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CASE STUDY

Pittsburgh Water Streamlines Operations and Prepares for the Future With Trimble Unity

Outdated systems left Pittsburgh Water reliant on paper records, manual reporting and disconnected tools. To improve decision-making and efficiency across its complex organization, the utility required a single digital platform and a strategy to transition nearly 300 staff members.

Challenge

Pittsburgh Water relied on legacy systems that made it difficult to track, manage and maintain its water and wastewater infrastructure. Operations relied heavily on outdated tools and fragmented workflows, forcing teams to toggle between paper-based records, disconnected applications and manual reporting. This approach slowed decision-making, made it difficult to maintain accurate asset data and created inefficiencies across plant operations and field crews.

Pittsburgh's water system is complex, spanning vertical assets at treatment plants, horizontal distribution and collection infrastructure, and thousands of miles of pipe and equipment. To keep up with system demands and modern regulatory expectations, Pittsburgh Water required a solution that could unify operations under a single digital

Project Stats

Client
Pittsburgh Water

Location
Pittsburgh, Pennsylvania

20
month timeline

300
users trained on asset management tool

platform. The challenge was twofold, requiring Pittsburgh Water to retire legacy systems without disrupting daily operations while also preparing nearly all employees across the organization to adopt new tools and workflows.

The modernization effort needed to support preventive and corrective maintenance at treatment plants while also equipping field service teams with mobile, geographic information system (GIS)-enabled tools to manage distributed infrastructure.

Solution

To deliver on these priorities, Pittsburgh Water partnered with 1898 & Co., a Trimble Unity implementation partner, to design and execute a phased modernization plan. This effort introduced the Trimble Unity platform, a unified, GIS-centric asset lifecycle management suite that centralizes data and workflows across planning, design, construction, operations and maintenance. The solution combined Trimble Unity Maintain, an enterprise asset management system built on Esri's geographic information system-enabled platform, with Trimble Unity Field, a mobile application that provides real-time, GIS-enabled data collection and visualization for field crews. The project followed a phased approach designed to balance adoption speed with organizational readiness.

The first phase targeted vertical assets at pumping stations, storage tanks, and a water treatment plant more than 100 years old, where preventive and corrective maintenance programs were formalized within Unity Maintain. Pittsburgh Water performed a facility asset inventory using ArcGIS Field maps to collect data from more than 2,000 assets. QR codes were applied to streamline how staff recalled asset information and initiated maintenance in Trimble Unity Field. At the same time, legacy business processes were digitized and refined, establishing a single source of truth for maintenance records. This allowed supervisors to schedule, track and evaluate work more effectively while extending asset performance and reducing downtime.

The second phase expanded to horizontal assets, where Trimble Unity was deployed for water distribution and wastewater collection infrastructure. Field crews were equipped with Trimble Unity Field, a GIS-enabled mobile application that provides system maps and asset data, service requests, work orders and inspection forms with offline functionality. With Trimble Unity, staff could complete tasks in the field, associating their work directly with asset records without reentering data in the office. This transition eliminated duplicative work, reduced reporting delays, provided additional asset analytics, and improved compliance tracking.

To support adoption across nearly 300 employees, 1898 & Co. deployed a train-the-trainer model, empowering department leaders to coach teams directly. Targeted training sessions were paired with tailored change management efforts, giving staff confidence in the new system and easing the transition from paper to digital.

The modernization effort also required historical data migration and integration across multiple enterprise systems. To assist with historical data migration, 1898 & Co. used the Safe Software by FME platform to efficiently migrate years of work and thousands of activity records into Trimble Unity. The project team developed integrations using the SpatialDNA platform to connect Trimble Unity with Pittsburgh Water's SAP Customer Information System (CIS), SAP Materials Management parts inventory and Supervisory Control and Data Acquisition (SCADA) systems. These interfaces integrated Trimble Unity into daily operations at Pittsburgh Water, streamlined processes, increased transparency across departments and improved coordination among plant operators, field crews and supervisors.

Results

With 1898 & Co. guiding implementation, Pittsburgh Water achieved measurable improvements: across both plant and field operations, including:

- **Efficiency gains:** Crews replaced paper with digital workflows, reducing duplication and delays.
- **Centralized visibility:** Supervisors gained dashboards to track progress, compliance and asset performance.
- **Improved data accuracy:** A unified data source strengthened decision-making and reporting.
- **Future-ready platform:** Positioned to integrate with Trimble Unity Construct for full lifecycle asset management.
- **Broad adoption:** Nearly 300 staff use the system daily — from plant operators to field technicians.

The modernization was completed over a 20-month timeline and represented one of the largest early deployments of Trimble Unity in North America. Many employees across the organization, from treatment plant staff to crews in the field, now rely on the platform daily. The integration of GIS asset data with work management provided a new level of insight into infrastructure performance.

With Trimble Cityworks and Unity Field now embedded into daily operations, Pittsburgh Water has set the foundation for even broader digital transformation. The utility is exploring integration with Trimble Unity Construct to strengthen capital project tracking and feed construction data directly into maintenance systems. By combining Unity Construct with Unity Maintain, Pittsburgh Water aims to enhance asset life cycle integration, linking design, construction, maintenance and renewal into one continuous process.

The project not only delivered immediate operational gains but also positioned the organization for long-term transformation. By moving away from paper and fragmented legacy systems and adopting a unified digital platform, Pittsburgh Water advanced both its operational efficiency and its capacity to adapt to future challenges.

Looking Ahead

The modernization of Pittsburgh Water represents one of the earliest and largest Trimble Unity deployments in North America. With Unity Maintain and Unity Field in place, Pittsburgh Water is now exploring Unity Construct to link capital project data directly into maintenance workflows and Unity Permit to streamline permitting and reporting, advancing toward true lifecycle asset management.

About 1898 & Co.

1898 & Co. is a global business, technology, and security consultancy serving critical infrastructure industries. We partner with clients to plan, secure and optimize their business. As part of Burns & McDonnell and our 120 years of industry experience, we understand the complexity of your asset-intensive business model, the trends impacting your industry, and the need to ground big ideas in operational realities. Learn more at **1898andCo.com**.