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Addressing the Fairness of Municipal User Fee Policy

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UNIVERSITY OF
TORONTO

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About IMFG

The Institute on Municipal Finance and Governance (IMFG) is an academic research hub and non-partisan think tank based in the Munk School of Global Affairs and Public Policy at the University of Toronto.

IMFG focuses on the fiscal health and governance challenges facing large cities and city-regions. Its objective is to spark and inform public debate, and to engage the academic and policy communities around important issues of municipal finance and governance. The Institute conducts original research on issues facing cities in Canada and around the world; promotes high-level discussion among Canada's government, academic, corporate, and community leaders through conferences and roundtables; and supports graduate and post-graduate students to build Canada's cadre of municipal finance and governance experts. It is the only institute in Canada that focuses solely on municipal finance issues in large cities and city-regions.

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Abstract

User fees are one of the principal funding mechanisms for a range of municipal services where the users can be identified and the amount of service provided can be measured. In general, policy related to the design of fees has been based on the “benefits-received” principle, sometimes modified using policy based on “ability-to-pay” criteria. This paper provides details on where user fees are used by municipalities in the Greater Toronto and Hamilton Area and elsewhere in the province of Ontario, their design, and where implementation could be considered. The inclusion of the design of fee policy as an element of municipal strategies to alleviate poverty is also reviewed. This discussion is put into the context of recent federal initiatives in the measurement of the distribution of income and the incidence of poverty. Examples of policy and strategy are drawn from municipalities elsewhere in Canada. This review is especially pertinent in the context of responding to the challenges posed to municipalities by the Covid-19 pandemic.

Keywords: user fees, municipal finance, Ontario, Greater Toronto and Hamilton Area, Greater Toronto Area

JEL codes: H20, H23, H71

Addressing the Fairness of Municipal User Fee Policy

I. Introduction

User fees fund some or all of the costs of a range of municipal services in Canada. These include water supply, sewers, solid waste collection and disposal, public recreation, public transit, and parking, as well as some social services. Fees range from fixed charges that are unrelated to consumption levels, to charges that vary directly with quantity consumed, to a mix of fixed and variable charges. The pricing structure may cover all or only a portion of all production and delivery costs.

Decisions about pricing structures and the proportion of costs recovered from user fees depend on considerations such as local tradition, the type of service, the preferences of residents, and the willingness (or lack thereof) of local officials to substitute prices for local taxes. Furthermore, in two-tier local governing structures, the importance of user fees in the overall revenue mix is determined by the distribution of functional jurisdiction.

This paper highlights areas of municipal service provision in which user fees are the principal funding mechanism, and identifies some areas where this form of revenue could usefully be introduced. It also provides details on the current level of financing by fees, principally in the Greater Toronto and Hamilton Area (GTHA).

The paper also discusses the current design of fees, which is based largely on “benefits-received” principles, and addresses ways in which the fee policy could be modified to take the “ability-to-pay” criterion of tax and fee design into account.

Put simply, the benefits-received principle is that “the costs of providing a good or service are borne as directly as possible by those benefiting from them” (Tedds 2020, 192). The ability-to-pay criterion suggests that those with higher incomes should bear a greater proportion of the cost of providing a good or service.

All levels of government have faced pressure to develop poverty reduction strategies, principally in the aftermath of the Great Recession of 2008 and 2009 (Shaffer and Tranjan 2019). The Covid-19 pandemic has further heightened public awareness of differences in neighbourhood incomes, health outcomes, and urban form.¹ In this context, municipalities have actively considered the equity impacts of user-fee design, and whether to look beyond the benefits rationale, the

1. These disparities were identified some years ago in work by Hulchanski (2010). The local Toronto press has also raised the possibility of providing free transit (Globe and Mail 2020; Munro 2020). Recent studies have also linked inequalities in income distribution among neighbourhoods to transit deserts in Canadian cities (Allen and Farber 2019).

“Wicksellian” connection, and Eurig-based criteria (Althaus and Tedds 2016) for fee-setting to other criteria, such as the ability to pay.²

The current response to the pandemic has made this discussion even more urgent. A perfect storm has been created for municipal fiscal decision-making. Difficult choices have had to be made on the deferral or cancellation of taxes and fees. In particular, while some fee revenue may be recoverable, fees for transit and recreation services,³ for example, are unlikely to return rapidly to pre-pandemic levels, even as the economy re-opens. In 2021, the City of Toronto estimated that revenue shortfall for its transit system alone will be about \$650 million (Toronto Transit Commission 2021). In such circumstances, the continuing affordability of municipal assistance to individuals through untargeted discounts is doubtful, given the pressure on the tax base and the proposed levels of assistance from the other orders of government.

This paper concentrates on issues in the design and application of user fees by identifying and analyzing areas in which municipalities currently apply user fees to services for which consumers can vary their consumption, for example, most environmental and recreational services. In its first four sections, the paper sets out why user fees are a good source of revenue for certain services, how they are currently used by a select group of Ontario municipalities, and how they are best structured, generally speaking, with respect to efficiency and fairness. The paper concludes by considering nine specific services that could be appropriate for user fees and analyzing how municipalities could design user fees while considering the goals of efficiency, equity, and fairness.

2. Where and why should municipalities use user fees?

The short answer from an economist’s perspective is that user fees should be adopted whenever and wherever possible (Althaus and Tedds 2016; Bird 1976; Bird and Tsiopoulos 1997; Tedds 2019a, 2019b, 2020). They are ideal for funding services for which specific beneficiaries can be identified, non-users can be excluded, and the quantity of service consumed can be measured. These are services with “private goods” characteristics – such as water, sewers, solid waste collection and disposal, and public transit.

User fees may be less appropriate in the funding of services with certain “public goods” characteristics – that is, services for which it is difficult or very costly to

2. The “Wicksellian” connection refers to the connection between those who use and pay for a publicly provided service; the Eurig criterion refers to the legal distinction between a tax and a fee in the Canadian context and the principle that fees should be limited to cost-recovery as opposed to raising general revenue. See Bird and Slack (2019), Althaus and Tedds (2016), and Farish and Tedds (2014) for discussions of these criteria and the legal issues in designing fees.

3. Fees for services may be charged directly by a municipal government or by an incorporated municipal utility. Municipalities also charge fees for services that have been justified as part of a “regulatory scheme” such as development charges, licences, permits, and administrative fees. Issues pertaining to regulatory and administrative fees are not addressed in this paper. See Tedds (2020) for a discussion of the distinctions among various types of fees.

exclude someone from using the service and the additional resource cost of another person using the good is zero. Examples include local roads and neighbourhood parks. Nor should they be used for services that are primarily redistributive in nature (social services, social housing, and public education). For these services, grants from senior levels of government and local taxes are much more appropriate.

The strength of a user fee is its capacity to recover all costs of providing a service by linking charges for its use to those who use it (Bird and Slack 2019). This is the classic benefits-received model⁴ of public finance – in other words, those who benefit are those who pay, also known as the “Wicksellian connection.” When this linkage is achieved, it is possible to satisfy several important criteria in financing public services: efficiency, accountability, transparency, fairness, and ease of administration. These criteria are described in Box A.

Box A: Criteria for setting user fees

Economic (or allocative) efficiency is achieved when the tax per unit, charge, or user fee equals the extra cost of the last unit consumed. This is the well-known price-equals-marginal-cost pricing principle. The tax, charge, or user fee indicates what consumers are willing to pay for a service and marginal cost measures the cost of resources used in producing that service.

For example, if the extra (marginal) cost of producing the last litre of water is 10 cents and customers are willing to pay 15 cents for it, the value that customers place on this litre is greater than the cost of producing it. Society is the beneficiary of a net gain of 5 cents per unit. Collectively, society would be better off if water production and consumption increased, as long as the price paid for each additional unit exceeded the cost of producing that unit; that is, for each of these units, the marginal benefit would exceed marginal cost – a net gain. If, on the other hand, the marginal cost of producing the last litre is 10 cents and customers are willing to pay only 5 cents for it, the benefit that customers get from this unit is less than the cost of the resources used in producing it and society is worse off by 5 cents for this unit. As long as the extra cost of producing the unit is less than its price, society is overproducing and overconsuming the resource.

Resource efficiency is achieved when marginal cost equals price, because this is the point at which society secures the greatest net

4. An alternative approach would be to argue for taxation on the basis of ability to pay. This is appropriate for governments that have access to income taxes (federal and provincial) and where services funded by these taxes provide broad benefits as opposed to specific beneficiaries, either individually or as a group that can be identified.

gain from the consumption of this service. The main economic reason for imposing correctly designed charges or fees on the beneficiaries (individuals or businesses) of public services is to provide the public sector with incentives for using resources in the most efficient manner possible. This leaves people with as large a bundle as possible of services that they want at a price they are willing to pay – the essence of efficient resource use.

Accountability is enhanced when the purpose of a tax, charge, or user fee is clear to taxpayers. The closer the link between the beneficiaries of a government service and payment for that service, the greater the degree of accountability. When taxes and user fees are directly matched to beneficiaries, the latter can determine whether the benefit from the last unit consumed is worth the price or tax paid for its consumption. Taxpayers can then apply pressure on politicians either to improve the efficiency with which services are provided or to discontinue providing the service.

Transparency is an extension of the accountability argument. It is improved when residents have access to information and decision-making forums so that the general public is familiar with the way in which local tax rates, charges, and user fees are set. An emphasis on transparency should mitigate the risk of corruption by making information available and by ensuring that all public policy decisions are made in an open manner (International Monetary Fund 2001).

Fairness or equity within the benefits model is achieved when those who use public services pay for them, just as someone who benefits from a private good pays for it. Concerns about the tax burden on low-income individuals should be addressed through income transfers from provincial and federal governments, and social assistance programs targeted to individuals in need. It is more equitable and efficient to handle income distribution issues through income transfers or targeting (Boadway and Kitchen 1999, chapters 8 and 9) than to tamper with charging or taxing mechanisms to accommodate these concerns.

Finally, the *easiest financing system to administer* is one that is not confusing for taxpayers to understand and does not require an unnecessary amount of time and effort in administering it.

A major problem with the current application of many user fees is that they are not set in a manner that satisfies the criteria listed in Box A. The general tendency is to set fees to generate revenue rather than to allocate resources to their most efficient use. Consequently, we see a demand for services and often a demand

for physical infrastructure that is not allocatively efficient or optimal (Fenn and Kitchen 2016; Kitchen 2017).

Inefficiently set user fees often lead to overinvestment and larger facilities than would be justified if more efficient pricing practices were adopted. At the same time, failure to price properly has resulted in considerable unplanned and implicit income redistribution, much of which would be unacceptable if it were made explicit (Bird 1976; Fenn and Kitchen 2016, 29). Income distribution considerations are important, but they should be handled through transfer programs that target lower-income households and individuals (or explicitly through special concessions such as lifeline rates for water, as discussed further in section 6.1) rather than changing or distorting prices where the relatively rich frequently benefit more than the relatively poor (more on this later).

Growing concerns over municipal fiscal sustainability and increasing pressure on the property tax base have highlighted the importance of examining where user fees might be used and how they should be structured to ensure that resources are not wasted or applied in an unfair and inequitable manner.

3. Where are user fees applied?

To answer this question, this paper relies on data from the consolidated Financial Information Returns (FIRs) of Ontario municipalities as compiled by the Ontario Ministry of Municipal Affairs and Housing. The returns provide consistency in reporting and accounting methodology as well as in functional definitions (see Box B). Data on user charges by function and the related expenditures being financed has been analysed for the cities and regional governments of the Greater Toronto Area (GTA) as well as some single-tier cities, including Hamilton, Peterborough, Windsor, and Ottawa for 2009 and 2018.

Understanding the application of user fees is complicated by several issues. First, the data include all types of fees, including those for services consumed, such as transit or water, as well as fees of a proprietary nature, such as rents for social housing or those that are regulatory in nature, such as permits. The first category is the most important from a quantitative perspective and the one for which it may be appropriate to use ability-to-pay criteria to inform policy related to the design of fee structures.

Second, comparisons of municipally aggregated data must recognize differences in functional assignments among regional governments and their area municipalities. For example, transit is provided by the regional level of government in York and Durham and at the lower-tier municipal level in Halton and Peel. The government responsible for the supply of water and sewerage also varies by region. Where it makes sense, data pertaining to the important subcategories of the standard functional distinctions used in the FIRs are shown in the tables in this paper, in the online data appendix (www.bit.ly/IMFG-User-Fee), as well as being referenced in the discussion.

Box B: Functional categories used in the Financial Information Returns

General government

Protective services

Transportation services (with separate aggregations of roads and traffic operations, transit, and parking)

Environmental services (with aggregations of wastewater operations, water services, and solid waste disposal)

Health services

Social and family services (assistance to aged persons, homes for the aged)

Social housing, recreation, and cultural services (with aggregations of parks, recreation programs, recreation facilities, and cultural services)

Planning and development

Table 1 shows the user fees collected by municipalities in 2018. It is not surprising that Toronto and Ottawa collect the largest totals in fees (\$2.9 billion and \$804 million, respectively), given both population and the full spectrum of service responsibilities of these cities.⁵

As expected, fees for transportation, environmental services, and recreation dominate the totals in Table 1.⁶ Table 2 shows these functions as a percentage of total user fees. The fees charged in Toronto for transit and the total fees for water, wastewater, and solid waste services account for more than 80 percent of all fees imposed by the city, with the former accounting for half. Similarly, in Hamilton, fees for environmental services account for more than 60 percent of fee revenues, while in Ottawa and Windsor, fees for environmental services are the principal category of fees levied.

In the Regions of Durham, Halton, Peel, and York, the environmental envelope (wastewater, water, and waste) dominates, varying from two-thirds to 90 percent of fee revenues. This variation, in part, is a consequence of transit being a lower-tier responsibility in Peel and Halton, and, in part, because the retail component of water and sewer services is collected at the lower tier in York (Markham, 69 percent, and Vaughan, 81 percent). By contrast, in Oshawa and Pickering, charges

5. The data tables are available in the online appendix (www.bit.ly/IMFG-User-Fee). Table A1 shows the totals for 2009 and 2018 for Toronto, the GTA Regions and selected area municipalities, as well as Hamilton, Ottawa, Peterborough, and Windsor in current dollars. Table A2 shows the totals in 2009 constant dollars.

6. While user fees finance a portion of municipal long-term care homes, this figure may appear to contradict the widely held view that income redistributive services should not be financed and delivered at the local level. The provision of these services, however, is rooted in history. Municipal homes for the aged have served as the care providers of last resort, rents are geared to income, and fees and service levels are regulated by the Province.

Table 1: User fees and charges in Ontario (2018 \$M)

	General Govt.	Protection	Transportation	Waste-water	Water	Waste Disposal	Social, Family, Health	Social Housing	Recreation, Cultural	Planning & Development	Total
Toronto	35.6	58.0	1,230.2	712.7	471.4	158.4	68.8	18.4	136.0	11.5	2,921.4
Durham	0.5	5.2	32.4	111.4	113.3	8.6	23.7	7.2	0.0	0.8	303.2
Oshawa	0.8	0.1	5.1	0.0	0.0	0.1	0.3	0.0	11.1	1.1	18.5
Pickering	0.5	2.0	0.0	0.0	0.0	0.0	0.1	0.0	6.0	1.2	9.8
Halton	1.2	5.0	0.8	69.5	69.1	8.1	16.6	1.1	0.0	1.0	240.5
Burlington	0.4	0.4	7.1	0.4	0.0	0.0	0.1	0.0	15.1	1.9	25.4
Peel	1.1	25.2	6.3	148.1	232.4	7.5	18.1	47.1	0.1	3.1	442.3
Mississauga	4.1	2.8	104.0	41.8	0.0	0.0	0.3	0.0	34.0	5.3	192.6
Brampton	6.1	2.1	80.7	0.0	0.0	0.0	0.6	0.0	21.0	3.6	114.1
York	5.5	16.5	96.3	195.2	125.2	11.0	6.0	21.7	0.0	4.8	482.9
Markham	2.2	11.9	10.7	63.3	58.9	0.2	0.0	0.0	17.4	13.7	178.3
Vaughan	3.0	4.4	0.7	86.1	64.3	0.2	0.0	0.0	15.0	11.8	185.7
Hamilton	11.6	5.9	59.4	109.5	99.0	9.8	19.5	0.3	23.3	12.2	350.4
Ottawa	11.9	38.8	202.4	187.7	175.4	44.5	21.8	69.3	38.2	14.5	804.4
Peterborough	0.8	1.4	11.8	18.0	16.0	2.7	5.9	7.5	9.9	0.2	74.3
Windsor	11.9	3.9	22.2	54.4	53.0	4.0	10.1	0.0	15.1	1.0	123.5

for parks and recreation (more than 60 percent), as well as parking in Oshawa (27 percent) and food inspection in Pickering (20 percent), are significant, as the Region of Durham provides both environmental services as well as transit.

Figures 1 and 2 show user fees per capita in 2018. Total per-capita user fees varied from a high of \$988 in Toronto to a low of \$612 in Hamilton among those municipalities with a full spectrum of service responsibilities.

The upper-tier regional government per-capita fee revenue derived principally from environmental services and regional transit operations and varied from nearly \$298 in York to \$412 in Halton. Variation in per-capita fee revenue among area municipalities is also apparent: for Oshawa and Pickering the figure was just over \$100, given their more limited responsibilities, while Markham (\$511) and Vaughan (\$564) surpassed the regional government’s level because of their responsibility for water and wastewater services.

Comparing user fees per capita for 2009 and 2018 shows that, from a general perspective, the largest municipalities in Ontario have increased their reliance on user fees in both current and constant (2009) dollars. (For details, please refer to the online appendix: www.bit.ly/IMFG-User-Fee).

Table 2: Percentage share of total user fees by function (2018)

	Transit	Wastewater	Water	Waste	Recreation
Toronto	40.3	24.4	16.1	5.4	4.7
Durham	9.5	36.8	37.4	2.8	0.0
Oshawa	0.0	0.0	0.0	0.4	59.9
Pickering	0.0	0.0	0.0	0.0	60.9
Halton	0.0	45.9	40.1	3.4	0.0
Burlington	21.8	1.5	0.0	0.0	59.7
Peel	0.5	33.5	52.5	1.7	0.0
Mississauga	47.4	21.7	0.0	0.0	17.7
Brampton	69.2	0.0	0.0	0.0	18.4
York	15.3	40.4	25.9	2.3	0.0
Markham	0.0	35.5	33.0	0.1	9.8
Vaughan	0.2	46.4	34.6	0.1	8.1
Hamilton	13.0	31.3	28.2	2.8	6.6
Ottawa	22.9	23.3	21.8	5.5	4.7
Peterborough	7.6	24.3	21.5	3.7	13.4
Windsor	9.1	30.8	30.0	2.2	8.5

Figure 1: Per-capita user fees and charges (single- and upper-tier municipalities)

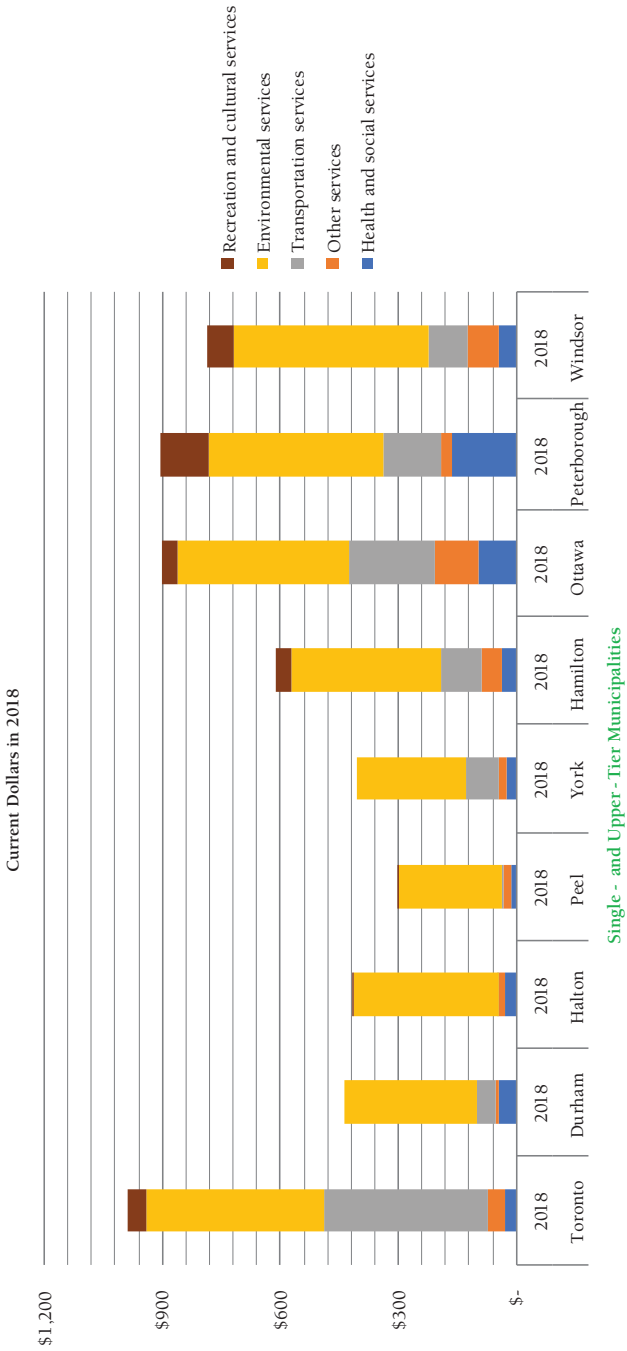


Figure 2: Per-capita user fees and charges (lower-tier municipalities)

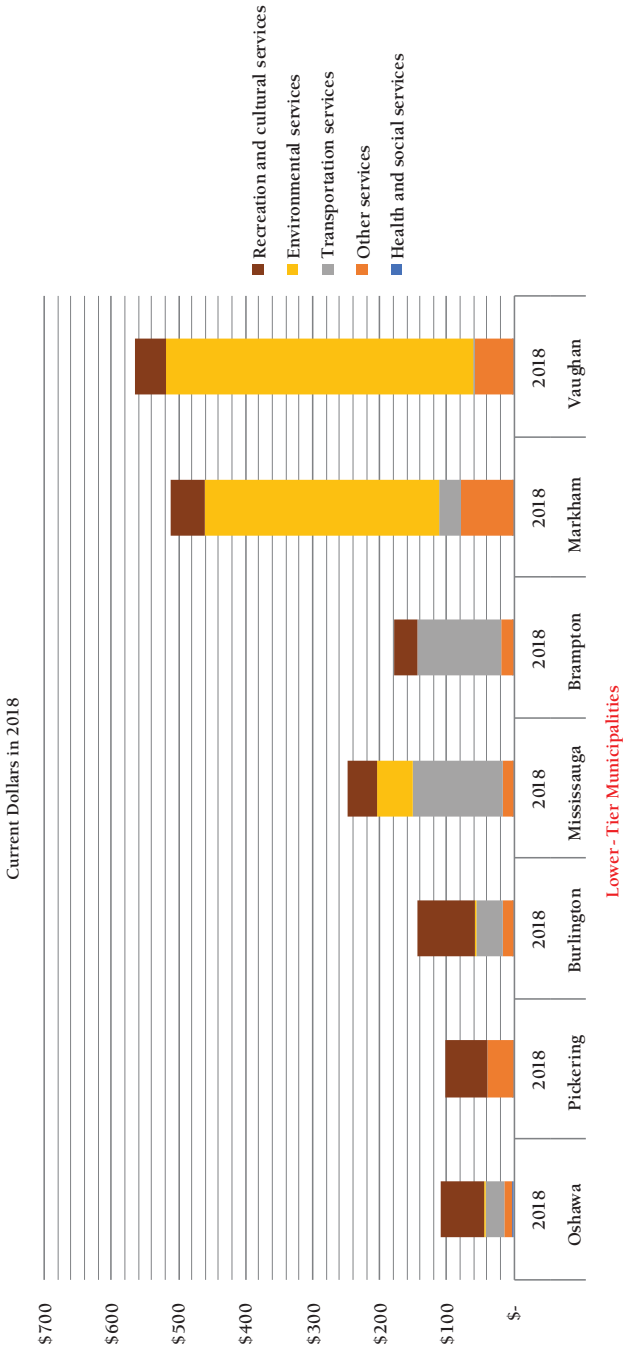


Table 3 offers another perspective on assessing the importance of user fees in the municipal fiscal framework by looking at fee revenue as a portion of own-source revenues (property taxes, user fees, and investment income).

Municipality	2009	2018
Toronto	26.7	29.5
Durham	25.5	29.2
Oshawa	6.9	10.3
Pickering	9.1	10.2
Halton	30.3	32.7
Burlington	8.9	10.7
Peel	26.1	26.4
Mississauga	19.1	23.0
Brampton	10.8	16.6
York	20.0	28.5
Markham	25.2	47.0
Vaughan	21.1	41.3
Hamilton	23.3	25.9
Ottawa	33.9	28.4
Peterborough	36.6	24.3
Windsor	33.9	21.2

In general, this indicator also shows that the role of user fees in municipal own-source revenues has increased over the 10-year period. However, Peterborough, Windsor, and Ottawa are exceptions to the general rule.

Furthermore, municipalities in which user fees as a percentage of own-source revenues exceeds 20 percent are typically jurisdictions with responsibility for transit, water, and wastewater at the household level. For example, the lower numbers for Oshawa, Pickering, and Burlington reflect the fact that their use of user fees is confined principally to parks and recreational services as well as planning and development. By contrast, transit is a lower-tier responsibility in Peel Region and certain environmental services are provided by area municipalities in York Region. (The rise of this indicator in Markham and Vaughan can be attributed to an increase in water revenues related to a change in responsibilities.)

Table 4 shows the proportion of user fees and charges relative to expenditures in those service areas between 2009 and 2018. Although reliance on transit fares as

shown by the provincial aggregate seems to have slipped, this trend does not seem to be the case for the municipalities under analysis.

Table 4: User fees and charges as a percentage of operating expenditures by function for Ontario municipalities

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Transit	36.2	39.5	43.0	43.4	43.1	42.4	41.0	40.1	40.3	33.1
Water and sewer	97.2	99.3	97.3	103.6	101.5	101.6	99.3	108.0	103.7	110.3
Waste services	41.4	46.1	27.6	25.3	25.7	32.2	33.0	37.1	37.3	34.0
Recreation programs	26.9	28.1	26.0	26.9	26.4	25.6	25.6	25.4	25.5	25.0

In the case of water and sewer services, the contribution of user fees to operating expenditures at times is larger than the total of the expenditures. In calculating the data in this table, the expenditures on tangible asset acquisition funded from current revenues are not included in the denominator. In many municipalities, more user fees for capital-intensive environmental services have been collected than actual operating expenses. The surplus of funds collected on a functional basis is used to finance in-year capital expenditures, in keeping with the current practice of full cost recovery for these municipal operations.⁷

The indicator exceeds 100 percent for most water operations in the GTA as well as for transit in Hamilton in 2018. By contrast, the financing of waste disposal continues to be subsidized by general revenues. Otherwise, in Mississauga, Brampton, and Toronto, transit operations depend the most on the farebox for funding. This indicator is also evidence that the financing of municipal operations depends heavily on municipal general revenues, and in particular, property taxation as the residual revenue source. (For details by municipality on a functional basis, please see the online appendix: www.bit.ly/IMFG-User-Fee).

4. How should user fees be structured?

Designing user fees is relatively straightforward in theory, yet often difficult to implement. Opposition often arises because they are alleged to be regressive (that is, they absorb a higher percentage of the incomes of lower-income individuals or households compared with those of higher-income individuals or households). In some cases, they are resisted because municipal cost data are not collected and recorded in a way that permits an estimation of marginal costs. This is generally

7. In 2002, the Ontario government passed the *Sustainable Water and Sewage Systems Act*, which was not proclaimed. Municipalities took the hint to move pricing systems to full cost charging. See Fenn and Kitchen (2016) and Watson and Associates (2019).

a problem with fixed costs or situations in which there are joint costs with other services, such as in assigning general government expenses to individual services. There is often political and sometimes administrative reluctance to introduce user fees for services that were previously not funded by these fees or to alter user-fee structures that have been in place for a long time. Although our analytical tools give us no guidance on overcoming political resistance to user fees, they do permit us to design efficient user fees under a variety of circumstances.

As noted in the criteria in Box A, to maximize efficiency, user fees in theory should be set so that the charge per unit (however defined) equals the extra cost of producing the last unit; that is, price equals marginal cost. In practice, however, prices may deviate from this price-equals-marginal-cost principle. For example, it is difficult to set user fees when marginal cost is not calculated, when economies of scale are present, when capacity constraints exist, when demand differs in peak and non-peak periods, when second-best considerations are prevalent, and when there are externalities to consider (Bird 2001; Bird and Tsiopoulos 1997; Fenn and Kitchen 2016; Kitchen 2017; Kitchen, McMillan and Shah 2019; Kitchen and Tassonyi 2012; Tedds 2019a).

In this section, each of these issues is discussed next within a theoretical framework designed to satisfy the criteria in Box A. A practical application on a service-by-service basis is discussed in Section 6.

4.1 If marginal costs are not calculated

If marginal costs are not calculated, either because the data are not available in a form that permits their calculation or if the equating of marginal cost to price generates a financial loss (as it would if marginal cost were lower than average cost), one solution is to set price equal to average cost. Every provider knows its average cost. Average-cost pricing simply takes the total cost and divides it by the number of units currently produced to obtain the price per unit. A positive feature of this approach is that prices are easier to calculate, especially if only financial costs are considered, as is almost always the case.

Average-cost pricing differs from marginal-cost pricing in important ways, however. If the average-cost price is declining, too little of the good will be provided and the price will be too high. If the average-cost price is rising, too much of the output will be produced and the price will be too low. In either case, an inefficient level of output results. Only if marginal and average costs are constant (the same regardless of the level of output) will average cost generate an efficient level of output. Despite potential efficiency losses, average-cost pricing is the most common practice.

Average-incremental-cost pricing is a variant of average-cost pricing. Like marginal-cost pricing, it attempts to calculate the cost of providing the service to an additional user, but the calculation in this case is an easier one for public-sector managers to estimate. Briefly, the calculation divides all the additional costs associated with providing an increased level of service to an area or neighbourhood or group of users by the anticipated number of additional users. Each user is

charged the average of the incremental total cost. This approach does not amount to marginal-cost pricing in the strict sense but may be as close as one can get in practice (Althaus and Tedds 2016, 85–92; Kitchen, McMillan and Shah 2019, 366–69).

4.2 *If economies of scale exist*

If economies of scale⁸ are prevalent, equating price to marginal cost results in annual operating losses. This loss must be subsidized by other local revenues – a solution that for political reasons is unlikely to be adopted and almost certain to be allocatively inefficient, since the subsidy will likely come from taxes that create distortions elsewhere.

A feasible alternative in many instances – one that is both economically efficient and should be politically acceptable – involves adopting a two-part price. In its simplest form, the price consists of a variable charge equal to the marginal cost of the last unit consumed and a fixed charge for gaining access to the service. The variable charge, if correctly set, ensures that the level of consumption is efficient (or as close to it as possible), and the fixed charge provides enough revenue to cover the fixed costs without distorting consumption choices. More complicated versions include more than two pricing variables. Multi-part pricing policies are often used for utility services, since they have substantial fixed production costs and declining average and marginal costs.

4.3 *If capacity constraints exist*

Capacity constraints arise when the service provided by a given infrastructure is limited. If capacity is uneven and can be expanded only in discrete amounts, marginal-cost pricing will typically lead to under- or overprovision relative to the efficient level. Here, when consumption presses on capacity, the price should be raised to allocate the limited supply efficiently. This approach justifies a price above short-run marginal cost whenever consumption is at or close to capacity. Peak-load pricing (see section 4.4), time-of-use pricing, and seasonal pricing are mechanisms to implement this approach and provide enough revenue to help cover fixed costs.

Although generally more difficult to implement, there is another approach to setting prices above marginal cost to fund fixed costs. Since prices will be too high, consumption will be less than its desirable level. The loss of satisfaction from reduced consumption can be minimized if there are several classes of consumers, by raising the price the most for those whose demand is most inelastic,⁹ meaning that they cannot easily reduce their consumption in response to high prices – this approach is known as Ramsey pricing (Church and Ware 2000, chapter 25).

8. Local utility-type services (water, sewers, or natural gas where it is a municipal responsibility) represent natural monopolies. Their predominant characteristic for analytical purposes here is that they exhibit decreasing per-unit costs over the entire range of output (economies of scale).

9. An inelastic demand exists when, for example, a 1 percent increase (decrease) in price leads to a decrease (increase) of less than 1 percent in quantity demanded.

4.4 Pricing in peak periods

Efficient pricing calls for higher fees in peak periods and lower fees in off-peak periods, because peak demand strains capacity and lasts for only a fraction of the demand cycle. The marginal benefit to peak users occurs over only a portion of the demand cycle, whereas the marginal cost of capacity expansion is incurred over the entire demand cycle, which means that the marginal benefit to peak users exceeds their marginal costs.

In addition, since off-peak users gain no additional benefit from capacity expansion, the additional capacity costs should be shouldered entirely by peak users. In other words, the off-peak price should be set equal to marginal operating costs while the peak price should be set equal to the sum of marginal capacity and operating costs.

4.5 Pricing and distance from source of supply

The marginal cost generally increases with distance from the source of supply. If the unit price or rate does not vary to reflect this circumstance, users with lower marginal costs subsidize users with higher marginal costs. If this subsidy is capitalized into land values, the properties farthest from the source increase in value relative to those closer to the source of supply than would otherwise be the case. One way to prevent this outcome is to impose differential fees on customers in remote or more expensive areas.

4.6 Pricing and second-best considerations

Second-best considerations arise if prices elsewhere in the system are inefficient – that is, different from their marginal social cost. This situation occurs when a municipality imposes a user fee for a particular service, such as public transit, but does not apply a specific charge to a substitute for that service, such as road or expressway use. Road and expressway users pay nothing to the municipality for each trip taken, whereas public transit users are charged for each trip.

In this instance, the municipality may be able to improve efficiency by setting the price in the controllable sector, public transit, below the marginal cost, in the hope of stimulating an increase in the use of transit services and a concomitant decrease in the use of roads and expressways (the uncontrollable sector). This pricing strategy is known as a “second-best” solution – that is, a solution that municipalities adopt when the price-equals-marginal-social-cost solution is impractical (Boadway 1997).

4.7 Pricing and externalities

Finally, subsidizing certain services may be warranted in the presence of externalities or spillover benefits accruing to non-residents. Much of the capital and social infrastructure in a municipality benefits both residents and non-residents, therefore user fees or charges collected from local citizens only may be less than the full marginal social cost.

While user charges can be imposed on non-residents, these may not capture capacity costs appropriately. In such circumstances, it may be preferable to provide a subsidy in the form of a provincial grant rather than to shift the associated costs to local residents. The standard recommendation here is that the costs of provision could be subsidized from provincial revenue sources or revenues collected from beyond the local community. The subsidy rate should equal the share of benefits accruing to non-residents.

4.8 The question of cross-subsidization

Should revenue from a user fee on one service be used to subsidize other services? The short answer is no. A user fee should cover only the operating and capital costs of the service for which it is set.¹⁰ It should not subsidize other services, as this practice leads to undesirable efficiency and distributional consequences.

For example, using excess revenue from water rates to subsidize the operational and capital costs of a local zoo means that water users are paying for a zoo that they may never visit. At the same time, visitors to the zoo are not paying the full cost of admission and therefore are likely to overuse the facility. As well, high water rates means that low-income water users are almost certainly subsidizing higher-income zoo visitors.

5. How can equity and fairness be ensured or improved?

A major concern that is often raised when local officials are considering user fees is the trade-off between efficiency and equity. A major strength of a properly structured user fee is its potential for allocating resources to their most efficient use. A major drawback, it is often alleged, is the financial impact that this charge has on users. User fees are often criticized because they impose a higher burden on those who are relatively poor compared with those who are relatively rich.

This criticism underlies much of the discussion and debate over user fees. What, then, is the analytical and practical response to this concern and what might be done to address it? To answer this, we begin by asking whether user fees are unfair in their impact. This is followed by a discussion of discounted rates. We continue with a summary of recent municipal initiatives in this area.

5.1 Are user fees regressive and therefore unfair?

User fees are frequently criticized, sometimes condemned, and may be avoided because they are alleged to be regressive (unfair) in their impact on the poor; that is, they take a higher percentage of the income of a poor person or poor household income when compared with that of a rich person or rich household. This is true, but the same thing can be said about the purchase of any product or service where the price per unit is the same regardless of income of the buyer or user, such as the purchase of milk or movie tickets. Just because the burden is *regressive*, however,

10. In particular, the criteria set out to meet the Eurig test of making a distinction between a user fee and general taxation would also apply. See Althaus and Tedds (2016, 44–51).

does not mean that it is *unfair*. Indeed, in the benefits-based model of local finance, efficiently structured user fees are fair if those who benefit from a service are those who pay for it.

The issue of regressivity, however, cannot be dismissed. It is important and needs to be addressed, but not by an across-the-board elimination or subsidization of fees for specific services. Instead, concern about the financial burden on low-income individuals, in general, should be addressed through income transfers from a senior level of government and social assistance programs targeted to individuals in need.¹¹

It is far more equitable to handle income distribution issues with income transfers from the orders of government that have access to broader tax bases or by targeting narrowly than to tamper with the general design of fees to accommodate these concerns. One example of targeting that exists in some municipalities is for water and sewer services, where lifeline rates are in place for low-income users. For example, the cities of Toronto, Hamilton, St. Catharines, and the Town of Newmarket provide targeted rebates to low-income households with demonstrated low levels of water consumption.

5.2 Should user fees be discounted for certain groups?

Municipalities should not discount fees based on the age of the user, such as seniors. Any discount should be based on income (that is, ability to pay). The practice of subsidizing municipal services by levying lower fees started many decades ago, when a large percentage of seniors in Canada were living in poverty. The elderly poverty rate fell from 36.9 percent in 1976 to 3.9 percent in 1995 (Osberg 2001). By 2010, it had climbed back to 12.3 percent (Conference Board of Canada 2013), primarily because of the slower growth of government transfers to seniors (Murphy, Zhang, and Dionne 2012), but by 2017, it had fallen back to 3.7 percent. This was considerably lower than the poverty rate for children (9 percent) or the working age cohort (11 percent) (Statistics Canada 2019).

Two potentially serious and costly problems emerge if individuals in one age cohort pay lower user fees than individuals in another cohort for the same service. First, this practice leads to an implicit subsidy or redistribution of income from those paying higher prices to those paying lower prices, irrespective of income. Second, wealthier users within the age cohort paying lower prices get the same subsidy as impoverished individuals in that same group (Corak 2016, 2017; Kitchen 2015, 2020).

At the same time, the practice of discounting user fees, generally speaking, is inefficient because the group paying the lower price will not be covering the same share of operating and capital costs as the group paying the higher price. For those paying a lower percentage of costs, there is an incentive for overuse

11. Regressivity of user fees also needs to be considered in the broader context of the whole of the tax system. This is discussed in Duff (2004, 403–5) and Tedds (2020).

and overconsumption. This, in turn, often leads to a demand for more services or higher service levels or both than is economically efficient, and ultimately, for more infrastructure investment than would be the case if every user paid the same price for the same service.

Similar arguments may also be made about discounted fares for students and children based on age or economic status rather than on ability to pay (Kitchen 2020).

5.3 How are municipalities addressing fairness concerns?

Municipal poverty reduction strategies

Addressing concerns about the fairness of municipal policy with respect to the funding of services has been a feature of municipal poverty reduction strategies.

While the federal government introduced a poverty reduction strategy in 2017, municipalities had long been active in establishing poverty reduction initiatives and strategies. For example, in the aftermath of the Great Recession (2008–2009), Toronto, Calgary, Edmonton, and Hamilton, among other cities, developed policies predating the federal Poverty Reduction Strategy. Furthermore, although the establishment of such strategies has become a growth industry, actual results are constrained at the municipal level by the realities of intergovernmental financial arrangements and local political will (Shaffer and Tranjan 2019).

As these policies placed their emphasis on social, health, and housing issues and took a broad strategic approach to developing policy frameworks, some municipalities have explicitly addressed the need for a consistent and rational user fee policy based on ability-to-pay criteria. In re-examining municipal poverty reduction strategies and assistance to low-income households in the context of user fee policy, municipalities may need to reconsider the criteria used to determine eligibility for assistance.

The measurement of income insecurity and a rationale for poverty reduction strategies

Several recent studies have shown the precarious economic circumstances created by transfer dependence and polarization in the labour market. Income uncertainty has propelled recent federal initiatives to revisit the definition of poverty, including those used by municipalities for policymaking.

Miles Corak (2016, 2017), for instance, highlights the focus on middle-income stability through income security measures and the consequent perception of an insecure future for middle-income households, not just those at the lower level of income distribution in Canada. He also suggests (Corak 2016, 404) that available poverty statistics do not support any easy answers as to whether poverty has fallen and makes suggestions for the better measurement of the low income cut-off point.

Emery and Guo (2020, 404) reinforce the evidence by showing a deterioration in the economic position of low-income households in the aftermath of the 2008–

2009 recession. Expenditures on food have been crowded out by other budget expenditures, particularly for women and households with children. Kronick and Ambler (2020) have documented the pressure of increased debt service faced by middle-income households before and during the pandemic.

Turning to the issue of poverty, there has been considerable debate as to whether the concept is useful.¹² However, the federal government recently provided the following definition in *Opportunity for All*.

Poverty is:

The condition of a person who is deprived of the resources, means, choices and power necessary to acquire and maintain a basic level of living standards and to facilitate integration and participation in society (Employment and Social Development Canada 2018, 16).

As *Opportunity for All* noted, in 2015, 1 in every 8 Canadians, or 12.1 percent of the population, lived in poverty. In 2017, the introduction of a poverty-reduction strategy stated that the targets, using 2015 levels as the baseline would be a 20 percent reduction by 2020 and a 50 percent reduction by 2030 (Employment and Social Development Canada 2018).

The federal government believed that meeting these targets would mark a significant reduction in poverty, with 1 in 10 or 9.7 percent of Canadians living in poverty by 2020, and 1 in 17 or 6.1 percent of Canadians living in poverty by 2030. This change would lift 2.1 million Canadians out of poverty, based on Canada's population in 2015. Meeting these targets could result in historic lows in Canadian poverty rates.

Until recently, policy makers used both the Low Income Measure (LIM) and Low Income Cut-Offs (LICO) as the measure of low income. The shortcomings of these measures are critically evaluated in Corak (2016, 386–88). In part, as a consequence of the dissatisfaction with both of these measures, and in conjunction with the poverty reduction strategy, the federal government recently established the Official Poverty Line (see Box C for a comparison of the measures of poverty in Canada).

Statistics Canada has committed to regularly updating the cost and the items within the market basket of goods and services. There is a further commitment to improving measurement and data collection to inform progress in poverty reduction (Employment and Social Development Canada 2018, 65–66). Despite criticisms of the existing measures, Statistics Canada notes that it will continue to use all three measures (Employment and Social Development Canada 2018, 54–55, 66).

12. In particular, see Corak (2016, 2017) for a discussion and Emery and Guo (2020) for a discussion of measurement issues with respect to the cost of living and the Consumer Price Index.

Box C: Measures of low income in Canada

Canada's Official Poverty Line (formerly known as the Market Basket Measure): Based on what used to be known as the Market Basket Measure, a household is considered to be low income if it does not have enough money to buy a specific and modest basket of goods and services that allows them to meet their basic needs and achieve a modest standard of living in their community. As this measure is based on having or not having enough money to purchase a fixed basket of goods and services (including food, shelter, transportation, and clothing), it is an absolute measure of poverty. The cost of the basket of goods and services is adjusted to reflect the cost of living in 50 different communities across Canada. This covers all the provinces, 19 specific communities, and 31 provincial regions according to population size.

Low Income Measure (LIM): A household is considered to be low income if its income is below 50 percent of median household income in Canada, accounting for household size. As this measure moves according to the changing incomes of the total population, it is a relative measure of poverty.

Low Income Cut-Offs (LICO): A household is considered to be low income if it spends 20 percent more on food, shelter, and clothing than the average family. This measurement is based on 1992 spending patterns of Canadian families. This measure is a relative measure of poverty.

A likely difficulty for municipal policy during the pandemic is the need to re-evaluate the criteria used to define a low-income user of municipal services, whether at the household or individual level. It seems that the fairest measure would be the LIM. There may also be a need to re-evaluate low income measured for policy purposes given the serious impact of the pandemic on households with precarious income sources.

5.4 Municipal policies and strategies linking user fee policy to competing criteria

As part of financial planning exercises, many municipalities have initiated policy reviews of their user fee regimes and published guidelines and reports that review the issues in a very practical manner. There is a consistency in the emphasis on a benefits rationale as well as identifying targeted subsidies to deal with income-based accessibility and consumption-choice issues. The reviews are motivated by the desire to have a consistent approach to policy across agencies and departments throughout the jurisdiction. Several examples are summarized here. These include municipalities outside Ontario, as several creative initiatives are noteworthy and timely.

Calgary

In 2020, the City of Calgary released the report and recommendations of its Financial Task Force. The noteworthy underlying principle identified was that “user fees accurately represent the value of the goods and services to citizens” (City of Calgary 2020, 7).

The Financial Task Force emphasized the differences in types of fees to identify those for which the use of discounts and sub-classes of users is appropriate. In particular, discounting based on the ability to pay should not apply to “regulatory and proprietary charges.”

The Task Force made recommendations designed to improve the fiscal system’s resiliency during adverse economic conditions. Leaving aside the recommendations pertaining to proprietary and regulatory fees, those pertaining to user fee policy were:

- Apply total cost for municipal services complemented with Calgary resident discounts for certain services (e.g., park and ride) to achieve differential user fees.
- Develop and implement the sale of memberships and long-term subscriptions for access to a wide range of services, e.g., golf courses.
- Charge for the use of proprietary assets, e.g., data.
- Deliver non-essential services only if the costs are fully recoverable through user fees (City of Calgary 2020, 18).

The recommendations of this review are still under consideration.

Policy elaborated in 2007 and 2008 and updated a few years later had principles for determining goods and services for which user fees are appropriate as well as principles to guide the design of fees currently in place in Calgary. The main principle consisted of several elements: the benefit from the consumption of goods and services accrues to the user and a fee can be charged; the fee is appropriate only where exclusion from the consumption of the service for non-payment is legally and administratively feasible as well as socially desirable; and full cost recovery is the basis for the calculation of the fee. Policy sought to combine the benefits principle and full cost recovery.

Council adopted a policy of “tax-supported subsidies for individuals” for those whose resources are below a certain level and who have no choice whether to consume and pay for particular city goods and services. A subsidy to the individual was permissible in order that the “choice to consume” (for example, the transit subsidy financed from general revenues) could be made (City of Calgary 2007, 13–18; 2008, 3–4). For example, the City subsidizes transit and recreational fees based on individual criteria.

The City further stated that “no user fee should be applied without a full consideration and analysis of subsidy options” (City of Calgary 2008, 5). An emphasis was placed on the development of a strategic approach. The introduction of “user fees by City departments and agencies has to be accompanied by a documented strategy for subsidies to qualified individuals.” The strategy should identify whether the subsidy applies to individuals or specific services or is the result of a City-wide program. For any individual subsidy, the criteria and application process as well as any sliding benefit should be consistent with the City’s Fair Calgary Social Policy (City of Calgary 2008, 8).

Edmonton

A broadly similar review was also undertaken by the City of Edmonton, resulting in a white paper published in 2016. This review was motivated by the need to have a consistent approach to both fees and subsidies across the spectrum of services for which fees are charged.

The white paper explicitly addressed the issue of common versus targeted subsidies. Common subsidies are defined as the use of general revenues where user fees are insufficient to fund a service that is widely available. Targeted subsidies at the time of the report were typically based on income levels, age, and occupational or student status. The argument was made that targeted subsidies should be based on a standardized measurement of means rather than demographic criteria or occupational criteria (City of Edmonton, 2016b, 11).

Edmonton’s consideration of affordability in relation to user fees specifically links the use of targeted subsidies to the removal of barriers to access public services: “Low income targeted subsidies are justified on the basis that by removing accessibility barriers, more people are able to use the public service, which then enhances both private benefits and public benefits, and which may also have the public benefit of more optimal service delivery. For the sake of consistency, standardized means testing of low-income eligibility should be consistently applied across the entire organization” (City of Edmonton, 2016b, 11).

The Edmonton white paper explicitly linked the benefit principle to a rationale for subsidies, noting that the principle suggests that “when City service produces both public and private benefits, it is appropriate to match user fee payments with the private benefits derived and to use tax-supported subsidies to match the public benefits derived.” Further, “targeted subsidies are appropriate when the subsidy targeting a specific group creates a public benefit deemed to be greater in value than the additional public costs of the subsidy” (City of Edmonton 2016, 16).

Consequently, there has been a concerted effort to implement policy that reflects a universal application of low-income criteria and common methods of identification and eligibility over different services.

Toronto

The last comprehensive review of user fee policy in Toronto was completed in 2011. The broad policy statement on the appropriate use of fees is clearly benefits-based and aims at full cost recovery. User fees are to be collected “to recover the full cost of services where it is determined that a service, product or the use of City facilities or resources provides direct benefits to identifiable individuals, groups of individuals or businesses, beyond those that accrue to the general public” (City of Toronto 2011, 15). It is also noted that the amount of a fee must not exceed the full cost of providing the service.

However, in the staff review, the basis for a waiver policy was also set out. Specifically, it was suggested that the consideration of waiving user fees should occur whenever “groups of individuals without sufficient income to pay the full amount of the user fee would otherwise be denied the privilege of consuming the service.” Relief from full cost recovery should also be considered where the waiver would “promote or advance economic or social benefits consistent with specific City policy goals and objectives, including supporting non-profit organizations in the development of projects or activities with clear societal benefits and intergovernmental events benefitting society as a whole and where a legislative or City policy required the protection of a vulnerable group” (City of Toronto 2011, 21–22).

Montréal

In Montréal, complications arise as a consequence of its multi-jurisdictional structure (Meloche, Vaillancourt, and Williams 2020). In Québec the use of user fees for water services is correlated with higher average levels of residential assessment per household implying that “tarification” is more common in municipalities that have greater-than-average fiscal capacity. Otherwise, consumption is subsidized from general revenues.

6. What services are appropriate for user fees?

In general, then, it makes economic sense to apply user fees to services displaying “private-good” characteristics: water and sewer systems, stormwater management, solid waste collection and disposal, public transit, major highways and arterial roads, parking, public recreation, and public libraries.¹³ However, as noted in the previous section, municipalities have considered or adopted strategies to enhance equitable access to municipal services to low-income households and to mitigate possible pressure on their economic circumstances. Possible mitigation strategies are specific to each function, given the varying ways in which these services are delivered, accessed, and paid for.

13. Fees are also charged to users of municipal day nurseries and municipal homes for the aged. These fees are regulated on the basis of ability-to-pay criteria and space is limited by funding constraints faced by both provincial and municipal governments.

This section describes user-fee design for nine services and, where applicable, examines equity considerations.

6.1 Water

There are two general rate structures in use for water: flat rates that do not vary with consumption and volume-based charges that vary with consumption. Volume-based structures require the use of meters and take a variety of forms, including constant unit charges, decreasing block rates, increasing block rates, or some combination of these approaches.

In the past two or three decades, municipalities have moved away from flat-rate charges and adopted some form of volume-based rates. Each structure uses different incentives to improve efficiency and encourage conservation. Each, however, is accountable and transparent only if revenues are deposited in accounts that are dedicated to funding capital and operating costs. Furthermore, volume-based structures are fair only if those who use the service are those who pay for the service.¹⁴

A *constant unit rate* (CUR) is an equal charge per unit of consumption (cubic metre, for example) and seldom varies across classes of customers. It may include a fixed-charge component unrelated to water consumption. It is an efficient pricing policy only if the marginal cost of water is constant (in which case, the average cost will be constant). We know, however, that the marginal cost is not constant – it rises or falls with quantity consumed. Since price must equal marginal cost for efficient use, this pricing structure is inefficient and ineffective in encouraging water conservation.

A *declining block rate* (DBR) structure generally includes a basic or fixed service charge per period combined with a volumetric charge that decreases in blocks (discrete steps) as the volume consumed increases (the more you use, the less you pay per unit).¹⁵ Typically, one or two initial blocks cover residential and light commercial water use, with subsequent blocks levied on heavy commercial and industrial uses. The fixed component of the charge often varies with the size of the service connection. Minimum charges corresponding to a minimum level of consumption in each billing period are common in systems of this kind. DBRs are efficient if the marginal cost of water provision is falling, for example, if economies

14. For a more detailed discussion of water and sewer pricing, see Fenn and Kitchen (2016) and Kitchen (2017).

15. Traditionally, the consumption limit for the first block represents the largest amount of water that a consumer in a single-family dwelling might use. The second block encompasses the consumption of most middle-sized commercial customers, and the third (and any subsequent) block encompasses larger industrial users. A typical declining block rate system has at least three blocks, but declining block volumetric charge structures with only two blocks are also used. DBRs have been used to provide an incentive for water-intensive industry to locate in a municipality.

of scale are present for large-volume customers. Critics argue, however, that DBRs do not promote water conservation, since the price of water declines as more water is used. On the other hand, a declining block rate system may be appropriate for water conservation, if the small-volume customers are responsible for inefficient water use. Charging them a higher price gives them a greater incentive to conserve.

In an *increasing block rate* (IBR), the first block for a given class of customer covers the normal water use of an average customer in that class. The rate increases with each subsequent block – the more you use, the more you pay per unit. IBRs may be appropriate for residential customers who as a class are the main cause of peak demand, and for industrial customers if limitations on the availability of water justify shifting the cost burden to the largest users. These users have the largest impact on water system planning and sizing, since systems are built to meet the largest demands. Price differences from block to block can be set to give customers a clear and strong incentive to conserve water.

A *humpback block rate* system of water charges combines increasing and decreasing block rates to produce the rate structure, which is shaped like an inverted “U.” Under this approach, the municipality applies its highest rate to the consumption block that captures the peak seasonal demand of residential customers to encourage water conservation while offering large industrial users block rates that decline as use increases and thereby benefit from the economies of scale associated with providing water to customers of this kind. This structure is sometimes used in municipalities promoting economic development. Despite some implicit cross-subsidization among classes of users, the ready availability of clean water at a reasonable price can be a distinct advantage in attracting businesses in sectors such as food processing or beverage manufacturing.

Municipalities often use *variations or combinations of the pricing structures* described above. Two-part pricing schemes, for example, are fairly common, consisting of a fixed charge designed to cover meter reading, billing, customer accounting, and the capital and maintenance costs of meters plus a constant commodity charge applied to all consumption.

Another variant is the lifeline rate for low-income households, which is an artificially reduced price for a minimum amount of water deemed necessary for essential water consumption. Lifeline pricing is common in cities with a fixed charge, as all customers must pay the fixed charge regardless of consumption.

Other variants include vintage rates, which distinguish between new and existing customers, or seasonal or peak-demand rates to reflect increased cost of delivery or a desire to reduce consumption during certain seasons or times of the day. Some municipalities have combined components of residential and commercial pricing systems into one schedule.

Water pricing was once viewed as an engineering issue rather than an economic issue. Local politicians and administrators, reluctant to use water prices

to promote efficiency and conservation, relied on technological improvements and demand management tools such as restrictions on use – for example, forbidding lawn watering during periods of low rainfall. These measures may be useful, but they are not as effective as properly set prices and pricing structures in generating efficient outcomes and proper levels of infrastructure investment.

The legislative move to full-cost pricing is more recent; that is, all water and sewer costs must be fully funded from charges on water and sewer users. This avoids cross-subsidization whereby municipalities cover any shortfall in water revenues from other revenues, such as the property tax. While there is a growing consensus on the merit of imposing full-cost pricing for water and wastewater services, there is no consensus on what it means and what it should include. Many practitioners argue that full-cost pricing is achieved if revenues from water and wastewater systems cover all production and maintenance costs, regardless of pricing structure.

Others recognize that replacement costs may be greater than anticipated due to rising technical specifications, greater system resilience needed to deal with climate change, and enhanced environmental provisions, such as those separating stormwater runoff from sanitary sewers. These calculations of the full cost of providing services add together the full valuation of water-related assets and liabilities, the use of depreciation and provision for replacement, and lifecycle capital planning.

Still others suggest that the definition of annual operating and capital costs is too narrow, because it ignores the opportunity cost of water withdrawn from the natural environment, including the commercial exploitation of aquifers and its potential impact on regional wells; the opportunity cost of land holdings; the opportunity cost of invested capital; and the harm caused by pollution (Renzetti 2009). These costs are significant (Dupont and Renzetti 2013).¹⁶

Much of the opposition to full-cost pricing is based, in part, on a desire to retain existing rate structures to preserve and even increase revenues. Many system operators and municipal officials argue that moving to efficiency-based prices will discourage consumption, thereby reducing total revenues, making it difficult to cover costs. But it may be that the existing plant capacity is too big; some municipalities, in the past, overbuilt largely because of grant assistance from senior levels of government and inefficiently set prices that led to overconsumption and hence, overinvestment. Moreover, because the demand for water is relatively inelastic, an increase in price will likely be accompanied by a much smaller

16. From an economics perspective, opportunity costs are a complete and accurate way of measuring all costs. They capture the return that would be generated if the resources were put into their next best alternative. One study in the Region of Niagara in the late 1990s concluded that the wholesale price for water would have to increase by at least 15 percent and possibly by as much as 45 percent if all of these costs were to be recovered (Renzetti and Kushner 2001). On this basis, one may infer that most Ontario municipalities are far from full-cost pricing, if all financial and social costs are to be included (Environment Canada 2011, 14).

percentage reduction in quantity, leading to an overall increase in total revenue, not a decrease.

Box D describes efforts to ensure fairness in setting user fees for water.

Box D: Equity considerations for water and wastewater

Some municipalities have implemented mitigation strategies while maintaining the overall consistency of a benefits-based rationale for water pricing. A fundamental design issue for assistance is posed by the characteristics of billing and supply. Assistance to tenants of multi-residential buildings where consumption is not measured by individual households would require a different approach from low-income households occupying units with water metering.

For example, while some jurisdictions maintain a volumetric variable portion of the fee structure, they provide a basic allotment of water within the framework of the fixed fee. As noted above, a lifeline rate for low-income households is common in cities with a fixed charge. In Battleford, Saskatchewan, 30 cubic metres (or about 330 litres a household a day) are provided within the quarterly fixed fee. Another approach is to provide cash transfers to households through partnerships with social agencies: for example, Halifax Water through the Salvation Army provides a subsidy to qualifying households, and the City of London includes a small charge on the residential water bill to provide a subsidy for qualified households (Canada's Ecofiscal Commission 2017).

In some municipalities, rebates on the combined water/wastewater bill are provided to eligible low-income households. For example, the City of St. Catharines provides a subsidy to eligible seniors who receive the guaranteed income supplement (City of St. Catharines 2020).

Similarly, the City of Toronto provides a rebate to eligible low-income households that consume less than 400 cubic metres per year and have a water meter (City of Toronto 2019b, 2021).

6.2 Sewage collection and treatment

Sewage collection and treatment expenses are almost always recovered through surcharges on water bills, not on sewage discharge, largely for reasons of administrative simplicity. In most municipalities, the surcharge is a percentage of the water bill, but in some municipalities, it is a fixed charge or a flat rate. This is generally true for small commercial and industrial users, as well. In a few cities, however, large industrial and commercial users are metered with rates or prices varying by volume of discharge, but seldom by quality of discharge.

In addition, some larger cities have sewer bylaws that limit the concentration of contaminants entering the sewer system. If actual levels of contamination exceed the permitted limit, overstrength fees or charges based on the difference between the actual level of concentration and the permitted limit come into effect, with the fee varying by the differential, to cover the extra treatment costs (Elgie et al. 2016) or to provide an incentive for users to treat their own sewage or to minimize its impact on municipal treatment systems.

In practice, pricing schemes for sewage collection and treatment are far from optimal. Prorated charges based on the water bill are inefficient, because they fail to reflect accurately the marginal cost of sewage disposal. The assumption that residential water consumption is directly and positively correlated with sewage generation is often inaccurate. For example, a large component of water consumption may be attributed to lawn sprinkling, car washing, swimming pools, and other uses unrelated to sewage generation. Runoff from these uses generally goes into the stormwater system, not the sanitary system, unless the two sewers are combined, which is common in older and denser areas of many cities.

Like the underpricing of water, the underpricing of sewage collection and treatment is allocatively inefficient, because there is no incentive to restrict use. Underpricing has also led to investment in sewage treatment facilities that are larger than they would be under a more efficient pricing policy (Renzetti 1999). One study on pricing wastewater services by Norwegian local governments (Borge and Rattsø 2003) showed that sound user-charge financing of sewer services significantly reduced the cost of providing the services. Finally, the underpricing of both water supply and sewage treatment has discouraged the development of alternative water and sewage treatment technologies.

For commercial and industrial properties, efficiency objectives and conservation goals could be improved through the efficient use of meters with sewer rates based on both the volume and quality of the discharge (Elgie et al. 2016). Pricing based on quality is currently used in some cities, but more could be done. In fact, it is quite possible that metering sewage discharge would help identify unauthorized sewage discharges, such as auto body shops, paint shops, or metal fabricators dumping contaminated waste into both sanitary and storm systems (Regional Municipality of Durham 2013).

6.3 Stormwater

Surface water is a direct source of potable water for some water systems, and its impact on the recharging of aquifers affects the groundwater sources of many municipal and private drinking water systems. Many older waterworks systems are still working to separate stormwater and sanitary sewage carried in the same pipes, either routinely or during peak flows. These combined flows must, of course, be treated as sanitary sewage when they reach the end of the pipe, creating significantly higher demands on sewage treatment plants and overflow cisterns.

While many municipal water departments and utility corporations do not have a separate charge for stormwater, as of 2018, nine municipalities in Ontario had implemented stormwater fees (Aurora, Kitchener, London, Markham, Mississauga, Ottawa, Richmond Hill, St. Thomas, and Waterloo). For those that do not have a separate charge, stormwater is lumped in with the wastewater charge and calculated as a component of water consumption. Such aggregation, however, means that consumers do not know what they are paying for stormwater management.

The increasing impact of climate change (severe storms and flooding) has led to the implementation of more robust and resilient stormwater systems. Increased funding has been provided for infrastructure (such as sewers, spillways, and retention ponds) and where they persist, for the separation of sanitary sewers from storm sewers. These developments have led some municipalities to consider converting stormwater facilities to a utility model, supported by “user” charges that are based on the estimated amount of water that leaves individual properties.

User fees make sense because benefiting properties are those that add runoff or are served by the provision of stormwater services. In both cases, they can be identified. As such, fees paid by stormwater generators can be based on the estimated amount of water that leaves their property or in relation to the services that the property receives (Johns 2018). Those who live or have businesses on properties whose impervious area is large will pay higher user charges than owners of properties that do not burden the drainage system to the same degree. If user charges are based on the property’s load on the stormwater infrastructure, an incentive is provided for property owners to reduce that burden by reducing the amount of runoff discharged into the municipal system (Dávila Aquije 2016).

There are two cost components to fund stormwater: fixed costs related to the infrastructure itself and variable costs from the pressure placed on the infrastructure from water runoff. The fixed portion may vary; for example, infrastructure costs for properties in rural areas may differ from those for properties in urban areas. Variable costs could be based on slope, vegetation, buildings, paved surfaces, and so on (Tedds 2019a). Mitigation that relies on property tax revenue may be more regressive than the use of user fees in this context.

6.4 Solid waste

The funding choice is between local tax revenues and user fees, but user fees in the form of a specific charge per bag or container are preferred on efficiency grounds for both collection and disposal of solid waste. Users can be identified and per-unit costs calculated. A charge that includes the full marginal social costs of collection and disposal is critical if one is to provide an incentive for discouraging waste and resource overuse.

In addition to covering all operating and capital costs for collection, the fee should cover a charge for the landfill site, set with efficiency objectives in mind. If a municipality pays for disposal by a third party, the cost is clear – it is the cost per tonne of the contract. If the municipality operates the landfill site, the cost

of placing a cubic metre of waste in a landfill is not just the current operating cost of the landfill, it must include all amortized capital costs, including closure and post-closure costs, plus the opportunity cost of that space, plus the value of environmental harm caused by the waste and its disposal.

The most difficult concept here is that of the opportunity cost of space (Deweese 2002). Suppose that the operating cost of a landfill site is \$20 per cubic metre of waste disposed and the cost of a new landfill site is \$100 per cubic metre. The opportunity cost of placing a cubic metre of waste in the existing landfill is not \$20, but \$20 plus an amount determined by the fact that each cubic metre so disposed hastens the time when the city will have to pay \$100 per cubic metre. The socially efficient tipping fee at the existing landfill is not \$20, but \$100 discounted for the number of years until the new landfill will be required.

Unfortunately, government-operated landfills tend not to charge tipping fees that reflect the future scarcity of landfill sites. Worse, many municipalities charge only per-tonne fees to private haulers. The tipping fees for garbage brought in by municipal operators is almost always paid for by local taxes and not by tonnage charges. The efficient size of the disposal site can be determined only if all waste is paid for on the basis of a uniform per-tonne tipping fee.

Tipping fees rarely include the expected value of environmental harm, except where financial liability for that harm is anticipated and built into the cost of operation. Environmental harm includes the annoyance to neighbours of the landfill from smells, birds, blowing refuse, and truck traffic. It may also include contamination of the groundwater if leachate escapes from the landfill during its operation or even decades after it is closed. These costs should be included in the tipping fee to ensure an efficient size of operation.

Studies have been done on the effects of user-pay systems in municipalities in Canada and the United States.¹⁷ In most studies, free (local tax-supported) garbage pickup was compared with a fee per bag or a fee per container. All studies measured the impact on garbage collected and many measured the impact on diversion (recyclables and yard waste). The results were consistent, although the magnitude of the impact varied depending on location and the method used in the study. In every case, reductions were noticed for solid waste, recycling increased, and the use of other options such as composting grew.

Critics of user fees for garbage argue that their implementation will lead to illegal diversion (in the form of burning or dumping on road sides or in school or commercial dumpsters) and that the impact of these fees will be regressive. They have also argued that administrative costs will rise because the system will be more complex and will require additional staff to police violators. Illegal dumping, however, has not turned out to be a problem and the administrative concerns have by and large disappeared. Furthermore, these charges are fair

17. See Kelleher, Robins, and Dixie (2005) for a review of these studies.

if they are based on trash generated. See Box E for a consideration of ways to mitigate waste disposal fees.

Box E: Equity considerations for waste disposal fees

Mitigation for waste disposal fees depends on the mix of revenues used to fund this service. Some have argued that waste generation is positively related to income, making the impact of charges progressive and that consequent reductions in property tax funding would further progressivity. However, transfers to low-income households to offset the impact of fees for these services may be more effective (Duff 2004; Tedds 2020).

For example, the City of Toronto provides a rebate to eligible low-income households (City of Toronto 2021). The criteria for receiving a rebate include: household income of \$50,000 or less; receipt of an allowance under the *Old Age Security Act*; or receipt of either a pension under the *Income Tax Act* (Canada) or disability benefits.

In 2019, the City Treasurer was given discretionary authority to consider the existence of broader circumstances to define a low-income person with disabilities for the purposes of City programs, other than being in receipt of federal and provincial income assistance (City of Toronto 2019b, 14).

6.5 Public transit

Public transit systems are funded mainly by fare box revenue, property taxes, and grants. Many systems generate additional funds from charter or rental services, advertising on and in vehicles, and miscellaneous income.

Transit fares have several virtues.¹⁸ Fares based on marginal-cost pricing are accountable and transparent because they are tied to usage. Transit fare revenues have been fairly stable and predictable, in the short run at least, until the Covid-19 pandemic reduced ridership.

Concerns about operating deficits often lead to debates over the level of fares and fare structures. Many social, economic, and political factors may be considered: availability of and access to substitute forms of transportation, the ability of residents to pay for transit services, the attitudes of local politicians towards acceptable levels of fares, the portion of operating costs to be recovered from fare box revenue, and so on.¹⁹

18. For a more detailed discussion, see Kitchen and Lindsey (2013, section 3.2).

19. Dachis and Godin (2021) review the rationale for fare increases after the pandemic, based on wider economic calculus of benefits, including the contribution of transit to agglomeration benefits.

The practice in many communities is to set different fares for adults, children, students, and seniors and to offer discounts for monthly passes. Where variation exists, the highest fare is for adults, with lower fares for seniors, students, and children. Furthermore, in some municipalities, lower fares are available for special groups, such as people with disabilities and the unemployed.

Transit fare revenues in the GTHA tend to cover 70 to 80 percent of operating costs and a smaller fraction of total costs when infrastructure costs are included. The resulting shortfall is subsidized mainly by the property tax. Although this is not the best way to subsidize transit, three general arguments may be made for subsidies.

First, many lower-income households use transit heavily and may not have ready or affordable access to other motorized transportation modes. Second, public transportation has scale economies in route density and service frequency.²⁰ Marginal-cost pricing calls for setting fares below average cost. Third, setting affordable fares encourages people to use transit rather than driving, which alleviates traffic congestion and other externalities. While buses do create externalities and passengers may crowd and delay each other, the costs are typically much lower per transit user than the equivalent cost per automobile driver.

Quantifying these reasons for subsidizing transit is not easy. It is difficult to say when transit fares are too high, too low, or “about right,” given the lack of road pricing. One study on public transit in Washington, D.C., Los Angeles, and London, however, suggested that optimal transit fees would be less than 50 percent of average costs (Parry and Small 2009).

The efficiency of transit fares depends not only on their average level, but also their structure. Fares in the GTHA are inefficient in several ways. First, although the social costs of transit trips increase with distance travelled, fares do not vary systematically with distance travelled (except for GO Transit). Short-distance travellers overpay, and long-distance travellers underpay. This approach is inconsistent with the benefits-received principle and creates an incentive for urban sprawl that works against “smart growth” objectives. The pandemic may force more innovative pricing solutions to create incentives for off-peak use and more competitive pricing for short trips (Deloitte 2020).

Second, fares do not depend on when trips are taken, even though transit ridership and crowding vary predictably by time of day and day of week. Failure to charge higher prices in peak hours creates an incentive to overinvest in public transit infrastructure and provide greater capacity than can be justified on efficiency grounds.

Lack of peak-load charges is often complicated by the availability of quantity discounts. These are used primarily by rush-hour travellers. This effectively lowers

20. Scale economies exist because if ridership increases, it is economically worthwhile to add routes and increase service frequency, which reduces average access and waiting times as well as uncertainty about waiting time and arrival time.

the price per trip at peak times, a time when fares should be higher rather than lower. As well, lower fares for seniors, children, and students are difficult to justify, especially at peak times. As noted earlier, subsidies granted on the basis of age or status rather than income are difficult to support on any grounds.²¹

Third, transit passes are often used by transit authorities. These economize on transaction costs, but are generally inefficient with respect to both time of day and distance travelled, because the marginal cost of using them is zero during their valid period. Examples occur in Toronto and Ottawa.²²

As we will see in section 6.6, automobile usage is underpriced. Therefore, second-best pricing calls for transit fares to be set below marginal cost. Operating-cost recovery rates of 70 to 80 percent in the GTHA are quite high by North American standards, and fares could be lowered rather than raised. Because transit usage is not very sensitive to fares (Oum, Waters, and Fu 2008), lowering fares will likely reduce fare-box revenues. Alternatively, if fares are raised to generate more revenue, it would probably harm efficiency.

To minimize efficiency losses from reducing ridership, the fare structure should follow second-best or Ramsey pricing rules (Gómez-Ibáñez and Small 1998). Instead of distorting public transit fares, however, a more efficient, fair, and direct financing instrument would be one that charged automobiles (and trucks) for their use of roads and highways. See Box F for more on questions of equity in transit.

Box F: The transit equity debate

Transit equity has generally been framed in three different but related ways: (1) horizontal equity, defined based on the fairness of accessibility for those of comparable wealth and ability; (2) vertical equity with regard to cost/benefit distributions between social and economic groups; and (3) vertical equity with regard to mobility need and ability which is assessed on the basis of “how well an individual’s transportation needs are met compared with others in the community” (Farber et al. 2014, 202).

Another definition states that “equity can manifest itself as a connected network that provides a range of travel options to provide the greatest number of choices possible for the greatest number of people, and at a

21. A recent study of youth passes in Madrid suggests that the introduction of a discounted pass resulted in poor households spending more as passes were bought with no improvement on their budget constraint while middle-income households did not benefit significantly either (Arranz, Burguillo, and Rubio 2019, 91).

22. See OC Transpo (2021) for an example.

price that all people can afford” (Metrolinx 2018, 3). These concepts have been used to inform a series of studies funded by Metrolinx that have mapped and quantified accessibility (connectivity) and participation in the economy of the GTHA using stratified household income data and survey data collected in 2016.

The data show that residents of low-income households in Toronto and Hamilton rely far more heavily on buses than higher-income households and that in the other municipalities of the region, significant numbers of low-income residents are automobile-dependent for most of their trips, suggesting that transit is not a viable option (Metrolinx 2018, 6). An earlier study (Farber et al. 2014) found that transit use is lower among the lowest wage workers, suggesting that they may be travelling between areas that are not well served, working multiple jobs, or travelling outside peak hours. Subsequently, a more nuanced study documented that the monetary costs of travel as well as other factors deterred low-income residents from travelling at levels of more affluent households.

Farber and Allen (2019, 55) admit the difficulty posed by policy to reduce transit fares in the current funding environment, but conclude that “policy could be designed in a progressive fashion...by subsidizing low-income transit riders, by taxing wealthy drivers through increased fuel taxes, increased taxes on luxury vehicles, or the deployment of congestion charges.” These initiatives have also been recommended in other studies (see Kitchen and Lindsey 2013). In small urban areas, the implementation of transit on demand solutions may be the most fair and cost-effective way to go.

The City of Toronto has adopted a plan to integrate transit fees into its poverty reduction strategy. The policy decisions include the full implementation of the Fair Pass Transit Discount Program. The elements of this plan include developing a low-barrier, integrated delivery model to expand the reach of the Fair Pass Transit Discount Program to include applying equity standards to TTC fare structure and policies by:

- Working with PRESTO and Metrolinx to increase the accessibility and availability of PRESTO card fare loading options;
- Maintaining and creating transit routes that pass equity-based service standards;
- Implementing the service planning equity consultation tool for major transit service changes.

(City of Toronto 2019a; Globe and Mail 2020)

6.6 Roads

City expressways, highways, and streets (lumped together as “roads” in this discussion) are funded mainly from general revenues (Highways 407 and 412 in Ontario are exceptions and most of 407 is privately owned).²³ This arrangement puts pressure on local budgets and increases congestion, which has social and environmental costs, and ultimately reduces productivity. When combined with the negative impact on quality of life, the results are slower economic growth and a barrier to international competitiveness (OECD 2009).

The traditional response to increased congestion has been to expand road capacity, but this approach has not worked. In a study using U.S. time-series data, it was shown that miles travelled increased roughly in proportion to roadway miles; hence, the conclusion that road capacity expansion is not effective in addressing traffic congestion (Duranton and Turner 2011).

These findings are confirmed for a sample of 545 European cities as well. That study also found that where tolls and congestion charges are in place, travel does not increase as much (Garcia-López, Pasidis, and Viladecans-Marsal 2020, 14). Other studies have found that “other supply-side policies such as improvements in traffic management can be expensive to implement, and to the extent that they make driving more attractive, they also encourage more driving” (Lindsey 2019).

Cities need to manage the use of roads in large urban and metropolitan areas. Much of the analytical discussion (although often not that by local policymakers) has concentrated on arguments for road pricing that can manage the demand for roads with revenues specifically earmarked for local transit and transportation. Road pricing can take a variety of forms, including tolls on individual lanes or individual roads or cordon or zonal charges within a defined area or zone. Each scheme is different because of its goals, budgets, political constraints, city topography, state of technology at the time of implementation, and other factors.²⁴

Efficiently set road prices offer several advantages (Kitchen and Lindsey 2013; Lindsey 2019). They are widely recognized as an effective demand management tool to cover all operating and capital costs of roads as well as to internalize congestion, pollution, and other external costs of driving. More than parking fees, they can influence all dimensions of travel choice: trip frequency, destination, travel mode, time of day or week, and route.

23. The Province of Alberta recently introduced legislation that would permit the tolling of certain roads and transportation projects such as bridges (Province of Alberta 2020).

24. For a more detailed discussion of road pricing tools and their impact, see Kitchen and Lindsey (2013) and Lindsey (2019). Amborski (2017) discusses the merits of a regional congestion charge as opposed to road tolls within the City of Toronto. In the European context, congestion effects are also impacted by the existence of efficient rail transport as an alternative.

To the extent that traffic demand is managed, cost pressures on city budgets are lowered, because traffic-related costs and infrastructure demands can be reduced. Furthermore, if revenues are dedicated to public transit and roads, they are more likely to gain public acceptance. As for coverage, each is most effective when applied at a metropolitan or regional level where there is a greater likelihood of managing intermunicipal traffic and a greater opportunity to minimize distortions that often arise when charges are restricted to smaller geographic areas.

6.7 Parking fees

Parking in large cities includes a mix of residential and non-residential spaces on private land, the street (curbside), surface lots, and parking garages. Parking policies, in general, need reform. At present, most are not designed to discourage driving; hence, cities should re-examine their current practices with the intent of introducing dynamic and innovative parking charges.

On-street parking in high-demand areas tends to be priced well below its scarcity value. At the same time, privately owned garage parking is overpriced because operators benefit from monopoly power due to their unique locations. Both lead to excessive cruising, which contributes to traffic congestion and pollution, as well as inefficiencies and lost productivity (Grush 2013). In the United States, for example, it has been estimated that cruising for parking accounts for roughly 30 percent of traffic in some cities at certain times of day (Shoup 2006, 2007).

Efficient and dynamic parking levies²⁵ could help reduce the volume of traffic, leading to less congestion, faster trips, lower policing and traffic enforcement costs, and less demand for new and expanded roads and highways. It could also generate much-needed revenue for improving and expanding public transit. Indeed, it has been argued that “underpriced parking does more to promote automobile use than good transit does to discourage it. Working tirelessly to build and promote transit that too few elect to use, struggling to find ways to have people pay for roads in ways they don’t wish to pay for, and then subsidize parking...is self-defeating,” according to a leading expert (Grush 2013, 132).

While not as efficient or effective as road prices in controlling congestion and raising revenue, modern technology now permits cities to set parking rates that automatically vary by time of day, duration, and average parking occupancy rates. The increasing use of apps and the availability of electronic signs and other media can help drivers find parking spaces while informing them of the price.

6.8 Public recreation

Municipal parks and recreational facilities rely on user fees for arenas (skating admissions, hourly ice rentals, and instruction), football and soccer fields,

25. For a discussion of parking policy options and their efficiency impact, see Kitchen and Lindsey (2013, part 5.6).

swimming (swimming admissions, memberships, and instruction), tennis courts (court fees, membership, and instruction), camps and camping (campground fees and day camp charges), and so on.

Here, user fees that are lower than the marginal cost of the use are often defended on two grounds. First, they permit individuals to use recreational facilities that they could not afford at comparable private-sector facilities. This type of subsidization, however, is neither efficient nor fair, because municipalities ought not to be concerned with major income redistribution initiatives. Furthermore, if income distribution were a local responsibility, it should be provided through relief based on income or some other measure of ability to pay and not by reducing prices for everyone.

Second, recreational facilities and programs may generate positive externalities or spillovers. These externalities, it is suggested, may take the form of a more physically fit and healthier society and hence lower medical costs for everyone. In reality, this may be a questionable supposition, for the externalities are unlikely to be significant. Indeed, they would probably be greater under an alternative and equally subsidized scheme of improved health and educational programs.

Since the largest portion of the benefits accrue directly to users, these services should be priced to generate sufficient revenues to cover most costs. The public sector, however, has not adopted many aspects of private pricing for recreational services. Private suppliers, faced with the prospect of recovering all costs through their pricing structures, have recognized the advantages of such things as an annual fixed levy plus an admission charge for each use of the facility. Municipalities seldom, if ever, follow this approach and therefore neither cover costs nor efficiently use their scarce resources.

With the exception of a few local public services such as arena rentals and golf courses, access to municipally provided facilities is generally rationed by queuing rather than prices. Failure to adopt a peak-load pricing policy to even out the demand over a day and a week has led to overinvestment in many recreational facilities. This problem has been aggravated by reduced charges for children and students (lower rates for skating, swimming, etc.) at all times. Lower fees for specific groups might be justified if a further restriction, as is frequently the case for private facilities but not public facilities, limiting them to use of the facility in off-peak hours were imposed. Such a policy approximates the use of a peak-load pricing structure.

Ending these practices would be highly contentious. Municipalities may wish to implement combination identification passes for low-income households that can be used for both transit and recreation. Both Calgary and Edmonton have implemented such policies that, in the past, received assistance from the provincial government. Similarly, the Cities of Hamilton and Oshawa also provide assistance to users of recreation facilities (see Box G).

Box G: Recreation and transit fee policies in Calgary, Edmonton, Hamilton, and Oshawa

Calgary

The City has implemented a combination pass for recreation and transit, which has received support from the Government of Alberta. The Fair Entry fee reduction program and Calgary Transit Low Income Transit Pass Program are based on the Statistics Canada LICO rate, which depends on the number of individuals in a household (City of Calgary n.d.).

Edmonton

Edmonton adopted its current Recreation User Fee Policy in 2008 and revised it in 2014. A City white paper describes the policy's objectives as:

1. Ensuring that fees contribute to the public's effective and efficient use of City resources.
2. Reducing the reliance on property taxes, by recovering a portion of the costs for various services from the user(s) that primarily benefit from them.
3. Providing a consistent and equitable process that encourages accessibility and participation.
4. Identifying the relative pricing provided to various user segments.
5. Establishing meaningful and realistic goals that provide enough flexibility to meet evolving social values and changing fiscal pressures.

The paper notes that “a good recreation user fee policy is able to reasonably distribute the full cost of a service between user fees and subsidies according to the private and public benefits derived from the service.”

The Statistics Canada Low Income Cut-Off (LICO) for Edmonton is used to determine eligibility for free annual membership cards and a 75 percent discount for up to four registered programs. New immigrants and refugees are also eligible for the program.

The white paper goes on to state: “There were over 36,700 low-income membership cards (Leisure Access Program) issued in 2015, and 99 percent of the memberships were used, on average, 17 times that year. The estimated value of offering this program to low-income Edmontonians and new citizens was \$15.4 million in 2015. Minor groups – groups providing sport and recreation to residents 18 and under – may be discounted up to 50 percent of the base rate for their use of space in City facilities. Taking into account arenas, pools, recreation centres, and sports fields, the value of offering this subsidy was \$6.6 million in 2015” (City of Edmonton, 2016b, 15). A combination pass was implemented in 2017 (City of Edmonton 2016a).

Hamilton

The City of Hamilton, on application, provides subsidized recreation services for low-income households and seniors. For example, eligible households may obtain a 90 percent discount off City of Hamilton registered programs (up to \$150 per child); a 50 percent discount off Affiliated Minor Sport league registration fees (up to a maximum of \$100 on baseball, basketball, soccer, lacrosse, and football or \$150 on hockey, skating, and ringette), and a 65 percent discount off year-round Camp Kidaca programs (up to 15 days at the base fee). Seniors may be eligible for discounted skating passes and waterfit passes (City of Hamilton 2020).

Oshawa

The City of Oshawa has stated “all residents, regardless of financial circumstances, should be able to enjoy the programs and services offered through our Recreation and Culture Services Branch. Oshawa residents may be eligible to receive financial assistance based on annual income to help with the cost of participation in the programs and services. To be eligible, applicants must have a net family income no greater than 25 percent above the Low Income Cut-Off (LICO)” (City of Oshawa 2019).

6.9 Public libraries

Local public libraries collect money from rentals and non-resident fees (fixed charge), but seldom from local residents on a usage basis. Consequently, a high percentage of funding for local public libraries comes from general municipal revenues.

Support for this subsidization is warranted because significant and positive externalities arise from the existence of public libraries, both in terms of easy access to library resources and because a better and more educated society creates a better environment in which to live. Furthermore, for many, public libraries provide access to the internet and computing and communications technology. Moving to a user fee policy may be more regressive in terms of impact than the current funding model that relies on property taxation generally.

7. Conclusion

The current crisis in the municipal fiscal framework created by the Covid-19 pandemic may lead to more creative uses of user fee policy. The tenets and fairness of the benefits-received framework justifies the use of user fees to finance services where users can be identified and the amount of service provided is measurable. In the context of widespread reduction in transit ridership and the use of public recreational facilities, as well as costs related to the continuing provision of transit, reduced household income, and the potential collapse of the non-residential tax

base, fairness issues arise in the continuing utility of discounts not related to ability to pay and fee systems that are inappropriately designed. Further subsidization of the use of these services through the general tax base is unlikely to enhance fairness in financing, nor is an increase in transfer dependency on other levels of the government. The latter is also questionable from many perspectives, including accountability and environmentally sound policy.

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