Seeking Sustainable and Replicable Wastewater Solutions for Rural, Underserved Communities in the 16-County Alabama Black Belt

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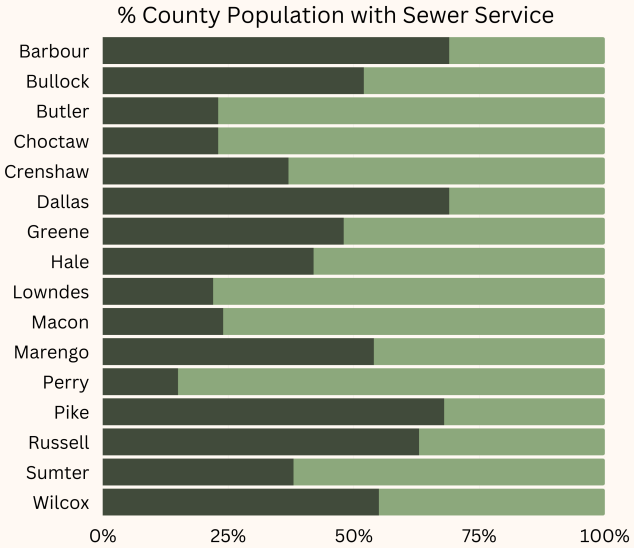
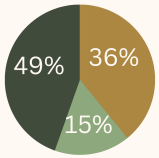
The Alabama Black Belt

- 16 to 18 County region
- Located along a crescent of Blackland Prairie soils
- Impermeable soils causing septic system failures
- High poverty rate
- Rural with low population density

Current Wastewater Conditions





In a study of unsewered homes

- 36% had failing septic systems
- 15% had straight pipes
- 51% had untreated wastewater on the ground surface

Barriers and Solutions

Barriers

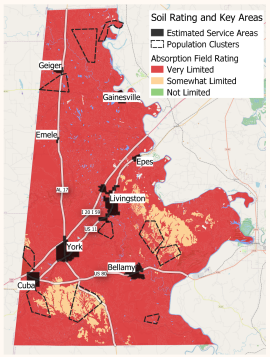
- Lack of expertise
- Lack of funding for small community systems
- Engineering disincentives
- Lack of data
- Lack of functional management
- Unaffordable technology (high sewer fees)

Solutions

- Technical assistance
- Sustainable funding
- Incentives for engineers
- Accurate data and maps
- Regional management
- Use of appropriate, low-cost technologies

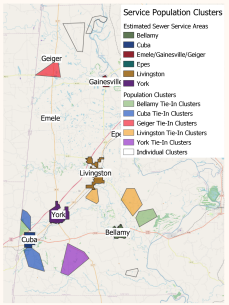
The Consortium for Alabama Rural Water and Wastewater Management was formed in 2018 to improve wastewater management and access in Alabama's Black Belt region.

Wastewater Needs Studies



- County based
- Map soil conditions for septic systems
- Identify existing sewer service areas
- Identify population clusters (85+ homes within a 5-mile radius)
- Provide best-fit solutions and cost estimations

A Cost-Effective 3-Part Plan



1. Upgrade/expand existing municipal systems
2. Identify/implement decentralized cluster systems (90+ homes within a 5-mile radius)
3. Areas outside of clusters require onsite solutions

Current Progress

Onsite Systems

- Testing and installation of innovative onsite wastewater treatment systems
- Programs funding system installations for Alabama Black Belt Residents

Cluster Systems

- Decentralized cluster system demonstration in Newbern Alabama
- Funded by ARPA and Columbia World Projects
- Rural community with impoverished residents
- No existing sewer system
- Clay soils causing septic tank and drain field failures
- Will serve 400+ residents (145 homes)
- Demonstrating the applicability, affordability, and sustainability of appropriate decentralized technologies and management