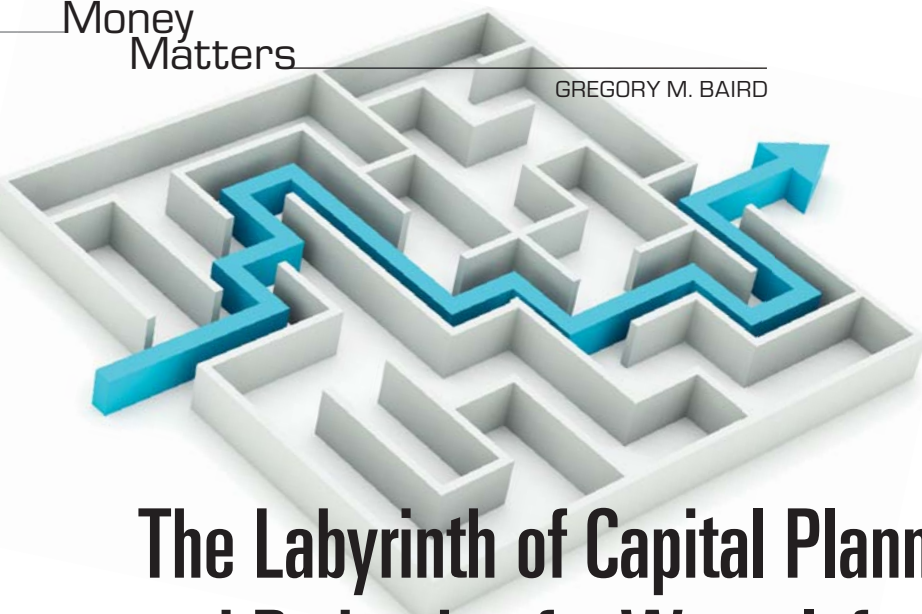




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The Labyrinth of Capital Planning and Budgeting for Water Infrastructure

In many ways, managing the ever-changing capital improvement plan (CIP) is like exploring a labyrinth. New information evolves with every twist and turn, and the CIP requires complicated and time-consuming inputs (Table 1). The “labyrinth” of managing the CIP suggests that the curious or the inexperienced can become lost and frustrated (because unlike a maze, a labyrinth has no dead ends). However, for those who are willing to brave the perils of the unknown, satisfaction and rewards await. In this case, rewards are defined as understanding the risks and having the ability to mitigate financial issues and reduce overall costs to the ratepayers.

The process of capital planning and budgeting is more complicated than the one governing the operating budget. Capital planning and budgeting are also more time-consuming because they lead to a capital financing plan or funding strategy. The important fact remains, however, that the capital planning process is actually a key to reducing the overall capital burden and long-term maintenance costs. Therefore, it is important to spend the necessary time, energy, and dollars to attain cost savings and reduced future rate increases that

result from a robust capital planning effort.

UTILITY FINANCIAL MANAGEMENT IS OFTEN MISUNDERSTOOD

Water and wastewater utilities are different from other enterprise funds and should not be viewed or treated the same as the general fund because they are the most capital-intensive sectors in the economy and require a more significant capital planning effort (Olstein et al, 2009). Utility finances also require long-term thinking, beyond the bounds of traditional municipal planning. The water system is a complicated puzzle of 30- to 120-year-old buried assets, and the normal standards of accounting, financial planning, and decision-making fall short. Sustainable asset management practices begin to bridge the generational gap of operational knowledge and proper capital planning.

Operating budgets. Although most operating budgets are fairly stable over time, the actuals will vary to some degree based on weather, demand, water sales, conservation, and so forth. The planned budget remains stable and generally increases as a result of salaries, energy, chemicals, contracts, and new assets added to the system. Yet, the operations budget always seems

to be the main focus of elected officials and local management. Requests for budget reductions are made, but without the benefit of realizing true savings from capital planning and asset management strategies, the typical end result is a higher cost later on. Budget reduction exercises often result in an increased financial burden for ratepayers or a weakening of the financial stability of the utility.

Much of this attention on the operational budget is also a result of the fact that basic operation and maintenance costs drive the normal baseline rate increases and other key financial indicators such as the legal debt covenant ratio (the relationship of net operating revenue to existing annual debt payments). However, it is important to remember that the debt issued, which now acts as an operating cost, was required because of the capital intensity component; after all, no one should issue debt to pay for operational expenditures. Although these common indicators are critical to the underlying financial strength of the utility, it is the work on the capital plan that really represents the point of convergence of risk assessment, strategic planning, and better financial ingenuity.

Capital planning. Improvements to the capital planning process have

been made over the past decade as the water industry has grown more complex and specialized. Brainstorming sessions are helpful, but now a great deal of data and analysis from multiple disciplines are necessary to identify all of the risks and needs. Modern capital planning includes internal factors such as operational needs and capacity requirements and external factors such as regulatory changes and contracts or agreements.

Capital planning data result in a better model, which has helped improve the process, but the next necessary step to sustainable capital planning is now required. Key concepts to guide the next step toward sustainability planning include the following:

- Planned maintenance costs are one third less than those for unplanned maintenance.
- The capital process locks in 65–85% of all of the life cycle costs in the project identification and preliminary feasibility design phases.
- Life cycle operations and maintenance costs are often 5–10% (and sometimes as much as 20%) of the initial construction costs.
- Life cycle cost-reduction opportunities diminish through detailed design planning, construction, and project startup phases (USEPA, 2010).
- Condition assessment helps avoid the default decision to replace the entire asset and offers analysis to determine where and when a rehabilitation technique can be applied to extend the life of the asset (PPIC, 2010).
- Total life cycle costs must be included as part of the capital decision-making process.
- Asset management strategies may be able to capture savings of 20–30% of life cycle costs over time (USEPA, 2010).
- The project delivery method can reduce the overall capital costs of a project (WVC, 2010).

Sustainable capital planning provides confidence that the recommended project is the right solution

at the right time for the right price. A strategic capital financial model and analysis considers life cycle costs (USEPA, 2010):

$$\text{Original Price} - \text{Salvage Value} + \text{Costs} \quad (1)$$

in which “costs” includes operating, maintenance, renewal, and decommissioning costs.

Other normal key assumptions are also important, including demand projections, growth projections, remaining life of assets, availability and timing of water resource purchases, timeliness of land acquisitions, permitting, and so on. It is also important to ensure that the planning assumptions (engineering, operational, and financial) of each major input stay synchronized in any financial or planning model.

A major challenge for many utilities occurred when the high growth of 2005–07 quickly declined in 2008–10 and changed many of the underlying assumptions, such as growth and consumption. A utility’s ability to mitigate financial risk under such a scenario includes understanding how to correctly prioritize various projects to preserve cash and avoid entry into an unstable financial credit market while minimizing the need for higher rate increases in the future.

THE INCREASING IMPORTANCE OF CAPITAL PLANNING

Nagel and Elenbaas (2006) report that “Rating agencies repeat-

edly stress the need for adequate planning studies. They want to be assured that the utility knows where it is going, how it is going to get there, and at what cost.” In its 1989 Municipal Finance Criteria document, Standard and Poor’s stated that a community desiring an optimum rating should be able to demonstrate an effective planning program for capital improvements. Fitch Rating’s criteria report, *The 12 Habits of Highly Successful Finance Officers*, concluded that solid financial management practices are more important in predicting favorable credit performance than has been understood in the past (Fitch Ratings, 2002). A five-year capital plan has been the minimum standard, but with growing concern over the aging infrastructure issue, credit agencies and bond holders must ask specifically about the prudent capital planning efforts over a longer period because most debt is issued over 20–30 year payback periods.

Investors now want to know if a utility has done its due diligence for condition assessment, has a strategy to address the short- and long-term infrastructure replacement issues, and has taken the affordability of rates into consideration. The answers to these questions directly relate to the sustainability of the financial health of the enterprise. This new emergence of sustainability concerns will raise the value of capital planning from “influential”

TABLE 1 Capital planning inputs

Internal	External
<p>Operations</p> <ul style="list-style-type: none"> Renewal and replacement Condition assessment Asset management Increase efficiency/savings Technology upgrades <p>Capacity</p> <ul style="list-style-type: none"> Master plans Water supply plans Conservation plans Integrated resource plans 	<p>Regulatory changes</p> <ul style="list-style-type: none"> Treatment Discharge permits Mandates <p>Joint agreements</p> <ul style="list-style-type: none"> City/county Regional <p>Developer contracts</p> <ul style="list-style-type: none"> Site-specific Timing/deadlines

to “very significant” as credit agencies evaluate the hidden and mostly unfunded liability of aging infrastructure and try to redeem their profession in light of its role in the global economic crisis.

THE ROLE OF THE FINANCE OFFICER

The role of the finance officer has expanded into the capital planning process as a necessity. However, the criticality of this process is commonly undervalued and overlooked by a traditional general fund municipal finance director. As stated in *Financing Capital Improvements* (Ayres & Thorpe, 1991), “Government officials are having an increasingly difficult time reconciling the apparent reluctance of the public to finance a reasonable level of capital spending. Proper planning, which includes an increase in quality and quantity [of] time devoted to the planning process, will help dispel many customers’ concerns regarding the sincerity and validity of the need for a rate or tax increase. Many public utilities operate efficiently on a day-to-day basis but find that they lack sufficient cash flow to address replacement or expansion needs. Over time (and during economic downturns), the tendency is for utilities to curtail or eliminate the staff time devoted to long-term planning. Although efforts in this area have been reduced out of necessity, the need for such planning has increased.” During economic downturns or constricted capital funding, the natural process is to simply defer capital projects. However, the strategic move involves conducting condition assessment as well as other asset management strategies before applying a project prioritization procedure.

THE CIP

Proper capital planning leads to a more accurate and defensible CIP, which, in turn, offers a more enduring capital financial plan. The end-goal financial plan empowers the utility with short- and long-term projections, which provide the basis

of discussions about financial risks internally, rate increases with citizens and approval authorities, and funding strategies with lenders. The CIP becomes the story that will help the utility explain to the public what the needs and the benefits are and justify the revenue requirements.

CIP financial strategy. Once the CIP seems somewhat stable, the capital financing strategy effort can compare capital needs against the current financial condition of the utility, identify the funding sources for each project, and conduct impact/connection fee reports and rate studies. As these additional data become available, forecasts of revenue- and debt-planning exercises can be generated (while the utility remains in compliance with existing adopted financial policies).

CONCLUSION

Many elected officials are concerned about making decisions that “hog tie” future boards and councils. But without having a discussion regarding long-term sustainability and affordability, they are simply hiding a growing and inevitable rate shock scenario that will surely burden some future rate approval person. The fundamental long-term view of a publicly owned utility should be more focused on how future rate increases can be minimized by today’s capital and operational decisions. It takes an ethical and strong utility manager or finance officer to stand up to short-term political whims and defend long-term affordability concerns.

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