

What Is A Data Center?

A data center is a facility that houses computer systems and networking equipment used to store, process, and distribute data. If you are using search engines, phone apps, online banking, vehicle navigation systems, streaming services, or social media – you are utilizing a data center.

Why Are Data Centers Important?

Data centers are critically important because they form the backbone of the digital world. They power the digital economy, facilitate cloud storage, secure and store critical information, support AI and high-performance computing, and act as control hubs for critical operations like emergency response.

How Do Data Centers Benefit Local Communities?

Hyperscale campuses have capital expenditures often in the billions, which brings a huge tax boost to the local community, while not being a commensurate burden on community services like schools and first responders. Other community benefits include jobs, workforce training, stimulus for complimentary businesses, enhanced utility infrastructure and progress toward renewable energy goals.

What Factors Influence Where Data Centers Are Built?

Data centers are typically sited based available land (workable site & trade area); proximity to high-voltage power transmission lines; access to reliable water, robust internet connectivity; and a jurisdictional partner with workable zoning regulations. Other considerations include climate, risk of natural disasters, state incentives and regulatory environment.

How Much Water Does A Data Center Use And What Factors Influence Demand?

Water needs vary depending on the type of cooling system (air-cooled vs. hybrid vs. water-based), equipment density, water quality, climate, and operational requirements. But not all data centers need to use water all the time. Thanks to local climate conditions, facilities in NW Indiana can rely on free cooling (no water needed) nearly 80% of the year.

How Is Wastewater Managed?

Industrial wastewater from data centers may be discharged into municipal systems, treated onsite, or reused for irrigation. Facilities must comply with local, state, and federal regulations.

How Is Power Provided To Data Centers?

Data centers require substantial and reliable power, often necessitating dedicated substations and infrastructure upgrades. Developers typically fund these improvements, and utilities design upgrades to ensure stable service for both new and existing customers.

Where Does The Power Come From? Is Any Of It Renewable?

Data Centers generally are fed off the main power grid for baseline power, with generation mix commensurate to the local area. With more generation needed, the companies behind data centers are now keeping existing generation online and adding new generation, like wind, solar, and advancing nuclear power. Technology and data center companies have become the driving force behind the global corporate transition to renewable energy.

Do Data Centers Increase Local Traffic?

Data centers generate minimal daily traffic compared to other industrial uses, mainly limited to employees and maintenance personnel. Construction phases may temporarily increase traffic, but operational impacts are low.

How Much Sound Do Data Centers Create, And How Is It Regulated?

With appropriate treatments, sound from a data center is comparable to the sound of a refrigerator. The primary sources of sound are HVAC systems and backup generators. Most facilities are designed to mitigate sound through equipment selection, placement, and screening. Noise is regulated by local ordinances and state agencies, with studies typically required to demonstrate compliance.

Why Do Data Centers Have Generators, And How Are They Regulated?

Backup generators provide power in the event of an emergency outage to protect critical data. They are typically diesel-fueled, although alternatives are being evaluated. Generators do not run all the time. They are subject to required testing for 30 minutes per month to make sure they are operational in case of emergency.

Are There Electromagnetic Fields Or Other Health Risks Associated With Data Centers?

EMF occurs with any electrical facility. Data centers emit low frequency EMF in the non-ionizing range and comply with federal regulatory standards. In reality, radiation from a data center doesn't extend far beyond its physical walls and the level is less than a household microwave.

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