Data Center Trends in Georgia and Considerations for Local Communities

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Data Centers: Global, National, and Local Topic

Rapid Increase in Development Sites

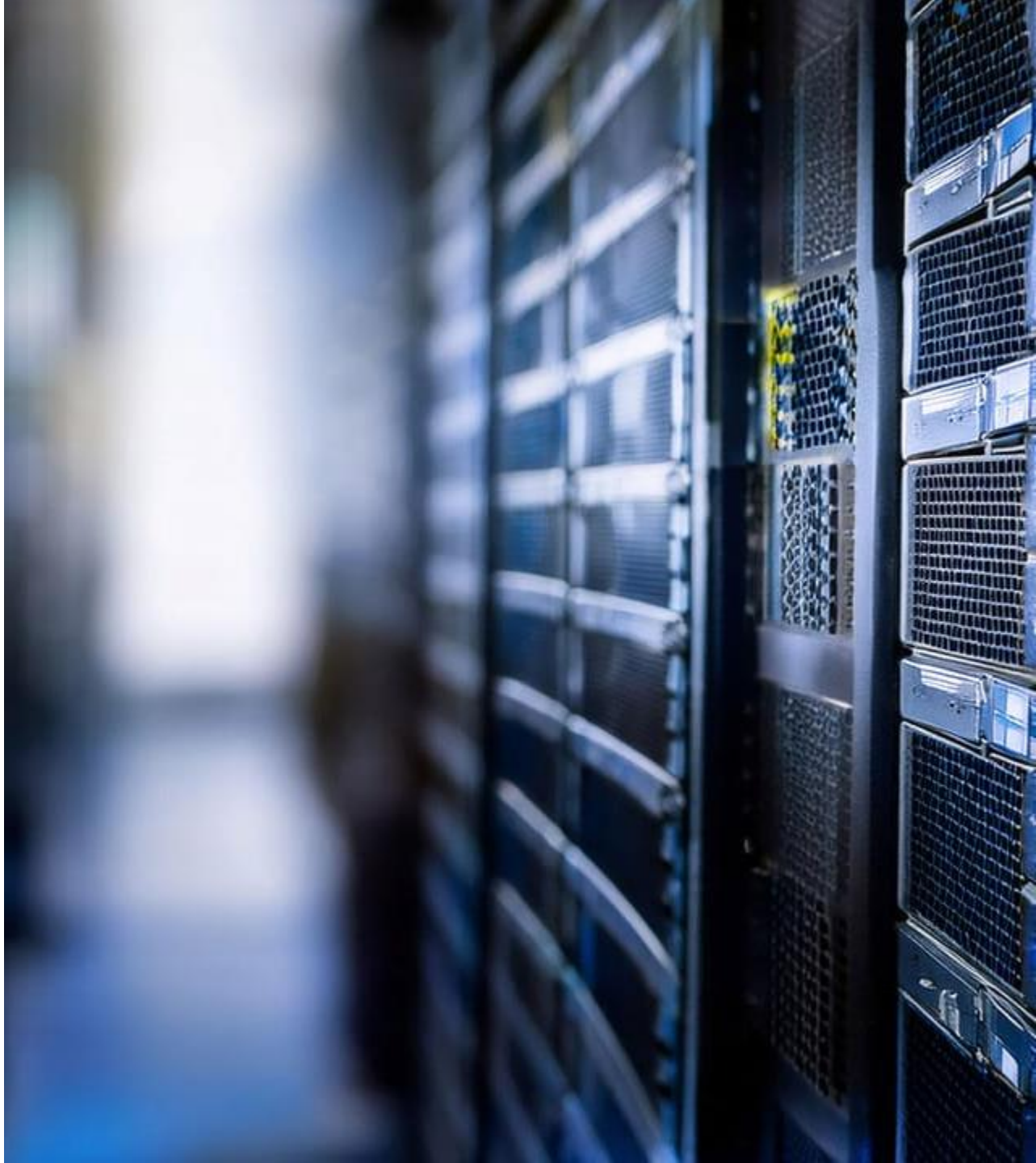
- Impacts on energy and water demands
- Additional pressure on existing infrastructure

Major Concerns about Resource Use

- Possible land, water, & air impacts
- Secondary concerns
  - Noise, appearance, & opportunity cost

New Development Type

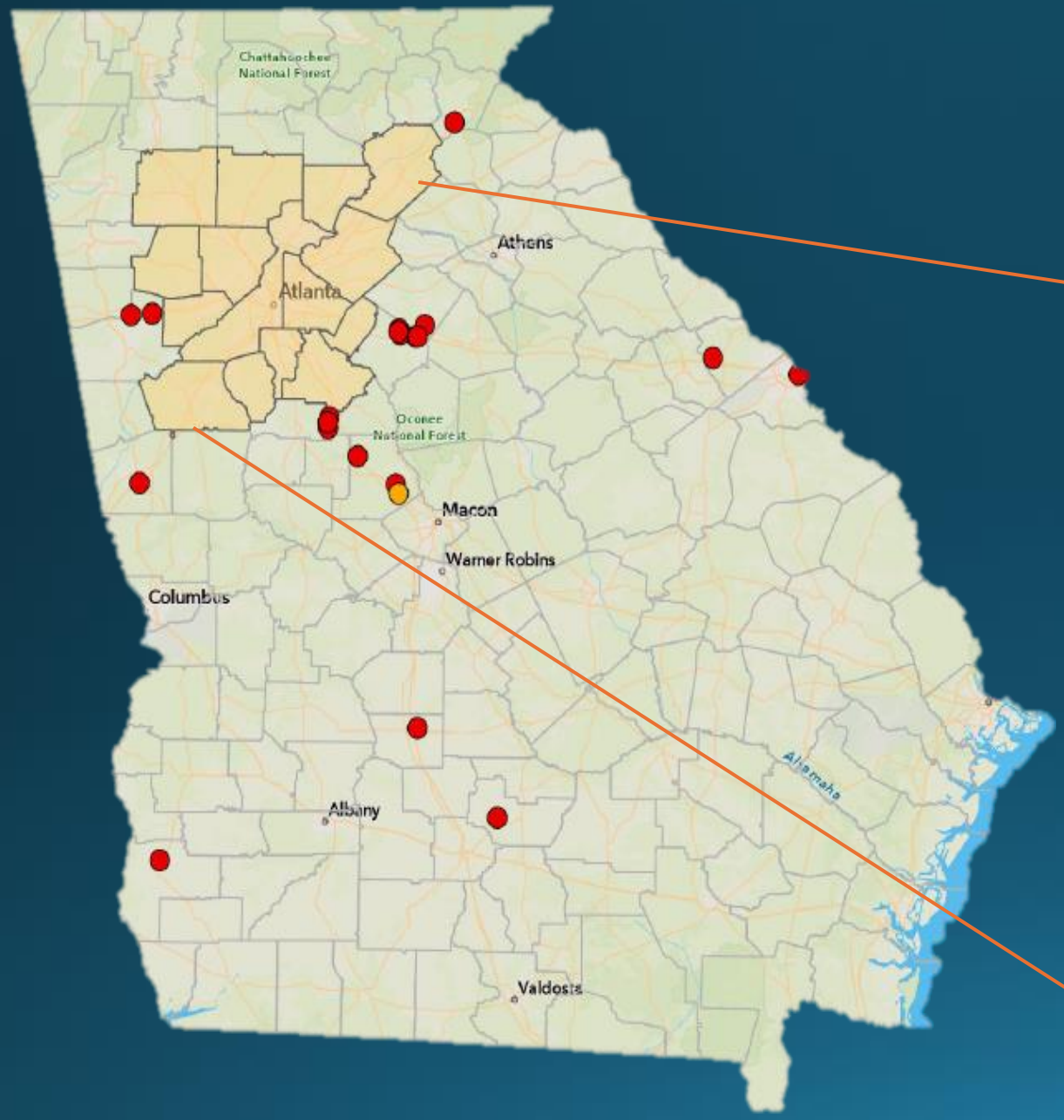
- Often not covered by existing local jurisdiction development recommendations & zoning practices

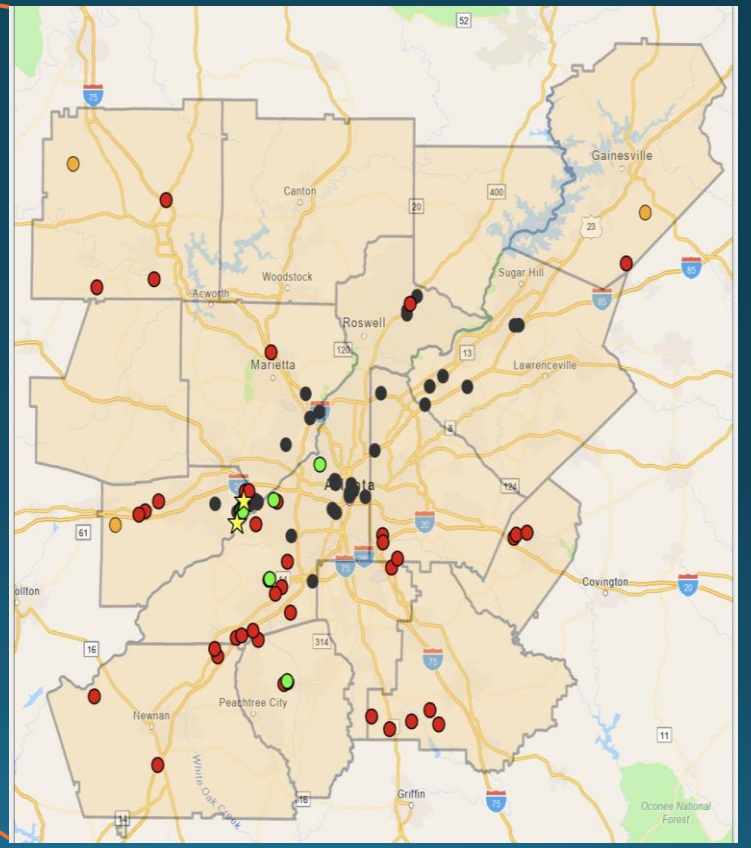


Data Center Growth in the Region

Location Trends:

Majority of proposed locations are looking for larger available tracts of land

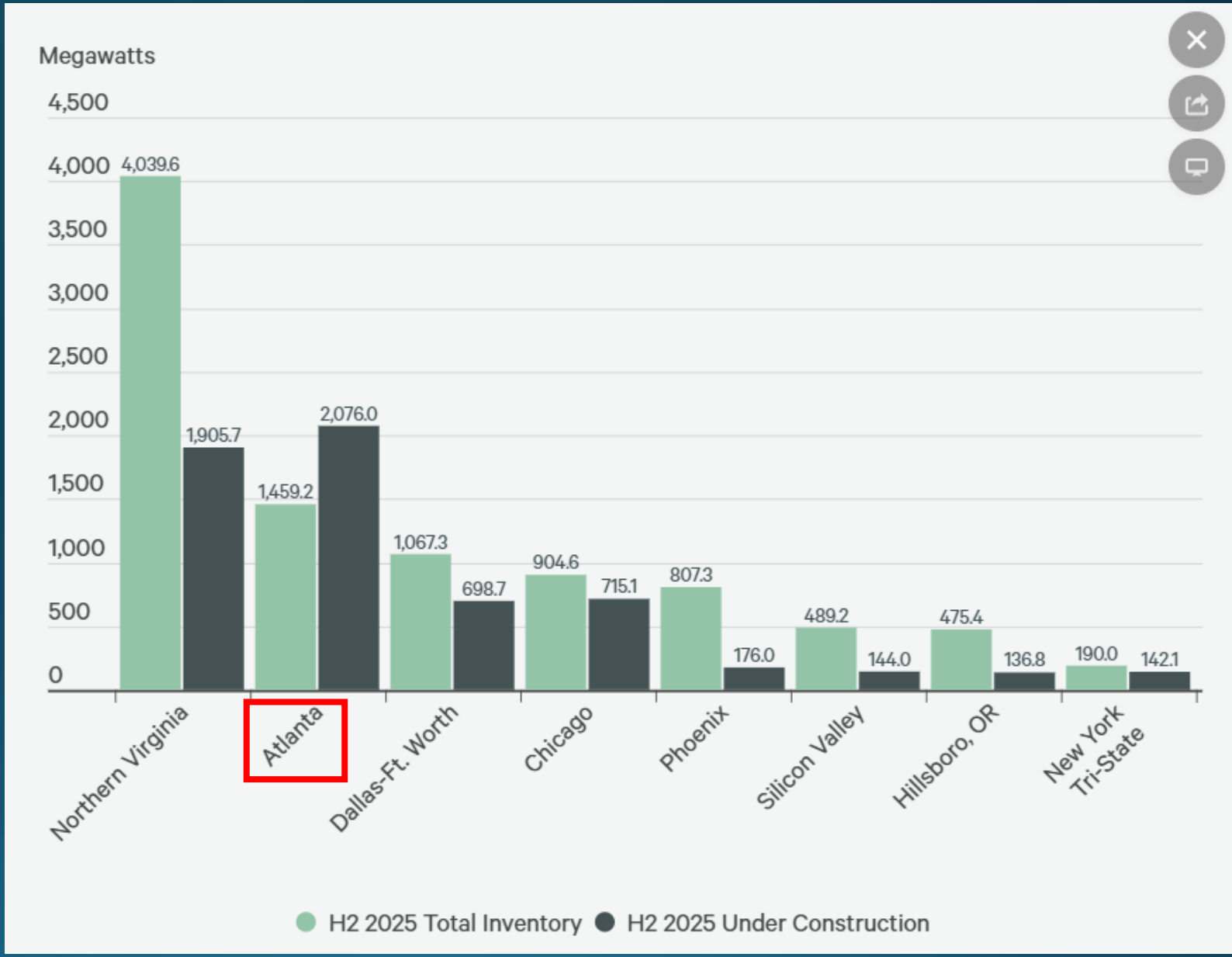




- Completed
- Proposed
- Existing
- Withdrawn
- Denied

2076 MW

Metro Atlanta continues to have the 2nd most data center construction capacity in North America



CBRE

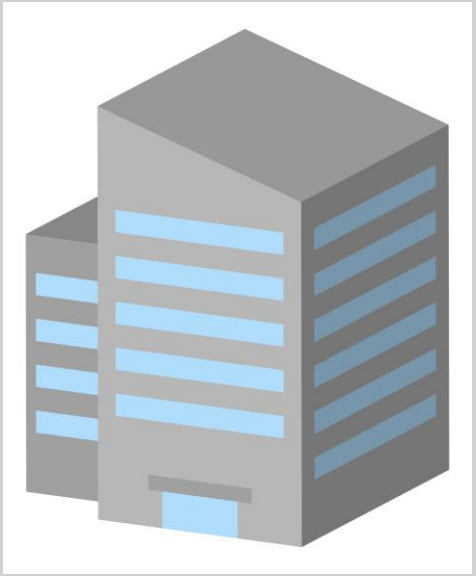
Energy and Data Centers

1 Megawatt (MW) = one million watts of power, and is enough to supply 650 homes

Small data centers today are ~50MW

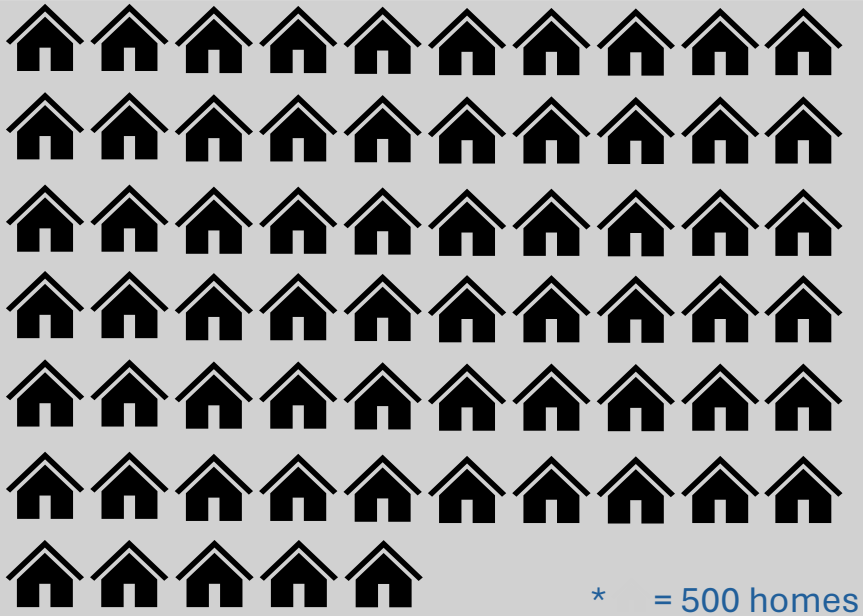
Today data center proposals can be upwards of 1 GW

50 MEGAWATTS CAN POWER EITHER



1 Small Data Center

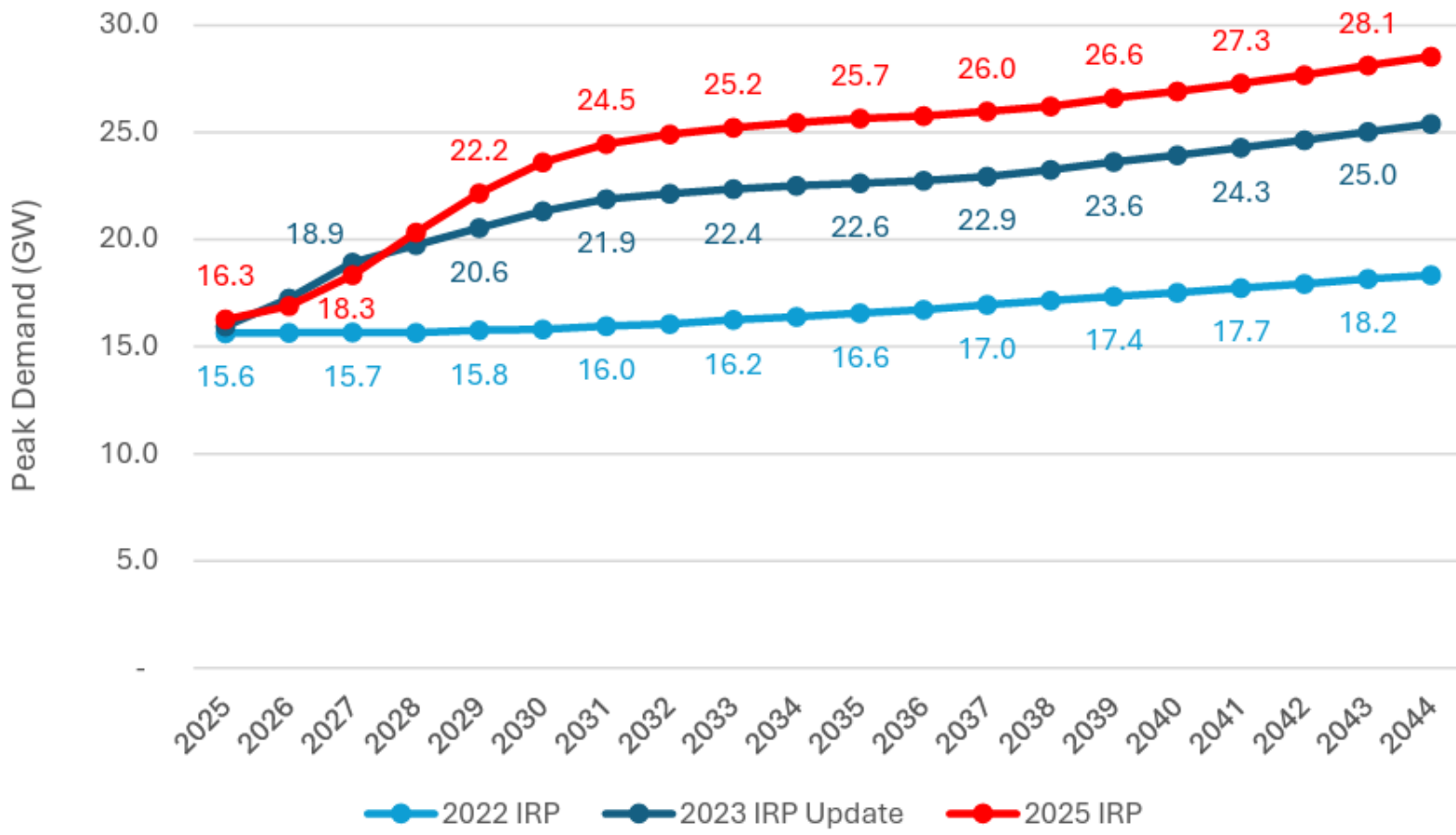
OR



32,500 Homes

Increased forecasted energy demands mostly associated with data centers

Figure 5A: Georgia Power Projected Winter Peak Demand

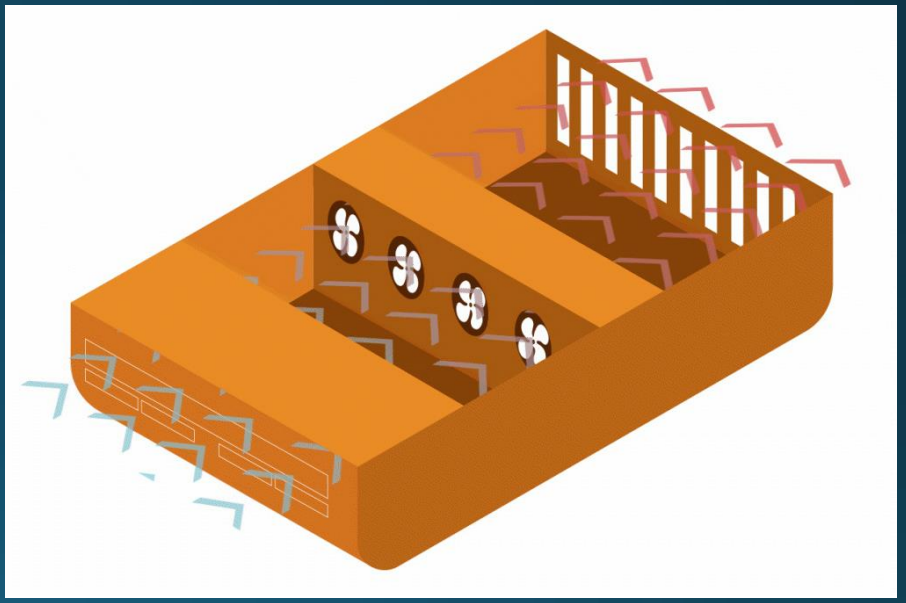


Source: Georgia Power, 2025 IRP

Cooling and Water Use in Data Centers

Cooling Technologies

- Operational temperature is imperative to the stability of system performance
- Heat removal by the cooling system is one of the most prominent challenges in the maintenance of data centers
- "**Fatal heat**"- damages the performance of components of the data center
- ~30% of the power consumption goes towards cooling



Types of Data Center Cooling

- Air Cooling
- Liquid Cooling
- Immersion Cooling
- Evaporative Cooling
- Closed-loop Cooling
- Hybrid Cooling
- Free Cooling

Relevant Cooling Methods to Georgia

Evaporative water cooling:

Uses natural water evaporation process to remove heat from the air

Water intensive

Can lose up to 80% of water to the atmosphere

Reduces return water flow to rivers and reservoirs

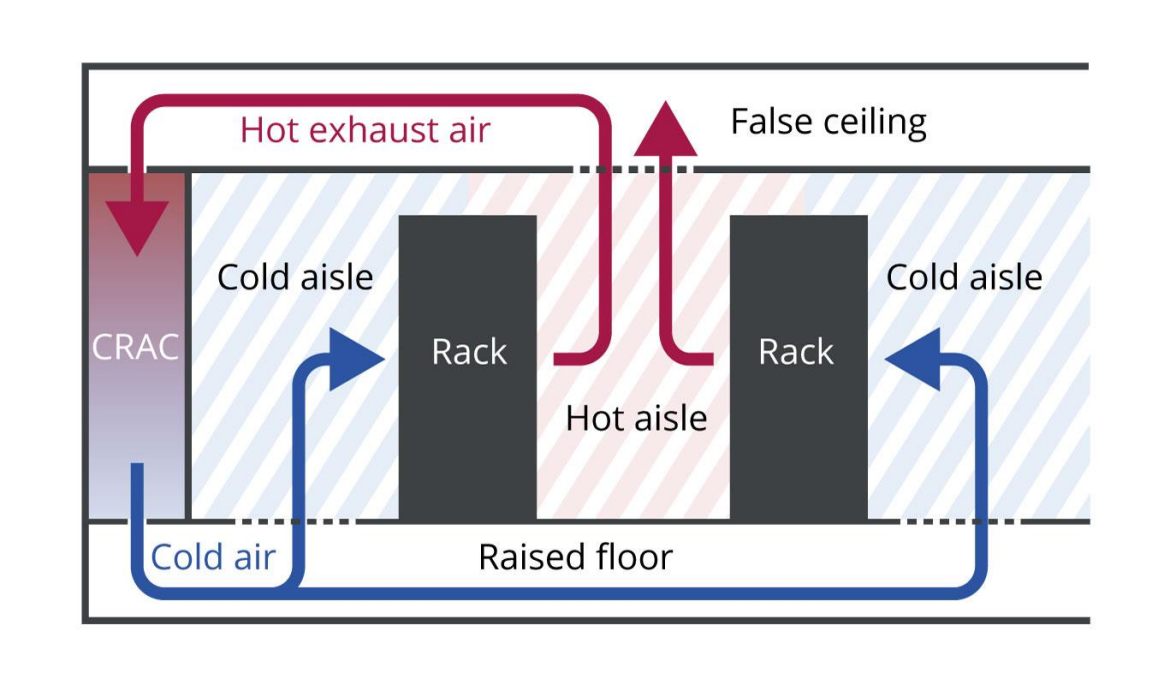
‘Closed-loop’ cooling:

A water-glycol mix continuously circulates in a sealed circuit to absorb heat

Uses significantly less water, but requires more energy

More expensive to install and operate

Air-Cooling System



Air-cooling was once the most widely used; suitable for lower-density computing

In-efficient in larger centers due to low density and heat dissipation capacity in the air

Traditional Evaporative Cooling

Liquid Cooling - Ideal for high-density and high-performance computing

- More efficient heat transfer through cool plates

More efficient heat removal

- Allows for closer component packing
- Greater computing capacity within the same footprint

Communities should anticipate evaporative cooling methods in the initial site plan proposal

~80% water is lost due to evaporation

(Google 2024 Environmental Report)

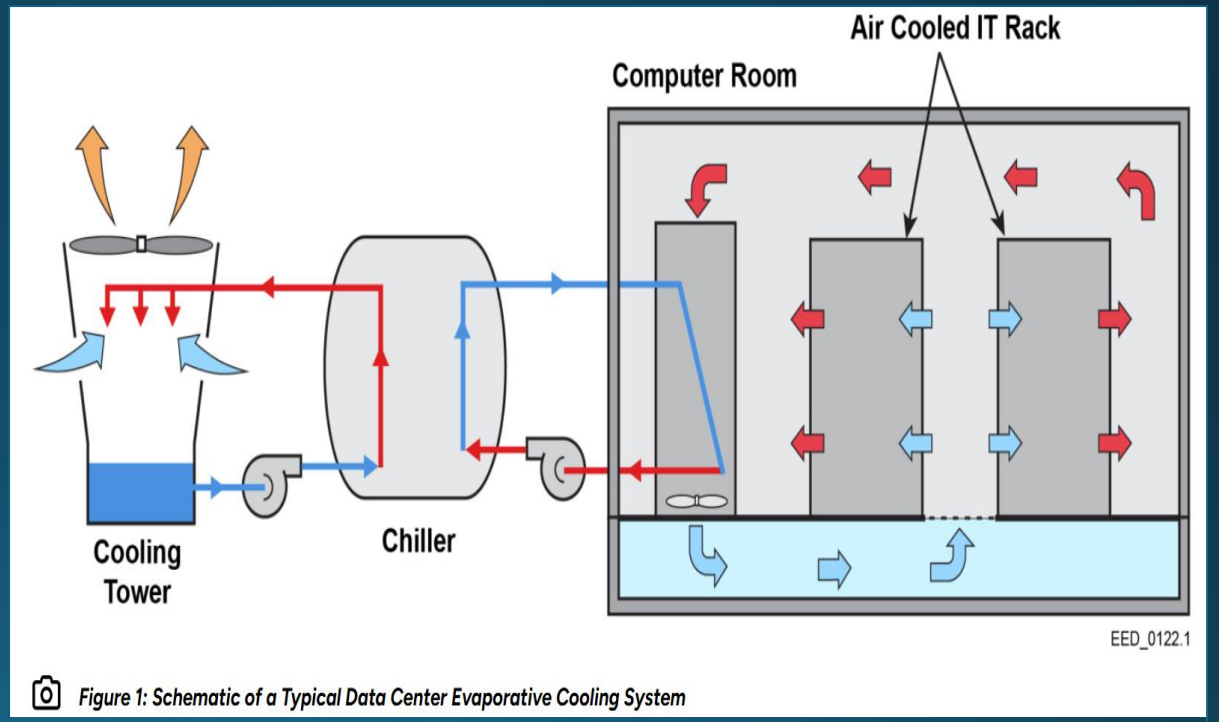
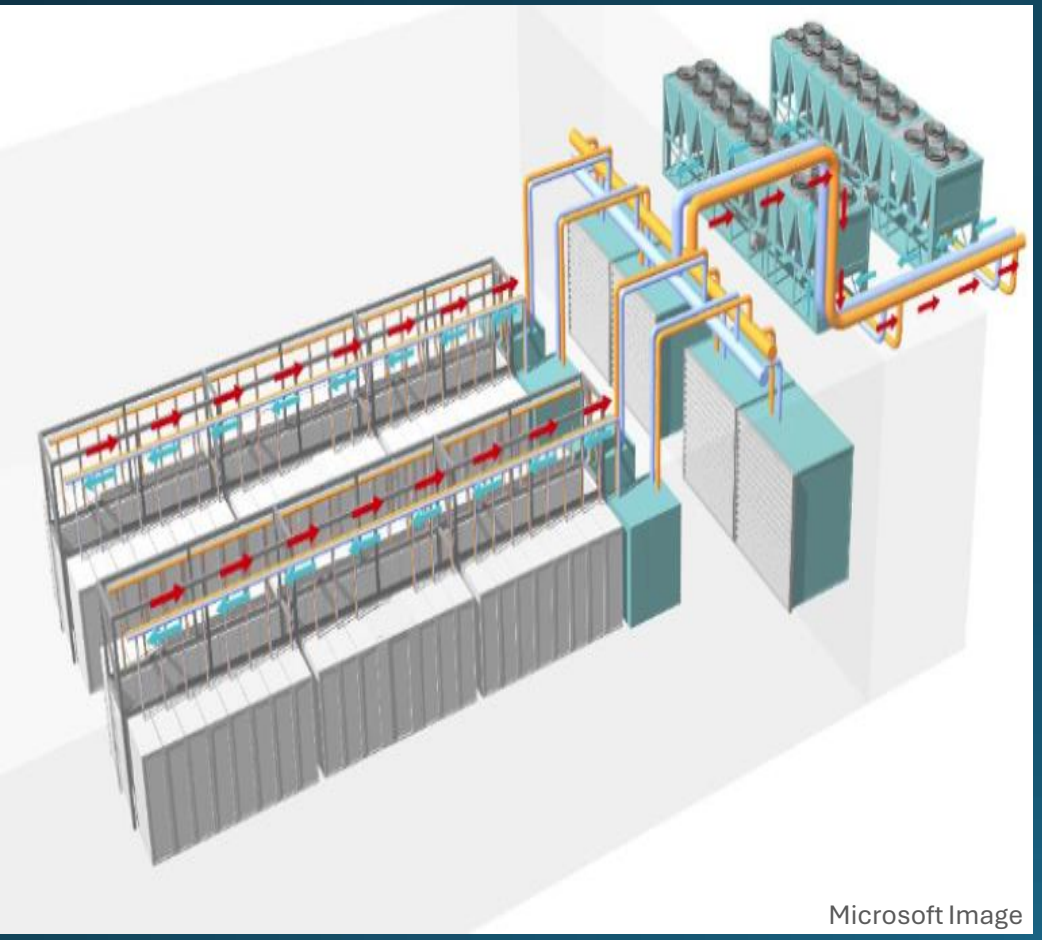


Figure 1: Schematic of a Typical Data Center Evaporative Cooling System

U.S D.O.E

Stewarding our limited resources with Non-Evaporative Cooling technologies



Microsoft Image

Closed-loop cooling recommended over Evaporative

Stewarding our limited resources

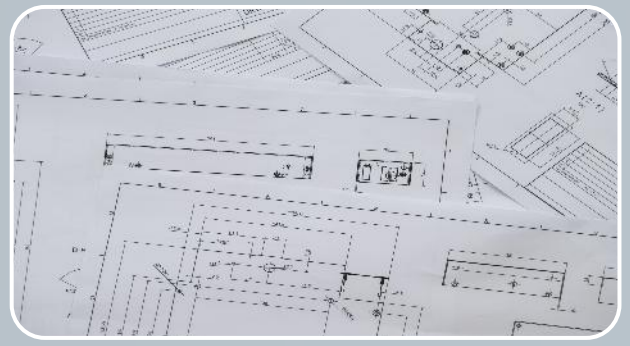
- A water-glycol mix or other refrigerant mixture circulated in a closed loop system
- Minimum amount of water needed to flush/refill system as needed periodically
- Provides resilience to facility during moments of drought and emergency outages
- Reduced impact to regional water supplies

Though it uses less water, the capacity required may still be similar to other commercial/industrial water users in a community.

Tradeoffs

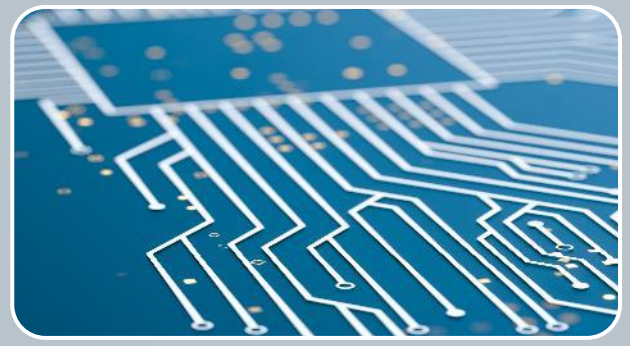
- *Larger capital investment*
- *Physical footprint*
- *Higher energy demands*

Cooling Trends in Georgia



Water Demands:

Most development proposals are not asking for millions of MGD, as once initially feared



Non-evaporative cooling:

Developments are shifting to installing Closed-Loop Cooling or similar technologies

Still Possible:

Sites still have the option of full evaporative cooling with a higher water demand

However, trends do not directly indicate this

How much water are data centers requesting?

Depends on

Size	Scale Building or campus?	Type of Facility Data storage vs AI/Processing	Energy Demands	Type of Cooling Air vs Liquid Evaporative vs Closed-Loop

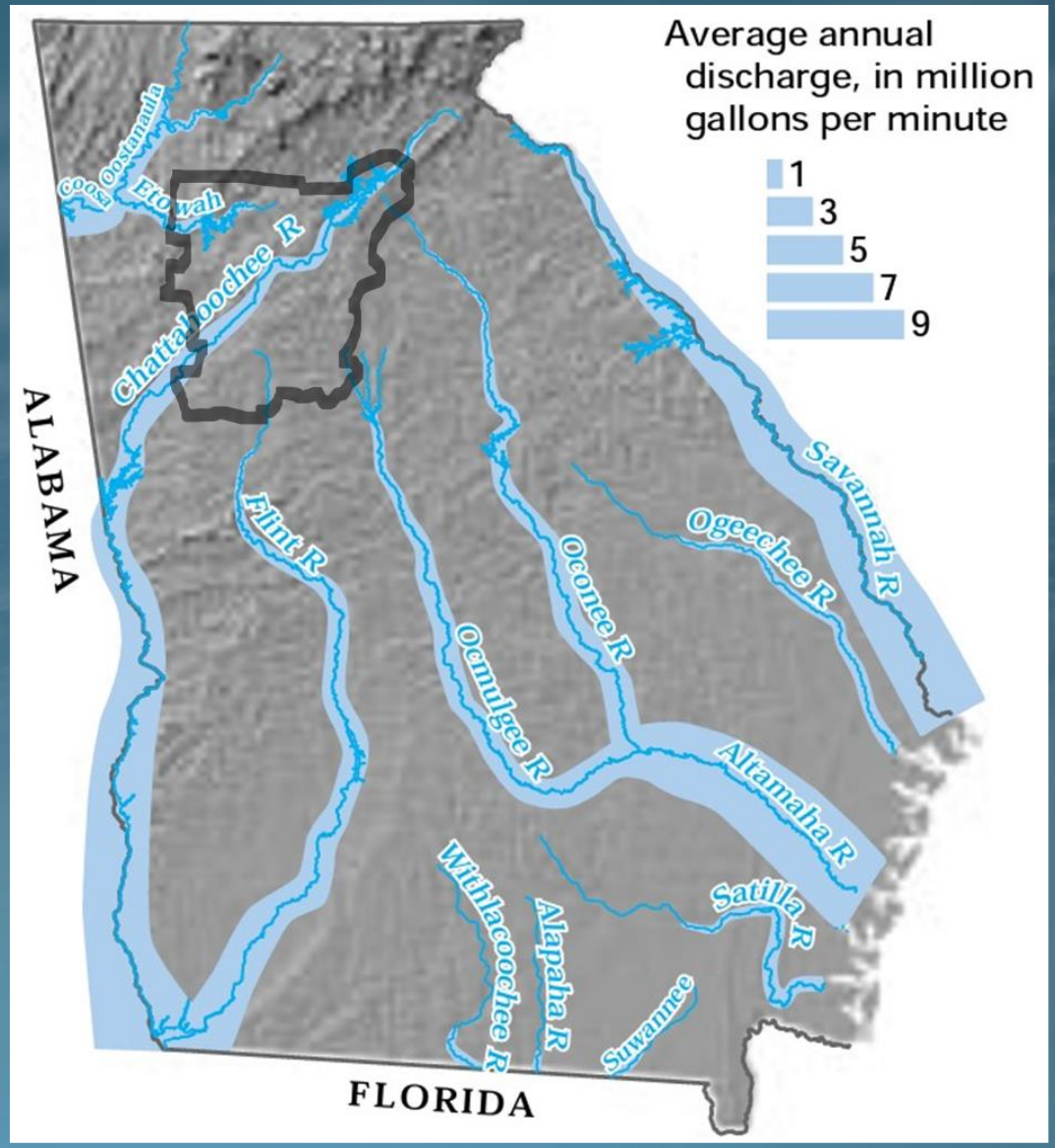
Water demand requests in Metro Atlanta

Evaporative	Closed-Loop
As much as 9 million gallons per day*	Typical range 5,000 to 50,000 gallons per day

*Update on site originally proposing evaporative cooling

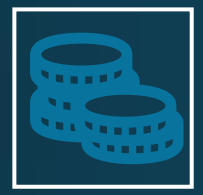
Why Cooling Methods Matter in Metro Atlanta?

- One of the smallest available surface water supplies of any major metro area
- Drought-prone
- Stewarding water resources for metro and downstream users
- Leaders in water conservation – by necessity



USGS

Considerations for Local Communities



Local Economic Impacts

Job Creation

Land Use Present and Future

Additional Infrastructure Needs

Environmental Health Impacts

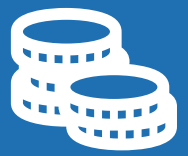
Drought Management

Emergency Outages

Critical Issues

How could a data center benefit your community?

Significant tax revenue growth



- Property taxes
- Business taxes
- Sales taxes

Epicenter for further commercial and economic growth

- Indirect economic boost via income tax revenue and consumer spending
- Fund public services
  - Infrastructure projects and community development

Financial Planning

Direct revenues toward community priorities, such as:

- Education
- Housing funds
- Fire and safety investments
- Community development
- Infrastructure upgrades

Workforce Development

- Data center could provide or support work force training programs for the community
- Create high-paying construction jobs
- Skilled technical roles

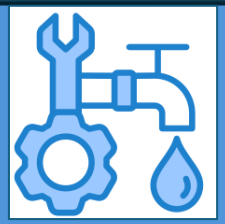
Site Readiness

Physical Infrastructure

- What does it look like?
- Does construction/operations of project shift other development plans?
- Re-evaluate Comprehensive Plan
- Setting precedent for future proposals
- Adaptive Infrastructure or “Stranded Asset”?

Environmental & Public Health Impacts

- Stormwater runoff and water quality
- Air quality and noise impacts during construction and once operational (diesel back-up generators)
- Community awareness, consideration and communication
- Coordination with fire/emergency services



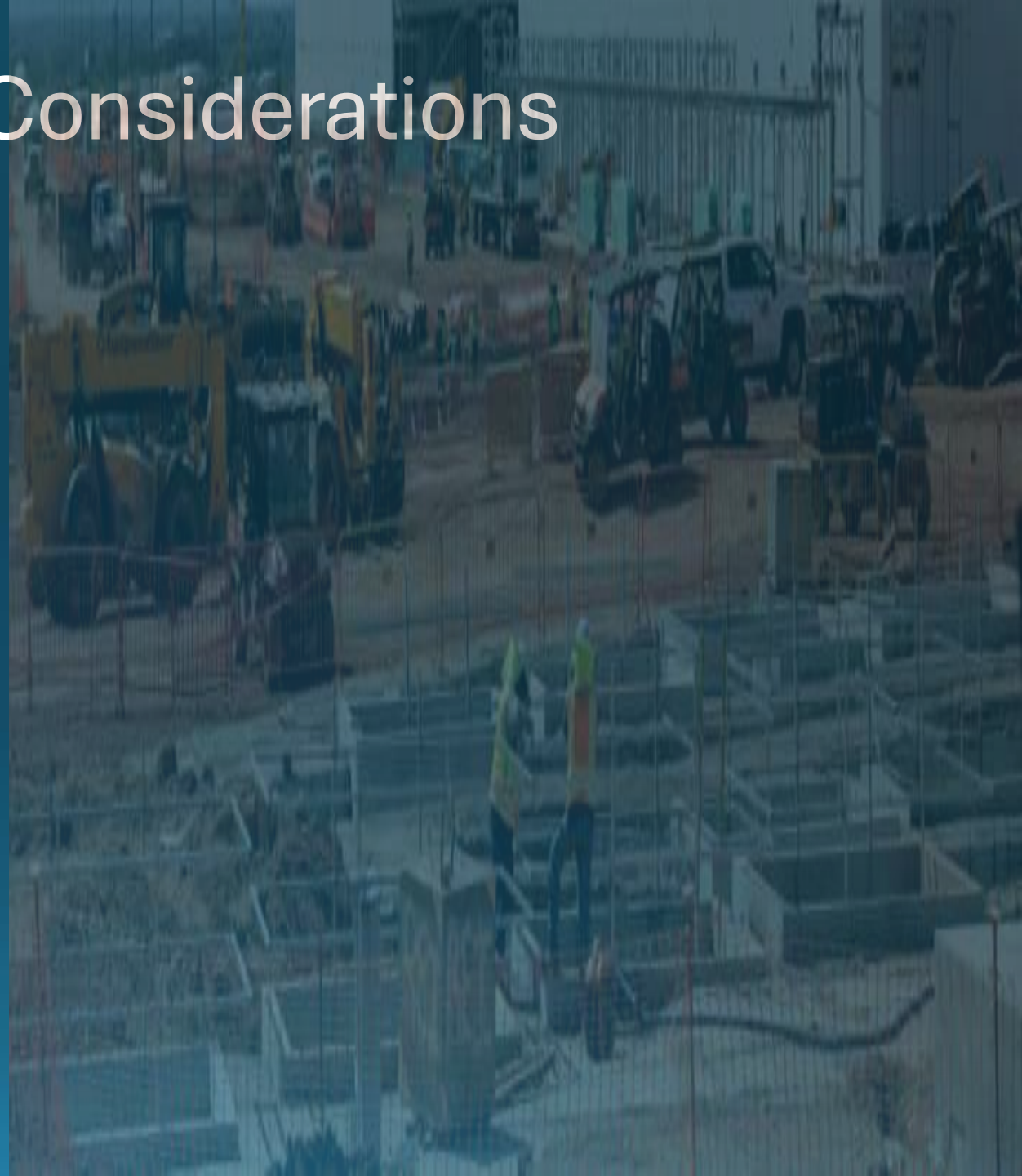
Water Service Considerations

- Immediate demand and future capacity needs
- Additional infrastructure needs
- Coordinate and understand wastewater requirements from developers
- Know developer’s system reliability and expectations early in discussions
- Critical infrastructure

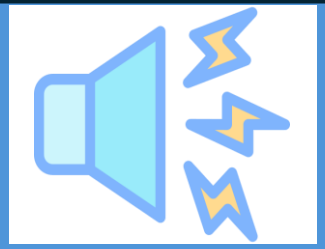
Development Ordinance Considerations

Variables to consider when the site is actively being constructed:

- Building set-backs
- Lighting directed away from adjoining property
- Landscaping - mature versus young planting requirements for buffers
- Noise thresholds and generator testing frequencies
- Specialized fire fighting training/cooperation needs



Addressing Community Concerns



Noise Impacts

Possible sources of concern:

- Generators
  - Testing and running
- Cooling systems
- Site construction
- Energy “hum”

Land Development

Possible sources of concern:

- Tree removal
- Stormwater runoff
- Traffic
- Property values

Community Awareness & Communication

Important to engage with community:

- Daily-life impacts
- Public outreach sessions
- Study/Mitigation efforts
- Zoning code amendments

Typical Infrastructure Layout

Solar and Green Roof Installation?

On-site solar unlikely to meet full power demands but can provide benefits

1 MW of power = 5 acres of solar panels

100 MW of power = 540 acres of solar panels

Roof designs with solar or green roofs not preferrable for most sites

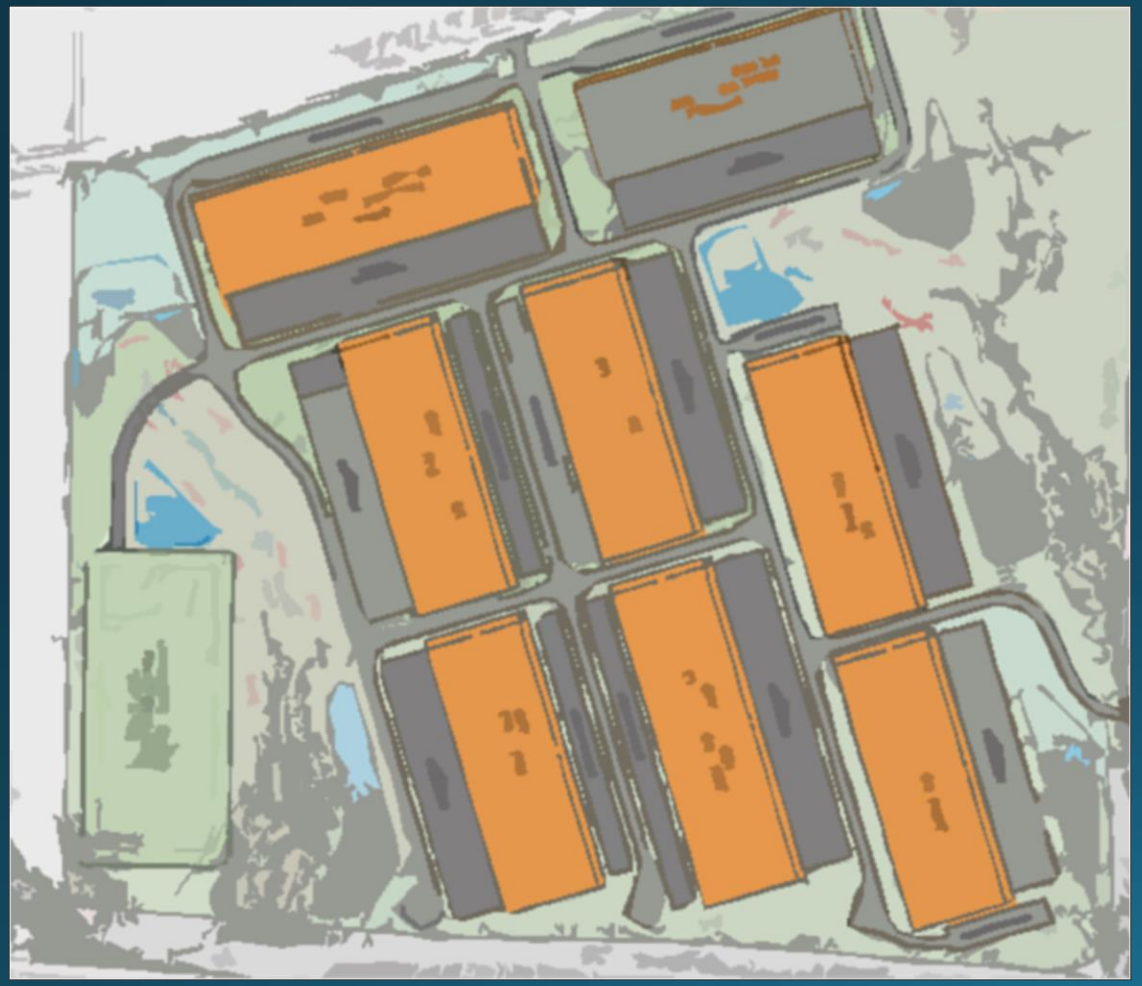
Associated risk concerns:

Could cause damage to expensive technology investment at the facility

Potential to disrupt operations

Green roofs require additional water during dry periods

Zoning



Re-zoning

- Many development proposals are requesting re-zoning of proposed site
- Agriculture or Light-industrial

Considerations

- Need to be prepared for refining land use
- Protecting your communities down the road

Community Benefit Agreements

Helps to address public concerns

- Identifies key community concerns
- Provide greater benefits to communities impacted by data center construction and operations

Several key features

- Transparency
- Community investments
- Sustainability for communities

Brookings

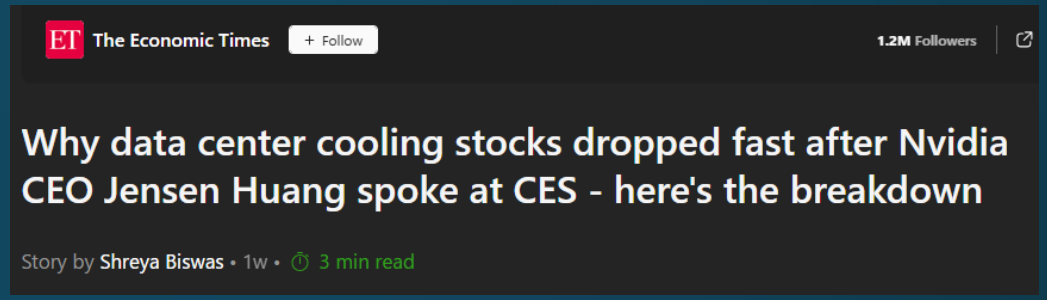
Industry Trends

Uncertainty of industry trends

- Chip development
- Increase/decrease of stocks

Rapid technology advancements

- Likely increases in efficiency and technological capabilities



Typical Comment Provided by ARC during DRI Process

The water resources of the metro Atlanta region are critically important to the region's economic vitality and quality of life.

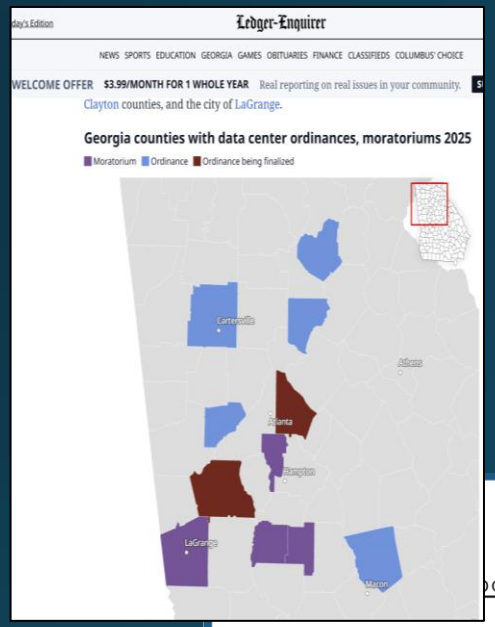
The region lies in the headwaters of six major river basins, where natural surface water sources are small relative to other major metropolitan areas and in need of a high level of protection.

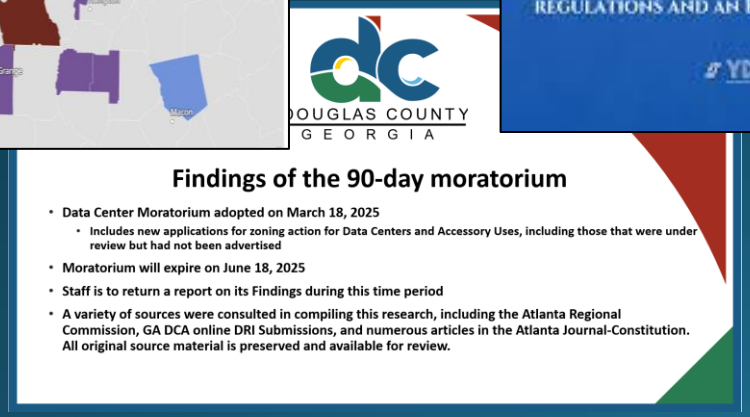
The firm yield of water supply sources available to individual jurisdictions also varies, and some jurisdictions have larger available supplies than others.

ARC recommends a careful examination by the *Water Provider* of its capacity to meet peak-day demands for this project, in addition to other current and projected future peak-day demands.

ARC also recommends that the *Water Provider* require the installation of advanced "waterless" cooling technologies or "near waterless" technology to reduce the burden on the drinking water supplies and increase the resiliency for both the project and the potable water system.

Known Current Local Government Efforts Across Georgia





Current Moratoriums

- City of Roswell (through April 12, 2026)
- DeKalb County (through June 2026)
- Pike County (through June 2026)
- Lamar County
- Troup County (through March 15, 2026)
- LaGrange (through March 2026)
- Crawford County (through June 2026)
- Monroe County (through March 2026)
- Rockdale County (through September 2026)

Ordinances Under Development

- DeKalb County
- Henry County

Ordinances Passed

- Coweta County
- Lumpkin County
- Bartow County
- Forsyth County
- Douglas County
- Jones County

Zoning Rules Adopted

- City of Atlanta
- Forsyth County
- City of South Fulton

"The promise of revenue expansion and diversification will require strategic planning to ensure community needs are addressed in concert with achieving long-term economic prosperity for the County."

-Prince William County 2023 Data Center Industry Tax Revenue Report

Photo Credit: World Bank

The Big Picture

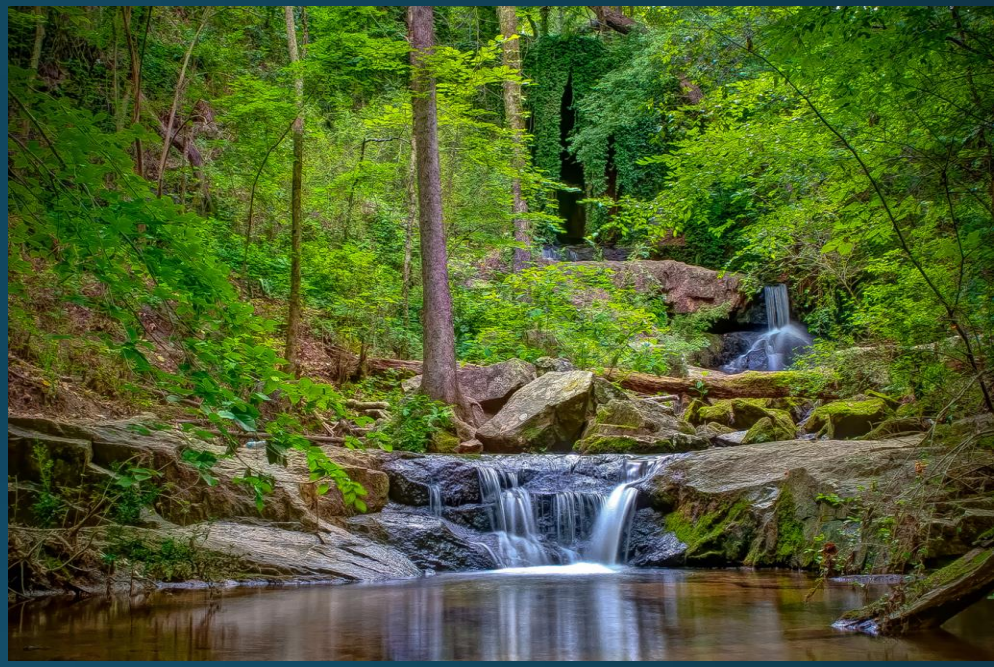
Developers
Engage with water providers early in project planning discussions.

Water Providers
Consider impacts and establish parameters for water use

Local Leaders
Support policies for balanced, resilient growth.

Trade-offs and Informed Decision Making Discussion for balanced and resilient growth

The resilience of our region—both today and tomorrow**—depends on all of us.**



Scan the QR Code
to visit the MNGWPD website
for additional resources

For Technical Assistance & additional information contact

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