White Paper

Breaking Down Operational Silos

Proven Strategies from Leading Municipal Utility Executives

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Introduction

Municipal utilities and public works departments are operating in an increasingly complex environment. Leaders are expected to improve service reliability, infrastructure resilience, and citizen satisfaction while navigating aging assets, constrained budgets, workforce transitions, and rising expectations for transparency.

Across most municipalities, core operational functions — streets, water, wastewater, electric utilities, facilities, parks, traffic, and IT — have historically evolved in isolation. Each department developed its own systems, documentation practices, and workflows. Over time, these silos hardened into structural barriers that limit visibility, slow decision-making, and undermine coordinated planning.

Jeremy Marquette, Assistant General Manager of Customer Service & Technology at the City of Pasadena described their starting point candidly: “We were kind of the utility from the stone ages, running a lot of 20 to 30 year old technology and a lot of paper manual processes.”

Similarly, Lisa Tyer, Director of Customer Engagement at the City of Waco reflected on their city’s operational landscape, saying “We had clipboards with the checklist, Excel spreadsheets, and institutional knowledge. Depending on who you would ask, you’d get a different answer.”

Their organizations and other leading municipalities are discovering that sustainable improvement requires more than isolated system upgrades. Success depends on coordinated transformation across four interconnected areas:

- Reframing modernization as enterprise transformation
- Consolidating fragmented systems into a single source of truth
- Operationalizing GIS as the backbone of municipal work
- Driving adoption through workforce-centered change management

Together, these disciplines enable cities to move from fragmented operations toward integrated, intelligence-driven service delivery.

Reframing Modernization as Enterprise Transformation

The transition from legacy systems to modern platforms represents far more than a technical upgrade. It is a fundamental redefinition of how municipal work is planned, executed, and evaluated.

Marquette emphasized that large-scale technology initiatives are frequently misunderstood: “A lot of times, people think of them as just technology projects. But they’re more than that. It’s really a great opportunity for business transformation.”

Pasadena’s modernization effort spans customer information systems, enterprise asset management, and smart metering. Rather than treating these as independent projects, the city positioned them as

vehicles for embedding industry best practices and reshaping organizational culture. Marquette added, “These projects have been an opportunity for us to collect systems that have best practice built in, adopt that best practice, and transform the way that we do business.”

The City of Waco’s experience followed a similar trajectory. Tyer explained that early assumptions about “installing a system” quickly gave way to a broader realization: “We started this project with the idea that this was a technology solution and quickly became aware that it needed to be a process improvement and a culture change solution.”

Consolidating Fragmented Systems Into a Single Source of Truth

One of the most persistent challenges in municipal operations is system fragmentation. Disconnected platforms, spreadsheets, paper records, and informal documentation practices create multiple — and often conflicting — versions of operational reality. Over time, these parallel systems erode visibility, slow decision-making, and make coordinated planning unnecessarily difficult.

Tyer illustrated the operational consequences through a familiar scenario. “A street gets paved, but has a really bad water line underneath it — now we’re going to go tear up new pavement to put in a new water line. It’s just not a good look for a city.” She emphasized that beyond optics, fragmentation represents a stewardship issue: “It’s not a good utilization of resources, and it certainly doesn’t lend us to our citizens the eyes that we’re being good stewards.”

These breakdowns are rarely the result of negligence. More often, they reflect years of organic system growth: departments adopt tools that solve immediate needs; work order systems evolve independently; spreadsheets fill functional gaps; naming conventions develop informally. Over time, what begins as practical problem-solving becomes structural misalignment.

Pasadena confronted this reality directly. As Marquette explained, the city was “looking at consolidating 38 systems — some are software systems, some are spreadsheets.” Their objective was not merely simplification, but coherence. “What it’s going to do is give us a single system of truth, a single system of record,” he noted — an enterprise foundation capable of delivering consistent answers across departments.

Waco faced similar complexity. Tyer observed that even basic terminology varied across teams: “Everyone didn’t call the same tool the same thing, and there were hierarchy issues on data naming.” These inconsistencies complicate reporting, undermine analytics, and make cross-departmental visibility difficult to achieve.

Unified platforms address these challenges by centralizing work initiation, execution, and closure within a shared ecosystem. When operational data is standardized and consolidated, municipalities move from reactive coordination to proactive planning. Leaders gain consistent insight into asset condition, service performance, and resource utilization — and, critically, the ability to demonstrate disciplined stewardship of public funds.

Stephen Miller, Director of Customer Experience for EAM Solutions at KloudGin reinforced this perspective from his experience working across many municipalities: “Everybody thinks of it as an IT project, but it is the business process. It’s how organizations work and how they do business.”

Organizations that frame modernization as enterprise transformation are better positioned to standardize workflows, eliminate informal practices, and build scalable operational models. Those that treat modernization as software replacement often replicate existing inefficiencies in digital form.

Operationalizing GIS as the Backbone of Municipal Work

GIS has evolved from specialized mapping tools into enterprise platforms that connect assets, work activities, and long-term planning. What was once primarily a mechanism for digitizing paper maps has become a central pillar of modern municipal operations.

Christopher Thomas, Director of Government Markets at Esri described this evolution clearly, noting that “initially it was just a way of digitizing paper and vellum records, which provided an opportunity to produce map overlays to identify patterns — but over the decades it became the authoritative source.” As cities digitized infrastructure networks, land use data, and service territories, GIS emerged as the primary repository for spatial intelligence. When integrated with work and asset management systems, it now enables cross-departmental coordination, advanced analytics, and enterprise-wide visibility. “Now I’m taking two systems of record, and I can do more with it,” Thomas observed, highlighting the compounded value created through system integration.

For the City of Waco, GIS functions as the connective tissue across departments. Tyer characterized its role succinctly: “It’s the tie that binds everything together — everything centers around the GIS.” Beyond serving as a static reference, GIS operates as a living system that evolves with field activity. “Until you’re in the field digging it up, you don’t really know. Being able to constantly update makes it such a livable system,” she explained, underscoring the importance of continuous data refresh.

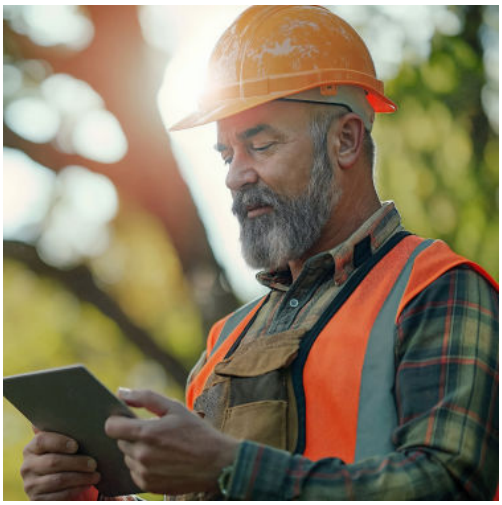
Pasadena similarly prioritized GIS integration as a core requirement in its modernization strategy. Marquette emphasized that tight system alignment was non-negotiable: “It was important to us to find one that was tightly integrated with GIS, as it’s super valuable.” For leadership teams, spatial context is no longer a supplementary feature, but is essential for informed decision-making.

When embedded within daily operations, GIS enables real-time asset visibility, integrated planning across departments, predictive maintenance modeling, public-facing transparency, and contextual decision support. These capabilities allow municipalities to move beyond reactive coordination toward proactive infrastructure management.

Organizations that treat GIS as foundational — rather than supplemental — establish a shared spatial framework that aligns operational, financial, and strategic planning. In doing so, they create a common language through which departments collaborate, investments are prioritized, and service outcomes are continuously improved.

Driving Adoption Through Workforce-Centered Change Management

Technology transformation depends fundamentally on workforce engagement. Without sustained adoption, even the most sophisticated systems fail to deliver meaningful value. In municipal environments — where employees often span multiple generations and exhibit wide variation in technical comfort — successful change management requires deliberate strategy and long-term commitment.



Pasadena addressed this diversity through careful team design and early stakeholder involvement. Marquette explained that the city "tried to select really a cross section of the entire organization, from newest members to veterans," ensuring that implementation reflected real operational realities. He emphasized that influence matters more than formal authority, noting that adoption is often driven by "not necessarily the highest ranking, but the most influential people" within the organization.

Waco complemented this approach with a phased implementation strategy that allowed employees to build confidence gradually. "We did a slow roll, with two types of work orders, and then we started adding," Tyer explained, describing how early pilots helped surface challenges before full-scale deployment. This incremental model reduced resistance and created space for continuous improvement.

Training was equally critical to sustaining adoption. Tyer described Waco's layered approach, which included "train-the-trainer, group training, and one-on-one training" to meet employees at varying skill levels. She cautioned against assuming that a single session is sufficient, observing that "most people only walk away with about 15%, so you can't train anybody just once." Ongoing reinforcement and supervisory feedback proved essential for maintaining consistent data quality and workflow discipline.

Miller summarized the core principle underlying effective change management: "You have to show people what's in it for them." In practice, this means demonstrating how new systems reduce paperwork, simplify reporting, improve scheduling, and minimize administrative friction. When employees see tangible benefits in their daily work, resistance gives way to engagement.

Effective programs recognize that frontline personnel generate the data that powers analytics, planning, and performance management. By prioritizing usability, reinforcement, and visible value, leading

municipalities transform system adoption from a compliance exercise into a shared organizational capability.

Enabling Data-Driven Stewardship and Future Readiness

Beyond operational efficiency, unified systems enable municipalities to become stronger stewards of public resources. When work, asset, and financial data are consolidated within a shared platform, leaders gain the visibility required to prioritize investments, justify funding requests, and demonstrate accountability to citizens.

Waco's capital planning experience illustrates the risks associated with fragmented and incomplete information. Reflecting on earlier planning efforts, Tyer acknowledged, "We probably didn't get the level of a plan that we should have had, as it wasn't as driven by data as it needed to be." Without consistent historical records and standardized documentation, long-term infrastructure decisions were often influenced by recent events rather than objective risk and lifecycle analysis. As she noted, "You can't just fix something because it was hard one time."

Marquette emphasized that data quality has become even more critical as municipalities explore advanced technologies. "If you have inconsistent input, you end up with inconsistent answers from AI," he observed, underscoring the direct relationship between operational discipline and analytical reliability. Emerging capabilities such as predictive analytics and AI agents amplify existing data patterns, making governance and standardization essential prerequisites.

Miller highlighted two common pitfalls that undermine long-term value creation: "One is to ask people for data nobody's ever going to look at. And the other is to do it twice." Excessive or redundant data collection erodes trust and weakens participation, while poorly aligned reporting requirements discourage consistent use of enterprise systems. Sustainable programs focus on capturing meaningful information that supports real operational and strategic decisions.

Thomas emphasized that transparency enabled by unified data ecosystems reshapes organizational behavior. "It changes the dialogue… people weren't talking to before," he noted, describing how shared visibility encourages collaboration and cross-departmental problem-solving. When information is accessible and trusted, discussions shift from anecdotal debates to evidence-based decision-making.

Integrated platforms support evidence-based capital planning, defensible budget requests, performance reporting, citizen transparency, and continuous improvement. Over time, these capabilities reinforce a culture of accountability and learning.

As municipalities explore AI, digital twins, and predictive analytics, disciplined data governance becomes the foundation for future capability. Cities that invest early in data quality, consistency, and usability

position themselves not only to adopt new technologies, but to extract lasting value from them in service of their communities.

The Path Forward

The experiences of Pasadena and Waco demonstrate that breaking down operational silos requires sustained, coordinated leadership. Technology investments alone do not produce transformation. Lasting change emerges from consistent attention to people, processes, data, and culture over time.

Tyer summarized this leadership imperative succinctly, emphasizing the importance of organizational readiness: “Put people and processes first — why are you buying a new system if you have no intention of changing the way you do business?” For Waco, modernization was never viewed as a finite initiative, but as an evolving organizational commitment. “This is a journey, and you’re going to be constantly tweaking,” she explained, reflecting the reality that systems, workflows, and governance structures must continuously adapt.

Marquette cautioned against allowing caution to become paralysis. Reflecting on Pasadena’s long planning horizon, he noted, “We suffered from analysis paralysis — don’t be afraid of making mistakes.” Large-scale transformation inevitably involves uncertainty, experimentation, and mid-course correction. Progress depends less on avoiding missteps than on maintaining momentum and institutional resolve.

He emphasized the importance of partnership and perseverance, concluding that “if you have the right project team, and you don’t give up, you’re going to be successful.” Strong internal governance, trusted implementation partners, and engaged operational leaders provide the foundation for navigating complexity and sustaining progress.

Success in modern municipal operations requires an integrated transformation approach across workflows, systems, data, and culture. Cities that master these disciplines position themselves for sustained service excellence, improved public trust, and resilient infrastructure stewardship.

The transition from fragmented, department-centric operations to unified, intelligence-driven ecosystems is no longer optional. It is becoming the new baseline for high-performing municipalities committed to long-term community value.

About KloudGin

KloudGin is a cloud-native solution provider delivering the utility and public sector’s only true Single Face of Work® platform that unifies Construction Work Management, Enterprise Asset Management, and Field Service Management within one operational ecosystem. Purpose-built as the operational engine for utility and public sector workers, our AI-native platform eliminates silos between systems and processes, seamlessly connecting all work operations in real time to empower the workforce that keeps essential services running across communities worldwide. Learn more at www.kloudgin.com

Contributing Authors

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Stephen Miller has over 20 years of experience across a variety of asset intensive industries covering: Oil & Gas (EP, Pipeline/Transmission, LNG, etc.), Power Generation (Fossil, Renewables, and Nuclear), Manufacturing, Food Processing, Facilities, Health Care, and Aerospace Manufacturing. Stephen has a very strong background in maintenance, asset, reliability, inventory, and information management, as well as business process improvement, including many years of implementing KloudGin, Maximo and SAP for clients of all sizes.

Jeremy Marquette

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Jeremy Marquette brings over 20 years of utility industry experience and leads the Customer Service and Technology Division at Pasadena Water and Power (PWP). Since joining PWP in 2019, he has overseen customer service operations, the call center, billing, credit and collections, meter services, and information technology. He recently directed the successful launch of PWP's new customer information system (CIS), earning PWP Oracle's "Utility Partner of the Year" award for innovation and customer experience advancement. Before PWP, Mr. Marquette served in multiple customer service, finance, and IT roles at Long Beach Utilities. His leadership contributed to major transformation initiatives, including a CIS replacement, the AMI smart meter rollout, and the Enterprise Resource Planning (ERP) implementation.

Contributing Authors

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Director, Customer Engagement, City of Waco

Lisa Tyer brings more than four decades of leadership experience across municipal operations, regulatory compliance, and enterprise transformation. She serves as the City of Waco's Director of Customer Engagement, where she leads initiatives to modernize service delivery, enhance resident experience, and advance the City's digital capabilities. Her experience includes executive sponsorship of major technology transformations across Utilities and customer-facing services, including customer information, work and asset management, and citywide communications, with a strong focus on operational efficiency, transparency, and service responsiveness.

Christopher Thomas

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Christopher Thomas is the Director of Government Markets on the Industry Solutions team at Esri, focused on state and local disciplines. He has over 30 years of experience working in and with national, state and local governments implementing technology. As a strategist and subject matter expert, Christopher works to identify emerging trends GIS can support.