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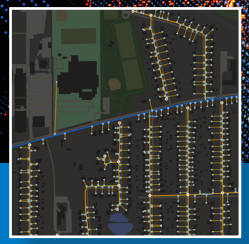
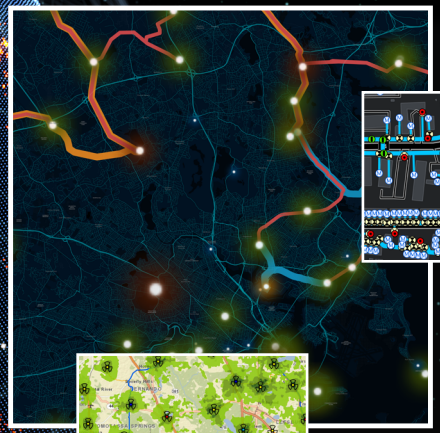
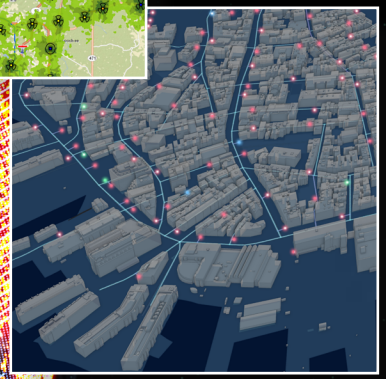






MAKING INFRASTRUCTURE CUSTOMERS **SUCCESSFUL**

Volume 4 | 2024

CONTENTS

PROVIDING SOLUTIONS FOR A CHANGING WORLD

In today's rapidly evolving world, decision-makers at infrastructure, utilities, and communications companies of all sizes are actively pursuing resilient and sustainable practices for their organizations. These efforts have far-reaching impacts, affecting every level of the company, its business partners, and its customers. To comprehensively understand and navigate these effects, organizations are turning to the power of location. By adopting a geospatial approach to infrastructure management, businesses can significantly improve their results and ensure an excellent customer experience and satisfaction.

Location-based technology plays a crucial role in aligning infrastructure with human needs and the environment. It enables organizations to gain a holistic view of their operations, allowing them to anticipate problems, establish proactive strategies, and predict outcomes based on scientific insights. In today's world, delivering safe, reliable, and sustainable services is a challenge that requires information sharing and collaboration with the community. Esri, along with its partners, offers world-class capabilities and proven solutions and technologies that promote efficiency, situational awareness, and excellent customer care.

This ebook serves as a comprehensive guide on how organizations can leverage Esri's geospatial software and solutions to deliver and optimize comprehensive infrastructure management. Through real-world customer stories leveraging partner services and solutions, you will discover how location-based technology has been applied across various organizations. Explore the enhancements in asset management, operations, planning and engineering, customer care, and network management. With business intelligence derived from Esri's ArcGIS software, organizations gain the ability to make smart decisions in the moment and develop predictive capabilities for the future.

Join us on this journey as we explore the transformative potential of Esri's geospatial solutions in delivering comprehensive infrastructure management. Learn from industry peers and discover how location-based technology can revolutionize your organization's approach to infrastructure. Together, we can build a more resilient, sustainable, and customer centric future.

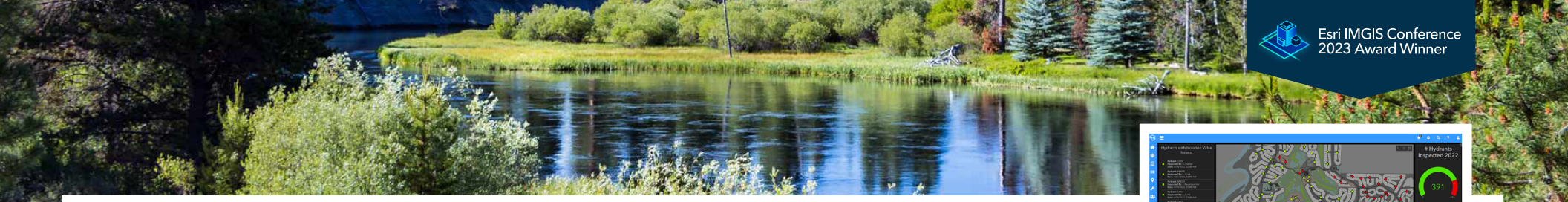
ASSET MANAGEMENT

In the rapidly evolving landscape of utilities and infrastructure organizations, the importance of modernizing asset management systems cannot be overstated. As the demands of the future continue to shape the industry, Esri emerges as a trusted partner in helping you unlock the full potential of your assets. By harnessing the power of location and leveraging the capabilities of **ArcGIS®**, Esri empowers you to extract maximum value from your assets.

With Esri's cutting-edge solutions, you gain access to a wealth of fresh insights into the performance, risks, resources, and costs associated with your assets. By incorporating location intelligence into your asset management practices, you can uncover hidden patterns and trends that traditional reporting methods often fail to detect. This newfound understanding allows you to make informed decisions and drive improved asset management outcomes.

Esri's comprehensive geographic information system (GIS) technology serves as the backbone of your asset management strategy. It provides a robust platform for fine-tuning your operations, enabling utility staff to have full operational awareness at their fingertips. Whether working from desktops or mobile devices, employees can swiftly respond to challenges and engage in collaborative problem-solving, ensuring that issues are addressed promptly and effectively.

In this section, we will delve deeper into the transformative capabilities of Esri's GIS technology and explore how it revolutionizes asset management practices. From enhancing operational efficiency to optimizing resource allocation, Esri equips you with the tools and insights needed to navigate the complexities of the modern utility and infrastructure landscape. Join us as we embark on a journey to unlock the true potential of your assets through the power of location and ArcGIS.



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SINGLE INTERFACE GIVES WATER UTILITY COMPREHENSIVE VIEW OF OPERATIONS, ASSETS

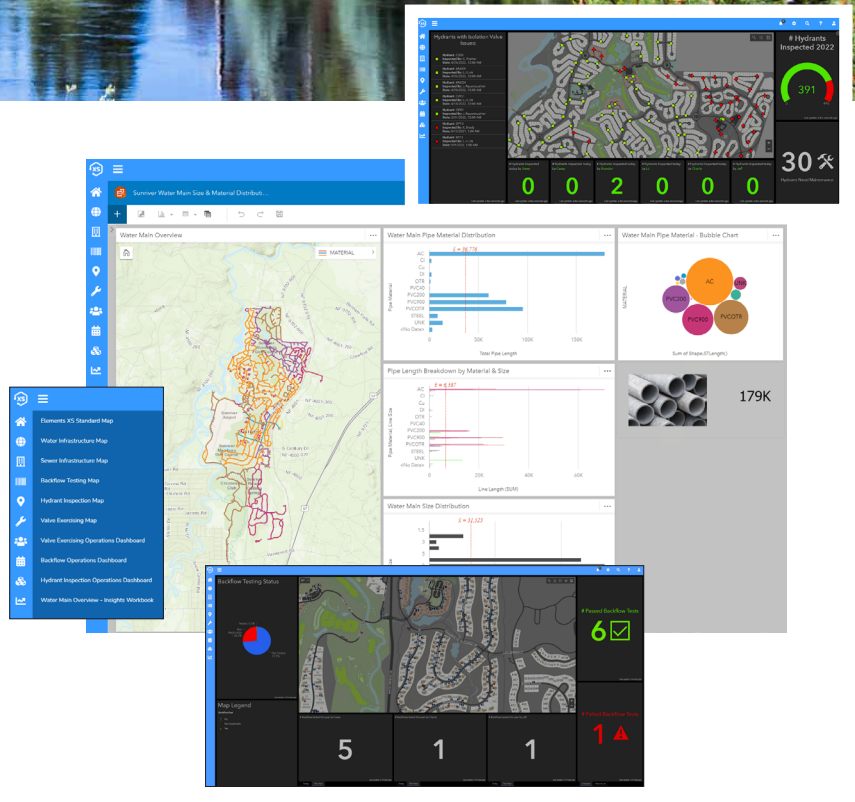
Sunriver Utilities staff realized that, to keep up with growth in the area, their manual, paper-based systems for managing work operations needed to be digitized. They wanted to track work and asset management activities in an electronic system that leveraged their existing ArcGIS technology, which served as the enterprise-wide system of record for all assets. Leaders also wanted to integrate customer billing workflows.

Sunriver Utilities implemented Elements XS, a GIS-centric, web-based asset management app for utilities and government organizations from Esri partner Novotx. Elements XS interacts directly, in real time, with published map services in ArcGIS Enterprise and ArcGIS Online.

Implementation of Elements XS has enabled Sunriver Utilities to manage workflows and assets; track inventory and labor; and generate comprehensive, GIS-based reports, all in one place. Having all data about an asset—from its physical condition and maintenance details to where it is located and how much it costs to operate—in one GIS-centric interface makes it simpler to plan maintenance and repairs; helps staff decide when an asset needs to be serviced, rehabilitated, or replaced; and aids in end-of-life decision-making. Employees have gained a better understanding of the utility's assets, resulting in more informed, data-driven decisions.

Read the full story.

Learn more about Novotx.



"Being able to interact with our GIS maps and dashboards within Elements [XS] has been extremely valuable for work management, project tracking, and managing asset life cycles."

—Steve Yeoman,
Water Supervisor, Sunriver Utilities

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WISCONSIN MUNICIPAL ELECTRIC UTILITY SIMPLIFIES ASSET MANAGEMENT AND DATA COLLECTION

In 2021, City of Sheboygan Falls Utilities (SFU) in Wisconsin initiated a technological overhaul to enhance its service delivery to over 4,600 customers. The utility transitioned from relying on outdated CAD files and printed maps to adopting a digital mapping system, aiming to foster real-time, secure, and efficient information sharing.

SFU collaborated with OpenPoint, an Esri Partner Network member, to implement Esri's ArcGIS Online, a SaaS (Software as a Service) facilitating live secure web maps accessible on various devices. The utility also utilized the ArcGIS Field Maps mobile app, allowing line workers to digitally map the network themselves, thereby ensuring almost immediate availability of the newly collected data. To achieve a minimum accuracy of three feet for its primary network, SFU employed the Arrow 100 Global Navigation Satellite System (GNSS) receiver by Eos Positioning Systems, which integrated seamlessly with ArcGIS Field Maps, offering real-time location streaming with remarkable precision.

Within a year, SFU successfully mapped a substantial portion of its network, including 10,000 nonlinear and 8,000 linear assets, with high accuracy. The initiative not only saved annual outsourcing costs but also significantly improved the reliability of the system, instilling confidence in the utility's asset knowledge and readiness for prompt service delivery.

Read the full story.

Learn more about Eos Positioning Systems.

"To me, this is a huge deal. You talk to any other line worker that works anywhere else, and without this kind of map, they struggle. But ours are right on our phones now. We can tap our app, hit any GPS-collected data point, and it brings up everything we want to see. So it's adding day by day to our efficiency."

—Justin Kiecker,
Line Worker, Sheboygan Falls Utilities

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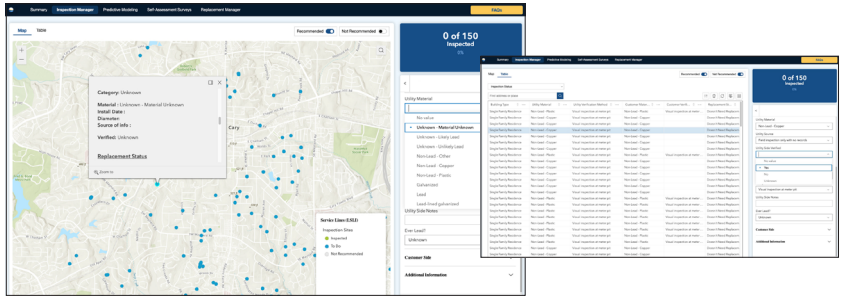
CARY UTILITIES DEPARTMENT USES PREDICTIVE MODELING TO DETERMINE SERVICE LINE MATERIAL

The Town of Cary Utilities Department is determined to track down and remove any remaining lead lines and all galvanized service lines in its system (in addition to delivering a reliably accurate lead service line inventory to the Environmental Protection Agency [EPA] by October 2024).



Tracking down a small number of lead service lines in a large water system can be difficult. But the Cary Utilities Department faced an additional challenge: capturing and organizing institutional knowledge as staff retire. This is especially important in low-lead communities, where the recollections of experienced workers are often the key to finding remaining lead lines.

Cary implemented Esri's Lead Service Line Inventory (LSLI) solution. It provided a centralized place to collect information and organize knowledge.

The solution was enhanced by adding Esri-BlueConduit technology integration. BlueConduit is a pioneer in validated predictive modeling for water service line identification. The integration leverages existing ArcGIS data with BlueConduit's machine learning-driven predictive analytics, streamlining inventory creation, accelerating replacement, and improving efficiency.

The LSLI solution and BlueConduit integration has proved to be a one-stop solution. Staff can capture and organize vanishing institutional knowledge, integrate that knowledge into evolving predictive models, and share findings and the underlying knowledge base within a single system everyone can access.

Read the full story.

Learn more about BlueConduit.

"I can't stress enough the importance of GIS in determining service line material for thousands of locations. It would have been difficult to fulfill the EPA's requirements and keep track of the data without the GIS tools that we have available nowadays."

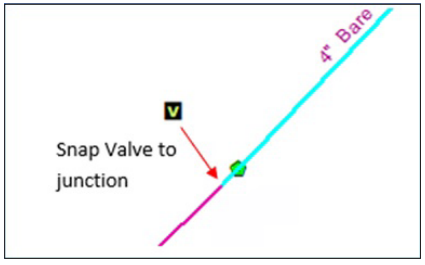
—Dylan Wingler,
GISP, GIS Coordinator, Utilities Department, Town of Cary

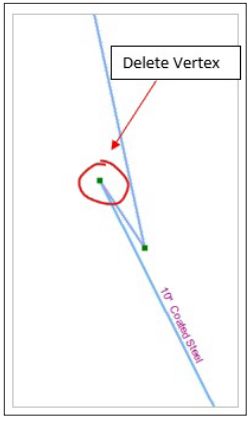
IMPROVING DATA QUALITY FOR A SUCCESSFUL ESRI UTILITY NETWORK TRANSITION

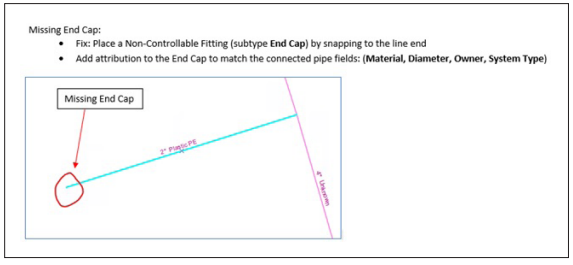
To better understand how fully its existing data meets the quality level needed to support increased operational needs and ArcGIS Utility Network requirements, Peoples Natural Gas engaged RAMTeCH to perform utility network data assessment and remediation. Data assessment included a set of actionable next-step recommendations to remediate the data and recommended changes to the data maintenance processes with appropriate supporting information from a timing and budget perspective. Once the data issues were identified, RAMTeCH completed the remediation and then assisted Peoples with the creation of the geometric network that positions Peoples for a smooth transition to a future state Utility and Pipeline Data Model (UPDM) data model supporting the utility network. RAMTeCH provided utility network data assessment and remediation processes that were successful in enabling Peoples to improve its current operations and to be equipped for its future state utility network-based operations. In addition to the data work, RAMTeCH assisted Peoples with creating an interim Esri-based geometric network to take advantage of a functional gas network.

Read the full story.

Learn more about RAMTeCH.







"This data cleanup effort enabled the creation of a connected model and contributed to the development of new processes that were implemented to continually identify new errors that were occurring."

"The remediation was completed in a timely manner without disruption to production users and gives us confidence in our gas utility network transition plans."

—Scott Ewart, GIS Lead, Peoples Natural Gas

OPERATIONS

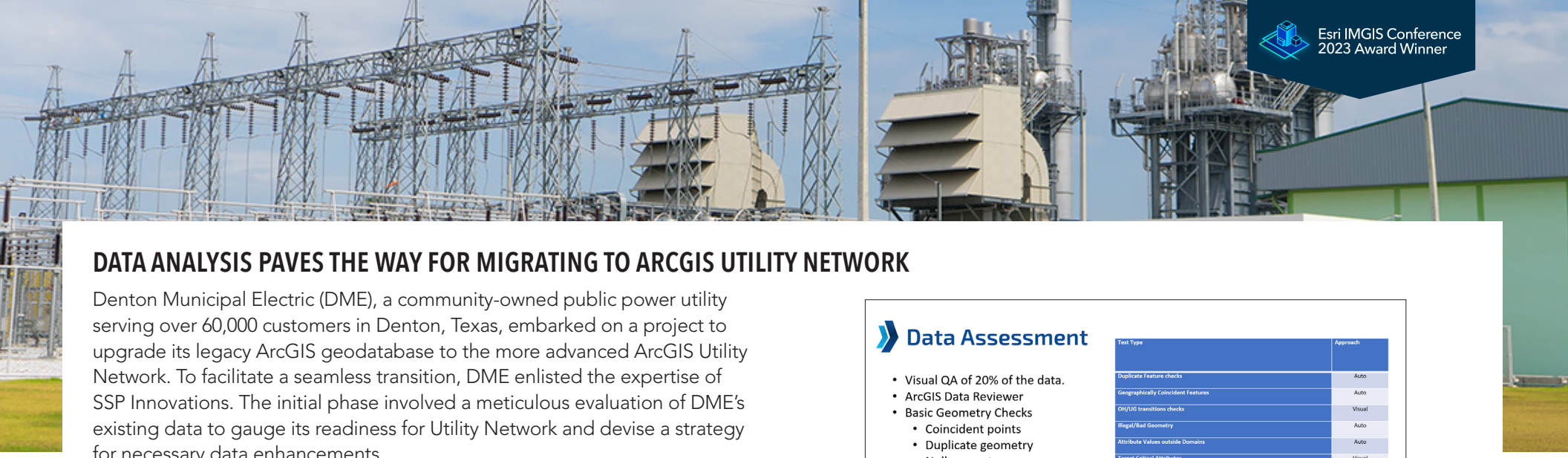
In today's ever-evolving operational environment, achieving comprehensive situational awareness is crucial for effective performance. Industries across the globe are harnessing Esri's technology, specifically leveraging ArcGIS, to enhance their operations through the strategic use of location intelligence. This powerful tool enables customers to not only model and visualize their networks in real-time but also gain immediate insights that are critical for operational health.

Esri Partners play a vital role in this ecosystem, providing specialized applications and services that enhance the ArcGIS experience. This collaboration offers customers tailored solutions that drive further efficiency and operational improvements.

By adopting GIS, organizations can place their operations within a geospatial framework, simplifying the process of locating resources, monitoring their status, and assessing performance impacts. This integration into their daily workflows empowers decision-makers to act knowledgeably and proactively to boost operational efficiency.

Among the most beneficial features of ArcGIS are the operations dashboards. These dashboards present a comprehensive snapshot of operational shifts, making it easier for teams to pinpoint assets, keep tabs on field activities, follow workforce movements, and identify issues promptly. Real-time awareness is invaluable for managing both network and field operations effectively, ensuring peak performance, and minimizing any potential interruptions.

In this section, we will examine how ArcGIS combined with the robust network of Esri Partners is digitally transforming operational capabilities. From data visualization and asset tracking to workforce monitoring, ArcGIS equips customers with the advanced tools needed to navigate the competitive landscape and make strategic, data-driven decisions. Join us to uncover how integrating location intelligence into your operations can significantly elevate your performance levels.



DATA ANALYSIS PAVES THE WAY FOR MIGRATING TO ARCGIS UTILITY NETWORK

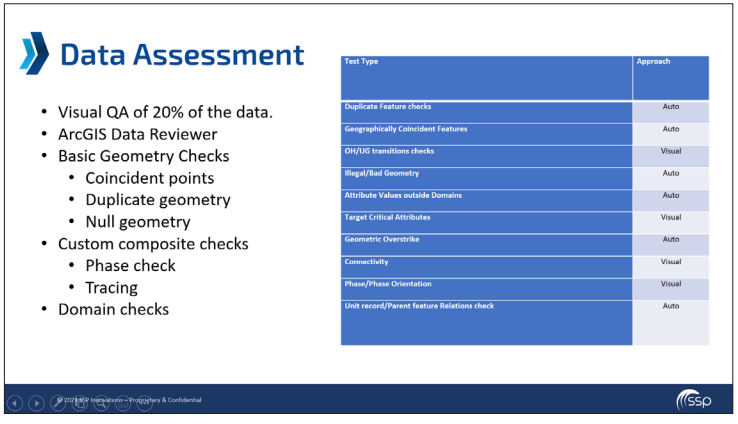
Denton Municipal Electric (DME), a community-owned public power utility serving over 60,000 customers in Denton, Texas, embarked on a project to upgrade its legacy ArcGIS geodatabase to the more advanced ArcGIS Utility Network. To facilitate a seamless transition, DME enlisted the expertise of SSP Innovations. The initial phase involved a meticulous evaluation of DME's existing data to gauge its readiness for Utility Network and devise a strategy for necessary data enhancements.

SSP undertook a rigorous assessment, identifying and categorizing errors based on their severity and impact on business operations. This involved automated validation tests and a visual inspection of a significant portion of the geodatabase to pinpoint potential issues. The findings were quantified, facilitating a comprehensive understanding of the data's condition and the adverse effects that various errors had on the business.

Armed with SSP's detailed plan, DME initiated the correction process, harmonizing it with the utility's daily operations. The strategy delineated automated and manual correction methods, including batch updates for high-frequency errors and manual cleanup for less recurrent issues. The meticulous preparation is steering DME toward a successful migration, with corrections being progressively implemented to meet the target migration date.

Read the full story.

Learn more about SSP Innovations.



"Data assessment is a vital component in moving to Utility Network. Working with a company that has the right people and the knowledge of the requirements is important for validating that your data is in good shape. Fortunately, our results were better than expected. Overall, our data was very clean. This project was rewarding as it reinforced that our editing over the years was consistent, and data was captured accurately in the field."

—Sandra Allsup,
Utility Enterprise Applications Manager, Denton Municipal Electric

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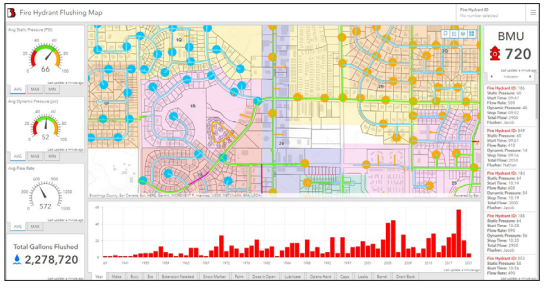
BROOKINGS MUNICIPAL UTILITIES STREAMLINES PROCESSES WITH MODERN GIS IMPLEMENTATION

Brookings Municipal Utilities (BMU) began its mapping journey in the world of paper, then CAD drawings. Staff used the drafting and design software for over 35 years to address department-level mapping requests and supply paper maps to mobile workers. The company also maintained many databases, including Microsoft Access and Excel, managing different aspects of network operations, from underground assets to field inspection forms. BMU selected Locana and implemented ArcGIS Utility Network and ArcGIS Pro, Esri's professional desktop application for editing, visualizing, and analyzing spatial data, as part of its overall electric utility solution. Utility Network functionality helped turn the company's previously map-centric 2D model into a high-fidelity, network-centric 3D model with greater data detail and analytic capabilities. Locana's Configurable Advanced Rapid Migration Engine (CARMEN) was a key contributor to the solution. Locana leveraged CARMEN to migrate the electric data from the source systems and implemented containers and associations. This resulted in a fast, efficient data migration that might have otherwise required significant time, resources, and investment by BMU. BMU will also incorporate supervisory control and data acquisition (SCADA), advanced metering infrastructure (AMI), and third-party systems to utilize GIS functionality within other operational systems.



Learn more about Locana.

"We wanted greater accessibility and transparency to our data. GIS gives us a single viewer to open data housed in different databases. By doing this, we improve our processes and make it easier and more efficient for engineers to manage the maps and data."

—Russ Halgerson, Electric Department Manager, Brookings Municipal Utilities

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GIS SOLUTIONS FUELS PAPERLESS CONSTRUCTION INSPECTIONS

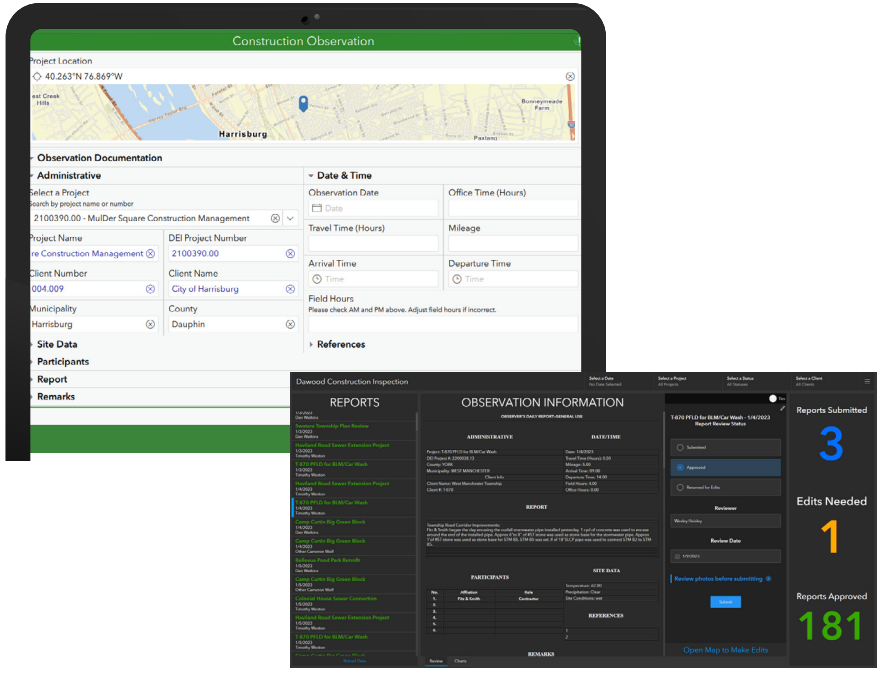
The field inspection process for Pennsylvania's capital city used to involve a labor-intensive, paper-driven workflow when sorting through reams of documents, leading to inefficiencies and errors. This process relied on PDF forms without real-time data access, complicating communication and instructions from project managers. Transcription errors and manual billing further burdened the workflow, designed historically for contingency purposes.

To address these challenges, Dawood Engineering introduced and implemented a geoenabled inspection solution on behalf of the City of Harrisburg resulting in an 80% gain in time efficiency. Dawood's revolutionary workflow involves real-time data-collection forms and photo attachments in the field to eliminate file management headaches. An integrated iPad device streamlined construction inspection tasks, making the process entirely paperless. Client data was digitally submitted in real time through ArcGIS Survey123, following standardized naming conventions, and automation ensured consistency.

Web-enabled dashboards provided immediate access to results, with PDF reports triggered via webhooks for team distribution, reducing paper usage. This digital transformation not only boosted efficiency but also eliminated field inspection office time. The City of Harrisburg now benefits from the assurance that Dawood's solution ensures correct facility installations and maintains records for issue resolution, all while showcasing the power of geospatial technologies.

Read the full story.

Learn more about Dawood Engineering.



"We want and expect our vendors to look for more efficient ways to serve Harrisburg and its citizens. Working closely with the city engineer and public works department, Dawood is innovatively improving the way inspections are performed in the city. We're particularly proud that a local, minority-owned business enterprise is leading the way in making our process better."

— Dan Hartman, Business Administrator, City of Harrisburg

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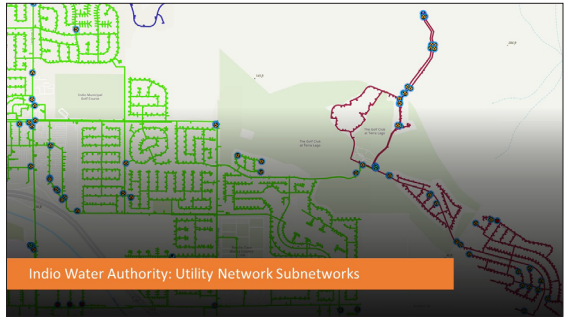
Indio Water Authority: Utility Network Containment


Indio Water Authority: UN Distribution Subnetwork


Indio Water Authority: Utility Network Subnetworks

GIS MODERNIZATION: INTEGRATING ENTERPRISE APPLICATIONS WITH THE UTILITY NETWORK

Indio Water Authority (IWA) is the primary source of water resources for 85,000 residents and businesses of the city of Indio in Riverside County, California. Recognizing the need to modernize its GIS platform, IWA contracted with Timmons Group, a multidiscipline engineering, design, and technology firm, to transition from ArcGIS Desktop to ArcGIS Pro, and from the geometric network to the ArcGIS Utility Network.

The migration of the Water Distribution geodatabase to Utility Network positioned IWA for future asset management. Compatibility with Cityworks AMS streamlined data configuration, while revised field processes took advantage of enhanced functionality provided by Utility Network. Integration with Neptune's advanced metering infrastructure (AMI) data allowed for water consumption analysis.

After completing integrations, Utility Network now receives nightly updates from Neptune, maintaining data accuracy. By enforcing data quality and consistency, Utility Network ensures that the IWA assets are always up-to-date and reliable. Field staff benefit from mobile apps in ArcGIS Enterprise and Cityworks, enabling data access and updates anywhere, anytime. This system provides comprehensive insights into production, distribution, and analysis, ensuring swift field response. Real-time dashboards in ArcGIS Enterprise enable transparent oversight of field operations, enhancing efficiency and data reliability.

Read the full story.

Learn more about Timmons Group.

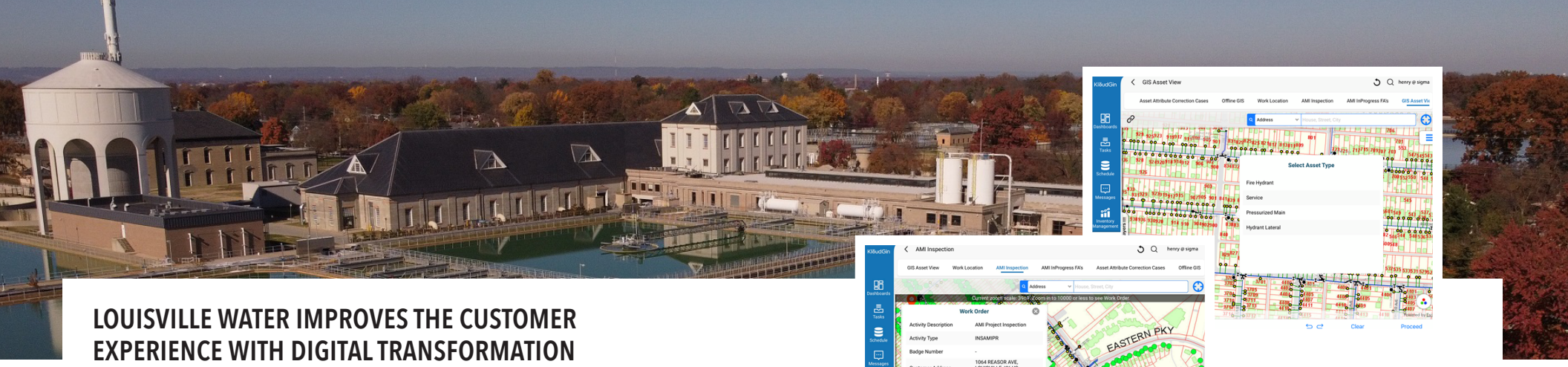
"Our data quality in the UN has improved our workflows for production and distribution, taking into account the real-time status of our assets and their conditions. The synergies that the UN and Cityworks create from a QA and QC prospective, create another set of eyes for the GIS and Asset management professionals back in the office."

—Christian Hernandez, Asset Management Coordinator

ESO ENABLES ELECTRIC OPERATION WITH SIMILIX CIM ADAPTOR

In 2023, ESO successfully implemented ArcGIS Utility Network for its 1.8 million Lithuanian electric customers, a significant milestone for the company. This deployment also included the integration of an advanced distribution management system (ADMS). To achieve this, ESO turned to the Similix CIM Adaptor for ArcGIS. Previously, ESO had relied on GE Smallworld as a bridge between ArcGIS and GE PowerOn ADMS. However, the company sought a more streamlined solution that its employees could easily maintain. ESO aimed to migrate to ArcGIS Utility Network and implement Common Information Model (CIM)-based integration, aligning with the international CIM standard for electrical models. The Similix CIM Adaptor for ArcGIS played a crucial role, allowing ESO to generate CIM files based on various CIM profiles and ensuring compatibility with systems consuming CIM data such as ADMS, outage management, SCADA, and Power Analytics systems. This shift has provided ESO with a robust, configurable integration from a Utility Network to ADMS, empowering its employees to adapt to evolving data models driven by new business requirements. Additionally, ESO can explore CIM-based integrations with other critical applications, thereby future-proofing its operations. This transformation ensures business continuity and adaptability in the dynamic world of electric utilities.

Learn more about SIMILIX.



LOUISVILLE WATER IMPROVES THE CUSTOMER EXPERIENCE WITH DIGITAL TRANSFORMATION

Louisville Water needed a modern digital platform that would streamline operations and boost efficiencies. It had to overcome multiple challenges to transform into the utility of the future: service order and asset maintenance work systems were more than 30 years old, there were no mobile field solutions for mobile workers to communicate and record their work, data was outdated and did not adequately represent field activities, and product support was limited with no enhancements available.

Louisville Water implemented KloudGin's native mobile and single-scheduling engine and integrated it with ArcGIS. The implementation consisted of three parts: implementation of Oracle's Work and Asset Management (WAM) tool for plant and facilities maintenance, expansion of WAM to distribution facilities and workflows, and evaluation and implementation of KloudGin's mobile workforce solution.

ArcGIS and KloudGin solution integration has increased efficiency and enabled staff to work smarter, not harder. Digital transformation has helped Louisville Water include advanced metering infrastructure (AMI)-type work orders in its mobile solution and facilitated the business's AMI meter-replacement project. This project helps drive timely billing and enhanced customer service capabilities. This has resulted in a 75 percent reduction in manual data entry time and a 65 percent overall reduction in paperwork with digitized forms.

Read the full story.

Learn more about KloudGin.

> "Every day, nearly one million people depend on Louisville Water Company to provide safe, high-quality drinking water. Modern digital tools are key for us to deliver exceptional value to our customers."
>
> —Dave Vogel, Executive Vice President, Louisville Water Company

PLANNING AND ENGINEERING

In the dynamic realm of infrastructure development, planning, design, and engineering teams rely on a powerful combination of geospatial data, modeling, and analytics to optimize the build-out process and streamline the delivery of services. These teams harness the potential of these tools to not only reduce project timelines but also ensure the achievement of optimal outcomes.

At the heart of this optimization process lies the invaluable contribution of predictive tools. By providing valuable insights into the potential vulnerabilities and increased risks associated with proposed projects, these tools empower teams to proactively plan for necessary changes and adjustments. This proactive approach mitigates potential issues before they arise, ensuring smooth project execution.

Efficient project management and collaboration are essential for successful infrastructure development. To facilitate this, prioritization and collaboration tools are employed. These tools enable teams to effectively schedule projects and seamlessly communicate upcoming initiatives both directly with customers and internally. This streamlined communication ensures that all stakeholders are well-informed and engaged throughout the entire project life cycle.

A standout feature of ArcGIS is its powerful modeling and visualization capabilities. This enables companies to create **digital twins** of their entire network and operational environment. By leveraging this digital representation, teams gain a comprehensive view of performance trends and patterns, allowing them to make data-driven decisions based on location-specific insights. Furthermore, the incorporation of population growth predictions into the modeling process aids in forecasting future demand and guiding capital investment decisions.

ArcGIS serves as a comprehensive solution that equips planning, design, and engineering teams with the necessary information, analytics, and engagement tools. In this section, we will explore the transformative capabilities of ArcGIS in empowering these teams to optimize their processes, make informed decisions, and deliver exceptional results. Join us as we embark on a journey into the world of geospatial data and analytics, and discover how ArcGIS can revolutionize infrastructure development.

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WHY CHUGACH ELECTRIC ASSOCIATION USED GIS FOR LAND DOCUMENT MANAGEMENT

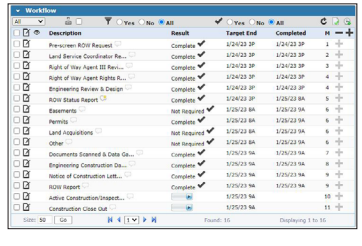
Chugach Electric Association, based in Anchorage, Alaska, is a member-owned cooperative serving over 92,000 members across 113,000 metered locations. To enhance efficiency and information accessibility, Chugach embarked on a mission to modernize its engineering systems and operations.

The primary challenge was the limited construction season due to Alaska's harsh weather conditions, coupled with the increased operational workload following the acquisition of Anchorage's city-owned utility in 2020. The existing homegrown application was insufficient to manage the complex engineering workflows and land permitting processes, leading to delays and inefficiencies.

To overcome this, Chugach adopted ArcGIS Enterprise, the leading geospatial software, to manage the utility's extensive GIS-based asset data. This was integrated seamlessly with Cityworks PLL, a solution designed for permitting, licensing, and land management, developed by Esri partner Cityworks, a Trimble Company. The integration process was facilitated by POWER Engineers, a global consulting firm, which helped define utility workflows and system requirements, meeting the utility's stringent schedule demands.

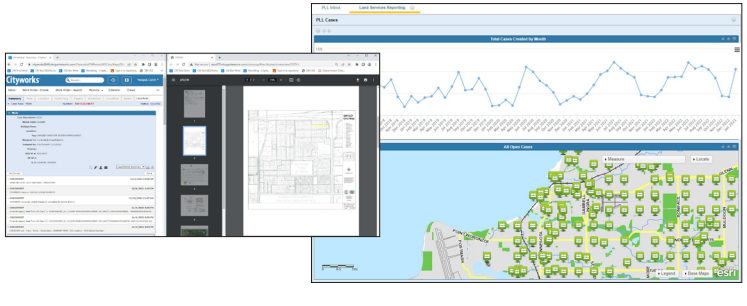
The new system revolutionized the land management process, enabling the utility staff to share geographically referenced data and documents organization-wide, thereby eliminating the need for cumbersome paper records and complex systems.

Overall, the implementation helps Chugach staff share information, make better decisions, and operate more effectively.



Read the full story.

Learn more about POWER Engineers.



"We are excited to have Cityworks PLL, fully integrated with ArcGIS Enterprise, providing our land services staff with an effective tool to maximize our efficiency."

—Karen Keesecker, Land Services Manager, Chugach Electric Association

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GIS + SMART DESIGN = BEST-IN-CLASS CUSTOMER SERVICE

For many years, LG&E and KU's legacy GIS had been hampered by incomplete and inaccurate data, thus impacting staff's ability to efficiently create the designs and network improvements needed to address customer needs in the utilities' rapidly growing service territory. LG&E and KU also needed better information to take to the field to support advanced mobile applications. This high-quality data would also be critical to support next-generation applications that manage the utilities' smart grid. Spatial Business Systems' (SBS) Automated Utility Design (AUD) software has been productively used at LG&E and KU for distribution design for many years. When it became time to add an improved geospatial dimension to this system, LG&E and KU reached out to SBS to become involved with the transformation. LG&E and KU took advantage of Esri's ability to provide rich basemap information and networked infrastructure to provide significantly better information to their design tool users. The robust search functionality of ArcGIS also empowers LG&E and KU to design more efficiently and provide better information to the field to support better construction processes.

Read the full story.

Learn more about Spatial Business Systems.

"With the support of Esri, a world leader in GIS technology, we were able to break this large-scale project down into manageable pieces with a phased approach. There's no question the pandemic impacted this particular phase of the project that began in January 2020, but the entire project team, including employees from our IT and operations areas, rallied to adapt and push through the challenges. Working closely with each line of business, I'm confident the product we delivered will provide enhancements in our ability to integrate and analyze data [and] manage certain work processes, and it will offer benefits for years to come."

—Dean Snyder,
Acting Director of IT Development and Support, LG&E and KU

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EFFICIENT AND STANDARDIZED ELECTRIC DISTRIBUTION DESIGN WITH ARCGIS UTILITY NETWORK

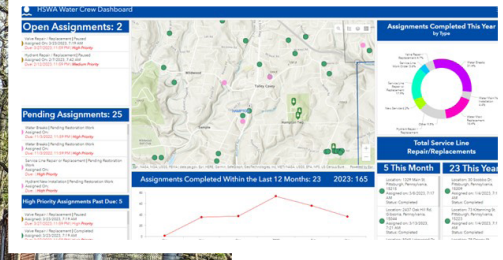
FirstEnergy, one of the nation's largest investor-owned electric utilities, recently completed a four-year project to migrate its CAD-based GIS to Esri's ArcGIS Utility Network. FirstEnergy wanted a tool to allow designers to create designs while ensuring data integrity efficiently.

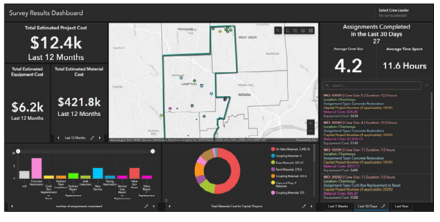
FirstEnergy chose to work with GeoSpatial Innovations, Inc. (GSI), to implement Distribution Design Studio (DDS) because of its built-in engineering analysis and field design capabilities, along with its ability to integrate with Utility Network in an efficient and standardized way.

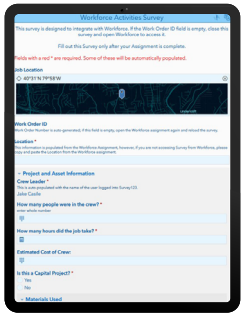
GSI's software greatly improves the quality and efficiency of the design process and engineering workflows, providing advanced design capabilities, powerful engineering analysis, consistent standards enforcement, ease of use, and robust integration with ArcGIS Utility Network. DDS seamlessly loads designs into FirstEnergy's utility network, providing fully connected structural and electric network assets to FirstEnergy's GIS, allowing staff to leverage the dynamic capabilities of the ArcGIS platform. The built-in engineering analysis tools within DDS are configured using FirstEnergy's engineering standards, ensuring that designs meet the company's engineering practices and National Electric Safety Code (NESC) requirements.

Read the full story.

Learn more about GeoSpatial Innovations.







LEVERAGING INTEGRATED GIS APPS TO MODERNIZE AND TRACK DATA COLLECTION WORKFLOWS

Hampton Shaler Water Authority (HSWA) needed to update its digital data inventory, including its GIS data. An experienced GIS professional was needed to perform an inventory and make changes or updates as necessary. HSWA also needed a better tracking system for work order tasks. In addition, workflows needed to be modernized, replacing outdated and time-consuming paper forms and maps, enabling field crews to spend less time logging information and more time doing fieldwork.

HSWA teamed with geographIT to modernize its workflows with data in ArcGIS Online. ArcGIS Workforce is now used to assign jobs for field crews; ArcGIS Survey123 is integrated to capture equipment, materials, and costs associated with each assignment; ArcGIS Field Maps is used to perform inspection and flushing activities; and ArcGIS Dashboards displays field captured data.

Using modernized workflows, office staff can view work progress, and the field services coordinator can quickly assign tasks to mobile crews, who can get to the job faster, know what materials are needed, and complete work without the need to write anything down. Materials and equipment used are recorded and tracked in real time, then visualized in a dashboard. HSWA introduced GIS-based solutions and workflows to collect field data faster and ultimately improve productivity.

Read the full story.

Learn more about geographIT.

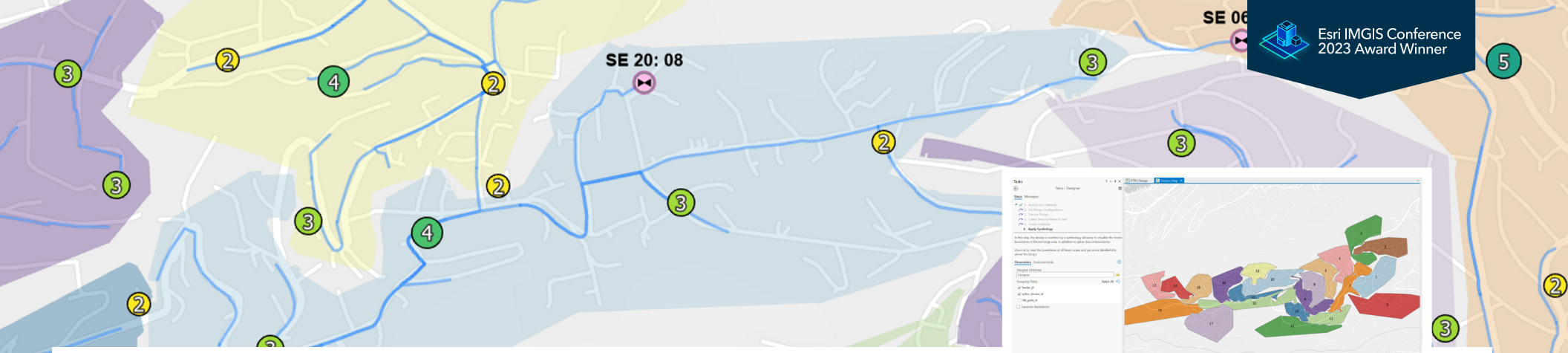
> "geographIT modernized our existing GIS by improving existing apps and implemented new, integrated apps that vastly improve our approach to collecting field data while being able to monitor it all in real time."
>
> —April Winklmann, Executive Director HSWA

NETWORK MANAGEMENT

In today's rapidly evolving landscape, comprehensive network management is crucial for communications service providers and utilities. To meet the demands of modern networks and the society they connect, companies require cost-effective and easy-to-deploy software solutions that empower the delivery of agile services. Additionally, a strong focus on maintaining safe working environments, delivering reliable services, and prioritizing customer support and quality of experience is essential for infrastructure organizations.

Forward-thinking companies recognize that the network serves as the anchor for all activities, and they concentrate their efforts on leveraging innovative solutions to optimize network operations. This is where ArcGIS and managing a telecom or utility network comes into play. We developed ArcGIS Utility Network to provide enhanced functionality over massive datasets at every scale of resolution. By harnessing the power of the entire ArcGIS Enterprise software suite, utilities and communications service providers can leverage tools that prioritize the user experience and improve communication across the entire organization.

In this section, we will explore the transformative capabilities of ArcGIS and the utility network in empowering companies to achieve comprehensive network management. From optimizing operations to enhancing communication and collaboration, ArcGIS offers a suite of tools designed to meet the unique needs of utilities and communications service providers. Join us as we delve into the world of network management and discover how ArcGIS can revolutionize the way companies deliver services and support their customers.



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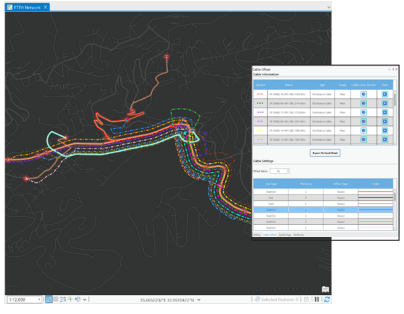
MODERNIZING TELECOM NETWORK MANAGEMENT WITH ARCGIS UTILITY NETWORK

Step Telecoms, a licensed telecom operator in Ireland, recently modernized its network management by implementing ArcGIS Utility Network. With over 250,000 meters of duct network and a skilled team with 20 years of experience, Step Telecoms sought to enhance its network capabilities. They partnered with Khatib & Alami (K&A), an Esri partner specializing in Utility Network solutions. K&A provided smart solutions using ArcGIS Utility Network data models to convert diverse data formats into a unified network inventory platform.



The results were significant, with telecom features, splicing connections, patching connections, and circuits being validated and established within the Utility Network framework. This improved operational efficiency and provided better insights into network changes and their impact on consumers.

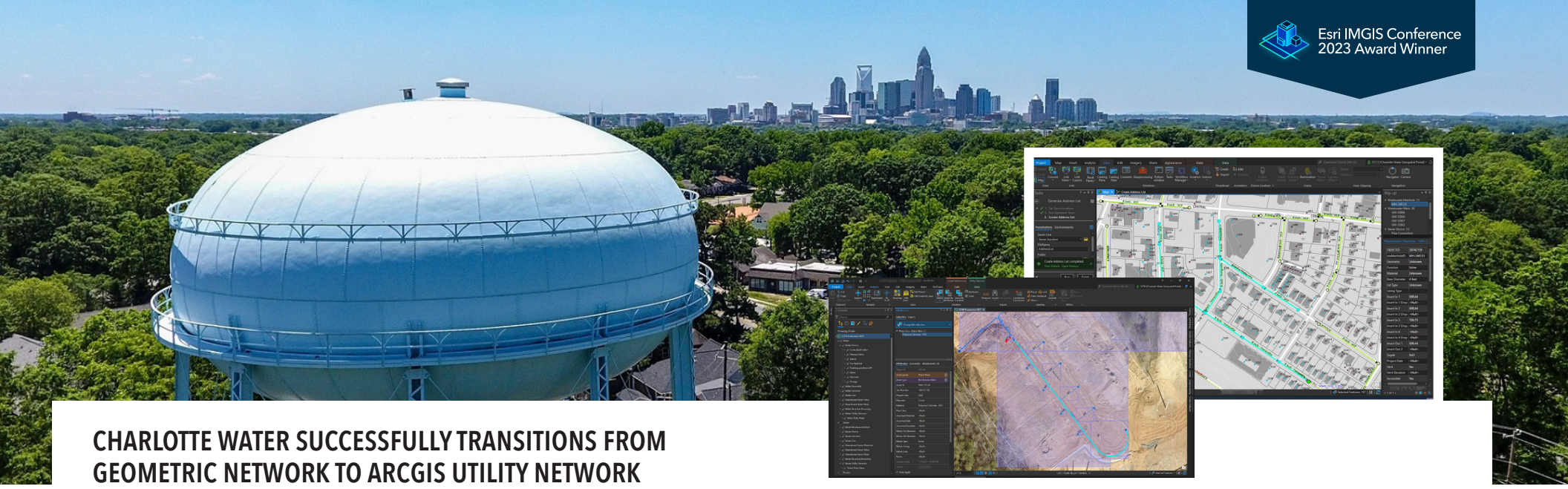
The implementation of ArcGIS Utility Network by Step Telecoms and K&A resulted in a dynamic and resilient network inventory module, reducing data entry errors and manual effort. The centralized data inventory module, based on the Communications Utility Network Foundation data model, provided secure access to network data across multiple platforms. This digital transformation has improved efficiency in telecom network management for Step Telecoms.

Read the full story.

Learn more about Khatib & Alamit.

"K&A has supported Step Telecoms in streamlining the migration of its network data—which is derived from various sources—to fit the Esri Communications Utility Network Foundation model. ArcGIS software/Telco+ handles the recording, design, and management of the network data, enhancing our service offering to various stakeholders."

—Mary McCabe - CEO Step Telecoms



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CHARLOTTE WATER SUCCESSFULLY TRANSITIONS FROM GEOMETRIC NETWORK TO ARCGIS UTILITY NETWORK

As part of a broader initiative to modernize its GIS, Charlotte Water decided to implement ArcGIS Utility Network. This project was a significant task that required advanced planning, resources, and stakeholder and user awareness. The objective was to understand all stakeholders and their needs and develop and execute an implementation plan to make the transition to ArcGIS Pro and Utility Network a success.

Charlotte Water partnered with Axim Geospatial to ensure that it received guidance from Utility Network experts. The Axim Geospatial team evaluated the utility's GIS program, data, and technical readiness while defining the pathway for adopting ArcGIS Utility Network. This included assessing the impacts of migrating to Utility Network, ensuring stakeholders were involved in the process, and preparing the utility with training and support.

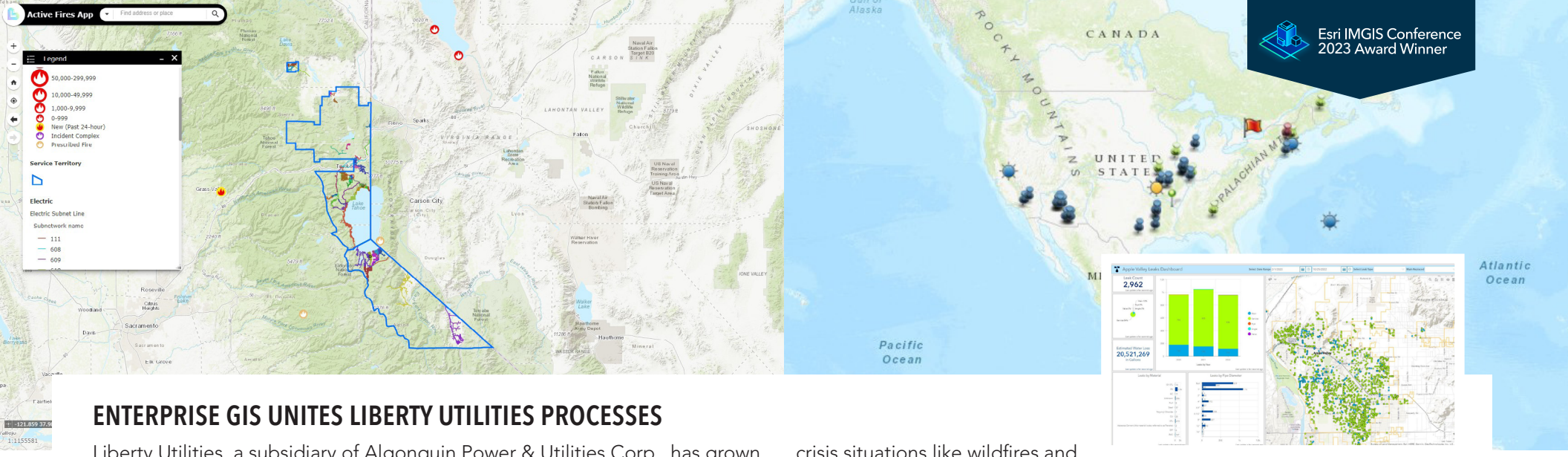
Charlotte Water's transition to ArcGIS Utility Network has resulted in a more efficient and secure system for network management. The utility can access more accurate representations of the conditions and functionality of real-world assets. Additional benefits include more detailed and accurate data management, better decision-making, improved data security, and a foundation for development of a digital twin. Most importantly, the team's GIS now follows modern IT best practices relying on a services-based architecture.

Read the full story.

Learn more about Axim Geospatial.

"With Axim Geospatial's support, we had all the tools, training, and resources we needed to successfully transition to Utility Network."

—Shannon Martel, GIS Manager, Charlotte Water

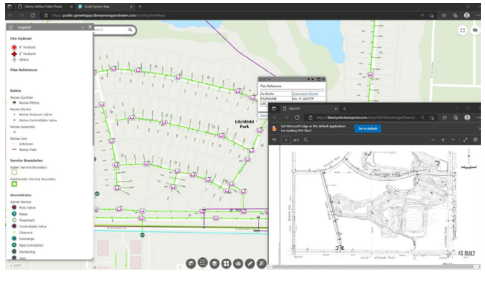


ENTERPRISE GIS UNITES LIBERTY UTILITIES PROCESSES

Liberty Utilities, a subsidiary of Algonquin Power & Utilities Corp., has grown significantly since its inception in 1988, now serving over a million customers across various regions. The company faced challenges in maintaining consistency and standardization in its operations due to its growth strategy centered on mergers and acquisitions; these challenges became especially evident during the COVID-19 pandemic.

To address this, Liberty adopted Esri's ArcGIS for enterprise GIS solutions and ArcGIS Utility Network for network management, centralizing its operations in the Microsoft Azure cloud. This implementation facilitated a system of engagement with over 1,000 members, offering functionalities from asset inspection to general mapping through various applications accessible on tablets. Partnering with Cyient data migration, Liberty managed to standardize the migration process, enhancing data quality and validation, which in turn reduced errors and improved service efficiency.

The new system has fostered improved communication and coordination, providing management with superior situational awareness, especially in crisis situations like wildfires and floods. The initiative has not only streamlined integration with other corporate systems but also promises lower costs and increased productivity.



Read the full story.

Learn more about Cyient.

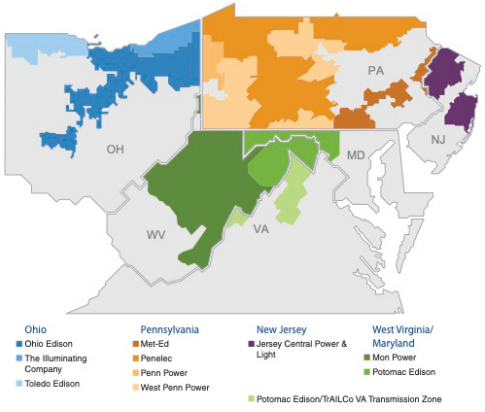
"The project was a success, and the team effectively crossed many hurdles. The technical and business challenges were many, let alone the situation that the COVID-19 pandemic presented, but the team handled them well. A big thank-you goes out to the project, local, IT, regional, vendor, and implementer teams for achieving this massive feat!"

—Jitesh Parmar, Utility Business Transformation Leader, Liberty Utilities

FIRSTENERGY MODERNIZES GRID OPERATIONS WITH ARCGIS UTILITY NETWORK

As a part of its grid modernization efforts, FirstEnergy brought its operational technology up to 21st century standards. The utility wanted to replace its outdated, legacy systems with an integrated GIS/ADMS that could propel its distribution operations forward.

FirstEnergy had a customized (Autodesk) CAD-based GIS that had exceeded its useful life. To serve as an effective foundation for its operational systems, FirstEnergy needed a solution that could model its network at the level of granularity required by ADMS.



SSP Productivity and SSP Delta were implemented to complement the base ArcGIS Utility Network functionality. SSP Productivity provides a streamlined editing experience for FirstEnergy's staff of 65 GIS editors. RAMTeCH performed FirstEnergy's migration from Autodesk to the ArcGIS Utility Network in partnership with SSP, with SSP providing quality assurance and control throughout the process.

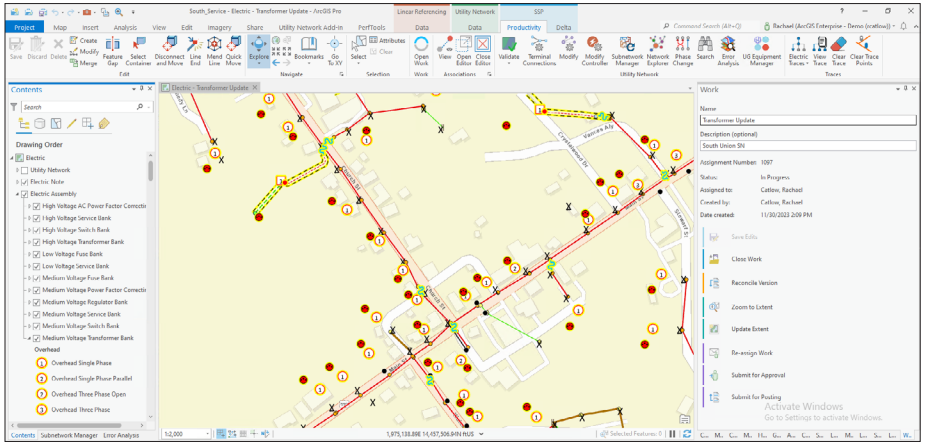
The ArcGIS Utility Network has improved FirstEnergy's network management capabilities by an order of magnitude. FirstEnergy is able to model its network in much more detail than it could with its legacy system. Its network model includes substation internals, mesh networks, and duct systems, enabling new capabilities for capacity planning and load management.

The ArcGIS Utility Network also provides a high-accuracy foundation for all of FirstEnergy's operational technology, supplying updates to the ADMS in near real-time.

Read the full story.

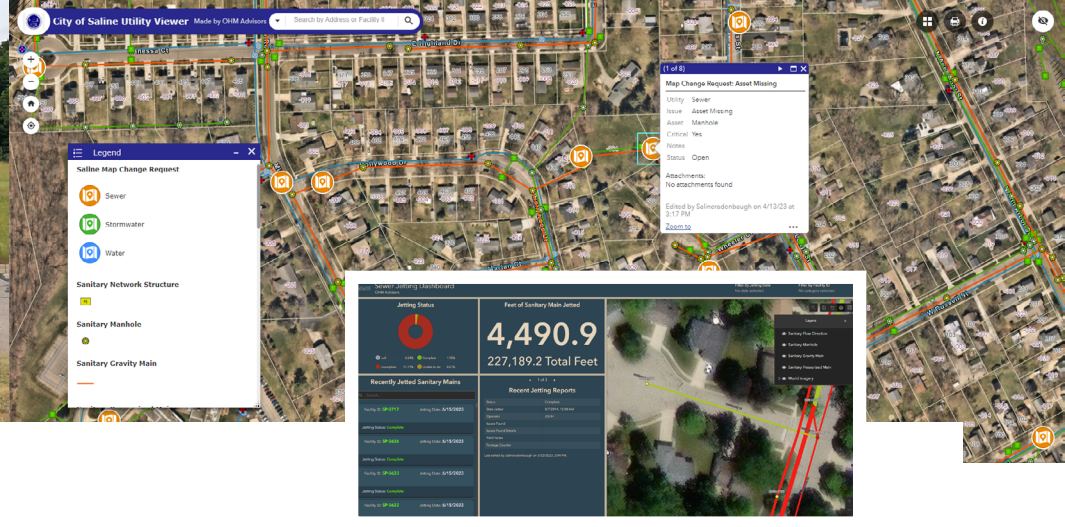
Learn more about RAMTeCH.

Learn more about SSP Innovations.



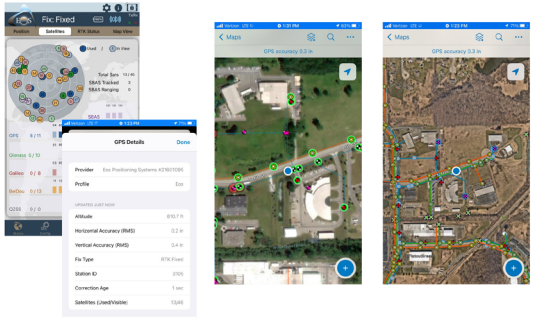
"Simply put, we needed a solution to let us easily see and predict how power is moving on an increasingly complicated and layered grid. GIS is the foundation for keeping our ADMS populated with current, accurate network information."

—Ted Allan, GIS/ADMS Project Director, FirstEnergy



A FORWARD-THINKING MICHIGAN MUNICIPALITY IMPLEMENTS HIGH-ACCURACY MAPS FOR PROGRAM MANAGEMENT

Until recently, the City of Saline's recordkeeping system was antiquated. Paper plot plans, as-builts, work orders, and other records were stored in various facilities. The city had a GIS, but a third-party firm managed it. None of the city's employees had access to it, and every map was produced at a cost.



Larry Sirls, director of the Department of Public Works (DPW), knew the power of consolidating, digitizing, and georeferencing utility data into a GIS. Sirls recommended the city regain control of its GIS, digitize decades of paper as-builts, and increase data accuracy. To guide the project strategically, Sirls brought in Esri partner OHM Advisors. Two plans were implemented to achieve their goals. A Saline veteran maintenance worker reviewed historical records, identifying discrepancies, while field crews used ArcGIS Field Maps and an Eos Arrow Gold GNSS receiver to verify and collect data.

To date, the water and sewer systems have been largely mapped, and the stormwater system is next. Every DPW employee can now access authoritative, trustworthy GIS data in the field using Field Maps and at the office using Esri ArcGIS Online. The GIS has improved efficiency, supports decision-making, and provides a foundation for future planning.

Read the full story.

Learn more about Eos Positioning Systems.

Learn more about OHM Advisors.

> "We finally have a way to manage our data so we can start to budget better. We want an accurate budget so we can make the best investments. We don't want a best guess."
>
> —Larry Sirls, Department of Public Works Director, City of Saline

CONCLUSION

Over the years, Esri has worked alongside our infrastructure customers to build and evolve software that meets the industry's dynamic needs. Despite the changing environments during these uncertain times, our mission remains the same: to help you unlock the potential of your data so that you can better serve your customers. We share your vision for sustainability, so we focus on developing systems that accommodate your present needs and will prove foundational to your sustainable operations. Our staff and partners have hands-on industry expertise to help you along this journey.

THANKS TO OUR PARTNERS

When you are looking to accelerate your ArcGIS implementations, customize solutions, or fine-tune your systems, it is essential to consider the vast network of Esri partners. These partners bring a wealth of expertise and specialized knowledge to the table, ensuring that you can maximize the value and potential of your ArcGIS platform.

Esri partners offer a wide range of services and capabilities that can cater to your specific needs. Whether you require assistance with system integration, data migration, application development, or training, these partners have the skills and experience to deliver tailored solutions that align with your goals and objectives.

By collaborating with Esri partners, you gain access to a diverse ecosystem of professionals who are well-versed in the intricacies of ArcGIS. They can provide guidance, support, and innovative ideas to help you overcome challenges and achieve success in your geospatial initiatives. These partnerships foster a collaborative environment where you can leverage the collective knowledge and experience of industry experts.

In summary, when you are seeking to accelerate your ArcGIS implementations, customize solutions, or fine-tune your systems, turning to Esri partners is a strategic choice. Their expertise and specialized services can propel your ArcGIS journey forward, enabling you to unlock the full potential of your geospatial capabilities.

ABOUT ESRI

Esri, the global market leader in geographic information system (GIS) software, location intelligence, and mapping, helps customers unlock the full potential of data to improve operational and business results. Founded in 1969 in Redlands, California, USA, Esri software is deployed in more than 350,000 organizations globally and in over 200,000 institutions in the Americas, Asia and the Pacific, Europe, Africa, and the Middle East.

Esri has partners and local distributors in over 100 countries on six continents, including Fortune 500 companies, government agencies, nonprofits, and universities. With its pioneering commitment to geospatial information technology, Esri engineers the most innovative solutions for digital transformation, the Internet of Things (IoT), and advanced analytics. Visit us at esri.com.

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