August 2026

Prepared by:
Central Florida
Regional Planning Council

Land Use, Infrastructure Resilience, and the Digital Future:

Data Centers, Broadband, and Emerging Technologies

Heartland 2070

CFRPC

The **Central Florida Regional Planning Council** brings communities together to plan for, prepare for, and respond to the regional issues that matter most. Building on Heartland 2060, **Heartland 2070** will help the region prepare for changing conditions through 2070, including emerging technologies such as advanced air mobility, agricultural innovation, data centers, and other developments that may shape its future.

As interest in data center development grows, Heartland 2070 provides a regional forum for communities to understand potential impacts, share information and lessons, and coordinate the infrastructure, land use, and policy decisions these projects may require.

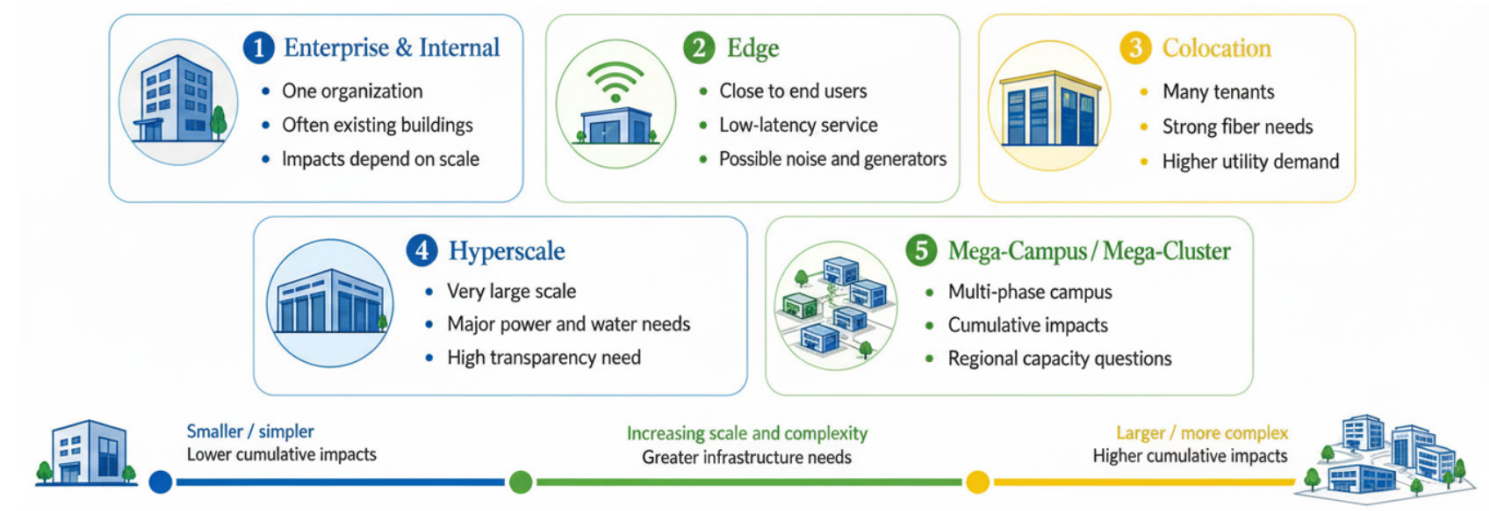
What is a Data Center?

Data centers are specialized facilities designed to store, process and transmit digital information. Data centers warehouse servers, storage systems, networking equipment and supporting infrastructure under relatively high security. While data centers have existed for decades, a new class of 'hyperscale' facilities designed for generative AI and cloud computing has grown significantly. Modern data centers differ from traditional enterprise data centers in size and resource intensity and require specialized power and cooling infrastructure that may impact local utility grids and water resources

Because these facilities differ in scale and function, their land use, water, energy, network, transportation, fiscal, and community impacts should be evaluated separately.

An increasing number of private and public entities have used data centers to support their expanding IT needs, particularly as data volumes continue to grow.

Congressional Research Service. August 26, 2025. "Data Centers and Their Energy Consumption: Frequently Asked Questions."

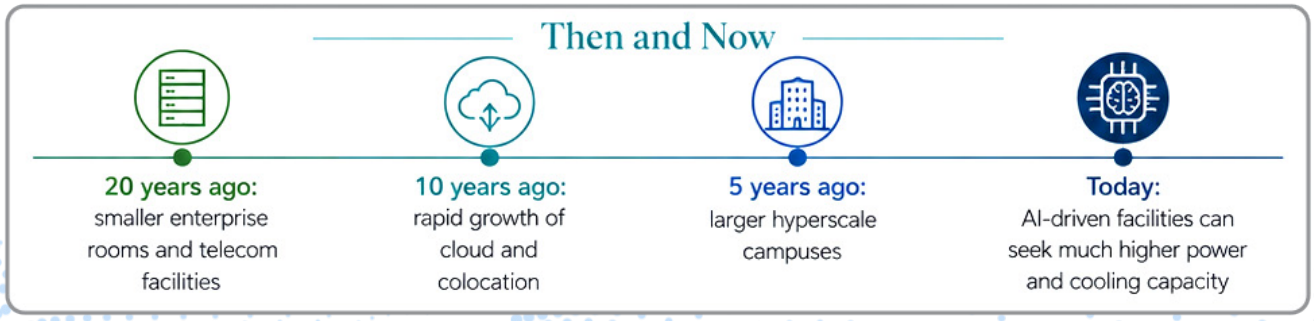


Planning for Future Infrastructure

Data centers are becoming a major driver of infrastructure demand across the country. U.S. data center electricity use increased from approximately 58 terawatt-hours in 2014 to 176 terawatt-hours in 2023, and the U.S. Department of Energy projects that data centers could account for 6.7% to 12% of total U.S. electricity use by 2028.

This rapid growth makes proactive infrastructure planning increasingly important. Early planning helps communities identify capacity needs, coordinate investments, protect existing customers, and direct new development to locations where electricity, water, transportation, broadband, and public services can support it safely and efficiently. As developers evaluate potential sites, local governments must navigate rapidly changing information, inform the public, and weigh both the economic opportunities and the broader community and regional impacts.

Data centers could account for **6.7% to 12%** of total U.S. electricity use **by 2028.**



Infrastructure Considerations

Data centers require large amounts of electricity to run servers, storage systems, networking equipment, cooling systems, and backup power.

Data centers are energy-intensive because servers and high-performance processors, including CPUs and GPUs, use significant power and generate substantial heat. About 40% of electricity use is tied to computing and servers, about 10% to networking and storage, and the rest largely to cooling, power conditioning, batteries, and backup systems.

Data centers also may require significant water, primarily for cooling. Cooling can reduce energy use but requires more water.

Water demand depends on the facility size, climate, cooling system, and how intensively the facility operates. Air cooling generally uses less water but more electricity, while evaporative cooling can reduce energy use but requires more water. Closed-loop, direct liquid, immersion, and free-cooling systems can reduce water use, but may be more expensive, more complex, or limited by climate.

Water use can vary widely. A medium-sized data center may use about 100 million gallons per year, while a large hyperscale facility may use 1 million to 5 million gallons per day during peak conditions. Although data centers represent a small share of total national water use, local impacts can be significant, especially in areas with limited water supply or existing water stress.

Florida large-scale threshold:
50 MW monthly peak load

Emerging AI campus requests nationally:
300–1,000 MW

SB 484, 2026 & the Florida Legislative Context

- **Local land use authority preserved:** Local governments retain comprehensive planning and land development regulation powers over large-load customers (data centers)
- **Cost of service protection:** Utilities must ensure data centers pay their own electricity costs; ratepayers cannot bear the risk of nonpayment
- **Grid stability safeguarded:** Utilities may curtail or interrupt service to data centers to protect grid stability and public safety
- **Foreign entity prohibition:** Public utilities cannot knowingly serve large load facilities owned by foreign countries of concern
- **Water use oversight:** Large-scale data centers face new consumptive use permit (CUP) requirements; water districts may require use of reclaimed water

Data centers primarily use water for cooling rather than as a production material. Servers generate substantial heat, so facilities must continuously remove that heat to prevent equipment damage or failure. Water use depends largely on the type of cooling system selected.

Air Cooling | Uses air-conditioning systems, chillers, fans, or heat exchangers to remove heat. Direct water use is generally minimal, although electricity demand can be higher.

Evaporative Cooling | Uses cooling towers or evaporative chillers. Water absorbs heat and then evaporates, reducing the electricity required for cooling. The trade-off is higher water consumption.

Closed-Loop Water Cooling | Circulates water or another fluid through sealed pipes. Because the same fluid is repeatedly reused, water losses are limited. These systems may reduce freshwater use by up to 70% compared with traditional open evaporative cooling, but they can be more costly and complex.

Direct Liquid and Immersion Cooling | Moves liquid directly to computer chips or submerges equipment in a non-conductive fluid. These systems remove heat efficiently and can reduce both air-conditioning needs and water consumption. They are increasingly used in high-density AI and high-performance computing facilities.

Free Cooling | Uses cool outside air or naturally cold water sources to remove heat. It can be highly efficient and use little or no water, but it is generally limited to cooler climates or certain seasons.

The Right Use, The Right Site.

Data centers can add tax base and digital infrastructure, but they are not automatically an economic win for your community. The best outcomes come from the right use, the right site, the right infrastructure, and clear enforceable public safeguards.

Scale Matters

A small enterprise data center and a multi-building hyperscale campus are not the same land use in practice. Scale drives impacts on power, water, transportation, noise, and public services.

Key Questions

1. What exact type and scale of facility is proposed?
2. How much power is needed at full build-out, and when?
3. What upgrades are required, and who pays?
4. What cooling system will be used, and what is average and peak water demand?
5. Is reclaimed water feasible?
6. What are expected noise levels, generator testing hours, and lighting controls?
7. How many permanent jobs, what wages, and how many local hires?
8. What tax revenue remains after abatements, depreciation, and public costs?
9. What community benefits are enforceable?
10. What happens if the facility closes, stalls, or never fully expands?

Possible Enforceable Commitments

- Direct payments or a community fund
- Workforce training and school partnerships
- Grid, water, road, or broadband improvements
- Water-use caps or reclaimed-water requirements
- Noise, lighting, and generator testing standards
- Annual reporting on jobs, water, and energy
- Clawbacks, penalties, and decommissioning terms

We aim to foster informed, collaborative decision-making and share resources that help local leaders respond effectively to development proposals. Member communities are encouraged to reach out for support to discuss emerging trends, gather information, or explore opportunities for coordinated regional planning.

To learn more please visit **www.cfrpc.org/heartland2070** for additional resources.