DATA CENTER PRESENTATION

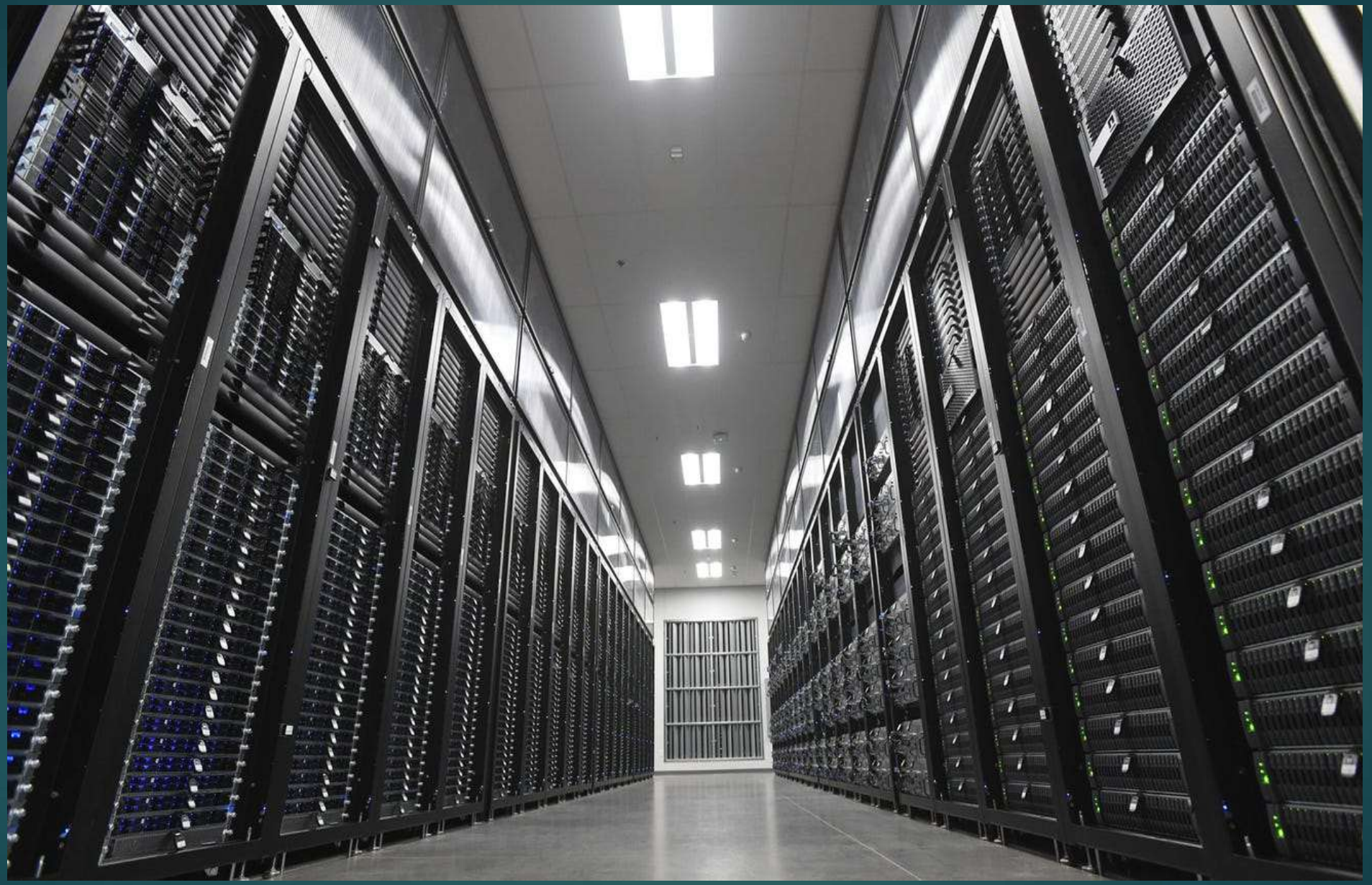
CITY OF DICKINSON PLANNING AND ZONING COMMISSION MEETING

APRIL 9, 2025

DATA CENTERS

- Data centers are the physical facilities where the internet lives.
- Consists of networked computer systems used for data storage and processing, along with supporting equipment, such as batteries, back-up power generators, and cooling devices.
- While data centers have historically been clustered around major internet access points, information technology companies, and government employment centers, higher and more spread out demand means more data centers in smaller metropolitan and nonmetropolitan areas.
- Big technology companies are likely to continue looking for sites that can accommodate new, large single-story structures. But operators that specialize in leasing space in the same facility to multiple companies (i.e., collocated data centers) may be more open to infill sites and existing structures, especially if those sites have access to fiber optic infrastructure.

RENO NEVADA



DATA CENTER LOCATIONAL CRITERIA

- Data centers use a lot of electricity and water to power processing and storage hardware and to keep that hardware cool.
- The amount of electricity (and often water) needed for cooling is higher in warm, humid climates than in cool, dry areas.
- Consequently, developers favor locations with low electricity rates and cooler climates.
- As these facilities operate continuously, developers often look for sites that are less vulnerable to natural hazards.

Source: Zoning for Data Centers and Cryptocurrency Mining, Zoning Practice June 2022, American Planning Association

CRYPTOMINING FACILITIES

- Facilities dedicated in whole or part to "mining" cryptocurrency.
- A cryptocurrency is a decentralized digital currency that uses encrypted data strings to denote individual units, or coins, and a peer-to-peer database known as a blockchain to maintain a secure ledger of transactions.
- Several of the most popular cryptocurrencies require extremely complex computations to verify each transaction and add a record, or block, for that transaction to the blockchain.
- Reserved for large-scale cryptocurrency production. Theoretically, small-scale cryptocurrency production can be done anywhere.
- Cryptocurrency miners are also looking for locations with cheap electricity and low hazard risk; however, dedicated mining facilities are not concerned about proximity to customers and are less likely to invest in backup power. While there seems to be a widespread consensus that data centers are essential to global communications and the global economy, cryptocurrency miners.

Source: Zoning for Data Centers and Cryptocurrency Mining, Zoning Practice June 2022, American Planning Association

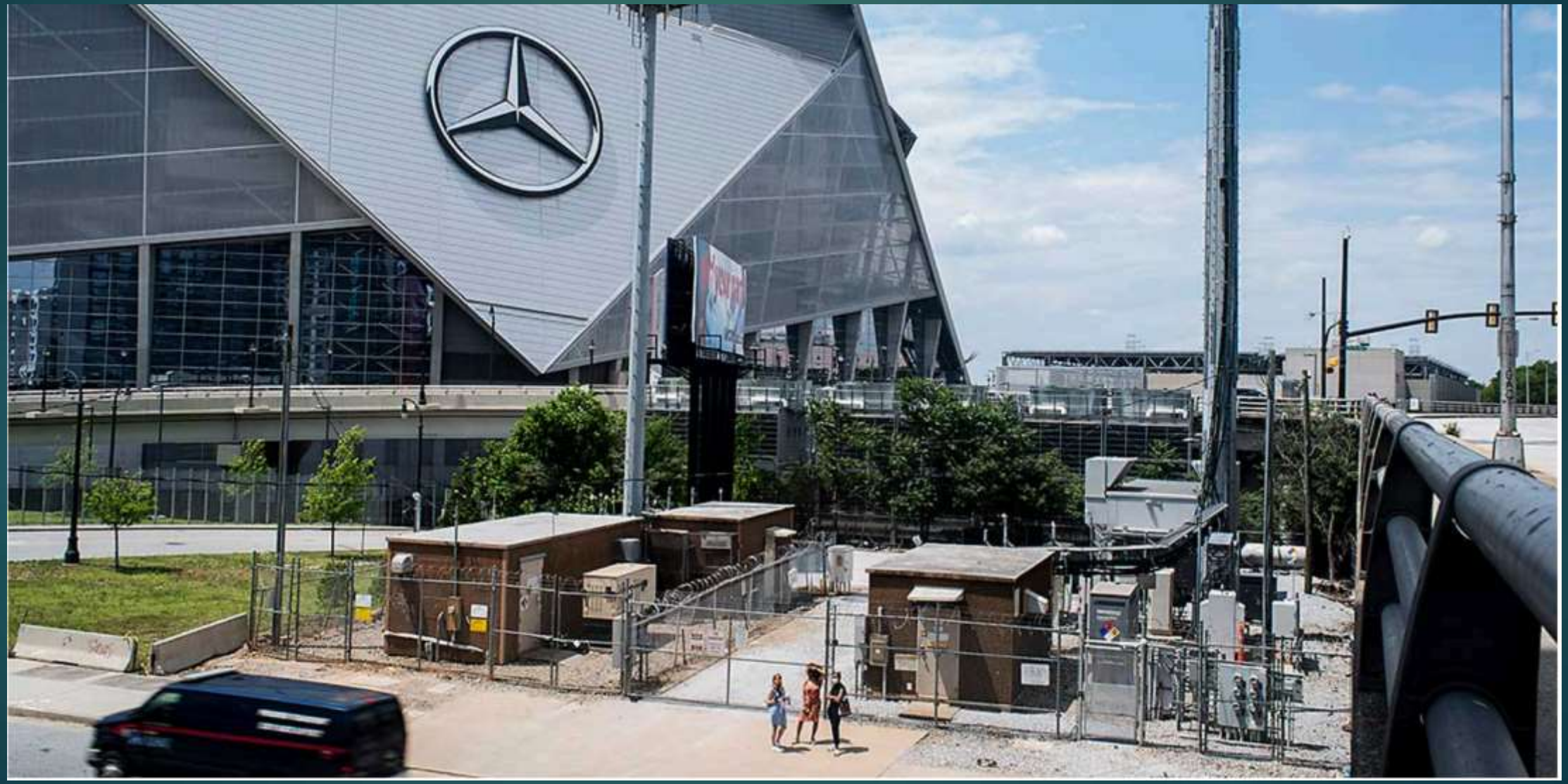
ELLENDALE NORTH DAKOTA

CURRENT TRENDS

- Micro Data Centers are smaller versions of data centers, ranging in size from a kitchen cabinet to 10,000 square-foot office.
  - Often appear in unconventional areas near users (such as utility poles, parking garages, etc.) in order to increase network traffic capacity and minimize information processing time.
- This new type of data center is already popping up next to cellular towers, on light and utility poles, in office buildings, and in parking garages, primarily in major cities and metropolitan areas. This level of dispersal is happening with the goal of minimizing application latency (the time it takes for data to go from a user device to the data center, process the information requested, and return it), as well as to increase capacity for higher levels of network traffic.
- Colo Data Centers are buildings containing multiple service and application providers, often through leasing out space.
  - More cost-effective for companies, consolidates where centers are located, and encourages faster spread to edge regions.
- Facilities are often monitored remotely, requiring physical security measures like access control, fencing, cameras, and outdoor lighting.
- Cooling fan systems and backup generators often produce significant noise.

Source: Data Centers Evolved: A Primer for Planners American Planning Association, July 2021

ATLANTA GEORGIA



ATLANTA GEORGIA

DATA CENTER IMPACTS

- Require high water and electricity use
- Cooling systems generate excessive noise
- Have enhanced Safety and Security Needs
- Provide low employment density
- Potentially increase surrounding land value

Source: Zoning for Data Centers and Cryptocurrency Mining, Zoning Practice June 2022, American Planning Association

ZONING CONSIDERATIONS

- Do these uses need new use definitions?
- Where should these uses be permitted?
- Do these uses need special development or performance standards?
- How should decommissioning data centers be handled?

Source: Zoning for Data Centers and Cryptocurrency Mining, Zoning Practice June 2022, American Planning Association

PROPOSED ZONING CODE TEXT AMENDENTS

- Adds definitions of Micro data centers and data centers
- Designates Data Centers would be allowed as Special Uses in the General Commercial and General Industrial zoning districts
- Includes Application Requirements
- Provides Development Standards
- Addresses Abandonment or Cessation of Operations and Decommissioning

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CITY OF DICKINSON COOMUMITY DEVELOPMENT

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- STEVE JOSEPHSON, AICP-CITY/COUNTY PLANNER