Prior to 1998, Dunedin, FL, which is located on the west coast of Florida, delivered solid waste collection services using three-man crews and rear-loading vehicles. As part of an initial five-year business plan in 1998, the city’s Solid Waste Division underwent a workforce reduction of ten employees (23 from 33) as a result of switching residential collection to one-man, side-loading vehicles. Today, the city currently provides residential and commercial waste collection services for about 12,900 and 500 customers, respectively, within the city limits. The city provides residential collection services to about 1,100 homeowners outside the city, but adjacent to existing service routes. Residential curbside collection of municipal solid waste is provided using a combination of automated and semi-automated collection trucks and individual 90-gal wheeled containers, along with rear end load collection trucks for yard waste and bulk collection. Residential customers are provided unlimited bulk pickups, such as furniture. Further, the city offers a curbside recycling program for about 1,100 homeowners. Commercial pickups are serviced using front-end loaders. The city also offers commercial roll-off services.

The city’s solid waste system is managed using a separate enterprise fund and bills for solid waste collection using a combined utility bill (water, sewer, solid waste). Until the recent rate increase, customer fees had been unchanged for 17 years (1989). Not unlike other, similarly sized municipalities offering solid waste collection services, Dunedin was at a crossroads in developing a strategic vision for the future. Increasing pressure from taxpayers and the need to develop a long-range fleet replacement strategy required the city to look for ways to enhance revenues as well as looking for ways to reduce costs through greater efficiencies. Continued increases in labor, fuel, maintenance, and internal city charges were impacting the financial viability of the solid waste system as fund balances were being drawn down. Layered on these issues was the need to communicate the urgency for an overall rate increase after 17 years, while at the same time maintaining the full scope of services being provided.

The Dunedin story is illustrative of the issues common to many solid waste collection programs throughout the country—how to do more with less and communicate the urgency of the city’s financial tsunami.

At the beginning of our effort, we reviewed background data and information concerning residential collection revenues and operating expenses. This included the following critical information: staffing and organizational charts, salary and benefit rates, customer rate schedules, customer and container counts, fund account summaries (totals and comparisons), fleet maintenance and fuel costs, past and current operating budgets, fleet replacement schedules, and projected fleet financing plans.

**Saving Money**

At the outset of the study, we tried to address several issues that could result in cost savings to the city’s collection program. Several of these are fairly typical of the day-to-day experiences of running a large automated collection program.

**Yard and Bulky Waste Collection.** Yard waste collection was becoming an increasing burden for the city because it had no absolute limits on the waste volumes that residents could place curbside. That is, yard waste volumes that are required to be collected on each route varied dramatically, making it difficult for staffing and equipment scheduling since there are no absolute maximum quantities. The city’s ordinance was unclear on the volumes that can be placed curbside when cut and bundled. Until recently, there was a benefit of collecting yard waste and “outside-the-barrel” Class III waste in terms of reduced tipping fees. However, tipping fee rates for these local private
landfills have escalated dramatically. Consequently, eliminating outside-the-barrel wastes would allow the city to provide 100 percent yard waste collection. This change would enable the city to get credit for these materials as source separated recyclables and increase diversion rates by an estimated 25 percent. This would also equate to an estimated $27,300 annual cost savings to the city. High-volume residents could obtain a “second barrel” service for $7.68 (half price) per month.

Gainsharing/Employee Incentives. To further increase efficiencies, many local governments have implemented programs to improve crew productivity through development of special pay structures and “gainsharing” initiatives. Typically, most public collection systems utilize an incentive or “task pay” system whereby each crew is assigned to a specific route with a fixed number of stops each day. Under this type of program, the crew is given the incentive to complete the route as quickly as possible, while at the same time ensuring that all stops are collected for that route. A disadvantage to this type of system is that routes can become unbalanced with waste generation and population growth. This becomes an increasing problem when communities shift to a pay-as-you-throw type of fee structure. Of greater concern is that with the shift to pay for performance compensation systems occurring in many industries, this type of task incentive is not aligned with the overall goals and objectives of the organization. Rather than rewarding safe operations and high service levels, the task has become an incentive for speed of service.

The task system is a compensation plan that was developed in the solid waste industry years ago to compensate generally low paid workers, encourage prompt collection, and complete service routes before outdoor temperatures became uncomfortable. Under this task system, productive employees are not penalized for clocking out early when they finish routes ahead of schedule, and are compensated for their full shift. The task system has become standard practice throughout the municipal solid waste industry, and can be a useful management tool for otherwise underpaid city workers, when not abused. However, many solid waste systems have taken the time to examine this compensation plan, and realize that it fails when this “undertime” becomes a regular or expected benefit. Undertime, defined as hours for which employees are paid but do not work, is standard in solid waste collection. Undertime potentially threatens a safe work environment where speed and risk escalate in an effort to improve this expected benefit.

Increasingly, the public sector is moving away from the incentive or task pay system towards work strategies that require more work from each crew to keep collection costs more in line with that of private haulers. To overcome the challenges of working quicker and faster, local governments are providing gainsharing bonuses, absenteeism, safety, and quality service incentives, in conjunction with route/vehicle selection initiatives to individual employees or crews based on meeting defined budget or efficiency goals.

Revenue Enhancement Opportunities

In addition to looking for cost savings, we also evaluated a number of feasible opportunities to expand revenues and services. The city currently provides residential solid waste collection services to roughly 1,250 single-family homes in the unincorporated areas of Pinellas County, which are located in proximity to existing solid waste collection service routes. This represents a 65 percent increase since January 1, 2005. This enables the city to maximize the efficiency of current collection equipment and personnel. The city charges an additional service fee of 11 percent to homeowners residing in these areas. Under current business conditions, it appears that the city could find similar opportunities to service additional nearby homeowners and commercial accounts to further maximize the efficiency of existing collection routes and equipment, while at the same time increasing system revenues for city residents.

In an effort to maximize this opportunity, the division strategically selected subdivisions in close proximity to current routes and developed a marketing initiative in response to resident’s request for city services. By integrating these new customers into an existing route structure with established overhead operating costs, the integrated revenue stream has a far greater impact. Additionally, through its marketing efforts, the city bundled services to these unincorporated county customers and mandated blue bin recycling, currently a volunteer program in city limits.

The Rate Study

At the outset of the work effort, our team developed a Microsoft Excel™ spreadsheet-based rate model to assist in the evaluation of several feasible residential rate structures. The model includes the following facets:

- An analysis of operational funds (personnel, services and supplies, landfill disposal charges, internal service charges).
- Analysis of fleet replacement and financing program (vehicle replacement by year).
- Funds analysis (reserve requirements, transfers to general fund, beginning and ending fund balances).
- Revenue sufficiency analysis (annual...
Individual spreadsheets were linked to develop an overall rate model to evaluate the impact of critical city cost and program revenue areas on different potential rate options.

A key requirement of the rate study was to evaluate a means of financing nearly $4.3 million in automated side and front-loader vehicle replacements over the next five years.

A number of years ago, a decision was made by the city to fund its own solid waste collection vehicles, and to not participate in the central fleet replacement program. In essence, the central fleet program required the city to both buy a vehicle at replacement time and also annually fund a reserve for the future replacement cost of the vehicle. Consequently, to now convert solid waste vehicle replacements to an internal funding scheme through central fleet was believed to have an unacceptable impact on rates. Our analysis of the financing options also strongly suggested that the best approach for the city was to initiate debt financing to fund the purchase of the replacement vehicles instead of procuring the collection trucks through annual cash purchases. In this way, the city could spread out its capital costs and eliminate the peaks and valleys in its replacement funding requirements.

With the entire first generation automated collection fleet aging simultaneously, vehicle replacements, per the current system, would require a large outlay in the same year. A strategy was developed to create a phased-in replacement approach, and based on current vehicle maintenance expense experience, higher cost vehicles (one-third of automated side loaders) were scheduled for replacement two years earlier than originally planned. The vehicles with the lowest maintenance costs are expected to be replaced in service past their originally scheduled replacement date, while the remaining one-third of the fleet would be replaced per the original schedule. With this new replacement strategy in place, the average age of the fleet can be reduced to five years, with new vehicles arriving, and older units retired on a regularly planned basis, rather than the majority in a single fiscal period.

Once the fleet replacement financing was determined, three different rate structure alternatives were modeled over a multi-year planning horizon (See Figure 2):

- Three annual rate increases of 3.0 percent in fiscal years 2007 through 2009 with a CPI increase planned over the entire planning horizon.
- Three annual rate increases of 3.25 percent in fiscal years 2007 through 2009 with a CPI increase planned over the entire planning horizon.
- Three annual rate increases of 3.50 percent in fiscal years 2007 through 2009 with a CPI increase planned over the entire planning horizon.

The CPI adjustment was designed to enable the city to keep pace with its increasing labor, benefits, internal charges, and operating expenses.

These three alternatives provided decision-makers with options to assist them in future planning needs, and allowed for either an aggressive, moderate, or conservative approach to a segment of future utility rates. In addition to a solid waste rate study, the city was also faced with water and wastewater rate reviews simultaneously. Providing these options allowed decision-makers the ability to fully consider their stakeholders, and the impact of multiple rate increases on residents, compared to the speed of financial recovery of the solid waste fund.

The findings of the solid waste services analysis and rate study enabled our team to craft a politically acceptable and balanced program, incorporating operational changes and modifications in customer service levels, as well as adjustments in fees and charges. For example, we were able to amply justify to our city commission that we could reduce some costs by eliminating underutilized collections during several holidays, thereby reducing overtime and fleet operation costs, and still be in line with service provided by neighboring jurisdictions. Similarly, modifying collection of bulky outside-the-barrel-waste was shown to greatly reduce annual disposal costs. These savings enabled us to offer a well-received ten percent discount program on customer rates for seniors. Lastly, our study illustrated the enormous savings in maintenance and repair costs that we could achieve by reducing the life cycle for capital replacement from seven to five years, through a phased in approach.

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