Outlook

Items for 12/16/25 PC meeting packet as addendum

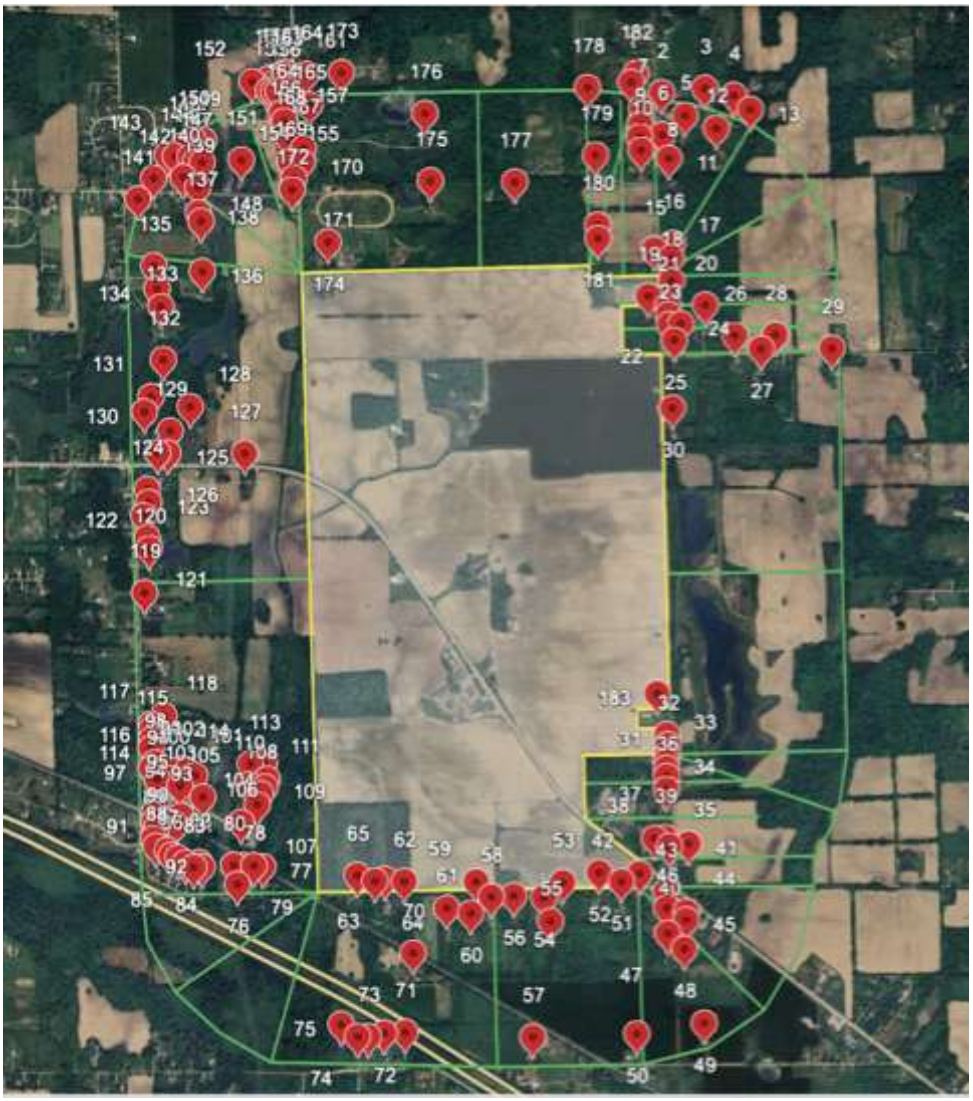
From J F [redacted]
Date Mon 12/15/2025 12:05 PM
To Howell Township Treasurer <treasurer@howelltownshipmi.org>; Tim Boal [redacted]
Cc Cory Alchin [redacted] Kristin Dennison [redacted] Dan Bonello [redacted]

4 attachments (7 MB)
12_16 PC RCC Letter.pdf; Definitions.pdf; 1-7-25 Oldham Co. KY DC Zoning.pdf; Data Cntr Text Amend DeKalb GA.pdf;

Jonathan and Tim,

Can these items please be included for the 12/16/25 planning commission meeting packet as an addendum, thank you!

Respectfully,
Jodi Fulton and Cory Alchin, Chairs
Howell Township Resident Research Committee



December 14, 2025

Howell Township Planning Commission
3525 Byron Road
Howell, MI 48855

To the Howell Township Planning Commission:

The members of the Resident Research Committee have begun compiling an exhaustive collection of research, references, and ordinances from across the state and the country.

One of the first issues we have identified as needing clarification, before any real ordinance details can be hashed out, is which zoning district "data centers" or "data processing facilities" belong under. Committee member Kristin Dennison has spoken to the Planning Commission before, about why she personally felt Industrial was a much better fit than Research & Technology for the particular data center proposal the township was considering, but in our continued research we have all come to believe that there is simply no one-size-fits-all answer to this question.

The reason lies in the history of data centers, and in the Township's own ordinances. Howell Township's Research & Technology district was created in 1983, to encompass the airport. The ordinance book mentions, in the RT Section 5.01 "Purpose", the district was intended for the "…development of land uses that directly relate to airport service…". The ordinance was last updated in 2013, though it is unclear what was changed, when "data processing" was originally included, or if any other updates had occurred between '83 and '13.

The earliest data centers emerged in the 1940's and 1950's, initially utilized by Universities for research applications and as part of the US military's Cold War defense projects—creating an atomic-bomb air defense network. This use subsequently inspired the first commercial application when IBM partnered with American Airlines to create airline ticketing reservation systems around 1960. We find this piece of history particularly interesting, given the purpose of our RT district being largely centered around airport functions, and "data processing" being specifically listed as part of "Scientific Research" uses.

This first "data centers" were a large rooms of computer servers within a larger office building. Like all technology, data centers' use and function has evolved tremendously since that time. Through the '80's, when Howell's ordinance came to be, "data centers" were these types of office-scale rooms or average-sized buildings, directly serving the enterprise functions of the primary use of the facility. In the '90's, the birth of the internet resulted in data centers beginning to expand into larger office buildings and dedicated facilities for web-hosting and e-commerce. In the early 2000's, cloud computing began to revolutionize the industry, and that is when the first "hyperscale"-size data centers began to appear (note: "hyperscale" is defined as more than 5,000 servers and 10,000 square feet—which pales in comparison to what was recently proposed in Howell: an entire campus of millions of square feet of multiple hyperscale facilities). Even as recently as 2013, when the RT ordinance was last updated, data centers were still essentially ordinary office buildings with relatively average infrastructure needs; even at "hyperscale" size, 10,000 square feet is far smaller than the average Walmart, which typically spans on average 106,000 square feet. It wasn't until 2017 when purpose-built, AI data centers began being constructed, and only as recently as 2022 when they began overtaking "regular" hyperscale centers in terms of size and power consumption.

This timeline is critical to consider, because the inclusion of "data processing" is inherently tied to the intent of the ordinance whenever the term was initially listed in the permitted uses, and how data centers looked and functioned at the time.

As mentioned in the history of data centers, they were relatively unimposing, ordinary buildings throughout most of their evolution. Where they began to diverge, is with the advent of Artificial Intelligence, and AI purpose-built facilities. Ordinary data centers house racks of CPU processors. These processors perform fundamental computing functions, and are useful for managing the many different activities you may be running on your computer simultaneously—think: listening to music while checking your email. They are also the primary processors for even more modern "hyperscale" facilities such as those used for cloud hosting and storage. These processors don't use an exceptional amount of power—although, of course, the larger the facility, the more server racks they contain, and the more power the facility as a whole requires. Typically, racks of CPU processors in these facilities only consume 5-10kW per rack.

Enter Artificial Intelligence. These purpose-built data centers are newcomers to the scene, and are why we seem to only recently be hearing about problems with data centers, when they have existed for over 70 years without much noise (literally). AI data centers house racks of GPU processors, which are significantly different from CPU processors. Where CPU's have a few powerful cores, GPUs have thousands of less-powerful ones. These processors excel at graphics for videos and gaming, by being able to perform millions of similar mathematical calculations—the same type of calculations that are required for artificial intelligence and machine learning. One analogy we have come across is that CPU is like a Swiss Army knife, and GPU is a specialized tool for a specific job, such as a chainsaw. That is not the only difference, however. GPU processors require significantly more power to run; a single rack may consume anywhere from 50 to as much as 500kW. Recall that CPU racks range from 5-10kW.

There is even more nuance to be considered with regard to the differences between the types of data centers that have been the focus of our recent attention, and other related uses such as cryptocurrency mining facilities. Crypto mining is more akin to AI data processing in terms of power consumption per square foot. A single Bitcoin transaction consumes the same amount of power that a single household would consume over approximately 40 to 50 days. Like AI, Cryptocurrency mining is most efficiently done using specialized processors. GPU processors are, once again, better suited to this task than CPU processors, but an even more specialized processor called ASIC is beginning to take precedence in crypto mining operations due to their increased efficiency. In terms of power consumption, a single CPU processor uses 35 to 125 watts. A single GPU uses around 400 watts, and a single ASIC processor uses approximately 3,000 watts—or more. While crypto mining facilities may serve similar functions to data processing, and often are found in much smaller facilities than hyperscale data centers, they may have impacts on utilities and noise that rival the AI data centers, and need to be carefully zoned accordingly. A school in Michigan has experienced this problem, and has filed a lawsuit against a cryptocurrency mining facility across the street, whose incessant noise is proving to be disruptive and harmful to their educational environment.

This enormous difference in power consumption is at the root of the fundamental change we are seeing in the impacts of data centers. AI campuses—including the one recently proposed here—consist of multiple hyperscale facilities, which collectively consume more power than entire cities. All that computing power also generates a ton of heat, which is why the new-wave AI data centers consume such alarming quantities of water for cooling systems. The noise complaints often tied to data centers and crypto mining facilities is directly related to the sound of the cooling systems. The number of diesel generators required to provide backup power also grow with the power demand. Once you understand the fundamental differences in the type of computing done at different types of data centers, you begin to understand there is a wide range of potential impacts to communities, and a wide range of land-use and zoning implications.

If you recall, the developers proposed a definition for “data processing”, and it included an exhaustive list of industrial-scale features. As Kristin mentioned at the last Planning Commission meeting, it seems clear by comparing the uses in their own definition with the uses listed in Howell’s Industrial ordinances, that a Special Use under Industrial Zoning is a more appropriate designation for a facility such as a hyperscale AI data center campus. Still, given the fact that not all data centers are dedicated to AI processors, it is worth considering whether there *is* room in the ordinances and the Township for data centers of a different nature —the “old-school”, CPU-based, office-scale buildings that we have lived amongst without noticing for over 20 years now—within other districts such as Industrial Flex; or perhaps as an ancillary or accessory use in RT, where the idea of “data centers” first began as a closet of servers dedicated to running an airline ticketing program, directly serving the enterprise functions of the primary use facility. In fact, *that* seems to be the context in which “data processing” is listed among “Scientific Research” uses. This is one aspect the Resident Research Committee intends to continue studying, to ensure Howell responsibly incorporates and addresses the variety of types of data centers that exist.

We would like to reiterate one last time, that cryptocurrency mining, and hyperscale, AI data centers—much less entire *campuses* of them spanning hundreds of acres— simply **did not exist** when Howell’s RT ordinance was written and when “data processing” was included in the permitted uses list. The uses listed in RT are all clearly office-scale facilities, and proceeding to allow data centers of *any* variety in that district without careful consideration of the history and context of data centers and the ordinance would be premature.

We look forward to presenting more of our research and ordinance findings to you at upcoming meetings. We have already begun to identify other areas in the ordinance book that should be reviewed and potentially revised, to further ensure cohesiveness in ordinances and land uses. There is a lot of ground to cover, and Howell has an opportunity to write some of the most thoughtful and comprehensive ordinances in the state. Other towns statewide are watching, and the ordinances this community crafts together—with citizens and township officials working hand-in-hand—can serve as a model of what careful planning and zoning is all about: ensuring harmonious land uses for the development of a strong, healthy community. We are eager to see the ordinances take shape, but are committed to helping ensure they are crafted thoughtfully, carefully, and without rush.

Sincerely,
The Howell Township Resident Research Committee
Jodi Fulton, Co-Chair
Cory Alchin, Co-Chair
Kristin Dennison, Secretary
Dan Bonello, Treasurer

Sources:

History of Data Centers: From 1950s Server Rooms to AI-Driven Powerhouses | TRG Datacenters (https://www.trgdatacenters.com/resource/history-of-data-centers/)

Data Centers: A Timeline of Growth and Expansion - Datacate, Inc (https://www.datacate.net/data-centers-a-timeline-of-growth-and-expansion/)

FLASHBACK: The First Data Centre in the 1950s (https://www.exabytes.sg/blog/flashback-first-data-centre-1950s/)

Sabre | IBM (https://www.ibm.com/history/sabre)

Explained: How Sabre Transformed Aviation [and IT] (https://airwaysmag.com/new-post/how-sabre-transformed-aviation-and-it)

CPU vs GPU vs NPU vs TPU: Complete Guide to AI Chips 2025 (https://guptadeepak.com/understanding-cpus-gpus-npus-and-tpus-a-simple-guide-to-processing-units/)

What is a hyperscale data center? | IBM (https://www.ibm.com/think/topics/hyperscale-data-center)

Walmart Statistics (2025): Revenue, Customers & Market Share (https://capitaloneshopping.com/research/walmart-statistics/)

Crypto and Data Centers Fast Facts (https://scienceforgeorgia.org/wp-content/uploads/2024/02/Crypto-and-Data-One-Pager-1.pdf)

Michigan Charter School Sues Crypto Mining Over Constant Noise (https://www.govtech.com/education/k-12/michigan-charter-school-sues-crypto-mining-over-constant-noise)

Crypto Mining and Electricity Costs Explained (https://salarycalculate.com/blog/crypto-mining-and-electricity-costs)

December 13, 2025

Howell Township Planning Commission
3525 Byron Road
Howell, MI 48855

To the members of the Howell Township Planning Commission,

The following definitions are being provided for discussion reference by the Resident Research Committee.

DEFINITIONS

Data Processing

The Merriam-Webster Dictionary defines Data Processing as:

Data Processing - The action or process of putting data into a computer and having it produce a desired result, essentially transforming raw facts into meaningful information through steps like organizing, sorting, analyzing, and presenting, often using defined procedures. It involves collecting, manipulating, and processing information, especially by computers, to generate useful outputs.

Data Processing Facility

The Merriam-Webster Dictionary defines a Data Processing Facilities as:

Data Processing Facility - A data processing facility refers to the physical location—a building, dedicated space within a building, or group of buildings—that houses the people, hardware, and software organized to provide these information processing services.

Cohoctah's Cryptocurrency Data Mining Facilities and Data Centers Ordinance defines a Data Center as:

Data Center - A structure that houses information technology infrastructure and equipment for building, running, and delivering applications, and the storage of digital data. This includes Artificial Intelligence ("AI") Data Centers.

Please see the example provided for the DeKalb County Data Center Text Amendment that provides a tiered definition approach, utilizing a separate name and definition for each data center size bracket.

Cryptocurrency Data Mining Facility

Cohoctah's Cryptocurrency Data Mining Facilities and Data Centers Ordinance defines a Crypto Currency Data Mining Facility as:

Cryptocurrency Data Mining Facility - A facility dedicated to operating data processing equipment for commercial cryptocurrency mining and the process by which cryptocurrency transactions are verified and added to digital ledgers.

References:
#1, Merriam-Webster Dictionary
#2, Cohoctah's Cryptocurrency Data Mining Facilities and Data Centers Ordinance
#3, DeKalb County, Georgia's Data Center Text Amendment

Respectfully,
The Howell Township Resident Research Committee
Jodi Fulton, Co-Chair
Cory Alchin, Co-Chair
Kristin Dennison, Secretary
Dan Bonello, Treasurer

DeKalb County Data Center Text Amendment

Data Center Text Amendment

Update 12/3/2025: The final version of Draft 3 has now been uploaded for review with *updated format*. You can download it from the "documents" section and please leave any feedback in the Questions and Comments box at the bottom of the page.

Board of Commissioners (Decision-Only): Dec 16th

Purpose of this Regulation

Throughout the Atlanta metro area, there has been a sharp increase in data center development. While data centers provide necessary infrastructure for the modern world, DeKalb County is seeking to ensure that the significant land, energy, and water consumption by these facilities does not negatively impact the community. Staff conducted extensive research into data centers and held discussions with community partners to find a balance between economic development and the welfare of the community.

This ordinance will add data centers as a use in industrial areas and regulate their location, design, and provide supplemental review standards. You can read the draft ordinance here, and a summary is provided below.

Summary

Data Centers are broken up 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 minimum of 500,000 square feet.

Please see the below table for examples of the different sizes and scales:

Data Center, Minor	Data centers under 20,000 sq ft in size. Intended to accommodate small-scale operations with minimal community impacts and accessory uses. May be located in a shared office building.	
Data Center, Medium	Data centers between 20,000 sq ft and 100,000 sq ft. Intended to accommodate medium-scale operations under the threshold of requiring substations or transmission line impacts. May be located in limited commercial areas.	
Data Center, Major	Data centers between 100,000 sq ft and 500,000 sq ft. Data centers classified as major have greater land, power, and water requirements and are intended for industrial areas.	
Data Center, Campus	Data centers above 500,000 sq ft can have significant community impacts and therefore require a greater level of review.	

Zoning:

- **Office Institutional (OI)**: Minor data centers as an accessory use (under 2,000 square feet); Medium data centers with a SLUP, Major data centers with a SLUP and industrial land use.
- **Office Distribution (OD):** Minor data centers (permitted), Medium data centers with a SLUP, Major data centers with a SLUP and industrial land use.
- **Light Industrial (M):** Minor data centers (permitted), Medium data centers (permitted), Major data centers with a SLUP and industrial land use, Campus data centers with a SLUP and industrial land use.
- **Heavy Industrial (M-2):** Minor data centers (permitted), Medium data centers (permitted), Major data centers with a SLUP and industrial land use, Campus data centers with a SLUP 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

Separation and Buffer Requirements

- No new data center development in a light industrial (M) or industrial (M-2) land use shall be permitted within 500 feet of the property line from any residentially zoned parcel.
- ***No data center development in M or M-2 zoning district shall be permitted within 500 feet of the property line from any DeKalb County parks and trails.*** [NEW]
- If an interstate roadway, state highway, or major arterial road borders the property line, the required distance between a development and a residentially zoned property may be reduced to 300 feet along the property line where the roadway is located.
- **Proximity to Transit: Data centers shall not be located within a half a mile (2,640 ft) of a high-capacity transit stop.**
- **Transitional Buffers:** Major and Campus data centers shall maintain a minimum transitional buffer of 100 feet along all property lines abutting any properties used for or zoned non-industrial (M or M-2).
- **Screening and Landscaping:** Major data centers and Campus data centers shall provide a 20-foot-wide landscaped buffer with a minimum 10-foot-high wall that shall provide a five (5) to ten (10) dB sound attenuation and a minimum of 1 canopy tree per every 30 feet of property frontage.

Site Layout and Design Requirements

- **Equipment Placement:** Substations, electrical yards, mechanical yards, and any other exposed equipment shall be located in the rear yard of the primary structure and where possible in the location least visible from a public street or park.
- **Building Façade:** A minimum of thirty (30) percent of the width of the front façade of the building at the ground level shall consist of fenestration.

Supplemental Standards

- All cooling and ventilation equipment within property boundaries must operate on a **closed-loop system** and must follow Watershed standards for usage and disposal.
- All applications for a data center shall provide the following plans and studies:
  - Noise Impact Assessment
  - Water Consumption and Sustainability Plan
  - Energy Consumption and Sustainability Plan
  - Lighting Plan
  - Transmission Line Impact Assessment
  - Tree Preservation and Reforestation Plan
  - Stormwater Management Plan
  - Sewer Plan

Questions and Comments

Questions and Comments

Please submit any questions or comments regarding the data center text amendment. Your submission will be sent to Planning staff for review and consideration. Not every question or comment will be answered directly, but common submissions will be answered and posted publicly or added to the FAQ page. Please stay tuned and check back for project updates!

Ask a question...

Enter your email

Enter your screen name

I agree to the Terms of Use and Privacy Policy for using Engagement HQ

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Page last updated: 03 Dec 2025, 02:00 PM

Who's Listening

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Documents

Data Center TA Draft 3.pdf (1.1 MB) (pdf)

More..

FAQs

- What is a data center?
- How much power do data centers use?
- How much water do data centers use?
- How do data centers support economic development and what benefits do they provide for the County?
- What are some community impacts from data center development?
- Do data centers already exist within the County?
- Why is the County regulating data centers?
- Where will data centers be permitted, and will they require any special land use permits (SLUP)?
- Is the water in a closed-loop cooling system for data centers chemically treated?
- How is chemically treated water discharge regulated?
- Additional Information and Resources

Key Dates

- Community Council 5 **13 October 2025**
- Community Council 2 **14 October 2025**
- Community Council 3 **08 October 2025**
- Community Council 4 **21 October 2025**
- Community Council 1 **15 October 2025**

More..

REGISTER to get involved!

EXHIBIT B TO ORDINANCE

400.662 DATA CENTERS

1. Definitions

   a. *Battery Energy Storage System/Battery Storage* means a system that stores energy from renewable and non-renewable sources in rechargeable batteries for later use.

   b. *Commercial Cryptocurrency Mining* means the commercial process by which cryptocurrency transactions are verified and added to the public ledger, known as the block chain, and also the means through which new units of cryptocurrencies are released, through the use of server farms or data centers employing data processing equipment. Any equipment requiring a High-Density Load Service, for a server farm or data center, will constitute a commercial cryptocurrency mining operation.

   c. *Cryptocurrency* means digital currency in which encryption techniques are used to regulate the generation of units of currency and verify the transfer of funds, operating independently of a central bank.

   d. *Cryptocurrency Data Center* means a leased or owned boundaries of floor space devoted to the operating data processing equipment for Commercial Cryptocurrency Mining; excludes spaces for commercial offices, storage, shipping and receiving, warehousing, or any other space that is not electronic processing, through the use of server farms or data centers employing data processing equipment. Any equipment requiring a High-Density Load Service, for a server farm or data center, will constitute a commercial cryptocurrency mining operation.

   e. *Cryptocurrency Server Farm* means three or more interconnected computers housed together in a single facility whose primary function is to perform cryptocurrency mining or associated data processing.

   f. *Data Center* means a facility whose primary service is data processing or data storage, and is used to house computer systems and associated components, such as central processing units, graphical processing units, neural networks, quantum bits, quantum processors, memory, data routing, data storage, server farm, bitcoin mining, crypto processing, Commercial Cryptocurrency Mining, virtual private networks, virtual servers, artificial intelligence training or processing, image processing, cloud computing, email servicing, a telecom hotel, a Cryptocurrency Server Farm, a Cryptocurrency Data Center, Telehouse co-location, or any other term applicable to facilities which are used for such purposes shall be deemed to be a data center.

   g. *Decibel (dB)* means a decibel (dB) is ten (10) times the common logarithm of the ratio of two power terms expressed in the same units of power.

   h. *Extraordinary Events:* Any of the following would be considered an 'extraordinary event': large-scale or facility-wide damage to Data Center facilities or SMDA's due to wind, storm, hail, fire, flood, earthquake, or other natural disaster; explosion, grievous injury to any citizen or employee; or similar event.

   i. *Generator* a machine that converts one form of energy into another

   j. *Grading*: The act of excavation or filling or a combination of both or any leveling

to a smooth horizontal or sloping surface on a property but not including normal cultivation associated with an agricultural operation.

k. *Lot/Parcel Coverage:* The ratio of the total plan view area of structures and hard surface areas on a parcel to the total area of the parcel or lot

l. *Noise* means any sound which annoys or disturbs humans, or which causes or tends to cause an adverse psychological or physiological effect on humans.

m. *Noise Disturbance* means any sound 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.

n. *Operator*: The party or entity responsible for the construction, operation, maintenance, and decommissioning in part or in whole of the Data Center.

o. *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.

p. *Standalone Modular Data Centers* are pre-engineered, prefabricated, and standardized buildings, equipped with power and cooling infrastructure, designed to house computer servers and network equipment.

q. *Substation (Electrical):* A facility that transforms and distributes electricity at different voltage levels.

2. Purpose and Intent

a. Purpose of Regulations. It is the purpose of this section to provide details related to any application for a Data Center Project; create a process to permit the development of a Data Center project; and identify significant environmental, social, and economic impacts related to the Data Center project.

b. Intent of Regulations. It is the intent of these regulations to address key issues associated with the project; however, issues that are not listed and that are deemed significant during the course of review will be addressed with the review and conditions of each individual Special Use Permit.

i. These regulations specify the plans, information surveys, and studies that shall be submitted as part of the Special Use Permit (SUP) application.

ii. Appropriate locational criteria for siting a Data Center are provided.

iii. Standards are provided to:

1. Ensure the land remains viable for agricultural uses during the life of the Data Center and following decommissioning;
2. Minimize the impact of the system on nearby properties;

iv. Minimize negative environmental impacts;

v. Ensure reclamation of the site; and

vi. Provide appropriate decommissioning and disposal measures.

3. Required Approvals. A Special Use Permit is required for a Data Center and/or Battery Energy Storage System/Battery Storage facility. Any proposed expansion of such facilities

will require approval of a new Special Use Permit. This would include an increase in the Site Area or the area for accessory equipment.

4. Evaluation Considerations. The Operator shall demonstrate their ability to strictly conform to all applicable performance standards detailed in these Regulations as well as applicable Local, State, and Federal laws or regulations. In addition to Section 400.610, the following considerations shall be evaluated with the review of any application:

    a. Visual impact;

    b. Impact on Wildlife Habitat/ Native Flora and Fauna;

    c. Impact on cultural, historical, or archeological features;

    d. Impact on critical wildlife habitats, current state-listed threatened and endangered species.

    e. Impact on environmentally sensitive lands;

    f. Impact on water quality and soil erosion;

    g. Impact on infrastructure, including roads and bridges to include for construction access;

    h. Impact of Sound/Noise on surrounding properties

    i. Aviation/Federal Aviation Administration (FAA) impacts;

    j. Cumulative Impacts;

    k. Company experience, reputation, and financial ability;

    l. Decommissioning, removal, reclamation, and disposal;

    m. Bond agreement or other means of ensuring reclamation, disposal, and decommissioning performance;

    n. Specific requirements for building and construction;

    o. Emergency services and training requirements; and

    p. Degree to which agricultural uses and wildlife habitat are accommodated with the facility layout and design.

5. Development Standards

    a. If applicable by federal or state law, regulation, or order, designated foreign entities shall be restricted from developing data centers within the County.

    b. Size.

        i. In order to maintain the rural character and preserve agricultural land the

Data Center Site shall;

ii. Be limited to no more than 1,000 acres total, unless the BZA approves a modification from this standard based on site specific characteristics which are determined to aid in the preservation of rural character or natural features or to promote the shared agricultural use of the property.

iii. Have a maximum of sixty (60) percent coverage of the lot/parcel of land in which it is located on, this includes but is not limited to all hard surface areas, structures and appurtenant equipment.

iv. Be measured at the boundaries of the parent parcel of land

v. No Data Center site shall contain less than two hundred (200) contiguous acres total.

c. Location.

i. The site and structures shall be located to:

1. Accommodate the future growth of incorporated cities;
2. Utilize existing terrain and vegetation to screen the project from off-site view to the extent possible. If this is not possible, additional screening may be required;
3. Avoid steep slopes of 15% or greater;
4. Make use of brownfield sites, or similar, where possible; and
5. Minimize impact to the following environmentally sensitive lands: Floodways, Flood Hazards Areas, jurisdictional wetlands, and stream corridors.

ii. Farmland. Food sustainability and preservation of prime agricultural land are important goals, and since a Data Center commonly utilizes land for multiple decades, the following standards shall apply:

1. Projects that further enhance climate and food system resilience and preserve agricultural character by enabling the integration of food production into their design are encouraged.
2. Systems may be located on prime farmland and farmland of statewide importance when the natural topography is preserved with limits set on grading.
3. Grading of prime farmland and farmland of statewide importance shall be limited to maintain the natural topography.
4. Where approved, grading shall not exceed 5% of the site area unless a modification is granted by the BZA.
5. A modification from this grading requirement may be granted if it is found to be necessary to ensure proper drainage or to mitigate unusual site constraints.
6. Grading may occur to the extent needed to accommodate the system on brownfield sites or other previously disturbed land.
7. Grading for battery storage, transformers, access, roads, and grid

connection infrastructure does not count toward the 5% limit.

iii. Airspace Overlay or Airstrip. If a system is proposed to be placed within five (5) miles of any airstrip, the applicant shall provide acknowledgement of location approval or acceptance from the Federal Aviation Administration with the Special Use Permit.

d. Structures:

i. Primary Structure: A primary structure shall be required prior to the installation of an SMDC. A primary structure excludes structures such as storage sheds, non-occupied secondary or accessory structures, and SMDCs.

ii. All data centers shall be contained within a primary structure or an SMDC.

iii. SMDCs shall be screened from view by a combination of landscaping, opaque fencing, and or a decorative opaque wall that is integrated into the architecture of the structure. The fence or wall shall be of a height equal to, or greater than the height of the SMDC being screened. Chain link fencing is not permitted as a screening method. On a case-by-case basis, a line-of-sight analysis can be submitted to assess the visual impact of the SMDC on the surrounding environment. The line-of-sight analysis can consider, but not be limited to terrain, obstructions, vegetation, buildings, and other objects.

e. Setbacks. The following setback requirements shall apply:

Facility Type	Affected Area/Applicable To	Setback
Data Center (including all appurtenant structures and equipment)	Another Data Center as measured by their respective property lines	1,320 feet
	Subject property line	1,000 feet
Battery Storage Systems	Subject property line	1,000 feet
Generators	Subject property line	1,000 feet
Substations	Subject property line	1,000 feet

i. A greater setback may be required so that the SPL attributable to infrastructure of the data center property shall not exceed fifty (50) dBC at the subject property lines.

ii. Buffering or screening landscaping, fencing, agricultural uses, and access

drives may be within the setback.

iii. No portion of a Data Center, appurtenant structures or appurtenant equipment may encroach upon the public right-of-way with the exception of distribution or transmission lines (overhead or underground) provided all applicable approvals from the authority having jurisdiction over that portion of the right-of-way have been obtained.

iv. Additional or modified setbacks may be required/permitted 1) to mitigate site specific issues if the County Commission determines that it is necessary or that there will not be a negative impact to the public or adjacent and nearby residents; or 2) to provide for frontage roads, cross-access easements, commercial corridors, or other means of egress/ ingress. An applicant must identify in its application any requested setback modification. Any requested modification to a setbacks must include a justification for why the modification is necessary and evidence showing no negative impact on adjacent properties or public safety. If setback modifications are approved with the consent of neighboring property owners, these agreements must be submitted with the application. No modification shall be approved which reduces any of the required setbacks from the subject property line to less than 100 feet.

v. The 1,000-foot setback includes a 500-foot buffer along the property line unless waived or modified by agreement.

f. Buffer.

i. Unless waived by the property owner, a five hundred (500) foot deep buffer area shall be provided, and maintained, along property lines between the facility and adjoining non- participating residential properties.

ii. The buffer area shall include the minimal features necessary to provide an adequate buffer in order to minimize land disturbance.

iii. The buffer may include a combination of berms, fences, and/or vegetation and may occur within the required setbacks on the facility property.

iv. The buffer area shall be designed to buffer the view of the facility from adjacent properties.

v. Evidence of waivers shall be provided to the Zoning and Codes Department and shall be filed with the Recorder of Deeds at the applicant's expense.

g. Height. Data Center and any appurtenant equipment shall not exceed forty (40) feet in height, measured from adjacent grade; including any roof mounted mechanical equipment with the following exception: The BZA may approve a modification to allow greater height, if found to be necessary to accommodate slopes without grading or to accommodate screening, provided the increase in height does not negatively impact nearby land uses or the character of the area.

h. Substation.

i. Substations shall serve exclusively as auxiliary facilities for onsite Data Center operations and may not provide power to offsite structures or the electrical grid.
ii. Substations must be included in the initial Special Use Permit (SUP) application for the Data Center, eliminating the need for separate zoning applications.
iii. Substations must include screening measures (e.g., berms, fencing, or vegetation) and comply with all local, state, and federal safety standards, including noise limits of 50 dBC at the property boundary.
iv. If the Data Center ceases operations, substations must be decommissioned and removed as part of the site's reclamation plan.
v. Substations must feature secure fencing, signage, fire protection, and an emergency response plan specific to their operation.

i. Utilities.

i. The applicant shall provide written verification from the applicable Electrical utility provider stating the following:

1. Adequate capacity is available on the applicable supply lines and substation to ensure that the capacity availability to serve the other needs of the planning area is consistent with the normal projected load growth envisioned by the utility.
2. Utility supply equipment and related electrical infrastructure are sufficiently sized and can safely accommodate the proposed use.
3. The use will not cause electrical interference or abnormal in line voltage on and off the operating premises.
4. An agreement that if a power outage or shortage occurs, the data center will be secondary to all other uses within Cass County.

ii. All electrical interconnection and distribution lines within the subject site shall be located underground, with the following exceptions:

1. When site conditions require: A modification may be granted by the BZA in instances where shallow bedrock, water courses, or other protected environmentally sensitive lands make underground connections detrimental.
2. Generation tie-lines from the project substation to a utility substation may be above ground.

iii. Underground cables shall be located at least three (3) feet, vertically or horizontally, from existing underground utilities.

1. Off-site, above ground utility or power lines may only be used for

generation tie-lines from the project substation to a utility substation and must be located in public right- of-ways, easements, or other legally dedicated tracts of land.

iv. Confirmation of water availability: If water is used for cooling, the source and adequacy of the supply shall be provided.

v. Changes in resources or data center expansion: If a change in resource occurs, a new special use permit shall be required for re-evaluation. If a data center expansion is proposed, a new special use permit shall be required for re-evaluation.

j. Generators.

i. Testing of generators is prohibited between the hours of 9 p.m. and 7 a.m. and limited in duration to no more than two (2) hours per day.
ii. Testing of generators shall be conducted no more than once per week.
iii. If generators are located outside of an enclosed building a screening wall shall be required.
iv. The SPL attributable to infrastructure of the data center property shall not exceed fifty (50) dBC, as measured at all data center property line. For data centers located within 500 feet of any allowed residential use or district, place of worship, daycare, park, lodging establishment (including bed and breakfast inn, campground and recreational vehicle park, hotel and motel, nightly rental, and timeshare unit), and educational facilities, the SPL attributable to the facility shall not exceed fifty (50) dBC at all data center property line.
v. Generators shall be enclosed with a concrete sound barrier that shall extend a minimum of two (2) feet above the generator(s) or have a minimum vertical height of ten (10) feet whichever is greater.

k. Battery energy storage system: All battery energy storage systems shall comply with requirements of the National Fire Protection Association (NFPA) 855 and all other local, state, and federal regulations. At a minimum, the following standards shall apply:

i. Battery energy storage systems, including all mechanical equipment, shall be enclosed by a fence with a self-locking gate to prevent unauthorized access unless housed in a dedicated-use building.
ii. The area within twenty (20) feet on each side of a battery energy storage system shall be cleared of combustible vegetation and surfaced with gravel or other non-combustible surfacing.
iii. Battery energy storage systems shall contain an automatic fire suppression system.
iv. Signage for the battery energy storage system shall be in compliance with ANSI Z535 and shall include the following information: the type of technology associated with the battery energy storage system; any special hazards associated; the type of suppression system installed in the area of the battery energy storage system, and 24-hour emergency contact information.

v. As required by the National Electric Code (NEC), disconnect and other emergency management information shall be clearly displayed on a light reflective surface. A clearly visible warning sign concerning voltage shall be placed at the base of all pad-mounted transformers and substations.

vi. Warning signage spacing shall be determined with the battery energy storage plan.

l. Signage.

i. Perimeter fencing shall incorporate appropriate safety signage, at a minimum spacing of every five hundred (500) feet.

ii. Signage, including addresses for each fenced area, shall be provided as required by the Emergency 911 dispatch.

m. Surveillance:

i. Video and/or audio surveillance systems shall be restricted to monitoring activities within the boundaries of the subject property and should not extend beyond the property lines.

n. Lighting.

i. A photometric diagram showing predicted maintained lighting levels produced by the proposed lighting fixtures shall be required. The maximum maintained vertical footcandle at an adjoining residential property line shall be 0.5 footcandles, measured at three feet above the grade.

ii. Biannually a photometric report showing lighting levels produced by the lighting fixtures shall be required to be submitted to the Zoning Department. The maximum maintained vertical footcandle at an adjoining residential property line shall be 0.5 footcandles, measured at three feet above the grade.

iii. Security or safety lighting relating to the Data Center and appurtenant structures shall be limited to the minimum necessary to mitigate visual impacts.

iv. No exterior lighting fixture shall be installed that exceeds fifteen (15) feet in height unless proven necessary by the applicant and approved as part of the Special use review process.

v. No light source shall be directed off-site. All external lighting shall be shielded and downcast such that light does not encroach upon adjacent properties or the night sky.

vi. When appropriate all exterior lighting, where used, shall be motion activated and on a timer, or switch- operated.

vii. If LED lights are used, the color temperature shall be no more than 3000K (Kelvin).

o. Glare. All structures must be constructed to minimize glare or reflection onto adjacent properties and adjacent roadways and must not interfere with traffic,

including air traffic, or create a safety hazard as per any Local, State, and Federal laws and regulations. Examples of measures that can be utilized to limit glare include, but are not limited to:

i. Textured glass;
ii. Anti-reflective coatings;
iii. Screening;
iv. Distance; or
v. Vegetation/landscape.

p. Sound/Noise Requirements. All requirements relating to noise and noise disturbance shall be considered for data centers.

i. On site monitoring of sound: The permit holder shall provide to the County, prior to the issuance of a certificate of occupancy or completion, an affidavit that includes the following information:

1. Name and qualifications of the person who measured the sound pressure levels, requiring a supervised and wet stamped report by a qualified Missouri licensed Professional Engineer.
2. Equipment used. List all test results; equipment; equipment serial numbers; equipment settings; copies of National Institute of Standards (NIST) traceable calibration certificates; drawings and pictures of the test setup including pertinent distance measurements; and weather conditions during the tests including wind speed, temperature and relative humidity.
3. Location of the noise measurements depicted on a scaled site plan. The points of measurement shall be at all property lines and generally at the points on those property lines most susceptible to noise from the applicable equipment.
4. Sound pressure levels (SPL) at each property line.
5. Time and duration of measurements.
6. A statement attesting to the accuracy of the information provided and a guarantee that the permit holder will not run their equipment, including generators, at a greater sound pressure level than when the measurements were made. The County reserves the right to require independent verification of noise measurements and/or to request additional measurements at different points on the property. All measurements must comply with the noise levels established in this Section of the Code.

q. Vegetation/Landscape.

i. The application for a special use permit shall be accompanied by a landscape buffer yard plan sealed by a Professional Landscape Architect licensed by the State of Missouri. The landscape buffer yard must be located within 15 feet of the property line unless easements dictate their

location be further away. The plan should incorporate elements of existing topographical features, existing vegetation, new trees and shrub plantings, and berm installations with the intent to visually obscure or screen Data Centers and to improve the development's aesthetics. The landscape buffer yard plan shall include provisions for maintenance, and a 2-year landscape maintenance bond may be required by the County.

ii. The Data Center Site shall be designed to accommodate concurrent use of the land for livestock grazing, row crops, or contain a diverse array of native grasses and forbs for native habitats. Ground around Data Centers and in designated buffer areas shall be planted and maintained in perennial vegetated ground cover or agricultural plants that are managed to prevent erosion and runoff, and meet the following standards:

1. Clearing of natural vegetation shall be limited to that which is necessary for the construction, operation, and maintenance of the site, access roadways, and other approved site improvements.
2. The surface of the project site shall be prepared as shown on the approved Vegetation Management Plan. For the remainder of the Project Area, disturbed soils shall be seeded to prevent erosion and manage runoff. Seed mixes for perennial plantings should include a diversity of grasses and wildflowers; Native plants, wildflowers, and agriculture are preferred.
3. Any pesticides used on the site shall be applied only by an authorized pesticide applicator. If the vegetation plan has been designed to minimize the use of pesticides or herbicides, those practices should be clearly stated on the site plan and noted in the operation plan.

r. Fencing/Screening.

i. Properties containing Data Centers shall be enclosed by perimeter fencing to restrict unauthorized access.

ii. As required by Local, State, and Federal regulations, critical electrical and communications equipment may be fenced with chain-link fence topped with barbed wire when such measures are deemed necessary to ensure public safety and provide additional security for the equipment.

iii. Specific standards for battery energy storage system fencing provided in the following section.

s. Soil: All grading and construction activities shall preserve existing topsoil.

i. Temporary Displacement or Removal of Soil: Topsoil may be temporarily displaced where grading has been approved as part of construction.

1. The amount of topsoil displaced shall be minimized.
2. Topsoil shall be stockpiled on the site.
3. After rough grading, the topsoil shall be redistributed uniformly

on the surface of all areas to be vegetated.

4. Displaced topsoil shall not be removed from the site except as required to remediate contamination per the standards in the following section.

ii. Topsoil shall not be removed from the site except due to contamination as required by law.

1. The amount of soil removed shall be reported to the Zoning and Codes Director.
2. The Zoning and Codes Director may require topsoil to be brought to the site for reapplication and planting, depending on the amount that was removed.
3. Contaminated topsoil shall be disposed of in accordance with Local, State or Federal regulations.

t. Maintenance. All structures shall be maintained and kept in good condition by the Operator.

i. Maintenance shall include, but not be limited to, painting, structural repairs, replacement of damaged or worn parts or cables, and integrity of security measures.

ii. Site access shall be maintained to a level acceptable to local emergency personnel. The Operator shall be solely responsible for maintaining the subject site, all appurtenant structures and the installation and maintenance of any access road(s), unless accepted as public right-of-way.

u. Ground Water Testing. With each approved Data Center Special Use Permit application, an optional water analysis of active wells within one-quarter mile of the Site Area shall be offered by the Operator prior to the installation of the equipment.

i. This offer shall be made to all owners of property within 1/4 mile of the Site Area by certified mail, at least one-month prior to the installation.

ii. A copy of the certified letter and a list of property owners notified shall be provided to the Zoning and Codes Department along with a list of all property owners who requested the testing and the results of that testing. This must occur prior to the installation of the facility.

iii. The test shall analyze the water in the nearby wells for substances such as lead and cadmium, as determined with the Special Use Permit, and shall include a pesticide panel.

iv. The results of ground water testing shall be provided to the Director of Zoning and Codes and sent by certified mail to the landowner.

v. Extraordinary Event.

i. Within 3 days of an extraordinary event, the Operator shall provide written notice of the event to the Zoning and Codes Director, noting the cause and the degree of damage associated with the event.

ii. Within 30 days of the event, the Operator shall provide the Zoning and Codes Director with a mitigation plan noting the steps they will take to mitigate any negative impacts. Additional mitigation steps may be required by the Zoning and Codes Office.

w. Liability Insurance. Applicants shall provide general liability insurance, showing general liability insurance coverage for the lifespan of the project encompassing installation and operation through decommissioning. Evidence shall be provided annually in the form of a certificate of insurance.

x. Building Permits and Plan Review. The applicant shall contract with a special inspector and/or Plan Reviewer, approved by the Zoning and Codes Director**,** for construction plan review and all required construction inspections, at the Operator's expense.

y. Time Frame. The Special Use Permit may be approved with a time frame of up to 25 years from the date of the BZA approval. Continuation of the use beyond that time frame will require the submission and approval of a new Special Use Permit.

z. Affidavit. Upon issuance of a permit for a Special Use by the Zoning and Codes office, Zoning and Codes shall file an affidavit with the Recorder of Deeds on all the properties within the Special Use Permit, which includes a copy of the Special Use Permit and all setback and buffer waivers. Filing fees will be covered by the applicant.

aa. Transfer of Operator. If the Operator listed on the approved SUP plans to sell or otherwise transfer their responsibilities to an entity not listed on the SUP, the listed Operator shall notify the Zoning and Codes Director of this proposed change. Furthermore, the new Operator shall notify the BZA and the Zoning and Codes Director in writing, acknowledging their acceptance of responsibility and intent to comply with all conditions listed in the approved SUP. The BZA may approve the transfer of Operator if they find the proposed Operator has demonstrated their ability to strictly conform to all applicable performance standards detailed in these Regulations as well as applicable Local, State, and Federal laws or regulations.

bb. Other Standards and Codes. All Data Centers, appurtenant structures and associated equipment shall be in compliance with all applicable local, state, and federal regulatory standards including, but not limited to, the Endangered Species Act, Clean Water Act, the International Building Code, National Fire Protection Association 855 Standards, and the National Electric Code, as amended.

cc. Reviews. The Data Center facility shall be reviewed for compliance with the

standards of the Special Use Permit one (1) year after release of Certificate of Occupancy and every five (5) years thereafter through the life of the Special Use Permit. These reviews may be conducted by a third party firm, selected by the Director of Zoning and Codes, and financed by the Operator.

dd. Cooling – All liquid cooled equipment shall be done so by a closed loop system.

ee. Modifications. Modification of the conditions set forth herein may be specified as part of the approval of a special use permit, if noted on the application and required notification, when it is determined that the data center can be accommodated in a modified manner without adverse impacts on adjacent properties and that such data center will still meet the general intent of the limitations.

6. Application and Required Documents

a. No application will be accepted or processed if submitted by an individual or government or entity or entities identified as a foreign adversary under 15 CFR 7.4(a) or a person identified on the office of foreign assets control sanctions list. If any such individual or government or entity subsequently obtains ownership of a Data Center as described herein, any previously granted approvals or permits shall be void.

b. The following additional notice and materials are required as part of the application submittal: As part of the Special Use Permit (SUP) application process, applicants must conduct public outreach to inform and engage nearby property owners and interested stakeholders. Prior to submitting an application for a Special Use Permit for a Data Center the applicant shall

i. Mail written notice via certified mail of the potential development application to property owners within a one-mile radius of the subject property included in the application. The applicant shall submit proof of mailing via certified mail to the Zoning and Codes Department for this notice, a sample letter, and a list of notified property owners at the time of the application. A certified list of property owners within one-mile of the property within the SUP application shall be obtained from the Cass County Assessor's Office or a title company, within 30 days of the mailing date. The notice shall be sent by certified mail and shall include the project summary, construction timeline, date the application will be submitted to the Zoning and Codes Department, the person with contact information (phone, email, address) designated by the applicant to respond to questions concerning the proposed application with instructions for submitting comments or inquiries and the following statement:

This letter is being sent to the owners of nearby property for the purpose of informing the property owners and other interested parties about the proposed Data Center project

described further in this letter. This letter does not grant the recipient and/or the property owner any additional legal rights to challenge the proposed development, instead, it is being provided solely to advise property owner(s) of the pending development. For further information, contact the applicant's designated representative or the Cass County Codes and Zoning Department at 816-380-8134."

ii. The applicant is responsible for mailing notice via certified mail with proof of mailing to all property owners listed on the certified property owner list prior to the submittal of the Special Use Permit application. When required notices have been properly addressed and deposited in the mail, failure of a party to receive such notice will not be grounds to invalidate any action taken by the Planning Commission or the BZA.

iii. Community Meetings - Applicants are to hold at least one public meeting to explain the project and address community concerns. The meeting location should be accessible and within proximity to the proposed site. A summary of outreach activities, including attendance records, copies of notices, and responses to community feedback, must be submitted with the application. Failure to meet outreach requirements will result in application delays until adequate efforts are demonstrated.

c. Existing Conditions. A physical and digital site plan of existing conditions showing the following (digital site plan must be formatted to toggle each layer off and on):

i. Existing property lines and property lines extending one thousand (1,000) feet from the exterior boundaries, including the names of the adjacent property owners and current use of those properties, as determined by site inspection or from the Cass County Assessor's Office;
ii. All recorded easements on the property, with type and recording information, and the location and width of all public road right-of-way.
iii. Existing points of ingress and egress to the property.
iv. Location and size of any known wells (oil, water, geothermal, etc.);
v. Existing power lines overhead and underground
vi. Nearest transmission lines intended for interconnection to service site
vii. Nearest substation or power generation site intended to provide service to the site
viii. Existing water and sewer lines
ix. Existing buildings and any paved or gravel surfaces, with dimensions;
x. Contour lines showing the existing topography of the site at one-foot intervals. The source of the topography must be stated. If the site

contains any FEMA mapped floodplain, the topography must be tied to the FIRM datum.

xi. Boundaries and designations of any Special Flood Hazard Areas identified on the Flood insurance Rate Map (FIRM) of Cass County, Missouri;

xii. Existing vegetation (list type and percentage of coverage; i.e. grassland, plowed field, wooded areas, etc.);

xiii. Existing swales, channels, ditches or streams, existing ponds and lakes, and existing culverts.

xiv. Soil map showing location of soils classified as Class 1 and 2 soils, prime farmland, and farmland of statewide importance as identified in the Natural Resource Conservation Service (NRCS) soil survey;

xv. Environmentally sensitive lands: Floodways, Flood Hazard Areas, jurisdictional wetlands, stream corridors.

xvi. Map of residential uses and structures within one thousand (1,000) feet of the facility boundary; and

xvii. Presence of any critical habitat for threatened or endangered species.

xviii. The location of any underground pipelines and all utility easements; including but not limited to railroad and drainage easements.

d. Proposed Conditions. A physical and digital site plan of proposed conditions showing the following:

i. The location(s) and spacing of all structures and all appurtenant structures. Building/structure type to be listed on the plan.

ii. Name and address of Operator;

iii. Location and width of access drives;

iv. Planned location of underground electric lines

v. Planned location of all water and sewer lines.

vi. Proposed retention ponds

vii. Proposed screening location including type

viii. Proposed phasing schedule;

ix. Environmentally sensitive lands to be protected;

x. Clearly delineated limits of proposed land disturbance or vegetation removal for all phases of construction and operation.

xi. Location and height of any proposed lighting;

xii. Wiring diagram for the site;

xiii. Locations and size of planned temporary construction laydown yards; and

xiv. Approximate limits of disturbance for all temporary and permanent project components (Project Area).

xv. Utility easements including, but not limited to, easements for transmission and interconnection; water; and sewer

xvi. List the megawatt of power required for the proposed site as a whole; by detail list the requirement for each structure, appurtenant structure, SMDC, etc.

xvii. Proposed construction traffic route as approved by the Cass County

Road & Bridge Director to include road surface type.

xviii. Proposed Security and surveillance plan

xix. Proposed location of any fuel gas storage tanks

xx. Proposed location of any cooling tower/tanks or water source; by detail include any potential contamination of ground or nearby water sources.

e. Additional Materials. The following shall be submitted with the application:

i. Public outreach required for Data Center: Information regarding public outreach, such as how the applicant informed nearby property owners and interested stakeholders in the community, what meetings were held, and/or what information was provided;

ii. Manufacturer's specification and recommended installation methods for all major equipment,

iii. Assessment of construction impacts such as, but not limited to, noise, vibration, lights, waste-management, water supply, etc. and mitigation measures. Mitigation measures could include, but are not limited to, limited construction hours, reduced scope of work at one time, alternate construction methods, etc.;

iv. A preliminary equipment specification sheet that documents the proposed battery energy storage system components, inverters, and associated electrical equipment to be installed;

v. A grading/vegetation removal plan which includes all proposed changes to the topography and vegetation on the site (clearing, grading, topographic changes, tree removal, etc.);

vi. A stormwater management plan with supporting calculations, documenting how increased runoff will traverse and be detained throughout the site. The calculations must include the design of open channels and culverts on site. Based on recommendations from the County's consulting engineer, controlled release at points of discharge from the site may be allowed. The stormwater management plan must be implemented on the final site plan prior to approval.

vii. Preliminary stormwater management plans shall be provided with the original application, as required by the County's consulting engineer, however, engineered, or detailed plans must be submitted for the County's consulting engineer's review and evaluation prior to BZA final action on the application.

viii. More detailed information may be required by staff when needed to make informed decisions on the use.

ix. Changes required by the stormwater plan, such as detention, shall be shown on the final plans for BZA consideration.

x. A copy of all Interconnection Facilities Studies;

xi. A copy of the interconnection agreement with the local electric utility shall be provided prior to the release of the Special Use Permit plans for building permits;

xii. A copy of the approved SWPPP (Stormwater Pollution Prevention Plan)

for the site.

xiii. An operation and maintenance plan which includes measures for maintaining access drives to provide access for emergency vehicles, as well as general procedures for operation and maintenance of the site;

xiv. Traffic and Road Maintenance Plan; A traffic and haul route plan based on the recommendations of the County's Road and Bridge Director. The plan shall include, but is not limited to:

1. A general project schedule;
2. A traffic study estimating the volume and type of traffic generated by the project, both during construction and during normal operations. The study must identify proposed haul routes for construction traffic, trucks, and oversize or overweight loads.
3. Based on the traffic study and the County's Road and Bridge Director's recommendations, the following items may be required prior to approval of the Special Use Permit: notes on the plan designating haul routes from the site to a paved county or state highway; road maintenance agreement to be executed with the county or township, addressing compensation for road maintenance or dust control on public roadways; public improvement agreements to be executed with the county or township, addressing compensation for necessary road, bridge, or culvert improvements on public roadways.

xv. Landscaping and Vegetation Management Plan; A landscape and vegetation management plan detailing all proposed changes to the landscape of the site required to accommodate buffering or screening from adjacent properties.

1. The plan shall include the installation, establishment, and maintenance of buffering or screening landscaping as required.

2. The plan shall show where existing vegetation is to be removed and what new vegetation will be planted.

3. The plan shall include the installation, establishment, and maintenance of ground cover and other vegetation to minimize erosion and, maintain soil health.

4. A species list shall be provided for all buffering or screening landscaping.
5. The landscaping plan shall include management methods and schedules noting how the vegetation will be managed on an annual basis, with particular attention given to the establishment period of approximately three (3) years.

xvi. Emergency Services, Fire, and Safety Plan; A plan including all means of

managing an Extraordinary Event at the Data Center Facility shall include, but will not be limited to, the following information:

1. The project summary, electronic schematics, site plans, emergency ingress/egress, with the location of the access drives and the width and load rating of the access drives.
2. Emergency contact information; which will also be posted on the site.
3. Description of how the fire safety system, and its associated controls will function and be maintained in proper working order.
4. Fire protection and suppression systems for buildings that store batteries, hazardous material, or compressed gases.
5. Site control measures during and after any emergency. All means of managing an emergency including shutting down the installation shall be noted and clearly marked.
6. Procedures for inspection and testing of associated alarms, interlocks, and controls shall be noted on the plan.
7. Material Safety Data Sheet (MSDS) unless the facility meets the reporting thresholds of Emergency Planning and Community Right to Know (EPCRA) Act in which case the applicant shall provide to submit a Tier II report, if required by the EPA. The EPA requires Tier II reports for facilities that store hazardous chemicals above certain threshold quantities.
8. Electrical shock hazards and possible contact with hazardous substances or toxic fumes identified.
9. The Operator shall update the Emergency Services and Fire Safety Plan annually in collaboration with Emergency Management, and provide new copies to the system owner, the local fire district, emergency response agencies, Cass County Emergency Management, and the Zoning and Codes Office.
10. Any specialty response equipment required to adequately manage Extraordinary Events will be provided, updated, and/or replaced by the Operator, as needed and at the Operator's expense.
11. Annual Emergency and Extraordinary Event response training will be provided for all emergency response stakeholders on the plan, site, equipment, and processes required to assure their safety and effective management during an event.

xvii. Soil Sampling Plan; The plan shall outline a procedure to characterize and document the soil health and any heavy metals present at the following phases: before construction begins; when construction is complete, biannually, prior to beginning decommissioning and reclamation; and following decommissioning/reclamation of the site.

1. The soil sampling plan shall include, but is not limited to, the following: 1. total carbon (organic and inorganic), 2. phospholipid

fatty acid (PFLA) for soil health, and 3. heavy metals such as lead and cadmium as determined with the review of the Special Use Permit.

2. The surface soil sample locations shall be established prior to construction and will be utilized for each scheduled sampling event.
3. A map of sampling sites shall be included with the plan.
4. A photo for each sample that demonstrates the location within the site and current vegetation shall be provided.
5. Sampling shall occur at one 25-foot by 25-foot sampling site within each discrete fenced area in a location deemed to be representative of the vegetation and soil conditions for the fenced area.
6. Subsamples of soil shall be taken of the upper 0-6 inches of soil, with 5 subsamples combined and mixed to form a representative sample for each 25- foot by 25-foot sample site designated on the map.
7. Additional soil tests and test sites may be required by the county at the Operator's expense in the event that damage has occurred to the point that leaching may have occurred or if damaged equipment was not removed within 30 days. In that case, a sample will be taken at the location of the incident, and a report will be provided to the Zoning and Codes Office.
8. Additional soil test sites may be required from graded areas over two (2) acres.
9. All soil tests shall be conducted at EPA certified labs that are certified for each compound tested. The PLFA may be tested by a non-EPA lab if needed.
10. Soil remediation plans shall be provided to the Zoning and Codes Office for review if contamination or soil degradation has occurred. Remediation measures shall be implemented as approved. –Remediation shall not be considered complete until the soil testing results are within a range designated and established with the soil remediation plans.
11. All required soil test results shall be sent by certified mail, with chain of custody, from the testing lab to the Zoning and Codes office.

xviii. Abandonment, Decommissioning, and Reclamation Plan; A decommissioning/reclamation plan shall be required to ensure that all structures and equipment are properly removed after their useful life. Decommissioning of Data Center or its components must occur in the event that they do not properly operate and have no demonstrated plan to restore to operating condition and before the end of the life-span of the Special Use Permit.

1. A report of proper operation shall be submitted to the Zoning and Codes Director annually.

2. If the Data Center is inactive for 180 consecutive days, it will be deemed 'abandoned.' The Zoning Director will issue a Notice of Abandonment.
3. Director of Zoning and Codes shall issue a Notice of Abandonment to the Operator of the facility. The Operator shall have the right to respond to the Notice of Abandonment within thirty (30) days from the Notice receipt date. The Director of Zoning and Codes may withdraw the Notice of Abandonment and notify the Operator that the Notice has been withdrawn if the Operator provides sufficient information to demonstrate that the facility has not been abandoned which may include documentation or certification by the Operator of the local electric utility, or that the Operator of the facility is actively pursuing a plan, including specified steps and a proposed schedule acceptable to the Director of Zoning and Codes, to bring the facility back into service.
4. The decommissioning/reclamation plan shall include provisions for removal of all structures, foundations, equipment, piping and underground wiring, and all materials foreign to the site prior to installation.
5. All cables buried thirty-six (36) inches or less underground must be removed. Cables that are deeper than thirty-six (36) inches may remain if the following requirements are met: a map of the buried lines is provided to One Call, and an affidavit is attached to the deed of the property to note that buried cables, deeper than thirty-six (36) inches, are present on the property.
6. The decommissioning/reclamation plan must ensure the site will be reclaimed to a useful, nonhazardous condition without delay with a minimum of ground disturbance, seeding of the land after the removal of equipment, and revegetation of reclaimed soil areas with crops or native seed mixes, excluding any invasive species.
7. The decommissioning/reclamation plan must include a description of how any changes to the surrounding areas and other systems adjacent to any battery energy storage system, such as, but not limited to, structural elements, means of egress, and required fire detection suppression systems, will be protected during decommissioning and confirmed as being acceptable after the system is removed.
8. The decommissioning/reclamation plan must provide that soil shall be tested following removal of equipment and compared with preliminary soil testing to evaluate any soil contamination and develop remediation program, if needed.
9. Concrete and other materials used in the construction of the site must be removed. Disposal of all solid and hazardous waste must be in accordance with local, state, and federal waste disposal regulations.
10. For any part of the project on leased property, the

decommissioning/reclamation plan may incorporate agreements with the landowner regarding leaving access roads, fences, gates, or repurposed buildings in place or regarding restoration of agricultural crops or forest resource land. Any use of remaining structures must be in conformance with the regulations in effect at that time.

11. If the Director of Zoning and Codes has issued a notice of abandonment**,** the permit holder will have one year to complete decommissioning and reclamation of the site. Decommissioning and reclamation shall be completed in accordance with the approved decommissioning/reclamation plan. The Operator shall notify the Zoning and Codes Director when decommissioning and reclamation is complete.
12. The decommissioning/reclamation plan shall include estimated decommissioning costs in current dollars and the method for ensuring that it will be available for decommissioning and reclamation. The applicant shall provide the basis for estimates of net costs for decommissioning the site. The cost basis shall include a mechanism for calculating adjusted costs over the life of the project.

xix. Bond Requirement: The applicant shall post a bond, with the Cass County Clerk, establish an escrow account, or provide such other financial security deemed acceptable by the County, in an amount equal to the estimated decommissioning costs, to ensure proper decommission and reclamation of the site.

1. The County shall contract with an independent third party for estimated decommissioning and reclamation costs, at the applicant's expense.
2. The bond, or other financial security, shall be posted prior to the commencement of any construction or site preparation.
3. A financial security bond, escrow account, or other acceptable mechanism must be provided to cover the estimated costs of decommissioning and reclamation. The following conditions apply:

    a. The financial security must be adjusted annually based on the Consumer Price Index for All Urban Consumers (CPI-U) or an equivalent inflation index determined by the County.
    b. Recalculation of decommissioning costs must occur: every five years throughout the life of the project and annually during the final five years of the Special Use Permit (SUP).
    c. If recalculations show an increase in costs, the financial

security must be adjusted to match the new estimate. If costs decrease, the County may approve a reduction in the required financial security.

4. In the event of non-compliance or default, the County may call the bond or use the financial security to complete decommissioning. Any remaining funds will be withheld until all work is satisfactorily completed.
5. The bond, or other financial security, shall include a mechanism for adjustment over the life of the project.

    a. The bond, or other financial security, shall be adjusted for inflation annually.
    b. The Data Center Operator shall engage a qualified individual to recalculate the estimated cost of decommissioning at an interval of every five years, and every year for the final five years of the SUP. If the recalculated estimated cost of decommissioning exceeds the previous estimated cost of decommissioning, then the Operator shall adjust their financial security to meet the new cost estimate. If the recalculated estimated cost of decommissioning is less than the previous estimated cost of decommissioning, then the County may approve reducing the amount of the security to the recalculated estimate of decommissioning cost.

6. In the event the Operator is in non-compliance or default due to non-payment, the County shall have the right to call said bond, or other financial security, and use it for decommissioning purposes. Should there be any remaining balance, the County shall have the right to withhold payment of any refund until the decommissioning process is completed to the County's satisfaction.