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

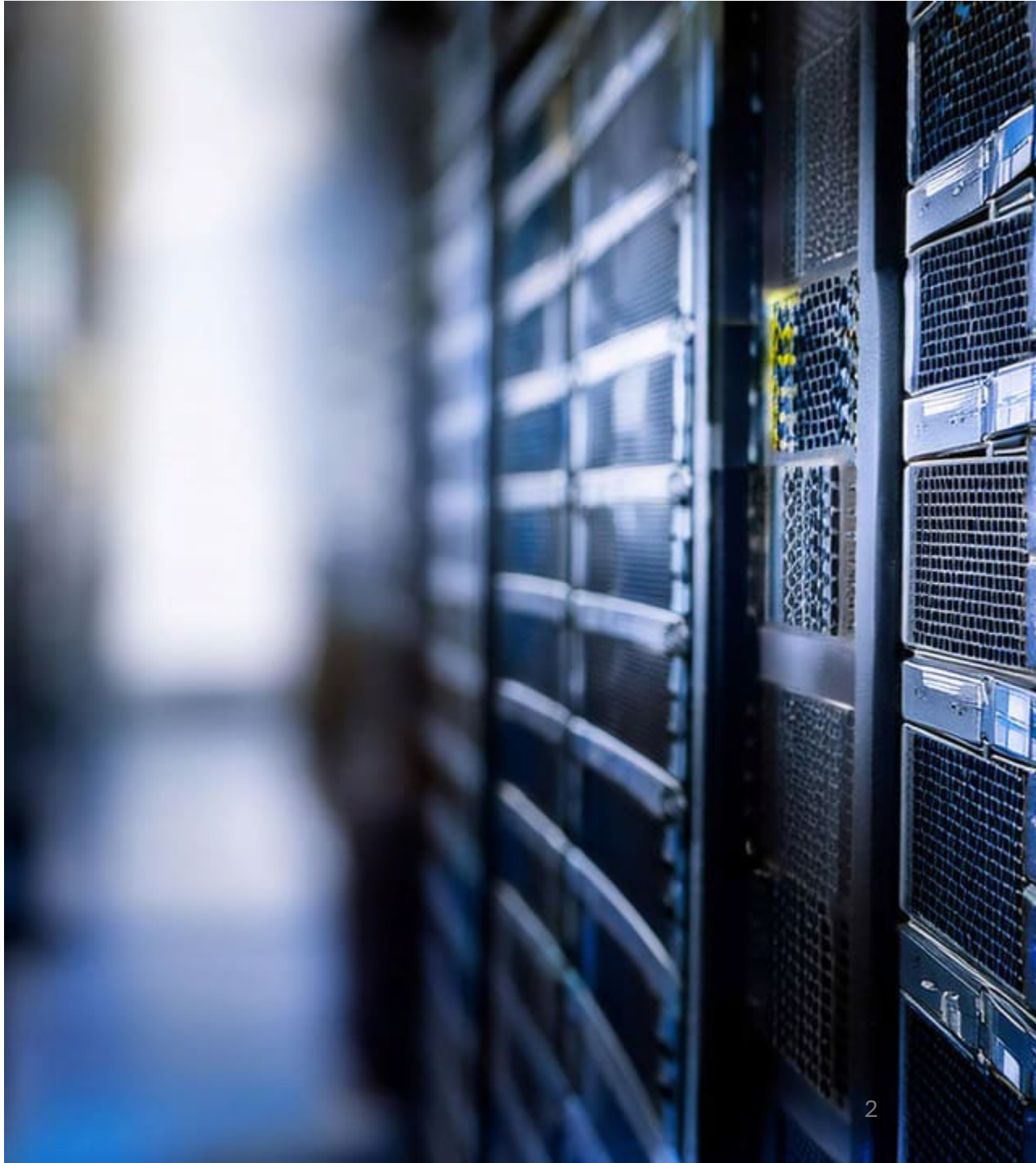
- Impacts on energy and water demands
- Additional pressure on existing infrastructure

Major Concerns about Resource Use

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

New Development Type

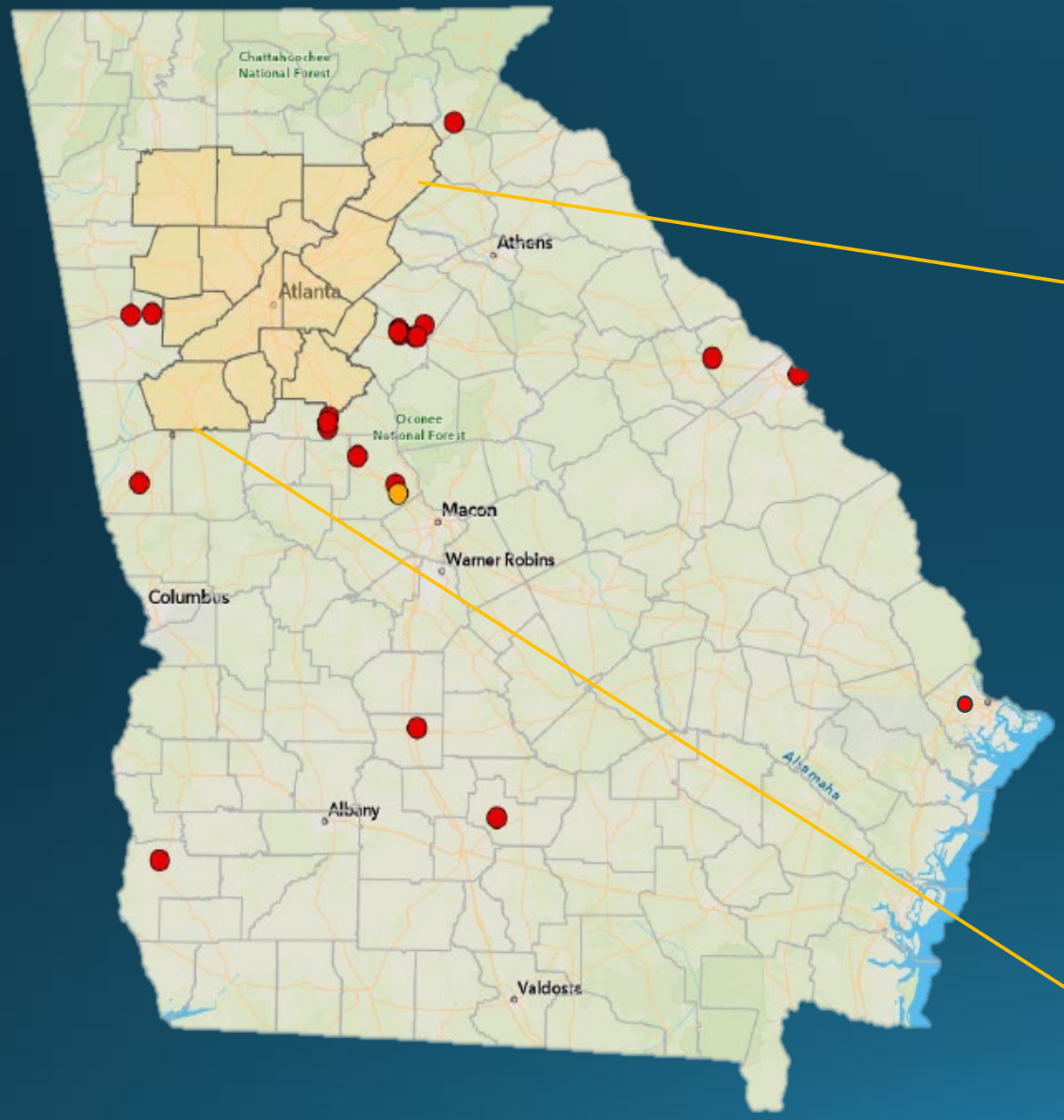
- Often not covered by existing local jurisdiction development recommendations & zoning practices

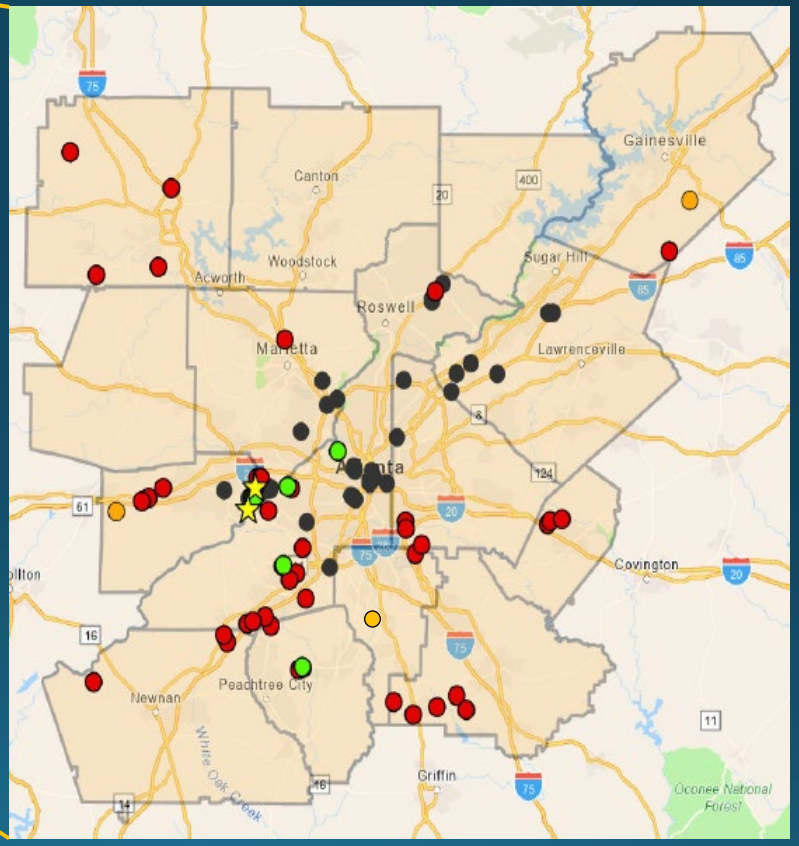


Data Center Growth in the Region

Location Trends:

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

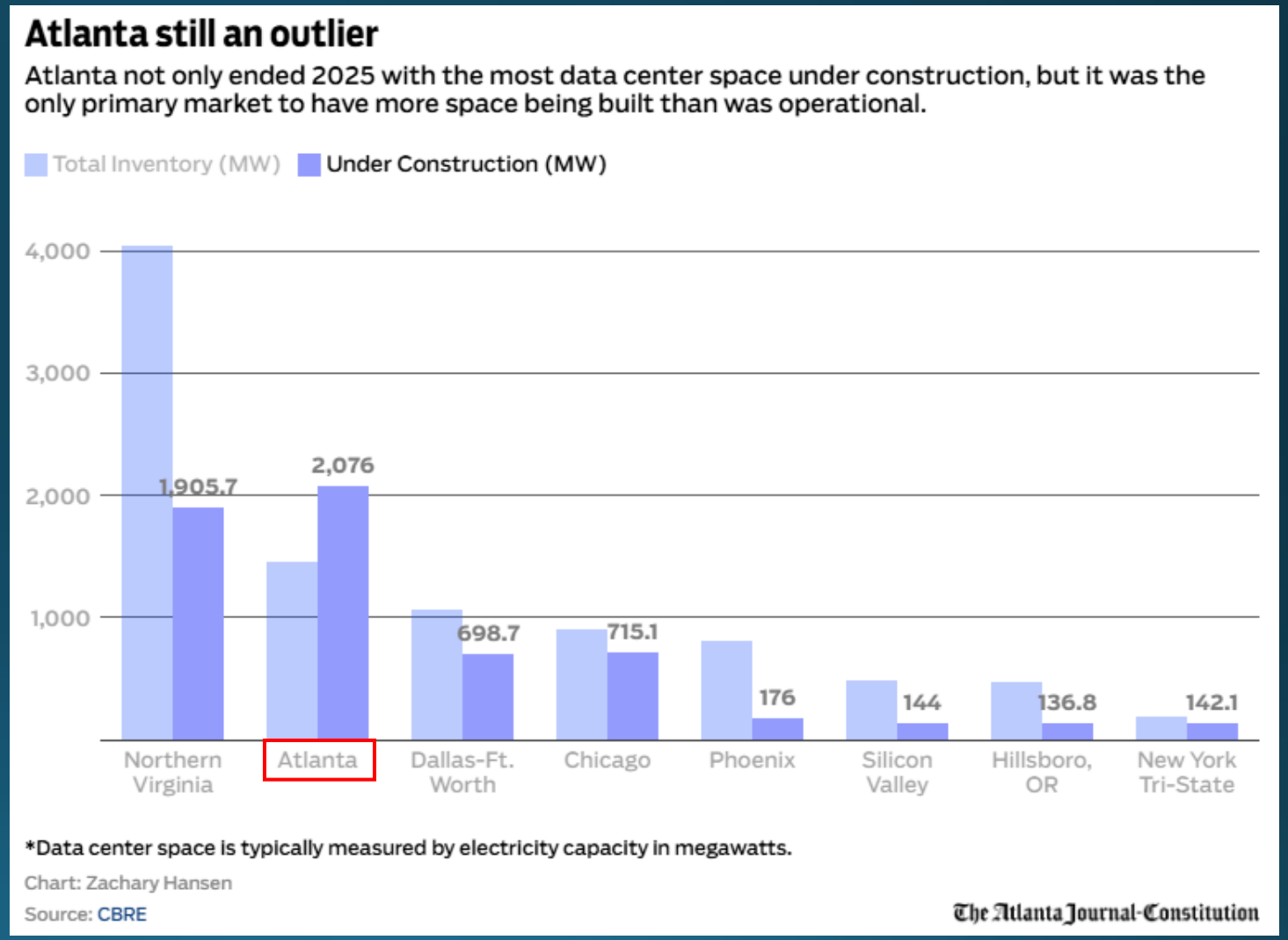




- Completed
- Proposed
- Existing
- Withdrawn
- Denied

Metro Atlanta only primary market with more Under Construction than Operational

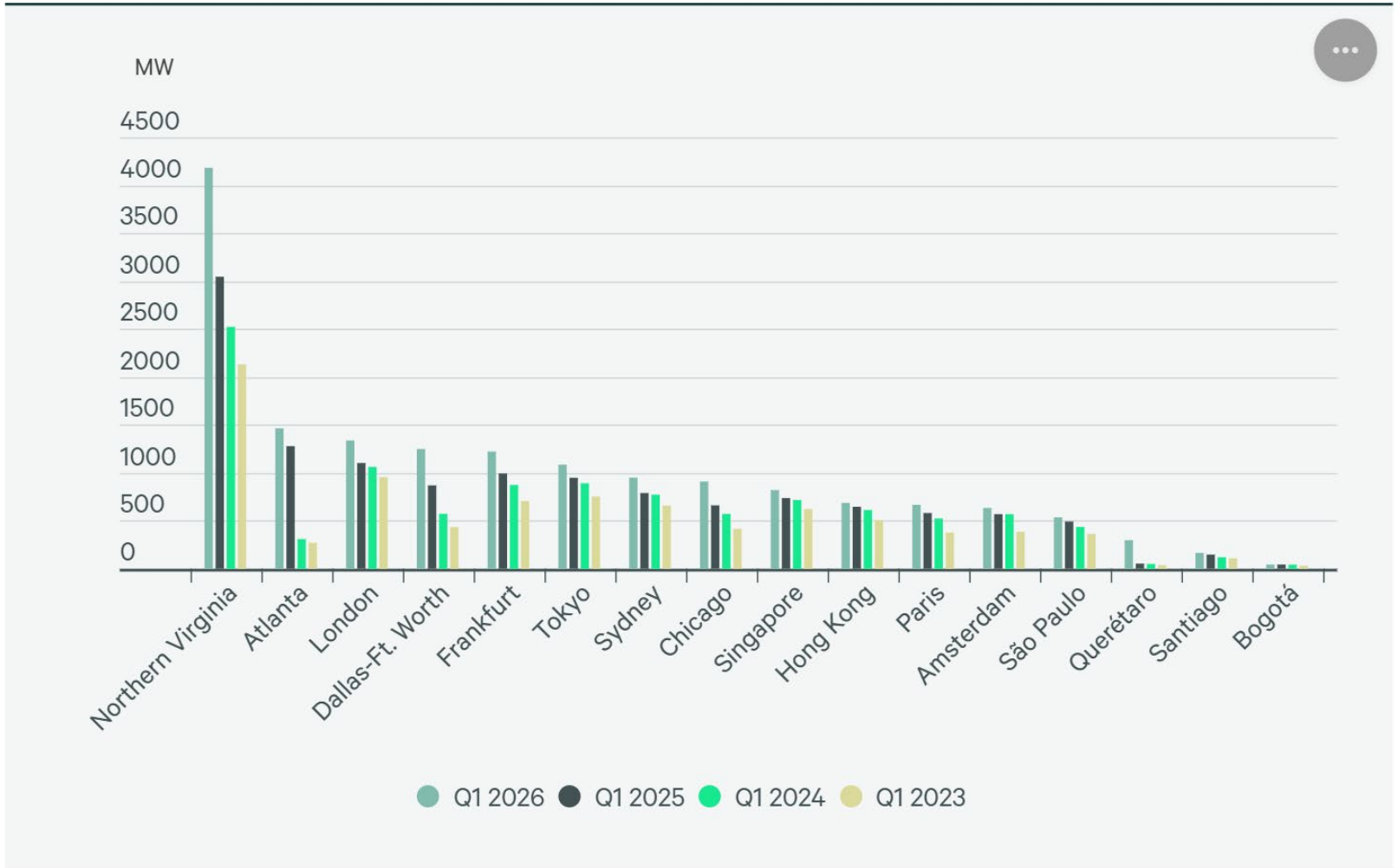
Leading the country in Construction, surpassing Northern Virginia



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.

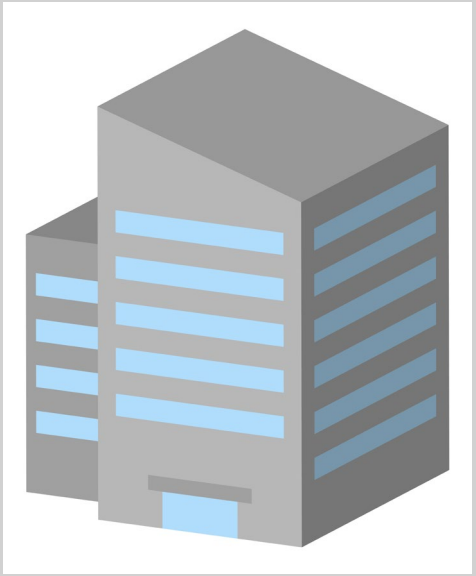
Energy and Data Centers

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

Small data centers today are ~50MW

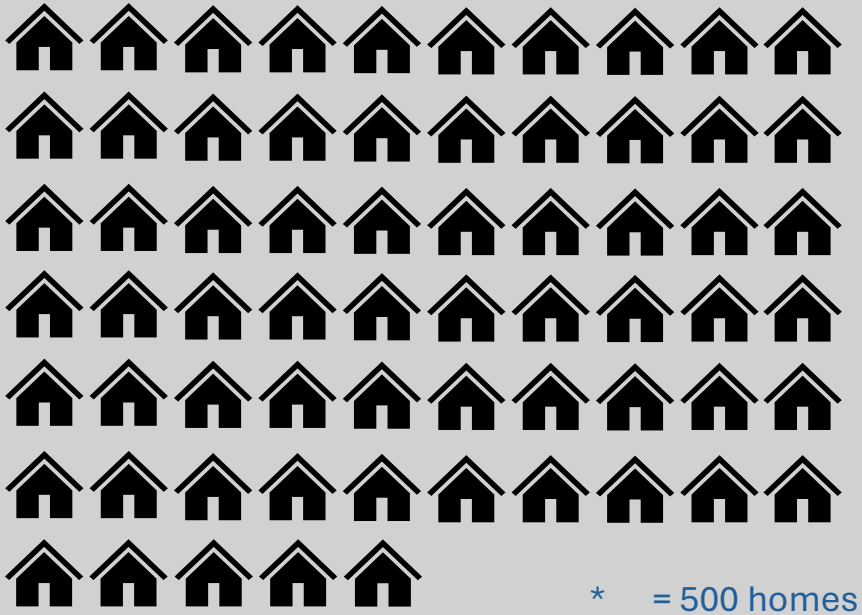
Today data center proposals can be upwards of 1 GW

50 MEGAWATTS CAN POWER EITHER



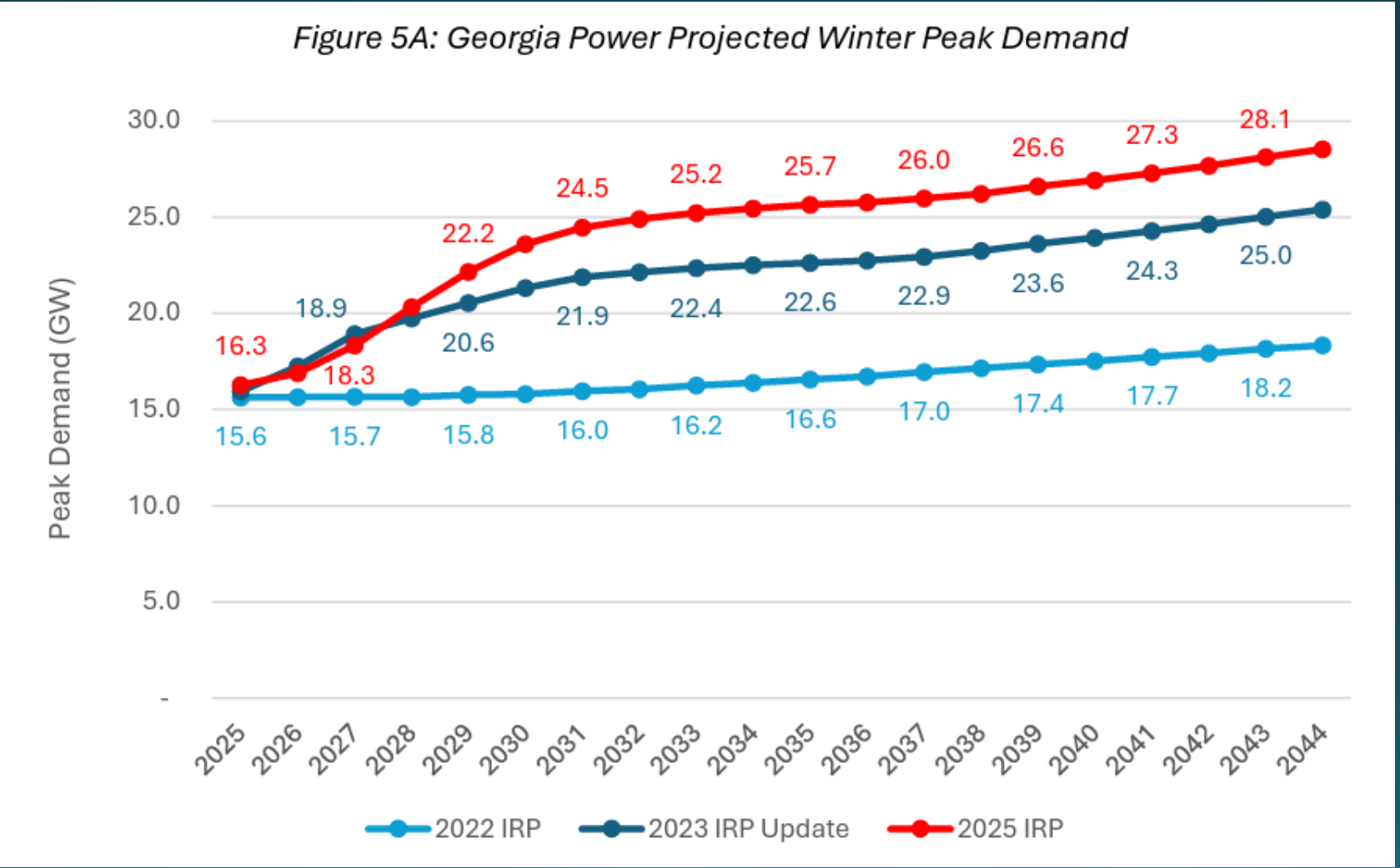
1 Small Data Center

OR



32,500 Homes

Increased forecasted energy demands mostly associated with data centers

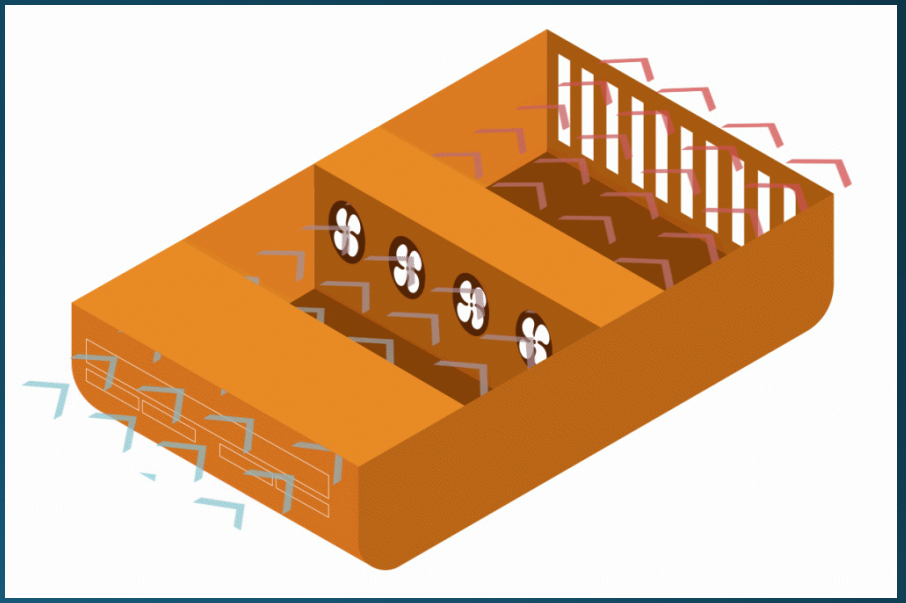


Source: Georgia Power, 2025 IRP

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 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

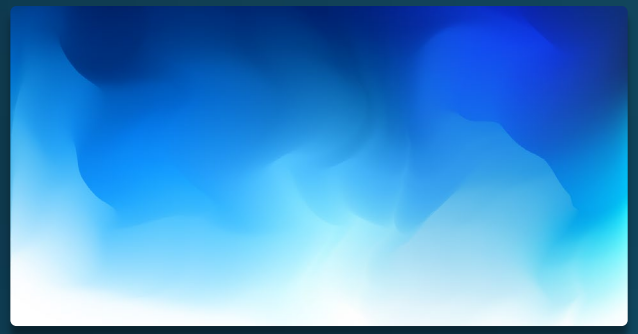
Uses significantly less water, but requires more energy

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

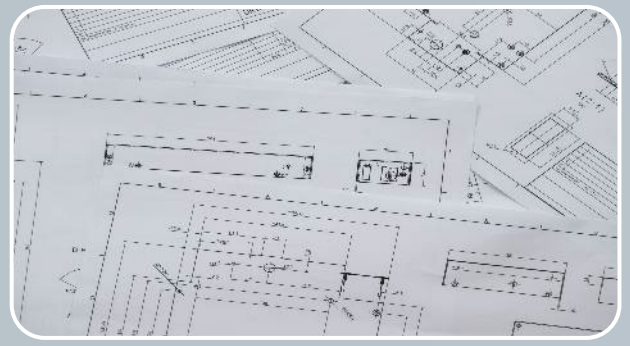
Reuse Cooling

- 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

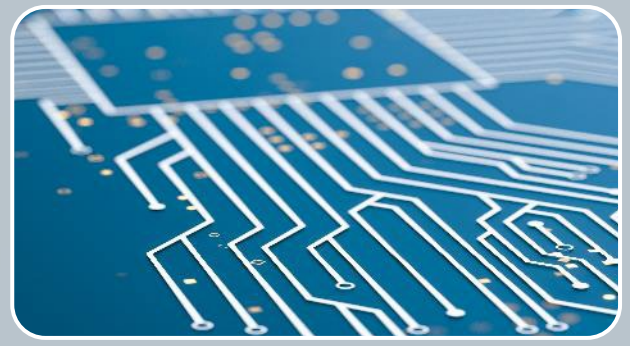
- Provides the least amount of consumptive loss for our region's water supplies and those downstream

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

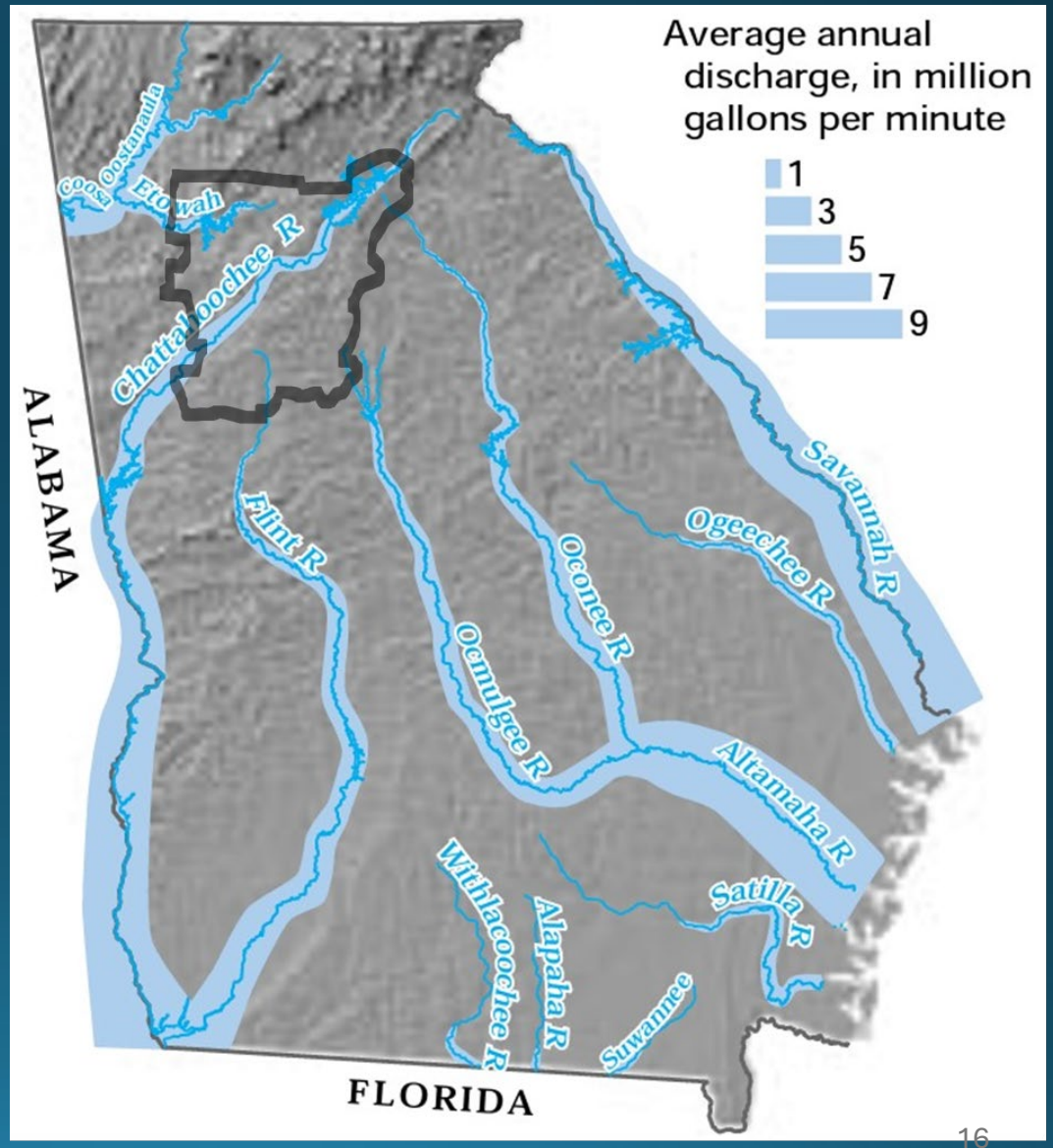
Water demand requests in Metro Atlanta

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

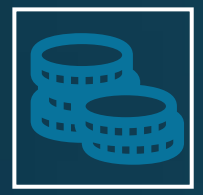
Why Cooling Methods Matter in Metro Atlanta?

- 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

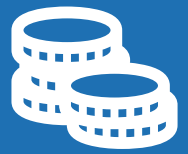
Drought Management

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

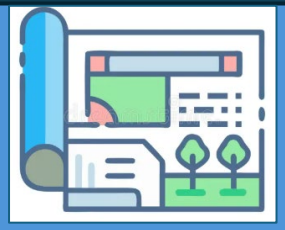
Direct revenues toward community priorities, such as:

- 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

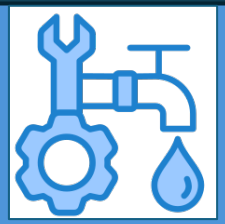


Physical Infrastructure

- 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”?

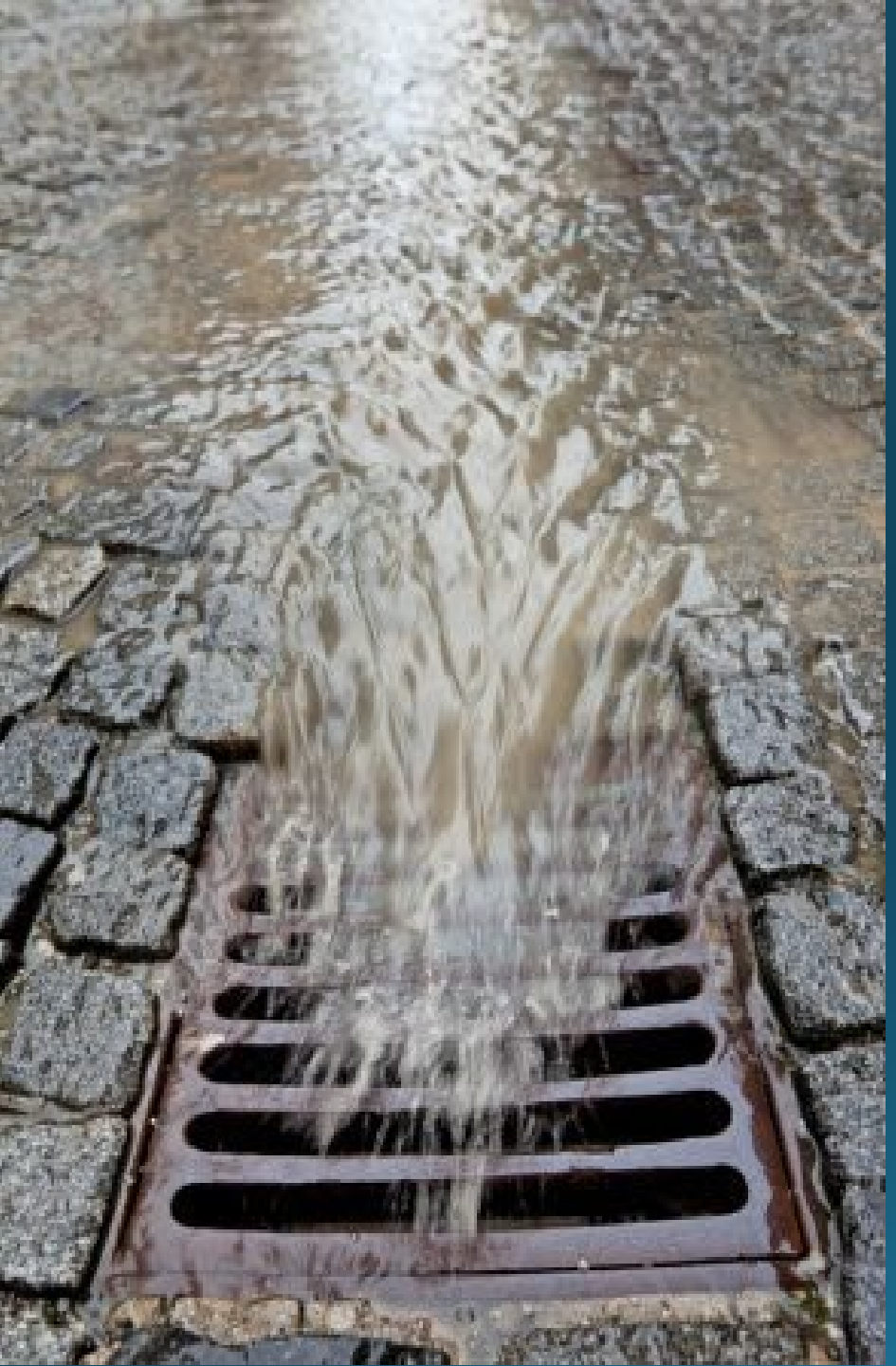
Environmental & Public Health Impacts

- Stormwater runoff and water quality
- 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



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

ACTION ITEM

WATERSHED-1: POST-CONSTRUCTION STORMWATER MANAGEMENT

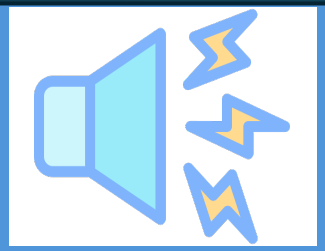
Responsible Party: Local Government	**Intent:** To protect long-term water quality by effectively managing runoff from developed areas.

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.

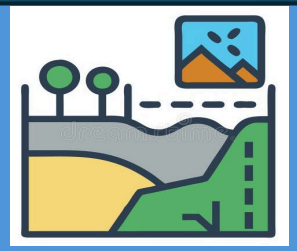
Addressing Community Concerns



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:

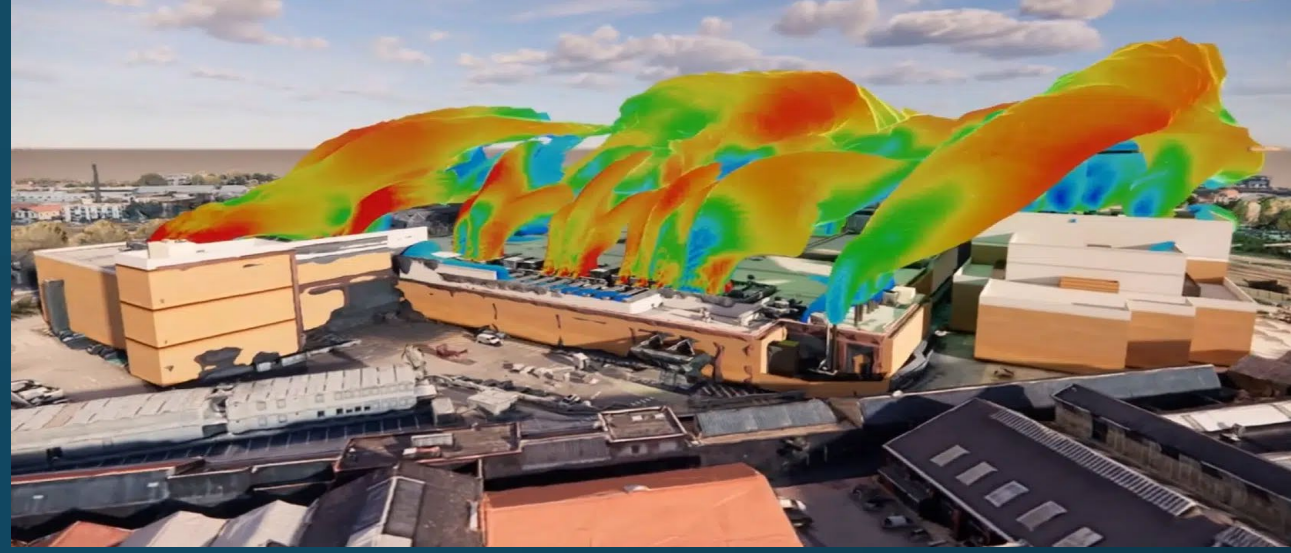
- Daily-life impacts
- Public outreach sessions
- Study/Mitigation efforts
- Zoning code amendments

Air Quality

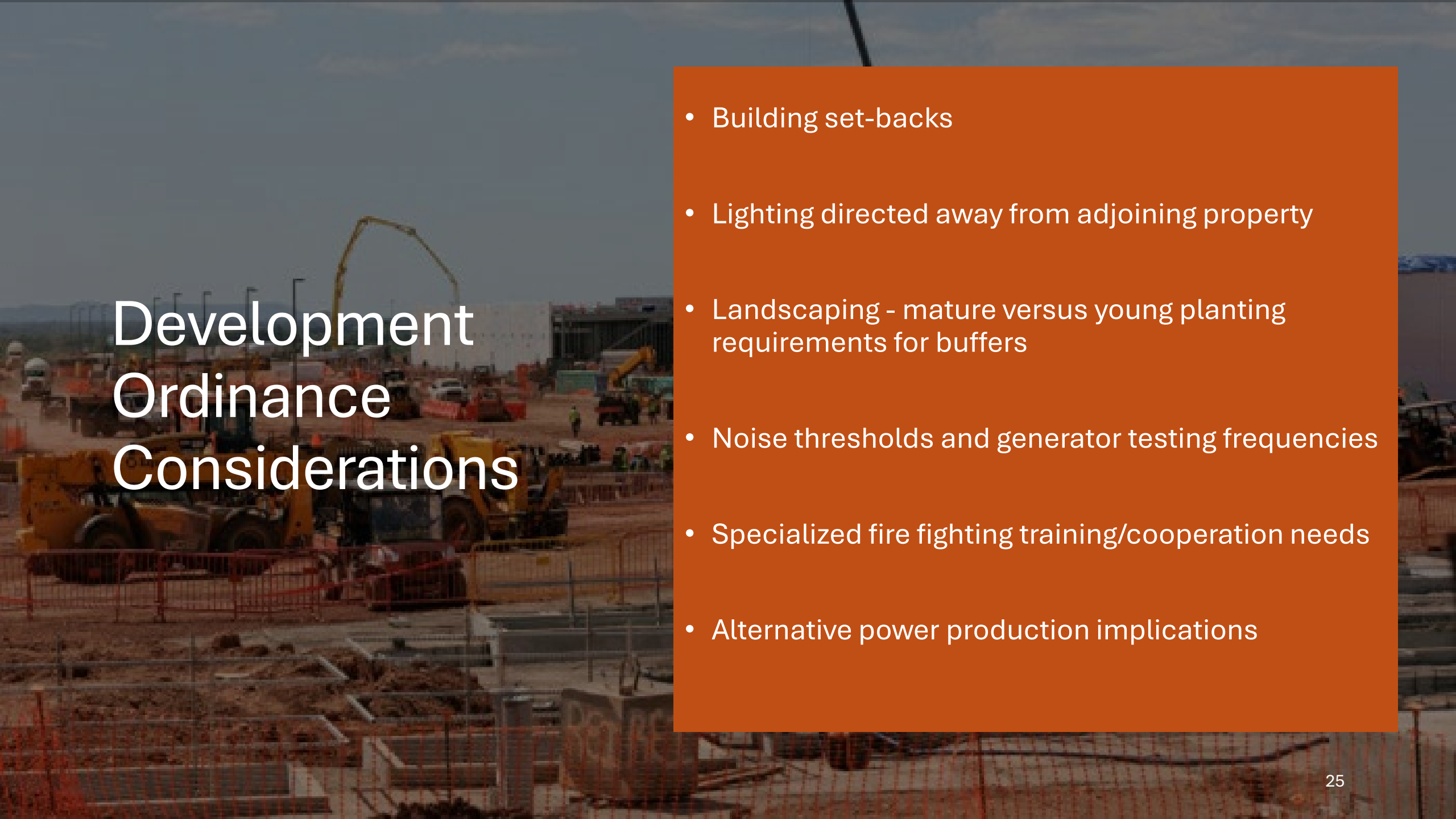
- Possible degradation during construction and in operations
  - Construction dust
  - Diesel generators (back up energy supply)

- 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

Heat Island Effect



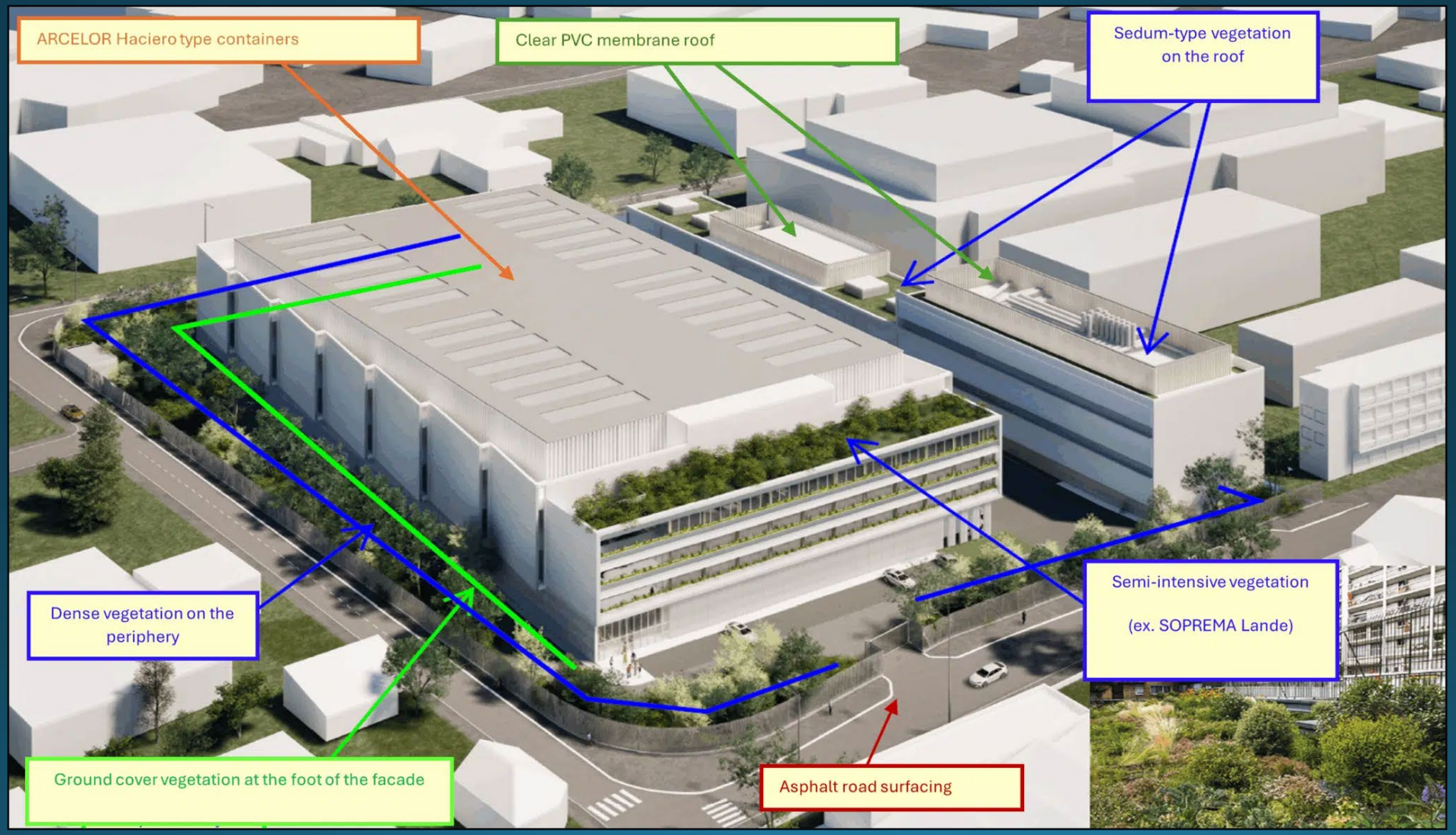
- Emerging international research comparing AI Hyperscalers to older data centers
- On-site heat release via energy-intensive processes
  - Increasing computation demands
  - Powering cooling systems
- Recent study found a local increase of 3.6 F (Marinoni et al, 2026)
  - Extreme cases up to 16.4 F
  - 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



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

Site Design can reduce Effects

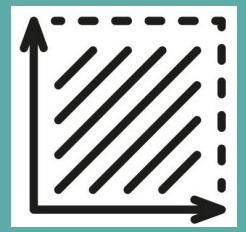


Eolios

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 by developers for most sites

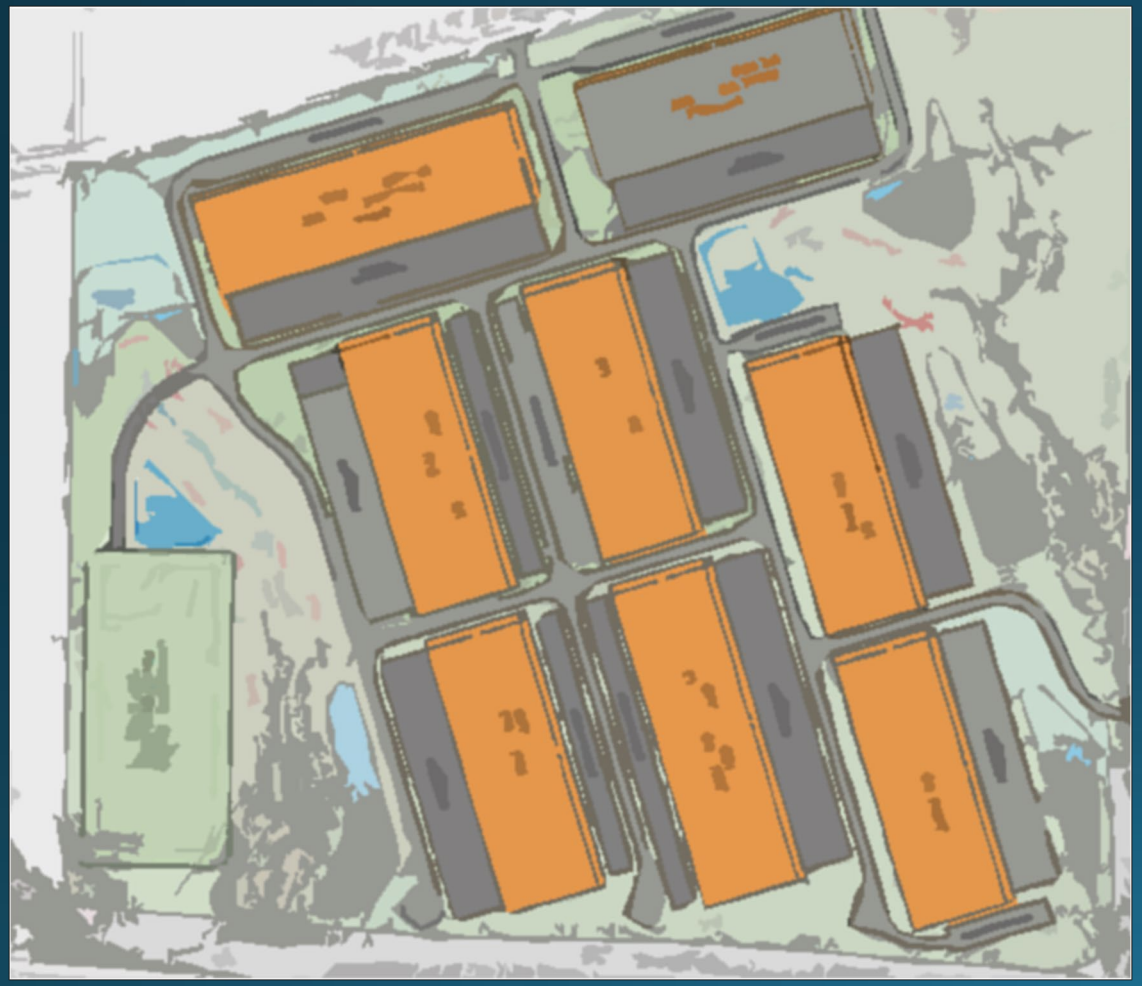
Associated risk concerns:

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

Typical Infrastructure Layout

www.google.com/maps

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

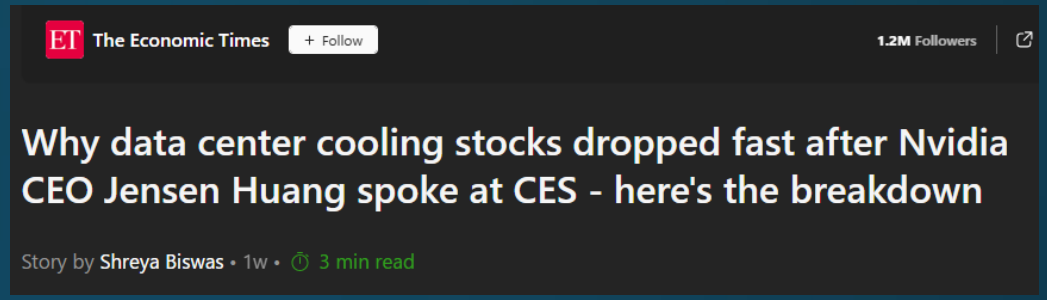
Industry Trends

Uncertainty of industry trends

- Chip innovation
- 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.

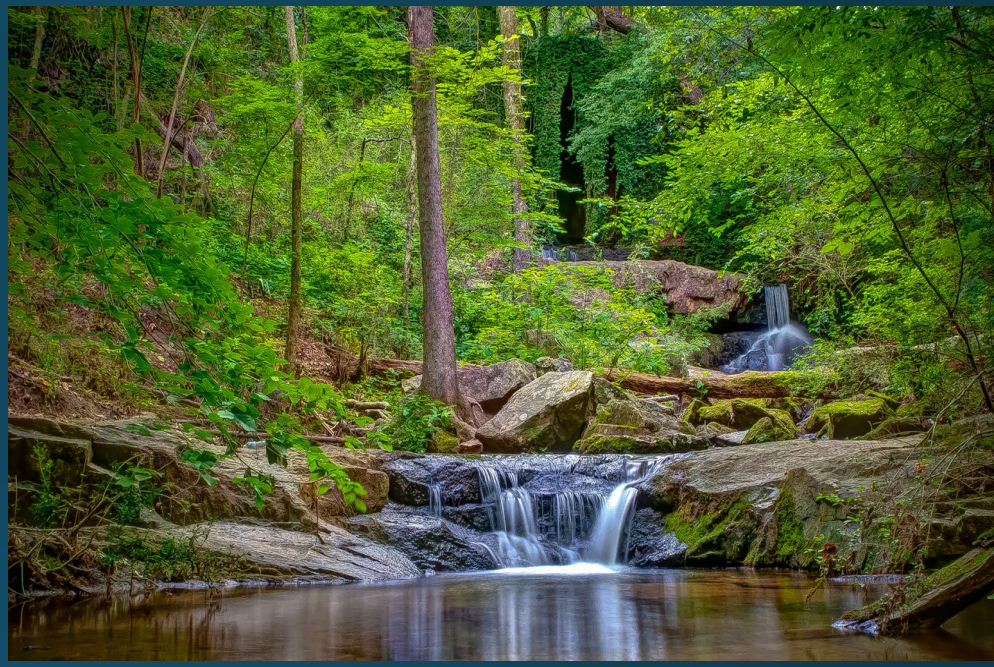
"The promise of revenue expansion and diversification will require strategic planning to ensure community needs are addressed in concert with achieving long-term economic prosperity for the County."

-Prince William County 2023 Data Center Industry Tax Revenue Report

Photo Credit: World Bank

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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