

ORDINANCE NO. _____

**AN ORDINANCE TO ADD ARTICLE XIX, SECTION 94-524 TO
CHAPTER 94 OF THE CODE OF ORDINANCES, CITY OF
WALKER REGARDING SUSTAINABLE ENERGY.**

THE CITY OF WALKER ORDAINS:

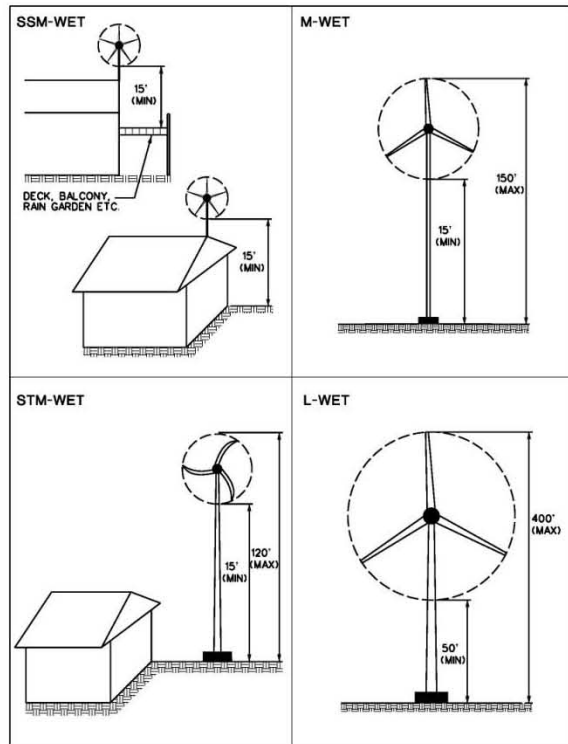
Section 1. **Addition of Article XIX, Section 94-524.** That the Code of Ordinances, City of Walker, Michigan, is hereby amended by adding a new Article XIX, Section 94-524 which such section reads as follows:

ARTICLE XIX. SUSTAINABLE ENERGY

Sec. 94-524.

- A. **PURPOSE AND INTENT.** The purpose of this Section is to establish regulations for the location, installation and operation of Wind Energy Turbines (WETs). Among other goals, the regulations in this Section are intended:
1. To promote the safe, effective and efficient use of WETs to produce electricity and reduce the consumption of fossil fuels.
 2. To preserve and protect public health, safety, welfare and quality of life by minimizing the potential adverse impacts of WETs.
 3. To establish standards and quantifiable procedures to direct the site location, engineering, installation, maintenance and decommissioning of WETs.
 4. To define and delineate between various types of WETs in order to properly regulate the different WET technologies (See Figure 1).

Figure 1



B. DEFINITIONS.

1. **Ambient Sound Level:** The amount of background noise at a given location prior to the installation of a WET which may include, but is not limited to, traffic, machinery, lawnmowers, general human activity and the interaction of the wind with the landscape. Ambient Sound Level is measured on the Decibel – dB(A) – weighted scale as defined by the American National Standards Institute (ANSI).
2. **Anemometer:** A wind speed indicator constructed for the purpose of analyzing the potential for installing a WET at a given location. An Anemometer includes a tower, base plate, anchors, cables and hardware, wind direction vanes, booms to hold equipment, a data logger, instrument wiring and telemetry devices used to monitor or transmit wind speed and wind flow characteristics over a period of time. Telemetry data can include instantaneous wind speeds or characterizations of a wind resource at a given location.
3. **Decommissioning:** The process of terminating the operation of a WET by completely removing the entire WET and all related buildings, structures, foundations, supports, equipment and, as appropriate, onsite access roads.
4. **Large Wind Energy Turbine (L-WET):** A tower-mounted wind energy system, standing greater than 150 feet tall and up to 400 feet tall, that

- converts wind energy into electricity through the use of equipment (e.g., base, blade, rotor, foundation, generator, nacelle, tower, transformer, vane, wire, inverter, batteries, etc.) L-WETs have nameplate capacities that identify maximum kilowatts.
5. **Medium Wind Energy Turbine (M-WET):** A tower-mounted wind energy system standing between one hundred fifty (150) feet tall and one hundred twenty one (121) feet tall that converts wind energy into electricity through the use of equipment (e.g., base, blade, rotor, foundation, generator, nacelle, tower, transformer, vane, wire, inverter, batteries, etc.) M-WETs have nameplate capacities that do not exceed two hundred and fifty (250) kilowatts.
 6. **Nacelle:** The encasement which houses the interior electricity generating components, gear box, drive tram, brakes and related equipment of a WET.
 7. **Net Metering:** A special metering and billing agreement between utility companies and their customers, which facilitates the connection of sustainable energy generating systems to the power grid.
 8. **Occupied Building:** A structure used by or which houses residents, customers, workers or visitors.
 9. **Operator:** The entity responsible for the day-to-day operations and maintenance of a WET.
 10. **Owner/Applicant:** The person, firm, corporation, company, limited liability corporation or other entity seeking City approval under this Section, as well as its successor(s), assign(s) or transferee(s), for a WET or Anemometer. An owner/applicant must have the legal authority to represent and bind the landowner or lessee who will construct, own, and operate the WET or Anemometer. The duties and obligations regarding a zoning approval for any approved WET or Anemometer shall be with the owner/applicant of the WET or Anemometer, and jointly and severally with the owner and operator or lessee of the WET or Anemometer if different than the owner/applicant.
 11. **Rotor:** A blade of a WET that is connected to the rotor hub and nacelle and acts as an airfoil assembly that extracts kinetic energy directly from the wind.
 12. **Rotor Diameter:** The cross-sectional dimension of the circle swept by the rotating blades of a WET.
 13. **Shadow Flicker:** The moving shadow created by the sun shining through the rotating blades of a WET. The amount of Shadow Flicker created by a WET is calculated by a computer model that measures WET location, elevation, tree cover, location of adjacent structures, wind activity and sunlight angle.

14. **Small Tower Mounted Wind Energy Turbine (STM-WET):** A tower-mounted wind energy system standing up to one hundred twenty (120) feet that converts wind energy into electricity through the use of equipment (e.g., base, blade, rotor, foundation, generator, nacelle, tower, transformer, vane, wire, inverter, batteries, etc.) STM-WETs have nameplate capacities that do not exceed thirty (30) kilowatts.
 15. **Structure:** Anything constructed or erected that involves permanent location on the ground or attachment to something having such a location.
 16. **Small Structure Mounted Wind Energy Turbine (SSM-WET):** A structure-mounted wind energy system that converts wind energy into electricity through the use of equipment (e.g., base, blade, rotor, foundation, generator, nacelle, tower, transformer, vane, wire, inverter, batteries, etc.) SSM-WETs are attached to a structure's roof, walls or another elevated surface. SSM-WETs have nameplate capacities that do not exceed ten (10) kilowatts. The Total Height of a SSM-WET unit does not exceed fifteen (15) feet as measured from the highest point of the adjacent roof or structure, excluding chimneys, antennae or other similar features.
 17. **Survival Wind Speed:** The maximum wind speed, as designated by the WET manufacturer, at which a WET in an unattended state is designed to survive without damage to any structural equipment or the loss of the ability to function normally.
 18. **Total Height:** The vertical distance as measured from the ground level of the base of a WET tower to the uppermost vertical extension of a rotor blade, or the maximum height reached by any part of a WET.
 19. **Tower:** A free-standing monopole that supports a WET.
 20. **Wind Energy Overlay District:** A specific zoning district for the location of L-WETs.
 21. **Upwind Turbines:** As opposed to a "downwind turbine," an Upwind Turbine has the rotor blades facing into the wind source direction.
 22. **Wind Energy Turbine (WET):** A structure-mounted or tower-mounted small, medium or large wind energy conversion system that converts wind energy into electricity through the use of specialized equipment and structures.
- C. **APPLICABILITY.** This Section applies to all WETs proposed for construction after the effective date of the ordinance adding this Section. All WETs constructed prior to the effective date of the ordinance adding this Section shall not be required to

meet the standards of this Section; however, any physical modification to an existing WET that materially alters the size, type, equipment or location shall require approval per the standards of this Section.

D. TEMPORARY USES. Anemometers are permitted in all zoning districts as a temporary use, subject to the provisions of this Subsection.

1. The construction, installation or modification of an Anemometer shall require a building permit;
2. Anemometers must conform to all applicable local, state and federal safety, construction, environmental, electrical, communications and FAA requirements;
3. Anemometers are subject to the requirements of this Section for Total Height, setbacks, separation, location, safety and decommissioning that correspond to the size of the WET(s) proposed on the site;
4. An Anemometer without an accompanying WET shall not be located on a site for more than 13 months when testing for SSM-WET, STM-WET or M-WET installation potential; and,
5. An anemometer without an accompanying WET shall not be located on a site for more than three years when testing for L-WET installation potential.

E. PERMITTED USES.

SSM-WETs and STM-WETs are a permitted use in all zoning districts, subject to the following:

1. SSM-WETs and STM-WETs must receive a building permit prior to construction, installation, relocation or modification. The Owner/Applicant or Operator must apply for and receive the building permit.
2. All SSM-WETs and STM-WETs shall be subject to the following minimum requirements:
 - a. "Upwind Turbines" shall be required unless otherwise approved by the Planning Commission, based on technical specifications and site-specific information.
 - b. Visual Appearance:

- i. SSM-WETs and STM-WETs, including accessory buildings and related structures, shall be a non-reflective, non-obtrusive color, such as white, gray or black.
 - ii. The appearance of the WET and all accessory structures shall be maintained throughout the life of the unit.
 - iii. Exterior lighting of a Tower, Rotor blades and Nacelle shall only be allowed in order to meet FAA mandatory requirements.
 - iv. Exterior lighting of accessory buildings or entrance points shall be permitted, provided that such exterior lighting fixtures shall be full cutoff “shoebox” fixtures. These fixtures shall not be mounted on poles or other structures that exceed a height of 20 feet, as measured from the grade at the base of the fixture.
 - v. SSM-WETs and STM-WETs may not contain commercial signage, banners, flags or advertising logos, except for the identification of the turbine manufacturer and unit specifications for regulatory purposes.
3. Ground Clearance: The lowest extension of any rotor blade or other exposed moving component of an SSM-WET or STM-WET shall be at least 15 feet above the ground, as measured from the highest point of grade within 30 feet of the base of the WET. In addition, the lowest extension of any rotor blade or other exposed moving component of an SSM-WET or STM-WET shall be at least 15 feet above any outdoor areas intended for human use that are located below the WET. Examples include balconies, roof gardens, etc.
4. Noise Control:
 - a. Where an adjacent parcel contains a residential use, the noise produced by a SSM-WET or STM-WET may not exceed the lowest ambient sound level that exists between the hours of 9:00 PM and 9:00 AM along any adjacent property line used for residential purposes.
 - b. Where no adjacent parcel contains a residential use, the noise produced by a SSM-WET or STM-WET may not exceed the lowest ambient sound level that exists between the hours of 9:00 PM and 9:00 AM on the parcel, plus 5 Decibels dB(A).
5. Vibration: An SSM-WET or STM-WET shall not produce vibrations that are perceptible to humans beyond any property line upon which a WET is located.

6. Wire Supports: Guy wires or similar apparatus shall not be allowed as part of an SSM-WET or STM-WET installation.
7. SSM-WET Height: The mounted height of an SSM-WET shall not exceed 15 feet above the highest point of the adjacent roof or structure.
8. SSM-WET Setbacks:
 - a. An SSM-WET shall be setback a minimum of 15 feet from any property line, public right-of-way, public easement or overhead utility lines.
 - b. If the SSM-WET is affixed by any extension to a structure's walls, roof or other elevated surface then the setback from property lines, public rights-of-way, public easements or overhead utility lines shall be measured from the furthest outward extension of moving WET components.
9. SSM-WET Separation Distances: If more than one SSM-WET is installed on a property, then a distance equal to the mounted height of the adjacent SSM-WET must be maintained between the bases of each SSM-WET.
10. STM-WET Height: The Total Height of a STM-WET shall not exceed 120 feet.
11. STM-WET Setbacks:
 - a. On a property containing occupied buildings, STM-WETs shall only be located in the rear yard.
 - b. An STM-WET shall be setback a minimum of 20 feet from all Occupied Buildings on the subject property. This setback will be measured from the base of the Tower.
 - c. A minimum setback equal to the Total Height of the STM-WET shall be required to any property line, public right-of-way, public easement or overhead utility lines. This setback will be measured from the base of the Tower. This setback may be reduced if the applicant provides a registered engineer's certification that the WET is designed to collapse, fall, curl or bend within a distance less than the Total Height of the WET.
12. STM-WET Separation Distances: If more than one STM-WET is installed on a property, then a distance equal to the Total Height of the tallest STM-WET must be maintained between the bases of each STM-WET.

13. Site Plan Review: SSM-WETs and STM-WETs are subject to site plan review by the Planning Commission, subject to the following:

- a. SSM-WETs and STM-WETs shall be exempt from the site plan review standards found in Article X of this Chapter but shall be subject to the standards and requirements contained in this Subsection.
- b. Owner/Applicants of SSM-WETs and STM-WETs proposed for installation shall provide the following to the City:
 - i. A completed application for site plan review plus any applicable fees and/or escrow deposit approved by the City Commission;
 - ii. A scaled site plan drawing clearly illustrating the proposed WET(s) and all accessory structures/equipment in relation to all onsite and adjacent buildings, property lines, rights-of-way, public easements and overhead utility lines. Setbacks as required in this Section shall be shown to scale on the site plan.
 - iii. A scaled site plan that clearly displays property dimensions, existing buildings on the subject property and on adjacent properties, sidewalks, non-motorized pathways and streets.
 - iv. A scaled site plan that includes existing and proposed onsite grading / topography at two-foot contour intervals.
 - v. Product-specific technical information from the manufacturer of the SSM-WET or STM-WET. This information shall include the proposed Total Height and type of WET, maximum noise output in Decibels, total rated generating capacity, product dimensions, Rotor blade diameter and a detail of accessory structures.
 - vi. Documented compliance with the noise and vibration generation requirements set forth in this Section.
 - vii. Documented compliance with applicable local, state and federal regulations including, but not limited to, public safety, construction, environmental, electrical, communications and FAA requirements.
 - viii. Proof of liability insurance in an amount approved by the Planning Commission.
 - ix. Documented evidence that the utility company has been informed of, and approved, the owner/applicant's intent to install an interconnected, customer-owned generator. Off-grid systems shall be exempt from this requirement.
 - x. A narrative that explains the proposed methods that will be used to perform maintenance on the WET(s) in compliance with the manufacturer's recommendations and requirements.
 - xi. A narrative that explains how the WET will be tested after installation for compliance with the noise and vibration regulations of this Section.

14. Safety Requirements:

- a. If the SSM-WET or STM-WET is connected to a public utility system for Net Metering purposes, it shall meet the requirements for interconnection and operation as set forth in the public utility's current service regulations that meet federal, state and industry standards applicable to wind power generation facilities. Any such connection shall be inspected and approved by the appropriate utility company.
- b. The SSM-WET or STM-WET shall be equipped with an automatic braking, governing or feathering system in order to prevent uncontrolled rotation, over-speeding or excessive pressure on the WET.
- c. A clearly visible warning sign regarding voltage shall be placed at the base of the WET.
- d. The structural integrity of the WET shall conform to the design standards of the International Electrical Commission; specifically IEC 61400-1 "Wind Turbine Safety and Design," IEC 61400-2 "Small Wind Turbine Safety," IEC 61400-22 "Wind Turbine Certification," and IEC 61400-23 "Blade Structural Testing," as amended or succeeded.

15. Signal Interference: The SSM-WET or STM-WET shall not interfere with communication systems, such as, but not limited to, radio, telephone, television, satellite or emergency services communication systems.

16. Decommissioning:

- a. The SSM-WET or STM-WET owner/applicant shall complete Decommissioning within 12 months after the end of the WETs useful life. The term "end of useful life" is defined as zero electricity generation for a period of 12 consecutive months from a particular WET.
- b. All Decommissioning expenses are the responsibility of the Owner/Applicant.
- c. The Planning Commission may grant an extension of the Decommissioning period based upon request of the Owner/Applicant. Such extension period shall not exceed one calendar year.
- d. If the SSM-WET or STM-WET Owner/Applicant fails to complete the act of Decommissioning within the period described in this Section, the

SSM-WET or STM-WET shall thereafter be deemed a public nuisance and subject to abatement as provided by law.

- e. For STM-WETs, following removal of all items noted in (e) above, the site shall be graded and stabilized to prevent soil erosion in a manner consistent with the post-WET use of the property.

17. Public Noise Complaints:

- a. Should an aggrieved person allege that the SSM-WET or STM-WET is not in compliance with the noise requirements of this Section, the administrative enforcement procedure shall be as follows:
 - i. The complainant shall notify the City of Walker Zoning Administrator in writing regarding the noise level.
 - ii. The Zoning Administrator shall coordinate with the Police Department to test the Decibel level for compliance with the standards of this Section.
 - iii. If the test results are unsatisfactory, the complainant may request a noise level test by a certified acoustic technician. The complainant will be required to submit a cash deposit in an amount sufficient to pay for the noise level test.
 - iv. If the noise level test indicates that the noise level complies with the standards of this Section, then the City will use the deposit to pay for the test.
 - v. If the noise level test indicates that the WET is in violation of this Section, then the owner/applicant shall reimburse the City for the noise level test while taking immediate action to bring the WET into compliance with this Section. The City may require the WET to be shut down until compliance can be achieved.
 - vi. Under circumstances as noted in (v) above, the City shall refund the cash deposit to the complainant.

F. SPECIAL EXCEPTION USES.

Medium Wind Energy Turbines (M-WETs) shall be considered a special exception use within the AA - Agricultural; ORP – Office, Research & Parking; C-1 through C-4 Commercial; ML – Light Industrial, MH – Heavy Industrial and MP – Industrial Park zoning districts.

Large Wind Energy Turbines (L-WETs) shall be considered a special exception use only within the Wind Energy Overlay District.

1. M-WETs and L-WETs must receive a building permit prior to construction, installation, relocation or modification. The Owner/Applicant or Operator must apply for and receive the building permit.
2. All M-WETs and L-WETs shall be subject to the following minimum requirements:
 - a. "Upwind Turbines" shall be required unless otherwise approved by the Planning Commission, based on technical specifications and site-specific information.
 - b. Visual Appearance:
 - i. M-WETs and L-WETs shall be mounted on a tubular Tower.
 - ii. M-WETs and L-WETs, including accessory buildings and related structures, shall be a non-reflective, non-obtrusive color, such as white, gray or black.
 - iii. The appearance of the WET and all accessory structures shall be maintained throughout the life of the unit.
 - iv. Exterior lighting of a Tower, Rotor blades and Nacelle shall only be allowed in order to meet FAA mandated requirements.
 - v. Exterior lighting of accessory buildings or entrance points shall be permitted, provided that such exterior lighting fixtures shall be full cutoff "shoebox" fixtures. These fixtures shall not be mounted on poles or other structures that exceed a height of 20 feet, as measured from the grade at the base of the fixture.
 - vi. M-WETs and L-WETs shall not contain commercial signage, banners, flags or advertising logos, except for the identification of the turbine manufacturer and unit specifications for regulatory purposes.
3. Ground Clearance:
 - a. M-WET: The lowest extension of any Rotor blade or other exposed moving component of an M-WET shall be at least 15 feet above the ground, as measured from the highest point of grade within 50 feet of the base of the Tower. In addition, the lowest extension of any Rotor blade or other exposed moving component of an M-WET shall be at least 15 feet above any outdoor areas intended for human use that are located below the WET. Examples include balconies, roof gardens, etc.

- b. L-WET: The lowest extension of any Rotor blade or other exposed moving component of an L-WET shall be at least 50 feet above the ground, as measured from the highest point of grade within 150 feet of the base of the Tower.
4. Shadow Flicker: The Owner/Applicant(s) or Operator(s) shall conduct an analysis of potential Shadow Flicker onto any Occupied Building with direct line-of-sight to the M-WET or L-WET. The analysis shall identify the locations of Shadow Flicker that may be caused by the WET and the expected durations of the Flicker at these locations from sun-rise to sun-set over the course of a year. The analysis shall identify situations where Shadow Flicker may affect the occupants of the buildings for more than 30 hours per year, and describe measures that shall be taken to eliminate or mitigate the problems. Shadow Flicker on a building shall not exceed 30 hours per year.
5. Noise Control:
 - a. Where an adjacent parcel contains a residential use, the noise produced by an M-WET or L-WET may not exceed the lowest ambient sound level that exists between the hours of 9:00 PM and 9:00 AM along any adjacent property line used for residential purposes.
 - b. Where no adjacent parcel contains a residential use, the noise produced by an M-WET or L-WET may not exceed the lowest ambient sound level that exists between the hours of 9:00 PM and 9:00 AM on the parcel, plus 5 Decibels dB(A).
6. Vibration: An M-WET or L-WET shall not produce vibrations that are perceptible to humans beyond any property line upon which a WET is located.
7. Wire Supports: Guy wires or similar apparatus shall not be allowed as part of an M-WET or L-WET installation.
8. Electrical System: All electrical controls, control wiring, grounding wires, power lines, and all other electrical system components of the M-WET or L-WET shall be placed underground within the boundary of each parcel at a depth designed to accommodate the existing land use to the maximum extent practicable. Wires necessary to connect the wind generator to the Tower wiring are exempt from this requirement.
9. Quantity of WETs:

- a. No more than one M-WET shall be installed for every two and one-half (2.5) acres of land included in the subject parcel.
- b. The number of L-WETs shall be determined based on WET setbacks and separation distances as required in this Section.

10. Total Height:

- a. The Total Height of an M-WET shall not exceed 150 feet.
- b. The Total Height of an L-WET shall not exceed 400 feet.

11. M-WET Setbacks & Separation:

- a. **Occupied Building Setback:** An M-WET shall be setback at least 20 feet from all Occupied Buildings on the subject parcel, as measured from the base of the Tower.
- b. **Property Line Setbacks:** With the exception of the locations of public roads (see below) and parcels with Occupied Buildings (see above), all internal property line setbacks shall be equal to the Total Height of the M-WET, as measured from the base of the Tower. This setback may be reduced by the Planning Commission as part of a special exception use permit if the applicant provides a registered engineer's certification that the WET is designed to collapse, fall, curl, or bend within a distance or zone shorter than the Total Height of the WET.
- c. **Public Road Setbacks:** Each M-WET shall be set back from the nearest public road a distance equal to the Total Height of the M-WET, as measured from the nearest boundary of the road right-of-way to the base of the Tower.
- d. **Communication and Electrical Lines:** Each M-WET shall be set back from the nearest above-ground public electric power line or telephone line a distance equal to the Total Height of the M-WET, as measured from the base of the Tower to from the existing power line or telephone line.
- e. **Tower Separation:** M-WET separation shall be based on industry standards and the manufacturer's recommendations.

12. L-WET Setbacks & Separation:

- a. **Occupied Building Setback:** Each L-WET shall be set back from the nearest Occupied Building located on the same parcel as the L-WET a

minimum of two times its Total Height, or 1,000 feet, whichever is greater, as measured from the base of the Tower.

- b. **Property Line Setbacks:** With the exception of the locations of public roads (see below) and parcels with Occupied Buildings (see above), all internal property line setbacks shall be a minimum of one and one-half (1.5) times the Total Height of the L-WET, as measured from the base of the Tower. This setback may be reduced by the Planning Commission as part of a special exception use permit if the applicant provides a registered engineer's certification that the L-WET is designed to collapse, fall, curl, or bend within a distance or zone shorter than the Total Height of the WET.
 - c. **Wind Energy Overlay District Setbacks:** There shall be a setback distance equal to two times the Total Height of the L-WET, as measured from the base of the Tower, to any border of the Wind Energy Overlay District.
 - d. **Public Road Setbacks:** Each L-WET shall be set back from the nearest public road a minimum distance of 400 feet or one and one-half (1.5) times the Total Height of the L-WET, whichever is greater, as measured from the nearest boundary of the road right-of-way to the base of the Tower.
 - e. **Communication and Electrical Lines:** Each L-WET shall be set back from the nearest above-ground public electric power line or telephone line a distance no less than 400 feet or one and one-half (1.5) times its Total Height, whichever is greater, as measured from the base of the Tower to from the existing power line or telephone line.
 - f. **Tower Separation:** L-WET Tower separation shall be based on industry standards and manufacturer's recommendations.
13. **Access Driveway:** All L-WETs shall be accessible from an access road in order to offer an adequate means by which public safety vehicles may readily access the site in the event of an emergency. All access roads shall be constructed to standards approved by the City Engineer, Police Chief and Fire Chief.
14. **Signal Interference:** An M-WET or L-WET shall not interfere with communication systems, such as, but not limited to, radio, telephone, television, satellite or emergency services communication systems.

15. Special Exception Use Permit Required: M-WET and L-WET projects require a special exception use permit prior to the commencement of any on-site construction. Special exception use permit applications for M-WET(s) and L-WET(s) shall follow the administrative procedures prescribed in Article IX of this Chapter.

As part of the application for a special exception use permit, the Owner(s)/Applicant(s) of proposed M-WET and L-WET projects shall provide the following to the City:

- a. A narrative explaining the proposed methods that will be used to perform maintenance on the WET(s) in compliance with the manufacturer's recommendations and requirements.
- b. A copy of the lease, or recorded document, with the landowner(s) if the Owner/Applicant does not own the land for the proposed M-WET or L-WET.
- c. A statement from the landowner(s) of a leased site that he/she will abide by all applicable terms and conditions of the special exception use permit, if approved.
- d. In the case of a Condominium Development, a copy of the Condominium Development's Master Deed and Bylaws addressing the legal arrangement for the M-WET or L-WET.
- e. The proposed number, representative types and Total Height of each M-WET or L-WET to be constructed; including their manufacturer and model, product specifications including maximum noise output (measured in Decibels), total rated capacity, Rotor Diameter, and a description of ancillary facilities.
- f. Documentation verifying the developer/manufacturer's confirming specifications for M-WET or L-WET Tower separation as proposed on the site plan.
- g. Documented compliance with the noise, vibration and Shadow Flicker requirements set forth in this Section.
- h. Engineering data concerning construction of the M-WET or L-WET and its base or foundation, including soil boring information.

- i. A certified, registered engineer's certification that certifies the M-WET or L-WET meets or exceeds the manufacturer's construction and installation standards.
- j. The anticipated construction schedule.
- k. A description of the routes to be used by construction and delivery vehicles and of any road improvements that will be necessary to accommodate construction vehicles, equipment or other deliveries.
- l. An agreement or bond which guarantees the repair of damage to public roads and other areas caused by construction of the L-WET
- m. A copy of the WET maintenance and operation plan, including anticipated regular and scheduled maintenance. Additionally, a description of the procedures that will be used for lowering or removing the M-WET or L-WET to conduct maintenance, if applicable.
- n. Documented compliance with applicable local, state and national regulations including, but not limited to, all applicable safety, construction, environmental, electrical, and communications standards.
- o. Documented compliance with Federal Aviation Administration (FAA) requirements, the Michigan Airport Zoning Act, the Michigan Tall Structures Act, and any applicable airport overlay zone regulations.
- p. Proof of comprehensive liability insurance in an amount to be approved by the Planning Commission.
- q. A statement indicating if hazardous materials will be used and stored on the site.
- r. Evidence that the utility company has been informed of the customer's intent to install an interconnected, customer-owned generator and that such connection has been approved. Off-grid systems shall be exempt from this requirement.

- s. A written description of the anticipated life of each M-WET or L-WET; the estimated cost of Decommissioning; the method of ensuring that funds will be available for Decommissioning and site restoration; and removal and restoration procedures and schedules that will be employed if the M-WET(s) or L-WET(s) become inoperative or non-functional.

- t. A Decommissioning plan that will be carried out at the end of the M-WET's or L-WET's useful life, which shall be submitted as a **Participating Landowner Agreement**, regarding equipment removal upon termination of the lease.
 - i. As part of the Participating Landowner Agreement, an independent and certified professional engineer shall estimate the total cost of Decommissioning ("Decommissioning Costs") with no regard to salvage value of the equipment, and the cost of Decommissioning net salvage value of the equipment.
 - ii. When determining this amount, the City may also require an annual escalator or increase based on the Federal Consumer Price Index (or equivalent or its successor). Said estimates shall be submitted to the City after the first year of operation and every fifth year thereafter.
 - iii. M-WET and L-WET Owner(s) shall post and maintain Decommissioning Funds in an amount equal to one hundred percent (100%) of Decommissioning Costs. The Decommissioning Funds shall be posted and maintained with a bonding company or Federal or state chartered lending institution chosen by the Owner(s) and participating landowner(s) posting the financial security. The bonding company or lending institution shall be authorized to conduct such business as approved by City.
 - iv. Decommissioning Funds shall be in the form of a performance bond made out to the City.

- v. A condition of the bond shall be notification by the bond company to the City when the bond is about to expire or be terminated.
 - vi. Failure to keep the bond in effect while an M-WET or L-WET is in place will be a violation of the special exception use permit. If a lapse in the bond occurs, the City may take action, up to and including requiring the cessation of operations of the WET until the bond is reposted.
 - vii. The Owner(s)/Applicant(s) shall be responsible to record, at its sole expense, a copy of the approved Participating Landowner Agreement with the Kent County Register of Deeds and supply a copy, after recording, to the City.
-
- u. A study assessing any potential impacts on the natural environment, including, but not limited to, assessing the potential impact on endangered species, bats, birds and/or other wildlife, wetlands and fragile ecosystems. The study shall conform to state and federal wildlife agency recommendations based on local conditions.
 - v. Other relevant information as may be requested by the City to ensure compliance with the requirements of this Section.

16. Site Plan Review Required: M-WETs and L-WETs are subject to site plan review by the Planning Commission consistent with the following:

- a. M-WET and L-WET projects are exempt from the site plan review standards found in Article X of this Chapter.
- b. Owner/Applicants of proposed M-WET and L-WET projects shall provide the following to the City:
 - i. A completed and signed application for site plan review by the Planning Commission plus any applicable fees and/or escrow deposit approved by the City Commission;
 - ii. A scaled site plan, sealed by a professional engineer, including:

- a. Contact information for the Owner(s)/Applicant(s) and Operator(s) of the M-WET or L-WET as well as contact information for all property owners on which the M-WET or L-WET is located.
- b. A site location map with identification and location of the properties on which the proposed M-WET or L-WET will be located.
- c. The location and dimensions of all proposed WET(s) and all accessory structures/equipment, including security fencing, exterior lighting and power grid connectivity equipment, whether buried or above ground.
- d. The location of all on-site and adjacent property lines, rights-of-way, public easements and overhead utility lines.
- e. The location and dimension of all setbacks as required in this Section.
- f. All property dimensions, zoning districts, existing buildings on the subject property and on adjacent properties, sidewalks, non-motorized pathways, large trees and streets.
- g. Existing and proposed on-site grading / topography at two-foot contour intervals.
- h. Soil erosion and stormwater drainage plans per Chapter 34 of the City Code.
- i. Plan view and cross sectional details of all proposed access drives.

17. Safety Requirements:

- a. If the M-WET or L-WET is connected to a public utility system for Net Metering purposes, it shall meet the requirements for interconnection and operation as set forth in the public utility's current service regulations that meet federal, state and industry standards applicable to wind power generation facilities. Any such connection shall be

inspected and approved by the appropriate utility company prior to operation.

- b. The M-WET or L-WET shall be equipped with an automatic braking, governing or feathering system in order to prevent uncontrolled rotation, over-speeding or excessive pressure on the WET.
- c. Security measures shall be in place to prevent unauthorized trespass and access. Each M-WET or L-WET shall not be climbable up to 15 feet above ground surfaces. All access doors to M-WETs or L-WETs and accessory electrical equipment shall be locked and/or fenced as appropriate.
- d. All spent lubricants, cooling fluids, and any other materials shall be properly and safely removed in a timely manner.
- e. Each M-WET or L-WET shall have one sign, not to exceed 2 square feet in area, posted at the base of the tower and on the security fence if applicable. The sign shall contain at least the following:
 1. A warning of high voltage
 2. Names of Manufacturer and owner/operator(s)
 3. Emergency contact numbers (list more than one number).
- f. The structural integrity of the WET shall conform to the design standards of the International Electrical Commission; specifically IEC 61400-1 "Wind Turbine Safety and Design," IEC 61400-2 "Small Wind Turbine Safety," IEC 61400-22 "Wind Turbine Certification," and IEC 61400-23 "Blade Structural Testing," as amended or succeeded.

18. Decommissioning:

- a. The M-WET or L-WET owner/applicant shall complete Decommissioning within 12 months after the end of the WETs useful life. The term "end of useful life" is defined as zero electricity generation for a period of 12 consecutive months from a particular WET.
- b. Decommissioning shall include the removal and disposal of each M-WET or L-WET, accessory buildings and structures, electrical components, and all foundations to a minimum depth of 60 inches.
- c. All access drives to the M-WET or L-WET shall be removed, cleared, and graded by the Owner/Applicant, unless the property owner(s) requests, in writing, a desire to maintain the access drives. All access

drives shall remain private and the City shall have no duty to undertake any maintenance or repair of such drives.

- d. The WET site and any disturbed earth shall be stabilized, graded, and cleared of any debris by the Owner/Applicant of the M-WET or L-WET or its assigns. If the site is not to be used for agricultural practices following removal, the site shall be seeded to prevent soil erosion.
- e. All Decommissioning expenses are the responsibility of the Owner/Applicant.
- f. The Planning Commission may grant an extension of the Decommissioning period based upon a reasonable and explanatory request by the Owner. Such extension period shall not exceed one calendar year.
- g. The performance bond agent shall release the Decommissioning Funds noted in Subsection 16 (t) when the Owner/Applicant has demonstrated in writing, and the City concurs in writing, that Decommissioning has been satisfactorily completed.
- h. If the M-WET or L-WET Owner/Applicant fails to complete the act of Decommissioning within the period described in this Section, then, consistent with the Participating Landowners' Agreement, the City may proceed as follows:
 - i. The City of Walker may proceed to collect against the performance bond and request a release of the Decommissioning Funds.
 - ii. The Commission shall designate a contractor to complete the Decommissioning.
 - iii. All decommissioning expenses shall be charged to the performance bond of the Owner/Applicant, or its successors or assigns or such other means available at law or equity.
 - iv. All outstanding Decommissioning expenses shall become a lien against the premises.
 - v. Nothing herein shall limit the right of the City to pursue all means of enforcement otherwise available at law for a violation of this Section including, without limitation, seeking injunctive relief.

19. Certification & Compliance:

- a. The City shall be notified of a change in ownership of an M-WET or L-WET or a change in ownership of the property on which the M-WET or L-WET is located within 60 days of such a transaction.
- b. The City reserves the right to inspect any M-WET or L-WET, in order to ensure compliance with the Section. Any cost associated with the inspections shall be paid by the Owner/Applicant of the WET.
- c. A sound pressure level analysis shall be conducted from a reasonable number of sampled locations at the perimeter and in the interior of the property containing any M-WETs or L-WETs to demonstrate compliance with the requirements of this Section. Proof of compliance with the noise standards is required within 90 days of the date the M-WET or L-WET becomes operational. Sound shall be measured by a third-party, qualified professional, with the associated fees being paid by the Owner/Applicant.
- d. The M-WET or L-WET Owner/Applicant or Operator(s) shall provide the City with a copy of the yearly WET maintenance inspection.

20. Public Noise & Shadow Flicker Complaints:

- a. Noise: Should an aggrieved person allege that the M-WET or L-WET is not in compliance with the noise requirements of this Section, the administrative enforcement procedure shall be as follows:
 - i. The complainant shall notify the City Zoning Administrator in writing regarding the noise level.
 - ii. The Zoning Administrator shall coordinate with the Police Department to test the Decibel level for compliance with the standards of this Section.
 - iii. If the test results are unsatisfactory, the complainant may request a noise level test by a certified acoustic technician. The complainant will be required to submit a cash deposit in an amount sufficient to pay for the noise level test.
 - iv. If the noise level test indicates that the noise level complies with the standards of this Section, then the City will use the deposit to pay for the test.
 - v. If the noise level test indicates that the WET is in violation of this Section, then the owner/applicant shall reimburse the City for the noise level test while taking immediate action to bring the WET into compliance with this Section. The City may require the WET to be shut down until compliance can be achieved.

- vi. Under circumstances as noted in (v) above, the City shall refund the cash deposit to the complainant.
- b. Shadow Flicker: Should an aggrieved person allege that the M-WET or L-WET is not in compliance with the Shadow Flicker requirements of this Section, the administrative enforcement procedure shall be as follows:
- i. The complainant shall notify the City Zoning Administrator in writing regarding the Shadow Flicker level.
 - ii. The Zoning Administrator shall examine the Shadow Flicker complaint on the site.
 - iii. If the Zoning Administrator finds justifiable cause, a Shadow Flicker level test by a certified technician may be authorized by the City. The complainant will be required to submit a cash deposit in an amount sufficient to pay for the Shadow Flicker level test.
 - iv. If the Shadow Flicker level test indicates that the Shadow Flicker level complies with the standards of this Section, then the City will use the deposit to pay for the test.
 - v. If the Shadow Flicker level test indicates that the WET is in violation of this Section, then the Owner/Applicant shall reimburse the City for the Shadow Flicker level test while taking immediate action to bring the WET into compliance with this Section. The City may require the WET to be shut down until compliance can be achieved.
 - vi. Under circumstances as noted in (v) above, the City shall refund the cash deposit to the complainant.

Section 2. Severability. The various parts, sections, and clauses of this Ordinance are declared to be severable. If any part, sentence, paragraph, section, or clause is determined invalid by a court of competent jurisdiction, the remainder of the Ordinance shall not be thereby affected.

Section 3. Effective Date. This Ordinance will become effective upon the expiration of seven days after publication of a notice of ordinance adoption in a newspaper of general circulation within the City of Walker.

First reading: _____

Second reading: _____

Effective date: _____

Robert J. VerHeulen, Mayor

Sarah Bydalek, City Clerk

03637 (502) 445059