

Data centers have been around since the 1940s, yet many people do not understand what they are and the impacts they have on communities and the environment. A data center is “a physical room, building or facility that houses IT infrastructure for building, running and delivering applications and services” (What is a Data Center, 2026). So, these buildings are essentially a library for digital information.

There are five types of data centers. Enterprise or on-premises data centers are used by many companies. They allow companies to have more control over data security. Managed data centers and colocation facilities are also used by companies. The first is used when companies have a shortage of space or expertise for an on-premises center. So, they lease storage and servers from a public cloud center. In colocation facilities, companies rent space to store their IT infrastructure. Public cloud data centers store IT infrastructure for multiple users. Hyperscale data centers are what larger cloud data centers are called. These data centers are typically run by large cloud service providers, such as Amazon and Google (What is a Data Center, 2026; What is a Colocation Data Center, 2026).

While data centers are necessary for housing IT software, they come with some devastating impacts. For example, these centers require a great deal of energy and as technology advances, they will continue to require more energy. One study, done by the Lawrence Berkley National Laboratory, found that data center will account for 12% of the United States energy consumption. Americans are paying for the increase in energy use. Compared to 2024, Americans are paying 10% more for electricity (Walker & Goldsmith, 2026).

Data centers require large amounts of water as well. The water is used to prevent servers from overheating. Currently, large data facilities consume five million gallons of water a day. Local water supplies are depleted, while the wastewater is poured back into local systems. Other

issues brought about by data centers include air pollution, noise pollution, and competition for land (Walker & Goldsmith, 2026).

Google started building a new data center in Fort Wayne in 2024. According to Fort Wayne Data Center, this is a beautiful advancement for the city of Fort Wayne. The cite claims that the new center will provide a new water tower, an economic boost, job creation, and community partnership. The new water tower is meant to expand Fort Wayne's water capacity and comes with a promise to replenish 120% of the water volume consumed. There is no plan listed about how the data center will replenish this water. Additionally, the center has created numerous construction jobs and claims to create hundreds of operational roles for the community (Fort Wayne Data Center, 2026). The information provided from the Fort Wayne Data Center website is brief and broad, which concerns considering the ginormous impact data centers have.

Data centers are an important factor in supporting the digital world. As technology advances, so does the demand for the servers and storage housed by data centers. The negative effects of data center are a concern, however. These centers use a large amount of energy and water. Additionally, they contribute to noise and water pollution plus a multitude of other issues. Will the technological benefits of data centers continue to outweigh the negative environmental effects? Or will companies take action to combat the negative side effects of data centers?

Works Cited

Fort Wayne Data Center | Google. (2026). <https://www.fortwaynedatacenter.com/>

Walker, C., & Goldsmith, I. (2026, February 17). From energy use to air quality, the many ways data centers affect US communities. <https://www.wri.org/insights/us-data-center-growth-impacts>

What is a Colocation Data Center? Fortinet. (2026).

www.fortinet.com/resources/cyberglossary/colocation-data-center

What is a data center? | IBM. (2026b). <https://www.ibm.com/think/topics/data-centers>