2026 SGA Awards Finalists: Engineering Innovation

Entry: Spire's Work Coordination Application

Company: Spire

What challenge was this project or initiative created to solve?
Spire's natural gas infrastructure is largely located within public rights of way, requiring frequent coordination with municipalities during pipeline replacement and system modernization projects. Historically, limited visibility into municipal paving and capital improvement schedules resulted in avoidable issues—such as newly paved streets being excavated shortly afterward for gas work—leading to increased costs, public frustration and strained relationships with public works departments.

With capital investment programs accelerating across Spire's service territories, the company needed a proactive, scalable solution to identify potential construction issues early, improve coordination with municipal partners, minimize community disruption and reduce redundant paving and restoration costs.

What approach or solution did your team implement?
Beginning in early 2025, Spire leveraged its internal GIS expertise to develop a **web-based Work Coordination GIS Application** that integrates municipal capital improvement data with Spire's Asset Management and planning systems.

The application uses advanced geospatial analysis and custom Python scripting to automatically compare Spire's planned infrastructure projects with municipal paving and capital improvement datasets. The system evaluates these datasets weekly, identifies overlapping project areas and flags potential conflicts well in advance of construction.

Key features include:

- Automated weekly issue analysis
- Filters by city, year, and project type
- Interactive mapping with one-click navigation to potential conflict locations
- Scalable data ingestion for GIS and non-GIS municipal data
- Visualization of completed infrastructure upgrades to support future planning

The solution was developed using existing software licenses and in-house staff, resulting in minimal development cost while delivering significant operational value.

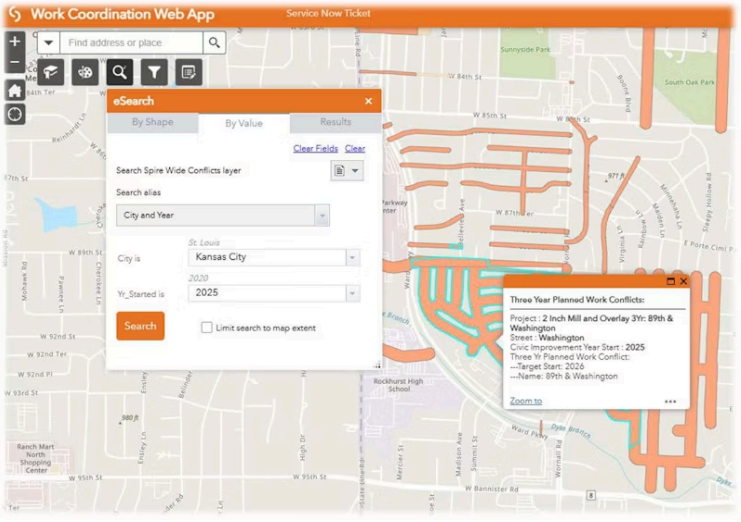
What was the result or measurable outcome?
In its first year of deployment in Kansas City, Missouri, the Work Coordination GIS Application identified **31 potential conflicts** between Spire projects and the city's 2026 paving program. Early detection allowed project schedules to be adjusted before paving occurred, avoiding unnecessary pavement cuts and restoration.

In late 2025, Kansas City also announced a moratorium on nonemergency right-of-way work ahead of and during the **2026 FIFA World Cup**, affecting key corridors and entertainment districts. Leveraging the Work Coordination GIS Application, Spire rapidly identified planned and active projects within the restricted areas and proactively adjusted construction schedules. Critical projects were expedited, and work resources were reassigned to avoid conflicts during the moratorium period. As a result, Spire anticipates completing all impacted work ahead of schedule, minimizing disruption to the city during a major international event.

Collectively, the application has delivered measurable benefits, including reduced redundant excavation, improved construction sequencing, and stronger coordination with municipal partners. As the program expands across Missouri and into Alabama, Spire estimates the potential to reduce redundant paving impacts by **up to 30% in fiscal year 2026**. The application is now a standard tool supporting long-range planning and regular coordination meetings with public works departments.

How does this work reflect SGA's mission to Share, Grow, and Advance the natural gas industry?
This initiative exemplifies SGA's mission by advancing how natural gas utilities collaborate with public partners through data-driven innovation. The Work Coordination GIS Application promotes shared planning, transparent communication and smarter infrastructure investment—benefiting utilities, municipalities and customers alike.

By proactively aligning utility and municipal capital programs, Spire is advancing industry best practices, improving safety and efficiency and fostering stronger partnerships that support sustainable infrastructure development across the natural gas industry.



Contributors:
Tod Fagan (Director, Right of Way & Land Management)
Jeff Wilcox (Manager, Right of Way-Permitting)
Brad Craddick (Developer IV, GIS)

Entry: Mass Incident Mass Outage (MIMO) Tracker Application

Company: Southern Company Gas

What challenge was this project or initiative created to solve?
The MIMO (Major Incidents and Mass Outage) tracker application was created to address inefficiencies, delays, and safety risks in managing large-scale gas outages and emergency incidents, which were being handled through a manual, paper- and spreadsheet-based process that did not scale well during major events.

What approach or solution did your team implement?
The team addressed the mass-outage challenge by replacing manual, fragmented processes with a real-time, GIS-driven MIMO platform that integrates customer systems, asset networks, field mobility, and workforce tracking. Through strong collaboration between Field Operations, GIS, and IT—and innovative use of GIS Enterprise technologies—the solution delivers faster response, safer field operations, standardized execution, and improved customer outcomes during major incidents.

What was the result or measurable outcome?
The MIMO solution transformed mass-outage response from a manual, fragmented process into a standardized, real-time, GIS-driven operation—reducing restoration time, improving safety and accuracy, and delivering measurable improvements in operational efficiency and customer satisfaction across the enterprise.

How does this work reflect SGA's mission to Share, Grow, and Advance the natural gas industry?
The MIMO initiative embodies SGA's mission to Share, Grow, and Advance the natural gas industry by delivering a scalable, technology-enabled model for safer, faster, and more reliable emergency response—one that can be shared across the industry, supports sustainable operational growth, and advances how utilities manage major incidents in an increasingly complex environment.

Contributors: James Bray, Craig McGalliard

Entry: Mobile AI Enabled Augmented Reality Operations Training and Field Execution Platform

Company: BHE GT&S, a BHE Pipeline Group company

What challenge was this project or initiative created to solve?
Like much of the natural gas industry, BHE GT&S faces increasing workforce challenges driven by retirements, loss of tribal knowledge and a less experienced employee base. While critical operating procedures, standard operating procedures and manuals had been digitized into PDFs, they remained lengthy, complex and difficult to apply in real-time field conditions. This created inconsistency in execution, increased safety risk and limited the effectiveness of traditional training approaches that relied heavily on classroom instruction and pre-job preparation alone.

What approach or solution did your team implement?
The Innovation
This mobile technology was introduced as a field-first training and execution platform designed to deliver “just-in-time” guidance exactly when and where work is performed. Using AI and visual technology, it converts existing BHE GT&S procedures into intuitive, step-by-step workflows that employees can access on a tablet or mobile device in the field. Each step can include annotated images, short videos or augmented reality (AR) overlays that visually guide employees to the correct equipment components and actions.

A key differentiator is the controlled AI environment. The platform’s AI assistant is restricted to BHE GT&S-approved documents—such as standard operating procedures, manuals and safety bulletins—ensuring accuracy, minimizing hallucinations and reinforcing compliance with company and regulatory standards.

Training, Safety and Workforce Impact
This fundamentally changes how training is delivered and reinforced. Rather than relying solely on periodic classroom or LMS-based training, BHE GT&S employees receive on-the-job learning that reinforces proper execution before and during task performance. Users can review hazards, PPE requirements, required tools and procedural steps immediately prior to beginning work, improving confidence and consistency.

The platform also supports safety-focused training outcomes by requiring photo evidence, data entry or validation checks at critical steps, helping ensure procedures are followed correctly the first time. This capability supports BHE GT&S’s goals of reducing preventable safety incidents, improving quality and standardizing work practices across locations.

Scalable and Sustainable Implementation

This technology has been rolled out in phases, typically building digital procedures one facility at a time, allowing BHE GT&S to ensure quality, alignment with standards and user adoption before scaling further. Technical Training manages governance, content integrity and expansion while analysts and trainers actively support procedure development—creating a sustainable model for long-term growth.

Internally, this has been recognized as one of BHE GT&S's flagship AI use cases, featured in AI showcase demonstrations and included in the company's broader AI use-case portfolio focused on operational enablement.

What was the result or measurable outcome?
Results to date show strong adoption and measurable improvements in execution. Facilities using the platform have accelerated task readiness for newer employees, increased consistency by guiding crews through standardized workflows and reduced rework by capturing required validations at key steps. Just as important, the solution creates a durable way to preserve and operationalize tribal knowledge ensuring critical knowledge is available on demand, even as experienced employees retire.

How does this work reflect SGA's mission to Share, Grow, and Advance the natural gas industry?
This technology demonstrates how AI can be applied responsibly and practically in natural gas operations—enhancing safety, preserving institutional knowledge and improving workforce readiness without replacing human expertise. By delivering trusted, just-in-time training directly to the field, BHE GT&S has created a repeatable, scalable model that other operators can adapt to strengthen operational excellence in an evolving workforce environment.

BHE GT&S is proud to submit this as an example of meaningful innovation that advances safety, training and operational consistency across the natural gas industry.