

**Planning Commission Hearing Date: November 6, 2025**  
**Board of Commissioners Hearing Date: November 20, 2025**

**STAFF ANALYSIS**

|                                                                    |                                                                                                                                                                                                                                                                                                                                       |                                                            |
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| <b>CASE NO.:</b>                                                   | TA-25-1247647                                                                                                                                                                                                                                                                                                                         | <b>File ID #:</b> 2025-0972                                |
| <b>Address:</b>                                                    | County-Wide                                                                                                                                                                                                                                                                                                                           | <b>Commission District:</b> ALL <b>Super District:</b> ALL |
| <b>Request:</b>                                                    | Application of the Director of Planning and Sustainability to Amend Chapter 27 To Establish a Definition, Regulatory Guidelines, and Development Standards for Data Centers in M (Industrial), M-2 (Heavy Industrial), O-I (Office Institutional), and O-D (Office Development) zoning districts. This text amendment is County-wide. |                                                            |
| <b>Applicant/Agent:</b>                                            | DeKalb County Planning & Sustainability Department                                                                                                                                                                                                                                                                                    |                                                            |
| <b>Sections of the Zoning Ordinance Affected by the Amendment:</b> | Chapter 27 of the Zoning Ordinance, to amend Section 4.1.3 (Use Table) to allow data centers in O-I, M, and M-2 zoning districts subject to certain supplemental regulations; and by adding to Article 9.1.3 – Defined Terms of <i>the Code of DeKalb County, as revised 1988</i> .                                                   |                                                            |

**STAFF RECOMMENDATION: Deferral\_11.12.2025**

The DeKalb County Planning & Sustainability Department is seeking to adopt an ordinance for regulations on data center developments, consisting of 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 service. The proposed ordinance defines data centers in four capacities of **minor, medium, major, and campus** - which is dependent on square footage, load capacity, and/or whether a substation is required for operation.

Major and campus data centers shall only be permitted in **Light Industrial (M)** and **Industrial (M-2)** zoning districts with a Special Land Use Permit due to their scale, limited employment generation, and lack of public accessibility. These facilities are not compatible with Activity Centers or residential neighborhoods.

Minor data centers will be permitted as accessory uses in **Office Institutional (O-I)** zoning districts and permitted outright in **Office-Development (OD)** zoning districts to accommodate small-scale operations in higher intensity areas. Minor data centers shall be permitted by right in **Light Industrial (M)** and **Industrial (M-2)** zoning districts.

Medium data centers will be permitted with a Special Land Use Permit in **Office Institutional (O-I)** and **Office-Development (OD)** zoning districts. Medium data centers shall be permitted by right in **Light Industrial (M)** and **Industrial (M-2)** zoning districts.

The proposed ordinance includes permitted locations, buffer requirements, architectural standards, operational requirements, noise and maintenance regulation, and supplemental assessments, such as water consumption, energy consumption, lighting design, stormwater management, sewer updates, transmission line impacts, and tree preservation.

The purpose for these regulations ensures that any new and/or existing developments do not impose upon the health, wellbeing, and welfare of DeKalb County Residents. The proposed ordinance considers the impacts of data center development on the economic, social, and environmental aspects of DeKalb County.

### Background

Over the last 10 years, the United States has seen a dramatic increase in data center development. Atlanta has seen major changes in the real estate market to prepare for the incoming demand. A study done with CBRE Research for North America Data Center Trends H1 2024 showed that Atlanta led all the primary markets for data centers with a 26% year-over-year increase in pricing, based on strong demand from AI providers, such as Google, Amazon, Microsoft, and X (CBRE Report).

Due to the High-Tech Data Center Equipment Tax Exemption (O.C.G.A. § 48-8-3(68.1)) allowed under House Bill 696 in 2018, many companies have been incentivized to build new data centers in Georgia. More recently, however, House Bill 528 passed through Georgia legislation placing more restrictions on larger development, requiring that “high resource use facilities to provide disclosures regarding community impact and energy and water usage” prior to engaging with any local government or jurisdiction for tax incentives.

There are currently two data centers located within DeKalb County. The first is a data center owned by DC Blox Atlanta located at 6 West Druid Hills Dr. NE, Atlanta, GA 30329. The facility is 3,350 sq ft and has been occupied since 2010. The second is INAP Data Center owned by Lincoln Rackhouse located at 40 Perimeter Center East, Atlanta, GA 30338. The facility is 88,000 sq ft and has been occupied since 2019.

The primary community concerns regarding data centers are the energy and water consumption, environmental impacts, land-use impacts, and noise pollution, particularly for campus and hyperscale facilities (>500,000 sq ft). In 2023, data centers consumed about 4.4% of total US electricity and are expected to consume 6.7 to 12% of total US electricity by 2028 ([US Department of Energy](#)). In understanding the basic capacity necessary to support data centers in populated areas, it is important to evaluate their impact on the surrounding community. Municipalities worldwide will have to learn how to adapt to the significant intelligent investments and the pressure from cloud and AI providers for space.

### Sustainability in the Data Center Industry

The integration of artificial intelligence (AI) into everyday processes has allowed for a rapid evolution of AI processing within a multitude of sectors, with Nvidia leading the charge for smaller, more efficient chip production. With the increase in the production of semiconductors, the ability to regularly process and cool the chips has become a concern. As more companies begin to focus on sustainable building and operation practices, it is imperative that regulation reflect these structural improvements.

Many of the pollutants from data centers come from diesel-powered backup generators. A diesel generator that operates with a load of 2kW to 5 kW can emit up to 4,456 kg of carbon dioxide per year ([Jakhiani et al., 2012](#)). An 80,000-square-foot data center can consume up to 150 watts per square foot to process information, resulting in a total power demand of 12 megawatts. To support this, backup diesel generators - typically four units handling a 2.5 MW load each - may be required. If not properly regulated, each generator can emit over 25,000 pounds of toxic emissions per hour. ([US EPA](#)). The US Environmental Protection Agency (EPA) has created four tiers to manage generators and reduce the emission of primary pollutants such as carbon dioxide, nitrogen oxide, particulate matter, sulfur oxides, carbon monoxide and hydrocarbons ([Power Secure](#)). Tier 4 is the current emissions standard for diesel generators, requiring the strictest regulations through intentional design using

diesel oxidation catalysts (DOCs), diesel particulate filters (DPFs), selective catalytic reduction (SCR) systems, and are optimized for fuel efficiency ([Worldwide Power Products](#)).

### Water Consumption

An important site selection criterion for data center locations is access to water, primarily through municipal or regional water utilities. For ideal high-density and high-performance computing, data centers can request 100,000 gallons to 3 million gallons of water per day, depending on the type of cooling system in place. Water cooling, consisting of an evaporative and closed-loop cooling, is a preferred method among hyperscale facilities because it more efficient in absorbing and expelling heat from high-density centers. Hyperscale data centers can consume 550,000 gallons per day, while wholesale and retail data centers consume an average of 180,000 gallons per day ([Water Usage in DCs](#)). Although data centers can use a large amount of water daily many facilities have opted to find alternatives that consume less water, such as immersion cooling ([Yañez-Barnuevo, 2025](#)). Despite these efforts, data centers still require a lot of energy and water to function effectively - even more so at larger scales. To increase water-efficiency, data centers can employ three different methods based on air or liquid cooling: closed-loop cooling systems, free cooling, direct air cooling, or immersion cooling.

Closed-loop cooling systems are the most common systems in new builds, recycling wastewater and freshwater that is chemically treated to prevent corrosion, microbiological issues, and freezing. Closed-loop systems require a large initial fill that can range in volume depending on the size of the data, however, it can reduce water use by 70% ([Yañez-Barnuevo, 2025](#)). These systems typically require more energy to circulate the water continuously between servers and chillers. Despite this, many developers are working towards zero water use for cooling as the industry continues to evolve.

Free cooling is used when development is located in a specific environment that maintains consistent cooler temperatures as cold air is drawn from the outside into the building to circulate and cool the equipment.

Direct air cooling requires no water, but instead much more energy. This system pulls heat away from the chips and filters it through air conditioning vents and tubes. An example of an air-cooling system is computer room air conditioning (CRAC), which uses a single pass air flow design through a refrigerant and then is immediately returned to the room to cool the air. This type of cooling system is ideal for areas with minimal water resources and cheaper access to power ([Chang et al., 2024](#))

An immersion cooling system is much more complex, requiring servers, chips, and any other data equipment to be completely submerged in a specialized dielectric fluid that absorbs the heat from the chips. In this instance, the hardware must be specifically designed to withstand the submersion. Immersion cooling is a much more recent technique that few developers have implemented into data centers due to initial costs that are much higher than installing a closed-loop system. Albeit the steep initial cost, immersion cooling can lead to significant space-optimization benefits and may have significant energy-saving benefits ([Yañez-Barnuevo, 2025](#)).

### Architectural and Safety Standards in Data Centers

Data centers are maintained with extremely strict standards in place due to sensitive data information, high-density equipment, and overall, extremely complex infrastructure ([Data Bank, 2024](#)). Data centers are susceptible to heat, electrical hazards, fire, air quality, and chemical exposure, often all regulated through appropriate on-site employee management, temperature and humidity regulation, air filtration systems, and data center design.

Data center design has become a concern for community members as more and more data centers spread to urban areas, specifically near densely populated cities or neighborhoods. As a result, it is important that data centers reflect similar architectural styles that remain relatively sustainable and are not incongruous with its surroundings. The basic design of these facilities should consider scalability and flexibility of building layout, power and cooling efficiency with equipment storage, high availability and redundancy of power, and 24/7 security and physical protection. Any kind of fenestration is typically discouraged in design as it presents an opportunity to physically access data center resources. Protocols, such as two-factor authentication, biometric screening, and video surveillance, must be put in place to ensure that any data within the building remains secure ([Pacheco, 2024](#)). Faux fenestration, applied decorative murals, or decorative windows can provide an alternative to the potential security risk that real windows present, while also maintaining a similar building envelope to the surrounding building environment.

The Atlanta Regional Commission is currently looking into releasing a Community Design Guide, in partnership with a noted design firm, to illustrate data center projects that can be integrated into local communities. This will help developers contribute to placemaking in building publicly accessible edges, shared amenities, and appealing facades. A key point is to lead developers away from green-fields and focus on regenerative redevelopment ([Atlanta Regional Commission](#)).

#### *Data Center Clustering for Efficiency*

The data center industry tends to grow in geographic clusters, often influenced by the cost and availability of land, power, and connectivity. Initially, data centers were typically located in remote areas to take advantage of lower land prices and cheaper energy. However, increasing customer expectations for low-latency services and the rising demand for bandwidth have driven a shift. Today, more data centers are being built closer to urban centers and along major transmission corridors to minimize latency and ensure faster, more reliable access to data.

For DeKalb County, which relies on a single water source, clustering could have more negative impacts on the existing water infrastructure. In implementing distance requirements, specifically from residentially zoned parcels, clustering of high-demand water users can be prevented in areas with limited infrastructure capacity, as well as reduces the risk of localized pressure drops in areas with older water infrastructure.

Although data centers can improve latency in closer proximity to each other, it is important to understand that clustering also concentrates water demand. As high demand users, data centers can place additional strain on DeKalb County's water infrastructure, potentially outpacing current capacity and impacting long-term sustainability.

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Planning Staff has collaborated with DeKalb County's Watershed Department to address water consumption concerns. Staff has also relied on key information from Georgia Power, Atlanta Regional Commission, Data Center developers, and the public, to ensure that regulations are conducive to the development goals of the County and the community. While the proposed ordinance may not address every potential issue at this time, it establishes a necessary regulatory framework to guide the location and operation of data centers within DeKalb County. In the absence of such regulations, these facilities could locate in areas where they may be incompatible with surrounding uses or community expectations. As the County gains experience administering these provisions, refinements can be made to address any emerging challenges or unforeseen impacts. Therefore, it is the recommendation of the Planning & Sustainability Department that the application be for "Deferral".