Sowega Aquifer Alliance, other dedicated groups, and individuals are actively working on comprehensive Ordinance suggestions. In the meantime, the below areas should be considered as Ordinances are created.

A comprehensive data center Ordinance should address land use, environmental impacts, public infrastructure strains, and site safety. Key areas to cover include precise definitions, clear zoning limits, strict noise controls, transparent resource management (water and power), and formal decommissioning plans.

Definitions and Land Use

- **Definitions:** Clearly define traditional data centers, artificial intelligence (AI) facilities, and cryptocurrency mining operations.

- **Zoning Districts:** Specify allowed zones (such as heavy industrial or technology parks) and require a special or conditional use permit for larger footprints.

- **Setbacks and Buffers:** Set large minimum distances from property lines, residential zones, schools, churches and recreational facilities to protect community members. A set back should not be less than 2,460 feet or 820 yards.

    - **The Low-Frequency Acoustic "Penetration" Zone:** Traditional setbacks protect against high-frequency sounds, which drop off quickly. Data center chillers and cooling towers emit a low-frequency, bass-heavy continuous hum. Low-frequency sound waves travel much further, pass easily through standard school masonry and double-paned windows, and can trigger chronic classroom distraction and cognitive fatigue. A half-mile buffer provides the physical space required for these specific acoustic waves to naturally dissipate.

    - **Industrial Diesel Particulate Matter (DPM) Drift:** Hyperscale data center campuses house dozens of massive multi-megawatt backup diesel generators. During routine utility grid failures, or even during mandatory monthly testing, these generators release high volumes of localized air emissions. School children breathing outdoor air on sports fields or playgrounds should not be inside the immediate downwind drift zone of heavy industrial exhaust stack testing.

    - **The "Looming" Structural Effect:** Modern AI data center structures are scaling up to 70–100 feet in height to accommodate vertical cooling networks. A 500-yard setback still keeps a massive, windowless, 100-foot-tall concrete monolithic wall visually dominant on a school's horizon. A half-mile to mile setback entirely removes the overbearing visual presence

    - **Height and Design:** Limit building heights and mandate architectural screening or landscaping to hide massive rooftop cooling units.

Environmental and Community Impact

- **Noise Limits:** Set strict decibel caps for continuous hums from cooling fans and periodic testing of backup diesel generators, requiring pre- and post-construction noise studies. Standard municipal limits are **55-60 dBA during the day** and **45-50 dBA at night.**

- **Water Consumption:** Restrict high-volume water cooling, mandate closed-loop systems, and require drought response plans and water feasibility studies.

- **Hazardous Materials:** Regulate the storage and disposal of emergency generator fuel, battery banks (such as lithium-ion systems), and electronic waste.

- **Lighting and Security:** Control bright perimeter security lighting and mandate secure fencing. **Mitigation Standards:** Groups like DarkSky International advocate for smart controls like motion sensors, fully shielded downward-facing fixtures, and warmer color temperatures (under 3000K) to reduce skyglow.

Infrastructure and Utilities

- **Power Capacity:** Require proof from the local electric utility that the grid can handle the load without harming local residential ratepayers.

- **Transmission Lines:** Require new power and data transmission lines to be buried underground.

- **Traffic and Access:** Plan for heavy vehicle traffic during construction and ongoing maintenance. Set allowed construction hours. Require heavy truck routes to protect roadways.

Safety and Administration

- **Emergency Response:** Provide a detailed fire protection and emergency operations plan, including specialized training or equipment for local first responders.

- **Decommissioning:** Require a financial bond or escrow funds upfront to guarantee site clean-up and restoration if the facility closes.

- **Fees and Compliance:** Require developer-funded escrow accounts to pay for independent expert reviews of the project, alongside annual compliance reporting and regular inspections.

Mandatory Industrial Pre-Treatment Programs (IPP)

Ordinances, such as the City of Griffin Data Center Framework, require data center operators to build, fund, and maintain **on-site pre-treatment facilities**.

- **The Rule:** Data centers cannot discharge raw blowdown water directly into the city sewer.
- **The Goal:** They must neutralize pH, lower water temperatures, and filter out heavy metals on-site before the water ever leaves their property line.

Strict Limits on Chemical Contaminants

Cooling water is treated with aggressive chemicals to prevent algae, scaling, and pipe corrosion. An ordinance should set strict maximum threshold limits for the following pollutants before allowing municipal discharge:

- **Total Dissolved Solids (TDS) and Salts:** Evaporated water concentrates minerals like chlorides. High TDS spikes can ruin a municipal plant's ability to clean water.

- **Biocides and Corrosion Inhibitors:** Formulations including isothiazolinones, glutaraldehyde, phosphates, and molybdates are highly toxic to aquatic life and must be strictly regulated.

- **Heavy Metals:** Copper, zinc, and chromium frequently leach from cooling tower infrastructure into the wastewater and require rigorous filtration.

- **PFAS and Liquid Coolants:** For advanced AI data centers using direct-to-chip or immersion liquid cooling, the ordinance must explicitly ban the disposal of any synthetic dielectric fluids, refrigerants, or PFAS ("forever chemicals") into the wastewater stream.

Thermal Pollution (Temperature) Caps

- **The Rule:** Mandate that discharged wastewater cannot exceed a specific temperature (typically capped around **85°F to 90°F** depending on local utility rules).

- **Why it matters:** Cooling tower blowdown is inherently hot. If poured directly into municipal sewers, hot wastewater physically warps PVC sewer lines and kills the beneficial bacteria that municipal plants use to process human waste.

Volumetric Discharges and Peak-Flow Regulation

Data centers can dump hundreds of thousands of gallons of blowdown water in sudden, massive batches.

- **The Rule:** Require data centers to install **surge/equalization tanks** on site.
- **Why it matters:** These tanks hold the wastewater and slowly meter it out into the city system over a 24-hour cycle. This prevents the data center from hydraulically overwhelming and flooding the city's treatment plant during peak hours.

Financial Protection and Infrastructure Surcharges

- **Developer-Funded Infrastructure:** If a data center wants to tie into a municipal plant, the developer must pay 100% of the cost to upgrade city water lines, lift stations, or treatment capacity.

- **Industrial Sewer Surcharges:** The ordinance should establish a specialized, higher-tier utility rate structure for data centers. This ensures local residential taxpayers do not subsidize the immense cost of treating industrial data center water.

Transparency and Continuous Monitoring

Historically, data center operators have hidden behind non-disclosure agreements (NDAs) regarding their water quality.

- **The Rule:** Ban NDAs regarding utility impacts (following recent statewide policy shifts like Georgia's Transparency Rules).

- **The Mechanism:** Require the data center to install **automated, real-time water quality testing meters** at their discharge point, giving city engineers instant access to pH, temperature, and conductivity data.

The Ultimate Solution: Forced "Closed-Loop" or "Reclaimed" Systems

If you want to eliminate the wastewater problem entirely, your ordinance can bypass the issue by mandating technology limits:

- **Mandate Closed-Loop Systems:** Follow the example of the City of Kingsland Data Center Ordinance, which legally defines and mandates **Closed-Loop Cooling**. These systems continually recycle their internal water supply, resulting in much less wastewater discharge.

- **Mandate Reclaimed/Graywater Usage:** Prohibit the use of clean, potable drinking water for data center cooling. Force the data center to take treated graywater from the city's sewage plant, use it for cooling, and process it themselves.