

Definitions & Data Center Zoning Requirements

Presented to the Howell Township (HT) Planning Commission (PC) & Board

by the Resident Research Committee (RRC)

What the RRC is asking the HT PC & Board for:

The following 3 items to be discussed and adjusted as needed (together as a group), and presented for future approval and addition to the HT Zoning Book of Ordinances...

1. List of Definitions
2. Data Center Zoning Requirements
3. Additional Data Center Siting Requirements to be Incorporated

1. Definitions to be Added:

Battery Energy Storage Systems (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.*

Data Processing: *The collection and manipulation of digital data to analyze and produce meaningful information.*

1. Definitions to be Added (continued):

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.*

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.*

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.*

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).*

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).*

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).*

1. Definitions to be Added (continued):

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.*

Generator: *A machine that converts one form of energy into another.*

High Load Use: *A term that refers to an industry or business with higher than average consumption; typically of electricity and/or water.*

Megawatt: *A unit of power output equal to 1,000,000 watts or 1,000 kilowatts, used to measure power consumption.*

Noise Disturbance: *Any noise which a) endangers or injures the safety of 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.*

1. Definitions to be Added (continued):

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.*

Sensitive Receptors: *Schools, preschools, daycares, health facilities such as hospitals, long-term care facilities, retirement and nursing homes, community centers, places of worship, playgrounds, parks, 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 SI.4-2014.*

Standalone 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.*

2. Data Center Zoning Requirements to be Added:

Data Center Type	Size (Sq Ft)	Zoning District	Distance from Residential*	Distance from Sensitive Receptors*	Distance from other Data Centers
Ancillary	<10% of building footprint	RT	-	-	-
Minor	<10,000	SUP- IF/I	Shall not abut	-*	-*
Medium	10,000-99,999	SUP- I	Shall not abut & >1,320 Ft* (.25 Mile)	>1,500 Ft*	500 Ft* from Major or Campus
Major	100,000-499,999	SUP- I	Shall not abut & >1,500 Ft*	>2,000 Ft*	>500 Ft* from Medium, Major or Campus
Campus	<750,000	SUP- I	Shall not abut & >2,000 Ft*	>2,640 Ft* (.5 Mile)	>.2,000 Ft* from another Campus; >500 Ft* from Medium or Major

CHART FOR USE WITH DATA CENTER OVERLAY DISTRICT IN CURRENT INDUSTRIAL ZONING

Research & Technology (RT), Industrial Flex (IF), Industrial (I), Special Use Permit (SUP)

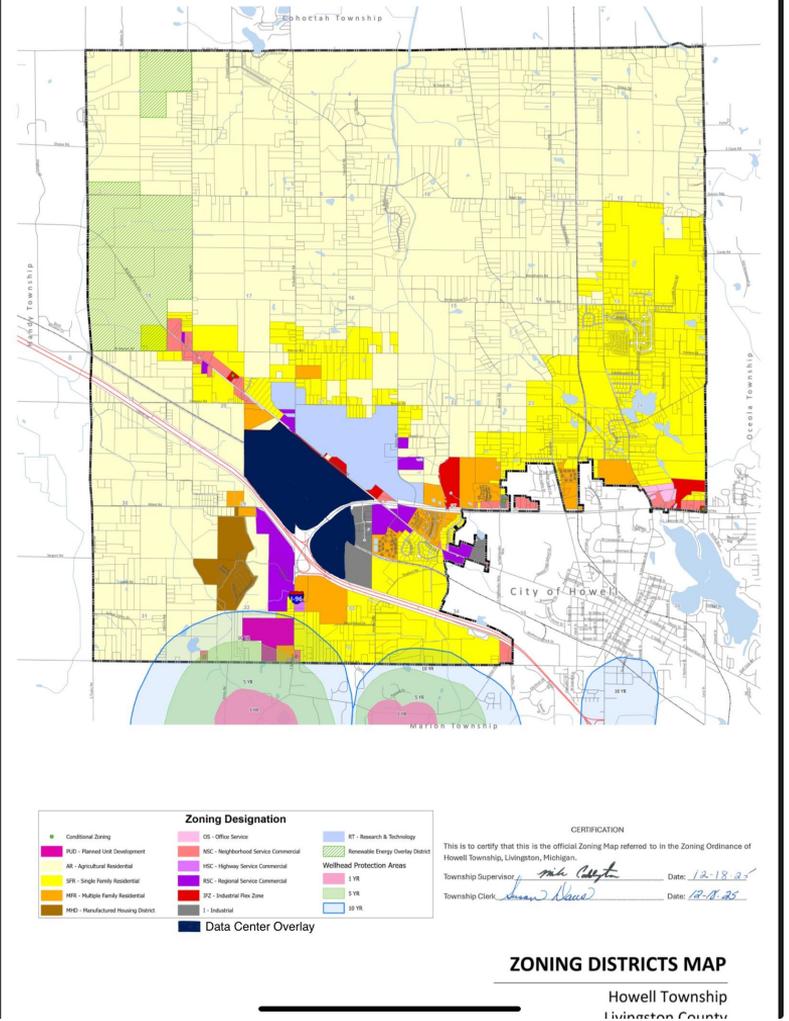
*The distances provided are based on the placement of a Data Center/Cryptocurrency/High Load Uses Overlay District being placed to coincide with HT's existing industrial zoning district; these distances will need to be increased if the use of an Overlay district is not utilized for Data Centers/Cryptocurrency/High Load Uses.

The current distance from Industrial Flex and Industrial parcels to residentially zoned parcels and sensitive receptors need to be confirmed, it is not our intent to make these restrictions impossible to meet within the township's current industrial zoning; the option for a variance may be appropriate should an existing IF/I parcel be located near an extremely low residential concentration area, a number should be set for low residential concentration, such as less than 5 residential homes.

2. Data Center Zoning Requirements to be Added (continued):

Proposed Overlay District for Data Centers and Cryptocurrency Mining Facilities

The following map illustrates the suggested overlay district, in proximity to the highway, train tracks, and existing Industrial and Industrial Flex zoning. An overlay district should still require Special Use Permitting, and consideration for proximity to residential and sensitive receptors should still be accounted for in the ordinance. To avoid compounding impacts and financial concentration risk, the ordinance should limit the total number or total number of square feet of Data Centers and Cryptocurrency Mining Facilities allowed in the township. **It is not the intention of the RCC for this overlay district to allow the entire area to be composed of data centers or other high load uses including cryptocurrency mining facilities.**



2. Data Center Zoning Requirements to be Added (continued):

Data Center, *Ancillary*:

Data Centers that are ancillary to another primary use are a Permitted Principle Use in Research & Technology (RT) if they: a) occupy no more than ten percent of the building 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) use no more than 5 MW of power, low power usage effectiveness (PUE), and incorporates cooling systems that do not utilize water.

Data Center, *Minor*:

Minor Data Centers shall be under 10,000 square feet (for all buildings and structures on the site), and shall require a Special Use Permit in either Industrial Flex (IF) or Industrial (I). If a Data Center development requires a substation, it shall be classified as a Medium Data Center. Minor Data Centers shall not abut residentially zoned land or land used/planned for a park, school, or medical care facility.

2. Data Center Zoning Requirements to be Added (continued):

Data Center, *Medium*:

Medium Data Centers shall be between 10,000 square feet and 99,999 square feet (for all buildings and structures on the site), and shall require a Special Use Permit in Industrial (I). Medium Data Centers shall not abut residentially zoned land or land used/planned for a park, school, or medical care facility. The minimum separation from any Medium Data Center property line and any residentially zoned property line shall be 1,325 feet, and the minimum separation from any sensitive receptor property line shall be at least 1,500 feet. A Medium Data Center property line shall be at least 500 feet from the property line of a Data Center Major, or Data Center Campus.

Data Center, *Major*:

A Major data center shall be between 100,000 square feet and 499,999 square feet (for all buildings and structures on the site), and shall require a Special Use Permit in Industrial (I). Major Data Centers shall not abut residentially zoned land or land used/planned for a park, school, or medical care facility. The minimum separation from any Major Data Center property line and any residentially zoned property line shall be 1,500 feet, and from any sensitive receptor property line shall be at least 2,000 feet. Any Major Data Center property line shall be at least 500 feet from any property line of a Medium Data Center, another Major Data Center, and a Data Center Campus.

2. Data Center Zoning Requirements to be Added (continued):

Data Center, *Campus*:

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 750,000 square feet total (for all buildings and structures on the site). Data Center Campuses shall require a Special Use Permit in Industrial (I). Data Center Campuses shall not abut residentially zoned land or land used/planned for a park, school, or medical care facility, and should be located adjacent to the Interstate. The minimum separation from any Data Center Campus property line and any residentially zoned property line shall be at least 2,000 feet and the minimum separation from any sensitive receptor property line shall be 2,640 feet. Any Data Center Campus property line shall be at least 2,000 feet from any property line of another Data Center Campus, and at least 500 feet from any property line of a Medium Data Center, and a Major Data Center.

3. Additional Siting Requirements to Incorporate:

- Land previously occupied/used for industrial, including brownfield site parcels, being prioritized for use first before rezoning minimally impacted land such as but not limited to residential or agricultural for future development.
- Existing parcels that meet zoning requirements shall be utilized for the development of Data Centers before expanding zoning districts.
- Only parcels that abut existing Industrial Flex (for Minor Data Centers) or Industrial (for Medium & Major Data Centers and Data Center Campuses) may be rezoned for Data Center development, no “spot zoning” shall be permitted.