

User-Pay Systems for Solid Waste Management in Canadian Municipalities

by Glenn Munroe



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Author's Biography

Glenn Munroe has over fifteen years of experience in the environmental field. After receiving a bachelor of arts degree in environmental studies from the University of Toronto in 1984, he went to work as a project manager for Pollution Probe. In the early '90s he managed Ontario's Waste Reduction Advisory Committee (WRAC), where he played a major role in the development of that body's Resource Stewardship Model – a plan for putting Ontario's waste reduction initiatives on a sustainable financial footing. From 1993 to 1996 he was a principal with Cook • Munroe, a consulting firm specializing in waste management issues.

Glenn Munroe conceived and led the development of the Ontario User-Pay Demonstration Projects, a series of pilots funded by the Ontario Ministry of Environment and Energy, which involved an extensive analysis of the barriers to user-pay in large North American municipalities. He also developed a series of workshops across the country on user fees for residential waste management. He is currently senior consultant with the LURA Group, a Toronto- and Halifax-based consulting firm specializing in environmental planning and communications.



Introduction

The collection and proper handling of the solid waste produced by individual residents has long been a municipal responsibility. For the most part, municipalities have chosen to fund this

Definition of User-Pay

The term *user-pay* as it applies to municipal waste management refers to the practice of charging a fee for a waste collection and/or disposal service that varies according to the amount of waste to be collected and/or disposed of. This variable fee either replaces (full system) or complements (hybrid system) the alternatives of a flat fee (one charge per household), dedicating a proportion of the municipal mill rate, or subsidizing the service from other revenue sources. The amount of waste for which the fee applies can be measured as either a volume or a weight.

service from their tax base, rather than provide it on a fee-for service basis. This has resulted in the common perception of solid waste management as a “free” service, along the lines of fire protection and snow removal. While this approach was effective in promoting the original goal of municipal waste management – the protection of public health – it has inadvertently promoted overuse of the system, resulting in excess waste generation. As the costs associated with waste disposal have risen over the past decade, and grants and other forms of financial support from provincial governments have decreased, the appropriateness of a system that does not discourage waste generation has become an important question for many municipal officials.

Despite the disadvantages associated with a tax-funded system, Canadian municipalities have not been quick to adopt alternatives. Many perceive that the existing system is working well in safeguarding public health, principally by ensuring that barriers to the use of the system are minimal and that equal access is provided to all, regardless of socioeconomic status. Public opposition to the introduction of user fees has in some instances been extreme and the arguments put forward by opponents are usually based on the fear that the new system will create barriers to access and thus compromise the health and cleanliness of the community.

On the other hand, in some municipalities the introduction of user fees has not created any significant opposition; in fact, some communities have embraced the concept as a fairer system that rewards environmental responsibility. As of the writing of this report, well over one hundred municipalities in Canada had successfully introduced some degree of user-pay. These communities provide a potential database for assessing the costs and benefits of the user-pay approach and the factors in its successful implementation for other Canadian municipalities.

This study investigated user-pay approaches to financing municipal solid waste programs in Canada. The goals were:

- ① to determine the nature and degree of the impacts of these new programs; and
- ② to attempt to ascertain the "success" factors involved in their implementation.

In meeting these goals, two methods were utilized: a telephone survey of randomly selected municipalities and a review of relevant literature on the subject of user fees and municipal waste management.

This report contains five major sections. This section (Section 1) introduces the concept of user-pay and describes the goals of the current study. Section 2 profiles user-pay options. Section 3 looks at the impacts, both positive and negative, of the introduction of user fees, particularly in Canada. Section 4 describes factors associated with successful implementation. Finally, Section 5 summarizes findings regarding the status and impacts of these alternative financing systems and suggests which tools are most effective in introducing user fees to the public.

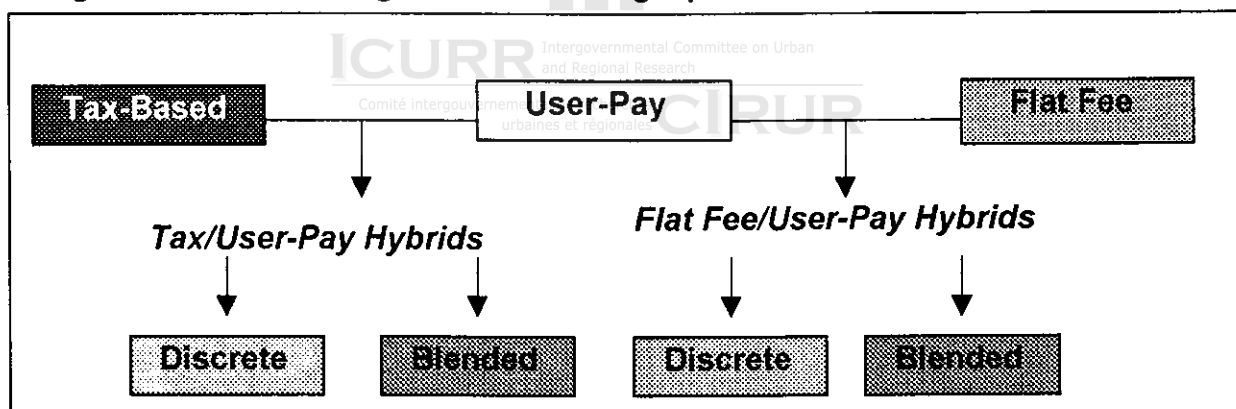
2 Overview of User-Pay Systems for Municipal Solid Waste

2.1 User-Pay Options

2.1.1 Approaches for varying waste management charges

In Canadian municipalities, the share of the total waste management cost that each household pays can vary according to three different approaches. Figure 1 outlines the seven systems that can be formed from these approaches, alone or in combination. In **tax-based systems**, the amount each household pays varies according to the **property tax assessment**. The owners of homes with a high value assessment pay more for their waste management services than do those assessed at a lower value. In **“flat fee” or utility-type systems**, the variability in charges is much less (or non-existent) and depends on which **category** the residence falls into (single home, small business, apartment unit, etc.). In this system, most householders pay exactly the same fee regardless of the assessed value of their home or the amount that they use the system. In **user-pay systems**, the “amount of system use” is the factor that is measured in order to vary the charge. As the definition in the box in section 1 indicates, user-pay systems are based on charging a resident a fee based at least in part on the **amount of waste** that they place out for collection.

Figure 1: Waste Management Financing Options



These three approaches are often combined in what are known as **“hybrid” systems**. Two types of hybrid system are based on a combination of tax assessment and system usage. With a **tax/user-pay discrete hybrid** system, for instance, residents are allowed one or more “free” bags per week (covered by their taxes) but must pay a per unit charge for everything above that limit.

With a **tax/user-pay blended hybrid system**, the user-fee component is spread over all of the service, so that there is no level of service that does not have a direct, at-the-curb fee attached: the cost of collecting and disposing of each bag of waste is covered by a combination of a user fee and a tax component. For example, in this system a household's taxes cover part of the cost of waste management, while a small user fee (say, \$0.50/bag, on each and every bag) covers the balance.

In addition, some municipalities combine the flat fee approach with a variable component. Again, there are two variants. In the **flat fee/user-pay discrete hybrid**, each household pays a monthly fee for a basic level of service (this fee is often different for apartments and small businesses) and then pays a unit fee for any service above the basic level. In the **flat fee/user-pay blended hybrid**, there is a user fee on every unit of service, but these fees only cover part of the system cost, with the balance coming from a monthly or annual flat fee paid by all households, small businesses, etc.

The blended hybrids (either tax/user-pay or flat-fee/user-pay) can appear to the public to be full user-pay programs. This is because residents pay a fee for every unit of service. For this reason they may be more difficult to implement. The discrete hybrids are more transparent, with the public able to see very clearly what level of service they are getting for their tax dollar or flat fee. All seven of these options are also summarized in Table 1.

2.1.2 User-pay delivery system options

A number of different systems have been developed for managing the financial component of the user-pay based waste management system. The most common is a "metered tag" system, where residents must attach a tag to a bag or container of waste that they place at curbside. Other common North American options include "metered bag" and "subscription" systems. The former requires the use of special bags for waste; the latter requires each resident to subscribe to one of a number of sizes of container, which they rent from the municipality. A more complex but promising system is one based on the weight of the waste set out by the customer. Weight-based systems have been piloted several times in North America, including a trial by the Capital Regional District of B.C., but are just now moving out of the pilot phase of development.

Table 1: Waste Management Financing Options

System type	Approach(es) used			Units with fees at curb	Share of costs covered by fees	How it works
	Tax	Utility	User Fee			
Tax-financed	X			None	None	Resident pays taxes (directly or through rent) and receives all necessary service (up to defined limit, in some cases)
Flat fee		X		None	None	Resident pays flat fee that only varies within defined categories (house, business, etc.), receives service to defined limit
Full user-pay				All	All	Resident pays fee for each unit (bag, container) of waste collected
Tax/user-pay discrete hybrid	X	X		Some	Some	Basic level of service covered by taxes; unit fee for additional service
Tax/user-pay blended hybrid	X			All	Some	User fees for all service; fees only cover part of system costs, balance from tax base
Flat fee/user-pay discrete hybrid		X		Some	Some	Flat fee for basic level of service; unit fee for additional service
Flat fee/user-pay blended hybrid		X		All	Some	User fees for all service; fees only cover part of system costs, balance from flat fees

Table 2 outlines the various options and briefly summarizes the pros and cons of each¹.

Table 2: Delivery System Options

System	How It Works	Advantages	Disadvantages
Tag or Sticker	Tags printed by municipality and distributed through selected outlets. Residents must purchase tags and place on bags or containers of prescribed size. Some municipalities give residents a certain number of free tags per year; other just allow a number of free lifts.	<ul style="list-style-type: none"> ◆flexible; allows different sizes, types of containers ◆easily understood ◆lower cost than bags ◆adaptable for bulky items ◆can be distributed by mail ◆no effect on garbage bag sales ◆information can be printed on sticker 	<ul style="list-style-type: none"> ◆must be secure once attached ◆handling fees (usually) ◆compliance less visible ◆monitoring complicated by variety of containers ◆increased collection time, tag removal (reusables) ◆does not encourage volume reduction past certain point
Bag	Special bags made for municipality and distributed through selected retail outlets. Can come in more than one size and price.	<ul style="list-style-type: none"> ◆easy to understand/use ◆easy to monitor (visible) ◆low admin costs ◆low implementation costs ◆set-out volume standardized ◆applicable to multi-family units 	<ul style="list-style-type: none"> ◆outlets for bags must be convenient ◆some loss of bag sales for local retailers ◆some customers prefer containers for waste ◆costs of bags plus uncertainty re demand ◆does not encourage further reduction
Hybrid (Bag-Tag)	Special bags used for regular waste; tags used for bulky items or containers (optional).	<ul style="list-style-type: none"> ◆greatest flexibility for different situations ◆provides options for users ◆minimizes some of the disadvantages of tags and bags 	<ul style="list-style-type: none"> ◆more complicated to explain to public ◆retains many of the disadvantages of both bag and tag systems, though in lesser degree

¹ The "pros and cons" set out in Table 2 have been adapted from the following two major sources: Dr. Lisa Skumatz (1996) and Federation of Canadian Municipalities (see Bibliography).

<p>Subscription Can</p>	<p>Residents subscribe to a size of container and pay monthly fee for its rental. Municipality offers two or three different sizes with larger units more expensive.</p>	<ul style="list-style-type: none"> ◆more stable revenue base (know demand in advance of providing service) ◆reusable containers ◆reduced injury to workers (if automated) ◆easy to monitor compliance ◆convenient (no on-going purchases required) 	<ul style="list-style-type: none"> ◆container exchange system required ◆use of containers inhibited by weather, topography in some areas ◆high initial capital costs ◆higher collection costs than bags, tags ◆higher admin costs ◆larger containers require automated collection vehicles ◆projecting subscription rates difficult (have to order containers based on projections) ◆difficult to track true costs for different sizes
<p>Weight-Based</p>	<p>Automated collection systems weigh waste at curb; customers are billed based on small base fee plus variable component. Billing is automated and usually monthly.</p>	<ul style="list-style-type: none"> ◆continual waste reduction incentive ◆easy to understand ◆can easily accommodate seasonal and other variations in generation rate ◆convenient for customer ◆provides great amounts of useful data ◆administration costs low if billing automated 	<ul style="list-style-type: none"> ◆exists only in pilot form in Canada (permanent systems now in place in U.S. and Europe) ◆high initial capital costs (truck, carts, computer) ◆weather can be a problem for carts and weighing equipment ◆accuracy problems in past (may be solved)

2.2 Profile of User-Pay Systems in Canada

2.2.1 A list of programs with user-pay components

In preparation for the survey we were able to identify 145 municipalities whose waste management financing includes a user-pay component. The regional breakdown is shown in Table 3.

Table 3: User-Pay Municipalities Identified by Province

Province	B.C.	Alberta	Sask.	Manitoba	Ontario
Number of user-pay municipalities	47+	5	4	4	84

NOTE: The study team was not able to identify any programs with user-pay components east of the Ontario-Quebec border.

Although the list is not comprehensive, we believe that it is fairly complete for all of the provinces except British Columbia. The latter province is moving towards the user-pay approach very quickly (it has been mandated by the provincial government) and it appears that no one person or organization is tracking this statistic. We were unable to find a comprehensive, up-to-date list; we therefore drew upon the knowledge of a number of informants to create a partial list for the purposes of the survey.

The list excludes programs for which the user-pay component applies only to landfill dumping (by residents), composting programs, and the like. It includes both full and hybrid user-pay programs as applied to residential solid waste only. A full system was defined as one where all of the waste costs were covered by the variable component; costs of diversion programs were not included in the definition of "full user-pay."

A total of 33 municipalities were randomly selected from the full list. The results of the survey of representatives of these municipalities form the basis for the review that follows in Section 2.2.2.

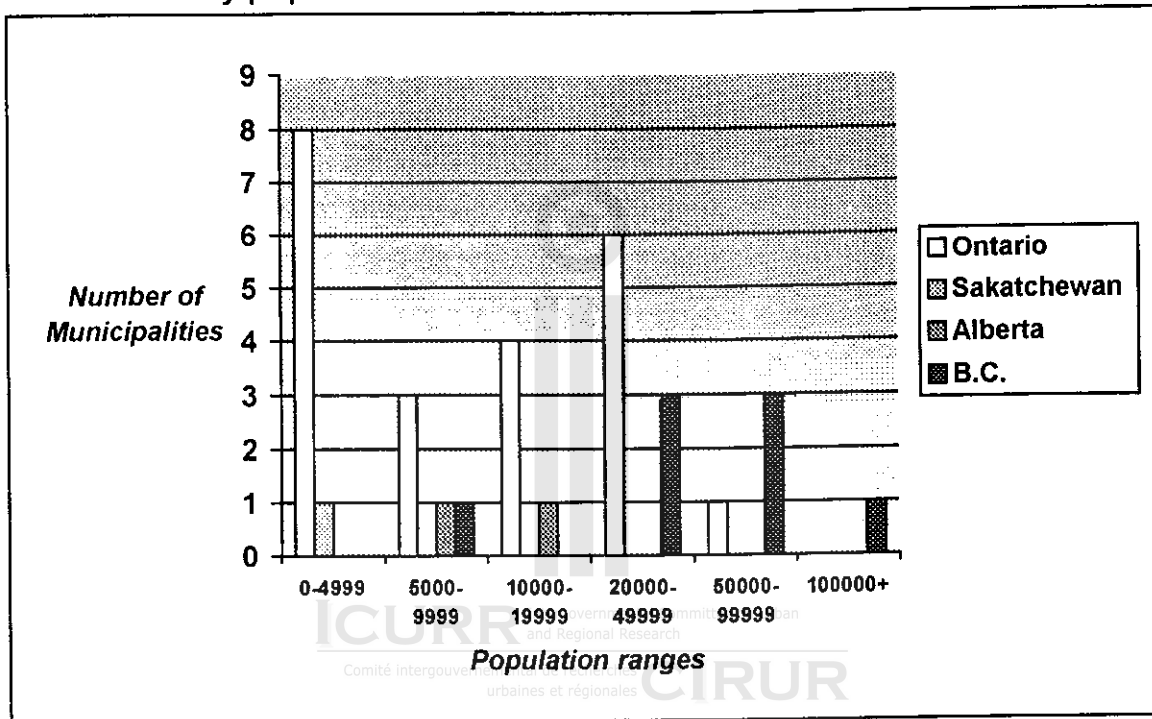
2.2.2 Profile of programs surveyed

Figure 2 below shows the distribution of the municipalities sampled by population. British Columbia differs noticeably from the other provinces with respect to the size of the municipalities with user-pay. Seven of eight B.C. municipalities have greater than 20,000 population. In the case of Ontario, only

7 of 22 municipalities have populations greater than 20,000 and of these, 6 are in the 20,000 to 49,999 range. None of the three municipalities in Alberta and Saskatchewan have more than 20,000 population.

Figure 2 suggests that for British Columbia the user-pay approach is more common in larger municipalities while in Ontario and the Prairies it is more common in smaller municipalities.

Figure 2: Summary of user-pay municipalities surveyed, by province and by population



2.2.3 Differences amongst provinces

The survey reveals three other notable differences amongst the various provinces. These can be summarized, as follows.

➔ **Elimination of industrial, commercial, and institutional (IC&I) subsidies**

Many municipalities subsidize their residential waste management programs through monies collected from the commercial and institutional sectors. These funds come in one of two forms: tipping fees collected at the landfill (if the municipality owns the landfill site); or taxes collected

from the IC&I sector for waste management services that they do not receive². Twenty-four of the thirty-three municipalities surveyed (73%) reported such subsidies prior to the implementation of their residential user-pay system. Only 5 out of 17 non-B.C. municipalities with previous subsidies (29%) reported that the subsidy had been eliminated by the new system; however, 5 out of the 7 B.C. municipalities that had subsidies (71%) reported that they had been eliminated.

➔ ***Type of hybrid system implemented***

Very few of the municipalities surveyed (4 out of 33 or 12%) had implemented full user-pay systems. Almost 90% had put some form of hybrid system in place. In this case, the differences were noticeable between Ontario and the other provinces. All of the Ontario municipalities that reported implementing hybrid systems stated that their choice was a combination of tax-base and user fee. All but one of the western programs (90%) reported implementing a mix of flat fee (utility style billing) and user fee. Moreover, the one western municipality that reported retaining a tax component also stated that plans were in place to eliminate it in favour of a flat monthly fee. Finally, all but two of the western municipalities also reported that they had used tax-based financing prior to the introduction of user fees.

With respect to the "blended" vs. "discrete" types of hybrid systems, the data indicates that the former type of system is not being used in B.C. or the Prairies, but has been used by a few Ontario municipalities (Town of Prescott, City of Trenton, Camden East Township).

➔ ***Unit cost in user-pay component (price of tag or sticker)***

On average, residents in Ontario municipalities paid \$1.36 per bag, tag or sticker. In contrast, residents of Western provinces paid \$1.91 per container. This higher charge in western Canada may be due to the elimination of IC&I subsidies in these provinces.

² If a business produces more waste than the municipality is willing to collect (and most large businesses do), then that business or institution must hire a private contractor to collect and dispose of its waste despite the fact that a proportion of its tax bill is for waste management services.

One of the most notable results of this survey of user-pay programs in Canada is the profile of how the approach to this often-controversial change varies from province to province across the country. A complete switch to a billing system based on use does not seem to have occurred to any great degree. Instead, smaller municipalities in Ontario and larger ones in British Columbia are developing two different approaches. Ontario municipalities are leaving the tax-financed system in place, with the gradual addition of bag limits and user fees for those who exceed those limits. In contrast, B.C. municipalities have implemented a utility-style billing system (with the concomitant elimination of IC&I subsidies) accompanied or followed by bag limits and user fees. These differing approaches may be due to the size differences between the typical Ontario and B.C. user-pay municipality, as well as differences in community values. These potential differences will be discussed further in Section 4.

Comparison of program designs

Table 4 summarizes the fee structure and enforcement mechanisms used by the 33 survey respondents. Only a fairly limited number of the programs surveyed had implemented any mechanisms for ensuring fairness to tenants (6 of 33) or to lower income families (2 of 33), so these potential program elements were not included in the table.

Of the 32 programs that responded to our questions regarding the mechanisms for charging the user fee, 29 indicated that they used a tag system, 2 reported using a metered bag, and one program stated that they used a bag-tag hybrid. No weight-based or subscription programs were reported.³

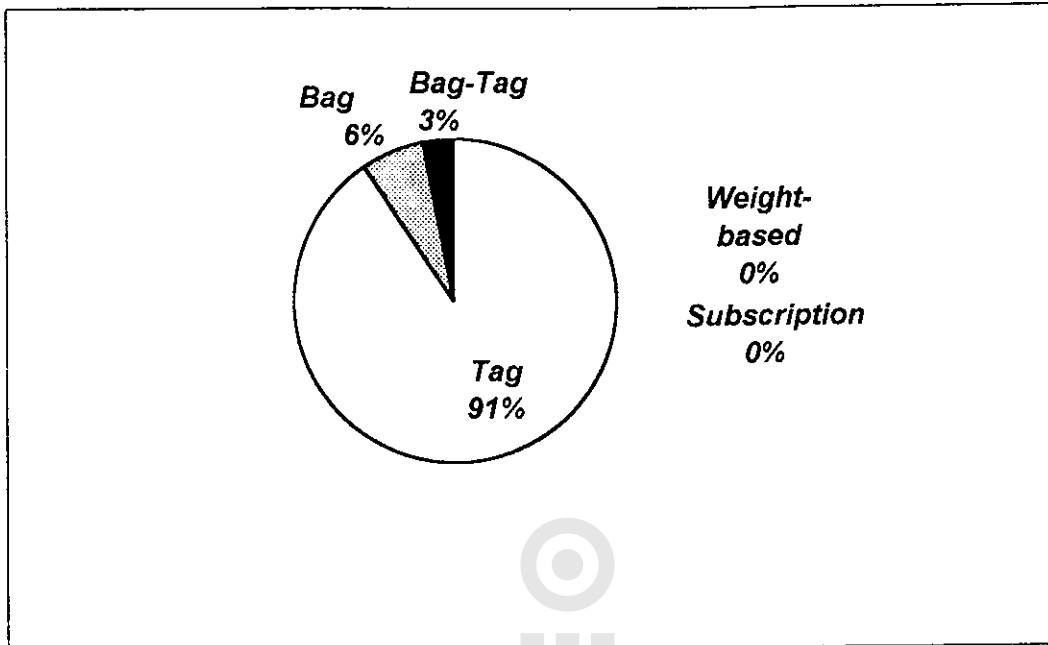
³ St. Albert, Alberta, recently implemented a subscription container system. They are believed to be the first in Canada with this type of program (although it is common in the United States). St. Albert was not one of the municipalities randomly selected for this survey.

Table 4: Summary of Program Designs

Municipality	Province	Population	Program type/fee structure				Enforcement mechanisms				
			Full	Tax	Base component		User-pay comp. Amount	Unit	By-law	Maximum fine	Other method
					Amount	Unit					
Ameliasburgh Township	Ontario	5,154		x		DK*	\$1	Tag	x	\$2,000	Charge \$50/bag
Barrie, City of	Ontario	80,000		x		2 bags/wk	\$1	Tag	x	\$5,000	Bill removal and disposal cost
Belleville, City of	Ontario	37,243		x		DK	\$1	Tag	x		
Brockville, City of	Ontario	21,207		x		1 bag/wk	\$1.25	Tag	x	\$5,000	Phone call, letter, \$65 fine
Camden East Township	Ontario	4,518	x			None	\$1	Tag	x	\$1,000	Letter to offender/small fine
Clifford, Village of	Ontario	800		x		DK	\$1	Tag		\$300	
Collingwood, Town of	Ontario	12,667		x		3 bags/wk	\$1	Tag	x	\$5,000	Charged under Environmental Prot. Act
Georgina, Town of	Ontario	32,000		x		DK	\$1	Tag	x	\$5,000	Letter, visits, charge \$25-\$100
Goderich, Town of	Ontario	7,400		x		DK	\$1.50	Tag	x		Letter to offender
Grand Bend, Village of	Ontario	1,000		x		DK	\$2	Tag	x		Letter to offender, charge \$125
Hay, Township of	Ontario	2,106	x			DK	\$2	Tag	No	No	None
Huntsville, Town of	Ontario	18,000		x		DK	\$1	DK	x	\$500	
Listowel, Town of	Ontario	5,300		x		2 bags/wk	\$1	Tag	No	No	None
New Tecumseth, Town of	Ontario	20,000		x		2 bags/wk	\$1	Tag	x	\$5,000	Visit, letter to offender
Orillia, City of	Ontario	27,000		x		DK	\$1.50	Tag	x	\$205	Letter, bill cost of clean-up
Port Colbourne, City of	Ontario	18,627		x		4 bags/wk	\$1	Tag	x	DK	Letter to offender
Port Stanley, Village of	Ontario	2,033		x		DK	\$2	Tag	x	\$5,000	\$100 fine
Prescott, Town	Ontario	4,189		x		None	.75-\$1.25	Bag	x	\$3-\$4000	Letter to offender
Shelburne, Town of	Ontario	3,352		x		DK	\$2	Tag	x	DK	Letter to offender
Stratford, City of	Ontario	29,000	x			DK	\$1.20	Tag	x	\$200	Visit to offender
Trenton, City of	Ontario	16,065		x		None	\$1	Tag	x	DK	Bill offender for clean-up
Westmeath Township	Ontario	2,271		x		DK	\$3	Bag	x	\$1,000	None
Gravelbourg	Sask.	1,226	x			None	\$1.50	Tag	x	\$200	None
Airdrie, City of	Alberta	17,000				3 bags/wk	\$2	Tag	x	\$10,000	Letter to offenders
Okotoks, Town of	Alberta	9,000				3 units/wk	\$1.50	Tag	x	\$2,000	Visit, letter
Coquitlam, City of	B.C.	106,000				3 bags/wk	\$2	Tag	x	\$150	None
Delta, City of	B.C.	95,000				2 bags/wk	\$1.50	Tag	x	\$500	Visit, letter, 2nd letter, legal notice, court
Nanaimo, Regional District of	B.C.	50,000				1 unit/wk	\$2	Tag	x	\$200	Visit
Nelson, City of	B.C.	9,585				1 bag/wk	\$2	Tag	x	DK	None
New Westminster, City of	B.C.	45,000		x		2 bags/wk	\$1.50	Tag	No	None	Letter (patchwork of by-laws)
Port Alberni, City of	B.C.	20,000				2 bags/wk	\$2	Tag	x	\$1,000	RCMP talks to offender
Sechelt, Regional District of	B.C.	21,000				2 units/wk	\$2	Tag	x	DK	Threatened names in paper; gone to court
Victoria, City of	B.C.	77,000				4 units/wk	\$3	Tag	x	\$500	Visit, letter

*Don't know **Proposed, comes from tax base now

Figure 3: Types of User-Pay Program Reported in Survey



3 Impacts of User-Pay Systems

3.1 Impacts Commonly Reported in the Literature

Three types of impact from the introduction of user fees are commonly reported:

- ❶ decreased waste to disposal and increased use of diversion programs;
- ❷ illegal dumping of waste;
- ❸ decreased program costs.

This section provides a brief overview of how these impacts are generally described in the literature. Section 3.2 summarizes the results of the survey with respect to the same three categories.

3.1.1 *Decreased waste to disposal and increased use of diversion programs*

Most if not all studies of user-pay systems have reported decreases in the amount of waste going to disposal. The range in the literature is generally between 10 and 60 percent, with the majority falling in the 15 to 45 percent range

(FCM, 1996). One of the difficulties with measuring this type of impact lies in sorting out the effect of user fees from the effects of existing or newly introduced diversion programs. A municipality that introduces a backyard composting subsidy program in conjunction with the user fees, for instance, will likely see greater reduction of waste to disposal than one that implements the fees alone. The results will also depend on the nature and degree of public education carried out. Nevertheless, it is probably safe to say that user-pay programs reduce the amount of waste going to landfill significantly. The figures in Table 5 bear this out.

Waste Reduction Due to User-Pay: Some Examples

- ❑ A study in Switzerland showed that in a number of Swiss municipalities a 10 percent increase in unit charge for garbage pick-up led to a 2 to 3 percent reduction in waste (In: "Public Innovation Abroad," October, 1992).
- ❑ The World Resources Institute has also reported that in 10 communities across the US a typical reduction resulting from the introduction of a \$1.50 fee was 18 percent by volume and 30 percent by volume where curbside recycling was in place. (In: "Green Fees, How a Tax Shift Can Work for the Environment and the Economy," World Resources Institute, 1992.)

Table 5: Reduction in Waste to Landfill Resulting from the Introduction of User-Pay Programs in Selected North American Cities⁴.

Municipality	Percentage Reduction in Waste to Landfill
St. Cloud, Minnesota	-53%
San Jose, California	-46%
Seattle, Washington	-42%
Capital Regional District, B.C.	-21%
Austin, Texas	-34%
Tompkins County, New York	-12%

Some organizations have attempted to quantify more accurately the decrease in waste to disposal that can be expected as a result of the introduction of user fees. The Solid Waste Utility of the City of Seattle estimates that a 2% reduction in residential solid waste is achieved for every 10% increase in user fees⁵. In Canada, the Ontario-based Association of Municipal Recycling Coordinators (AMRC, 1996) conducted some research in that province which led them to make the following projections:

Hybrid system

- ◆ two "free" bags will produce approximately 15% to 20% reductions;
- ◆ one "free" bag will produce approximately 25% to 35% reductions.

⁴ From research done by Cook•Munroe and Associates and Resource Integration Systems for the Ontario Ministry of Environment and Energy, 1996.

⁵ Even after the dramatic decrease in the amount of waste sent to landfill (42%), the City of Seattle experienced a further 15% waste diversion as a direct result of an experimental weight-based pilot project.

Full system

- ◆ no "free" bags will produce approximately 30% to 40% reductions.

The results of the current survey are consistent with the numbers presented above. Section 3.2 discusses these in more detail.

Along with reductions in waste to disposal, user-pay programs are typically reported to increase the amount of materials handled by a municipality's various 3Rs programs. Numbers for this increased diversion tend to be even more difficult to calculate, as they are extremely dependent upon when the programs are introduced. A municipality that introduces an extended recycling program (new materials added) at the same time as a user-pay program will see much greater increases than one that leaves the existing program unchanged. Dr. Lisa Skumatz of SERA INC. in Seattle has done the most extensive work on this subject in North America. She has developed a database that includes a substantial number of the more than 3000 programs currently operating in the U.S. and Canada. Dr. Skumatz's calculations indicate that a municipality can expect anywhere from 8 to 13 additional percentage points of diversion when user fees are introduced. In other words, a city with a recycling program that diverts about 20 percent of the waste stream can expect to see that number rise to between 28 and 33 percent, just from the introduction of user-pay (without any concurrent changes to the recycling program itself).

3.1.2 Illegal dumping of waste

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The issue of illegal dumping and illegal burning is always raised in association with the introduction of a user pay program. The literature indicates, however, that while there is usually a temporary increase in incidents resulting from the introduction of user pay, most communities over the long term do not find illegal dumping or illegal burning to be a problem (Skumatz, 1996). A survey of over 100 communities in the United States found that less than one-third had experienced any problems, and that most of these were temporary (Skumatz, 1994).

This has been the experience in Ontario as well. A survey done by the Region of Waterloo in 1994 found that illegal dumping was not a problem in any of the

Ontario communities that had implemented user-pay at that point in time (Joyce, 1994). In Sydney Township, a study showed that the amount of illegal dumping actually decreased over the first year of the user-pay program (Centre and South Hastings Recycling Board, 1995).

In addressing this issue, however, communities generally report that they imposed monitoring and enforcement procedures to prevent widespread problems. The approaches taken often include the following:

- ◆ placing padlocks on dumpsters owned by the City or the IC&I sector;
- ◆ publishing names of illegal dumpers in the local newspaper;
- ◆ enacting by-laws prohibiting illegal dumping and illegal burning;
- ◆ setting fines for illegal dumping or burning violations;
- ◆ introducing a clean city campaign to beautify the local environment.

Despite evidence to the contrary, illegal dumping is perceived by the public to be a major issue. A 1995 survey of Ontario residents (Munroe, 1995) revealed that the concerns regarding illegal dumping were the single greatest barrier to the acceptance of user fees (see Section 4.1 for more details). Further, concerns regarding illegal dumping were strong for both supporters and non-supporters of user-pay. These concerns may derive from public motives regarding health, community cleanliness, and how user fees may impact upon these important values.

In summary, the literature indicates that the illegal disposal of waste does not appear to be a problem for most communities, other than some relatively minor initial reaction. Nevertheless, the literature is also clear that the issue remains a major public concern and must be adequately addressed by municipal planners.

3.1.3 Decreased program costs

In general, the literature supports the concept that user fees reduce overall program costs (AMRC, 1996). This conclusion is based on the fact that user-pay reduces overall waste generation, thereby reducing collection and disposal costs, and often increases recycling revenues. Many factors come into play, however, and savings cannot be taken for granted. Some costs, such as

A User-Pay Finance Model

The Association of Municipal Recycling Coordinators has developed a model spreadsheet for calculating the unit price needed for the system to "break even." For more information, contact the AMRC at 519-823-1990 or 519-823-0084 (fax).

administration, may increase, depending on the nature and design of the program. Also, an increase in recycling may not result in a decrease in costs, depending on the efficiency of the recycling program and the value of the recycled materials at any given point in time. Because these materials are tradable commodities, their prices fluctuate as numerous factors, some international in scope, influence supply and demand.

Perhaps the important issue with respect to program costs is revenue forecasting (Skumatz, 1993b). Municipalities must take great care in calculating their rates and forecasting the demand for use of the system if they are to avoid revenue shortfalls. A common mistake is underestimating the reduction in demand created by the introduction of the new system (see "User-Pay Finance Model," previous page).

3.2 Impacts Reported by Respondents

3.2.1 *Decreased waste to disposal and increased use of diversion programs*

Of the 33 programs surveyed, 20 had done some kind of formal evaluation of the waste reduction impact of the program. The assumptions behind these calculations, the size of the municipalities, and the nature of the programs, etc., all varied considerably, so they cannot be averaged or otherwise aggregated. The range of 5% to 50%, however, is consistent with the literature (see Section 3.1.1). Another 6 municipalities were willing to estimate the impact; the range for these programs was 13% to 40%, also consistent with previous reports. Altogether, 26 municipalities (79%) provided figures in this regard. None indicated that there had been no reduction at all, although one municipality felt it was minimal.

Respondents were also asked to evaluate the effectiveness of their program in reducing waste on a scale of 1 to 6, where 1 was "not effective" and 6 was

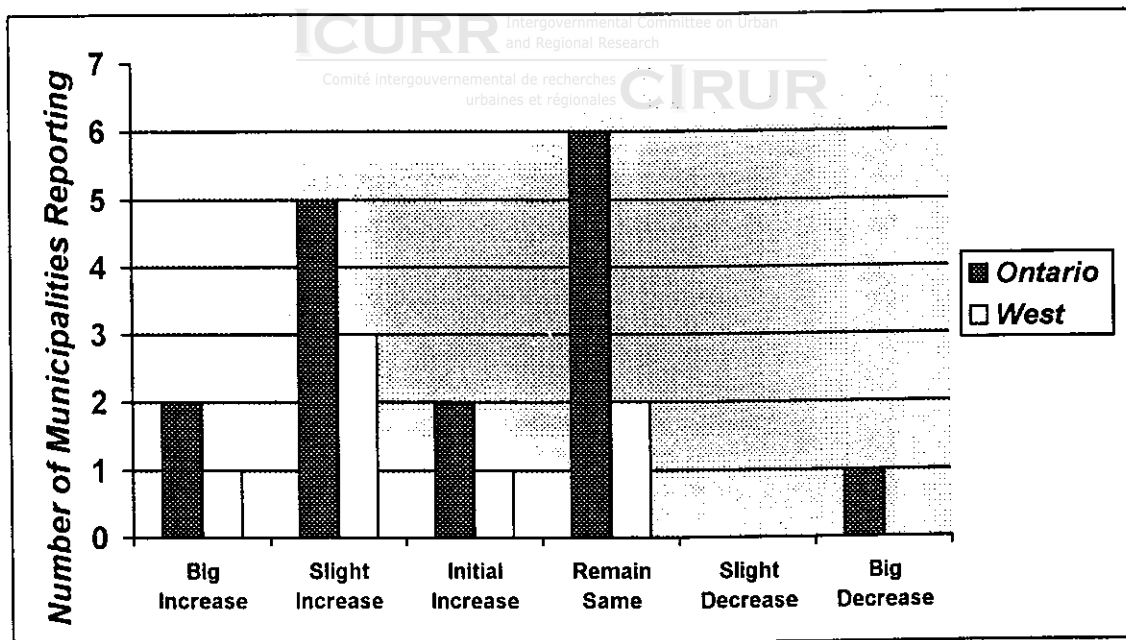
“extremely effective.” The average response on the 6-point scale was 5.0. The numbers varied somewhat regionally, with larger Ontario municipalities (population greater than 20,000) indicating by far the most satisfaction with their program’s effectiveness at reducing waste (5.6). The least satisfaction in this regard was expressed by the larger B.C. municipalities (4.6).

The average response across Canada of 5.0 on a 6-point scale is extremely high. This indicates that, in general, Canadian user-pay programs are viewed by their operators as being very effective in reducing waste.

3.2.2 Illegal dumping of waste

None of the 33 programs contacted had formally monitored illegal dumping before or after the implementation of their program. In response to a question regarding their estimation as to whether illegal dumping had increased greatly, increased slightly, increased then dropped off, remained the same, decreased slightly, or decreased greatly, only 23 (70%) were prepared to make a judgement. The results are shown in Figure 4 below.

Figure 4: Respondents’ Opinions Regarding Changes in the Amount of Illegal Dumping After Implementation of a User-Pay Program



In general, most respondents felt that illegal dumping had increased slightly or remained the same. Only three respondents (2 in Ontario, 1 in B.C.) felt that it had increased greatly and was therefore a problem. The usual comment found in the literature – illegal dumping increases at first and then drops back to normal levels – was only supported by three respondents.

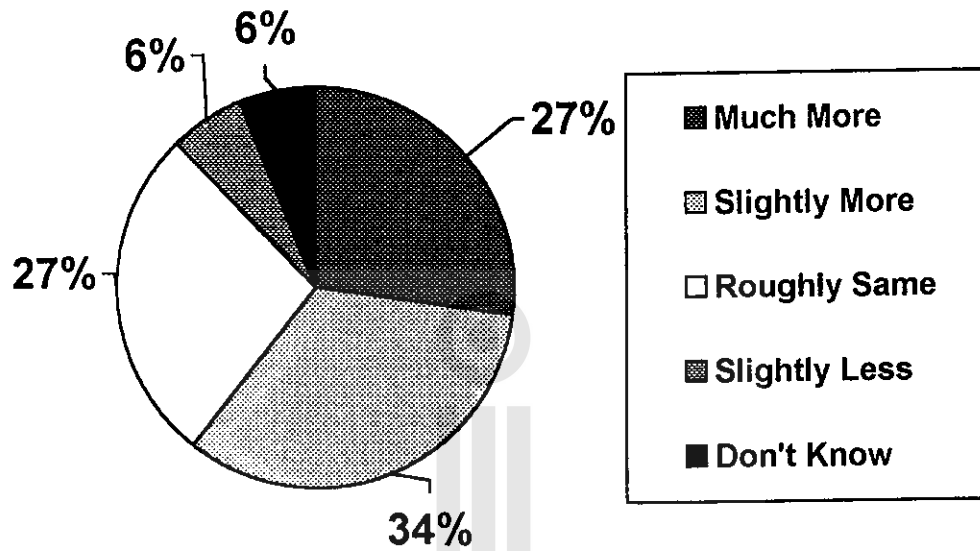
It appears that illegal dumping is a minor impact of user-pay programs; however, a number of qualifications must be made. First, over 90% of the programs surveyed were partial systems and the average unit fee was only \$1.55. Non-compliance would likely tend to rise with higher sticker prices and/or no subsidized level of service. Second, the Western respondents indicated a slightly higher incidence (proportionally) of illegal dumping (4 out of 7, or 57%, reported some increase) than did the Ontario respondents (7 out of 16, or 44%). This may reflect the higher average unit fee (\$1.91 compared to \$1.36), the fact that the charges are all visible under a utility-type billing system, community values, or some combination of these. These facts indicate some cause for caution with respect to the size of the unit fee, the feasibility of full user-pay systems, and the removal of IC&I subsidies.

3.2.3 Decreased program costs

Very few respondents (5 of 33) were able to provide actual estimates of the savings realized by the introduction of user fees. The range of these estimates was from 17 to 76 percent, with the median at 30 percent. We are also not sure that the different municipalities in developing these estimates used the same parameters. Therefore, we suggest that the data in Figure 5 provides a better framework for considering the cost impacts of user-pay programs. Respondents were asked to indicate whether their programs were much more cost-effective, slightly more cost-effective, roughly the same, slightly less cost-effective, or much less cost-effective than the system in place prior to implementation of a user-pay program. Thirty-one of the total of 33 contacted responded, with a total of 60% stating that they felt that their program was either much more cost-effective (27%) or slightly more cost-effective (33%). Another 27% felt that the new program was roughly the same as the old, while only 6% (2 respondents) felt that cost-effectiveness was slightly less with the user-pay program in place.

No one felt that user-pay had been much less cost-effective and 2 respondents (6%) stated that they did not know.

Figure 5: Respondents' Appraisals of their Programs' Cost-Effectiveness



4 Success Factors

4.1 In the Literature

In discussing the reasons why some municipalities are successful in implementing user-pay systems and others are not, authors of other reports frequently refer to terms such as "public resistance" and "political will." The implication is that if the will of political representatives to implement a program is stronger than the combined will of elements of the populace to resist such a change, then the initiative will be successful.

This may be true in a summary sense; however, both public resistance and political will are comprised of numerous distinct components, all of which add up

to success or failure. For instance, public resistance may be heightened by an adverse article or editorial in the local paper or decreased by the support of a popular politician. Similarly, political will can be strengthened by circumstances such as an impending tax increase or by strategies such as the "co-opting" of opponents to the program through their inclusion in the planning process.

This report defines "success factors" as ***those elements, either planned or circumstantial, that positively affect the outcome of a user-pay initiative, either by lowering public resistance or by increasing the will of the elected politicians to make it happen.*** The analysis of these factors focuses on the planning and communications elements, because these are to a large degree controllable by a municipality. Circumstantial factors, such as the need for a new landfill, are not considered in the findings, as they are not transferable to other jurisdictions.

In order to understand what municipalities have done successfully to lower public resistance, we should first describe the general nature of that resistance. For the purposes of this report, public resistance to the concept of user-pay for waste management can be organized into three broad categories: ***concerns for public health, issues regarding the fairness of the impacts on various members of society, and the need to minimize impacts on (and maximize autonomy of) individuals.*** A general discussion of each of these three categories follows below.

4.1.1 Concerns for public health

The Issue

This is essentially the fear of illegal dumping and/or burning described in Sections 3.1.2 and 3.2.2. Although rarely a problem in reality⁶, this concern is always front and centre in the public eye. As mentioned in an

"The current debate over user pay garbage basically involves a conflict between two equally valid principles. One principle is paying for municipal services on the basis of ability to pay and the other is reducing environmental damage by requiring those responsible to pay for its costs."
- Letter to the *Kanata Courier-Standard*, May 20, 1994

⁶ The literature is virtually unanimous in declaring illegal disposal to be at most a temporary problem. For survey results see Skumatz, 1994 (U.S. programs) and/or Joyce, 1994 (Ontario programs).

earlier section, a survey of over 500 residents of large Ontario municipalities (Munroe, 1995) revealed that both supporters and non-supporters of user-pay were very concerned about the possible negative impact of illegal dumping.

This aspect of public resistance goes right to the heart of the matter: the ultimate goal of municipal waste management services. Originally, the goal was to protect public health. To ensure that the goal was met, the system had to be as accessible as possible to as many of the populace as possible. When user fees are introduced, however, a parallel (and in some aspects, competing) goal of **waste minimization** is also introduced. This results in the concern that the reduction in accessibility caused by the imposition of fees (for low income families in particular) will lead to the weakening of the system's ability to meet the original goal of protecting public health.

The Approach

The approach most often advocated in dealing with this issue is a combination of public education, system design, and enforcement. The public education component consists of letting the public know that similar systems have been adopted elsewhere with little or no negative impacts. The design component consists of ensuring that the fees are kept low enough and/or that an appropriate level of non-variable or subsidized service is maintained. Partial or hybrid systems (see Section 2.1) are the norm in Canada and are growing in popularity in the United States (Skumatz, 1996).

Finally, the enforcement component ensures that any increases in illegal dumping are temporary. Illegally disposed waste can be searched for evidence (usually envelopes) of the material's origins. Municipalities that conduct these searches report that garbage is "very identifiable." Offenders are usually warned (first offence) and then fined. In some cases, their names are published in the newspaper.

4.1.2 Issues of fairness of impacts on various members of society

The Issue

This category includes the issues of:

◆ **Large families**

Since larger families will produce more waste than small ones (all else being equal), some see user fees as unfair to more highly populated households. Others argue that small families have been subsidizing large ones under the tax-based system and that large families *should* pay more.

◆ **Low-income households**

This issue has two main perspectives. The first, which is related to Point 1 above, is one of access: do user fees limit the ability of lower income households to use the service? And if so, will that result in illegal dumping and its related public health and safety issues? The second perspective is one of fairness. The property tax system is not progressive in the same sense as income tax but it does tend to place more of the burden of the costs of the system on those who can better afford to pay. For instance, under a property-tax based system, a family with a house valued at \$150,000 pays twice as much for their waste management services as does a family with a house valued at \$75,000. Some people feel that setting the fee according to the ability to pay is fair; others feel that paying for what one uses is fairer, regardless of ability to pay.

◆ **Renters**

In tax-based systems, renters pay for waste management systems through their rent, which includes all of the landlord's costs, including municipal taxes. If taxes are reduced (or not raised) due to the introduction of user fees, landlords receive a benefit that is not necessarily passed on to the tenant, who may now be responsible for paying the same rent as previously, in addition to the user fees.

◆ **The elderly**

The average income of retired people in Canada is just slightly over \$20,000 per year. For many of these people, options such as backyard composting and depot recycling are either a hardship or just not feasible, due to illness and/or frailty. This means that they cannot reasonably be

expected to divert as high a percentage of their waste as the general population, all other factors being equal. The combination of these two general facts could result in many elderly people fearing the introduction of user fees for garbage. This concern is counterbalanced to some degree by the fact that many elderly people live alone and produce very little waste. Nevertheless, the problem is a real one that must be considered as part of the design of an equitable user-pay system.

The Approach

Other authors have suggested that issues of fairness are usually addressed through program design (Skumatz, 1995b). This can consist of a partial system (designed so that responsible users can avoid any extra charges) or a rebate system (e.g., for low-income families or the elderly).

4.1.3 Need to minimize impacts on the individual household

The Issue

This is a broad category that covers several related concerns: double taxation, the concept of a "sin tax," the concern that garbage collection is an essential service, the mistrust of what is seen by some as "social engineering," and finally, that user-pay will cause administrative costs to rise.

The first (and most widely referenced in the literature) is the fear of **double taxation**. In essence, this is a problem of perception. The public understands that garbage collection and disposal is a service covered by property taxes. The introduction of user fees, therefore, is perceived as a tax added for a service that is already being paid for – a double taxation that is unacceptable. Over the past decade, conventional wisdom in the waste management field was that the solution to this aspect of public resistance was to break out the cost of waste management services on the tax bill the year previous to the introduction of the user fees. This would educate the public as to the real cost of their garbage collection and disposal services. The next step would be to actually reduce taxes by that amount when the fees were put in place. This would clearly illustrate the fact that double taxation was not occurring. This approach was recently used

successfully by the City of Belleville, where taxes were reduced by 1.5% to offset the cost of the tags being introduced.

Another recent experience, however, illustrates some problems with this approach. In Kanata, Ontario, staff broke out the costs of waste management on the residents' tax bills one year in advance of the planned implementation of a full user-pay system. Municipal staff report that the public response to the removal of waste management from their tax bill was skeptical at best, hostile at worst. Many of the people calling the hotline felt that it was like a card trick, where the idea is to keep the residents' attention on the lowering of taxes while a new, and potentially larger tax is brought in by the back door (Munroe, 1995).

The situation in Kanata was not helped by the fact that the removal of the IC&I subsidy as part of the new system proposed meant that most residents would be paying more, even after diversion programs were taken into account. Kanata was subsidizing residential waste services from IC&I taxes at a rate of about 40%. The proposed system eliminated the subsidy, with all revenues to be garnered through a user fee of about \$1.40 per bag, on all bags. Because of the removal of the subsidy, many residents (those living in modest homes) would only have seen about \$50 removed from their annual tax bill. This meant an overall increase of about \$23 per year for those who got their waste down to one bag per week and \$95 per year for those who put out 2 bags per week. Many residents made these calculations public in angry letters to the editor of the local newspaper. Many of the same writers pointed out that people living in more expensive homes were going to save money no matter how wasteful they were, as their tax reductions were significantly larger.

The Kanata experience highlights some of the difficulties involved in removing waste management from the tax base. The current survey results indicate that most Ontario municipalities are leaving waste services on the tax bill and introducing user fees for higher levels of service, often in lieu of a tax increase.

The *sin tax* concept is analogous to the taxes placed on alcohol and tobacco. The concern has been expressed to the authors by both citizens and professionals that the existence of a "bag tax" will be a constant temptation to municipal councils. This argument posits that it would be easier to add a dollar

or two to an existing tax on what is considered undesirable behaviour (i.e., the generation of waste) than to increase property taxes generally, in order to cover increased costs in an unrelated area, such as welfare or snow removal. This viewpoint, however, does not take into consideration the inherent limits that are imposed on fee levels by concerns over increases in illegal disposal.

The *attitude that garbage collection is a right, or an essential service* often arises in the media when user-pay is in the spotlight. It suggests that many residents see garbage collection as a fundamental municipal government service, like fire and police protection. This point of view may be tied to the concept of garbage as a value-less commodity, as expressed in the quote in the box on the right.

"People don't mind paying for valued services such as hydro and water, but how many will want to fork out two dollars to get rid of a bag of garbage."

**- Letter to the Editor,
Kanata Courier-Standard,
June, 1994**

The concept of garbage user-pay as an undesirable type of "*social engineering*" is perhaps best introduced by an anecdote provided by a councillor from the City of Kanata following that municipality's unsuccessful attempt to implement user fees. This councillor reported that during the period when the media coverage of the proposed user-pay program was greatest, one of her more vocal constituents called her to say that he felt strongly that, for his tax dollar, the municipality should "...maintain his streets, give him police and fire protection, and pick up his garbage." In every other way, she said, he felt that the municipality should "...stay out of his life" (Munroe, 1995).

This attitude is similar to the one encountered with other government interventions in private behaviour intended for the public good, such as mandatory seat belts for cars or helmets for bicycle riders.

Finally, the feeling that user-pay will cause *administrative costs* to rise is another aspect of the overall concern that government is getting too large and complicated. In fact, administration of user-pay systems is generally slightly more expensive than administration of tax-based systems; however, as discussed previously, these costs are usually less than the savings experienced due to reduced waste generation.

The Approach

Municipalities usually address these concerns through public education, as most of the issues are ones of perception. The other factor that arises here is one of trust. Residents often express the concern that a new tax will only get larger and that any reductions in municipal taxes will soon be increased to cover some other new cost. This is particularly the case in large urban centres, where issues such as rising welfare costs are prominent. The approach taken in Sydney Township, Ontario, is probably the one most often recommended for overcoming issues of trust. That municipality co-opted the most vocal critics of the proposed system by asking them to participate as volunteers in the planning process. Once the critics had had the chance to become familiar with all of the data, including the financial analyses, they saw the benefits and became supporters of a partial user-pay system (which has since become a full system, one of the few in Canada) (personal communication, 1996).

4.2 Success Factors Reported by Respondents

In attempting to identify and assess the factors that led to the successful implementation of user-pay programs in the municipalities surveyed, we asked many different questions relating to circumstances, planning tools and processes, communications, and, more generally, the major barriers encountered and the respondents' own assessments of the success factors involved (see appendix A for survey questions). In general, the responses to these questions were extremely varied, with few generalizations emerging. For instance, the most commonly mentioned "success factors" were:

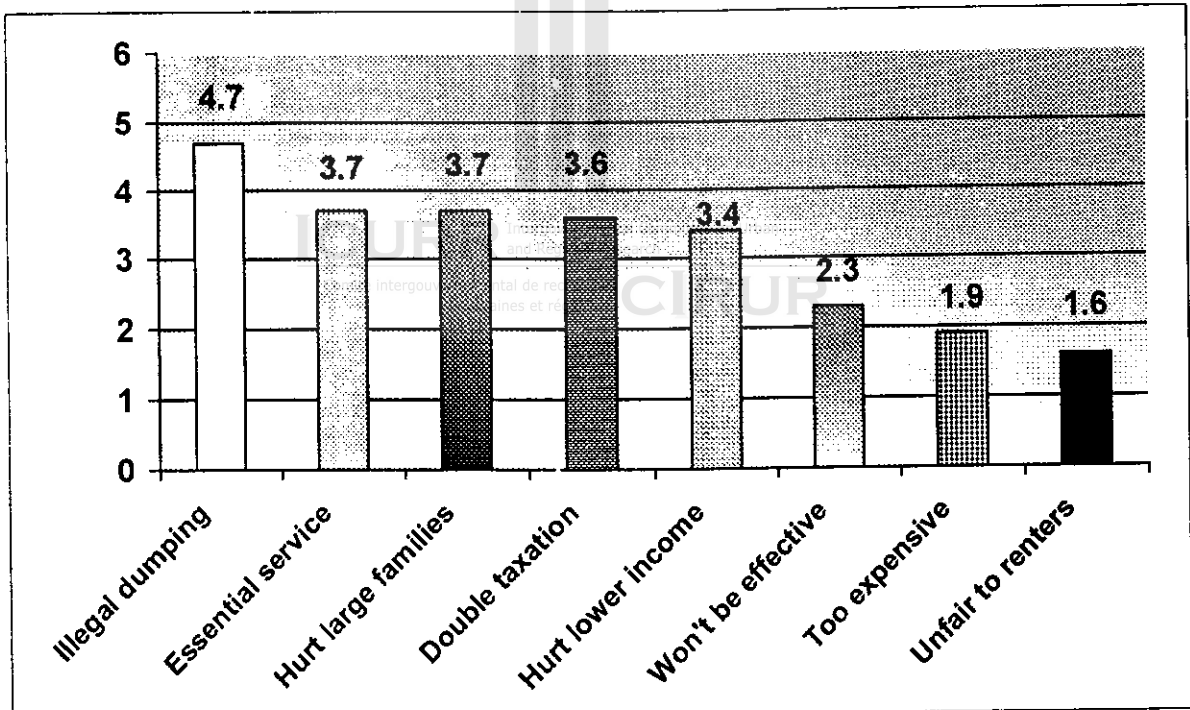
- ◆ taking the time to identify key supporters and enlisting their aid in gaining public support for the initiative (5 mentions);
- ◆ ensuring that good diversion programs were in place (6 mentions);
- ◆ conducting extensive education and communications programs (7 mentions);
- ◆ receiving strong support from Council (4 mentions); and
- ◆ the inherent fairness of the new system (3 mentions).

The discussion that follows in Section 4.2.1 covers only the significant points that emerged.

4.2.1 With respect to public resistance and support

Respondents were asked to report how often they heard various objections to user-pay from the public prior to implementation of the program. This was not an open-ended question: the categories were those that appear in Figure 6. The scale was 1 to 6, where 1 was "never" and 6 was "frequently." The results fall into three broad categories (see Figure 6). Concerns regarding illegal dumping were highest at 4.7. This is consistent with findings reported elsewhere, which identify this concern as the most widely held, if not the most accurate. It represents the first category of public resistance described in Section 4.1 – the concern for public health and safety.

Figure 6: Reported Public Objections to User-Pay (Pre-implementation)



Four objections had mean rankings from 3.7 to 3.4. These were:

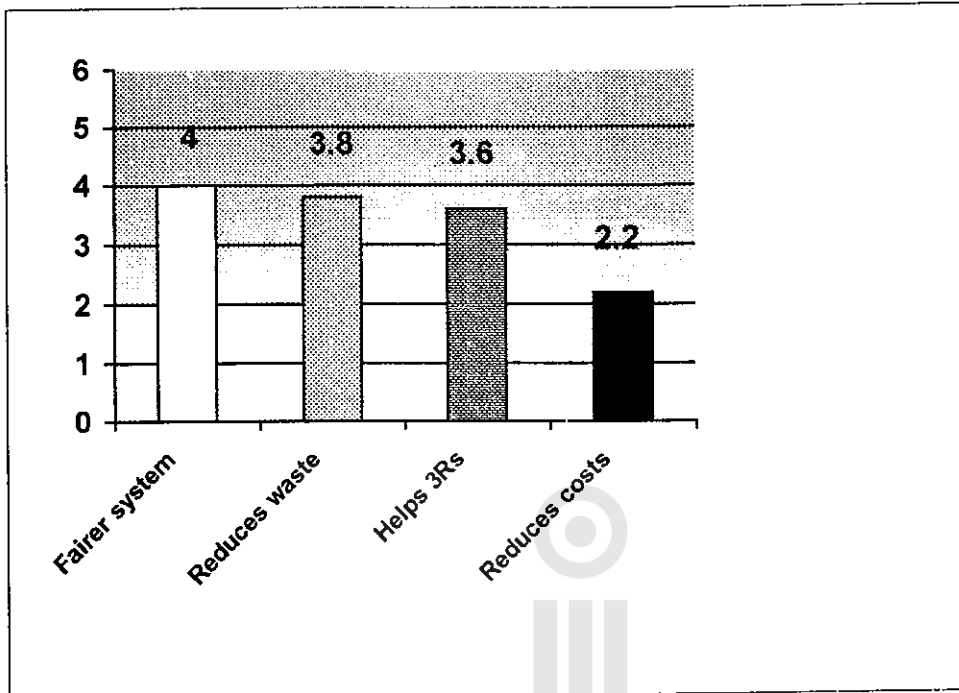
1. the feeling that garbage collection and disposal should be an essential service, provided as part of our tax-based services;
2. the fear that user-pay will hurt large families;
3. the perception that user-pay constitutes double taxation; and
4. the concern that it is unfair to lower-income residents (because it is not based in any way on ability to pay).

These four objections fall into the second and third categories described in section 4.1 – fairness (large families, low income) and impacts and the need to minimize impacts on individual households (double taxation, provision of essential services). Their rankings indicate that these were important considerations for a smaller, but still significant, segment of the populations of the municipalities surveyed.

The other three concerns surveyed – the feeling that the program would not be effective in reducing waste, the fear that it would be too expensive, and the concern that it would be unfair to renters – did not rank very highly (2.3 to 1.6), indicating that these were not major objections voiced by residents of the municipalities surveyed.

Public support was evaluated in the same manner (see Figure 7). In this case, respondents reported hearing supportive statements fairly often with regard to the fairness of the new system, its ability to reduce waste, and its impact on waste reduction programs (mean responses 4.0 to 3.6 on a 6-point scale where 1 was “never” and 6 was “frequently”). The statement that the system would reduce costs was not heard very frequently.

Figure 7: Reported Public Support for User-Pay (Pre-implementation)



In general, these responses are consistent with the importance of issues of public resistance and support reported in the literature. The broadest concern is that of restricted access or non-compliance (illegal dumping), followed by concerns regarding fairness and individual or taxpayers' rights (impacts on large families, double taxation, etc.). The latter two categories tend to be expressed by completely different sub-groups within the overall population, giving rise to a relatively unique feature of user-pay systems – that they tend to be opposed by both ends of the political spectrum and supported by the middle.

This feature has been noted before. Bertollo (1993) stated in his research document that the opposition to Peterborough's user-pay initiative was led by an unusual coalition of the left and right. Similarly, when the user-pay initiative in Kanata ran into its fiercest public opposition (as it neared the final vote by Council), the first two councillors to break ranks and jointly call for a public referendum on the issue were well known to be on opposite ends of the political spectrum. By their own admission, they held opposing views on most issues

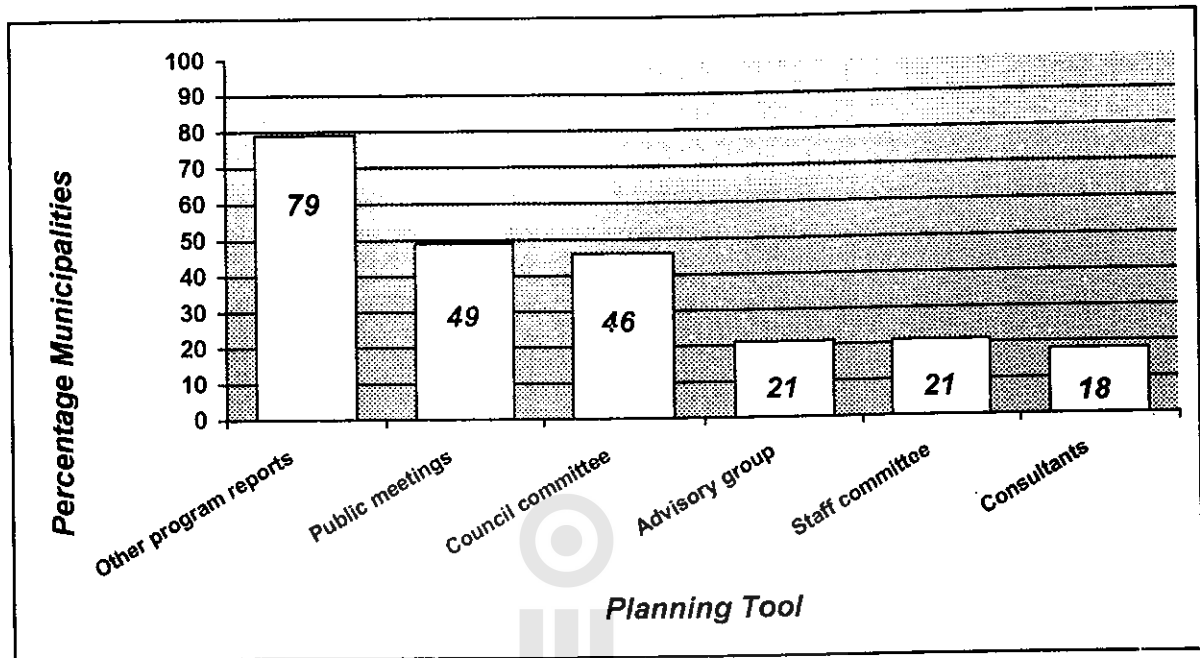
(Munroe, 1995). The point to be made here is that the opposition to user-pay often comes from both ends of the political spectrum simultaneously, and for completely different reasons. This “pinching” of the issue from both sides is an important aspect of public resistance, particularly in larger urban settings.

4.2.2 With respect to planning tools and processes

Survey data indicate that municipalities tend to rely primarily on reports from other jurisdictions in planning their user-pay programs (see Figure 8). Almost four-fifths (79%) reported using this planning tool. Percentages drop rapidly after reports. Just under half of the respondents indicated that they held public meetings (49%) and that they had a planning committee of Council members in place (46%). Other planning tools received little use by respondents. Only multi-stakeholder advisory groups (21%), staff planning committees (21%), and the use of waste management consultants (18%) received a mention from more than 10 percent of the respondents.

Conspicuously absent from this list are randomized telephone surveys and focus groups. Only two municipalities (6%) carried out surveys and only 1 (3%) conducted focus groups. Public meetings were favoured slightly by municipalities under 20,000 population (58%) compared to those over (43%). Alternatively, the use of reports was strongest by the larger municipalities (86%, compared to 74% for those under 20,000 population).

Figure 8: Percentage of User-Pay Municipalities Using Specific Planning Tools

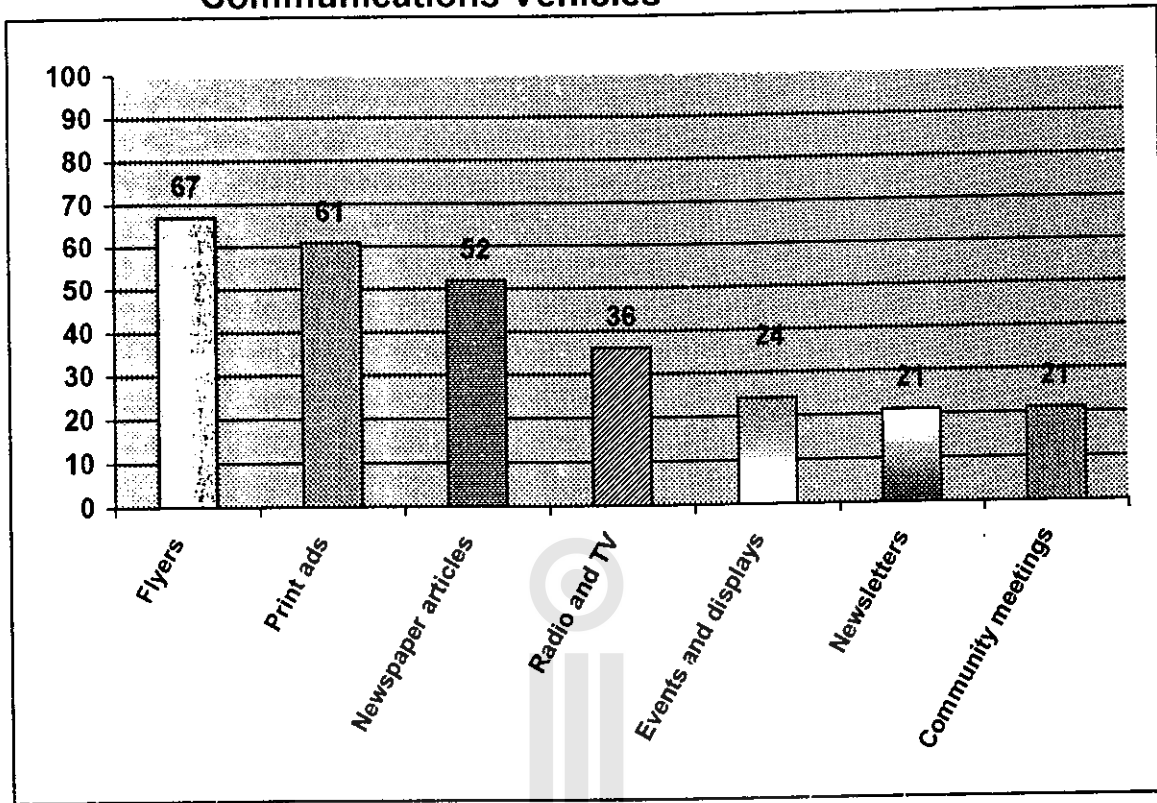


4.2.3 With respect to communications vehicles

Flyers (67%), print ads (61%), and newspaper articles (52%) were reported by more than half of the respondents as being significant vehicles for getting the user-pay message out to the public prior to implementation (see Figure 9). Other vehicles receiving considerable mention were radio and TV (36%), events and displays, such as mall kiosks (24%), newsletters (21%) and community meetings (21%).

Formal pre-implementation communications strategies were employed by most of the municipalities surveyed (91%). That percentage dropped off to just over half (51%) for post-implementation strategies. No real consensus emerged with regard to the message provided to the public; however, the high cost of disposal (36%) and landfill pressures (33%) were mentioned by about a third (pre-implementation) and "how well we are doing" was the choice of eight (21%) post-implementation messages.

Figure 9: Percentage of User-Pay Municipalities Using Specific Communications Vehicles



4.2.4 With respect to success factors in general

Analysis of the survey results revealed that Canadian municipalities that have incorporated some degree of user-pay in their solid waste financing systems did not rely heavily on special planning or communications techniques. The approaches used were very much standard ones, with little or no use of more sophisticated techniques such as surveying, focus groups, and multi-stakeholder planning. Moreover, as indicated earlier in this report, approaches varied somewhat from the western provinces to Ontario, but were almost uniformly a matter of the introduction of a user-pay component to a tax- or flat-fee-financed "free" level of service. In other words, the success factors involved appeared to be largely structural, rather than procedural. The experience of Kanata, Ontario, which failed to implement a user-pay system after more than a year of careful planning, communications, and public discussion, would appear to corroborate this finding, as an after-the-fact analysis has indicated that a partial system might have been successfully implemented in Kanata (Munroe, 1995).

5 Findings

5.1 Introduction

The findings that follow constitute the informed opinion of the project team. They are drawn from the results of the survey, the literature review, and the experience of the members of the team. The findings have been organized into three categories, reflecting the goals of the study:

1. The status of user-pay in Canada;
2. The impacts of user-pay, both positive and negative; and
3. Success factors which, if considered and acted upon, should maximize the chances of a successful implementation of similar systems by other municipalities.

Key data that led to the specific conclusion are listed and discussed briefly after each of the findings.

5.2 With Respect to the Status of User-Pay in Canada

5.2.1 *In Canada, full user-pay systems are rare overall and non-existent in large municipalities (population >50,000)*

Our survey found only four municipalities of thirty-three that had a full user-pay system in place. Three of these were in Ontario, one was in Saskatchewan. Three of the four had populations below 5000; Stratford, Ontario, was the only medium-sized municipality (population 29,000) with a full system. We are not aware of any municipality in Canada with a population greater than 50,000 that has a full user-pay system in place.

5.2.2 *In Ontario, the trend is for small municipalities to implement tax/user-pay hybrid systems*

Ontario user-pay communities are generally small (most less than 20,000 pop) and they use hybrid systems that combine tax-funded base service with user fees for amounts exceeding bag limits (usually 1 to 3 bags per week); IC&I subsidies are generally left in place. Some medium-sized municipalities (e.g.,

Trenton, pop. 16,000) have implemented tax/user-pay blended hybrid systems (no free bags, but tax base subsidizes system to keep unit cost low). Most Ontario communities, however, offer some level of "free" service (tax/user-pay discrete hybrid systems).

5.2.3 In British Columbia, the trend is for larger municipalities to implement flat-fee/user-pay hybrid systems

Programs in British generally consist of hybrid systems that combine flat-fee utility-type billing systems with user fees for amounts exceeding bag limits (discrete, as opposed to blended). IC&I subsidies are generally eliminated. Unit fees are somewhat higher than in Ontario (\$1.91 compared to \$1.36 in municipalities surveyed).

5.2.4 In the Prairie Provinces, these trends are somewhat mixed

The characteristics of programs on the Prairies may be somewhere in between those in Ontario and in B.C. They are characteristically small municipalities utilizing utility-type billing after removing IC&I subsidies (although our sample size was too small to have great confidence in these findings).

5.2.5 By far the most common type of program in Canada is the metered tag

Over 90% of the municipalities surveyed used tag systems. Another municipality used a combination of bags and tags. Only two municipalities used metered bags alone and none used subscription systems (variable sized containers) or weight-based systems. One municipality that uses a subscription system was identified (St. Albert, Alberta), but was not selected in the random process used to identify potential respondents.

5.2.6 User-pay in any significant form reduces waste and promotes waste diversion programs

Although the survey did not produce any significant hard data on this impact, the informal results obtained by asking municipal representatives to estimate impacts were very similar to those found in the literature. The study team feels

that it is safe to state that the introduction of some level of user-pay does have a beneficial impact in terms of diverting waste from disposal and into 3Rs programs.

5.2.7 It is likely that user-pay programs are more cost-effective than traditionally financed programs; however, more detailed investigation may be required to confirm this finding

In general, survey respondents either did not have access to hard data regarding the cost-effectiveness of their programs vis-à-vis their previous systems, or were not willing to provide such data to our interviewer. Nor was much data available from the literature. Anecdotal evidence points to the potential for greater cost-effectiveness due to overall reductions in waste generation, which in turn results in reduced collection and disposal costs. A few respondents indicated that administrative costs were higher with user-pay than with traditional systems, but most felt that these costs were more than offset by the reductions due to decreased use of the service by customers.

5.2.8 Illegal dumping is usually a negligible or minor problem, with two qualifications

Any statement about illegal dumping not being a problem should be qualified in two ways:

1. Illegal dumping or burning may become significant under certain circumstances. Reports from the U.S., for instance, indicate that illegal dumping rises with an increase in tipping fees at landfills. We cannot be sure that illegal dumping will not become a significant issue.
2. Illegal dumping remains a major issue with the public, as it goes to the root of the public's concerns regarding the move from a tax-based system (full access for all) to one based on use (possible restrictions to access due to lack of funds).

5.3 With Respect to Success Factors for Implementation

5.3.1 Hybrid systems (as opposed to full systems) are the norm in Canada, particularly for larger municipalities

It would appear that at this time many Canadians are open to user fees as a way of limiting irresponsible use of the waste management system, but not to their full replacement of existing systems (tax-based, flat fee). This may be because Canadians see some level of subsidized service as maintaining full and easy access to the service for everyone and thus protecting public health. Some Canadians also see the ability to pay as an issue and therefore want to see at least some level of service remain on the tax base.

Two qualifications to this finding should also be stated:

1. **User-pay becomes more popular once implemented.** This was shown both in the current survey, where most respondents noted higher approval ratings six months after implementation than before, and in the literature (once programs are in place, they are seldom, if ever, removed and are universally reported to be very popular). This implies that full user-pay systems may be brought in gradually, starting with one of the hybrids and gradually lowering the number of subsidized units (or gradually raising the fee in blended systems). An example of this approach is Sydney Township (Ontario), where one "free" bag was recently dropped in favour of a full user-pay system, with strong support from the community.
2. **Utility-style billing may change attitudes towards user-pay.** Although all of the B.C. municipalities surveyed have hybrid systems in place, it may be possible for them to move to full systems in the future with a minimum of opposition from a public that now sees solid waste management as a utility (see next finding).

5.3.2 *The utility concept (where waste management is seen in the same light as electricity or water) is an important tool for the selling of user-pay to the public, particularly in larger urban centres*

Survey results in Ontario show very strong support for the concept of user-pay for utilities. Traditionally, however, waste management has not been seen as a utility but as a property-tax-based service, like snow removal and police and fire protection. The move to utility-style billing in British Columbia is designed to change this attitude and thus pave the way for user-pay. Utility billing systems have the added benefit of being transparent to the consumer, eliminating the concern about double taxation.

5.3.3 *Although the communications and education tools used by the municipalities surveyed were fairly standard, their importance cannot be overemphasized*

Misconceptions are common with user-pay systems and these must be minimized. Key messages will vary from municipality to municipality, but will likely include environmental responsibility, fairness, control over costs, and the management of problems such as illegal dumping. In particular, the double taxation issue must be addressed with a strong, clear message regarding the financing of the system (see utility billing, above).

5.3.4 *Smaller municipalities should consider leaving any significant IC&I subsidies in place, at least temporarily, in order to avoid having too high a unit price*

The experience of Kanata (see Section 4.1.3) points out quite clearly the difficulties involved with removal of any IC&I subsidies. Subsidy removal increases costs for residents. If this increase in cost is associated with the proposed move to user-pay, the entire program is at risk. Nor does it seem realistic to argue for the fairness of subsidy removal: in Kanata, residents' comments on this issue showed that, in general, they felt that the industrial and commercial sector should subsidize municipal waste collection, in the same manner that their taxes subsidize road construction and police protection. Letters to the editor in Kanata at that time called user-pay a "tax-break for big

business." Moreover, concern that they would be perceived as looking for a tax break kept the business community, who agreed with the user-pay proposal, from being vocal and visible in its support (Munroe, 1995).

As mentioned earlier in this report, this issue has been dealt with differently by Ontario and B.C. municipalities. Ontario municipalities have left the subsidies in place by adopting tax/user-pay hybrids. B.C. municipalities have eliminated the subsidies by shifting to a utility-style billing system, with its greater transparency and different approach to waste management services. Either approach seems to work. Eliminating the subsidy at the same time as user-pay is introduced, with no switch to a utility-style system, does not seem feasible.

5.3.5 Public participation in the planning process can be a valuable tool, particularly if it can be used to bring some of the strongest opponents into the planning process

Although public participation in the planning process was not mentioned as a success factor by more than six of the municipalities surveyed, it has been used successfully in a number of communities. Centre and South Hastings (Ontario), for example, brought some of the proposed system's strongest opponents into the planning process and by doing so converted them into supporters (personal communication, 1996).

5.3.6 Opposition to user-pay cuts across party lines; it comes from both ends of the political spectrum. All of these concerns, however, can be met through the proper design of a hybrid user-pay system

As discussed above, user-pay as an approach to managing solid waste has both technical and communications issues that must be addressed if implementation is to be successful. Municipal staff, however, should bear in mind that user-pay is also a very political subject. Public opposition is often fanned by elected representatives who see in user-pay a threat to their constituencies. This is particularly true in larger municipalities, where organized interest groups who have links with politicians often oppose user fees for ideological reasons. These political factors may be the single most important barrier to the introduction of user-pay in large municipalities.

The data from the current survey shed some light on this issue. Canadians appear to be ready to accept hybrid systems if they are designed properly. Also, evidence from British Columbia suggests that the shift to utility-style billing may be a necessary preliminary step in the introduction of user fees in major centres, for reasons discussed earlier in this report. Overall, the data suggests that the structure of the program, as opposed to the "spin" put on it in communicating to the public, is the most important factor in overcoming both public and political opposition.



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A. Background Information

1. *Please give the municipality, contact person, and kind of waste-related services offered.*

- Municipality
- Contact name
- Phone number
- Population
- Curbside/depot system

2. *What is the means of service delivery (public, private contract, no service, etc.) for the following:*

- Waste collection
- Recycling collection
- Disposal
- Processing

B. History and Context

3. *How long has the program been in place?*

3a. *What were the sources of funding for municipal solid waste services prior to the implementation of the current system? Please check each that applies, in whole or in part.*

- Municipal taxes
- Flat fee
- Landfill tipping fees
- Other (specify)

3b. *Was the system previously subsidized by IC&I taxes or tipping fees?*

If yes, please specify percentage.

If no, go to question 17.

3c. *Was this subsidy eliminated when the program was introduced?*

- Yes, completely
- Yes, but in stages
- No

3d. *If the answer is either "yes, but in stages," or "no," please explain how the subsidy is integrated into the system.*

4. How were diversion programs financed before the current system? Please check each that applies, in whole or in part.

- Municipal taxes
- Flat fee
- Landfill tipping fees
- Private-sector stewardship funding
- Provincial government grants
- Other (please specify)

5. In your opinion, what special factors, whether social, political, or environmental, influenced the decision to introduce the program? (Examples might include difficulties in siting a landfill, budget constraints, 3Rs targets, etc.)

- Most important factor:
- Other important factors:

6a. Judging on a scale of 1 to 6, where 1 is "never" and 6 is "frequently," how often did you hear each of the following objections to your program expressed by members of the public prior to its implementation? ("na" means "not applicable" and "dk" means "don't know.")

- Garbage is an essential service which should be covered by taxes
- The program will be too expensive to operate
- The program is a form of double taxation
- The program will not be effective in reducing waste
- The program will hurt large families
- The program will lead to illegal dumping
- The program will hurt those with lower incomes
- The program will be unfair to tenants

6b. On the same scale, how often did you hear each of the following supportive statements prior to your program's implementation?

- It is fairer to have to pay only for what you waste
- The program will help waste diversion programs
- The program will help to reduce waste
- The program will help lower costs overall

7. Which stakeholder groups in your community went on record to support the program and which opposed it?

- Supporting:
- Opposing:

8a. Which of the following diversion programs were in place prior to the introduction of your alternative financing system?

- Depot recycling
- Curbside recycling of some materials: steel, aluminum, glass, newsprint
- Enhanced curbside recycling: various plastics, OCC, other fibre, etc.
- Yard waste composting (curbside pick-up)

- Food waste composting (curbside pick-up)
- Backyard composter subsidy program
- Household hazardous waste depot
- Other (specify)

8b. *Were any new programs introduced in conjunction with the new financing program?*

- Yes (please specify)
- No

8c. *Have any new programs been introduced since?*

- Yes (please specify)
- No

C. Description of the Waste Management Program

9. *Which of the following would you say best describes your municipality's system for charging citizens for their waste management services?*

- Full variable rate (no "free" or subsidized level of service)
- Full flat rate
- Hybrid of tax base and variable rate
- Hybrid of flat rate and variable rate
- Other (please describe)

10. *Which of the following mechanisms do you use to vary the rate at which people pay for their waste management services?*

- Metered bag
- Metered tag
- Subscription to different sized containers
- Subscription to different numbers of containers
- Charge by weight of refuse
- Hybrid: bag and tag (the latter for large items)
- Hybrid: subscription and tag (the latter for large items)
- Not applicable (flat rate)

11. *If not a flat rate, what is the unit variable charge?*

_____ per _____ (e.g. \$2.00 per bag)

12. *If a hybrid system, what is the rate that does not vary by use?*

_____ per _____ per _____ (e.g., tax rate or minimum charge)

13a. *Do the fees collected represent actual costs (i.e., full-cost accounting)?*

- Yes
- No

13b. *If yes, what are the costs allocated to each component?*

13b(I) Subsidized or non-variable component (or full fee if flat-fee system):

- Waste collection
- Waste disposal
- Transfer station
- Recyclable collection
- Recyclable processing
- Yard waste composting
- Yard waste collection
- Backyard composter subsidies
- Communications and education programs
- Administration

13b(II) Variable component:

- Waste collection
- Waste disposal
- Transfer station
- Recyclable collection
- Recyclable processing
- Yard waste collection
- Yard waste composting
- Backyard composter subsidies
- Communications and education programs
- Administration

14. If residents must purchase bags or tags, where can they purchase them?

- Municipal offices
- Convenience stores
- Designated outlets
- Other (describe)



15a. If residents are billed, how often are the bills issued?

- Annually
- Semi-annually
- Monthly
- Bi-monthly
- Other (specify)

15b. What is the vehicle for the bill?

- Tax bill
- Separate invoice
- Utility bill (e.g., water)
- Other (specify)

16a. Which of the following measures are in place to ensure that residents comply with the program?

- Anti-dumping by-law (with associated fines)
- Maximum amount of fine:
- "Garbage police"
- Policy of publishing offenders' names in local newspaper
- Other (please specify)
- Not applicable (flat fee program)

16b. Have any of the enforcement mechanisms been used?

- Yes (please specify which)
- No
- Not applicable (flat rate)

17. Does your program apply to multiple units such as apartment dwellings and condominiums?

- Yes
- No

18a. Are there any mechanisms in place specifically to deal with the issue of fairness to tenants?

- Yes (please describe)
- No

18b. If yes, does the variable rate/flat fee apply to each individual tenant or condo owner?

- Yes
- No

18c. If yes, please describe how the system operates.

19a. Does your program include any special financial arrangements to assist low-income households?

- Yes
- No

19b. If yes, please describe.

D. Planning

20a. Was a randomized phone survey conducted as part of the planning for your program?

- Before implementation
- After implementation

20b. Were any focus groups employed in the planning process?

- Yes
- No

20c. *Would you be willing to send us a copy of the results of the survey(s) and the focus groups research, if these are available?*

Yes (surveys)

Yes (focus group research)

21. *Which, if any, of the following public participation tools were used in planning the program?*

Public meetings

If Yes, how many?

Multi-stakeholder advisory group

Meeting with stakeholder groups

Hot-line

Mall kiosks

Other (specify)

22. *Which of the following, if any, were used in the planning process?*

Reports from other jurisdictions

Waste management consultants

Financial consultants

Communications consultants

Planning committee (of Council)

User-pay guides (please specify)

23. *How long did the planning process take (from first instructions from Council until final approval of the program)?*

E. Communications and Education

24. *Was a formal communications strategy carried out*

a) *before implementation of the program?*

b) *during and after implementation of the program?*

25. *What were the primary messages in the pre-implementation communications strategy?*

26. *Which of the following vehicles were used to communicate to the public prior to implementation of the program?*

Newsletter

Flyers

Newspaper articles

Radio or television specials/announcements

Print advertisements

Community meetings

Event or mall displays

Other (specify)

27. *What were the primary messages in the post-implementation communications strategy?*

- Same as during the pre-implementation strategy
- New messages or different emphasis, as described below

28. *Which, if any, of the following vehicles are being used to regularly communicate with the public since the program began?*

- Newsletter
- Flyers
- Newspaper articles
- Radio or television specials/announcements
- Print advertisements
- Community meetings
- Event or mall displays
- Other (specify)

29. *What, in your opinion, was the single biggest hurdle in communicating the value of your program to the public?*

30a. *Were there any newspaper editorials written specifically on the topic of the new system, either before, during, or after implementation?*

- Yes
- No

30b. *Would you be willing and able to fax us copies of these editorials?*

- Yes
- No

F. Evaluation

31a. *Have you formally calculated the impact of the program on waste-to-landfill in your municipality?*

- Yes
- No

31b. *If yes, what was the impact of the program on overall waste diversion (in percentage points, increase or decrease, actual calculation or estimate)?*

32a. *Have you formally calculated the impact of the program on specific 3Rs programs such as recycling and composting?*

- Yes
- No

32b. *If yes, what was the impact on your recycling program?*

32c. *If yes, what was the impact on your backyard composting program?*

33a. Have you documented any changes in the amount or type of waste that is disposed of illegally?

- Yes
- No
- Not applicable (flat rate system)

33b. If yes, please describe these changes.

34a. How does the program compare to your previous system with respect to cost-effectiveness?

- Much more cost-effective
- Slightly more cost-effective
- Roughly the same
- Slightly less cost-effective
- Much less cost-effective

34b. What are the (up to 3) principal factors that make the program more (or less) cost-effective than your previous system?

34c. If known, by what percentage have your overall costs decreased (increased)?

35. In your opinion, how effective has the program been in the following areas (on a scale of 1 to 6, where 1 is "not effective" and 6 is "extremely effective"; use na "for not applicable" and dk for "don't know")?

- Reducing waste
- Promoting behaviour beneficial to the environment
- Reducing overall costs
- Pleasing the general public

36. Please evaluate the following components of your program on a scale of 1 to 6, where 1 is "unsuccessful" and 6 is "extremely successful":

- The planning process
- Pre-implementation communications
- Post-implementation communications
- Enforcement measures
- Bag or tag distribution system
- System for multiple units
- System for ensuring fairness to renters
- System for assisting low-income families
- Other (specify)

37a. In your opinion, what was the general level of acceptance of the new system at the time when it was first introduced to the public, on a scale of 1 to 6, where 1 is "completely opposed" and 6 is "strongly supportive"?

Level of acceptance then

37b. In your opinion, what is the general level of acceptance now (using the same scale as in 37a)?

Level of acceptance now

- 37c. *If acceptance is now significantly greater, approximately how long did it take for complaints about the new system to die down?*
38. *In your opinion and in retrospect, what were the 3 most difficult barriers (in order of importance) to acceptance of your current system?*
39. *What were the key success factors in the design and implementation of your current system?*
- 40a. *In your opinion, what are the greatest strengths of your current system?*
- 40b. *In your opinion, what are the greatest weaknesses of your current system?*



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