

Current Leading Issues in Solid Waste Financial Planning

Long-term financial planning is a necessary evil in an era where solid waste agencies are faced with the mantra of doing things cheaper, quicker, and faster. BY MARC J. ROGOFF

Over the past 35 plus years in the solid waste industry, first as a solid waste agency manager and now for the last 30 years as solid waste consultant, I find many agencies continuing to grapple with major issues of finding funding sources for their programs and developing fair and equitable rates for their customers. The planning issues, which we will discuss in the following paragraphs, appear to bubble up to the surface whenever rate or financial planning studies are being considered.

Fleet Replacement

With the ever increasing costs of vehicles and equipment for solid waste management, many communities are evaluating their budgets and how they approach their overall vehicle and equipment replacement programs. Historically, local governments have reduced fleet sizes and deferred replacements during economic downturns or times of budget shortfalls to provide a balance against the need to increase user fees or rates to meet operating expenses. While one can argue that the decision to reduce fleet replacement spending is a valuable corrective action, it could result in increasing fleet expenses for these agencies if they tip the balance of fleet replacement spending too far.

All vehicles and equipment used in public works eventually wear out and become more expensive to maintain and operate. That is, unplanned maintenance and repairs due to component failures tend to rise with increasing age of the vehicles or equipment. These unpredictable incidents result in such events as increasing shop time, delays in securing major parts for repair, as well as delays in getting the vehicle or equipment back into operation.

Capital costs tend to decline over time, while operating and maintenance costs increase. The combination of these two basic curve functions results in a “U-Shaped” cost curve, oftentimes called “total costs.” The economic theory of vehicle and equipment

replacement predicts that vehicles and equipment should ideally be replaced during the flat portion of the curve, that is, at the time annual operating costs begin to outweigh capital costs. Deferring replacement purchases in order to accommodate short-term budget shortfalls can result in future increased replacement costs and oftentimes unmanageable fleet replacement backlogs.

Commonly, public sector organizations attempt to purchase solid waste vehicles and equipment using cash generated from their annual operating income. In essence, this is somewhat akin to an individual paying for a personal vehicle in cash from his or her annual salary—a somewhat daunting task for most people. Similarly, many agencies have historically used cash as the primary means of funding their replacement program. Since it involves no interest or debt financing costs, cash purchases are viewed by many finance and solid waste managers as a financially prudent method for funding fleet replacement. Unfortunately, the use of cash to primarily fund vehicle and equipment replacements results in volatile funding requirements with high annual peaks and valleys.

For example, in order for many agencies to replace a “big ticket” vehicle or piece of equipment, it might be necessary to freeze a significant portion of other fleet replacements and cut other operational programs (i.e., training, safety, and professional development, etc.) within the agency’s overall budget authority. In my opinion, this almost always results in a deferral of some replacement purchases. Typically, where agencies use cash as the primary means to fund vehicle and equipment purchases, one often finds older fleets, higher maintenance costs, and backlogs in purchases.

There are a number of alternative vehicle/equipment purchasing programs which are being used by solid waste agencies to preserve cash. Each of the financing methods described below has its own particular advantages and disadvantages, which can be

influenced by local municipal circumstances. Clearly, there is no single best approach to financing fleet replacement costs. With the financial challenges facing local governments today in providing cost-effective and timely solid waste management services, evaluation of these various approaches should be made focusing on ways to minimize costs and providing value-added services to the public.

Guaranteed Buy-Back Programs

These buy-back programs are an alternative to an outright cash purchase of fleet equipment. That is, the agency has the right to sell, lease, trade or otherwise dispose of the vehicle. However, in the bid for equipment, the bidder guarantees that he will repurchase the machine from the agency at the end of a specified hourly or annual term from the date of delivery. Typically, many agencies use these provisions to keep maintenance costs to a minimum and to enable them to procure new equipment at a frequent rate.

Sinking Fund

In order to fund fleet replacements, many solid waste agencies have used a sinking or revolving fund to spread the costs of funding new vehicles or equipment over a longer period of time. Essentially, this type of financing approach requires that an agency make periodic payments into a fleet replacement fund thereby ensuring that there will adequate funds available for the replacement vehicle or unit when it comes due for replacement.

For example, if the initial purchase price for a vehicle is \$120,000 and the replacement cycle is determined to be six years, then \$20,000 is budgeted every year to pay for the replacement of the vehicle. In comparison to the cash method, a sinking fund helps even out the annual volatility of the agency’s replacement funding needs. Critical to its success is the ability of the agency to properly account for the inflationary increases in purchase prices for the replacement vehicles or equipment, interest earning on the funds

placed in reserve, and salvage values of the vehicles or equipment, if any.

In essence, a basic advantage to this approach is that it enables the agency to predict its annual funding needs over a long planning horizon. Notwithstanding, a major disadvantage of the sinking fund method of funding, however, is that it oftentimes is prohibitively expensive to establish for most agencies if there already a large backlog of fleet replacement needs. That is, a large amount of cash must be deposited initially to create the working capital necessary to start replacing vehicles or equipment. Further, there is always the temptation on the part of municipal officials to raid such funds during lean budget years undermining a well-designed fleet replacement program in a single year.

Debt Financing

In comparison to cash or sinking fund financing programs, debt financing typically allows solid waste agencies an option to spread out the costs of fleet replacement. Rather than trying to accumulate cash reserves in a sinking fund, an agency can borrow funds from financial institutions, either as lines of credit, fixed-term, bank loans or bonds, repaying

the outstanding principal and interest on a periodic basis once the vehicles or equipment are placed in service. Similar to the sinking fund method of financing fleet replacement, debt financing enables the agency to eliminate the peaks and valleys in replacement funding requirements. Also, in some respects the predictable natures of the annual expenditures have tended to make replacement funding less subject to controversial budget decision making. Historically, many solid waste agencies have shied away from debt financing to fund their fleet replacements. Oftentimes, much of this is due to local or managerial preferences to avoid high interest charges for vehicles and equipment that have a short lifespan. In other cases, state or local laws prohibit the use of debt financing without voter approval.

Leasing

Leasing or lease-purchase options are other commonly used methods by solid waste agencies for financing fleet replacements. Usually, these financing programs are offered directly from the manufacturer or third-party distributor. In comparison to the other financing methods discussed in the paragraphs above, leasing enables the agency

to pay a fee ("installment purchases") for a vehicle or equipment and then essentially "walk away" from it after a specified period.

New municipal lease programs now being offered on the market allows agencies to have new trucks every two years with full factory warranties on the vehicle chassis and body. A variant of leasing is a lease-purchase where an agency can own the equipment. Overall, there is no hard and fast rule in lease financing since the terms may differ from manufacturer to manufacturer. In most cases, their obligation terminates if the department fails to appropriate funds to make the renewal year's lease payments. Because of this provision, neither the lease nor the lease payments are considered debt. Payments can be structured monthly, quarterly, semi-annually, or annually based on the cash flow of the agency.

What makes municipal leasing financially desirable is its treatment of interest under Section 103 of the Federal Internal Revenue Code. The interest earnings under a properly structured and documented lease are exempt from federal income tax under the same tax laws that enable a municipal bond to carry a tax-exempt rate. Because the lessor does

We Have the Better Solution

TY Cushion Tire Brings Added Value



Aperture holes dissipate heat, reduce weight, and provide a cushion ride.

Solid rubber is flat proof and extremely durable

Benefits of Solid Tires

Fits Original equipment wheels and has more rubber than tires with expanded wheels



- Eliminates downtime
- Presses onto OEM Wheel
- Lasts up to 4xs longer than pneumatic or foam filled tires
- Excellent traction reduces spinning
- Reduces wear and tear on your equipment
- Lower lifetime cost



Various tread designs available



visit us online
www.tycushiontire.com
(888) 870-9797

Visit us at Canadian Waste
& Recycling Expo – Booth #1661

not pay federal tax on the interest earned, the tax-exempt lease oftentimes carries a much lower interest rate than other kinds of leases and installment loans thus significantly lowering the cost of financing for the borrower. This enables the agency to replace vehicles or equipment more frequently without having to acquire significant cash reserves before purchases the replacements.

Assessment Programs

Special solid waste assessments are increasingly being evaluated by many solid waste agencies. A non-ad valorem special assessment is a charge (or assessment) against a specific parcel of property based on a specific benefit which the property has or will receive. The assessment normally is billed annually as a separate line item on the property tax (or ad valorem tax) bill. For collection purposes, it is considered a part of the tax bill and carries the same penalties for failure to pay as do the property taxes on the tax bill. However, unlike the ad valorem tax which is based on the assessed value of the property, the non-ad valorem special assessment is based solely on the benefit received by the property for the service received. Non-ad valorem special assessments typically are authorized and regulated by state statute and contain several provisions which generally must be strictly followed to ensure the validity of the assessment. Many local governments have utilized these statutes to impose fees for solid waste disposal, collection, or recycling services.

Advantages of Using a Non-Ad Valorem Special Assessment

Billing

Since non-ad valorem special assessments are billed annually on the property tax bill, there are many benefits:

- **Low Administrative Costs:** The use of the property tax billing system results in low administrative costs.
- **High Collection Rate:** Property tax collection rates, and thus special assessment collection rates, are considerably higher than those obtained through monthly billing processes.
- **Mortgage System:** Those residents who pay their property taxes as part of their mortgage will be able to pay the assessment monthly as part of their mortgage payment.
- **Reliable Revenue Source:** The revenue source is very stable, very constant and collection levels are predictable.
- **High Levels of Participation:** Historically, as solid waste charges increase, program participation decreases. In many cases, the very individuals who need the service the most are the first to drop out. Since the service is already paid for under the special assessment system, there is incentive to participate.

Flexibility

Non-ad valorem special assessment systems are flexible. They can be designed to support any or all aspects of a solid waste management system. They can design and implement a non-ad valorem special assessment program tailored to a local government's system, (mandatory service, voluntary service, franchised service, or free-market service). For example, a system could assess:

- all solid waste system costs
- residential collection and disposal costs, charge a tipping fee for commercial

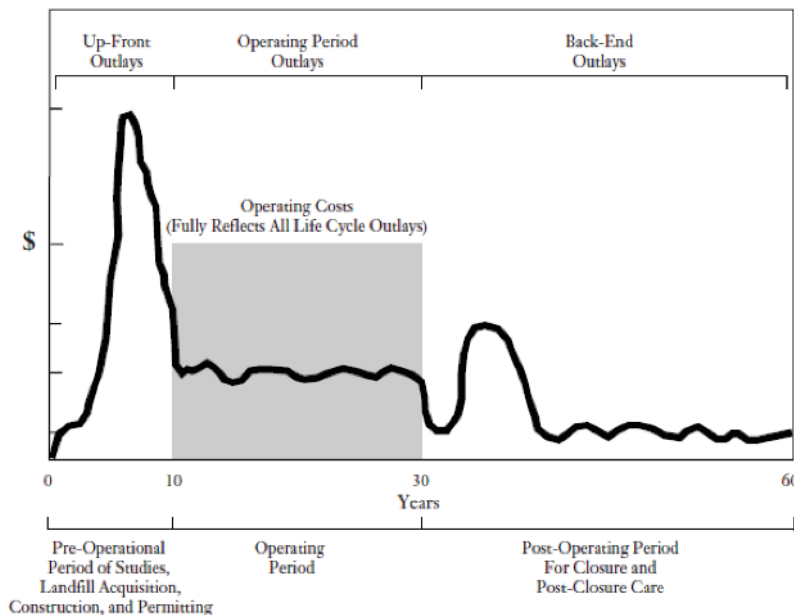


Exhibit 1. Illustration of landfill life cycle outlays and costs

disposal, and allow the haulers to bill all commercial collection services

- residential disposal costs, charge a tipping fee for commercial disposal, and allow the haulers to bill all residential and commercial collection services
- the capital and debt portions of the disposal costs, charge a tipping fee for disposal operating costs, and allow the haulers to bill for all collection costs
- all residents for disposal, assess all residents within an "urban" zone for collection, and allow the hauler to bill those residents outside the "urban" zone for collection as needed; charge a tipping fee for commercial disposal; and allow the hauler to bill commercial collection services
- all disposal and recycling costs and allow all residential and commercial customers to choose their own collection options

Areas of Concern

There are two major areas of concern when designing and implementing a special assessment program. First, the assessment for each parcel must be based on the benefit received by that parcel. Properties receiving like benefits should be assessed equally, and properties receiving unequal benefits should be assessed on that basis.

Second, the "assessment role" (the list of all properties to be assessed), should be complete and accurate. The best source of data for compiling the assessment roll is the records of the county or city official responsible for property appraisal and valuation. However, limitations may exist with the data because these records are maintained for the purpose of determining property valuations, not for performing solid waste assessments. Additional information must be developed in order to convert the initial records into a complete and accurate assessment role.

Post-Closure Reserves for landfills

Lastly, I am increasingly being asked by many solid waste agencies to provide financial guidance on the long-term costs of operating a landfill. Full-cost accounting (FCA) for landfill management has been advocated by US Environmental



For related articles:

www.mswmanagement.com

Protection Agency (USEPA), beginning with the promulgation of the landfill disposal regulations in the 1980s. FCA, unlike cash flow accounting, considers direct, indirect (overhead), upfront (past), and back-end (future financial liability) expenses. As shown in Exhibit 1, landfill assets last for many years and exhibit all of these costs, which must be considered in effectively pricing a landfill's long-term tipping fee.

The Federal landfill regulations (Subtitle D 40 CFR 258) and implementing Arizona regulations mandate specific standards for all owners/operators to follow when closing a landfill and setting up a program of monitoring and maintenance during a 30-year post-closure period.

For 30 years after closure, the owner/operator is responsible for maintaining the integrity of the final cover, monitoring ground water and methane gas, and continuing leachate management. All landfills must also comply with the financial assurance criteria. The owner/operator must demonstrate financial responsibility for the costs of closure, post-closure care, and corrective action for known releases. This requirement can be satisfied by the following mechanisms:

- trust fund with a pay-in period
- surety bond
- letter of credit
- insurance
- guarantee
- state assumption of responsibility
- multiple mechanisms (a combination of those listed above)

Existing Federal and State landfill regulations require that consistent monitoring procedures be followed each year during the 30-year post-closure care (PCC) period. This essentially means that the operating entity of the landfill must continue to monitor for groundwater contamination and LFG in a similar fashion as during the pre-closure period.

The 30-year PCC period prescribed in the regulations can be decreased or extended by the Director of the implementing agency of an approved state if it is determined that a change is protective of human health and the environment. Unfortunately, there is little, if any, guidance provided by USEPA to make this affirmative decision, and if this decision is made, what ground rules can be established on the frequency of monitoring that can be required.

Presently, there is significant uncertainty on the methodology that will be used by state regulators in evaluating whether or not any landfill at the end of its responsibility at the 30-year PCC period will need any additional annual monitoring. Some large agencies and private operators, as well as professional solid waste organizations (Environmental Research and Education Foundation and Solid Waste Association of North America), have developed research programs based on analyzing the monitoring data that indicate the performance of the landfill.

Final Words

Getting a firm handle on a solid waste agency's operations is a tremendous challenge for any solid waste agency manager, particularly in this era of "lean and mean" local government. Doing more with less is the watchword for most city and county commissioners across the country still reeling from the financial impacts of the Great Recession. The three financial planning issues discussed above are critical whenever a customer or tipping fee analysis is conducted. **MSW**

Marc J. Rogoff is a Project Director with SCS Engineers in Tampa, FL.



TOUGH
Built for the Recycling Industry

VERSATILE
Receive, Store & Meter

POWERFUL
KEITH Drive Unit

WATCH IT WORK
Scan code or visit:
youtube.com/user/KeithMfgCo

AUTOMATE MATERIAL HANDLING
IT'S WHAT WE DO

KEITH WALKING FLOOR® Bins

- Efficiently Store a Variety of Recyclables
- Automate the Feeding Process
- Easily Integrate with Downstream Equipment

 The **KEITH® WALKING FLOOR®** system unloads what you need, where you need. It's safe, efficient and fast.

Waste & Recycling Expo Canada

BOOTH #1621

www.keithwalkingfloor.com
1-800-547-6161

KEITH
MANUFACTURING CO

2016 KEITH Mfg. Co. KEITH, KEITH logo and WALKING FLOOR are registered trademarks of KEITH Mfg. Co. Manufactured under license.