

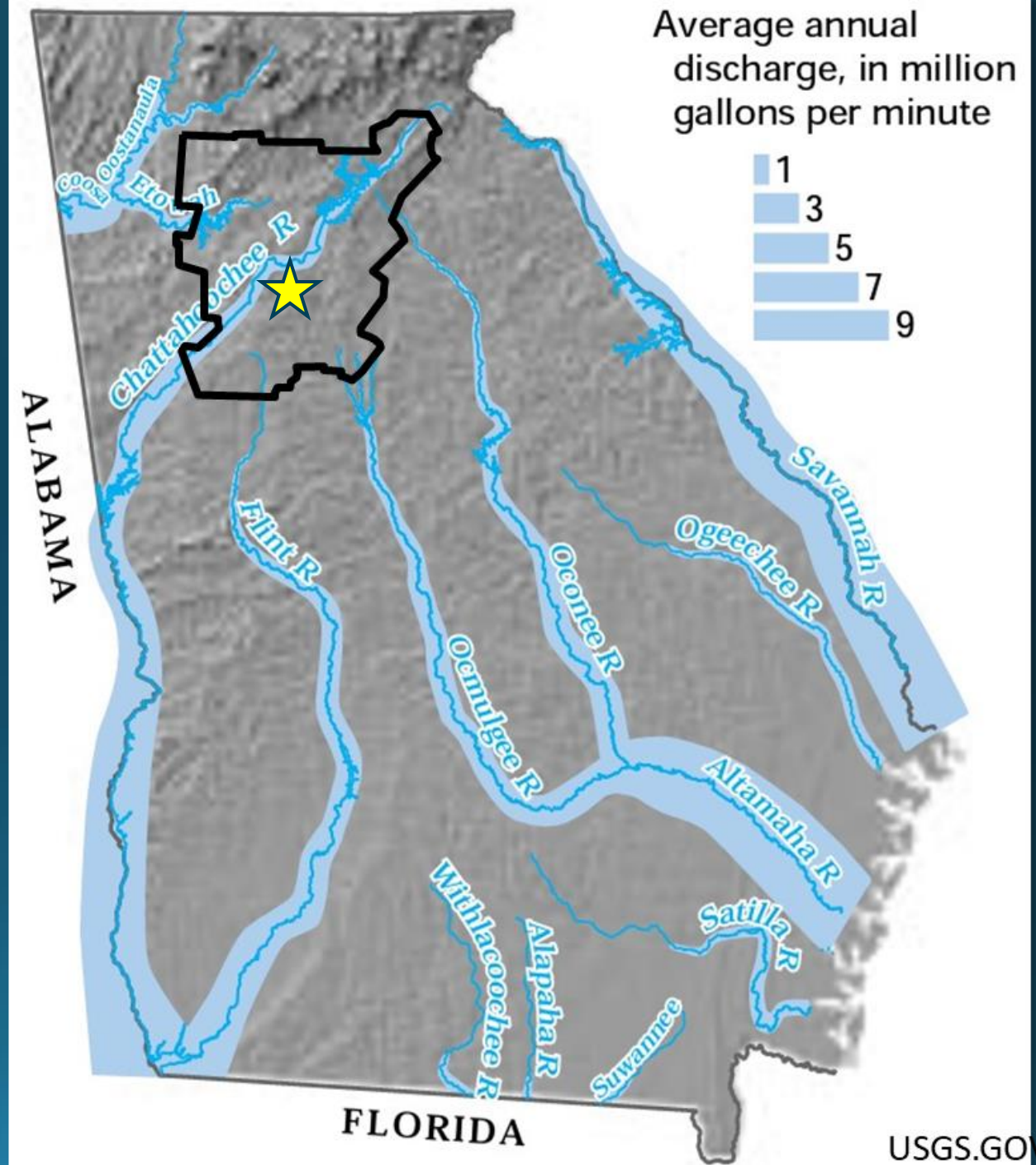
Data Center Trends in Metro Atlanta and Considerations for Local Communities

76th Annual Environmental Engineering Conference
Kansas University

Metropolitan North Georgia Water Planning District

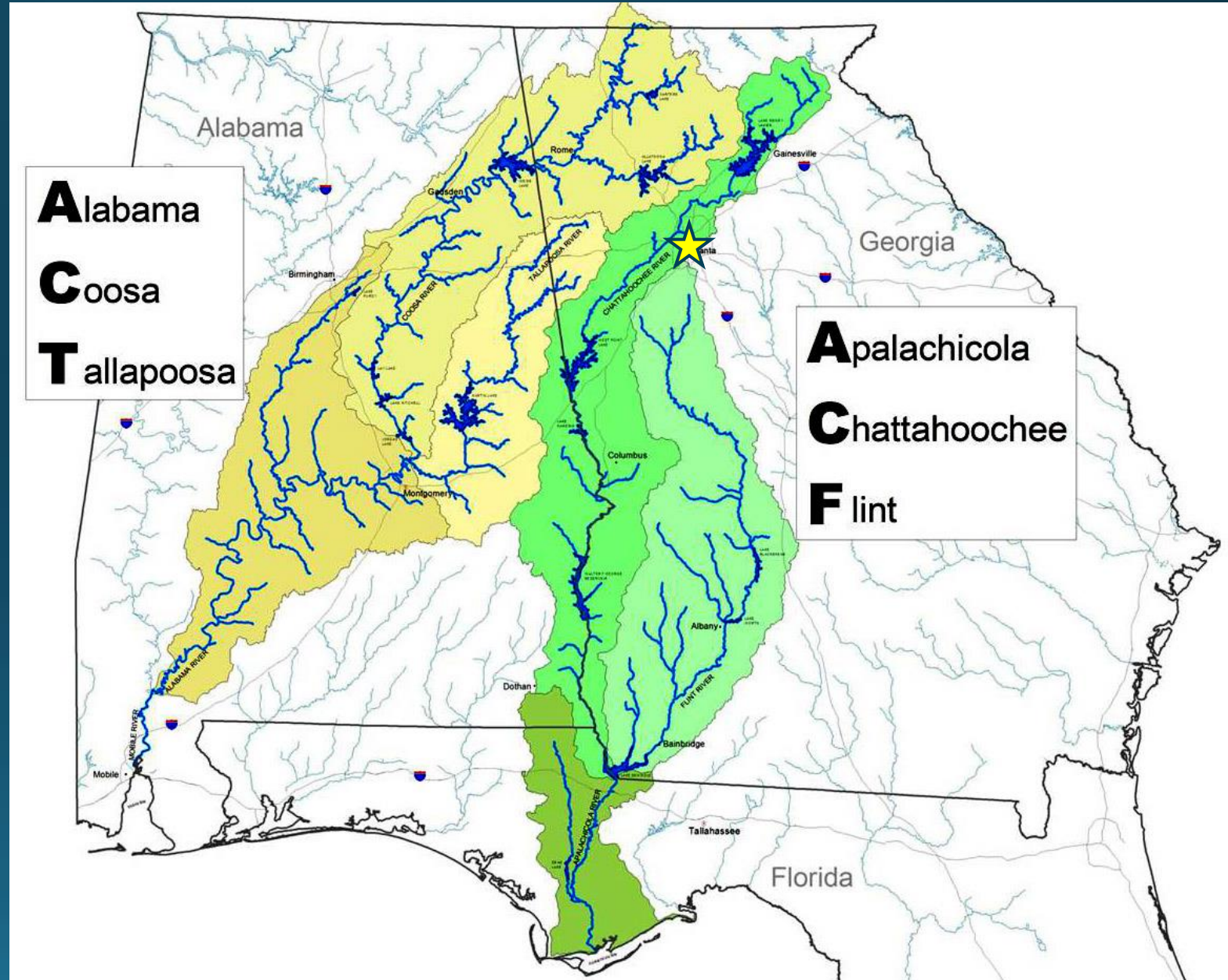


Metro Atlanta: Headwaters to Most of Georgia



Major Sources are Shared

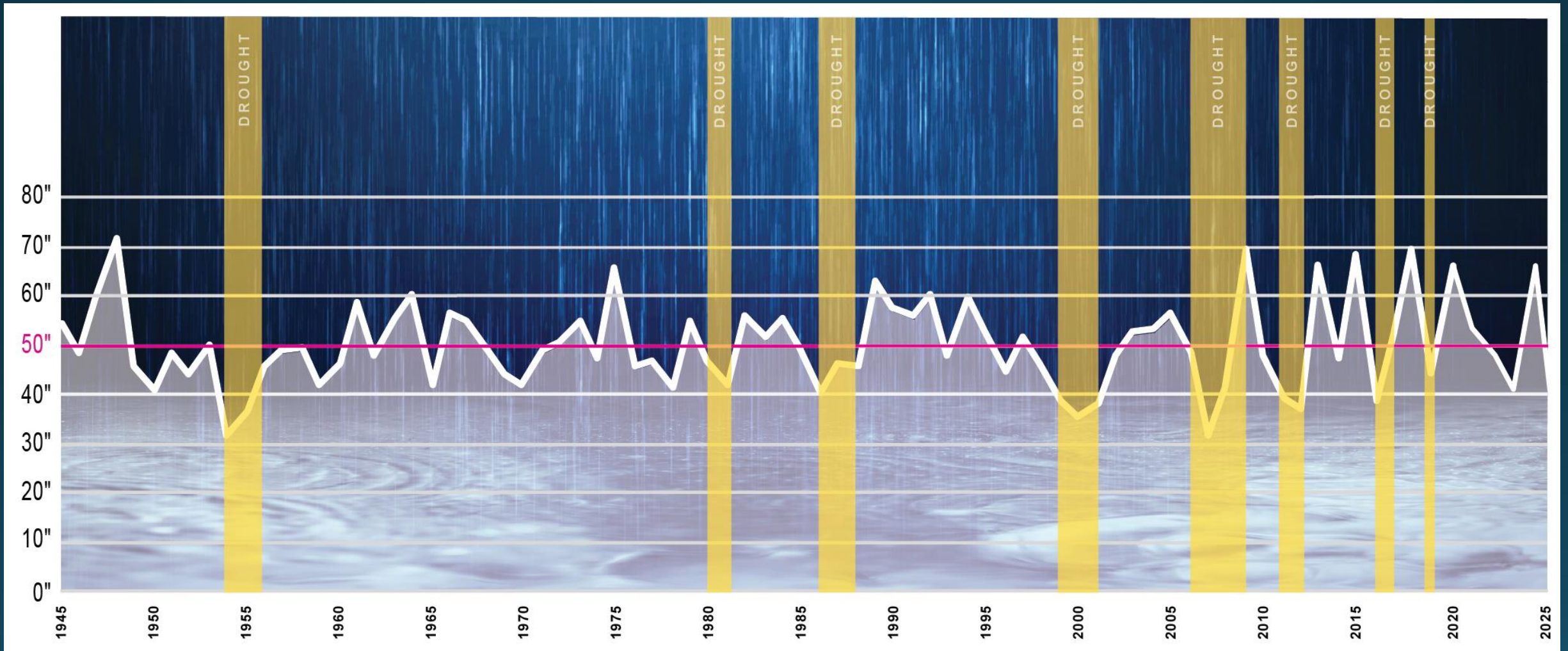
- ▶ Water Supply
- ▶ Hydropower
- ▶ Flood Control
- ▶ Recreation
- ▶ Waste Assimilation
- ▶ Navigation
- ▶ Agriculture
- ▶ Fish & Wildlife
- ▶ Endangered Species
- ▶ Apalachicola River & Bay



Cycles of Floods and Droughts

Annual Rainfall

Average Annual Rainfall = 50 inches



Data Center Growth in Metro Atlanta



Data Centers Growth in Metro Atlanta

Data centers are not a new concept, they have been around for decades

A development proposal does not guarantee the project will move into the development or operational phase

How many projects will become operational depends on local approvals, power commitments, market trends, etc.

Prominent Types of Data Centers in Metro Atlanta

Colocation: space is rented to multiple companies to install their own servers and equipment

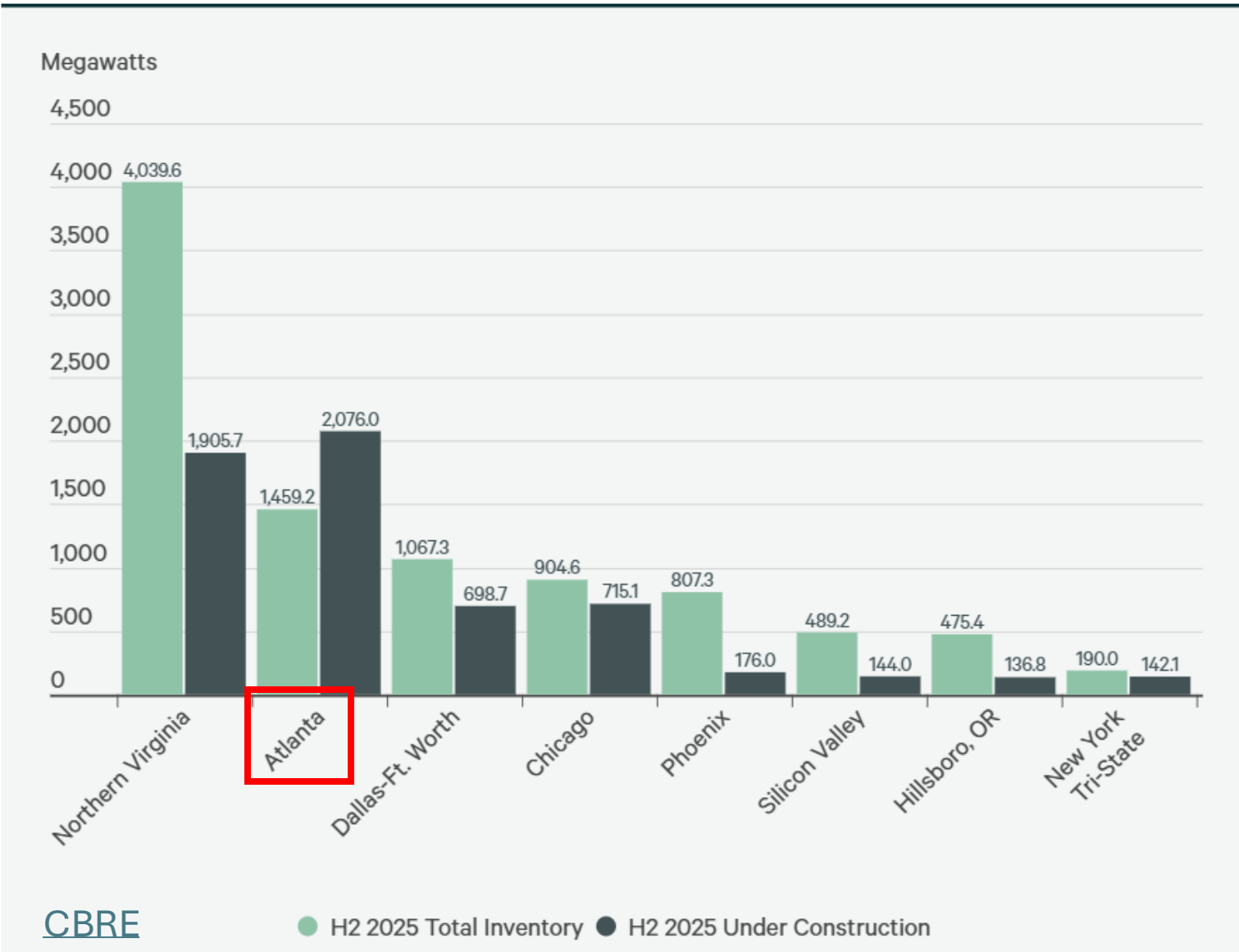
Hyperscaler: single owner and operator, typically the big players in the technology sector

Developer: A data center built to sell to a colocation or hyperscaler owner once constructed.

2,076 MW

Metro Atlanta continues to be a leader in data center construction capacity in North America

Figure 6: Total Inventory vs. Under Construction by Primary Market, H2 2025

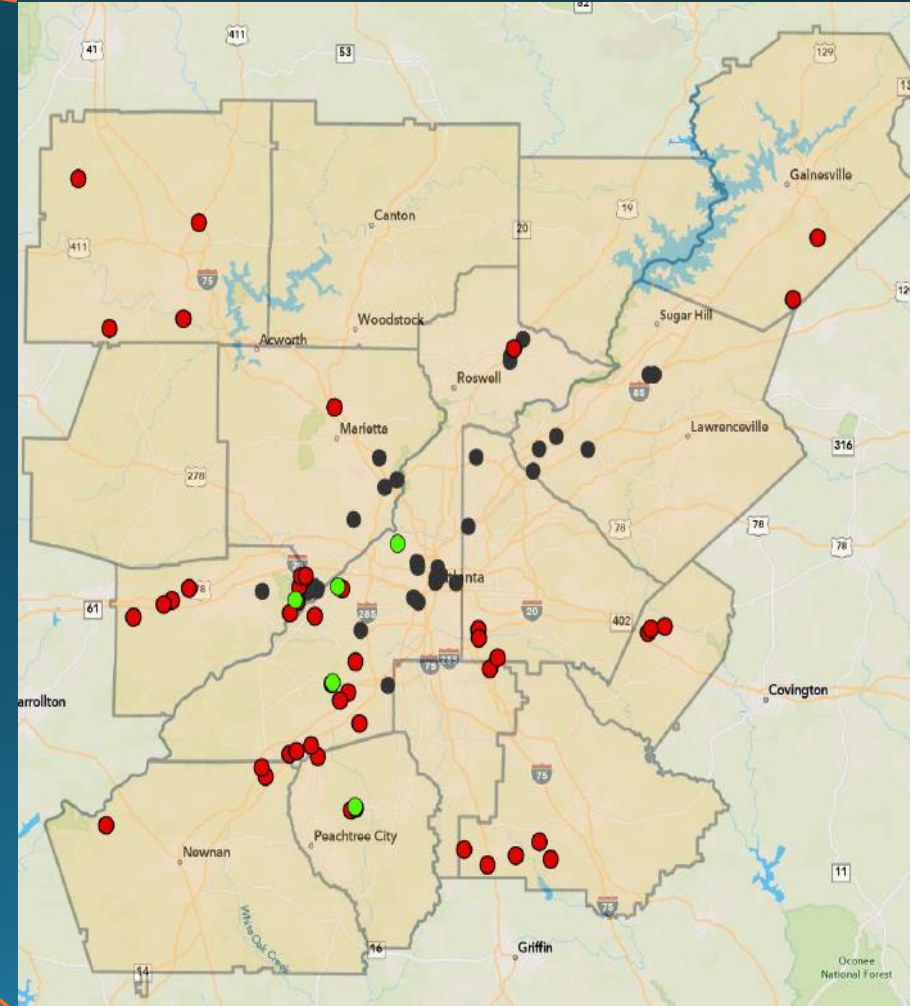
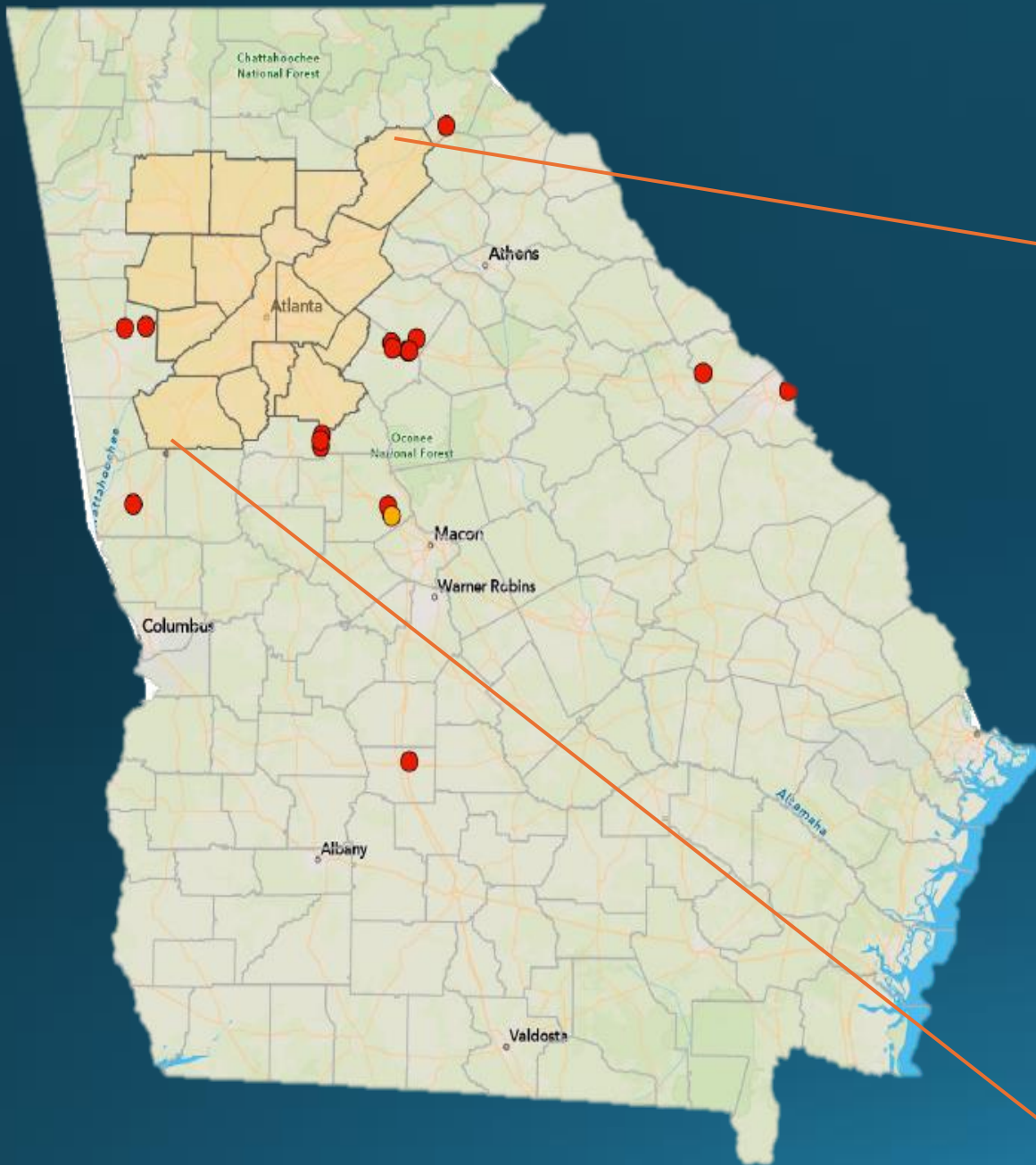


CBRE

● H2 2025 Total Inventory ● H2 2025 Under Construction

Location Trends:

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



- Completed
- Proposed
- Existing
- Withdrawn

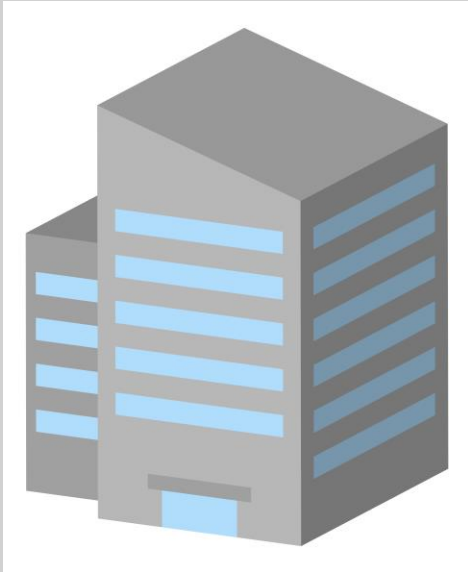
Energy and Data Centers

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

Small data centers today are ~50MW

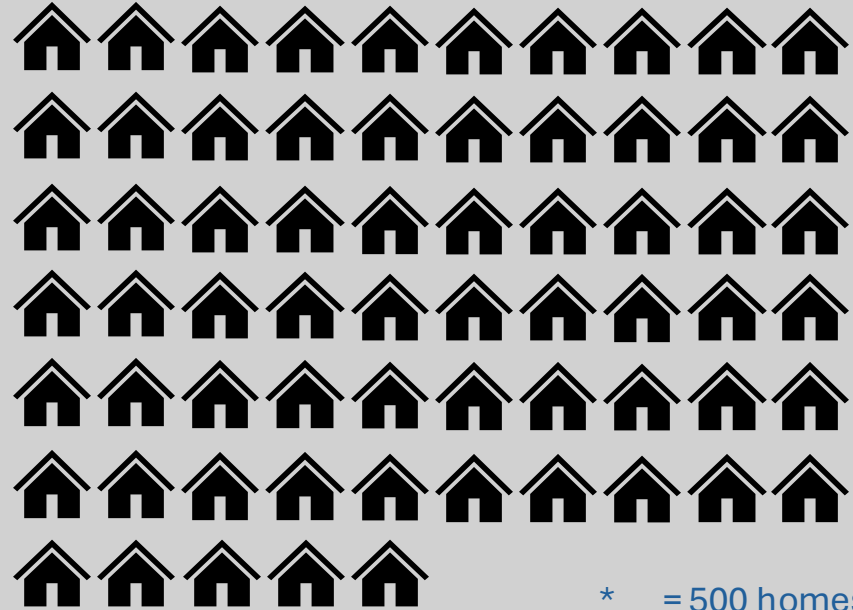
Today, data center proposals can be upwards of 1 GW

50 MEGAWATTS CAN POWER EITHER



1 Small Data Center

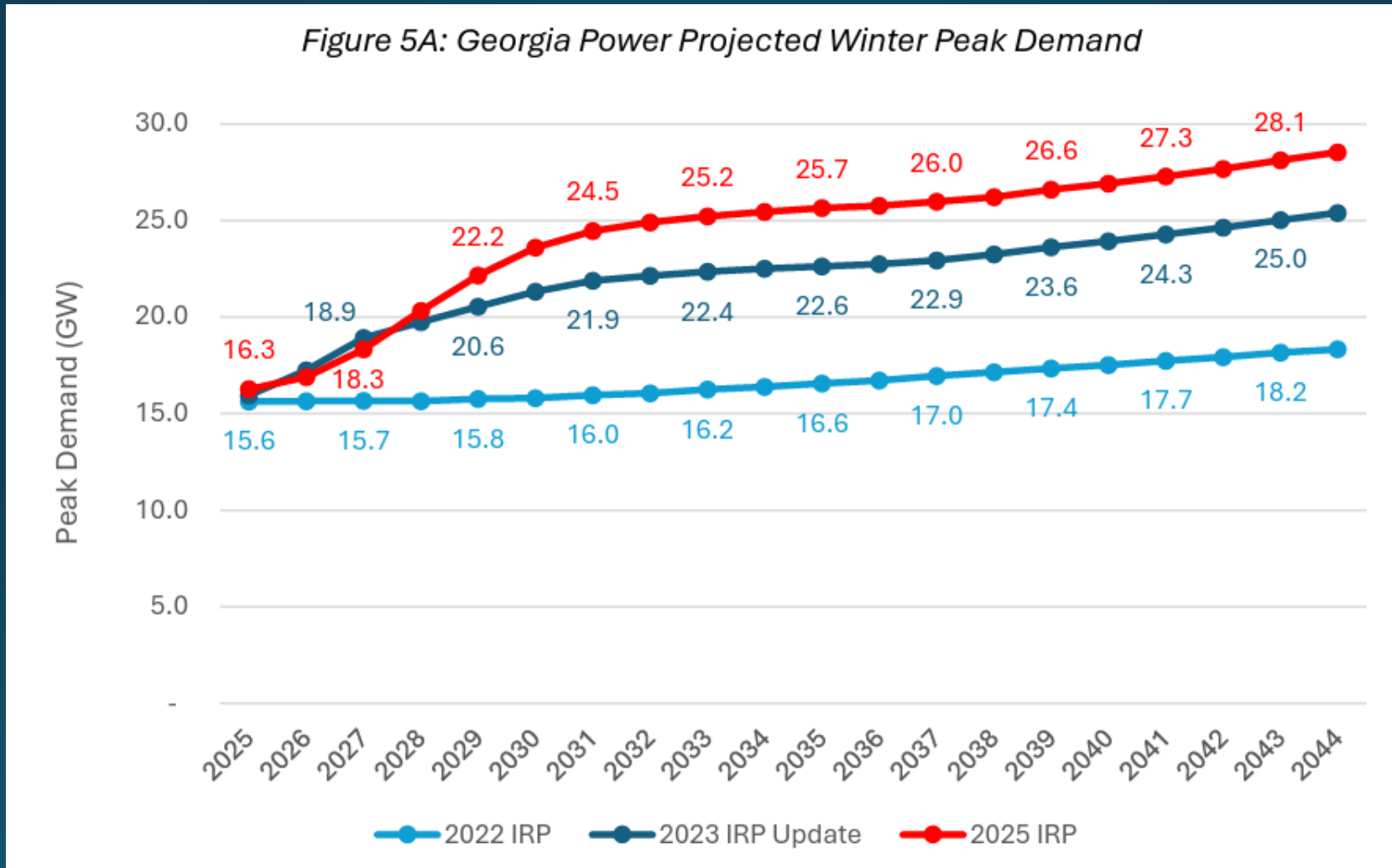
OR



* = 500 homes

32,500 Homes

Increased forecasted energy demands mostly associated with data centers

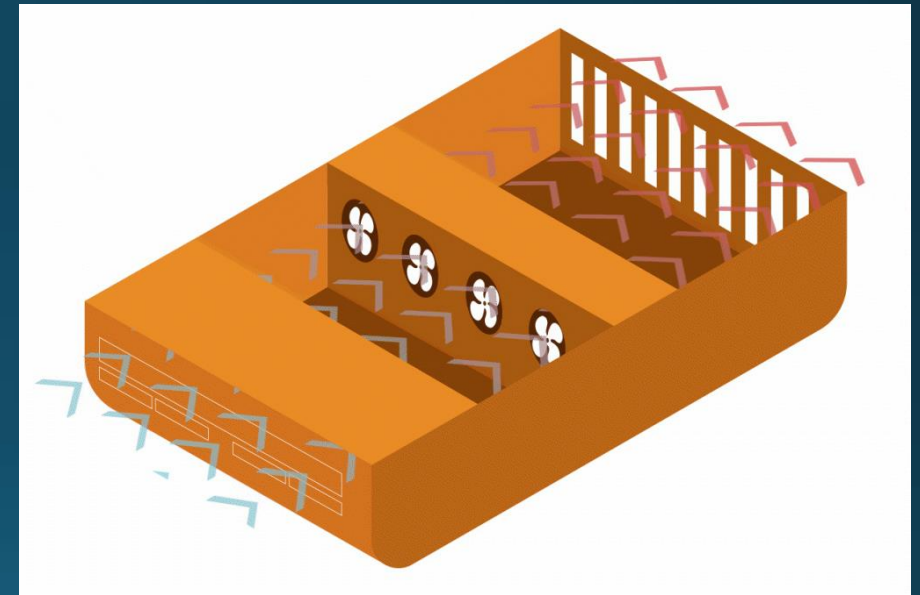


Source: Georgia Power, 2025 IRP

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 metro Atlanta



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



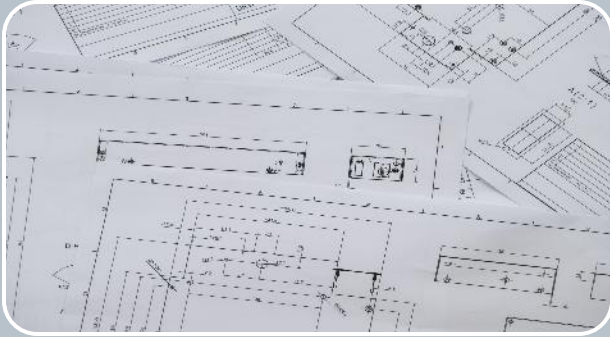
'Closed-loop' cooling:

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

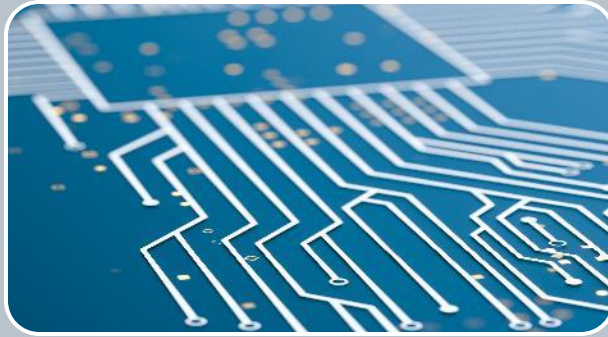
Uses significantly less water

More expensive to install and operate

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?



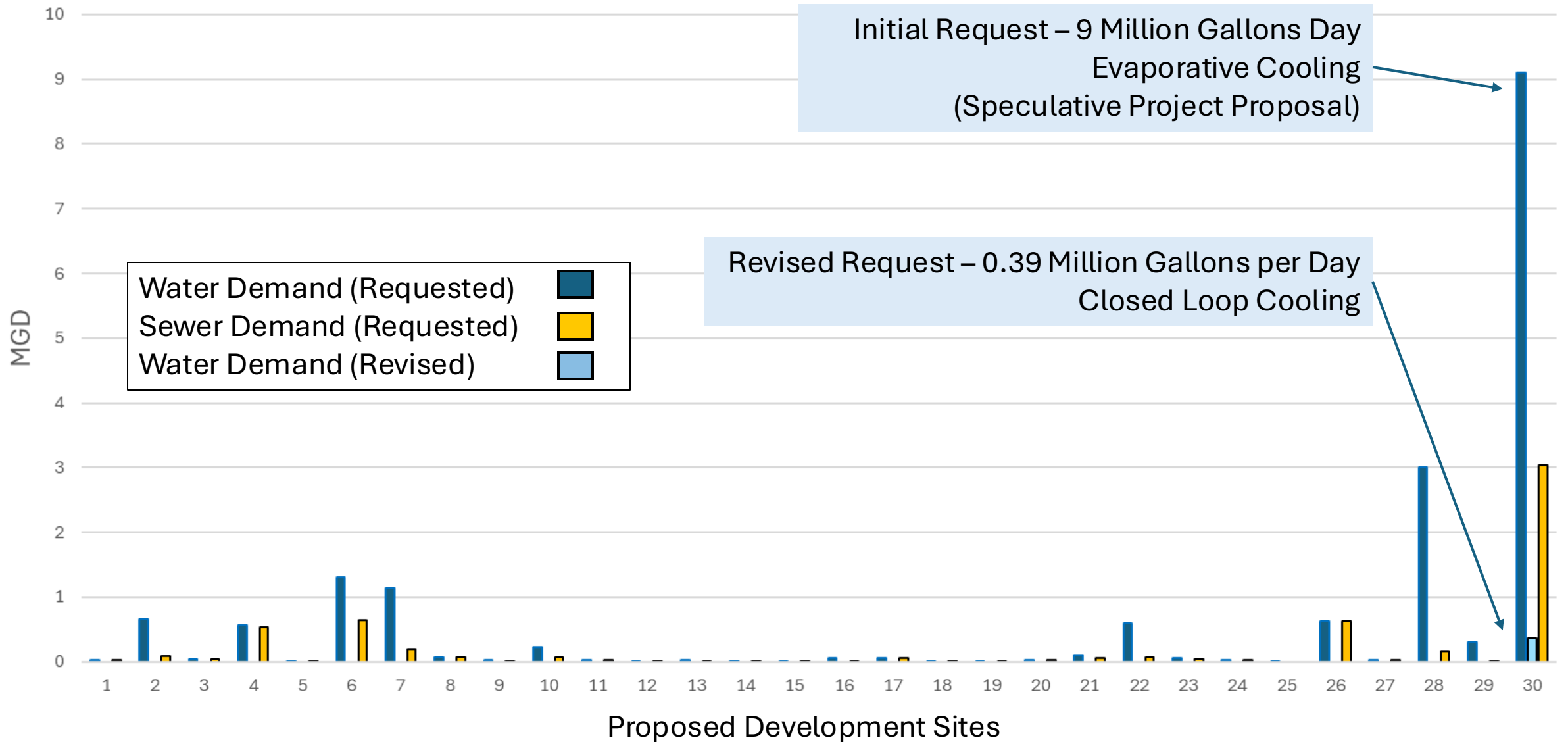
Depends on

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
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Water demand requests in Metro Atlanta

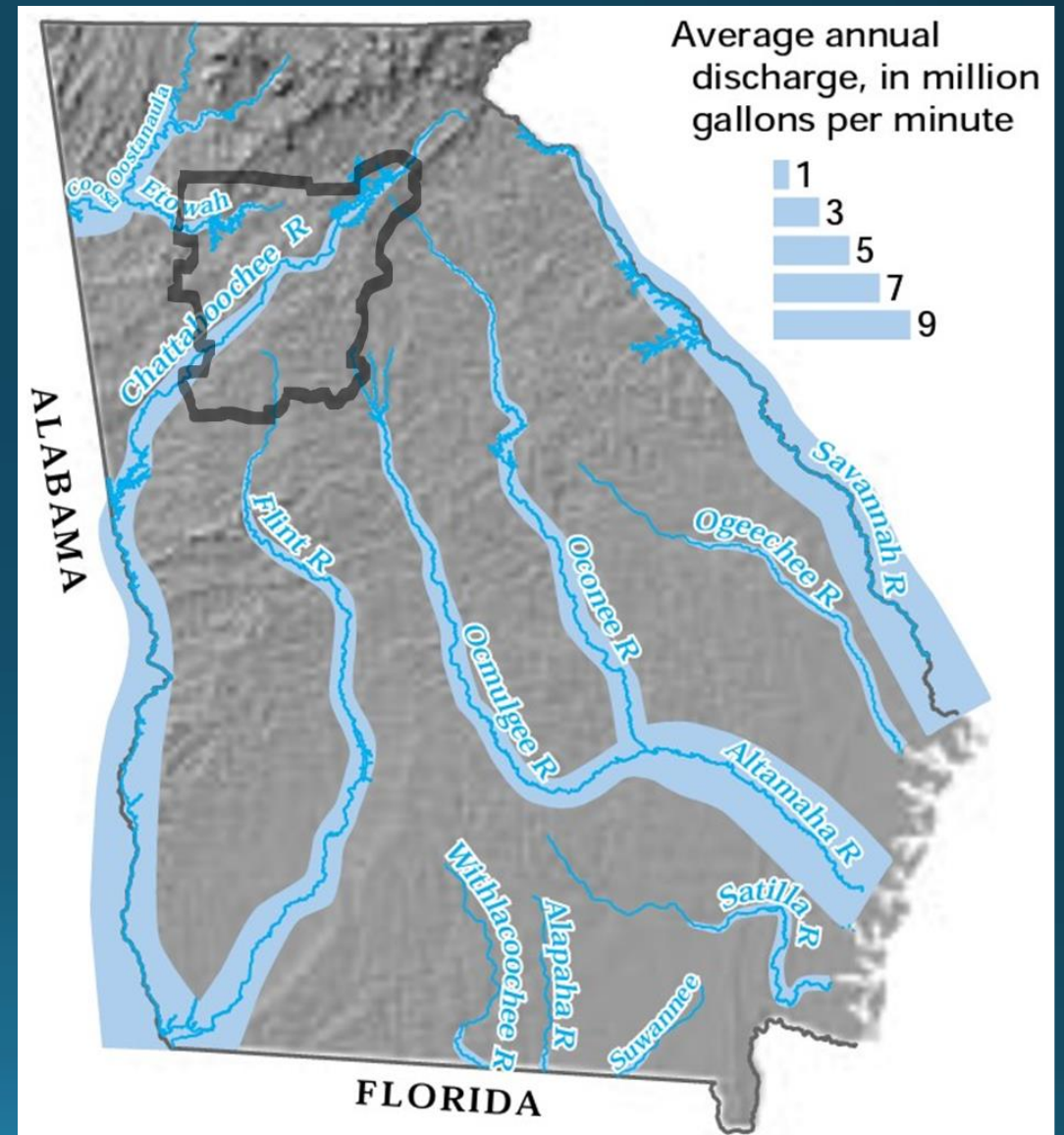
Evaporative As much as 9 million gallons per day	Closed-Loop Typical range 5,000 to 50,000 gallons per day
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Requested Water Supply Demands & Wastewater Disposal for Proposed Data Center Developments in Metro Atlanta (15 Counties)

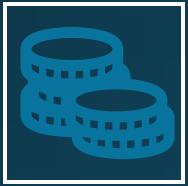


Why Cooling Methods Matter in Metro Atlanta?

- 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



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 from real estate and infrastructure investments
- Business taxes from operations or equipment
- Sales taxes on equipment purchases
- Increased revenue could serve to reduce or eliminate property taxes for residents

Financial Planning

- Direct revenues toward community priorities, such as:
 - Education programs
 - Affordable housing funds
 - Fire and safety investments
 - Parks and recreation
 - Utility upgrades
 - Sustainability and resilience initiatives
 - Ensure strong infrastructure before offering tax reductions

Epicenter for further commercial and economic growth

- Indirect economic boost through increased income tax revenue and consumer spending
 - Fund public services, infrastructure projects, and community development

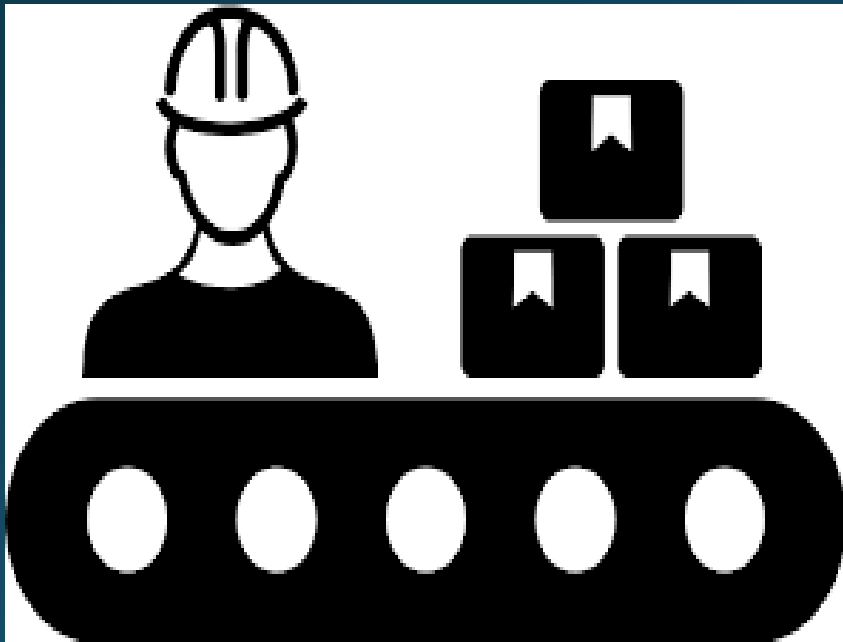
Workforce development

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

Job Creation for Data Centers Lags Behind Similar Sized Developments

Between 200 and 1,000 jobs

typical headquarters, manufacturing, or shared service operations



Between 5 and 30 jobs

typical data center (IT, custodial, security, maintenance, office)



Consider Land use Today and in the Future

Physical infrastructure

- Understand infrastructure needs
- What does it look like?

Will the construction of a data center shift other development plans?

- Reevaluate Comprehensive Plan
- Setting precedent for future data center proposal

Adaptive infrastructure

- Can the design be adapted as technology advances?
- Risk of “Stranded assets”
 - No longer meets the design capacity
 - No longer economically viable due to technology or business needs.



Typical Infrastructure Layout

On-site
Water
Storage

Backup
Generators

Electrical
Substation

Cooling
System

Douglas County
Google Data Center

Six Flags Rd



Incorporate Best Management Practices to Mitigate Environmental and Public Health Impacts



Stormwater Runoff & Water Quality

Development should prevent increases to:

- Downstream flooding
- Streambank channel erosion

Mitigate

- Water quality
- Habitat degradation

Consider increased open space requirements

Consider native tree and plant vegetation



Air Quality

Control of construction dust

Ensure backup generator exhaust meets EPA requirements



Development Ordinance Considerations

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

Prepare to Address Community Concerns



Noise Impacts

Possible sources of concern:

- Generators
- 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:

- Public outreach sessions
- Study/Mitigation efforts
- Zoning code amendments

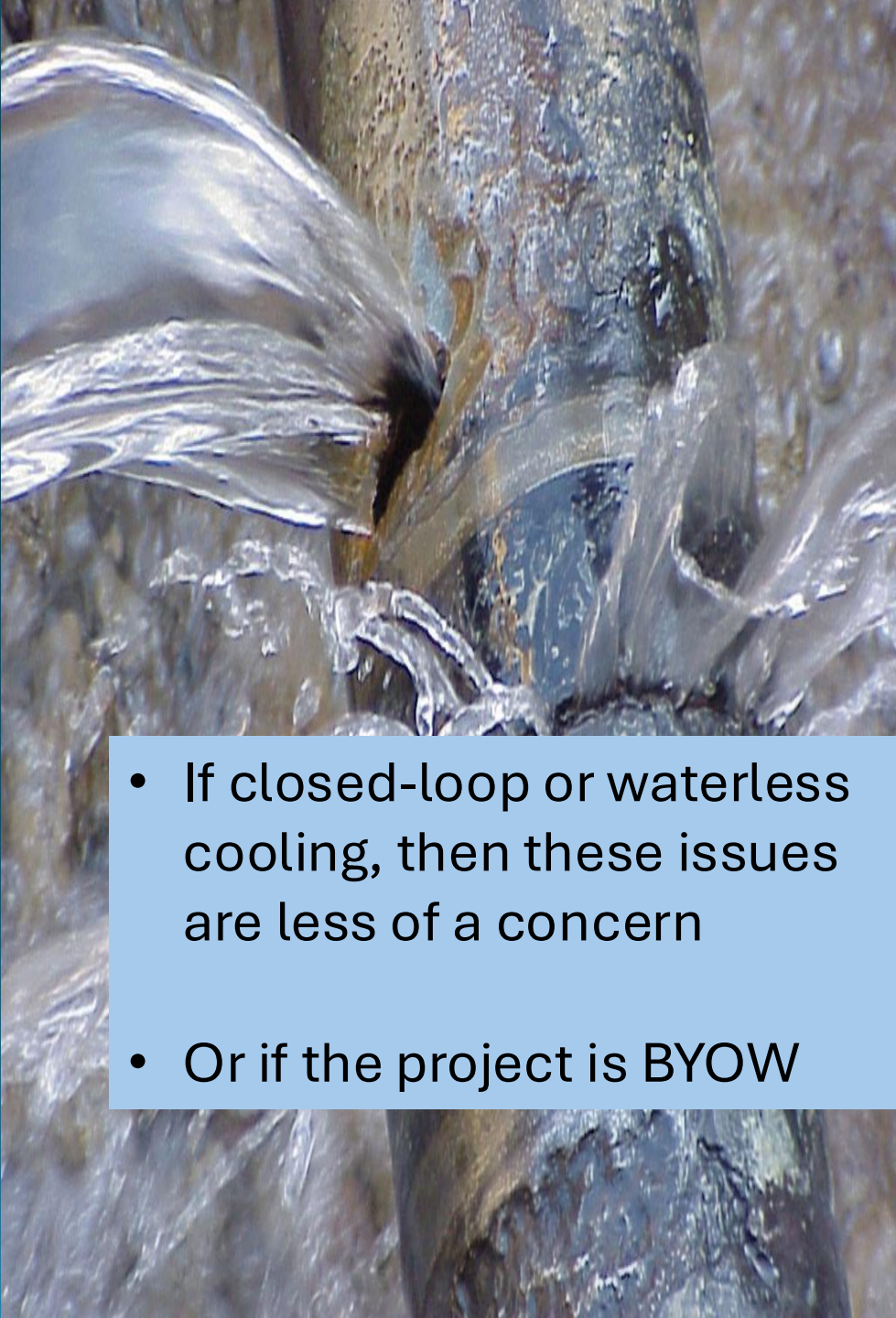
Wastewater Considerations

- Coordinate and understand wastewater requirements from developers
- Treatment standards should meet those specified under the industrial wastewater permit
 - Biocides- Chemicals to control microbial growth and ensure water quality
- Consider discharge rate and temperature impacts on public sewer systems



Water Service Considerations

- Understand planning for immediate demand and future capacity needs
- Assess need for additional infrastructure
 - Larger water lines, booster pumps, storage tanks, possible water supply and treatment expansions
- Data centers may desire to be regarded as critical infrastructure similar to hospitals
- Prepare for limitations of service
 - Drought Management - Consider updates needed to Drought Management Plan
 - Emergency Outages - Consider design elements and redundancy needs
- Discuss system reliability and expectations with the developer early in the process

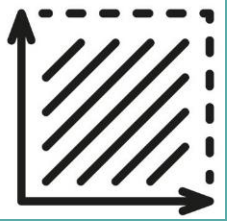
- 
- A close-up photograph of water gushing out of a pipe. The water is clear and turbulent, creating white foam and splashing. The pipe itself is dark and appears to be made of metal or plastic, with some rust or mineral deposits visible. The background is a blurred, textured surface, possibly a wall or another part of the plumbing system.
- If closed-loop or waterless cooling, then these issues are less of a concern
 - Or if the project is BYOW

Solar and Green Roof Installation?

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

Roof designs with solar or green roofs not preferable by developers

1 MW of power = 5 acres of solar panels



100 MW of power = 540 acres of solar panels

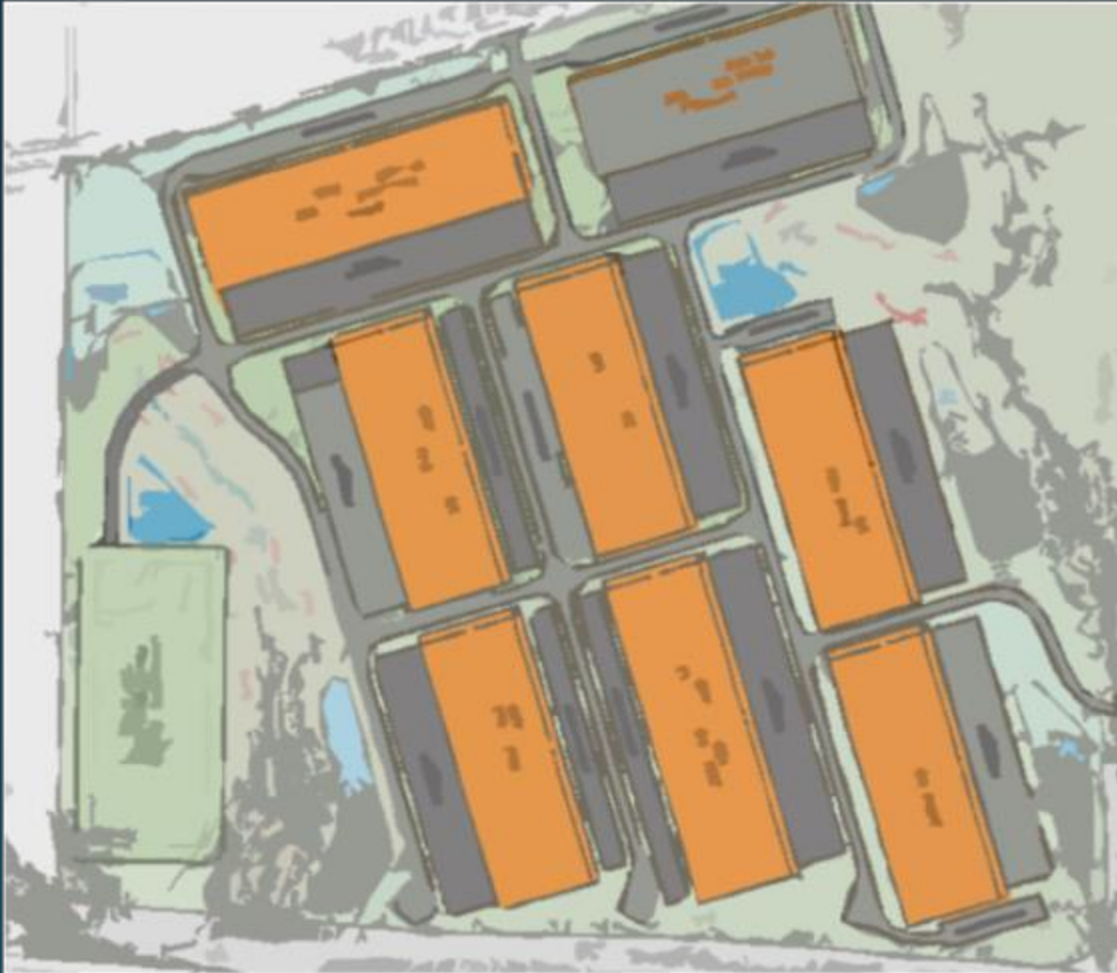
Associated risk concerns:

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 community down the road



Community Benefit Agreements

Helps to address public concerns

- Provide greater benefits to communities impacted by data center construction.
- Identifies key community concerns
 - Explains how companies will address those matters

Several key features

- Transparency,
- Affordability,
- Sustainability for communities

Should not be subject to NDA

The “Perfect Data Center”



Industry Trends

Uncertainty of industry trends

- Chip development
- Increase/decrease of stocks

Rapid technology advancements

- Likely increases in efficiency and technological capabilities
 - [Nvidia's Villa Ruben Chip](#)



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MARKETS

AI boom warning sign? Nvidia's new chips hit data center cooling stocks

The chips could make some cooling systems “not necessary” for data centers, Nvidia's CEO said. That could hurt demand for a major component of the facilities.

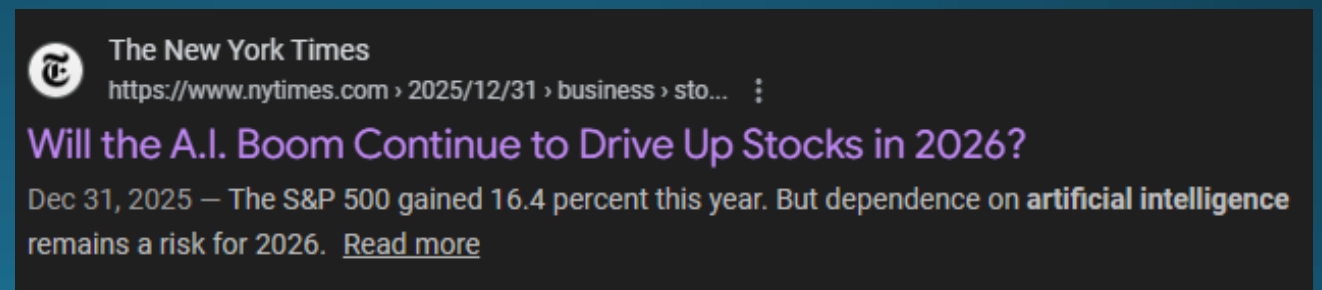


Forbes

DAILY COVER

The AI Data Center Gold Rush Is Leaving The Landlords Behind

The mainstreaming of AI is turning into a trillion dollar business, yet the two biggest data center real estate firms have lagged in public markets. Here's why —and how they could catch up.

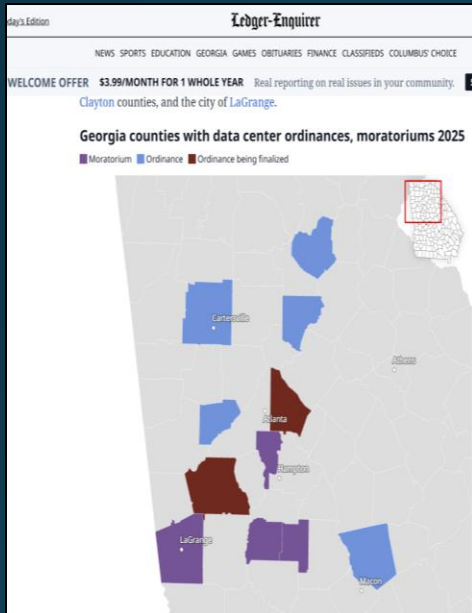


The New York Times
<https://www.nytimes.com> › 2025/12/31 › business › sto... ⋮

Will the A.I. Boom Continue to Drive Up Stocks in 2026?

Dec 31, 2025 — The S&P 500 gained 16.4 percent this year. But dependence on **artificial intelligence** remains a risk for 2026. [Read more](#)

Current Known Local Government Efforts Across Georgia



Findings of the 90-day moratorium

- Data Center Moratorium adopted on March 18, 2025
 - Includes new applications for zoning action for Data Centers and Accessory Uses, including those that were under review but had not been advertised
- Moratorium will expire on June 18, 2025
- Staff is to return a report on its Findings during this time period
- A variety of sources were consulted in compiling this research, including the Atlanta Regional Commission, GA DCA online DRI Submissions, and numerous articles in the Atlanta Journal-Constitution. All original source material is preserved and available for review.

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)

Ordinances Under Development

- DeKalb County
- Henry County

Ordinances Passed

- City of Atlanta
- City of South Fulton
- Coweta County
- Lumpkin County
- Bartow County
- Forsyth County
- Douglas County
- Jones County
- Jackson County



Trade-offs and Informed Decision Making

Data Centers and The Big Picture



Developers: *Engage with water providers early in project planning discussions.*



Water Providers: *Consider impacts and **establish parameters** for water use, communicate drought and emergency planning protocols.*



Local Leaders: *Support policies for balanced, resilient growth.*



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



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



For Technical Assistance & additional information contact
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Metropolitan North Georgia Water Planning District