

THE OPTIONS FOR



Solid Waste Fleet Replacement

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Aging or obsolete equipment require a greater level of maintenance and repair to prevent out of service conditions. Older equipment that has reached the end of its useful life will require expensive repairs beyond standard preventative maintenance because as a vehicle ages its critical systems become unreliable. In the case of solid waste vehicles, hydraulic systems, chassis drive trains including transmissions, and fundamental body wear require major and costly mid-life rebuilding. It is at this point in a vehicle's life that a decision be made to either replace the unit or rebuild it.

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.' (Exhibit 1) 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.

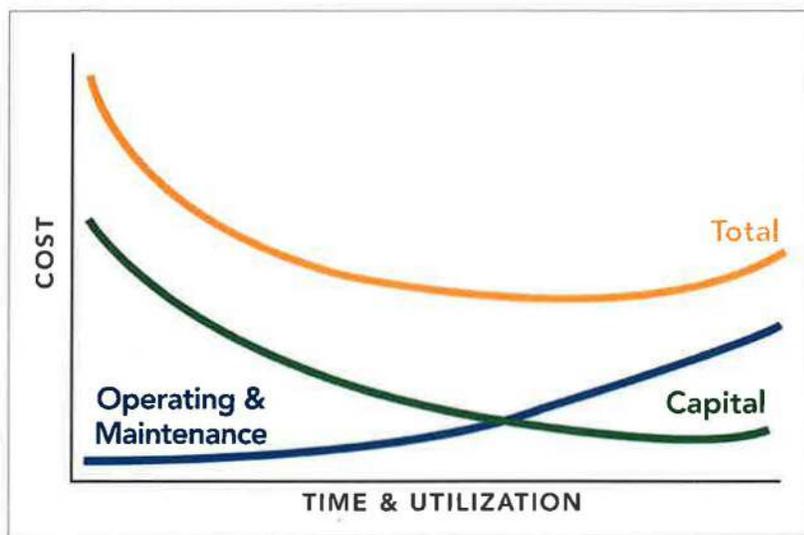


EXHIBIT 1: Fleet Replacement Cost Curve

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

Buy-back programs are an alternative to an outright cash purchase of fleet equipment. A buy-back program allows an agency the right to sell, lease, trade or otherwise dispose of the vehicle. However, in the bid for equipment, the bidder guarantees that they will repurchase the vehicle 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 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.

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