



Rural Water Scarcity and Infrastructure Expansion

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CoonBranch Mountain is a rural community reliant on private wells that experiences recurring summer drought-related water shortages, forcing residents to haul water and depend on vulnerable groundwater sources. These conditions contribute to reduced [educational attainment](#), [increased household stress](#), and [negative health outcomes](#). At the same time, the Jaeger–Bradshaw corridor near the [Hatfield–McCoy Trail](#) is seeing growing tourism-related development, including new [cabins and Airbnb rentals](#), some located directly on CoonBranch Mountain. The area has also received increased national visibility, including [60 Minutes coverage in McDowell County](#), yet major water infrastructure deficits remain unresolved, highlighting the need for municipal water investment and planning that accounts for both resident needs and expanding tourism demand.

Water access and Educational Attainment

Evidence suggests that limited on-premises access to safe drinking water is associated with lower educational outcomes among rural children ages [12–18](#), including reduced school attendance, fewer completed years of schooling, and delays in age-appropriate grade progression. These constraints can compound over time, contributing to lower overall educational attainment in affected communities. In [McDowell County](#), these broader structural challenges are reflected in educational attainment levels, where approximately 35.1% of residents do not hold a high school diploma, 56.7% have a high school diploma as their highest level of education, and only 8.2% have attained a college degree or higher. Together, these figures highlight the potential link between infrastructure deficits and

Research Highlights

- CoonBranch Mountain relies on private wells that are vulnerable to drought and contamination, while nearby tourism growth is increasing future water demand without matching infrastructure investment.
- Limited water access is linked to lower educational attainment and reduced school performance, reflected in McDowell County’s low college completion rate of 8.2%.
- Private well water in the region is often vulnerable to contamination from bacteria such as *E. coli* and total coliform, particularly where septic systems, runoff, and limited monitoring are present.

Barriers to Safe Drinking Water Access in West Virginia

In West Virginia, abandoned mine drainage has significantly degraded waterways for decades, particularly in coal-impacted regions. These conditions have contributed to [long-term water quality challenges](#), including increased acidity, contamination, and impaired ecological health in creeks and rivers such as the Tug Fork River and Panther Creek. In rural areas that rely on private wells, water quality concerns are further compounded by the presence of harmful bacteria such as total [coliform and *E. coli*](#), which are commonly associated with inadequate wastewater infrastructure, surface runoff infiltration, and failing septic systems, posing direct risks to household drinking water safety. Sustainable water access requires [strengthening infrastructure](#), protecting water sources, and improving treatment and distribution systems to ensure safe, reliable potable water, while addressing persistent contamination risks from runoff, inadequate sanitation, and limited monitoring that continue to undermine water security in rural and underserved communities.

Cost of Water Line

Category	Cost
Water main pipe (10 miles)	\$2,000,000
Trenching & installation	\$3,000,000
Rock removal / excavation	\$500,000
Fire hydrants (53 units)	\$265,000
Valves & fittings	\$750,000
Service connections (100 homes)	\$250,000
Engineering & design	\$750,000
Permitting & ROW	\$400,000
Traffic control & restoration	\$300,000
10% Contingency (unexpected costs)	\$1,000,000
TOTAL PROJECT COST	9,215,000

Rural water infrastructure costs vary widely but are well-documented by federal and industry benchmarks. The [USDA Rural Development](#) and [U.S. Environmental Protection Agency](#) both indicate rural water system development often ranges from tens of thousands per household connection depending on density and terrain, with major capital financing available through federal programs. System design standards and spacing assumptions follow guidance from the [American Water Works Association](#). These benchmarks provide a baseline for estimating total project costs and evaluating financial feasibility for extending service to dispersed rural communities.

Statements from Residents

- “I have lived on CoonBranch Mountain most of my life, but every summer our spring dries up and we are forced to haul or buy water just to bathe, cook, and survive.” — Teresa Auville
- “Basic hygiene in my home has become a daily calculation of risk—every shower, every load of laundry, every dish depends on whether we can afford to lose the water we hauled.” — Anonymous Resident
- “This is 2026 in America, yet elderly residents here are still physically hauling water uphill to meet basic needs because no public water system reaches our homes.” — Cori Shrader
- “We have been told for years that water is coming, yet after multiple promises and delays, families here are still living without reliable access to something as basic as clean water.” — Ronald Shrader
- “We live surrounded by public water lines, but they stop just short of our mountain, leaving elderly, low-income residents to pay out of pocket for water or go without.” — Karen Rowland
- “Water is something every family needs to live day to day—it shouldn’t be something any community has to struggle to get or go without.” — Sandra Shrader

Policy Option

This policy option would extend approximately 10 miles of centralized public water lines to connect rural households to a safe, regulated supply, while installing fire hydrants to improve emergency response. This approach provides a reliable, long-term solution that improves drinking water quality and strengthens critical infrastructure in underserved communities. It also reduces reliance on private wells that may be vulnerable to contamination and inconsistent supply.

Conclusion

Expanding centralized water infrastructure offers a durable solution to persistent water quality and access challenges in rural communities. By improving both drinking water safety and emergency response capacity, this option strengthens long-term public health, safety, and community resilience while reducing reliance on vulnerable private well systems.

Figure 1: Potential Waterline Map



The map shows the road from CoonBranch to Beartown Mountain, it spans approximately 10 miles long with approximately 100 homes