SUMMARY

Lee County, on the southwestern coast of Florida has been laying the groundwork over the past decade to establish self-sufficient means of funding an environmentally sound, integrated and diversified solid waste system. This system and the means used to fund it, serves as a model for other communities faced with similar issues. The County has taken a pro-active approach in dealing with issues as they arise and strives to not only control costs, but to also distribute the costs equitably amongst all users of the system.

KEY WORDS

Flow Control, Solid Waste Funding, User Fees, Assessments

I. INTRODUCTION

Lee County, on Florida’s Gulf Coast, is one of the country’s fastest growing counties, with a population of approximately 380,000, which increases to almost 500,000 during the peak tourist winter months. The area which includes the City of Fort Myers and the beautiful beaches and wetlands which surround the area, is somewhat less developed than the counties on the eastern coast of the state.

Over the past decade, the County has been developing an integrated solid waste system which serves as a model to other communities. Its state of the art facilities are funded through a self-supporting enterprise fund, not through tax dollars. For the most part, both residents and businesses pay for their solid waste services in proportion to the amount of waste they generate making the system equitable to its users. While other communities have been dealing with ever increasing tip fees and dwindling quantities of waste being delivered to these more expensive facilities, Lee County has managed to lower the tip fee at its resource recovery facility while utilizing other means to generate revenues. This has ensured a steady and slowly increasing flow of waste into its system, and has ensured its fiscal stability.

In 1985, the Lee County Solid Waste Disposal and Resource Recovery Act was enacted, authorizing the County to finance, build, and operate a resource recovery system for the benefit of its citizen’s waste disposal needs. This state legislation enabled the County to control the flow of waste stream to the resource recovery facility, ensuring a stable financial base to operate and maintain the facility. A few years later, legislation was passed by the state, requiring each county to reduce the amount of waste disposed by at least 30% by the year 1995. In 1989, Lee County adopted a Solid Waste Master Plan, outlining the County’s plan to handle all of its solid waste over a 40 year period. At that time, waste was landfilled at a privately owned landfill located in the County. The cornerstone of the County’s newly developed plan was to aggressively pursue recycling to meet the state’s mandate, to develop a county-owned but privately operated mass burn resource recovery facility to manage those materials which couldn’t be recycled, and to develop a regional landfill to handle ash from the facility, as well as any materials which could not be handled by the plant.
The County has been able to successfully finance its plan and has far exceeded its original goals for recycling. In addition, the costs for providing these top-notch services have been stabilized, and are less than for many other communities. All of this has been accomplished through the County’s foresight, careful planning, and innovation.

II. THE SOLID WASTE SYSTEM

Unincorporated Lee County is currently divided into 5 waste collection areas, which receive waste collection through franchise haulers under contract to the County. These haulers have exclusive rights to collect both residential and commercial waste in their respective areas and also provide for recycling and horticultural waste collection for all residents. The Cities of Fort Myers, Cape Coral and Sanibel either contract out for waste collection or provide their own municipal service. The Town of Fort Myers Beach contracts with the County for collection services. In 1995, the County’s contracts for waste collection were competitively bid for the first time, and the cost of once per week collection of waste, recyclables, and horticultural waste to homeowners dropped by an average of 40 percent from the previous year’s cost. The County bills homeowners for collection and disposal through annual assessments, just like homeowners would pay for other types of utility service. The County, in turn pays the haulers directly for collection of all residential refuse. Commercial establishments, which receive varied service in terms of frequency of service and size and types of containers utilized, pay the haulers directly based on competitive prices established in accordance with the terms of the hauler’s contracts with the County.

Following its solid waste master plan, the County in 1992 entered into an agreement with Ogden Martin systems of Lee to construct, operate and maintain a 1200 tpd waste-to-energy facility located within, and owned by, the County. This state-of-the-art mass burn facility went into operation in December 1994, and burns waste to produce electricity which is sold to a local utility.

All waste from Lee County, neighboring Hendry County and the four municipalities, is delivered to, and processed at the facility. Ash and non-processible waste is delivered to a privately owned, permitted landfill under contract with the County. The County has also purchased a tract of land in Hendry County, where the first cell of a regional landfill was recently constructed for the long term disposal of ash and non-processibles from the facility. Hendry County, in return, pays a reduced tip fee for waste disposed at the facility.

Recyclable materials are also collected from all residential and multi-family dwellings in the county and are delivered to a recently expanded materials recycling facility. This facility is currently handling about 120 tons per day of materials and is capable of handling up to 300 tpd. Some commercial recyclables are brought to the facility, but most are brought to a number of private recyclers in the region. In 1996, 35 percent of the waste generated in the county was recycled, surpassing the goal established in State legislation.

III. FUNDING OF THE SYSTEM

The existing solid waste program in Lee County functions as a self-supporting enterprise system, which is divided into a number of operating programs providing specific services to county residents and businesses. The system is not funded through the general tax base, and services under the program have been, for the most part, performed by private contractors, with waste delivered to privately-operated facilities.

In 1991, the County issued 197 million dollars in revenue bonds to finance the cost of constructing its resource recovery system. Revenues for operations and repayment of the bonds are derived from special assessments which are paid by residential property owners, tipping fees at the
facility, surcharges collected by the County, and revenues from the sale of electricity produced at the
facility. Special assessments for solid waste services are billed by the County and paid by all residential
properties within the unincorporated areas of the County. These special assessments cover the entire
cost of collection, waste disposal, recycling, and also provide other programs such as household
hazardous waste collection to the residents. The assessments are based upon the costs associated with
collecting and disposing of approximately one ton of waste generated on average by each single family
residence within the County.

Tip fees are those fees charged at the gate of the facility to process and dispose of each ton of
waste delivered. Prior to the development of the resource recovery facility, tip fees charged at the landfill
had been approximately $27/ton in 1993. Once the resource recovery facility became the primary
means of waste disposal, tip fees were anticipated to rise to over $80/ton. While resource recovery does
produce a certain amount of revenues from the sale of electricity, these revenues could not offset the
considerably higher costs inherent in providing an environmentally sound system and in paying off its
debt service. Tip fees charged at the resource recovery facility have to be higher than those at a landfill.

IV. THE ISSUE OF FLOW CONTROL

In May of 1994, just a few months prior to the start-up of the new facility, the United States
Supreme Court decided the “Carbone” case which made the issue of flow control come to the forefront of
solid waste issues. In that decision, the Supreme Court determined that the Town of Clarkstown, New
York could not require that all solid waste generated within the Town be brought to the Town's designated
facility. The implications of this decision, of course, were widespread since every municipality which
either had financed or was planning to finance a resource recovery facility could be impacted. Other
types of solid waste facilities would be affected as well, but resource recovery in particular, due to its
relatively high cost and reliance on flow control ordinances would be most affected. If other less costly
waste disposal options were available, communities could and would send their solid waste to those
facilities even if it meant transporting them over a considerable distance. Resource recovery facilities
would lose revenues from tip fees, jeopardizing repayment to bond-holders who financed the facility.
When the County’s resource recovery facility was originally planned, the County counted on the State
legislation to provide for flow control. Now this was in question.

At that time, Lee County’s resource recovery system was almost completed, and the County was
in the process of financing its ash landfill and transfer stations in Hendry County. The tip fee for the
Facility, set to begin operation in a few months was about to be established in the County’s annual rate-
setting process. Although there were no lower-priced potentially competing facilities in existence in the
vicinity of Lee County, the issue could become a problem at a future time if someone wanted to develop
a facility, or if an existing landfill dropped its tip fee to attract more waste.

Malcolm Pirnie, as the County’s consulting engineer was asked to examine the impact and
possible solutions to the dilemma which the “Carbone” decision had created. Quantifying the amount of
waste which could potentially be “lost” due to this decision, and how the County could minimize the
resultant impacts, were the tasks at hand.

Residential waste generated in the unincorporated portions of the County was guaranteed to be
delivered to the facility, since the County paid the haulers to deliver it to that site, essentially providing a
“zero” tip fee to the haulers. Commercial waste from unincorporated Lee could also be counted on for
delivery to the facility since the same haulers were under contract to the County to bring the commercial
waste to the County-designated site. It was unlikely that they would risk losing their franchise rights to
both residential and commercial waste by violating this provision of their contracts with the County.

The three cities within the County were problematic, however, since they together generate
about 30% of the total amount of waste anticipated to be delivered to the facility. The potential to lose all
or at least some of this waste was great. Malcolm Pirnie examined what it would hypothetically cost
these cities to transfer their waste to alternative disposal sites, and determined that it would cost approximately $47/ton for the cities to do so. The County moved quickly to establish a tipping fee at the facility of $45/ton, and over time, managed to get the cities to sign interlocal agreements with the County, agreeing to pay this reduced tip fee in return for guaranteeing their waste stream for a five-year period.

While the immediate problem, a loss of revenues due to a decrease in the waste stream was averted, the revenue loss due to the 43 percent reduction in the tip fee still existed, and now had to be made up for by some other means. An alternative funding source needed to be found to make up for these lost revenues.

V. FINDING ALTERNATIVE FUNDING

Most communities look to an increase in property taxes whenever additional funds need to be raised. This is not, however, a palatable alternative and in Lee County, where solid waste services had not been paid for out of the tax base, this alternative was unacceptable for the long term. The County did increase property taxes for one year only, as an interim measure, until alternative funding could be established. Moreover, when it comes to solid waste costs, the rational and equitable approach is for those who generate more waste to pay more for its disposal. Property value does not correlate to the amount of waste disposed, and hence is not a good indicator of the amount of solid waste generated.

Lee County had the option of establishing a municipal service benefit unit which could charge fees within the area established for those who receive a benefit due to the service received. The fees or assessment charged would be in direct proportion to the amount of waste generated... basically a user fee. One might liken the establishment of a benefit unit as similar to a utility district where everyone in the district pays the utility fee in return for receiving the “benefit” of that utility. Establishing a user fee system for solid waste services, however, is not like paying for water or electricity or any other utility which can be metered. Garbage trucks in general, do not have scales to individually measure and weigh what each establishment throws out. A better, more practical methodology for determining waste generation needed to be found. Malcolm Pirnie and Lee County worked together to develop a methodology which was relatively simple and implementable to determine waste generation for single-family residences, multi-family residences, and for various types of commercial establishments. A waste disposal assessment could then be determined (in $ per ton), based upon revenues needed for fixed operating costs and the tonnage generated.

VI. DETERMINING WASTE GENERATION

Waste generation for single family residences proved to be a relatively easy task. In order to determine a residential waste generation rate, hauling routes were identified which were predominantly residential and economically diverse, in other words a cross-section of the residential sector of the County. Waste is collected from all residences once per week, which simplified this methodology.

Two person teams were assigned to follow the trucks while collecting residential waste. The entire route was followed from the first stop to the last, and finally to the disposal site, noting where each collection had occurred. The goal of this residential waste survey was to estimate the tonnage of waste collected from a representative number of residential units, to subtract out any commercial waste collected, and to derive a waste generation rate per household. This data could then be extrapolated over the entire population of residences in the County. The survey took place over a 2-week period in April and included approximately 21 percent of all residences. Seasonal variation in waste generation was factored into the final waste generation number, and waste generation (for MSW) was found to be about 1.0 tpy, on average.
In Lee County, waste generated by multi-family residences is considered to be commercial waste. Frequency of collection varies not only by the type of establishment but also by the time of year. Large condominium complexes which cater to seasonal residents may dramatically decrease service in the summer months. Frequency of service usually increase at Christmas, and throughout the winter months. Initially, a phone survey of approximately 50 condo complexes was undertaken, which encompassed information from over 5,000 individual units. Information was requested on the days and frequency of collection and type of container collected. A container density factor was determined to account for the fact that while the type and size of container could be identified, whether or not the container was full when collected could not be determined. A container density factor was used to account for the fact that containers may or may not be full when collected, and can be used as a general conversion factor for all types of waste. Malcolm Pirnie based this number on findings from other studies it had undertaken particularly in the State of Florida. As a result of this exercise, a multi-family waste generation rate for apartments, condominiums and mobile homes, was established at about 0.8 tpy.

This multi-family waste generation factor was confirmed through additional work the following year, in which a total of over 13,600 multi-family units were examined by utilizing hauler records and were also found to have a waste generation rate of 0.8 tpy.

Determining waste generation rates for commercial establishments proved to be far more problematic. The County and Malcolm Pirnie developed a methodology based on the fact that commercial waste generation is generally a function of the type of business activity, and its square footage. It is not necessarily related to the number of people employed at a particular location. Specific information was requested from the County's property appraiser's office, which kept up-to-date information on all properties within the County, including the Cities. This information listed each individual property by type (such as office, church, warehouse, restaurant, etc.), improved with a building currently in use or vacant, along with its square footage. Initially, all properties were assigned to one of five waste generator categories, based upon information gathered in detailed studies in other parts of Florida. Categories ranged from low generators of waste such as churches, to medium generators which include most commercial properties such as offices, stores, theaters, etc., to very high generators such as nightclubs and fast-food restaurants. Initially, it was desirable to determine if this methodology could be applied to Lee County. Waste generation factors (in pounds of waste generated per square foot per year) were assigned to each and every establishment within the County. These factors were multiplied by effective square footage, and a total waste tonnage was calculated for the County. This calculated tonnage was compared to actual tonnage delivered to the disposal facility, and the difference turned out to be relatively small. Therefore, the County decided to move forward and utilize this methodology in determining waste generation rates for commercial establishments.

In setting commercial assessments, however, a certain amount of variability in waste generation is expected between individual establishments classified within the same category. Therefore, ranges were established, and if an establishment fell within that range of waste generation, it was be assessed at that category’s rate.

In October 1995, all residential, multi-family and commercial establishments were required to pay an annual special assessment for the fixed charges for the County’s solid waste disposal facilities. This assessment was based on the tonnage generated by all sectors, at a rate of $27.27/ton. Individual commercial establishments who felt that they generated less waste than their assigned category, were given the opportunity to provide back-up to their claim, and if warranted, were assigned to a lower waste generation category on a case-by-case basis.

The following year, additional work was undertaken to refine the waste generation rates. Since the new franchise hauler agreements with the County enabled the County to obtain hauler records, which had previously not been made available, meetings were held with each of the haulers and detailed information concerning their routes and customer service was provided. In this follow-up study, twenty-
seven different types of commercial properties were examined by matching the waste haulers customer lists to the County property appraiser’s listings. Hauler listings provided the address of the property, container size and frequency of collection. The property appraiser provided the effective area for a specific property listed by type. By matching the two listings, for a given type of property, an average annual waste generation rate per square foot was determined. Waste density factors were re-evaluated based upon actual data provided. Commercial properties in the City of Fort Myers were also examined to determine if waste generation in the City was substantially different from waste generation in the unincorporated County. As it turned out, rates were fairly similar.

The results of this additional work served to confirm the waste generation rates which had been previously established based upon theoretical values in other areas. Some types of commercial properties were reassigned to a new category, either at a higher or lower rate. In keeping with the County’s policy of basing assessments on a fair and equitable basis, the County maintains its review process for those establishments which may generate more or less waste than their assigned category.

Economic flow control was established in Lee County not as a result of a crisis situation, but because of a desire to carefully plan ahead, and to avoid such a crisis situation. Once the County recognized its need to implement solid waste assessments, and given its desire to equitably distribute the costs amongst users of the system, it openly informed the public, and as a result, there has been general acceptance of the County’s approach, with relatively few complaints. Competitively bid contracts for hauling and contract operations have allowed the County to stabilize rates while providing facilities which can serve the County’s needs in the long-term. The County has taken a pro-active approach in dealing with issues as they have arisen, and realizes that they must remain vigilant in keeping on top of issues which may potentially affect the economics of providing a top-level service to their constituents.
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