

Data Centers in Charles County

Q&A



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WHAT IS A DATA CENTER?

Data centers are a critical part of our digital infrastructure. A data center is a facility that stores, manages, and processes large amounts of data, supporting cloud services, internet infrastructure, and enterprise applications. Data centers are critical for hosting websites and applications and supporting data-driven services that businesses and consumers rely on daily. They are large buildings that contain many computer servers. Any time you search the web, use GPS, post on social media or use internet banking, your digital activity flows through a data center.

What do data centers look like?

There are different types of data centers, but most are very large structures that are one or two stories in height. Information security is paramount for data centers and so they are typically surrounded by fences and have a manned security gate with 24-hour coverage. Newer data centers often have significant building setbacks from property lines and vegetative buffers to mitigate noise from cooling systems.

Why are data centers getting so much attention?

Data centers have been in existence for many years. In fact, you may have heard of companies and organizations keeping their data in “the Cloud”. This is a common reference to a data center. In recent years, the dramatic growth in artificial intelligence (AI) has created significant demand for new data centers. This has resulted in a robust search for new data center sites.

Why are people opposed to data centers?

Early data centers in some areas, were not properly regulated and sited resulting in the concerns by neighbors over noise and building appearances. Additionally, some point to data centers significant use of energy and water as a problem. All of these issues can be addressed with a proper regulatory framework.



What are the economic benefits of data centers?

Data centers generate significant tax revenue, create job opportunities, enhance broadband access and digital infrastructure, diversify the local economy, and provide longterm economic stability.

Why do data centers matter for Charles County?

Attracting data centers would help balance Charles County's tax base with more commercial/industrial revenue. As the commercial tax base grows, businesses contribute more property tax revenue, which helps fund essential services such as schools, roads, public safety, parks, and libraries. With businesses accounting for a larger share of the tax burden, there's less pressure to raise taxes on residents, which fosters economic vitality and makes the community a better place to live. A data center would also serve as an anchor for the development of other technology companies and jobs.

How will data centers affect job creation and workforce development?

The development of a large data center creates jobs during construction and operation. Recent economic studies have shown that a typical large data center could result in up to 5,000 construction jobs over a five to ten year construction period. Once operational, this data center could generate up to 500 high paying jobs to manage the data center. A data center requires continuous maintenance and enhancements which require on-going jobs by skilled contractors such as electricians, plumbers and steamfitters.



How much power do data centers require, and how is it managed?

Data centers require substantial and reliable electrical power. This is the most important factor that data center developers consider when evaluating a site. In Charles County, SMECO and PEPCO distribute the supply of electrical power. A data center developer must pay for a load study from these utility companies prior to moving forward. These studies are very complicated and cost hundreds of thousands of dollars. The results inform the developer as to the potential improvements that must be made and timing of the improvements. For many sites, adequate power isn't available or the cost of improvements are too great and they don't move forward. As energy is a key input, data center operators are committed to energy efficient operations and sustainable facilities.

Why do data centers require large amounts of water?

The servers in data centers create significant levels of heat, and most data centers are cooled with water-based systems. In some areas that didn't properly plan for data centers, this has put a strain on local water systems. In Charles County, any development of data centers would have to prioritize the use of non-potable water. Non-potable water is water that is treated, yet not drinkable. It is typically placed into the Potomac River after complying with strict regulations. Charles County has existing agreements with two local power plants to sell them non-potable water for cooling. This same arrangement would be likely with a data center developer. Once used, the non-potable water is returned to the Mattawoman Wastewater Treatment Plant.

Are data centers noisy?

The computer servers in data centers generate significant heat and require extensive cooling systems. Data centers also must have redundant power systems to ensure continuous operations in the event of an electrical blackout. These cooling systems and backup generators can be loud. The noise impact can be mitigated with building layouts, setbacks and vegetative buffering and berms. Generators must be periodically tested for short periods of time, but most have not been used given the high level of reliability of power sources. A data center in Charles County would be required to complete noise studies prior to development and on an on-going basis.



Are data centers the same as crypto mining facilities?

Crypto mining facilities verify cryptocurrency transactions, whereas data centers support storing, processing, and distributing large amounts of data. Crypto mining facilities can produce a significant amount of noise and heat.

Why is Charles County an attractive location for data centers?

Charles County's proximity to Washington, D.C., access to reliable power and fiber infrastructure, and lower land costs make it an ideal location for data centers. Anchored by the Naval Surface Warfare Center Indian Head Division (NSWC IHD), the county offers a secure data infrastructure that supports federal contractors, DoD needs, and growing cloud hosting demands.

What measures can be taken to ensure that data centers are environmentally friendly?

Today's large data centers are operated by some of the most innovative companies in the world—Meta, Google, Amazon and Microsoft. All of these companies are very committed to finding sustainable solutions to energy, cooling and noise mitigation issues. These issues are part of their corporate commitment to sustainability, but also have major cost impacts which drives their innovation efforts. Microsoft's commitment to buy energy from the Three Mile Island Nuclear Plant to power data centers is an example of this innovative culture of these companies. Charles County will encourage any data center developer to embed sustainability practices into its site design and operation.

What are the long-term economic effects of housing data centers?

Data centers provide long-term stability for the tax base and employment. These centers are recession-resilient investments because demand for data and cloud services continues to grow, even in economic downturns. They create a technology ecosystem that drives higher wages, expands local career pathways, and fosters entrepreneurship in related sectors. This aligns with Charles County's need for economic diversification to reduce over-reliance on commuter residents and government employment.

