

NEW SECTION 18-181 – HIGH RESOURCE DEMAND FACILITIES

Section 18-181 High Resource Demand Facilities

- 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 benefits with protection of public health, safety, welfare, natural resources, and neighborhood character. These 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 emissions).
 3. Ensure efficient use of water and electricity, prioritizing renewable energy and conservation.
 4. Promote context appropriate architectural and robust screening.
 5. Ensure responsible decommissioning and site restoration.
- B. **Applicability.**
1. Section 18-181 applies to High Resource Demand Facilities, Data Center and Data Processing uses, including Large-Scale, Small-Scale, and Accessory as defined herein.
 2. Complete Special Land Use and Site Plan applications are required in accordance with Articles 6 and 7 herein.
 3. Approval is contingent upon the applicant demonstrating conformance to the requirements of this Section of the ordinance and other applicable standards of the Zoning Ordinance.
 4. Where conflicts exist between this section and other provisions, this section governs. Where silent, other applicable provisions apply (e.g., lighting, landscaping, stormwater management, 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, 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:
 - i. Central plant or large-scale mechanical cooling and/or ventilation systems service process loads or IT/electronic equipment;
 - ii. 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;
 - iii. Dedicated electrical transformation/switchgear yard, substation, or similarly intensive electrical infrastructure primarily serving the facility;
 - iv. 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 approved or constructed within five (5) years):
 - i. Water demand: average daily water demand > 100,000 gallons/day;
 - ii. Sanitary sewer: average daily sanitary discharge > 50,000 gallons/day;
 - iii. Electric demand: maximum contracted demand or designed peak demand > 10MW (or equivalent documented kW);
 - iv. Hazardous material s/ regulated wastes: storage, use, or generation requiring reporting under EPCRA Tier II and/or applicable state hazardous materials reporting] nd/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, colling and ventilation systems, uninterruptible power supplies, backup generators, and associated support infrastructure. The term includes colocation centers, cloud-computing facility, 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 square feet 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 square feet gross floor area 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 square feet gross floor area.
7. **Battery Energy Storage System (BESS):** one or more electrochemical energy storage containers, inverters, switchgear, and associated equipment, which may be collocated 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 High Resource Demand Facility.

D. **Districts Permitted.**

1. **High Resource Demand Facility:** Special land use in the Industrial zoning district only. Prohibited elsewhere.
2. **Large-Scale Data Centers and Data Processing Centers:** Special land use in the Industrial zoning district only. Prohibited elsewhere.

3. **Small-Scale Data Centers and Data Processing Centers:** Special land use in the Industrial zoning district only. Prohibited elsewhere.
4. **Accessory Data Centers and Data Processing Centers:** Special land use accessory to an approved principal use in the Industrial, Commercial and Mixed-Use zoning districts.

E. Dimensional Standards.

1. Minimum Lot Area:
 - i. High Resource Demand Facility: 20 acres
 - ii. Large-scale: 20 acres
 - iii. Small-scale and Accessory: 4 acres
- b. Maximum Building Height: 45 feet; 3 stories
- c. Maximum Lot Coverage: 60% (impervious surface)
- d. Minimum Setbacks:
 - i. High Resource Demand Facility: 400 feet from all property lines
 - ii. Large-scale: minimum 400 feet from all property lines.
 - iii. Small-scale and accessory: minimum of 100 feet from all property lines.
 - iv. Greenbelt: A minimum 50-foot landscaped greenbelt shall be provided along all property lines. The greenbelt shall include an eight (8)-foot tall berm in accordance with Section 18-262 I.5. with Evergreen trees planted not more than 30 feet on center.
 - v. Siting: A High Resource Demand Facility, including, but not limited to, Large-Scale Data Centers and Data Processing Centers, 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 and Façade Articulation.
 - a. **Massing and Scale.**
 - i. Building mass, height, bulk, scale, and proportion shall maintain consistency with the existing character of the adjacent buildings.
 - ii. Building design should employ coordinated massing to produce overall unity, scale, and interest.
 - iii. Rooflines and pitches shall be proportionate to nearby structures so as to provide transition or mitigation of significant changes to scale.

b. Architectural Design and Building Materials.

- i. **Façade Variation.** Wall designs must provide 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 materials module, pattern, and/or color.
 - e. System of integrated architectural ornamentation.
 - f. Green screen or planter walls.
 - g. Translucent, fritted, patterned, or colored glazing.
 - h. Architectural style shall not be restricted. Rather, evaluation of the appearance of a project shall be based upon compatibility and the quality of its design and relationship to surroundings.
 - i. Buildings within the same development shall 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.
 - j. Minimize monotony of expansive exterior walls by incorporating the following elements: staggering 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 elements; use of horizontal bands of compatible colors; and providing changes in roof shape or roofline.
 - k. Facades shall provide visual interest from both vehicular and pedestrian viewpoints.
 - l. 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.

- i. Durable building materials, simple configurations, and solid craftsmanship are required. At least 75% of walls visible from public streets, 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.
- ii. Materials shall be selected for suitability to the type of buildings and the architectural design in which they are used.
- iii. Material selection shall be consistent with architectural style in terms of color, shades, and texture; however, monotony shall be avoided.
- iv. Materials shall be consistent with adjoining buildings.
- v. 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 ways and public parking lots.
- vi. If any design in which the structural frame is exposed to view, the structural materials shall be compatible within themselves and harmonious with their surroundings.
- vii. 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 low- or moderate-density residential areas. These features assist in mitigating potential conflicts between these uses. Transitional features are intended to be used in combination with landscape buffers or large setbacks.
 - b. 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. 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. 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 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 must be screened to full height from public viewpoints.
 - d. Service/loading areas shall be oriented away from residential districts where feasible and screened in accordance with Section 18-248.B.2.
3. Lighting. Security and area lighting shall comply with Section 18-265 – full cut-off fixtures, downward-directed, and shielded to prevent glare and light trespass beyond property lines.
4. Landscaping and Buffers. All landscaping and buffers shall comply with Section 18-262.
5. Stormwater and Wastewater.
 - a. Stormwater. On-site detention and water-quality treatment are required per the Monroe County Drain Commissioner (MCDC). Designs shall address potential thermal impacts from large roof/pavement areas and condenser discharge.
 - b. Withdrawals/Discharge. Any large-quantity 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 through Saturday unless otherwise approved.

G. Performance Standards:

1. Noise and Vibration.

- a. Noise limit. Routine operations (including cooling equipment) shall not exceed 55 dBA at the property line.
- b. Routine generator testing shall occur only between 8:00a.m. and 6:00 p.m. on weekdays. Testing shall comply with the noise limits.
- c. If facility is completed before permanent power is obtained, generators must meet noise limit outlined in subsection a. above.
- d. Measure Protocol. Compliance shall be demonstrated via pre- and post-occupancy sound studies by a qualified acoustic engineer; apply penalties for prominent discrete tones (+5 dB) and impulsive noise per ANSI S12 standards.
- e. Vibration. Operations shall not cause perceptible vibration at the property line per ASI/ISO criteria.

2. Air Quality and Emissions.

- a. All stationary engines, cooling towers, and emission sources shall comply with the Federal Clear Air Act and Great Lakes, and Energy (EGLE) rules. Required Air Use Permits to Install (PTI) must be obtained and kept current.
- b. New generators shall meet EPA Tier 4 Final standards. Dispersion modeling may be required where within 500 feet of schools, parks, or hospitals.
- c. Cooling towners shall include drift eliminators and be managed to prevent particulate emissions or microbial contamination.

3. Energy and Sustainability.

Infrastructure Impact Statement. Applicants shall submit an Infrastructure Impact Statement at the time of site plan review, which must identify:

- a. Utility Capacity Impact Statement from DTE/ITC confirming service adequacy.
- b. Anticipated electric power demand (MW).
- c. Anticipated water usage for cooling and other operations (gallons per day).
- d. Waste heat recovery, reuse, or discharge methods.
- e. Planned on-site backup generation capacity (MW) and associated fuel type(s).

4. **Energy Efficiency.**

- a. Data Centers must be designed to achieve a Power Usage Effectiveness (PUE) of 1.3 or lower or provide documentation demonstrating the highest level of efficiency reasonably achievable based on site-specific constraints.
- b. Facilities shall incorporate best practices for energy conservation, including but not limited to high-efficiency HVAC systems, waste heat reuse, variable-speed drives, and hold/cold aisle containment.
- c. Applicant shall provide an operations report detailing anticipated power demand and redundancy systems.
- d. Applicant shall provide a heat recovery or reuse feasibility analysis (waste heat for district energy).

5. Renewable Energy Integration.

- a. Applicants are encouraged to incorporate on-site renewable energy generation (e.g., solar, wind, geothermal) or to procure renewable energy from off-site sources.
- b. At least 25% of projected annual energy demand shall be demonstrated to be met through renewable energy sources, whether on-site or through power purchase agreements, renewable energy credits, or utility green-power programs.

6. Water Conservation.

- a. Cooling systems shall be designed to minimize potable water use, with preference for closed-loop water systems.
- b. Facilities using water-based cooling must demonstrate the use of recycled, reclaimed, or non-potable water sources to the maximum extent possible.

7. Green Building Practices.

- a. New data center structures shall be designed to achieve LEED Silver certification or an equivalent third-party sustainability certification or provide documentation of equivalent performance standards.
- b. The Planning Commission may approve alternative documentation demonstrating substantially similar environmental performance.

8. Air Quality.

- a. All generators, cooling systems, and other emission sources shall comply with Federal Clean Air Act requirements and the Michigan Department of Environment, EGLE air quality rules.

- b. Facilities shall obtain and maintain any required air use permit to install (PTI) or other approvals from EGLE for stationary engines, cooling towers, or fuel storage.
- c. Generator emissions.
 - i. Generators shall meet or exceed current EPA Tier 4 Final emissions standards.
 - ii. Dispersion modeling may be required if a facility is within 500 feet of a residential district, school, park, or hospital.
- d. Cooling towers shall include drift eliminators and be managed to prevent particulate emissions or microbial contamination.
- e. Routine generator testing shall occur only between 8:00a.m. and 6:00 p.m. on weekdays.
- f. Applicants shall submit an annual statement to the Township confirming compliance with EGLE permits and reporting actual operating/testing hours of backup generators.

H. **Security and Emergency Access.** Data centers shall be designed and operated to protect the facility, surrounding community, and public safety resources.

1. **Perimeter Security.**

- a. Data centers shall be fully enclosed with a perimeter security system, which shall include an eight-foot berm with evergreen plantings not more than 30 feet on center or such other systems approved by the Planning Commission.
- b. Security barriers shall be designed to balance safety with community character; opaque fencing must be screened with landscaping where visible from public roads or residential areas.

2. **Controlled Access.**

- 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 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 development standards, with sufficient load-bearing capacity for emergency apparatus.
- c. Fire lanes shall be maintained free of obstruction at all times.

4. Fire Protection and Suppression.

- a. Data centers 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 the duly adopted Township Fire Code and shall be approved by the Fire Chief.

5. Hazardous Materials Management.

- 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. Applicant shall provide a Hazardous Materials Management Plan identifying on-site materials, storage methods, spill prevention measures, and emergency response procedures.
- c. Water cooling pit reservoirs shall be constructed to contain 2.5 times the needed volume of fluid needed with triple alternating layers of compacted clay and geosynthetic clay lines to prevent contaminated cooling water from leaching back into the local watershed. Such cooling reservoirs shall be enclosed to prevent particulate matter from being released into the atmosphere. Used cooling water shall be disposed of at an appropriate licensed Haz-mat disposal facility.
- d. Applicant shall provide fire protection plan.

6. Emergency Response Coordination.

- a. Applicant shall submit an Emergency Response Plan to the Township at the time of site plan review, which must include:
 - i. Site layout for emergency responders.
 - ii. Fire suppression and alarm systems description.
 - iii. Backup generator location and fuel storage details.
 - iv. Contact information for on-site security and facility management.
- b. Operators shall provide annual training opportunities or site orientations to local fire, police, and emergency medical services.

7. 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 Codes, duly adopted Township Fire Code and manufacturer's specifications.
- c. Outdoor BESS containers shall be setback a minimum of 100 feet from property lines and 300 feet from residential districts/uses, unless a greater distance is required by NFPA 885 based on technology and aggregate capacity.
- d. 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.

8. 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.

I. Use of Consultants and Cost Recovery.

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

J. Monitoring and Reporting.

- 1. Prior to Certificate of Occupancy, commissioning results for mechanical, electrical systems and acoustical compliance shall be submitted to the Township.
- 2. Owners and operators shall provide an annual sustainability report (by March 31 each year) to the Township, including:
 - a. Actual annual energy consumption (MWh) and calculated PUE.
 - b. Renewable energy procurement and percentage of total load.
 - c. Water usage (gallons) and cooling method.
 - d. Water discharge (gallons).
 - e. Generator testing/operating hours and emissions compliance statement with current EGLE permits.

- f. Sound Level monitoring summary.
 - g. Summary of any energy efficiency, cooling system upgrades, and security upgrades implemented
 - 3. Failure to monitor and report may be grounds to revoke any Township approvals.

- K. **Decommissioning.** As a condition of site plan and special use approval, the applicant shall submit Decommissioning and Site Restorage/Reuse Plan that addresses:
 - 1. **Triggers for Decommissioning.**
 - a. A data 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 which is satisfactory to the Planning Commission.
 - b. Decommissioning must begin within 6 months of abandonment and be completed within 12 months.
 - c. Decommissioning may not be required, if the property owner can provide documentation which is satisfactory to the Planning Commission, that the facility can be repurposed for another use as outlined in the reuse plan and shall be completed three (3) years from the date of abandonment.
 - 2. **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 must be updated every 5 years and adjusted for inflation.
 - 3. **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.

4. **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.

5. **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.

b. Any costs exceeding the financial guarantee shall remain the responsibility of the property owner.

MODIFICATION TO OTHER ORDINANCE SECTIONS

Section 18-68, District Use Table

- Allow high resource demand facilities, small-scale and large-scale data centers as a special land use in the Industrial zoning district, prohibited in all other districts.
- Allow accessory data centers as an accessory use to an approved permitted use in the Industrial, Commercial and Mixed-Use districts.
- Remove data centers and computing centers as permitted uses in the Commercial and Mixed-Use zoning districts.