

# Memorandum

To: Mayor Mark Bell and Board of Commissioners  
Eric Peterson, Town Manager

From: Matt Efird, Assistant Town Manager

Date: May 11, 2026

Subject: Background Information — Data Center Discussion



This memorandum provides background information to the Board of Commissioners to facilitate conversations about data centers and potential land use concerns within Hillsborough. This topic is undergoing review in communities across the state and country, and issues of both misinformation and missing information can challenge making effective decisions. Town staff is participating in a regional working group convened by Central Pines Regional Council (CPRC) and has done internal background research — but the information in this memorandum should not be considered “expert” or definitive. The focus in this document is to provide relevant information to the board and community, identify local trends and regulations, and provide information on potential paths forward.

## 1. Definitions

- a. The first step in discussing data centers and potential land use challenges is to define what we are discussing. The Town of Apex provides a simple definition: “A data center is a facility that provides computational services such as cloud computing, data storage, artificial intelligence (AI), cryptocurrency mining, and high-performance computing.”
- b. Beyond the basic definition, data centers can be categorized in various ways: type of use or ownership; scale and size (based on square footage, power and/or water consumption); and whether water for data center operation is discharged or recirculated internally.
  - i. Use/Ownership
    1. Enterprise/Internal — Typically owned, operated and located on site and used by a single entity to support that entity’s operations.
    2. Co-located/External — Owned and operated by an entity that leases space in the form of servers or computational power to multiple external users.
  - ii. Scale — based on electric utility classifications
    1. Minor Use: 0-49 megawatt (MW) — Treated like a standard industrial customer.
    2. Moderate Use: 50-99 MW — Requires system impact analysis to study feasibility, timeline and infrastructure requirements.
    3. Major Use: 100+ MW — Requires formal agreement or service plan, infrastructure investments and upfront financial participation.
  - iii. Water Consumption
    1. Open Loop — Uses a mechanical or cooling system that requires external input of fluid (water) which is passed through equipment to transfer heat or perform some other function and then is discharged, evaporated or otherwise released from the site.

2. Closed Loop — Uses a mechanical cooling process in which the coolant circulates continuously within a sealed pipe circuit to remove heat. The coolant (water) absorbs heat and transfers it to a cooling device without direct contact to the external environment or discharge. The coolant is recirculated within the system rather than consumed or released.
- c. As shown above, a data center can have a combination of operating factors, some of which may be acceptable for appropriate land use within the town, while others may not. A large part of the community conversation focuses on the specter of hyperscale data centers — usually defined as having energy demand in excess of 100 MW, water demands in excess of 1 million gallons per day (GPD), 5,000 or more servers, and certain technological redundancies. The definition has varying types of uses that may or may not be appropriate in town.

## 2. Current Land Use Regulations

- a. Data centers are not currently a defined land use in the Hillsborough Unified Development Ordinance. In general, uses that are not defined in the ordinance are not allowable in town, although case law suggests staff should utilize the regulations of a comparable use. Due to this, the town at minimum should consider establishing a definition of data centers and any appropriate zoning regulations applicable to that use.
- b. Please see the separate legal guidance provided to the board by Town Attorney Robert Hornik.

## 3. Potential Negative Impacts

- a. One reason that data centers have become a frequent topic of conversation is the myriad potential external impacts from this type of development. Potential impacts in addition to power and water consumption are: noise, greenhouse gas emissions, air and light pollution, soil contamination, hazardous materials, fire and explosion risk, electronic waste creation, and off-site infrastructure impacts.
  - i. Power Consumption — The capacity of the town’s electric utility providers is not known but can be determined. The town is served by both Duke Energy and Piedmont Electric Cooperative. An understanding needs to be reached on the grid capacities for both and their ability to serve already-planned residential and commercial growth, data centers notwithstanding.
  - ii. Water Consumption — The town has sufficient water capacity now to serve current and known permitted customers. However, the threat of drought, a changing climate, and water distribution system limitations means that a large-scale consumer may require significant investment in treatment and distribution capacity and will limit the opportunity for future residential and commercial growth. Given the town’s more restricted wastewater treatment capacity, it is recommended that no open loop systems (as defined above) be considered under potential data center regulations.
  - iii. Noise — Data centers of all sizes and types include backup generators, standard HVAC systems and larger cooling systems in their operations. These systems generate a large amount of both low- and high-frequency noise and vibrations that can impact properties in a wide area. It is recommended that any development regulations related to data centers include pre- and post-construction noise studies, limits on allowable noise levels for low- and high-frequency noise, time standards for generator testing and maintenance, and screening requirements.

- iv. Air Pollution and Greenhouse Gas Emissions — This risk may take one of several forms or a combination. On-site backup generators, typically diesel-fueled, will create emissions. Indirectly, the site’s power consumption may increase emission outputs at power generation plants. On-site power generation may be included in some data center proposals or required by the electric utility, which further increases the potential for increased emissions. Improper maintenance of large-scale water and air handling systems may cause aerosolized release of bacteria or pathogens that may impact the surrounding community.
- v. Soil Contamination and Hazardous Materials — Examples of potential risks for leaks or spills that could cause ground contamination include on-site fuel storage, non-water coolants, biocides for coolant system maintenance, and batteries. These should be reviewed as part of development regulations. Some data center proposals have included hydraulic fracturing (“fracking”) operations to provide natural gas for on-site use. This should not be considered for data center sites if not allowed in other areas of town.
- vi. Fire and Explosion Risk — The risks of this type of land use are increased by stored fuel for backup generators, high heat generation, and battery storage. Orange Rural Fire Department should be engaged on identifying the risks and the agency’s ability to respond to a large-scale battery fire, which may require different equipment and tactics.
- vii. Electronic Waste Creation — As technology evolves, a data center’s servers, batteries and other electronic components will require regular upgrades and replacements, which will create large volumes of potentially hazardous waste. Any data center development would likely receive private commercial trash service, but those components could end up in area landfills. Materials handling and decommissioning plans should be considered for inclusion in any data center regulations. This type of use can make future reuse or adaptation of the buildings difficult.
- viii. Off-site Infrastructure Impacts — A primary risk includes the need for construction of additional power substations in the community to serve data centers. This potentially takes up developable land and creates additional burdens for surrounding property owners, with the impacts there potentially long after the data center ceases operations. It is a permanent change to the local environment.
- ix. Financial Impacts — Data centers can be significant property tax generators; however, most of the value is in the business equipment, which can depreciate rapidly. Renewal and replacement cycles need to be monitored closely by the county’s tax assessors to ensure data centers are not being undervalued. A sales and use tax exemption currently exists for data centers. If that changes, significant sales tax receipts could be associated with a data center’s building and periodic upgrades. Additionally, many data centers operate on minimal staffing. Any increases in local employment would likely be temporary and construction-related, rather than higher-paying technology jobs.

#### 4. Local Trends

- a. This is an emerging topic throughout the state, and many communities have already taken some action related to data centers. In our region, these communities have had discussions on data centers: Apex, Durham, Sanford and Wendell and Chatham, Harnett, Lee, Orange and Wake counties. Those discussions resulted in temporary moratoriums on data center development in all communities except Sanford and Harnett and Lee counties. Information

from the Town of Apex, City of Durham, Orange County, and Wake County are attached to this memo as additional information.

#### 5. Legislation Watch

- a. As of May 5, a number of bills have been introduced in the North Carolina General Assembly that directly or indirectly impact the development of data centers.
  - i. House Bill 1213 — Repeals sales and use tax exemption for data centers.
  - ii. House Bill 1063 — Regulates large-scale data centers, cost and utility impacts.
  - iii. House Bill 1192 and Senate Bills 1019, 1024, 1026 and 844 — Primarily address electric utilities, with provisions aimed at large-load customers such as data centers.

#### 6. Next Steps

- a. Given the lack of regulations around data centers and the significant potential for negative impacts, it would be appropriate for the board to consider a temporary moratorium to allow staff to develop and propose regulations for the board and community to review. Staff has proposed that the board adopt a resolution of intent, signaling to the community and developers that additional regulations regarding data centers are forthcoming.
- b. A short-term option for a moratorium of not more than 60 days can be approved by the board after a public hearing and appropriate notice. The board may direct staff to provide additional information at a future meeting as a primary step toward that action or can vote to call the public hearing and receive the background information as part of the proceedings.
- c. Any longer-term moratorium considerations require much longer notice requirements and may involve the Planning Board. This process can begin concurrent with a short-term moratorium if desired.