Until Next Time

There is nothing more important to sustaining human existence than water—specifically, water pure and safe enough to drink. Communities thrive because of their water supply. Not only does safe drinking water sustain individuals, families, neighborhoods, and communities, it is one of the most essential requirements for supporting commerce.

All people appreciate having safe drinking water, although it is easy to take for granted. We recognize the worth of water when the well is dry or when the quality of our drinking water changes. In the U.S., one of the reasons customers take safe drinking water for granted is that the overwhelming majority of water purveyors do such a wonderful job supplying consistently safe water to the public.

The task of providing safe drinking water is not as easy as it seems. That clear glass of tap water you drink today is not the product of luck, but the result of hard work on the part of the water system, as well as those who set the quality standards and those who assist the water system in meeting those standards. The jobs of those who oversee and direct the operations of water systems are destined to become more complex over time.

Running the Water System Like a Business

Is it possible to imagine any business-type enterprise that shouldn’t be run like a business?

Even faith-based institutions are run like businesses these days. And though scholars debate whether government should be modeled on the private sector, public administrators know that there are governmental activities that are required to be operated as enterprises. By accounting standards, government-owned utilities are required to be run like businesses.

Whether public, private, or not-for-profit, customers benefit when water utilities are operated in a business-like manner. Businesses succeed when they know who their targeted customers are and know what they want; when they are able to produce what the customers want in a cost effective manner; and when they can identify—and to the greatest extent possible—reduce the risks to their survival in the marketplace over the long term.

Can you imagine a business today that requires capital investments to begin their work that can possibly survive without keeping that capital investment up to date? Thinking about our water systems in this way brings sustainability to the forefront and requires attitudes about user charges to change. Are governments and business really all that different when it comes to protecting the public’s capital investments?

We’ve Built the System, Isn’t that Enough?

It isn’t enough to build a system, repay creditors, and operate it effectively over time.

Sustainable public water systems also must reinvest in the capital assets that are needed and used to produce what is sold: safe drinking water. To drive home this concept, let’s use a business example to illustrate the idea of reinvestment in productive assets.

I’m going to create a business—Awesome Widget Enterprises, Inc. (AWE)—that manufactures widgets. To start up the business, I’ll borrow money from the local bank to buy a widget manufacturing machine. The machine is supposed to last for 15 years and I’ll pay back the loan in five years. With all of the other necessary operations in place, I’ll begin producing widgets and making sales. The plan is to make 100 widgets a day, the sales of which will meet all my business costs including paying back the bank. Fast forward to the future.

Everything goes great for the first 10 years. We paid back the loan after five years and AWE widgets are a well-established product in the marketplace. In year 11, though, we notice that our total production is still 100 widgets per day, but nine are defective and can’t be sold. To overcome this loss of salable widgets, we raise the price of the ones we can sell. In year 12, we are experiencing 20 defectives per 100, but we can’t raise the price and still be competitive in...
the marketplace. Now what?

Management decides that it’s time for AWE to renew its production capability. Because AWE has been expensing depreciation of its widget machine through part of its sale revenue, there are some funds available to offset the costs of replacing the machine.

In effect, part of the sale of each widget helped to pay for the wear and tear on the machine. Another part of the each sale paid for the retirement of the debt (at least for the first five years) that we took on to buy our first machine. AWE could wait until the current machine was completely broken, but management realizes that they need to produce a certain number of widgets at a competitive price to bring in enough money to keep the business going. And they’re not going to wait for the government or anyone else to bail them out.

Should government-operated enterprises, such as water systems, operate under different business rules? Is it appropriate for environmental operations to ignore the cost of system replacement and pay only for their operating and debt costs? If so, can we expect these systems to provide sustainable public goods and services effectively and efficiently over time?

The answers to these questions are no, no, and probably not. It isn’t appropriate to expect that government enterprises or “businesses” should have financial management characteristics that are different from well-managed private businesses. (I emphasize well-managed here because the road to success in the private sector is strewn with the wreckage of businesses that have been mismanaged.)

The difference, however, is that public environmental systems can last for a very long time before their capabilities to provide service are eroded to the breaking point. And that timetable, the term of office of policymakers, and the memory of the customers aren’t always in sync.

A Well-Managed Water System

Our case study of AWE, Inc., showed that reinvestment in capital assets was necessary to rebuild profitability and market share of widget sales. We should assume (for the sake of this example) that AWE’s management and board of directors had implemented the classic annual business cycle model that is depicted in the management imperative graphic. This cycle is presented in its classic form with four key functions: planning, budgeting, reporting, and analyzing. Between these key functions are actions that allow the business to move smoothly from one function to the next. The actions are:

- translating (moving from a plan to a budget),
- executing (taking the budget authority and putting it into action),
- evaluating (monitoring the budget activity reports and checking to see that everything is on track)
- responding (taking action on the analysis of the year’s activity and preparing for the next cycle)

Notice that the water system board and management are in the center of this process. Ideally, they would be in the middle of all of these events to ensure that the course they have set for the water system is successfully achieved. The annual business cycle is the second part of the management imperative.

Step 1: Plan

Planning is simply the process of deciding where the water system is going to be in the next year and future years. The plan sets the course of the water system over time. Planning can be an elaborate process requiring specialists in the planning field who know both the nature of the business and the variety of planning methodologies and techniques that could be applied. Or, planning may be more informal, with the function carried out by existing staff and officers in a more informal way.

Regardless of the planning resources available, this function of the business cycle can be simplified to three steps: (1) determining the organization’s mission, (2) setting goals, and (3) formulating objectives to meet those goals. Everything that had to be done to implement AWE’s long-term goals required resources. Their success was contingent upon having a clear idea of what needed to be done (a plan) and a budget to implement that plan. Water systems can (and should) also operate according to the classic business cycle.

Because what is planned affects what is budgeted (the second step in the annual cycle), systems need to know how much of the year’s activity is either routine or new. Most experienced managers know that 90 percent or more of their budget represents the same activities from one year to the next. The other 10 percent or so represents new projects, changes in regulations, changes in operations, etc. Assuming that the system budget meets full cost financing requirements, such as the cost of system replacement, managers need to consider how much of a reinvestment effort is represented in the current budget and how much would be an increment above current budget levels.

An expense budget that considers the full costs of the system generally includes the following major areas: operations and maintenance, general and administrative expenses, capital improvements (both new and replacement), debt, and reserves.

But, what if the system isn’t fully funded now? What if operational costs are budgeted along
with new facility project costs but not system replacement costs? Most water system budgets do not include an expense line item for depreciation. If reserve expenses are not significant or appropriate to meet annual system replacement costs, then the budget will be inadequate. By under-funding the water system, we end up trying to manage a system that is increasingly unsustainable.

All public investment in infrastructure carries with it a responsibility to see that that investment has a lasting benefit. When water systems are built, but not continually updated, the benefit of that original investment erodes over time. If, for the sake of keeping rates low and avoiding public criticism the full costs of system replacement are not included in the budget, then the system will wear out, wear down, and need to be replaced. Often the replacement is funded through the issuance of debt. This means that future users will need to pay for the replacement of the system that current users use up.

In many communities, residents and their elected and appointed water system stewards seem to think that the debt payments they are making today for the system they built 15 years ago is magically allowing that system to last forever (or certainly to last until the end of their terms in office).

The new financial reporting standards for governments, GASB Statement 34, expands the options for how this can be done by allowing a modified approach to reporting system reinvestment in addition to the depreciation method. The modified approach more specifically expresses the value and condition of capital assets—information that can be extremely valuable for decision makers as well as the general public.

In funding a sustainable system, reinvestment expense should be determined. What do we need to know? First, an inventory of capital assets should be performed. Second, a determination of remaining useful life or condition of the assets provides a sense of when infrastructure should be replaced or managed more aggressively to provide additional years of service. Next, a calculation is made of how much funding is needed and when it is needed to finance replacement of assets should be performed. Models such as CAPFinance, developed by the Environmental Finance Center at Boise State University, can help in this process.

In addition to these steps, the system managers and board members need to decide who should pay (current and/or future users) and what combination of reserve or debt financing should be used. These latter decisions are certainly the most controversial and require political courage.
Who’s Going to Pay for Rebuilding the System?

Commitment to protecting the public’s investment can be strengthened by self-funding the program. Increased user charges are probably necessary to implement a comprehensive management approach. The process of informing citizens and gaining their support in providing those dollars will be a strong incentive for managers and board members to continue to use financial and performance information to gauge the efficiency and effectiveness of the system and to make long-range financing decisions.

Municipal enterprises, such as water systems, should be funded so that the full costs are offset by user charges. Incremental capital reinvestment costs should then be funded through increases in user fees. To the extent that the fee increases are related to system replacement costs (as discussed earlier), decisions can be made about whether replacement should be debt-financed, funded through reserves, or through contributions of capital (grants), or by any combination of the three. It is the combination of funding sources that determines the impact on current and future customers.

Obviously, use of these three categories of funding have different cost impacts. Self-funding of capital reserves for system replacement offers the opportunity to earn interest that may offset the inflationary impact of future replacement. Debt financing adds the costs of interest payments. Grant funding and contributions of capital are just plain hard to get. The mix of system assets and replacement needs of any system will probably require the use of all three.

The Environmental Finance Center at Boise State University has developed a Guidebook of Financing Tools, a guide to hundreds of financing techniques that have been identified for funding environmental projects. It is also a great tool to use when seeking an explanation for the public or the press on how these funding mechanisms work.

The bottom line is that sustainable systems require that the full costs of running the system today and in the future be both identified and funded. There are many reasons to avoid reinvestment expenses as additional costs that require increases in user fees. One of the most popular may be the “scream factor.” This is the phenomenon that occurs whenever user charges are increased—increase the fees and people will start screaming. But the screaming will also start when the public begins to realize that the essential services that they took for granted all these years won’t produce the satisfactory levels of service they’ve come to expect. Then the question will be: How could you let this happen?

The truth is that the customers own the system, and the managers and board members are merely the stewards. Reinvestment in the public’s infrastructure assets is the work of good stewards.

Getting Started and Knowing Where You’re Going

The hardest part of reinvestment—especially if it hasn’t been done adequately—is getting started. Sometimes it’s best to know the place you need to get to. Since we know we have to get the customers on board, they’ll be better passengers on the journey if they also know where they’re going. Here are the steps in the process:

- Review the mission and goals of the water system.
- Take an inventory of what the community owns, calculate its value and useful life, and share that information with the citizenry.

Good luck in the journey!

To learn more about tools, such as CAPFinance and the Guidebook of Financing Tools, visit the Environmental Finance Center at Boise State University’s Web site at sspa.boisestate.edu/efc/Tools&Services/CAPFinance.htm.

Bill Jarocki is the director of the Environmental Finance Center at Boise State University. He has taught at the National Environmental Services Center’s annual Training Institute.