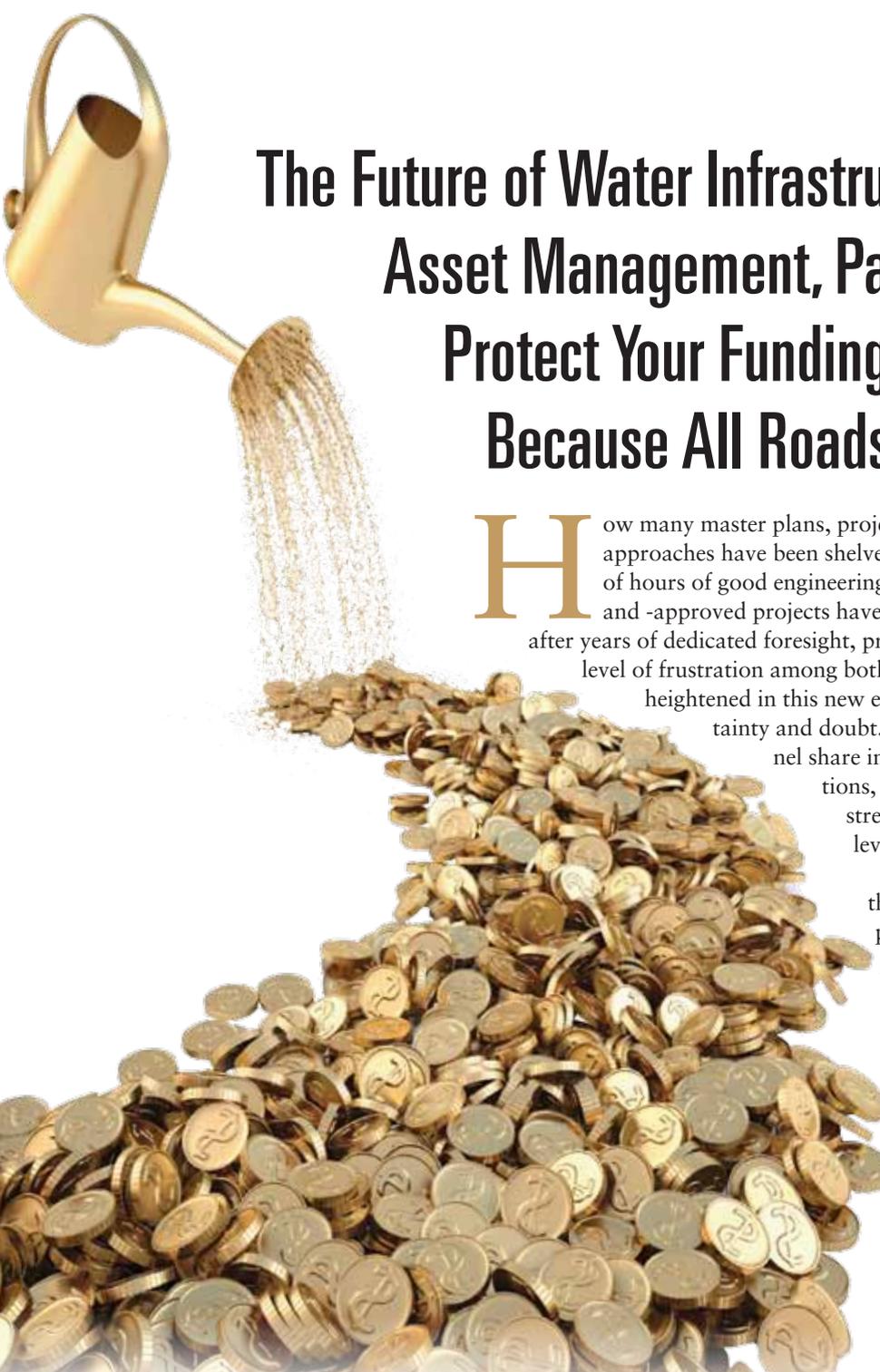




Baird



The Future of Water Infrastructure Asset Management, Part 2: Protect Your Funding ... Because All Roads Lead to Finance

How many master plans, project designs, and innovative engineering approaches have been shelved only to gather dust after hundreds of hours of good engineering work? How many capital-budgeted and -approved projects have been deferred or simply canceled after years of dedicated foresight, project planning, and development? The level of frustration among both public and private engineers has heightened in this new economy, which is fraught with uncertainty and doubt. Operations and maintenance personnel share in the experience, with program reductions, hiring freezes, and resources being stretched so thin that they affect service levels and customer response times.

What has been the prevailing barrier that sinks new projects and causes the proverbial “pulling up the gang plank” to needed resources at the last minute? Most would assume and respond to these questions with “It was the finance manager” or simply “It was a lack of funding.” Others might admit improper scope planning, timing, or even the lack of project preparation. Although these seem acceptable answers, the overall cause and process are more complex, requiring a great deal of communication and integrated knowledge-sharing and planning.

PROFILE OF THE FINANCE MANAGER

Blaming the finance manager or a lack of funding support is a simple way out, but still does not match the resources to the needs at the right time, which is the fundamental goal. The typical finance manager spends six months forecasting, preparing, submitting, and presenting the main budget, with less time spent on the changing complexities of the capital budget in terms of fluctuating spending cycles and project scopes. The other six months are spent on accounting, auditing, and financial reporting. Additional support and expertise either internally or contractually acquired are needed for rate and fees, debt management, investment portfolio management, financial policy planning, pension liability issues, auditing, bond issuance/financings, credit agency reviews, and bond due diligence.

Municipal finance managers have both general fund and enterprise fund responsibilities, with 90% of their efforts going to general fund activities (i.e., police and fire) and 10% going to water, sewer, and stormwater. Municipal water and sewer enterprise funds, which may even be separate entities legally, are still normally controlled by the same authority as the general fund and tend to be treated the same (such as an across-the-board budget cut or hiring freeze). Enterprise funds by definition should be able to run like a business with a set of self-balancing accounts that in concept support a business enterprise style. Practically speaking, although things have improved over the past decade, some utilities still face a lack of business acumen, especially if the municipal governance model exists. For example, municipal golf courses, as enterprise funds, are more able to operate as businesses than are utilities. This model of treating utilities like the general fund presents a common barrier to developing financial businesslike practices that would help transform how the water industry and the public view the value of water.

WHAT ABOUT THE FUNDING?

The lack of funding support concept has several categories of thought. First, at the organizational level, the financial function could have limitations and a lack of resources. Developing funding options and arranging for financings takes time and special attention. Major projects may require an 18-month lead time in order to provide needed funding. Second, at the project preparation level, there could be a lack of engagement between finance and the separate silos of engineering, operations, maintenance, and customer service within the organization. After all, one department may have focused on the project, but was funding preparation part of the project action plan? There are many difficult decisions to be made to achieve project success. For example, is it worth it to engage public relations to overcome the public's concerns? Is it worth having an inspector on a project

to ensure a quality installation to extend the asset life? Some of these questions can be addressed with a cost-benefit analysis, but the next question strikes at the core of project risk management. Is it worth having an infrastructure finance specialist assigned to help ensure the project will be funded? The answer may be found in reviewing whether the last project was funded adequately—if not, special attention may be required.

Protecting your funding. Acknowledging the resource gaps between the actual project implementation and the financial resources is a critical step in moving forward to determine the next steps to create a win-win between engineering and finance and acquire the necessary funding.

Jason Mumm, director of financial, commercial, and risk services with MWH Global, explains, "Many utilities are facing very difficult and demanding financial decisions, many of which are occurring without the support of integrated financial analysis. The goal is to fund programs and projects. The challenge is to quantify the various options and risk tolerances in order to make good economic decisions to help balance the competing needs and develop corrective measures when things change."

Integrated financial support and analysis efforts enhance the traditional development of a rate-and-fee study or cost-of-service study. Do not underestimate the need for a cost-of-service study. As a static public document it has value but still requires connectivity into the entire infrastructure and financial story of the utility. Integrated finance draws from many input disciplines such as engineering, operations, maintenance, customer service, growth planning, information technology, hydraulic and analytical modeling, and infrastructure asset management planning. These inputs are quantified, and when working with finance, they are balanced against the current and forecasted financial conditions of the utilities' cost of capital, reserve balance, credit standing, investment risks, customer rates affordability, pension and other liabilities, political tolerance of risk, and the public acceptance of service quality. The fundamental goal of developing and maintaining financial policies and managing risks while providing adequate and timely funding for critical projects can be achieved.

Running the utility like a business. The ensuing results of an integrated financial strategy can include financial gap assessments and improvement action plans, aging water and sewer infrastructure funding, and financial risk analysis. This is not a process of analysis paralysis, but a means to create distinct economic decision options for various levels of management.

Other more complex results can include:

- phased project funding plans;
- financial policy and financial modeling nexus;
- operational business analytical water modeling software inputs to budget development;
- prebond due-diligence and credit protection awareness;

- triple-bottom-line and business case scenario evaluations;
- special financing layering to smooth user rate increases against aging infrastructure failure risks;
- review and development of local, state, regional, and federal alternative funding opportunities;
- subdivision of projects to meet specialized funding sources;
- internal risk management cost analysis as compared with privatization contractual options;
- staffing-level financial performance reviews;
- service-level and performance measures financial metrics for rate adjustments;
- product selection combined with life-cycle cost and return on investment financial considerations;
- open procurement financial audits;
- nonrevenue water budget and investment targets analysis;
- cost of capital and emergency reserves scenario testing;
- user rate and development fee affordability indexing;
- revenue source monitoring and revenue generation analysis;
- energy cost-savings analysis;
- integrated dashboard reporting; and
- development of tracking and reporting features for asset management cost savings and projections.

INFRASTRUCTURE ASSET MANAGEMENT

Mitigating the cost of ownership. The US Environmental Protection Agency (USEPA) definition of asset management is:

... maintaining a desired level of service for what you want your assets to provide at the lowest life-cycle cost. Lowest life-cycle cost refers to the best appropriate cost for rehabilitating, repairing or replacing an asset. Asset management is a framework being widely adopted as a means to pursue and achieve sustainable infrastructure. It is the practice of managing infrastructure capital assets to minimize the total cost of owning and operating them while delivering the desired service levels. A high-performing asset management program incorporates detailed asset inventories, operation and maintenance tasks, and long-range financial planning to build system capacity, and it puts systems on the road to sustainability (USEPA, 2012).

On the basis of the this definition—as well as that of other heavy industry sectors—minimizing the total cost of ownership of assets while maintaining an acceptable service level is the primary goal. The entire motivation of US-based infrastructure asset management program implementations is based on cost avoidance, cost containment, and cost justification in both theory and practice. However, there must still be a working relationship and a process combining these efforts with the

funding sources and financing mechanisms. Cost-related data by themselves do not produce the funding; as a result, all infrastructure asset management roads eventually lead to finance.

Developing a project funding plan. Project funding sources are vulnerable to outside forces and require monitoring and the continuing development of alternative solutions. An investment downgrade for bond funds, a natural disaster, and other events can create a funding nightmare domino effect. One area of difficulty for finance managers is developing a methodology of bridging the gap between short-term needs and risks and long-term needs. By training, budget and accounting managers are not risk-takers and most have not been provided the analysis to quantify many financial decisions to help support project funding needs against other perceived financial risks and considerations. Projects are simply cut and deferred, assuming that the need will go away or that the funding will be magically available in the future. Few efforts are made to develop a project finance plan before a project is approved or even immediately after a project is delayed. Likewise, public officials and voters think and act in this same way; if the supporting analysis is not convincing enough to the finance manager, then it will never be acceptable to the public.

Understanding asset management plans. Penny Burns, editor of AMQ International's *Strategic Asset Management*, draws from 30 years of experience when discussing the future of asset management from a global perspective. She suggests one scenario that increases the criticality of the asset management plan by which service levels are set and performance measures are established and rates approved. "Asset management plans serve a dual role, as a funding proposal to attract the support of the regulator and as a mechanism for implementation by which the organization will be audited. Asset management plans are therefore taken very seriously," said Burns. Although this may sound straightforward, the level of planned performance is scrutinized and rigorously audited as a public document. In this accountability scenario, financial expectations and operating realities are transparently linked, and the execution of the plan could result in approved funding or future restricted resources.

Considering strategic plans. Strategic plans are also an important tool for an organization to identify the resources and establish a path to move forward. Martin "Mac" Hodell, MWH strategic planning expert, states, "The need for a strategic plan is when everything seems like a priority." Strategic plans actually can pay for themselves by eliminating loss of productivity, wasted resources, and throwaway projects and initiatives that occur within an organization in which there is a vision but a lack of documentation as a guide. Strategic plans can identify solutions to barriers and incorporate project funding milestones.

MANAGING ONE WATER

The U.S. Water Alliance, formerly the Clean Water America Alliance, has been collaborating to achieve one voice for water. President Ben Grumbles explains that an aspect of the “one water” concept is a paradigm shift that breaks down the barriers of potable, graywater, sewer, stormwater, reuse, recharge, and reclaimed water categories in order to develop the best sustainable solution over the long term. Infrastructure costs are a contributing factor to the lack of “one water” implementation plans. “We are beginning to understand that not only are many water problems interconnected, but they are also connected to critical issues beyond water,” Grumbles said. These types of integrated plans also face inconsistent funding and could benefit from an infrastructure finance specialist and integrated finance practices as part of the stewardship and collaboration required—especially on large-scale engagements in which cost-sharing opportunities exist.

INTEGRATED WATER AND ENERGY

Water and energy systems and operations should be planned together. Just as energy requires water, water supply and sewer disposal need energy (Plappally & Lienhard, 2012). As an example, most of the water in California is in the northern part of the state, whereas most of the state’s population lives in the arid southern region. The annual conveyance, storage, treatment, and

distribution of this water consume nearly “19% of the state’s electricity, 30% of its natural gas, and 88 billion gallons of diesel fuel” (Krebs, 2007).

Brown Thornton, MWH energy sector expert, explains that strategic planning is critical for an organization with both water and electric capabilities. Integrating total life-cycle costs from an asset management plan with an energy plan to look for cost-effective equipment replacement timing, optimization, and renewable options, and even on how to store energy using water is important to consider. One trend in integrated strategic planning efforts entails using solar and wind for pumping versus drawing power from the grid.

DEVELOPING BUSINESS SOLUTIONS

Integrated finance incorporates long-term financial planning to support asset management planning practices, but, more important, focuses on the short- and mid-term needs of maintaining financial strategies to help meet the funding requirements of critical projects. Projects and capital plans do not necessarily all have to be a “go” or a “no go.” Solutions and strategies can be developed, communicated, and put into place to allow projects to move forward with contingencies built into the financial model, bid documents, and other public documents and resolutions.

Many utilities are at critical junctures of cutting and delaying projects beyond their future ability to

adequately address the issue without equipment failures, sink holes, severe public outcry, and managerial scrutiny. Project-funding requirements and deferment risks can be quantified and communicated to all decision-makers. Water and wastewater utilities that embrace a more businesslike process such as integrated finance and infrastructure asset maintenance and management practices will continue developing public trust on the path of financial sustainability.

—Gregory M. Baird,
greg.m.baird@agingwaterinfrastructure.org,
AWI Consulting LLC, served as the chief financial officer of Colorado's third largest utility. Baird is an advisor to the Economic Development and Capital Planning Committee with the Government Finance Officers Association (GFOA) for the US and Canada, trains municipal finance directors on asset management practices, and is the founder and lead of GFOA's Utility Finance Forum. He is an active member of AWWA and serves on the Rates and Charges Committee, working on the national Affordability and Conservation subcommittees. Baird is currently collaborating with Virginia Polytechnic Institute and State University's

WATERiD project and has also served as the chair of rate affordability for WIN-Colorado (a statewide nonprofit coalition to address water and wastewater infrastructure funding needs in Colorado).

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