

**TYRONE TOWNSHIP**  
**REGULAR PLANNING COMMISSION MEETING**  
**December 12, 2023, 7:00 PM**

**CALL TO ORDER:**

**PLEDGE OF ALLEGIANCE:**

**CALL TO THE PUBLIC:**

**APPROVAL OF MINUTES:**

**OLD BUSINESS:**

- 1) Master Plan**
- 2) Utility-Scale Solar Facilities**

**NEW BUSINESS:**

None

**CALL TO THE PUBLIC:**

**MISCELLANEOUS BUSINESS:**

**ADJOURNMENT:**



**Carlisle | Wortman**  
ASSOCIATES, INC.

117 NORTH FIRST STREET SUITE 70 ANN ARBOR, MI 48104 734.662.2200 734.662.1935 FAX

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**TO:** Planning Commission

**FROM:** Matteo Passalacqua, Associate Planner

**DATE:** December 12<sup>th</sup>, 2023

**RE:** Solar Overlay and Master Plan Next Steps

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Please see updates and action items for the Solar Overlay and Master Plan items on the agenda.

- **Master Plan**

**Update:** December 26<sup>th</sup> will mark the conclusion of the sixty-three (63) statutory review period for neighboring communities and parties of interest for the Master Plan draft. As we prepare for next steps, below is an outline of remaining items in the finalization and adoption of the Master Plan:

- After the sixty-three (63) day review period, the Planning Commission may review the comments of notified parties and consider further revisions to the plan.
- Upon completing any further revisions, the Planning Commission must hold at least one (1) public hearing. The public hearing could be scheduled during the regular Planning Commission meeting set for January 9<sup>th</sup>.
- After the public hearing, the Planning Commission may make further revisions to the plan if appropriate.
- Once finalized, the Planning Commission may recommend adoption of the Master Plan to the Township Board by a majority vote.
- After a recommendation from the Planning Commission, the Board of Trustees approves or rejects the Master Plan.
- Once adopted, the Master Plan must then be redistributed to all required reviewing entities for their records.

**Action Items:** Please review upcoming Planning Commission and Board of Trustee meetings to consider under what schedule you would like to undertake these takes.

- **Solar Overlay**

**Update:** Attached to this packet is the latest draft of the Solar Overlay zoning ordinance. All language accepted from the meeting November 14<sup>th</sup>, 2023 has been incorporated. All proposed edits have been added and are redlined. Please review the additional language and provide any pertinent feedback on further revisions.

Also attached is draft version of the Overlay District on the zoning map and the draft Master Plan Future Land Use map. It was determined by the Planning Commission that the areas designated “Planned Industrial” on the draft Master Plan Future Land Use map would be used to define the solar overlay district. Please review both maps and provide any pertinent feedback on further revisions.

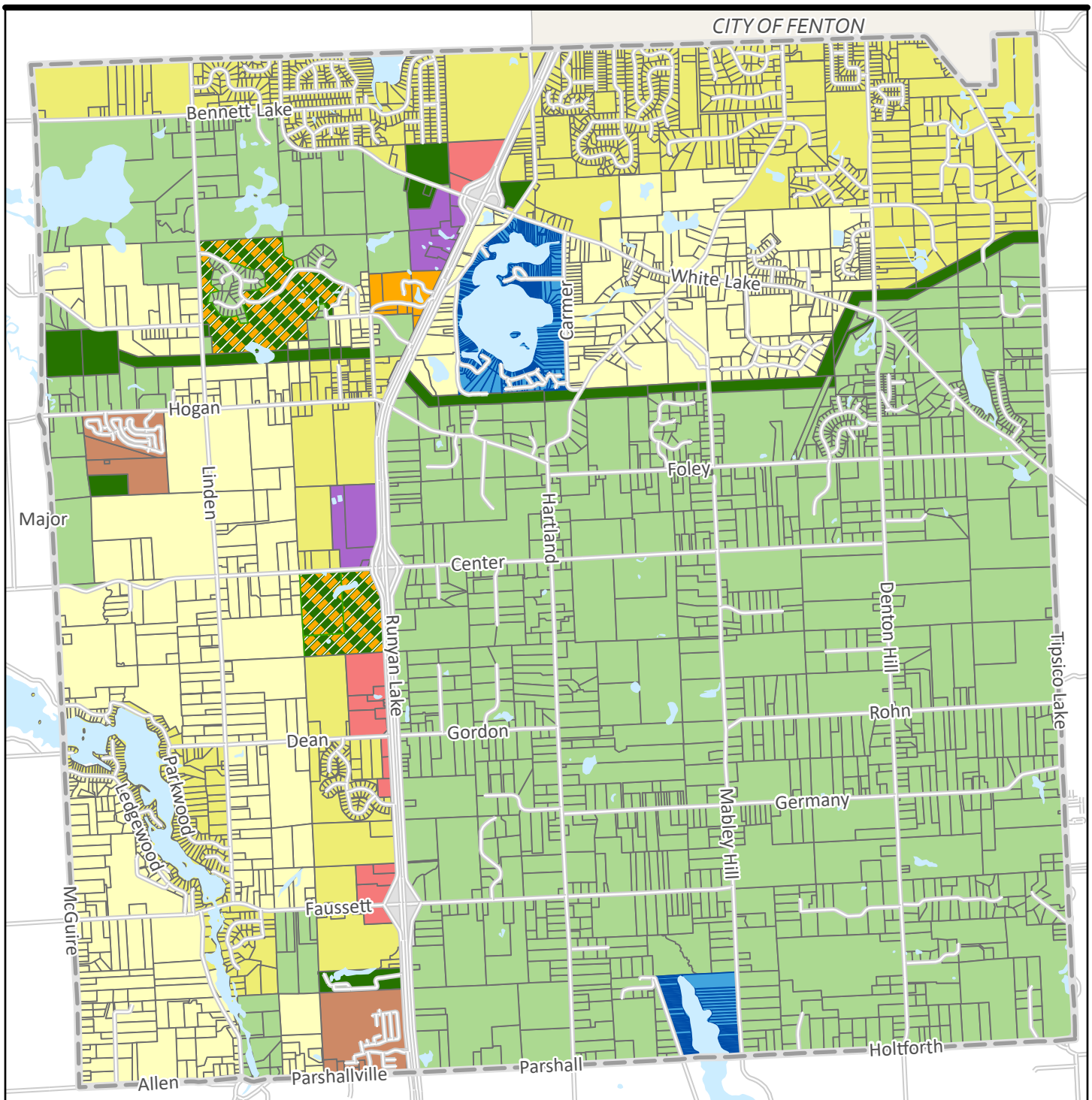
Once the overlay district and ordinance language is finalized, it is the recommendation of CWA to forward the documents to the Township’s legal counsel for review both with and without the consideration of the draft renewable energy laws currently being considered by the state legislature and governor.

**Action Items:** Provide any further revisions/comments on the ordinance language and overlay district with the goal of finalizing both and forwarding to legal counsel.

Thank you for your time and please reach out with any questions or considerations.



CARLISLE/WORTMAN ASSOC., INC.  
Matteo Passalacqua  
Community Planner



## Future Land Use Tyrone Township

Future Land Use	Sum (Acres)	Unit Per Acre Allowance	Future Land Use	Sum (Acres)
Agricultural/Natural	12,194	1 unit per 4 acres	Planned Industrial	165
Low-density Residential	4,565	1 unit per 1.5 to 3 acres	Public/Quasi-Public	466
Medium-density Residential	4,262	1 unit per 0.5 to 1.5 acres	Planned Commercial	189
Lake Residential	535	1 unit per 0.5 acre	Commercial Recreation	383
High-density Residential	63	4 to 8 units per 1 acre	Waterways	
Mobile Home Residential	298	4 to 10 units per 1 acre	Cities	
Tyrone Township			Roads	

This map is for reference only. Data layers that appear on this map may not be accurate. The information is provided with the understanding that the conclusions drawn from such information are solely the responsibility of the user. Any assumption of legal status of this data is hereby disclaimed.

Prepared by: Carlisle/Wortman Associates, Inc.  
7/12/2023



[Proposed Amendments to Section 2 of the Tyrone Zoning Ordinance.](#)

**SECTION 2.02 SOLAR ENERGY GENERATION DEFINITIONS**

**ABANDONMENT:** Any Utility-solar energy system or facility that is no longer producing power over a consecutive 12-month period of time.

**DECOMMISSION:** To remove and/or retire a Utility-scale solar energy system or facility from active service.

**HEIGHT:** The height of a Utility-scale solar energy system, measured vertically from the adjacent grade to its highest point at maximum tilt.

**SOLAR ARRAY.** A collection of solar panels, wired together to generate electricity from the sun.

**UTILITY-SCALE SOLAR ENERGY FACILITIES.** A facility where the principal design, purpose, or use is to provide energy to off-site uses or the wholesale or retail sale of generated electricity.

**UTILITY-SCALE SOLAR ENERGY SYSTEMS.** A device, and/or components designed to collect and transform solar energy into electricity.

**Proposed Amendments to Section 22.05 Part T of the Tyrone Zoning Ordinance.**

**A. Utility-scale Solar Energy Facilities.**

Utility-scale Solar Energy Facilities may only be permitted in Solar Overlay Districts, subject to the following conditions:

- 1. Regulations.** The following regulations are intended to ensure the interests of the landowner and the Township are achieved harmoniously with no negative effect to the long-term viability of the subject property or those surrounding it. In the overlay zoning districts where this special land use is permitted, facilities for the capture, storage, and distribution of solar energy for commercial purposes are subject to the following standards:

- a. Facility Boundary.** The boundary around a parcel, multiple parcels, or portions thereof, leased or purchased for the purposes of operating a Utility-scale solar energy facility. The Facility Boundary may cross road rights-of-way, but required setbacks shall be provided and calculated on each side of any such road.

- b. Setbacks.** The Utility-scale solar energy facility setback requirements are found in the table below. All accessory equipment shall be subject to the same requirements. Setback requirements for all yards may be increased or decreased by the Planning Commission based upon impacts to existing or likely adjacent development.

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District	Solar Overlay		
	<u>Residential Land Uses</u>	<u>Place of Worship or Public Institutional Land Uses</u>	<u>All Other Land Uses</u>
Adjacent Properties			
Front Yard Setback	100ft	100ft	50ft
Side Yard Setback	100ft	100ft	50ft
Rear Yard Setback	100ft	100ft	50ft

In instances where the Utility-scale solar energy system is comprised of multiple parcels, these setbacks shall apply to the exterior perimeter of all adjoining parcels. Setback distance is measured from the property line to the closest point of the Utility-scale solar energy system at minimum tilt.

**c.b. Height.** The height of the Utility-scale solar energy system and any mounts, buildings, accessory structures, and related equipment must not exceed fifteen (15) feet when orientated at maximum tilt. Lightning rods may exceed fifteen (15) feet in height, but they must be limited to the height necessary to protect the Utility-scale solar energy system from lightning and clearly shown in site plan proposals.

**d. Screening.** Greenbelt screening is required around the entire facility boundary perimeter of a any Utility-scale solar energy facility ~~system and around any equipment associated with the system~~ to obscure, to the greatest extent possible, the Utility-scale solar energy system from ~~any adjacent residences~~ all adjacent properties. ~~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. Greenbelt standards set forth in Section 21A.04 Part C3 shall be applied to all~~ Utility-scale solar energy facilities. Each owner, operator, or maintainer of any Utility-scale solar energy facility to which this ordinance applies shall utilize good husbandry techniques with respect to said vegetation, including but not limited to, proper pruning, proper fertilizer, 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 at the next appropriate planting time. Plants or grasses not part of the buffer area shall be maintained by the facility operator not to exceed a height of twelve (12) inches. Applicant agrees to submit an acceptable and reasonable long term landscape maintenance plan prior to final

approval.

**Fencing.** The facility boundary perimeter of a Utility-scale solar energy facility must be fenced per standards set forth in Section 21.13. Additional fencing or obscuring walls, as defined in Section 21A.10 may be required for screening in cases where the Planning Commission deems necessary. All fencing must comply with the latest version of the National Electrical Code.

e.c. **Glare.** Utility-scale solar energy systems must be placed and oriented such that concentrated solar radiation or glare does not project onto roadways and nearby properties. Applicants have the burden of proving any glare produced does not cause annoyance, discomfort, or loss in visual performance and visibility. An analysis by a qualified professional third-party, mutually agreeable by both the Township and applicant, shall be required to determine if glare from the Utility-scale solar energy system will be visible from nearby residents and roadways. The analysis shall consider the changing position of the sun throughout the day and year, and its influence on the Utility-scale solar energy system.

f.d. **Natural Feature Preservation.** The plan for installation of a Utility-scale solar energy facility shall include a tree survey and plan for cutting of trees greater than 6" DBA. No such trees shall be cut in any required setback other than those reasonably required for the installation of a drive to access the facility. Retention of natural grades, soils, and groundcover material is encouraged where feasible.

g.e. **Environmental Impact Analysis:** An analysis by a qualified professional third-party, mutually agreeable by both the Township and applicant, shall be required 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.

An 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 following:

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 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.),

Part 353 Sand Dunes Protection and Management (MCL 324.35301 et seq.).

**h.f. Drainage and Stormwater.** Utility-scale solar energy facilities shall not increase stormwater runoff onto adjacent properties. The application shall include a drainage plan prepared by a registered civil engineer showing how stormwater runoff shall be managed and demonstrating that runoff from the site shall not exceed the agricultural runoff rate or otherwise cause undue flood. Any necessary permits from outside agencies for off-site discharge shall be provided. It should also be demonstrated that maintenance procedures and products will not introduce chemicals or create detrimental impacts to the natural environment, groundwater, and wildlife. Detergents should be of a biodegradable variety, and frequency of anticipated cleaning should be described.

**Stormwater Study:** An analysis by a qualified professional third-party, mutually agreeable by both the Township and applicant, shall be required to account for the proposed layout of the Utility-scale solar energy facility 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.

**g. Lot Coverage.** The area of the Utility-scale solar energy facility and any associated accessory structures shall not exceed 75% of the square footage of the entire site within the facility boundary. Impervious surfaces for the purpose of calculating lot coverage for Utility-scale solar energy systems include, but are not limited to, mounting pads, footings, concrete or asphalt driveways and walkways, and accessory structures.

**Abandonment, Removal, Repowering and/or Maintenance.** If a Utility-scale solar energy facility ceases to perform its intended function (generating electricity) for more than 12 consecutive months, the

operator shall remove the collectors, mounts, and associated equipment and facilities no later than 90 days after the end of the 12-month period. Where the removal has not been lawfully completed as required above, and after at least 30 days' written notice, the Township may remove or secure the removal of the Utility-scale solar energy facility and/or system or portion thereof, with the Township's actual cost and reasonable administrative charges to be covered by the operator's security bond. Charges may include the procurement of a contractor with the expertise to oversee and execute the entire decommissioning and removal of all equipment and fixtures on the site. Any costs incurred by the Township above and beyond the value of the security bond will be the responsibility of the operator.

If due to abandonment and/or negligence to maintain, the Township shall have the right to enter the site for the reason of repowering the facility, in cases where repairs or replacements to the Utility-scale solar energy system components are necessary, in order to properly maintain the system. The Township's actual cost and reasonable administrative charges to be covered by the operator's security bond. Charges may include the procurement of a contractor with the expertise to oversee and execute the entire set of repairs and/or maintenance to restore the site to its original capacity. Any costs incurred by the Township above and beyond the value of the security bond will be the responsibility of the operator.

**i.h. Decommissioning.** The ground shall be restored to its original condition within 60 days of removal of structures. The restoration will include returning all soil within the facility to its original environmental state of which record must be taken prior to the commencement of construction. Acceptable ground covers include grasses, trees, crops, or other material demonstrated to be characteristic of the surrounding land. All above and below ground materials shall be removed when the Utility-scale solar energy facility and/or system is decommissioned. All installed landscaping and greenbelts shall be permitted to remain on the site as well as any reusable infrastructure as determined by the township. These can include service drives, utilities, etc.

**j.i. SuretySecurity.** ~~A letter of credit, cash deposit, or other security instrument found acceptable to the Tyrone Township Board.~~ The owner(s) and/or operator of the Utility-scale solar energy facility shall post a security instrument in a form acceptable to the Township equal to one-hundred fifty (150) percent of the total estimated decommissioning and/or reclamation costs. The cost of decommissioning shall be re-reviewed and submitted to the Township annually to ensure adequate funds are allocated for

decommissioning. The security instrument, defined herein, shall be appropriately adjusted to reflect the current decommissioning estimate.

- i. The applicant shall engage a certified professional engineer acceptable to the Township to estimate the total cost of decommissioning all structures in the facility in accordance with the requirements of this Ordinance, including reclamation to the original site conditions.
- ii. A security bond, if utilized, shall be posted and maintained with a bonding company licensed in the State of Michigan or a Federal or State-chartered lending institution acceptable to the Township.
- iii. Any bonding company or lending institution shall provide the Township with 90 days' notice of the expiration of the security bond. Lapse of a valid security bond is grounds for the actions defined in Subsection v., below.
- iv. In the event of sale or transfer of ownership and/or operation of the Utility-scale solar energy facility, the security instrument shall be maintained throughout the entirety of the process.
- v. If at any time during the operation of the Utility-scale solar energy facility or prior to, during, or after the sale or transfer of ownership and/or operation of the facility the security instrument is not maintained, the Township may take any action permitted by law, revoke the special land use, order a cessation of operations, and order removal of the structure and reclamation of the site.
- vi. The security instrument shall be maintained until decommissioning and removal has been completed to the satisfaction of the Township.

**k.j. Wildlife Impact Analysis:** The applicant shall provide an analysis by a qualified professional third-party, mutually agreeable by both the Township and applicant, 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. 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. 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. 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 aboveground lines, transformers, or conductors should follow any Avian Power Line Interaction Committee (APLIC, <http://www.aplic.org/>) guidelines to prevent avian mortality.

**4.k. Provision of Manufacturers' Safety Data Sheet(s):** Applicant must submit manufacturer safety data sheets for all proposed equipment. If approval is granted, applicant must provide the Township with finalized manufacturer safety data sheets both to be kept on record at with the Township and on-site in a clearly marked waterproof container. Applicant must provide updated manufacturer data sheets whenever equipment is modified so that all records are up to date. Documentation shall include the type and quantity of all materials used in the operation of all equipment.

**~~I. Fire Suppression Plan~~Response:** ~~Applicant must provide a plan describing the fire suppression process and procedure, as well as potential training for emergency personnel. All electrical equipment associated with and necessary for the operations of the facility shall comply with all local and state codes. All design and installation work shall comply with all applicable provisions of the National Electrical Code (NEC).~~

~~The applicant shall provide training before, approximately halfway through and after construction for all emergency service departments serving the Township. Including all other requirements for permits, all three trainings must have been completed to receive final permits. Trainings upon the completion and during the operation of the Utility scale solar energy facility will be conducted upon the request of all emergency service departments but not exceed four (4) trainings per any given twelve (12) month period.~~

The applicant shall provide a set of procedures and protocols for managing risk or fire and for responding in the event of an emergency at the facility. It will be the burden of the applicant to ensure said procedures and protocols provided to the various emergency service departments is the most up to date version.

Special equipment that may be required to ensure the safety of fire and rescue personnel when responding to an emergency at the facility shall be provided at no cost to the Township prior to commencement of construction of the facility.

The applicant shall provide for and maintain reasonable means of access for emergency services. Lock boxes and keys shall be provided at locked entrances for emergency personnel access. If any adjoining properties are damaged as a result of ingress/egress to the facility, the applicant shall remedy all damages in full.

- m. **Anticipated Construction Schedule:** Applicant must provide an anticipated construction schedule which highlights when potentially hazardous materials will be brought on-site and installed.
- n. **Permits:** Applicant must coordinate with all applicable agencies for required permitting including but not limited to the Livingston County Road Commission and/or Michigan Department of Transportation (MDOT) Livingston County Drain Commission, Environmental Protection Agency (EPA), Michigan Department of Environment, Great Lakes and Energy (EGLE), etc.
- o. Photographic Record:** Applicant must submit a complete set of photos and video of the entire development area prior to construction. This will be used as historical documentation for the township to secure and refer to if/when decommissioning and redevelopment activities take place.
- p. Herbicides:** Best practices when using herbicides (non-harmful to the environment) or other hazardous chemicals to control weeds, grass and other unwanted vegetation shall be used.
- q. Batteries, Energy Storage Equipment and Accessory Equipment:** All batteries, energy storage equipment and accessory equipment are prohibited due to environmental hazard and emergency response concerns.
- or. Panel Type:** The photovoltaic panels shall not contain harmful chemicals such as cadmium or amorphous silicon. Prior to construction, the applicant shall provide written panel specifications to

include composition, toxicological information, and the physical and chemical properties of all panels used at the facility. Only biodegradable cleansers and water shall be used to clean panels.

2. **Site Plan Approval and Supporting Materials.** All applications for Utility-scale solar energy facilities must be accompanied by detailed site plans, drawn to scale and dimensioned and certified by a registered engineer licensed in the State of Michigan. All site plans shall conform to the requirements of Article 23. In addition they shall display the following information:
- a. All lot lines and dimensions, including a legal description of each lot or parcel(s) comprising the Utility-scale solar energy facility.
  - b. Vicinity map showing the location of all surrounding land uses along the proposed site's property lines.
  - c. Location and height of all proposed Solar Array(s), buildings, structures, electrical tie lines and transmission lines, security fencing, and all above-ground structures and utilities associated with a Utility-scale solar energy facility.
  - d. Horizontal and vertical to scale drawings (elevations) with dimensions that show the location of the proposed Solar Array(s), buildings, structures, electrical tie lines and transmission lines, security fencing and all above ground structures and utilities on the property.
  - e. Location of all existing and proposed overhead and underground electrical transmission or distribution lines within the Utility-scale Solar energy facility and within one hundred (100) feet of all facility boundary property lines of the Utility-scale solar energy facility. Use of above-ground lines shall be kept to a minimum.
  - f. Proposed setbacks from the Solar Array(s) to all existing and proposed structures within the Utility-scale solar energy facility and from the facility boundary property lines of the Utility-scale solar energy facility.
  - g. Topography for the Solar Array(s) location and the relationship to the land elevations of all existing and proposed structures within the Utility-scale solar energy facility at a minimum of two (2) foot contour intervals.
  - h. Access driveways within and to the Utility-scale solar energy facility, together with a detailed narrative regarding dimensions, composition, and maintenance of each proposed driveway. All access driveways shall be subject to Livingston County Road Commission (LCRC) approval and shall be planned so as to minimize the use of lands for that purpose.

- i. Planned security measures to prevent unauthorized trespass and access during the construction, operation, removal, maintenance or repair of the Utility-scale solar energy facility. In no instance shall barbwire be used.
- j. A written description of the maintenance program to be used for the Solar Array(s) and other components of the Utility-scale solar energy facility, including decommissioning and removal. The description shall include maintenance schedules, types of maintenance to be performed, and decommissioning and removal procedures and schedules if the Utility-scale solar energy facility is decommissioned. Description should include the average useful life of all primary Utility-scale solar energy system equipment and components being proposed.
- k. Planned lightning protection measures.
- l. A plan for reviewing and reasonably resolving complaints from the public or other property owners concerning the construction and operation of the Utility-scale solar energy facility, which is subject to the Township's review and approval.
- m. A plan for managing any hazardous waste, which is subject to the Township's review and approval.
- n. A transportation plan for construction and operation phases, including any applicable agreements with the Livingston County Road Commission and Michigan Department of Transportation, which is subject to the Township's review and approval.
- o. 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 Utility-scale solar energy facility and/or system, which is subject to the Township's review and approval.

**~~Batteries and Accessory Equipment.~~**

- p. A security plan shall be submitted with the special land use application and site plan application for a Utility-scale solar energy facility. The security plan shall:**

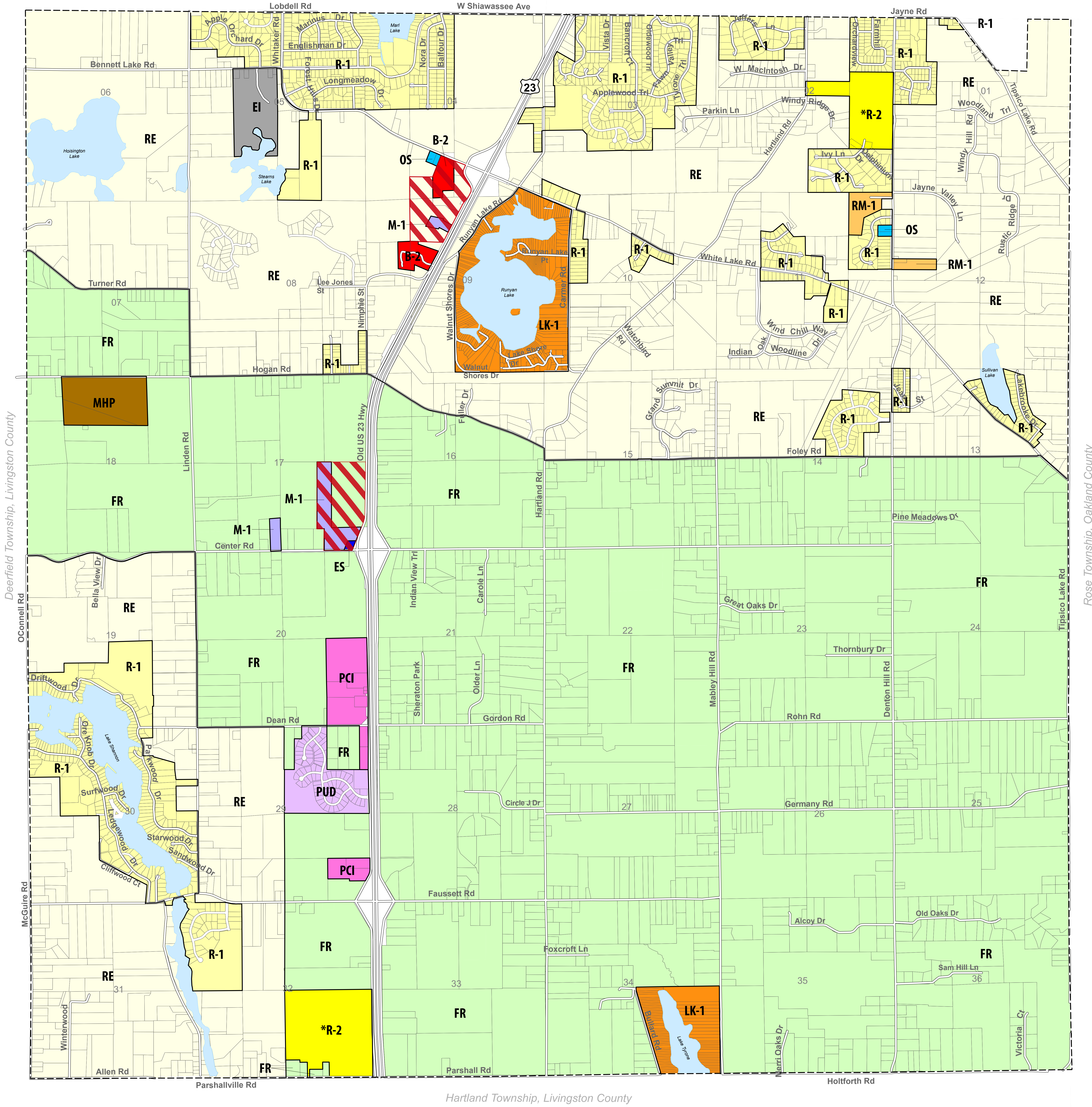
  - Show all points of secured access as well as the means for limiting access to authorized personnel only.**
  - Along with other signage requirements in this ordinance, install and**

maintain warning signage on all dangerous equipment and facility entrances.

- Provide a schedule outlining the implementation and maintenance of site security as well as routine inspections to ensure site security infrastructure is intact and operating as intended.

**p.g.** Additional detail(s) and information as required by the Tyrone Township Zoning Ordinance, or as required by the Planning Commission and/or Township Board.





November 28, 2023

# Draft Solar Overlay and Zoning Map

Tyrone Township, Livingston County, Michigan

Zoning District

- FR

Farming Residential
- RE

Rural Estate
- R-1

Single Family Residential
- R-2

Single Family Residential
- RM-1

Multiple Family Residential
- LK-1

Lake Front Residential
- MHP

Manufactured Home Park
- B-1

Local Business
- B-2

Community Business
- OS

Office Service
- ES

Expressway Service
- M-1

Light Manufacturing
- M-2

Heavy Industrial
- ROM

Research-Office-Manufacturing
- EI

Extractive Industry
- PUD

Planned Unit Development
- PCS

Planned Commercial Services
- PCI

Planned Commercial Industrial
- PIRO

Planned Industrial Research and Office
- Township Boundary
- \*

Consent Judgment
- Draft Solar Overlay

NOTE

This map represents generalized zoning district boundaries. Exact zoning district boundaries should be confirmed by parcel descriptions and detailed maps that accompany rezoning ordinances and that are maintained as separate by Tyrone Township

CERTIFICATION

I, MARCELLA HUSTED, CLERK OF THE TOWNSHIP OF TYRONE, LIVINGSTON COUNTY, DO HEREBY CERTIFY THAT THIS IS A TRUE COPY OF THE MAP ADOPTED BY THE TOWNSHIP BOARD OF THE TOWNSHIP OF TYRONE ON OCTOBER 21, 2003, AS WELL AS THOSE AMENDMENTS MADE AS OF REVISION DATE.

MARCELLA HUSTED, CLERK, TYRONE TOWNSHIP

Date: \_\_\_\_\_

REVISION DATES

October 17, 2003	May 5, 2016		
April 7, 2009			
December 3, 2013			
January 6, 2015			

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