Discussion of Data Centers and Land Use Matters

May 11, 2026

TOWN OF
HILLSBOROUGH

Topics

- Definition and Types of Data Centers
- Current Land Use Regulations
- Potential Negative Impacts
- Local Trends
- Legislation Watch
- Next Steps

Definition and Types of Data Centers

- 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.”

- Data Centers can be classified based on the following characteristics:
  - Use/Ownership
  - Scale
  - Water Consumption

Type of Data Centers

- Use/Ownership
  - Enterprise/Internal - Typically owned, operated and located on site and used by a single entity to support that entity's operations.
  - Co-located/External — Owned and operated by an entity that leases space in the form of servers or computational power to multiple external users.
- Scale (Utility Classification)
  - Minor Use: 0-49 megawatt per day (MW) — Treated like a standard industrial customer.
  - Moderate Use: 50-99 MW — Requires system impact analysis to study feasibility, timeline and infrastructure requirements.
  - Major Use: 100+ MW — Requires formal agreement or service plan, infrastructure investments and upfront financial participation.

- Context
  - The average residential customer in North Carolina uses 33 KwH of power per day
  - Each 1 MW of use is the equivalent of 30 residential units
  - Minor – 30 – 1,400 homes
  - Moderate – 1,500 – 2,900 homes
  - Major – 3,000+ homes

Types of Data Centers

- Water Consumption
  - 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.

  - 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.

Types of Data Centers

- Hyperscale
  - Power requirements over 100 MW
  - Water requirements over 1 MGD
  - 5,000+ servers
  - Technological redundancies

Current Land Use Regulations

- Data centers are not currently a defined use in the Hillsborough UDO
  - In general, uses that are not defined in the UDO are not allowed in town
  - However, there is case law that suggests that the regulations of a comparable use would need to be applied
  - Very important for the town to take action to define data centers and appropriate zoning regulations for that use

Potential Negative Impacts

- There are many known and suspected impacts that may come with data centers as a land use
  - Power consumption – capacity for our area is unknown
  - Water consumption – could crowd out desired residential and commercial development, town has much more limited wastewater capacity
  - Noise – data centers generate a large amount of low- and high-frequency noise and vibration at all hours of the day
  - Air Pollution and GHG Emissions – on-site generators and increased power use, potential threat of aerosolized bacteria

- Context
  - The average residential customer in town uses 3,400 gallons of water per month
  - Each 50,000 GPD use by data centers of use is the equivalent of 450 residential units
  - 300,000 GPD – 2,700 residential units
  - 500,000 GPD – 4,500 residential units
  - 1 MGD – 9,000 residential units

Potential Negative Impacts

- There are many known and suspected impacts that may come with data centers as a land use
  - Soil Contamination and Hazardous Materials – fuel, coolants, batteries, potential fracking
  - Fire and Explosion Risk – stored fuel, high-heat operations, large battery storage – need engagement with ORFD
  - Electronic Waste and Decommissioning – frequent replacement or upgrades generates a lot of waste, sites are difficult to reuse if data center ceases operation

Potential Negative Impacts

- There are many known and suspected impacts that may come with data centers as a land use
  - Off-site Infrastructure – may cause construction of additional power substations, which have long-term negative community impacts
  - Financial Impacts – most property value is in business personal property, which rapidly diminishes. Promised tax revenues and job creation may be much lower in reality

Local Trends

- Data Center discussions in the local area:
  - Town of Apex (moratorium)
  - City of Durham (moratorium)
  - City of Sanford (UDO definition)
  - Town of Wendell (moratorium)
  - Orange County (moratorium)
  - Durham County (moratorium)
  - Harnett County (UDO definition)
  - Lee County (UDO definition)
  - Wake County (moratorium)

Legislation Watch

- As of early May, a number of bills have been introduced that involve data centers
  - House Bill 1213 — Repeals sales and use tax exemption for data centers.
  - House Bill 1063 — Regulates large-scale data centers, cost and utility impacts.
  - 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.

Next Steps

- Tonight
  - Consider adoption of “Resolution of Intent” to inform community and developers of forthcoming regulations
- Near-Term
  - Direct staff to develop data center definition and regulations and/or short-term (under 60 day) moratorium
- Longer-Term
  - If desired, follow process for longer (more than 60 day) moratorium