



LOCAL GOVERNMENT CASE STUDY:

City of Eden– Pay-As-You-Throw Pilot Program in Rural North Carolina

Population (1998): 15,366

Households: 6,450

Solid Waste Collection: Curbside

Recycling Collection: Drop-off

Eden, located in the foothills of North Carolina's Blue Ridge Mountains, is the largest city in Rockingham County and 43rd largest in the state. The current population is 15,366 people, with approximately 6,450 households. This rural community has recently completed a Pay-As-You-Throw pilot project to determine how effective a variable rate disposal program could be in reducing the volume of household waste. This program was administered to 2,000 of the city's households, with a mixture of lower, middle and upper income families for comparison with the current, traditional collection system. This pilot project has enabled the city to gather information on the current residential waste system, educate citizens about the true cost of the solid waste services, and gain enlightenment on the prospect of a full-scale PAYT program in Eden.

Current Refuse Collection Services

Garbage service provided to households not participating in the pilot program consists of weekly, automated collection of 90-gallon carts for household garbage as well as weekly collection of bulky wastes, white goods, brush and clean wood, demolition waste and yard wastes. The cart may only contain household trash or food waste and all garbage must be inside with the lid closed. The city provides one cart to each homeowner, but residents may acquire additional containers up to five, including the one provided by the city. These additional carts are \$30 each with a monthly fee of \$5.80 per container. The city also provides residents a staffed drop-off site for recycling of #1 and #2 plastics, clear, brown, and green glass, old corrugated cardboard, old newspapers, aluminum, steel and tin cans, mixed paper, waste oil, auto type batteries, and oil and water based paints. The city offers no curbside recycling service. The current fee structure for automated collection of the 90-gallon containers is \$5 per month per household. This fee covers 58.6 percent of the cost of the residential collection service, and only covers 30 percent of the total cost for all residential solid waste services provided by the city. The other 70 percent is funded through the general tax fund.

Variable Rate Pricing Pilot Program

Eden's pilot program was set up as a volume based, ID sticker system with four different levels of service. The residents in the program retained their 90-gallon carts from the previous collection system, but now were assigned service levels based on the Solid Waste Superintendent's assessment of their typical waste disposal amount.

Levels	Amount Disposed	Fixed Cost (\$)	Monthly Rate (\$)
I	0-30 gal.	9.50	11.50
II	30-60 gal.	9.50	14.50
III	60-90 gal.	9.50	17.50
IV	Senior Citizen	9.50	4.28

Each household received a color-coded sticker, corresponding to their level of service, to attach to their cart. These stickers indicated the maximum allowable volume for each container. For example, a household that normally disposed of a cart that was 2/3 full each week would be given a sticker for Level II and would be prohibited from disposing of a container that was more than 2/3 full. Senior citizens (65 or older) who traditionally generate lower volumes of waste were automatically qualified for a reduced rate below the lowest rate of the system. Low-income families were still charged at the assessed level of service, but could obtain coupons for rate reduction based on the volume of materials they recycled. The citizens were not actually issued a bill for these services, they continued to pay their traditional disposal fees (\$5 per month), but they were encouraged to keep track of their disposal volumes and calculate what their cost would have been under a true PAYT program. The solid waste division also kept track of the assessed volumes and calculated the difference in cost and revenue from the traditional collection program.

Containers were randomly inspected on a weekly basis to evaluate compliance. If a household was in violation a special ribbon would be left to notify them of the problem and they would be contacted concerning the corrective action that must be taken. If the violation continued to the next collection day, the volume range and rate would automatically be upgraded to the appropriate level. Each residence was also given two color-coded ribbons during the initial stages of implementation. These ribbons could be used if residents wished to have their solid waste volume re-assessed for a different level of service. Ribbons had to be attached to the handle of the container for four consecutive collection days before a rate adjustment would be considered. Residents with excessive amounts of trash that exceeded their service level could attach pre-purchased tags on each extra bag of trash they wished to dispose. The option to acquire another container was also available at an additional cost. Improperly tagged or overloaded carts would be identified and charged for additional waste at the applied rate plus penalty. Tags were available at the billing collection department, city hall or through the mail.

Planning Issues

The primary goals of Eden's pilot project were as follows:

- To collect data on the current waste generating trends of the various demographic areas of the city while illustrating the full cost of solid waste services;
- To gauge the recycling activity of the residential community; and
- To educate citizens about PAYT.

City officials also hoped that this pilot program would reveal how many residents subsidize their neighbors' solid waste cost, not only through the monthly fee but with their tax dollars as well. When participants recorded their weekly volumes of waste and tracked them monthly, they would clearly see the advantages of implementing waste reduction measures through reuse, recycling and conservation.

Eden also planned to use this project as an example to citizens of how tax dollars could be used to benefit them more efficiently rather than paying for their neighbor's trash disposal.

In the planning stages of this program, the city of Eden had to carefully examine the cost of the pilot program and household participation to determine the rate structure for their program. The first level of associated cost they had to consider was the "fixed cost" or the cost necessary to cover the basic expenditures associated with the operation. The second level of associated cost was the service costs that cover expenditures derived from the level of service provided including collection and disposal costs. The city estimated the cost for full implementation of the pilot program would equal \$1,078 based on the approximate cost of each of the following program elements:

· 2,000 color coded ID stickers	\$130
· Color coded ribbon material	\$30
· Education and other printed materials	\$270
· Staff time and equipment cost	\$648

It was later determined that the actual implementation cost of this program was \$2,000. The difference between the projected and actual costs was mainly due to an underestimation of labor costs. To meet these costs the rate structure was set up as shown in Figure I. This rate structuring process was also made easier due to the fact that the data on container weights at various volumes had already been acquired. The Solid Waste Division was able to take data from the last full-cost analysis of the solid waste system combined with the container weight data to generate the rate structure. In this process, the city also took into account its prediction that the reduction in tipping fees due to increased recycled material and the generated revenue from these recycled materials would provide additional money for the program.

Selling Issues

Two of the largest issues associated with this project were achieving the approval of the city council for the pilot program and overcoming residential resistance to increased garbage disposal fees or increased taxes. To address these concerns and reassure the city council and residents, the Solid Waste Division made every attempt to educate both parties on the benefits of. Through the use of local media and printed materials the division stressed the positive aspects of the proposed program.

The division felt the largest advantage PAYT could bring to Eden was providing the revenue source required for operation of the solid wastes service system, which would suspend the need for additional tax dollars that were now being pulled from other tax supported service areas. This program also put into place the key element for significantly reducing the amount of waste generated by the city. It allowed citizens to actually see the cost associated with services provided within the solid waste system. The Solid Waste Division also felt that PAYT could benefit residents by offering a clearer understanding of their solid waste services, while providing a much more equitable program that asked residents to pay primarily for the waste they generated.

The Transition to Pay-As-You-Throw

At the initiation of the pilot program, the Solid Waste Division selected the areas that would participate from various demographic regions of the city and developed an informational flyer explaining the planned pilot project. Several media releases were issued prior to the beginning of the program to educate citizens on the Solid Waste Division's process of checking, assessing and assigning service levels to each household. When this assessment process began, a flier was left at each residence to

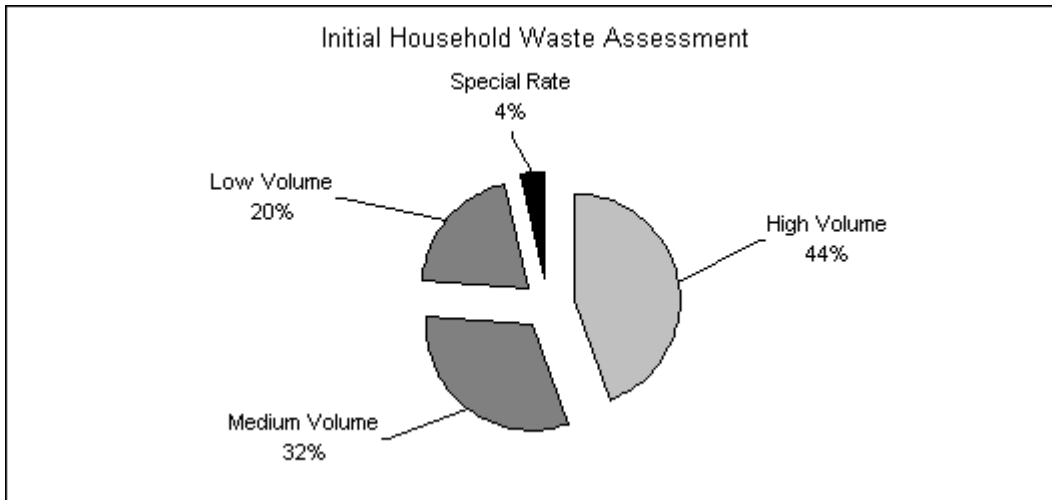
inform them of what had been done up to that point in the project and who to contact with questions. A gray sticker was attached to the top of their waste container stating "Pilot Program Participant." Approximately two weeks later, Solid Waste staff began placing ID stickers on the containers according to the assessed volume level. A detailed information packet and a pilot program rate sheet was given to each household to record what their actual disposal cost would have been each month if they were being charged for the total cost of service. The residents were encouraged to contact the solid waste division "hotline" if they had any questions or desired additional information. The initial waste assessments were conducted by the solid waste superintendent and his assistant, but subsequent random "checks" were carried out by two Solid Waste Division employees trained for this specific purpose. Different sections of the pilot program's collection route were targeted for these inspections for approximately two hours each collection day.

Problems

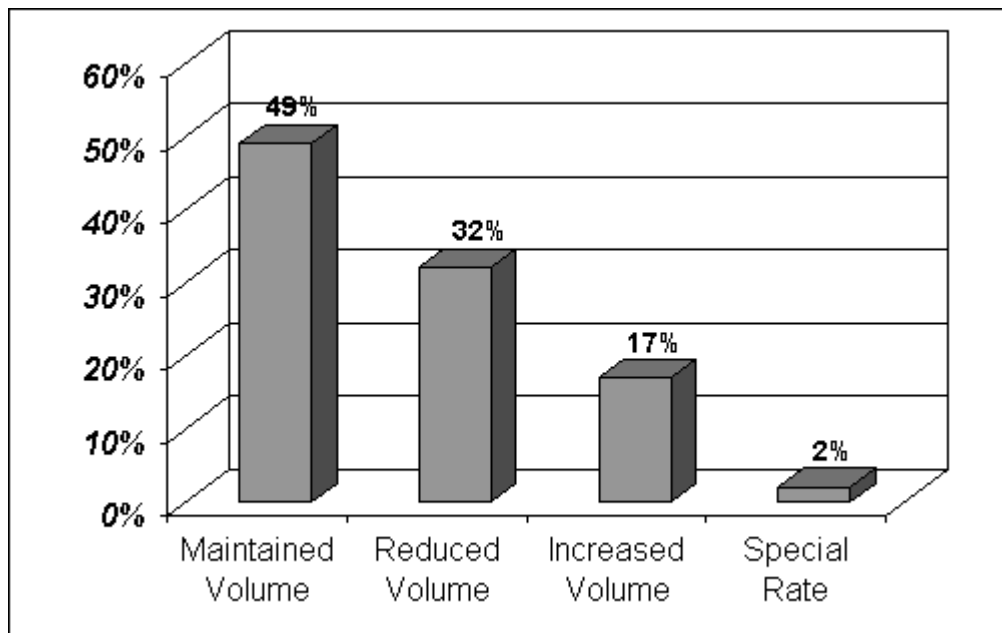
This pilot program experienced very few problems in the transitional stage and throughout the six-month period. Several of the participating households were displeased with the Solid Waste Division checking or inspecting their solid waste container, but were assured that the assessment process was to determine the amount of waste disposed not the specific contents of the container. Some residents also worried about the ability of large families on small incomes to meet the increased cost of disposal, due to their large waste volumes. To address this issue, the Solid Waste Division once again informed the residents of one of the many benefits of this PAYT system that allows families in this category to reduce their solid waste cost and obtain coupons for disposal through recycling and source reduction. The largest problem the pilot program experienced was attaching the ID stickers to the containers due to the cool, wet seasonal conditions when the project was initiated. The quick solution to this issue was to dry the area where the sticker was to be applied with a propane torch. Since the initial stages of the program, a new, less expensive system of utilizing reflective paint and stencil to ID the containers has been employed.

Results

It was the belief of Eden's Solid Waste Division that initiating PAYT in its community with a pilot program would facilitate the implementation of a full-scale program in subsequent years. Overall, their assertion seems to be coming true. Several positive consequences of this pilot program were the education of the public concerning the waste services they received vs. the amount they actually paid, as well as identifying useful waste reduction practices that are now being implemented by residents. Although there were few problems during the program, a recognized disadvantage was the increased burden on low-income families and large families that are accustomed to having their waste services subsidized by the general tax fund. The most important result of Eden's pilot program was the valuable information it provided for the development of a citywide PAYT program. After the Solid Waste Division conducted its waste assessments, it found that participating residents were broken down into the following waste generation categories:



The members of these categories reacted to the pilot program in varying ways. The table below indicates that 49 percent of the pilot participants did not change their waste generation pattern, 32 percent reduced the amount of waste generated and 17 percent increased the amount of waste generated. However, the pilot project did result in a net decrease in waste generated. It should be noted that the pilot did not actually assess increased fees based on amount of waste produced – it merely informed residents what their costs would have been under a true PAYT program. If fees were actually paid by residents based on the amount of waste generated, the number of residents reducing their waste may have been higher.



After the pilot, initial data was compared with current waste disposal, with the result indicating a decline in waste volume generated. According to the Solid Waste Division this decrease could be attributed to three main factors:

- Residents became more aware of the total cost compared to what they were paying through the monthly fee and implemented some form of waste reduction measures;
- Residents implemented recycling to reduce the amount of waste they dispose;
- Residents made adjustments in assessment of waste volume.

The cost for waste services during the six-month period for the participating households was approximately \$197,880. Under the current system the amount of revenue received was \$60,000, covering only 30 percent of the program costs and resulting in \$137,880 in lost revenue. The amount of revenue derived from the PAYT program would have been \$173,886.88, covering 88 percent of the program costs and resulting in only \$23,993.12 in lost revenue. The pilot results indicated that a much greater percentage of program costs could be recovered under PAYT while providing residents with an equitable fee structure and an incentive to reduce waste. With the conclusion of the pilot program, the Solid Waste Division found that the overall response from residents regarding PAYT was positive and indicated that the majority of citizens wanted to see a citywide program put into place. They felt that the current system was unfair and burdened those who generate less waste with having to subsidize other residents.

The Future

It is anticipated that Eden's pilot program will become a citywide PAYT program in the next several years. Jerome Adams, solid waste superintendent for the city, indicated that the Solid Waste Committee, city manager and city council plan to address this issue in 2000 with the hope that full implementation would be decided upon. The projected cost for citywide implementation is estimated to be \$18,000 and take six to eight months. The basic billing database is already in place, but some modifications will be necessary. Citizens that participated in the pilot program are not required to continue with the specified guidelines while the city decides what will be done in regards to a PAYT system. Many of the residents have become committed to recycling and waste reduction practices and continue to maintain their assessed volume range.