TOWN OF FLETCHER

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Data Centers
Zoning Text Amendment

Planning Department Staff Report
Tyler Morrow, Planning and Zoning Director

What are Data Centers? 2
Current Regulations for Similar Uses 3
Where would the Data Centers Likely be Built? 4
Town Council's Request to Staff 5
Land Use Plan Consistency: 6
Planning Board Summary and Recommendation: 6

What are Data Centers?

Data centers are the physical facilities that house the infrastructure of the internet. At their core, they are networked computer systems designed for data storage and processing, supported by equipment such as battery systems, backup generators, and cooling technology.

Industry analysts expect continued growth in data center construction, including both large "hyperscale" facilities and smaller "edge" centers distributed closer to users. Developers are drawn to sites with low latency, reliable and affordable electricity, and access to fiber infrastructure.

While data centers have traditionally clustered near major internet hubs and employment centers, the rise of cloud computing is driving expansion into smaller metropolitan and rural areas. Large technology firms often seek sites for expansive, single-story buildings, while colocation operators may pursue infill locations or existing structures with strong connectivity.

Because data centers consume significant electricity and require cooling, developers prefer areas with lower power costs, cooler climates, and reduced natural hazard risk.

From the outside, data centers often resemble typical commercial or light industrial buildings. However, their operational characteristics are usually very different from surrounding land uses. From a planning standpoint, the most significant distinctions involve their high electricity and water consumption, potential noise generation, heightened safety and security requirements, and relatively low employment densities.

In 2020, data centers consumed roughly 200 to 250 terawatt hours of electricity, about one percent of global demand. While efficiency gains have historically offset rising usage, growing demand from streaming, gaming, cloud computing, AI, and connected devices is expected to drive higher energy consumption. This figure does not include cryptocurrency mining, which alone used an estimated 60 to 70 terawatt hours in 2020, comparable to the annual electricity use of a mid-sized country.

Both data centers and cryptocurrency mining facilities generate significant waste heat and require substantial cooling, often relying on water. A medium sized data center can use more water annually than two 18-hole golf courses.

These facilities can also produce noise, particularly from rooftop or ground mounted cooling equipment, which may impact nearby properties, especially residential areas.

Because they operate continuously and house valuable equipment and sensitive data, data centers typically include enhanced security features such as fencing, gated access, and lighting.

Source- APA's Zoning Practice June 2022 Issue "Zoning for Data Centers and Cryptocurrency Mining" By David Morley, AICP

Current Regulations for Similar Uses

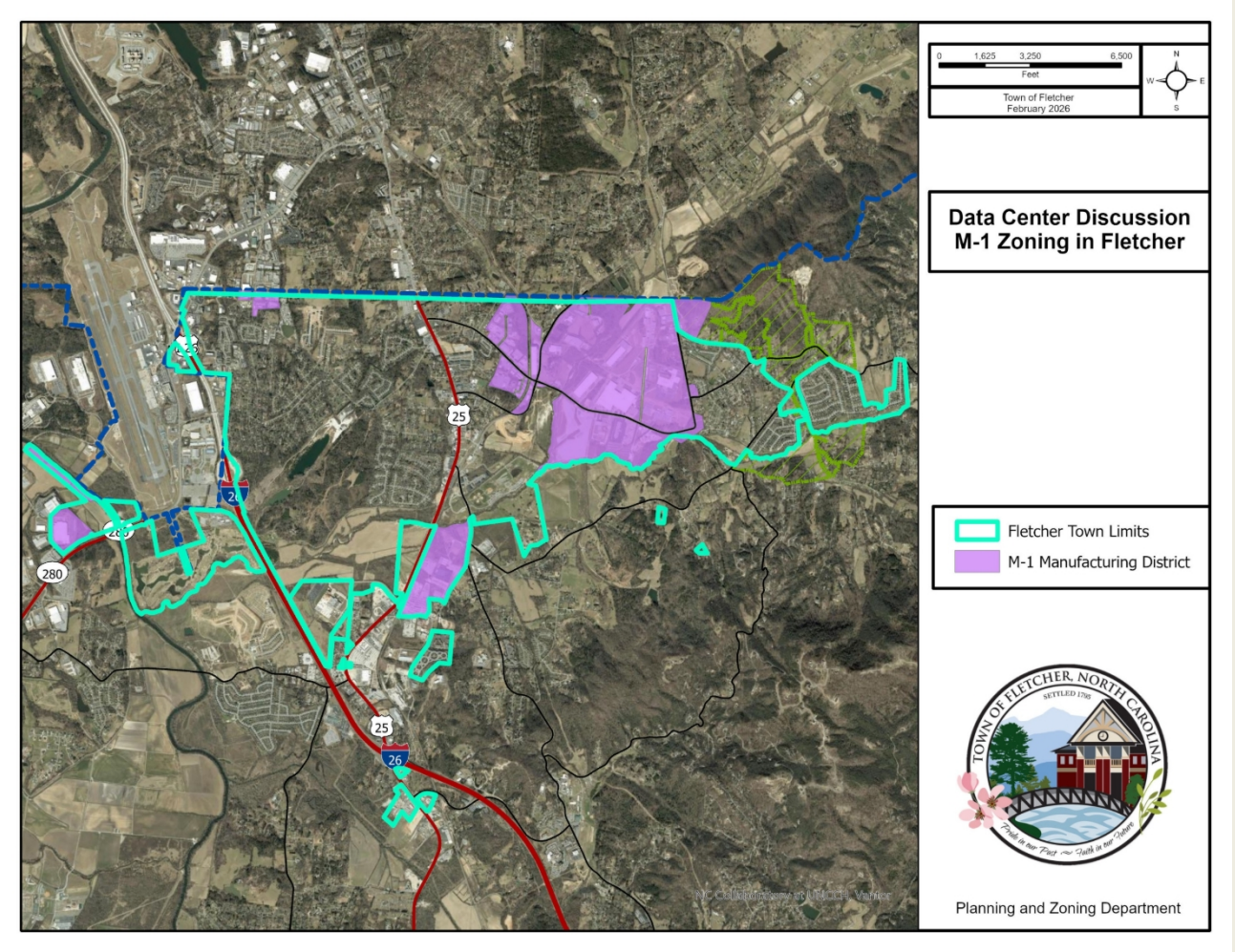
In 2023, Council added "Cryptocurrency Mining Operations" as a use listed in the Use Matrix. Cryptocurrency Mining Operations are not currently permitted in any zoning district within the Town. They are defined as "The operation of specialized computer equipment for the purpose of mining one or more blockchain-based cryptocurrencies, such as Bitcoin. This activity, which is also termed "proof of work," involves the solving of algorithms as part of the development and maintenance of a blockchain which is a type of distributed ledger maintained on a peer- to-peer network. Typical physical characteristics of cryptocurrency mining include specialized computer hardware for mining operations as well as equipment to cool the hardware and operating space. For the purposes of the associated regulations, cryptocurrency mining includes the commercial "creation" ("mining") of virtual currency not recognized as legal tender of the U.S., but does not include the exchange of cryptocurrency, the use, creation, or maintenance of all types of peer-to-peer distributed ledgers. This definition does not include use of one or not more than five computers from which cryptocurrency is mined in an enclosed structure, provided the cryptocurrency is not mined for commercial purposes."

As you will see, the current definition of Cryptocurrency Mining Operations is silent on overall data centers. While some data centers may include a cryptocurrency component, not all data centers involve cryptocurrency. Data centers can encompass a wide range of technological functions, such as hosting websites, providing cloud services, and supporting AI infrastructure. For these reasons, it would be my interpretation that our current definition and prohibition of Cryptocurrency Mining Operations does not extend to all data centers.

The ordinance does state, however, that "Any use not listed in the Use Matrix is prohibited unless the Administrator determines that it falls within the same class as a listed use as set forth." Since data centers are not explicitly listed as a permitted use, it could be argued that they are already prohibited. However, without a clear definition or supplementary standards, an attorney could contend that a data center falls within an existing permitted industrial use category.



Where would the Data Centers Likely be Built?



Based on the information outlined above regarding the size and configuration typically required for data centers, it is reasonable to conclude that such a facility in the Town of Fletcher would most likely only be located within the M-1 Manufacturing District. Properties within this district are generally larger in scale and capable of accommodating the square footage and building design commonly associated with data center development.

All the areas within the Town that currently hold this designation are shown in the above map in purple. The existing town limits are shown in Cyan.

However, at the direction of Town Council, the ordinance has been amended to specify that data centers would not a permitted use in any zoning district. This approach clearly communicates to potential developers that the use is prohibited throughout Fletcher and leaves no room for interpretation.

Town Council's Request to Staff

Town Council directed staff to add Data Centers as a new defined use in the use table and to amend the Land Development Code to prohibit this use in all zoning districts within Town limits, similar to the current treatment of Cryptocurrency Mining Operations.

The proposed text amendment carries out this direction. Staff has added Data Centers as a defined use within the use matrix and designated the use as not permitted in any zoning district in Fletcher. Additionally, a definition has been added to Article 18 to clearly establish what constitutes a data center for regulatory purposes.

The proposed definition of "Data Center" states "A building, structure, or group of buildings used for the storage, processing, management, transmission, or distribution of digital data through large-scale computer systems and associated information technology infrastructure. Such facilities typically contain servers, data storage systems, networking equipment, routers, switches, and related hardware designed to support remote computing, cloud services, digital communications, or off-site users. A data center may include supporting mechanical and electrical infrastructure necessary for continuous operation, including but not limited to electrical substations, high-capacity electrical service, backup generators, battery storage systems, cooling systems, ventilation equipment, and related utility infrastructure. This use may include server farms, data processing facilities, cryptocurrency or high-density computing operations, and other similar digital infrastructure facilities. Data centers are generally characterized by substantial electrical demand, specialized cooling requirements, and limited on-site staffing relative to the size of the facility."

Research and development	—	—	—	—	P	P	P	P	P
Storage - Outdoor storage yard, primary use	—	—	—	—	—	—	—	—	PS
Storage - Warehouse, indoor storage	—	—	—	—	—	—	—	—	P
Wholesaling and distribution	—	—	—	—	—	—	—	SUP	PS
Asphalt Plant	—	—	—	—	—	—	—	—	—
Cryptocurrency Mining Operations	—	—	—	—	—	—	—	—	—
Data Centers	—	—	—	—	—	—	—	—	—

D

Data Center: A building, structure, or group of buildings used for the storage, processing, management, transmission, or distribution of digital data through large-scale computer systems and associated information technology infrastructure. Such facilities typically contain servers, data storage systems, networking equipment, routers, switches, and related hardware designed to support remote computing, cloud services, digital communications, or off-site users. A data center may include supporting mechanical and electrical infrastructure necessary for continuous operation, including but not limited to electrical substations, high-capacity electrical service, backup generators, battery storage systems, cooling systems, ventilation equipment, and related utility infrastructure. This use may include server farms, data processing facilities, cryptocurrency or high-density computing operations, and other similar digital infrastructure facilities. Data centers are generally characterized by substantial electrical demand, specialized cooling requirements, and limited on-site staffing relative to the size of the facility.

principal residential for one or two families.

Detain: To store and slowly release stormwater runoff following precipitation by means of a surface depression or tank and an outlet structure.

Detention Basin/Pond: Engineered facilities for storing or detaining rain water runoff from a site. Detention stores water on a site to allow time for pollutants precipitate out of the runoff. This cleans the water before it is allowed to flow to nearby surface waters (see watershed).

Developable Acreage: That portion of a tract or parcel of land which can be developed under the provisions of this Code not including public rights-of-way, streams or other water bodies, wetlands under the jurisdiction of the US Army Corps of Engineers, or areas of flood hazard.

Developer: The legal or beneficial owner or owners of a lot or of any land included in a proposed development, including the holder of an option or contract to purchase or other persons having enforceable proprietary interests in such land.

Land Use Plan Consistency:



The proposed text amendment is consistent with the Land Use Plan's first goal, which is to provide the citizens of Fletcher with a quality environment for living, leisure activities, and work.

It is also consistent with the Land Use Plan's fourth goal, which is to discourage the development of incompatible land uses.

The proposed amendment removes data centers as a permitted use within the Town's jurisdiction. This action helps protect the quality of life and well being of residents, workers, and visitors by preventing a use that can have significant environmental and operational impacts. Data centers are known to require substantial amounts of electricity and water and can generate continuous mechanical noise from cooling and electrical systems. The scale and intensity of these impacts differ significantly from other uses currently present in Fletcher, making such facilities incompatible with the community's existing development pattern and land use goals.

Planning Board Summary and Recommendation:

THE PLANNING BOARD VOTED 7-0 TO RECOMMEND APPROVAL OF THE PROPOSED ZONING TEXT AMENDMENT.

Motion:

Motion made by: Robyn Mondin Second: Leslie Cuevas

For: Robyn Mondin, Doug Ferguson, Julia Fogel, Bryan Gilbert, Lee Bowser, Leslie Cuevas, Jacob Compher

Against: None

Meeting Overview:

Staff presented the proposed text amendment. The Planning Board had no questions for staff. No members of the public were present. Following the presentation, the Board made a motion to recommend approval.