GREEN OAK CHARTER TOWNSHIP
ORDINANCE NUMBER 01-2026

AN ORDINANCE TO AMEND CHAPTER 38, ZONING, ARTICLE IV, District Regulations 38-203: High Resource Demand Facilities **THEREOF.**

GREEN OAK CHARTER TOWNSHIP ORDAINS:

Section 1. Amendment of Chapter 38

A. Purpose and Intent

The purpose of this ordinance is to establish a regulatory framework for siting, design, operation, and decommissioning of High Resource Demand Facilities, which include data centers and data processing centers, in order to balance local economic impacts with protection of public health, safety, welfare, natural resources, and neighborhood character. Standards are intended to:

1. Direct High Resource Demand Facilities to locations with existing and adequate infrastructure, redevelopment and infill of existing sites, and minimal land-use conflicts;
2. Avoid and mitigate nuisance impacts (noise, vibration, light/glare, air pollution and emissions);
3. Ensure efficient consumption and use of electricity and water, prioritizing renewable energy and conservation;
4. Promote context-appropriate architecture and robust screening;
5. Ensure compatibility with adjacent land uses and the Township's Master Plan; and
6. Ensure responsible decommissioning and site restoration.

B. Applicability

1. This section applies to High Resources Demand Facilities, Data Center and Data Processing Center uses, including Large-Scale, Small-Scale, and Accessory as defined herein.
2. A complete Special Approval Use Permit application and Site Plan application is required per Section 38-44 and 38-71.
3. Approval is contingent upon the applicant demonstrating conformance to the requirements of this ordinance and other provisions of the Zoning Ordinance and all other applicable Township Ordinances.
4. Where silent within this provision, other applicable provisions apply (e.g., lighting, landscaping, stormwater, and performance standards).

C. Definitions

1. High Resource Demand Facility (HRDF): A principal nonresidential facility, campus, or group of buildings under common ownership or control that is characterized by (i) continuous or near-continuous operation, and (ii) significant mechanical, electrical, or cooling infrastructure, and that meets the applicability criteria in subsections (A) and (B) below.

A facility shall be considered an HRDF only when both of the following are met:

A. Operational Characteristics. The facility includes one or more of the following operational characteristics that are integral to the primary use:
    1. Central plant or large-scale mechanical cooling and/or ventilation systems serving process loads or IT/electronic equipment;

2. On-site emergency generation with an aggregate nameplate capacity exceeding 2,000 kW or 2 MW, and/or on-site fuel storage exceeding 10,000 gallons;
3. Dedicated electrical transformation/switchgear yard, substation, or similarly intensive electrical infrastructure primarily serving the facility;
4. 24-hour operations and/or operational necessity requiring uninterrupted environmental control (temperature/humidity) or high-reliability power systems.

B. Resource/Infrastructure Thresholds. The facility exceeds one or more of the following thresholds, as demonstrated by applicant-prepared estimates and utility/service provider documentation, including any phased expansion approved or constructed within five (5) years:
1. Water demand: average daily water consumption > 100,000 gallons/day;
2. Sanitary sewer: average daily sanitary discharge > 50,000 gallons/day;
3. Electric demand: maximum contracted demand or designed peak demand > 10 MW (or equivalent documented kW);
4. Hazardous materials / regulated wastes: storage, use, or generation requiring reporting under [EPCRA Tier II and/or applicable state hazardous materials reporting] and/or generation of hazardous waste at a level regulated under state/federal hazardous waste generator requirements, as documented on a materials inventory submitted with the application.

Exclusions. HRDF does not include general warehousing/distribution, general manufacturing, or office uses unless the Zoning Administrator determines, based on operational characteristics and supporting documentation, that the facility is substantially similar in operational profile to HRDF-type facilities (e.g., high-reliability power demand and continuous environmental control serving electronic/process loads) and meets subsections (A) and (B).

Aggregation. Multiple buildings, modules, or phases located on the same site or on contiguous parcels under common ownership or control shall be aggregated for purposes of determining HRDF status and whether thresholds are exceeded.

Relationship to Data Centers. A Data Center or Data Processing Center that meets the HRDF definition shall be considered an HRDF and shall comply with all applicable HRDF supplemental standards.

2. Data Center: A facility used for the centralized storage, management, processing, and transmission of digital information, typically containing computer servers, data storage systems, telecommunications equipment, power distribution systems, cooling and ventilation systems, uninterruptible power supplies, backup generators, and associated support infrastructure. The term includes colocation centers, cloud-computing facilities, hyperscale computing facilities, and similar high-intensity information technology operations. The term does not include small server rooms, IT closets, or similar equipment rooms that are clearly accessory and subordinate to another lawful principal use.
3. Data Processing Center: A building or portion of a building used primarily for the manipulation, analysis, computation, or transformation of digital information through computer hardware or specialized equipment. A Data Processing Center may include servers or digital processing equipment but is typically of smaller scale or lower intensity than a Data Center and may involve office or administrative functions associated with data manipulation. The term does not include general business offices or accessory server rooms subordinate to a principal use.

4. Large-Scale Data Center and Data Processing Center: A center equal or greater than 25,000 sq ft gross floor area or located on a site greater than 10 acres.
5. Small-Scale Data Center and Data Processing Center: A center less than 25,000 sq ft, often serving local or regional networks.
6. Accessory Data Center and Data Processing Center: A center that is clearly incidental and subordinate to a principal use (e.g., hospital, university, large employer) and less than 10,000 sq ft.
7. Battery Energy Storage System (BESS). One or more electrochemical energy storage containers, inverters, switchgear, and associated equipment, which may be co-located with a High Resource Demand Facility to provide resiliency or load management.
8. On-site Substation/Switchyard. Electric utility facilities (e.g., transformers, breakers) necessary to serve a data center.
9. Water Consumption. The portion of Water Usage that is permanently removed from immediate availability for reuse within the same watershed as a result of High Resource Demand Facility operations. Water Consumption includes, but is not limited to, water lost through evaporation, drift, blowdown discharged to a different watershed, incorporation into products or waste streams, or other processes that prevent return of the water to the local hydrologic system in a usable form.
10. Water Usage. The total volume of water withdrawn, diverted, or supplied to a High Resource Demand Facility from any source, including public water systems, private wells, surface water, reclaimed water, or other sources, over a specified period of time. Water Usage includes all water delivered to the facility for cooling, humidification, fire suppression testing, domestic use, equipment maintenance, or other operational purposes, regardless of whether such water is later returned to the same watershed, reused on-site, or discharged as wastewater.

D. Districts Permitted

1. High Resource Demand Facility: Special Approval Use in High Resource Demand Facility Overlay District only
2. Large-Scale Data Centers and Data Processing Centers: Special Approval Use in High Resource Demand Facility Overlay District only
3. Small-Scale Data Centers and Data Processing Centers: Special Approval Use in High Resource Demand Facility Overlay District only
4. Accessory Data Centers and Data Processing Centers: Special Approval Use accessory to an approved principal use in the GI – General Industrial, LI – Limited industrial, and RO – Research Office districts only. Prohibited elsewhere.

E. Dimensional Standards

1. Minimum Lot Area:
    a) High Resource Demand Facility: 10 acres
    b) Large-Scale: 10 acres
    c) Small-Scale and Accessory: 2 acres
2. Maximum Building Height, including all mechanical equipment and heating and cooling towers: 45 feet
3. Maximum Lot Coverage, including all mechanical equipment: 60%
4. Minimum Setbacks:
    a) High Resource Demand Facility: 200 feet from all property lines and private or public right-of-way
    b) Large-Scale: 200 feet from all property lines and private or public right-of-way

c) Small-Scale and Accessory: 75 feet from all property lines and private or public right-of-way

5. Greenbelt:
   a) A minimum 50-foot landscaped greenbelt shall be provided along all property lines.
6. Siting:
   a) A High Resource Demand Facility, including but not limited to a Large Scale Data Center, shall not be located on any parcel that is within 500 feet of any residential zoned or used property.

F. Site and Design Standards

1. Architecture & Façade Articulation
   a) Massing and Scale
      1. Building massing, height, bulk, scale, and proportion shall maintain consistency with the existing character of the adjacent buildings.
      2. Building design should employ coordinated massing to achieve overall unity, appropriate scale, and visual interest.
   b) Architectural design and building materials.
      1. Transparency requirements. Transparent elements may include windows, glazed doors, clerestory windows, or architectural glazing.
         a. Ground floor transparency.
            1. A minimum of 20 percent of the length of each ground-floor street-facing façade shall include transparent elements.
            2. Minimum Window Spacing. No uninterrupted blank wall segment exceeding 50 feet in length shall be permitted along a street-facing façade.
            3. Height of Transparency. Required transparent elements shall be located between 3 feet and 15 feet above finished grade.
         b. Upper-Level Transparency
            1. Upper floors visible from a public or private right-of-way shall include architectural articulation and transparency equivalent to at least 10 percent of the façade length.
            2. Upper-level transparency may be achieved through Windows or glazed panels; Spandrel glass or fritted glazing; Architectural recesses, false window systems; or similar design features that simulate transparency while maintaining security.
      2. Façade variation. Wall designs must provide a minimum of three of the following elements, in addition to transparency requirements, occurring at intervals no greater than 25 feet horizontally and 10 feet vertically:
         a. Expression of structural system and infill panels through change in plane not less than three inches.
         b. System of horizontal and vertical scaling elements, such as belt course, string courses, cornice, pilasters.
         c. System of horizontal and vertical reveals not less than one inch in width/depth.
         d. Variations in material module, pattern, and/or color.
         e. System of integrated architectural ornamentation.
         f. Green screen or planter walls.
         g. Translucent, fritted, patterned, or colored glazing.

3. Architectural style shall not be restricted. Rather, evaluation of the appearance of a project shall be based upon quality of its design and compatibility with surroundings.
4. Buildings within the same development should be designed to provide a unified and easily identifiable image. Methods to achieve this include using similar architectural styles and materials, complementary roof forms, signs, and colors.
5. Minimize monotony of expansive exterior walls by incorporating the following elements: staggering of vertical walls; recessing openings; providing upper-level roof overhangs; using deep score lines at construction joints; contrasting compatible building materials; use of variety and rhythm of window and door openings; use of horizontal and vertical architectural elements, use of horizontal bands of compatible colors; and providing changes in roof shape or roofline.
6. Facades shall provide visual interest from both vehicular and pedestrian viewpoints.
7. Entrances to individual buildings shall be readily identifiable to visitors through the use of recesses or pop-outs, roof elements, columns, or other architectural elements.

c) Material standards.

1. Durable building materials, simple configurations, and solid craftsmanship are required. At least 75% of walls visible from public or private rights-of-way, exclusive of wall areas devoted to meeting transparency requirements, shall be constructed of brick, glass, metal (beams, lintels, trim elements, and ornamentation only), wood lap, stucco, split-faced block, or stone. Vinyl or aluminum siding shall only be used for accents. Exterior Insulation Finishing Systems (E.I.F.S.) or similar material is not permitted as a primary building material.
2. Materials shall be selected for suitability to the type of buildings and the architectural design in which they are used.
3. Material selection shall be consistent with architectural style in terms of color, shades, and texture; however, monotony shall be avoided.
4. Materials shall be consistent with adjoining buildings.
5. Buildings shall have the same materials, or those that are architecturally compatible, for construction of all building walls and other exterior building components wholly or partly visible from public or private rights-of-wayand public parking lots.
6. In any design in which the structural frame is exposed to view, the structural materials shall be compatible within themselves and harmonious with their surroundings.
7. Transitional features.
    a. Transitional features are architectural elements, site features, or alterations to building massing that are used to provide a transition between higher-intensity uses and residential areas. These features assist in mitigating potential conflicts between those uses. Transitional features are intended to be used in combination with landscape buffers or large setbacks.
    b. Intensity. A continuum of use intensity, where moderate-intensity uses are sited between high-intensity uses and low-intensity uses, shall be developed for multibuilding developments. An example would be an office use between commercial and residential uses.
    c. Height and mass. Building height and mass in the form of building step-backs, recess lines or other techniques shall be graduated so that structures with higher-intensity uses are comparable in scale with adjacent structures of lower-intensity uses.
    d. Architectural features. Similarly sized and patterned architectural features, such as windows, doors, arcades, pilasters, cornices, wall offsets, building

materials, and other building articulations included on the lower-intensity use shall be incorporated in the transitional features.

2. Mechanical, Loading, and Rooftop Equipment
    a) Mechanical equipment shall be fully enclosed unless where mechanically unfeasible based on manufacturers' specifications.
    b) If located outside of a building, all mechanical equipment (HVAC, generators, cooling towers, transformers) shall be fully screened by architecturally compatible walls/panels.
    c) Rooftop equipment shall be screened to full height from public or private rights-of-way.
    d) Service/loading areas shall be oriented away from residential districts where feasible and screened per Section 38-177.
3. Lighting
    a) Security and area lighting shall comply with Section 38-364: full cut-off fixtures, down-directed, and shielded to prevent glare and light trespass beyond property lines.
    b) Maximum maintained illuminance at the property line shall not exceed 0.5 foot-candles adjacent to residential and 1.0 foot-candle elsewhere.
    c) Color temperature shall not exceed 3,500 Kelvin.
4. Landscaping & Buffers
    a) Provide required greenbelts and landscape screening per Section 38-177.
    b) Parking lots shall meet interior landscaping ratios; heat-island mitigation via shade trees is required.
5. Stormwater and Wastewater
    a) Stormwater.
        1. On-site detention and water-quality treatment are required per the Livingston County Drain Commission. Designs shall address potential thermal impacts from large roof/pavement areas and condenser discharge.
    b) Withdrawals/Discharge.
        1. Used water may not be discharged into any Waters of the State as defined by Michigan's Natural Resources and Environmental Protection Act (NREPA).
        2. Any water withdrawal or discharge shall comply with applicable state and county permits.
6. Traffic and Construction Management
    a) A Construction Logistics and Traffic Management Plan is required identifying haul routes, delivery windows, worker parking, and dust/mud control.
    b) Construction hours shall be limited to 7:00 a.m.–7:00 p.m. Monday–Saturday unless otherwise approved.

G. Performance Standards

1. Noise and Vibration
    a) Noise Limit. Routine operations (including cooling equipment and generators) shall not exceed 50 dBA Leq of continuous noise and 60 dBA Leq of impulse noise at the property line. Nighttime (10 p.m.–7 a.m.) limits shall not exceed 40 dBA Leq of continuous noise and 30 dBA of impulse noise. Noise limits shall be measured at all frequencies from sub-sonic to hyper sonic.
    b) Generator Testing. Routine testing shall occur between 8:00 a.m.–6:00 p.m. weekdays. Noise limits for generator testing and use of back-up generators during power outages shall not exceed 60 dBA Leq of continuous noise and 100 dBA Leq of impulse noise at the property line.

c) Measurement Protocol. Compliance shall be demonstrated via pre- and post-occupancy noise studies by a qualified acoustical engineer. The study shall include all proposed development on a lot or site plan and shall be measured at five (5) feet above grade along the property lines. The noise study shall address the following circumstances:
    1. Expected maximum noise output with all cooling and any other noise-generating equipment operating simultaneously at full operational load.
    2. The use of back-up generators during power outages.
    3. The routine testing of generators.

d) Vibration. Operations shall not cause perceptible vibration at the property line per ANSI/ISO criteria.

2. Air Quality and Emissions
    a) All stationary engines, cooling towers, and emission sources shall comply with the federal Clean Air Act and EGLE rules. Required Air Use Permits to Install (PTI) must be obtained and kept current.
    b) Generators. Generators shall meet EPA Tier 4 Final standards. Dispersion modeling may be required where within 500 feet of residential, schools, parks, or hospitals.
    c) Cooling Towers. Cooling towers shall include drift eliminators and be managed to prevent particulate emissions or microbial contamination
3. Energy and Sustainability
    a) Efficiency Target. Design for Power Usage Effectiveness (PUE) of 1.3 or lower, or demonstrate the highest efficiency reasonably achievable given site constraints; provide documentation at Site Plan and post-occupancy.
    b) Renewable Energy. Demonstrate that greater than 25% of projected annual energy demand will be met via on-site generation, power-purchase agreements, renewable energy credits, or utility green-power programs.
    c) Heat Reuse. Provide a feasibility analysis for waste-heat recovery or district-energy interconnection.
    d) Reporting. See Section I for annual reporting requirements.
    e) Water Conservation.
        1. Cooling systems shall be designed to minimize potable water consumption, with preference for air-cooled, hybrid, or closed-loop water systems.
        2. Facilities using water-based cooling must demonstrate the use of recycled, reclaimed, or non-potable water sources to the maximum extent feasible.
    f) Security and Emergency Access
        1. Perimeter Security.
            a. Sites shall be fully enclosed with a perimeter security system, which may include fencing, walls, or equivalent barriers not less than eight (8) feet in height.
            b. Security barriers shall be designed to balance safety with community character; opaque fencing must be screened with landscaping where visible from a public or private right-of-way or residential areas.
        2. Access Control.
            a. All site entrances shall include controlled access gates, guard stations, or equivalent security technology to prevent unauthorized entry.
            b. Visitor and delivery access points must be separated from employee access points wherever feasible.
        3. Emergency Access.

a. A minimum of two (2) points of emergency vehicle access shall be provided, with clear signage and unobstructed pathways around the building.
b. Access drives shall be constructed to fire department standards, with sufficient load-bearing capacity for emergency apparatus.
c. Fire lanes shall be maintained free of obstructions at all times.

4. Cameras.
   a. Installation and maintenance of a perimeter camera surveillance system capable of monitoring all vehicular and pedestrian access points, building entrances, and outdoor mechanical/equipment areas.
   b. Cameras shall be positioned to minimize intrusion into adjoining residential properties and public or private rights-of-way, while still providing full coverage of the site.
   c. Camera systems shall be continuously operational (24 hours per day, 7 days per week) and recordings shall be retained for a minimum of 30 days.
   d. A security plan, including camera layout, monitoring procedures, and data retention policies, shall be submitted as part of site plan review.
5. Fire Protection.
   a. Sites shall be equipped with an automatic fire detection and suppression system designed to protect both building occupants and sensitive equipment.
   b. Suppression systems shall comply with National Fire Protection Association (NFPA) standards and be approved by the Fire Marshal.
6. Hazardous Materials.
   a. Any use of hazardous materials (including fuels for backup generators, batteries, and chemicals for cooling systems) shall comply with federal, state, and local storage, reporting, and disposal requirements.
   b. Applicants shall provide a Hazardous Materials Management Plan identifying on-site materials, storage methods, spill prevention measures, and emergency response procedures.
   c. Applicant shall provide a fire protection plan to be reviewed and approved by the Township Fire Marshall.
7. Emergency Response Plan. Applicants shall submit an Emergency Response Plan to the Township at the time of Site Plan review, which must include:
   a. Site layout for emergency responders.
   b. Fire suppression and alarm systems description.
   c. Backup generator location and fuel storage details.
   d. Contact information for on-site security and facility management.
   e. Operators shall provide annual training opportunities or site orientations to local fire, police, and emergency medical services.

4. Battery Energy Storage Systems (if provided)
   a) Battery Energy Storage Systems (BESS) shall be an accessory component to the principal use of the property.
   b) BESS shall comply with NFPA 855, the Michigan Building/Fire Codes, and manufacturer's specifications.

c) Setbacks. Outdoor BESS containers shall be set back a minimum of 100 feet from property lines and 300 feet from residential districts/uses, unless a greater distance is required by NFPA 855 based on technology and aggregate capacity.
d) Protection. Provide vehicle impact protection, fire-rated separation where required, gas detection, ventilation, and emergency shut-offs. Include a BESS-specific emergency response plan and data sheet package.

5. On-Site Substation/Switchyard (if provided)
   a) Locate to minimize visual and noise impacts; provide evergreen screening and security fencing consistent with utility standards.
   b) Transformers shall include integral secondary containment sized per state rules.

H. Use of Consultants and Cost Recovery

1. The Township may retain qualified consultants to review energy efficiency, water consumption and use, air quality, BESS safety, renewable energy, stormwater, noise, and related matters.
2. All reasonable costs shall be escrowed by the applicant.

I. Monitoring and Reporting

1. Commissioning Documentation: Prior to Certificate of Occupancy, submit commissioning results for mechanical/electrical systems and acoustical compliance.
2. Annual Report (by March 31):
   a) Actual annual energy consumption (MWh) and calculated PUE;
   b) Renewable energy procurement and percentage of total load;
   c) Water consumption (gallons) and cooling method;
   d) Generator testing/operating hours and emissions compliance statement with current EGLE permits;
   e) Noise level monitoring summary; and
   f) Summary of efficiency/cooling/security upgrades implemented.
3. Failure to monitor and report may be grounds to revoke any township approvals.

J. Decommissioning

1. Plan Required. As a condition of Special Approval Use and Site Plan approval, the applicant shall submit a Decommissioning and Site Restoration Plan that address:
   a) Triggers for decommissioning.
   b) Methods for removal of structures, equipment, utilities, and impervious surfaces.
   c) Recycling and disposal of equipment and hazardous materials.
   d) Final grading, soil stabilization, and revegetation.
   e) Restoration of the site to a condition compatible with surrounding uses.
2. **Triggers for Decommissioning**
   a) A center shall be considered abandoned if it ceases operations for a period of **12 consecutive months**, unless the owner provides evidence of intent to resume operations.
   b) Decommissioning must begin within **6 months of abandonment** and be completed within **12 months**.
3. **Performance Guarantee / Financial Assurance**
   a) Prior to issuance of a building permit, the applicant shall post a financial guarantee in the form of a letter of credit, bond, or escrow account acceptable to the Township
   b) The amount shall equal **125% of the estimated decommissioning cost**, as determined by a qualified engineer and approved by the Township.

c) Estimates and the financial guarantee must be updated every **5 years** and adjusted for inflation.

4. **Removal Standards**
   a) All above-ground structures, including buildings, mechanical equipment, cooling towers, security fencing, and pavement not otherwise serving a reuse, shall be removed.
   b) Below-ground infrastructure, such as foundations and utilities, shall be removed to a minimum depth of **36 inches below grade** unless otherwise approved.
   c) Materials shall be recycled to the maximum extent practicable.
5. **Site Restoration**
   a) The site shall be restored with topsoil, seeded or planted with native vegetation, and stabilized to prevent erosion.
   b) The Township may approve alternate restoration plans if the site is proposed for redevelopment consistent with the Master Plan and zoning ordinance.
6. **Failure to Decommission**
   a) If the owner fails to complete decommissioning in accordance with the approved plan, the Township may draw upon the financial guarantee to complete the work and assess/lien subject parcel(s) for any cost in excess of the amount of the submitted bond
   b) Any costs exceeding the financial guarantee shall remain the responsibility of the property owner.

Section 2. **Repealer.**

This ordinance repeals any ordinances in conflict thereof.

Section 3. **Savings Clause.**

Nothing in this ordinance shall be construed to affect any suit or proceeding pending in any court, or any rights acquired, or liability incurred, or any cause or causes of action acquired or existing, under any act or ordinance hereby repealed as cited in this ordinance; nor shall any just or legal right or remedy of any character be lost, impaired, or affected by this ordinance.

Section 4. **Publication and Effective Date.**

This ordinance shall be effective on the 8th day after publication, or a later date as provided in the Michigan Zoning Enabling Act for when a petition for voter referendum on this ordinance and/or a notice of intent to submit such a petition is timely filed with the Township Clerk.

Section 6. **Adoption.**

That this ordinance was duly adopted by the Green Oak Charter Township Board at its regular meeting called and held on April 1, 2026 and was ordered given publication in the manner required by law.

GREEN OAK CHARTER TOWNSHIP

Michael H. Sedlak, Township Clerk

Adoption Date: April 1, 2026
Publication Date: April 8, 2026
Effective Date: April 16, 2026