

**How Can Unit-Pricing Programs Be Better Designed
To Meet the Needs of Low-Income Residents?**

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ABSTRACT

In 1993, Worcester, Massachusetts began a variable-rate solid-waste program in response to cuts in the city's budget. Under the program, Worcester residents were required to purchase specially-marked garbage bags for fifty cents each. The revenue thus generated would be used to partially finance the cost of solid waste pick-up and disposal. Concurrently, the city started a new recycling program, which enabled residents to recycle more of their trash. City planners expected the amount of garbage produced in the city to decrease, thus reducing labor, hauling and disposal costs.

This thesis is an evaluation of Worcester's variable-rate program. It explores the economic and political factors that caused Worcester to enact its program, and how these factors affected its design and implementation. It also analyzes how the program has impacted a segment of the population crucial to its success—namely, lower-income residents. It concludes by demonstrating how Worcester's experience can provide guidance to other urban areas, particularly Providence, Rhode Island.

To determine the effectiveness of Worcester's program, I used several methods. Quantitatively, I analyzed system costs before and after the program's implementation. To evaluate its political effectiveness, I relied on qualitative methods—interviews with program designers and politicians, discussions with public servants and community activists, and archival research on the political and social factors that influenced the program's design. In addition, I conducted two focus groups with low-income residents to determine their perceptions of the program, and its impact on their lives.

My findings indicate that Worcester's unit-pricing program has been a success on several levels. It has achieved its primary goals—specifically, shifting the financial burden of solid-waste management away from the municipal budget, reducing solid-waste tonnage, and dramatically increasing recycling rates. It also seems to be a political success. Despite initial opposition, the planners' ability to compromise resulted in a program largely accepted by lower-income residents. These compromises included maintaining an artificially low price for garbage bags, providing both large and small garbage bags, and widening the range of locations at which the garbage bags could be purchased. A public-outreach and education program has also helped alleviate the concerns of lower-income residents. Thanks to these measures, political opposition has been muted, and anticipated secondary effects, such as illegal dumping and non-compliance, have been negligible.

These findings suggest that Worcester's program is a powerful model for other urban areas considering unit-pricing. Furthermore, it is a model that Providence, with its well-organized and vocal political opposition, would do well to emulate. By adopting a unit-pricing program, Providence can reap the financial and environmental benefits that Worcester has achieved. And by learning from Worcester's experience, Providence can anticipate the political pitfalls and design a program that is both inclusive of and accepted by its lower-income residents.

Introduction

The State of Solid Waste in America: An Overview

Over the last two decades, many communities in the United States have changed the ways in which they manage their municipal solid waste, in response to a variety of factors. The United States' high rate of waste generation, has led politicians, environmental groups and solid waste managers to reevaluate current waste management strategies. The United States' waste generation rates are among the highest in the world, and continue to rise. Between 1968 and 1988, the amount of municipal solid waste produced in this country more than doubled, from 88 to 180 million tons per year, and the amount of waste generated is predicted to increase another twenty percent by the end of the century.¹

Furthermore, in direct response to these high rates of waste generation, currently licensed landfill space in which garbage can be disposed of legally is quickly being depleted. In a 1988 survey, the Environmental Protection Agency estimated that 80 percent of existing landfill space will reach capacity in the next twenty years. At the same time as existing landfill space is being depleted, it has become increasingly difficult to site new landfills due to community opposition.² This opposition has produced lengthy hearings on new site selection and

¹Robert Repetto, et. al. Green Fees: How a Tax Shift Can Work for the Environment and Economy. 1992, p.15.

²Ibid

permitting. It can now take between two and seven years and upwards of \$10 million to complete the process of siting a single new landfill.³

In general, rapidly rising disposal costs have further compounded the problem for many communities seeking to manage their municipal solid waste effectively and economically.⁴ Tipping fees (the amount of money charged by a landfill for disposal of one ton of waste) are often used as indicators of landfill cost, and these rates have, in general, been rising steadily.⁵ Nevertheless, tipping fees do not include the total costs of waste disposal and are consequently poor indicators for the actual cost of garbage disposal. For instance, municipal budgets rarely represent the full incremental costs of waste collection and disposal, often neglecting vehicle maintenance labor costs and the cost of employee benefits. Furthermore, direct disposal costs in municipal landfills are more often than not understated. Municipalities rarely charge landfill operators realistic land rents and such properties often have much higher market values than they are assessed at. Similarly, landfill operators do not allow for depletion charges as landfills approach their holding capacity, a capacity that can only be replaced at a much higher future cost.⁶ Finally, the environmental and social costs resulting from air, water and noise pollution are not reflected in tipping fees, primarily because such costs are very difficult to quantify.

As a result, even communities with plentiful landfill space and lower than average tipping fees should be looking for ways of prolonging the life of currently licensed landfills rather than dealing with the future expense and difficulty of siting and operating a new landfill.

³Ibid

⁴ Ibid

⁵ Ibid

⁶ Ibid

At present, most households in the United States either pay for their solid waste collection and disposal through a fixed monthly service charge, or the costs are incorporated into their property taxes.⁷ A significant drawback of these systems is that they allow citizens “[t]he luxury of generating as much waste as they care to [while] paying a flat fee.”⁸ Consequently, individual residents have no incentive for reducing the amount of trash they produce because they are paying the same rate regardless of whether they throw out ten bags of trash or one. Under these traditional systems of solid waste management, citizens who engage in source reduction (buying products with less packaging), or waste diversion (recycling and composting), subsidize the cost of other people who do not. Therefore, these traditional systems are fundamentally inequitable because a flat fee does not reflect an individual resident's actual usage of the municipality's garbage collection and disposal services.

Variable-rate systems are designed to give residents direct economic signals as to the price of their individual waste generation and have been implemented to offer economic incentives for residents to reduce and divert their trash output.⁹ Variable-rate systems for solid waste management are modeled after usage-based rates for utilities such as gas, electricity and water. Just as usage-based utilities “[p]rovide direct and fairly continuous price signals to encourage conservation among their consumers,” user-fees for solid waste disposal also provide the “direct, continuous signals needed to encourage waste reduction.”¹⁰

⁷Environmental Protection Agency. Pay-As-You-Throw: A Fact Sheet for MSW Planners. 1997, p.5

⁸Barrett, Douglas. User Fees for Solid Waste Management in Rhode Island. M.A. Thesis, Environmental Studies, Brown University, April 1991, p. 16.

⁹Throughout this work the terms variable rate, user fees, pay-as-you throw and pay-per-bag will be used interchangeably.

¹⁰Barrett, p.22.

In practice, user-fees can take a variety of forms, but all of them share one defining principle in common: that residents pay for municipal waste management services per unit of waste which is collected, rather than through a fixed monthly fee. Charging residents through a fixed fee, or financing solid waste services through a portion of the municipality's property tax, does not allow residents to understand what their contribution to their communities total solid waste management bill is. User-fees on the other hand, enable residents to see and control the costs of their individual waste generation.¹¹

The economic incentives that user-fees provide to encourage waste reduction have been shown to work in practice. Nevertheless, most variable rate systems that have been implemented are located in suburban communities with relatively wealthy and homogenous populations. Despite the singular success of Seattle, Washington's urban variable-rate program, questions remain as to whether user-fees can be widely implemented in dense, multi-racial, urban areas with significant numbers of low-income residents.

Underlying the question of whether unit-pricing can work in urban areas as well as it has in suburban areas are two other questions:

1. Will urban unit-pricing programs cause illegal dumping?
2. Will urban unit-pricing programs create undue hardships for low-income residents?

These questions are difficult to address because there are so few urban unit-pricing programs in existence whose experiences could provide some of these answers. This thesis will address these two questions, which are hindering the wide-spread development of urban unit-pricing programs, by describing and

¹¹Canterbury, Janice. Pay-As-You -Throw: Lessons Learned About Unit Pricing of Municipal Solid Waste, 1992, p. 2.

analyzing the unit-pricing program of the city of Worcester, Massachusetts. Using Worcester's program as a case study, I will make recommendations that could inform and direct the development of a unit-pricing program in the city of Providence, Rhode Island.

Chapter One: User-Fees in Theory and Practice

Types of User-Fee Systems

When a municipality considers implementing a user-fee system, it has several options to choose from. In this thesis, I will discuss two of the most common systems: volume-based, and weight-based systems. It is important to note that all user-fee systems are designed to work in conjunction with other waste diversion strategies such as recycling and composting. By complementing a user-fee system with a recycling program, a municipality gives residents the means of diverting a significant proportion of their trash from disposal to recycling and thus controlling their disposal costs. Recycling programs that exist in towns before the implementation of variable-rate programs, are often expanded to include more materials, which permits greater waste diversion. Some communities have also implemented composting programs that encourage residents to divert their yard waste from disposal.

A comprehensive recycling program is critical to the success of user-fee systems. Residents would be hard pressed to significantly reduce their disposable trash through source reduction techniques alone.

In weight-based programs the municipality weighs the amount of trash a resident leaves out on the curb, and charges that resident per pound of trash collected. The benefit of this method is that it enables the municipality to

precisely weigh the amount of trash produced by each resident. As a result, this system provides residents with the exact cost for their individual trash production and provides the most direct and best economic incentive for residents to divert or reduce their trash output. On the other hand, these systems are often very costly to implement and operate. They require expensive trash collection equipment to weigh residents' waste, and necessitate the development and maintenance of complicated billing systems.

Volume-based programs are easier to implement than weight-based programs, and most communities that have enacted a unit-pricing approach to solid waste management have chosen this kind of system.¹²

In volume-based systems, residents are (1) either charged for the number of cans or bags of trash left at the curb, or (2) required to purchase specially marked trash bags (or stickers that can be placed on trash bags) which include the cost of waste collection in their purchase price. The main disadvantage to this approach is that it is not as precise as weight-based systems for determining the impact of unit-pricing on solid waste generation rates. Nevertheless, volume-based programs do offer residents strong incentives for lowering the amount of trash that they dispose of in order to save money.

What Are the Benefits of Unit-Pricing ?

There are many perceived benefits for implementing a variable-rate program in a community, regardless of whether it is a weight-based or volume-based system. One of the most direct benefits of unit-pricing, which has been repeatedly demonstrated, is that it is an extremely effective way for a community to reduce the amount of waste it disposes of. The percentage reduction varies

¹²Miranda, M.L. and Aldy, Joseph. Unit Pricing of Residential Municipal Solid Waste: Lessons From Nine Case Study Communities, 1996, p.1.

from community to community, but it is not uncommon for reductions of 30 to 50 percent to occur.¹³ (See table 1-1 on the next page)

Table 1-1: Reported Waste Reductions in Unit-Pricing Communities¹⁴

Community	Waste Reduced
Downers Grove, Illinois	Waste Reduced 50%
Lisle, Illinois	Waste Reduced 53%
Mendham Township, New Jersey	Waste reduced 55%
Perkasie, Pennsylvania	Waste reduced 41%
High Bridge, New Jersey	Waste reduced 24%
Lansing, Michigan	Waste reduced 20%

Another perceived benefit that a unit-pricing system offers, is its potential to encourage residents to change wasteful purchasing and consumption behavior. In theory, in order to lower the amount of trash that must be placed at the curb, residents will begin buying items with less packaging, and will take advantage of opportunities to buy in bulk. Source reduction will theoretically lower the amount of trash a person produces, while having the secondary effects of contributing to material conservation and reduced energy usage. In practice however, there is a good deal of debate surrounding the question of whether variable-rate systems actually contribute to source reduction behavior. In Miranda's 1994 study of the waste generation rates of 21 variable-rate communities, she found that the average reduction in overall waste generation was 30%, with an average recycling rate of 19%. Even when errors in

¹³Center for Environmental Studies. Doing the Right Thing: Setting Incentives for Responsible Solid Waste Management, 1994, p.1.

¹⁴ Miranda, M.L. et. al. Unit Pricing Programs for Residential Municipal Solid Waste: An Assessment of the Literature, March 1996, p.15.

measurement and diversion due to illegal disposal were taken in to account, she concluded that some of the waste reduction must have resulted from source reduction behavior.¹⁵ Similarly, a survey of Tompkins County, New York reported that due to the variable rate system there, 39% of the respondents reported that they were more attentive to product packaging when they shopped.¹⁶ In contrast to these views, other authors' studies suggest that garbage compaction and illegal diversion of trash are responsible for observed levels of waste reduction.¹⁷ For example, Fullerton and Kinnaman's survey of 75 households participating in Charlottesville, Virginia's unit-pricing system found that 28% of the total reduction in trash was caused by illegal disposal.¹⁸ As a result, although it is clear that unit-pricing is effective in encouraging waste diversion through recycling, the extent to which it fosters source reduction above other diversion strategies, like illegal dumping, remains in dispute.¹⁹

Illegal Dumping and Unit-Pricing

While unit-pricing may offer many benefits to communities that implement them, there are also significant concerns associated with such systems as well. One of unit-pricing's main attributes, that it provides residents with an incentive to reduce their trash, can also be viewed as a potential pitfall. Although residents may choose to lower the amount of trash they put out at the curb through recycling, composting or source reduction, they may also choose to

¹⁵ Ibid, p.16.

¹⁶ Ibid.

¹⁷ Nestor, D.V. and Podolsky, Michael. Implementation Issues in Incentive-Based environmental Policy: A Comparative Assessment of Two Policies for Reducing Household Waste Disposal. October 1996, p.4.

¹⁸ Fullerton, Don and Kinnaman, Thomas. Household Demand for Garbage and Recycling Collection with the Start of a Price Per Bag. National Bureau of Economic Research Working Paper #4670. March 1994, p.19.

¹⁹Jenkins, Robin. Municipal Demand for Solid Waste Disposal services: The Impact of User Fees. Ph.D. Dissertation, Department of Economics, University of Maryland, 1991, p.5.

divert their waste in other ways. One of the most common perceptions about unit-pricing is the belief that it will increase the amount of illegal dumping or burning of trash that occurs in a community. In particular, solid waste officials, environmental planners and environmental justice activists have all raised concerns that illegal dumping is more likely to present a serious problem in dense, multi-racial, urban communities with significant low and fixed income populations, vacant and abandoned properties, and commercial dumpsters located near resident's homes. Although, many unit-pricing communities have not reported serious problems with illegal dumping, it has been a significant problem for some.²⁰

The most common type of illegal dumping that variable rate communities encounter is "dumpster dumping", i.e., people throwing their trash into commercial dumpsters. For instance, according to the solid waste officials of ten Illinois unit-pricing programs, the most significant problem that their programs faced was the illegal disposal of residential waste in commercial dumpsters.²¹ In circumstances where residents are illegally using commercial dumpsters to dispose of their residential waste, the dumpsters' owners end up paying for the hauling and disposal of other people's trash. It is obviously inequitable for business owners to subsidize the cost of residents trash disposal. Nevertheless, compared to "open dumping", leaving trash in vacant lots, on roadsides, or in wooded areas, dumpster dumping is the least problematic type of illegal dumping.

Compared to dumpster dumping, refuse left out in the open is more problematic because it can become a breeding ground for rats and disease. In addition, from an economic perspective, illegally disposed-of trash constitutes a

²⁰ Miranda, M.L. and Aldy, Joseph. p.25.

²¹ Miranda et. al. Unit-Pricing Programs for Residential Municipal Solid Waste: An Assessment of the Literature, March 1996, p.20.

loss of revenue in a variable-rate system, and creates additional clean-up costs. As a result, the price of bags, or can subscriptions, may rise to cover these additional expenses and may incite more dumping, creating a negative cycle of rising cost and rising dumping.²²

In Marie Lynn Miranda and Joseph Aldy’s comparative study of nine communities with unit-pricing programs, all nine of the cases they investigated reported some problems with undesirable diversion. This study cited three urban communities in particular, Grand Rapids, Michigan, Lansing, Michigan, and San Jose, California, which had reported significant problems with undesirable waste diversion.²³

Table 1-2
Annual Estimates of Illegal Dumping in Three Urban Communities²⁴

City	Amount Annually Dumped	Annual Cleanup Cost
Lansing	300 Tons	\$52,500
Grand Rapids	30 Tons ^{25*}	\$15,000
San Jose	170 Tons	\$500,000

While commercial hauling firms in Lansing report that about 10% of their customers have complained about residents dumping garbage in their dumpsters, the majority of illegally dumped waste is comprised of bulky items left in vacant lots or along roadsides. Officials in Lansing attribute illegal dumping of bulky items to the comparatively high \$20 per item charge that the city imposes for its pick up and disposal.²⁶ In Grand Rapids, problems with

²² Barrett, p. 85.

²³ Miranda, M.L. and Aldy, Joseph. p.26.

²⁴ Ibid, p.26.

²⁵ Ibid, Appendix, p.G-7.

*Grand Rapids disposes of an additional 60 tons of trash each year collected in community clean ups, for which no cost was disclosed.

²⁶ Ibid, Appendix, p.L-7.

undesirable diversion of trash can be linked to various aspects of the design of its variable-rate program. Under its pay-per-bag program, residents are given the option of participating in the city's recycling program, but must pay a monthly service charge in order to do so, which acts as a disincentive for participation in the recycling program. In addition, Grand Rapids only began a yard waste program in March of 1995, and has had a very limited education program with which to encourage residents to take full advantage of legal waste diversion strategies.²⁷ In San Jose, solid waste officials report that 70% of the illegally disposed of waste that they collect each year is dumped by professional landscapers, and that construction debris and bulky items comprise much of the remaining illegally dumped waste. Consequently, although there is a significant amount of illegal dumping in San Jose, much of this dumping is independent of its variable-rate program.²⁸

It appears therefore, that while illegal dumping is perceived to be a problem, it is not necessarily a major problem or one for which adequate remedies cannot be provided. In the three cities cited above, the problem resulted from illegal dumping of bulky items or dumping by landscapers and construction contractors, but was clearly not caused by individual residents dumping their waste in abandoned lots or in wooded areas. The fear that an urban user-fee will cause uncontrollable problems with illegal dumping is not grounded in the actual experience of urban unit-pricing communities. Further, it is entirely reasonable to believe that a variable-rate system can be designed to minimize illegal dumping that does exist by providing a workable means for the legal disposal of bulky items.

²⁷ Ibid, Appendix, p.G-7.

²⁸ Ibid, Appendix, p.S-8

Additional Concerns: Low-Income Residents and Unit-Pricing

Another potential problem that advocates of unit-pricing need to address, is how to incorporate low-income or fixed-income residents into the program. Unit-pricing programs must consider whether the rates being charged for trash disposal would place an undue financial burden on low-income households. In order for unit-pricing to work in an area with a high percentage of low-income residents, there must be some way to ensure that these residents have a viable and realistic alternative for legally disposing of their trash. This concern is especially significant for programs in urban areas, where there are usually higher numbers of low-income residents than in the suburbs. The main reason for offering low-income and fixed-income segments of the population special rates is to ensure that all people can participate in the program.

Other factors can also influence a municipality's decision to implement a bag subsidy or discount program. Set out surveys that measure the amount of trash generated by residents, have shown that families in low-income neighborhoods tend to have higher garbage disposal rates than families in higher-income neighborhoods. Findings indicate that when compared to moderate and high income neighborhoods, low-income neighborhoods produce, "[a]nywhere from 30% to over twice as much (garbage) on average."²⁹ One explanation for this might be that low-income families tend to be larger than wealthier families and consequently produce more trash.³⁰ Given this, variable-rate systems (without subsidies or discounts) inevitably require that low-income families spend proportionally more of their family's budget on disposal of their trash than do their middle and high-income counterparts. Since variable-rate systems are designed to act in a manner similar to standard utilities, it follows

²⁹Lennon, Mark and Skumatz, Lisa. Variable Pricing: A Practical Guide for Local Decisionmakers. Conference Of North Eastern Governors, May 1995, Appendix B, p.4.

³⁰Ibid.

that subsidy or "lifeline" services, such as those provided for telephone and natural gas service, also be provided to those who cannot afford the costs of a variable rate garbage program.³¹

Developing Subsidy Programs for User-Fee Systems

Establishing criteria for which residents receive discounts or subsidies for the purchase of garbage bags can be difficult, yet they have been established in some variable rate programs. Seattle, Washington's variable rate program is a volume-based program in which customers pay a monthly charge for weekly recycling and garbage pick-up. The monthly charge is based on the size and number of containers that each household subscribes to. (See Table 1-3 Below)

Table 1-3: Monthly Charge for Different Service Levels³²

Service Level	Monthly Charge per Household
Micro-Can	\$10.05
Mini-Can	\$12.35
One 32 Gallon Can	\$16.10
Two 32 Gallon Cans	\$32.15
Three 32 Gallon Cans	\$48.25
Each additional 32 Gallon Can	\$16.10

Seattle has a total population of 516,259 and in 1997, 15,000 households, received discounts for their solid waste service.³³ The city of Seattle considers household size and income in determining eligibility. Specifically, discounted utility rates are granted to low-income households provided that they meet three criteria:

1. They are not residents of federally subsidized public housing.

³¹Barrett, p. 92.

³²Seattle Public Utilities. Municipal Ordinance 117184. Seattle Public Utilities, 1997.

³³ Ibid.

2. Income is at or below 125% of the federal poverty level from all sources for all household members.
3. The residential Seattle City Light bill is in the name of the applicant for low-income utility assistance.³⁴

Discounted rates are also provided to households that meet two other criteria:

- 1) The total annual income of all household members does not exceed 70% of Washington's median income for the number of individuals in the household.
- 2) The applicant is blind, or sixty-five years of age or older, or disabled and receiving funds from a disability program.³⁵

Eligible applicants for Seattle's Low Income Rate Assistance program receive discounted rates for the five utilities that the city operates, (water, sewer, drainage, electricity and solid waste). Although I will only be discussing the subsidy that is provided for solid waste service, it is important to keep in mind that those residents who meet the aforementioned guidelines qualify for discounted rates for all five utility services. As a result, those low-income residents who qualify for Seattle's solid waste subsidy, also receive substantial subsidies for the city's other utility services.

Seattle's rate assistance program for solid waste service is structured to provide an incentive for recycling and waste reduction while providing low-income residents with the means to legally dispose of their waste. The rate

³⁴Seattle Public Utilities. Summary of LIRA Billing. Seattle Public Utilities, 1997.

³⁵ Ibid.

structure was designed so that as households subscribe to larger can sizes, the discounted rate they receive decreases. (See Table 1-4 below)

Table 1-4: Seattle's Discounted Monthly Rate for Solid Waste Services³⁶

Service Level	Monthly Charge per Household
Micro-Can	\$3.90 (40% of the regular rate)
Mini-Can	\$4.85 (40% of the regular rate)
One 32 Gallon Can	\$6.30 (40% of the regular rate)
Two 32 Gallon Cans	\$19.20 (60% of the regular rate)
Three 32 Gallon Cans	\$35.25 (73% of the regular rate)
Each Addition 32 Gallon Can	\$16.10 (no discount provided)

The Seattle Public Utility is able to provide a low-income subsidy by allocating 3.1% of each resident's monthly garbage payment to the administration and financing of the city's subsidy program.³⁷ Since the city's solid waste subsidy was developed after subsidy programs for its other utilities had been initiated, some of the costs associated with creating a new subsidy program were avoided by expanding the established administrative infrastructure rather than building a new one. All of the city's subsidy programs, including the subsidy for solid waste, are administered through Seattle's Department of Housing and Human Services. Consequently, the singular administrative cost of the solid waste subsidy is not easily discernable from the total administrative costs for all of the city's subsidy programs.³⁸

There are several problems with using Seattle's solid waste assistance program as a model for other cities seeking to develop such programs. One of

³⁶ Ibid.

³⁷ Ibid.

³⁸ Phone conversation with Veronica Baca from Seattle Public Utilities on September 12, 1997.

the benefits of Seattle's subsidy program is that it was designed to provide assistance to those households that need it, while simultaneously encouraging recycling and waste reduction. This is possible in the Seattle program because customers subscribe to different levels of service. The city is aware of the level of service that each household subscribes to, and their subsidy program can be designed to give greater discounts to households that recycle and reduce more of their waste. In variable-rate programs in which customers purchase garbage bags as they need them, rather than subscribing to a fixed level of service, developing a subsidy program that encouraged waste reduction would be difficult.

A city that operates a variable-rate program in which customers do not subscribe to a particular level of service, face additional challenges in developing a subsidy program. Because customers can not select their level of service, the municipality would have to determine the number of bags to give to households of different sizes and with different incomes. Determining how many garbage bags a particular household should receive each month could be difficult and if the municipality incorrectly assesses a household's need, then households may not receive enough bags to cover their disposal costs. This could lead to illegal dumping and undermine the success of a unit-pricing program. On the other hand, a household may receive more bags than it needs. In this case, bags will have a cash value and become a commodity, potentially causing revenue leaks from a variable-rate program.³⁹

The strategy for creating a new subsidy program by “piggybacking” on an existing welfare or assistance program, may work in cities that do not already have subsidy programs that are administered at the city level. The national food stamp program, which provides assistance in the form of coupons for purchasing

³⁹ Barrett, p. 91.

food, is one of the programs on which a municipal subsidy program could piggyback. There are several reasons why the food stamp program seems to provide a good basis upon which to develop other assistance programs.

The food stamp program covers more people than any other single assistance program.⁴⁰ This is important since a municipality that is setting up a new assistance program would be able to quickly identify a significant portion of those people who are in need of assistance.

Secondly, the food stamp program's eligibility guidelines and the amount of assistance given are variable, based on household size and income. Since the amount of assistance that the food stamp program provides to a household is variable, a program that would enable low-income residents to receive discounts on the purchase of bags in a Pay-As-You-Throw system would be variable also. A family's level of support would mirror the scale of assistance that they are receiving from the food stamp program, an increasing amount of aid as family size increases.

Finally, vouchers or coupons for the purchase of garbage bags could be issued at the point of purchase of food stamps. The need to set up an additional system of tracking and accounting for trash bag coupons would be reduced because they would be collected from local super markets and grocery stores with food stamps. In this way, through the use of existing programs and their criteria for who is eligible to receive assistance, people implementing variable-rate programs can reduce the costs and bureaucratic hurdles of designing and maintaining a new assistance program.

Nevertheless, using the food stamp program's criterion to develop a variable-rate assistance program raises problems that belie the apparent ease of

⁴⁰ Conversation with Elaine Minkler, Chief Investigator for Food Stamp Fraud at the Middlesex County Department of Human Services, on September 19, 1997.

“piggybacking” on another assistance program. In order for a solid waste assistance program to be structured on the model provided by the food stamp program, base lines would need to be established that determined the amount of assistance different sized households would receive. This would require the municipality to develop an estimate of how many garbage bags, households of different sizes, disposed of during an average month. This is an extremely difficult task to accomplish. Baselines would need to be determined before the variable-rate garbage program was implemented. Pre-program estimates of a household’s trash output could not be used as a baseline for a subsidy program because they would not reflect the reduction in household waste that would accompany a variable-rate program. Furthermore, a municipality would need to determine how much assistance to provide. This level of assistance would depend on determining what part of a household’s monthly budget would have to be allocated to meet their disposal needs. Again, this would require a municipality to determine baseline numbers that reflected the average cost to a household for trash disposal. A municipality would then have to assess what is a reasonable amount of assistance to provide to qualifying households given the pricing structure of their variable-rate program. Clearly, the food stamp program could not singularly direct the development of a solid-waste subsidy program. As a result, a municipality would have to allocate both money and labor to develop a substantial portion of a unit-pricing subsidy program. It is difficult to estimate what the precise cost that a unit-pricing subsidy program would be to a municipality. However, conversations with planners from Seattle’s assistance program, and unit-pricing planners from Worcester’s Department of Public Works, have given conservative estimates of at least one-million dollars annually for the implementation and maintenance of such a

program.^{41 42} This additional cost can compound the overall efforts to gain public and political support for a unit-pricing program by reducing its cost-effectiveness.

Chapter Two - Worcester's Variable Rate Program

Most existing variable-rate systems are located in rural and suburban areas. Nevertheless, some cities have successfully adopted unit-pricing systems and there is the potential for them to become more widely used in urban areas. I studied the volume-based user-fee program in the city of Worcester, Massachusetts in order to gain an understanding of how these systems can work in large cities, and to determine what is problematic and unique about urban user-fee systems. Several factors contributed to my selection of Worcester as a case study for urban variable-rate programs. Unlike smaller communities with user-fees, Worcester is a post-industrial city, and with a population of 169,759 residents, it is the second largest city in New England.⁴³ Furthermore, Worcester

⁴¹ Phone conversation with Veronica Baca from Seattle Public Utilities on September 12, 1997.

⁴² Phone Conversation on March 18, 1996 with Bob Fiore, Assistant to the Commissioner of DPW.

⁴³U.S. Bureau of the Census. County and City Data Book: 1994. Washington, DC: U.S. Government Printing Office, 1994.

is the only major city that has instituted a user-fee program in the Northeastern United States. Additionally, since it is located about 40 miles away from Providence, Rhode Island, it was close enough to get first hand information and to observe directly how its program functioned. Equally importantly, officials at Worcester's Department of Public Works were willing to share their experiences with instituting its program and agreed to share budgetary and solid waste data with me.

Finally, another important demographic characteristic of Worcester influenced my decision. Fifteen percent of the city's total population, 24,228 people, is living below the federal poverty level. Although the percent of Worcester's population living below the poverty line is significantly lower than Providence, Rhode Island's 23.0%, it is close to the national average of 13%.⁴⁴ The significant number of residents in Worcester below the poverty level, provided an opportunity to research how low-income residents have been affected by the city's user-fee program.

Why Did Worcester Consider Implementing a User-Fee System?

Before 1993, Worcester's solid waste collection and disposal services were funded through revenues generated by the property tax. In 1992, the Department of Public Works (DPW), which was responsible for maintaining the city's solid waste services, was finding it increasingly difficult to get a large enough share of the city's tax revenue to fund their services. The city council had recently recognized the city's fire department, police department, and public school system, as priorities for funding. The DPW, which was not identified as a priority department, realized that future cuts in its budget would require a reduction in solid waste services. Consequently, the DPW began looking for a

⁴⁴ Ibid

funding alternative to tax assessment. It determined that a user-fee system was an attractive option.⁴⁵

Other factors, in addition to its funding needs, influenced the DPW's decision to look for different approaches to its solid waste management practices. State-imposed deadlines which banned certain items from being landfilled or incinerated had been enacted, and the city of Worcester recognized the need to comply with those mandates. The Massachusetts Solid Waste Master Plan had already established a ban on batteries, leaves, trees, and household appliances that took effect in 1992. The plan called for a ban on disposal of single-polymer plastics and recyclable paper after December 31, 1994. In addition, the mandate called for landfills and incinerators to recycle as much as 25% of all the trash they received each year, which meant that cans and bottles would no longer be accepted at landfills and trash to energy plants.⁴⁶ As a result, municipalities had to establish recycling programs so that these materials would not be part of the waste stream that was going to be landfilled.

Although the state's mandates were an important factor in the decision to adopt a user-fee program in Worcester, the fear of being unable to maintain current levels of solid waste services in the face of an expected revenue shortfall of \$3.7 million for fiscal year 1994, was the major factor driving the decision to consider establishing a user-fee system. The DPW saw trash fees as the only way to make up that additional revenue.⁴⁷

How Did the Citizens of Worcester Respond?

Like many communities in which user-fee systems have been considered, there was, initially, considerable political and public resistance in Worcester to

⁴⁵Phone Conversation on March 18, 1996 with Bob Fiore, Assistant to the Commissioner of DPW.

⁴⁶The Worcester Telegraph and Gazette: "Recycling Push May Be Delayed", September 11, 1992.

⁴⁷The Worcester Telegraph and Gazette: "Trash Fee in Worcester", June 8, 1993.

the idea of adopting a trash collection fee. Although residents had always paid for their trash disposal, they had done so through their property taxes. Since the cost for residential trash disposal was imbedded in the property tax, many residents (renters in particular) had the mistaken perception that the municipal solid waste services they received were provided for free. Consequently, the enactment of a user-fee system, in which residents are directly responsible for paying for the amount of trash they dispose of, was viewed as a tax increase. This was one reason that a trash collection fee in Worcester became a hotly debated political issue.

Another reason was the fear that illegal dumping of trash would greatly increase in response to the imposition of a trash fee in Worcester. As previously noted, this is a common concern when variable rate systems are implemented and many feared that residents would dispose of their trash illegally in the city's woodlands, parks and commercial dumpsters rather than paying the trash collection fee. One leading critic of the bag fee in Worcester, councilman Raymond Mariano, expressed his concerns about illegal dumping by saying, "When they talk about 90 percent of the people doing it the right way, [i.e. placing trash in specially marked bags] that means there are 15,000 bags out there that aren't being put out...I know a business owner that found 12 bags in his dumpster on Tacoma Street...We are going to see more of that and that's the issue."⁴⁸ (bracketed language added)

Worcester's variable rate program attempted to alleviate these concerns, and, according to officials at the DPW, many of the anticipated problems did not surface when the program began on November 29, 1993. The DPW decided that the program that was easiest to operate and use by Worcester residents was a bag fee in conjunction with a new and extensive curbside recycling program.

⁴⁸The Worcester Telegraph and Gazette: "Trash System Hits First Snag", Dec 2, 1993.

Specially marked bags that cost 50 cents each were made available to residents at local supermarkets and retail stores. The price of the bags was projected to generate \$2.3 million dollars for the first year of the program, and the additional revenue of \$5.1 million for trash collection and recycling was projected to come from the property tax.

More Than Economics: How the Price of Bags Became Fifty Cents

The decision to fund part of the program through the property tax, and part through a bag fee, kept the price of bags at a politically acceptable level.⁴⁹ Had the program been funded solely from revenue generated by the sale of bags, it was estimated that the price of each 32-gallon bag would have had to be \$1.14 each. City planners were concerned that this price would seem unacceptably high to most residents and could jeopardize the development of any variable-rate system at all. The 50 cents per bag price that was eventually settled on was a “guesstimate” of what would be acceptable to residents. At this price, city planners assumed that all residents, including low-income residents, would be able to afford the cost of participating in the program.⁵⁰ One year after the program's implementation, the city began offering 15-gallon bags for 25 cents per bag. This was a response to complaints by some of the residents who had reduced their weekly trash output below 32-gallons. These residents argued that larger bag sizes were causing them to waste money since they were throwing away only partially full bags each week

⁴⁹The Worcester Telegraph and Gazette: “Council Approves Trash Fees”, June 9, 1993.

⁵⁰ Phone Conversation with Bob Fiore, April 24, 1997.

Worcester's New Curb-Side Recycling Program

The Worcester recycling program was designed to make it very easy for residents to divert recyclables from their trash. A bi-weekly collection of recyclables was established and residents were not required to pre-sort their recyclables. Instead, aluminum and tin cans, all colors of glass, plastics HDPE #2, PVC #3, juice and drink boxes, newspaper, magazines, junk mail and chip board could be placed in the same recycling bin. The pre-sorting of recyclables associated with many recycling programs was not included in the design of the program since the state-owned recycling facility in Springfield had automated sorting lines.⁵¹

Although the recycling program was designed to be easy to use, many residents were dissatisfied with bi-weekly collection of their recyclables. The amount of recyclables that many individuals were diverting over a two-week period was so great that it made storing and taking recyclables to the curb an inconvenience. The planners at the DPW were concerned that without weekly pickups, recyclables would end up in the waste stream. As a result of this concern, the city began weekly collection of recyclables in March of 1996.⁵²

In addition to the newly established bag-fee and recycling program, Worcester also started a bulky waste pick up program that was funded by the bag-fee. This measure was implemented to mitigate potential problems with the illegal dumping of large items such as refrigerators, stoves, couches, bed frames, and mattresses. Residents are able to call the DPW and arrange for the pickup of the items without being directly charged for the service.

Why Multi-Unit Housing was Excluded From the Unit Pricing Program

⁵¹Phone Conversation with Bob Fiore, March 18, 1996.

⁵²The Worcester Telegraph and Gazette: "Recycling Pickups Going Weekly", March 2, 1996.

The new programs in Worcester did not apply to the entire city. Only 50,000 houses and apartments participate in the program. Buildings with six or more units are not part of the bag-fee or recycling program and must contract with a private hauler for their waste removal services. The decision to service only those houses with 5 units or less was a practical one. It would have been extremely difficult for the city to incorporate large housing complexes into the program. Because large multi-family housing units have mixed trash collected in large dumpsters, there would be no incentive for residents to purchase the specially marked bags, and it would be almost impossible to determine which residents had not complied.

How Did Worcester Monitor Program Compliance?

The variable-rate system in Worcester, which was marketed to residents under the name "Pay-As-You-Throw", also had several other important design features. Worcester's enforcement procedures were decidedly educational in nature. Although fines were included in the design of the program in order to enforce compliance, they were only levied as a last resort. The DPW hired four garbage route inspectors to monitor which houses were not complying with the new program. The inspectors determined that households were in compliance if they placed their recyclables out on collection days, and used the city's garbage bags. During the first month of the program inspectors would stop by houses that were not complying and speak to the residents, explaining to them how they could get into compliance with the program. Only after repeated violations occurred would an inspector impose a fine, beginning at \$25 for the first violation and escalating to \$100 for repeated violations. This approach was successful and by January 1994, two months after the program's initiation,

compliance levels for the 50,000 households participating in the program were at 99%.⁵³ By the end of FY 1994, the inspectors who had originally acted as enforcers for non-compliance with bags, were transferred from the DPW to the Department of Health and reassigned to inspect vacant lots and wooded areas for illegal dumping.

How Does the User-Fee Program Compare With Worcester's Previous Solid Waste Program?

There are many ways to evaluate the degree to which Worcester's variable rate program has been successful. One way to gauge the program's success is to compare its effectiveness with the traditional solid waste management system that it replaced in November 1993.

Tonnages

Solid waste tonnages increased gradually between Fiscal Years (FYs) 1986-1990.⁵⁴ (See Table 2-1) This is not surprising since there were no incentives for residents to reduce their waste during this time. Solid waste tonnages decreased slightly during FYs 1991-1993, and this reduction can be attributed to a drop-off recycling program that was initiated in Worcester in April of 1990.⁵⁵ The city maintained six drop-off centers and residents were able to drop off newspapers, glass and some plastics, which helped reduce the total amount of solid waste disposed of during this period. Solid waste data for FYs 1994-1996 show significant reductions in the amount of municipal solid waste collected and disposed of, which was the direct result of instituting a variable rate program and a comprehensive recycling program. (See Table 2-1 below)

⁵³ Moylan, Robert, Jr. "Volume Based Program Succeeds in Urban Setting", World Wastes, May 1995, p.6.

⁵⁴ The Fiscal Year goes from July 1 to June 30

⁵⁵ The Worcester Telegraph and Gazette: "Recycling Program 'easy to use'", November 21,

Table 2-1 Solid Waste Tonnages and Tip Fees for 1986 - 1996

Year	Trash in Tons	Tip Fee/Ton	Annual Disposal Cost
1986	44,301	\$24.42	\$1,081,830
1987	45,272	\$24.67	\$1,116,860
1988	48,124	\$25.33	\$1,218,981
1989	49,252	\$26.29	\$1,294,835
1990	47,589	\$27.10	\$1,289,662
1991	45,168	\$27.92	\$1,261,091
1992	43,288	\$28.25	\$1,222,886
1993	38,534	\$28.79	\$1,109,394
1994	22,810	\$28.96	\$660,578
1995	24,076	\$29.47	\$709,520
1996	24,362	\$29.94	\$729,398

Disposal Costs

The annual disposal costs for Worcester increased between FYs 1986-1990, which corresponds to the increases in the total amount of waste being produced during this period. (See Table 2-1 above) There were gradual decreases in disposal costs for FYs 1991-1993, which is consistent with the diversion of some material from Worcester's waste stream due to the establishment of drop-off centers for recycling. The significant decreases in disposal costs for FYs 1994-1996 were a direct result of the variable-rate system's ability to divert recyclables and yard waste from disposal. (See Table 2-1 above)

Total Cost for Solid Waste Services

Although it has effectively reduced disposal costs, the implementation of a variable-rate program in 1993, has significantly increased the city's total solid waste costs. For example, in FY 1994, the total cost for providing solid waste

services was over \$ 1,000,000 more than the total costs in FY 1993. The additional costs in FY 1994 resulted from new costs created by the variable-rate program. These new costs resulted from the need to collect and haul recyclables, purchase and distribute the trash bags, hire four enforcement officers, and institute education and advertising campaigns. In FY 1995, the cost of trash bags declined a bit, but the cost of recycling increased by 47% and new costs for bulk waste removal and hazardous waste collection were added. These increases were offset by decreases in salaries, overtime, and the program's education and advertising campaigns. For FYs 1996 and 1997, the total budgeted costs stabilized at about \$3,400,000, which reflects no real change from the total cost of 1992 after taking into consideration a 2.6% annual average rate of inflation.⁵⁶

Revenue

Offsetting the increased cost, was the revenue generated by the sale of garbage bags:

Fiscal Year	Revenue Generated
1994	\$ 1,007,375 ⁵⁷
1995	\$ 1,552,125
1996	\$ 1,468,422
1997	\$ 1,552,100

The revenue generated by the sale of garbage bags has remained fairly stable since the program's implementation. If the revenue generated by the program is subtracted from the program's total costs, the result is the amount of

⁵⁶Bureau of Labor Statistics. Consumer Price Index-All Urban Consumers. Bureau of Labor Statistics Home Page. September, 1997.

⁵⁷ For fiscal Year 1994, the program was only in effect for 8 months, from November 1993 - June 1994.

tax revenue needed to cover the cost of the variable-rate program to the city of Worcester. (See Table 2-2 below)

Table 2-2: Revenue Generated by Bag Sales and Through Taxes

<u>Fiscal Year</u>	<u>Total Cost</u>	-	<u>Bag Revenue</u>	=	<u>Tax Revenue</u>
1992	\$2,976,207	-	0	=	\$2,976,207
1993	\$2,975,343	-	0	=	\$2,975,343
1994	\$3,993,895	-	\$1,007,375 ⁵⁸	=	\$2,986,520
1995	\$3,342,695	-	\$1,565,125	=	\$1,777,570
1996	\$3,443,847	-	\$1,468,421	=	\$1,975,426
1997	\$3,373,916	-	\$1,552,100	=	\$1,821,816

Before initiating a variable-rate program, the tax revenue needed for providing solid waste services was relatively stable at about \$3,000,000. The tax revenue realized for the variable rate program in FY 1994 was about the same as the previous two fiscal years', which represented the traditional system of waste management. The tax revenue needed for FY 1994 was significantly higher than the tax revenue needed for FYs 1995-1997, because it includes the substantial program start-up costs (advertising, education, establishing a billing system, etc.) However, after FY 1994, the tax revenue needed to run the program decreased

⁵⁸ For Fiscal Year 1994, the program was only in effect for 8 months, from November 1993 - June 1994.

significantly and the city was saving on average, \$1,000,000 per fiscal year when compared to FYs 1992-1993.

Worcester's variable-rate program can be fairly assessed as an additional tax. This is because the additional costs of the variable-rate program are being paid with the revenue generated through the sale of bags. Consequently, from the point of view of a typical program participant, they are paying for the variable-rate program through their property tax and through the purchase of bags. Yet, from the perspective of the Department of Public Works, its variable-rate program had been a success. It has simultaneously reduced its dependency on money from the city's general funds, while providing greater solid waste services to residents.

Although Worcester has been successful in reducing its solid waste tonnages and maintaining a high recycling rate, there are other benchmarks of the program's effectiveness which have not been explored in detail, and are necessary to investigate if Worcester is to be considered a model city for urban variable-rate programs. These other factors include the acceptance of the program by the community at large, low-income residents' response and acceptance of the program, and the effect that the program had on illegal dumping in the city.

Despite the fact that subsidies have been implemented in some municipalities with variable-rate systems, and are of particular concern to program planners in urban areas, the DPW in Worcester did not include a subsidy for low-income participants. The DPW's decision not to include a special rate for low-income citizens was based on two considerations, the first was the limited amount of time that it had to implement the new pay-per-bag program,

and the second was the hope that the bag price was so low that it wouldn't discourage low-income residents from participating in the program.⁵⁹

Public works officials discussed developing a subsidy program, but several concerns that could not be adequately resolved in a timely manner effectively killed any possibility of an assistance program. Foremost among these concerns was the cost the DPW would incur in order to design and administer a subsidy program. Equally daunting was the prospect of developing fair standards with which to judge those needing assistance, and the difficulty of recertifying people for assistance each year. These concerns limited the feasibility of an assistance program in the minds of the city's planners.

It is my opinion that the DPW did not fully explore the possibility that creating a variable-rate program without a subsidy for low-income people would create an unfair burden on an already disadvantaged group. No low-income advocacy groups were included in the program's design process. The decision not to include a subsidy program seems to have come about more as a result of limitations in planning time and limitations on staff time devoted to program design. The decision does not appear to have been the result of a well-informed determination that a 50-cent per bag price would or would not create difficulty for low-income residents.

⁵⁹Phone Conversation with Bob Fiore, April 25, 1997.

Chapter Three
**The Experience of Low-Income Residents
in Worcester's Pay-As-You-Throw Program**

The degree to which any program is considered successful is necessarily dependent on the criteria used to evaluate it. Variable-rate programs in particular, can be evaluated on readily accessible and easily quantifiable information. The amount of waste reduced, the percent of the overall waste stream that is being recycled, and a shift in the way solid waste programs are funded, are all common criteria on which variable-rate programs are evaluated. Using these criteria, Worcester's variable-rate program has been hailed as a success by representatives of the city's DPW, the City Council, local newspapers and regional environmental organizations. In addition to becoming one of the first cities in New England to implement such a program, Worcester's unit pricing approach to solid waste management has also effectively reduced total solid waste tonnages, has helped to maintain a consistently high level of recycling, and has reduced annual disposal costs. This ostensible success, in a city with over 160,000 people, has encouraged leaders from other cities, both nationally and internationally, to consider the possibility of instituting urban variable-rate programs of their own.⁶⁰

Nevertheless, measures of Worcester's success in terms of end results, are incomplete and insufficient since they do not reflect program participants' opinions and perceptions of what is a good or fair program. A successful program is not only one in which a city meets its fiscal and solid waste goals, but

⁶⁰ Phone Conversation with Bob Fiore, April 25, 1997

also one which realizes these goals in a manner that enables all residents to participate without facing undue hardship or financial burden. If this additional criterion for evaluating the success of a program is applied, the experience of Worcester's low-income population becomes significant.

The DPW apparently believes that low-income residents have not had problems adjusting to, participating in and accepting Worcester's variable-rate program⁶¹, and this belief warrants further attention. If indeed low-income residents have not had difficulty affording the cost of the city's bags, and have adjusted to the city's program, it is important to determine why these residents have been able to participate in the program. Discovering the reasons for Worcester's success in this area would expand our understanding of how variable rate-systems can be designed to work more effectively and fairly in other urban areas.

Since Worcester's DPW did not involve low-income residents, or groups representing low-income residents, in the planning stages of their program, and since the DPW did not do any follow up studies to see how this population was affected by the program, there is the possibility that low-income residents may be experiencing more difficulty with the city's program than city officials know or care to admit.

In developing a strategy to understand how low-income people in Worcester responded to the city's program, I asked four main questions:

- 1. Did the cost of participating in the program cause undue hardship to low income residents ?**
- 2. What were the specific design features of Worcester's program that encouraged low-income residents' participation ?**
- 3. What were the specific design features of Worcester's program**

⁶¹Phone Conversation with Bob Fiore, April 25, 1997.

that made it more difficult for low-income residents to participate ?

4. How could low-income residents' experiences inform and direct the development of variable rate programs in other cities ?

The main goal or objective of these inquiries was to get a direct, first hand understanding of the experiences of low-income participants in Worcester's Pay-As-You-Throw program. There were multiple methodological approaches that I could have used to gather information. The Department of Environmental Management in Providence, Rhode Island, recommended that I distribute surveys in Worcester in order to get a large sample of low-income residents' responses. This research method would have enabled me to draw conclusions based upon a larger sample of low-income residents and about their responses to the program. Nevertheless, I chose to use a qualitative approach to getting this information because of the limited use that a survey would have had in providing the detailed explanations, motivations and reasons for people's views, opinions and feelings that my questions for this study required. Because my initial questions and concerns necessitated that I obtain detailed and in-depth information from low-income participants, I decided to use focus groups rather than surveys. As a result, I was able to get very detailed accounts of some low-income resident's experiences in the program, but could not claim that these findings represented the views or experiences of the low-income population in general.

Practical and Methodological Difficulties Recruiting Low-Income Residents

The process of recruiting participants for my focus groups was a difficult one. I intended to organize two focus groups consisting of low-income residents of Worcester, and was immediately confronted with the difficult prospect of

gaining access to low-income residents. Although there are several section eight housing projects in Worcester, the number of apartments in each complex precluded residents there from participating in Worcester's program.⁶² As a result, a large pool of easily accessible low-income residents had to be excluded from my study. I considered canvassing or randomly selecting residents from the phone book, but rejected this approach since the qualification process would have necessitated asking personal questions about income, and I felt very uneasy about this prospect. I was finally able to gain access to a large pool of low-income residents by enlisting the support of local churches, charities, and non-profit agencies. These agencies, which help low-income residents by distributing food and clothing and providing emergency assistance and counseling, enabled me to use their existing relationships with low-income community members and significantly reduce the amount of leg-work it would have required to recruit participants on my own. These institutions allowed me to post fliers in their organization for recruiting focus group participants, and enabled me to establish contact with participants. This method of recruiting was both time and cost effective, and relied on "informants", or organizations that already had contact with low-income residents to aid in recruiting participants. One of the dangers of using this method of selecting focus groups participants was that it could have introduced bias into my focus groups selection. For example, participants that were recruited through a local church may tend to be more civic-minded and more amenable to participating in socially beneficial programs like recycling, than the average resident would be. Although my selection process relied on the help of churches and charitable organizations, the actual focus group participants were not members of these organizations, but used the services that

⁶²Only those buildings with less than five units in them are included in the city's trash and recycling program

these groups provided. This distinction is significant since it does not follow that people who use a church's food pantry necessarily belong to a church, and I believe that my use of these organizations for information sources did not significantly bias my focus group selection.

Other problems particular to low-income people also made recruiting difficult. Many people who expressed interest in participating did not have their own telephones and, although they were interested in participating, could only be contacted through the phones of friends or relatives who had agreed to pass messages on to them. As a result, planning a convenient time and location for participants became much more difficult and time consuming. In addition, many of the participants did not have cars to get to the different focus group locations, and special care had to be taken to ensure that locations were within walking distance or available via Worcester's public transportation system.

Potential participants were screened to ensure that they had been residents of Worcester for the past four years, that they were participating in the city's variable rate program and that they were either receiving assistance from the federal government or utilized local clothing and food banks on a regular basis. Each of the residents that met these qualifications was called and offered ten dollars to participate in an hour-long, video-taped focus group session. People who had committed to participate were called a week in advance and reminded of the location, time and date of the focus group. In addition, follow-up calls were made the day before each focus group to remind participants once again of their commitment.

The first focus group was held in the board room of Worcester's Public Library on July 11, 1996 at 6:00 pm. Each of the six residents who had agreed to participate showed up at the session and the focus group started on time. However, this was not true of the second focus group, which was scheduled to

be held on August 12, 1996 at 7:00 pm at Youville House, a local food pantry. The night before the second focus group, I called each participant and confirmed that he/she would be in attendance and that he/she knew the right time and location. Nevertheless, on the night of the focus group, no one showed up. There were several different reasons why participants did not attend. A few of the residents who had planned on walking to the focus group were dissuaded from attending by the inclement weather that evening. Furthermore, several people were unable to find rides, and two of the participants who were single mothers, couldn't find baby-sitters. As a result, I rescheduled the focus group for August 19th at the same time and place. This time, however, I offered to arrange transportation and to provide someone to watch the participants' children. By taking the time to make it as easy as possible for residents to attend the focus group, I was able to get all seven residents to participate. Despite the frustration of arranging this focus group, the difficulty I experienced in planning it was very important because it further illustrated the daily difficulties that low-income people face. Things that I had suspected were difficult for low-income people—mobility, having consistent telephone and utility services; and the difficulty of affording baby-sitters,— were brought into sharp focus during the planning and organization of these focus groups.

Question Design and Structure

The questions that I asked at the focus groups were designed and organized to elicit participants' perceptions of Worcester's variable rate program and how those perceptions had changed over time.⁶³ I was interested in learning whether people's initial concerns, complaints, or problems with the program had remained the same, or had changed. Since people will often "remember" their

⁶³A copy of my moderator's guide is included in the Appendix

past feelings through the lens of their current feelings, asking people to recall how they felt in the past can be problematic. Despite these concerns, I thought that participants would recall particularly difficult or memorable experiences as unbiased memories, regardless if their current feelings had changed.

The first group of questions that I asked participants was aimed at finding out their initial reactions to the program, and what they imagined their participation in the program would be like. The second group of questions that I asked was aimed at finding out the participant's most immediate reactions to the program, and how it was affecting them at the present time. The third section of questions that I developed put the participants in the hypothetical situation of designing a new variable rate program for the city of Providence. Participants were encouraged to reflect and draw upon both their positive and negative experiences of participating in Worcester's program, in order to offer ways to make, Providence's "Pay-As-You-Throw" program easier for people to participate in.

Results and Findings

In this section I will present the most significant findings from both my focus groups. The comments of participants in both focus groups covered the same general themes and expressed similar concerns. The similarities between both focus groups support the validity of my findings and that they were central to each group discussion suggests that the themes were significant. I have divided my findings into categories of the areas of Worcester's Pay-As-You-Throw program that were of most concern to focus group participants. I am organizing comments around these themes because they are the ones that people used to describe the ways in which the program affected them most directly and the ways in which residents integrated the requirements of participating in the program into their daily routines.

Cost of City Garbage Bags

Overwhelmingly, the main problem that focus group participants had with Worcester's variable rate program was the cost of purchasing bags. It is reasonable to expect that most residents, even those with moderate and high incomes, would cite bag cost as an inconvenience. Nevertheless, it is unlikely that most residents of Worcester feel the additional constraints that bag prices impose on their family's budget as acutely as low-income program participants do. For instance, many comments by participants made clear that the \$2.50 price for a roll of five 30-gallon garbage bags was not insignificant to them. Participants' comments expressed the genuine concern that low-income people have with small expenditures.

I'm really counting pennies. It wasn't the recycling aspect, it was the money issue, having a hard time making ends meet to begin with and then having to buy bags for \$2.50 ? So that's what bothered me - not the procedure itself.

-Jennifer (8/19/96)

Two fifty isn't a whole lot of money to some people, but when you are really just getting by, you have to worry about where all your money goes, what you're going to spend it on.

-David (7/11/96)

I think its a pain. I like the concept of it, recycling for the earth and all that, but I haven't had any income since February, so still paying \$2.50 for bags really irks me. I buy ten bags at time, I could go to Shaws and buy ten bags for 99 cents at one time.

-Pam (8/19/96)

It would be easier if you could buy one bag at a time, but its spending \$2.50 every time you need a garbage bag. That's the problem, its not the 50 cents its \$2.50.

-Mary (7/11/96)

Additionally, comments from participants in both focus groups indicated that some participants have had to make very difficult trade offs between purchasing bags and other household staples like diapers and milk.

If it comes down to a box of diapers or trash bags it really isn't much of a decision.

-Heather (8/19/96)

Even now if its a choice between a gallon of milk or bags, what would you do ?

-Christina (8/19/96)

Although there was no person in either session who said he/she could not participate in the program because of its cost, several participants in both sessions detailed the extraordinary measures that they had to take in order to dispose of their trash legally. I was surprised to find participants in both groups who bought non-city garbage bags at times when they could not afford to buy a roll of city garbage bags. Participants did this in order to temporarily store their garbage outside their apartments and homes and would then transfer these generic garbage bags into the city's bags when they were able to purchase them.

I've gone for weeks without buying yellow bags. I always keep regular bags around so I can leave the trash outside until I can get the other bags.

-Mary (7/11/96)

I still put my trash in the green bags and then I put them in the yellow because at least I'm getting them out of the house, so I'm buying double bags.

-Christina (8/19/96)

I also have a large family so I need to buy at least five bags (a week) and if I don't have money the one week, I have to put out ten bags the next week and I have gone three weeks and I have fifteen bags of garbage.

-Pam (8/19/96)

Several participants revealed that the program's initial design caused them to waste money in unexpected ways. When the program first started in Worcester, participants could only buy 30-gallon trash bags, and as a consequence, would often have to throw out bags that were only partially filled with garbage. Participants who described this experience felt that they were wasting money by purchasing bags that they didn't get enough use from. Participants who decided to keep using the same trash bag until it was filled, complained about having to keep old garbage around the house and in the kitchen in order to save money.

It's me and my two kids at home and I really didn't have that much trash and you don't want your trash hanging around week after week until you fill that bag. So I was wasting it. What really bothered me was paying 50 cents a bag and wasting it.

-Pam (8/19/96)

And like in the summer time, if trash builds up in the house, you can get maggots and it really smells.

-Jennifer (8/19/96)

They should have had the small bags all the time when they started doing this. Not everyone needs the big bags, its better to use two of the smaller ones than only part of a big one.

-Sandra (7/11/96)

Suggestions for Proposed Providence "Pay As You Throw" Program

Part of my focus group questions were designed to utilize low-income residents' experiences of participating in Worcester's program as a basis for informing and directing the development of variable rate programs in other urban areas. I asked participants their opinions on what a variable rate program ought to be like if it was to be implemented in Providence, Rhode Island.

Participants were asked what changes and additions they would recommend be

included in the design of this program and what should remain the same. There were explicit recommendations made by participants and implicit suggestions which, while not actually stated, could be inferred from their comments.

In addition to asking participants what specific elements of Worcester's program should and should not be used in Providence, participants were asked to consider how higher prices for bags would affect the success of such a program. One of my concerns in asking questions about the effect of higher bag prices was the potential for participants to think that bag prices were actually going to rise in Worcester. To prevent any potential misunderstandings, I explained once again to participants that I was a student researcher, I was not affiliated with any city agencies, and that I had nothing to do with the administration of the city's garbage or recycling programs.

Reactions to a Bag Price of 85 Cents

Given, the negative response in both focus groups to Worcester's 50 cents per bag price, it was not surprising that participants responded as strongly and as negatively as they did to the question of whether they thought an 85 cents per bag price would be feasible in Providence. People were concerned that at this price, low and fixed income residents would simply not be able to afford the purchase of bags. Participant responses reflected their belief that a bag price of 85 cents would cause illegal dumping.

**How are people on welfare going to afford that ? They can't.
-Heather (8/19/96)**

85 cents is way too high. I don't think they could get away with it, because articles in the paper talk about how much money they (the city) are saving. They'd be cutting their own throats. There would be people out there protesting and there would be slime all over the place in terms of rubbish - there have been too many articles about how good and positive and cost effective its been.

-Anne (8/19/96)

She was talking about people protesting and stuff, (see above) but look how hard it was for you to get a meeting going and getting us together with one voice at the same time - Its always I got something else to do, I'm busy, or I don't feel like going or you know - bringing this problem to the people and having them sign petitions you know prices will go up and we will just keep suffering.

-Joan (8/19/96)

I don't think it would work, I couldn't spend five bucks a week on garbage bags. Two-fifty is bad enough, I just don't think people would be able to do it.

-John (7/11/96)

Things would get messy, people have to throw their trash somewhere and there would be trash all over the place in the streets and stuff.

-Trina (7/11/96)

Comments from participants indicated the concern that even those policies directed towards providing some kind of assistance to low-income people, such as a subsidy for bags to low-income residents, would not be comprehensive enough, and would exclude people who have very low-incomes but do not receive welfare or foodstamps.

Something that could be implemented is a discount for people that could prove they are on welfare or SSI to show that they are low-income or getting some assistance.

-Joan (8/19/96)

Not all people on fixed incomes get discounts.

-Heather (8/19/96)

Not just low-income. Some people who don't get food stamps just don't get that much money, but aren't eligible for programs.

-Anne (8/19/96)

Education of Program Participants

Participants had very good reactions to Worcester's education program. Participants liked that they received multiple notices letting them know about what the city's new garbage and recycling program entailed, and required of them. Furthermore, participants liked that the city advertised its program in several different media and that the DPW had set up a hot-line that people could call to have their questions answered. Almost everyone in the second focus group nodded their heads in agreement at the suggestion that the DPW send out annual information regarding the progress of the program so that participants would feel like they were contributing to its success.

It was in the newspaper also, they did a lot of advertising. Everybody got fliers sent out to their homes. Actually they sent a booklet, a pamphlet...basically they really detailed it for us.

-Jennifer (8/19/96)

The mailman. Distributing information through the mail worked really well in Worcester.

- Trina (7/11/96)

They also gave examples too, what they meant by it too, it was really good, glass but no light bulbs - they really explained everything.

-David (7/11/96)

You should also always have a phone # to call to have questions answered.

-Pam (8/19/96)

They should send out a progress report to let us know how we have helped out and what money has been saved.

-Heather (8/19/96)

Concerns with Elderly Participation

When asked to describe how Worcester's garbage and recycling program had affected their neighbors, relatives and friends in Worcester, the most

prominent theme that emerged was a concern for the elderly and their ability to participate in the program. Two participants in the second focus group were particularly vocal because they had elderly relatives in Worcester. They explained that the cost of the program not only created an additional burden for low-income residents, but for senior citizens with fixed incomes as well. Additional comments focused on the difficulty that handicapped and elderly people had crushing recyclables and carrying out recycling bins to the curb. They suggested that the city provide elderly and handicapped residents with exemptions from having to crush their cans and milk cartons.

My mother is handicapped and she's elderly, she lives in an elderly complex and they are all complaining about the same thing. It just takes too much effort on her part

to carry the stuff out.

-Heather (8/19/96)

Most of the people (elderly citizens) are on social security and don't have that much money and they have to put their money into the bags.

-Heather (8/19/96)

Could you imagine an elderly lady or even a man, picking up one of those bins ?

-Jennifer (8/19/96)

The older people are really upset about it and she can't do it. Don't make them crush things or have different colored bins for the elderly so the inspectors know that they couldn't crush things.

-Heather (8/19/97)

Availability of Bags

Availability and convenient access to stores that sold the city's bags, was described as a problem by some participants. People had difficulty during the first year of the program when some of the larger grocery stores in Worcester

refused to carry the city bags because they were not able to mark them up. For the most part however, participants found that many stores carried the bags and that it wasn't too difficult to get them.

It is a lot better now than when they first started. When you don't make that much money - when you are low-income you know you never shop in convenience stores because everything is so much more expensive, you shop in grocery stores or department stores. Some of the big grocery stores were refusing to carry the trash bags, so I had to make two trips, which was a real pain.
-Anne (8/19/96)

Going grocery shopping is an event when you have to use the bus anyways, and since the buses only go to the big stores like Price Choppers, which didn't even carry the bags for a while, I had to go to two different places to get everything I needed.
-Kathleen (7/11/96)

You can get the bags anywhere now, every little convenience store, like the Honey Farms, and all those little corner stores, carry them now.
-Trina (7/11/96)

But some stores don't carry them on the shelves anymore because people were stealing them. So you have to get them at the courtesy desk which takes a long time.
-Joan (8/19/96)

Shopping Behavior

Residents seemed unsure of what I meant when I asked them if they had changed the way they shopped due to the variable rate program. In both focus groups, no one reported that they had changed their shopping behavior in any way due to the program. Comments revealed that buying items with less packaging is not a real option for low-income people. Participants revealed that what they buy at the supermarket is directly related to the price of the item. They explained that the major decision that affected their shopping behavior was which stores had the best bargains. Participants noted that some of the

supermarkets in Worcester had recently added sections in which items could be purchased in bulk. Nevertheless, participants also pointed out that buying items in bulk requires that a person have enough money to pay for bulk items and still cover the cost of the other groceries they need that week.

If they were cheaper then I'd buy them.
-Jennifer (8/19/96)

I buy refills for window spray because it is cheaper to buy the refills.
-Christina (8/19/96)

The only time we get alot of the same thing is like with toilet paper or something like that, but what's the point of getting a huge bag of chips instead of getting a smaller bag and something else you need.
-David (7/11/96)

People should know that the most expensive things at the store are frozen dinners, and the candy and chips. Buying an enormous bag of something like that is just buying more of what is really expensive to begin with.
-Sandra (7/11/96)

Bulky Item Pick Up

Focus group participants were quick to point out that bulky item pick up was a problem in Worcester. Although participants liked that they didn't have to pay for the pick up, they didn't like that it took the city a long time to pick up large items such as refrigerators, couches and stoves. This was problematic for those participants who rented apartments because they had limited storage space for large items.

It took a month and a half to pick up my stove. I own my own home so I can keep a lot of stuff in my garage, but if you are a tenant, It becomes a burden.
-Christina (8/19/96)

It really does, where are you going to store it ? I have no space for any extra stuff like that in my place.
-Pam (8/19/96)

You don't have to pay for it, you just have to WAIT !
-Anne (8/19/96)

When you call BFI they give you an appointment, three months from when you call. What do they expect ? Do they care if I have a couch sitting in my stairway for a month ?
-Kathleen (7/11/96)

If you leave stuff like that on the street, someone who needs it will take it, people go around all the time looking for stuff they can fix up or use. I left a refrigerator out there to be picked up and before they (BFI) came for it, almost the entire thing except the insulation was gone.
-David (7/11/96)

Illegal Dumping

Participant responses to problems with illegal dumping primarily focused on illegal dumping of bulky items. Participants pointed out that the long time it took for the city to take resident's bulky items, added to the problem of illegal dumping. Participants responded that illegal dumping of bulky items occurred in Worcester before the program, and they were unsure whether the variable rate program increased this type of illegal dumping or it had remained about the same.

I still notice a few dumpings of the big items...You know where I see stuff, Coburn Ave in the woods, big appliances and stuff.
-Christina (8/19/96)

Great Brook Valley....People go there because it takes so long to get rid of their big stuff - so people throw it out in the middle of the night.
-Bill (8/19/96)

I think illegal dumping would have decreased because pick up of bulky items would be free.
-Barbara (8/19/96)

It used to be up on Pecurin Road - before they built the fire station - Holy Cross used to pick up all that stuff because it was their property and they used to have the maintenance go in and pick up all the trash - it used to be a big dumping off place. You'd find trash bags, furniture, everything you could think of.

-Pam (8/19/96)

Although participants were able to identify different areas where people are known to dump bulky items in Worcester, there was no discussion about people using commercial dumpsters or vacant lots to dump their trash. A few participants recalled that at the beginning of the program people tried to avoid buying the city's bags, but no one indicated that illegal dumping of trash was still a problem. Respondents attributed the lack of illegal dumping to Worcester's strong inspection and enforcement policies.

Well, like in Worcester, you'd be fined number one. They're not going to take your trash. There is a fine or something if you don't use the city's bags...People found that the fine was more than it cost to buy the bags so they gave into it, so you don't really find that much trash around.

-Jennifer (8/19/96)

When we first started out that was done. I noticed that there was a lot of trash that was left on the sidewalk and people were refusing to use the yellow bags, but the city would not pick them up either. They (the garbage inspectors) actually went through the trash and found out who the trash belonged to.

-Christina (8/19/96)

There were trash police at the beginning and they checked to see if you used the right kind of bags. If you didn't use them you got a fine. It's as expensive as getting a speeding ticket, a \$100 or more.

-Trina(7/11/96)

I thought there would be trash everywhere, but people use the bags, their isn't really anything else you can do, its something you just get used to doing. I don't even think about it anymore.

-Kathleen (7/11/96)

Additional Findings About Illegal Dumping

I was interested in determining if illegal dumping of household waste occurs in Worcester as it does to some degree in most unit pricing communities.⁶⁴ However, this kind of information is difficult to get from a focus group. Illegal dumping is a socially undesirable behavior. In a social situation like a focus group, it would have been very surprising for any person to say the he/she illegally dumped his/her household waste. As a result, I had to develop a different research method to get a better indication of whether illegal dumping occurred in Worcester.

Random telephone calls to fifteen convenience stores and ten property management firms confirmed that illegal dumping of residential waste in commercial dumpsters does occur but on an undetermined level. Two convenience store clerks reported that they sometimes noticed residential trash in or around their dumpsters. All except one property management firm reported that if illegal dumping did occur, they were not aware of it. One condominium manager responded that his complex's dumpsters were used by people outside the development, but he had no way of being sure of how frequently. Although it seems probable that this kind of dumping does occur on a small scale throughout the city, it either goes unnoticed, or does not create enough of an additional disposal cost for these businesses to more carefully monitor their dumpsters.

Focus Group Limitations

While both focus groups provided information that is useful in understanding the impact of Worcester's variable rate program on low-income participants, there are limitations to the conclusions that can be drawn from this research. A total of 13 people participated in both focus groups; and while the

⁶⁴Canterbury, p 12.

comments reported above represent the view points and feelings of the low-income participants involved, they are not necessarily representative of the entire low-income population of Worcester. Nevertheless, the themes that emerged in both focus groups are significant because they provide the information with which to make informed suggestions about how to better incorporate low-income residents into urban unit-pricing programs.

Chapter Four: Recommendations Based on Focus Group Findings

How can planners of urban unit-pricing programs maximize acceptance of user-fee programs among low-income participants while minimizing the difficulties that these residents may face?

The experience of Worcester suggests that planners should encourage the participation of low-income residents during the primary stages of unit-pricing programs, in order to identify and address the concerns of these groups. Although this strategy may generate early political opposition, a dialogue between planners and low-income groups will allow these groups to feel included in the political process rather than victimized by the political process. The most direct way to encourage such a dialogue may be through a well-designed education program that anticipates and engages with the immediate concerns of low-income residents.

My focus groups indicate that low-income residents have responded positively to Worcester's education program. When kept well-informed about the need for unit-pricing and about the progress that the unit-pricing program was making, these low-income residents became more invested in the success of the program and were more likely to participate.

Conversely, my focus groups revealed that an unwillingness to participate stemmed from specific elements of the program's design. These hurdles to acceptance of the unit-pricing program could easily have been mitigated early in the implementation process, had low-income residents been included in a decision-making forum. Indeed, when these troublesome design elements were

addressed later in the program's process, my focus group members reported a more favorable reaction to the program. This suggests that significant political opposition to such programs could be defused by an inclusive policy.

The design elements that seemed to present the most difficulty for my focus group respondents revolved around two main issues. The first issue is the quality-of-life costs that unit-pricing programs impose. The low-income residents I spoke with indicated that they had concerns about the program that would not necessarily occur to middle and high-income planners. The concerns mentioned were ones that made compliance with the program detrimental to one's comfort, one's use of time, or the livability of one's home; specifically cited were the problems of space limitations in apartments, and limited access to garbage bag retailers, and delays in the pick-up of bulky items.

Tellingly, the design elements responsible for this disgruntlement were precisely those that were altered in the course of the program's development, after the concerns were brought to the attention of the city planners. Residents' complaints about having to share apartment space with half-filled bags of garbage were addressed by the introduction of the smaller 15-gallon bags. In this way residents were able to select the bag size that best fit the amount of waste they generated. As a result, this prevented low-income residents who only need 15-gallon bags from spending more money on 30-gallon bags that are not used as efficiently.

Those who voiced dismay about the inconvenience of having to find transportation to a supermarket when the need for bags arose were mollified by

the expansion of bag distribution to neighborhood convenience stores. Although the problem of bulky-item pick-up has not yet been substantively dealt with, it seems to be a problem that residents are willing to put up with, since it is a more infrequent one. Charging residents for the pick-up of bulky items is one possible way to definitively resolve this issue. However, there is another way to resolve this issue without adding cost to the individual. Worcester's DPW can put pressure on BFI to make more prompt pick-ups of resident's bulky waste. This would not involve paying more money to BFI. Instead it would require the city to monitor BFI's pick-up of this waste to ensure that bulky-item pickups occur in a timely manner. Based upon my focus group findings, I believe that the additional price of hauling bulky-items is one that low-income residents would pay. The additional price of hauling bulky-items is secondary to the inconvenience low-income residents expressed due to loss of apartment space. This give-and-take points to the possibility that these kinks in the process could have been avoided entirely had lower-income voices been heard earlier, or had lower-income residents been more invested in the success of the program. It also seems to argue against the idea that opening the planning process to dialogue inevitably creates a political opposition that could derail the program entirely.

The second, and clearly the most contentious, issue that engaged my focus groups is the financial cost individuals must bear in order to participate in a unit pricing program. While this would seem to be an obvious concern for low-income residents, my research indicates that the perceived problem is not

necessarily the cost of the garbage bag. Rather it is the perception that the cost of the garbage bag pays solely for the garbage bag –an item that they had hitherto been able to purchase far more cheaply. This is a crucial perception that any educational efforts must address. Policy-makers need to make clear to residents that under a unit-pricing program, the nominal fee for the garbage bag also pays for pick-up of the garbage, disposal of the garbage, and the administrative costs of removing the garbage. My focus groups revealed that residents who understood the conceptual basis of the unit-pricing program had fewer misgivings about the cost of the individual garbage bags.

Nevertheless, education alone will not mitigate people’s objections to the cost an individual will have to bear under a unit-pricing program. Policy-makers have two options that can decrease the cost that low-income residents will have to pay to participate.

One option is to develop a subsidy program that will subsidize the cost of bags for low-income residents. This approach requires developing guidelines to determine which residents would qualify for assistance, developing a system for distributing bags or vouchers for residents to obtain bags, and necessitates the development of a bureaucracy to monitor and administer the assistance program. Because of the difficulty in developing such a system, and its prohibitive cost, this approach is less attractive than other options.

A second, and perhaps better, option is to keep the price of bags artificially low. While this may mean that the unit-pricing program is not entirely

funded through revenue generated by the sale of bags, it does enable planners to satisfy a desire to institute a unit-pricing program while ensuring participation. As Worcester's example demonstrates, it also has the effect of lowering opposition to unit-pricing. Here, again, an early dialogue between planners and lower-income residents would have helped smooth the course of the fledgling program. My focus group members voiced several opinions about the pricing of bags and, also, about the possibility of a range of prices for a range of bag sizes. Suggestions such as these must have been instrumental in forwarding policy changes that made the Worcester program more equitable, but such suggestions could have been implemented even earlier had they been heard in the appropriate forum.

My focus groups also made it clear that the artificially low prices in the Worcester program were within the boundaries of what they were willing to pay. Their willingness to accept the costs of the program was a key factor in the success of the program. Conversely, this suggests that pricing the bags high enough to cover the entire cost of a user-fee program, which would result in a per-bag price substantially higher than what Worcester residents paid, may be politically untenable or may lead to mass non-participation. The experience of Worcester indicates that it is more important to initiate a unit-pricing program than to ensure that it is fully funded by self-generated revenue. Should it become financially necessary, the price of bags could be put on an increasing rate schedule over the course of several years. Gradual changes in price would most

likely be accepted by residents just as price increases for other services are. However, based on my focus group findings, such a policy would have to be accompanied by an educational program that gave lower-income residents a reason to be invested in the program's success; otherwise, political opposition or non-compliance may be more likely.

Chapter Five

The Challenge to Unit Pricing in Providence

Worcester's variable-rate program stands in contrast to the widely held perception that these programs can-not function in urban areas. Certainly, illegal dumping and low-income concerns do present additional challenges to urban unit-pricing communities. However, these concerns are not insurmountable, and they alone should not preclude other urban communities from seriously considering the benefits of adopting user fees.

Unfortunately, Worcester's ability to develop and sustain its user fee program over the past four years has not stimulated serious discussion about implementing a user fee system in Providence. In this chapter I will discuss what I believe to be the different reasons why Providence has not actively explored the implementation of a user-fee system, and the most significant challenges that a user fee system would face in Providence. Where possible, I will suggest ways in which some of the obstacles to establishing a user fee system in Providence can be avoided or circumvented.

Worcester enacted its user fee program because there was a need for additional revenue for the city's solid waste services. According to Bob Fiore, one of the principal designers of Worcester's program, "Without the budget cuts, we probably would not have gone to a user fee".⁶⁵ The fiscal crisis in Worcester demanded that city officials seriously consider user fees. Because of the initial unfavorable public reaction to user fees, it is unlikely that public officials in Worcester would have pursued a user fee program had there been other options available.

In Providence, it is also very unlikely that elected officials would support a user fee in a context other than one of necessity. In order for a user fee to

⁶⁵Phone Conversation with Bob Fiore, April 25, 1997.

work in Providence, it would certainly need the support of Mayor Vincent Cianci. Since the mayor is very responsive to the public's opinion of him and his policies, it is difficult to imagine him championing the cause of unit pricing, while knowing that the immediate public reaction to such a proposal would likely be negative.

In order for a user fee to be established in Providence, the economic and social benefits that it could provide would have to outweigh the political costs to the policy makers who would implement it. Nevertheless, since the Providence Department of Public Works (PDPW) has not considered the extent to which a user fee system in Providence could reduce the annual net cost to the city of providing solid waste services, there is no economic ground on which to argue in favor of a user fee system. My intent to explore the effects of different user fees on solid waste generation rates was stifled by my inability to obtain the necessary budget information from the PDPW. Officials at the PDPW were either unwilling, or unable, to answer repeated requests for this information.

It is improbable that of their own accord, the PDPW would explore the possibility of enacting a user fee. In addition to overseeing the city's solid waste services, officials at the PDPW have many other responsibilities, and adopting a user fee would only create additional work. Without the political, financial, or public pressure for them to do otherwise, the PDPW has no reason to do anything except maintain the status quo.

Although the Rhode Island Resource Recovery Corporation (RIRRC)⁶⁶ and the Rhode Island Department of Environmental Management (RIDEM) actively support the development of user fee systems, representatives from both agencies admit that it is very unlikely for a user fee system to be instituted in Providence

⁶⁶ The RIRRC was formerly known as the Solid Waste Management Corporation

in the near future.⁶⁷ The relatively low and stable \$32/ton tip fee at the Johnston landfill does not create a strong enough incentive to necessitate the development of a user fee, and the estimation that the Johnston landfill will not reach capacity for at least another 20 years only adds to the complacency surrounding a user fee in Providence.⁶⁸

The RIDEM and the RIRCC could buoy public and political interest in a user fee system by forecasting its cost and revenue, and comparing it to Providence's current system of solid waste management. Such information would be useful in starting a meaningful political and popular discourse about the efficacy of user fees in Providence.

Even if the political inertia surrounding unit pricing in Providence is overcome, a user fee will invariably face serious opposition from some community advocacy groups. Direct Action for Rights and Equality, (DARE), is a social justice advocacy group that represents the concerns of minorities and low-income residents in South Providence. DARE has successfully organized around issues of social, economic and environmental justice, and as the organization's name implies, it frequently uses tactics that are highly visible and confrontational. Shannah Kurland, DARE's executive director, is strongly opposed to implementing user fees in Providence. Her opposition stems from her beliefs, that:

1) Even with a subsidy program, low-income residents can not be sure that they will be protected from unbearable costs resulting from user-fees.

2) Current problems with illegal dumping will only be exacerbated by user-fees.⁶⁹

⁶⁷Conversation with John Trevor, Education Coordinator at the Rhode Island Resource Recovery Corporation, March 20, 1997.

⁶⁸Ibid.

⁶⁹Conversation with Shannah Kurland, Executive Director of dare, April 9, 1996.

Even a user fee program that was designed to provide a broad safety net for low income residents and to prevent additional illegal dumping, could be defeated by a well organized and highly publicized campaign by DARE. To overcome both political inertia and political opposition, Providence, like Worcester, must show that the need for a user-fee system exists. While Worcester's program was predicated on financial need, Providence's program may have to rest on a broader basis, given the city's comparatively healthy fiscal state. It is not clear that Providence can show residents that a unit-pricing program would be more cost-effective than its current system of solid-waste management. Instead, Providence's user-fee system could be presented as an effort to make Providence a cleaner and healthier city to live in, while generating money that can be used to improve its resident's quality-of-life.

Resistance from low-income residents, specifically those in DARE or similar organizations, will focus on the cost that low-income citizens will have to bear. They will also claim that the program will impinge unduly on the quality-of-life of low-income residents – that is, if these residents are even able to participate. They will be skeptical about promises of new programs.

As my focus groups in Worcester seem to show, the best way to overcome this skepticism is to use a two-pronged approach, matching a strong educational program to an open planning process.

Rather than being marginalized as “political opposition”, DARE and its associates must be brought into the planning process. Issues that particularly

affect lower-income residents, such as cost of bags, size of bags, and distribution of bags, should be addressed by group advocates early in the development of the program. In this way, the lower-income groups immediate material concerns will be addressed early, perhaps easing the way to philosophical acceptance of the program's aims. To further mollify community concerns, strong consideration should be given to the setting aside of revenues for community service programs, with input from lower-income advocates as to what the best use of such revenues would be. For instance, one of DARE's major concerns is illegal dumping in the vacant lots on the south side of Providence. To address this concern, revenues accrued from a unit-pricing program can be used to appoint monitors who would police vacant lots and prevent illegal dumping. Revenues could also go towards a program that would clean up eyesore lots in lower-income areas. In this way, the fiscal savings from a unit-pricing program will benefit the low-income community in an immediate and highly visible way, earning that community's acceptance.

With groups like DARE invested in the success of the progress, they can be enlisted in an educational program to inform lower-income residents of the changes in the waste-management system, and what the new pricing format means. City planners in Providence should be able to demonstrate that the current per-capita cost of solid-waste management is equivalent to the projected per-capita cost under a unit-pricing system. If the per-capita cost is significantly higher under a unit-pricing program, planners should make it clear that

residents would receive more services from the city for the additional cost they are paying, and the nature of these services should be detailed. In all public communications, what should be emphasized is that the only difference between a traditional solid-waste system and a unit-pricing system is that the cost of waste removal will now be explicit, and not buried in the property tax. While these measures cannot guarantee compliance from lower-income residents, including them in a dialogue about the program will go a long way towards earning their acceptance. It will also make it easier for groups like DARE to support the process.

The city planners should also be sure to inform both lower-income residents and their advocacy groups that a unit-pricing program will not affect subsidized, section 8 housing complexes or condominiums, since they use privately contracted haulers. While this may not eliminate DARE's concerns about financial hardships for low-income residents, it can be presented as a built-in safety net for preventing the most impoverished residents suffering under the program.

The example of Worcester's successful unit-pricing program suggests that Providence could also benefit from the institution of a user-fee policy. And my studies have indicated that one of the prime reasons for opposing such a program – namely, the political controversy over lower-income residents' participation in the program – can be substantially mitigated. As my focus groups suggest, a well-educated and politically engaged lower-income

community will find a value in participating in a user-fee program that may overshadow the material costs. By following Worcester's lead and opening up a dialogue about the future of unit-pricing programs, Providence has the potential to develop a waste-management system that can make the entire city a cleaner, healthier, and better place for all of its residents.

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Moderator's Guide to Focus Groups

Good evening and welcome to our session tonight. Thank you for taking the time to join our discussion of Worcester's recycling and garbage disposal services. My name is Brian Slater and I am a student at Brown University in Providence Rhode Island. Assisting me tonight is Jane Comaroff who is also a student at Brown University. We are trying to gain information on how residents have responded to the city's recycling and trash program.

You were selected for this group because you all are residents of Worcester and use the city's yellow garbage bags to throw out your trash. We are interested in your views because you are representative of others in the community.

Tonight we will be discussing your experiences with using the city's garbage and recycling services. There are no right or wrong answers, but there are different points of view. Please feel free to share your point of view even if it is different from what other people have said.

Before we start, let me remind you of some ground rules. This is a research project, and all of your names will be kept strictly confidential. Only one person should speak at a time since we are video taping the session and if several people talk at once, we might not be able to hear your comments. Please keep in mind that negative comments are just as useful as positive ones and are sometimes the most useful.

Let's get started. We've placed name cards on the table in front of you to help us remember one another's names. Let's go around the room and introduce ourselves to one another and tell us how long each of you have lived in Worcester.

OK - How did people first learn about the way in which garbage was collected in Worcester?

How is this program different then how people in other towns, throw out their trash?

When you first started buying the city's garbage bags, what did you think would be difficult or inconvenient about the program?

probe for:

-cost

-recycling

Are there any other concerns people had when they first learned about the program in Worcester?

probe for:

-Illegal dumping

-Access to Bags

How has participating in the program changed the amount of trash you throw out?

How has participating in the program affected the amount of trash you recycle?

Did anyone change the way they shopped because of the program?

How do you feel about the price of Bags?

What things do people like least about the program?

What things do people like best about the program?

How do other people you know feel about the program?

I would like for all of you to imagine that you were going to design and start a garbage program like the one Worcester has, but for Providence RI. Providence is very similar to Worcester, and your experiences and feelings about

participating in Worcester's program can really help shape Providence's program.

Some people in Providence are concerned that people will not buy the new trash bags in Providence, and that trash would end up being thrown in vacant lots and local parks.

What would you tell people in Providence about their concerns?

The town planners in Providence want to make sure that all the people in Providence will participate in the program. Right now they have decided to charge people .85 cents for each bag.

How do you feel about that price for a single bag?

Probe for different reactions to different prices

What things would you recommend be included in Providence's program that aren't in Worcester's?

How do you think residents should be told and educated about participating in the program?

What ways could the Program in Providence be made easier to participate in then it is in Worcester?

Are there any other recommendations, warnings or advice you would give to people trying to start a program in Providence?

Concluding Questions -

Is there anything we missed tonight that you think we should talk about?