Howell Township

Data Center and Cryptocurrency Mining Facilities Working Model Ordinance

2026

presented by

The Howell Township Resident Research Advisory Committee

THE RESIDENT RESEARCH ADVISORY COMMITTEE

The Resident Research Advisory Committee is a resident based advisory group established by the Township Board to gather, analyze, and present information relevant to ordinances and regulations including but not limited to the following uses: cryptocurrency mining, data processing facilities, battery energy storage systems, etc. to Howell Township.

Its purpose is to:

• Help protect public interest by identifying potential impacts on water, air, energy, land use, noise, emergency services, taxation, finances, community character and more; and by recommending for review appropriate related regulatory safeguards and ordinances.

• Conduct research regarding the impacts of cryptocurrency mining, data processing facilities, battery energy storage systems, etc. and share the findings with the Howell Township Board/Planning Commission; the Committee may further share it's recommendations based on these research-findings in meetings available to the public and open to public comment to assist the Township in their decision making that is consistent with the master plan and zoning ordinance, as well as the public health, safety, and general welfare.

• The committee operates independently of developers and utilities, collaborates closely with township officials, and serves as an extension of resources to gather information with citizen-resident perspective.

<u>Committee Members:</u>

Dan Bonello - Contributor

Kristin Dennison - Contributor

Greg Lehr - Contributor

Angela Barbash - Contributor

<u>Advisory Members:</u>

Brent Kilpela - Member

Jodi Fulton - Member

Tim Boal – Member

OVERVIEW

The following document is a working model ordinance containing suggested language, including terminology and definitions commonly used in regulations for Data Centers and Cryptocurrency Mining Facilities.

This model ordinance serves as a summary document of the various components that the Howell Township Resident Research Advisory Committee believes are necessary for the Howell Township Board and Planning Commission to consider when evaluating the impact on the community. It should be the goal of Howell Township to clearly articulate their expectations and requirements to any developers proposing these uses within Howell Township, as well as to clearly address the concerns and interests of Township residents.

The Township protects and promotes the safety, health, and morals of the community by following and enforcing proper planning procedures, ensuring that development within the borders has been thoroughly considered well in advance of the submittal of plans for development. When considering where to permit and how to regulate more intense uses (such as the ones discussed in this model ordinance), the Township should conduct assessments to evaluate the social, environmental, and economic impacts that these types of uses could have on the community, and to determine where in the Township these types of uses can safely function. This type of assessment should be conducted by the Township during the planning stage, when the Township is considering adding language to the ordinances. Early assessment of the potential social, environmental, and economic impacts of these more intense uses during the planning stage minimizes the potential for conflicts when a developer submits a land development proposal.

As Data Center and Cryptocurrency Mining Facility standards continue to evolve, the Township will be challenged to keep up with them, let alone prepare in advance of any changes. This model ordinance is presented based on technology and knowledge available at this time. As always, municipal staff and officials and members of the Howell Planning Commission are encouraged to reach out to the Howell Township Resident Research Advisory Committee as established by the Howell Township Board if questions arise regarding any of the content found within this model ordinance.

SECTION 100. DEFINITIONS

ANCILLARY DATA CENTER- are data centers that are ancillary to another primary use and a) occupy no more than ten percent of the building's footprint, b) are used to serve the enterprise functions of the on-site business and are not used to lease data storage and processing services to third parties, c) are not housed in a separate, stand-alone structure on the parcel, and d) uses no more than 5 MW of power, low power usage effectiveness (PUE) and incorporates cooling systems that do not utilize water.

BATTERY ENERGY STORAGE SYSTEM (BESS)- A storage system that collects energy from renewable and non-renewable sources in rechargeable batteries for later use.

CLOSED LOOP COOLING SYSTEM- A cooling system that constantly reuses and recycles an initial load of water within its operation, significantly reducing the draw on external water sources and minimizing wastewater discharge.

CRYPTOCURRENCY MINING FACILITY- A facility of any size that is dedicated to operating data processing equipment for cryptocurrency mining and the process by which cryptocurrency transactions are verified and added to digital ledgers. This includes data mining facilities.

CRYPTOCURRENCY MINING FACILITY – Pre-engineered, prefabricated, temporary and standardized buildings, including shipping containers, designed to house computer servers and network equipment.

COMMUNITY NOISE EQUIVALENT LEVEL (CNEI) - The 24-hour A-weighted average sound level from midnight to midnight, obtained after the addition of 5 dB to sound levels occurring in the evening from 7 PM to 10 PM and after the addition of 10 dB to sound levels occurring in the night between 10 PM and 7 AM.

DATA CENTER – a physical facility housing the people, hardware and software organized to provide information processing services. This includes data processing facilities, server farms and artificial intelligence / "AI" data centers.

DATA CENTER ACCESSORY USE – Ancillary uses or structures secondary and incidental to a Data Center use, including but not limited to- administrative, logistical, fiber optic, storage, and security buildings or structures; sources of electrical power such as generators used to provide temporary power when the main source of power is interrupted; electrical substations; utility

lines, domestic and non-contact cooling water and wastewater treatment facilities; water holding facilities; pump stations; water towers; environmental controls (air conditioning or cooling towers; fire suppression, and related equipment), and security features, provided such Data Center and Cryptocurrency Mining Facilities. Accessory Uses/structures are located on the same tract or assemblage of adjacent parcels developed as a unified development with a Data Center and Cryptocurrency Mining Facilities. The use shall not include energy generation systems used or intended to be used to supply power to the Data Centers or Cryptocurrency Mining Facilities during normal operations.

DATA CENTER CAMPUS- See Data Center, also a Data Center Campus shall consist of more than one Data Center building and may be any combination of sizes of Data Center buildings, not to exceed a total of 750,000 square feet (for all buildings and structures on the site).

DATA CENTER ELECTRICAL SUBSTATION – A facility used for the transformation or transmission and/or switching of voltages to distribution voltages which switches circuits and distributes usable/consumable electric power, specifically for Data Center and Cryptocurrency Mining Facilities users on the same or adjacent site, or on a site immediately across a road right-of-way.

DATA CENTER PRINCIPAL BUILDING – A building that contains the office and/or data storage functions of a Data Center and Cryptocurrency Mining Facilities.

DATA PROCESSING- The collection and manipulation of digital data to analyze and produce meaningful information.

DECIBEL, dB- A decibel (dB) is a common measure of sound intensity that is one-tenth of a bel (B) on the logarithmic intensity scale.

DECIBEL-dBA- Decibels measured in dBA are weighted to the frequencies in the middle of the range of human hearing, as a representation of the perceived overall loudness.

DECIBEL-dBC- Decibels measured in dBC are weighted to the low-frequency, sounds which travel and penetrate farther than treble sound, often a component of tonal noise.

ELECTRICAL SUBSTATION- An electric system facility that converts higher voltages to lower voltages within or separate from a data center to generate sufficient power at maximum efficiency; can operate independently for dedicated sites once directly connected to the transmission line.

FOOTCANDLE – Enough light to saturate a one-foot square with one lumen of light.

GENERATOR- A machine that converts mechanical energy into electricity.

HIGH LOAD USE- A term that refers to an industry or business with higher-than-average consumption; typically, of electricity and/or water.

MAJOR DATA CENTER- See Data Center, a Major Data Center shall also be between 100,000 square feet and 499,999 square feet (for all buildings and structures on the site).

MEDIUM DATA CENTER- See Data Center, a Medium Data Center shall also be between 10,000 square feet and 99,999 square feet (for all buildings and structures on the site).

MEGAWATT- A unit of power output equal to 1,000,000 watts or 1,000 kilowatts, used to measure power consumption.

MINOR DATA CENTER- See Data Center, a Minor Data Center shall also be under 10,000 square feet (for all buildings and structures on the site). If a minor data center requires an electrical substation and/or water treatment plant, it shall be classified as a Medium Data Center.

NOISE DISTURBANCE- Any noise which a) endangers or injures the safety or health of humans or animals; or b) annoys or disturbs a reasonable person of normal sensitivities; or c) endangers or injures persons or real property.

SENSITIVE RECEPTORS – Public and private schools, preschools, day care centers, in-home licensed daycares, health facilities such as hospitals, long term care facilities, retirement and nursing homes, community centers, places of worship, playgrounds, parks (excluding trails), campgrounds, prisons, dormitories, and any residence where such residence is not located on a parcel with an existing industrial, commercial, or unpermitted use as determined by the zoning officer

SOUND PRESSURE LEVEL (SPL)- Means the sound pressure levels stated in dB units referenced to twenty (20) micro pascals, with a C frequency weighting and a ten (10) mS response with peak detection per ANSI Sl.4-2014.

STAND-ALONE MODULAR DATA CENTER/CRYPTOCURRENCY MINING FACILITY- Pre-engineered, prefabricated, temporary and standardized buildings, including shipping containers, designed to house computer servers and network equipment.

TONAL NOISE- A noise characterized by a distinct, recognizable frequency, which stands out significantly against the background broadband noise, considered a nuisance due to the human auditory system's sensitivity to pure tones, especially when they are continuous.

.

SECTION 200. ZONING AND SPECIFIC USE CRITERIA

Due to the various sizes and scope of Data Centers and Cryptocurrency Mining Facilities,

The following requirements apply to all Data Centers and Cryptocurrency Mining Facilities. If any of the following regulations are found to conflict with regulations found elsewhere in the Howell Township Zoning Ordinance, the most restrictive regulations shall be applied, unless otherwise stated-

Data Centers are divided into 4 categories based on size and energy needs-

Data Center, Minor- A physical room, building, or facility that houses infrastructure for building, running, delivering, or transmitting applications and services, or for storing and managing the data associated with those applications or services. Minor data centers shall be under 20,000 square feet and do not require a substation. A minor data center may include data centers as an accessory use if they are under 2,000 square feet.

Data Center, Medium- A physical room, building, or facility that houses infrastructure for building, running, delivering, or transmitting applications and services, or for storing and managing the data associated with those applications or services. A medium data center shall be between 20,000 square feet and 100,000 square feet.

Data Center, Major- A physical room, building, or facility that houses infrastructure for building, running, delivering, or transmitting applications and services, or for storing and managing the data associated with those applications or services. A major data center shall be between 100,000 square feet and 500,000 square feet.

Data Center, Campus- A singular development that has more than one (1) data center, or a physical room, building, or facility that houses infrastructure for building, running, delivering, or transmitting applications and services, or for storing and managing the data associated with those applications or services. A data center campus shall be a maximum of 750,000 square feet

Office Institutional (OI)- Minor data centers as an accessory use (under 2,000 square feet); Medium data centers with a Special Land Use Permit, Major data centers with a Special Land Use Permit and industrial land use.

Office Distribution (OD)- Minor data centers (permitted), Medium data centers with a SPECIAL LAND USE PERMIT, Major data centers with a Special Land Use Permit and industrial land use.

Light Industrial (M)- Minor data centers (permitted), Medium data centers (permitted), Major data centers with a Special Land Use Permit and industrial land use, Campus data centers with a Special Land Use Permit and industrial land use.

Heavy Industrial (M-2)- Minor data centers (permitted), Medium data centers (permitted), Major data centers with a Special Land Use Permit and industrial land use, Campus data centers with a Special Land Use Permit and industrial land use. Major and Campus data centers will not be permitted on parcels with any Future Land Use other than Light Industrial or Industrial

A. Building Placement and Orientation

(1) All principal and accessory structures associated with a Data Center and Cryptocurrency Mining Facilities shall be arranged, designed, and constructed to be harmonious and compatible with the site and with the surrounding properties. In general, Data Centers and Cryptocurrency Mining Facilities that visually approximate commercial office buildings are encouraged.

(1) Data Center and Cryptocurrency Mining Facilities campuses containing more than one building are required to provide a variety in building size, massing, siting, and appearance by transitioning from smaller or lower buildings along street frontages to larger and taller structures on the interior of the site. Consideration of topography shall be given to avoid placement of larger, taller, or more massive buildings in a prominent location on the property or along a public street.

(2) Buildings shall be sited and oriented to-

Minimize visual impacts of the bulk of the building when examined on a line-of-sight basis from adjacent public streets and Sensitive Receptor areas.

Provide safe and convenient vehicular access to the site, including sufficient on-site queuing areas at security gates.

Accommodate adequate parking.

Minimize impacts on natural resources.

Incorporate appropriate stormwater management practices.

B. Maximum Height

The maximum building height for Data Centers and Cryptocurrency Mining Facilities shall be 50 feet including rooftop equipment screening.

C. Setbacks

(1) All principal buildings, accessory structures, and Data Center or Cryptocurrency Mining Facility Electric Utility Substations must be set back at least 500 feet from all property lines except for gate houses, which shall be at least 400 feet from all property lines.

(2) Parking lots for Data Centers or Cryptocurrency Mining Facility shall be set back at least 400 feet from public road rights-of-way, and 100 feet from all adjacent property lines.

.

D. Parking Requirements

A minimum of one parking space per employee on the largest shift is required, plus three additional visitor spaces. Parking must satisfy the ADA requirements.

Public parking shall be provided in the buffer zones to access the perimeter sidewalk or pathway. Public parking shall have a minimum of four spaces (one being ADA compliant) spaced a maximum of one-half of a mile apart.

E. Off Street Loading

A minimum of one loading space is required. Loading spaces/bays are only permitted to be located on one facade of the Data Center or Cryptocurrency Mining Facility Principal Building.

F. Noise/Vibration

(1) Any noise that emanates from all activities associated with any data center is limited to a maximum sound level of 50 dBa during the hours of 7am and 10pm and 40 dBa from 10pm and 7am. Such levels are measured at the property line. The maximum sound levels in this section do not apply to-

Demolition work on buildings, structures or appurtenances and /or the testing of generators or equipment consistent with the current noise ordinance.

Any situation arising from sudden and reasonably unforeseen events (beyond the control off the facility operator) that require the response of emergency vehicles or the temporary use of emergency generators.

Snow removal

Road repair

Emergency work to provide electricity, water or other public health or safety is involved.

Generator testing conducted between 10am and 4pm

(2) A noise reduction barrier or device may be required at the discretion of the zoning officer when it is inconclusive that noise level tests do not conform to acceptable noise levels.

(3) The limitations of Section 200.1.F. herein shall not apply to any Sensitive Receptor that is established adjacent to the Data Center or Cryptocurrency Mining Facility after the date of issuance of a certificate of completion or occupancy for the applicant's operation.

G. Negative Impacts

Any use or activity producing air, dust, smoke, glare, exhaust, heat, or humidity in any form shall be carried on in such a manner that it is not perceptible at or beyond the property line.

H. Safety

The equipment used in any Data Center or Cryptocurrency Mining Facility operation shall be housed in a metered, electrically grounded, and pre-engineered metal-encased structure with a fire rating designed to resist an internal electrical fire for at least 30 minutes. The containment space shall contain baffles that automatically close in the event of fire, independent of a possible electric system failure.

Any Data Center or Cryptocurrency Mining Facility use proposing battery storage (BESS) or any other device or group of devices capable of storing energy in order to supply electrical energy at a later time, whether the energy is stored for use on-site or off-site, shall demonstrate compliance with National Fire Protection Association (NFPA) Standard 855, Installation of Stationary Energy Storage Systems, or similar standards and must include fire suppression systems designed specifically for battery storage.

I. Power

Prior to approval of the certificate of completion or occupancy, the applicant shall provide written verification from the applicable service provider stating the following

(1) Adequate capacity is available on the applicable supply lines and substation to ensure that the capacity available to serve the other needs of the service area is consistent with the normal projected load growth envisioned by the provider,

(2) Utility supply equipment and related electrical infrastructure are sufficiently sized and can safely accommodate the proposed use,

(3) Any system designed for cooling and operation of the facility (electricity, water, or other means) will be adequate and will not negatively impact the surrounding region,

(4) The use will not cause electrical interference or fluctuations in line voltage on and off the operating premises, and

(5) Prior to approval of the certification of completion or occupancy, the applicant shall provide Howell Township with written verification that the electrical work has passed a third-party final inspection.

J. Lighting

(1) Horizontal Surfaces

For the lighting of predominantly horizontal surfaces, such as, but not limited to, parking areas, roadways, vehicular and pedestrian passage areas, loading docks, building entrances, sidewalks, bicycle paths, and site entrances, luminaires shall be aimed down, and shall meet Illuminating Engineering Society of North America (IESNA) full cut-off/fully shielded criteria.

(2) Non-Horizontal Surfaces

For the lighting of predominantly non-horizontal surfaces, such as, but not limited to, facades, landscaping, and signs, luminaires shall be shielded and shall be installed and aimed to not project their output into the windows of neighboring residences, adjacent uses, past the object being illuminated, skyward, or onto a public roadway.

(3) Adjacent Residential Uses

The illumination projected onto a residential use shall at no time exceed 0.1 footcandle, measured line-of-sight and from any point on the receiving residential property.

(4) Adjacent Non-Residential Uses

The illumination projected from any property onto a non-residential use shall at no time exceed 0.5 initial footcandle, measured line-of-sight from any point on the receiving property.

(5) Glare

Vegetation screens shall not be employed to serve as the primary means for controlling glare. Rather, glare control shall be achieved primarily using such means as cutoff luminaires, shields and baffles, and appropriate application of luminaire mounting height, wattage, aiming angle, and luminaire placement.

(6) LED Lights

LED light sources shall have a correlated color temperature that does not exceed 3000K.

(7) Luminaires

Luminaires shall not be mounted more than 20 feet above the finished grade of the surface being illuminated. No pole-mounted lighting on the roof shall be permitted.

(8) Lighting After Hours

Lighting for parking areas and vehicular traffic ways shall be automatically extinguished nightly within ½ hour of the close of the facility. On/off control shall be by an astronomic programmable controller with battery or capacitor power-outage reset. When after-hours site safety/security lighting is proposed, such lighting shall not exceed 25% of the number of fixtures required or permitted for illumination during regular business hours. Where there is reduced but continued onsite activity throughout the night that requires site-wide even illumination, the use of dimming

circuitry to lower illumination levels by at least 50% after 11 PM or after regular business hours, or the use of motion sensor control, shall be permitted

K. Perimeter Fencing/Security

Fences shall not exceed 10 feet in height above ground and shall be of high-quality design and maintenance free materials. No barbed wire or razor wire shall be permitted.

L. Power Lines and Data Center or Cryptocurrency Mining Facility Electric Utility Substations

(1) Data Center or Cryptocurrency Mining Facility Electric Utility Substations must include year-round opaque landscaping or a screen wall a minimum of 10 feet in height to minimize visual impact.

(2) Electric Utility Substations on the same property as the Data Center they serve must be located on the side or rear of a Data Center Principal Building so they are screened from public view and must not be located in a required front yard. On-site substations do not require a buffer or screening between the Data Center or Cryptocurrency Mining Facility Principal Building and the substation.

(3) All power transmission or other lines, wires, or conduits from a Data Center or Cryptocurrency Mining Facility to any building or other structure must be located underground at a depth that complies with current National Electrical Code standards, except for power switchyards or the area within a substation.

(4) The Data Center or Cryptocurrency Mining Facility's Electric Utility Substation shall be subject to applicable zoning district setback requirements. Setbacks shall be measured from the edge of the compound containing the substation to the property boundary of the lot it occupies.

M. Emergency Contact Information

Each Data Center or Cryptocurrency Mining Facility operation shall provide 24-hour emergency contact signage visible at the access entrance. Signs shall include the company name (if applicable), the owner/representative's name, the telephone number, and the corresponding local power company's name and telephone number.

N. Sensitive Receptors

(1) Loading docks, truck entries, and truck drive aisles shall be oriented away from abutting Sensitive Receptors.

(2) To the greatest extent feasible, loading docks, truck entries, and truck drive aisles shall be located away from nearby Sensitive Receptors. Screening as described in Section 200.1.K. shall be provided. When making feasibility decisions, Howell Township must consider existing laws

and regulations and balance public safety with the site development's potential impacts on nearby Sensitive Receptors

O. Buffer Yards and Screening

All Data Center or Cryptocurrency Mining Facility operations shall provide buffer yards and screening along all property boundary lines, except for areas of ingress and egress onto the site.

(1) Service Areas - Loading bays, refuse collection areas, and service entrances shall be screened from view from existing or planned public roads, Sensitive Receptors, and residential zoning districts. Screening may include year-round landscaping or a screen wall of an appropriate height to mitigate visual impacts as determined by a line-of-sight study submitted by the applicant.

(2) Mechanical/Electrical Equipment Screening.

a. Ground-Mounted

Ground-mounted equipment adjacent to and serving the Data Center or Cryptocurrency Mining Facility Principal Building shall be completely screened behind an opaque wall or maintenance free fence. When the equipment is located between buildings, a combination of walls and gates may be used at the openings between buildings.

When in or adjacent to an industrial use or zoning district, ground-mounted equipment screening is only required from any existing or planned public road.

Ground-mounted equipment is prohibited in any required setback.

b. Roof Top

All rooftop-mounted equipment shall be screened by a parapet wall, equipment penthouse, or visually solid screen on all four sides that is constructed of materials complementary to those used in the exterior construction of the Data Center Principal Building. This shall be accomplished by setting the penthouse or screened area back from the facade of the building such that the top of the penthouse or screen is below a 45-degree line drawn from the top of the parapet. Roof-top equipment to be screened includes, but is not limited to, the following- solar panels, cooling, ventilation, and power supply machinery.

Roof top equipment that is visible above the parapet wall shall be set back from the exterior or parapet wall a distance no less than the height of said equipment.

Roof-top equipment may exceed the applicable maximum district building height when completely screened pursuant to this ordinance.

Roof top equipment may occupy up to a maximum of 75% of the roof area when screened per this ordinance and, when combined with the height of the Data Center building, does not exceed the maximum building height requirement.

(3) Buffering

Data Center or Cryptocurrency Mining Facility sites abutting Sensitive Receptors or collector/arterial roads must include an enhanced buffer yard with required plantings located on an earthen berm with a grade no steeper than 2-1. The minimum height of the berm abutting Sensitive Receptors is eight feet, and abutting collector/arterial roads is six feet.

Where the combined footprint of the principal structure or structures is less than 100,000 square feet-

A minimum 100-foot buffer yard shall be provided along the entire length of any public street frontage of any property upon which the Data Center is located and along any property line which abuts or is within 500 feet of an existing residential property line or zone, school, daycare center, hospital, place of worship, designated park, or public open space.

A minimum 50-foot buffer yard shall be provided along any property line adjacent to a non-residential use or zone.

Where the combined footprint of the principal structure or structures is between 100,000 square feet and 250,000 square feet-

A minimum 150-foot buffer yard shall be provided along the entire length of any public street frontage of any property upon which the Data Center or Cryptocurrency Mining Facility is located and along any property line which abuts or is within 500 feet of an existing residential property line or zone, school, daycare center, hospital, place of worship, designated park, or public open space.

A minimum 50-foot buffer yard shall be provided along all other property lines.

iii. Where the combined footprint of the principal structure or structures exceeds 250,000 square feet-

a. A minimum 300-foot buffer yard shall be provided along the entire length of any public street frontage of any property upon which the Data Center or Cryptocurrency Mining Facility is located and along any property line which abuts or is within 500 feet of an existing residential property line or zone, school, daycare center, hospital, place of worship, designated park, or public open space.

b. A minimum 50-foot buffer yard shall be provided along all other property lines.

iv. Utilities should be located outside of buffer yards to the maximum extent feasible to maintain a cohesive buffer yard, protect landscaping, and preserve open space. Utilities should be co-located when feasible to minimize the number of utility crossings through the required buffer yard, particularly when such crossings cannot be avoided.

Use of existing vegetation for landscaping and screening is strongly encouraged and may be substituted for new berms and plantings if approved by Howell Township Planner.

The required number of plant units shall be calculated in accordance with other municipal screening requirements.

Buffer yards along roadways shall be measured from the street right-of-way line.

Where a lot line drainage or utility easement is required, the buffer yard shall be measured from the inside edge of the easement.

Buffer yards shall not include environmental encumbrances such as but are not limited to; wetlands, wetland transition areas, riparian buffers, and flood hazard areas as may be imposed by outside agencies.

The buffer yard shall include a dense landscape buffer consisting of the following- One (1) large evergreen tree per 25 linear feet of buffer two rows deep spaced at 25 feet and staggered in a checkerboard pattern directly on the outside of the fence. The size of large evergreen trees shall be a minimum of eight (8) feet in height at the time of planting. Narrow/upright evergreen species may also be used within buffers at a ratio of 3-1. No more than 25% of the total required large evergreen species can be substituted with narrow/upright species.

One (1) canopy (shade) tree per 75 linear feet of buffer. The size of canopy (shade) trees shall be a minimum of 2 ½ inch caliper at the time of planting.

One (1) ornamental/flowering tree per 50 linear feet of buffer. The size of ornamental/flowering trees shall be a minimum of eight (8) feet in height for multi-stemmed varieties, or 2 ½ inch caliper at the time of planting for single-stemmed varieties.

Five (5) shrubs per 25 linear feet of buffer. Shrubs shall be fully branched and a minimum of three (3) feet in height at the time of planting. Shrubs shall be a combination of evergreen and deciduous species, with a minimum of 50% evergreen.

The landscape buffer shall begin at the fence line and extend 100 feet toward the right of way

50-foot buffer yards will require two rows of staggered evergreens only.

Plant material within buffer plantings shall meet the following requirements-

i. Be resistant to diesel exhaust.
ii. Not identified on the most current Michigan DNR invasive species or watch lists.
iii. Be hardy within USDA hardiness Zones 6 and 7.
iv. Shall be planted on the top and the exterior of any berm to provide effective screening.
v. Shall be arranged in groupings to allow for ease of maintenance and to provide a natural appearance.

vi. Shall provide a diversity in plant species, such that no one species accounts for more than 25% of each plant type.

vii. The plantings shall be arranged to provide a complete visual screen of the property at least 12 feet in height, measured in addition to the height of any required berm, within three (3) years.

viii. The buffer yard may be located within the required building setback lines. No impervious surface is permitted within the buffer yard aside from access drives, sidewalks, and associated improvements.

ix. All buffer yards, fences and landscaping must be completed prior to construction to reduce noise, dust and visual impact while construction operations are in progress.

P. Pedestrian Traffic

The developer shall provide a sidewalk along paved roads pursuant to Howell Twp. Sidewalk Regulation Ordinance 282 and a pathway along gravel roads pursuant to Howell Twp. Pathway Regulation Ordinance 283.

Q. Environmental and Community Impact Analysis

Prior to the commencement of the board of review, the applicant shall provide an environmental and community impact analysis. The environmental and community impact analysis shall include-

(1) A narrative description of the nature of the on-site activities and operations, including the market area served by the facility, the hours of operation of the facility, the total number of employees on each shift, the times, frequencies, and types of vehicle trips generated, the types of materials stored and the duration period of storage of materials.

(2) A site plan of the property indicating the location of proposed improvements, flood plains, wetlands, lakes river and streams and cultural and historic resources on the property and within 500 feet of the boundaries of the property.

(3) Evidence that the disposal of materials will be accomplished in a manner that complies with state and federal regulations.

(4) An evaluation of the potential impacts of the proposed use, both positive and negative, upon-

a. Emergency services and fire protection

b. Water supply,

c. Sewage disposal,

d. Solid waste disposal,

e. School facilities and school district budget, and

f. Municipal revenues and expenses.

(5) Any environmental impacts that are likely to be generated (e.g., odor, noise, smoke, dust, litter, glare, heat islands, vibration, electrical disturbance, wastewater, stormwater, solid waste, etc.) and specific measures employed to mitigate or eliminate any negative impacts. The applicant shall further furnish evidence that the impacts generated by the proposed use fall within acceptable levels, as regulated by applicable laws and ordinances.

(6) The applicant must clearly articulate water needs used to assist with equipment cooling and humidity maintenance within their operations, use, availability, recycling and/or release procedures, and local and regional impacts on water resources

R. Exterior Building Material and Colors

External building materials shall be maintenance free not consisting of horizontal aluminum or vinyl siding or wood products.

Acceptable colors are low-reflective, subtle, or earth tone which complement the surrounding area. Fluorescent and metallic colors shall be prohibited as exterior wall colors.

S. Emergency Responders

(1) The applicant shall coordinate with the Livingston County emergency management coordinator to ensure there is adequate radio coverage for emergency responders within the building based upon the existing coverage levels of the Livingston County Public Safety Radio Communications System at the exterior of the building and shall install enhancement systems as needed to meet compliance.

(2) The owner shall provide first responders with access to any part of the campus for firefighting, emergency and police actions.

(3) Before any construction of the Data Center or Cryptocurrency Mining Facility begins, the Township's fire department (or the fire department with which the Township contracts for fire service) will review the fire protection plan submitted with the application. The fire chief will determine whether the fire protection plan adequately protects the Township's residents and property and whether there is sufficient water supply to comply with the fire protection plan and to respond to fire or explosion incidents. If the fire chief determines that the plan is adequate, then the fire chief will notify the Township or his or her designee of that determination. If the fire chief determines that the plan is inadequate, then the fire chief may propose modifications to the plan, which the applicant or operator of the Data Center or Cryptocurrency Mining Facility must implement. The fire chief's decision may be appealed to the Township Board, and the Township Board will hear the appeal at an open meeting. The Township Board may affirm, reverse, or modify the fire chief's determination. The Township Board's decision is final, subject to any appellate rights available under applicable law.

(4) The applicant or operator may amend the fire protection plan from time-to-time considering changing technology or other factors. Any proposed amendment must be submitted to the fire department for review and approval.

(5) The Data Center or Cryptocurrency Mining Facility must comply with the fire protection plan as approved by the fire chief (or as approved with the fire protection plan as approved by the fire chief (or as approved by the Township Board in the event of an appeal).

(6) The Data Center or Cryptocurrency Mining Facility must contain an internal fire suppression system that shall be reviewed and tested once every twelve (12) months by a third-party contractor approved by the fire chief.

(7) Applicant must provide all Township Fire Department contractors with the appropriate equipment and training to address fires in the Data Center or Cryptocurrency Mining Facility.

T. Environmental Impact Assessment

An Environmental Impact Assessment shall be performed. The assessment shall be prepared by a professional engineer, ecologist, environmental planner, or other qualified individual. An assessment shall include a description of the proposed use, including location, relationship to other projects or proposals, with adequate data and detail for Howell Township to assess the environmental impact. The assessment shall also include a comprehensive description of the existing environment and probable future effects of the proposal. The description shall focus on the elements of the environment most likely to be affected as well as potential regional effects and ecological interrelationships. At a minimum, the assessment shall include an analysis of the items listed below regarding the impact of the proposed use and the mitigation of any such impacts. The assessment shall also include a detailed examination of public resources most likely impacted by the development plan and include the following focus areas-

(1) Air pollution impacts emissions from vehicle operations, including from truck engines during idle time. The applicant shall identify all stationery and mobile sources of fine particulate matter (PM2.5), volatile organic compounds, and nitrogen oxides at the site. The applicant shall specify best management practices for preventing and reducing the concentration of air-polluting emissions at the site. The owner or operator of the facility shall have anti-idling signs prominently posted in areas where 15 or more trucks may park or congregate.

(2) The potential for public nuisance to residents resulting from operations and truck traffic, including noise, glare, light, and visual obstacles, exists.

(3) A stormwater management plan will be required.

(4) Consistency with the municipal and county comprehensive plan. The applicant shall submit an assessment report of the impact of the proposed use on the goals of the respective plans. Where the proposed use conflicts with the comprehensive plan, the assessment report shall

identify mitigation measures that may be undertaken to offset any degradation, diminution, or depletion of public natural resources.

Analysis. A description of alternatives to the impacts.

(5) Additional considerations. The following shall also be addressed- Alternative a. A statement of any adverse impacts that cannot be avoided.

Impact minimization. Environmental protection measures, procedures, and schedules to minimize damage to critical impact areas during and after construction, including design considerations.

Mitigation steps. A listing of steps/structural controls proposed to minimize damage to the site before and after construction.

(6) Critical impact areas. In addition to the above, plans should include any area, condition, or feature that is environmentally sensitive or that, if disturbed during construction, would have an adverse impact on the environment. Critical impact areas include, but are not limited to, floodplains, riparian buffers, streams, wetlands, slopes greater than 15%, highly acid or highly erodible soils, hydric soils, hydrologic soil groups, areas of high-water table, and mature stands of native vegetation and aquifer recharge and discharge areas.

A statement of impact upon critical areas and of adverse impacts that cannot be avoided.

Environmental protection measures, procedures, and schedules to minimize damage to critical impact areas during and after construction.

U. Green Building Techniques

Data Centers shall implement low-impact development practices in site design and energy efficiency, such as, but not limited to, the following-

(1) Site Design.

a. Select sites that avoid sensitive lands such as wetlands, floodplains, and steep slopes

b. Minimize land disturbance

c. Maximize tree preservation

d. Minimize impervious surfaces

e. Minimize potential nuisance impacts (noise, glare, vibration, etc.) on adjacent properties, public roadways, and the vicinity.

f. Consider brownfield properties as priority.

(2) Energy/Resource Efficiency.

a. Orient buildings to take advantage of passive cooling and daylight opportunities

b. Utilize alternative energy sources as much as possible

c. Provide an energy storage system to monitor and regulate usage of alternative energy for usage during off-peak hours

d. Utilize reclaimed water for cooling, if available

e. Encourage systems that limit the use of finite natural resources and their disposal

f. Encourage fuel storage that limits impacts on the environment from potential spills

g. Install water-efficient landscape materials

h. Utilize LED exterior/interior lighting

i. Implement energy management best practices and carbon reduction techniques such as, but not limited to, those promoted through the U.S. Department of Energy's Better Buildings initiative and U.S. Green Building Council's LEED Certification system.

V. LEED (Leadership in Energy and Environmental Design) Certification

LEED certification is strongly encouraged, as well as the installation of roof-mounted accessory solar energy systems.

W. Woodland Disturbance

Woodland disturbance, including alteration or removal of any hedgerows, shall be minimized. No portions of tree masses, tree lines, hedgerows, or individual freestanding trees measuring six (6) inches or greater in diameter at breast height (DBH) shall be removed unless it is clearly necessary to effectuate the proposed development. In no case shall more than 50% of any existing tree masses, tree lines, hedgerows, or individual freestanding trees with six (6)-inch or greater DBH be removed. For purposes of this subsection, a woodland is defined as a tree mass or plant community in which tree species are dominant or codominant and the branches of the trees form a complete, or nearly complete, aerial canopy. Any area, grove, or stand of mature or largely mature trees (i.e., six (6)-inch or greater DBH) covering an area of .25 of an acre or more or consisting of more than 50 individual trees six (6) inches or greater DBH, shall be considered a woodland.

X. Threatened and Endangered Species

(1) The developer must comply with the State of Michigan Department of Natural Resources Endangered Species Act and any other State and Federal agency rules and conditions and provide clearance letters required thereby and shall be provided to the Howell Township Planning Board.

(2) Compliance

The applicant shall comply with all measures directed by the clearance letters to avoid, minimize, or mitigate impacts to endangered, threatened, and special concern species and their habitat.

Y. Riparian Forest Buffer Area

Data Centers subject to the requirements of this Section must satisfy the stricter of the requirements of this Section, or of 25 Pa. Code 102.14, Riparian Buffer Requirements.

(1) For purposes of this Section, a riparian buffer is an area of permanent vegetation along a waterway that is left undisturbed to allow for the natural succession of native vegetation. A riparian forest buffer is a type of riparian buffer that consists predominantly of native trees, shrubs, and forbs, providing at least 60% uniform canopy cover.

(2) Where the project site contains, is along, or is within 150 feet of a perennial or intermittent river, stream, or creek, lake, wetland, floodplain, pond, or reservoir, whether natural or artificial, the use will be subject to the requirements of this Section and shall, in accordance with the requirements of this subsection, do one of the following-

a. Protect an existing riparian forest buffer.

b. Convert an existing riparian buffer to a riparian forest buffer.

c. Establish a new riparian forest buffer.

(3) Where a riparian forest buffer exists, it shall be left intact to meet the width requirements in subsections (6) and (7). An existing riparian forest buffer need not be altered to establish individual Zones 1 and 2 under subsection (9).

(4) Riparian buffers that consist predominantly of native woody vegetation that do not satisfy the composition requirements for a riparian forest buffer in subsection (1) or the width requirements in subsections (6) and (7) shall be enhanced or widened, or both, by additional plantings in open spaces around existing native trees and shrubs to provide at least 60% uniform canopy cover for the required width and shall be composed of zones in accordance with subsection (9).

(5) On sites without native woody vegetation, a riparian forest buffer providing at least 60% uniform canopy cover shall be established to meet the width requirements in subsections (6) and (7) and be composed of zones in accordance with subsection (9).

(6) The width of the riparian forest buffer shall be a minimum of 100 feet on each side of the water body as measured from the top of the bank. The boundary of the buffer shall follow the natural streambank or shoreline.

(7) Measured within the 100-foot buffer, the following additional distances shall be added to the minimum width of the riparian forest buffer-

a.10 feet if the average slope is 10-15%,

b.20 feet if the average slope is 16-17%,

c.30 feet if the average slope is 18-20%,

d.50 feet if the average slope is 21-23%,

e.60 feet if the average slope is 24-25%, or

f.70 feet if the average slope exceeds 25%.

(8) In the case of the presence of a nontidal wetland or vernal pond wholly or partially within the riparian buffer area, an additional 25 feet shall be added to the width of the riparian forest buffer area for that portion of the buffer area along the wetland, floodplain, or pond.

(9) A new riparian forest buffer or a converted riparian forest buffer shall be composed of zones as follows- Zone 1 shall begin at the top of the streambank or normal pool elevation of a lake, pond, or reservoir and occupy a strip of land 50 feet in width, measured horizontally on a line perpendicular from the top of the streambank or normal pool elevation of a lake, pond, or reservoir. Predominant vegetation must be composed of a variety of native riparian tree species.

Zone 2 shall begin at the landward edge of Zone 1 and occupy an additional strip of land a minimum of 50 feet in width, measured horizontally on a line perpendicular from the top of the streambank or normal pool elevation of a lake, pond, or reservoir. Predominant vegetation must be composed of a variety of native riparian trees and small tree/shrub species.

(10) No earth disturbance, land development, or storing or stockpiling of materials shall occur within the riparian forest buffer area.

(11) In the management of riparian buffers, noxious weeds and invasive species shall be removed or controlled to the greatest extent possible.

(12) Existing, converted, and newly established riparian buffers, including access easements, must be protected in perpetuity through deed description, conservation easement, permit conditions, or any other mechanisms that ensure the long-term functioning and integrity of the riparian buffer.

(13) The riparian buffer shall be designated on the final subdivision and/or land development plan.

Z. Solar

(1) All building roofs shall be solar-ready, which includes designing and constructing buildings in a manner that facilitates and optimizes the installation of a rooftop solar photovoltaic (PV) system after the building has been constructed.

(2) Any portion of a building's rooftop that is not covered with solar panels or other utilities shall be constructed with light colored roofing material with a solar reflective index of not less than

78. This shall be the minimum solar reflective rating of the roof material for the life of the building.

(3) On buildings over 400,000 square feet, prior to the issuance of a certificate of occupancy, A third party electrical engineer shall ensure rooftop solar panels are installed and operated in such a manner that they will supply as much power as needed to operate the facility as is feasible.

4) All solar panels shall be confined to rooftops only and shall be concealed within the parapet wall.

AA. General Provisions

(1) Data Centers or Cryptocurrency Mining Facilities are permitted in the Township only as a special land use with special approval by the Howell Township Planning Board in accordance with the Township's Master Plan.

(2) Any property owner within 1,500 feet of the proposed data center must be notified within 30 days after the initial concept of the project and must be offered 150% of the market value of the property plus a relocation fee of the building occupants of $5,000 for residential property and $10,000 for commercial property. Fair market value is to be determined by real estate comparables by an independent property appraiser. This is not required for property that is zoned and used for agriculture.

(3) The purchaser of the adjacent property is free to construct light industrial, retail or commercial office buildings, parks or athletic fields subject to zoning ordinances or sell or donate for the use of same or retain and maintain the vacant land in a vegetated state and is not to be used for agriculture.

(4) Structures on adjacent purchased property must be demolished, moved or repurposed and the land be graded and seeded and strawed prior to construction.

(5) Landowners that opt not to sell to the developer may waive the offer and receive a one-time payment of the reduced property value paid by the developer.

(6) The Township may enforce any remedy or enforcement, including, but not limited to; the removal of the Data Center or Cryptocurrency Mining Facility pursuant to the Zoning Ordinance or as otherwise authorized by law if the Data Center or Cryptocurrency Mining Facility does not comply with this section.

(7) An applicant for special approval of a Data Center or Cryptocurrency Mining Facility must provide the following-

a) An application fee in the amount set by resolution of the Township Board.

b) A list of all parcel numbers that the Data Center or Cryptocurrency Mining Facility will encompass; documentation establishing ownership of each parcel; and any lease agreements, easements or purchase agreements for the subject parcels.

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

d) Current photographs of subjected property, including aerial photographs.

e) A site plan that includes all proposed structures and the location of all equipment, as well as setbacks, the location of property lines, signage, fences, greenbelts and screening, drain tiles, easements, floodplains, bodies of water, designated wetlands, proposed access routes, and road rights-of-way. The site plan must be drawn to scale and must indicate how the Data Center or Cryptocurrency Mining Facility will be connected to the power grid.

f) 6. A written plan for maintaining the subject property, including a plan for maintaining and addressing stormwater management, which is subject to the Township's review and approval. The Cryptocurrency Mining Facility or Data Center drain tiles must be maintained in always working condition while in operation. The applicant or operator must inspect all drain tiles at least once every three years using a robotic camera, with the first inspection occurring before the Data Center or Cryptocurrency Mining Facility is in operation. The applicant or operator must submit proof of the inspection to the Township. The owner or operator must repair any damage or failure of the drain tile within sixty (60) days after discovery and submit proof of the repair to the Township. The Township is entitled, but not required, to have a representative present at each inspection or to conduct an independent inspection.

g) A decommissioning and land reclamation plan per section AA describing the actions to be taken the following the abandonment or discontinuation of the Data Center or Cryptocurrency Mining Facility, including evidence of proposed commitments with property owners to ensure proper final reclamation, repairs to roads, and other steps necessary to fully remove the Data Center or Cryptocurrency Mining Facility and restore the subject parcels, which are subject to the Township's review and approval.

h) Financial security in the manner of an escrow account funded at $25,000.00 with a statement that those funds are to be used pursuant to this Ordinance. The escrow fee must be deposited with the Township in cash. The applicant must replenish the escrow account if it has less than $5,000.00 in it in the amount of estimated outstanding costs. Failure to replenish the escrow account will result in the Township suspending the processing or finalizing of the application.

i) A plan for resolving complaints from the public or other property owners concerning the construction and operation of the Cryptocurrency Mining Facility or Data Center, which is subject to the Township's review and approval.

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

k) A fire protection plan, which identifies the fire risks associated with the Data Center or Cryptocurrency Mining Facility; describes the fire suppression system that will be implemented; describes what measures will be used to reduce the risk of fires re-igniting (i.e., implementing a "fire watch"); identifies the water sources that will be available for the local fire department to protect adjacent properties; identifies a system for continuous monitoring, early detection sensors, and appropriate venting; and explains all other measures that will be implemented to prevent, detect, control, and suppress fires and explosions.

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

m) An attestation that the applicant will indemnify and hold the Township harmless from any costs or liability arising from the approval, installation, construction, maintenance, use, repair, or removal of the Data Center or Cryptocurrency Mining Facility, which is subject to the Township's review and approval.

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

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

(p) The applicant or operator will maintain property/casualty insurance and general commercial liability insurance in an amount of at least $5 million per occurrence. The Township shall be listed as an additional insured on the policy at all times.

(q) All required county, state, and federal permits must be obtained before the Data Center or Cryptocurrency Mining Facility begins operating. A building permit is required for construction of a Cryptocurrency Mining Facility or Data Center regardless of whether the applicant or operator is otherwise exempt under state law.

(r) If the Data Center or Cryptocurrency Mining Facility experiences a failure, fire, leakage of hazardous materials, personal injury, or other extraordinary or catastrophic event, the applicant or operator must notify the Township within 24 hours.

(s) The applicant or operator must submit a report on or before January 1 of each year that includes all of the following-

i. Current proof of insurance.

ii. Verification of financial security; and

iii. Summary of all complaints, complaint resolutions, and extraordinary events.

(t) The Township may inspect a Data Center or Cryptocurrency Mining Facility at any time by providing 24-hour advance notice to the applicant or operator.

(u) A conditional land use permit for a Data Center or Cryptocurrency Mining Facility is transferable to a new owner. The new owner must register their name and business address with the Township and must comply with this Ordinance and all approvals and conditions issued by the Township.

(v) If an applicant or operator fails to comply with this Ordinance, the Township may pursue any remedy or enforcement, including but not limited to the removal of any Data Center or Cryptocurrency Mining Facility pursuant to the Zoning Ordinance or as otherwise authorized by law. Additionally, the Township may pursue any legal or equitable action to abate a violation and recover any and all costs, including the Township's actual attorney fees and costs.

BB. Decommissioning and Environmental Remediation Plan

If a Data Center or Cryptocurrency Mining Facility is abandoned or otherwise nonoperational for a period of one year, the property owner or the operator must notify the Township and must remove the system within six (6) months after the date of abandonment. Removal requires receipt of a demolition permit from the Building Official and full restoration of the site to the satisfaction of the Zoning Administrator. The requirements of this subsection also apply to a Data Center or a Cryptocurrency Mining Facility that is never fully completed or operational if construction has been halted for a period of one (1) year.

The following conditions apply-

(1) To ensure proper decommissioning of a Data Center or Cryptocurrency Mining Facility upon abandonment, the applicant must post financial security in the form of a security bond or escrow payment in an amount equal to 125% of the total estimated cost of decommissioning, code enforcement, and reclamation, which cost estimate must be approved by the Township. The operator and the Township will review the amount of the financial security every two (2) years to ensure that the amount remains adequate. This financial security must be posted within fifteen (15) business days after approval of the special use application.

(2) The property shall be returned to its original physical state, and the zoning will revert to its original purpose.

(3) As part of the decommissioning, the soil must be tested and all contaminated soil removed and replenished with clean soil.

(4) All decommissioning activities shall be performed in full compliance with local, state, and federal regulations.

(5) The Owner shall be responsible for obtaining all necessary permits and submitting timely reports to regulatory agencies.

(6) The Owner agrees to indemnify and hold harmless the buyer or successor owner from all liabilities, claims, and costs arising from the building's decommissioning or any pre-existing environmental conditions.

(7) Prior to decommissioning, the owner shall notify the Township Planner and develop and execute a comprehensive Decommissioning and Environmental Remediation Plan (the "Plan") prior to any demolition or transfer of the property. The Plan's goal is to eliminate hazards, mitigate environmental risks, and ensure regulatory compliance.

The Plan shall include-

a. A detailed site assessment and characterization report.

b. Procedures for safely shutting down and disconnecting all utilities, including water, power, and gas, in accordance with applicable codes.

c. Protocols for the removal and proper disposal of all hazardous materials, such as asbestos, lead paint, and stored chemicals.

d. Plans for remediation of any soil or groundwater contamination, if applicable.

e. A waste management plan detailing the responsible disposal, recycling, or salvage of materials from the building.

f. A schedule for site restoration, including grading and landscaping, to prepare the site for its next use.

CC. Effective Date.

This Ordinance takes effect upon the expiration of 7 days after publication as required by MCL

125.340

Penalties and/or Fines?

Timelines?

Compel to comply?

Shut down of operations?

Condemnation?

Any promises of benefits made to the community as a condition of the approval of the data center (i.e. tax reduction, millage pay-offs, assessment removal, infrastructure improvements, funding of projects, decrease in utility bills, etc.) must be put in writing as a legal and binding document by the developer/owner and shall be held accountable.

For total transparency, full disclosure of end user company is required, no NDA's may be signed by developers, government officials or residents of the Township.

Meetings or conversations of Township official(s) with any project stakeholder(s) outside of sanctioned Township meetings must be disclosed to the Township Board and Planning Commission at the public meetings and discussions made public.