**Partnering for the Future: Strategic Water Considerations**
Toward a Coordinated Water Strategy for Giles County

## 1. Purpose

This paper addresses the potential need for a new water source in Giles County, evaluates regulatory and technical requirements, considers storage and hydraulic coordination needs, and identifies governance and funding challenges. It provides county leadership and the Giles County Water Alliance with a structured overview for planning and prioritization of initial steps.

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## 2. Background

Giles County currently relies on multiple independent water providers:
• City of Pulaski Water Department
• South Giles Utility District
• Minor Hill Utility District
• Fairview Utility District
• Other providers beyond Giles County

No centralized county water authority exists. Each provider operates independently, with separate sources, treatment, and storage facilities, creating challenges for coordinated planning, water sharing, and infrastructure development. Coordination is improving with the establishment of the Giles County Water Alliance, a partnership between municipal water departments, utility districts, and county government.

**Additional Context:**
• The county currently has no master plan, growth plan, or land-use regulations.
• There is only speculative information on where housing and population growth may occur.
• This lack of planning significantly increases the difficulty of prioritizing infrastructure investments and projecting future water demand.

**Organizational & Funding Challenges:**
Many of the county's water providers operate with minimal budgets and limited technical staff. This creates a natural tendency to focus on immediately "available" water sources without fully appreciating the studies and approvals required for reliable, sustainable, and regulatory-compliant development. Early investments in hydraulic modeling, demand assessment, and preliminary source evaluation are critical to avoiding costly missteps, maximizing grant opportunities, and ensuring that any project aligns with countywide priorities. A coordinated approach through the Alliance allows small entities to share costs, pool expertise, and move forward in a structured, phased manner rather than making isolated, high-risk decisions.

These structural gaps underscore the need for coordinated planning and data-driven prioritization.

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## 3. Key Issues (Prioritized)

### 1. Population & Demand Uncertainty

- Accurate projections of population growth and water demand are foundational.
- Without this data, sizing sources, storage, and transmission infrastructure is guesswork.
- Early demand studies guide all subsequent planning and investment decisions.
- Necessary before pursuing permits for new water sources.

### 2. Hydraulic Coordination

- A countywide hydraulic model is essential to identify flow capacities, bottlenecks, and interconnections.
- Understanding system dynamics ensures efficient use of existing infrastructure and informs where new sources or storage are most needed.
- Placement of new water sources and interconnection to existing infrastructure.

### 3. Water Sourcing

- Selection of surface or groundwater sources depends on demand, hydraulics, and regulatory approvals.
- Surface water may require TVA Section 26a and TDEC permits; groundwater is limited by aquifer capacity.
- Long-term water quality, seasonal variation, and inter-basin transfer considerations must be integrated early.

### 4. Water Storage

- Adequate storage ensures reliability during peak demand, emergencies, and system outages.
- Coordinated assessment across districts is needed to optimize storage investments and inform source selection.

### 5. Governance Challenge

- The county lacks a single water authority, complicating permitting, operations, and coordinated investment.

- Effective collaboration through the Water Alliance—or creation of a formal governance structure—will strengthen planning and grant competitiveness.

**6. Funding & Resource Coordination**

- Securing federal and state grants, local matching funds, and technical assistance requires a unified strategy.
- Isolated investments risk misalignment with countywide priorities; shared planning reduces redundancy and maximizes grant opportunities.

**7. Regulatory Complexity**

- TVA, TDEC, and USACE approvals must be sequenced and coordinated to avoid delays.
- Early engagement with regulatory agencies reduces the risk of redesign or delays.

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## 4. Suggested Step-by-Step Approach

**Step 1: Define Project Scope, Prioritize Needs, Identify Funding**
• Clarify goals (growth, resiliency, industrial demand, aging infrastructure).
• Identify service areas and system constraints.
• Identify funding for steps 2-4.
• *Responsible entities:* Water Alliance, supported by county government.

**Step 2A: Population & Demand Study**
• Collect systemwide water use data.
• Project future demand under most likely growth scenarios.
• *Responsible entities:* Utilities (data), county/EDC/consultant (study).
• *Funding:* State/federal planning grants or technical assistance.

**Step 2B: Hydraulic Study**
• Develop a countywide model of all systems.
• Identify pressure zones, interconnections, and bottlenecks.
• *Responsible entities:* Consultant under Alliance oversight.
• *Funding:* Planning assistance programs.

**Step 2C: Source & Storage Study**
• Evaluate surface vs. groundwater options.
• Assess current and future storage needs.

- *Responsible entities:* Consultant, with utility input.
- *Funding:* Planning loans or shared cost studies.

*(NOTE: Steps 2A-C should be accomplished concurrently, using the same firm.)*

**Step 3: Preliminary Design & Integration of Safety Requirements**

- Assess options and costs from Steps 2-4.
- Alliance selects preferred source and storage sites based on hydraulic modeling and demand projections.
- Review preliminary designs with Water Alliance members to ensure alignment with governance and coordination agreements.
- Responsible entities: Consultant engineers, with Alliance oversight.
- Funding: Cost-shared among Alliance members; pursue early-stage grants for design and safety integration.

**Step 4: Regulatory Engagement & Governance Alignment**

- Engage TDEC, TVA, and USACE early to review preliminary designs and ensure sequencing of approvals.
- Confirm governance responsibilities: who applies, who signs, interlocal agreements, and Alliance authority in regulatory matters.
- Responsible entities: Alliance as applicant, county/municipal support as needed.
- Funding: Planning assistance programs; leverage consultant support for technical submittals.

**Step 5: Environmental & Risk Planning**

- Address drought contingency, environmental impacts, and risk management.
- *Responsible entities:* Consultant with regulatory review.
- *Funding:* Environmental or resilience program support.

**Step 6: Cost & Funding Analysis**

- Estimate capital and operating costs.
- Identify primary funding sources (federal/state/local).
- *Responsible entities:* County government leads grant coordination; municipalities/utilities provide local match; Alliance develops unified funding strategy.

**Step 7: Stakeholder & Community Engagement**

- Involve utility boards, municipal leaders, and the public.
- Build consensus on shared responsibilities and funding commitments.
- *Responsible entities:* Alliance leadership with county facilitation.

**Step 8: Final Feasibility Report**
• Consolidate studies, preliminary designs, regulatory feedback, and cost estimates.
• Recommend priorities and phased implementation steps.
• Formal adoption by local government and Alliance crucial to formalize priorities
• *Responsible entities:* Consultant delivers; Alliance and county adopt next steps.
• *Funding:* Completion of report positions county and Alliance for construction grants/financing.

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## 5. Conclusion

Developing a reliable, countywide water system in Giles County requires a structured, collaborative, and phased approach. Success depends on aligning technical studies, governance, funding, and regulatory engagement with the county's long-term priorities. Leadership and the Giles County Water Alliance should focus on the following priorities:

1. **Phased, Cooperative Implementation**
    - Coordinate planning and shared decision-making to ensure investments are aligned, efficient, and positioned for grant funding.
2. **Data-Driven Decisions**
    - Use accurate population, demand, and hydraulic studies to guide source selection, storage sizing, and system improvements.
3. **Governance & Collaboration**
    - Establish clear roles, interlocal agreements, or a formal water authority to support permitting, operations, and coordinated implementation across providers.
4. **Coordinated Funding**
    - Combine local commitment with state and federal grants to maximize resources and prevent fragmented investments.
5. **Regulatory Sequencing & Engagement**
    - Engage TVA, TDEC, and USACE early and in proper sequence to reduce delays and ensure compliance with all permitting requirements.

By focusing on these priorities, Giles County can strengthen cooperation among its water providers, positioning the county for a reliable and coordinated water future that supports both current needs and long-term growth.

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