MOST POLICY INITIATIVE

Data Center Land Use

How much and what kind of land do data centers use?

Data centers are growing in size.

Data centers are facilities that contain computer servers and provide storage and online services (Lawson et al. 2026). They are categorized by their operations and who they serve. Operations typically correlate with facility size, but exact definitions and thresholds vary (Ferreira et al. 2026, Shehabi et al. 2024). The average size of new data centers in the U.S. has increased, nearly doubling from about 100,000 square feet (ft^2) in 2016 to almost 200,000 ft^2 in 2025, and is expected to continue to increase through 2030 (Ferreira et al. 2026). This growth is driven by more construction of large data centers.

Small data centers are used to support telecommunications networks, provide service to a single enterprise, or lease server space to retail customers. They can range in size from a small closet up to several thousand ft^2.

There are two main types of large data centers (Ferreira et al. 2026, Shehabi et al. 2024). Wholesale data centers sell large portions of server space to a few customers. Hyperscale data centers are typically owned and operated by a single large technology company for cloud or Artificial Intelligence (AI) services. One common definition for hyperscale data centers is a minimum of 5,000 servers and 10,000 ft^2 of physical space (Powell & Smalley n.d.). However, wholesale and hyperscale data centers can be hundreds of thousands of ft^2.

As of July 2026, the largest data center projects in progress in MO are in:

- Independence: a four-building AI-focused data center campus totaling 2.5 million ft^2 (57 acres) built by Nebius on 400 acres of land (City of Independence n.d.).
- Montgomery County: two data centers totaling 1.5 million ft^2 (34 acres) built by Google on 900 acres (Montgomery County, MO n.d.(a)).
- Montgomery County: up to 17 cloud computing data centers totaling 3.7 million ft^2 (85 acres) built by Amazon on 900 acres (Montgomery County, MO n.d.(b)).

Research Highlights

Hyperscale and wholesale data center construction is increasing the average data center size.

Data centers are typically built on one story to more easily manage heat, water, and weight distribution.

Most data centers are built in large metropolitan areas for faster connection to users, but AI models can be trained in rural facilities.

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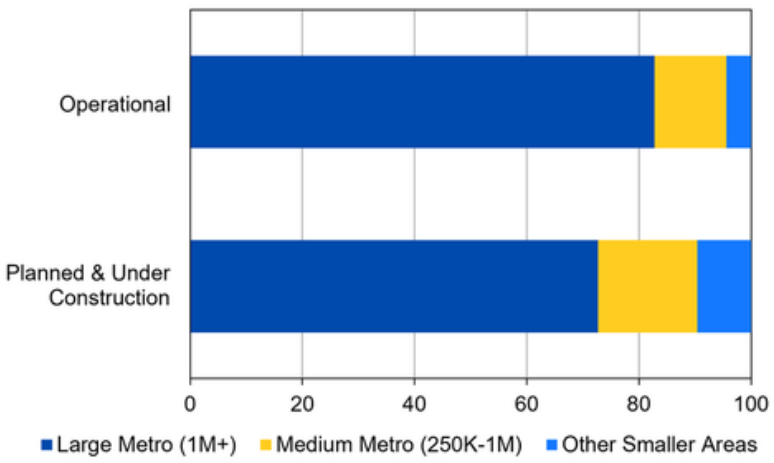

Figure 1. Distribution of operating data centers in the Great Lakes region by location compared to data centers planned and under construction. Most data centers are in large metropolitan areas (dark blue) to provide short response times for users. However, smaller cities (gold) and rural areas (light blue) comprise a larger share of data centers currently in development. Data centers in remote locations can be used for AI model training. Figure adapted from Ferreira et al. 2026.

Data centers are typically single-story buildings.

Data centers are typically built on a single story (Barroso et al. 2019). Multi-story construction makes heat and water distribution more difficult, requires managing heavy equipment on each floor, and reduces rooftop space for cooling equipment (Johnson 2023).

However, some companies have built multi-story data centers that can fit into dense urban areas. An eleven-story data center in Singapore contains a total of 1.8 million ft^2, and a 30-story data center in Hong Kong contains 350,000 ft^2 (Huang 2018, Varidata n.d.).

Connection to end users affects where data centers are placed.

To build data centers, developers prefer land that is easy to clear or already developed (Arzumanyan et al. 2025). Areas with lower risk of natural disasters are ideal to prevent service interruption. Data centers also require access to electricity, internet, and skilled labor to operate.

Data centers are mostly located in or near urban areas due to more reliable electricity (grid) and internet access (Fang & Greenstein 2025). They also are closer to their end users, which lowers the latency period, or users' wait time for a response. Metropolitan areas with more than 1 million people contain over 80% of data centers in the Great Lakes region (Ferreira et al. 2026, **Figure 1**). That share is decreasing, as smaller metros and rural areas make up more than a quarter of data centers currently in development.

AI operations have different location requirements. Data centers run AI models using two different operations: training, which internally develops the model, and inference, which responds to user requests (Torell & Torres Arango 2026). Training requires larger amounts of computation and power than inference but does not connect to users. Because of this, large data centers in remote locations with less expensive land are used to run AI training (Iron Mountain 2026a). As the number of users grows, inference will require more power and data centers than training (Iron Mountain 2026b, Ord 2025). Inference's short user response time requirements will need to operate in urban and suburban data centers.

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