



Planning and
Development
Services

DATA CENTER COORDINATION: RECOMMENDATIONS AND NEXT STEPS

Planning and Development Services

March 2026

Purpose

This report summarizes the research conducted by Wake County into regulations and placement of large or hyperscale data centers and provides recommendations for local community consideration. It also documents the next steps that will be taken to provide more guidance for local communities.

Role: Wake County's role is to coordinate and convene stakeholders to share information and guidance, as appropriate. Stakeholders include municipalities, public utilities, Duke Energy, economic development, the Wake Water Partnership, the Central Pines Regional Council of Governments (CPRC), and the NC Department of Environmental Quality.

Multiple entities are contributing to the knowledge base and best practices on the issue of AI and the related growing demand for hyperscale data centers. Wake County is working alongside and in coordination with CPRC as they research best practices in order to support local governments. Apex staff are generous with their time as they process the annexation and rezoning request for the New Hill data center. Lastly, the Board of Commissioners has representation on the North Carolina AI Leadership Council, whose mission is "to guide the responsible and effective use of Artificial Intelligence in state government".

Background: Nationally, the demand for and location of hyperscale data centers is evolving and expanding driven by a demand to support artificial intelligence applications in business operations and consumer services. In general data centers are located where five factors converge:

- 1) Internet capacity (fiber)
- 2) Demand for service (population)
- 3) Available space (land)
- 4) Electrical capacity
- 5) Cooling capacity (water/air)

Data centers are likely attracted to Wake County based on the first two factors, fiber and population. The other factors, land, electricity, water, are likely challenges or restricting factors based on costs and competition from user potential uses.

In 2025, the Town of Apex received an application requesting annexation and rezoning of a 190-acre site for a hyperscale data center. Several other municipalities have also received inquiries. Data centers are not new to our community. There are five located in Wake County (examples: SAS, NetAPP, BB&T, Global), but these data centers are generally smaller and serve to support another larger use.

Definition: Following the lead of Duke Energy, this report shall focus on data centers that propose to consume more than 100 Megawatts (MW) daily in electrical power (see recommendation 1). Municipalities may choose to apply recommendations from this report in other instances. For context, the current daily output of the Shearon Harris Nuclear Plant is 928 MW and the data center request in Apex would consume around 250 MW daily.

Initial Considerations

Hyperscale data centers are different than many other warehouse or industrial uses because of the enormous demand for electricity for power and water for cooling. Based on this, it is recommended that communities work with potential developers to understand how electrical and cooling needs could/will be addressed very early in the process.

1) *Electricity Assessment:* Overall, Duke Energy noted that they will adjust, as needed, to meet future energy demands, but the cost for expansion cannot just be passed on to existing and future rate payers. Duke Energy routinely charges potential commercial users an upfront fee to develop an assessment of the infrastructure needed to serve a site. Duke Energy recently formalized its policy for applicants needing 100 or more MW. The policy requires applicants to pay a \$100,000 non-refundable fee to cover research and analysis and to make financial commitments to the long-term usage and payment for the energy load requested. This policy applies to all of Duke Energy's service area, including applicable ElectriCities¹.

2) *Municipal Water and Waste-Water Assessment:* Although the municipalities in Wake County have different levels of future municipal water and waste-water capacity, all the communities have goals to maximize the usefulness to the community of this future capacity. Future capacity in the Wake County area is difficult and costly to attain and once allocated it is likely to be even more expensive and difficult to replace. A use, such as hyperscale data center, that requires 1 to 5 million gallons of water per day for one time use would significantly impact the community's future options. The data center industry has, and is continuing to evolve, various on-site methods to reduce daily municipal water usage. These methods, however, usually add chemicals to increase efficiency and protect internal loops, and these chemicals may impact waste-water treatment. Data centers have also used municipal reuse water and captured rainwater to reduce the use of municipal water. All systems lose water to evaporation. The efficiency of cooling methods will be affected by Wake County's average temperature.

¹ ElectiCities is a membership organization that provides power supply to communities.

Data centers also use different amounts and types of water during maintenance and replenishment windows. To encourage dialogue between the municipality and the applicant, it makes sense for municipalities to set a threshold amount of annual water usage that will trigger specific questions and criteria.

Site Considerations

Continuing the theme that hyperscale data centers are different than other uses based on size and the impact of on-site operations, Wake County's research identified the following specific areas of concern and provides recommendations on local ordinance changes to best prepare for potential applications.

1) Applicable Zoning: Wake County's research found that Wake County municipalities do not have a consistent definition, assigned zoning district, or specific standards for large data centers. Some municipalities noted the language in existing zoning districts could be interpreted to allow data centers. Wake County's research found that the rezoning process could serve as a pathway for facilitating the best dialogue between the proposed development and the community. As noted, the larger community dialogue in the proposed Apex development was started by a request to annex and rezone the property.

2) Placement and Use of Back Up Generators and Battery Energy Storage Systems (BESS): Data centers generally require redundant back-up systems to maintain operations if electric grid power is unavailable. Though solar, battery or other low noise solutions can be encouraged to assist or augment with back-up power needs, based on power requirements, most centers have diesel or natural gas generators. Although these generators are like the generators used in other commercial and industrial locations, the difference is the number of generators required and the frequency of generator use. To address concerns with generator noise and emissions, it is recommended that municipalities work with developers to carefully locate these on site. There are examples where generators have been placed within specifically designed locations surrounded by the data center building and far removed from any property lines. Communities have also requested / required information on the number of hours generators will be used and hours for testing.

3) *Noise / Low Frequency Sounds:* Adjacent landowners in some areas around the country have noted concerns with noise and vibrations generated by servers within the site. These sounds are often sensed as much as they are heard.

4) *Setbacks and Screening:* Data centers are 24-7 operations with security needs. This often translates to a requirement for lighting in many areas of the site during all hours of dusk and darkness.

5) *Reuse and Decommissioning:* Like other technology heavy uses, data centers, especially the equipment within the center, have an expected life cycle. Reuse provisions require that aspects of the site and building design are planned to accommodate future uses and technological advancement. Decommissioning provisions define the state the site must be in if the use is discontinued. Both provisions are often supported by formal commitments, agreements and/or financial commitments.

Community Considerations

Wake County's research identified the following specific areas of concern and provides recommendations on community wide impacts to best prepare for proposed data centers.

1) *Limited Tax Revenues:* Wake County's experience (see Further Notes 2) with existing smaller scale data centers suggests that the taxable value of the center will decrease relatively quickly. This is because a large percentage of the site's value is equipment, i.e. servers, server connections, server stands, that depreciate quickly based on expected useful life and tax policies. Based on this, it is recommended that municipalities estimate conservatively on projected revenues that will be generated via tax revenues.

2) *Limited Job Creation:* National statistics suggest that data centers create fewer permanent jobs per square foot, per dollar invested, per kilowatt hour uses, and per gallon of water used than many other large-scale developments. Based on this it is recommended that municipalities estimate conservatively on projected revenues that will be generated from future income taxes.

3) *Advanced Understanding of Community Needs:* Wake County's research indicates that data center developers value clear expectations and pathways to site construction

and operation. Because data centers are not expected to greatly expand the jobs and tax base that communities typically rely on to multiply the benefits of commercial investment, it is important for the community to have a specific discussion on how it will balance community impacts with overall community benefits. The electricity assessment, the municipal water and sewer assessment, and the site development requirements outlined in the recommendations will provide context for this consideration. Nationally, communities have identified specific project investments that could be funded as part of larger project cost / benefit consideration and approval process. Some of these investments have been closely tied to potential data center impacts such as funding for plant improvements to expand municipal water or grey water capacity while others are tied to larger community needs or issues like the funding for other community facilities like fire stations, parks, or transportation improvements. The data center developer would need to agree to all funding agreements and the cost would need to be proportional to impacts.

Recommendations and Next Steps

Recommendation 1: As a first step of the process, require that property owners and / or potential developers attest that they have contacted Duke Energy and are aware of the electricity assessment policy.

Next Step 1: Wake County and its partners will build on the recommended basic check list to further flesh out process steps and model documentation for the community, developer, Duke Energy dialogue. Although Duke Energy has formalized their process for users requesting more 100 MW, the question still has “chicken and egg” aspects about it as the community wants to know the ability and timing of Duke Energy to serve a proposed development and Duke Energy wants to know the community’s position on permitting the development overall. The model documentation and, as possible, clear check points, will be tied into further development of community tools as noted in recommendations 2, 3, and 4.

Recommendation 2: Adjust municipal water connection policies to require a special assessment process for uses that propose to use over 500,000 gallons of municipal water or municipal gray water daily. The goal of the special assessment would be to set

early and up-front expectations on water and sewer demands, understand on-site methods that could or would be used to reduce water usage, understand the potential fluctuations in water usage based on temperature, system maintenance or other system operations, assess investments that would need to be made to meet demand, and identify long term commitments and agreements needed to protect the water and sewer agency.

Next Step 2: Wake County will work with water agency partners (Raleigh, Cary, Holly Springs, Fuquay-Varina) and others to determine the best ways to modify the commercial water service application process to require further documentation and assessment for large water uses. Like Duke Energy policy, it is very possible that this process will entail upfront fees to cover detailed studies. A recent review of water capacity across Wake County, noted that a use requiring 1 to 5 million gallons per day would require significant site-specific and regional investments and would likely trigger system-wide capacity concerns as well. Based on this, it is possible that the area would prohibit uses that directly cool with municipal water and require usage of municipal gray water or other on-site solutions.

Recommendation 3: Consider a separate unified development ordinance category specifically for uses that require more than 100 Megawatts of power. This use would be permitted only in specific zoning districts or overlay.

Next Step 3: Wake County and its partners will develop model language for a unified development ordinance (UDO) category that covers a use that will require more than 100 MW of power. This language will explore the best ways to fit into various municipal regulations and may not be one size fits all. The goal of this language will be to define that data centers are allowed if they meet all minimum requirements, but that a rezoning process will be required to designate a specific site. This site-specific process will allow adequate dialogue between the developer and the community regarding community impacts and investment. If the partners determine that model language cannot be developed quickly enough, the group shall develop model language for a temporary moratorium on uses requiring more than 100 Megawatts of power that will stay in place only until full UDO changes are adopted.

Recommendation 4: Review ordinance requirements to verify that adequate provisions are in place to allow the community to work with the developer to find the best solutions to ensure that adjacent properties are shielded from generator noise and other impacts. Potential issues not covered by the noise ordinance may need to be discussed as part of the rezoning process.

Next Step 4: Wake County and its partners will develop model language for unified development ordinance (UDO) changes related to placement and use of back-up generators and battery energy storage systems (BESS), noise / low frequency sounds, setbacks and screening, reuse and decommissioning, and other site-specific issues as identified.

Recommendation 5: As part of facilities assessment, particularly water and sewer facilities, and public outreach, municipalities should understand community needs and identify potential investment opportunities. These opportunities should be prioritized based on impact and categorized based on location. As appropriate, as part of the rezoning approval process, the municipality should consider these investments as part of developer approved conditions or part of a developer approved community benefit agreement.

Next Step 5: As an extension of ongoing municipal facility and community needs assessments, Wake County and its partners will identify and prioritize projects like fire stations, parks or transportation improvements that could be funded to offset specific community impacts. This work will include a review of recommendations for best practices in developer approved conditions and developer approved community benefit agreements. This work will be right-sized with the understanding that hyperscale data center applications may be limited in Wake County by high land costs and competition for water, sewer and electrical capacity.

Further Notes

1) *Work Coordinated with Central Pines Regional Council of Governments (CPRC):* All Wake County work on data centers will continue to be coordinated with CPRC. CPRC is currently coordinating similar discussions, gathering research about best practices and has produced a report. [CPRC report](#)

2) *Data Center Depreciation Table Example:* The following table is provided by Wake County's Tax Administration Office showing an example depreciation schedule for servers and equipment within a data center.

Data Processing Equipment Depreciation Schedule (U-5)			
	Installed Cost New	Percent Good	Taxable Value
Year 1	\$20,000	80%	\$16,000
Year 2	\$20,000	61%	\$12,200
Year 3	\$20,000	41%	\$8,200
Year 4	\$20,000	20%	\$4,000
Year 5	\$20,000	5%	\$1,000
Year 6	\$20,000	5%	\$1,000
Year 7	\$20,000	5%	\$1,000