



# CROSSING DEPARTMENTS

Richmond, Va., implements asset management project across utility divisions

By Eddie Childers Jr. & David C. Sklar

In March 2009, Dwight C. Jones, mayor of Richmond, Va., said before the city council, "We are in a unique moment in time—in a dire economy—to plot our pathway into the future." This statement signaled the beginning of Richmond's transformation into a "tier one city" and eventually led to the creation of the Department of Public Utilities' (DPU) Enterprise Asset Management (EAM) project, a cross-departmental collaboration that includes the executive office, police, fire, public schools, public works, public utilities and economic development. The collaboration, through focus papers, outlined strategic goals and tactical initiatives that created a pathway to achieving the mayor's vision.

Richmond DPU has a diverse portfolio of assets across multiple utility divisions (water, wastewater, storm water, natural gas, street lighting and electric distribution). The "wet" utility assets include more than 5,400 miles of underground pipe, a wastewater treatment plant, a

water filtration plant, 12 tanks, one reservoir, 13 pumping stations and 10 lift stations. Additionally, Richmond is one of America's oldest cities, chartered in 1742, and much of its infrastructure is quickly approaching the end of its life and becoming costly to maintain and/or replace.

## Implementing a Program

One of the focus papers developed by the EAM project team identified asset management as a means to improving operational efficiencies. The document described implementing an EAM program as "a proven sustainable practice that invokes better risk management and decision making." Currently, DPU is creating an asset management culture that will be repeatable across other city departments.

To start, the team implemented several rounds of internal education programs, recruited consultants, held fact finding workshops and developed a formal IT infrastructure gap analysis. The principal conclusion showed that DPU already was performing asset

management across many areas. This insight allowed it to focus on addressing specific gaps that offered the greatest opportunity for improvement while building upon its strong foundations.

## An Incremental Approach

Over the past five years, the project team has developed a master plan for the EAM program, with 18 clearly defined initiatives ranked as the highest priorities in terms of gaps in desired performance and potential positive impact on DPU. To date, full implementation plans are developed for three initiatives. DPU1 is an overarching initiative across all utilities to establish a formal operating unit and structure. W6 and W7 are focused on establishing formal valve and hydrant reliability programs for the wet utilities. Each of these initiatives has a formal implementation plan that includes a charter, roles and responsibilities, and defined budgets, tasks and milestones. Equally important are key performance indicators that will be

tracked from the outset to demonstrate benefits and returns to DPU and its customers in terms of reduced lifecycle costs, improved reliability and enhanced service levels. These will be communicated to stakeholders and measured against the original assumptions included in the implementation plans.

### Establishing the Operating Unit

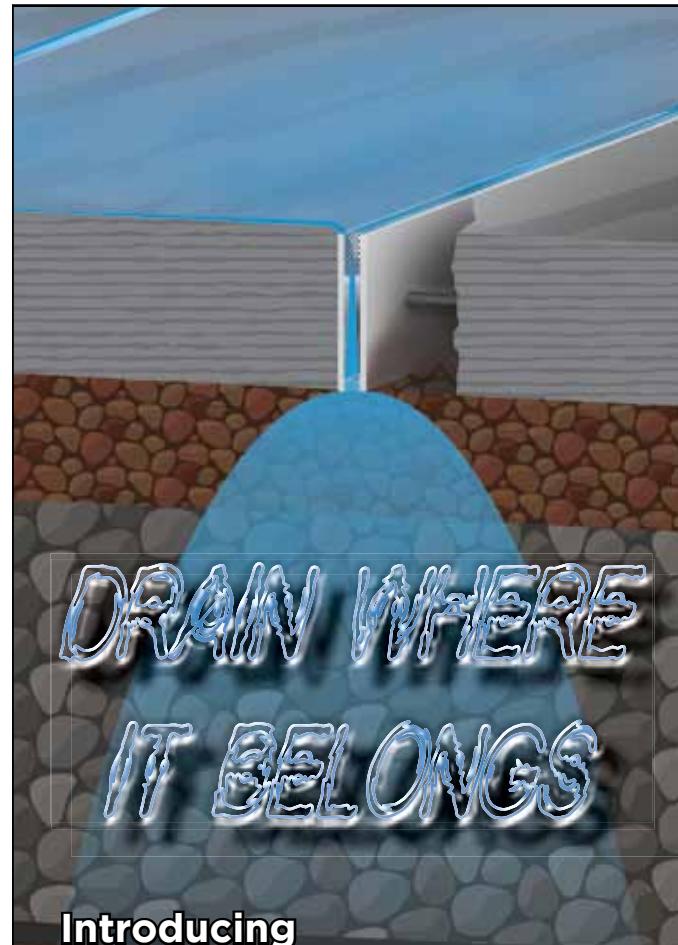
As part of DPU1, the team established a formal operating unit for the EAM program. The unit is tasked with directing activities across utility divisions, including change management and communication, documentation of business processes, and development of enhanced tools and methodologies. This structure currently is housed within DPU's Technical Services Div., which also is responsible for managing capital projects and the GIS department. As it becomes more formally established, the operating unit is implementing more structured asset management policies and developing comprehensive asset management plans across asset classes in collaboration with operations and maintenance (O&M). The operating unit is guided by a senior-level steering committee that will provide executive-level oversight and directives.

The DPU1 initiative defines the overall organizational structure of the unit and establishes internal operational practices and interactions with the rest of the organization, including O&M. The key activities addressed during implementation included defining core roles and responsibilities, establishing qualifications and training requirements, and defining specific on-boarding plans for new positions.

### Reliability-Driven Maintenance Programs

The W6 and W7 initiatives focus on the development of formal hydrant and valve inspections and maintenance programs to introduce preventive maintenance programs and increase system reliability. DPU leadership is committed to establishing a formal hydrant and valve maintenance program that follows industry best practices, including the American Water Works Assn. guidelines for reliability. This initiative aligns with an overall DPU strategy to move from reactive to proactive maintenance while optimizing lifecycle costs and enhancing reliability.

Key activities will include development of standard operating procedures, formal data collection and tracking procedures, an asset risk framework and prioritization model, and comprehensive training materials that include instructional videos for staff. The initiative will be supported by a detailed business plan to include staffing strategies, agreed-upon levels of service and key performance indicators. Additionally, this initiative



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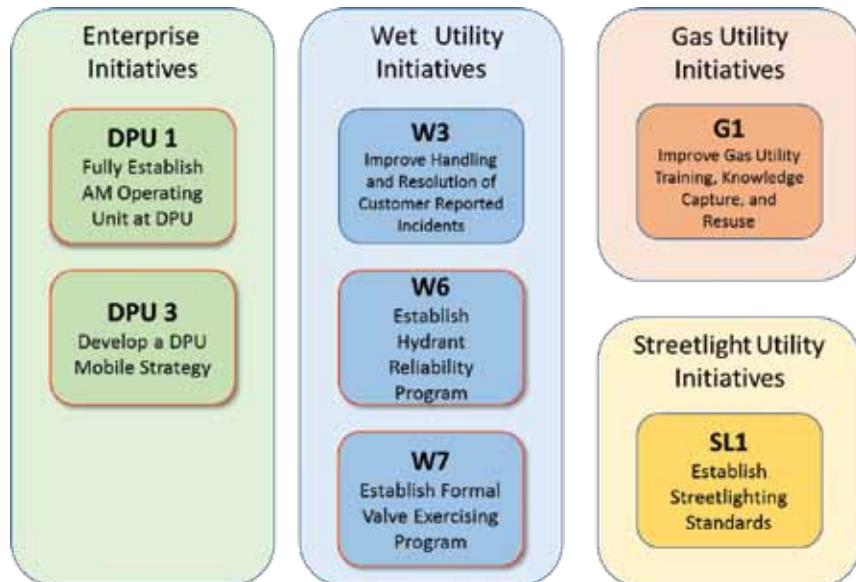
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Write in 755



This figure shows the asset management project's highest-priority initiatives for Richmond DPU.

will codify existing programs into a unified strategy with clear goals and defensible data that can be used as a

template for future preventive maintenance program enhancements for other asset classes.

## Planned Benefits & Impacts

All of the initiatives that are part of this program are supported by a strong business case with quantifiable benefits and qualitative improvements. The softer strategic benefits of the EAM program include opportunities for staff development; optimized decisions that balance risk, cost and service; enhanced business processes; improved regulatory compliance; and alignment with city sustainability efforts. More tangible benefits that will be measured and tracked include reduced lifecycle costs, improved system reliability and customer response, enhanced staff productivity and improved preventive maintenance ratios.

## Defining the Path Forward

DPU currently has long-term plans for a diverse set of initiatives that it will tackle over the next several years, including developing a mobile strategy; improving rigor around capital project

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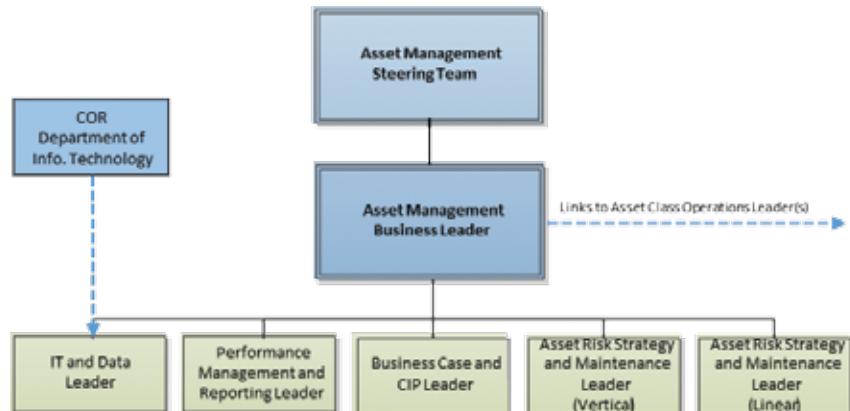
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A flow chart helps indicate responsibilities of various departments and individuals.

demonstrate momentum that will have a positive impact on its overall business. As part of this cultural change, ongoing communication and maintaining excitement and support at the staff level will help ensure long-term momentum.

DPU and the city recognize that this effort is about implementing business-driven changes that have a wholesale impact on the organization and its core processes. It is important to maintain the strategy, processes, technology, data and people of the organization in order to grow and manage a successful EAM program. **SWS**

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delivery; prioritizing capital expenditures in water distribution; improving financial forecasting for the water treatment plant; improving resolution of customer-reported incidents for the distributed wet utilities; and improving work order management for distributed wet assets, the water treatment plant

and pumping assets.

A key component of the overall program is to tackle the positive cultural change that is expected to occur as a result of smaller tactical changes and improvements embedded within each initiative. Over time, DPU will create organizational champions and

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