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**AN EVALUATION OF PRIVATIZATION, TAXES, AND USER  
FEES AS ALTERNATIVE STRATEGIES FOR  
MUNICIPAL TRASH COLLECTION**

**by**

**James Neubecker**

**A Dissertation  
Submitted to the  
Faculty of The Graduate College  
in partial fulfillment of the  
requirements for the  
Degree of Doctor of Public Administration  
School of Public Affairs and Administration**

**Western Michigan University  
Kalamazoo, Michigan  
April 1996**

# **AN EVALUATION OF PRIVATIZATION, TAXES, AND USER FEES AS ALTERNATIVE STRATEGIES FOR MUNICIPAL TRASH COLLECTION**

**James Neubecker, D.P.A.**

**Western Michigan University, 1996**

This study consists of evaluating the perceived quality of the various methods of collecting residential trash and paying for that collection in four Michigan cities. The cities selected are East Lansing, Lincoln Park, Saginaw, and Wyoming. They share similar demographic characteristics, including median income and population size, as well as number and location of trash pick-ups. The study compares paying for trash collection services with tax dollars, user fees, and direct private charges to the vendor. It also evaluates the residents' perceptions of quality when municipal workers are compared with private company workers providing trash collection services.

Questionnaires were sent to randomly selected residents in each of the four cities. The answers to the questionnaires were subjected to various statistical tests. As a result, it was determined that there was no difference in the perceived quality of trash removal services among the four cities, regardless of payment methods or what workers performed the service. In addition, trends in the changes in quality of trash collection services over three years, as well as suggestions for improving trash collection services, were also obtained from the respondents and are summarized in this study.

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**James Neubecker**

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## **CHAPTER I**

### **BACKGROUND**

#### **Paying for Municipal Services a Major Problem**

A real dilemma facing municipalities and taxpayers throughout the United States, including municipalities within the state of Michigan, is paying for the increased demands placed on government for providing services. At the same time, governments are finding it harder and harder to increase taxes, particularly at the local level. Efforts to accommodate the varied demands on governments, while at the same time maintaining and sometimes mandating balanced budgets, can be found throughout the literature.

#### **Purpose of Chapter**

The general problem of paying for increased municipal services, specifically trash removal services, is discussed in this chapter. This problem is explored in the context that expenditures appear to be rising faster than revenue. Hence, the concern for the widening revenue-expenditure gap and how trash management cost containment may alleviate the gap.

The importance of the topic in the context of the public sector is explained in this chapter. The importance of the research in relation to the widening



revenue-expenditure gap is discussed, and an overview of the dissertation is provided. Finally, Chapter I includes the expected contribution this research will make to the field in terms of paying for municipal services, providing quality services, and determining value for services performed.

### Historical Background

Americans frequently want more and more public services, but they balk at the prospect of paying higher taxes for them. Boyle (1976) stated that part of citizens' reluctance to pay higher taxes for various services is the unclear connection in their minds between the higher taxes and the actual services being provided. Invariably, taxes are more visible and tangible than the services and benefits derived from them.

In addition, from time to time, Americans become frustrated and confused as to how efficiently and effectively public resources are being used. One of the reasons for these frustrations occurs when the citizen believes the benefits from government services appear remote and intangible (Boyle, 1976). A logical extension of the remoteness and intangible nature of selected government services is the question of the efficiency with which such services are being provided.

If, because of this belief among voters that benefits are remote and intangible, governments do not believe that increasing taxes is a viable alternative, what else can they use to help close the revenue and expenditure

gap? One answer is user fees or charge financing (Pettengill, 1980). Charge financing (also called current charge financing by the U.S. Bureau of the Census), or privatization of government services, is not something new to the nonprofit sector. Historically, governments have had to scramble to find ways to finance public projects, services, and conveniences. Such methods of financing public services have been in existence since the early 1920s (Groves, 1958). However, what has recently occurred is a renewed interest in such methods of financing public projects as a result of the increased difficulty that local units of government have in raising taxes.

#### Examples of Problems With Raising Taxes

Sbragia (1983) cited two such examples illustrating this point. In the late 1970s and early 1980s, voters supported Proposition 13 in California and Proposition 2-1/2 in Massachusetts. Of these two, Proposition 13 in California is the most famous or infamous.

In 1978, California voters approved by a 2 to 1 margin a property tax cut proposal called Proposition 13 on the ballot. This required the government to roll back property taxes to 1% of the property's market value, based on the 1975-76 assessment. Subsequently, property taxes may be raised only by a maximum of 2% per year. When the property is sold, then it would be reassessed at current market value. The result was that California had to slash property taxes by 57% during the next year (Rabushka & Ryan, 1990).

Subsequently, in 1980, Massachusetts voters faced a similar proposition. It was called Proposition 2-1/2 on the Massachusetts ballot. This proposition reduced property tax rates to 2.5% of market value, resulting in a \$1.5 billion cut in property taxes statewide (Lo, 1990).

After the passage of these propositions, user fees or charge financing programs and privatization of services were quickly put into place as a method of helping to offset the limitations placed on continuing tax increases.

In California and in many other states, taxpayers continued to pass tax-cut initiatives at an ever-increasing rate, as reported in City and State (Bennett, 1990, p. 5). The contract with America demonstrated in 1995 that this trend remains with us.

#### Definitions and Names for Government- Imposed Nontax Revenues

Many different names are used to refer to government-imposed nontax revenues. The most frequent are "charge financing," "user fees," "nontax revenues," and "user charges." They have also been called "indirect taxes."

Several years ago, Boyle (1960) explained service charges as

a payment made by an individual to the government in return for a specific service. A government expenditure may be charge-financed when it yields individual benefits and is free of redistributive aspects. In addition, if the service is essential to the community at large, the users must show evidence of the ability to pay the charge. (p. 15)

Neels and Caggiano (1984) suggested that beneficiary (or user) charges are "charges that a citizen can avoid paying by not consuming the services.

They are: represented by payments for specific city services, frequently earmarked for specific services, [and] paid by the consumers of the service" (p. 9). Neels and Caggiano were more restrictive than Boyle in their definition of user charges. For example, Neels and Caggiano did not include essential services for a community, as Boyle did.

#### **User Fees Defined**

For purposes of this study, the term "user charges" is used exclusively to refer to these government-imposed financing charges. Boyle's (1976) definition is used, which brings together these several definitions:

Charge financing refers to the use of a "Service Charge" (or User-Charge) to finance the provision of services by a government agency. Service charges according to the Bureau of Census, may be defined as "amounts received (by governments) from the Public for the performance of specific services benefiting the persons charged." (p. 1)

When comparing the definition of charge financing to taxation, one quickly sees a significant difference. Taxation is involuntary and unavoidable, whereas charge financing, or user charges, may be avoided--providing the taxpayer does not use the government service or product offered through the use of charge financing.

## Public Goods, Merit Goods, and Private Goods

The public finance literature differentiates local services paid for by the public into three distinct categories: public goods, merit goods, and private goods. For purposes of this study, such differentiation is appropriate.

Public goods are those goods and services that provide general benefits to the public at large, while serving individual members as well. Examples would be police and fire protection. These goods also provide a "spill-over" effect because, while certain members receive a disproportionate share of the service, an entire target population is served.

Private goods normally are provided within the market economy, but are found in the public sector, where it is more beneficial for society to distribute such goods in a monopolistic environment. The individual benefactors of these goods are easily identified and typically are expected to pay the entire cost of the product or service. Normally, such services have few, if any, spill-over effects. Examples of private goods are publicly owned electric utilities, water treatment plants, and cable television companies.

Merit goods (also referred to as quasi-private goods) occupy an intermediate place between truly public and truly private goods. As in the case of private goods, one can easily identify the consumer, but like public goods, their benefits "spill over" to other people in the community. Examples of merit goods, cited by Mitchell and Carson (1989), include treatments of communicable

diseases (vaccinations), garbage (trash) pick-up services, remedial substance-abuse programs, municipal swimming pools, and tennis courts.

### **Focus of Study: Merit Goods**

The focus in this study was on merit goods because in this category there appears to be the most to be gained in terms of different financing strategies. It is important to understand thoroughly the differences among these three categories because acceptable funding methods differ, depending on the types of goods and services being consumed. It is commonly accepted that the potential use of either user fees or privatization to finance services is not acceptable for purely public goods. However, the use of user charges or privatization to fund private goods is not only quite acceptable but also frequently found in municipalities providing such services.

This leaves the middle type—merit goods—and the question as to how best to pay for these services or goods. How to deal with such goods still is an open question. Yet, if there is going to be a significant increase or decrease in the use of user charges or private monies to fund goods and help close the revenue-expenditure gap, it would be primarily in the funding of merit goods.

David Cooke (quoted in Lemov, 1989), a Charlotte, North Carolina, budget analyst, argued that the rule of thumb for determining whether a service lends itself to a user fee is that

. . . the benefits of a public service accrue primarily to particular individuals rather than to the general public, and that it be feasible to

exclude nonpayers from receiving the benefits of the program. Administratively, there must be a relatively easy way to collect the fee. Or, in other words, the cost of collecting the fee should not outweigh the benefit accrued by having such a fee. (p. 30)

How does garbage or refuse collection fit into this analysis? Actually, there are differing opinions. Former Charlotte, North Carolina, mayor Harvey Gantt (quoted in Lemov, 1989) believed that garbage or refuse collection had a significant spill-over effect insofar as, if residents were not using appropriate refuse collection services, there would be indirect costs to other residents. Examples would be an increase in rat and mouse infestation, disease, and sickness. Thus, he preferred to keep the cost in the tax base and continue to collect from all customers. The term "spill-over effect" refers to benefits received or inconveniences incurred that are realized not only by the people directly using refuse collection services, but also by other citizens. Such benefits would include cleaner cities for everyone, healthier environments, and less contamination. One could also argue that the spill-over effect of trash collection is minimal and that the service is easily identifiable to the customer; thus, a fee should be imposed. One could even go so far as to impose a fine or penalty on people who refused to dispose of their trash properly. Thus, little if any spill-over effect would be realized.

Superimposed on this dilemma in the trash collection area is the fact that it is becoming increasingly expensive to dispose of trash collections. Landfill "tipping" charges are increasing rapidly as landfills are filling up faster than new landfill sites can be found.

Offsetting tipping fees are some incremental revenues that should also be considered. Examples include revenue realized from selling methane gas and composting products, both of which are by-products of refuse collection. Amy Gibson (1995), Solid Waste Coordinator in Monroe County, Michigan, raised the issue of whether solid waste should be considered as negative or positive utility or spill-over effects. Until very recently, solid waste was thought to have only a negative utility.

However, a 1992 federal court ruling, Fort Gratiot Sanitary Landfill v. The Michigan Department of Natural Resources (cited in Gibson, 1995, p. 9), clearly emphasized that solid waste is a commodity. This distinction is important because other laws come into play that affect a county's ability to restrict solid waste from coming into the county landfill.

Gibson (1995) explained that this ruling is a double-edged sword. First, allowing solid waste into the landfill will potentially increase revenues and reduce costs by being convenient to large, metropolitan areas. But it also may dissuade landfill operators from seeking recycling and other methods to reduce landfill use.

Can we then conclude at this point that user charges have only a positive potential? Absolutely not. The court in Maryland ruled that a regulatory fee, or user fee, is not a fee after all, but a tax (Enos, 1990). Other courts also have ruled that user charges are a tax, particularly if fee collections exceed the cost of the particular expense they are expected to cover.



Lemov (1989) wrote that user charges may have reached their peak in many jurisdictions. However, she was quick to point out that many continue to believe they are "the answer to city budget prayers" (p. 24).

### Financing and Processing Residential Trash Collections

This researcher investigated four different approaches used by Michigan cities to finance and process trash collections: (1) taxes, (2) user charges, (3) privatizing the entire service by contract with a specific vendor, and (4) privatizing the entire service without any direct involvement by the municipality. The writer analyzed the perceived effects each approach and each financing alternative has on providing the service, and also considered the merits of the effectiveness of the four different funding approaches as perceived by consumers.

### Issues Addressed in the Dissertation

The issues analyzed in this study are:

1. What is the preferable way for municipalities to pay for trash collection services?
2. Is there a significant difference in the perceived quality of service when trash collection is paid for through taxes, privatization, user fees, or private haulers?

The researcher used one example of a merit good, namely, trash collection services, to determine whether there was a difference in perceived

quality of service when comparing the three possible funding options and personnel associated with picking up trash in the selected cities.

### Research Methodology

Four cities in Michigan were used in this research. One city, East Lansing, employed user charges and taxation as methods of funding trash collection services provided by city workers. The second city, Lincoln Park, used taxation (property) paid to private haulers to fund trash removal services. The third city, Wyoming, used privatization services, with residents paying for the service directly, to fund trash removal services. The fourth city, Saginaw, used taxes to pay for trash removal services provided by city workers.

Each of the four municipalities' trash collection costs were obtained to determine what the tipping cost per unit was for trash collection. An effort was made to ensure that all four of the cities were providing basically the same type of trash removal service, regardless of the method of paying for the service.

Interviews were conducted with the city controller's office, public service department, or other city departments directly involved in costing and/or servicing trash removal to determine whether one of the four approaches used for providing trash removal services--taxation, service charges, privatization, or a combination of taxation and privatization--was more effective in closing the revenue-expenditure gap. In addition, comparisons were made among users of the services to determine whether the **perceived** quality of trash removal

services was significantly different. These comparisons were concerned with the relative effectiveness of alternative funding methods and city employees and private workers engaged in providing trash removal services. Private residential customers using these services in all four locations were surveyed.

### **Research Questions**

Several research questions are addressed in this dissertation:

1. Is there a difference in the cost per unit of a merit good, trash collection, when financed by taxation, service charges, or privatization?
2. Can the differences in costs of financing trash collection by taxation, service charges, or privatization be explained by the public choice model?
3. Is there a significant difference in consumers' perceptions of the quality of service when comparing tax-paid trash removal services, service charges, and privatization as the methods used to finance trash collection services?

### **Limitations and Key Assumptions**

Trash collection activities elsewhere in the United States are similar to those found in Michigan, but the generalizations drawn from this study apply only to the four cities in the study, which were similar in size and wealth.

This study was not intended to be definitive as to the actual quality of alternative trash collection models. Rather, perceived quality was interpreted only on the basis of how the people answering this questionnaire "viewed" it. In reality, their views of quality may be expected to be roughly similar in nature, rather than equal to some defined standard of quality.

This study also was not intended to ascertain the optimum cost of trash removal, on either a per unit or aggregate basis, under all conditions. Rather, the relative cost of trash removal was evaluated, considering the different methods of payment. There is no single "correct" method of paying for trash removal services that should be adopted by all cities, regardless of their preferences. There may well be extenuating circumstances under which the least costly method or the most popular method in one city may not meet the needs of other comparable cities.

This study also was not expected to have an indefinite life span, due to the growing scarcity of solid landfill disposal sites. Instead, it may be assumed that the assumptions and "ground rules" will have a short life span, perhaps 5 to 10 years. However, there is no reason to believe that the four cities selected are so unique that conditions of trash collection and removal there would not be found in other cities.

Finally, the researcher does not argue that using privatization or service charges is the single most important factor in closing the revenue-expenditure gap. No attempt was made to compare other approaches that cities could use

to close the revenue-expenditure gap. Rather, the objective of this study was to determine whether privatization or a user fee, when compared to taxation, was considered to be a significant factor in the perceived quality of trash removal services.

### **Overview of the Remainder of the Dissertation**

Chapter II includes a historical analysis of user fees, privatization, and paying for municipal services using taxation methods. This is done by reviewing the experiences of various cities and local units of government throughout the United States. The chapter then focuses on how cities perform and pay for trash removal services and what results they have achieved. Also explored in Chapter II is whether municipalities have found one form of paying for trash removal services to be more beneficial than others in efforts to close the revenue-expenditure gap. The information collected in this broader literature review was used to pinpoint specific problem areas. This information was used in evaluating various methods of financing trash removal services in the four selected Michigan cities.

Chapter III contains a description of the research methodology used in selecting the various middle-sized cities in Michigan as the stratified sample for this dissertation. As such, the chapter also includes the rationale for selecting four different cities with similar per capita incomes. It explains how the cities were selected, the financial analysis used to determine the cost of trash removal,

and the reasons for using questionnaires in determining the qualitative aspects of evaluating the various methods of paying for trash removal services. The design of the questionnaires is explained, as is the system used to select the random sample of residents. Also explained in Chapter III are the tests of statistical significance used in determining whether there was a perceived difference in the quality of services provided under the three different methods of paying for trash removal services. Differences in the cost of trash removal services among the four cities are explained, and related cost changes over a three-year period are traced.

The results of the research are described and analyzed in Chapter IV. The researcher explores whether opting for user fees or privatization will help to close the revenue-expenditure gap and evaluates the results in terms of their specific and more general applications. The comparative data on trash removal also are analyzed. Included are anecdotal data drawn from the comments section of the questionnaire distributed to customers.

Chapter V contains a summary of the data included in this study on trash removal and the various ways of paying for such services. Conclusions are drawn from these data, and recommendations are made, showing how this study has contributed to the body of knowledge on this subject. The implications of the conclusions, both for the Michigan cities under examination and for other similar Michigan cities, are set forth. The researcher also explains how the specific results obtained from these medium-sized Michigan cities pertain to cities

elsewhere in the United States that are confronting similar issues, as well as the limitations of the findings for other cities. Due to differences in the economies of scale, caution should be exercised in using the results of this study to project conclusions to small- or large-sized cities. In the final section, several other suggestions are made for future research.

## **CHAPTER II**

### **LITERATURE REVIEW**

**This chapter includes a historical analysis of user fees, privatization, and paying for municipal services using taxation methods. The experiences of various cities and local units of government throughout the United States are reviewed. The chapter then focuses on how cities perform and pay for trash removal services, on privatization options, and on what results have been achieved by them.**

**In this chapter the researcher also explores whether municipalities have found one form of paying for trash removal services to be more beneficial than others in efforts to close the revenue-expenditure gap. The information collected in this broader literature review is used to pinpoint specific problem areas. It also is used to evaluate various methods of financing trash removal services in the four selected Michigan cities.**

#### **Background Research**

**Service-charge financing (also called "current charge financing" by the U.S. Bureau of the Census) is not something new in the current scramble to finance public projects, services, and conveniences. User fees were introduced in the early 1920s. Economist Harold Groves (1958) pointed out that user**



charges in the 1920s were oftentimes the preferred method of financing municipal services. They were reintroduced after necessity dictated the development of a new revenue source following World War II.

Municipal governments at this point experienced rapid increases in expected services, but without a corresponding increase in traditional revenue sources to support such services. It was thought that the property tax had been extended to its limit (Moak & Hillhouse, 1975). Such limits were confirmed by the backers of Proposition 13 in California just a few years later. Supporters of Proposition 13 thought that property taxes had reached an intolerable limit. Thus, they favored a statutory limit on property taxes. One of the reasons this proposition passed was its simplicity. It limited annual increases to a maximum of 2%; new or higher taxation on property could be realized only by an affirmative vote of two-thirds of the electorate or a two-thirds vote of the electorate in any governmental entity (Rabushka & Ryan, 1982). Its simplicity and its deep-cutting power quickly gave rise to its nickname, the "meat-ax" method of tax cutting.

### Alternatives to Increasing Taxes

As a result of the tax-cutting mentality of the citizens, governmental entities found that little increase was possible in the typical tax base to cover growing public-service demands. Thus, a user fee or charge was seriously considered by many municipalities to close the revenue-expenditure gap. However, what at first might appear as a fairly simple shift from a tax-base

revenue source to a user-fee support was not left unchallenged. Californians found that the public was not willing simply to accept user fees in lieu of tax increases without a fight (Rabushka & Ryan, 1982). Legal rulings had to be obtained to determine when user fees were to be considered a tax and thus also subject to the two-thirds rule for voter acceptance.

Subsequently, in 1980, Massachusetts voters faced a similar proposition. It was called Proposition 2-1/2 on the Massachusetts ballot. This proposition reduced property tax rates to 2.5% of market value, resulting in a \$1.5 billion cut in property taxes statewide (Lo, 1990).

After the enactment of Proposition 2-1/2 in Massachusetts in 1980, Neels and Caggiano (1984) cited several advantages of using user fees:

1. User fees can raise substantial sums of money at times when legal, political, or economic limitations restrict other potential revenue sources.
2. Beneficiary charges encourage a change in management outlook. They focus attention on the city manager—and on the concerns and demands of people they serve directly.
3. Beneficiary charges can improve horizontal equity. Polls indicate that the public perceives beneficiary charges as a fair and appropriate way of paying for city services, because they guarantee that services are paid for by the people who use them.
4. Benefit-based finance, especially user charges, rations the demand for public services and encourages people to be more careful in their use of public resources.
5. Beneficiary charges can also lessen inefficient or wasted use of community resources. (p. 9)

Although the first advantage—the contention that user fees can raise substantial sums of money—may be true, one must be careful to ensure that an expeditious solution is fair and equitable for all concerned. This is particularly

important in the case of public goods because high user fees could act as a "gatekeeper" and thus disenfranchise valid consumers of public goods that are essential for their well-being. Even in the case of quasi-merit goods, when user fees become onerous, they could destroy potential spill-over effects and have an overall detrimental effect on the public at large.

Because user charges are so much more visible than paying for government services through taxation, one can see why Neels and Caggiano (1984) cited the second advantage. The city manager would have more discretion with user charges, either by using them more frequently or by recommending raising or lowering them to the mayor and city council. The city managers and their management philosophy thus become much more visible and accountable to the public.

In the case of the third advantage--beneficiary charges may improve horizontal equity--care must also be exercised in accepting this conclusion. Although the public may perceive beneficiary charges as reasonable, the charges in fact may be grossly unfair due to the gatekeeper influence. Such charges may, in fact, keep the poor and disadvantaged from consuming what the public might perceive to be their fair share of this essential service.

It is difficult to refute the fourth advantage because any charge has a certain amount of ration effect on the use of that service or product. It also raises the level of public awareness that indeed there is a cost to providing even the most basic type of service or product. The downside, however, is that the public

also expects to have already paid for many basic services within the existing tax structure. If government relies too extensively on user charges, the general public may legitimately question what, if anything, their tax dollars are paying for.

The fifth advantage is particularly important. When a service or product is given to people, without any direct transfer or payment on their part directly related to the product or service, people can easily misuse or waste the particular product or service. The attitude becomes, "It really did not cost me anything, so what's the difference?" Individually, the incremental difference, or shadow cost, of using one additional unit of service admittedly is cost-free or insignificant. But when enough people feel this way and instead of consuming only one or two additional units they consume many additional units, the aggregate cost may indeed be significant (Dominiak, 1991).

#### Property Tax Concerns Felt in Michigan

The property tax limits were felt in Michigan as well, with the overwhelming passage of the 1994 sales tax increase to 6% and drastic reduction in property taxes as a funding mechanism for public schools. What has recently occurred, then, is not the creation of a new method of financing public services. Rather, it is a renewed interest in these particular methods of financing public projects as a result of the increasing difficulty that local units of government have encountered in raising any form of taxes.

Although these concerns about financing government services may at first appear academic and not exceptionally challenging, political economist Gerald Faverman (1995) viewed the changes to come as the fourth great upheaval in our nation. He explained that in the 206 years of the United States, people have experienced stability and continuity when compared to Europeans. The political elections, both nationally and in the state of Michigan, are examples of this upheaval. People, Faverman believed, have a sense that "things are not right" (p. 2). They are suspicious of their government and feel more and more alienated from it. As a result, citizens are demanding that government costs decline and that regulations and procedures be simplified. Faverman also argued that the citizens regard the number one issue on the future policy agenda to be the environment.

Unfortunately, Faverman (1995) saw many other topics on the agenda as well, including welfare reform, education, crime and safety, and health care. All of these agenda items come with a price. This reinforces the need to be efficient and effective with the dollars entrusted to cities and states throughout the nation.

In a report in Municipal Issues, Alter, Berman, and McGuigan (1992) argued that ever-increasing service and infrastructure needs in Florida have resulted in a change in financing capital projects from a tax-based system to user fees and one-time-impact fees. Over and over, many experts have argued that the end is here for increasing revenues through taxation, and thus the quest for

new revenues relying on other methods. User fees, charge financing, and privatization all seem to be likely candidates.

A former Michigan legislator, Lynn Jondahl (1993), explained that governments, and in particular Michigan state government, must seek cooperation with the private sector and become a partner in making broad issues work for the betterment of all citizens. He saw government's role as providing the policies and evaluating the outcomes, but letting the private sector coordinate and implement the various phases of a given project.

Jondahl (1993) was leery of those who argue for a much wider scope for privatization, explaining that some people believe privatization is a panacea for all of the "evils of government." Even if such evils of government were proven to be true, that, in itself, is an inappropriate reason to justify a massive change to privatization. Jondahl did not believe government service is flawed, although he did concede that perhaps government is not always as efficient as one would like it. But to make massive changes and privatize a flawed system without some policy input will not suddenly make it correct.

First, one must correct what is wrong, and then consider whether changing from government service to a private concern will make it better, in terms of service or product delivery, or of greater cost effectiveness. To support this contention, Jondahl (1993) referred to state audit reports, which repeatedly have identified cost overruns and inadequate management and financial control systems; yet the contracts continue to be honored and renewed.

Jondahl (1993) also expressed the concern that privatization may well lead to diminished services. The typical citizen, who earlier was provided government services, may see a dramatic reduction in both the quality and quantity of services if the government simply steps away from monitoring and evaluating the privatized services. Therefore, it is exceptionally important to ensure that one compares "apples with apples" when comparing private services or products with public services or products. One also must ensure that similar-sized public and private organizations are being compared.

Pettengill (1980) also was concerned about what governments can do to raise revenues if increasing taxes is no longer a viable alternative. What other resources are available to help close the revenue and expenditure gap? One answer is reliance on user fees or change financing. Still another possibility is the use of private monies to fund merit goods (Paternoster, 1990). This is referred to as privatization.

### **Privatization Issues**

Many articles have been written recently on the extent of privatization at all levels of government. Petersen (1992) observed that this phenomenon of governments bailing out of services, once routinely provided by the public sector, is occurring all over the world.

In a study conducted in 1989 by Touche-Ross and Company (Deloitte and Touche), it was found that privatization falls largely into three categories

(Touche-Ross, 1990). The first is contracting services out. Examples include privatizing laundry and food services at universities and colleges. The second is constructing or acquiring facilities and then contracting their operation out to private companies. Examples are contracting out road maintenance and snow removal to private companies, as is done on several Interstate highways near Lansing, Michigan. The third is selling governmental assets, e.g., hospitals or electrical companies, and then having the private sector operate them for the same consumer base. Examples would be selling a municipal hospital or electrical company to a private buyer.

Another survey on the extent of privatization at the state level was conducted by the National Association of State Auditors, Controllers, and Treasurers (NASACT, 1992). That survey substantiated the findings of earlier studies dealing with privatization.

In September 1992, Robert Kleine and Frances Spring, economic consultants to government and private industry, called for some form of privatization because they believed that even under the best of circumstances, governments would have to become more efficient and find a better way to deliver services. They pointed out that state government staffing levels already had declined for 1992-93. They also noted that governments do not have to provide or deliver all of the services directly, but must simply ensure that necessary services are rendered. Thus, the privatization door is opened, which then allows for private contracting, subsidies to the private sector, user charges,



and many other nontraditional ways of conducting the public's business (Kleine & Spring, 1992). Rapidly rising health care costs, inflationary pressures, and retirement costs place tremendous pressure on other budgetary items, which may not be perceived by the customer when paying for priority services or products. Thus, other costs, such as trash removal, have to look for new and innovative ways to cover their costs.

In an article appearing in Government Finance Review, Chang and Jones (1992) provided an opportunity to review four different methods of privatization: the British model, the New Zealand experience, the old standby, and the United States innovation. For purposes of discussion and to provide a reasonable basis for supporting the old-standby model in terms of trash collection, a brief discussion of the various models, their advantages, and their disadvantages is an appropriate starting point.

The British model is the sale of government assets, usually conducted by a fixed-price stock offering, making single-payment shares available to the public. Another example of the British model is to tender shares on the British stock exchange, which allows the price to be set by market forces (Chang & Jones, 1992).

The New Zealand experience coined the term "corporatization," in which most governmental services were privatized through an all-out effort. In this model the government creates a for-profit entity having a governmental board typically composed of members from the government as well as from private

companies. While the government retains ownership in the new corporation by retaining all of the stock, the process enables the newly created corporation to operate free of most of the constraints of the government.

The New Zealand experience is not too far removed from the Enterprise Fund accounting model found in the United States. Frequently, colleges operate their dormitories and food service operations using an Auxilliary (Enterprise) Activities Fund. This allows managers of these funds to operate the dormitory and food service as a business, fully responsible for revenues, expenses, and profit. Other examples are city-owned electric utilities and hospitals, which typically are operated for profit, have their own boards of directors, and run much like a private corporation in the same industry. Although not called privatization, many of the same features are inherent in both systems.

One could challenge the New Zealand model when its advocates say that the New Zealand process enables the newly created corporation to operate free of most of the constraints of the government. Because the government, through its citizens, created the constraints now found to be so expensive and stifling, that same government could free its employees just as easily by selling government assets to the private sector. Thinking that private companies, by the mere fact that they are private, are freer to conduct the public business than are public entities certainly should be scrutinized and challenged. One could challenge this argument less expensively and with fewer changes to the overall

model if one would simply free government entities from the burdensome regulations that some citizens think are stifling.

However, if the public buys into the argument that it is appropriate for the private entity to be more flexible and free to do as it pleases with the public's business, then public and private agencies cannot be compared on a level playing field. Corruption and fraud will be allowed to ripen in the private sector and go unnoticed, and soon the costs of doing the public's business will be greater than if left to the government.

The old-standby model simply offers a method wherein the government contracts for services with various private companies. The private businesses supply the staff needed to perform the services for an agreed fee. This is the simplest model and is easily corrected, if necessary. If the service either is not being performed or does not meet specifications, the contract can be terminated at its end, or cancelled immediately, if the performance is significantly incomplete. Private companies use this outsourcing or special-order model, as well, when they contract out to other companies to make parts for them (Dominiak & Louderback, 1991).

The United States privatization model combines the approaches of the old-standby and the New Zealand models by creating a nonprofit corporation to provide the staff necessary to perform the services. In this model, the governmental entity gives up some of its authority over the new company to a

newly formed group, the targeted citizen/customer group. An example of this type of combination approach would be the various regional transit authorities.

Chang and Jones (1992) concluded that privatization is a viable option when governments seek ways to reduce public expenditures, increase efficiencies, or enhance services. One might add that reducing costs, while still keeping the playing field level, is one of the few universal justifications for privatization. But the authors also cautioned that this is not a panacea for all governmental woes, particularly when public goods are involved. When the service or product is for distributing public goods, management theory dictates that authority can be delegated, but not responsibility. The government still remains ultimately responsible for public goods and services. Proprietary activities, such as trash removal services where a clear customer/vendor relationship typically exists, tend to lend themselves better to privatization.

#### Trash Collection Seen as a Candidate for Privatization

In reviewing the literature, it was found that a number of cities have viewed trash collection as an excellent candidate for privatization. An article in a recent edition of City and State ("Strapped Governments," 1991) said that one city council selected several outstanding privatization projects and evaluated the reasons for their success. In one case, a city contracted with a private local landowner to provide a collection site for dumping yard waste. The city saved approximately 15% of what it was costing to dump this refuse at a local landfill

("Strapped Governments," 1991). Approximately 12% to 15% savings were found in other privatization experiences as well (Mills, 1990).

At first glance, one might conclude that 12% to 15% is not sufficient savings to warrant any further investigation. Two points must be remembered. First, user-charge financing or privatization of even a single service could have multiple effects if several other services were subsequently charged a user fee or privatized. Second, 12% to 15% savings is significant, particularly when considering that the typical private company does not make more than an average profit of 10% annually.

But skeptics remain as to the actual extent of cost savings resulting from privatization, even though that is one of its primary justifications. In Massachusetts, a law now requires administrators to document anticipated savings from the private sector before privatization occurs. Part of the reasoning is that too often companies were not competing on the same terms as the government (Stuart, 1994). A Massachusetts representative, Janet O'Brien (quoted in Stuart, 1994), agreed with this point, saying, "The thrust [of privatization] is to hire people to work for less" (p. 22).

The legislators then attempted to insert a more reasonable basis for setting wage issues into the law. For example, the law requires the private contractors to offer a health benefit package comparable to what the government worker is receiving. Next was added a requirement that contractors pay the

average wage rate as in private industry or the base pay for an inexperienced governmental employee (Stuart, 1994).

Have there been documented cases in which privatization has gone sour? Yes, according to Gurwitt (1994) in Governing. In Visalia, California, the city went all out with a new entrepreneurial philosophy under the successor to city manager Ted Gaebler, who in turn is credited with having "reinvented" Visalia. It became known as "the most entrepreneurial city in America," as Inc. magazine labeled it in a 1985 article (Gurwitt, 1994). Today, according to Gurwitt, there is no one around city hall who wants to be associated with the word. It was supposed to be a tremendous success as a private/public partnership—the building of a downtown hotel with a maximum city contribution of \$4 million. When it was completed, the city was left holding the bag for the entire project, and had spent \$20 million. The initial idea was to have municipal workers thinking more like entrepreneurs, rather than government workers. The resulting fiasco showed that the risks of entrepreneurship do not necessarily mesh well with the fiduciary responsibilities of government (Gurwitt, 1994). The public became disenchanted when it came to view its tax dollars as not being spent wisely on this project. The new city manager, Ray Forsyth (quoted in Gurwitt, 1994), may have summarized it best in saying that

. . . you shouldn't let it [developing people within the organization along entrepreneurial lines] get to the point where you become oblivious to serving the community, and we crossed the line to becoming a self-serving organization. We became too wrapped up in what we wanted and not what the community wanted. (p. 40)

Forsyth's warning needs to be heeded. The government has a fiduciary responsibility to the public that is totally different from a private corporation's responsibility. Unlike a corporation, in which its stockholders have an option of investing or not investing in high- or low-risk companies, taxpayers do not have such an option. First and foremost, the government has a fiduciary responsibility to the taxpayers and preserving the resources entrusted to its care. The result of this fiduciary responsibility is frequently manifested in a conservative approach to investing and carrying out the public's business. An example of such fiduciary responsibility not being carried out is the recent case in Orange County, California, when the county controller had invested heavily in derivatives and lost millions. One of the first questions went to the issue of why a public body was investing in high-risk portfolios anyway, *"with our tax dollars."*

#### Privatization and Refuse Collection

Roehm, Castellano, and Karns (1989) found that the number of cities contracting essential services had increased through 1989. These authors believed that contracting services had afforded cities an alternative to maintaining quality services without increasing costs and without citizen complaints as a by-product. They came to these conclusions after conducting a study of 288 municipalities during August 1987. The authors asked the cities' chief financial officers to comment on how successful 121 different privatization

services were. More than 50% of the surveys were returned. The percentages of cities contracting various services are shown in Table 1.

**Table 1**  
**Percentage of Selected Services Privatized by a**  
**National Sample of U.S. Cities, 1989**

Service	% Privatized
Refuse collection	49.7
Vehicle towing and storage	76.9
Animal control	13.1
Street maintenance	23.7
Transportation	25.9
Health care	26.9
Parks landscaping	23.7
Tax collection	4.1
Waste water treatment	8.1
Police protection	1.9
Fire protection	3.1
Building inspection	3.1

**Source:** Roehm, H. A., Castellano, J. F., & Kams, D. A. (1989, February). Contracting services to the private sector: A survey of management practices. Government Finance Review, p. 21.



As indicated in Table 1, roughly 50% of all cities responding to this survey had privatized their refuse collection. However, some questionnaires that were returned explained that the government services that had been privatized were actually contracted to a governmental entity. Thus, the 50% figure does not mean that all of these contracts went to a private company. It is worth noting also that as one reads down the table, the popularity of privatizing services was highest in the case of private goods, then merit goods, and finally public goods.

Roehm et al. (1989) also explained the methods used to select the contractor. In terms of refuse collection, 61.2% were selected based on the lowest bid among qualified companies. The two most common types of contracts for refuse collection were fixed price with an escalation clause (40.3%) and firm fixed price (29.9%). The two most common types of providing initial capitalization financing for refuse collection were private firm responsible (50.9%) and normal tax assessment (20.8%).

Often, one asks what happened to the displaced workers. In the case of refuse collection, in 58% of the cases there were no government workers already in place when privatization occurred. When there were, the governmental entity gave workers priority for other government jobs in 11.6% of the cases. It almost goes without saying that if there are no government workers already in place providing potential privatized services or products, it is much easier to entertain privatization than if the entire infrastructure is in place.

The two most common methods used to monitor contractors' responsiveness to citizens' complaints for refuse collection were (1) referral of complaints to those government officials tracking contractors' performance (76.5%) and (2) the use of a formal inspection system (8.8%) (Roehm et al., 1989). Again, if one is to compare government workers with privatized workers, one must ensure that complaints are handled in a similar manner. In addition, the costs incurred by the governmental entity handling the complaints must also be included as an indirect cost of refuse collection (Dominiak & Louderback, 1991).

When respondents were asked how the city is to deal with service interruption, the two most common methods in terms of refuse collection were (1) to require performance bonds and termination penalties (48.5%) and (2) to check contractors' past performance and financial standing before issuing a contract (16.7%) (Roehm et al., 1989). In terms of influencing price on collection refuse, 28.1% of the cities said they had no control, whereas 26.6% stated they had a major influence on prices. From a fiduciary perspective, it is troubling that, in terms of such a basic service as refuse collection, 28.1% of the cities responding thought they had no control over prices. Once the infrastructure of city-operated refuse collection is dismantled, it seems logical that they will have even less control.

One can conclude from the Roehm et al. (1989) report that there are significant similarities in the experiences of those cities that have privatized

refuse collection. Cities interested in privatizing would find these experiences beneficial.

The editors of City and State asked this question of a sample of mayors throughout the nation: "Which of your city's attempts to privatize has been most successful?" ("Strapped Governments," 1991, p. 6). The same answer was given by mayors in Indianapolis, Indiana; Austin, Texas; and Newark, New Jersey. Mayors responded that they saw some form of refuse collection and trash removal as their most successful privatization experience.

In the same article, urban experts affirmed that the fiscal crises gripping many cities across the country have been forcing local officials to come up with new strategies—particularly public-private partnerships and privatization—to provide city services ("Strapped Governments," 1991). "There are virtually no areas of city services that will not be in a partnership or put out for contract," stated Frank Fairbanks, City Manager of Phoenix, Arizona (p. 8). The county manager of Catawba, North Carolina, added that cities and their employees pick up garbage and recyclables, and then the private sector is coming in and marketing it.

Another advantage of privatization was presented in an article by Michael Mills (1990), executive vice-president of the Michigan State Chamber Foundation. This advantage was identified by Michael Williamson, superintendent of Wyandotte Public Schools. He argued that when he needs to terminate an ineffective employee who has tenure, picketers walk the sidewalk

the next day, and the board of education asks all sorts of questions. However, when he terminates an incompetent contractor, no one outside of the school is concerned, and the board applauds him. Terminating contracted companies does not appear to affect people like terminating government employees does.

Another advantage suggested for using either user fees or privatization is that more competition helps both private industry and the city become more efficient. Bennett (1990) argued that, in cities where public works departments and companies bid against each other for franchises, taxpayers usually are the winners, in terms of cost savings.

Political scientist John Donahue (cited in Bennett, 1990) noted that there is much evidence that competition is a crucial factor in efficient trash collection. The public works director (Jensen) in Phoenix, Arizona, affirmed Donahue's findings. He found that, once competitive bidding was initiated in 1978, his department, which had previously lost districts to private industry, regained them from the private companies (Bennett, 1990). In Saginaw, Michigan, a similar experience occurred. In the early 1990s, Saginaw contracted out two sections of its refuse collection services to a private company. In July 1994, it returned to having municipal workers pick up all trash.

In Michigan, the experience of Louis Schimmel (1990), the court-appointed receiver for Ecorse, Michigan, corroborated Donahue's findings. He believed that privatization for Ecorse has provided better management and significant savings.

But Michigan has found privatization slow in coming. And Todd Sloane (1992), staff writer for City and State, said it is not always an easy way to save money. Michigan has experienced privatizing highway maintenance as well as the State Accident Fund. To date, saving money does not appear to be a primary point; experimentation with privatization is.

The trash collection activities experienced in Michigan are not unique. Gibson (1995) explained that the solid waste industry has experienced tremendous growth in the last decade. Disposing of solid waste is really much more than what each household must pay for such services, regardless of whether it is a tax, a fee, or a user charge. Other considerations affecting this decision include what to pick up, e.g., yard waste, appliances, bulky items, and hazardous waste, to name a few. This decision as to what to pick up became crystal clear in Michigan on March 27, 1995, when P.A. 262, Public Acts of 1994, banning yard wastes from landfills became effective.

Larry Reed (quoted in Kellogg, 1992), president of the Mackinac Center, a Midland-based GOP think tank, pointed out that "adding things allows you to concentrate the benefits and spread out the costs" (p. F3). On the other hand, "contracting it means you have got to spread the pain to everybody" (p. F3). Nothing could be clearer in the area of trash removal, where landfill regulations have become increasingly stringent, thereby leaving fewer and fewer landfills available for accepting trash and rubbish. Furthermore, most people do not want a landfill in their own backyard. They may tolerate a landfill serving only local

consumers. They are even less tolerant about bringing someone else's trash into their community landfills. This resistance reduces the available supply of landfills and, in turn, leads to higher collection costs. Because higher taxes seem unlikely, costs must be borne by the ultimate consumer. Kellogg reported that this means governments will likely take a customer-service approach to providing services. Customer-service approaches typically mean user fees or privatization, where the customer pays for services directly.

Another type of trash collection that is frequently mentioned in the literature is hazardous waste (Reed, 1993). Although most households do not produce a significant amount of hazardous waste, it nevertheless comes into the trash collection and landfill equation.

One controversy concerns transporting hazardous waste over long routes to its final resting place (Reed, 1993). The Waste Isolation Pilot Plant (WIPP) is a research and development facility for the safe disposal of transuranic radioactive wastes. As explained, there needs to be more training to ensure proper accident prevention and accident response in keeping hazardous waste products from harming the public. The public is appropriately hesitant and nervous about such shipments going over well-traveled routes. There will be no intrastate hauling until such time as regulators and haulers alike can convince the public that their fears have been minimized and are oftentimes unfounded because protective measures have been initiated to haul hazardous waste products successfully.

Reed (1993) was convincing in arguing that public perception is a paramount concern in resolving issues of trash disposal. Until such time as public perceptions of the dangers of transporting hazardous waste are countered, few localities will willingly allow transporting of hazardous waste. In terms of accidents, the crash-resistant containers, explosion-resistant devices, and proper spillage-detection equipment all enter into the safety equation before such waste products may be transported. Here is just another of many situations in which the public perception is of the utmost importance in arriving at a mutually agreeable solution to transporting waste products.

It appears that citizens are more tolerant in allowing local trash and refuse to be sent to a local landfill than they are for local landfills to be used for trash collections from a distance. This reluctance was explored in another article, which stated that one way to minimize "foreign trash" was to impose user fees on disposing out-of-state trash ("Fees on Out-of-State Trash," 1993). From this article, one can conclude that people dislike out-of-state trash even more than their own. But are such charges constitutional?

The Oregon Supreme Court upheld a lower court ruling and found that it was constitutional to charge out-of-state haulers a fee that was not charged to in-state haulers, providing there was evidence that there were extra costs involved in handling and regulating out-of-state trash.

What remains to be seen is the documentation needed to support the contention that there are, in fact, extra costs involved in handling and regulating

out-of-state trash. One might legitimately ask what these extra charges would look like. Although the article did not explore this issue, the presumption would be that the types of trash that might be disposed of in one state would not necessarily be the same as in another. Thus, some sort of review and assessment of the propriety of trash being hauled would have to be done by the regulators of the state accepting another state's trash.

When the United States was a more agrarian society, how each one personally disposed of trash and hazardous waste was simply a matter of personal preference. In some tribal cultures, the people would simply move from one location to another when the trash became unbearable. As the globe continues to shrink and everyone's lives become more and more affected by actions of others, it becomes more understandable how such seemingly far-reaching actions can directly affect trash removal at each citizen's curbside.

Even though the city of Visalia has gone through tremendously difficult times with its entrepreneurial endeavors in terms of its hotel experiment mentioned earlier, there is one project that has come successfully to fruition. That is with, of all things, a split garbage can, a concept that was 10 years in the making. The garbage can is designed so that one half holds trash and the other half holds recyclables. The can is emptied with an automated arm attached to the truck. This innovation is expected to cut manpower costs in half (Gurwitt, 1994).



### Performance Measurements and Accountability

Are user-fee charges and privatization models a panacea for cities and other local units of government in closing the revenue-expenditure gap? Many experts are dubious. One such expert argued that the best approach is to be receptive to innovative financing without being seduced by it, to appreciate tested methods of financing, and to do nothing without the commitment of political decision makers (Snell, 1991).

It also is important to do one's homework. Subject both public and private options to an independent analysis, which has no built-in bias for either outcome. Ensure that all costs, direct and indirect, are included in the analysis. If at all possible, test the results using a pilot program for the option under consideration. If it is privatization, then do not dismantle the municipal infrastructure only to find out too late that privatization does not work. Rebuilding the infrastructure would be exceptionally costly once it is dismantled, thus leaving the city at the mercy of the private contractor.

Detroit Free Press staff writer Dawson Bell (1992) also pointed out that a United Automobile Workers (UAW) analysis of more than 150 reports from the state Auditor General found many examples of cost overruns, no-bid contracts, and other abuses in 40% of all contracts. Michigan Legislator Keith Muxlow (1992) reminded that it is extremely important to compare "apples with apples" in the matter of government costing and private costing. He referred to a total-costing form of accounting in which the government would have to use all costs

involved in the service or product when compared with the costs of the metropolitan agency and private companies. Muxlow believed that previous comparisons by governmental entities were flawed because the comparisons of costs of product or service delivery were not equivalent as the governmental unit was not including all associated costs. In the article, Muxlow was silent on the reverse, namely, the possibility that the corporation may not be using total cost data in its bidding. Financial people from both sides, in any event, should carefully review all costs associated with the product or service in order to make a fair comparison.

Arrandale (1993) supported Muxlow's contention when he argued that, in several different ways, outmoded government preferences hide the true costs of extracting and processing raw materials. If markets were truly willing to reflect total costs, government recycling programs would already be competitive. Such costs are not hidden only in government models, however. Private companies are particularly prone to hiding indirect or overhead costs (Dominiak & Louderback, 1991). As the federal government has found many times when reviewing cost-plus federal contracts, hidden costs that are not appropriately the responsibility of the federal contract sometimes are charged to the contract under the guise of overhead or administrative fees.

A 1992 study conducted by the Michigan Public/Private Partnership Commission also supported Muxlow's concerns regarding the necessity of including all "hidden costs."

Robert Daddow (1992), Vice-President of the Public Sector Group, helped the lay person understand these "hidden costs" in a conference report entitled Privatization--Options, Cost Accounting and More. He defined "hidden costs" as follows: "Costs included in departments other than the departments providing the services to the public and differences in accounting policies between commercial and governmental entities" (p. 1). He identified seven different areas in which such costs can be found:

- I. Direct costs included in various departments applicable to the primary service department.
- II. Fixed assets in the general fixed assets account group (depreciation expense).
- III. Fringe benefits—particularly if the government is self-insured or on a "pay-as-you-go" basis:
  - a. Retirees' health insurance.
  - b. Workers' compensation.
  - c. Health, dental, vision, and life insurance.
  - d. Pension costs.
  - e. Training, travel, and seminars.
- IV. Central administrative costs as a result of the governmental unit's providing services:
  - a. Payroll preparation/personnel.
  - b. Accounting, purchasing.
  - c. Computer operations and copier charges.
- V. Facility costs, e.g., property insurance, utilities, and debt service.
- VI. Claims, litigation, and assessments.
- VII. Vested vacation, sick and holiday pay earned, but not taken (banked time). (p. 7)

Examples of direct costs included as part of category 1 above could be utility charges, supplies and materials, direct administration, and leased space. Such charges, although direct in nature, sometimes are not costed out to the benefiting department, but rather are accumulated in other departments and costed out to them.

In category 2, fixed assets, depreciation expenses frequently are not accumulated and charged back to the benefiting department. But if we are going to compare apples to apples, then depreciation expense is a legitimate expense and must be considered.

Currently, miscellaneous fringe benefits often account for 40% of the direct salary of government workers. If these costs are not considered, as identified in category 3 and category 7, there is an unfair comparison between the public and private sectors. Oftentimes, as in category 1 costs, these costs are accumulated in another department, human services for example, and never considered in the benefiting department.

Category 4 includes central administration costs, which often are overlooked when costing government products and services. These overhead and indirect costs, however, must be considered in order to ensure that all costs attributable to a particular activity are considered. This is particularly important for comparative purposes.

One of the costs in category 4 that is often overlooked is debt service and property insurance. Frequently, governmental units service their debt centrally and may not have a mechanism to charge back interest expense to the benefiting department. Also, governmental units often are "self-insured." There is thus no insurance premium to pay to an outside company. Instead, they set aside a certain amount into a self-insurance fund and pay for losses out of that

fund. Nevertheless, such set-aside monies should be assessed against the benefiting unit in a manner similar to how insurance premiums would be.

The point of this discussion is to alert government leaders to the fact that all costs must be considered, especially when comparing options. To do otherwise is failure to conduct government business in a forthright manner. Unfortunately, the people who are fooled with such false figures and information often are the government officials themselves.

To discuss only costs is an inappropriate limitation on the total financial picture of refuse collection. One must also look at whether there are any incremental revenues to be obtained as a result of refuse collection. In this case, they are in the form of recycling opportunities. For several years, the literature pointed to a glut of such recyclable products on the market. This discouraged exploring any serious link between significantly reducing net costs by including, as an offset, incremental revenue from recycling opportunities. However, in 1995, this changed. Madison, Wisconsin's recycling director, George Dreckmann (cited in Arrandale, 1995), reported that the recycling glut appeared to be over for the present and that the recycling market had become a seller's market. He cited examples of corrugated boxboard going from \$20 a ton to \$200 a ton; newsprint going from \$5 a ton to \$100 a ton; and a growing shortage of steel cans, which is expected to last until the year 2010. He pointed out, however, that like so many other cyclical business products, recycling products

have their ups and downs. This happens to be an up time; a down time certainly could follow.

But the fact remains that incremental revenues available from recycling refuse materials are a legitimate offset to the rising costs of refuse collection. Whenever it is significant, it should be considered in the revenue-expenditure-gap equation.

Perhaps the best method of ensuring a comparison of apples to apples is illustrated by a publication by the Council of State Governments on privatization. The author, Chi (1993), contended that still another option in the privatization debate is direct competition between public and private sectors. He suggested that the governmental entity should be allowed to compete directly with private companies in giving services or products.

In the report, Chi (1993) suggested a bidding process on a routine basis for those services or products that are considered candidates for privatization. Bids would be accepted from private-sector companies capable of performing the services and also from the governmental workers either currently providing the services or hoping to provide the services. Such competition or "managed competition" is interpreted to mean breaking up the government's monopoly on public services. However, the report further stated that governments should be allowed to compete with the private sector. If they can deliver the goods or services more cheaply under the same constraints that the private sector is asked to bid on, then the consumer would benefit, regardless of who wins.

The city of Saginaw, Michigan, used this managed-competition strategy when it privatized one half of the trash collection activities and one half was left for the city workers to collect (McGovern, 1994). After the pilot program was finished, the city workers were able to regain the entire trash pick-up service. McGovern pointed out in an interview that city residents were constantly comparing the municipal workers and the private workers. Even though both sets of workers were working under the same rules and regulations, in terms of what trash they could and could not pick up, the timeliness of service, and the quality of services in general, comparisons still were made as to which workers were serving the customer better.

Government workers competing with the private sector must include hidden costs and overhead costs in order to ensure that all costs are being considered. However, such a service as trash removal could even be set up in an enterprise fund, which, by definition, is a governmental fund operating under the same accounting rules and conventions as its private-sector counterpart (Hay & Wilson, 1992).

The private sector and the public sector also should be required to illustrate in the bidding document what criteria would be considered, to determine on what basis efficiency, effectiveness, and cost would be used to evaluate performance (Governmental Accounting Standards Board [GASB], 1994). Such information would be helpful to city officials and the general public to evaluate various options, and it also would be helpful to producers of the product or

service. The GASB Concepts Statement 2 includes this information and thus enables all bidders to know exactly what is expected of them.

Although bidders still are not required to follow this model, as currently circulated, its requirements add welcome rigor to the process. The GASB (1994) model has the following reporting objective:

The objective of Service Efforts and Accomplishments (SEA) reporting is to provide more complete information about a governmental entity's performance than can be provided by the traditional financial statements and schedules to assist users in assessing the economy, efficiency and effectiveness of services provided.

They include (a) categories of SEA measures—measures of service efforts (input indicators), measures of service accomplishments (output and outcome indicators), and measures that relate service efforts to service accomplishments (efficiency and cost–outcome indicators). (p. 25)

There is no doubt that performance measurement is a hot topic with legislators, public administrators, accountants and auditors, and knowledgeable citizens (GASB, 1994). In 1994, more than 820 participants attended a three-day conference to learn more about performance measures and reinventing government at the University of Texas's Lyndon B. Johnson School of Public Affairs. The topics covered at the conference included the following (Miller, 1994):

1. Accountability in performance.
  2. How effective are your community services?
  3. Performance measures in governments: A systemic view.
  4. Citizen surveys.
  5. Interagency/public-private collaboration on performance measures.
- (p. 8)



The first topic was intended to help government administrators establish policies that are measurable because government administrators are now being held to a quantifiable standard. Thus, before a program is approved, it must include a design mechanism that will provide the criteria under which the program will be measured, once the year is completed.

The second topic concerned a comprehensive approach to documenting quality of services, particularly from the public's viewpoint. This should also include measures common to both public and private entities providing such services, whenever possible, for fair comparisons.

The third topic included measurement and reporting of outcomes and performance. As an integral part of the program right from the beginning, administrators, program directors, and staff should not be "blind-sided" by after-the-fact evaluators. Instead, there should be agreement before the program is started as to exactly what is expected from all parties involved.

The fourth topic is important because it involves the consumer in measuring the quality of various programs. Such surveys also can be used to determine which programs to expand, which to contract, and which to drop completely. The fifth topic concerned opportunities for public and private entities to collaborate on outcome measures appropriate for various programs.

Establishing such performance measures is difficult. It may be even more difficult than measurement and service delivery, but it is essential in order for the

government, confronted as it is with diminishing resources, and rising citizen expectations, to show accountability for its stewardship responsibilities.

Approximately one year after the above-mentioned conference, the Government Finance Officers Association reported on performance measures in budgets (Miller, 1995). One of the key measures reported on was public works. The researchers made five recommendations on how best to use performance measures:

1. Only those indicators that provide the most practical and useful information should be included in the budget.
2. Performance data should be linked with long-standing budget objectives.
3. Multiyear performance data should be presented at the same level of disaggregation as other budgetary data.
4. The budget should include a mix of output, outcome, efficiency, and other measures.
5. Departments and agencies should play a key role in the development and selection of performance measures used in budgeting. (p. 7)

As with any other efficiency tool, performance measures must be cost effective. The first recommendation addressed that problem by suggesting that only the most practical performance measures need to be in the budget. Too many burdensome measures tend to have a short life, and agencies then fall back to using nothing at all to measure performance.

As mentioned in the second recommendation, performance data should be linked to long-term budget objectives. In this way the elected officials can best tie budget and performance together. The third recommendation, which includes performance data at the same level of detail as other budgetary data,

is particularly important. To say simply, "We spent it all," and break down expenditure data into 100 categories just does not help government administrators and elected officials evaluate performance.

The fourth recommendation requires various measurement techniques. This is vital for several reasons. First, no types of measurement data are available at all times for each category. Thus, by including several different techniques, one will be more certain of being able to provide at least some type of measurement. Second, other similar entities may be using only one type of performance measure. By using several types, the agency is more likely to be able to compare with at least one indicator from another comparable entity. Third, elected officials and administrators, considering their diverse backgrounds, may vary in their understanding of different indicators. The agency will, therefore, be in a position to satisfy more of them when several different types of performance measures are used.

The fifth recommendation is critical. The more departments and agencies play a direct role in establishing and agreeing on outcomes, outputs, and other indicators, the greater chance the program has for success (Miler, 1995).

The Council of State Governments (1993) report on privatization also pointed out a key point that often is missed in the privatization debate. Government continues to be ultimately responsible for privatized services. Thus, to protect itself, government must carefully prepare contracts that specify exactly what is to be performed and what monitoring will be done of such contracts. To

do otherwise would be an abdication of government's responsibility, and the customers could be left with inferior services or products.

Privatization tends to work best where there are many vendors willing to compete for the government contracts being bid out (Council of State Governments, 1993). It also is important to keep in mind that once the government infrastructure that is necessary for services is dismantled, the government is vulnerable to the private sector. It may lack the capability to resist dramatically rising costs. Thus, government monopoly could easily be replaced by private monopoly. Once the private monopoly is in place, what is there to stop the company from price gouging? One does not have to go far to see how prices have increased in the case of one such monopoly, namely, cable television.

### When to Privatize

In a draft report to the Governor of the State of Michigan (Michigan Department of Management & Budget, 1992), an illustration is given that provides a set of general criteria that can help determine which is the best provider of a product or service (see Table 2). How well do trash collection services, the subject of this study, meet these privatization criteria?

The terms of the privatization alternative in question 1 are not met well in the case of trash collection services. These services have been available for years. The requirements can be extremely precise, and they can and should be

specified in advance so that the consumer is aware of what will or will not be picked up.

**Table 2**  
**Privatization Criteria**

<b>Don't Privatize If:</b>	<b>Privatize If:</b>
1. The task is uncertain at the outset and prone to revision.	1. Precise requirements can be specified in advance.
2. The value of the production is hard to measure.	2. The ends are more important than the means.
3. It is very disruptive to switch contractors in mid-stream.	3. It is easy to measure results.
4. The unit of government knows the best means to accomplish the task.	4. Incompetent providers can be readily replaced.
5. Process is as important as the end result.	

**Source:** Michigan Department of Management and Budget. (1992, August). Privatization in Michigan: Recommendations to the governor. Lansing, MI: Author, p. ii.

Question 2 could be answered either way. The value of production, from a societal point, is difficult to measure. Exactly how much worth there is in an efficient trash removal service, when also considering harm to the environment, health, and quality of life, is not easy to answer with specific quantifiable data. On the other hand, if one is simply to measure the results of the haulers moving the trash from the curbside or back door of individual consumers, and that is the

essence of the production stream, then it is fairly easy to measure. One could prepare a request for a proposal and solicit bids from a variety of vendors providing such services, based on a set of established criteria.

Question 3 deals mainly with short-term concerns. This question asks whether one wants to privatize a specific service in the middle of a contract and disrupt government workers who have provided such service routinely. Thus, it would seem in the short run that one would not want to pull a contract from a public agency, due to litigation and public relations concerns. If the government workers have routinely provided the service, one might wish to give them sufficient lead time to relocate, find other employment, or arrange for them to be employed by the private vendor while negotiating the contract. Roehm et al. (1989) convincingly argued this point. It certainly stands to reason that if government workers routinely provided trash removal services, there would be minimal retraining for them to be available to continue providing such services under a private contractor.

Applying question 4 to trash collection, results would likely lead to privatization. Incompetent providers can easily be replaced. Part of this, though, could be answered by the municipality writing a tight contract specifically identifying the quality and quantity of services that must be provided without breaching the contract. Thus, replacing incompetent providers should not have to happen if the original contract was properly executed.

At first glance, question 5 in Table 2 does not seem to apply here. However, the process of trash collection is critical insofar as consumers want quality services, no litter remaining, and timely pick-ups. Thus, citizens might prefer not to privatize. However, as mentioned above, the process can be strictly controlled through the use of a clear, specific contract between the municipality and the provider. Because the process of trash collection could be clearly stated and measurement indices built into the contract, it appears that citizens can be persuaded to lean toward privatization, provided it is done right (Michigan Department of Management & Budget, 1992).

In the same publication, Glenn Rairligh, a spokesman for the United Auto Workers, cautioned that privatization of this magnitude is a fraud on the taxpayers (Michigan Department of Management & Budget, 1992, p. 2). He warned that, once government is no longer competing in the various service and production areas, the private companies will boost their prices dramatically.

### Summary

Perhaps the ultimate bottom line is that, as Chicago Mayor Richard Daley (quoted in Daly, 1994) said, "People want service. They don't care who does it. They just want service" (p. 27). But this does not mean that the only option left is privatizing. It could also mean that government managers and government workers must work closely together in a spirit of compromise to ensure that the services or products are distributed at a fair price for all concerned.

The literature reviewed in this chapter concerned the advantages and disadvantages of various user charges, taxation methods, and privatization options, and showed how they relate to the environment of trash collection. It seems reasonable to conclude that the literature did not identify one best method or one worst method. Rather, it depends more on the ability of city administrators, public officials, and private entrepreneurs and on the particular political economy within which they work.



## **CHAPTER III**

### **RESEARCH METHODOLOGY**

The terms used in the study are defined in this chapter, and the research methodology is described. The chapter includes the rationale for selecting trash removal services as the test service for the four different cities with similar per capita incomes. The researcher explains how the cities were selected, the financial analysis used to determine the cost of trash removal, and the reasons for including the various items in the questionnaire. The purpose of the instrument was to qualitatively evaluate the various methods of paying for trash removal services. The design of the questionnaire, the types of questions, and the rationale for selecting the sample of residents also are explained.

This chapter also contains a description of the tests of statistical significance used in determining whether there was a perceived difference in the quality of services provided under the three different methods of paying for trash removal services. Finally, the researcher assessed the differences in the cost of trash removal services among the four cities, where appropriate, and traced the related cost changes over a three-year period.

### Definition of Terms

For purposes of this study, the following definitions of the three financing sources apply.

**Privatization.** The act of reducing the role of government, or increasing the role of the private sector, in an activity or in the ownership of assets (Savas, 1987, p. 3).

**Taxes.** A percentage of income, property value, and so on, that is paid for the support of a government (Webster, 1986).

**User fees.** Direct charges or fees used to finance a specific service by a governmental agency (Boyle, 1976, p. 1).

### The Analysis

The state of Michigan has experienced a wide shift in its tax structure since 1994. Whereas property taxes once were a primary revenue source in funding public schools, that source now has shifted to sales taxes. Since 1990, when Governor John Engler was elected in Michigan, more and more credence is being given to the assumption that the private sector could perform the majority of government services. Underlying the shift in providing government services from the public sector to the private sector were two other assumptions: privatization would be cheaper, and it would be better.

Assumptions, when taken to a universal or all-inclusive level, can be very misleading. Privatizing, in order to achieve efficiencies in one instance, or even

in several instances, does not always automatically achieve efficiencies. One way of putting such assumptions to a practical test was to select a common commodity or service (trash collection) used by the majority of citizens and ask them what they thought about it. Thus, trash removal service was selected because it is a common service that is used by the overwhelming majority of city residents.

#### Targeted Michigan Cities

The scope of this study was limited to a specific target population of Michigan cities. To make more systematic and accurate comparisons among the various Michigan cities in terms of the most beneficial financing method to use for trash collection, only medium-sized cities with comparable per capita incomes were included in the sample. For purposes of this study, medium-sized cities were defined as those with populations between 40,000 and 100,000. By comparing medium-sized cities, it was thought that similar economies of scale would be experienced. In contrast, small cities would undoubtedly have a greater portion of fixed costs relative to total costs of trash removal, and large cities would have a greater portion of variable costs to total costs. Such dissimilar fixed and variable cost configurations could bias the outcome of the study. Thus, by factoring the two extremes out and using only medium-sized cities, it was believed that greater consistency would result in making the ultimate comparison of the perceived value of trash removal services.

Similar per capita income per household was also used in determining which cities to select because it was thought that similar lifestyles would then be more likely. It was thought that the two extremes in lifestyles, considerable wealth or poverty, could influence the outcome of the study by affecting the variables being tested. In addition, home owners were selected, instead of all users of trash collection services, because it was thought that residential customers would provide a more homogeneous basis for evaluating the different methods of costing and collecting trash removal services.

After reviewing the sizes of all Michigan cities, the cities shown in Table 3 were considered on the basis of population and per capita income.

Table 3

Population and Per Capita Income of Selected Michigan Cities

Michigan City	Population	Per Capita Income
Dearborn	86,180	\$14,588
East Lansing	48,070	\$ 9,825
Lincoln Park	42,400	\$11,627
Muskegon	40,360	\$ 8,771
Pontiac	71,080	\$ 9,832
Roseville	50,520	\$11,450
Saginaw	71,650	\$ 9,178
Troy	67,700	\$18,872
Southfield	71,870	\$17,885
Westland	81,490	\$12,778
Wyoming	62,410	\$11,049

Next, inquiries were made to the city controller's office or another appropriate department to determine the method of funding trash collection and the people used to provide such services. As a result of such inquiries, the four medium-sized cities shown in Table 4 were selected for the sample.

Table 4  
Types of Financing and Workers in Sampled Cities

Michigan City	Type of Financing	Types of Workers
East Lansing	Service charges	Municipal
Lincoln Park	Taxation	Private
Saginaw	Taxation	Municipal
Wyoming	Privatization	Private

The municipalities using taxes as the funding source simply have the cost of providing the service included in the tax base without regard to the extent of usage. No distinction is made, in terms of the taxpayer, as to the actual dollars it will cost to provide the trash collection service. As Savas (1967) explained in Privatization: The Key to Better Government, when taxes are used as a funding source, the taxpayer does not know what the actual cost is and quite possibly does not care.

The municipality charging a user fee to pay for the cost of trash collections pinpoints a defined cost for the ultimate consumer, the taxpayer, to provide trash collection services. These consumers either know precisely how much it is costing them to have their trash removed or at least have a means of finding out.

The key here is what it is costing them. In the case of this municipality, they also subsidized the cost of providing trash collection services.

Municipalities using privatization under contract would have their taxpayers paying a standard fee for trash collection services. In other words, one vendor is given the contract to provide trash collection services to the entire city, and its rates are available to the consuming public.

Municipalities using privatization by simply allowing a number of different vendors to collect trash would presumably have several different collection fees, depending on the selection of a vendor by the ultimate consumer. One could reasonably assume, however, because no vendor has a monopoly, the rates would be competitive.

In the case of trash collection services, however, one must also remember that, because all taxpayers produce waste products, e.g., trash or refuse, there really is no way to get around using some form of collection service to dispose of trash. Dominiak and Louderback (1991), in their cost accounting text, defined this as an unavoidable cost. The use of the lower cost when comparing two or more costs of providing trash collection services would appropriately be referred to as foregoing an opportunity cost, which would be the incremental cost difference (Dominiak & Louderback, 1991).

Three of the four cities (East Lansing, Saginaw, and Lincoln Park) were analyzed to determine what the cost per unit was for trash collection. Such analysis covered a three-year period, from July 1, 1991, through June 30, 1994,

in order to determine what, if any, change there was over time. The fourth city (Wyoming) was not directly involved in trash collection services; thus, no analysis was appropriate.

### **Research Issues**

The null hypotheses were as follows:

**Null Hypothesis 1:** When trash collection services paid for through tax revenues are compared to trash collection services paid for through user fees, there is no significant difference in the perceived quality of services by the people using the services.

**Null Hypothesis 2:** When trash collection services paid for through tax revenues are compared to trash collection services paid for through private monies (privatization), there is no significant difference in the perceived quality of services by the people using the services.

**Null Hypothesis 3:** When trash collection services paid for through user fees are compared to trash collection services paid for through private monies (privatization), there is no significant difference in the perceived quality of services by the people using the services.

In addition, the following questions were answered:

1. What was the cost per unit of trash removal services over a three-year period in each of the four cities studied?

2. In rank order from lowest to highest, which city had the lowest cost per unit of trash removal services in the four cities studied?

3. Which cities had the greatest change in trash removal service costs on a yearly basis for the three years studied?

### **Research Strategy**

Four Michigan municipalities were selected for this study. One city (Saginaw) selected property taxes to fund trash removal services. The use of the tax method means that consumers of trash removal services will pay for the service through property taxes, irrespective of how much or how little they actually use the service.

Another city (East Lansing) charged user fees to fund trash removal services. In this case, city residents were charged a flat amount per bag of trash. Trash bags could be purchased at various points throughout the city. They were a distinctive color, and all were the same size. No other trash containers were considered for pick-up. The only exception to this was that the first bag per week was free.

The third city (Lincoln Park) used one vendor for trash removal services, but the consumer paid for the service through taxation, without regard to usage. In this case, the city periodically bid out the trash collection services. The successful bidder, who used his or her own workers to pick up trash, had the exclusive rights to pick up trash throughout the contract period.



The fourth city (Wyoming) allowed any licensed trash removal vendor to collect refuse, and the consumer paid for the service directly. At the time of the study, several trash collection vendors were operating in the city. This was undoubtedly the most competitive and privatized arrangement among the four cities included in the study.

Case study techniques were used to gather data, including interviews with key employees from the city controller's office or other pertinent city offices. The responses helped to determine the pros and cons of each method of funding trash removal services, the resulting costs for such services, and the officials' observations on the potential benefits of using one method over another in closing the revenue expenditure gap.

Through the use of financial analyses, the cost per unit of trash removal services, the changes in trash removal costs over a three-year period, and the relative importance of any such changes were determined. In addition, a questionnaire was sent to 160 municipal residents in each of the four cities, for a total of 640 questionnaires, to determine whether there was any perceived difference in the quality of services, based solely on one of the methods of financing such services or staff providing such services.

To determine what residents in each city were selected, a systematic sampling design was used. Frequently, a systematic sample is confused or used interchangeably with simple random sample selection (Blalock, 1979, p. 568). If there is no reason to believe that the order of placement of items on the list

cannot be considered random with respect to the variables being considered in the test, then systematic sampling can be considered equivalent to a random sample (p. 559). In the cases of the four cities sampled, there was no reason to believe that the systematic sample used could not be considered equivalent to a random sample. Considering the data bases available for analyzing Michigan cities, including those in each of the four cities sampled, this sample design was considered both appropriate and expedient. Blalock stated that a simple random sample over a systematic sample is "hardly worth the extra trouble" (p. 559).

### Questionnaire Design

The questionnaire helped to determine whether the perceived quality of service among cities obtaining their trash removal services through taxation, user fees, or privatization was significantly different. The questions were designed to determine the residents' perceptions of the quality of service, or the residents' perceptions of change in the quality of service over three years, and the level of financial value that they assigned to the trash removal services being provided (see Appendix A).

The questionnaire consisted of 17 questions and requests. The questionnaire requested demographic data, including home ownership status, length of time respondents had resided in the city studied, gender, age, education, and employment status. It was not anticipated that any of the

demographic data, such as gender, age, educational background, or present employment status, would have a direct effect on the results.

In addition, specific trash collection information was also requested, including the frequency of trash collection, the collection site, and the cost of the service as well as the perception of the quality of the service now and in the past, and the value of the service relative to its cost. This information was important because the interviews with city officials and logic both indicated that frequency of collection had a direct bearing on both costs of the service and customer satisfaction with the service. Where one's trash is collected, e.g., at the curbside, at the back door, or at some central point within the neighborhood, also has a direct bearing on the costs of the service as well as customer satisfaction.

Questions dealing with trends are critically important because they provide information as to the stability and consistency of trash collection services. For instance, a city that is experiencing a high degree of customer satisfaction may be lulled into maintaining a status quo policy in regard to evaluating changes in trash collection services. However, if they determined that their customers were seeing a decline in the service provided, the city would be more receptive to reversing such declines.

Open-ended questions provided opportunities for the respondents to explain their responses to the perceived quality and the value of the services provided. These were a primary focus of the study. The questions were purposely left open-ended because it was thought the answers obtained from

open-ended questions would provide the best feedback for purposes of analysis and future study. At first glance, many might think that funding and perceived value of the services rendered are two of the most basic and easily evaluated answers. However, determining the value for services provided and identifying partial subsidies are complicated. Thus, open-ended questions provided the respondents with sufficient freedom to express answers in the way they felt most comfortable.

The respondents' answers to all of the questions included in the survey helped to focus on the similarities found among the four cities sampled and methods used to collect trash in order to detect ways trash removal may be improved. However, other similar cities may also find value in the answers to these questions and thereby improve upon their trash removal services.

To select respondents within each city, it was important to draw on a data base including all possible respondents. By definition, respondents were private residential customers. For two of the cities selected, East Lansing and Saginaw, such data bases were available and were obtained directly from the city. For the other two cities, Lincoln Park and Wyoming, no such computerized data base was available. Thus, a data base found in the Bresser publications was used.

### Selecting the Sample

Samples were selected from each city. To ensure randomness, a systematic, interval sample-selection procedure was used. Each city's total

resident population was calculated, and then every  $n$ th residential customer was selected to ensure that at least 160 customers from each city were selected. The entire mailing went out in October 1994.

### Perceived Quality of Service

Once the questionnaires were returned, the answers were analyzed to determine whether there was a statistical difference in the perceived quality of service as a result of the four different approaches to implementing and paying for trash collection services in these cities.

### Statistical Tests Used in the Evaluation

The Kruskal-Wallis one-way analysis of variance (ANOVA) was used to determine what, if any, statistical differences could be found in the means between or among the samples from the four different cities. This test is appropriate whenever there are several independent random samples and ordinal-scale data (Blalock, 1979, p. 367). This test was used for a number of questions, including evaluating differences in the frequency of collection, location of collection service, service quality, and trends in service quality.

Spearman correlation coefficient tests also were used. Spearman's measure is used to compare the rankings on two sets of scores by taking the differences of ranks, squaring these differences, and then adding, and finally manipulating, the measure so that its value will be a maximum of +1.0 and a

minimum of -1.0. If the answer is +1.0, there is perfect agreement; if the answer is -1.0, there is perfect disagreement.

The Spearman measure was used to determine the reasonableness of answers to questions that should have been answered similarly. For example, if respondents answered a question stating they were very pleased with the quality of trash removal services, the next question relating to why should be answered positively as well.

Means, medians, modes, and ranges, where appropriate, were other statistics used. Means and medians are both measures of central tendency, the mode being the most common. The mean is defined simply as the sum of scores divided by the total number of cases involved (Blalock, 1979, p. 56). The median is defined as the middle value when data have been ranked from one extreme to the other—high to low or vice versa (p. 59). The mode is defined simply as the most frequent score or scores in a given array (p. 69). The range is defined as the difference in value from the highest to the lowest (p. 76).

Other tools used to help explain the data were histograms, pie charts, and bar charts. Histograms and pie charts help lay readers of computational data to get a better "picture" of the results of interval, ordinal, or nominal data.

### **Interviews With Selected Municipal Administrators**

Before conducting interviews with selected municipal administrators, each of them was given a two-page summary of potential questions (Appendix B).

This was not intended to be used as a blind questionnaire to be strictly adhered to, but rather as a guide to facilitate discussion.

In the literature review it was found that administrators frequently were not in touch with the customers of the municipal services provided. Thus, a series of questions was developed to determine the administrators' perceptions of trash removal services. Comparisons could be made between the administrators' answers and the residents' answers. These questions were intended to elicit information regarding costs and the perceived value of services rendered. But perhaps the most important information to gather from the city administrators was their perceptions of trends—whether trash collection services are improving or getting worse. The answers to these questions could be compared with the responses gathered from the questionnaires obtained from the residents of the respective cities. Finally, it was thought that the administrators' thoughts on improving trash collection services was as important as the residents' thoughts on improving customer services. Comparisons were made with what the customers considered important for improving trash removal services.

### Interviews With Personnel in the Four Sample Cities

The pertinent results of all the interviews with personnel in the sample cities are discussed here. To facilitate the discussion, multiple interviews in a particular city are discussed together. A series of prepared questions were used in East Lansing, Lincoln Park, and Saginaw (Appendix B). Because the city of

Wyoming was not directly involved in the trash removal business, many of the prepared questions were not appropriate. Instead, the administrator provided the researcher with limited information on feedback they received regarding trash removal services of the various vendors from the residents. Most of this information was anecdotal, and complaints were referred back to the resident to be discussed with the appropriate vendor. Because they had multiple vendors providing trash removal services, it was rather easy simply to discontinue having one vendor and to select another vendor to perform the work. The interviews were held over a period of two years.

### Saginaw

The first interview was held on July 22, 1992, and the second interview on June 17, 1994. Both interviews were with Patrick McGovern, Director of Plant and Grounds. During the first interview, he explained that Saginaw, Michigan, uses a combination of city workers and private haulers to perform trash removal services with the city of Saginaw, Michigan. This combination is a pilot project, which will be evaluated to determine whether it continues and will cover the entire city, or be discontinued. The city uses two different landfills: (1) the Taymouth Landfill near Birch Run, Michigan, receives approximately 20% of the refuse and charges \$8.55 per cubic yard; (2) the Sexton Landfill in James Township, which is in Saginaw County, receives the remainder of the refuse and charges \$8.30 per cubic yard.



During the period between the first and the second interviews, all seven refuse pick-up routes were taken over by city workers. The pilot project was discontinued and changed back to allow the city workers to regain all of the routes.

McGovern (1994), believes the city of Saginaw provides a Cadillac refuse removal service for Saginaw residents. Currently it hauls yard waste, furniture, refrigerators, and regular trash, and it participates in recycling. Admittedly, in 1995, the rules for yard waste were changing. This change was effected by Michigan's Public Act 451, Public Acts of 1994, which prohibits the owner or operator of a landfill or a municipal solid waste incinerator from knowingly accepting yard clippings.

McGovern (1994) believes Saginaw's trash removal service has improved over the past three years. Currently, it provides a one-person rubbish truck for efficiency. This has allowed the city workers to maintain control of the waste stream. The city also is in complete compliance with the freon-refrigerant restrictions. It provides freon removal at no additional cost to city residents.

Although most city residents are not able to tell someone how much it costs to remove trash, that cost has decreased by .2 mill in the past three years. Currently, it is costing residents approximately \$30 monthly per household to dispose of their trash.

The city administrator indicated that the following changes could improve trash collection services:

1. Automated collections.
2. Sixty-five-gallon containers for rubbish.
3. Separate container for yard waste.
4. Containers for recyclables.
5. Pick-ups to be made by automated trucks. Automated trucks would allow more stops to be made per day, require fewer personnel, and result in fewer job injuries to back, feet, and hands.

These initiatives should provide a cleaner city because the containers would also be animal proof. Saginaw has already started the initiatives by investing \$1 million in new containers. More than \$150,000 will be needed to convert the present collection process. Part of the cost will be to convert the present seven routes to four. The changes were to be introduced in July 1995 and to be phased in over four years.

During the second interview, the Superintendent was able to provide a data base of all Saginaw residents. The sample of 160 residents was then drawn from that data base.

### East Lansing

The first interview in the city of East Lansing, Michigan, was held on July 10, 1992, with the Controller, Constance Larkin. She stated that East Lansing has gone through considerable turmoil in terms of its trash collection services, but lately it is smoothing out. She explained that the city recently has

moved to a cost-per-bag or user fee to pay for trash removal services. Therefore, the more one uses, the more it will cost to dispose of one's trash. Although the trash removal services are under the Director of Plants and Grounds, there is no direct overhead cost that actually goes to picking up trash. The trash services are provided by municipal workers. The tipping costs were not covered in this interview for the city of East Lansing. Instead, they are covered in the interview with the Group Manager, Public Works Department.

The Controller was able to provide a data base of all East Lansing residents to use in drawing the sample.

The second interview, which was held on Friday, July 7, 1995, was with Peter G. Eberz, Group Manager in the Public Works Department. He explained that approximately 20,000 residents of East Lansing do not use the trash removal service, whereas some 30,000 residents do. The city of East Lansing is unique. Its population fluctuation is significantly different due to the students from Michigan State University who leave in the spring and return in the fall. The city does not provide services to Michigan State University. Because only residential consumers of trash removal services were in the population data base, this factor did not affect the present study or results.

Employees of the city of East Lansing are the sole collectors of residential trash. The cost of such service for residential pick-up is .5 mill per thousand dollars of assessed valuation. Yard waste is not included in the trash collection services since Public Act 451, Public Acts of 1994, was passed.

The charges are \$1 per bag for regular refuse, with the first bag being "free." This simply means that the first bag is included in the millage assessment for all homeowners. The total annual cost is approximately \$633,000, with revenues from bag sales offsetting this charge by \$192,000. These costs include both direct and indirect costs, including other administrative costs that are included in the budget. The entire refuse collection program is operated as an Enterprise Fund in East Lansing. This means that it is operated as a wholly owned business of the city of East Lansing, with responsibility for covering the entire expense of operation through revenues and designated tax receipts.

Eberz's (1995) current assessment of the quality of the refuse collection services in East Lansing is very high. He believes the trash collection service has improved during the past three years. Considering the amount residential customers pay for trash collection services, he believes they are receiving good value.

In answering the question about what could be done to improve East Lansing's trash removal services, Eberz (1995) suggested that a mechanized system, including automatic arms that dump the trash load, would help to lower operating costs. He would also like to go to a one-person load from a two- to three-person load system.

The tipping fee at the local landfill, which is used exclusively for all of East Lansing's refuse collections, was \$10.50 per cubic yard for the fiscal year ending

June 30, 1995. Previously, in fiscal years 1992-93 and 1993-94, it was \$10.00 and \$10.25, respectively.

East Lansing recently has become involved in recycling. Eberz (1995) believes that the city's recycling program is very good.

### Lincoln Park

Both interviews for Lincoln Park were with John Martin, Controller. The first interview was on September 25, 1992, and the second interview was on June 29, 1994. To clarify selected points, a third-follow-up telephone interview also was conducted.

During the first interview, Martin (1992) explained that the city of Lincoln Park uses private haulers to perform trash removal services. Periodically, they bid on the refuse contract, which gives exclusive rights to one hauler to perform trash removal services. The hauler is under contract and therefore is fairly independent of the city, as long as the contract is honored. Trouble calls by citizen customers are received and followed up accordingly, by the city. Currently, a company called City Disposal has the contract. It has had the contract for more than five years, which covers the entire period under study.

During the second interview, Martin (1994) explained that they did not have a computerized data base available for purposes of selecting the sample. But Bresser's Cross-Index Directory (1994) provided names, street addresses, and zip codes for all people living in Lincoln Park.

The remainder of the prepared questions that were asked during the interviews with the cities of East Lansing and Saginaw were not used for either Lincoln Park or Wyoming. They were not appropriate for cities that were not directly involved in trash collections.

### Wyoming

The interview with Joseph Bommarito, Controller of the city of Wyoming, Michigan, was held on June 21, 1994. He explained that he had recently arrived from Portage, Michigan. Therefore, he did not feel comfortable working with historical issues pertaining to trash removal within the city of Wyoming, but he was able to answer many of the other questions.

Bommarito (1994) explained that the city of Wyoming does not become involved with trash removal services. Rather, the individual citizens are completely on their own in terms of such services. When someone moves into the city of Wyoming and requests advice and help in terms of trash removal services, they simply are told that they can hire whomever they wish. No one vendor has exclusive rights to hauling trash in the city. As one might expect, the city does not act as an intermediary when complaints arise, either. Any complaints would have to be resolved directly between the vendor and the customer. If the customer cannot obtain satisfaction, the options are either to file a legal suit or simply to change to another vendor.

The city of Wyoming also did not have a computerized data base consisting of residences only. Through Bresser's Cross-Index Directory (1994-95), though, it was possible to obtain a compilation of residences from which to draw a random sample of 160 residences.

Neither Bommarito nor his assistant had any specifics in terms of costs per cubic yard for trash removal services. This is reasonable because the city of Wyoming does not become directly involved in such services. Presumably, tipping fees could easily vary from hauler to hauler, according to which landfill they use and the volume of refuse they wish to dispose of.

It was interesting that all of the city officials who were interviewed were very positive about their cities' services and fully expected the questionnaire results to be favorable. They also seemed to be exceptionally candid about their perceptions of trash removal services. They all expected some degree of negative feedback from the questionnaires and recognized that no system is perfect. All of the officials of the cities involved in trash removal services (East Lansing, Saginaw, and Lincoln Park) were interested in the study and hoped that the results of the questionnaire would corroborate their expectations.

The results of the surveys are discussed in Chapter IV. In addition, comparisons are made among the four cities in the sample.

## CHAPTER IV

### RESULTS OF THE RESEARCH

The results of the research are described and analyzed in this chapter. The chapter includes the comparative data on trash removal, the responses to the various open-ended questions, and the anecdotal data drawn from the respondents' comments.

Table 5 contains the results of the questionnaires. As can be seen from the table, the return rates were somewhat consistent among the four cities in the sample. The disparity in the numbers of returns among the four cities had no statistical effect on the results of the study.

Table 5

#### Return Rate of Questionnaires

City	Questionnaires Sent	Questionnaires Returned	Percentage Returned
Lincoln Park	160	45	28.1
Saginaw	160	47	29.4
Wyoming	160	52	32.5
East Lansing	160	60	37.5
TOTAL	640	204	31.8



The percentage of people responding was not as large as initially expected. Due to the small response rate, there was no way to determine whether the respondents were representative of the population surveyed. Had a second mailing been done, it might have improved the response rate.

The discussion now turns to one of the primary research questions: Is there a significant difference in consumers' perceptions of the quality of service when comparing tax-paid trash removal services, service charges, and privatization as the method used to finance trash collection services?

#### Statistical Procedures Used

To evaluate the answer to this question, the Kruskal-Wallis statistical test was used to determine whether there were differences in the means between or among the samples from the four cities. This test was explained in Chapter III. The results of this test are presented in Tables 6, 8, and 9.

As shown in Table 6, whether before or after correcting for ties, the chi-square values of .1613 and .1150 indicated no statistically significant relationships among these four cities in terms of respondents' perceptions of the quality of trash removal services.

Table 6

Kruskal-Wallis One-Way ANOVA: Quality of Service (N = 204)

City	Cases	Mean Rank
Lincoln Park	45	86.57
East Lansing	60	101.18
Saginaw	47	101.64
Wyoming	52	110.46
TOTAL	204	
<b>Results:</b>		
Chi-Square	df	Significance
5.1473	3	.1613
5.9315	3	.1150

It also was important to determine whether there was a statistically significant difference between cities that used taxes rather than user fees or private monies to fund trash removal services. Thus, a comparison was made between the cities of Lincoln Park and Saginaw, which used tax collections to fund trash removal services, and East Lansing and Wyoming, which used user fees and private monies, respectively, to fund trash removal services. The Mann-Whitney U statistic was used for this comparison. The results are shown in Table 7. The correct interpretation of this statistic is that there was no statistically significant difference when comparing cities that paid for trash removal services with taxes irrespective of the amount of trash collected (Lincoln

Park and Saginaw) and those who used user fees and private monies to pay for trash collection services (East Lansing and Wyoming).

Table 7

Mann-Whitney U Statistic (N = 204)

Cities	Cases	Mean Rank
Lincoln Park & Saginaw	92	98.86
East Lansing & Wyoming	112	105.49
<u>Results:</u>	Mann-Whitney U Test 4817.5	Corrected for Ties .3921

Because other questions were asked in the survey that could have an effect on the quality of services, the Kruskal-Wallis one-way ANOVA test was also performed on the following questions: "How often is your trash collected?" The choices were (a) weekly, (b) every other week, (c) twice weekly, and (d) monthly. Results of this statistical analysis are shown in Table 8. As can be seen in the table, whether before or after correcting for ties, the chi-square values of .8455 and .0940 indicated no statistically significant difference among these four cities in terms of the frequency of trash removal services.

Respondents also were asked, "Where is it [trash] collected?" The choices were (a) at the house, (b) curbside, (c) at some central point, and (d) other. The results are shown in Table 9. As can be seen from the table, whether before or after correcting for ties, the chi-square values of .6179 and .2150

indicated no statistically significant difference among these four cities in terms of where trash collections were made.

Table 8

Kruskal-Wallis One-Way ANOVA: Frequency of Collection ( $N = 204$ )

City	Cases	Mean Rank
Saginaw	45	97.00
Lincoln Park	45	99.23
East Lansing	60	102.03
Wyoming	52	107.14
TOTAL	204	
<b>Results:</b>		
Chi-Square	df	Significance
.8165	3	.8455
6.3917	3	.0940

Table 9

Kruskal-Wallis One-Way ANOVA: Where Trash Is Collected ( $N = 204$ )

City	Cases	Mean Rank
Lincoln Park	45	95.83
Saginaw	47	100.37
East Lansing	60	101.60
Wyoming	52	111.23
TOTAL	204	
<b>Results:</b>		
Chi-Square	df	Significance
1.7863	3	.6179
4.4698	3	.2150

Concerns about trends in trash collection were also explored, as illustrated by this question: "During the past three years, or as long as you have lived in the city where you currently reside, has the trash collection service improved, stayed the same, worsened, or do you have no opinion?" This question was asked in an attempt to determine whether trend increases or decreases were occurring. The results for this question are shown in Table 10. As can be seen from the table, whether before or after correcting for ties, the chi-square values of .2795 and .1927 indicated no statistically significant difference among these four cities in terms of upward or downward trends in perceptions of trash collection services.

Table 10

Kruskal-Wallis One-Way ANOVA: Trends in  
Collection Service (N = 204)

City	Cases	Mean Rank
Saginaw	47	88.64
Lincoln Park	45	100.98
Wyoming	52	105.20
East Lansing	60	110.44
TOTAL	204	
<b>Results:</b>		
Chi-Square	df	Significance
3.8383	3	.2795
4.7290	3	.1927

As a result of the three tests comparing the four cities in the sample in terms of perceived quality of trash collection services, location of pick-up of trash collections, and trends in the quality of trash collection services, one can say at a confidence level of 95% that there was no statistically significant difference among the cities sampled.

Of all of the tests that were conducted, only one test showed a statistically significant correlation. When the perceived value for money spent on trash collection was correlated with the perceived quality of the trash removal services, the results shown in Table 11 were obtained. There was a strong positive correlation when comparing quality of trash removal services to the costs associated with trash removal services. This correlation was statistically significant.

Table 11

Summary of Spearman's Rank Order Correlation:  
Question 10 and Question 5

Strong positive correlation	.4977
Number in sample	197
Significance	.000

When the quality of trash removal services was correlated with the frequency of trash collection, the results shown in Table 12 were obtained. As shown in the table, the more frequently the pick-up of trash occurred, the greater

was the perceived quality of service. Thus, there was a slight positive correlation between the quality of trash collection services when compared to the frequency of pick-up. However, this correlation was not statistically significant.

**Table 12**

**Summary of Spearman's Rank Order Correlation:  
Question 5 and Question 3**

Slight positive correlation	.1019
Number in sample	202
Significance	.149

When the quality of trash removal services was correlated with the frequency of trash collection, the results shown in Table 13 were obtained. There was a slight positive correlation between the quality of trash collection services and the location of the pick-up. However, the results were not statistically significant.

**Table 13**

**Summary of Spearman's Rank Order Correlation:  
Question 5 and Question 4**

Slight positive correlation	.0160
Number in sample	204
Significance	.820

### Analysis of Tipping Fees

One of the research questions asked, What is the cost per unit of trash removal services over a three-year period in each of the four cities? The answer to this question was not available for all four cities because two of them were not directly involved in trash removal services. However, even though it was not directly involved in paying tipping fees because the vendor pays those fees directly, Lincoln Park was able to answer the question. Thus, the following comparisons were made (see Table 14). It can be seen that East Lansing's tipping fees increased by approximately 2.5% per year over the three-year period, whereas Lincoln Park's and Saginaw's fees remained constant. In rank order, East Lansing had the highest tipping fees, Lincoln Park was second, and Saginaw was third.

Table 14

Schedule of Tipping Fees

Year	East Lansing	Saginaw	Lincoln Park	Wyoming
1993	\$10.00	\$8.55	\$9.25	n/a
1994	\$10.25	\$8.55	\$9.25	n/a
1995	\$10.50	\$8.55	\$9.25	n/a



### Individual City Analysis

The following materials are included to indicate the anecdotal responses to the questionnaires received in the survey. These materials help to corroborate the statistical tests used and the results of such analyses. Each city's responses are discussed separately, and those responses cannot be used to evaluate any statistical correlation with other cities.

#### City of East Lansing

Close to 97% of the respondents (57 of 59) stated that they owned their own houses. Indeed, virtually all of the respondents in the four cities were homeowners. In response to the question regarding the length of time respondents had lived in the city, the lowest number of years was 1, and the highest reported was 65. Only three respondents had been there fewer than 3 years, which was the minimum requested evaluation time. No respondents expressed concern that they had not spent enough time in residence to evaluate the effectiveness of trash removal services.

More than 93% of the respondents (49 of 59) stated that trash was collected weekly. Three percent stated it was collected twice weekly. In discussions with Peter Eberz (1995), he confirmed that trash was collected weekly. In response to where the trash was collected, more than 13% of the

respondents stated it was collected at the house, 86% said at the curbside, and 5% said either at some central location or "other," but did not explain where. The percentages totaled more than 100% because two of the respondents marked both at the house and curbside. Thus, there appears to have been some slight confusion between these two choices. In discussions with Peter Eberz, he confirmed that the curbside was where trash was being collected.

Respondents were asked to evaluate the quality of the trash removal service. The highest possible response was "very good," and the lowest possible response was "poor." There was also a "no opinion" option available. Almost 32% (19 of 59) of the respondents stated the quality of the trash removal service was very good, 34% said it was good, 7% stated it was adequate, 5% found it was fair, 3% thought it was poor, and the remainder did not respond.

Respondents were asked to briefly explain their answers regarding the quality of the trash collection service. In order of frequency, the 31 answers to this question were:

1. Always timely (54.8%).
2. Cost \$1 per bag now, when before it was free (19%).
3. Good value (13%).
4. Pick up large items for free (13%).

Respondents were asked to evaluate whether there was a trend in the quality of trash collection services over the past three years. In answering this

question, 29% (17 of 58) found it had improved, 36% said it had stayed the same, 33% indicated it had worsened, and 2% had no opinion. When asked to explain their answers, the 30 respondents gave the following responses:

1. Liked recycling program (30%).
2. It used to be easier to have large items taken (20%).
3. Too fussy (20%).
4. Yard waste and large items used to be free (20%).
5. Fair price (10%).

When asked how much it cost to have trash removed, 56% (33 of 59) said they did not know because it was included in their taxes, 20% said it was under \$10 per month, 10% thought it was between \$11 and \$20 per month, 2% stated it was between \$21 and \$30 per month, and 5% did not know. The respondents who answered this question alleging they knew the cost of trash removal services probably were thinking only of the direct cost to them. But the reality is that the trash removal service was subsidized by the city. That portion simply was included in property tax collections.

The residents were asked whether they thought they were receiving value for their money when the amount they paid for trash collection was considered.

The answers were as follows:

1. Very good value for the money (22% or 13 of 57).
2. Good value (34%).

3. Fair value (17%).
4. Poor value (8%).
5. No opinion (15%).
6. No answer (3%).

When asked to explain their answers, less than 11% of the respondents took the opportunity to elaborate further. Five percent said the service was very convenient, 3.5% said it would be better to have more than one bag of trash collected free, and 2% stated that using a private contractor would make the service less expensive.

Respondents were asked to suggest ways they thought trash collections might be improved in East Lansing. In order of frequency, the respondents suggested:

1. The service is good as it is; no suggestions for change (31% or 9 of 29).
2. They liked getting one free bag and then having to pay for additional bags (17%).
3. Make it easier to get rid of large items (17%).
4. The collectors should pick up brush and other trimmings for free (17%).
5. The service should be totally free (14%).
6. The city should go to private contractors (3%).

Some respondents made additional comments about trash removal services. They said they would like more recycling (3), liked the yearly summer special collection (1), and thought that municipal employees were not cost effective (1).

When considering the answers given by East Lansing residents to the various questions, one must be cautious about adjusting the trash collection services. Attempts to satisfy concerns expressed here may unwittingly cause other residents to react negatively. For example, the fact that East Lansing now has a new procedure that allows for one free bag of trash per week, and all others are charged at \$1 per bag, drew considerable adverse response. However, other respondents liked the idea that the heavier users of trash collection services would pay more for such use.

#### City of Lincoln Park

In response to Question 1, the overwhelming majority of residents (91% or 41 of 45) stated they owned their own houses. The length of time respondents had lived in the city ranged from 2 years to 50 years. Only three respondents had lived there fewer than 3 years (they all had lived there at least 2 years), which was the minimum requested evaluation time needed to assess the trend. All of the respondents thought they had enough time in residence to evaluate the effectiveness of trash removal services.

The overwhelming majority of respondents (95%) stated that trash was collected weekly. Two percent said it was collected twice weekly. In discussions with the controller, he confirmed that trash was collected weekly. When asked where trash was collected, 11% stated at the house, 84% stated at the curbside, and 2% said "other" but did not explain where. In discussions with the controller, he confirmed that curbside was where trash was being collected. Because the respondents were anonymous, there is no way of knowing why 11% of them answered this question incorrectly.

When asked to evaluate the quality of the trash removal service, 58% of the respondents stated it was very good, 24% said it was good, and 13% thought it was adequate; none found it either fair or poor. The rest did not respond to the question.

When asked to explain briefly how they felt about the quality of trash removal services, respondents gave the following answers:

1. Effective (24% or 11 of 45).
2. Timely (16%).
3. No complaints (13%).
4. Sloppy (7%).
5. No answer (40%).

When asked to evaluate whether there was a trend over the three years in trash collection services, 18% of the respondents said it had improved, 71%

thought it had stayed the same, 4% thought it had grown worse, 4% had no opinion, and the remainder did not answer. When asked to explain their answer, respondents said:

1. Collection is timely (37.5% or 3 of 8).
2. Recycling is a good idea (37.5%).
3. The timing of trash collection is unpredictable (25%).

When asked how much it cost to have trash removed, 51% (23 of 45) did not know because it was included in their property taxes, 27% said it was under \$10 per month, 4% estimated it was between \$11 and \$20 per month, and 2% stated it was more than \$31 per month. Eleven percent simply did not know. The rest did not respond to this question.

The respondents who answered this question, alleging they knew the cost of trash removal services, probably were guessing at the actual cost. From interviews with the controller, it was learned that the cost of trash removal service to the residents of Lincoln Park was entirely subsidized by the city and included in property tax collections.

The residents were asked whether they thought they were receiving value for their money when the amount paid for trash collection was considered. The answers are included below:

1. Very good value for the money (31%).
2. Good value for the money (33%).
3. Fair value for the money (11%).

4. Poor value for the money (0%).
5. No opinion (18%).
6. No answer (7%).

When asked to explain their answers, less than 14% (6 respondents) took the opportunity to elaborate further. Sixty-seven percent of those responding said the service was very tidy and clean, 17% said it was convenient, and 17% said other cities had too many rules to follow.

Suggestions to improve trash collections in Lincoln Park included responses from 10 households:

1. Be on time (50%).
2. Be neater (20%).
3. Pick up both sides of the street at the same time (10%).
4. Give cans with lids (10%).
5. Be less noisy (10%).

Some respondents made additional comments about the trash removal services. These seven individuals reiterated the importance of being on time (43% or 3 of 7), 43% wanted pick-up of more recyclables, and 14% expressed concern about the state no longer picking up yard waste, such as leaves, grass clippings, and twigs.

The fact that all four cities responded that the quality of trash collection was very good, good, or adequate bodes well for trash collection services. Not



one respondent from any of the cities answered this question with the possible choices of fair or poor.

### City of Saginaw

All of the respondents ( $n = 52$ ) stated they owned their own houses in Saginaw. The entire citizen sample had lived in Saginaw for at least 4 years—one resident for as long as 90 years. All of the respondents thought they had enough time in residence to evaluate the effectiveness of trash removal services.

The overwhelming majority of respondents (96%) said that trash was collected weekly. The other 4% of respondents did not answer this question. In discussions with the superintendent, he confirmed that trash was collected weekly. When asked where trash was collected, 4% responded at the house and 96% said at the curbside. The superintendent confirmed that the trash was collected at the curbside.

When asked about the quality of the trash removal service, 33% of the respondents stated it was very good, 31% good, 12% adequate, 10% fair, and 2% poor; the remainder did not answer the question. When asked to elaborate on the service, 23% indicated that the collectors left big items behind and were too fussy, 17% of the respondents had no problems with trash collection, 10% thought that the collectors did not leave a mess, 2% said they were polite, and the rest had no additional comments.

When asked whether there had been a trend over the three years in trash collection services, 27% said it had improved, 58% said it had stayed the same, 6% thought it had worsened, and the rest did not respond. When asked to elaborate on the quality of services, seven respondents indicated the following:

1. Liked the recycling program (57% or 4 of 7).
2. Thought trash pick-up worsened when the city went to private haulers (29%).
3. Wished that trash pick-up would come earlier in the day (14%).

Respondents were asked how much it cost to have trash removed. Of the 52 respondents, 31% said they did not know because it was included in their property taxes, 17% stated the cost was a \$30 per year garbage fee, 13% said it was under \$10 per month, 15% said it was between \$11 and \$20 per month, 8% stated it was between \$21 and \$30 per month, and 4% stated it was over \$31 per month. Six percent said they did not know, and the rest did not respond.

The respondents who answered that it cost \$30 per year were correct in terms of the direct cost to them. But the reality is that the cost of trash removal service directly to the residents of Saginaw is subsidized by the city, and the subsidized portion is simply included in property tax collections.

Asked whether they were receiving value for their money when considering the amount they paid for trash collection, respondents indicated:

1. Very good value for the money (23%).
2. Good value for the money (27%).

3. Fair value for the money (27%).
4. Poor value for the money (6%).
5. No opinion (10%).
6. No response (7%).

Only a few respondents elaborated on the quality of service. Of the 11 responding, 55% said the service was timely, 36% said it was inexpensive, and 9% said the trash collectors were lazy. Asked to give whatever suggestions they wished to help improve trash collections in Saginaw, 21 respondents suggested:

1. There are too many rules (33%).
2. They would like to see more recycling (29%).
3. Collectors should pick up all trash (29%).
4. They should pick up twice weekly (5%).
5. They should furnish recycling containers (5%).

Respondents also were asked for any other information they would like to give relating to trash removal services. Of the 11 responding, 45% stated they would like to see twice yearly pick-up of large items, 36% wanted more frequent recycling, and 18% suggested that a hazardous waste pick-up site would be welcome.

### City of Wyoming

The overwhelming majority of Wyoming residents (88% or 45 of 51) owned their own houses. Respondents had lived in the city from a low of 3 years

to a high of 53 years. No respondents had been there fewer than 3 years. No respondents stated that they had insufficient time in residence to evaluate the effectiveness of trash removal services.

More than 68% of the respondents stated that trash was collected weekly, 8% said it was collected twice weekly, 2% said monthly, and the rest did not answer the question. In discussions with the controller, he confirmed that more than one answer was possible for this question because trash collection services were handled by multiple vendors. When asked where trash was collected, 12% of the respondents stated at the house, 75% said at the curbside, 12% stated at some central location, and 2% said "other" but did not explain where. Again, the controller confirmed that alternative answers were appropriate because the multiple vendors collected the trash differently.

When asked about the quality of the trash removal services, 33% of the respondents stated it was very good, 35% found it good, 18% adequate, 6% fair, 2% poor, and the rest did not respond. In elaborating on these answers, 22 respondents thought that the trash collectors:

1. Are always timely (36%).
2. Have too many restrictions (14%).
3. Have no complaints (14%).
4. Have a clean town (14%).
5. Are too messy (14%).
6. Should take all items at curbside (9%).

Respondents were asked to evaluate whether there had been a trend in the past three years in trash collection services. More than 23% said it had improved, 59% said it had stayed the same, 10% said it had worsened, and 10% had no opinion. When asked to explain these answers, only eight people responded; 50% (four individuals) expressed concern about the limit on the amount vendors picked up, 25% thought that better containers were needed and saw curbside recycling as a plus, 12% thought the city might be forced into recycling, and 12% thought that trash should be removed three times per week.

When asked to estimate how much it cost to have trash removed, 8% (4 of 51) of the respondents did not know because it was included in their property taxes, 20% said it was under \$10 per month, 47% said it was between \$11 and \$20 per month, 10% stated it was between \$21 and \$30 per month, 4% stated it was over \$31 per month, and 12% said they did not know.

The four respondents who alleged that the cost of trash removal services was included in their taxes were incorrect because Wyoming does not subsidize any of the trash removal services. The reality is that residents pay the cost directly to the vendor. Thus, multiple answers on the cost of trash removal services were probably valid.

In assessing whether they were receiving value for their money, the respondents answered as follows:

1. Very good value for the money (16%).
2. Good value for the money (29%).

3. Fair value for the money (27%).
4. Poor value for the money (10%).
5. No opinion (16%).

Only a few respondents sought to explain their answers more fully. Three said the service was very inexpensive, one said it would be better to have more vendors, one stated that collectors were very polite, one said that collectors didn't care, and one said that vendors were too limited on the types of trash they would pick up. A few elaborated on these answers with the following 17 comments on trash collection in Wyoming:

1. Leave the service alone; it is good as is (41%).
2. Remove old appliances and other big items (24%).
3. Rule out charge for curbside recycling (18%).
4. Eliminate additional charges for extra trash (6%).
5. Make recycling easier (6%).
6. Pick up leaves (6%).

Encouraged to make additional changes, a few respondents indicated that there should be no extra charge for recycling (4), the city should return to recycling stations (3), vendors should give approximate time for trash pick-up (1), and there should be more recycling options (1).

### Summary

To illustrate better the relationships among the four cities, the following tables were prepared. To make comparisons with other cities easier and to satisfy multiple users, the percentage values are indicated. The tables represent the answers obtained from the respondents who answered the questionnaires.

As shown in Table 15, Saginaw had the tightest range, with all respondents reporting weekly collections, and Wyoming had the most differences among indicated collection options. This was not unexpected because Wyoming had numerous vendors working within the city, whereas Saginaw relied solely on municipal workers, who all were working under the same procedures and guidelines.

**Table 15**

#### **How Often Trash Is Collected**

Frequency	East Lansing (%)	Lincoln Park (%)	Saginaw (%)	Wyoming (%)
Weekly	95.0	97.7	100.0	96.5
Semi-weekly	0.0	0.0	0.0	1.9
Bi-weekly	5.0	2.2	0.0	7.7
Monthly	0.0	0.0	0.0	3.8
TOTAL	100.0	100.0	100.0	100.0

Note: Columns may not add up to 100% due to rounding.

It can be seen from Table 16 that the overwhelming majority of trash pick-up was reported to be at the curbside, ranging from 93% in Saginaw to 75% in Wyoming. Again, this was consistent because Saginaw had municipal workers picking up trash throughout the city, and Wyoming had multiple vendors picking up trash. As such, the pick-up location was determined in Wyoming between the customer and the vendor.

In Lincoln Park, the majority of all respondents were very satisfied with the quality of trash removal service (see Table 17). Saginaw, at 38.3%, had the lowest percentage of respondents who were very satisfied with the quality of trash removal service. East Lansing had the largest percentage of respondents who thought the quality of trash collection service was poor, but only 3.3% responded in that fashion. In Lincoln Park, not a single respondent rated the quality of trash collection service as poor.

Table 16

## Where Trash Is Collected

Location	East Lansing (%)	Lincoln Park (%)	Saginaw (%)	Wyoming (%)
At the house	10.0	13.3	6.4	9.6
Curbside	85.0	84.4	93.6	75.0
Central point	1.7	0.0	0.0	13.5
Other	3.3	2.2	0.0	1.9
TOTAL	100.0	100.0	100.0	100.0

**Note:** Columns may not add up to 100% due to rounding.



Table 17  
Quality of Trash Removal Services

Quality	East Lansing (%)	Lincoln Park (%)	Saginaw (%)	Wyoming (%)
Very good	46.7	60.0	38.3	38.5
Good	33.3	24.4	36.2	36.5
Adequate	10.0	13.3	12.8	13.5
Fair	5.0	2.2	10.6	5.8
Poor	3.3	0.0	2.1	1.9
No opinion	1.7	0.0	0.0	3.8
TOTAL	100.0	100.0	100.0	100.0

**Note:** Columns may not add up to 100% due to rounding.

An important question in the survey dealt with the citizens' views of service trends. Was the service improving, staying the same, or getting worse? The answers to this question for the four cities are summarized in Table 18. East Lansing, at 30%, had the highest percentage of respondents who thought the trash removal service was improving; Wyoming, at 23.1%, had the lowest. Lincoln Park, at 4.4%, had the lowest percentage of respondents who thought the trash removal service was becoming worse. East Lansing, at 35%, had the highest percentage of respondents who thought the trash removal service was becoming worse.

**Table 18**  
**Trends in Quality of Trash Services**

<b>Trend</b>	<b>East Lansing (%)</b>	<b>Lincoln Park (%)</b>	<b>Saginaw (%)</b>	<b>Wyoming (%)</b>
<b>Improved</b>	<b>30.0</b>	<b>17.8</b>	<b>29.8</b>	<b>23.1</b>
<b>Stayed the same</b>	<b>33.3</b>	<b>71.1</b>	<b>63.8</b>	<b>57.7</b>
<b>Worsened</b>	<b>35.0</b>	<b>4.4</b>	<b>6.4</b>	<b>9.6</b>
<b>No opinion</b>	<b>1.7</b>	<b>4.4</b>	<b>0.0</b>	<b>9.6</b>
<b>Missing</b>	<b>2.2</b>			
<b>TOTAL</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>

**Note:** Columns may not add up to 100% due to rounding.

Because it was found that the cost of trash removal service was significant when compared to the quality of trash removal service, Table 19 is important for comparative purposes. Lincoln Park, at 31.1%, had the highest percentage of respondents who thought the trash removal service was a very good value for the money. Wyoming residents, at 15.4%, seemed less convinced. None of the respondents from Lincoln Park thought the trash removal service was a poor value for the cost of the service, whereas Wyoming, at 9.6%, had the highest percentage of respondents who thought the trash removal service was a poor value.

**Table 19**  
**Value for the Cost of Trash Removal**

Value	East Lansing (%)	Lincoln Park (%)	Saginaw (%)	Wyoming (%)
Very good	23.3	31.1	25.5	15.4
Good	33.3	28.9	27.7	30.8
Fair	16.7	13.3	29.8	26.9
Poor	8.3	0.0	6.4	9.6
No opinion	16.7	17.8	10.6	13.5
Missing	1.7	8.9	0.0	3.8
TOTAL	100.0	100.0	100.0	100.0

**Note:** Columns may not add up to 100% due to rounding.

### Summary and Conclusions

In this study it was found that customers of residential trash collection services were indifferent as to who picked up the trash, the method of payment, and the means of disposal. With this in mind, there was evidence that city administrators would best serve the residents by continuing with their current system, assuming that the residents are not making any significant negative comments or raising negative issues.

One of the most frequent complaints across all four of the cities was that trash collection service providers were constantly changing the rules of the

game. Although this complaint was not mentioned often enough in any one city to warrant discussion, the fact that it was prevalent in each of the four cities studied is important. It was one of the two complaints that was consistent across all four of the cities. This was irrespective of whether the change was good or bad. When change is necessary, it seems certain that communicating the exact change being considered and giving the consumer a chance to respond to such changes will work well for cities in their efforts to improve trash collection procedures.

The other complaint found in all four cities was frustration with the law preventing haulers from taking customers' grass clippings to landfills in Michigan. It seemed apparent from the responses to the survey that most people were not upset over the fact that landfills would no longer take yard waste, but rather with not knowing what to do with yard waste. What would be helpful is if the four cities studied could offer suggestions for disposing of yard waste and disseminate such information. Because this is a Michigan law, there is every reason to believe that other residents in other Michigan cities would also experience the same frustration and concern.

In all four cities, the residents were positive about the recycling initiatives. Respondents expressed concern about the environment and the need to recycle.

One of the unexpected results of this study was the overall positive responses received regarding trash removal services. This seems somewhat inconsistent with the anecdotal commentary one hears when the curbsite is not

left as clean as expected, the haulers are late, and domestic pets that are allowed to roam freely get into the trash. But when it came time to seriously evaluate one's trash collection services, respondents seemed to put these isolated instances behind them and seriously discuss the significant issues and concerns relating to trash collection.

The results of this study were exceptionally positive. The first order of business, therefore, should be to continue the quality trash removal services already in place in these four cities. Before any changes are made, pilot studies should be conducted and the results closely evaluated.

It is important to remember, however, that this study was limited to the four cities identified and that all tests and conclusions were based on the responses from those cities. Further study needs to be done to see what, if any, applicability the statements and conclusions might have to other cities.

## **CHAPTER V**

### **SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS**

**This chapter contains a summary of the information in this study on the different methods of paying for and collecting residential trash. Conclusions are drawn from these data, and the implications of those conclusions are explained, both for the Michigan cities examined and for other similar Michigan cities. Recommendations and suggestions for future research are included.**

#### **Summary and Conclusions**

**Four cities in Michigan were selected for use in this research. One city, East Lansing, used a combination of taxation and user fees as a method of funding trash collection services and municipal workers to collect the trash. The second city, Lincoln Park, imposed user charges paid to private haulers to fund trash removal services. The third city, Wyoming, relied on privatization services, with residents paying for the service directly, to fund trash removal services. The fourth city, Saginaw, used taxes to pay for trash removal services provided by city workers.**

**To ensure reasonable comparisons among the four cities, the cities selected all had similar demographic characteristics, including comparable**

median incomes, were located close to larger cities, and had approximately the same populations.

### **Sample Size**

The sample consisted of 160 residents from each of the four cities. To ensure randomness, a systematic, interval sample-selection procedure was used. In other words, each city's total population was calculated, and then every  $n$ th residential customer was selected to ensure that at least 160 customers from each city were selected. The scope of this study was limited to sampling private residential customers using trash removal services.

Each of the four municipalities' trash collection costs were obtained to determine what the cost per unit was for trash collection. Three of the four cities—East Lansing, Lincoln Park, and Saginaw—had similar costs per unit for tipping fees at landfills situated reasonably close to the respective cities. The fourth city, Wyoming, did not know what the tipping fees were for trash haulers in their city because it had no contractual or employment relationship with them. It also was found that the four cities were providing basically the same type of trash removal service, regardless of the method of paying for the service.

### Interviews With City Officials

Interviews were conducted with appropriate city officials to determine whether any one of the four approaches used for providing trash removal services—taxation, service charges, privatization, or a combination of taxation and privatization—was more effective in closing the revenue-expenditure gap. In addition, comparisons were made among users of the services to determine whether the **perceived** quality of trash removal services was significantly different. The various types of charges and staff used to collect trash in the four cities are shown in Table 20.

Table 20

#### Types of Charges and Workers Used to Collect Trash

City	Type of Financing	Type of Worker
East Lansing	Service charges	Municipal
Lincoln Park	Taxation	Private
Saginaw	Taxation	Municipal
Wyoming	Privatization	Private

### Primary Research Question

The primary research question addressed in the study was: Is there a significant difference in consumers' perceptions of the quality of service when



comparing tax-paid trash removal services, service charges, and privatization as the method used to finance trash collection services?

It was determined that there was no statistical difference among residents in these four cities in their perceptions of quality of trash removal services. It was also determined that there was no statistical difference in the perceived quality of service, even when comparing any sets of two cities in the sample. In terms of level of satisfaction with trash removal services, there also was no statistical difference among the four cities. There also was no statistical difference even when comparing any sets of two cities in the degree of satisfaction with the overall trash collection service.

There was only one question in which the answer was statistically significant. When comparing the quality of trash collection services to the amount one pays for such services, there was a strong positive correlation. The correlation was slightly greater than 49%. In other words, it was determined that the greater the costs of trash collection services, the better the residents perceived that the service was.

### Analysis of Data

Appendix A includes a copy of the questionnaire sent to the sample of residents in each of the four cities. Other key questions included in this instrument were the following:

1. Where is trash picked up and how often is it collected?

2. How satisfied are you with the service?
3. Is there a difference in the quality of service over the past three years?
4. What complaints do you have about trash removal services?
5. What do you like about trash removal services?
6. What would you recommend be done, if anything, to improve trash collection services in your city?

The most frequent response in all four cities to the first question was at the curbside. A distant second was at the house. It also was noted that there were no complaints as to pick-up location. In all four cities, people seemed satisfied with the location for trash collection. In fact, the only criticism, which was really a suggestion for improvement, was that all trash should be placed on the same side of the street, at the curbside, so that the haulers would have to make only one pass on any given street.

In all four cities, more than 70% of the resident respondents said they were either very satisfied or satisfied with the trash collection services, which is a strong indication of customer satisfaction. This answer, when placed in the context that few respondents offered suggestions for improvement in trash collection services, further confirmed strong customer satisfaction.

More than 60% of all respondents thought trash collection services either were improving or staying the same. Because customer satisfaction was high, it is reasonable to conclude that "staying the same" was a positive response. Only East Lansing had a significant percentage (35%) of respondents saying that

the trash collection service had worsened. Although this response should not be taken lightly, it must also be evaluated in terms of the fact that East Lansing recently had undergone a significant change in how it billed residents for trash removal services. It had moved from a no-fee, tax-subsidized service to one costing respondents \$1 per bag after only one free bag of trash.

The three most frequent complaints across the four cities in the sample addressed:

1. Fussy requirements for pick-up.
2. Concern with new law discontinuing picking up yard waste.
3. Careless trash collectors.

Residents complained that the rules were changing constantly, thus causing confusion about exactly how trash was to be handled, and ripped bags being left at the curbside. Without question, the most frequent concern was what residents were going to do with grass clippings as a result of the new Michigan law forbidding landfills from accepting yard waste. Finally, trash collectors did not always leave the curbside looking neat and orderly.

Only a few respondents chose to make additional comments. Those who did, however, liked recycling and thought that trash collection was timely, effective, clean, and tidy. Respondents across the board appreciated trash haulers' leaving a clean and picked up curbside. They wanted the haulers to be timely. Respondents were silent as to when trash should be picked up, but they did state that the service should be consistent and that a set schedule should be

followed. Recycling activities were very popular with the majority of respondents. Although this topic was outside the scope of the study, many respondents volunteered in the open-ended section of the survey that they wanted recycling activities expanded.

Many respondents did not have any suggestions for improvement. But the three most frequent suggestions for improving trash removal services were:

1. Pick-ups should be more timely and consistent--don't keep changing the rules.
2. More recycling should be done.
3. Semi-annual pick-up of big items should be addressed.

#### Recommendations From the Study

The following recommendations are made to cities as a result of responses to the questionnaire, interviews with various city administrators, and a review of the literature pertaining to privatization initiatives, trash collection, and methods of conducting public business.

1. **Continue the current method of residential trash collection pick-up services unless there is persuasive evidence that your trash collection system is not working.**

This study has shown that customers of residential trash collection services were indifferent as to who picked up the trash, the method of payment, and the means of disposal. With this in mind, there is evidence that city

administrators would best serve the residents by continuing with their current system, assuming that no significant negative comments or issues are being raised by the residents. In the case of East Lansing, the system had most significantly changed, and the highest percentage (more than 35%) of respondents thought the service had deteriorated. Hence, the old adage "If it isn't broke, don't fix it" should be heeded.

**2. Keep focused on the trash collection procedures and keep the consumer informed of any changes before they are implemented.**

One of the most frequent complaints was that trash collection service providers were constantly changing the rules of the game. This was irrespective of whether the change was good or bad. Consumers just did not like having the rules of the game constantly changing. Change is invariably difficult and often is fought because people become comfortable with the existing rules. However, when change is necessary, it seems certain that communicating the exact change being considered and giving the consumer a chance to respond to such changes will work well for cities in their efforts to improve trash collection procedures.

**3. Inform residents as to the options available now that the rules for disposing of grass clippings and other yard waste in Michigan have changed.**

People were frustrated with the law preventing them from taking their trash clippings to landfills in Michigan. It seemed apparent from the responses to the

survey that most people were not upset over the fact that landfills would no longer take yard waste, but rather with not knowing what to do with yard waste.

Although this may seem relatively insignificant when compared to other societal problems, many respondents mentioned it. Perhaps there is a need to educate the public and thus alleviate the problem and reduce their anxieties. How best to do this is debatable. One way is to work with landscape experts and have them publicize the options available to dispose of grass clippings and other yard waste.

**4. Continue with city recycling efforts, if they have already started; otherwise, start now to recycle.**

In all four cities, the residents were positive about the recycling initiatives. Without a doubt, respondents were concerned about the environment and the need to recycle. Recycling has become a way of life for residents and is no longer viewed as an interesting alternative to filling landfills that is not applicable to most households.

**5. Keep up the good work.**

Sometimes what is lost when survey results are obtained and evaluated is the overwhelmingly positive response and high customer satisfaction with trash collection in all four cities. When policy-makers and other people charged with setting rules for others try to make adjustments to a system, they always run the risk of making a change that satisfies a select few people and alienates a significant number of other people. The results of this study were exceptionally

positive. The first order of business, therefore, should be to continue the quality trash removal services already in place in these four cities. Before any changes are made, pilot studies should be conducted and the results closely evaluated.

### **Suggestions for Future Research**

As explained earlier in this study, the information contained here has a limited life expectancy. Also, further study needs to be undertaken to see applicability to other cities. The issues of privatization and recycling were not fully explored due to time constraints. Both of these areas offer considerable possibilities in terms of future research.

Although potential privatization of trash collection services was compared with municipal workers providing such service, the literature and the respondents to the questions regarding quality of services did not indicate a significant difference. Although this is a very small area in terms of the various goods and services offered by governments, it does raise caution flags as to the propriety of jumping onto the privatization bandwagon without careful thought and analysis. Further research is needed in different areas to determine whether other areas are somewhat neutral when it comes to the perceived quality of products and services, whether they be performed by municipal or private workers.

The importance of various recycling activities as an alternative to filling landfills cannot be emphasized enough. From this study it appears that people

are becoming aware of and even sensitive to the real problem of running out of landfill space. Although beyond the scope of this study, recycling activities should be thoroughly researched in order to provide user-friendly, convenient recycling options. This should also include exploring the possibility of various by-products that might be produced by the product being recycled.

### Relevance of This Study for Other Cities

It is inappropriate to project the results of this study to other Michigan cities or other cities in the United States, unless further study and analysis is done that includes other cities in the design of the survey. The reason caution should be exercised in generalizing these conclusions is the fact that all other cities were outside the scope of the study. For example, climate may make the frequency of trash collections (once a week) in Michigan impractical elsewhere. The cost of trash removal found here may also not be applicable elsewhere due to different cost-of-living factors. Thus, the eastern states, which historically have had a high cost of living, may not have costs comparable to the results obtained here. Conversely, the costs in southern states, which historically have had a lower cost of living, may not be similar to the results obtained here.

Cities that are required to transport their trash to distant landfills may also not find the conclusions in this study useful for their purposes because all four cities in this study were able to use landfills in close proximity to their cities. City officials expressed concern in the interviews as to the increased costs, in terms



of time, transportation, and workers, which will ensue when such landfills are no longer available.

Other concerns beyond the scope of this study pertain to the difficulties encountered in having large items picked up and to those that no longer will be picked up, such as grass clippings. Although mulching lawn mowers are becoming more popular, which negates the issue of what to do with grass clippings, other yard and household wastes, including branches, chemicals, and paints, still need to be disposed of. Initiatives that would help give direction to residents on ways to recycle or otherwise dispose of these items should be researched and made available to the public.

There is no doubt that recycling is becoming increasingly popular and that residents of cities are concerned about recycling. Recycling concerns, including the advisability and feasibility of privatization, costs, and customer satisfaction, were beyond the scope of this study. Such recycling research would be a valuable next step.

**Appendix A**  
**Questionnaire for City Respondents**

### Questionnaire for City Respondents

1. Do you rent or own the house you are living in?
  - a. \_\_\_\_\_ Rent
  - b. \_\_\_\_\_ Own
2. Approximately how long have you lived in this city?
  - \_\_\_\_\_ Years
  - \_\_\_\_\_ Months
3. How often is your trash collected?
  - a. \_\_\_\_\_ Weekly
  - b. \_\_\_\_\_ Every other week
  - c. \_\_\_\_\_ Twice weekly
  - d. \_\_\_\_\_ Monthly
4. Where is it collected?
  - a. \_\_\_\_\_ At the house
  - b. \_\_\_\_\_ Curbside
  - c. \_\_\_\_\_ At some central point
  - d. \_\_\_\_\_ Other
5. What is your opinion of the quality of the trash removal service in your city?
  - a. \_\_\_\_\_ Very good
  - b. \_\_\_\_\_ Good
  - c. \_\_\_\_\_ Adequate
  - d. \_\_\_\_\_ Fair
  - e. \_\_\_\_\_ Poor
  - f. \_\_\_\_\_ No opinion
6. Please explain briefly.
 

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7. During the past three years, or as long as you have lived in the city where you currently reside, has the trash collection service
  - a. \_\_\_\_\_ Improved
  - b. \_\_\_\_\_ Worsened
  - c. \_\_\_\_\_ Stayed the same
  - d. \_\_\_\_\_ No opinion
8. If you answered that it has either improved or worsened, briefly explain exactly what has changed.
 

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9. Approximately how much do you pay for trash removal services per month?
- a. \_\_\_\_\_ Unknown (included in taxes)      d. \_\_\_\_\_ \$21-30 per month  
 b. \_\_\_\_\_ Under \$10 per month      e. \_\_\_\_\_ Over \$31 per month  
 c. \_\_\_\_\_ \$11-\$20 per month      f. \_\_\_\_\_ Don't know
10. When considering the amount you pay for trash removal, do you think you are getting your money's worth?
- a. \_\_\_\_\_ Very good value for the money  
 b. \_\_\_\_\_ Good value for the money  
 c. \_\_\_\_\_ Fair value for the money  
 d. \_\_\_\_\_ Poor value for the money  
 e. \_\_\_\_\_ No opinion
11. If you answered that it is very good value or poor value, briefly explain why you feel this way.
- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_
12. What could be done to improve your city's trash removal services?
- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_
13. Is there anything else relating to trash removal services you would like to add?
- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_
14. Please provide me with the following information about yourself. This information will be used for statistical purposes only.
- a. \_\_\_\_\_ Male      b. \_\_\_\_\_ Female
15. What is your age?
- a. \_\_\_\_\_ Under 25      b. \_\_\_\_\_ 26-35      c. \_\_\_\_\_ 36-45  
 d. \_\_\_\_\_ 46-55      e. \_\_\_\_\_ 56-65      f. \_\_\_\_\_ 66-75  
 g. \_\_\_\_\_ Over 75

16. What is your educational background?

- |                               |                           |
|-------------------------------|---------------------------|
| a. _____ Grade school         | d. _____ Some college     |
| b. _____ Some high school     | e. _____ College graduate |
| c. _____ High school graduate | f. _____ Graduate degree  |

17. What is your present employment status?

- |                             |                    |
|-----------------------------|--------------------|
| a. _____ Student            | d. _____ Homemaker |
| b. _____ Employed full-time | e. _____ Retired   |
| c. _____ Employed part-time | f. _____ Other     |

Thank you for taking the time to fill out this questionnaire.

**PLEASE RETURN THIS QUESTIONNAIRE IN THE PRE-ADDRESSED  
ENVELOPE NO LATER THAN NOVEMBER 7, 1994.**

**Appendix B**  
**Interview Guide for City Officials**

### Interview Guide for City Officials

1. What is the current method your city uses to dispose of refuse?
  - \_\_\_\_\_ a. Private Hauler, cost included in taxes, regardless of the number of units hauler picks up.
  - \_\_\_\_\_ b. Municipal Hauler, cost included in taxes, regardless of the number of units hauler picks up.
  - \_\_\_\_\_ c. Private Hauler, payment made by user, via charge per bag, or some other method specifically tied to the number of units of trash.
  - \_\_\_\_\_ d. Municipal Hauler, payment made by user, via charge per bag, or some other method, specifically tied to the number of units of trash.
  - \_\_\_\_\_ e. Other. (Please specify.)
2. How many years has this system been used in your city?
3. Did you have a different service earlier? If so, what system did you have?
4. What is your current assessment of the quality of the refuse collection in your city?

_____ a. Very good	_____ d. Fair
_____ b. Good	_____ e. Poor
_____ c. Adequate	_____ f. No opinion
5. During the past three years, or as long as you have worked for the city, has the trash collection service:

_____ a. Improved	_____ c. Worsened
_____ b. Stayed the same	_____ d. No opinion
6. If you answered improved or worsened, what do you think the reasons were for the change?

7. When considering the amount the city pays for trash removal, do you think the citizens are getting their money's worth?
- ☐ a. Very good value for the money
  - ☐ b. Good value for the money
  - ☐ c. Adequate value for the money
  - ☐ d. Fair value for the money
  - ☐ e. Poor value for the money
  - ☐ f. No opinion
8. What, in your opinion, could be done to improve trash removal services in your city?
- a. \_\_\_\_\_
  - b. \_\_\_\_\_
  - c. \_\_\_\_\_
9. What is the cost per unit (tipping fees) of trash removal services? What does a unit of service consist of?
10. What does this cost contain?
- ☐ a. Direct costs only
  - ☐ b. Direct and indirect costs
  - ☐ c. Variable and fixed costs
  - ☐ d. Variable costs only
  - ☐ e. Don't know
11. How do you handle administrative costs associated with trash removal?
12. Please comment on anything else relating to trash removal services which you feel would be beneficial for me to know when comparing trash removal services here with other cities of a comparable size.

Thank you for taking the time to visit with me on this project.



**Appendix C**  
**Protocol Clearance From the Human Subjects**  
**Institutional Review Board**

Human Subjects Institutional Review Board



Kalamazoo, Michigan 49008-3899  
616 387-8293

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## WESTERN MICHIGAN UNIVERSITY

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Date: May, 9 1994

To: James Neubecker

From: Kevin Hollenbeck, Chair

Re: HSIRB Project Number 94-04-14

*for K. Hollenbeck*

This letter will serve as confirmation that your research project entitled "An evaluation of privatization, taxes, and user fees as alternative strategies for municipal trash collection" has been **approved** under the full category of review by the Human Subjects Institutional Review Board. The conditions and duration of this approval are specified in the Policies of Western Michigan University. You may now begin to implement the research as described in the application.

You must seek reapproval for any changes in this design. You must also seek reapproval if the project extends beyond the termination date.

The Board wishes you success in the pursuit of your research goals.

Approval Termination: May 9, 1995

xc: Kobrak, PAA

## BIBLIOGRAPHY

- Alter, D., Berman, J., & McGuigan, P. (1992, October/November). Administrative factors in rating local debt: Case studies of three states in the southeast region. Moody's Municipal Issues, 9(3), 9.
- Arrandale, T. (1993, April). The selling of the garbage glut. Governing, 6, 28-32.
- Arrandale, T. (1995, January). Goodbye (for now) to the recycling glut. Governing, 4, 24-25.
- Bell, D. (1992, December 9). Union sees flaws in state contracts. Detroit Free Press, p. E1.
- Bennett, J. (1990, November). Privatization cuts hauling costs, or does it? City and State, 7, 12-13.
- Blalock, H. M., Jr. (1979). Social statistics (Rev. 2nd ed.). New York: McGraw-Hill.
- Bommarito, J. (1994, June). Personal communication.
- Boyle, G. (1960). Use of service charges in local governments (A monograph). New York: National Industrial Conference Board.
- Boyle, G. J. (1976). Study of charge financing for local government services (A monograph). Albuquerque, NM: Albuquerque Urban Observatory.
- Bresser's cross-index directory: Dearborn Down River communities (pp. 218-247). (1994). Detroit: Bresser.
- Bresser's cross-index directory: Grand Rapids and Kent County (pp. 5-546). (1994-95). Detroit: Bresser.
- Chang, S. Y., & Jones, R. A. (1992, August). Approaches to privatization: Established models and a U.S. innovation. Government Finance Review, 8, 21.

- Chi, K. S. (1993, November). Privatization in state government: Options for the future, state trends forecast. Council of State Governments, 2, 24-27.
- Council selects top privatization projects. (1991, June-July). City and State, 8, 25.
- Daddow, R. J. (1992, October 29). Privatization--Options, cost accounting and more. Paper presented at the Fall Governmental Accounting and Auditing Conference, Lansing, MI.
- Daly, J. (1994, April). Taking Chicago private. Governing, 7, 27.
- Dominiak, G. F., & Louderback, J. G. (1991). Managerial accounting. Boston: PWS-Kent Publishing.
- Dworak, R. J. (1980). Taxpayers, taxes, and government spending. New York: Praeger.
- Eberz, P. G. (1995, July). Personal communication.
- Ehrenhalt, A. (1990, July). Privatization without ideology. Governing, 3, 63-64.
- Enos, G. (1990, April). Court ruling slams impact fees. City and State, 7, 2-50.
- Faverman, G. A. (1995). Shaping the agenda: A policy for the future. The Faverman Group, 1(6), 1-3.
- Fees on out-of-state trash. (1993, December). State Legislatures, 19, 9.
- Gibson, A. (1995, January). Michigan's counties and solid waste. Michigan Forward, pp. 9, 20.
- Give privatization a try. (1991, December). City and State, 7, 25.
- Governmental Accounting Standards Board (GASB). (1994, April). Service efforts and accomplishments reporting (Concepts Statement No. 2). Norwalk, CT: Author.
- Groves, H. M. (1958). Financing government (6th ed.). New York: Holt, Rinehart & Winston.

- Gurwitt, R. (1994, May). Entrepreneurial government: The morning after. Governing, 7, 34-40.
- Hay, L. E., & Wilson, E. R. (1992). Accounting for governmental and non-profit entities (9th ed.). Homewood, IL: Irwin.
- Hudnut, W. H., Todd, B., & Sharpe, J. (1991, October). Which of your city's attempts to privatize has been most successful? City and State, 8, 6.
- Jondahl, H. L. (1993, April). Reinventing Michigan government. Michigan Commentary, pp. 5-6.
- Kellogg, S. (1992, October 25). Downsizing government: Pain and prospects. Grand Rapids Press, p. F3.
- Kleine, R., & Spring, F. (1992, September). Overview and analysis of the Michigan budget, fiscal year 1992-93. Public Policy Advisor, pp. 3, 10-11.
- Larkin, C. (1992, July). Personal communication.
- Lemov, P. (1989, March). User fees, once the answer to city budget prayers, may have reached their peak. Governing, 3, 24-30.
- Lo, C. Y. H. (1990). Small property versus big government. Los Angeles: University of California Press.
- Martin, J. K. (1982). Urban financial stress. Boston: Auburn House.
- Martin, J. (1992, September). Personal communication.
- Martin, J. (1994, June). Personal communication.
- McGovern, P. (1992, July 22). Personal communication.
- McGovern, P. (1994, June 17). Personal communication.
- Michigan Department of Management and Budget. (1992, August). Privatization in Michigan: Recommendations to the governor. Lansing, MI: Author.
- Michigan Public-Private Partnership Commission. (1992, December). PERM: Privatize, eliminate, retain or modify. Lansing: Author.

- Miller, J. R. (1994, January). Conference focuses on performance measures. Governmental Accounting and Auditing Update, 5, 8.
- Miller, J. R. (1995, February). GFOA reports on performance measures in budgets. Governmental Accounting and Auditing Update, 6, 6-7.
- Mills, M. L. (1990, September). Privatization: Impacting local school districts. Michigan State Chamber of Commerce, pp. 9-10, 13.
- Moak, L. L., & Hillhouse, A. M. (1975). Concepts and practices in local government finance. Chicago: Municipal Finance Officers Association of U.S. and Canada.
- Municipalities are landfill landlords. (1991, June). City and State, 8, 2.
- Muxlow, K. (1992, August). Privatization strategies for state government. Michigan Chamber of Commerce, p. 16.
- Neels, K., & Caggiano, M. (1984). The entrepreneurial city. Innovations in Finance and Management for Saint Paul. Santa Monica, CA: Rand.
- Patemoster, R. (1990, September). Fees fund growth. City and State, 7, 5-6, 10-, 12-13.
- Petersen, J. (1992, February). Privatization by storm. Governing, 5, 66.
- Pettengill, R. B., & Uppal, J. S. (1974). Can cities survive? New York: St. Martin's Press.
- Privatization: State trends forecasts. (1993, November). Council of State Governments, 2, 24-27.
- Rabushka, A., & Ryan, P. (1982). The tax revolt. Palo Alto, CA: Stanford University, Hoover Institution.
- Reed, J. B. (1993, January). Transporting of hazardous waste: The long and winding road to WIPP. State Legislators, 19(1), 46-48.
- Roehm, H. A., Castellano, J. F., & Kams, D. A. (1989, February). Contracting services to the private sector: A survey of management practices. Government Finance Review, 5, 21-33.
- Sbragla, A. M. (1983). The municipal money chase. Boulder, CO: Westview Press.

Schimmel, L. H., Jr. (1990, August). Ecorse: Was it worth it? Michigan State Chamber of Commerce, p. 24.

Sloane, T. (1992, September). All eyes on Michigan's privatization plan. City and State, 9, 2, 21.

Snell, R. K. (1991). Highway tolls and private roads: The way to the future? State Legislatures, 17, 55-56.

Strapped governments turn to private sector. (1991, October). City and State, 8, 8.

Stuart, E. (1994, February). Bay state brawl. State Government News, 37, 20-22.

Touche-Ross. (1990). State government privatization in America. New York: Author.

Webster's new world dictionary of the American language (2nd college ed.). (1986). New York: G & C Merriam.

Which of your city's attempts to privatize has been most successful? (1991, October). City and State, 8, 6.