NSF Convergence Accelerator

NSF Convergence Accelerator's 2023 Cohort Phase 1 Award

Project Title
AI Copilots for Rural Water Quality

Awardee
Delta Bravo Artificial Intelligence, Inc.

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PROJECT ABSTRACT
Rural water utilities throughout the U.S. are struggling with deteriorating infrastructure, inadequate staff, and loss of trust in the communities they serve. The objective of this project is to use artificial intelligence (AI) to improve water quality, safety, and fairness in under-resourced rural communities.

In South Carolina, the absence of qualified operators presents a safety risk and stifled growth as businesses hesitate to invest due to substandard infrastructure. The South Carolina Rural Water Association projects a 75% operator vacancy rate in drinking water treatment, over 90% in wastewater treatment, and over 95% in water distribution by 2028. Unless modern technologies and systems intervene, these communities will be stuck with poor water quality and insufficient systems that are unable to support fair opportunities and economic growth. The team's convergence approach is led by Delta Bravo Artificial Intelligence and includes local community, government, high school, university, and private industry experts.

AI Copilots will be built to proactively anticipate and help operators resolve issues in water quality, equipment reliability, and compliance. Renewable Water Resources (Rewa) will contribute data and access as a pilot facility for the proposed solution. Rewa has provided water utility services to rural areas of South Carolina since 1925. The quantity, quality, and diversity of Rewa's datasets will accelerate the data modeling process. Rewa's connection to rural water distributors and systems will help the solution team deliver proof points within Phase 1 that display active usage and benefit.

Successful implementation of the proposed solution will improve compliance, water quality, and safety, thus helping to improve quality of life, water distribution fairness, and economic viability in the communities that need it most.