

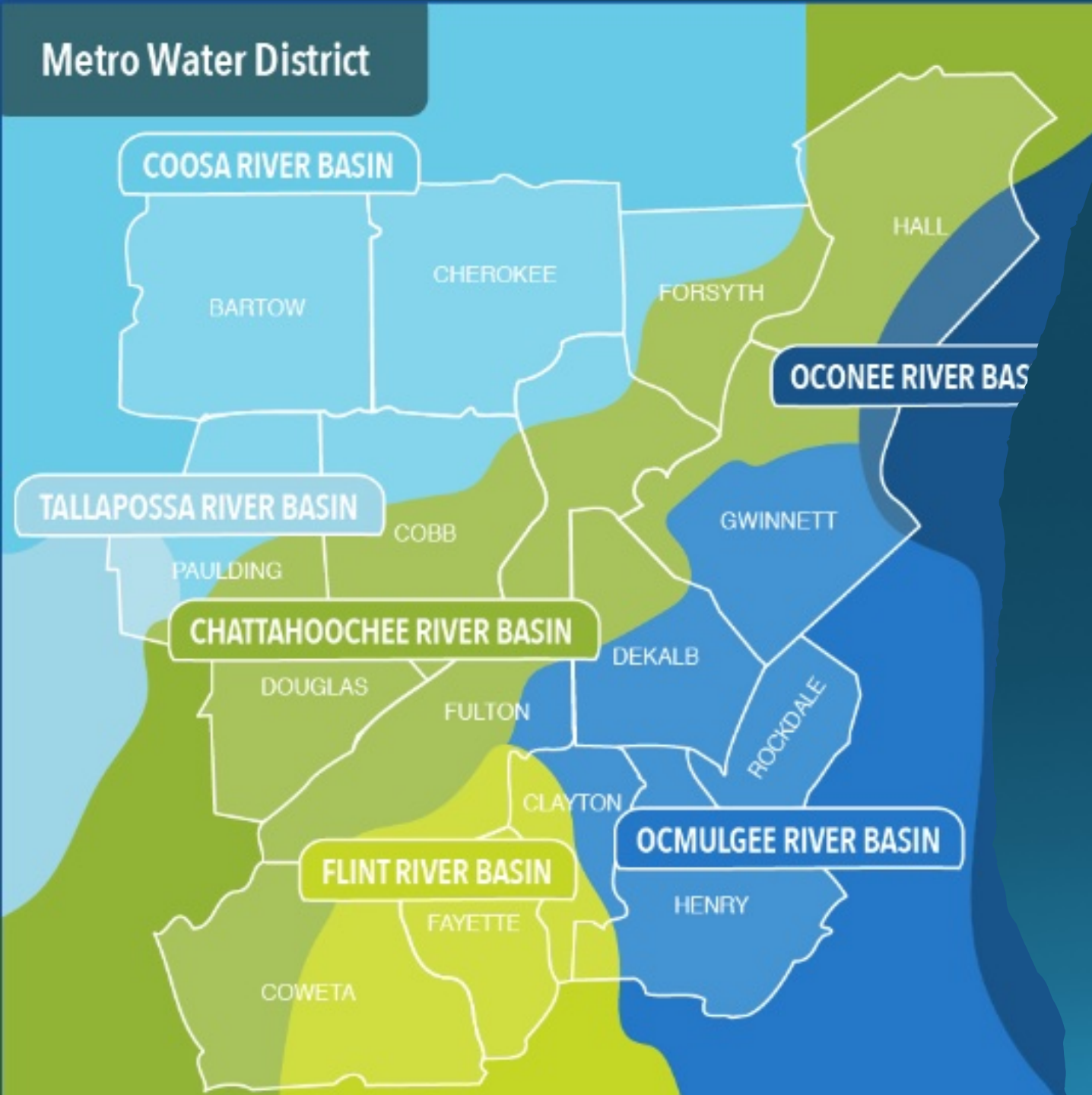
Data Center Trends in Georgia and Considerations for Local Communities

Céline Benoît & Shelby Miller
Natural Resources Department
Atlanta Regional Commission





Metro Water District



The District

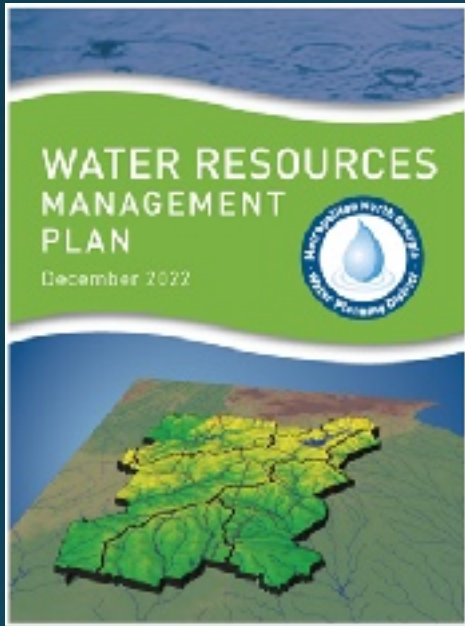
Established by the Georgia legislature in 2001

97 cities and 15 counties

District provides technical and educational resources in managing our shared water supplies



Water Resources Management Plan



Metro Water District develops regional Water Resources Management Plan



Local Governments responsible for implementing the plan



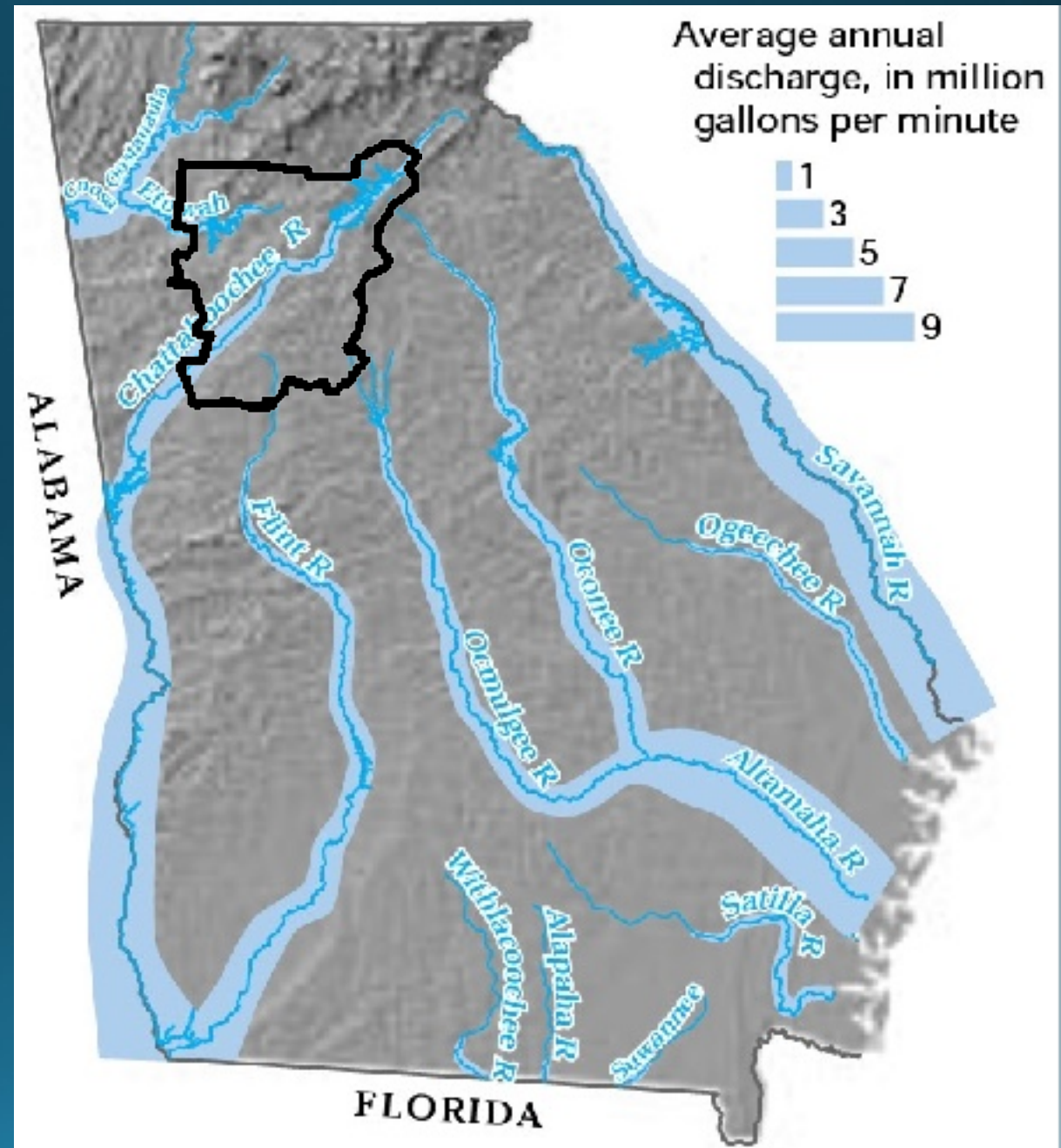
Georgia EPD approved plans and enforces implementation via permits and state funding eligibility

Where does our drinking water come from?

Headwaters of 6 Small river systems that flow to our downstream communities and neighboring states

Smallest watershed for surface water supply of any Metropolitan area in the nation

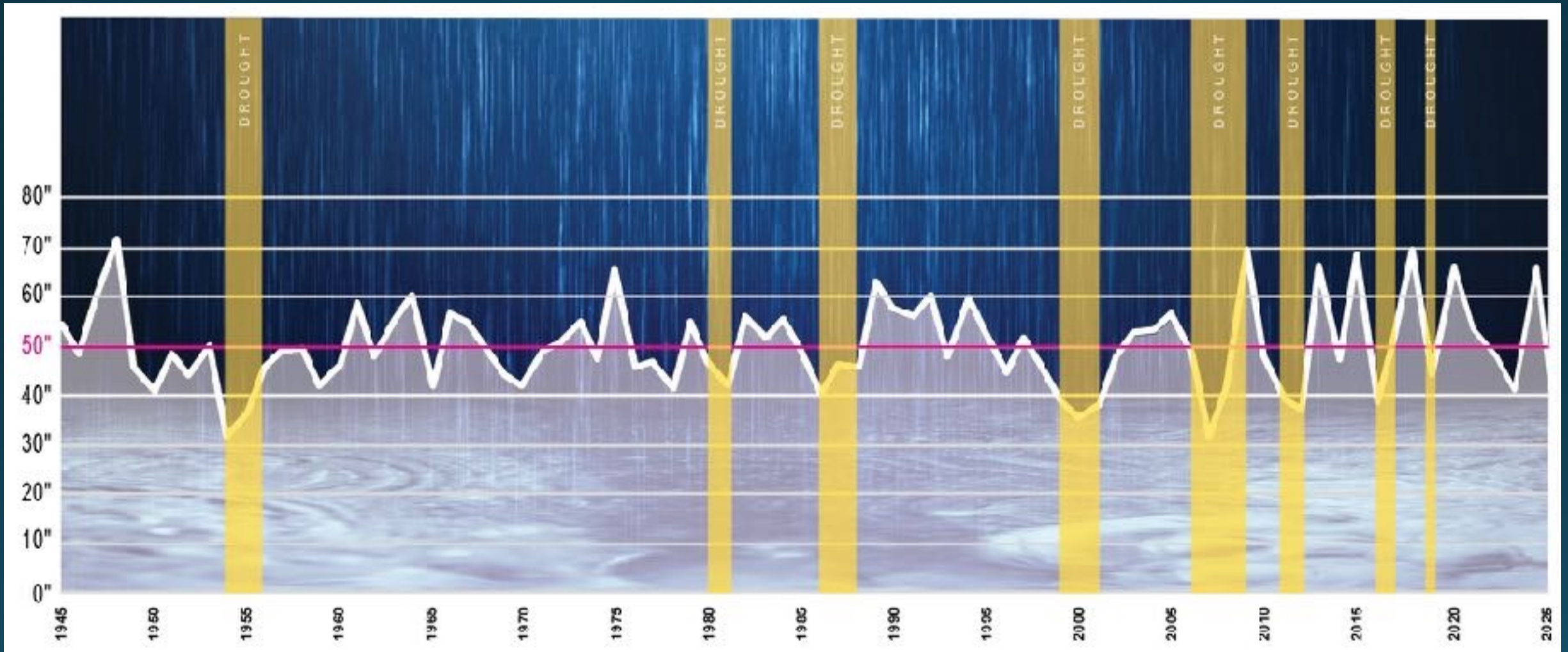
99% of our drinking water is supplied through Surface Water Sources



Averages can be Misleading

Annual Rainfall

Average Annual Rainfall = 50 inches



Water Supply & Metro Atlanta



Drought Level 1 Still in Effect

Level 1 Drought Declared |
Environmental Protection Division

Georgia EPD declared state-wide Drought Response Level 1 April 27th

Consists of a public information campaign, with requirements for: public notice and drought specific public-service messaging

District Resources

[Press Release](#)

[Current Drought Status](#) webpage

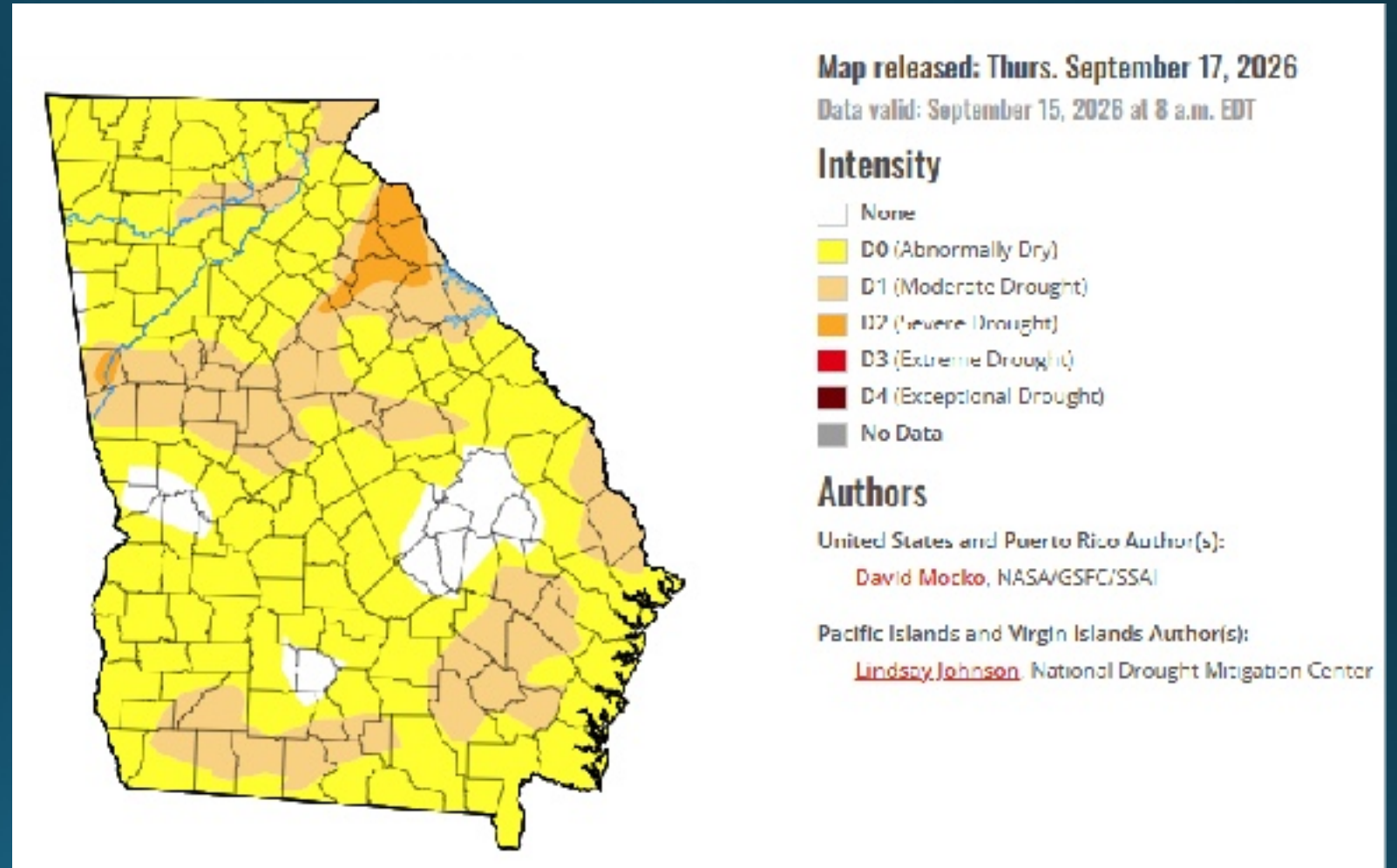
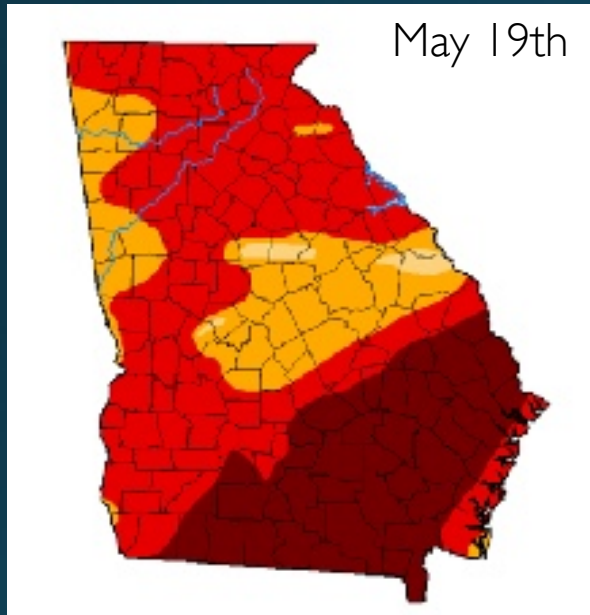
[Water Stats](#) webpage

Social media resources

[Printables & brochure resources](#)



2026 Drought



Source(s): NDMC, NOAA, USDA, NASA
Data Valid: 09/01/25

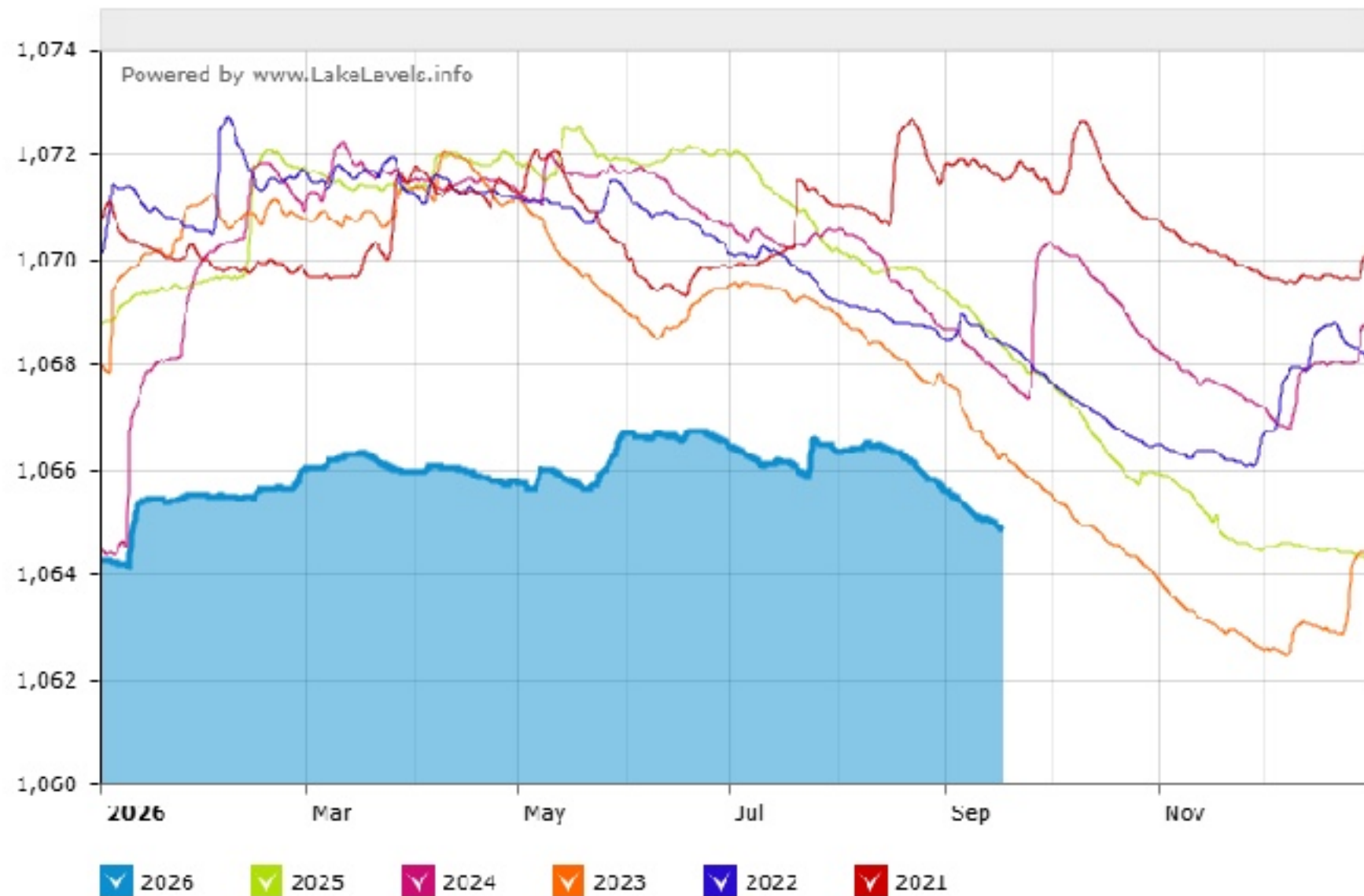
Drought.gov

Lake Lanier Water Levels

1,064.85 ft: Sept
17

1,071 ft: Full Pool

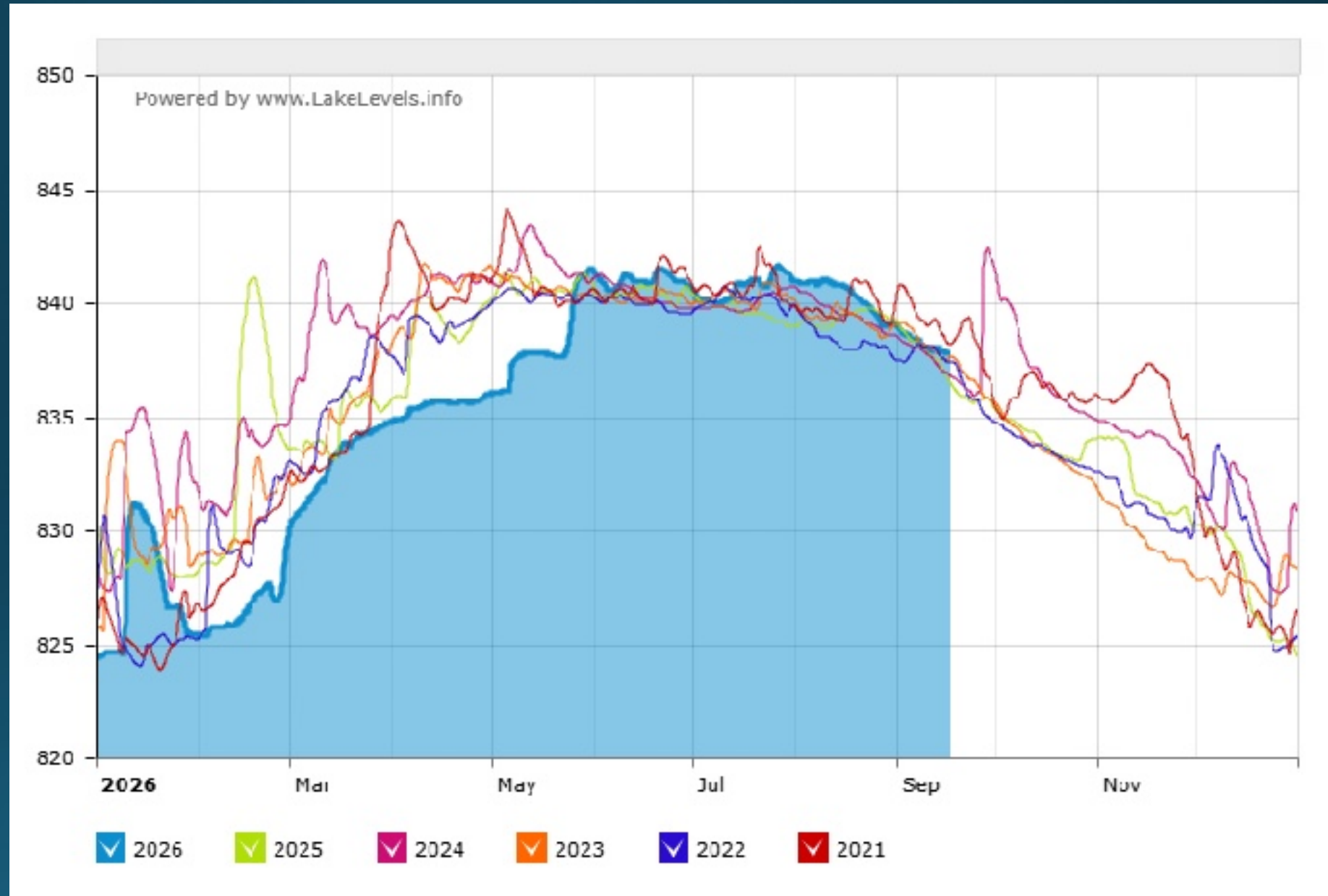
-6.85 ft



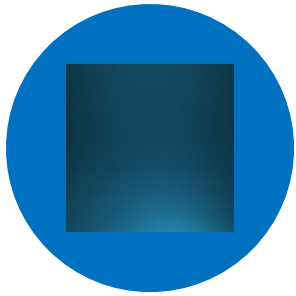
Allatoona Lake Water Levels

837.76 ft: Sept 17
840 ft: Full Pool

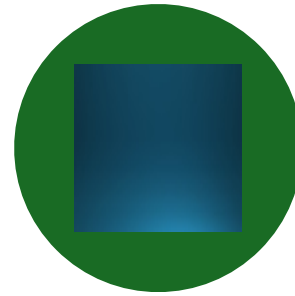
-2.24 ft



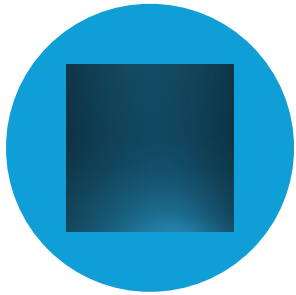
Why is any of this important?



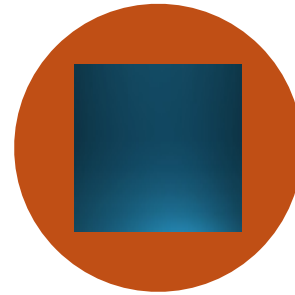
Surface water dependency, no access to groundwater aquifers like southern parts of GA or other states



Just because it's raining does not mean we are out of the drought



Where it rains matters to replenish local reservoirs



Leaders in water conservation – by necessity

Data Center Growth in the Region

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, temperature & opportunity cost

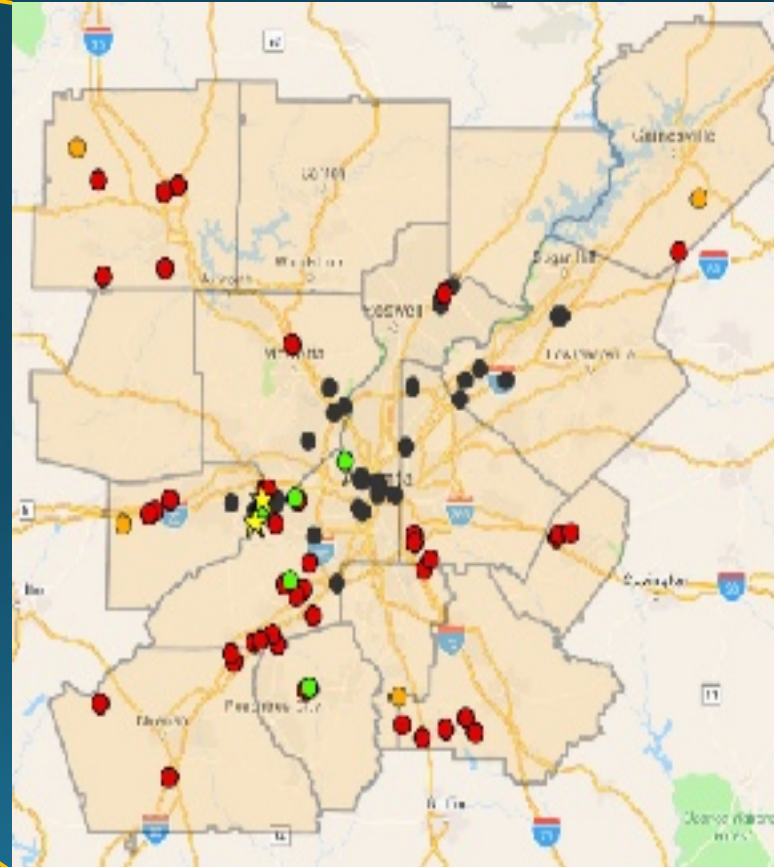
New Development Type

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



Location Trends:

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



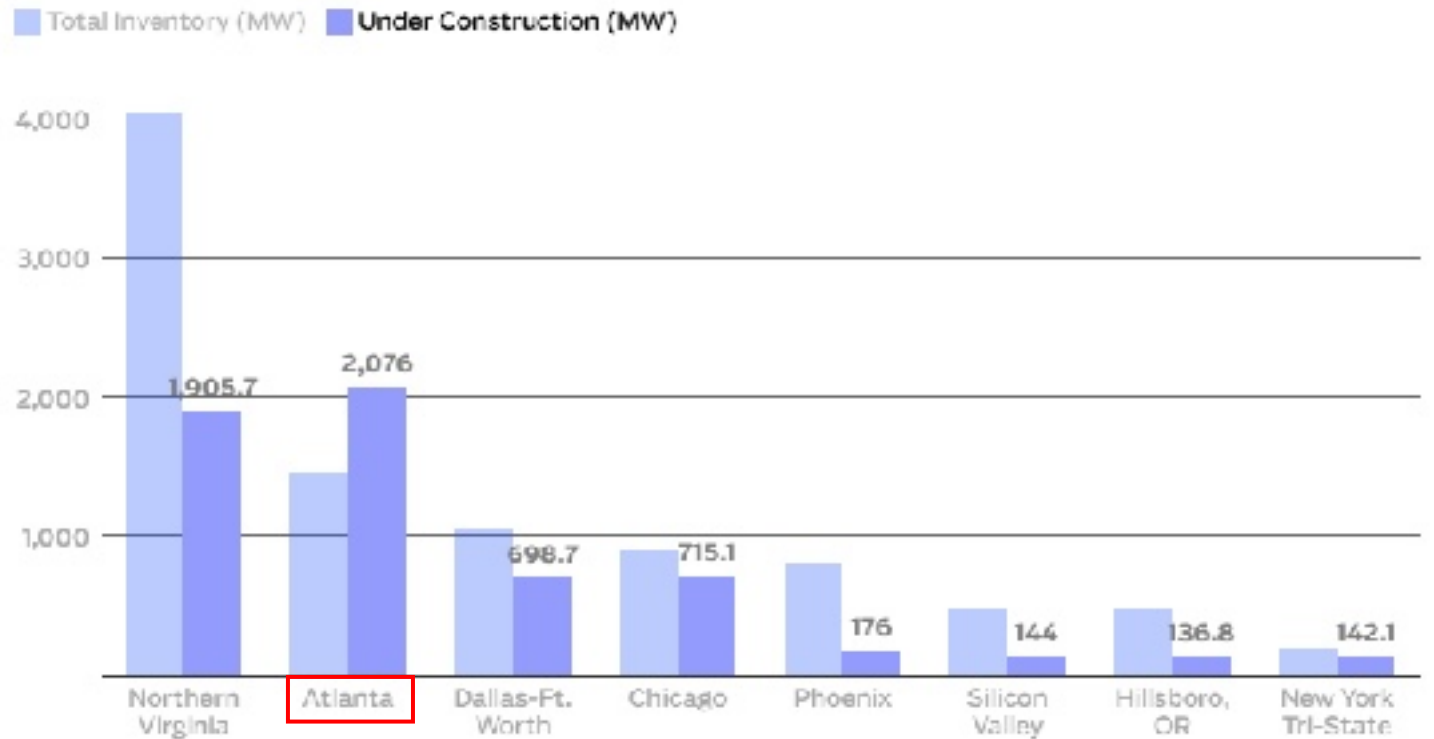
- Completed
- Proposed
- Existing
- Withdrawn
- ★ Denied

Metro Atlanta only
primary market with
more Under Construction
than Operational

Leading the country in
Construction, surpassing
Northern Virginia

Atlanta still an outlier

Atlanta not only ended 2025 with the most data center space under construction, but it was the only primary market to have more space being built than was operational.



*Data center space is typically measured by electricity capacity in megawatts.

Chart: Zachary Hansen

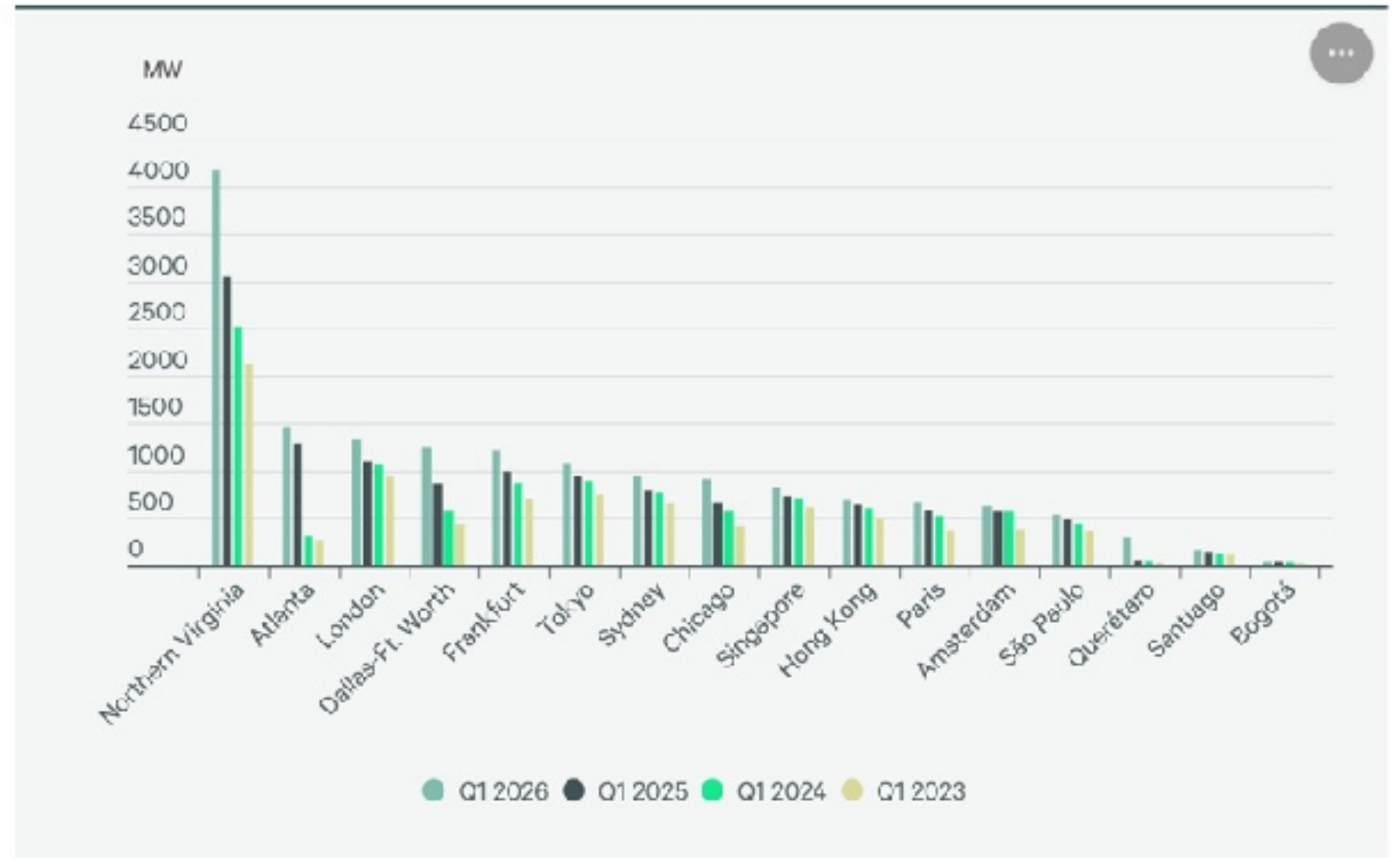
Source: CBRE

The Atlanta Journal-Constitution

1,465 MW

Metro Atlanta has the
2nd most constructed
data center inventory in
the world

Figure 2: Data Center Inventory by Market



Source: CBRE Research, Q1 2026.

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



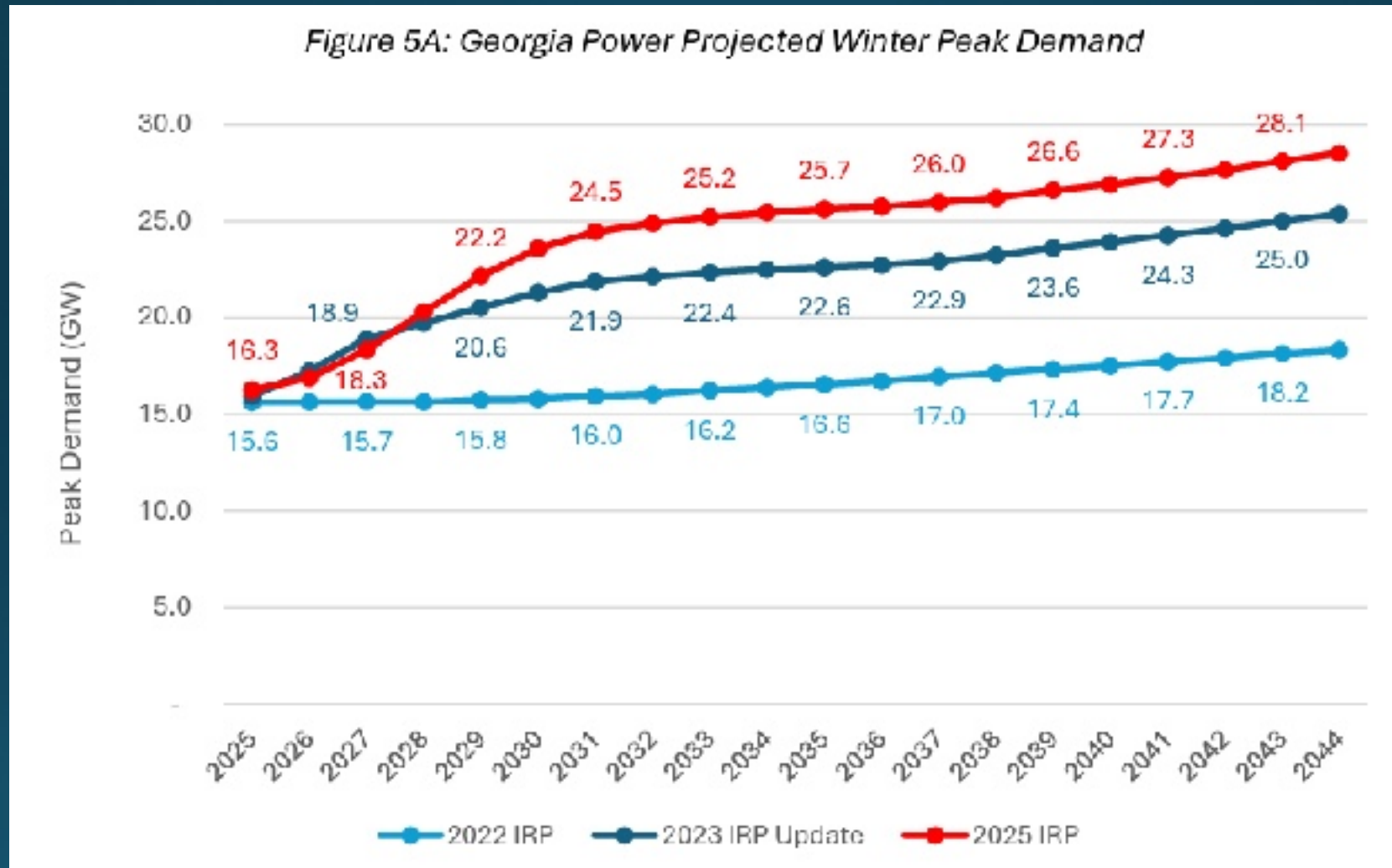
**1 Small Data
Center**

O
R

**32,500
Homes**

* = 500
homes

Increased forecasted energy demands mostly associated with data centers

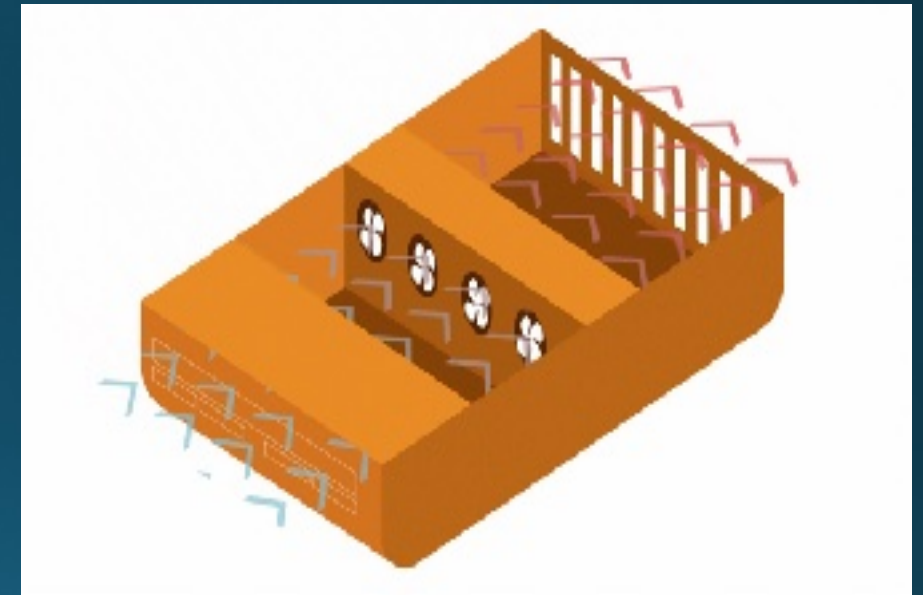


Source: Georgia Power, 2025 IRP

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 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

Types of Cooling

Very important in Metro Atlanta

- 99% dependency on surface water
- No access to groundwater aquifers unlike other parts of the state or country



Evaporative Cooling

- Upwards of 80% of water is evaporated
- Needs constant replenishment
- Does not refill local reservoirs



Reuse Cooling

- Reduces amount of water returned to local water supplies
- Can cause management challenges during times of drought or emergency outages



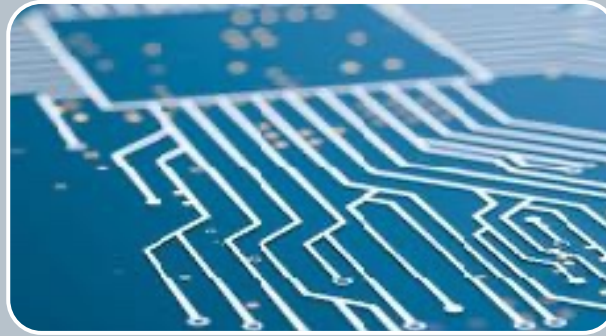
Closed-Loop
-or-
Non-Evaporative

- Provides the least amount of consumptive loss for our region's water supplies and those downstream

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	Closed-Loop
Varies but as much as 9 million gallons per day* has been requested	Typical range 5,000 to 50,000 gallons per day

*Later changed to
close-loop cooling

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”?



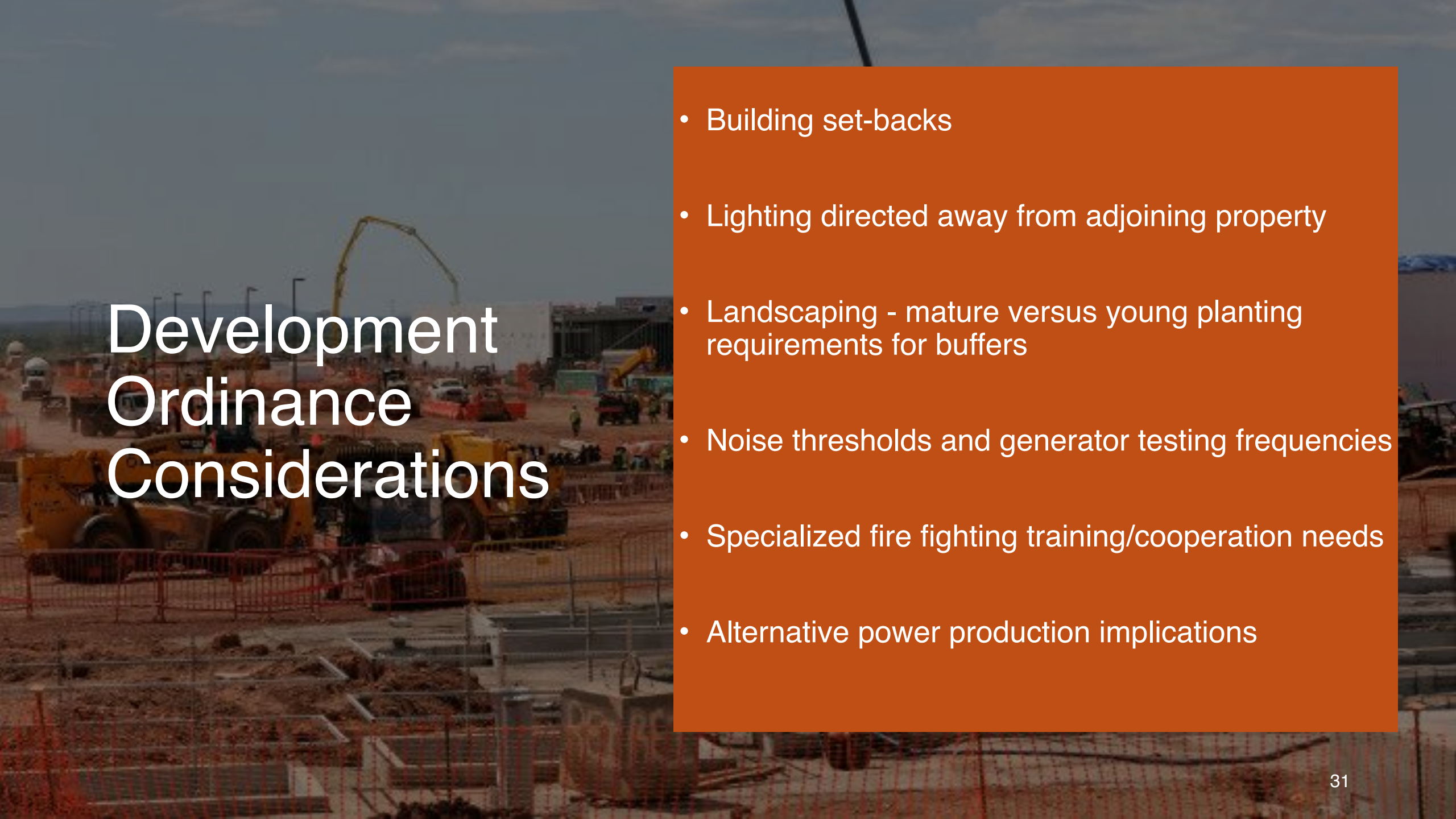
Environmental & Public Health Impacts

- Stormwater runoff and water quality
- Community awareness, consideration and communication
- Coordination with fire/emergency services
- Heat island effects



Water Service Considerations

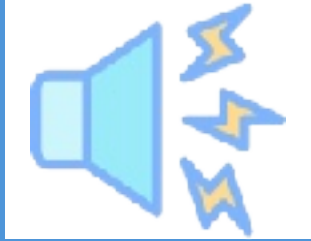
- Immediate demand and future capacity needs
- Additional infrastructure needs
- Coordinate and understand wastewater requirements from developers
- Know developer’s system reliability and expectations early in discussions
- Critical infrastructure



Development Ordinance Considerations

- 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
- Alternative power production implications

Addressing Community Concerns



Noise Impacts

Possible sources of concern:

- Generators
 - Testing and running
- Cooling systems
- Site construction
- Energy “hum”
- Sub-level decibels impacting wildlife and communities



Land Development

Possible sources of concern:

- Tree removal
- Stormwater runoff
- Traffic
- Property values
- Heat island



Community Awareness & Communication

Important to engage with community to address:

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

Air Quality

- Possible degradation during construction and in operations
 - Construction dust
 - Diesel generators (back up energy supply)
- Exposure to fine particulate matter, even at a low level, can pose substantial health risks and threaten local wildlife and minimize plant growth and yield — F. Dominici, professor of biostatistics. Harvard's School of Public health





Stormwater Management

Data centers can create large impervious areas

Ensure sites are considering and implementing stormwater management practices

Detain and treat runoff to the required standards to avoid impacts to downstream properties

Stormwater Management - Metro Water District Only

Confirm the required ordinance is in place

To reference WS-1 in a data center ordinance ensure to have Practicability Policies in place when/if questions around feasibility come up

^ Watershed Action Items

- Watershed-1: [Post-Construction Stormwater Management](#)
 - [Policy on Practicability Analysis for Runoff Reduction](#)

SECTION 6 ACTION ITEMS

ACTION ITEM

WATERSHED-1: POST-CONSTRUCTION STORMWATER MANAGEMENT

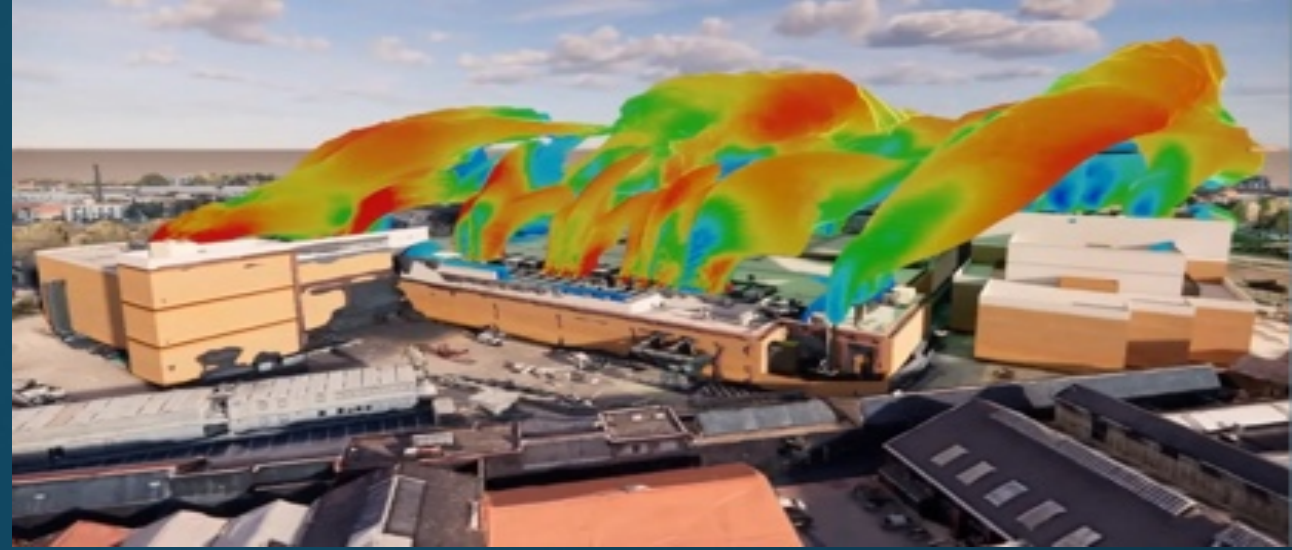
Responsible Party: Local Government	Intent: To protect long-term water quality by effectively managing runoff from developed areas.
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Action Item: Adopt a post-construction stormwater management ordinance, a local stormwater design manual, a stormwater management plan review process with checklist(s), a practicability policy, inspection and maintenance agreement requirements for new post-construction stormwater management systems, and inspection process with checklist(s) to ensure stormwater management plan compliance during construction.

Sub-Tasks: Each local government shall:

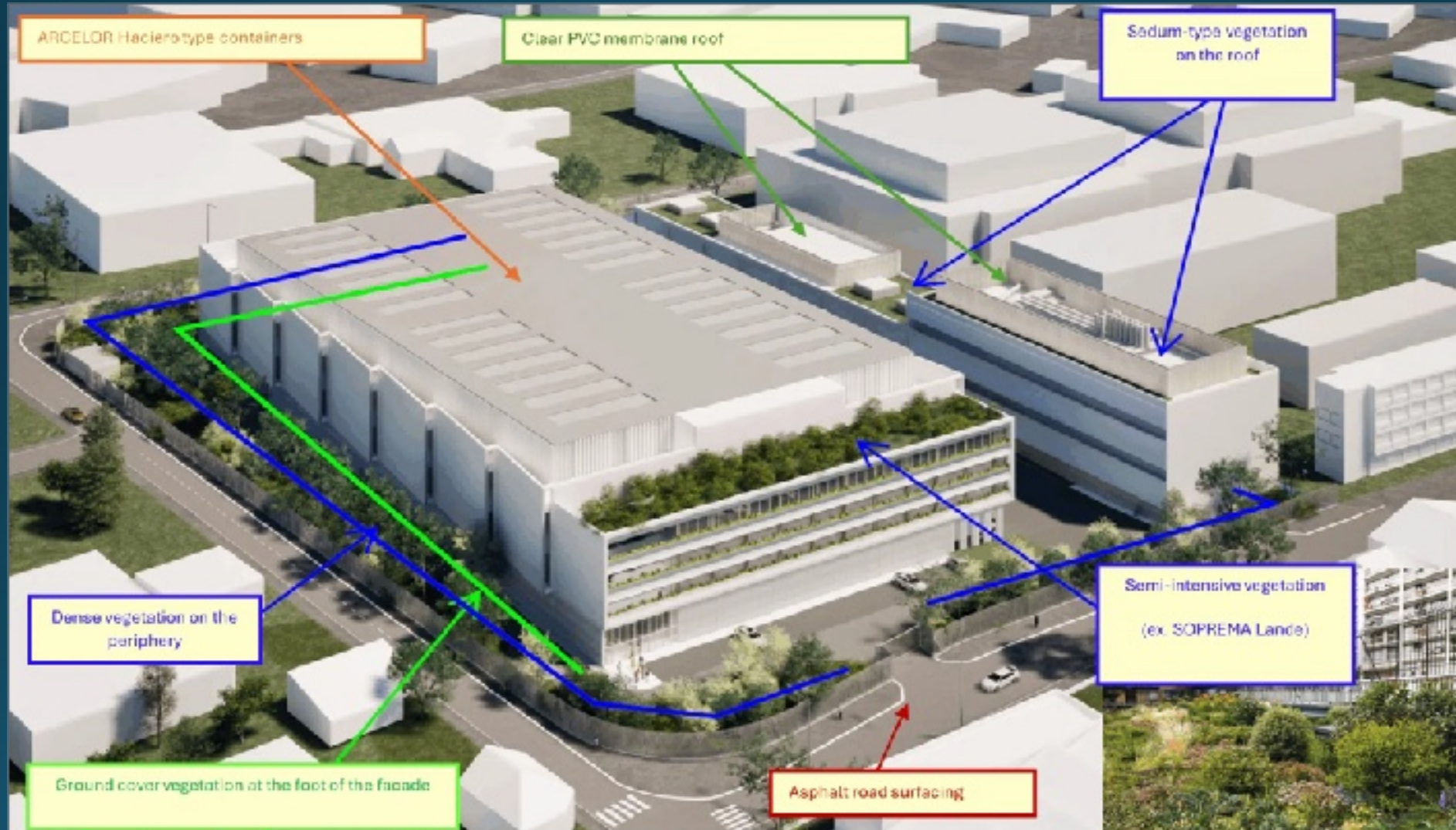
1. Adopt the District's [Model Ordinance for Post-Construction Stormwater Management for New Development and Redevelopment](#) or an equivalent ordinance at least as effective, based on the guidance in the latest [Georgia Stormwater Management Manual \(GSMM\)](#) and MS4 permit as applicable.
2. Adopt the GSMM or an equivalent local stormwater design manual.
3. Implement stormwater management plan reviews as part of the land development application based on the GSMM or equivalent local stormwater design manual.
4. Adopt a practicability policy to document the determination by a stormwater management plan reviewer that it is infeasible to apply the runoff reduction requirement on part or all of a proposed site development.
5. Require inspection and maintenance agreements on all new post-construction stormwater management systems.
6. Develop a process and checklist(s) for stormwater management plan review and inspection.

Heat Island Effect



- Emerging international research comparing AI Hyperscalers to older data centers
- On-site heat release via energy-intensive processes
 - Increasing computation demands
 - Powering cooling systems
- Recent study found a local increase of 3.6 F (Marinoni et al, 2026)
 - Extreme cases up to 16.4 F
 - Heat impacts being felt upwards of 6 miles from site
- Dense urban environment acts as a **heat trap**, limiting dispersion and favoring recirculation on neighboring facades and air intakes

Site Design can reduce Effects



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 preferable by developers 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

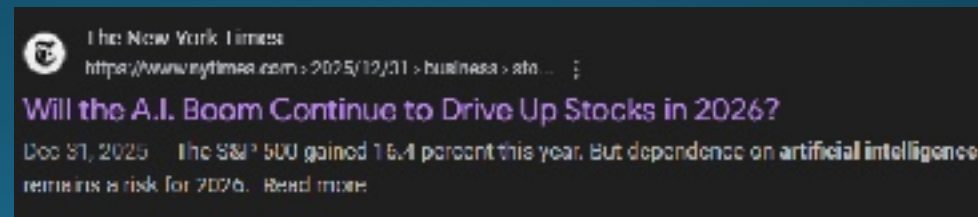
Industry Trends

Uncertainty of industry trends

- Chip innovation
- Increase/decrease of stocks

Rapid technology advancements

- Likely increases in efficiency and technological capabilities





“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



**Understand trade-offs
for balanced and resilient growth
and informed decision making**

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

Visit the ARC website for additional resources



For Technical Assistance & additional information contact

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Natural Resources Department, ARC

