Private Solar Energy System	Private BIVPs	All zoning districts	Not required
	Roof or Building Mounted Private Solar Energy System	All zoning districts as accessory use	Not required
	Ground Mounted Private Solar Energy Systems	A-1 (Agricultural)	Required
Commercial Solar Energy System	All Commercial Solar Energy Systems (Ground Mounted only)	A-1 (Agricultural)*	Required

* Commercial Solar Energy Systems are not permitted on any properties enrolled in the PA 116 Farmland and Open Space Preservation Program.

B. Private Solar Energy Systems.

1. Private Solar Energy System BIVPs. Private Solar Energy System BIVPs are permitted in all zoning districts. A building permit is required for the installation of BIVPs.

2. Roof or Building Mounted Private Solar Energy Systems. Roof or Building Mounted Private Solar Energy Systems are permitted in all zoning districts as an accessory use, subject to the following requirements:

   a. No part of the Solar Energy System erected on a roof is permitted to extend beyond the peak of the roof. If the Solar Energy System is mounted on a building in an area other than the roof, no part of the Solar Energy System is permitted to extend beyond the wall on which it is mounted.

b. No part of a Solar Energy System mounted on a roof is to be installed closer than three (3) feet from the edges of the roof, the peak, or eave or valley to maintain pathways of accessibility.

c. No part of a Solar Energy System mounted on a roof is permitted to extend more than two (2) feet above the surface of the roof.

d. If a Roof or Building Mounted Private Solar Energy System has been abandoned, the property owner must remove it within three (3) months after the date of abandonment.

e. A building permit is required for the installation of Roof or Building Mounted Private Solar Energy Systems.

3. Ground Mounted Private Solar Energy Systems. Ground Mounted Private Solar Energy Systems are allowed only in the A-1, Agricultural, zoning district and require a special land use permit and site plan review. In addition to all requirements for a special land use permit under Article X and site plan review and approval under Article X, Ground Mounted Private Solar Energy Systems are also subject to the following requirements:

a. *Site Plan.* Before installation of a Ground Mounted Private Solar Energy System, the property owner must submit a site plan to the Zoning Administrator. The site plan must include setbacks, panel size, and the location of property lines, buildings, fences, greenbelts, and road right of ways. The site plan must be drawn to scale.

b. *Maximum Height.* A Ground Mounted Private Solar Energy System must not exceed the maximum building height for adjacent accessory buildings and must not exceed fifteen (15) feet above the ground when oriented at maximum tilt.

c. *Location.* A Ground Mounted Private Solar Energy System must be located in the rear yard and meet the rear yard setback requirements applicable in the A-1 zoning district.

d. *Underground Transmission.* All power transmission or other lines, wires, or conduits from a Ground Mounted Private Solar Energy System to any building or other structure must be located underground. If batteries are used as part of the Ground Mounted Private Solar Energy System, they must be placed in a secured container or enclosure.

e. *Screening.* Greenbelt screening is required around any Ground Mounted Private Solar Energy System and around any equipment associated with the system to obscure, to the greatest extent possible, the Solar Energy System from any adjacent residences. The greenbelt must consist of shrubbery, trees, or other non-invasive plant species that provide a visual screen. In lieu of a planting

greenbelt, a decorative fence that is at least 50% opaque (meeting the requirements of this Ordinance applicable to fences) may be used if approved by the Planning Commission.

f. *Lot Area Coverage.* No more than 20% of the total lot area may be covered by a Ground Mounted Private Solar Energy System.

g. *Appearance.* The exterior surfaces of a Ground Mounted Private Solar Energy System must be generally neutral in color and substantially non-reflective of light.

h. *Abandonment.* If a Ground Mounted Private Solar Energy System has been abandoned, the property owner must notify the Township and remove the system within three (3) months after the date of abandonment.

i. *Building Permit.* A building permit is required for installation of a Ground Mounted Private Solar Energy System.

j. *Transferability.* A special use permit for a Ground Mounted Private Solar Energy System is transferable to a new owner. The new owner must register its name and business address with the Township and must comply with this Ordinance and all approvals and conditions issued by the Township.

k. *Remedies.* If an applicant or operator of a Ground Mounted Solar Energy System fails to comply with this Ordinance, the Township, in addition to any other remedy under this Ordinance, may revoke the special land use permit and site plan approval after giving the applicant notice and an opportunity to be heard. Additionally, the Township may pursue any legal or equitable action to abate a violation and recover any and all costs, including the Township's actual attorney fees and costs.

C. Commercial Solar Energy Systems. Commercial Solar Energy Systems are allowed only in the A-1, Agricultural, zoning district (except they are not permitted on any properties enrolled in the PA 116 Farmland and Open Space Preservation Program) and require a special land use permit and site plan review. In addition to all requirements for a special land use permit under Article X and site plan review and approval under Article X, Commercial Solar Energy Systems are also subject to the following requirements:

1. *Application Requirements.* The applicant for a Commercial Solar Energy System must provide the Township with all of the following:

a. Application fee in an amount set by resolution of the Township Board.

b. A list of all parcel numbers that will be used by the Commercial Social Energy System; documentation establishing ownership of each parcel; and any lease agreements, easements, or purchase agreements for the subject parcels.

c. An operations agreement setting forth the operations parameters, the name and contact information of the certified operator, the applicant's inspection protocol, emergency procedures, and general safety documentation.

d. Current photographs of the subject property.

e. A site plan that includes all proposed structures and the location of all equipment, transformers, and substations, as well as all setbacks, panel sizes, and the location of property lines, signage, fences, greenbelts and screening, drain tiles, easements, floodplains, bodies of water, proposed access routes, and road right of ways. The site plan must be drawn to scale and must indicate how the Commercial Solar Energy System will be connected to the power grid.

f. A copy of the applicant's power purchase agreement or other written agreement with an electric utility showing approval of an interconnection with the proposed Commercial Solar Energy System.

g. A written plan for maintaining the subject property, including a plan for maintaining and inspecting drain tiles and addressing stormwater management, which is subject to the Township's review and approval.

h. A decommissioning and land reclamation plan describing the actions to be taken following the abandonment or discontinuation of the Commercial Solar Energy System, including evidence of proposed commitments with property owners to ensure proper final reclamation, repairs to roads, and other steps necessary to fully remove the Commercial Solar Energy System and restore the subject parcels, which is subject to the Township's review and approval.

i. Financial security that meets the requirements of this Section, which is subject to the Township's review and approval.

j. A plan for resolving complaints from the public or other property owners concerning the construction and operation of the Commercial Solar Energy System, which is subject to the Township's review and approval.

k. A plan for managing any hazardous waste, which is subject to the Township's review and approval.

l. A transportation plan for construction and operation phases, including any applicable agreements with the County Road Commission and Michigan Department of Transportation, which is subject to the Township's review and approval.

m. An attestation that the applicant will indemnify and hold the Township harmless from any costs or liability arising from the approval, installation, construction, maintenance, use, repair, or removal of the Solar Energy System, which is subject to the Township's review and approval.

n. Proof of environmental compliance, including compliance with Part 31, Water Resources Protection, of the Natural Resources and Environmental Protection Act; (MCL 324.3101 et. seq.; Part 91, Soil Erosion and Sedimentation Control (MCL 324.9101 et. seq.) and any corresponding County ordinances; Part 301, Inland Lakes and Streams, (MCL 324.30101 et. seq.); Part 303, Wetlands (MCL 324.30301 et. seq.); Part 365, Endangered Species Protection (MCL324.36501 et. seq.); and any other applicable laws and rules in force at the time the application is considered by the Township

o. Any additional information or documentation requested by the Planning Commission, Township Board, or other Township representative.

2. *System and Location Requirements.*

a. Commercial Solar Energy Systems must be ground mounted.

b. Commercial Solar Energy Systems must be located on parcels of land twenty (20) acres in size or larger.

c. Commercial Solar Energy Systems are not permitted on any properties enrolled in the PA 116 Farmland and Open Space Preservation Program.

d. Commercial Solar Energy Systems (including all solar panels, structures, and equipment) must be set back 500 feet from all lot lines and public road rights-of-way. If a single Commercial Solar Energy System is located on more than one lot, then the lot-line setbacks of this subsection do not apply to the lot lines shared by those lots.

e. The height of the Commercial Solar Energy System and any mounts, buildings, accessory structures, and related equipment must not exceed fifteen (15) feet when oriented at maximum tilt. Lightning rods may exceed 15 feet in height, but they must be limited to the

height necessary to protect the Commercial Solar Energy System from lightning.

3. *Lot Area Coverage.* No more than 20% of the total lot area may be covered by a Commercial Solar Energy System.

4. *Permits.* All required county, state, and federal permits must be obtained before the Commercial Solar Energy System begins operating.

5. *Screening.* Greenbelt screening is required around any Commercial Solar Energy System and around any equipment associated with the system to obscure, to the greatest extent possible, the Solar Energy System from any adjacent residences. The greenbelt must consist of shrubbery, trees, or other non-invasive plant species that provide a visual screen. At least 50% of the plants must be evergreen trees that are at least six feet tall at the time of planting. In lieu of a planting greenbelt, a decorative fence that is at least 50% opaque and that meets the requirements of this Ordinance applicable to fences may be used if approved by the Planning Commission.

6. *Lighting.* Lighting of the Commercial Solar Energy System is limited to the minimum light necessary for safe operation. Illumination from any lighting must not extend beyond the perimeter of the lot(s) used for the Commercial Solar Energy System. The Commercial Solar Energy System must not produce any glare that is visible to neighboring lots or to persons traveling on public or private roads.

7. *Security Fencing.* Security fencing must be installed around all electrical equipment related to the Commercial Solar Energy System, including any transformers and transfer stations. Appropriate warning sings must be posted at safe intervals at the entrance and around the perimeter of the Commercial Solar Energy System.

8. *Noise.* The noise generated by a Commercial Solar Energy System must not exceed the following limits:

a. Forty (40) Dba Lmax, as measured at the property line of any adjacent R-1 (Residential) or B-1 (Business) zoned land in existence at the time the Commercial Solar Energy System is granted special land use approval.

b. Forty (40) Dba Lmax, as measured at any neighboring residence in existence at the time the Commercial Solar Energy System is granted special land use approval, between the hours of 9:00 p.m. and 7:00 a.m.

c. Forty (40) Dba Lmax, as measured at the lot lines of the project boundary.

d. In addition to the above limitations, a sound barrier of a solid decorative masonry wall or evergreen tree berm, with trees spaced not less than 10 feet apart, must be constructed to reduce noise levels surrounding all inverters. The berm must be no more than ten (10)

feet from all inverters, must be at least as tall as all inverters but not more than three (3) feet taller than the height of all inverters.

9. *Underground Transmission.* All power transmission or other lines, wires, or conduits from a Commercial Solar Energy System to any building or other structure must be located underground at a depth that complies with current National Electrical Code standards, except for power switchyards or the area within a substation. If batteries are used as part of the Ground Mounted Solar Energy System, they must be placed in a secured container or enclosure.

10. *Drain Tile Inspections.* The Commercial Solar Energy System must be maintained in working condition at all times while in operation. The applicant or operator must inspect all drain tile at least once every three years by means of robotic camera, with the first inspection occurring before the Commercial Solar Energy System is in operation. The applicant or operator must submit proof of the inspection to the Township. The owner or operator must repair any damage or failure of the drain tile within sixty (60) days after discovery and submit proof of the repair to the Township. The Township is entitled, but not required, to have a representative present at each inspection or to conduct an independent inspection.

11. *Insurance.* The applicant or operator will maintain property/casualty insurance and general commercial liability insurance in an amount of at least $10 million per occurrence.

12. *Decommissioning.* If a Commercial Solar Energy System is abandoned or otherwise nonoperational for a period of one year, the property owner or the operator must notify the Township and must remove the system within six (6) months after the date of abandonment. Removal requires receipt of a demolition permit from the Building Official and full restoration of the site to the satisfaction of the Zoning Administrator. The site must be filled and covered with top soil and restored to a state compatible with the surrounding vegetation. The requirements of this subsection also apply to a Commercial Solar Energy System that is never fully completed or operational if construction has been halted for a period of one (1) year.

13. *Financial Security.* To ensure proper decommissioning of a Commercial Solar Energy System upon abandonment, the applicant must post financial security in the form of a security bond, escrow payment, or irrevocable letter of credit in an amount equal to 125% of the total estimated cost of decommissioning, code enforcement, and reclamation, which cost estimate must be approved by the Township. The operator and the Township will review the amount of the financial security every two (2) years to ensure that the amount remains adequate. This financial security must be posted within fifteen (15) business days after approval of the special land use application.

14. *Extraordinary Events.* If the Commercial Solar Energy System experiences a failure, fire, leakage of hazardous materials, personal injury, or other extraordinary or catastrophic event, the applicant or operator must notify the Township within 24 hours.

15. *Annual Report.* The applicant or operator must submit a report on or before January 1 of each year that includes all of the following:

a. Current proof of insurance;

b. Verification of financial security; and

c. A summary of all complaints, complaint resolutions, and extraordinary events.

16. *Inspections.* The Township may inspect a Commercial Solar Energy System at any time by providing 24 hours advance notice to the applicant or operator.

17. *Transferability.* A special use permit for a Commercial Solar Energy System is transferable to a new owner. The new owner must register its name and business address with the Township and must comply with this Ordinance and all approvals and conditions issued by the Township.

18. *Remedies.* If an applicant or operator fails to comply with this Ordinance, the Township, in addition to any other remedy under this Ordinance, may revoke the special land use permit and site plan approval after giving the applicant or operator notice and an opportunity to be heard. Additionally, the Township may pursue any legal or equitable action to abate a violation and recover any and all costs, including the Township's actual attorney fees and costs.

Section 3. Amend Section XX.

Section XX of the Zoning Ordinance, entitled A-1 Agricultural Zoning District is amended to add the following uses permitted by special land use permit:

- Ground Mounted Private Solar Energy System
- Commercial Solar Energy System

Section 4. Validity and Severability.

If any portion of this Ordinance is found invalid for any reason, such holding will not affect the validity of the remaining portions of this Ordinance.

Section 5. Repealer.

All other ordinances inconsistent with the provisions of this Ordinance are hereby repealed to the extent necessary to give this Ordinance full force and effect.

Section 6. Effective Date.

This Ordinance takes effect seven (7) days after publication as provided by law.

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12-07-2023 DRAFT_____ TOWNSHIP

ORDINANCE NO. _____

AN ORDINANCE TO AMEND THE ZONING ORDINANCE TO REGULATE SOLAR ENERGY SYSTEMS

The Township of _____ ordains:

Section 1. Add Definitions to Article X.

The following definitions are added to Article X, Section X of the Zoning Ordinance, and will be placed in the Zoning Ordinances so that all definitions are in alphabetical order:

A. Abandonment: A Solar Energy System is abandoned if it has not been in operation for a period of one (1) year. This includes a Solar Energy System that was never operational if construction has been halted for a period of one (1) year.

B. Building Integrated Photovoltaics (BIVPs): A small Solar Energy System that is integrated into the structure of a building, such as solar roof tiles and solar shingles.

C. Commercial Solar Energy System: A Solar Energy System in which the principal design, purpose, or use is to provide energy to off-site uses or the wholesale or retail sale of generated electricity to any person or entity.

D. Ground Mounted Solar Energy System: A Private or Commercial Solar Energy System that is not attached to or mounted to any roof or exterior wall of any principal or accessory building.

E. Private Solar Energy System: A Solar Energy System used exclusively for private purposes and not used for any commercial resale of any energy, except for the sale of surplus electrical energy back to the electrical grid.

F. Roof or Building Mounted Solar Energy System: A Private Solar Energy System attached to or mounted on any roof or exterior wall of any principal or accessory building; but excluding BIVPs.

G. Solar Energy System: Any part of a system that collects or stores solar radiation or energy for the purpose of transforming it into any other form of usable energy, including the collection and transfer of heat created by solar energy to any other medium by any means.

H. Surplus Electrical Energy: Any solar energy not used by a private solar energy system that is sent back into the energy grid.

Section 2. Add New Section XX, entitled "Solar Energy Systems"

Section XX, entitled "Solar Energy Systems," is added to Article X of the Township's Zoning Ordinance. The section reads in its entirety as follows:

Section XX. Solar Energy Systems.

A. General Provisions. All Solar Energy Systems are subject to the following requirements:

1. All Solar Energy Systems must conform to the provisions of this Ordinance and all county, state, and federal regulations and safety requirements, including applicable building codes and applicable industry standards, including those of the American National Standards Institute (ANSI).

2. The Township may revoke any approvals for, and require the removal of, any Solar Energy System that does not comply with this Ordinance, as amended.

3. Solar Energy Systems are permitted in the Township as follows, subject to this Section XX and other applicable provisions of the Zoning Ordinance:

Type of System	**Sub-Type of System**	**Zoning District**	**Special Use Permit**
Private Solar Energy System	Private BIVPs	All zoning districts	Not required
	Roof or Building Mounted Private Solar Energy System	All zoning districts as accessory use	Not required
	Ground Mounted Private Solar Energy Systems	All zoning districts as accessory use	Not Required
Commercial Solar Energy System	All Commercial Solar Energy Systems (Ground Mounted only)	CA (Conservation Agricultural)	Required

4. Private Solar Energy Systems that are two (2) square feet or less in area, are exempt from these regulations and a land use permit.

B. Private Solar Energy Systems.

1. Private Solar Energy System BIVPs. Private Solar Energy System BIVPs are permitted in all zoning districts. A land use permit is required for the installation of BIVPs.

2. Roof or Building Mounted Private Solar Energy Systems. Roof or Building Mounted Private Solar Energy Systems are permitted in all zoning districts as an accessory use, subject to the following requirements:

a. Roof or Building Mounted Private Solar Energy Systems are permitted on both principal structures and accessory structures.

b. No part of the Solar Energy System erected on a roof is permitted to extend beyond the peak of the roof or shall extend above the parapet wall. If the Solar Energy System is mounted on a building in an area other than the roof, no part of the Solar Energy System is permitted to extend beyond the wall on which it is mounted.

c. No part of a Solar Energy System mounted on a roof is to be installed closer than three (3) feet from the edge of the roof, eave or valley to maintain pathways of accessibility.

d. A land use permit is required for the installation of Roof or Building Mounted Private Solar Energy Systems.

3. Ground Mounted Private Solar Energy Systems. Ground Mounted Private Solar Energy Systems are allowed in all zoning districts and require a Land Use Permit. In addition to all requirements for a land use permit, Ground Mounted Private Solar Energy Systems are also subject to the following requirements:

a. *Site Plan.* Before installation of a Ground Mounted Private Solar Energy System, the property owner must submit a site plan to the Zoning Administrator. The site plan must be drawn to scale.

b. *Maximum Height.* A Ground Mounted Private Solar Energy System must not exceed the maximum height of twelve (12) feet above the ground when oriented at maximum tilt.

c. *Location.* A Ground Mounted Private Solar Energy System must be located in the side or rear yard and must comply with all required setback requirements applicable to a ground mounted private solar energy system.

d. *Underground Transmission.* All power transmission or other lines, wires, or conduits from a Ground Mounted Private Solar Energy System to any building or other structure must be located underground. If batteries are used as part of the Ground Mounted Private Solar Energy System, they must be placed in a secured container or enclosure.

e. *Lot Area Coverage.* Ground Mounted Private Solar Energy Systems shall not count toward the lot coverage requirements of the zoning district standards.

f. *Setbacks.* Ground Mounted Private Solar Energy Systems shall be located 50 feet from any rear property line; 40 feet from any side property line; and shall not maintain a required setback from another structure on the same property. Ground Mounted Private Solar Energy Systems shall not be permitted in the front yard area.

g. *Appearance.* The exterior surfaces of a Ground Mounted Private Solar Energy System must be generally neutral in color and substantially non-reflective of light.

h. *Remedies.* If an applicant or operator of a Ground Mounted Solar Energy System fails to comply with this Ordinance, the Township, in

addition to any other remedy under this Ordinance, may revoke the land use permit approval after giving the applicant notice and an opportunity to be heard. Additionally, the Township may pursue any legal or equitable action to abate a violation and recover any and all costs, including the Township's actual attorney fees and costs.

C. Commercial Solar Energy Systems. Commercial Solar Energy Systems are allowed only in the CA, Conservation Agricultural, zoning district and require a special land use permit and site plan review. In addition to all requirements for a special land use permit under Article X and site plan review and approval under Article X, Commercial Solar Energy Systems are also subject to the following requirements:

1. *Application Requirements.* The applicant for a Commercial Solar Energy System must provide the Township with all of the following:

a. Application fee in an amount set by resolution of the Township Board.

b. A list of all parcel numbers that will be used by the Commercial Solar Energy System; documentation establishing ownership of each parcel; and any lease agreements, or easements, for the subject parcels.

c. An operations agreement setting forth the operations parameters, the name and contact information of the certified operator, the applicant's inspection protocol, emergency procedures, and general safety documentation. ***(Maybe Eliminate this section).***

d. Property survey that depicts all easements and existing structures and equipment.

e. A site plan that includes all proposed structures and the location of all equipment, transformers, and substations, as well as all setbacks, panel sizes, and the location of property lines, signage, fences, greenbelts and screening, drain tiles, easements, floodplains, bodies of water, proposed access routes, and road right of ways. The site plan must be drawn to scale and must indicate how the Commercial Solar Energy System will be connected to the power grid.

f. A copy of the applicant's power purchase agreement or other written agreement with an electric utility showing approval of an interconnection with the proposed Commercial Solar Energy System. ***(Ask Attorney if we need this).***

g. A written plan for maintaining the subject property, including a plan for maintaining and addressing stormwater management, which is subject to the Township's review and approval.

h. A decommissioning and land reclamation plan describing the actions to be taken following the abandonment or discontinuation of the

Commercial Solar Energy System, including evidence of proposed commitments with property owners to ensure proper final reclamation, repairs to roads, and other steps necessary to fully remove the Commercial Solar Energy System and restore the subject parcels, which is subject to the Township's review and approval. ***(Ask Attorney if this is needed) (Also see page 8, Section 12).***

i. Financial security that meets the requirements of this Section, which is subject to the Township's review and approval. ***(Ask Attorney if this is needed). (Also see page 8, Section 13).***

j. A plan for resolving complaints from the public or other property owners concerning the construction and operation of the Commercial Solar Energy System, which is subject to the Township's review and approval. ***(Ask if this is needed).***

k. A plan for managing any hazardous waste, which is subject to the Township's review and approval.

l. A construction phasing or sequencing plan, a temporary storage plan, transportation plan for construction and operation phases, including any applicable agreements with the County Road Commission and Michigan Department of Transportation, which is subject to the Township's review and approval.

m. An attestation that the applicant will indemnify and hold the Township harmless from any costs or liability arising from the approval, installation, construction, maintenance, use, repair, or removal of the Solar Energy System, which is subject to the Township's review and approval. ***(Ask Attorney if this is needed).***

n. Proof of environmental compliance, including compliance with Part 31, Water Resources Protection, of the Natural Resources and Environmental Protection Act; (MCL 324.3101 et. seq.; Part 91, Soil Erosion and Sedimentation Control (MCL 324.9101 et. seq.) and any corresponding County ordinances; Part 301, Inland Lakes and Streams, (MCL 324.30101 et. seq.); Part 303, Wetlands (MCL 324.30301 et. seq.); Part 365, Endangered Species Protection (MCL324.36501 et. seq.); and any other applicable laws and rules in force at the time the application is considered by the Township

o. Any additional information or documentation requested by the Planning Commission, Township Board, or other Township representative. ***(Ask Attorney if this can be removed).***

2. *System and Location Requirements.*

a. Commercial Solar Energy Systems must be ground mounted.

b. Commercial Solar Energy Systems must be located on parcels of land twenty (20) acres in size or larger. ***(Do we need a minimum size? Ask Attorney).***

c. Commercial Solar Energy Systems are not permitted on any properties enrolled in the PA 116 Farmland and Open Space Preservation Program. ***(Ask Attorney if this can be removed).***

d. Commercial Solar Energy Systems (including all solar panels, structures, equipment, and fencing) must be set back 500 feet from all lot lines, private road easements, shared driveway easements, and public road rights-of-way. If a single Commercial Solar Energy System is located on more than one lot, then the lot-line setbacks of this subsection do not apply to the lot lines shared by those lots.

e. The height of the Commercial Solar Energy System and any mounts, buildings, accessory structures, and related equipment must not exceed fifteen (15) feet when oriented at maximum tilt.

3. *Lot Area Coverage.* Shall comply with zoning district requirements; however, the free-standing solar panels shall not count toward the lot coverage requirements.

4. *Permits.* All required county, state, and federal permits must be obtained before the Commercial Solar Energy System begins any construction.

5. *Screening.* Greenbelt screening is required around any Commercial Solar Energy System and around any equipment associated with the system shall comply with the Greenbelt standards outlined in Section 5.11.2.B.C. of the Township Zoning Ordinance.

6. *Lighting.* Lighting of the Commercial Solar Energy System is limited to the minimum light necessary for safe operation. Illumination from any lighting must not extend beyond the perimeter of the lot(s) used for the Commercial Solar Energy System. The Commercial Solar Energy System must not produce any glare that is visible to neighboring lots or to persons traveling on public or private roads.

7. *Underground Transmission.* All power transmission or other lines, wires, or conduits from a Commercial Solar Energy System to any building or other structure must be located underground at a depth that complies with current National Electrical Code standards, except for power switchyards or the area within a substation. If batteries are used as part of the Ground Mounted Solar Energy System, they must be placed in a secured container or enclosure.

8. *Drain Tile Inspections.* The Commercial Solar Energy System must be maintained in working condition at all times while in operation. The applicant or operator must inspect all drain tile at least once every three years by means of robotic camera, with the first inspection occurring before the Commercial Solar Energy System is in operation. The applicant or operator must submit proof of the inspection to the Township. The owner or operator must repair any damage or failure of the drain tile within sixty (60) days after discovery and submit proof of the repair to the Township. The Township is entitled, but not required, to have a representative present

at each inspection or to conduct an independent inspection. ***(Get comments from Engineering Consultant on this).***

9. *Insurance.* The applicant or operator will maintain property/casualty insurance and general commercial liability insurance in an amount of at least $10 million per occurrence. ***(Get comments from Attorney if this is needed).***

10. *Decommissioning.* If a Commercial Solar Energy System is abandoned or otherwise nonoperational for a period of one year, the property owner or the operator must notify the Township and must remove the system within six (6) months after the date of abandonment. Removal requires receipt of a demolition permit from the Building Official and full restoration of the site to the satisfaction of the Zoning Administrator. The site must be filled and covered with topsoil and restored to a state compatible with the surrounding vegetation. The requirements of this subsection also apply to a Commercial Solar Energy System that is never fully completed or operational if construction has been halted for a period of one (1) year. ***(Get comments from Attorney if this is needed).***

11. *Financial Security.* To ensure proper decommissioning of a Commercial Solar Energy System upon abandonment, the applicant must post financial security in the form of a security bond, escrow payment, or irrevocable letter of credit in an amount equal to 125% of the total estimated cost of decommissioning, code enforcement, and reclamation, which cost estimate must be approved by the Township. The operator and the Township will review the amount of the financial security every two (2) years to ensure that the amount remains adequate. This financial security must be posted within fifteen (15) business days after approval of the special land use application. ***(Get comments from Attorney if this is needed).***

12. *Annual Report.* The applicant or operator must submit a report on or before January 1 of each year that includes all of the following:

a. Current proof of insurance;

b. Verification of financial security; and

c. A summary of all complaints, complaint resolutions, and extraordinary events. ***(Get Comments from Attorney if this is needed).***

13. *Inspections.* The Township may inspect a Commercial Solar Energy System at any time by providing 24 hours advance notice to the applicant or operator.

14. *Transferability.* A special use permit for a Commercial Solar Energy System is transferable to a new owner. The new owner must register its name and business address with the Township and must comply with this Ordinance and all approvals and conditions issued by the Township. ***(Ask Attorney if this is needed).***

15. *Remedies.* If an applicant or operator fails to comply with this Ordinance, the Township, in addition to any other remedy under this Ordinance, may revoke the special land use permit and site plan approval after giving the applicant or operator notice and an opportunity to be

heard. Additionally, the Township may pursue any legal or equitable action to abate a violation and recover any and all costs, including the Township's actual attorney fees and costs. ***(Ask Attorney if this is needed).***

Section 3. Amend Section XX.

Section XX of the Zoning Ordinance, entitled CA (Conservation Agricultural) Zoning District is amended to add the following uses permitted by special land use permit:

- Ground Mounted Private Solar Energy System
- Commercial Solar Energy System

Section 4. Validity and Severability.

If any portion of this Ordinance is found invalid for any reason, such holding will not affect the validity of the remaining portions of this Ordinance.

Section 5. Repealer.

All other ordinances inconsistent with the provisions of this Ordinance are hereby repealed to the extent necessary to give this Ordinance full force and effect.

Section 6. Effective Date.

This Ordinance takes effect seven (7) days after publication as provided by law.

MICHIGAN STATE UNIVERSITY | Extension

GRAHAM SUSTAINABILITY INSTITUTE
UNIVERSITY OF MICHIGAN

PLANNING & ZONING FOR SOLAR ENERGY SYSTEMS

A GUIDE FOR MICHIGAN LOCAL GOVERNMENTS

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Jason Derry, *Research Assistant*
Emma Gilbert, *Research Assistant*

University of Michigan
Graham Sustainability Institute

Sarah Mills, *Senior Project Manager*
Hannah Smith, *Research Assistant*

Cover image: Ground-mounted SES with pollinator garden. Photo by Rob Davis.

BACKGROUND & PURPOSE

Lapeer Solar Park. Photo by Bradley Neumann.

Michigan's diverse energy future is set in motion. Utility companies have bold plans to expand solar options and other forms of renewable energy over the next two decades and beyond. By 2040, DTE Energy[1] expects to have over 10 million solar panels generating power for its customers. Consumers Energy also announced[2] plans to build roughly 8,000MW of solar energy by 2040. Regional electric cooperatives and municipally owned utilities are following suit, with plans to expand solar energy production. Michigan has 65 utilities across two peninsulas.

The shift in the utility sector from centralized power generation (e.g., a large coal plant) to a higher number of accessory and principal use solar energy systems (SES[3]) means Michigan communities should plan for renewable energy development within their jurisdictions. According to a 2019 study of solar ordinances in Michigan, fewer than 20% of Michigan communities have zoning regulations in place to address all scales of SES.[4] These scales are defined further in Section 3 of this guide.

The purpose of this guide is to help Michigan communities meet the challenge of becoming solar-ready by addressing SES within their planning policies and zoning regulations. This document illustrates how various scales and configurations of photovoltaic SES fit into landscape patterns ranging between rural, suburban, and urban.

1 Our Bold Goal for Michigan's Clean Energy Future. DTE. (2020). https://dtecleanenergy.com/

2 Consumers Energy. Consumers Energy Announces Plan to End Coal Use by 2025; Lead Michigan's Clean Energy Transformation. (2021). https://www.consumersenergy.com/news-releases/news-release-details/2021/06/23/consumers-energy-announces-plan-to-end-coal-use-by-2025-lead-michigans-clean-energy-transformation

3 Michigan Office of Climate and Energy. (2019). Michigan Zoning Database. Available at https://www.michigan.gov/climateandenergy/0,4580,7-364-85453_85458-519951--,00.html

4 Ibid.

Planning and Zoning for Solar Energy Systems: A Guide for Local Governments in Michigan was developed by experts within Michigan State University Extension (MSUE) and Michigan State University's School of Planning, Design and Construction in partnership with faculty at the University of Michigan Graham Sustainability Institute. Further review of this document was completed by content experts from local units of government, legal counsel, energy-related non-profits, utility experts, and members of academia. Its intent is to help Michigan communities make public policy decisions related to solar energy development.

This guide is written for use by local planners, officials, legal counsel, and policymakers within the State of Michigan. It first presents the current context for solar in Michigan, describes the various components and configurations of SES, and provides principles for how SES might fit within various land-use patterns across the state. Then, starting on Page 22, the guide presents sample language for including SES into a community's zoning ordinance. The findings and recommendations in this document are based on university peer-reviewed research (whenever available and conclusive) and on the parameters of Michigan law as it relates to the topic(s) in Michigan. The zoning and regulatory rules and concepts discussed here may not apply in other states. This guide will be updated as solar technology evolves and as we learn more from the deployment of existing technology.

Preparing a zoning ordinance and master plan are only two aspects of being solar-ready. More information on how communities can plan for, regulate, and reduce barriers for SES—through meaningful public engagement, clarifying building/electrical permit processes, reducing permit fees, and evaluating placement of SES on or near municipal buildings, to name a few—is available through numerous Michigan agencies, universities, and organizations, and through the SolSmart[5] program. Additional resources on solar energy (and renewable energy) planning and zoning in Michigan are available from MSU Extension[6] and the Michigan Department of Environment, Great Lakes, and Energy[7] in partnership with University of Michigan Graham Sustainability Institute[8] faculty.

Ground-mounted SES, Grand Traverse waterfront. Photo by Mary Reilly.

5 SolSmart. (2021). Program Guide. Available at: https://solsmart.org/resources/solsmart-program-guide/
6 MSU Extension Outreach. Michigan Station University. https://www.canr.msu.edu/outreach/
7 Community Energy Management. Office of Climate and Energy. https://www.michigan.gov/climateandenergy/0,4580,7-364-85453_98214---,00.html
8 Graham Sustainability Institute. University of Michigan. http://graham.umich.edu/

SOLAR ENERGY IN MICHIGAN

O'Shea Solar Park, Detroit. Photo by DTE Energy.

While the solar resources in Michigan and other Midwestern states are not as abundant as in the Southwest,[9] over the course of one year, a solar panel in a typical Michigan location produces approximately 70% of the energy as the same solar panel in Phoenix, Arizona.[10] Furthermore, technology advancements have led to rapid cost reductions at all levels of solar development, making solar an increasingly cost-competitive option, both nationally and in Michigan specifically.[11] As a result, utility companies in Michigan have plans to significantly increase the amount of power generated from solar energy. This shift is evidenced by the amount of utility-scale solar energy development currently under construction or in the development queue,[12] along with expanding installations of smaller on-site solar energy systems.[13]

As the demand for clean energy sources continues to grow, Michigan communities are being approached with development proposals for new SES. It is vital that communities have planning and zoning in place to address these proposals. By doing so, communities have the opportunity to proactively determine how SES can fit into their landscape through master planning and zoning ordinance development.

MASTER PLANNING AND ZONING

Solar energy systems can serve as a method to help reach several different goals that a community may identify, including those focused on resiliency, economic development, farmland preservation, climate action, energy generation, and more.

A community's master plan sets the vision and high-level goals for the community. Local policy related to renewable energy generation is established first in the master plan, with an explanation of how SES could fit into the unique landscapes and character of the jurisdiction. In addition to the master plan, goals related to SES are established in other local plans, which could include district or sub-area plans, resiliency plans, climate action plans, or renewable energy plans. Here, specific geographical areas are designated as ideal for SES development. Including SES in local plans supports the establishment of related zoning regulations, consistent with the requirement of the Michigan Zoning Enabling Act (MZEA).[14] A community-supported vision, followed by the adoption of reasonable zoning standards, together establish a successful framework for SES in a community.

9 Solar Resource Data, Tools, and Maps. National Renewable Energy Laboratory. https://www.nrel.gov/gis/solar.html.

10 Solar Resource Data. NREL PVWatts Calculator. Available at: https://pvwatts.nrel.gov/pvwatts.php.

11 Lazard. (2020). Levelized Cost of Energy and Levelized Cost of Storage – 2020. Available at: https://www.lazard.com/perspective/levelized-cost-of-energy-and-levelized-cost-of-storage-2020/; Solar Technology Cost Analysis. NREL. https://www.nrel.gov/solar/solar-cost-analysis.html.

12 Midcontinent Independent System Operator, Inc. https://www.misoenergy.org/planning/generator-interconnection/GI_Queue/.

13 MPSC. (2020). Distributed Generation Program Report for Calendar Year 2019. https://www.michigan.gov/documents/mpsc/DG_and_LNM_Report_Calendar_Year_2019_711217_7.pdf

14 Michigan Zoning Enabling Act, Public Act (PA) 110 of 2006, as amended. http://legislature.mi.gov/doc.aspx?mcl-Act-110-of-2006.

Incorporating renewable energy into the master plan is a logical place to start before drafting zoning regulations. The MZEA requires that all zoning be based on a plan. The master plan therefore establishes the community's formal policy position on solar energy development. For example, the master plan might set a goal that permits accessory SES throughout the jurisdiction. For principal-use SES, it might define what scale is appropriate as a permitted use (i.e., use by right) or determine appropriateness based on the location of marginal lands, soil types, or steep slopes. It could document community attributes or characteristics that are important to consider and/or protect when siting solar energy development. A master plan ideally includes a spatial analysis of land-use suitability and incorporates community engagement to establish formal guidance for the zoning regulations.

Accessory ground-mounted SES powering remote meteorological and communications equipment. Photo by Bradley Neumann.

COMMENTARY: A request for solar energy development may land on the doorstep of a community that has no mention of solar in the zoning ordinance or master plan. While neither ideal nor recommended, communities sometimes zone first and plan second.[15] Amending the zoning ordinance first without planning for solar is a relatively common course of action, especially when there is a sense of urgency to the permit request. If a community cannot avoid amending the zoning ordinance without first amending the plan, they should work closely with a qualified planner or municipal attorney to perform a master plan review in order to find elements that support or contradict a solar energy zoning amendment. Master plan elements to consider in this review:

- **Vision statement:** How do these broad community statements align with or contradict the contemplated ordinance amendment? Does the vision include renewable energy?
- **Goals and objectives:** If the solar amendment includes multiple scales of SES, then review the goals, objectives, and policies for all relevant land-use classifications on the future land-use map, such as agricultural, residential, commercial, forestry, industrial, etc.
- **Brownfields or grayfields:** Review plans, policies, and maps for recommended zoning approaches.
- **Future land-use map:** Review the map for projected areas of growth (infrastructure extension, type of growth or change in land-use) or areas with goals, objectives, and policies to preserve or maintain a unique community asset.
- **Zoning plan:** While not required as a precursor to a zoning amendment, a statement in the zoning plan[16] affirming the preferred scope and/or location of SES relative to other land-use classifications and zoning districts may be sufficient to show the community anticipated the solar zoning amendment but had not yet taken action to amend the ordinance. [End of commentary]

15 All zoning must be based on a plan. MCL 125.3203(1). http://legislature.mi.gov/doc.aspx?mcl-125-3203

16 Michigan Planning Enabling Act, MCL 125.3833 (2.d)

After a community has incorporated solar development into its master plan, the zoning ordinance can be amended to include regulations for the various configurations and scales of SES. The zoning regulations protect the community's health, safety, and welfare, and are based on policies outlined in the master plan. Zoning regulations define the location, scale, and form or configuration of SES allowed in the community and establish the permits and processes by which solar energy is allowed and even incentivized.

COMMENTARY: According to a review of Michigan zoning ordinances,[17] large-scale solar energy systems (see Section 3) tend to be allowed as principal land uses of property and authorized by special land-use permit in certain zoning districts within a community. Accessory structures, where the electricity generated is used by the principal land use on the property, are generally allowed in more or all zoning districts as accessory uses by right. Furthermore, roof-mounted systems are generally permitted in more zoning districts within a community than ground-mounted systems. In fact, it is quite common to see roof-mounted systems allowed in all zoning districts.

Some communities also permit ground-mounted systems in all districts, though this is less frequently the case than with roof-mounted systems. More specifically, ground-mounted systems tend to be allowed in lower-density districts where there is likely to be larger parcels with larger yards that can accommodate the accessory structure on-site. [End of commentary]

PUBLIC ACT 116—FARMLAND DEVELOPMENT RIGHTS PROGRAM

The Michigan Department of Agriculture and Rural Development (MDARD) administers the Michigan Farmland and Open Space Preservation Program, which includes the Farmland Development Rights Program, commonly referred to as PA 116 (Public Act 116 of 1974). The PA 116 program allows a landowner to voluntarily enter into an agreement with the State to retain their land in agriculture in exchange for certain tax benefits and exemptions from various special assessments.

Prior to 2019, principal-use solar was not permitted on land enrolled in the PA 116 Farmland Preservation Program. The policy has since changed to allow landowners to put their PA 116 agreements on hold to pursue solar development if specified conditions are met.[18] For example, among the conditions in PA 116 are those that require the developer to maintain existing field tile, plant a cover crop that includes pollinator habitat, and post a surety bond or letter of credit with the state to ensure that solar panels will be removed, and the land will be returned to a condition that enables farming at the end of the project life. This allows farmers to take advantage of the economic opportunity presented by solar development while preserving the long-term viability of growing crops or raising livestock on that land. Under the terms of the Farmland Development Rights Agreement, it is the landowner's responsibility to work with the solar energy developer to ensure that all conditions associated with PA 116 are satisfied. Therefore, a landowner will need to address such conditions in the solar energy lease, easement, or other agreement with the developer. In some counties, as much as 80% of farmland is enrolled in PA 116.[19] It is important for municipalities to understand the scope of PA 116 lands within their jurisdiction.

17 Derry, J., & Gilbert, E. (2020). Primary Research on Planning and Zoning for Solar Energy Systems in the State of Michigan. https://www.canr.msu.edu/resources/primary-research-on-planning-zoning-for-solar-energy-systems-in-the-state-of-michigan

18 The Farmland and Open Space Preservation Act, being PA 116 of 1974, now codified in Part 361 of the Natural Resources and Environmental Protection Act, PA 451 of 1994. http://legislature.mi.gov/doc.aspx?mcl-451-1994-III-1-LAND-HABITATS-361. Also see: https://www.michigan.gov/mdard/0,4610,7-125-1599_2558---,00.html

19 MDARD Farmland Preservation Program (PA116) Percentage of Farmland Enrolled by County. https://www.michigan.gov/documents/mdard/PA116_Enrollment_Map_531166_7.pdf

Rooftop SES, Petoskey, Michigan. Photo by Richard Neumann.

PRIVATE RESTRICTIONS

Private restrictions, such as homeowners' association (HOA) rules, deed restrictions, or architectural standards within a subdivision or condominium development, can limit the installation of SES regardless of local government plans and ordinances. Local governments can work with neighborhood associations, sharing sample rules that allow for SES on individual properties and attempting to align the goals of the association with existing local policy. An additional possibility would be to include a requirement in one's zoning ordinance that all new residential developments must allow rooftop solar as a permitted use in the development.

ZONING FEES AND ESCROW POLICY

The local resolution governing permit fees and review costs should be updated to include SES upon adoption of a zoning amendment regulating the use. The Michigan Zoning Enabling Act authorizes the legislative body to adopt reasonable fees for zoning permits.[20] The permit fee amount must be set by the legislative body to cover anticipated actual cost of the application review and not more.

To encourage the adoption of solar energy, some communities waive or reduce zoning fees for some types of systems. Within the SolSmart certification program, for example, communities can earn points toward certification by waiving or exempting fees for residential solar permit applications.

For large utility-scale SES, though, a community might consider using escrow funds deposited by the applicant to recover the expense of hiring outside reviewers, such as an attorney, engineer, or planning consultant. An escrow policy provides a mechanism for the community to anticipate the costs associated with reviewing a complex application. Prior to requiring escrow funds for a zoning application review, the legislative body must first adopt an escrow policy by resolution.[21,22] Among other things, an escrow policy establishes administrative guidelines for spending, replenishing the escrow below a certain balance, and returning remaining funds.

20 Michigan Zoning Enabling Act, Act 110 of 2006, MCL 125.3406, http://legislature.mi.gov/doc.aspx?mcl-125-3406

21 Forner v. Allendale Charter Twp. Court: Michigan Court of Appeals, 2019 Mich. App. LEXIS 576, 2019 WL 1302094 (March 21, 2019, Decided), Unpublished Opinion No. 339072, http://www.michbar.org/file/opinions/appeals/2019/032119/70094.pdf

22 Charter Township Act, PA 359 of 1947. http://legislature.mi.gov/doc.aspx?mcl-Act-359-of-1947. Revised Statutes of 1846. http://legislature.mi.gov/doc.aspx?mcl-R-S-1846-41-1-16

Langeland Farms SES. Photo by M. Charles Gould.

OTHER PERMIT PROCESSES

The planning commission can serve in a coordinating role to ensure additional required permits are obtained before planning commission review and approval. For example, the application may include mitigation measures to minimize potential impacts on the natural environment, including but not limited to wetlands and other fragile ecosystems, historical sites, and cultural sites. In addition to local zoning permits, solar energy developments may require permits from other agencies, including:

- **Department of Environment, Great Lakes, and Energy (EGLE)** if the project affects waters of the state, such as wetlands, streams, or rivers.[23]
- **U.S. Fish and Wildlife Service (USFWS)** for the Endangered Species Act or migratory flyways.[24]
- **Federal Aviation Administration (FAA)** for projects on or within the vicinity of an airport to determine if any safety or navigational problems are present.[25]
- **Municipal or County Soil Erosion Permitting Agency** if the project is one or more acres in size, or is within 500 feet of a lake or stream.[26]
- **Tax Assessor** or zoning administrator for land division approval if leasing less than 40 acres or the equivalent for more than one year.[27]
- **Building Department** for required building, electrical, and mechanical permits.[28]
- **Local Airport Zoning**, for projects within 10-miles of a local airport.[29,30]

23 Parts 301 and 303 of the Natural Resources and Environmental Protection Act, PA 451 of 1994. http://legislature.mi.gov/doc.aspx?mcl-451-1994-III-1-INLAND-WATERS

24 Federal laws administered by the USFWS: Endangered Species Act (ESA); Bald and Golden Eagle Protection Act (BGEPA); Fish and Wildlife Coordination Act (FWCA). See: https://www.fws.gov/ecological-services/energy-development/laws-policies.html

25 Part 77 (Airspace Review) of Title 14 of the Code of Federal Regulations. https://www.faa.gov/airports/environmental/policy_guidance/media/FAA-Airport-Solar-Guide-2018.pdf

26 Soil Erosion and Sedimentation Control. https://www.michigan.gov/egle/0,9429,7-135-3311_4113-8844--,00.html

27 Michigan Land Division Act, PA 288 of 1967, definition of 'Division' – MCL 560.102(d). http://legislature.mi.gov/doc.aspx?mcl-560-102

28 When a project is developed or owned by a private entity, local construction permits are required. If the project is owned by a regulated utility, then local building and electrical permits may not be required but projects are instead regulated by the Michigan Public Service Commission. See Stille-Derossett-Hale Single State Construction Code Act, PA 230 of 1972, MCL 125.1502a(1)(bb), http://legislature.mi.gov/doc.aspx?mcl-125-1502a; and 2015 Michigan Building Code, 1.105.2.3 Public Service Agencies, https://www.michigan.gov/lara/0,4601,7-154-89334_10575_17550-234789--,00.html

29 Airport Zoning Act, Act 23 of 1950. http://www.legislature.mi.gov/documents/mcl/pdf/mcl-act-23-of-1950-ex-sess-.pdf

30 Michigan Zoning Enabling Act, Act 110 of 2006, MCL 125.3203, http://legislature.mi.gov/doc.aspx?mcl-125-3203

SCALES & COMPONENTS

Ground-mounted monopole SES. Photo by Bradley Neumann.

This section discusses SES across a range of sizes, scales, configurations, and related components. SES cannot be treated uniformly by local governments because the scale of installations and energy generation capacity can vary dramatically. For example, a small solar panel powering a streetlight might be exempt from regulation, while a large-scale photovoltaic SES, providing power to the grid through a system of components, likely would require rigorous local review.

TYPES

Solar energy generation for distribution to the grid is a unique land use, at both the large and small scale. As such, these developments should be clearly defined as a separate land use within a zoning ordinance. Treating all scales of SES the same may unnecessarily restrict accessory and small scale installations. In addition, solar developments are scalable and can be sited across many zoning districts. Therefore, in zoning ordinances, SES should be expressly defined as distinct land uses at the different system scales that the community desires (e.g. accessory use vs. principal-use, small SES vs. large SES, ground-mounted SES vs. roof-mounted SES, etc.).

The first distinction to consider for SES is accessory use versus principal use.

Accessory: These SES are accessory to the primary use of a property, such as a residence or a commercial building, and provide electricity that is intended for use by a primary structure located on the same parcel as the SES. Accessory systems can range in size and configuration. They typically range from being small enough to power an exterior light fixture to being large enough to power electricity for multiple buildings, for instance livestock or equipment barns. On-site (or distributed-generation) systems can be affixed to the roof of a building or can be freestanding, ground-mounted structures.

Principal: Principal-use SES developments generate electricity distributed off-site through the grid and exported to a wholesale utility market. These projects occupy single or multiple large parcels of land and are typically the primary use on the site. These SES vary greatly in size, covering as little as an acre to thousands of acres. In addition, SES have two primary configurations: ground-mounted and roof-mounted.

Roof-Mounted: A roof-mounted SES has solar panels affixed to a racking system on the roof of a building, which may be a residential, agricultural, institutional, commercial, or industrial building. Roof-mounted panels can be installed parallel to the roof surface, like a solar shingle, or protrude from the roof at an angle, like an awning. A roof-mounted SES typically has fixed mounts that do not rotate throughout the day to track the sun. By definition, roof-mounted systems are accessory structures relative to the principal use of the building.

Ground-Mounted: A ground-mounted SES has solar panels affixed to a racking system on support posts. These posts are most commonly driven into the ground, without requiring excavation for a concrete foundation. However, in cases where the soil cannot be penetrated, such as with a brownfield or capped landfill, ground-mounted SES can also be designed with ballasted supports that sit atop the ground. A ground-mounted SES may be fixed (i.e., stationary) or have single- or double-axis trackers to follow the sun throughout the day. While nearly all principal-use SES are ground-mounted, some accessory SES may be ground-mounted, too. For example, solar parking canopies are becoming more common in Michigan and present unique characteristics as compared to a typical ground-mounted SES.

These characteristics include unique panel height, vehicle support-post collision mitigation, lighting, and site configurations. Ground-mounted SES can also be distinguished by scale, which we define in this guide to be 'large' or 'small'.

SCALES

As mentioned, even principal-use SES can vary greatly in size, covering as little as an acre to thousands of acres. Because of this variation in the size and impact on a site, many communities may choose to distinguish between small and large principal-use SES in their ordinances. To be sure, there is no established definition of "small" or "large," and for other industry or taxation purposes, large- and small-scale distinctions may differ.

In assisting a community in making a distinction between scales of SES based on size, Table 1 (below) illustrates common SES outputs measured in megawatts (MW) of direct current (DC)[31] and the average acreage of land required to host an SES of that output.[32] Larger projects have a higher variability in land required per megawatt (5-10 acres per MW DC)[33], depending on how many parcels are involved and the layout of solar panels within them.

Table 1. Comparison Chart: Megawatt Outputs to Acreage Needed

Megawatts (DC)	Acres
1 MW*	5-10
2 MW	10-20
20 MW	100-200
100 MW	500-1,000
200 MW	1,000-2,000

*The current national average (through 2018) number of homes powered by 1 MW of solar is 190. Since SEIA began calculating this number in 2012 it has ranged from 150 - 210 homes/MW.[34]

31 Solar output can also be measured in alternating current (AC), often for taxation or regulatory policies. An SES will have a higher MW DC rating than MW AC rating since there are some losses when inverting power from DC to AC to connect to the grid.

32 Ong, S., Campbell, C., Denholm, P., Margolis, R., and Heath, G. 2013. Land-Use Requirements for Solar Power Plants in the United States. National Renewal Energy Laboratory, Technical Report NREL/TP-6A20-56290. Table ES-1, Page v. Source: https://www.nrel.gov/docs/fy13osti/56290.pdf. Retrieved August 27, 2021.

33 Solar Energy Industries Association (SEIA). (2021). Siting, Permitting & Land Use for Utility-Scale Solar. https://www.seia.org/initiatives/siting-permitting-land-use-utility-scale-solar

34 SEIA. (2021). What's in a Megawatt? https://www.seia.org/initiatives/whats-megawatt

(Clockwise from top right) Ground-mounted SES with grazing (sheep) by Mary Reilly.; park outbuilding, rooftop SES in winter, demonstration array, all by Bradley Neumann.

In this guide, the scale threshold between small and large principal-use SES is 2MW (or approximately 20 acres). Currently, there are dozens of SES projects of 2MW and less being developed in the state.[35] These have largely been well-received by local communities, suggesting they fit within the character of the landscapes in which they are proposed. Small systems 2MW or under (or 20 acres) could be permitted by right after an administrative site plan review (see discussion below). Each community, though, should determine what the right demarcation of scale is between small and large principal-use SES given the community's context. In an urban environment, where parcels are smaller, the threshold to classify as a large principal-use SES may be smaller projects of fewer megawatts. In a community abundant with rural land or experience with expansive developments, a larger MW or acreage threshold for large projects may be more appropriate.

35 Most of these small projects are sized so that they can be considered "qualifying facilities" under PURPA, a federal law enacted in 1978, intended to diversify electricity generation. Specific capacity (MW) thresholds to receive the "standard offer tariff" vary from utility to utility. The current standard offer capacity threshold and more about PURPA can be found on the Michigan Public Service Commission's website: https://www.michigan.gov/mpsc/0,9535,7-395-93309_93439_93463_93723_93730-406273--,00.html

COMMON SOLAR COMPONENTS

All SES require equipment to operate properly, although this equipment may differ based on the scale and configuration of the system. Besides the solar array panels/modules themselves, four common types of equipment are included with an SES: an inverter, a battery system (if in use), racking, and wiring. There are also other 'balance of system' components that may or may not be present: combiner boxes, disconnect switches, a weather station, performance monitoring equipment, and transformers.

Solar Panels: Photovoltaic solar panels convert light (photons) to electricity (voltage). The vast majority of today's solar panels are made of silicon solar cells. An individual solar panel is typically assembled on racking to function with other panels as part of an array. Commercial solar panels are constructed with one or more anti-reflective coatings often made of magnesium fluoride (MgF_2). Anti-reflective coatings have been highly improved in the last 20-30 years to ensure that panels maximize how much light reaches the photovoltaic cells. Glare from modern solar panels is insignificant and local regulation, even adjacent to airports, is not always required.

Inverter: Inverters convert direct current (DC) electricity generated by photovoltaic modules into alternating current (AC) electricity that is compatible with batteries and the electrical grid.[36] Some inverters produce sound when in operation, which can often be managed with proper placement based on the sound pressure they produce. Communities may choose to adopt sound regulations to influence the placement and design of inverters within an SES.[37]

Battery: Some homeowners or solar developers include batteries in their solar installations, allowing the solar energy to be stored and used at later times when it is needed (such as at night). These on-site batteries make solar energy more accessible and reliable as an electricity source, and are becoming increasingly common for all scales of SES as per-unit costs of batteries decline. Batteries can vary in size depending on the level of storage needed and may also vary in their location on the site. For accessory systems, the batteries may be within the residence itself.

Racking: As described above, SES may be ground- or roof-mounted. The frames, support posts, foundations (if required), and hardware used to secure solar panels and other SES equipment is often collectively referred to as "racking."

Wiring: Solar panels are wired together to create an electrical circuit that allows current to flow through the component parts. Wiring extends beyond the panels to inverters, batteries, electronic devices, transformers, and/or distribution lines, depending on whether the SES generates electricity for use on-site or export to the electrical grid. Wiring between solar components may be underground.

Other components related to larger SES include transformers and substations for connecting to transmission lines that serve the electrical grid. Often solar developers connect to existing substations, but sometimes developers propose new or upgraded substations or transmission-line extensions as part of the SES. Transformers in substations increase voltage to higher levels for more efficient transmission over long distances. Transformers may produce low audible noise, so they may be subject to local government regulations applying to substations.

36 U.S. Department of Energy, Office of Energy Efficiency & Renewable Energy. Solar Integration: Inverters and Grid Services Basics. https://www.energy.gov/eere/solar/solar-integration-inverters-and-grid-services-basics

37 Kaliski, K., I. Old, and E. Duncan. An overview of sound from commercial photovoltaic facilities. June 29-July 1. NOISE-CON 2020. https://rsginc.com/wp-content/uploads/2021/04/Kaliski-et-al-2020-An-overview-of-sound-from-commercial-photovolteic-facilities.pdf

LAND-USE CONSIDERATIONS

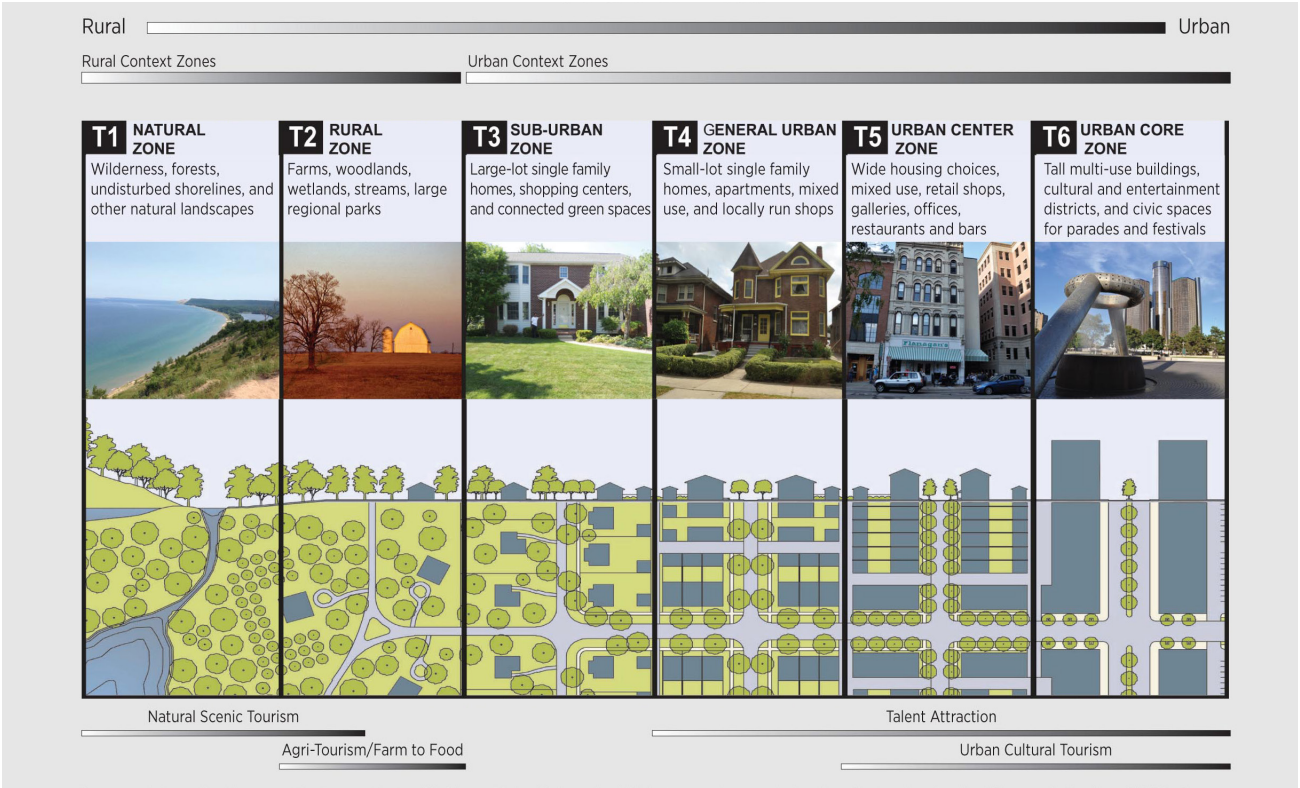


Fig 1. Rural-to-Urban Transect. *Credit: DPZ CoDesign; MSU Extension*

From left to right in **Figure 1**, above, the landscape shifts from a natural zone (T1), which can be wilderness, woodlands, wetlands, or other naturally occurring habitats, gradually transitioning in intensity-of-use to the urban core where we find our large urban centers. The remaining transect zones depicted in Figure 1 include rural farmland and open space areas (T2), suburban developments (T3) and general urban zones (T4, T5, T6), including traditional walkable neighborhoods and smaller historic downtowns. By taking a transect-based view of a community, policymakers can consider SES scales and configurations relative to the development pattern(s) in a community to determine the most appropriate regulation of SES by landscape type (vs. specific individual land use).

Solar energy systems (SES) can be of different scales and configurations within a community. As used in this document, the four basic scales of SES are roof-mounted, accessory ground-mounted, small principal-use, and large principal-use. Ultimately, the compatibility of an SES at a given site depends on its scale relative to the pattern and density of the surrounding physical and built environment. Zoning, as a local regulatory mechanism, can mitigate the impacts of SES if standards are appropriately tailored to the various development patterns of a community.

To better understand how SES can be integrated into existing development patterns in a community, it is helpful to understand and apply the 'transect' to illuminate the multiple intersections of solar configurations and scales possible across a range of natural to urban landscapes. The Rural-to-Urban Transect, depicted in Figure 1, is an urban planning model that defines a series of zones that transition from natural and sparse rural farmhouses to the dense urban core of a large regional city.[38] In the figure, the dark gray boxes are built structures served by light gray roadways and surrounded by green natural open space or trees. There is an elevation or profile view across the top 'horizon' line of each transect and a plan or aerial view of the same landscape just below.

38 For more background on the Rural-to-Urban Transect, visit the Center for Applied Transect Studies website at: https://transect.org/.

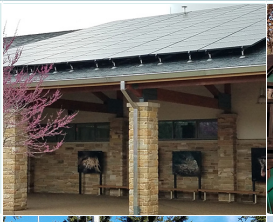
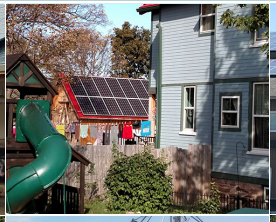
Solar Energy System Type	Natural	Rural	Urban	General Urban
Accessory Roof Mounted				
Accessory Ground Mounted				
Principal Use (Small)				
Principal Use (Large)				

Fig 2. Examples of Solar Energy System Types across the Transect

Figure 2 provides a visual depiction of the type and scale of SES that exhibit predominant factors for compatibility in a given setting. For example, while it's not generally appropriate to develop a large or small principal use SES in a natural wilderness area (T1), it may be more appropriate to allow roof-mounted SES in that transect to serve park structures and accessory equipment within this landscape. Similarly, compatible siting of SES can occur in the suburban transect zone (T3) with a full range of SES types and scales, such as a roof-mounted system on a hotel, an accessory ground-mounted SES carport, or a large or small principal use system at an office park. Regardless of whether a community uses transect-based zoning terminology in the master plan or zoning ordinance, the transect framework is helpful in developing community goals related to the logical placement and installation of SES across varying landscapes of a community.

Table 2 – SES Scale and Type as applied to Example Zoning Districts

Example Zoning District:	Resource Production / Agricultural	Low-Density Residential	Commercial / Office	Industrial	Medium-Density Residential	Mixed Use
Roof-Mounted	P	P	P	P	P	P
Accessory Ground-Mounted	P	P	P	P	P	P
Principal Use (Small)	SPR	SLU	SPR	SPR	SLU	SPR
Principal Use (Large)	SLU	X	SLU	SLU	X	X

P = Permitted Use (zoning standards apply); SPR = Site Plan Review; SLU = Special Land Use; X = Not Permitted

Understanding that various types of SES can exist (or not exist) compatibly within natural, rural, suburban, and urban land-use transects, communities with conventional, use-based zoning ordinances will need to determine the SES type and scale that best fits in each zoning district. This determination must include the approval mechanisms by which the types of SES will be allowed. See Table 2 for one approach to applying SES types and scales across a range of six common zoning districts and the zoning approval processes that might be used. Table 2 suggests permitting processes for the four main SES types. For instance, roof-mounted and accessory ground-mounted systems are likely appropriate across the transect and can be allowed as a use by right in all zoning districts. Small principal-use SES are similarly permitted across the transect, but the approval process varies depending on the context. In zoning districts where there is concern about compatibility with existing land uses, a special land-use (SLU) permit issued after planning commission review provides the most protection for existing and adjacent land uses. However, small principal-use SES might also fit within certain zoning districts without much concern and therefore can also be permitted through site plan review (SPR) performed by the zoning administrator. Lastly, large principal-use SES are permitted by SLU in many, but not all, zoning districts due to compatibility concerns with existing land uses and development patterns. For instance, it could be counter to the master plan and intent of the zoning district for a large principal-use SES to be sited in a walkable, mixed-use district. Each community, though, should tailor the SES type and scale to its own development patterns, transect zones, or zoning districts and assign the appropriate zoning approval process to each.

Overlay zoning is an optional approach to proactively establish the potential location of small or large principal-use SES.[39] Overlay zoning is often used to create a standard set of regulations to address unique needs of one type of land use by placing a second regulatory zoning district on top of the existing zoning map. This approach might be useful if the majority of the land in the community is under the same zoning designation (e.g., agricultural or ag-residential), and the community finds SES are appropriate in some, but not all, areas of that district. For example, the community may determine an SES overall to be most appropriate near existing electrical transmission lines or substations, or in sections of an ag-residential district without substantial residential development. In addition to defining the regulations for the overlay district within the zoning ordinance text, communities who opt to use overlay zoning to regulate SES should also proactively apply the overlay district to their zoning map. The boundaries of the overlay should be supported by the master plan with analysis of the solar resource, location of

39 American Planning Association. Property Topics and Concepts. https://www.planning.org/divisions/planningandlaw/propertytopics.htm

existing energy infrastructure, slopes, unique natural features, capabilities of the land/soil, current development patterns, and more.

COMMENTARY: Ethics and Conflict of Interest: Because large principal-use SES may cover hundreds of acres of land, it is not unusual for local elected officials or planning commission members' properties to be included in a project. The legislative body or planning commission may have existing rules or bylaws on what constitutes a conflict of interest for its members and how a conflict of interest is handled. Planning commissions are required to have bylaws with rules on handling conflict of interest.[40] If no such rules or bylaws are in place, they should be established and would apply to all matters before the board or commission. Involvement of the community's attorney that is experienced in municipal (planning and zoning) law is advised when a conflict of interest issue presents itself for one or more board members or planning commissioners. [End of commentary]

FARMLAND CONSIDERATIONS

When a large principal-use SES is proposed on agricultural land, there are sometimes concerns about whether the operation is a wise use of farmland and whether the land will be able to be farmed during or at the end of the solar project's life. While this question is rarely asked of other land uses in farming communities (for example, residential subdivisions are often allowed in agricultural districts and that land would not be readily farmed again), given the scale of solar projects on the horizon and that prime farmland and other important farmlands are a limited commodity,[41] it is a reasonable concern.

There is nothing inherent in solar development that would make the land unfarmable: the panels and support posts can all be removed. Driving paths between arrays or concrete pads on which the inverters sit will result in soil compaction and should be mitigated upon decommissioning, but these tend to be relatively small percentages of land area for an SES. A bigger concern for returning a solar site to crop production is site design standards, such as the choice of stormwater management practices, the extent and type of landscaping, and the use of berms as a screening mechanism. Movement of topsoil or planting of trees may jeopardize the ability to farm the land in the future. The guidelines outlined in this sample ordinance and also presented in PA 116—to maintain the field tile and plant pollinator habitat—help ensure that the land can be farmed again the future.

Some local governments have proposed going even further, prohibiting solar energy development on particular classes of farmland. The U.S. Department of Agriculture, Natural Resources Conservation Service (NRCS) uses eight categories to classify the suitability of soils to grow most kinds of field crops. In general, Class I through Class IV are suitable for cropland use while Class V through Class VIII are suitable for permanent vegetation (i.e., no tillage).[42] However, if land is predominantly Class III or higher, it might be considered marginal farmland, and therefore could be considered less valuable for long-term agricultural use—raising fewer concerns about the appropriateness of solar energy development. In communities where prohibitions based on soil classification extend to other land uses (e.g., residential developments, golf courses, airstrips), this may be reasonable based on a master plan that includes farmland preservation goals and recommends farmland protection zoning techniques and other farmland preservation tools, such as Michigan's farmland purchase of development rights program. However, if soil classification-based prohibitions only apply to large principal-use SES, this approach may be vulnerable to legal challenges.

40 MCL125.3815. http://legislature.mi.gov/doc.aspx?mcl-125-3815. Also see MSU Extension Sample Bylaws for a Planning Commission: https://www.canr.msu.edu/resources/sample_1e_bylaws_for_a_planning_commission

41 Other farmland classifications to consider include: farmland of statewide importance, farmland of local importance, unique farmland, and prime farmland if drained. https://websoilsurvey.sc.egov.usda.gov

42 USDA NRCS. Land Capability Class, by State. 1997. https://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/technical/nra/?cid=nrcs143_014040

AGRICULTURE DUAL USE

"Dual use" is the integration of solar panels in an agricultural system in a way that enhances a productive, multifunctional landscape.[43] Dual use can take many forms in agricultural areas, and while there are numerous examples of successful co-located projects, it isn't the default practice for every solar development, and may not always be possible or desired by property owners. Perhaps the most overt combination of solar and agriculture working together is through an "agrivoltaic" system that combines raising crops for food, fiber, or fuel, and generating electricity within the project area to maximize land use. Careful planning and evaluation is needed when designing the configuration of solar arrays for specialty crop production.

Grazing animals under and around solar arrays is another example of dual use. Grazing sheep is a practice that keeps land in active agricultural production and effectively manages vegetation.[44] A 2018 report from the David R. Atkinson Center for a Sustainable Future at Cornell University concluded that utilizing sheep for site vegetation management resulted in, "2.5 times fewer labor hours than mechanical and pesticide management on site."[45] Tampa Electric reported a 75% cost savings over traditional mowing at its solar sites.[46] However, grazing sheep requires careful site design (to ensure that livestock is compatible with project infrastructure), as well as vegetation planning (so that the right forages are planted and the proper rotational grazing system is implemented).[47,48,49] Done successfully, solar grazing can support the livelihoods of veterinarians, feed suppliers, and other parts of the rural agriculture economy.

Agrivoltaics and grazing are not the only ways that SES can support agricultural landscapes and economies.[50] Another dual use is planting groundcover that is compatible with solar panels and provides a variety of other ecosystem services of value. Examples include planting vegetation that provides food sources for pollinators or selecting plant species that provide ecological services, such as carbon sequestration, increased soil health, habitat preservation, or water quality improvements.[51] Though some existing solar projects may already provide stacked ecological services, research is just now underway to quantify some of these co-benefits. In the interim, SES systems that integrate plant species and practices compatible with conservation-cover standards should be treated as dual use, as they provide the ecological benefits of these farm management practices along with clean energy.

43 Low-Impact Solar Development Basics. Innovative Site Preparation and Impact Reductions on the Environment. https://openei.org/wiki/InSPIRE/Basics

44 Hartman, David. (2021). Sheep Grazing to Maintain Solar Energy Sites in Pennsylvania. Penn State Extension. https://extension.psu.edu/sheep-grazing-to-maintain-solar-energy-sites-in-pennsylvania

45 Kochendoerfer, N., Hain, L., and Thonney, M.L. (2018). The agricultural, economic and environmental potential of co-locating utility scale solar with grazing sheep. David R. Atkinson Center for a Sustainable Future, Cornell University. https://cpb-us-e1.wpmucdn.com/blogs.cornell.edu/dist/f/6685/files/2015/09/Atkinson-Center-report-2018_Final-22l3c5n.pdf

46 Utility Dive Does a Deep Dive on Solar Grazing. (2020). ASGA. https://solargrazing.org/utility-dive-does-a-deep-dive-on-solar-grazing/

47 Agricultural Integration Plan: Managed Sheep Grazing & Beekeeping. (2020). https://www.edf-re.com/wp-content/uploads/004C_Appendix-04-B.-Agricultural-Integration-Plan-and-Grazing-Plan.pdf

48 Cassida, K. and Kaatz, P. (2019). Recommended Hay and Pasture Forages for Michigan. Extension Bulletin E-3309. Michigan State University. https://forage.msu.edu/wp-content/uploads/2019/11/E3309-RecommendedHayPastureForagesForMichigan-2019.pdf

49 Undersander, D., Albert, B., Cosgrove, D., Johnson, D., and Peterson, P. (2002). Pastures for Profit: A Guide to Rotational Grazing. Extension bulletin A3529. University of Wisconsin-Extension and Minnesota Extension Service. https://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb1097378.pdf

50 A Guide to Solar Energy in Vermont's Working Landscape. (2020). The University of Vermont Extension. https://www.uvm.edu/sites/default/files/The-Center-for-Sustainable-Agriculture/resources/solar_energy_vt_working_landscape.pdf

51 Steinberger, K. (2021). Native Plant Installation and Maintenance for Solar Sites. The Nature Conservancy. https://www.nature.org/content/dam/tnc/nature/en/documents/Native-Plant-Management-at-Solar-Sites.pdf

Ground-mounted SES with grazing (sheep). Photo by M. Charles Gould.

COMMENTARY: As of January 1, 2021, the sheep and lamb inventory in Michigan was 87,000 head.[52] Of that 87,000 head, 47,000 are ewes.[53] By 2024, there will be a total of 1,188 megawatt (MW) of solar online.[54] Assuming a principal-use SES requires eight acres per MW of generating capacity, 9,504 acres could potentially be grazed.[55] At a stocking rate of three mature ewes per acre, 28,512 ewes would be needed to manage the vegetation of all solar projects currently online or going online through 2024.[56] While there are more than enough ewes to service these solar projects, the sheep inventory in the state is at grazing equilibrium. Solar projects that are suitable for grazing could spur an increase in the sheep and lamb inventory in Michigan. Because ewes can have multiple lambs, the state's sheep industry has the capacity to expand to meet this demand. Furthermore, over half of the lamb and mutton supply is currently imported[57], and with the largest livestock harvesting facility east of the Mississippi in the Detroit area, there are opportunities to replace imported meat with the increased lamb and sheep inventory. [End of commentary]

52 U.S. Department of Agriculture. Sheep and Goat Inventory News Release [NR-21-07]. (February 2021). https://www.nass.usda.gov/Statistics_by_State/Michigan/Publications/Current_News_Release/2021/nr2107mi.pdf

53 USDA NASS Great Lakes Region. 2021. News Release: Sheep and Goat Inventory NR-21-07. Found at https://www.nass.usda.gov/Statistics_by_State/Michigan/Publications/Current_News_Release/2021/nr2107mi.pdf. Retrieved July 28, 2021.

54 Correspondence on March 5, 2021 with Julie Baldwin, Manager, Renewable Energy Section of the Michigan Public Service Commission.

55 SEIA. Siting, Permitting & Land Use for Utility-Scale Solar. https://www.seia.org/initiatives/siting-permitting-land-use-utility-scale-solar.

56 U.S. Department of Agriculture. Grazier's Math, With Apologies. https://app.box.com/s/x9zv3yvili2w0l7xbh8lcl2cgn71meh6

57 USDA Economic Research Service. https://www.ers.usda.gov/topics/animal-products/sheep-lamb-mutton/sector-at-a-glance/. Retrieved July 28, 2021.

SOLAR ON BROWNFIELDS AND GRAYFIELDS

A recommended practice is to use regulation to encourage the siting of SES on land that is difficult to develop or marginal for other uses. Examples of marginal land include brownfield sites, capped landfills, grayfield sites (previously developed property), and required safety buffer areas around industrial sites. On brownfields or capped landfills, solar development can allow productive use of land that might be compromised or have other development challenges. Solar arrays can be designed to avoid penetrating the ground and don't require as much remediation as other kinds of development. In a similar vein, development of solar on grayfield sites can provide an economic development opportunity for land that is otherwise disadvantaged from a redevelopment perspective.

While the use of marginal land for solar energy development is recommended, it is not a common practice, particularly among large SES, for a range of reasons.[58] One reason is that most of these marginal lands are smaller than the preferred 100+ acres for a more typical SES, and these smaller sites typically do not allow for achieving economies of scale. Even when solar developers are building a smaller-scale project, developing on a brownfield site may require using ballasted support structures (rather than driven posts), which can be more expensive, or may require a less-than-ideal panel layout. Communities wanting to attract solar development to marginal lands may need to reduce other costs or barriers to development, such as expediting review and permitting, providing land at low or no cost, decreasing required setbacks, or providing other incentives, including offering property tax incentives where that is allowed. While Michigan has seen modest development of solar on brownfields to date, other states (for example, Massachusetts and New York) are purposely targeting such development as a land-use and local economic development strategy.[59]

CO-LOCATION WITH OTHER LAND USES

When evaluating how SES might fit into a community, one important consideration is how compatible an SES would be with the surrounding landscape and existing land use. Solar co-location is a signature concept for local regulation. The notion of co-location allows for solar energy production to be in parallel with another use.

For example, parking lots may be outfitted with solar carports as accessory structures (see extended commentary for some case studies). Other examples of co-location of SES include siting solar arrays at public school sites or other institutional grounds and in highway rights-of-way and the open space at airports. With the road network, an SES within a highway or freeway right-of-way might be deployed to power a specific piece of equipment, such as a sign, light, or meteorological station. Given their ample landholdings, airports may be ideally poised for solar installation, and have successfully installed SES as both ground-mounted and roof-mounted systems. The three primary issues regulated by the Federal Aviation Administration (FAA) are reflectivity and glare, radar interference, and the physical penetration of panels into airspace. Guidance provided by the FAA helps airport operators understand the considerations they should make in deploying solar, including when glare studies are required.[60]

Coldwater Solar Field Park.
Image courtesy of City of Coldwater, MI.

58 Schaap, B., Dodinval, C., Husak, K., & Sertic, G. (2019). Reducing Barrier to Solar Development on Brownfields. Retrieved from: http://graham.umich.edu/product/reducing-barriers-solar-development-brownfields.

59 See: Solar Massachusetts Smart Target Program. https://www.mass.gov/info-details/solar-massachusetts-renewable-target-smart-program and NYSERDA Solar Guidebook for Local Governments.

60 Federal Aviation Administration. (2018). Technical Guidance for Evaluating Selected Solar Technologies on Airports. https://www.faa.gov/airports/environmental/policy_guidance/media/FAA-Airport-Solar-Guide-2018.pdf

COMMENTARY: The use of parking lots for co-location of solar energy systems is a growing trend around the country. These dual-use situations provide unique opportunities and challenges to local governments interested in encouraging their installation.

In many situations, regulations are silent on co-location opportunities. Communities sometimes struggle to identify the land-use regulations that should apply. The following examples, which come from three different underlying land uses, show how co-location opportunities can be encouraged on surface parking infrastructure for existing uses. These summaries are based on personal interviews related to MSU research.

Case Study—Michigan State University (MSU), East Lansing, MI | Michigan State University (49,000 students) has the largest solar carport development project in the state (2020). Over 5,000 parking spaces across five large commuter parking lots (34 acres total) are fitted with ground-mounted solar carports. These lots provide students, faculty, and visitors with covered space to leave their cars as they walk, bike, or use public transit to traverse the campus.

The project can generate up to 10MW—nearly 20% of total campus electricity generation. It is a key part of the university's Energy Transition Plan, a process by which MSU reduces its dependency on fossil fuels and expands its renewable energy portfolio. According to MSU director of Planning, Design, and Construction John LeFevre, preserving green space was a large selling point for the project.

The solar carports advance land-use and energy goals by increasing the utility of existing developed sites with enough structural repetition to allow for an efficient solar-panel layout. This approach to SES development applies to universities, as well as to other larger commuter parking lots and developed grayfield sites present in many communities.

Case Study—USA Hauling & Recycling, East Windsor, CT | East Windsor, a town in northern Connecticut with 11,375 residents, is home to USA Hauling & Recycling, a local waste management firm. In 2018, the company requested and received permission to enact a site-plan change for their industrial property, whereby they installed two solar carports of 25,000 and 45,000 square feet. They now operate their large compressors and recycling processes through 743kW of solar energy and protect their truck fleet with carport canopies.

The company received a prompt review from the town after amending their site plan, gaining final approval in just months. East Windsor town planner and consultant Mike D'Amato, AICP, CZEO, attributes the town's efficient approval process to how they regulate carports—as a class of accessory structures. Within this framework, solar carports are permitted in all zoning districts that allow accessory structures. A key provision of carports is that they are exempt from setbacks and lot coverage. The net result is an abundance of community locations where solar carports are now permitted.

Case Study—Fairbanks Museum & Planetarium, St. Johnsbury, VT | St. Johnsbury is a town of 5,685 residents in northeastern Vermont, home to the Fairbanks Museum & Planetarium. The museum undertook an energy efficiency campaign in 2015, resulting in the installation of a 27.36kW solar car-port over an auxiliary parking lot, connected to underground batteries, in December of 2020. The project marks the end of their renewable energy transformation. According to museum director Adam Kane, energy costs have decreased from around $15,000 per year in 2010 to $0 in 2020.

Both Kane and St. Johnsbury zoning administrator Paul Berlejung make special mention of the town's flexible solar regulations. There are no "restricted" or specifically permitted zoning districts in the town's section on solar collectors. Instead, solar collectors are defined as accessory uses, with a few clearly defined provisions pertaining to setbacks, build heights, and burial of utility lines. Kane and Berlejung both noted that interactions between solar suppliers and the town are remarkably smooth, concluding that municipalities looking to incentivize solar carport construction should consider reducing the barriers to entry at the local level. [End of commentary]

SOLAR AND HISTORIC OR CULTURALLY SIGNIFICANT SITES

Solar panels can have a variety of impacts on character-defining features of historic or culturally significant structures or sites. Solar collectors can obscure character-defining features of a structure, or be incompatible with a structure's roofline, exterior color, and the texture or shape of building materials. Despite these potential impacts, many Michigan communities allow for and regulate SES in historic districts and on other significant sites. It is important to allow SES on historic sites and structures in a context-sensitive way, granting the use while preserving the integrity of site aspects deemed historic or culturally significant.

Newer photovoltaic systems, including building-integrated SES, may be appropriate on the street-facing side, even in historic districts. New technology such as solar shingles can be designed and mounted to match the shape, materials, and proportions of a structure. For ground-mounted SES at a historic or culturally significant site, placement of the SES should be context-sensitive with respect to significant areas of the property.

Communities with historic district ordinances should update their ordinance to address roof and ground-mounted SES. The cities of Grand Rapids, Ypsilanti, and Manchester are a few examples that provide for regulations that address these issues. For state or federally designated historic structures, applicants should review the U.S. Secretary of the Interior's Standards for Rehabilitation.

DECOMMISSIONING AND REPOWERING

A question that commonly arises when communities are considering solar as a primary land use is what happens at the end of the solar project's life. Most solar panels are designed to operate for 25-40 years, so it is not uncommon for solar developers to have a lease or easement of roughly this length with a landowner. However, many landowner agreements include the option to extend, sometimes because there is still life left in the original panels and sometimes because the developer hopes to repower the project.

It's important to note the distinction between the two primary options at the end of a solar project's life: decommissioning and repowering. Decommissioning is the process of removing the equipment and other infrastructure associated with the project. While decommissioning is commonly a provision in a landowner's agreement with a solar developer, many communities also require review of a decommissioning plan that includes a financial commitment as part of the approval process. The decommissioning plan

Rooftop SES, Petoskey, Michigan. Photo by Richard Neumann.

details how the project equipment will be removed and the land restored when the contract for the SES expires, and the financial commitment guarantees there will be funding to implement the plan.

Before reaching the end of its useful life, sometimes a solar project is repowered. Repowering an SES involves refurbishing or replacing system components to allow the SES to continue operation. The expectation associated with repowering is that much of the original infrastructure (e.g., racking, access roads, wiring, etc.) may still have useful life and may be reused, even if other components have reached the end of their useful life.

COMMENTARY: Fundamentally, zoning approvals and permits are permanent and run with the land. A solar power project could be a temporary land use decommissioned at the end of the solar project's life, or it could be repowered through maintenance and installation of new technology. Generally, maintenance of real property is allowed within the terms of a zoning permit. What constitutes system maintenance versus work that triggers a new permit might vary from community to community. Advances in technology will certainly create circumstances in which the SES owner will be compelled to replace equipment in order to continue to efficiently produce electricity relative to project costs. Therefore, the zoning ordinance should specify if repowering triggers a review. A municipal attorney with experience in planning and zoning can help define a process to repower an SES to extend the life of the project. [End of commentary]

MICHIGAN EXAMPLE: Gaines Charter Township requires the following of a decommissioning plan:

"**Decommissioning:** A decommissioning plan signed by the responsible party and the landowner (if different) addressing the following shall be submitted prior to approval:

1. Defined conditions upon which decommissioning will be initiated (i.e. end of land lease, no power production for 12 months, abandonment, etc.)
2. Removal of all non-utility owned equipment, conduit, structures, fencing, roads, solar panels, and foundations.
3. Restoration of property to condition prior to development of the system.
4. The timeframe for completion of decommissioning activities.
5. Description of any agreement (e.g. lease) with landowner regarding decommissioning, if applicable.
6. The entity or individual responsible for decommissioning.
7. Plans for updating the decommissioning plan.
8. A performance guarantee shall be posted in the form of a bond, letter of credit, cash, or other form acceptable to the township to ensure removal upon abandonment. As a part of the decommissioning plan, the responsible party shall provide at least two (2) cost estimates from qualified contractors for full removal of the equipment, foundations, and structures associated with the facility. These amounts will assist the township when setting the performance guarantee valid throughout the lifetime of the facility. Bonds and letters of credit shall be extended on a bi-annual basis from the date of special use permit approval."

– *Gaines Charter Township Zoning Ordinance (Kent Co.), Section 4.18 [End of example]*

SAMPLE ZONING FOR SOLAR ENERGY SYSTEMS

The proposed sample zoning language is meant to be a starting point for dialogue between officials, staff, and residents before or during a zoning amendment process related to SES. Communities can (and should) work with their municipal attorney and a knowledgeable planner to modify the proposed sample zoning language in this document to further refine and develop regulations that fit identified community goals and are tied to master plan objectives, upon which zoning must be based.[61]

DEFINITIONS

Add to the Definitions article of the ordinance the following terms and definitions, or modify existing related definitions for consistency. Not all ordinances will require all of the following terms. Municipalities should tailor definitions to terms used in their ordinance.

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:

- Pollinator Habitat: Solar sites designed to meet a score of 76 or more on the Michigan Pollinator Habitat Planning Scorecard for Solar Sites.[62]
- 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).
- Forage: Solar sites that incorporate rotational livestock grazing and forage production as part of an overall vegetative maintenance plan.
- 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.

Invasive Plant: Non-native (or alien) to the ecosystem under consideration and whose introduction causes or is likely to cause economic or environmental harm or harm to human health.[63]

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

61 MCL 125.3203(1) of the Michigan Zoning Enabling Act, PA 110 of 2006, as amended.

62 Michigan State University Department of Entomology. Michigan Pollinator Habitat Planning Scorecard for Solar Sites. https://www.canr.msu.edu/home_gardening/uploads/files/MSU_Solar_Pollinators_Scorecard_2018_October.pdf

63 USDA U.S. Forest Service. What is an Invasive Plant Species. https://www.fs.fed.us/wildflowers/invasives/index.shtml

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

Photovoltaic (PV) System: 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 Principal-Use SES generating more than ___ [e.g., 2] MW DC for the primary purpose of off-site use through the electrical grid or export to the wholesale market [see discussion in "Land-Use Considerations" on why this number is suggested, and why it might warrant tailoring to your community's land-use typologies].

Principal-Use (Small) Solar Energy System: A Principal-Use SES generating up to and including ___ [e.g., 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.

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

GENERAL PROVISIONS

Add to the General Provisions article of the ordinance, as a separate section, the following provisions for Roof-Mounted SES, Accessory Ground-Mounted SES, and Building-Integrated SES as permitted by right in all districts and do not require a special use permit.

Roof-Mounted SES, Accessory Ground-Mounted SES, and Building-Integrated SES are permitted in all zoning districts where structures of any sort are allowed, and shall meet the following requirements:

A. ROOF-MOUNTED SES

1. **Height:** Roof-Mounted SES shall not exceed __ [e.g. 5-10] feet above the finished roof and are exempt from any rooftop equipment or mechanical system screening.
2. **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.
3. **Application:** All SES applications must include ___ plan [e.g., plot or site, whichever is required for a zoning compliance review]. 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.

MICHIGAN EXAMPLES:

"**Solar Energy System:** An aggregation of parts including any base, mounts, tower, solar collectors, and accessory equipment such as utility interconnections and solar storage batteries, etc., in such configuration as necessary to convert solar radiation into thermal, chemical or electrical energy."

– *Royal Oak Zoning Ordinance (Oakland Co.), Section 770-8*

"**Solar Energy System (SES):** A system consisting of a device or combination of devices, structures or parts thereof, that collect, transfer or transform solar radiant energy into thermal, chemical or electrical energy. An SES may be mounted on a roof (roof-mounted SES) or be supported by posts or other support structures extending into the ground (ground-mounted SES)."

– *Greater Thompsonville Area Zoning Ordinance (Benzie Co.), Section 18.23*

"**Solar Energy System:** A passive design using natural and architectural components to collect and store solar energy without using any external mechanical power or an active mechanical assembly that may include a solar collector, storage facility, and any other components needed to transform solar energy for thermal, chemical, or electrical energy. Examples include a solar greenhouse, solar panels, solar hot water heater, photovoltaic panels, passive solar panels, and a large, clear south-facing expanse of windows."

– *Bessemer Township Zoning Ordinance (Gogebic Co.), Section 15.22 [End of examples]*

COMMENTARY: Because of concerns over wind load, most roof-mounted systems are not the same dimensions as ground-mounted SES. Given current SES design considerations, 10 feet is sufficient to accommodate most roof-mounted systems.

If a zoning ordinance has height exceptions for other mechanical equipment, it might alternatively just include roof-mounted SES in this exception. In addition to listing this in the section of your ordinance with those exceptions, you could also use the following language in this section of the solar provisions:

A Roof-Mounted SES, other than building-integrated systems, shall be given an equivalent exception to height standards as building- or roof-mounted mechanical devices, chimneys, antennae, or similar equipment, as specified in Section __ [height exceptions] of the ___ [municipality name] Zoning Ordinance. [End of commentary]

Ground-mounted SES feedlot. Photo by M.Charles Gould.

B. ACCESSORY GROUND-MOUNTED SES

1. **Height:** Ground-Mounted SES shall not exceed __ [e.g. 20] feet measured from the ground to the top of the system when oriented at maximum tilt.

COMMENTARY: Height of a Ground-Mounted SES can vary from four to 15 feet, depending on how many rows of panels are installed and the maximum tilt height, if applicable. If the SES is co-located with an active agricultural operation, such as livestock grazing and crop production, it may need as much as eight feet of clearance, which can increase the overall height to up to roughly 20 feet. Similarly, a solar carport would need additional clearance to accommodate vehicle access. The carports at Michigan State University are 14'6" to accommodate snow removal and paving trucks. A relatively straightforward way to regulate the height of SES and account for this range of applications is to apply the same height standard as other accessory buildings or structures within the zoning district. [End of commentary]

2. **Setbacks:** A Ground-Mounted SES must be a minimum of __ [e.g., 5] feet from the property line or __ [e.g., ½] the required setback that would apply to accessory structures in the side or rear yard in the respective zoning district, whichever is greater. Setback distance is measured from the property line to the closest point of the SES at minimum tilt.
3. **Lot Coverage:** The area of the solar array shall not exceed __ [e.g., 50] % of the square footage of the primary building of the property unless it is sited over required parking (i.e. solar carport), in which case there is no maximum lot coverage for the Ground-Mounted SES. A Ground-Mounted SES shall not count towards the maximum number or square footage of accessory structures allowed on site or maximum impervious surface area limits if the ground under the array is pervious.

4. **Visibility** (Residential)**:** A Ground-Mounted SES in residential districts [list districts here] shall be located in the side or rear yard to minimize visual impacts from the public right-of-way(s).
    a. 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:
        i. Decrease the efficiency of the SES due to topography, accessory structures, or vegetative shading from the subject lot or adjoining lots;
        ii. Interfere with septic system, accessory structures, or accessory uses; or
        iii. Require the SES to be placed on the waterfront side of the building housing the primary use [where applicable].

MICHIGAN EXAMPLES: Some communities apply screening standards to Accessory Ground-Mounted SES. Here is an example:

Ground Mounted SES shall be reasonably screened from the view of the surrounding streets and roads to the maximum extent practicable by garden walls, fences, hedges, landscaping, earth berms, or other means, except to the extent that such screening is either impracticable or would result in ineffective solar access on the lot in question. Ground Mounted SES that are visible from a road or adjacent properties shall, to the maximum extent feasible, and without compromising the ability to effectively use solar collectors on the lot in question, use materials, textures, screening, and landscaping that will screen the Ground Mounted SES from view, and blend with the natural setting, existing environment, and neighborhood character. All Ground Mounted SES that rely on landscaping or a vegetative buffer for screening shall maintain a minimum opacity of at least eighty percent (80%), and a mature height of not less than the greater of (x) six (6) feet or (y) sixty percent (60%) of the height of the Ground Mounted Solar Energy System when oriented to maximum tilt.

– *Webster Township Zoning Ordinance (Washtenaw Co.), Section 12.110 [End of example]*

5. **Exemptions:** A SES used to power a single device or specific piece of equipment such as a lawn ornament, lights, weather station, thermometer, clock, well pump or other similar singular device is exempt from Section ____ [Ground-Mounted SES provisions].
6. **Nonconformities:** A Ground-Mounted SES installed on a nonconforming lot or use shall not be considered an expansion of the nonconformity.
7. **Application:** All SES applications must include a ___ plan [e.g., plot or site, whichever is required for a zoning compliance review]. Applications for Ground-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.

Off-grid device power. Photo by Bradley Neumann

Dual-use ground-mounted SES and blueberry farm. Photo by Mary Reilly.

MICHIGAN EXAMPLES: Many Michigan communities with both small-scale and large-scale solar regulations have zoned on-site solar energy systems as accessory uses. The City of Bay City (Bay Co.), Lyon Charter Township (Oakland Co.), and Almont Township (Lapeer Co.) all permit roof-mounted systems as an accessory use in all districts. Van Buren Charter Township (Wayne Co.), Albert Township (Montmorency Co.), and Chester Township (Ottawa Co.) all expand this provision (e.g. permitting roof-mounted systems as an accessory use in all districts) by permitting both on-site roof-mounted and ground-mounted systems in all districts as an accessory use. [End of example]

C. BUILDING-INTEGRATED SES

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

In addition to the General Provisions (above), also add the following standards for Small Principal-Use SES to the General Provisions article of the zoning ordinance. Also add 'Small Principal-Use SES' to the list of permitted uses in all zoning districts (or where desired). A community will need to decide whether a Small Principal-Use SES application is reviewed solely by the zoning administrator, reviewed and approved by the planning commission, or a hybrid, wherein the zoning administrator has the option to review/approve or advance the application to the planning commission for review/approval.

D. SMALL PRINCIPAL-USE SES: A Small Principal-Use SES is a permitted use in ____ [e.g., all, non-residential] zoning districts subject to site plan review and shall meet all of the following requirements:

1. **Height:** Total height shall not exceed __ [e.g. 20] feet measured from the ground to the top of the system when oriented at maximum tilt.
2. **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. A Ground-Mounted SES shall follow the setback distance for primary buildings or structures for the district in which it is sited.
   b. A Ground-Mounted 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.
3. **Fencing:** A Small Principal-Use SES may [shall] be secured with perimeter fencing to restrict unauthorized access. If installed, perimeter fencing shall be a maximum of __ [e.g. something greater than or equal to 7] feet in height.____ [Barbed wire is prohibited.] Fencing is not subject to setbacks.

Ground-mounted SES in rural setting. Photo by Bradley Neumann.

COMMENTARY: Principal-Use SES may be subject to regulations, such as those of the National Electrical Code (NEC), that require a perimeter fence. The current NEC standards call for a 6-foot fence with three lines of barbed wire, or a 7-foot fence with no barbed wire. A community could ban the use of barbed wire at an SES and still allow for compliance with the NEC, so long as the fencing is allowed to be at least 7 feet. If an SES is not subject to the NEC, wildlife-friendly fencing, commonly made of smooth wiring to prevent injury with openings that allow wildlife to move through, should be used where appropriate. A community may choose to be less prescriptive in fencing requirements so long as the requirements do not conflict with NEC requirements (e.g. by limiting fence height to 5 feet). [End of commentary]

4. **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.
    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 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 Zoning Administrator [or Planning Commission] may require substitute screening consisting of native deciduous trees planted __ [e.g. 30] feet on center, and native evergreen trees planted __ [e.g. 15] feet on center along existing non-participating residential uses.
    c. The Zoning Administrator [or 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; existing vegetation).
    d. 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.
5. **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 the site plan.

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

b. 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.

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

COMMENTARY: One of the reasons to exempt large and small principle-use SES from maximum lot coverage or impervious surface standards is because there are practical challenges to measuring the overall footprint of principal-use systems, since they may include tilting panels and access drives. Communities who choose not to include this exemption must decide which elements of an SES count/do not count toward lot coverage and make clear how lot coverage should be calculated for co-located systems. If the community's intent is to minimize a development's impervious surface area, consider using the ground cover provisions within this sample language instead. They serve the same purpose and avoid unnecessary limitations and ambiguities. [End of commentary]

7. **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.

8. **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.

9. **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.

10. **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.

11. **Signage:** An area up to ___ square feet [should be consistent with the district or sign type standard] may be used for signage at the project site. Any signage shall meet the setback, illumination, and materials/construction requirements of the zoning district for the project site.

12. **Sound:** The sound pressure level of a Small Principal-Use SES and all ancillary solar equipment shall not exceed __ [e.g. 45] dBA (Leq (1-hour)) at the property line of an adjoining non-participating lot. The site plan shall include modeled sound isolines extending from the sound source to the property lines to demonstrate compliance with this standard.

13. **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.

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.

COMMENTARY: The goal of the above sample sound regulation for both small and large principal-use SES is to determine compliance with the sound standard during site plan review, as opposed to long-term monitoring or enforcement by staff. Predicting noise levels and mitigating through site design is more efficient and cost-effective than mitigating an issue after the project is complete. During the site plan phase, applicants have more options to reduce noise impacts on adjoining property owners, such as by placing inverters closer to the center of the project or covering axis motors. Sound isolines on a site plan would show predicted sound levels, typically in 5 decibel increments, starting at the sound source and extending to or beyond the property line. Sound isolines are similar to contour lines on a topographical map and provide helpful information to the approving body and adjoining property owners. [End of commentary]

14. **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.
    a. An SES owner may at any time:
        i. Proceed with the decommissioning plan approved by the Zoning Administrator [or Planning Commission] under Section ___ [of local government ordinance] and remove the system as indicated in the most recent approved plan; or
        ii. Amend the decommissioning plan with Zoning Administrator [or Planning Commission] approval and proceed according to the revised plan.
    b. Decommissioning an SES must commence when the soil is dry to prevent soil compaction[64] and must be complete within __ [e.g., 18 months] after abandonment. An SES that has not produced electrical energy for __ [e.g., 12] consecutive months shall prompt an abandonment hearing.

64 The "ribbon test" is a simple in-field test that can be used to make a rough determination if the soil is too wet to work without a high risk of compaction. Conducting the ribbon test involves digging down four inches into the soil, grasping a handful of soil, and squeezing it tightly in your hand. If the soil forms a "ribbon" when squeezed between the thumb and forefinger, it is in a condition for compaction to occur. See Iowa State University Extension & Outreach article Soil compaction may be cutting into your yield (https://crops.extension.iastate.edu/encyclopedia/soil-compaction-may-be-cutting-your-yield) and Colorado State University Cooperative Extension Bulletin Estimating Soil Texture: Sandy, Loamy or Clayey? (https://culter.colorado.edu/~kittel/SoilChar(&RibbonTest)_handout.pdf).

SPECIAL LAND-USE STANDARDS

Add to the Special Land Uses article of the ordinance, as a separate section, the following provisions for large principal-use SES. Also add 'large principal-use SES' to the list of special land uses in the zoning districts where appropriate. See discussion on the Rural-to-Urban Transect above.

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:

1. **Height:** Total height for a large principal-use SES shall not exceed the maximum allowed height in the district in which the system is located [or a lesser height, such as __ [e.g., 20] feet].
2. **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 [or __ [e.g. 50] feet from the property line of a non-participating lot].
   b. __ [e.g., 100] feet from any existing dwelling unit on a non-participating lot.
   c. A Ground-Mounted 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.
3. **Fencing:** A large principal-use SES may [shall] be secured with perimeter fencing to restrict unauthorized access. If installed, perimeter fencing shall be a maximum of __ [e.g. something greater than or equal to 7] feet in height. [Barbed wire is prohibited.] Fencing is not subject to setbacks.
4. **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 has an existing residential or public use.

Lapeer Solar Park. Photo by Bradley Neumann.

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 __ [e.g. 30] feet on center, and native evergreen trees planted __ [e.g. 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.

COMMENTARY: Zoning requirements may impact the ability for the land to be returned to its original use. For example, required berming, substantial vegetative screening, or on-site stormwater detention/retention (which may be regulated by the Drain Commissioner, for example) may need to be removed or altered in order to return the land to its previous use. In considering whether to reduce, waive, or expand vegetation and screening standards, communities should take landowner considerations relating to reuse into account. [End of commentary]

5. **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. Sites 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 more 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 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

   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.

COMMENTARY: The Michigan Department of Agriculture and Rural Development policy for allowing commercial solar energy development on PA 116 lands requires that any portion of the site not included in pollinator plantings must maintain U.S. Department of Agriculture, Natural Resources Conservation Service Conservation Cover Standard 327. Standard 327 reduces erosion, enhances wildlife, pollinator, and beneficial organism habitat, and improves soil health. Standard 327 can be implemented to support grazing animals with the right mix of forage crops. However, if grazing is the primary forage management practice, Prescribed Grazing Standard 528 may be a more useful standard to follow. Standard 528, however, does not apply to solar projects on land enrolled in PA 116 because the policy specifically recommends using Standard 327. There is flexibility within each standard to develop site-specific seed mixes. Private consultants as well as local NRCS staff can help develop a plan to implement these standards in a solar project. [End of commentary]

COMMENTARY: As discussed on Page 15, if a community's existing master plan and ordinance include farmland preservation provisions, it may make sense to extend them to large principal-use SES. In that case, signal your community's desire for development that minimizes impacts to locally important soil classifications through language such as:

Agricultural Protection: For sites where agriculture is a permitted use in a district, a large principal-use SES may be sited to minimize impacts to agricultural production through site design and accommodations including [select those most applicable to your community]:

a. The ground mounting of panels by screw, piling, or a similar system that does not require a footing, concrete, or other permanent mounting in order to minimize soil compaction, [and/or]
b. Siting panels to avoid disturbance and compaction of farmland by siting panels along field edges and in nonproduction areas to the maximum extent practicable and financially feasible, [and/or]
c. Maintaining all drainage infrastructure on site, including drain tile and ditches, during the operation of the SES, [and/or]
d. Siting the SES to avoid isolating areas of the farm operation such that they are no longer viable or efficient for agricultural production, including, but not limited to, restricting the movement of agricultural vehicles/equipment for planting, cultivation, and harvesting of crops, and creating negative impacts on support infrastructure such as irrigation systems or drains, or
e. Voluntarily purchasing agricultural conservation easements from an equivalent number of prime farmland acres consistent with a purchase of development rights ordinance adopted under state law in ____ [local unit of government].

The above list is presented as a menu of sample standards and is neither a comprehensive list nor intended to be adopted in its entirety or verbatim. A local government that wishes to protect agricultural land from future development should work with a qualified planner and attorney to develop a comprehensive approach in the master plan and zoning ordinance that addresses threats to farmland from all types of development pressure. [End of commentary]

Aerial view of Tecumseh solar farm. Photo by Harvest Solar.

MICHIGAN EXAMPLES: Communities in Michigan have differing approaches to the compatibility of solar energy and agriculture. Here are some examples:

"Solar energy equipment shall only be located in an area determined to be "not prime farmland" by the U.S. Department of Agriculture (USDA), per the USDA's Farmland Classification Map as of the date of Special Use Application for a Utility-Scale Solar Energy Collector System."

– *Chester Township Zoning Ordinance (Ottawa Co.), Section 1912*

"All solar arrays greater than ten (10) acres in area must include one or more of the following amongst the panels of the solar array: Crop cultivation; Livestock grazing, with the panels raised to allow an eight (8) foot clearance for animals to pass underneath; or Pollinator fields, including milkweed and other native plantings."

– *Grand Haven Charter Township Zoning Ordinance 2020 (Ottawa Co.), Section 3.03*

"Solar energy systems in Oliver Township are considered a compatible use in the Agricultural Preservation District. The siting of a ground mounted solar energy system is permitted in the Agricultural Preservation District (Chapter 5) and must conform to the front, rear, and side yard setback requirements described in Section 504."

– *Oliver Township Zoning Ordinance (Huron Co.), Section 1305 [End of example]*

COMMENTARY: Some communities require a performance guarantee for small and large principal-use SES for the cost of grading and on-site ground cover establishment in the form of a bond, letter of credit, or establishment of an escrow account. The rationale is that if a site is cleared of vegetation and graded, but the project is not completed, there is a financial guarantee that the site will be stabilized. Such a provision may be redundant with Soil Erosion and Sedimentation Control (SESC) bonding requirements for projects larger than one acre, or for land enrolled in the Michigan Department of Agriculture of Rural Development's (MDARD) PA 116 Farmland and Open Space Preservation Program.

Regarding decommissioning guarantees, MDARD, as mentioned above, requires a surety bond or irrevocable letter of credit for solar development on PA 116 land to cover the cost of the removal of the solar facility and the restoration of the land to agricultural use. A community may wish to tailor the sample standard below based on this requirement by MDARD or provide an exception from the local government decommissioning guarantee for land enrolled in PA 116.

A periodic review (such as every 3-5 years) of the decommissioning guarantee will ensure adequate funds are available to cover decommissioning costs 20-30 years down the road. A review might also be triggered if there is a change of ownership. The ordinance should specify which body is responsible for approving the amount of the performance guarantee; the planning commission could recommend an amount, but the legislative body should make the final decision. When considering this language, a community could review how performance guarantees are handled for other types of developments, such as landscaping guarantees, and discuss how this could be the same or different. The amount of the guarantee for an SES may prompt a different level of review. [End of commentary]

6. **Lot Coverage:** A large principal-use SES shall not count towards the maximum lot coverage or impervious surface standards for the district.
7. **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.
8. **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 the SES is permitted, provided that the geotextile fabrics and gravel are removed once the SES is in operation.
9. **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.
10. **Lighting:** Large principal-use SES 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.
11. **Signage:** An area up to ___ square feet [should be consistent with the district or sign type standard] may be used for signage at the project site. Any signage shall meet the setback, illumination, and materials/construction requirements of the zoning district for the project site.
12. **Sound:** The sound pressure level of a large principal-use SES and all ancillary solar equipment shall not exceed __ [e.g. 45] dBA (Leq (1-hour)) at the property line of an adjoining non-participating lot. The site plan shall include modeled sound isolines extending from the sound source to the property lines to demonstrate compliance with this standard.

13. **Repowering:** In addition to repairing or replacing SES components to maintain the system, a large principal-use SES may at any time be repowered, without the need to apply for a new special land-use permit, 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 the ____ [local unit of government] by the SES owner in compliance with established escrow policy.]

COMMENTARY: A fundamental zoning concept is that a zoning ordinance must allow for nonconformities—that is, the continuation of a land use or structure that was legally established before a change in zoning that no longer permits the use or structure location. Zoning ordinances have standards for replacement, reconstruction, and expansion of nonconformities. For example, the decision could be centered around the replacement components' monetary value—a new investment of 50% or more of the value of the project is a typical threshold for nonconformities. The zoning board of appeals or the planning commission, whichever is charged with making decisions on nonconformities, would decide the fate of the project based on the nonconforming standards in the ordinance, rather than following the original special land-use permit review process. A proposal to expand the footprint of the system could be at odds with ordinance rules for enlarging nonconformities. In that case, the ordinance may dictate that the proposal must be scaled back to meet the rules for replacing nonconformities, otherwise decommissioning may be the only option. If decommissioning is not the intended or desired outcome, a community has the option to amend the ordinance to allow for SES again, thereby releasing the project from nonconforming status. Communities should work with a municipal attorney to explore preferred options for the SES and how SES will be treated under an application to repower the system. [End of commentary]

14. **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 __ [e.g., 3 or 5] years, for the life of the project, and approved by the _____ [legislative body] board. An SES owner may at any time:

        i. Proceed with the decommissioning plan approved by the Zoning Administrator [or Planning Commission] under Section ___ [of local government ordinance] and remove the system as indicated in the most recent approved plan; or

        ii. Amend the decommissioning plan with Zoning Administrator [or 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 __ [e.g., 18 months] after abandonment. An SES that has not produced electrical energy for __ [e.g., 12] consecutive months shall prompt an abandonment hearing.

Consumers Energy - Western Michigan University, Business Technology and Research Park solar garden. Photo by Mary Reilly.

SITE PLAN REVIEW

Add to the Site Plan Review article of the zoning ordinance, as a separate section (or to the section of the ordinance with site plan requirements), the following provisions for Principal-Use SES. Consider using the following checklist to determine if the application is complete. In this sample, a large principal-use SES is proposed to be reviewed as special land use. A Small Principal-Use SES is proposed to be reviewed as a permitted use with a required site plan. When reviewing a Small Principal-Use SES, a community will need to choose one of the following approaches:

- **Administrative:** *The Zoning Administrator reviews and approves or denies a Small Principal-Use SES when following the site plan review requirements below.*
- **Administrative/Planning Commission:** *The Zoning Administrator could perform site plan review with the option to send the application to the Planning Commission for site plan review. This option could be utilized to provide greater public input and shared responsibility, such as for a high-interest or high-visibility application.*

Site Plans and supporting application materials for a Principal-Use SES shall include a detailed site plan including all applicable requirements found in Article XX, Section XX [the section of the ordinance with general site plan standards] of this ordinance, except that site plans for large principal-use SES shall be submitted at a scale of 1" = ___ [e.g., 200] feet, plus the following site plan requirements:

SITE PLAN REQUIREMENT (X = Required, NA = Not Applicable)	Small Principal-Use	Large Principal-Use
The location of all solar arrays, including setbacks, the width of arrays and distance between arrays plus total height and height to the lowest edge above grade, ancillary structures and electric equipment, utility connections, and dwellings on the property and within __ [e.g. 150] feet of the property lines, participating and non-participating lots, existing and proposed structures, buried or above ground wiring, temporary and permanent access drives, fencing detail, screening/landscape detail, berm detail, and signs.	X	X
Plans for land clearing and/or grading required for the installation and operation of the system, and plans for ground cover establishment and management.	X	X
Sound modeling study including sound isolines extending from the sound source(s) to the property lines of adjoining non-participating lots.	X	X
A Decommissioning Plan as applicable: • For a Small Principal-Use SES, a decommissioning plan including a description of which above-grade and below-grade improvements will be removed, retained, or restored for viable reuse of the property consistent with the zoning district.	X	N/A
• For a large principal-use SES, 1) a decommissioning plan including a description of which above-grade and below-grade improvements will be removed, retained, or restored for viable reuse of the property consistent with the zoning district, 2) the projected decommissioning costs for SES removal (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, and 3) the method of ensuring that funds will be available for site decommissioning and stabilization (in the form of surety bond, irrevocable letter of credit, cash deposit).	N/A	X
The location of prime farmland [and/or farmland of statewide importance, farmland of local importance, unique farmland, and prime farmland if drained] as defined in the U.S. Department of Agriculture, Natural Resources Conservation Service - Web Soil Survey.	N/A	X [only if Ag Protection is part of the ordinance]
Completed copy of Michigan Pollinator Habitat Planning Scorecard for Solar Sites (when applicable).	N/A	X

SITE PLAN REQUIREMENT (X = Required, NA = Not Applicable)	Small Principal-Use	Large Principal-Use
Additional studies may be required by the Planning Commission if reasonably related to the standards of this ordinance as applied to the application site, including but not limited to [*select those most applicable to your community; these do not directly link to standards in the sample language, but may be helpful in evaluating conformance with other ordinance standards*]: • Visual Impact Assessment: A technical analysis by a third party qualified professional of the visual impacts of the proposed project, including a description of the project, the existing visual landscape, and important scenic resources, plus visual simulations that show what the project will look like (including proposed landscape and other screening measures) a description of potential project impacts, and mitigation measures that would help to reduce the visual impacts created by the project and documented on the site plan. • Environmental Analysis: An analysis by a third-party qualified professional to identify and assess any potential impacts on the natural environment including, but not limited to wetlands and other fragile ecosystems, wildlife, endangered and threatened species, historical and cultural sites, and antiquities. If required, the analysis shall identify all appropriate measures to minimize, eliminate or mitigate adverse impacts identified and show those measures on the site plan, where applicable. • Stormwater Study: An analysis by a third-party qualified professional that takes into account the proposed layout of the SES and how the spacing, row separation, and slope affects stormwater infiltration, including calculations for a 100-year rain event (storm). Percolation tests or site-specific soil information shall be provided to demonstrate infiltration on-site without the use of engineered solutions. • Glare Study: An analysis by a third-party qualified professional to determine if glare from the SES will be visible from nearby residents and roadways. If required, the analysis shall consider the changing position of the sun throughout the day and year, and its influence on the SES.	N/A	X

Dual-use ground-mounted SES with conservation plantings. Photo by M. Charles Gould.

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UNIVERSITY OF MICHIGAN

The Graham Sustainability Institute at the University of Michigan transforms knowledge into real-world impact by catalyzing collaborations between students, researchers, practitioners, and stakeholders. These cross-disciplinary initiatives lead to positive outcomes that safeguard the planet's life support systems and enhance well-being for present and future generations. The institute's work is grounded in the belief that diversity, equity, and inclusion are key to empowerment and to the advancement of sustainability knowledge, learning, and leadership.

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MICHIGAN DEPARTMENT OF ENVIRONMENT, GREAT LAKES, AND ENERGY

Acknowledgment

This material is based upon work supported by the Department of Energy and the Michigan Energy Office (MEO) under Award Number EE00007478. Find this document and more about the project online at extension.msu.edu/solarzoning.

hello, MTA ... ?

Robert E. Thall, MTA Legal Counsel
Bauckham, Thall, Seeber, Kaufman & Koches, PC

Q Our rural township has zoned for utility-scale solar as a special land use. We have a pending application for a utility-scale solar energy system with battery storage on an 800-acre agricultural parcel. We are concerned that we cannot adequately provide fire protection to the site because of lack of appropriate equipment and training. Can we deny the application on this basis?

The answer depends on your zoning ordinance special land use provisions. If the application meets the terms of your zoning ordinance provisions, then you must grant the special land use. However, most well-drafted zoning ordinances have provisions that can be used to address this situation. Typically, a township would not permit a special land use that presents a fire hazard that the township is incapable of handling.

An example of special land use language to handle this type of consideration might be as follows: The use shall be adequately served by essential public facilities and services, or, in the alternative, it must be demonstrated that the person responsible for the proposed special land use will be able to continually provide adequately for the services and facilities deemed essential to the special land use under consideration. The special land use shall not place demands on public services and facilities in excess of available capacity.

If you have this type of language in your ordinance, you would have the ability to deny the application if the township lacks the fire-fighting capabilities to extinguish a utility-scale solar energy system or battery storage fire and the operator does not have some sort of on-site fire suppression system.

The impact of an 800-acre solar energy system fire can be immense. Not only does it have the ability to burn a large area of the township and the company's property, but it impacts future use of the property, neighboring properties, the safety of firefighters, and can put toxins in the air. Fire-fighting ability is a major concern and we have had solar utility developers offer to provide townships with equipment and training needed to adequately provide fire protection to the project. In some cases, we have had the company offer to pay for annual firefighter training and fire-fighting apparatus that could include a specialized fire truck or brush unit. If the company, as part of their application, is willing to provide the township the necessary training or equipment, then that might satisfy the township's special land use requirements regarding adequate public services.

Q How does the township address the issue of a utility-scale solar energy system that ceases operation?

The last thing a township wants to have happen is to allow a large solar project on hundreds of acres of land and then be stuck with a solar graveyard if operations cease and the panels and structures remain. This potential situation is handled by requiring a decommissioning agreement to be in place with regard to any utility-scale solar energy system approval. No approval should ever be granted without a decommissioning agreement. Ideally, the decommissioning agreement requirements will be spelled out in your zoning ordinance. Even where it is not specifically spelled out in your ordinance, you can typically require a decommissioning agreement as a reasonable condition to the special land use or site plan approval.

The basic purpose of the decommissioning agreement is to require removal of all equipment upon cession of operations. The agreement will require a bond to be in place to allow the township to collect funds for the removal of the equipment and reclamation of the property, if the company fails to do so. The bond needs to be in place once construction begins.

One major issue of contention in negotiating the terms of a decommissioning agreement is whether the company may reduce the bond amount by the salvage value of the solar equipment. We vigorously contend that salvage value should not be used. In this regard, the township is not in a position of trying to find a market for the scrap. This should not be a township responsibility. If the company operates properly, they will take care of their own decommissioning without the township forcing the matter or collecting on the bond. If the township has to take care of the decommissioning, then the township should not have to find a market for the scrap. If the decommissioning agreement does not include the salvage value, then the company has an incentive to properly handle the decommissioning themselves. They can get salvage value themselves and are much more likely to know the market. The township should not include the salvage value reduction since it just encourages the company to walk away from an abandoned site and leave the decommissioning to the township.

Another issue that should be addressed in the decommissioning agreement is periodic review of the bond amount to make sure that the amount continues to provide proper security over the many years that the project may be in operation. The cost of removal 20 years from now will most likely be much higher than the present cost; so there should be analysis/adjustments every few years.

Q Our township doesn't have any provisions in our zoning ordinance for solar energy systems (SES). Should we be concerned?

Yes. The are a number of potential issues that may arise by not specifically handling solar energy systems in your zoning ordinance. Zoning ordinances are prohibitive, so if not mentioned, the SES would be prohibited unless interpreted to fall under another specified item. Not providing for SES leaves the township open to unintended interpretations or claims of unlawful exclusionary zoning. The state has a goal that 60% of its electricity will be from renewable energy sources by 2030. As such, utility-scale SES projects are being pursued throughout the state. Solar energy use in Michigan is on the rise and the township's lack of regulation in this regard will leave it ill-equipped and unprepared for handling SES requests.

Suggested zoning regulations could provide for accessory SES (used to power on-site residential or commercial business uses); principal-use small SES (less than 2 megawatts for primary purpose off-site use); and principal-use utility-scale SES (2 megawatts or more for primary purpose off-site use).

With regard to accessory SES, the ordinance could provide regulations concerning: roof-mounted, ground-mounted and building-integrated SES; height; setback; lot coverage; visibility; locations; and applications. With regard to principal-use utility-scale SES and principal-use small SES, the ordinance could provide regulations concerning: special land use application; fencing; screening/landscaping; height; setback; minimum lot area; ground cover; lot coverage; minimal land clearing; access drive; wiring; lighting; signage; sound; repowering; and decommissioning.

Ultimately, your zoning ordinance regulations should reflect implementation of your master plan with regard to your community and the desires of your township board. One size does not fit all and what might work for one community may not work in yours.

Hello, MTA ... ? provides general information on typical questions asked by township officials. Readers are encouraged to contact an attorney when specific legal guidance is needed. Member township officials and personnel may contact MTA Member Information Services with questions or requests from 8 a.m. to 5 p.m., weekdays, at (517) 321-6467 or fax (517) 321-8908.

Want more resources on renewable energy, and how your township can prepare? MTA has the information you need!

- Visit MTA's "Solar Energy" and "Wind Energy" webpages, which include links to sample ordinances, articles and more (access via the "Answer Center" under the "Member" tab on www.michigantownships.org. Log-in required.).
- Turn to the April/May 2022 *Township Focus* cover story, "Renewable Energy on the Horizon" (look on MTA's website under the "News" tab for digital magazine archives).
- Attend MTA's 2023 Annual Conference to take part in several sessions on solar energy:

  On Tuesday, April 18: "Solar Energy Regulation: Why Your Township Needs a Solar Ordinance" Business Solution Session, held from 11:30 a.m. to 12:30 p.m., and "Here Comes the Sun: What Your Township Needs to Do to Prepare for Solar Energy," from 2:45 to 4 p.m.

  On Wednesday, April 19: "Dual-Use Solar Energy Projects," from 1 to 2:15 p.m.

  The Conference registration brochure appears in THIS issue of *Township Focus* and on MTA's website.

GRAHAM SUSTAINABILITY INSTITUTE
UNIVERSITY OF MICHIGAN

Renewable Energy Site Tour

What You Need to Know About Renewable Energy

Madeleine Krol
Sarah Mills, PhD

Lansing Area, October 26, 2023

Existing utility-scale wind & solar 4,348 MW

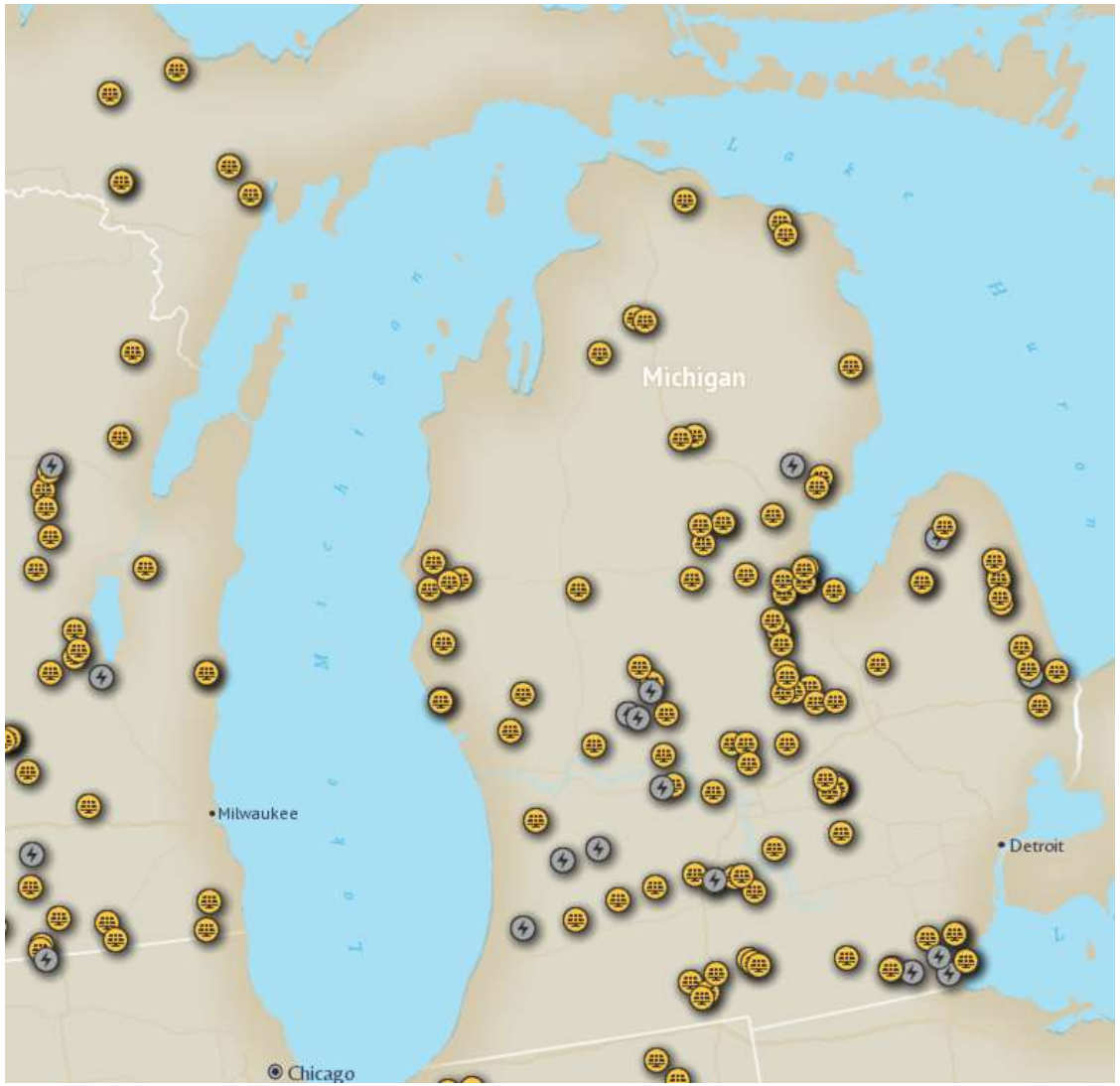
3,579 MW
Wind
769 MW
Solar

Source: U.S. Energy Mapping System, April 7, 2023
https://www.eia.gov/state/maps.php

Wind being considered: 4 projects, 786 MW

Source: MISO Queue, Sept 30, 2023
https://api.misoenergy.org/PublicGiQueueMap/index.html

(Large) Solar being considered: 95 projects - 15,513 MW



12,945 MW Solar
2,568 MW Hybrid

Source: MISO Queue, Sept 30, 2023
https://api.misoenergy.org/PublicGiQueueMap/index.html

Stand-alone Battery energy storage, too!

43 Projects
6,445 MW Hybrid

Source: MISO Queue, Sept 30, 2023
https://api.misoenergy.org/PublicGiQueueMap/index.html

Not all—but lots—will be built

CRAIN'S DETROIT BUSINESS

THIS WEEK NEWS & DATA AWARDS SPECIAL FEATURES VOICES EVENTS CONTE

March 25, 2022 11:03 AM | UPDATED 32 MINUTES AGO

Utilities on the hunt for thousands of acres for solar development

CHAD LIVENGOOD

Consumers (2021 IRP)
64-80,000 acres
by 2040

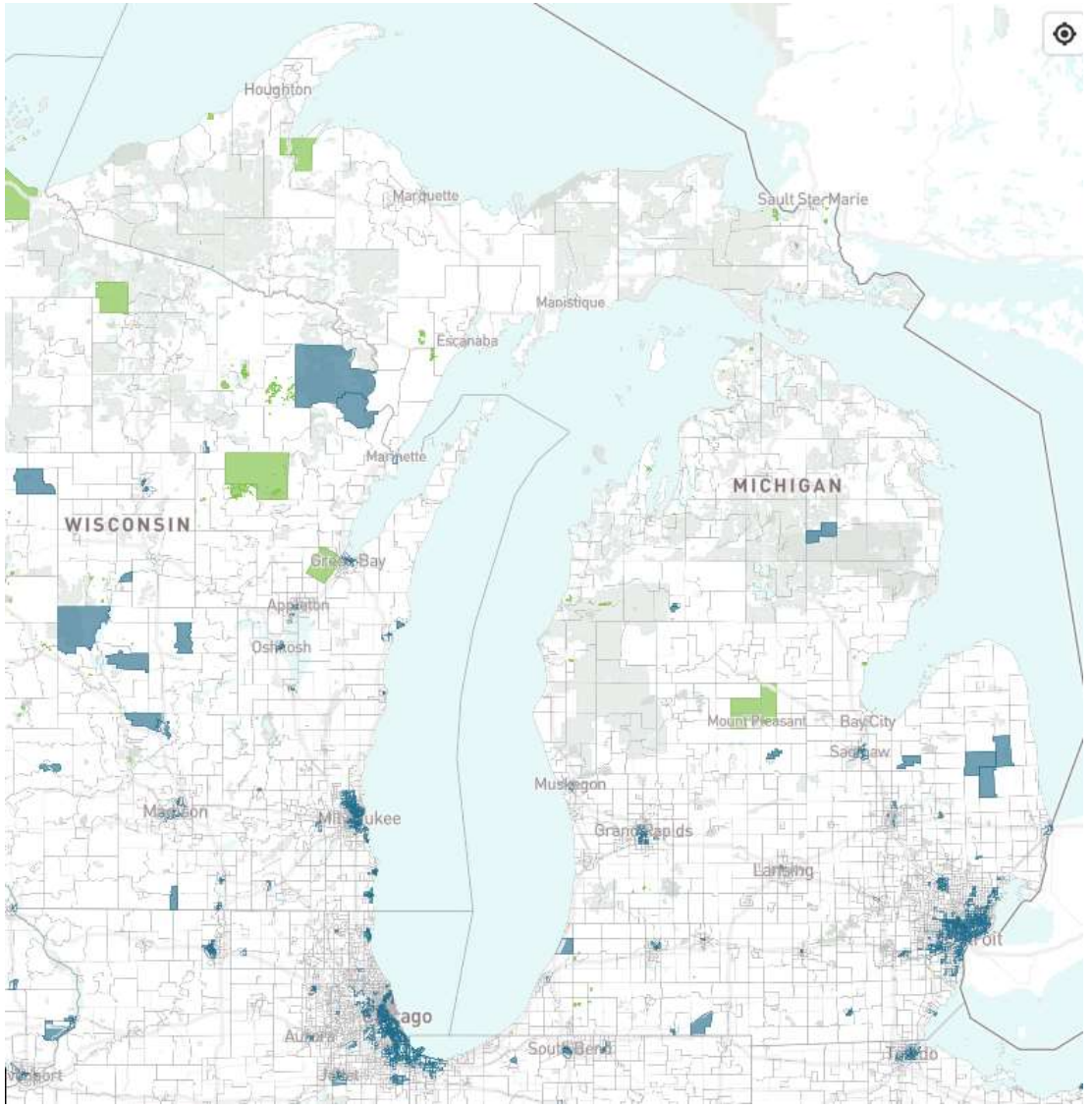
DTE (2022 IRP)
52-65,000 acres
by 2042

Why so much activity?

IRPs calling for 4x increase in renewables (hedge for future fuel costs)

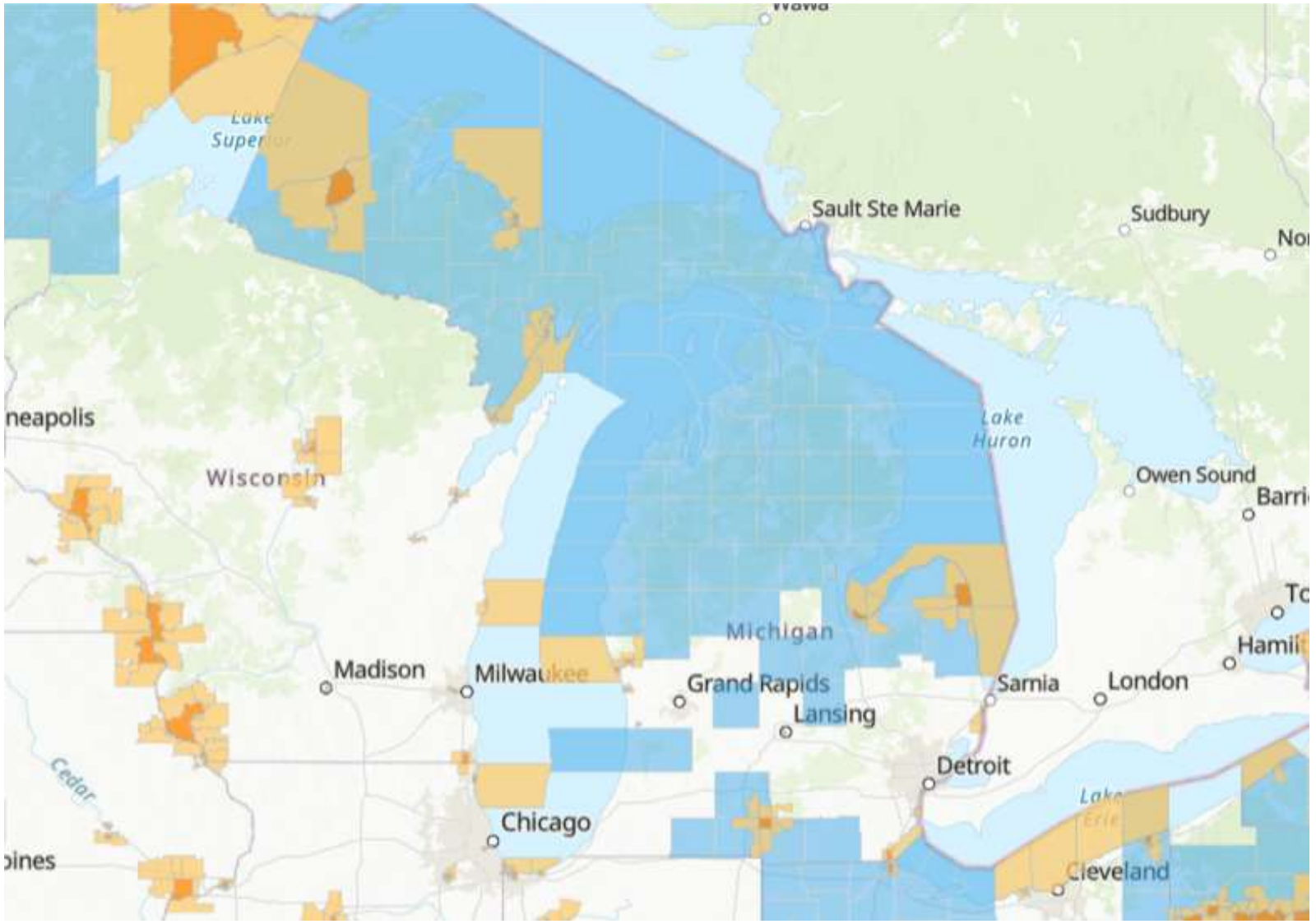
Technology (wind), cost reductions (solar) making renewables possible statewide

Why so much activity in particular places?
Justice40 Initiative / DOE: Energy Justice Dashboard



Source:
Department of Energy, Energy Justice Dashboard, April 7, 2023:
https://energyjustice.egs.anl.gov/

Why so much activity in particular places?
DOE: Energy Community Tax Credit Bonus



Source:
Department of Energy: Energy Community Tax Credit Tool, April 7, 2023:
https://arcgis.netl.doe.gov/portal/apps/experiencebuilder/experience/?id=a2ce47d4721a477a8701bd0e08495e1d

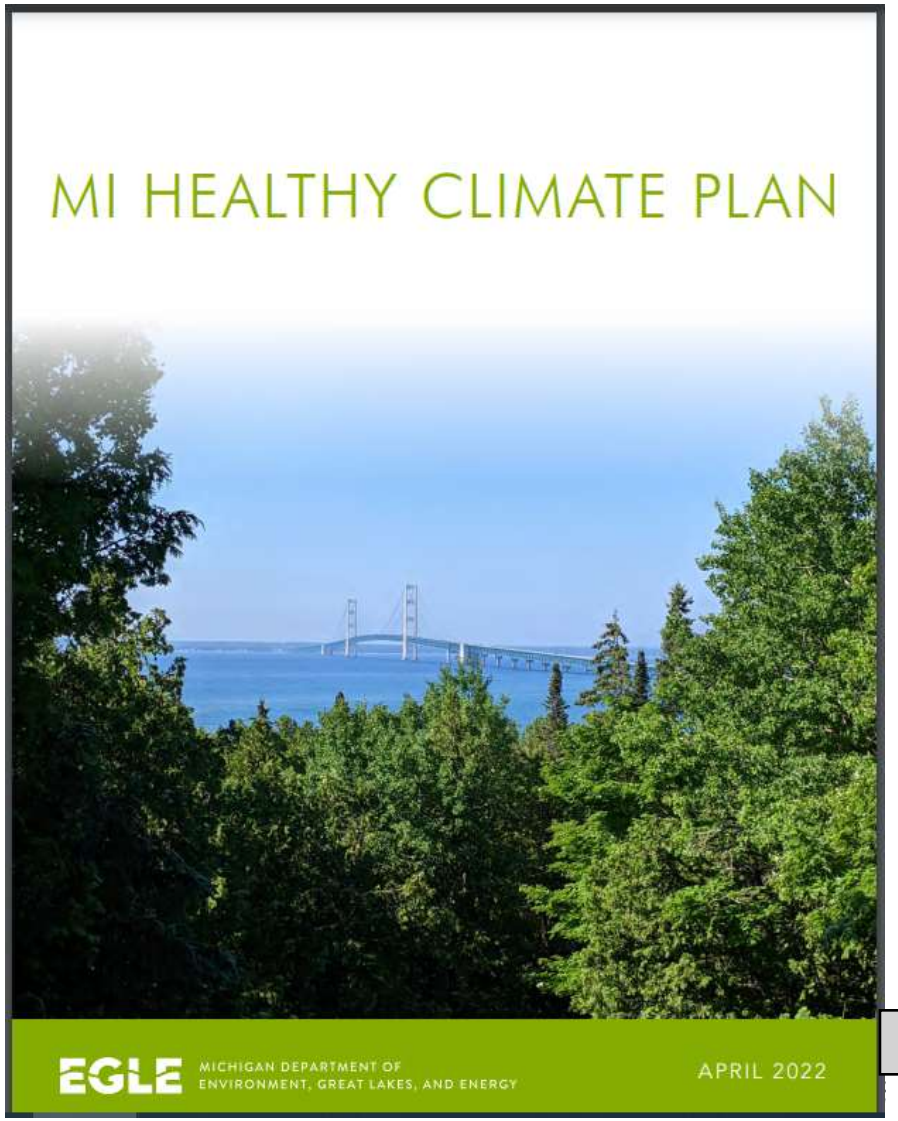
Why so much activity?
[we haven't even seen the half of it]

- 60% renewables by 2030
  - Currently at ~15% (took 15 years)
  - Accelerated timeline from what utility plans calling for

- Siting (zoning) recognized as something that must be addressed

  "Assist clean energy developers and communities in adopting best practices for siting renewable energy systems."

- Bills have been introduced, more on current legislative updates later this afternoon!



My current advice

Photo: https://www.uppermichiganssource.com/content/news/Friends-of-the-Huron-Mountains-not-in-favor-of-wind-turbine-project-in-LAnse-489183491.html

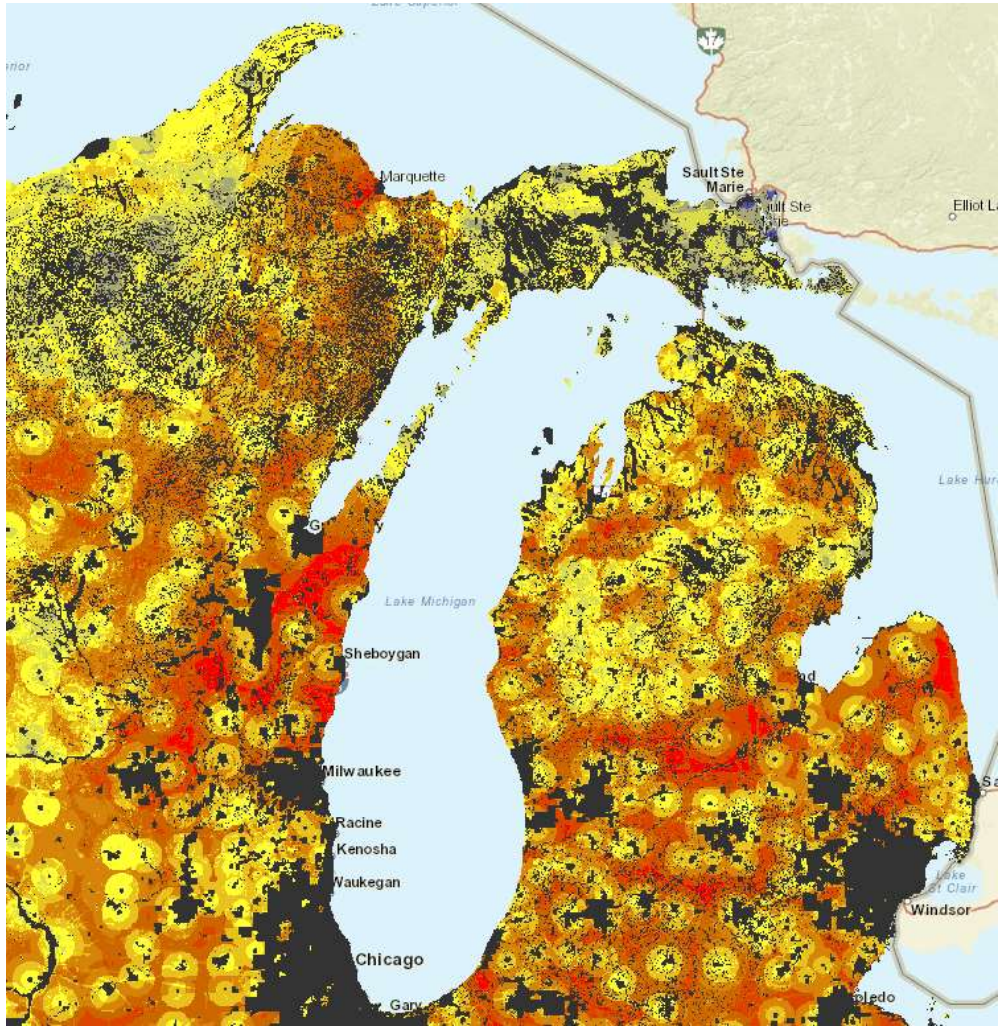
- **Set clear expectations for property owners and potential developers**
  - When zoning is silent, ambiguity
  - Send your message about where it fits
  - **And stick to it**
- **Process really important**
  - Lots of legal scrutiny from all sides
  - Best to err on side of MORE notice
- **Do get township attorney involved**
  - On process
  - On which restrictions are defensible

WHAT YOU NEED TO KNOW ABOUT WIND ENERGY

Different scales

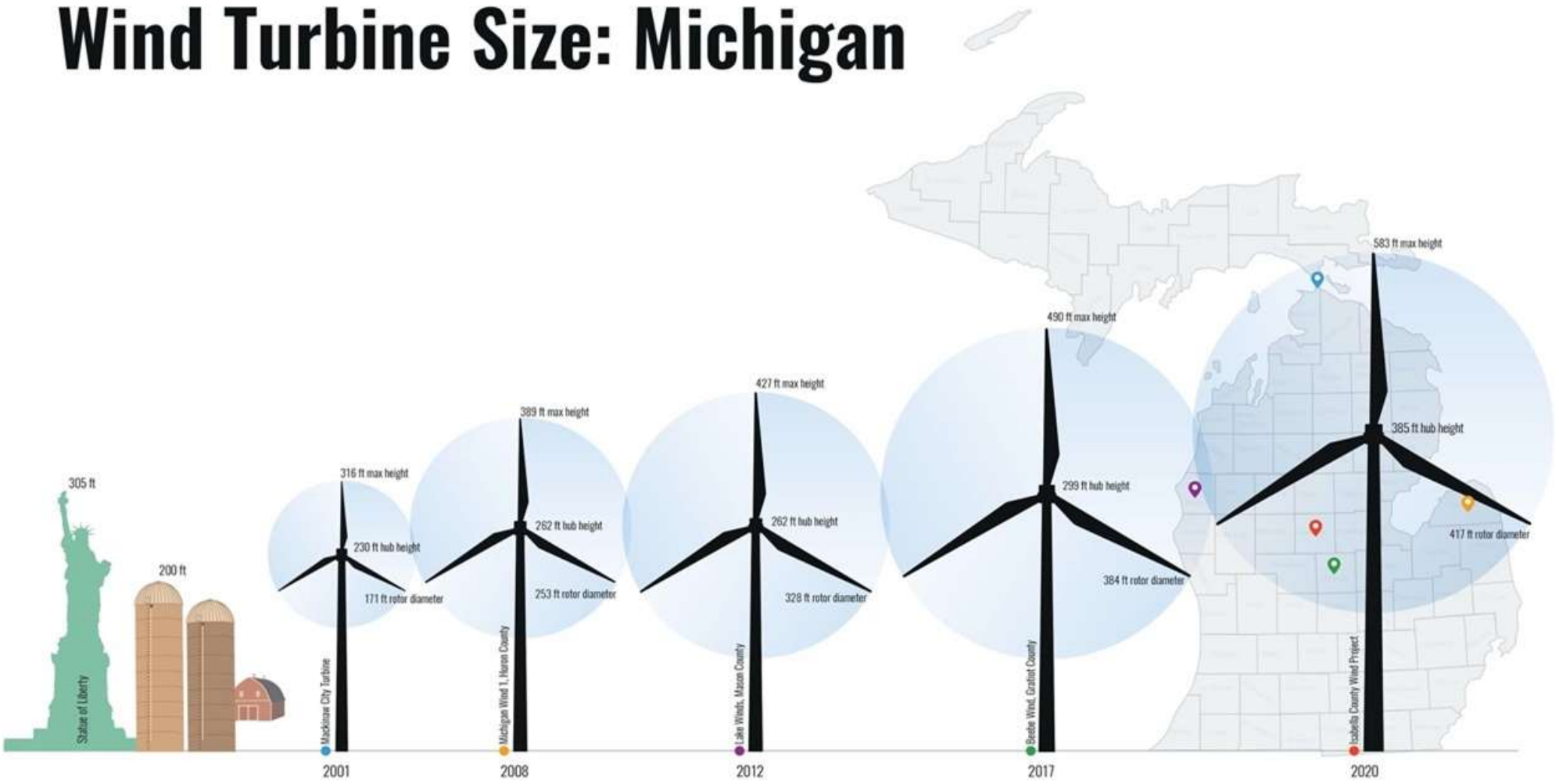
Where is utility-scale wind development possible?

- Good wind resource (though relatively easy)
- Looking for access to transmission
- Avoid endangered species
- Away from urban areas
  - Not enough open land
  - Wind disruption



https://ezmt.anl.gov/mapping/viewer

Wind turbine heights over time



Wind Energy

Local Benefits

- Landowner payments
  - Farm reinvestment
  - Farm succession
  - Not just farmers
- Tax payments, developer donations (caveat)
- Jobs (caveat)

Local Concerns

- Noise / health
- Wildlife
- Visual Impacts
  - Outright
  - On property values
- "Not why I moved here"

Bottom Line on Wind

- Wind = economic development
- If goal is to sustain agriculture, wind can fit
- If goal is for substantial residential development or growth of tourism, wind may not be right

WHAT YOU NEED TO KNOW ABOUT SOLAR ENERGY

Shifting scale of solar

	Existing	Proposed
Avg	11 MW	160 MW
Avg acres	55-88 acres each	800-1,300 acres each
Max	239 MW	500 MW
Max acres	1,900 acres (7.9 acres/MW)	2,500-4,000 acres

Photo: https://inovateus.com/portfolio-items/lapeer-michigan-solar/

Utility-scale Solar Energy

Local Benefits

- Landowner payments
- Tax payments
  - Solar PILT enabled; $7,000 / MW/yr
- Jobs (caveat)

Local Concerns

- Wildlife (?)
- Visual Impacts
  - "Not why I moved here"
  - Property values
- Wise use of land

Solar: New Threat or Opportunity?

The Washington Post
Democracy Dies in Darkness

Local

Proposed solar energy developments draw opposition over loss of farmland

The Washington Post
Democracy Dies in Darkness

Business

The next money crop for farmers: Solar panels

What are you trying to preserve?

- Urban boundary
- Rural vista
- Habitat
- Land for growing food
- Farm livelihoods

What are you trying to preserve?

- Urban boundary
- Rural vista
- Habitat
- Land for growing food
- Farm livelihoods

- Land occupied 30+ years
  - Decommissioning standard
- No demands on services
- Contributes to taxes
  - How much varies state to state
  - All over the place in Michigan right now; pending leg = much simpler (if opt in)

What are you trying to preserve?

- Urban boundary
- **Rural vista**
- Habitat
- Land for growing food
- Farm livelihoods

Source: Anthony Wahl/Janesville Gazette
https://lmtribune.com/agriculture/farming-land-surrounded-by-solar/article_4159269a-boco-559e-aad5-fcb561b20fb8.html

What are you trying to preserve?

- Urban boundary
- Rural vista
- **Habitat**
- Land for growing food
- Farm livelihoods

https://www.nature.org/en-us/about-us/where-we-work/united-states/north-carolina/stories-in-north-carolina/making-solar-wildlife-friendly/

102

What are you trying to preserve?

- Urban boundary
- Rural vista
- Habitat
- **Land for growing food**
- Farm livelihoods

Grazing possible

Other crops niche at the largest scale for medium term; research proposed!

What are you trying to preserve?

- Urban boundary
- Rural vista
- Habitat
- **Land for growing food**
- Farm livelihoods

- **Short-term vs. long-term?**
- **Do land use requirements limit "reversibility"?**

What are you trying to preserve?

- Urban boundary
- Rural vista
- Habitat
- Land for growing food
- **Farm livelihoods**

What are you trying to preserve?

- Urban boundary
- Rural vista
- Habitat
- Land for growing food
- Farm livelihoods

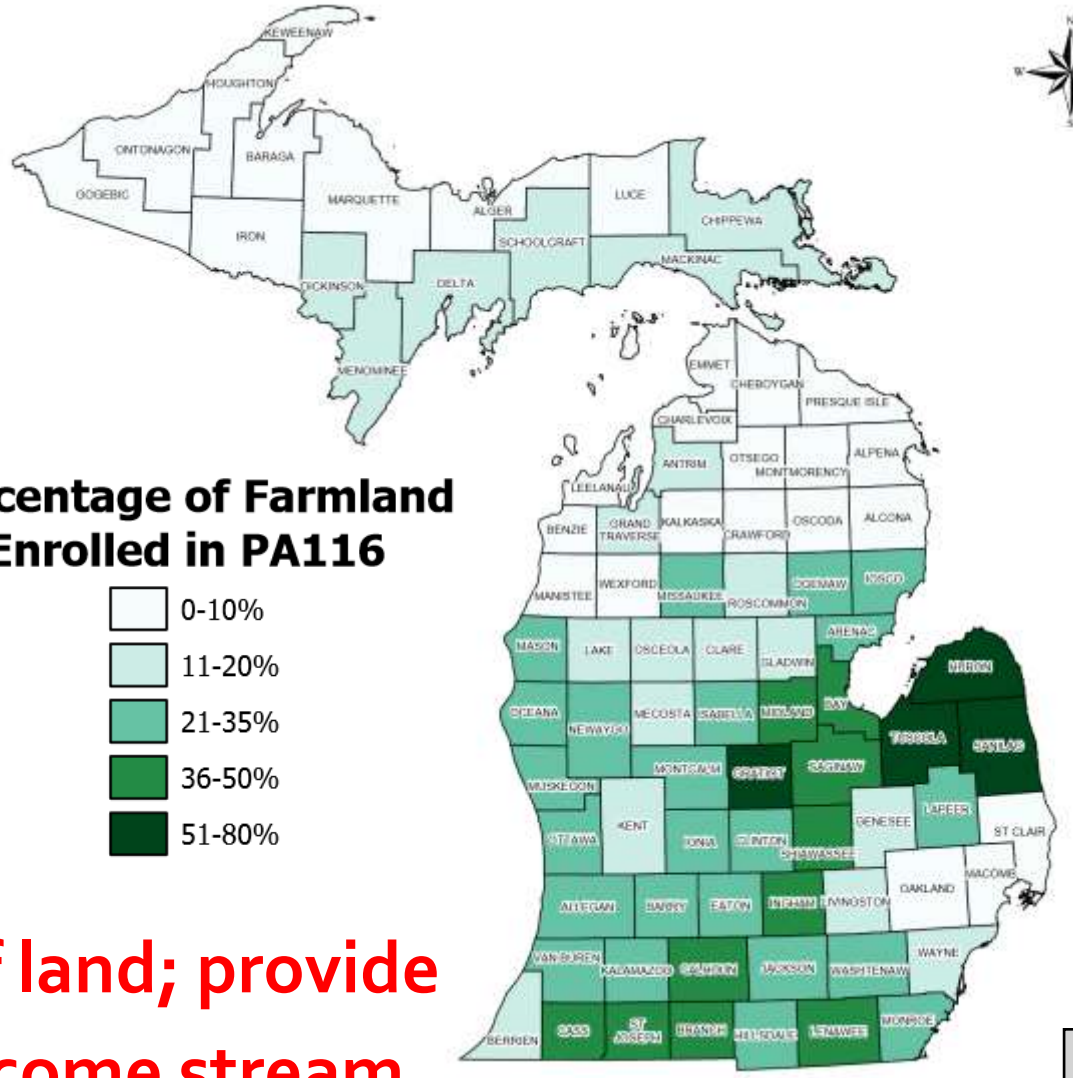
<u>DOE-funded Research (2021-2024)</u>

- How much solar land is leased vs. purchased?
- What are leaseholders doing with revenue?
  - How does lease revenue recirculate in local economy?
- Comparison of solar to ag (inputs, taxes)

Solar on PA 116 Land

State allows solar if:

- Field tile is maintained,
- Cover crop is planted that includes pollinator habitat, and
- Surety bond or letter of credit with the state to ensure solar panels will be removed and the land returned to a condition in which it can be farmed.



Aim to protect long-term farmability of land; provide farmers/farm communities with new income stream

Typical ground cover

National Renewable Energy Laboratory

E.ON Climate and Renewables

Dual use SES

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).

Credit: Charles Gould

Dual use SES

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

Michigan Pollinator Habitat Planning Scorecard for Solar Sites

This form was developed by the MSU Department of Entomology to guide vegetation management at solar installations to make them more supportive for native pollinators. Check the boxes and add up the points to determine whether the plans meet or exceed the minimum requirements. For more local information on pollinators and habitat: www.pollinators.msu.edu

PROJECT DETAILS

Solar developer:_____

Vegetation consultant: _____

Project location: _____

Project size (acres):_____

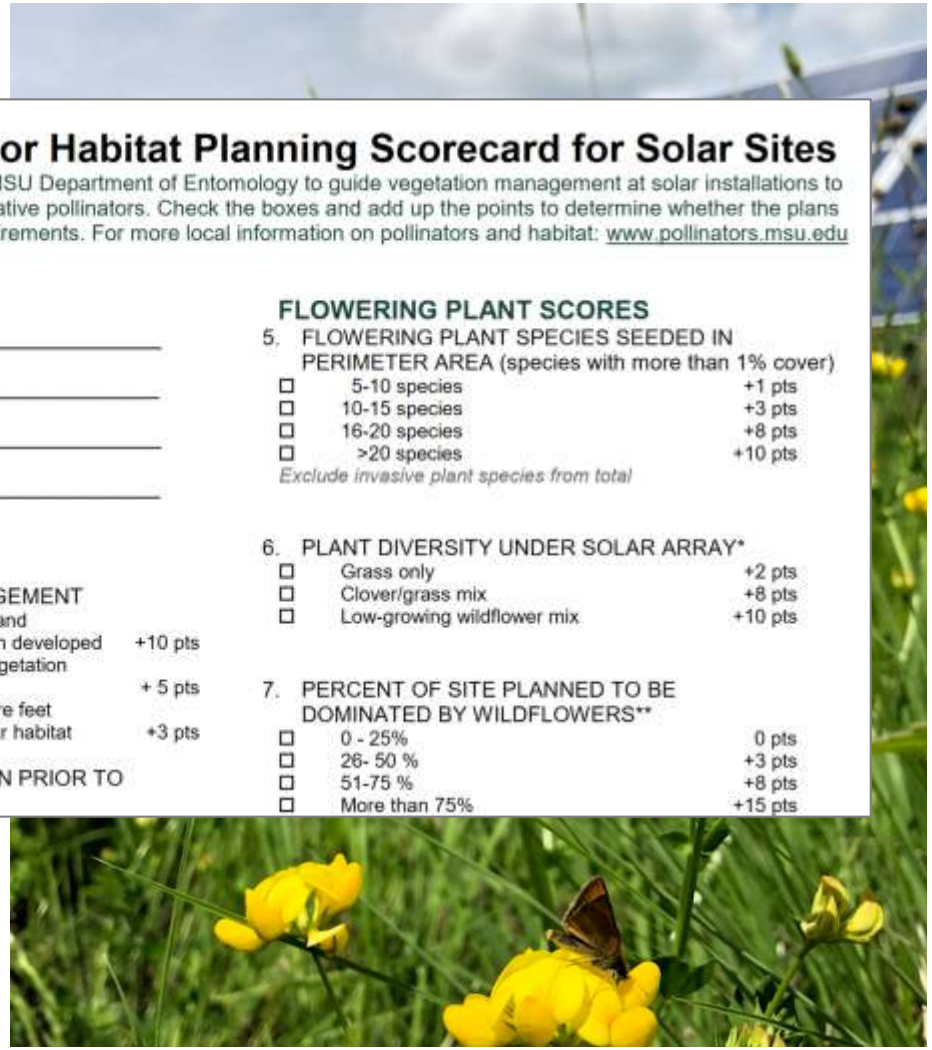
SITE SCORES

1. SITE PLANNING AND MANAGEMENT
   - ☐ Detailed plant establishment and vegetation management plan developed +10 pts
   - ☐ Site plan developed with a vegetation management company + 5 pts
   - ☐ Signage legible at forty or more feet stating pollinator friendly solar habitat +3 pts
2. HABITAT SITE PREPARATION PRIOR TO IMPLEMENTATION

FLOWERING PLANT SCORES

5. FLOWERING PLANT SPECIES SEEDED IN PERIMETER AREA (species with more than 1% cover)
   - ☐ 5-10 species +1 pts
   - ☐ 10-15 species +3 pts
   - ☐ 16-20 species +8 pts
   - ☐ >20 species +10 pts

   Exclude invasive plant species from total
6. PLANT DIVERSITY UNDER SOLAR ARRAY*
   - ☐ Grass only +2 pts
   - ☐ Clover/grass mix +8 pts
   - ☐ Low-growing wildflower mix +10 pts
7. PERCENT OF SITE PLANNED TO BE DOMINATED BY WILDFLOWERS**
   - ☐ 0 - 25% 0 pts
   - ☐ 26- 50 % +3 pts
   - ☐ 51-75 % +8 pts
   - ☐ More than 75% +15 pts



Credit: Rob Davis

Planning & Zoning for Solar Energy Systems: A Guide for Michigan Local Governments

Dual use SES

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

Credit: M. Reilly

Planning & Zoning for Solar Energy Systems: A Guide for Michigan Local Governments

Dual use SES

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

Credit: M. Reilly

Planning & Zoning for Solar Energy Systems: A Guide for Michigan Local Governments

Bottom Line on Rural (Ag) Solar

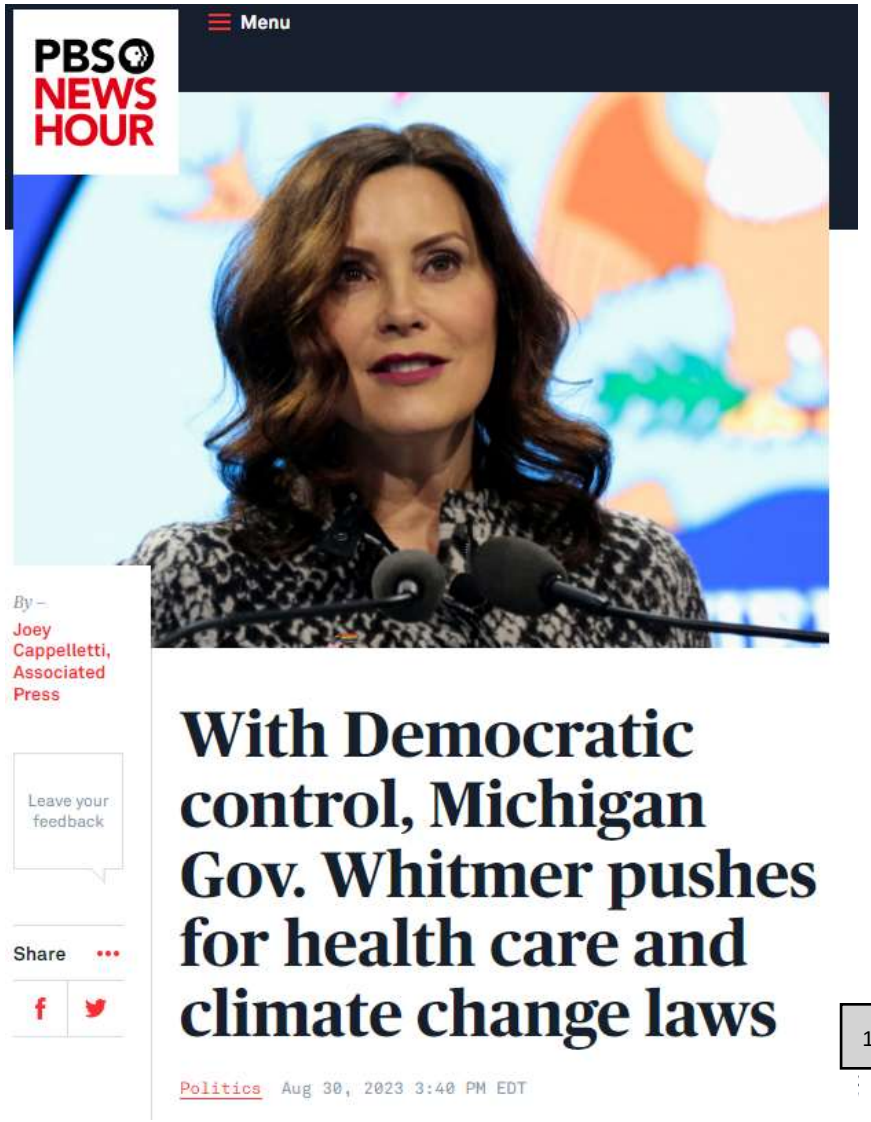
- **Solar = economic development**
- **Where land is of marginal quality, no-brainer**
- **Where ag-based economy with prime soils**
  - Be consistent: What else do you allow in ag-district?
  - Solar as short- or long-term land use?
    - Short term: minimize soil movement/compaction & vegetative screening, require decommissioning
    - Long term: more emphasis on screening & stormwater management

Photos by Gonz DDL and John Cameron on Unsplash; Jukka Niittymaa on Pixabay

LEGISLATIVE UPDATES AND RESOURCES

Legislative updates on zoning authority

- SB 271 (in committee)
  - 60% renewable energy (date in flux)
  - 100% clean/carbon-free by 2040 (?)
- HB 4256 (in committee)
  - 2,500MW BESS by 2030
- HB 5120-5123 (passed by committee, now to full House for consideration)
  - HB 5120: Authorizes MPSC to approve wind, solar and storage facilities >100 MW
  - HB 5122: Authorizes MPSC to approve solar and storage facilities 50-99 MW
  - HB 5121 and HB 5123: Amend the MZEA accordingly



What will happen?

ENERGYWIRE

Illinois makes divisive move to fight local renewable bans

A bill that passed the Legislature is amo
moves in recent years by a state to over
that have erected roadblocks to wind an

BY: **JEFFREY TOMICH** | 01/12/2023 07:11 AM EST

Bridge MICHIGAN | Michigan's nonpartisan, nonprofit news source

TRENDING: Coronavirus Michigan | Rural Michigan | Gov. Gretchen Whitmer | Michigan K-12 schools | Upper Peninsula

Guest Commentary

Opinion | Michigan's system to approve green energy projects is broken

September 25, 2023 Sarah Mills Guest Commentary
Michigan climate change, Rural Michigan

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Closing Thoughts

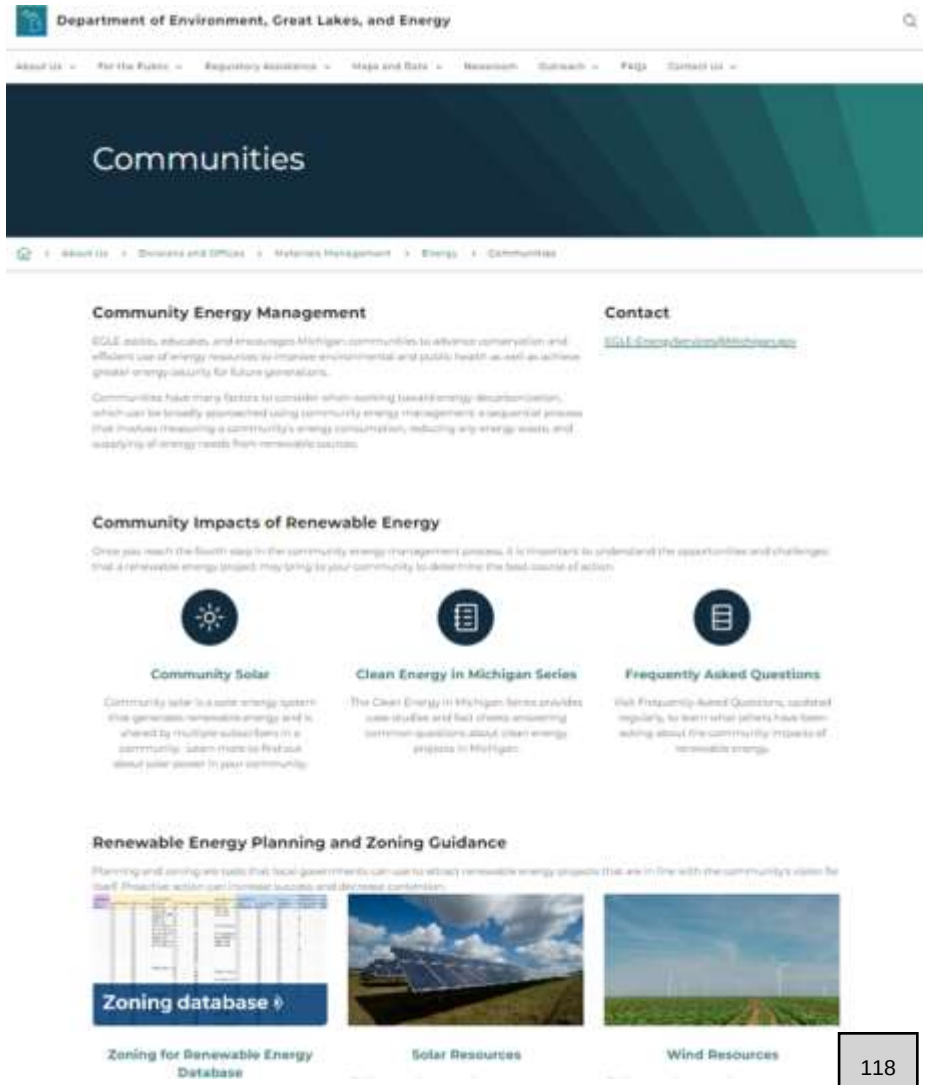
- All energy sources have trade-offs at the local level

- **Everyone** taking their fair share may help avoid preemption
  - State needs ~15GW wind, ~32GW solar
  - In Lower Peninsula, that's 1.5MW/square mile; much less in the U.P.

- $30 Million in 2024 budget for "Renewable Ready Communities"
  - Only for big projects; at least $5k/MW
  - Details due soon

Planning and Zoning Resources

- **Curated repository of templates, guidance**
  - https://www.michigan.gov/egle/about/organization/materials-management/energy/communities
- **Case Studies, FAQs**
- **March-April 2022 issue of MTA's Township Focus**
- **April 2020 issue of Planning & Zoning News**



EGLE

Sample Ordinances - with MSU-Extension (Thanks to EGLE)

Sample Zoning for Wind Energy Systems 2020

DOWNLOAD FILE

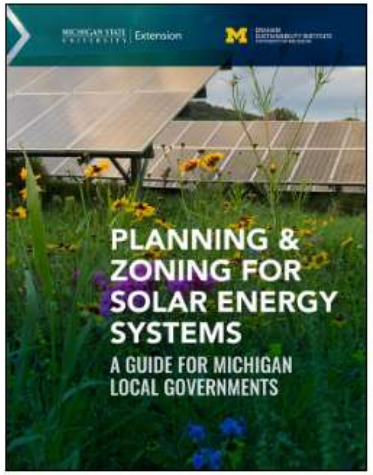
October 11, 2020 - Author: Mary Reilly and Brad Neumann

This publication presents a zoning ordinance sample amendment for utility scale wind energy systems and smaller wind electric generation systems for an individual business or home. There are earlier versions of this document. They should not be used. There are significant and important updates and changes to this version. Do not use a version dated prior to November 2017.

This is a fact sheet developed by experts on the topic(s) covered within MSU Extension.Its intent and use is to assist Michigan communities making public policy decisions on these issues. This work refers to university-based peer reviewed research, when available and conclusive, and based on the parameters of the law as it relates to the topic(s) in Michigan. This document is written for use in Michigan and is based only on Michigan law and statute. One should not assume
other regulation by Michigan municipalities and cou
cases they do not. This is not original research or a s
conclusions.

Planning & Zoning for Solar Energy Systems: A Guide for Michigan Local Governments

DOWNLOAD FILE



October 5, 2021 - Author: Wayne Beyea, Harmony Fierke-Gmazel, M. Charles Gould, Bradley Neumann and Mary Reilly, Michigan State University Extension; Sarah Mills, University of Michigan Graham Sustainability Institute

The purpose of this guide is to help Michigan communities meet the challenge of
r energy systems (SES) within their planning
ument illustrates how various scales and
landscape patterns ranging between rural,
eloped by experts within MSU Extension and
Construction in partnership with faculty at the
ility Institute. Further review of this document
ocal units of government, legal counsel,
energy-related non-profits, utility experts, and members of academia. Its intent is
Michigan communities make public policy decisions related to solar energy

Available at https://www.michigan.gov/egle/about/organization/materials-management/energy/renewable-energy

Questions?

- **Reach out to us**
  - Answer questions
  - Review draft zoning ordinances
  - Give presentation to township
  - Connect you to MSU-Extension, other communities
- **More training**
  - Online webinars on zoning
  - Legal training, bus tours through MAP

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Livingston County Department of Planning

MEMORANDUM

TO: Livingston County Planning Commissioners and the Cohoctah Township Board of Trustees

FROM: Robert Stanford, Principal Planner

DATE: January 6, 2023

SUBJECT: Z-06-23 Amendments to Zoning Ordinance Article - Various Sections and Articles: *Utility Scale Solar Energy Systems and Moratorium*

Kathleen J. Kline-Hudson
AICP, PEM
Director

Robert A. Stanford
AICP, PEM
Principal Planner

Scott Barb
PEM
Principal Planner

During the November 16, 2022 Livingston County Planning Commission meeting, the Commission heard, reviewed and made recommendation on *Livingston County Zoning Case #Z-37-22* (**Recommendation: Take No Action, Encourage Further Review**). With this set of amendments the township proposed to do the following:

- The township proposed to remove the definition of "Solar Farm" from Section 2.02.
- The township proposed to replace references to "Solar farms" to "Utility scale solar energy systems" in Sections 4.03(M), 5.03(L), 6.03(K), 7.03(H), 10.03(G), 11.03(X), and 16.58(C).
- The township proposed to delete Section 13.17 regarding Solar Buildings.
- The township proposed to replace existing section 13.27 in its entirety and revise it with new regulations throughout.

While it was felt by County Planning Staff that the proposed amendments were very comprehensive and many of them sufficiently addressed many of the elements related to proper planning and zoning related to the issue according to the current establish set of unofficial guidelines developed by the Michigan State University Extension and University of Michigan-Graham Institute of Sustainability entitled: "Planning & Zoning for Solar Energy Systems: A Guide for Michigan Local Governments"[1], there were many undefined, unclear and vague areas through the proposed amendments that the County Planning Commission recommended that the Township take back the amendments to reevaluate and continue to better clarify these areas of deficiencies in the proposal and perhaps repropose to the County Planning Commission at a near future date a cleaner more refined set of amendments.

[1](Source: available at: https://www.canr.msu.edu/planning/uploads/files/SES-Sample-Ordinance-final-20211011-single.pdf)

Department Information

Administration Building
304 E. Grand River Avenue
Suite 206
Howell, MI 48843-2323

(517) 546-7555
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Web Site
co.livingston.mi.us

Subsequent to this action, the Cohoctah Township Planning Commission received the recommendation of the County Planning Commission and has decided to take this current action. In addition, the township has decided to retain new legal counsel specifically to aid and assist in the further development of the township's solar and wind energy ordinance. The proposed amendments as presented in this review are a result of advice provided by the township's new legal counsel.

In conversations and public meetings attended by Staff with township planning commissioners, board members and legal counsel, Staff has come to the understanding that the township had indeed implemented a similar moratorium over the past year or so previous, which concluded on or around November-December of 2022. Because of the uncertainty and level of necessary additional work that is required to revise the previously proposed set of amendments (see case #Z-37-22) as well as the new ground swell of concern and activity by the township residents, the Township Planning Commission has decided to initiate this new course of action under the proposed moratorium.

For purposes of this review, proposed additions to existing text are noted in **red** underline, deletions in ~~strikethrough~~.

ITEM 1. The Township Planning Commission has initiated this new course of action with the following Resolution, which formulates the basis for the action.

WHEREAS, Public Act 110 of 2006, MCL 125.3101 *et seq*., as amended, authorizes a township board to adopt and amend zoning ordinances that regulate the use of land and structures within its zoning jurisdiction to meet the needs for food, fiber, energy, and other natural resources, places of residence, recreation, industry, trade, service, and other uses of land, to ensure that use of the land is situated in appropriate locations and relationships, to limit the inappropriate overcrowding of land and congestion of population, transportation systems, and other public facilities, to facilitate adequate and efficient provision for transportation systems, sewage disposal, water, energy, education, recreation, and other public service and facility requirements, and to promote public health, safety, and welfare; and

WHEREAS, the Planning Commission wishes to consider recommending regulations applicable to Commercial Wind and to Solar Energy Projects in the Township; and

WHEREAS, the Planning Commission finds that it is necessary and reasonable for the Township Board to establish a temporary moratorium upon the issuance of any and all permits, licenses, and approvals for any property in the Township for the establishment and use of Commercial Wind and Solar Energy Projects for a period of 12 months, with the ability to extend said moratorium for up to an additional 12 months by the adoption of a resolution for extension by the Township Board; and

WHEREAS, the Planning Commission finds that adopting such a moratorium is in the best interest of the public health, safety, and welfare to ensure that the Planning Commission and the Township Board have sufficient time and space during which to thoughtfully consider such regulations without the added pressure of pending applications or proposed developments involving Commercial Wind and Solar Energy Projects; and

WHEREAS, the Planning Commission has determined that the following sections of the Township's Zoning Ordinance relating to "solar farms" should be repealed while the Planning Commission considers revised regulations: the definition of "solar energy system" and "solar farm" in section 2.02, section 4.03(M), section 5.03(L), section 6.03(K), section 7.03(H), section 10.03(G), section 11.03(X), section 16.58(C), section 13.27, and any other section that could be construed to permit Commercial Wind and Solar Energy Projects in the Township while the moratorium remains in effect.

NOW, THEREFORE, the Planning Commission of the Township of Cohoctah resolves as follows:

1. The Planning Commission recommends that the Township Board adopt Ordinance No. 2023-___, An Ordinance to Amend the Township Zoning Ordinance to Include a Moratorium on the Issuance of Permits, Licenses, or Approvals for, or for Any Construction of, Commercial Wind and Solar Energy Projects, And To Repeal Sections Of The Township Zoning Ordinance Pertaining To "Solar Farms" And "Solar Energy Systems" (the "Ordinance," attached as **Exhibit A**).

2. The Planning Commission shall forward this Resolution and the Ordinance, along with the minutes of the public hearing, to the Livingston County Planning Commission for review and recommendation and to the Township Board for consideration.

3. A copy of the Ordinance shall be available for examination at the office of the Clerk, and copies may be provided for a reasonable charge.

4. Any and all resolutions that are in conflict with this Resolution should be repealed but only to the extent necessary to give this Resolution full force and effect.

ITEM 2. The following is a summary of the proposed Ordinance and moratorium text.

Section 1. **Addition of New Section 13.28 to Township Zoning Ordinance.** This section adds Section 13.28 to the Township Zoning Ordinance. The new Section 13.28 contains the following subsections:

A. **Subsection (A)** defines "Commercial Wind and Solar Energy Project."

B. **Subsection (B)** describes the purpose and findings of the proposed Ordinance, including the need for a moratorium and repeal of sections of the Zoning Ordinance pertaining to "solar farms" and "solar energy systems."

C. **Subsection (C)** imposes a moratorium upon the issuance of any and all permits, licenses, or approvals for any property in the Township for the establishment or use of Commercial Wind and Solar Energy Projects, so long as the Ordinance is in effect.

D. **Subsection (D)** describes the term of the moratorium imposed by the Ordinance stating it will be in effect for 12 months following the effective date of the Ordinance,

and that the Township Board may extend the moratorium by resolution for an additional 12 months.

Section 2. **Validity and Severability**. This section provides that if any portion of the Ordinance is found invalid, such holding will not affect the validity of the remaining portions of the Ordinance.

Section 3. **Repealer**. This section repeals any ordinances or parts of ordinances in conflict with this Ordinance, including but not limited to Ordinance No. 84 adopted on November 9, 2017.

Section 4. **Effective Date.** This section provides that the Ordinance is effective as provided by law.

ITEM 3. The Township proposes an ordinance to amend the Township Zoning Ordinance to include a moratorium on the issuance of permits, licenses, or approvals for, or for any construction of, commercial wind and solar projects, and to repeal sections of the township zoning ordinance pertaining to "solar farms" and "solar energy systems". New Section 13.28 is added to the Township Zoning Ordinance and reads as follows:

Section 13.28 Moratorium on Commercial Wind and Solar Projects and Repeal of Sections of the Township Zoning Ordinance Pertaining to "Solar Farms" and "Solar Energy Systems"

A: **Definition**. A "Commercial Wind and Solar Energy Project" is a utility-scale commercial facility that converts energy into electricity, whether by wind, photovoltaics (PV) or various experimental solar technologies, for the primary purpose of wholesale or retail sales of generated electricity.

B. **Purpose and Findings**. The purpose of this moratorium is to provide sufficient time for the Cohoctah Township Planning Commission and Township Board to fully and thoughtfully explore, analyze, research, and make informed decisions regarding Commercial Wind and Solar Energy Projects. In support of this Ordinance, the Cohoctah Township Planning Commission and Township Board have determined the following:

1. The integration of Commercial Wind and Solar Energy Projects within the Township's existing land uses requires suitable regulations and controls to ensure compliance with the Township's Master Plan and for the protection for the health, safety and welfare of all of the Township's residents.

2. The Township wishes to consider whether amendments to its Zoning Ordinance to regulate the establishment and use of Commercial Wind and Solar Energy Projects are necessary in order to better protect the public health, safety, and welfare of Township residents.

3. Imposing a moratorium, on a limited temporary basis, is reasonable and necessary in order to allow the Township time and space to fully and thoughtfully explore, analyze, research and

develop any proposed zoning amendments regarding potential amendments to the Township's Zoning Ordinance applicable to Commercial Wind and Solar Energy Projects.

4. A moratorium should be imposed upon the issuance of any and all permits, licenses, and approvals for any property in the Township for the establishment and use of Commercial Wind and Solar Energy Projects for 12 months, subject to further extension by resolution adopted by the Township Board.

5. The following sections of the Township's Zoning Ordinance relating to "solar farms" should be repealed while the Planning Commission considers revised regulations: the definition of "solar energy system" and "solar farm" in section 2.02, section 4.03(M), section 5.03(L), section 6.03(K), section 7.03(H), section 10.03(G), section 11.03(X), section 16.58(C), section 13.27, and any other section that could be construed to permit Commercial Wind and Solar Energy Projects in the Township while the moratorium remains in effect. .

C: **Moratorium**. A moratorium is hereby imposed upon the issuance of any and all permits, licenses, or approvals for any property in the Township for the establishment and use of Commercial Wind and Solar Energy Projects, so long as this Ordinance is in effect.

D. **Term of Moratorium; Renewal**. The moratorium imposed by this Ordinance remains in effect for 12 months following the effective date of this Ordinance. Before this moratorium expires, the Township Board may, by resolution, extend the moratorium for up to 12 additional months, if in its judgment the Township Board determines additional time is necessary. If an extension is adopted, the Township will publish notice of the resolution of extension.

Section 2. Validity and Severability.

Should any portion of this Ordinance be found invalid for any reason, such holding will not affect the validity of the remaining portions of this Ordinance.

Section 3. Repealer.

Any ordinances or parts of ordinances in conflict with this Ordinance, including but not limited to Ordinance No. 84 adopted on November 9, 2017, are hereby repealed only to the extent necessary to give this Ordinance full force and effect. Specifically but without limitation, the following sections of the Township Zoning Ordinance pertaining to "solar farms" are repealed: the definition of "solar energy system" and "solar farm" in section 2.02, section 4.03(M), section 5.03(L), section 6.03(K), section 7.03(H), section 10.03(G), section 11.03(X), section 16.58(C), section 13.27, and any other section that could be construed to permit Commercial Wind and Solar Energy Projects in the Township while the moratorium remains in effect.

Section 4. Effective Date.

This Ordinance is effective as provided by law.

Staff Comments: Staff understands the Township's desire to make sure the development and implementation of the set of regulations pertaining to commercial wind and solar energy projects are prepared to the best of its ability. The Township recently developed a set of regulations pertaining to utility solar energy systems which was recently reviewed and recommend on by the County Planning Commission (see County Zoning Case Z-37-22). It is Staff's understanding that with this current amendment, that previous submission will be held up and set aside for the time being while this moratorium is in place, to possibly be reintroduced into the Zoning Ordinance at some future date.

Staff would caution the township to limit the length of this proposed moratorium to the absolute least amount of time necessary to properly undergo its desired reexamination of the subject matter and the subsequent redevelopment of utility-scale wind and solar energy land use regulations.

Adopting a moratorium is not without legal risk. A local government must do so with caution and ensure that the municipal attorney is directly involved.

The following excerpt is taken from a Michigan State University Extension article entitled: "A zoning moratorium should only be done with caution"[2]. It provides a great explanation for the need for a local municipality to exercise caution when determining to utilize a moratorium.

[2](Source: "A zoning moratorium should only be done with caution" written by Brad Neumann, Michigan State University Extension, April 08, 2020, found online at: https://www.canr.msu.edu/news/zoning_moratoriums_should_only_be_done_with_caution)

Local units of government sometimes adopt moratoria to prevent anyone from developing or building something until regulations concerning the activity are developed and adopted. This has occurred in Michigan with medical marijuana dispensaries, signs and billboards, scrapyards, and wind and solar energy generation systems, to name a few.

The problem in Michigan is that there is no statutory authority for a local government to adopt a moratorium in the first place. This is a problem because there is no specific procedure or process for enacting a moratorium – leading to questions about how it is done.

On the other side of the coin, the U.S. Supreme Court has recognized the legitimate use of moratoria (Tahoe-Sierra, U.S. (2002)), and there are appellate level court cases in Michigan that provide support for the idea that moratoria can be done (e.g. Central Advertising Co. v St. Joseph Township 125 Mich App 548, 554-555 (1983).) In one case, "a moratorium on the issuance of building permits in a particular district of the city for a reasonably limited time" was not voided by the court (Heritage Hill v Grand Rapids, 48 Mich App 765, 768 (1973)). Nor did the Michigan Court of Appeals find it to be legally offensive for a township to declare a "brief moratorium on all sewer connections" (BPA II v Harrison Township, 73 Mich App 731, 733-734 (1977)).

While courts have not struck down moratoria in Michigan, there is no appellate court that has upheld a moratorium in Michigan for longer than six months. Moratoria are supposed to be short, tied to a direct threat to the public health, safety and general welfare, given a specific start and end date, and then removed at the end of that date.

The serious and important point is that a local government should never enact a moratorium without the direct involvement of the government's corporate attorney, who should be experienced in municipal and land use law. This is particularly important because there may be question over the government's authority to do so. There may also be question on how it is done. Normally, one would find such direction in enabling legislation, but this is lacking in Michigan. Therefore, it is important that a moratorium is enacted in a way that the attorney is comfortable with, because he or she will be the one to stand to defend the local government if challenged.

Under the doctrine of legislative equivalency, an ordinance can only be amended/suspended by another ordinance, meaning a moratorium can only be enacted by adoption of an ordinance. While some Michigan communities have attempted to enact a moratorium by resolution, it is well-established case law in Michigan that an ordinance cannot be suspended by resolution as shown in these examples:

- *City of Saginaw v Consumers' Power Co., 213 Mich 460, 469 (1921) ("[A]n ordinance may not be repealed or amended without action of equal dignity to that required in its enactment.")*

- *Lee v City of Taylor, 63 Mich App 221, 223 (1975) ("It is settled that a municipal corporation may only repeal an ordinance by an act of equal dignity and formality.")*

- *McCarthy v Village of Marcellus, 32 Mich App 679, 688-89 (1971) ("An ordinance or resolution cannot be amended, repealed, or suspended by another act by a council of less dignity than the ordinance or resolution itself.")*

- *Lorencz v Brookfield Twp., Mich App (No. 319235, Apr. 28, 2015, Unpublished) ("[A]n ordinance may only be repealed by an act of equal dignity, which requires the township to repeal by ordinance and not resolution.")*

It is important that the text of the moratorium ordinance include specific content on:

- *The narrow subject to which the moratorium applies*
- *An explanation as to how the moratorium is addressing a direct and immediate threat to public health, safety and general welfare.*
- *Findings of fact that support the public health, safety and welfare threat.*
- *A specific starting date.*
- *A specific ending date.*
- *Anything else the local government's attorney believes is important to convey.*

Township Recommendation: Approval. The Cohoctah Township Planning Commission recommended Approval of this zoning amendment at its January 6, 2023, public hearing. There were several public comments regarding this amendment noted in the minutes.

Staff Recommendation: Approval With Conditions. Following the November 2022 County Planning Commission meeting, the Planning Commission recommended "Take No Action,

Encourage Further Review", on Livingston County Zoning Case #Z-37-22, as there were many areas of concern with the amendments as proposed and a great deal of increased effort was seen as needed by Cohoctah Township to properly address these concerns and greatly improve the set of regulations going forward.

This, coupled with the fact that the township has retained new legal counsel in its efforts to reassess the current situation and move forward in this planning process under their guidance may necessitate an additional previously unforeseen time commitment in order to effectively and efficiently develop a set of guidelines regulating utility-scale solar that best addresses the health, safety and well-being of the residents of the community and best serves the community as a whole.

Therefore, it is recommended that the township continue to remain diligent in finding a well-conceived and reasonable final resolution to this land use issue as expeditiously as possible, including repeal of regulations as proposed if the township feels this is necessary, relying on the advice of its legal counsel as it progresses through this new course of action. However, the recommendation would also be that these steps are taken without implementation of the moratorium as proposed by the amendments, which constitute the conditions of this Approval.

It is believed that undertaking a further continuation of a previous moratorium period is an unnecessary step and that the tasks necessary to improve the previously proposed set of regulations (as provided in the Staff review for the case) can be completed through the normal course of action utilized in the past by the township whenever any further revisions or refinements that are suggested or recommended to proposed amendments by the County Planning Commission are subsequently implemented by the township.

Livingston County Department of Planning

MEMORANDUM

TO: Livingston County Planning Commissioners and the Conway Township Board of Trustees

FROM: Robert Stanford, Principal Planner

DATE: March 3, 2023

SUBJECT: **Z-14-23 Amendments to Zoning Ordinance Article**

Article 6: *General and Supplemental Regulations*

Section 6.27*: An ordinance to impose a moratorium on the issuance of permits, licenses, or approvals for, or for any construction of, commercial wind and solar energy projects and to repeal sections of the township zoning ordinance pertaining to "wind energy" and "solar energy collectors"*

Scott Barb
AICP, PEM
Director

Robert A. Stanford
AICP, PEM
Principal Planner

The Conway Township Planning Commission has proposed the above-referenced zoning amendment and request (by resolution) of the Conway Township Board of Trustees to impose a moratorium on the issuance of permits, licenses, or approvals for, or for any construction of, commercial wind and commercial solar energy projects and to repeal sections of the township zoning ordinance pertaining to "wind energy" and "solar energy collectors".

Proposed additions to existing text are noted in **red** underline, deletions in ~~strikethrough~~.

BACKGROUND. a general law ordinance was passed by the Township Board on March 15, 2022, for an initial period of 180 days which was able to be extended by Resolution (**See Exhibits C-1 and C-2** at the end of this review). The Board extended the moratorium once by resolution from September 11, 2022, to March 10, 2023, at its meeting on August 16, 2022 (**See Exhibit D** at the end of this review). Another resolution to extend this general law ordinance moratorium was prepared in January 2023, but the Board has not considered that, considering this currently proposed moratorium amendment to the Zoning Ordinance.

ITEM 1 – EXHIBIT A. The Township proposes an ordinance to impose a moratorium on the issuance of permits, licenses, or approvals for, or for any construction of, commercial wind and solar energy projects and to repeal sections of the township zoning ordinance pertaining to "wind energy" and "solar energy collectors", and reads as follows:

Department Information

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304 E. Grand River Avenue
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Web Site
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EXHIBIT A

CONWAY TOWNSHIP
TOWNSHIP BOARD

ORDINANCE NO. 2023-01

AN ORDINANCE TO IMPOSE A MORATORIUM ON THE ISSUANCE OF PERMITS, LICENSES, OR APPROVALS FOR, OR FOR ANY CONSTRUCTION OF, COMMERCIAL WIND AND COMMERCIAL SOLAR ENERGY PROJECTS AND TO REPEAL SECTIONS OF THE TOWNSHIP ZONING ORDINANCE PERTAINING TO "WIND ENERGY" AND "SOLAR ENERGY COLLECTORS"

CONWAY TOWNSHIP ORDAINS:

Section 1. Addition of Section 6.27 to Township Zoning Ordinance. New Section 6.27 is added to the Township Zoning Ordinance and reads as follows:

Section 6.27 Moratorium on Commercial Wind and Commercial Solar Projects and Repeal of Sections of the Township Zoning Ordinance Pertaining to "Solar Farms" and "Solar Energy Systems"

A: **Definition**. A "Commercial Wind" and "Commercial Solar Energy Project" are utility-scale commercial facilities that convert energy into electricity, whether by wind, photovoltaics (PV) or various experimental wind or solar technologies, for the primary purpose of wholesale or retail commercial sales of generated electricity.

B. **Purpose and Findings**. The purpose of this moratorium is to provide sufficient time for the Conway Township Planning Commission and Township Board to fully and thoughtfully explore, analyze, research, and make informed decisions regarding Commercial Wind and Commercial Solar Energy Projects. In support of this Ordinance, the Conway Township Planning Commission and Township Board have determined the following:

1. The integration of Commercial Wind and Commercial Solar Energy Projects within the Township's existing land uses requires suitable regulations and controls to ensure compliance with the Township's Master Plan and for the protection for the health, safety and welfare of all of the Township's residents.

2. The Township wishes to consider whether amendments to its Zoning Ordinance to regulate the establishment and use of Commercial Wind and Commercial Solar Energy Projects are necessary in order to better protect the public health, safety, and welfare of Township residents.

3. Imposing a moratorium, on a limited temporary basis, is reasonable and necessary in order to allow the Township time and space to fully and thoughtfully explore, analyze, research and develop any proposed zoning amendments regarding potential amendments to the Township's Zoning Ordinance applicable to Commercial Wind and Commercial Solar Energy Projects.

4. A moratorium should be imposed upon the issuance of any and all permits, licenses, and

approvals for any property in the Township for the establishment and use of Commercial Wind and Commercial Solar Energy Projects for 12 months, subject to further extension by resolution adopted by the Township Board.

5. Any and all sections of the Township Zoning Ordinance pertaining to "wind energy" and "solar energy collectors" should be repealed, including Section 6.24, Section 6.26, Section 7.02(A)(13), Section 7.03(A)(18), Section 7.03(A)(20), Section 7.03(A)(21), Section 8.02(A)(13), Section 8.03(A)(11), Section 8.03(A)(12), Section 10.02(A)(15), Section 10.03(A)(8), Section 10.03(A)(9), Section 10.03(A)(10), Section 11.02(C)(F), Section 11.03(A)(7), Section 11.03(A)(8), Section 11.03(A)(9), and the definition of "Solar Energy Collector" in Article 2.

C: **Moratorium**. A moratorium is hereby imposed upon the issuance of any and all permits, licenses, or approvals for any property in the Township for the establishment and use of Commercial Wind and Commercial Solar Energy Projects, so long as this Ordinance is in effect.

D. **Term of Moratorium; Renewal**. The moratorium imposed by this Ordinance remains in effect for 12 months following the effective date of this Ordinance. Before this moratorium expires, the Township Board may, by resolution, extend the moratorium for up to 12 additional months, if in its judgment the Township Board determines additional time is necessary. If an extension is adopted, the Township will publish notice of the resolution of extension.

Section 2. Validity and Severability.

Should any portion of this Ordinance be found invalid for any reason, such holding will not affect the validity of the remaining portions of this Ordinance.

Section 3. Repealer.

Any ordinances or parts of ordinances in conflict with this Ordinance are hereby repealed only to the extent necessary to give this Ordinance full force and effect. Specifically but without limitation, the following sections of the Township Zoning Ordinance pertaining to "wind energy" and "solar energy collectors" are hereby repealed while the moratorium remains in effect: Section 6.24, Section 6.26, Section 7.02(A)(13), Section 7.03(A)(18), Section 7.03(A)(20), Section 7.03(A)(21), Section 8.02(A)(13), Section 8.03(A)(11), Section 8.03(A)(12), Section 10.02(A)(15), Section 10.03(A)(8), Section 10.03(A)(9), Section 10.03(A)(10), Section 11.02(C)(F), Section 11.03(A)(7), Section 11.03(A)(8), Section 11.03(A)(9), and the definition of "Solar Energy Collector" in Article 2.

Section 4. EFFECTIVE DATE.

This Ordinance shall take effect seven (7) days after publication of a notice of adoption as provided by law.

ITEM 2 – EXHIBIT B. The Township Planning Commission has initiated this course of action with the following Resolution, which formulates the basis for the action.

EXHIBIT B

CONWAY TOWNSHIP
PLANNING COMMISSION

RESOLUTION TO RECOMMEND TO TOWNSHIP BOARD ADOPTION OF AN ORDINANCE TO IMPOSE A MORATORIUM ON THE ISSUANCE OF PERMITS, LICENSES, OR APPROVALS FOR, OR FOR ANY CONSTRUCTION OF, COMMERCIAL WIND AND SOLAR ENERGY PROJECTS AND TO REPEAL SECTIONS OF THE TOWNSHIP ZONING ORDINANCE PERTAINING TO "WIND ENERGY" AND "SOLAR ENERGY COLLECTORS"

At a meeting of the Planning Commission for the Township of Conway, Livingston County, Michigan, held on the 13th day of February, 2023, at 7:00 p.m.

PRESENT: Planning Commissioners, Lucas Curd, Jeff Klein, Shawn Morrison, Kayla Poissant, Meghan Swain-Kuch, David Whitt and Ex-Officio Member George Pushies.

ABSENT: There were zero (0) absent voting members.

The following preamble and resolution were offered by Ex-Officio Member, George Pushies and seconded by Planning Commissioner, Shawn Morrison.

WHEREAS, Public Act 110 of 2006, MCL 125.3101 *et seq*., as amended, authorizes a township board to adopt and amend zoning ordinances that regulate the use of land and structures within its zoning jurisdiction to meet the needs for food, fiber, energy, and other natural resources, places of residence, recreation, industry, trade, service, and other uses of land, to ensure that use of the land is situated in appropriate locations and relationships, to limit the inappropriate overcrowding of land and congestion of population, transportation systems, and other public facilities, to facilitate adequate and efficient provision for transportation systems, sewage disposal, water, energy, education, recreation, and other public service and facility requirements, and to promote public health, safety, and welfare; and

WHEREAS, the Planning Commission wishes to consider recommending regulations applicable to Commercial Wind and Commercial Solar Energy Projects in the Township; and

WHEREAS, the Planning Commission finds that it is necessary and reasonable for the Township Board to establish a temporary moratorium upon the issuance of any and all permits,

licenses, and approvals for any property in the Township for the establishment and use of Commercial Wind and Commercial Solar Energy Projects for a period of 12 months, with the ability to extend said moratorium for up to an additional 12 months by the adoption of a resolution for extension by the Township Board; and

WHEREAS, the Planning Commission finds that adopting such a moratorium is in the best interest of the public health, safety, and welfare to ensure that the Planning Commission and the Township Board have sufficient time and space during which to thoughtfully consider such regulations without the added pressure of pending applications or proposed developments involving Commercial Wind and Commercial Solar Energy Projects; and

NOW, THEREFORE, the Planning Commission of the Township of Conway resolves as follows:

1. The Planning Commission recommends that the Township Board adopt Ordinance No. 2023-01, An Ordinance To Impose A Moratorium On The Issuance Of Permits, Licenses, Or Approvals For, Or For Any Construction Of, Commercial Wind And Commercial Solar Energy Projects And To Repeal Sections Of The Township Zoning Ordinance Pertaining To "Wind Energy" And "Solar Energy Collectors" (the "Ordinance," attached as **Exhibit A**).

2. The Planning Commission shall forward this Resolution and the Ordinance, along with the minutes of the public hearing, to the Livingston County Planning Commission for review and recommendation and to the Township Board for consideration.

3. A copy of the Ordinance shall be available for examination at the office of the Clerk, and copies may be provided for a reasonable charge.

4. Resolutions that conflict with this Resolution are repealed but only to the extent necessary to give this Resolution full force and effect.

A vote on the above Resolution was taken and was as follows:

ADOPTED:

YEAS: Seven (7)

NAYS: Zero (0)

STATE OF MICHIGAN)
) ss.
COUNTY OF LIVINGSTON)

I, the undersigned, the duly qualified and acting Planning Commission Secretary of the Township of Conway, Michigan, CERTIFY that the foregoing is a true and complete copy of certain proceedings taken by the Planning Commission of said Township at a meeting held on the 13th day of February, 2023.

Kayla Poissant, Planning Commission Secretary

Staff Comments: Staff understands the Township's desire to make sure the development and implementation of the set of regulations pertaining to commercial wind and solar energy projects are prepared to the best of its ability.

Staff would caution the township to limit the length of this proposed moratorium to the absolute least amount of time necessary to properly undergo its desired reexamination of the subject matter and the subsequent redevelopment of utility-scale wind and solar energy land use regulations.

Adopting a moratorium is not without legal risk. A local government must do so with caution and ensure that the municipal attorney is directly involved. In Conway Township's case, Staff understands that Township legal counsel is fully engaged with the township and providing guidance through this current administrative policy and regulatory ordinance development process.

The following excerpt is taken from a Michigan State University Extension article entitled: "A zoning moratorium should only be done with caution"[2]. It provides a great explanation for the need for a local municipality to exercise caution when determining to utilize a moratorium.

[2](Source: "A zoning moratorium should only be done with caution" written by Brad Neumann, Michigan State University Extension, April 08, 2020, found online at: https://www.canr.msu.edu/news/zoning_moratoriums_should_only_be_done_with_caution)

Local units of government sometimes adopt moratoria to prevent anyone from developing or building something until regulations concerning the activity are developed and adopted. This has occurred in Michigan with medical marijuana dispensaries, signs and billboards, scrapyards, and wind and solar energy generation systems, to name a few.

The problem in Michigan is that there is no statutory authority for a local government to adopt a moratorium in the first place. This is a problem because there is no specific procedure or process for enacting a moratorium – leading to questions about how it is done.

While courts have not struck down moratoria in Michigan, there is no appellate court that has upheld a moratorium in Michigan for longer than six months. Moratoria are supposed to be short, tied to a direct threat to the public health, safety, and general welfare, given a specific start and end date, and then removed at the end of that date.

The serious and important point is that a local government should never enact a moratorium without the direct involvement of the government's corporate attorney, who should be experienced in municipal and land use law. This is particularly important because there may be question over the government's authority to do so. There may also be question on how it is done. Normally, one would find such direction in enabling legislation, but this is lacking in Michigan. Therefore, it is important that a moratorium is enacted in a way that the attorney is comfortable with because he or she will be the one to stand to defend the local government if challenged.

Under the doctrine of legislative equivalency, an ordinance can only be amended/suspended by another ordinance, meaning a moratorium can only be enacted by adoption of an ordinance.

It is important that the text of the moratorium ordinance include specific content on:

- *The narrow subject to which the moratorium applies.*
- *An explanation as to how the moratorium is addressing a direct and immediate threat to public health, safety, and general welfare.*
- *Findings of fact that support the public health, safety, and welfare threat.*
- *A specific starting date.*
- *A specific ending date.*
- *Anything else the local government's attorney believes is important to convey.*

For some recent historical context that is relevant as to the consideration of this particular moratorium, in **County Case Z-06-23 (January 2023**), in a very similar wind energy and solar energy collector moratorium ordinance and resolution proposed Cohocton Township, the Livingston County Planning Commission recommended **Take No Action, Encourage Further Review**. There were several reasons given by the Commission for this recommendation. This decision was preceded by the County Planning Commission providing a **Take No Action, Encourage Further Review** recommendation regarding Cohoctah Township's proposed

utility scale solar energy systems ordinance (County Case Z-37-22 – November 2022).

County Planning Staff certainly encourages the township to continue its review, research, and pursuit of developing a final zoning ordinance that regulates utility-scale wind and solar energy facilities. However, doing so within the context of extending a previous, or implementing a new lengthy moratorium presents some serious concern. The current moratorium proposal being done in conjunction with the repeal of all solar related language throughout the zoning ordinance principally leaves the Township temporarily without a solar ordinance to regulate with.

In addition, the township has essentially been operating under a moratorium established by the Township Board since March 2022 for development of their solar ordinance, which was extended by the Township Board as of August 2022, to run from September 11, 2022, through March 10, 2023 (See Exhibits C-1, C-2, and D at the end of this review). It also does have both a wind energy ordinance (Section 6.24) and a solar energy collectors ordinance (Section 6.26i) currently in place. As previously mentioned above, these ordinances will be repealed in their entirety with passage of this proposed moratorium.

County Planning Staff also recognizes the township has retained additional new legal counsel in its efforts to reassess the current situation and move forward in this planning process under their guidance which may necessitate an additional previously unforeseen time commitment in order to effectively and efficiently develop a set of guidelines regulating utility-scale solar that best addresses the health, safety and well-being of the residents of the community and which best serves the community as a whole.

Therefore, it is recommended that the township continue to remain diligent in finding a well-conceived and reasonable final resolution to this land use issue as expeditiously as possible, including repeal of regulations as proposed with this proposed amendment should the township feel so compelled, relying on the advice of its assembled legal team as it progresses through this new course of action.

For consistency's sake, Staff would recommend that these steps be taken without implementation of a further moratorium by the township as proposed by the amendments. This recommendation follows precedent set in similar recent solar moratoriums and ordinance repeals reviewed recommended on by the County Planning Commission. Ultimately it will be the responsibility of the township and its legal counsel to defend this action, therefore Staff would recommend that the County remain neutral in its decision regarding this moratorium. County Planning Staff encourage and fully supports the township in its on-going pursuit and completion of a full and final wind and solar energy ordinance in the very near future and welcomes any request by the township for further assistance by County Planning Staff in this endeavor.

Township Recommendation: Approval. The Conway Township Planning Commission recommended Approval of this zoning amendment at its February 13, 2023. There were several public comments noted in the minutes.

Staff Recommendation: Take No Action, Encourage Further Review. For consistency's sake with prior decisions made by the County Planning Commission, Staff would recommend that the proposed repeal be taken without implementation of a further moratorium by the township as proposed by the amendment. This recommendation follows recent precedent set in similar solar moratoriums and ordinance repeals reviewed recommended on by the County Planning

Commission. Ultimately it will be the responsibility of the township and its legal counsel to defend this action, therefore Staff would recommend that the County remain neutral in its decision regarding this moratorium action. County Planning Staff encourages and fully supports the township in its on-going pursuit and completion of a full and final wind and solar energy ordinance in the very near future and welcomes any request by the township for further assistance by County Planning Staff in this endeavor.

EXHIBIT C-1

RESOLUTION TO ADOPT AN ORDINANCE PLACING A TEMPORARY MORATORIUM ON COMMERCIAL SOLAR ENERGY SYSTEMS

Resolution No. 220315-10

CONWAY TOWNSHIP

WHEREAS, reportedly several Township owners of large acreage parcels have been contacted as to the proposed lease, grant of easement or purchase of lands for the creation of commercial solar energy systems on a large scale throughout the Township and this has resulted in a number of inquiries, questions, comments and concerns being expressed to the Township;

WHEREAS, some property owners of the Township are experiencing development pressure and receiving proposals from developers with regard to the location and development of commercial solar energy systems;

WHEREAS, the Conway Township Zoning Ordinance contains certain minimum standards for commercial solar energy systems pursuant to Section 6.26(F);

WHEREAS, the Conway Township Board and Planning Commission, with input from the Township planning consultant and attorney, have determined the current standards and requirements do not sufficiently or adequately address large scale commercial solar energy systems of the magnitude currently being proposed to property owners throughout the Township, including amassing farmland of potentially hundreds of acres, with dozens or more parcels located in Conway and neighboring townships, for development of such energy systems;

WHEREAS, in particular, the Township wishes to reconsider and add provisions relating to commercial solar energy systems to:

1. Address the potential magnitude of and appropriate zoning districts for larger scale commercial solar energy systems.
2. Ensure adequate on-going property maintenance once construction is completed.
3. Mitigate impacts on adjacent property owners and residents in the areas of noise, drainage, interference, light reflection, visibility, and wildlife friendly fencing that still complies with federal standards.
4. Consider the issues of PA 116, agricultural exemptions, concurrent agriculture uses, decommissions and repairs, appropriate bonds and escrows, and a complaint process for residents.

WHEREAS, it is intended that the Planning Commission will review and recommend to the Township Board certain revisions and amendments to the Township Zoning Ordinance which it feels are necessary in order to best protect the health, safety and general welfare of the residents and property owners of the Township and as such, the Township Board wishes to enact a moratorium for a period not to exceed 180 days to allow them to do so;

WHEREAS, the Township Board hereby finds and determines as follows:

1. An urgent situation exists such that a temporary emergency moratorium is necessary in order to protect the public health, safety, and general welfare of the property owners and residents of the Township.
2. Such a moratorium advances a legitimate public interest, that being the protection of adjacent uses and the Township as a whole, protection and sanctity of the Master Plan and the Conway Township Zoning Ordinance as the current regulations do not afford the protection needed to ensure that the residents and property owners of Conway Township are not adversely affected.
3. The moratorium is being entered into in good faith, with an expectation of diligence and swift action to address the need.
4. The moratorium will not deprive any property owner of the reasonable use of their property for an unreasonable time.
5. Rather, the moratorium is being established for the protection of the Township and its residents and property owners only until such time as a draft Zoning Ordinance amendment can be prepared and completed, a public hearing can be conducted and Zoning Ordinance amendment adopted;

WHEREAS, the Conway Township Board deems it necessary to adopt an ordinance placing a moratorium on the establishment and development of new commercial solar energy systems for a period of 180 days from the effective date of the Ordinance, unless sooner terminated by the Board, in order to permit the planning process to take place and to allow the Planning Commission and the Township Board sufficient time to make any necessary changes and modifications to the existing Township Zoning Ordinance regarding these commercial systems;

WHEREAS, the moratorium is not intended to apply to requests for other solar energy collectors permitted by Section 6.26 of the Conway Township Zoning Ordinance as those uses are typically residential or of a smaller scale such as not to pose a danger to the public health, safety, and general welfare of the property owners and residents of the Township;

WHEREAS, the Board has reviewed and wishes to adopt a general law ordinance entitled *Ordinance to Place a Temporary Moratorium on Commercial Solar Energy Systems* to be numbered and known as General Law Ordinance 27, and to temporarily suspend the Township's Policy calling for a public hearing before adoption of a general law ordinance, which is not required by statute, given the emergent situation and need; and

WHEREAS, authority is provided to the Board to establish such an ordinance pursuant to MCL 41.181;

NOW, THEREFORE, BE IT RESOLVED that:

1. The Board hereby enacts the Ordinance to Place a Temporary Moratorium on Commercial Solar Energy Systems which shall be known as General Law Ordinance No. 27, as presented.

2. The administrative policy calling for a public hearing prior to enactment of a general law ordinance is temporarily suspended as to this proposed ordinance.

3. All other ordinances, policies, and procedures that are in conflict are hereby repealed.

The foregoing resolution offered by Board Member St. Charles
Second offered by Board Member D. Grubb

Upon roll call vote the board members voted as follows:
Grubb, B: yes
Whitt: yes
Grubb, D: yes
Pushies: yes
St. Charles: yes

The Supervisor declared the resolution adopted by the Conway Township Board at a regular meeting held on March 15, 2022.

Elizabeth Whitt, Clerk

EXHIBIT C-2

ORDINANCE TO PLACE A TEMPORARY MORATORIUM ON COMMERCIAL SOLAR ENERGY SYSTEMS

CONWAY TOWNSHIP
LIVINGSTON COUNTY, MICHIGAN
Ordinance No. 27

An ordinance to impose a temporary moratorium on all applications and approvals for commercial solar energy systems in Conway Township, in order to allow the Township to institute appropriate and comprehensive regulations of these operations to protect the health, safety, and welfare of the residents of Conway Township.

Section 1: Findings. The findings supporting this Ordinance have been set forth in detail in the authorizing resolution.

Section 2: Moratorium. There is hereby imposed a temporary moratorium upon the acceptance of applications and the issuance of all permits and approvals for the operation of commercial solar energy systems, also known as solar farms, within the Township, including but not limited to those requests in accordance with Section 6.26(F) of the Conway Township Zoning Ordinance. The term "commercial solar energy system" shall be as defined in Article 2 of the Conway Township Zoning Ordinance.

Section 3: Exceptions to Moratorium. The moratorium imposed under this Ordinance shall not apply to requests for other solar energy collectors permitted by Sections 6.26 of the Conway Township Zoning Ordinance.

Section 4: Term of Moratorium. The moratorium imposed hereunder shall expire upon the earlier of (a) 180 days from the effective date of this Ordinance, unless extended by Township Board resolution; or (b) the effective date of any amendments to the Conway Township Zoning Ordinance addressing this matter.

Section 5: Severability. The provisions of this Ordinance are hereby declared to be severable and if any clause, sentence, work, section or provision is declared void or unenforceable for any reason, by any court of competent jurisdiction, it shall not affect any portion of the ordinance other than said part or portion thereof.

Section 6: Effective Date. This Ordinance shall take effect the day following publication. All ordinances or parts of ordinances in conflict with this Ordinance are hereby repealed.

CERTIFICATION

I hereby declare the above is a true copy of an ordinance adopted by the Conway Township Board at a regular meeting held on March 15, 2022, at the Conway Township Hall, pursuant to the required statutory procedures.

Respectfully submitted,

Elizabeth Whitt, Conway Township Clerk

EXHIBIT D

RESOLUTION TO EXTEND THE TERM OF THE MORATORIUM ON COMMERCIAL SOLAR ENERGY SYSTEMS

Resolution No. 220816-03

CONWAY TOWNSHIP

WHEREAS, the Township approved General Law Ordinance No. 27, known as an Ordinance To Place A Temporary Moratorium On Commercial Solar Energy Systems ("Ordinance"), on March 15, 2022;

WHEREAS, the Ordinance places a temporary moratorium on the acceptance of applications and issuance of permits and approvals for the operation of solar farms in accordance with Zoning Ordinance Section 6.26(F) within the Township for a period of 180 days, which period is set to expire on September 11, 2022;

WHEREAS, the Township has made and continues to make diligent efforts during the temporary moratorium towards amending its zoning ordinance regulations relating to solar farms, also known as solar energy systems, including discussions with its planning consultants, outside solar consultants, neighboring townships and their consultants, and the Township attorney, but it has become clear that additional time is needed to complete their efforts;

WHEREAS, the Ordinance provides the Board may extend the temporary moratorium by resolution;

WHEREAS, the Board does wish to extend the temporary moratorium through March 10, 2023, to allow the Township Planning Commission and Board additional time to amend the zoning ordinance;

NOW, THEREFORE, BE IT RESOLVED that:

1. The Board hereby extends the term of the temporary moratorium relating to solar farms established by the Ordinance to Place a Temporary Moratorium On Solar Farms, General Law Ordinance No. 27, from September 11, 2022, through March 10, 2023.

2. All other ordinances, policies, and procedures that are in conflict are hereby repealed

The foregoing resolution offered by Board Member Whitt.
Second offered by Board Member Pushies.

Upon roll call vote the board members voted as follows:
Grubb, D: yes
Pushies, G: yes
Hohenstein, R: yes
Grubb, B: yes
Whitt, E: yes

The Supervisor declared the resolution adopted by the Conway Township Board at a regular meeting held on August 16, 2022.

Elizabeth Whitt, Clerk

DAVISON TOWNSHIP

GENESEE COUNTY, MICHIGAN

ORDINANCE NO. 16-94

Solar Energy Systems Ordinance Amendment

Section 201
Section 1741
Section 1742

An ordinance amending the Davison Township Zoning Ordinance No. 16, as amended,

The Township of Davison ORDAINS:

That Ordinance No. 16, being Davison Township Zoning Ordinance is hereby amended as follows:

SECTION 1

INSERT new definitions into Section 201 (Definitions), as follows:

Abandoned Solar Energy System: Any Solar Energy System that remains nonfunctional or inoperative to the extent that it is not used to generate energy for a continuous period of 180 days.

Building Integrated Solar Energy System: A solar energy system that consists of integrating photovoltaic devices into the building structure, such as the roof or the wall, and which does not alter the relief of the roof or wall.

Ground-Mounted Solar Energy System: A solar energy system that is directly installed in the ground and is not attached or affixed to an existing structure.

Photovoltaic Device: A system of components that generates electrical energy from incidental sunlight by means of photovoltaic effect, whether or not the device is able to store the electric energy produced for later use. For purposes of this ordinance, a photovoltaic device shall also be known as a solar device.

Roof-Mounted Solar System: A solar energy system in which solar panels are mounted to a roof of a building, either as a flush-mounted system or as modules fixed to frames which can be tilted.

Solar Array: Any number of devices connected together to provide a single output of electrical energy or other energy.

Solar Energy System, Large: A utility-scale solar energy system intended to generate electric energy or other energy by converting sunlight, whether by solar devices or other conversion technology, for the sale, delivery, or consumption of the generated energy by more than one end-user, and typically the power output of that system is equal to or greater than 1 megawatt. Large solar energy systems may be a principal use or an accessory use.

Solar Energy System, Small: A solar energy system where the sole use is to generate electric energy or other energy by converting sunlight, whether photovoltaic devices or other conversion technology, primarily for consumption by a single end user at the same property upon which the solar energy system is located. The power output of the system shall not exceed 1 megawatt. Small solar energy systems shall only be an accessory use to a principal use.

Wall-Mounted Solar Energy System: A solar energy system that is mounted to a wall of a building, either as a flush-mounted system or as modules fixed to frames which can be tilted.

SECTION 2

INSERT new Section 1741 (Solar Energy Systems, Large)
to Article XVII (General Provisions), as follows:

Section 1741. Solar Energy Systems, Large

The purpose and intent of these regulations is to allow and promote the use of renewable energy as an alternative energy source and to provide associated place, land development, installation, and construction regulations for large solar energy systems facilities subject to reasonable conditions that will protect the public health, safety, and welfare. These regulations establish minimum requirements for large solar farm facilities while promoting a renewable energy source in a safe, effective, and efficient manner.

1. Minimum Lot Size and Placement: A minimum of ten (10) acres of land is required. Large solar energy systems shall be located within four (4) miles of an electrical substation in existence at the time of adoption of this Section, as shown on the Existing Utility Substation Radius exhibit.

2. Height Restrictions: All photovoltaic panels solar devices and support structures located on a large solar energy system facility shall be restricted to a maximum height of fifteen (15) feet when orientated at a maximum tilt as measured from the existing grade.

3. Road Frontage Setback: All photovoltaic solar devices and support structures associated with such facilities, including perimeter fencing, shall be setback a minimum of two-hundred (200) feet from any road right-of-way line. This road frontage setback area may be occupied by other uses as allowed within the designated zoning district of the subject property.

4. Property Line Setbacks: In addition to the required road frontage setback, all photovoltaic solar devices and support structures associated with such facilities, including perimeter fencing, shall be setback a minimum of fifty (50) feet from all other property lines.

5. Landscape Greenbelt: Landscaping shall consist of a minimum twenty (20) foot wide vegetated greenbelt around the entire perimeter of the facility. Such greenbelt shall be outside of any perimeter fencing associated with the facility. Landscaping within the greenbelt shall consist of evergreen trees of a minimum of six (6) feet in height at the time of planting. All trees shall be planted a minimum of ten (10) feet apart measured on center and have a minimum projected height of twenty (20) feet. Existing vegetation within the greenbelt may be used as a substitute for the required plantings, upon approval of the Planning Commission or Planning Administrator. The landscape greenbelt shall be maintained and irrigated in accordance with Section 1713,(5).

6. Maintenance of Setback Areas and Landscape Greenbelt. The owner is responsible for maintaining (mowing, etc.) the required setback areas and landscape greenbelt. Adequate access

and space shall be provided to facilitate the maintenance of these areas. All plant material shall be maintained in a healthy condition to provide the intended screening and shall be replaced upon death or disease.

Insert Existing Utility Substation Radius Exhibit

7. Maximum Lot Coverage: Maximum lot coverage restrictions shall not apply to solar devices, provided that the total area of the facility shall not exceed more than sixty percent (60%) of the lot area. For the purposes of this requirement, the size of the facility shall include all area within the perimeter fencing required by subsection 8, below.

8. Safety/Access: The site must be secured by a fence along all exterior sides of the facility that is a minimum of six (6) feet in height with a gate and locking mechanism that will allow for emergency access at all times. The fencing shall consist of durable materials which shall be approved by the Planning Commission. The fencing must be located between the required landscape greenbelt and all photovoltaic solar devices and support structures associated with the facility.

9. Vehicular Access Drives and Parking Areas. Vehicular access drives and parking areas may be gravel surfaced. All parking and vehicular traffic surfaces shall be maintained in sound condition and free of weeds, dust, trash and debris. All parking areas shall meet the minimum requirements of the applicable state and federal ADA accessibility codes.

10. Noise: No large solar energy systems shall exceed fifty (50) dBA as measured at the property line.

11. Glare: Large solar energy system facilities shall be placed such that concentrated solar radiation or solar glare shall not be directed onto nearby properties and public roads. Anti-reflective coatings are required.

12. Electrical Interconnections: Use of above ground transmission lines are prohibited within the site except as may otherwise be required by a public utility.

13. Energy storage buildings and equipment. Energy storage buildings and equipment compounds shall be allowed on site. Such buildings and equipment shall be centrally located, not exceed a height of fifteen (15) feet, or occupy an area greater than five-hundred (500) square feet.

14. A Professional Engineer registered in the State of Michigan shall certify that the construction and installation of a large solar energy system meets or exceeds the manufacturer's safety, construction, and installation standards. Such certification shall be provided to the Township Building Official prior to the issuance of a zoning compliance permit.

15. All electrical components, compartments, storage facilities, wire conduit and interconnections with private structures shall conform with applicable national and local electrical codes. The installation of large solar energy systems shall also comply with local building permit requirements.

16. The surface area beneath any solar panel or array of panels shall be continually maintained and the pervious surface condition of such land area shall remain unbuilt. Additionally, in no instance shall the peak flow rate of storm water runoff from the site (also known as overland flow) exceed the predevelopment runoff rate. Development shall comply with the requirements for storm water quantity and quality outlined in the 2010 Genesee County Storm Water and Flood Control Design Standard Requirements manual, as may be amended.

Insert Large Solar Energy Facilities Development Requirements Exhibit

17. Additional Special Condition Use Criteria: In addition to the special condition use and site plan requirements found in Article XIX (Review and Approval of Special Condition Uses) and Article XVIII (Site Plan Review Procedures), the applicant shall address the following topics in the application for large solar energy system applications:

a. Project Description and Rationale: Identify the type, size, rated power output, performance, safety, and noise characteristics of the system including the transmission line/grid connection for the project. Identify the project construction time frame, project life, developmental phases (and potential future expansions) and expected markets for the generated energy. Describe the proposed property maintenance program.

b. Job Creation: Estimated construction jobs and estimated permanent jobs associated with the development.

c. Visual Impacts: Graphically demonstrate the visual impact of the project using photos and renditions of the project with consideration given to setbacks and proposed landscaping.

d. Environmental Analysis: Identify impacts on County drains and/or established natural and private drainage features in the area existing environmental features, such as topography, hydrology, geology, and cultural resources.

e. Waste: Identify any solid or hazardous waste generated by the project.

f. Lighting: Provide plans showing all lighting within the facility. No light may adversely affect adjacent parcels. Site lighting shall not exceed 0.2 footcandles at the front property line and no light shall reach side or rear property lines.

g. Transportation Plan: Provide a proposed access plan during construction and operational phases. Show proposed project service road ingress and egress locations onto adjacent roadways and the layout of the facility service road system. Due to infrequent access following construction, it is not required to pave or curb solar panel access drive.

h. Prime Farmland: Identify potential loss of prime farmland as defined by the soil survey for Genesee County or United States Department of Agriculture Natural Resources Conservation Service.

i. Public Safety: Identify emergency and normal shutdown procedures. Identify potential hazards to adjacent properties, public roadways and to the general public that may be created.

j. Sound Limitations: Identify noise levels at the property lines of the project when completed and operational.

k. Telecommunications Interference: Identify any electromagnetic fields and communications interference that may be generated by the project.

l. Abandonment and Decommissioning: Following the operational life of the project, or at the time the project becomes obsolete or an Abandoned Solar Energy System, as determined by the Township Building Official or any other expert or specialist to be designated by the Township to make such a determination, the applicant shall perform

decommissioning and removal of the Large Solar Energy System and all its components. The Applicant shall prepare a Decommissioning Plan and submit it to the Planning Commission for review and approval prior to issuance of the Special Condition Use Permit. Under this plan, all structures and facilities shall be removed, including any structures below-grade, and removed offsite for disposal. No concrete, piping and other materials may be left in place. Any Solar Array or combination of Photovoltaic Devices that become an Abandoned Solar Energy System shall be removed under the Decommissioning Plan. The ground must be restored to its original condition within 180 days of becoming an Abandoned Solar Energy System, or decommissioning, whichever occurs first. If decommissioning is not completed within a 180-day period, the Township Board shall have the authority to complete any decommissioning and restoration activities necessary to restore the property to the condition in existence prior to the installation of the Large Solar Energy System or any components thereof. Any costs incurred by the Township in pursuing such activities shall be at the expense of the Applicant, including the Applicant's continuing restoration security as provided by this Section.

(1) Prior to issuance of a Special Condition Use Permit by Davison Township, the applicant must provide the Davison Township Planning Department a certified cost estimate for decommissioning. The decommissioning cost shall be certified by an engineer in licensed to practice in the State of Michigan. The performance guarantee must be in the form of certified check (no bonds or performance guarantees are acceptable). The amount of the certified check will be equal to one and a quarter times the decommissioning cost or $50,000.00, whichever is greater. Estimates for decommissioning the site and salvage value shall be determined by a professional engineer or a general contractor licensed to practice in the State of Michigan. A new estimate must be submitted to the Davison Township Building Department each year verifying that the cash held in escrow is an adequate amount to ensure compliance with the ordinance and to ensure that it has been properly renewed. The full amount of decommissioning must remain in escrow until the facility decommissioned and any necessary site restoration is complete and inspected and approved by the Davison Township Building Official.

After approval of the Special Condition Use Permit, but prior to the final electrical inspection, the decommissioning plan shall be recorded at the Genesee County Register of Deeds Office and a recorded copy provided to the Davison Township Building Department. In the event of a change of ownership of the facility, the new owner of the facility must provide an updated signed decommissioning plan within thirty (30) days of the change of ownership.

m. Continuing Security and Escrow: If any Large Solar Energy System is approved for construction under this Section, the applicant shall be required to post continuing security and a continuing escrow deposit prior to commencement of construction, which shall remain in effect until the Large Solar Energy System has been finally removed, as provided below:

(1) Continuing Restoration Security: If a Special Condition Use Permit is approved pursuant to this section, the Township Board shall require security in the form of a cash deposit, or surety bond acceptable to the Township, which will be furnished by the applicant to the Township to ensure full compliance with this

section and all conditions of approval. When determining the amount of each required security, the Township may also require an annual escalator or increase based on the Consumer Price Index (or the equivalent or its successor). Such financial guarantee shall be deposited or filed with the Township Clerk after a Special Condition Use Permit has been approved but before construction commences on the Large Solar Energy System. At a minimum, the financial security shall be in an amount determined by the Township to be reasonably sufficient to restore the property to its previous condition prior to construction and operation of the Large Solar Energy System. Such financial security shall be kept in full force and effect during the entire time that the Large Solar Energy System exists or is in place, and such financial security shall be irrevocable and non-cancelable. In addition, the party operating a Large Solar Energy System approved by the Township shall inform the Township in the event the system, or a material portion of the system is sold to a third party, and any such sale shall require the purchasing party to provide the Township with the security described by this section, along with relevant contact information.

(2) Continuing Obligations: Failure to keep any required financial security and escrow deposit in full force and effect at all times while a Large Solar Energy System exists or is in place shall constitute a material and significant violation of the Special Condition Use Permit and this Ordinance, and will subject the Large Solar Energy System applicant, owner and operator to all remedies available to the Township, including revocation of the Special Condition Use Permit. A review of security and escrow requirements shall occur no less than annually to determine compliance with this section.

n. Transfer of Ownership/Operation: Prior to a change in the ownership or operation a Large Solar Energy System, including, but not limited to, by the sale or lease of that System or the underlying property, the current owner or operator shall provide written notice to the Township at least sixty (60) days prior to that change becoming effective. This notice shall inform the Township of the intended transfer of control of the Large Solar Energy System and include a copy of the instrument or agreement effecting that transfer. Such an instrument or agreement shall include an express statement that the new owner or operator of the Large Solar Energy System shall not be permitted to operate that System until compliance with the terms of this Ordinance, including requirements for continuing security and escrow funds, has been established.

o. Township Review: Because of the ever-changing technical capabilities of solar devices and of new technology in general, the Township Planning Commission shall have the authority to review and consider alternatives in both the dimensional and physical requirements in this Section as a part of the Special Condition Use Permit approval process.

p. All site improvements (landscaping, fencing, buildings, etc.) must be maintained in good condition until the facility is dismantled and removed from site.

q. Solar components must have a UL listing, or a listing from an alternative testing agency accepted by the jurisdiction having authority over the project.

r. All construction parking must be located outside of the rights-of-way of the public streets.

s. The applicant must provide written authorization from the local utility company acknowledging and approving connection to the local utility company's grid and submit a copy to Davison Township.

SECTION 3

INSERT new Section 1742 (Solar Energy Systems, Small)
to Article XVII (General Provisions), as follows:

Section 1742. Solar Energy Systems, Small

The purpose of these regulations is to regulate the construction, location, and operation of small solar energy systems that are accessory uses to a site's primary use and subject to reasonable conditions that will protect the public health, safety, and welfare.

1. In General.

   a. Small solar energy systems may be building integrated, ground-mounted, roof-mounted, or wall-mounted systems, as defined in this Ordinance.

   b. The review and approval process for small solar energy systems shall be as follows:

      (1) Building-integrated small solar energy systems – No zoning approval is required.

      (2) Roof-mounted and/or wall-mounted small solar energy systems – Administrative review and approval by the Building Official shall be required, subject to the requirements of this Section.

      (3) Ground-mounted small solar energy systems – Review and approval by the Planning Commission shall be required as a use permitted subject to special conditions in accordance with Article XIX, "Review and Approval of Special Condition Uses." A site plan shall be submitted concurrently with the special conditional use application which includes the required information per Section 1901,(2),(a) through (d) and (f), and any other supporting statements, evidence, data, information and exhibits necessary to demonstrate compliance with the requirements of this Section.

2. Roof-mounted systems.

   a. Roof-mounted systems are permitted to face any rear or side yard.

   b. Roof-mounted systems shall be designed to be in harmony with the architectural style of the building to which it is attached, and not obviously appearing as a separate mechanical structure that appends or appears to interrupt the uniform surface of a roof.

   c. Roof-mounted systems on an angled roof shall appear to be flush mounted.

   d. The highest point of the roof-mounted system shall not exceed the highest point of the roof to which it is attached. For installations on a flat roof, the highest point of the system shall be permitted to extend up to 6-feet above the roof to which it is attached; however,

it shall be so located or architecturally concealed by a parapet wall or screen so that the system is not visible from abutting rights-of-way or private road easements.

e. For non-residential uses, no roof-mounted system shall be installed in a manner that would cause the shedding of ice or snow from the roof onto a stoop, porch, deck, stairwell, or pedestrian travel area.

3. Wall-mounted systems.

a. Wall-mounted systems are permitted to face any rear or side yard.

b. Wall-mounted systems shall be designed to be in harmony with the architectural style of the building to which it is attached and not obviously appearing as a separate mechanical structure that appends or appears to interrupt the design character of the wall to which it is attached.

4. Ground-mounted systems.

a. A minimum of one (1) acre of land is required.

b. For residentially zoned parcels, ground mounted systems shall not exceed 1,000 square feet in area utilized for solar panels and electrical equipment. For all other zoning districts, ground mounted systems shall not exceed 10,000 square feet in area utilized for solar panels and electrical equipment.

c. Ground-mounted systems cannot be constructed in any required setback area. Greenbelts, landscape screening and/or fencing shall be required to screen the ground-mounted system from adjoining properties and roadways.

d. Ground-mounted systems shall be accessory to a principal use and located on the same zoning lot as the principal use. Locating ground-mounted systems within a general common element or other similarly-shared space held in common ownership is expressly prohibited.

e. All exterior electrical lines shall be buried below the surface of the ground.

f. Photovoltaic panels, devices and support structures shall be restricted to a maximum height of six (6) feet when orientated at a maximum tilt as measured from the existing grade.

g. The surface area beneath any solar panel or array of panels shall be continually maintained and the pervious surface condition of such land shall remain unbuilt.

SECTION 4

INSERT new Subsection 3 under Section 1402 (Uses Permitted Subject to Special Conditions) of Article XIV (M-1, Limited Manufacturing District, as follows:

3. Large solar energy systems, subject to the requirements of Section 1741.

SECTION 5

INSERT new Subsection 3 under Section 1502 (Uses Permitted Subject to Special Conditions) of Article XV (M-2, General Industrial District), as follows:

3. Large solar energy systems, subject to the requirements of Section 1741.

SECTION 6

The penalty for violation of this ordinance shall be the same as those penalties set forth in Article XXVI, Section 2600 through 2604 of the Davison Township Zoning Ordinance No. 16.

SECTION 7

Notice of the adoption of this Ordinance shall be published in the Davison Index Circulated within the Township of Davison, Genesee County, Michigan within fifteen (15) days following the adoption.

The ordinance shall become effective upon publication of the notice.

Dated: July 8, 2019

DAVISON TOWNSHIP BOARD

By: Timothy W Elkins
Davison Township Supervisor

By: Cindy K Shields
Davison Township Clerk

Section 7.25

REGULATION OF SOLAR FARMS AND SOLAR PANELS

This amendment Solar Energy is hereby added to the Montcalm Township Zoning Ordinance to state as follows:

A. INTENT AND PURPOSE

This section is intended to promote the use of solar energy within Montcalm Township as a clean alternative energy source and to provide for the land development, installation and construction regulations for solar farm and similar facilities subject to reasonable conditions that will protect the public health, safety and welfare. These regulations establish minimum requirements and standards for the placement, construction and modification of photovoltaic solar farm and similar facilities, while promoting a renewable energy source for our community in a safe, effective and efficient manner.

B. DEFINITIONS

The following words and terms shall mean the following for purposes of this section:

ABANDONMENT - To give up, discontinue, or withdraw from. Any solar farm that ceases to produce energy on a continuous basis for 18 months will be considered abandoned.

BUILDING - Any structure having a roof supported by columns or walls, and designated or intended for the shelter, support, enclosure or protection of persons, equipment, animals or chattels.

DECOMMISSIONING PLAN - A document that details the planned shut down or removal of a solar farm from operation or usage, including abandonment as defined in this Ordinance.

FENCE - A continuous barrier extending from the surface of the ground to a uniform height (to be established through the special use permit process), constructed of steel, or other metal, or any substance of a similar nature and strength.

GATE - A door or other device attached to a fence which, when opened, provides a means of ingress and egress of persons and things for which it was intended, and which, when closed, forms a continuous barrier as a part of the fence to which it is attached.

RESIDENCE - A building used as a dwelling for one or more families or

persons. Residential Area: Any area within one quarter (1/4) of a mile of a solar farm having twenty-five or more dwellings.

SOLAR FARM - Land designated or used for the purpose of producing solar or photovoltaic electricity, which includes, but is not limited to, the use of one or more solar panels or other solar energy systems. The power generated is sold or transferred to electric companies or other third parties for distribution through a power grid. A solar farm is comprised of solar panels, photovoltaic cells, or similar facilities that comprise or occupy 20 acres or more on a given parcel or lot.

C. PROHIBITIONS

It shall be unlawful after the effective date of this Ordinance for any person, firm, corporation, or other legal entity to operate, maintain or establish in any area of Montcalm Township a solar farm without special land use approval by the Montcalm Township Planning Commission. Modifications to an existing lawful solar farm (which existed as of the effective date of this Ordinance) that increases the area by more than 10% of the original footprint or changes the solar panel type shall be fully subject to this Ordinance.

D. SOLAR FARM DEVELOPMENT AND DESIGN

1. **Solar farms are only allowed within the Agricultural ("AG") zoning district and the Industrial zoning district and only with special land use approval by the Planning Commission.**
2. **Minimum Lot Size: Solar farms shall not be constructed on lots or parcels where less than 20 acres can be dedicated to solar energy production.**
3. **Height Restrictions: All photovoltaic panels located on a solar farm shall be restricted to a height of 14 feet.**
4. **Setbacks: All photovoltaic solar panels and support structures associated with solar farms (excluding perimeter security fencing) shall be a minimum of 20 feet from any side or rear property line and a minimum of 50 feet from any road or highway right-of-way or easement.**
5. **Safety/Access: A security fence (with the height and material to be established through the special land use permit process) shall be installed and maintained around the perimeter of the solar farm and electrical equipment shall be locked. Knox boxes and keys shall be provided at locked gated entrances for emergency personnel access.**
6. **Noise: The noise from a solar farm shall not exceed 65 decibels as measured at any property line.**
7. **Landscaping: The Planning Commission may alter the landscaping requirement, as outlined in Chapter 14 of this Ordinance, depending upon the topography and existing plant material on the site and proximity to**

residential housing. Trees shall be a minimum of four (4) feet tall when planted and remain in good condition for the life of the solar farm.

8. **Local, State and Federal Permits: Solar farms shall obtain all necessary permits from the United States Government, State of Michigan, and Montcalm Township, and shall comply with the standards of the State of Michigan adopted codes.**
9. **Electrical Interconnections: All electrical interconnection or distribution lines shall comply with all applicable codes and standard commercial large-scale utility requirements. Use of above ground transmission lines shall be prohibited within the site.**
10. **If the solar energy facility consists of batteries or the storage of batteries, adequate design and operations must be implemented to ensure that all local, state and federal requirements regulating outdoor battery storage have been met.**
11. **Additional Special Land Use Criteria: In addition to the requirements and standards contained in Chapter 11 regarding special land uses in general, no special land use request for a solar farm will be met unless the Planning Commission finds that the following criteria will also be satisfied (and that the following requested items or information is supplied to the Township):**
    a) **Safety and noise characteristics of the system, including the name and address of the facilities manufacturer and model. Identify the time frame, project life, development phases, likely markets for the generated energy, and possible future expansions**
    b) **Analysis of on-site traffic: Estimated construction jobs, estimated permanent jobs associated with the development**
    c) **Visual impacts: Review and demonstrate the visual impact using photos or renditions of the project or similar projects with consideration given to tree plantings and setback requirements; Project description and rationale: Identify the type, size, rated power output, performance**
    d) **Wildlife: Review potential impact on wildlife on the site**
    e) **Environmental analysis: Identify impact analysis on the water quality and water supply in the area, and dust from project activities**
    f) **Waste: Identify any solid waste or hazardous waste generated by the project;**
    g) **Lighting: Provide lighting plans showing all lighting within the facility. No light may adversely affect adjacent parcels. All lighting must be shielded from adjoining parcels, and light poles are restricted to 18 feet in height.**
    h) **Transportation plan: Provide access plan during construction and operation phases. Show proposed project service road ingress and egress access onto primary and secondary routes, layout of the plant service road system. Due to infrequent access to such facilities after construction is completed, it is not required to pave or curb solar panel**

access drives. It will be necessary to pave and curb any driveway and parking lots used for occupied offices that are located on site.

i) Public safety: Identify emergency and normal shutdown procedures. Identify potential hazards to adjacent properties, public roadways, and to the community in general that may be created

j) Sound limitations and review: Identify noise levels at the property line of the project boundary when completed;

k) Telecommunications interference: Identify electromagnetic fields and communications interference generated by the project.

l) Life of the project and final reclamation: Describe the decommissioning and final land reclamation plan after anticipated useful life or abandonment or termination of the project, including evidence of an agreement with the property owner that ensures proper and environmentally safe final removal of power generating equipment within 6 to 12 months of decommissioning. At a minimum the decommissioning plan will address and require provisions for removal of all structures (including equipment, fencing, and roads), foundations and restoration of soil and vegetation to the condition prior to development.

m) A copy of the application to the utility company that will be purchasing electricity from the proposed site shall be provided to the Township.

n) An affidavit or evidence of an agreement between the lot owner and the facility's owner or operator confirming the owner or operator has permission of the property owner to apply for the necessary permits for construction and operation of the solar energy facility.

E. PLANNING COMMISSION REVIEW

Because of the ever-changing technical capabilities of photovoltaic solar panels and of new technology in general, the Planning Commission, as part of the special land use review process, shall have the authority to review and consider alternatives in both dimensional requirements as well as physical development requirements found in this Section. The Planning Commission shall not have the authority to review or to allow solar farms within any other zoning district (apart from the Agricultural and Industrial zoning districts).

<u>Bond required</u>. Decommissioning security financing in required by Eureka Charter Township to ensure the proper decommissioning of the site. This security financing will be in the form of a surety bond.

F. BUILDING-MOUNTED SOLAR ENERGY PANELS OR COLLECTOR REQUIREMENTS

A building-mounted solar panel or energy collector shall be a permitted

accessory use on buildings in all zoning districts, shall require a Zoning Permit, and is subject to the following requirements:

1. **Sketch plan review and approval by the Planning Commission is required of all building-mounted solar energy panels or collectors permitted as an accessory use totaling over 40 square feet on any building.**
2. **Solar energy panels or collectors that are mounted on the roof of a building shall not project more than five (5) feet above the highest point of the roof but, in any event, shall not exceed the maximum building height limitation for the zoning district in which it is located; and shall not project beyond the eaves of the roof.**
3. **Solar energy panels or collectors mounted on the roof of a building shall be only of such weight as can safely be supported by the roof. Proof thereof, in the form of certification by a professional engineer or other qualified person, shall be submitted to the Township prior to installation and such certification shall be subject to the Township building official's approval.**
4. **Solar energy panels or collectors that are roof-mounted, wall-mounted or are otherwise attached to a building or structure shall be permanently and safely attached to the building or structure. Proof of the safety and reliability of the means of such attachment shall be submitted to the Township prior to installation. Such proof shall be subject to the Township building official's approval and compliance with the National Electrical Code and other applicable codes.**
5. **Solar energy panels or collectors that are wall-mounted shall not exceed the height of the building wall to which they are attached.**
6. **Solar energy panels or collectors shall not be mounted on a building wall that is parallel to or visible from an adjacent public right-of-way.**
7. **The exterior surfaces of solar energy panels or collectors that are mounted on the roof or on a wall of a building, or are otherwise attached to a building or structure, shall be generally neutral in color and substantially non-reflective of light.**
8. **Solar energy panels or 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 Township prior to installation. The Township building official may inspect the completed installation to verify compliance with the manufacturer's directions, the National Electrical Code and any other applicable codes.**
9. **Solar energy panels or collectors, and the installation and use thereof, shall comply with the Township's construction code, the electrical code and other applicable Township codes.**
10. **The total area of solar energy panels or collectors on any building shall not exceed 1,000 square feet.**

G. GROUND-MOUNTED SOLAR ENERGY PANELS OR COLLECTOR REQUIREMENTS

Ground-mounted solar energy panels or collector system shall be a special land use (requiring approval by the Planning Commission), require a Zoning Permit and is subject to the approval of a site plan and subject to all of the following requirements:

1. **Ground-mounted solar energy panels or collectors shall be located only in the rear yard and the side yard, but not in \the required rear yard setback or in the required side yard setback unless permitted by the Planning Commission in its approval of the special land use.**
2. **They may be located in the front yard only if permitted by the Planning Commission in its approval of the special land use but, in any event, they shall not be located in the required front yard setback.**
3. **Ground-mounted solar energy panels or collectors shall not exceed 14 feet in height, measured from the ground at the base of such equipment.**
4. **Solar energy panels or collectors shall be permanently and safely attached to the ground. Proof of the safety and reliability of the means of such attachment shall be submitted to the Township with the special land use application and shall be subject to site plan review.**
5. **Solar energy panels or collectors shall be installed, maintained and used only in accordance with the manufacturer's directions. A copy of such directions shall be submitted to the Township with the special land use application. The special land use, if granted, shall be subject to the Township building official's inspection to determine compliance with the manufacturer's directions.**
6. **The exterior surfaces of solar energy panels or collectors shall be generally neutral in color and substantially non-reflective of light.**
7. **Ground-mounted solar energy panels or collectors, and the installation and use thereof, shall comply with the Township's construction code, the electrical code and other applicable codes.**
8. **Any special land use approval may include terms and conditions in addition to those stated in this subsection.**

The Remainder of the Montcalm Township Zoning Ordinance is Unaffected. Except as expressly amended by this ordinance/ordinance amendment, the rest of Montcalm Township Zoning Ordinance remains unchanged and in full force and effect.

Flushing Township
Solar Energy Zoning Ordinance Provisions

Article 2 DEFINITIONS

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

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.

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).

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.

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

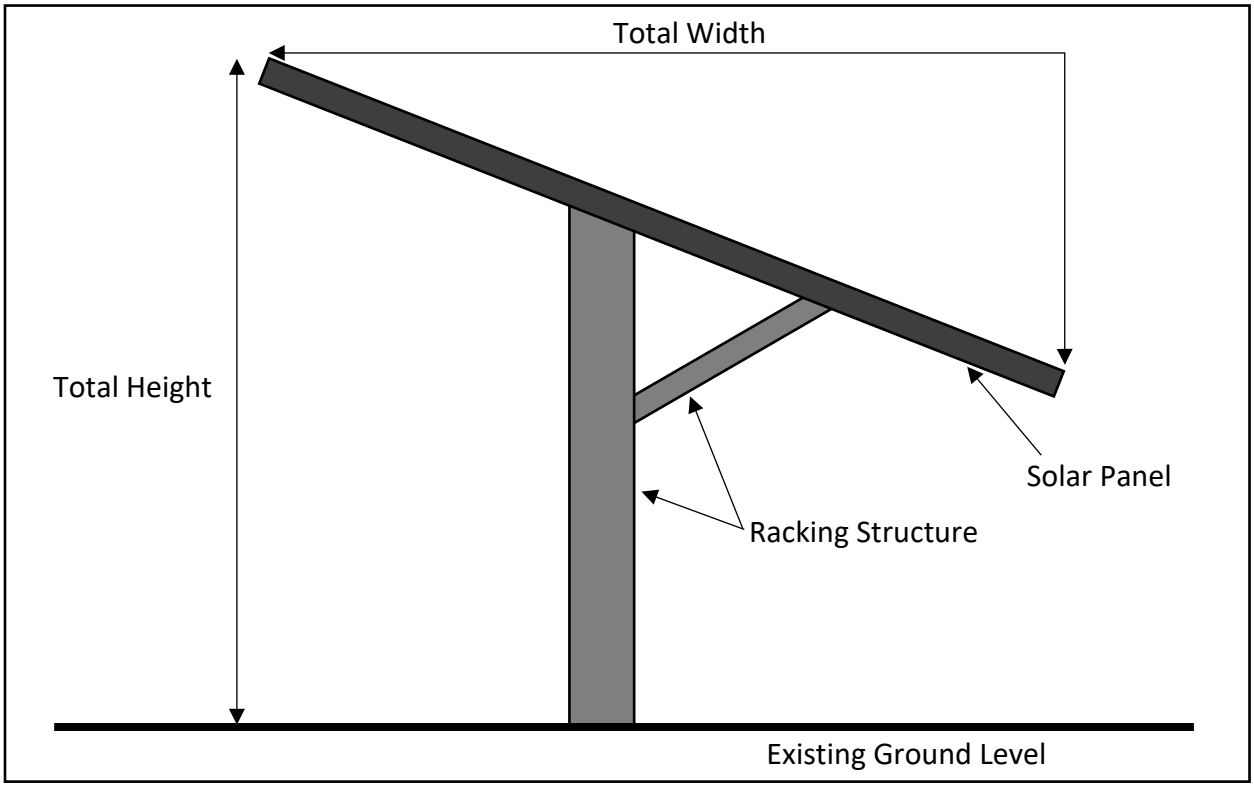

Figure 1

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

Sec. 20-419 On-Site 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 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 Collector
  (1) Solar energy collectors shall be such a weight to be safely supported by the building. Building inspector approval is required.
  (2) Solar energy collectors shall be considered part of the building and meet all the required building height and setback requirements.
  (3) 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.
  (4) Solar energy collectors shall not be located within 3 feet of any peak, eave, or valley to maintain adequate accessibility.

(c) On-Site Ground-Mounted Solar Energy Collector

(1) Ground-mounted solar energy systems 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) Ground-mounted solar energy systems may not extend into the side-yard or rear setback when oriented at any designed tilt angle.

(3) 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.

(4) There shall be a minimum of 25 feet from all-natural features including water courses, wood lots, wetlands, and 100-year floodplains.

(5) 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.

(6) For the RU-1, RU-2, RU-4, RSA, C-1, C-2, C-3, M-1, and M-2 zoning districts, ground-mounted solar energy collectors requesting a lot coverage of 15 percent or less be considered an accessory use. A Discretionary Special Use Permit may be considered for ground-mounted solar energy collectors requesting a lot coverage over 15 percent.

(7) Ground-mounted solar energy collectors shall meet the requirements of Sec. 20-400 Accessory Structures.

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 Article

Section 20-1804 Requirements for Permitted Special Land Uses

(OO) Commercial Solar Energy Collector System

(a) The commercial solar energy collector system must meet all requirements in Sec. 20-419(a) all solar energy collectors and (b) roof-mounted solar energy collectors.

(b) All commercial solar energy collector systems that are ground-mounted 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 ground-mounted solar energy collections shall be included in calculations to determine lot coverage and shall not exceed a maximum lot coverage of 25 percent regardless of the residing zoning district.

(c) Required to be on lots larger than 2 acres.

(d) Any commercial solar energy collector system adjoining any residential development shall be provided with a buffer of at least 60 feet along the adjacent property line. Such buffer shall be planted with evergreen and other suitable plantings and used for no other purposes. A landscaped planting area of at least 60 feet shall also be provided along all street frontage. The Planning Commission may approve to substitute the above described greenbelt for an obscuring fence, wall, and other protective barriers as long as it meets requirements in Sec. 20-408.

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

(2) Provide verification that adequate infrastructure exists to transport the electricity generated into the larger grid system.

(3) 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.

(4) Power and communication lines to electric substations or interconnections with buildings shall be buried underground.

(e) Exception for underground power communication lines:

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

(2) When required by the utility company.

(3) Unless otherwise determined by the Planning Commission.

(f) The installation of the solar energy collectors shall not disturb the existing topography.

(g) 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 90 days. 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 bond in favor of Flushing Township 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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CHARTER TOWNSHIP OF GENESEE

GENESEE COUNTY, MICHIGAN

ORDINANCE NO. 580

AN ORDINANCE AMENDING THE GENESEE TOWNSHIP ZONING ORDINANCE THE ADDITION OF AN ORDINANCE TO PERMIT AND REGULATE SOLAR ENERGY SYSTEMS WITHIN THE TOWNSHIP AND PROVDE FOR PENALTY OF SAME

THE CHARTER TOWNSHIP OF GENESEE ORDAINS:

SECTION 1 - INTRODUCTION, TITLE, AND PURPOSE

This Ordinance shall be known and may be cited as Genesee Township Ordinance Number 580, The Solar Energy Ordinance. The Township, as allowed by law, hereby declares by this ordinance, that it is purpose and intent of this ordinance to preserve the peace, welfare, order, health, and safety, of persons and property in the Charter Township of Genesee, and to prescribe various penalties for the violation of the provisions of this ordinance and to repeal any ordinances or parts of ordinances in conflict therewith.

SECTION 2 - DEFINITIONS

ACCESSORY SOLAR ENERGY SYSTEM: An area ofland or other area used for a solar collection system used to capture solar energy, convert it to electrical energy or thermal power and supply electrical or thermal power primarily for on-site use. An accessory solar energy system consists of one **(1)** or more free-standing ground, or roof mounted solar arrays or modules, or solar related equipment and is intended to primarily reduce on-site consumption of utility power or fuels.

BROWNFIELD PROPERTY: land in an area for redevelopment or reuse that's complicated by the presence or potential presence of a hazardous substance, pollutant or contaminant.

GLARE: The effect produced by light with an intensity sufficient to cause annoyance, discomfort, or loss in visual performance and visibility.

PRINCIPAL SOLAR ENERGY SYSTEM: An area of land or other area used for a solar collection system principally used to capture solar energy, convert it to electrical energy or thermal power and supply electrical or thermal power primarily for off-site use. Principal solar

energy systems consist of one (1) or more free-standing ground, or roof mounted solar collector devices, solar related equipment and other accessory structures and buildings including light reflectors, concentrators, and heat exchangers, substations, electrical infrastructure, transmission lines and other appurtenant structures.

SOLAR EASEMENT: A solar easement means a right, expressed as an easement, restriction, covenant, or condition contained in any deed, contract, or other written instrument executed by or on behalf of any landowner for the purpose of assuring adequate access to direct sunlight for solar energy systems.

SOLAR ENERGY: Radiant energy (direct, diffuse and/or reflective) received from the sun.

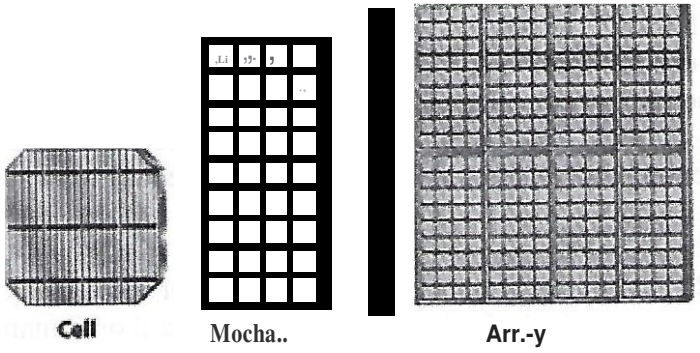
SOLAR PANEL: That part or portion of a solar energy system containing one or more receptive cells or modules, the purpose of which is to convert solar energy for use in space heating or cooling, for water heating and/or for electricity.

SOLAR RELATED EQUIPMENT: Items including a solar photovoltaic cell, module, panel, or array, or solar hot air or water collector device panels, lines, pumps, batteries, mounting brackets, framing and possibly foundations or other structures used for or intended to be used for collection of solar energy.

1. SOLAR ARRAY: A grouping of multiple solar modules with purpose of harvesting solar energy.

2. SOLAR CELL: The smallest basic solar electric device which generates electricity when exposed to light.

3. SOLAR MODULE: A grouping of solar cells with the purpose of harvesting solar energy.



SECTION 3 - ACCESSORY SOLAR ENERGY SYSTEMS (ASES)

A. Regulations Applicable to All Accessory Solar Energy Systems:

1. ASES that have a maximum power rating of not more than 15kW shall be permitted as a use by right in all zoning districts. ASES that have a power rating more than 15kW shall comply with the requirements of Section 4 - Principal Solar Energy Systems.

2. Exemptions

   a. ASES with an aggregate collection and/or focusing area of 25 square feet or less are exempt from this ordinance.

   b. ASES constructed prior to the effective date of this Section shall not be required to meet the terms and conditions of this Ordinance. Any physical modification to an existing ASES whether or not existing prior to the effective date of this Section that materially alters the ASES shall require approval under this Ordinance. Routine maintenance or like-kind replacements do not require a permit.

3. The ASES layout, design, installation, and ongoing maintenance shall conform to applicable industry standards, such as those of the American National Standards Institute (ANSI), Underwriters Laboratories (UL), the American Society for Testing and Materials (ASTM), Institute of Electrical and Electronics Engineers (IEEE), Solar Rating and Certification Corporation (SRCC), Electrical Testing Laboratory (ETL), Florida Solar Energy Center (FSEC) or other similar certifying organizations, and shall comply with the MI Uniform Construction Code as enforced by the Township, and with all other applicable fire and life safety requirements. The manufacturer specifications for the key components of the system shall be submitted as part of the application.

   Upon completion of installation, the ASES shall be maintained in good working order in accordance with standards of the Township codes under which the ASES was constructed. Failure of the property owner to maintain the ASES in good working order is grounds for appropriate enforcement actions by the Township in accordance with applicable ordinances.

4. Accessory Solar Energy Systems must be installed in accordance with and obtain all necessary permits from the US Government, State of Michigan, and Genesee Township, and comply with standards of the State of Michigan adopted codes.

5. All on-site utility, transmission lines and plumbing shall be placed underground to the extent feasible.

6. The owner of an ASES shall provide the Township written confirmation that the public utility company to which the ASES will be connected has been informed of the customer's intent to install a grid connected system and approved of such connection. Off-grid systems shall be exempt from this requirement.

7. The display of advertising is prohibited except for reasonable identification of the manufacturer of the system.

8. Glare

a. All ASES shall be placed such that concentrated solar radiation or glare does not project onto nearby structures or roadways.

b. The applicant has the burden of proving that any glare produced does not have significant adverse impact on neighboring or adjacent uses either through siting or mitigation.

9. Prior to the issuance of a zoning permit, applicants must acknowledge in writing that the issuing of said permit for a solar energy system shall not and does not create in the property owner, its, his, her or their successors and assigns in title or, create in the property itself: (a) the right to remain free of shadows and/or obstructions to solar energy caused by development of adjoining or other property or the growth of any trees or vegetation on such property; or (b) the right to prohibit the development on or growth of any trees or vegetation on such property.

10. Decommissioning

a. Each ASES and all solar related equipment shall be removed within twelve (12) months of the date when the use has been discontinued or abandoned by system owner and/or operator, or upon termination of the useful life of same.

b. The ASES shall be presumed to be discontinued or abandoned if no electricity is generated by such solar collector for a period of twelve (12) continuous months.

c. The ASES owner shall, at the request of the township, provide information concerning the amount of energy generated by the ASES in the last 12 months.

11. Permit Requirements

a. Zoning /building permit applications shall document compliance with this Section and shall be accompanied by drawings showing the location of the system on the building or property, including property lines. Permits must be kept on the premises where the ASES is constructed.

b. The zoning/building permit shall be revoked if the ASES, whether new or pre-existing, is moved or otherwise altered, either intentionally or by natural forces, in a manner which causes the ASES not to be in conformity with this Ordinance.

c. The ASES must be properly maintained and be kept free from all hazards, including but not limited to, faulty wiring, loose fastenings, being in an unsafe condition or detrimental to public health, safety or general welfare. In the event of a violation of any of the foregoing provisions, the Zoning/Code Enforcement Officer shall give written notice specifying the violation to the owner of the ASES to conform or to remove the ASES.

B. Roof Mounted and Wall Mounted Accessory Solar Energy Systems:

1. A roof mounted or wall mounted ASES may be located on a principal or accessory building.

2. The total height of a building with an ASES shall not exceed by more than 1 foot above the maximum building height specified for principal or accessory buildings within the applicable zoning district.

3. Wall mounted ASES shall comply with the setbacks for principal and accessory structures in the underlying zoning districts.

4. Solar panels shall not extend beyond any portion of the roof edge.

5. Roof mounted solar panels may be located on front-facing roofs as viewed from any adjacent street when approved as a conditional use. The applicant shall demonstrate that, due to solar access limitations, no location exists other than the street-facing roof, where the solar energy system can perform effectively.

6. For roof and wall mounted systems, the applicant shall provide evidence that the plans comply with the applicable Michigan Construction/Building Codes and adopted building code of the township that the roof or wall is capable of holding the load imposed on the structure.

C. Ground Mounted Accessory Solar Energy Systems:

1. Setbacks

   a. The minimum yard setbacks from side and rear property lines shall be equivalent to the principal structure setback in the zoning district.

   b. Ground mounted ASES are prohibited in front yards, between the principal building and any road right of way.

2. Height

   a. Ground mounted ASES shall not exceed 9 feet in height above the ground elevation surrounding the systems.

3. Coverage

   a. The total surface area of the arrays of ground mounted ASES on the property shall not exceed more than 200 sq ft per acre.

   b. The applicant shall submit a Stormwater Management Plan that demonstrates compliance with the municipal stormwater management regulations.

4. Screening - Ground mounted ASES shall be screened from any adjacent property that is residentially zoned or used for residential purposes. The screen shall consist of plant materials which provide a visual screen. In lieu of a planting screen, a decorative fence meeting requirements of the zoning ordinance may be used.

5. Appropriate safety/warning signage concerning voltage shall be placed at ground mounted electrical devices, equipment, and structures. All electrical control devices associated with the ASES shall be locked to prevent unauthorized access or entry.

6. Ground-mounted ASES shall not be placed within any legal easement or right-of-way location, or be placed within any storm water conveyance system or in any other manner that would alter or impede storm water runoff from collecting in a constructed storm water conveyance system.

SECTION 4 - PRINCIPAL SOLAR ENERGY SYSTEMS (PSES)

A. Regulations Applicable to All Principal Solar Energy Systems:

1. PSES shall be permitted only as follows:

   a. PSES shall be permitted by special exception with Planning Commission Review in Township areas qualifying as Brownfield properties.

   b. In non-Brownfield designated properties, Applicant shall submit application provided by Township to the Township Zoning Administration for consideration by the Township Board.

      The Township Board shall review the application according to the criteria set forth in the Genesee Township Zoning Ordinance, Article XVII, Section 1704, Special Exception Use Permits.

2. Exemptions

   PSES constructed prior to the effective date of this Section shall not be required to meet the terms and conditions of this Ordinance. Any physical modification to an existing PSES, whether or not existing prior to the effective date of this Section that materially alters the PSES shall require approval under this Ordinance. Routine maintenance or like-kind replacements do not require a permit.

3. The PSES layout, design and installation shall conform to applicable industry standards, such as those of the American National Standards Institute (ANSI), Underwriters Laboratories (UL), the American Society for Testing and Materials (ASTM),), Institute of Electrical and Electronics Engineers (IEEE), Solar Rating and Certification Corporation (SRCC), Electrical Testing Laboratory (ETL), Florida Solar Energy Center (FSEC) or other similar certifying organizations, and shall comply with all applicable State building and construction codes and as enforced by the Township and with all other applicable fire and life safety requirements. The manufacturer specifications for the key components of the system shall be submitted as part of the application.

4. All on-site transmission and plumbing lines shall be placed underground to the extent feasible.

5. The owner of a PSES shall provide the Township written confirmation that the public

utility company to which the PSES will be connected has been informed of the customer's intent to install a grid connected system and approved of such connection.

6. No portion of the PSES shall contain or be used to display advertising. The manufacturer's name and equipment information or indication of ownership shall be allowed on any equipment of the PSES provided they comply with the prevailing sign regulations.

7. Glare

   a. All PSES shall be placed such that concentrated solar radiation or glare does not project onto nearby structures or roadways.

   b. The applicant has the burden of proving that any glare produced does not have significant adverse impact on neighboring or adjacent uses either through siting or mitigation.

8. No trees or other landscaping otherwise required by the municipal ordinances or attached as a condition of approval of any plan, application, or permit may be removed for the installation or operation of a PSES.

9. The PSES owner and/or operator shall maintain a phone number and identify a person responsible for the public to contact with inquiries and complaints throughout the life of the project and provide this number and name to the Township. The PSES owner and/or operator shall make reasonable efforts to respond to the public's inquiries and complaints.

10. Decommissioning

    a. 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.

    b. The PSES owner is required to notify the Township immediately upon cessation or abandonment of the operation.

    c. The PSES owner shall then have twelve (12) months in which to dismantle and remove the PSES including all solar related equipment or appurtenances related thereto, including but not limited to buildings, cabling, electrical components, roads, foundations and other associated facilities from the property. If the owner fails to dismantle and/or remove the PSES within the established timeframes, the municipality may complete the decommissioning at the owner's expense.

    d. At the time of issuance of the permit for the construction of the PSES, the owner shall provide financial security in the form a bond in favor of the Township equal to 125 percent of the costs to meet the decommissioning plan.

11. Prior to the issuance of a zoning permit, PSES applicants must acknowledge in writing that the issuing of said permit shall not and does not create in the property owner, its, his, her or their successors and assigns in title or, create in the property itself: (a) theright to remain free of shadows and/or obstructions to solar energy caused by development of adjoining or other property or the growth of any trees or vegetation on such property; or (b) the right to prohibit the development on or growth of any trees or vegetation on such property.

12. Permit Requirements

    a. PSES shall comply with the Township subdivision and land development requirements. The installation of PSES shall be in compliance with all applicable permit requirements, codes, and regulations.

    b. The PSES owner and/or operator shall repair, maintain and replace the PSES and related solar equipment during the term of the permit in a manner consistent with industry standards as needed to keep the PSES in good repair and operating condition.

B. Ground Mounted Principal Solar Energy Systems:

1. Minimum lot size shall be 10 acres

2. Setbacks shall be 100 feet from all property lines and road rights-of-way.

3. Ground mounted PSES shall not exceed 12 feet in height.

4. Impervious Coverage

    a. The area beneath the ground mounted PSES is considered pervious cover. However, use of impervious construction materials under the system could cause the area to be considered impervious and subject to the impervious surfaces limitations for the applicable Zoning District.

    b. The applicant shall submit a Stormwater Management Plan that demonstrates compliance with all state, local, and federal stormwater management regulations.

    c. PSES owners are encouraged to use low maintenance and low growing vegetative surfaces under the system as a best management practice for storm water management.

5. Ground mounted PSES shall be screened from adjoining residential uses or zones according to the standards found in this ordinance.

6. Ground-mounted PSES shall not be placed within any legal easement or right-of-way location, or be placed within any storm water conveyance system or in any other manner that would alter or impede storm water runoff from collecting in a constructed storm water conveyance system.

7. Security

a. All ground-mounted PSES shall be completely enclosed by a minimum eight (8) foot high fence with a self-locking gate.

b. A clearly visible warning sign shall be placed at the base of all pad-mounted transformers and substations and on the fence on the surrounding the PSES informing individuals of potential voltage hazards.

8. Access

a. At a minimum, a 25' wide access road must be provided from a state or township roadway into the site.

b. At a minimum, a 20' wide cartway shall be provided between the solar arrays to allow access for maintenance vehicles and emergency management vehicles including fire apparatus and emergency vehicles. Cartway width is the distance between the bottom edge of a solar panel to the top edge of the solar panel directly across from it.

9. The ground mounted PSES shall not be artificially lighted except to the extent required for safety or applicable federal, state, or local authority.

10. If a ground mounted PSES is removed, any earth disturbance resulting from the removal must be graded and reseeded.

SECTION 5- VIOLATIONS & PENALTY

A. Violations - Use of land, buildings, and structures in violation of any provision of this Ordinance are hereby declared to be a nuisance per se.

B. Penalties - Any person, corporation, or firm who violates, disobeys, omits, neglects or refuses to comply with any provisions of this Ordinance or any permit, license or exception granted hereunder, or any lawful order of the Township Code Official, Building Official, Zoning Administrator, Zoning Board of Appeals, Planning Commission or Township Board issued in pursuance of this Ordinance shall be guilty of a misdemeanor punishable by up to $500 and/or 90 days in jail. Each day during which a violation continues shall be deemed a separate offense. The imposition of any sentence shall not exempt an offender from compliance with the provisions of this Ordinance. The forgoing penalties shall not prohibit the Township from seeking injunctive relief against a violator or such other appropriate relief as may be provided by law.

SECTION 6 - SEVERABILITY

The various sections, parts, and clauses of this ordinance are hereby declared to be severable. If any part, clause, sentence, paragraph or section is adjudged unconstitutional or invalid by a court of competent jurisdiction, the remainder of the ordinance shall not be affected thereby.

SECTION 7 - CONFLICTING LAWS

If any term of this ordinance conflicts with any previous ordinance, this ordinance shall prevail. Unless otherwise provided for herein, any section of any previous ordinance shall remain in full force and effect.

SECTION 8 - EFFECTIVE DATE

This ordinance shall become effective on the 30th day following publication.

We hereby certify that the foregoing Ordinance was adopted on the Second Reading by the Township Board of the Charter Township of Genesee at its meeting on January 9, 2019.

First Reading: December 27, 2018

Second Reading: January 9, 2019

Published on: _ _ _ _ _ _ _ _ , 2019

Steven Fuhr, Supervisor

Wayne G. Bates, Clerk

Amendment of Gratiot County Zoning Ordinance

AN ORDINANCE TO AMEND THE GRATIOT COUNTY ZONING ORDINANCE REQUIREMENTS FOR SOLAR ENERGY SYSTEMS AND SOLAR FARMS FOR THE COUNTY-ZONED TOWNSHIPS OF ELBA, HAMILTON, LAFAYETTE, NEWARK, NORTH STAR, AND SUMNER. THIS ORDINANCE AMENDMENT WAS ADOPTED BY THE GRATIOT COUNTY BOARD OF COMMMISSIONERS ON August 6, 2018 .

PREAMBLE

It is hereby determined by the Gratiot County Board of Commissioners that good and reasonable cause exists to amend the Gratiot County Zoning Ordinance as ordained below:

THE COUNTY OF GRATIOT HEREBY ORDAINS

That the Gratiot County Zoning Ordinance be amended as follows:

CHAPTER 1 DEFINITIONS, SECTION 1.19 DEFINITION "S"

Insert the following new definitions:

SOLAR ENERGY SYSTEM: A single residential or small business-scale solar energy conversion system consisting of building-mounted panels, ground-mounted solar arrays, or other solar energy fixtures, and associated control or conversion electronics that will be used to produce utility power primarily for on-site use.

SOLAR FARM: A utility-scaled commercial facility that converts sunlight into electricity, whether by photovoltaics, concentrating solar thermal devices or any other various experimental solar technologies for the primary purpose of wholesale or retail sales of generated electricity off-site.

Alphabetize accordingly

CHAPTER 2 GENERAL PROVISIONS, SECTION 2.11 ACCESSORY USES

Insert the following under Accessory Uses

C. Solar energy systems are permitted as an accessory use in all zoning districts.

An on-site use solar energy system (see Section 1.19 for definition) is intended to first serve the needs of the private owner. Systems may be building-mounted or ground-mounted. Small systems may be approved through the issuance of both, a zoning compliance permit and a building permit, provided the applications and installations meet the requirements set forth in this section. If the zoning administrator believes that the solar energy system may have an adverse

impact on the health and safety of the public, it may require the applicant to apply for Site Plan Approval to the Planning Commission.

1. General Requirements:

    a. Setbacks: All small solar energy systems shall maintain a minimum setback of twenty (20) feet from all property lines.

    b. Mechanical equipment must be screened from street and neighboring residences by fencing or landscaping.

    c. A site plan, drawn to scale, shall show all existing and proposed structures, driveways, adjacent structures within 100 feet, and any other information required by the Zoning Administrator, Building Inspector or Planning Commission that is necessary to determine compliance with this ordinance.

    d. Complete prepared site plans signed by the responsible parties shall not apply to applications proposing:

        i. Building-mounted solar panels

        ii. Ground-mounted solar panels that do not exceed 8,000 square feet.

2. Building-mounted solar panels:

    a. An Administrative Review is required of all building-mounted solar energy collectors permitted as an accessory use. The application should include the following:

        i. Photographs of the property's existing conditions.

        ii. Plot plan to indicate where the solar energy equipment is to be installed on the property.

    b. Solar energy collectors that are mounted on the roof of a building shall not project more than five (5) feet above the highest point of the roof but, in any event, shall not exceed the maximum building height limitation for the zoning district in which it is located, and shall not project beyond the eaves of the roof.

    c. Solar energy collectors that are wall-mounted shall not exceed the height of the building wall to which they are attached.

    d. Solar energy collectors shall not be mounted on a building wall that is parallel to an adjacent public right-of-way.

e. Solar energy collectors, and the installation and use thereof, shall comply with the County construction code, the electrical code, and other applicable County construction codes.

3. Ground-mounted solar panels:

   a. Shall not be installed on parcels less than one (1) acre in size.

   b. Shall only be located in the side or rear yard.

   c. The maximum ground area occupied by solar panels and associated paved surfaces is twenty (20) percent of lot size.

   d. If more than 4,000 square feet of impervious surface is proposed, a drainage plan must be submitted with the permit application.

   e. The maximum ground-mounted panel height is eight (8) feet, measured from grade to the top of the panel.

   f. Panels shall be screened from residential districts and public rights-of-way by a greenbelt and/or six (6) foot privacy fence.

CHAPTER 4 AG-AGRICULTURAL DISTRICT, SECTION 4.4 SPECIAL LAND USES

Insert to the List of Special Land Uses

Solar Farms permitted by special land use in the AG districts.

CHAPTER 5 RP-RURAL PRESERVATION DISTRICT, SECTION 5.3 SPECIAL LAND USES

Insert to the List of Special Land Uses

Solar Farms permitted by special land use in the RP districts.

CHAPTER 6 RR-RURAL RESIDENTIAL DISTRICT, SECTION 6.3 SPECIAL LAND USES

Insert to the List of Special Land Uses

Solar Farms permitted by special land use in the RR districts.

CHAPTER 12 I-1-INDUSTRIAL DISTRICT, SECTION 12.3 SPECIAL LAND USES

Insert to the List of Special Land Uses

Solar Farms permitted by special land use in the I-1 districts.

CHAPTER 14 SITE PLAN REVIEW, SECTION 14.4 SITE PLAN REVIEW

Insert the following:

F. Solar Farm Special Use Site Plan Review Required

1. Solar farms shall be located only in the AG, RP, RR, or I-1 Districts, and shall be approved only as a special land use in accordance with the procedures set forth in Chapter 16, Special Land Uses. They shall be subject to review and approval under Chapter 14, Site Plan Review. In addition to the applicant procedures of Chapter 14, an applicant seeking approval for a solar farm shall also provide the following application materials:

    a. Site Plan: A site plan must include the proposed number, location and spacing of solar panels; proposed height of panels; location of access road roads; planned location of underground or overhead electric lines connecting the Farm to the substation or other electric load; proposed storm water management facilities; proposed erosion and sediment control measures; and other related facilities or appurtenances.

    b. Landowner Authorization: The applicant shall provide the following information with respect to the Site:

        i. A legal description of the Participating Property(ies) on which the Solar Farm will be located.

        ii. The name, address and phone number of the applicant, including the name of the authorized representative of the applicant, the owner of all equipment proposed to be installed, and the owner(s) of the Participating Property(ies).

        iii. Written authorization from the Participating Property owners to seek land use approval for the Solar Farm

        iv. A copy of the applicant's letter of intent with any Participating Property owner.

c. Liability Insurance: The applicant shall maintain a current general liability policy covering bodily injury and property damage with limits of at least $1 million per occurrence and $1 million in the aggregate, and provide proof that it meets the insurance requirement to the Zoning Administrator prior to approval.

d. Review Expenses: In addition to any application fees, an escrow fee may be requested by the Zoning Administrator, Planning Commission or County Board. The amount of the escrow fee shall be based on an estimate of the County's expenses, and shall be maintained or reestablished until all expenses have been paid in full. The applicant shall be entitled to a refund of any unused escrow foes and shall pay any balance due which exceeds the escrow fees.

e. Decommissioning Plan: The applicant shall submit a decommissioning plan that adheres to the requirements set out in Chapter 16, Section 16.7, Paragraph II, Subparagraph L.

CHAPTER 16 SPECIAL LAND USES, SECTION 16.7 SPECIFIC SPECIAL LAND USE STANDARDS

Insert the following to the list:

II. Solar Farm

Alphabetize accordingly

CHAPTER 16 SPECIAL LAND USES, SECTION 16.7 SPECIFIC SPECIAL LAND USE STANDARDS

Insert

II. Solar Farm

Purpose: Gratiot County promotes the effective and efficient use of solar energy collection systems. It is the intent of the County to permit these systems by regulating the siting, design, and installation of such systems to protect the public health, safety, and welfare, and to ensure compatibility of land uses in the vicinity of solar energy collectors, as defined in this Ordinance, shall comply with the provisions of this Section.

1. Such facilities are permitted by special land use in the AG, RP, RR, and I-1 Districts.

2. In addition to the applicable information required by Chapter 14, the site plan application shall include:

a. Identify the type, size, rated power output, performance, safety and noise characteristics of the proposed system including the transmission line/grid connection for the project.

b. The estimated construction timeline.

c. A graphical demonstration of the visual impact of the project using photos or renditions of the project with consideration given to setbacks and proposed landscaping.

d. Details of the access road to the solar farm including dimensions, composition and maintenance.

e. Planned security measures to prevent unauthorized trespass and access,

f. An environmental analysis identifying any impacts on the surrounding environment. Including the identification of any solid or hazardous waste generated by the project.

g. Identify potential hazards to adjacent properties, public roadways and to the general public that may be created. Include emergency and normal shutdown procedures.

h. Identify noise levels at the property lines of the project when completed and operational.

i. Identify any electromagnetic interference that may be generated by the project.

j. A copy of the manufacturer's installation instructions shall be provided. Included as part of or as an attachment to the installation instructions shall be standard drawings of the structural components of the solar farm, including base and footings provided along with engineering data and calculations to demonstrate compliance with the structural design provisions of the County Building Code; drawings and engineering calculations shall be certified by a registered engineer licensed to practice in the State of Michigan.

k. A detailed description of the complaint resolution process developed by the applicant to resolve complaints from nearby residents concerning the construction or operation of the solar farm. The process shall not preclude the County from acting on the complaint. During construction the applicant shall maintain and make available to nearby residents a telephone number where the project representative can be reached during normal business hours.

l. The solar farm application shall contain a Decommissioning Plan to ensure it is properly decommissioned upon the end of project life, inoperability of the solar farm, or facility abandonment. Decommissioning shall include the removal of all structures, fencing and equipment, foundations, footings and debris to a depth of four (4) feet, as well as restoration of the soil and vegetation. The decommissioning including restoration shall be completed within one (1) year of the end of project life, inoperability of the solar farm or facility abandonment, at the owners or operators expense. Extensions may be granted upon written request to the Planning Commission prior to expiration of the one (1) year decommissioning period. The site shall be restored to as natural condition as possible within six (6) months of the removal. A site will be considered decommissioned when, after inspection and approval by the County, all structures and equipment are removed and the site is in natural condition. The Decommissioning Plan shall state (a) how the facility will be decommissioned, (b) the Professional Engineer's estimated cost of decommissioning, and (c) the financial resources to be used to accomplish decommissioning.

    1. The financial resources for decommissioning shall be in the form of a surety bond or letter of credit, which shall be deposited in an escrow account with an escrow agent acceptable to the County.

    2. The County shall have access to the escrow account funds for the express purpose of completing the decommissioning, if decommissioning is not completed by the applicant within one (1) year of the end of project life, inoperability of the solar farm, or facility abandonment, or upon expiration of any extension granted by the Planning Commission. Escrow funds may be used for administrative fees and costs associated with decommissioning.

    3. The County is granted the right of entry onto the site, pursuant to reasonable notice, to effect or complete decommissioning as necessary.

    4. The County is also granted the right to seek and obtain injunctive relief to effect or complete decommissioning, as well as the right to collect reimbursement from applicant or applicant's successor for decommissioning costs in excess of the amount deposited in escrow 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 costs, and to take all steps allowed by law to enforce the lien.

3. All photovoltaic panels and support structures located in a solar farm shall be restricted to a maximum height of twenty (20) feet when oriented at maximum tilt.

4. All photovoltaic solar panels and support structures excluding perimeter fencing and landscaping associated with a solar farm shall be setback a minimum of fifty (50) feet from right-of-way and twenty-five (25) feet from adjacent property lines.

5. Solar farms are exempt from the maximum lot coverage requirements of the ordinance.

6. A security chain-link fence of eight (8) feet in height shall be placed around the perimeter of the solar farm and electrical equipment. Additionally, a sign shall be posted at the entrance containing the following information: emergency contact, emergency phone number, and emergency shutdown procedures.

7. Noise emanating from the solar farm shall not exceed 50 dB(A) (not calculated as an average) at the property line.

8. A ten (10) foot area clear of trees, bushes, or brush is required surrounding all ground-mounted photovoltaic arrays. Vegetation in the area must be kept trimmed to less than 18 inches.

9. Solar farms shall be sited so that concentrated solar glare shall not be directed toward or onto nearby properties or roadways at any time of day.

10. Solar farms shall include a landscaping and screening/buffering plan. The plan will be reviewed through the approval process to assure that the proposed solar farm is appropriately landscaped in relation to adjacent land uses and road right-of-ways. The use of berms and evergreen plantings along property lines adjacent to residential land uses is strongly encouraged. Exceptions to landscaping requirement may be granted by the planning commission on a case by case basis if there is perceived environmental or contamination issues on the land.

11. The solar farm shall comply with all applicable state construction and electrical codes including local building permit requirements. The interconnection of the solar farm with the utility company shall adhere to the State Electrical Code as adopted by the County.

12. An approved special use permit for a solar farm project shall expire if construction of the solar farm has not commenced within twenty-four (24) months from the date of issuance. An applicant may request an extension of the approval of the special use permit by letter addressed to the Zoning Administrator. The Zoning Administrator may grant or deny an extension of up to twenty-four (24) months for the construction to commence provided the written request to extend the special use

permit is submitted prior to the expiration of the special use permit and provided that the proposed use continues to satisfy the applicable standards set forth within the ordinance.

13. An approved special use permit for a solar farm shall constitute approval to operate and use the solar farm twenty-four (24) hours per day.

14. The County hereby reserves the right upon issuing any solar farm special land use permit to inspect the premises on which the solar farm is located. If a solar farm is not maintained in operational condition and poses a potential safety hazard, the owner shall take expeditious action to correct the situation.

Alphabetize accordingly.

This Amendment of the Gratiot County Zoning Ordinance shall become effective eight (8) days after the notice of adoption is published as required by the Michigan Zoning Enabling Act (PA 110 of 2006, as amended).

The motion was made by Commissioner Lambrecht, supported by Commissioner Smith. :

The motion carried 5-0.

George Bailey, Chairperson
Gratiot County Commission

Date signed 8.21.18

Angie Thompson,
Gratiot County Clerk

Date signed 8-21-2018

STATE OF MICHIGAN
COUNTY OF Gratiot

I do hereby certify that the above Amendment of the Gratiot County Zoning Ordinance is a true and correct copy of the Ordinance adopted by the Gratiot County Commissioners present on August 6, 2018.

Angie Thompson

Angie Thompson,
Gratiot County Clerk

MARION TOWNSHIP
SOLAR ENERGY ZONING ORDINANCE AMENDMENTS

An amendment to the Marion Township Zoning Ordinance to add definitions related to solar energy, establish a solar farm energy overlay district, establish standards for utility solar energy facilities, and establish standards for private solar energy systems.

Marion Township Ordains:

1. AMENDMENT OF ARTICLE Ill: DEFINITIONS

Section 3.02 Definitions of the Zoning Ordinance is hereby amended to add the following solar energy definitions which shall read, in its entirety, as follows:

Farmland Preservation Program: The Michigan Farmland Preservation Program, Part 361 of the Natural Resources and Environmental Protection Act, PA 451 of 1994, also commonly referred to as PA 116.

Solar Energy: The following definitions shall apply in the application of this Ordinance.

1. **Abandonment:** Any solar energy system or facility that is no longer producing power.
2. **Building Integrated Photovoltaics (BIPVs):** A private or utility solar energy system that is integrated into the structure of a building, such as solar roof tiles or solar shingles.
3. **Decommission:** To remove or retire a solar energy system or facility from active service.
4. **Ground-Mounted Solar Energy System:** A private or utility solar energy system that is not attached to or mounted on any roof or exterior wall of any principal or accessory building.
5. **Height:** The height of a solar energy system, measured vertically from the adjacent grade to its highest point at maximum tilt.
6. **Inhabited Structure:** Any existing structure usable for living or non-agricultural commercial purposes, including, but not limited to: working, sleeping, eating, cooking, recreation, office, office storage, or any combination thereof. An area used only for storage incidental to a residential use, including agricultural barns, is not included in this definition. If it is not clear by this definition, the Zoning Administrator shall make a determination of any structure regarding whether or not if it is inhabited.
7. **Non-Participating Property:** A property that is not subject to a Utility Solar Energy Facility lease or easement agreement at the time an application is submitted for a Special Land Use for the purposes of constructing a Utility Solar Energy Facility.
8. **Participating Property:** A property that participates in a lease or easement agreement, or other contractual agreement, with or that is owned by an entity

submitting a Special Land Use Permit application for the purpose of developing a Utility Solar Energy Facility.

9. **Photovoltaic Array (PV Array):** A device designed to collect and transform solar energy into electricity.
10. **Private Solar Energy System:** A Solar Energy System used exclusively for private purposes and not used for commercial resale of energy, except for the sale of surplus electrical energy back to the electrical grid.
11. **Repowering:** Replacing or upgrading Solar Energy System to increase power rating of panels or Solar Energy System accessory structures within the approved project footprint. This does not apply to regular maintenance.
12. **Roof or Building-Mounted Solar Energy System:** A private or utility solar energy system that is attached to or mounted on any roof or exterior wall of any principal or accessory building but excluding BIPVs.
13. **Solar Energy System:** A device designed to collect and transform solar energy into electricity, including but not limited to, PV arrays, racks, inverters, transformers, wiring, batteries, and electrical system components.
14. **Solar Farm:** See Utility Solar Energy Facility.
15. **Utility Solar Energy System or Facility:** A Solar Energy System where the principal design, purpose, or use of such system is to provide energy to off-site uses or the wholesale or retail sale of generated electricity to any person or entity.

2. AMENDMENT OF ARTICLE VII: ZONING DISTRICTS AND MAPS

Section 7.01 Establishment of Districts of the Zoning Ordinance is hereby amended to add SFO Solar Farm Overlay District, which shall read, in its entirety, as follows:

Section 7.01 Establishment of Districts

For the purpose of this Ordinance, the Township is hereby divided into the following zoning districts, which shall be known by the following respective symbols and names.

RR: Rural Residential District

SR: Suburban Residential District

UR: Urban Residential District

ERS-1: Existing Residential Subdivision District ERS-2:

Existing Residential Subdivision District MHP: Mobile

Home Park

HS: Highway Service District

LI: Light Industrial District

PL: Public Lands District

Other Areas

PUD: Planned Unit Development Overlay District

SFO: Solar Farm Overlay District

WPA: Wellhead Protection Area

3. ADDITION OF ARTICLE XII: "SOLAR FARM OVERLAY DISTRICT"

A new Article XII entitled "SOLAR FARM OVERLAY DISTRICT" is hereby added to the Zoning Ordinance which shall read, in its entirety, as follows:

ARTICLE XII: SOLAR FARM OVERLAY DISTRICT

Section 12.01 SFO: Solar Farm Overlay District

A. Intent: It is the intent of the Solar Farm Overlay District (SFO) to provide for the location and siting of Utility Solar Energy Facilities to balance the promotion of economic development; to provide for a demonstrated need for energy production in general and solar energy production in particular; to supplement, rather than supplant, agricultural activities while also protecting the public health, safety, and welfare; to mitigate adverse impacts to agricultural lands, natural and environmentally-sensitive areas, and developed residential areas; and to preserve scenic views and cultural heritage. The Solar Farm Overlay District is intended to include areas in proximity to an electrical substation and electrical transmission lines to limit potential impact on other areas and uses within the Township.

B. Permitted Accessory Uses:

1. Accessory uses or structures clearly incidental to the operation of an approved Utility Solar Energy Facility.

C. Uses Permitted By Special Use Permit: (See specific Provisions in Article XVII)

1. Utility Solar Energy Facilities.

4. AMENDMENT OF ARTICLE XVII: "STANDARDS FOR SPECIFIC SPECIAL USES"

Article XVII STANDARDS FOR SPECIFIC SPECIAL LAND USES of the Zoning Ordinance is hereby amended to add Section 17.35 "Utility Solar Energy Facilities" which shall read, in its entirety, as follows:

17.35 UTILITY SOLAR ENERGY FACILITIES

A. Intent and Purpose: The intent and purpose of this Section is to establish standards for the siting, installation, operation, repair, decommissioning, and removal of Utility Solar

Energy Facilities; establish the process for the reviewing and permitting of such facilities; protect the health, welfare, safety, and quality of life of the general public; and ensure compatibility with land uses in the vicinity of the areas affected by such facilities.

B. Locational Requirements: Utility Solar Energy Facilities are permitted by special land use in the SFO Solar Farm Overlay District.

C. Application Requirements:

An applicant proposing a Utility Solar Energy Facility must submit the following additional materials with the Special Land Use Application:

1. Applicant Identification: Applicant's name and address in full, a statement that the applicant is the owner involved or is acting on the owner's behalf, the address of the property involved in the application (substitution may include a legal description or parcel identifications number(s)), and any additional contact information. Each application for a Utility Solar Energy Facility shall also be dated to indicate the date the application is submitted to Marion Township.
2. Project Description: A general description of the proposed project including a legal description of the property or properties on which the project would be located and an anticipated construction schedule.
3. Insurance: Proof of the general liability insurance to cover the Utility Solar Energy Facility, the Township, and the Landowner.
4. Certifications: Certification that applicant will comply with all applicable state and federal laws and regulations. Land enrolled in the Michigan Farmland Preservation Program must provide confirmation of approval from the Michigan Department of Agriculture to locate a Utility Solar Energy Facility on the property before issuance of a certificate of zoning compliance.
5. Compliance with the County Building Code and the National Electric Safety Code: Construction of a Utility Solar Energy Facility shall comply with the National Electric Safety Code and the County Building Code (as shown by approval by the County) as a condition of any Special Land Use Permit under this section. In the event of a conflict between the County Building Code and National Electric Safety Code (NESC), the NESC shall prevail.
6. Environmental Impact: Copy of the Environmental Impact Analysis.
7. Wildlife Impact: Copy of the Wildlife Impact Analysis.
8. Manufacturers' Safety Data Sheet(s): Documentation shall include the type and quantity of all materials used in the operation of all equipment.
9. Decommissioning Plan: Copy of the decommissioning plans and a description of how any surety bond is applied to the decommissioning process.
10. Complaint Resolution Protocol: Copy of Complaint Resolution Protocol.
11. Emergency Action Plan: Copy of a plan for the actions to be taken in event of an emergency. The emergency action plan must include a fire suppression plan, including the technology to be used and the training and equipment to be

provided to Township or other firefighters before the facility becomes operational. The emergency action plan must include plans for immediate cleanup and long-term aftermath efforts following an emergency.

12. Site Plan Requirements shall be submitted, showing the location, size, and screening of all buildings and structures. The site plan shall also include the following:
    a. Survey of the property showing existing features such as contours, large trees, buildings, structures, roads (rights-of-way), utility easements, land use, zoning district, ownership of property, and vehicular access;
    b. The location, approximate height, and dimensions of all existing structures, existing parcel drainage tile layouts, water bodies, waterways, floodplains, landscaping, and fencing, on the parcels planned for Solar Energy installation including other parcels within (1/4) one quarter of the project's boundaries.
    c. Documentation of existing vegetation, regulated wetlands, regulated floodplains, regulated and endangered species, and regulated lakes, streams, or ponds.
    d. Lighting plan;
    e. Plan(s) showing the location of proposed Utility Solar Energy Facility, underground and overhead wiring (including the depth of underground wiring), new drainage facilities (if any), access drives (including width), substations and accessory structures, along with a note indicating where any trees measuring over 2.5 feet in diameter within six inches of grade are to be removed;
    f. A map depicting topographical grades and conditions of the planned Solar Energy parcel(s) or lots at time of application.
    g. Proof that the Applicant and/or its contractor has informed the Livingston County Road Commission (LCRC) and the Township of all the roads they propose to use as haul routes to each construction (including repair and decommissioning) site. This shall be done prior to beginning any construction (or decommissioning) at any site. A third-party road inspector will be retained, with mutual approval of the Township, the Applicant, and the LCRC or the Michigan Department of Transportation (MDOT) if a state highway is involved. The road inspector will determine any precautions to be taken (including video taping and physical inspections) during the process to determine any damage that may be caused by Applicant's contractor(s), and then determine the appropriate road standards and measures to be taken to repair the damage. The cost of the third party road inspector and/or any other required third party assistance, and of all repairs necessitated to restore the roads [and related property which may be damaged by the contractor(s)], shall be the responsibility of the Applicant and/or their contractor, and shall in no case be the responsibility of the Township.

h. Anticipated construction schedule;

i. Description of operations, including anticipated regular and unscheduled maintenance and the hours maintenance will take place;

j. The applicant must also obtain a permit from the Livingston County Road Commission or Michigan Department of Transportation (MDOT) for permission to connect access roads to existing County roads and from the Livingston County Drain Commission for any culverts or other drainage facilities;

k. Proof of approval by Livingston County, Road Commission, and Drain Commission;

l. Any other relevant studies, reports, certificates, or approvals as may be reasonably required by the Planning Commission;

m. A copy of the agreement between the applicant and the utility company that will be purchasing electricity from the proposed Utility Solar Energy Facility;

1. An affidavit or evidence of an agreement between the lot owner or operator confirming the owner or operator has the permission of the property owner to apply for the necessary permits for construction and operation of Utility Solar Energy Facility;

m. A complete description of the proposed technology to include type of solar panel and system, maximum height, fixed mounted versus tracking, number of panels and angles of orientation;

n. An escrow deposit shall be provided to the Township in an amount included in the Township's Annual Fee Schedule; and

o. A complete set of photos and video of the entire development area prior to construction.

p. Airport Review: Any Solar Energy System must be reviewed using the current Solar Glare Hazard Analysis Tool (SGHAT) available through Sandia National Laboratories or a commercially available equivalent. The SGHAT will be used to ensure that airports and those that use them will not be affected by unwanted visual or ocular impacts. The process is designed to save costs and increase public safety.

    1. The Study shall determine if there are any potential adverse effects on any registered airfield within ten miles of the project. Effects noted, but not exclusively, should include any possible decreased safety and utility.

    2. In addition, all proposed solar facilities must obtain a Determination of No Hazard (DNH) from the Federal Aviation Administration (FAA). A DNH does not eliminate the need for the SGHAT study nor does it in any way eliminate the standard for glare on roadways or non-participating parcels.

    3. The DNH must be obtained prior to breaking ground on any portion of the Solar Energy System.

4. No Solar Energy System that impacts safety or utility of any registered airfield shall be permitted.

13. Application Fee. Review fees shall be submitted for a Land Use Permit application, Special Use Permit application, site plan review, and required escrow fee to the Township in the amount specified in the fee schedule adopted by the Board of Trustees. This shall include but not be limited to independent review by experts, as deemed necessary by the Planning Commission

D. Site Requirements:

1. The site shall be at least forty (40) acres.
2. The site may consist of a single participating property or multiple participating properties.
3. The site and all fenced compounds shall have access described below.
   a. There shall be direct access from a public road or an access easement with a maximum length of one thousand two hundred fifty (1,250) feet and a width of at least thirty-three (33) feet.
   b. Access drives shall have a hard surface or material that can pack hard that is sufficient to support fire apparatus and provide access at all times of the year.

E. Buffering Requirements:

1. There shall be a landscape buffer at least twenty (20) feet wide along the exterior of the fenced compound, whenever existing natural vegetation does not otherwise reasonably obscure the Utility Scale Solar Energy Facility, as described below.
   a. The buffer shall be installed to obscure Utility Scale Solar Facility and shall contain two rows of staggered evergreen trees planted not less than twelve (12)) feet apart trunk to trunk, and the two rows shall be ten (10) ft apart. The Township may consider an alternative landscape buffer as a part of the special land use approval provided the alternative provides adequate screening.
   b. Plantings shall be least eight (8) feet tall at time of planting, measured from the top of the root ball to the base of the leader (not including the height of the leader) and must be a species that can reasonably be expected to reach a height of ten (10) feet within three (3) growing seasons.
   c. The trees may be trimmed but must maintain a height of at least eighteen (18) feet.
   d. Evergreen trees shall be Norway Spruce in Row One closet to fence. Row Two shall be Thuja Green Giant Arborvitae.
2. Good arboricultural techniques shall be followed with respect to vegetation, including but not limited to, proper pruning, proper fertilizing, and proper mulching, so that the vegetation will reach maturity as soon as practical and will have maximum density in foliage. Dead or diseased vegetation shall be removed and must be replanted in a manner consistent with this Section at the next appropriate planting time.
3. All fences and improved areas shall comply with the applicable setback for the

underlying zoning district in which it is located.

4. All structures and improved areas located within the fenced compound shall be at least thirty (30) feet from the fence line.
5. Solar energy systems and related accessory structures, such as transformers, shall be at least one hundred (100) feet from road rights-of-way, wetlands, lakes, rivers, and Wellhead Protection Areas, and five hundred (500) feet from non-participating residential dwellings, churches or religious institutions, schools, family or group child day-care homes, bed and breakfast establishments, residential facilities, and any other residence or inhabited structure.

F. Performance Standards:

1. Utility Solar Energy Facilities shall be designed, constructed, operated, and maintained in compliance with all applicable provisions of local, state, and federal laws and regulations.
2. PV Array Components: PV array components shall be approved by the Institute of Electrical and Electronics Engineers (IEEE), Solar Rating and Certification Corporation (SRCC), Electronic Testing Laboratories (Ell), or other similar certification organization if the similar certification organization is acceptable to the Township.
3. Fencing: Utility Solar Energy Facility compounds shall be completely surrounded by a fence designed to prevent unauthorized access and screen the facility.
   a. The fence shall be at least seven (7) feet tall, and posts shall extend at least thirty-six (36) inches into the ground.
   b. Gate posts and corner posts shall have a concrete foundation.
   c. The fence shall be a woven agricultural-style fence. The Township may require or allow durable green opaque material to be integrated into the fence if necessary for buffering or screening.
   d. Gates shall be provided at all access points, unless otherwise permitted or approved. Gates for vehicular access shall be approved by the Fire Authority.
   e. Gates shall be the same height and constructed of the same material as the fencing. Access, such as knox box, shall be provided for emergency responders.
   f. The Township may require or allow a fence design to allow for the passage of wildlife upon a finding that adequate access control and visual screening will be preserved.
   g. Alternate fencing may be approved by the Township upon a finding that the alternative provides adequate access control and visual screening.
4. Safety:
   a. All collection system wiring shall comply with all applicable safety and stray voltage standards.
   b. All electrical connection systems and lines from the Utility Solar Energy Facility to the electrical grid connection shall be located and maintained a minimum of six (6) feet underground within and adjacent to the site.

c. All access gates and doors to Utility Solar Energy Facility compounds and electrical equipment shall be lockable and kept secured at all times when service personnel are not present.

d. The applicant shall be responsible for maintenance of the access roads.

e. The manufacturers or installer's identification and appropriate warning signs shall be posted on or near solar panels in a clearly visible manner.

f. Fire suppression plans and Safety Data Sheets shall be kept on-site and be accessible for emergency responders.

g. The applicant will provide an unredacted copy of the manufacturer's safety manual for each component of the Solar Farm without distribution restraints to be kept at the Township Hall and other locations deemed necessary by Planning Commission or local first responders. The Manual should include standard details for an industrial site such as materials, chemicals, fire, access, safe distances during Solar Farm failure, processes in emergencies, etc.

h. The Township shall have the right upon issuing any Solar Farm special use permit to inspect the premises on which each Solar Farm is located at any reasonable time. The Township may hire a consultant to assist with any such inspections at a reasonable cost to be charged to the operator of the Solar Farm.

5. Advertising or non-project related graphics shall be prohibited. This exclusion does not apply to signs required by this Ordinance.

6. Signs shall be posted at entrances to Utility Solar Energy Facility compounds containing emergency contact information, operator contact information, and complaint resolution information. The Township may require additional signs with this information on the fence surrounding the compound.

7. The Utility Solar Energy Facility owner, operator, and property owner shall be responsible, jointly and severally, for mitigating erosion, flooding, and all other environmental impacts resulting from the Utility Solar Energy Facility.

8. The Utility Solar Energy Facility owner, operator, and property owner shall be responsible, jointly and severally, for making repairs to any public roads, drains, and infrastructure damaged by the construction of, use of, or damage to, a Utility Solar Energy Facility. Any solar panel damaged beyond repair or use must be removed from the project site within five days and must be disposed of off-site in accordance with any state or federal requirements.

9. Utility Solar Energy Facilities shall not have any on-site battery storage systems for the sale of stored energy.

10. Plants or grasses not part of the buffer area shall be maintained not to exceed a height of twelve (12) inches. The Township may approve a taller height upon a finding that it will not result in a nuisance.

11. Wildlife Impact:

a. The applicant shall have a third-party qualified professional, acceptable to the Township, conduct an analysis to identify and assess any potential impacts on wildlife and endangered species. The applicant shall take appropriate measures

to minimize, eliminate, or mitigate adverse impacts identified in the analysis. The applicant shall identify and evaluate the significance of any net effects or concerns that will remain after mitigation efforts.

b. Sites requiring special scrutiny include wildlife refuges, other areas where birds are highly concentrated, bat hibernacula, wooded ridge tops that attract wildlife, sites that are frequented by federally or state listed endangered species of birds and bats, significant bird migration pathways, and areas that have landscape features known to attract large numbers of raptors.

c. At a minimum, the analysis shall include a thorough review of existing information regarding species and potential habitats in the vicinity of the project area. Where appropriate, surveys for bats, raptors, or general avian use should be conducted. The analysis shall include the potential effects on species listed under the federal Endangered Species Act and Michigan's Endangered Species Protection Law. The applicant shall follow all pre-construction and post-construction recommendations of the United States Fish and Wildlife Service.

d. The analysis shall indicate whether a post-construction wildlife mortality study will be conducted and, if not, the reasons why such a study does not need to be conducted. Power lines should be placed underground, when feasible, to prevent avian collisions and electrocutions. All above-ground lines, transformers, or conductors should follow any Avian Power Line Interaction Committee (APLIC, http://www.aplic.org/) guidelines to prevent avian mortality.

12. Environmental Impact:

a. The applicant shall have a third-party qualified professional, acceptable to the Township, conduct an analysis to identify and assess any potential impacts on the natural environment including, but not limited to, wetlands and other fragile ecosystems, historical and cultural sites, and antiquities. The applicant shall take appropriate measures to minimize, eliminate, or mitigate adverse impacts identified in the analysis.

b. The applicant shall identify and evaluate the significance of any net effects or concerns that will remain after mitigation efforts. The applicant shall comply with applicable parts of the Michigan Natural Resources and Environmental Protection Act (Act 451 of 1994, MCL 324.101 et seq.) including but not limited to Part 31 Water Resources Protection (MCL 324.3101 et seq.), Part 91 Soil Erosion and Sedimentation Control (MCL 324.9101 et seq.), Part 301 Inland Lakes and Streams (MCL 324.30101 et seq.), Part 303 Wetlands (MCL 324.30301 et seq.), Part 323 Shoreland Protection and Management (MCL 324.32301 et seq.), Part 325 Great Lakes Submerged Lands (MCL 324.32501 et seq.), and Part 353 Sand Dunes Protection and Management (MCL 324.35301 et seq.).

13. Spacing. Utility Solar Energy Facilities shall be at least two thousand five hundred (2,500) feet from any adjacent, existing Utility Solar Energy Facility.

14. Noise. The noise generated by a utility-scale solar energy system must not exceed the following limits:

a. Forty (40) Dba Lmax, as measured at the lot line of the project property.

b. Thirty-Five (35) Dba Lmax, as measured at the lot line of the project property, between the hours of 9:00 p.m. and 7:00 a.m.

c. In addition to the above limitations, a sound barrier of a solid decorative masonry wall or evergreen tree berm, with trees spaced not less than 10 feet apart, must be constructed to reduce noise levels surrounding all inverters. The berm must be no more than ten (10) feet from all inverters, must be at least as tall as all inverters but not more than three (3) feet taller than the height of all inverters.

d. The noise level by a Utility Scale Solar Energy Facility must be inspected every three (3) years, at the operator's expense, by an auditory expert to ensure compliance with these noise requirements.

15. Groundcover. Utility Scale Solar Energy Facilities shall include the installation of perennial ground cover vegetation that shall be maintained for the duration of operation until the site is decommissioned.
    a. Land enrolled or bound by the Farmland Preservation Program must follow the Michigan Department of Agriculture and Rural Development's Policy for Allowing Commercial Solar Panel Development on PA 116 Lands.
    b. Land not enrolled or bound by the Farmland Preservation Program must provide at least one (1) of the following types of dual use ground cover to promote ecological benefits:
        1. Pollinator habitat with a score of at least seventy-six (76) on the Michigan Pollinator Habitat Planning Scorecard for Solar Sites (www.pollinators.msu.edu);
        2. Conservation cover focused on restoring native plants, grasses, or prairie with the aim of protecting specific species, such as bird habitat, or providing specific ecosystem services, such as carbon sequestration or improving soil health;
        3. Incorporation of rotational livestock grazing and forage production as part of an overall vegetative maintenance plan; or
        4. Raising crops for food, fiber, or fuel and generating electricity within the site to maximize land use.
    c. The Township may approve or require alternative ground cover upon finding it is not feasible to provide groundcover as defined above.
    d. All groundcover must be native plants with substantial root system to support soil. Turf grass is not permitted as ground cover.
    e. Invasive species and noxious weeds are not permitted and must be removed in a timely manner.
16. Lighting. Lighting shall be limited to inverter or substation locations only and shall comply with 14.04(E) Lighting.
17. Emergency Action Plan; Emergency Training. Before the Utility Solar Energy Facility is operational, it must provide the necessary training, equipment, or agreements specified in the application to Township or other emergency personnel.

18. General Liability Insurance; Bonding Requirements; Escrow Requirements.

    a. Utility Solar Energy Facilities shall have and maintain general liability insurance of at least ten million ($10,000,000.00) dollars. The Township may require a higher amount for larger projects and may allow for a lesser amount for smaller projects upon a finding that the alternate amount is more consistent with the likely risk.

    b. In addition, In order to assure the funds will be available to perform all road repairs required under this ordinance, the Applicant will be required to post financial security acceptable to the Township, in the form of: a) a surety bond from a surety listed as acceptable on the Federal Surety Bond circular 570 of the U.S. Department of Treasury; or b) an acceptable letter of credit; or c) an escrow account established in a financial institution licensed in the State of Michigan. The amount of the security shall be a minimum of one million two hundred fifty thousand dollars ($1,250,000), but this amount may be increased if the third-party consultant determines the amount needed for road repairs is greater than this amount. The bond (or other security) shall only be released (in whole or part) when the Township Board, in consultation with LCRC and the third party inspector, determines that all required road work has been completed and approved by LCRC and/or MDOT.

    c. General Maintenance Bond. The Township shall require a General Maintenance Bond to guarantee all aspects of this Ordinance are met at all times during the construction and operation of the Solar Farm. At the time of the Special Use application, the Applicant shall submit two third-party contractor bids for construction of all fencing, landscaping, and drainage improvements associated with the Solar Farm, and the bond shall be the higher of the two bids. The Township may use the bond to repair any landscaping, fencing, drainage infrastructure (including drainage tiles), and/or to correct any ongoing violation of this Ordinance, in the event that the Solar Farm owner fails to adequately maintain the required site improvements, or fails to make operational changes to correct an operational violation.

    d. The Applicant shall be required, as a condition of the operation, to fund an escrow account for investigation of complaints for, but not limited to glare, stray voltage, noise, and signal interference in the amount of $15,000.00 to be used at the discretion of the Township Board to pay for third party investigative services, the provider of which shall be chosen by the Township. Such funds shall be deposited with the Township Treasurer, or with a third-party fiduciary, at the discretion of the Township. When the escrow account balance is below $5,000.00 the Township shall notify the Applicant and the Applicant shall replenish the account to the amount of $15,000.00 within 45 days.

19. Repowering or Modifications. Any modifications of an approved site plan that are made after the initial date of approval, including an expansion of project, shall be resubmitted to the Township Planning Commission for review at an additional fee based upon current fee schedule. Any changes of the approved site plan, subject to

this Ordinance as it exists at time of application, will require a new site plan application and review, including reconfiguration of arrays, updating current technology, and Solar Energy Facility infrastructure.

20. The Applicant must submit an attestation that the Applicant will indemnify and hold the Township harmless from any costs or liability arising from the approval, installation, construction, use, maintenance, repair, or removal of the Solar Farm.

21. Prior to the start of construction, any existing drain tile must be inspected by robotic camera and the imagery submitted to the township for baseline documentation on tile condition. Any damage shall be repaired, and a report submitted to the landowner and township. While the facility is in operation, the owner or operator must reinspect the drain tiles every three years by robotic camera for any damage and must repair any damage within 60 days of discovery. The owner or operator must report the inspection, along with any damage and repair, to the Township within 90 days after each three-year deadline. The Township reserves the right to have the Building Inspector or other agent present at the time of repair. Solar panel support structures and/or foundations shall be constructed to preserve any drainage field tile or system.

22. Transfer or Sale: In the event of a transfer or sale of the Solar Farm, the new owner or operator must notify the Township in within 30 days, and the Zoning Administrator shall administratively amend the permit to name the new owner or operator. Upon transfer or sale, the cash bond shall be transferred to the new owner or operator and shall be maintained at all times, the estimated costs of decommissioning shall be resubmitted, and the security bond adjusted to account for the new estimate.

G. Abandonment and Decommissioning:

Following the operational life of the project, the Applicant shall perform decommissioning and removal of the Utility Solar Energy Facility and all its components and restore the site to its original conditions.

1. The decommissioning plan shall be written to provide security to the Township for one hundred twenty-five percent (125%) of the cost to remove and dispose of all panels, wiring, and restoration of the land to its original conditions. The value of decommissioning shall be determined by a third-party financial consultant or engineer selected by the Township and paid for by the developer. The decommissioning security shall be paid in cash to the Township. Once value of decommissioning is determined, it shall be updated on a periodic basis of not less than every three (3) years and additional security may be required on the basis of the average inflation rate of the preceding three (3) years.

2. All abandonment and decommissioning work must be done when soil is dry or frozen to prevent compaction.

3. Solar energy systems that are not operated for a continuous period of twelve (12) months shall be considered abandoned and shall be subject to removal proceedings.

4. Solar energy systems that are damaged shall be replaced or removed within seven (7) days.

5. The ground must be restored to its original topography within three hundred sixty- five

(365) days of abandonment or decommissioning. An extension may be granted if a good faith effort has been demonstrated and any delay is not the result of actions or inaction of the operator. An alternative topography can be approved by the Township as part of the original site plan review or later as part of decommissioning.

6. If land balancing is required, all top soil will be saved and spread evenly over balanced area.
7. An annual report shall be provided to the Zoning Administrator showing continuity of operation and shall notify the Zoning Administrator if use is to cease, prior to decommissioning, or abandonment.
8. Continuing Obligations: Failure to keep any required financial security in full force and effect at all times while a Utility Solar Energy Facility exists or is in place shall constitute a material and significant violation of the Special Land Use, Special Use Permit, and this Ordinance, and will subject the Utility Solar Energy Facility Applicant, owner, and operator, jointly and severally, to all remedies available to the Township, including any enforcement action, civil action, request for injunctive relief, and revocation of the Special Land Use Permit.
9. The Applicant shall be responsible for the payment of all attorney fees and other costs incurred by the Township in the event that the structure is not voluntarily removed and the Township has to enforce removal.

H. Complaint Resolution:

Utility Solar Energy Facilities shall provide a complaint resolution process, as described below.

1. The site shall have signs posted with contact information to collect complaints related to the Utility Solar Energy Facility.
2. A log shall be kept by the owner or operator of all complaints received and shall be available to Township officials for review, per Township request.
3. The operator or its agent shall respond to complainants within ten (10) business days and shall provide notification to the Zoning Administrator.
4. Any resolution shall include lawful and reasonable solutions consistent with the Zoning Ordinance, which shall also be provided to the Zoning Administrator.
5. The operator or its assigns reserve the right to adjudicate any claims, including residential claims, in a court of competent jurisdiction. An annual report shall be submitted to the Zoning Administrator and the Township Board that details all complaints received, the status of complaint resolution, and actions taken to mitigate complaints.

5. ADDITION OF SECTION 6.31 "PRIVATE SOLAR ENERGY SYSTEMS"

Article VI GENERAL PROVISIONS of the Zoning Ordinance entitled is hereby amended to add a Section 6.31 entitled "Private Solar Energy Systems" which shall read, in its entirety, as follows:

Section 6.31 Private Solar Energy Systems

Private Solar Energy Systems shall be permitted as an accessory use in all zoning districts, subject to the following:

A. A land use permit from the Township is required for the installation of any Ground Mounted Private Solar Energy System. The applicant is responsible for contacting the building department to determine if a Private Solar Energy System requires a building permit. The application shall include a scaled plot plan shown the property lines, setbacks, existing and proposed buildings and structures, road rights-of-way, wiring location, and panel information.

B. Ground-mounted Private Solar Energy System shall be located in the rear yard or side yard and shall meet the rear and side yard setbacks for accessory structures in the zoning district in which it is located.

C. Roof-mounted Private Solar Energy Systems erected on a roof shall not extend beyond the peak of the roof. If the Private Solar Energy System is mounted on a building in an area other than the roof, it shall not extend vertically beyond the wall on which it is mounted and shall not extend more than twelve (12) inches beyond the wall on which it is mounted.

D. Ground-mounted Private Solar Energy Systems shall have a maximum height of twenty-five (25) feet above the ground when oriented to maximum tilt.

E. All power transmission lines, wires, or conduits from a ground-mounted Private Solar Energy System to any building or other structure shall be located underground.

F. Batteries associated with Private Solar Energy Systems must be located within a secured container or enclosure.

G. Solar energy systems that are damaged shall be replaced or removed in a timely manner.

H. Signage shall be provided in a visible location with disconnection procedures for emergency first responders.

I. All Private Solar Energy Systems, including BIPVs, ground-mounted, and structure mounted, shall conform to applicable County, State, and Federal laws and regulations and safety requirements including Michigan Building codes.

J. Private Solar Energy Systems that have been abandoned for a period of one (1) year shall be removed by the property owner within six (6) months of the date of abandonment.

6. Validity and Severability

If any portion of this Ordinance is found invalid for any reason, such holding will not affect the validity of the remaining portions of this Ordinance.

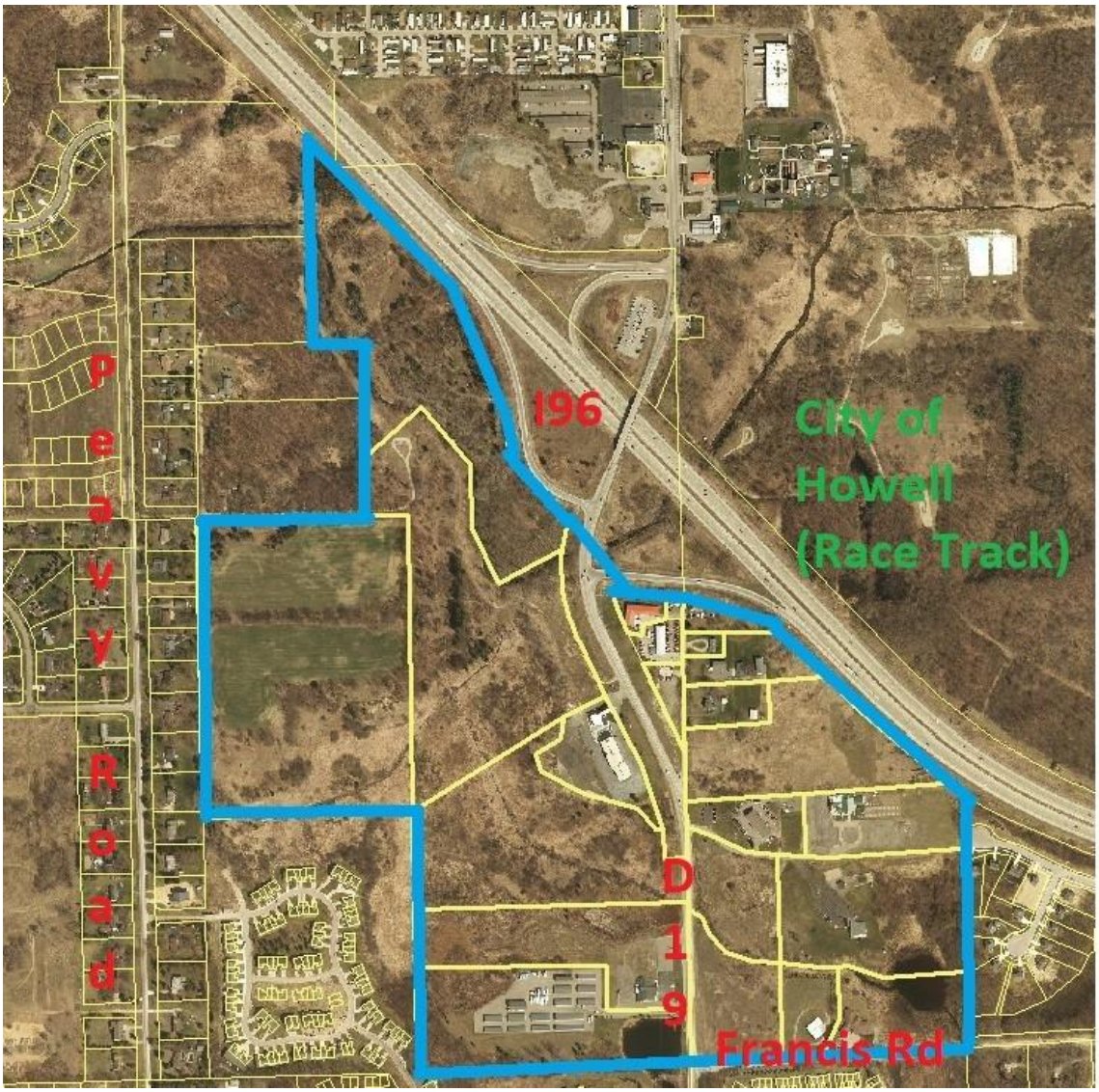
7. Repealer

All other ordinances inconsistent with the provisions of this Ordinance are hereby repealed to the extent necessary to give this Ordinance full force and effect.

8. Effective Date

This Ordinance takes effect seven days after publication as provided by law.

SOLAR FARM OVERLAY DISTRICT DRAFT



Parcel Number	Acres
10-01-300-003	1.11
10-01-300-004	0.48
10-01-300-005	1.84
10-01-300-007	2.54
10-01-300-010	9.74
10-01-300-011	2.95
10-01-300-017	10.94
10-01-300-018	5.15
10-01-300-021	4.72
10-01-300-022	2.54
10-01-300-023	5.3
10-01-300-033	5.2
10-02-400-004	0.85
10-02-400-005	0.94
10-02-400-010	12.27
10-02-400-011	3.85
10-02-400-013	10.2
10-02-400-014	19.66
10-02-400-016	31.61
10-02-400-017	16.03
10-02-400-018	22.57
Total Acres in Overlay	170.49

Marion Township
Livingston County, MI

Section 7.25

REGULATION OF SOLAR FARMS AND SOLAR PANELS

This amendment Solar Energy is hereby added to the Montcalm Township Zoning Ordinance to state as follows:

A. INTENT AND PURPOSE

This section is intended to promote the use of solar energy within Montcalm Township as a clean alternative energy source and to provide for the land development, installation and construction regulations for solar farm and similar facilities subject to reasonable conditions that will protect the public health, safety and welfare. These regulations establish minimum requirements and standards for the placement, construction and modification of photovoltaic solar farm and similar facilities, while promoting a renewable energy source for our community in a safe, effective and efficient manner.

B. DEFINITIONS

The following words and terms shall mean the following for purposes of this section:

ABANDONMENT - To give up, discontinue, or withdraw from. Any solar farm that ceases to produce energy on a continuous basis for 18 months will be considered abandoned.

BUILDING - Any structure having a roof supported by columns or walls, and designated or intended for the shelter, support, enclosure or protection of persons, equipment, animals or chattels.

DECOMMISSIONING PLAN - A document that details the planned shut down or removal of a solar farm from operation or usage, including abandonment as defined in this Ordinance.

FENCE - A continuous barrier extending from the surface of the ground to a uniform height (to be established through the special use permit process), constructed of steel, or other metal, or any substance of a similar nature and strength.

GATE - A door or other device attached to a fence which, when opened, provides a means of ingress and egress of persons and things for which it was intended, and which, when closed, forms a continuous barrier as a part of the fence to which it is attached.

RESIDENCE - A building used as a dwelling for one or more families or

persons. Residential Area: Any area within one quarter (1/4) of a mile of a solar farm having twenty-five or more dwellings.

SOLAR FARM - Land designated or used for the purpose of producing solar or photovoltaic electricity, which includes, but is not limited to, the use of one or more solar panels or other solar energy systems. The power generated is sold or transferred to electric companies or other third parties for distribution through a power grid. A solar farm is comprised of solar panels, photovoltaic cells, or similar facilities that comprise or occupy 20 acres or more on a given parcel or lot.

C. PROHIBITIONS

It shall be unlawful after the effective date of this Ordinance for any person, firm, corporation, or other legal entity to operate, maintain or establish in any area of Montcalm Township a solar farm without special land use approval by the Montcalm Township Planning Commission. Modifications to an existing lawful solar farm (which existed as of the effective date of this Ordinance) that increases the area by more than 10% of the original footprint or changes the solar panel type shall be fully subject to this Ordinance.

D. SOLAR FARM DEVELOPMENT AND DESIGN

1. **Solar farms are only allowed within the Agricultural ("AG") zoning district and the Industrial zoning district and only with special land use approval by the Planning Commission.**
2. **<u>Minimum Lot Size</u>: Solar farms shall not be constructed on lots or parcels where less than 20 acres can be dedicated to solar energy production.**
3. **<u>Height Restrictions</u>: All photovoltaic panels located on a solar farm shall be restricted to a height of 14 feet.**
4. **<u>Setbacks</u>: All photovoltaic solar panels and support structures associated with solar farms (excluding perimeter security fencing) shall be a minimum of 20 feet from any side or rear property line and a minimum of 50 feet from any road or highway right-of-way or easement.**
5. **<u>Safety/Access</u>: A security fence (with the height and material to be established through the special land use permit process) shall be installed and maintained around the perimeter of the solar farm and electrical equipment shall be locked. Knox boxes and keys shall be provided at locked gated entrances for emergency personnel access.**
6. **<u>Noise</u>: The noise from a solar farm shall not exceed 65 decibels as measured at any property line.**

7. **<u>Landscaping</u>: The Planning Commission may alter the landscaping requirement, as outlined in Chapter 14 of this Ordinance, depending upon the topography and existing plant material on the site and proximity to residential housing. Trees shall be a minimum of (4) feet tall when planted and remain in good condition for the life of the solar farm.**
8. **<u>Local, State and Federal Permits</u>: Solar farms shall obtain all necessary permits from the United States Government, State of Michigan, and Montcalm Township, and shall comply with the standards of the State of Michigan adopted codes.**
9. **<u>Electrical Interconnections</u>: All electrical interconnection or distribution lines shall comply with all applicable codes and standard commercial large-scale utility requirements. Use of above ground transmission lines shall be prohibited within the site.**
   If the solar energy facility consists of batteries or the storage of batteries, adequate design and operations must be implemented to ensure that all local, state and federal requirements regulating outdoor battery storage have been met.

10.<u>Additional Special Land Use Criteria</u>: In addition to the requirements and standards contained in Chapter 11 regarding special land uses in general, no special land use request for a solar farm will be met unless the Planning Commission finds that the following criteria will also be satisfied (and that the following requested items or information is supplied to the Township):

a) **Safety and noise characteristics of the system, including the name and address of the facilities manufacturer and model. Identify the time frame, project life, development phases, likely markets for the generated energy, and possible future expansions**
b) **Analysis of on-site traffic: Estimated construction jobs, estimated permanent jobs associated with the development**
c) **Visual impacts: Review and demonstrate the visual impact using photos or renditions of the project or similar projects with consideration given to tree plantings and setback requirements; Project description and rationale: Identify the type, size, rated power output, performance**
d) **Wildlife: Review potential impact on wildlife on the site**
e) **Environmental analysis: Identify impact analysis on the water quality and water supply in the area, and dust from project activities**
f) **Waste: Identify any solid waste or hazardous waste generated by the project;**
g) **Lighting: Provide lighting plans showing all lighting within the facility. No light may adversely affect adjacent parcels. All lighting must be shielded from adjoining parcels, and light poles are restricted to 18 feet in height.**
h) **Transportation plan: Provide access plan during construction and**

operation phases. Show proposed project service road ingress and egress access onto primary and secondary routes, layout of the plant service road system. Due to infrequent access to such facilities after construction is completed, it is not required to pave or curb solar panel access drives.

It will be necessary to pave and curb any driveway and parking lots used for occupied offices that are located on site.

- **i) Public safety: Identify emergency and normal shutdown procedures. Identify potential hazards to adjacent properties, public roadways, and to the community in general that may be created**
- **j) Sound limitations and review: Identify noise levels at the property line of the project boundary when completed;**
- **k) Telecommunications interference: Identify electromagnetic fields and communications interference generated by the project.**
- **l) Life of the project and final reclamation: Describe the decommissioning and final land reclamation plan after anticipated useful life or abandonment or termination of the project, including evidence of an agreement with the property owner that ensures proper and environmentally safe final removal of power generating equipment within 6 to 12 months of decommissioning. At a minimum the decommissioning plan will address and require provisions for removal of all structures (including equipment, fencing, and roads), foundations and restoration of soil and vegetation to the condition prior to development.**
- **m) A copy of the application to the utility company that will be purchasing electricity from the proposed site shall be provided to the Township.**
- **n) An affidavit or evidence of an agreement between the lot owner and the facility's owner or operator confirming the owner or operator has permission of the property owner to apply for the necessary permits for construction and operation of the solar energy facility.**

E. PLANNING COMMISSION REVIEW

Because of the ever-changing technical capabilities of photovoltaic solar panels and of new technology in general, the Planning Commission, as part of the special land use review process, shall have the authority to review and consider alternatives in both dimensional requirements as well as physical development requirements found in this Section. The Planning Commission shall not have the authority to review or to allow solar farms within any other zoning district (apart from the Agricultural and Industrial zoning districts).

Bond required. Decommissioning security financing is required by Montcalm Township to ensure the proper decommissioning of the site. This security financing will be in the form of a surety bond.

F. BUILDING-MOUNTED SOLAR ENERGY PANELS OR COLLECTOR REQUIREMENTS

A building-mounted solar panel or energy collector shall be a permitted accessory use on buildings in all zoning districts, shall require a Zoning Permit, and is subject to the following requirements:

1. **Sketch plan review and approval by the Planning Commission is required of all building-mounted solar energy panels or collectors permitted as an accessory use totaling over 40 square feet on any building.**
2. **Solar energy panels or collectors that are mounted on the roof of a building shall not project more than five (5) feet above the highest point of the roof but, in any event, shall not exceed the maximum building height limitation for the zoning district in which it is located; and shall not project beyond the eaves of the roof.**
3. **Solar energy panels or collectors mounted on the roof of a building shall be only of such weight as can safely be supported by the roof. Proof thereof, in the form of certification by a professional engineer or other qualified person, shall be submitted to the Township prior to installation and such certification shall be subject to the Township building official's approval.**
4. **Solar energy panels or collectors that are roof-mounted, wall-mounted or are otherwise attached to a building or structure shall be permanently and safely attached to the building or structure. Proof of the safety and reliability of the means of such attachment shall be submitted to the Township prior to installation. Such proof shall be subject to the Township building official's approval and compliance with the National Electrical Code and other applicable codes.**
5. **Solar energy panels or collectors that are wall-mounted shall not exceed the height of the building wall to which they are attached.**
6. **Solar energy panels or collectors shall not be mounted on a building wall that is parallel to or visible from an adjacent public right-of-way.**
7. **The exterior surfaces of solar energy panels or collectors that are mounted on the roof or on a wall of a building, or are otherwise attached to a building or structure, shall be generally neutral in color and substantially non-reflective of light.**
8. **Solar energy panels or 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 Township prior to installation. The Township building official may inspect the completed installation to verify compliance with the manufacturer's directions, the National Electrical Code and any other applicable codes.**

9. **Solar energy panels or collectors, and the installation and use thereof, shall comply with the Township's construction code, the electrical code and other applicable Township codes.**
10. **The total area of solar energy panels or collectors on any building shall not exceed 1,000 square feet.**

G. GROUND-MOUNTED SOLAR ENERGY PANELS OR COLLECTOR REQUIREMENTS

Ground-mounted solar energy panels or collector system shall be a special land use (requiring approval by the Planning Commission), require a Zoning Permit and is subject to the approval of a site plan and subject to all of the following requirements:

1. **Ground-mounted solar energy panels or collectors shall be located only in the rear yard and the side yard, but not in \the required rear yard setback or in the required side yard setback unless permitted by the Planning Commission in its approval of the special land use.**
2. **They may be located in the front yard only if permitted by the Planning Commission in its approval of the special land use but, in any event, they shall not be located in the required front yard setback.**
3. **Ground-mounted solar energy panels or collectors shall not exceed 14 feet in height, measured from the ground at the base of such equipment.**
4. **Solar energy panels or collectors shall be permanently and safely attached to the ground. Proof of the safety and reliability of the means of such attachment shall be submitted to the Township with the special land use application and shall be subject to site plan review.**
5. **Solar energy panels or collectors shall be installed, maintained and used only in accordance with the manufacturer's directions. A copy of such directions shall be submitted to the Township with the special land use application. The special land use, if granted, shall be subject to the Township building official's inspection to determine compliance with the manufacturer's directions.**
6. **The exterior surfaces of solar energy panels or collectors shall be generally neutral in color and substantially non-reflective of light.**
7. **Ground-mounted solar energy panels or collectors, and the installation and use thereof, shall comply with the Township's construction code, the electrical code and other applicable codes.**
8. **Any special land use approval may include terms and conditions in addition to those stated in this subsection.**

The Remainder of the Montcalm Township Zoning Ordinance is Unaffected. Except as expressly amended by this ordinance/ordinance amendment, the rest of the Montcalm Township Zoning Ordinance remains unchanged and in

full force and effect.

TOWNSHIP OF OLIVE
County of Ottawa, State of Michigan

ZONING TEXT AMENDMENT ORDINANCE
Ordinance No. 2018-03
Adopted: September 20, 2018
Effective: October 5, 2018

AN ORDINANCE TO AMEND THE OLIVE TOWNSHIP ZONING ORDINANCE BY ADDRESSING SOLAR ENERGY REGULATIONS, AND BY ESTABLISHING AN EFFECTIVE DATE.

THE TOWNSHIP OF OLIVE, OTTAWA COUNTY, MICHIGAN, ORDAINS AS FOLLOWS.

Section 1. Zoning Districts. Section 3.03 of the Olive Township Zoning Ordinance shall be amended by adding the following overlay zoning district in its entirety as follows.

Article XVIB Utility - Scale Solar Energy Collector Systems Overlay District

Section 2. Utility - Scale Solar Energy Collector Systems Overlay District. Article XVIB of the Olive Township Zoning Ordinance shall be added to state in its entirety as follows.

Article 16B
Utility - Scale Solar Energy Collector Systems Overlay District

Section 16B.01 – Purpose

The purpose of this overlay district is to facilitate the establishment of utility-scale solar energy collector systems by providing standards for their placement, design, construction, operation, monitoring, modification, and removal consistent with public safety, while minimizing negative impacts on adjacent and area property, and while promoting the Township's goals of preserving agricultural lands and open spaces. Minimizing loss of rural character and open spaces and the desire to preserve farms and agricultural-based activities are strongly supported in the Master Plan. To promote the preservation of the Township's rural character and agricultural heritage, the lands included in the Utility-Scale Solar Energy Collector Systems Overlay District are limited to portions of the Township not presently used for agricultural purposes or production, are within reasonable proximity to existing major transportation infrastructure, and are within reasonable proximity to existing electric power transmission infrastructure including substations, utility easements, and transmission lines.

Section 16B.02 – Definitions

The definitions in Section 17.2 shall also apply to this article.

Section 16B.03 – Applicability

This article applies to utility-scale solar energy collector systems located in the Utility-Scale Solar Energy Collector Systems Overlay District and does not apply to small-scale solar energy collector systems primarily intended for on-site usage.

Section 16B.04 – General Requirements

A. Applications. An application for special land use approval for a utility-scale solar energy collector system shall include a site plan in accordance with Article 25 as well as meet all applicable criteria of Article 18. Additionally, applications must include equipment and unit renderings, elevation drawings, and distances from lot lines and adjacent structures as well as meet the criteria in Section 16B.05. No utility-scale solar energy collector system shall be installed or operated except in compliance with this section.

B. Glare and Reflection. The exterior surfaces of solar energy collectors shall be generally neutral in color and substantially non-reflective of light. A unit may not be installed or located so that sunlight or glare is reflected into dwellings on other lots or onto roads or private roads.

C. Location. Solar energy equipment shall be located in the area least visibly obtrusive to adjacent residential properties while remaining functional.

D. Obstruction. Solar energy collectors shall not obstruct solar access for other properties.

E. Vegetation. All vegetation underneath solar energy infrastructure shall be properly maintained at a height not to exceed 24" so as to not block access to solar collectors.

F. Installation.

1. A solar energy collector shall be permanently and safely attached to the ground. Solar energy collectors, and the installation and use thereof, shall comply with building codes and other applicable Township, County, State, and Federal requirements.

2. Solar energy collectors shall be installed, maintained, and used only in accordance with the manufacturer's directions. Upon request, a copy shall be submitted to the Township prior to installation.

G. Power lines. On site power lines between solar panels and inverters shall be placed underground.

H. Abandonment. A solar energy collector system that ceases to produce energy on a continuous basis for twelve (12) months will be considered abandoned unless the

responsible party with ownership interest in the system provides substantial evidence to the Township every six (6) months after the twelve (12) months of no energy production of the intent to maintain and reinstate the operation of that system. The responsible party shall remove all equipment and facilities and restore the lot to its condition prior to the development of the system within one (1) year of abandonment.

Section 16B.05 – Utility-Scale Solar Energy Collector Systems

Utility-scale solar energy collector systems may be established as a special land use only in the Utility-Scale Solar Energy Collector Systems Overlay District, subject to the following requirements.

A. Minimum Setbacks. The minimum setback for all yards shall be one hundred (100) feet; however, as a condition of approval, the Township may require increased setbacks if it is determined that greater separation is necessary to adequately protect adjacent residents and property owners.

B. Maximum Height. The maximum height of the system shall be twenty (20) feet, measured from the natural grade below the unit to the highest point at full tilt.

C. Minimum Lot Acreage. Twenty (20) acres shall be the minimum lot area to establish a utility-scale solar energy collector system.

D. Maximum Noise. Noise emanating from the solar energy collector system shall not exceed sixty (60) decibels (dBA) as measured from any lot line of the lot on which the system is located.

E. Screening. Views of collectors and equipment from residential properties or public right-of-way may be required to be screened. Screening methods may include the use of material, colors, textures, screening walls, and landscaping that will blend the unit into the natural setting and existing environment.

F. Decommissioning. A decommissioning plan signed by the responsible party and the land owner (if different) addressing the following shall be submitted prior to approval of a utility-scale solar energy collector system. The plan shall include the following.

1. Defined conditions upon which decommission will be initiated (e.g., end of land lease, no power production for twelve [12] months, abandonment, etc.)

2. Removal of utility-owned equipment and non-utility-owned equipment, which may include but not be limited to conduit, structures, fencing, solar panels, and foundations.

3. Restoration of property condition which existed prior to the development of the system.

4. Specification of the timeframe from completion of decommissioning activities.
5. Description of any agreement (i.e., lease) with landowner regarding decommissioning, if applicable.

6. Identity of the entity or individual responsible for decommissioning.

7. Plans for updating the decommissioning plan.

8. A performance guarantee shall be posted in the form of a bond, letter of credit, cash, or other form acceptable to the Township to ensure removal upon abandonment. As a part of the decommissioning plan, the responsible party shall provide at least two (2) cost estimates from qualified contractors for full removal and disposal of equipment, foundations, and structures associated with the system. These amounts will assist the Township when establishing the performance guarantee amount. The performance guarantee amount shall be valid throughout the lifetime of the system. Bonds and letters of credit shall be extended on a regular basis with expiration dates never less than two (2) years from the annual anniversary of special land use approval

Section 3. Renewable Energies - Definitions. Section 17.2 of the Olive Township Zoning Ordinance shall be amended by **eliminating** the definitions for Building Integrated Photovoltaic (BIPV) Systems, Freestanding or Ground-Mounted Solar Energy System, Large-Scale Solar, Small-Scale Solar, and Rooftop or Building Mounted Solar System; and by **adding** the following definitions to state in their entirety as follows.

Building-Mounted Solar Energy Collector – A solar energy collector attached to the roof or wall of a building, or which serves as the roof, wall, or other element in whole or in part of a building. Also includes building-integrated photovoltaic systems (BIPV).

Ground-Mounted Solar Energy Collector – a solar energy collector that is not attached to and is separate from any building on the lot on which the solar energy collector is located.

Small-Scale Solar Energy Collector – a solar energy collector primarily intended to provide energy for on-site uses and to provide power for use by owners, lessees, tenants, residents, or other occupants of the lot on which it is erected. May be comprised of the following: building-integrated photovoltaic (BIPV) systems, flush-mounted solar panels, ground-mounted solar energy collectors, or building-mounted solar energy collectors.

Solar Energy Collector – a panel or panels and/or other devices or equipment, or any combination thereof, that collect, store, distribute, and/or transform solar, radiant energy into electrical, thermal, or chemical energy for the purpose of generating electric power or other form of

generator energy for use in or associated with a principal land use on the lot where the solar energy collector is located, or, if permitted, for the sale and distribution of excess available electricity to an authorized public utility for distribution to property other than the lot where located.

Utility-Scale Solar Energy Collector – A large-scale facility of solar energy collectors with the primary purpose of wholesale or retail sales of generated electricity. Also known as a solar farm.

Section 4. Small-Scale Solar Energy Collectors. Section 17.3.C of the Olive Township Zoning Ordinance shall be amended to state in its entirety as follows.

C. Small-Scale Solar Energy Collector Systems.

1. Applicability. This section applies to any system of small-scale solar energy collector systems. This section does not apply to solar energy collectors mounted on fences, poles, or on the ground with collector surface areas less than five (5) square feet and less than five (5) feet above the ground, nor does this section apply to utility-scale solar energy collector systems. Nothing in this section shall be construed to prohibit collective solar installations or the sale of excess power through a net billing or net-metering arrangement.

2. General requirements.

a. Applications. In addition to all other required application contents as listed in Section 26.04.B., equipment and unit renderings, elevation drawings, and site plans depicting the location and distances from lot lines and adjacent structures shall be submitted for review. No small-scale solar energy collector system shall be installed or operated except in compliance with this section.

b. Glare and Reflection. The exterior surfaces of solar energy collectors shall be generally neutral in color and substantially non-reflective of light. A unit may not be installed or located so that sunlight or glare is reflected into neighboring dwellings or onto adjacent roads or private roads.

c. Installation.

i. A solar energy collector shall be permanently and safely attached to the ground or structure. Solar energy collectors, and their installation and use, shall comply with building codes and other applicable Township and State requirements.

ii. Solar energy collectors shall be installed, maintained, and used only in accordance with the manufacturer's directions. Upon request, a copy shall be submitted to the Township prior to installation.

d. Power Lines. On site power lines between solar panels and inverters shall be placed underground.

e. Abandonment and Removal. A solar energy collector system that ceases to produce energy on a continuous basis for twelve (12) months will be considered abandoned unless the responsible party with ownership interest in the system provides substantial evidence to the Township every six (6) months after the twelve (12) months of no energy production of the intent to maintain and reinstate the operation of that system. The responsible party shall remove all equipment and facilities and restore the lot to its condition prior to the development of the system within one (1) year of abandonment.

3. Solar-Thermal Systems. These systems may be established as accessory uses to principal uses in all zoning districts.

4. Building-Mounted Solar Energy Collectors. These systems may be established as accessory uses to principal uses in all zoning districts subject to the following conditions.

a. Maximum Height. The maximum height of the zoning district in which the building-mounted solar energy collectors are located shall not be exceeded by more than three (3) feet.

b. Obstruction. Building-mounted solar energy collectors shall not obstruct solar access to adjacent properties.

5. Ground-Mounted Solar Energy Collectors. These systems may be established as accessory uses to principal uses in all zoning districts subject to the following conditions.

a. Location.

i. Rear and Side Yards. The unit may be located in the rear yard or the side yard but shall be subject to the setbacks for accessory structures.

ii. Front Yard. The unit may be located in the front yard only if located no less than one hundred fifty (150) feet from the front lot line.

b. Obstruction. Ground-mounted solar energy collectors shall not obstruct solar access to adjacent properties.

c. Vegetation. All vegetation underneath solar energy infrastructure shall be properly maintained at a height not to exceed 24" so as to not block access to solar collectors.

d. Maximum Number.

i. Residential uses. There shall be no more than one (1) ground-mounted solar energy collector unit per principal building on a lot.

ii. Agricultural, Commercial, and Industrial uses. There shall be no limit to the number of ground-mounted solar energy collector units on a lot.

e. Maximum Size.

i. Residential uses. There shall be no more than one percent (1%) of the lot area up to one thousand five hundred (1,500) square feet of collector panels on a ground-mounted solar energy collector system unless a larger system is approved in accordance with this section.

ii. Agricultural, Commercial, and Industrial uses. There shall be no more than ten thousand (10,000) square feet of collector panels on a ground-mounted solar energy collector system unless a larger system is approved in accordance with this section.

f. Maximum Height.

i. Residential uses. The maximum height shall be six (6) feet, measured from the natural grade below the unit to the highest point at full tilt.

ii. Agricultural, Commercial, and Industrial uses. The maximum height shall be sixteen (16) feet, measured from the natural grade below the unit to the highest point at full tilt.

g. Minimum Lot Area. Two (2) acres shall be the minimum lot area to establish a ground-mounted solar energy collector system.

h. Screening. Screening shall be required in cases where a ground-mounted solar energy collector unit impacts views from adjacent residential properties. Screening methods may include the use of material, colors,

textures, screening walls, and landscaping that will blend the unit into the natural setting and existing environment.

i. Applicants requesting ground-mounted solar energy collectors shall demonstrate the system's projected electricity generation capability, and the system shall not exceed the power consumption demand of the principal and accessory land uses on the lot. However, larger systems may be approved if greater electricity need is demonstrated to power on-site buildings and uses.

Section 5. Special Uses. Section 17.4.C of the Olive Township Zoning Ordinance shall be eliminated in its entirety and reserved for future use.

Section 6. Effective Date. The foregoing amendments to the Olive Township Zoning Ordinance were approved and adopted by the Township Board of Olive Township, Ottawa County, Michigan on September 20, 2018, after a public hearing as required pursuant to Michigan Act 110 of 2006, as amended. This Ordinance shall be effective on October 5, 2018, which date is eight days after publication of the Ordinance as is required by Section 401 of Act 110, as amended, provided that this effective date shall be extended as necessary to comply with the requirements of Section 402 of Act 110, as amended.

Dated: September 24, 2018

Lona Bronkema
Olive Township Clerk

CERTIFICATE

I, Lona Bronkema, the Clerk for the Township of Olive, Ottawa County, Michigan, certify that the foregoing Olive Township Zoning Text Amendment Ordinance was adopted at a regular meeting of the Township Board held on September 20, 2018. The following members of the Township Board were present at that meeting: Bronkema, A. Nienhuis, M. Nienhuis, Vander Zwaag and Wolters. The Ordinance was adopted by the Township Board with all members of the Board voting in favor, and no members of the Board voting in opposition. The Ordinance was published in the *Holland Sentinel* on September 27, 2018.