Sumter City-County Planning Commission

August 26, 2026

<u>OA-26-01, Data Centers (County)</u>

I. THE REQUEST

Applicant:	Sumter County
Request:	Amend *Articles 3, 4, 8,* and *10* of the Sumter County Zoning & Development Standards Ordinance in order to adopt comprehensive standards for the establishment of data centers in Sumter County.

II. BACKGROUND

At the direction of Sumter County Council, staff has prepared a proposed amendment to the *Sumter County Zoning & Development Standards Ordinance* (the "Zoning Ordinance") to create regulations that incorporate data center development into the Sumter community while addressing publicly voiced concerns related to preservation of agricultural lands, power usage, water consumption, and noise.

In dealing with data centers there are a few key items to address:

1. Defining what constitutes a data center.
2. Determining which districts are appropriate and whether by-right, conditional or special exception use should be applied.
3. Establishing finite development review criteria that address areas of public concern.

What Are Data Centers?

A data center is a physical facility that organizations use to house their computer systems, physical data, and critical applications. These facilities range in size from a small server room within an office building to "hyperscale" campuses that span millions of square feet. Data centers have four essential building blocks:

- ***IT Equipment:*** networked servers, storage devices, routers and switches to process and transmit information.
- ***Power Infrastructure:*** electrical grid connections, back up batteries (UPS), and generators to guarantee uninterrupted operations.
- ***Cooling Systems:*** Heavy Duty industrial HVAC units, liquid cooling setups, and fans to prevent systems from overheating.
- ***Security and Connectivity:*** High bandwidth fiber-optic cables for lightning-fast internet connections along with strict physical security, on-site security guards, and fire suppression systems.

Organizations operate with different data center models based on their budget, scale, and security needs. Those choices may include:

- *Enterprise (On-Premise)*: Built, owned and operated by a single company for their own internal use.
- *Colocation:* A shared facility where a third party provides the building, cooling, and power but individual companies rent space to install their own server hardware.
- *Cloud:* Off-premises facilities managed by tech companies like Amazon Web Services (AWS), Microsoft Azure, or Google Cloud. Businesses rent these virtualized resources over the internet on a pay-as-you-go basis.
- *Edge:* Small-scale data centers positioned physically close to end users to reduce latency for time-sensitive applications.

These facilities come in a range of sizes from under 1,000 sq. ft. to 200,000 sq. ft. and beyond and break down into five size ranges or tiers—micro/edge, small/modular, medium/enterprise, large/regional, and hyperscale.

Micro/edge data centers are designed for localized processing and low latency applications. They are commonly deployed as single racks or smart enclosures near cellular towers or IoT (internet of things) hubs. These facilities normally occupy less than 1,000 sq. ft. of floor area.

Small/modular data centers are commonly used for local business computing infrastructure and telecom hubs. They are typically composed of prefabricated modules or localized telecom hubs. They serve municipal infrastructure, retail centers, branch offices, etc. These facilities normally occupy 1,000-5,000 sq. ft. of floor area.

Medium/enterprise data centers are traditional corporate data facilities or localized hosting centers. They house internal corporate IT infrastructure, localized cloud nodes, and private networks. These facilities normally occupy 5,000-50,000 sq. ft. of floor area.

Large/regional data centers are massive multi-tenant spaces or large corporate hubs. These facilities bridge the gap between enterprise computing and massive cloud infrastructure. These facilities generally range in size from 50,000 sq. ft. to 200,000 sq. ft.

Hyperscale data centers are massive industrial-scale campuses operated by global cloud providers. They have high density storage and massive data processing capabilities. These facilities are generally characterized by uniform architecture, highly optimized power usage effectiveness (PUE), and direct high-voltage grid connections. These facilities exceed 200,000 sq. ft. in area.

As the number of data centers across the country increases to support cloud computing and artificial intelligence (AI) scaling, their impact on the surrounding community is being closely scrutinized. The following section discusses power consumption by size, water consumption, and noise generation.

Power Consumption by Size.

Data centers have a reputation for being the most energy intensive corporate infrastructure projects globally. While traditional manufacturing operations have highly variable peak loads that change with shifts and seasons, data center power demands are a flat continuous 24/7/365 baseload demand profiles. Table 1 details data center power consumption by facility size.

Table 1 – Data Center Power Consumption by Facility Size			
Classification	**Floor Area (sq. ft.)**	**Power Load Capacity**	**Est. Annual Consumption (MWh)**
Micro / Edge	Under 1,000 sq ft	Under 200 kW	Under 1,500 MWh
Small / Modular	1,000 – 5,000 sq ft	200 kW – 1 MW	1,500 – 8,000 MWh
Medium / Enterprise	5,000 – 50,000 sq ft	1 MW – 10 MW	8,000 – 80,000 MWh
Large / Regional	50,000 – 200,000 sq ft	10 MW – 40 MW	80,000 – 320,000 MWh
Hyperscale	Over 200,000 sq ft	Over 40 MW	Over 320,000 MWh

It is helpful to understand how this power consumption compares to other industries, a selection of which are detailed in Table 2:

Table 2 –Power Consumption for Certain Uses Compared to Data Center Tiers			
Industrial / Commercial Sector Facility	**Typical Peak Power Load**	**Estimated Annual Energy Use**	**Equivalent Data Center Tier**
Micro-Brewery / Light Industrial Workshop	50 – 150 kW	100 – 400 MWh	Micro / Edge (<200 kW)
Large Supermarket / Regional High School	200 – 800 kW	1,200 – 4,500 MWh	Small / Modular (200 kW – 1 MW)
Regional Hospital / Major University Campus	2 – 8 MW	15,000 – 60,000 MWh	Medium / Enterprise (1 MW – 10 MW)
Automobile Assembly Plant / Semiconductor Fab	15 – 40 MW	100,000 – 300,000 MWh	Large / Regional (10 MW – 40 MW)
Aluminum Smelter / Primary Steel Mill	50 – 200+ MW	400,000 – 1,500,000+ MWh	Hyperscale (>40 MW)

Data centers command a tremendous power requirement into a small footprint. Because they pull power smoothly and constantly, they do not shock or stress the grid with sudden start-up spikes like a traditional factory.

Data centers cannot risk power disruptions. To obtain the most stable electricity possible, they typically bypass local distribution lines and build private electrical substations that tap directly into high-voltage transmission lines.

Water Consumption Considerations.

Data center water consumption refers to the amount of water withdrawn from the environment, whether a public water supplier or private well, that is not returned to the system. Data center operators and researchers evaluate water impact across two distinct categories:

> *Direct Water Use (On-Site / Scope 1):* This is the physical water piped directly into the data center building to run the cooling loops.
>
> *Indirect Water Use (Off-Site / Scope 2):* This is the water used by the local utility power plant to generate the electricity that the data center consumes. Thermoelectric power plants (nuclear, coal, natural gas) burn fuel to boil water into steam heavily driving up indirect water footprints.

The on-site direct water use/consumption is of primary concern at the local community level. Data center water consumption can compete with other users of this vital resource depending on how access to water is provided and managed.

The design of the data center cooling system drives water use. The exact amount of water a data center uses depends entirely on its engineering design. There are three main ways data centers are cooled:

> *Evaporative Cooling (Open-Loop)*: This system is highly energy-efficient. Cold water is sprayed over hot air coming from the servers. The water absorbs the heat and evaporates into the sky via cooling towers. 80% to 85% of this water is lost to evaporation and does not return to the municipal sewer system.
>
> *Closed-Loop Systems:* Water flows through a completely sealed network of pipes to absorb heat from the servers. It is then chilled back down using fans or refrigerants and recycled continuously. These systems reduce direct water consumption by up to 90%, but require more electricity to run fans and chillers.
>
> *Air Cooling:* The facility relies entirely on massive industrial fans and outdoor air for cooling. It consumes virtually zero water on-site, but is vastly less energy-efficient in hot climates, creating a direct "water vs. power" trade-off.

Data centers that employ an open-loop system for cooling have the greatest impact on the local water supply.

Table 3 compares daily water footprints between open-loop and closed-loop cooling systems across data center operational scales. Water usage equivalents are evaluated using standard US household averages (~300 gal/day) and Olympic-sized swimming pools (~660,000 gal).

Table 3 – Water Demand by Data Center Tier				
Facility Size & Tier	**Open-Loop Consumption (Evaporative)**	**Open-Loop Daily Equivalent**	**Closed-Loop Consumption (Recycled)**	**Closed-Loop Daily Equivalent**
Micro / Edge	350 – 1,000 gallons	1 – 3 homes	50 – 150 gallons	Minimal (partial home)
Small / Modular	7,000 – 35,000 gallons	23 – 117 homes	1,000 – 5,000 gallons	3 – 17 homes
Medium / Enterprise	70,000 – 215,000 gallons	233 – 717 homes	10,000 – 32,000 gallons	33 – 107 homes
Large / Regional	285,000 – 570,000 gallons	950 – 1,900 homes	42,000 – 85,000 gallons	140 – 283 homes
Hyperscale	710,000 – 2,100,000+ gallons	1.1 – 3.2 Olympic pools (or up to 7,000 homes)	105,000 – 320,000+ gallons	350 – 1,067 homes

Data centers can acquire water from a public or private water utility or by drilling a private well. Many concerns regarding data centers expressed by the public are tied to the potential impact that large-scale water usage by a data center utilizing a private well can have on rural populations and agricultural areas. Development of regulations should address the water source utilized by a data center.

Noise Considerations.

Data centers are large buildings full of powerful computers that work continuously. In doing so, they generate significant heat and require large cooling systems. These fans create a constant humming sound, like a giant refrigerator that never turns off. Data center noise is unique because it is continuous. The sound is tonally flat and differs from manufacturing facilities that generally have transient or impact noises. Data centers produce a steady-state drone that is primarily generated by two industrial subsystems:

> *Heat Rejection Subsystems:* Chillers, cooling towers, computer room air handlers (CRAHs), and massive dry cooler condenser arrays generate broadband acoustic profiles. The noise stems from the aerodynamic displacement of air by large industrial fan blades rotating at high velocities, alongside structural vibrations from compressor cycles.
>
> *Backup Power Infrastructure:* Emergency diesel generators used for power redundancy produce high-intensity, low-frequency acoustic energy. Generators generally only run during power grid failures or for weekly testing routines. Noise from generator exhaust and cooling fans routinely cross emergency thresholds , necessitating robust structural containment.

When evaluating the noise from a data center, it is important to evaluate the noise using both A-weighted decibels (dBA) and C-weighted decibels (dBC). The difference between the two is explained below.

A-weighted decibels, abbreviated as dBA or dB(A)*: measure of sound levels adjusted to match how the human ear perceives relative loudness. While standard decibels measure raw physical sound energy, A-weighting reduces the impact of very high and very low frequencies that humans hear poorly, focusing instead on middle frequencies.*

Key Characteristics

- ***Unit of measure:*** *Expressed as dBA or dB(A).*
- ***Human hearing model:*** *Based on the ear's lower sensitivity to extreme low and high frequencies.*

Standard Use:

- *Widely applied in environmental noise regulations, workplace safety codes, and hearing damage risk assessments.*

C-weighted decibels (dBC) *measure of sound pressure levels using an electronic filter that mimics how the human ear perceives very loud sounds. Unlike A-weighting, which cuts off low bass frequencies, C-weighting has a flat response that includes low-frequency and peak noises.*

Key Characteristics

- *Flatter response curve compared to A-weighting.*
- *Covers a frequency range from roughly 31.5 Hz to 8 kHz with minimal attenuation.*
- *Matches human hearing sensitivity at high volume levels (around 100 dB).*

Standard Use:

- *Measuring peak noise or sudden high-level impulses like gunshots or explosions.*
- *Evaluating entertainment and concert venue noise containing heavy bass.*
- *Assessing heavy machinery, diesel engines, and low-frequency industrial environments.*

Each measure of sound evaluates different aspects of data center noise. To understand dBA and dBC levels, Tables 4 and 5 in this report provide real world examples for each range of sound in each scale.

Table 4 – dBA Levels

dBA Level	Common Real World Example	How it Feels to the Human Ear
0 dBA	Total silence	The absolute limit of human hearing
30dBA	Whispering or a quiet bedroom at night	Very quiet
60dBA	A normal conversation or background office noise	Comfortable
70 dBA	A vacuum cleaner running nearby	Annoying
85 dBA	Heavy city traffic or a noisy lawnmower	Dangerous over long periods.

110 dBA	A live rock concert or a car horn right next to you	Extremely loud / painful
140 dBA	A jet engine taking off	Instant hearing damage.

Table 5 – dBC Levels		
dBC Level	**Common Real-World Examples**	**Sensation / Effect on the Human Ear & Body**
40–50	Quiet library, soft whisper, bedroom at night	**Soft & Gentle**: Barely audible; completely comfortable for long periods.
60–70	Normal conversation, city street, background music	**Moderate**: Audible and clear; standard everyday environment without physical strain.
80–90	Heavy traffic, lawnmower, busy restaurant	**Loud**: Creates a sense of noise fatigue; requires raising your voice to speak over it.
100–110	Jackhammer, nightclub, power saw, helicopter	**Very Loud**: Low frequencies cause a physical, vibrating sensation in the chest cavity.
120–130	Rock concert, nearby jet takeoff, ambulance siren	**Threshold of Discomfort**: Sounds cause ear pressure; vibrations feel heavy against the skin.
140+	Gunshot, firecracker at close range, rocket launch	**Threshold of Pain**: Sharp, painful physical sensation in ears; immediate risk of permanent damage.

Noise impacts from data center facilities scale proportionately with power capacity, layout footprint and cooling system choices. Table 3 details estimated noise from differently sized data centers where no noise dampening or buffering has been included in the design of the facility. These measurements are measured at 50 - 100ft. from the source equipment.

Table 3 - Estimated Noise from Data Centers Based on Size				
Facility Scale	**Power Capacity**	**Unmitigated dBA (High-Freq Fan Whine)**	**Unmitigated dBC (Low-Freq Mech Hum)**	**Dominant Acoustic Profile**
Micro / Edge (Smartpoles, 5G)	< 50 kW	**45 – 55 dBA**	**50 – 60 dBC**	Faint high-speed server fan hiss; easily masked by ambient daytime vehicular traffic.
Small / Modular (Container Pods)	50 kW – 1 MW	**55 – 65 dBA**	**65 – 75 dBC**	Steady HVAC compressor whine; noticeable nighttime transformer hum within 150 ft.
Medium / Enterprise	1 MW – 10 MW	**65 – 78 dBA**	**80 – 90 dBC**	Continuous industrial roar; low-frequency hum

(Corporate On-Premesis)				penetrates nearby light-commercial walls.
Large / Regional (Multi-Tenant Colocation)	10 MW – 50 MW	**75 – 88 dBA**	**95 – 105 dBC**	Deafening fan array whine; 120 Hz transformer hum causes structural resonance up to 1,500 ft.
Hyperscale (AI / Cloud Campuses)	50 MW – 500+ MW	**85 – 100+ dBA**	**110 – 125+ dBC**	Airport taxiway equivalent; massive low-frequency ground vibrations affecting entire neighborhoods.

Data centers can be engineered to mitigate external sound impacts through source reduction from mechanical equipment and thermal architecture and through path attenuation through barriers, enclosures, and silencers. The following list details some examples of measures that can be taken to reduce noise impacts:

- *Direct-to-Chip (DTC) and Immersion Liquid Cooling:* Transitioning from high-velocity air-cooling loops to closed-loop liquid or two-phase immersion systems eliminates massive external condenser fan banks, reducing facility dBA emissions at the source by 12–18 dBA.

- *Low-Speed, Bionic Blade Design:* Deploying larger diameter fans running at lower RPM with serrated trailing edges cuts aerodynamic turbulence and blade-pass vortex noise by 4 to 8 dBA without sacrificing volumetric airflow (CFM).

- *Active Vibration Isolation Systems:* Mounting heavy rotary chillers, primary pumps, and transformers on seismic-rated, high-deflection steel spring isolators combined with elastomeric neoprene pads prevents structure-borne low-frequency coupling to foundational concrete slabs.

- *Composite Perimeter Acoustic Barrier Walls:* Erecting continuous barrier walls (18 to 30 ft height) immediately adjacent to mechanical yards. Walls must feature a minimum Sound Transmission Class rating of STC-35 and a sound-absorption coefficient of NRC 0.90+ on the interior face to prevent reverberant acoustic buildup.

- *Tuned Duct and Plenum Attenuators:* Installing splitter silencers within intake and exhaust pathways engineered specifically for both mid-frequency broadband turbulence (500–2,000 Hz) and tonal blade-pass frequencies.

- *Earth-Sheltered Mechanical Canyons:* Sinking chiller yards below grade or enclosing them within thick, poured-in-place concrete vaults lined with weatherized acoustic panels to contain both airborne sound and ground-borne vibrations.

Appropriate Zoning Districts for Data Center Uses.

Large facilities (20,000 sq. ft. or greater) should be sited in the Heavy Industrial (HI) zoning district. Most HI-zoned property in Sumter County is located away from residential uses and has the utility infrastructure to serve large energy consumers. Additionally, these areas are served by public water and sewer systems, reducing or eliminating the need for private well access.

Small facilities (20,000 sq. ft. or less) can be incorporated into the commercial districts within the community if properly attenuated for any potential noise impacts to adjacent residential properties.

Proposed Text Amendment

Based on the above analysis, staff has developed regulatory language attached as Exhibit 1.

III. STAFF RECOMMENDATION

Staff recommends that the Planning Commission forward this request to County Council with a favorable recommendation.

IV. PLANNING COMMISSION – August 26, 2026

<u>Amend Article 3, Exhibit 5 (Use Regulations Table).</u>

Article 3, Exhibit 5 is hereby amended as follows.

Amendment to existing NAICS 518 row: The Notes column of the existing row "518 – Data Processing, Hosting, and Related Services" is amended to add: "Facilities meeting the definition of a Data Center in Article 10.b.1 are reviewed under NAICS 518210 rows below." The existing district designations in that row are otherwise unchanged.

Insert two new rows immediately following NAICS 518: Two new rows with the following cell values. All district columns not listed are left blank:

NAICS	Description	R-15	R-9	R-6	GR	RMF	PO	NC	LC	GC	LI-W	HI	AC	CP	Notes	NAICS Sector
518210	Data Center (Less than 20,000 sq. ft. GFA)						P	P	P	P	P	P			*Ref. Article 4.p. & Article 10.b.1. Definition*	51
518210	Data Center (More than 20,000 sq. ft. GFA)											P			*Ref. Article 4.q. & Article 10.b.1. Definition*	51

Amend Article 4 (Supplemental Development Standards)

Add new Section P: Supplementary Development Standards for Data Centers (20,000 sf of gross floor area (GFA) or less).

4.p.1. Data Centers (20,000 sf of GFA or less) (NAICS 518210): The following supplementary development standards apply.

a. **Maximum Noise Levels:**
   1. Through the utilization of noise dampening features or configuration methods, a data center shall be engineered to maintain the maximum threshold identified in the table below based on adjoining land use.

Adjoining Land Use	Time Period	Max Airborne Limit (dBA)	Max Low-Frequency Limit (dBC)	Ground Vibration Limit (PPV)
Residential & Institutional	Daytime (7:00 AM – 10:00 PM)	**55 dBA**	**65 dBC**	**0.05 in/s** (1.27 mm/s)
	Nighttime (10:00 PM – 7:00 AM)	**45 dBA**	**55 dBC**	**0.05 in/s** (1.27 mm/s)
Commercial & Office Space	24-Hour Continuous	**65 dBA**	**75 dBC**	**0.10 in/s** (2.54 mm/s)

   2. The Zoning Administrator may require a noise study prepared by an independent third-party acoustical engineer at the applicant's expense at any time to demonstrate compliance with the maximum noise threshold. Post construction failure to meet the maximum noise threshold is a violation of this Ordinance and may result in permit revocation, stop work order issuance, or any other remedy available pursuant to Article 1.d of this Ordinance.

b. **Electrical Utility Usage: In cases where a data center utilizes electricity in any amount from a public or private electricity provider, including for uses and/or activities incidental to the data center itself, the following standards apply:**

   1. The data center applicant shall provide written verification signed by the applicable electricity provider stating the following:

a. Adequate capacity is available on existing supply lines and substations to ensure there is or will be adequate electrical capacity available to serve the proposed use at peak operational levels while also serving the needs of other electricity users in the service area.

b. Existing utility supply equipment and related infrastructure are sufficiently sized and can safely accommodate the proposed use.

c. The use will not cause electrical interference or fluctuations in line voltage on or off the premises.

c. Water Utility Usage: Data centers shall meet the following water utility usage standards:

1. Data centers must be served by public or private water utility providers and shall not be served by a private ground water well or surface water intake facility.

2. The data center applicant shall provide written verification signed by the public or private water utility provider stating the following:
   a. Adequate capacity is available from existing water sources to ensure there is adequate water capacity available to serve the proposed use at peak operational levels while also serving the needs of other users in the service area.
   b. Existing water supply equipment and related infrastructure are sufficiently sized and can safely accommodate the proposed use.
   c. The use will not cause a loss in water pressure necessary to maintain functional fire protection and general service needs of the service area.

3. Fire hydrants serving the site shall be provided in accordance with Article 8.h.1.

d. Power Generation Devices: On-site power generation devices, whether permanent or temporary, shall comply with the following standards:

1. Such devices, including fuel storage areas, shall be fully enclosed within a building or by a masonry wall of a minimum height necessary to obscure the structure and provide adequate noise dampening. Walls enclosing power generation devices shall be considered part of the principal structure and subject to principal structure zoning district setback requirements. Such walls shall not be subject to the maximum height requirements for walls and fences established in Article 4.f.7 or Article 8.d.9.o.

2. Such devices, including associated fuel storage, shall comply with all applicable fire codes and with the fire and explosives performance standard of Article 5.b.5.b.

3. Such devices shall secure all required state and federal permits prior to operation.

Add new Section Q: Supplementary Development Standards for Data Centers (more than 20,000 sf of gross floor area (GFA)).

4.q.1. Data Centers (more than 20,000 sf of gross floor area (GFA)) (NAICS 518210): The following supplementary development standards apply.

a. **Maximum Noise Levels:**
   1. Through the utilization of noise dampening features or configuration methods, a data center shall be engineered to maintain the maximum thresholds identified in the table below based on adjoining land use.

Adjoining Land Use	Time Period	Max Airborne Limit (dBA)	Max Low-Frequency Limit (dBC)	Ground Vibration Limit (PPV)
Residential & Institutional	Daytime (7:00 AM – 10:00 PM)	**55 dBA**	**65 dBC**	**0.05 in/s** (1.27 mm/s)
	Nighttime (10:00 PM – 7:00 AM)	**45 dBA**	**55 dBC**	**0.05 in/s** (1.27 mm/s)
Commercial & Office Space	24-Hour Continuous	**65 dBA**	**75 dBC**	**0.10 in/s** (2.54 mm/s)

   2. A pre and post construction noise study prepared by an independent third-party acoustical engineer at the applicant's expense is required. A post construction noise study shall be submitted within 90 days of certificate of occupancy/completion of the data center. Post construction failure to meet the maximum noise threshold is a violation of this Ordinance and may result in permit revocation, stop work order issuance, or any other remedy available pursuant to Article 1.d of this Ordinance.

b. **Required Setbacks:**

   1. Except for off-street parking spaces, vehicular accessways, and underground utilities, all structures and development associated with a data center shall maintain a minimum setback based upon the established zoning district regulations with the exception of the following:

      a. Principal structures associated with a data center (including generators) shall be located no less than 500 linear feet from any lot line shared with a residential zoning district or an approved residential dwelling unit.

b. Principal structures associated with a data center (including generators) shall be located no less than 1,000 linear feet (structure to structure) from an existing or approved elementary or secondary school (NAICS 6111).

c. **Electrical Utility Usage: In cases where a data center utilizes electricity in any amount from a public or private electricity provider, including for uses and/or activities incidental to the data center itself, the following standards apply:**

1. The data center applicant shall provide written verification signed by the applicable electricity provider stating the following:
   a. Adequate capacity is available on existing supply lines and substations to ensure there is or will be adequate electrical capacity available to serve the proposed use at peak operational levels while also serving the needs of other electricity users in the service area.
   b. Existing utility supply equipment and related infrastructure are sufficiently sized and can safely accommodate the proposed use.
   c. The use will not cause electrical interference or fluctuations in line voltage on or off the premises.

d. **Water Utility Usage: Data centers shall meet the following water utility usage standards:**

1. Data centers must be served by public or private water utility providers and shall not be served by a private ground water well or surface water intake facility.

2. The data center applicant shall provide written verification signed by the public or private water utility provider stating the following:
   a. Adequate capacity is available from existing water sources to ensure there is adequate water capacity available to serve the proposed use at peak operational levels while also serving the needs of other users in the service area.
   b. Existing water supply equipment and related infrastructure are sufficiently sized and can safely accommodate the proposed use.
   c. The use will not cause a loss in water pressure necessary to maintain functional fire protection and general service needs of the service area.
   d. Fire hydrants serving the site shall be provided in accordance with Article 8.h.1.

e. **Power Generation Devices: On-site power generation devices, whether permanent or temporary, shall comply with the following standards:**

1. Such devices, including fuel storage areas, shall be fully enclosed within a building or by a masonry wall of a minimum height necessary to obscure the structure and provide adequate noise dampening. Walls enclosing power

generation devices shall be considered part of the principal structure and subject to principal structure zoning district setback requirements. Such walls shall not be subject to the maximum height requirements for walls and fences established in Article 4.f.7 or Article 8.d.9.o.

2. Such devices, including associated fuel storage, shall comply with all applicable fire codes and with the fire and explosives performance standard of Article 5.b.5.b.

3. Such devices shall secure all required state and federal permits prior to operation.

f. **Site Plan Review**: A data center exceeding 20,000 sf GFA shall constitute a Major Site Plan pursuant to Article 7.d.1.b and shall be reviewed under Article 7.d, with submission documents as required by Article 9.c.5 and Exhibit 24.

<u>Amend Article 8, Exhibit 23 (Off-Street Parking).</u>

Amend Exhibit 23 by adding, under the heading "TRANSPORTATION, COMMUNICATIONS, GAS & SANITARY SERVICES" or under a new "INFORMATION" heading, the following line item: "Data Centers" (NAICS 518210) — **1 space per employee on the largest shift, plus 1 space per company vehicle operating from the premises, plus ADA spaces per Exhibit 22**.

<u>Amend Article 10, Section B (Definitions) to insert:</u>

A-Weighted Decibel (dBA): A-weighted decibel (dBA) is an expression of the relative loudness of sounds as perceived by the human ear. This method modifies raw sound pressure levels across the frequency spectrum to mimic human hearing sensitivity.

C-Weighted Decibel (dBC): C-weighted decibel (dBC) is a measure of sound pressure levels using an electronic filter that mimics how the human ear perceives very loud sounds. Unlike A-weighting, which cuts off low bass frequencies, C-weighting has a flat response that includes low-frequency and peak noises.

Data Center (20,000 sf of gross floor area (GFA) or less): A commercial operation (not exceeding 20,000 sf GFA) designed to house and operate computer servers, data storage equipment, and associated networking and telecommunications systems, together with supporting infrastructure necessary for their continuous operation. Supporting infrastructure may include electrical service and distribution equipment, backup power supplies (such as batteries or emergency generators), cooling systems, fire suppression, and security systems.
Examples:

Enterprise Data Centers – Facilities operated by individual businesses and used to solely support that company's data and technology needs, including crypto mining.

Managed Data Centers – Third party service facilities that manage another company's computer hardware, data, and infrastructure.

Colocation Data Centers – Facilities typically owned by third parties where hardware is run and managed by a cloud-based company.

Edge Data Centers – Smaller facilities located close to the populations they serve to increase data processing speed and decrease transmission delays. Such facilities typically deliver cloud computing resources and cached content to end users and typically connect to a larger central data center or multiple data centers.

Data Center (More than 20,000 sf of gross floor area (GFA)): A commercial operation (exceeding 20,000 sf of GFA) designed to house and operate computer servers, data storage equipment, and associated networking and telecommunications systems, together with supporting infrastructure necessary for their continuous operation. Supporting infrastructure may include electrical service and distribution equipment, backup power supplies (such as batteries or emergency generators), cooling systems, fire suppression, and security systems.
Examples:

Enterprise Data Centers – Facilities operated by individual businesses and used to solely support that company's data and technology needs, including crypto mining.

Edge Data Centers – Facilities located close to the populations they serve to increase data processing speed and decrease transmission delays. Such facilities typically deliver cloud computing resources and cached content to end users and typically connect to a larger central data center or multiple data centers.

Hyperscale Data Centers – Large facilities that house critical computing and network infrastructure that provides scalability and high-speed processing for large volumes of data. Such centers may need large acreage tracts and millions of square feet of building space.

Peak Particle Velocity (PPV): metric used to measure ground vibration. It represents the maximum instantaneous speed reached by a single ground particle as a vibration wave passes through it. PPV is typically measured in inches per second (in/s) or millimeters per second (mm/s).