

SUSTAINABLE FUNDING FOR URBAN/REGIONAL TRANSPORTATION IN CANADA

The TAC Urban Transportation Council published ***A New Vision for Urban Transportation*** in 1993 proposing a generic vision for Canadian urban areas supported by 13 decision-making principles, one of which is “Funding/Financing – Create better ways to pay for future urban transportation systems.” Since then TAC has produced several additional briefings on this subject including: ***Financing Urban Transportation*** (1997), that lays out nine criteria for an improved financing model, discusses funding mechanisms including public-private partnerships, describes revenue sources used by the Agence métropolitaine de transport (AMT) created in 1996 by the Province of Quebec to fund and deliver transportation in the Greater Montreal Region, and outlines the findings of a national ***Transportation User Pay Symposium*** of 120 government and industry delegates held in 1995; ***Innovation in Financing Urban Transportation*** (2002), that describes funding sources for transportation in Calgary, Edmonton, Vancouver [TransLink] and Montreal [the AMT] and lessons learned; and ***Road Pricing in an Urban Context*** (2009), that provides an overview of the context, elements, issues, and challenges regarding urban road pricing and gives examples of potential ground breaking initiatives. As further background, the TAC briefing ***Strategies for Sustainable Transportation Planning*** (2007) defines sustainable transportation and presents planning strategies and principles for achieving it.

Building on the earlier publications, this briefing summarizes the need for, and benefits of, sustainable funding to build, operate and maintain/rehabilitate urban and regional transportation systems in Canada. Also included is an overview of current funding shortfalls and some alternative funding sources with potential to help fill the gap. The briefing also provides background information on relevant issues, tools and their applications elsewhere as a basis for discussion and consideration as urban/regional transportation agencies study the use of alternative revenue sources to meet growing needs.

In this context “sustainable funding” means a stable mix of reliable funding sources yielding sufficient and dependable revenue streams, providing incentives to use the transportation system more efficiently, and distributing funding obligations equitably among users and other beneficiaries of the system.

The purpose of this briefing is not to advocate for the use of any specific funding source but rather to point out the need for more sustainable funding for urban/regional transportation systems and to show that alternative funding sources exist – and are widely used elsewhere. Funding sources can be used not only to help close the funding gap but also – equally if not more important – as incentives to encourage more efficient use of road systems and attract use of transportation options that are more cost-effective, environmentally benign, convenient and capable of serving and shaping more sustainable urban areas; in other words – to provide more sustainable urban transportation and development.

1. Background: The Need

Sustainable funding is needed for the following compelling reasons:

- Four of five Canadians live in urban areas with the largest three CMAs¹ making up 34% of Canada’s population and contributing 42% of Canada’s Gross Domestic Product. Over 40% of Canadians live in Canada’s six largest metropolitan areas of Toronto/
- Hamilton, Montreal, Vancouver, Ottawa/Gatineau, Calgary and Edmonton, where over 50% of Canada’s jobs are located, proportions which continue to increase.
- The well-being of a majority of Canadians therefore depends on the economic, environmental and social quality of our urban areas.

¹ The Census Metropolitan Areas of Toronto, Montreal and Vancouver.

- This, in turn, depends on urban and regional transportation systems that provide effective and efficient service for the movement of both people and goods.
- Transportation systems have lifetimes measured in decades, therefore requiring consistent, reliable, long-term funding for effective planning and timely, efficient delivery.
- Typically, urban and regional transportation systems in Canada are funded by a mixture of dedicated and semi-dedicated local sources (e.g. transit fares, property taxes), and funding from senior governments.
- Particularly during the past two or three decades, a number of factors have resulted in chronic under-investment in urban and regional transportation. This has led to an increasing backlog of deferred maintenance, service cut-backs, deteriorating facilities, and growing congestion/crowding as transportation demands continue to outstrip supply in most Canadian cities.
- The emphasis in some cases on capital funding that is unmatched with a comparable increase in funding of operations-related expenditures can lead to sub-optimal infrastructure decisions (e.g. over-building of capital-intensive transit modes when not justified by ridership forecasts, because the capital funding is available and because they offer significantly lower annual operating costs).
- Opportunities to defer infrastructure expansion, through strategies such as peak spreading, are largely exhausted. Commuters – particularly in larger metropolitan areas - have been shifting their trip start and finish times where feasible and peak periods are spreading and intensifying. Average trip times have also approached or exceeded the levels of other major cities in the world, such that our cities' ability to attract or accommodate growth is at risk.
- Unless these negative trends are addressed, the resulting toll of congestion, accidents and unreliability will create increasingly significant economic, environmental, social and health problems. A stable mix of reliable, long-term funding sources that provide consistent revenue streams sufficient to meet ongoing capital and operating requirements, that send pricing signals to transportation users and beneficiaries to use the system more efficiently, and that encourage innovative approaches for transportation improvements will lead to more sustainable transportation and land use in Canadian cities.

2. Pricing Signals

“Economics 101” teaches that charging a fair price for goods and services provides not only the required funding to produce them but also the means of allocating and moderating consumer demand. In general, the free market pricing mechanism works very well in our society and is used to fund and allocate most goods and services. However, a major exception is road space, an increasingly scarce resource which we continue to ration by queuing rather than by pricing. Governments in many parts of the world are now moving toward the implementation of transportation user fees, including road pricing, to introduce market discipline for the use of the transportation systems.

There are many types of alternative funding sources that can be considered to help provide a consistent and sustainable funding program for urban transit/transportation. Some of these (such as municipal property taxes) have a negligible effect on moderating or allocating transportation demand, but are a legitimate funding source because all property owners receive benefits from the area's transportation system. Other sources – such as land value capture levies in areas directly served by rapid transit – may provide incentives to developers and employers to generate more compact, mixed-use land use which, in turn, supports convenient, efficient transit services and active transportation (e.g. walking, cycling). Other sources – such as fuel taxes or carbon taxes – provide incentives for drivers to purchase and use more fuel-efficient, less polluting vehicles and drive them less, thereby encouraging more use of public transit/active transportation and, indirectly, more compact, sustainable land use. Similarly, a parking levy on commercial off-street spaces encourages more use of transit, reduced auto use and parking requirements, and opportunities for more compact land use.

Achieving more sustainable land use – which, in turn, supports more sustainable transportation – is a gradual process as individual locational and development decisions are made over periods of years and decades. This reinforces the need for long-term, reliable funding, enabling transportation plans (e.g. for networks of higher-order transit lines) to be steadily implemented. This allows developers, employers and households to confidently make locational decisions based on these networks, leading to more compact, mixed-use development around major transit stations. If, on the other hand, the transportation plans are subject to major delays and deletions from uncertain and insufficient funding, development and locational decisions will revert to “business as usual”, resulting in more urban sprawl and lost opportunities for more sustainable development.

The most effective user fee for encouraging more sustainable travel behaviour is undoubtedly road pricing. In addition to the general incentives noted above (e.g. for shorter trips, less driving) as provided by a fuel tax or a parking levy, road pricing also provides direct incentives for drivers to avoid congested places in the road network and also to avoid peak travel times. This means the network is used more efficiently to the benefit of all drivers and the economy at large. It also means that, as illustrated in Exhibit 1, drivers on tolled facilities experience quicker, more reliable travel times and the tolled road provides greater capacity since it is operating under free flow conditions rather than bumper-to-bumper congestion.

Effective incentives for both sustainable transportation and sustainable land use therefore depend on having reliable, long-term funding sources for urban and regional transportation and sources that also provide direct pricing signals encouraging more sustainable travel behaviour. Such pricing signals and related incentives to use the system more efficiently provide a powerful tool box for implementing transportation demand management (TDM), a major policy instrument for achieving sustainable transportation.

Road pricing can take a number of forms, including:

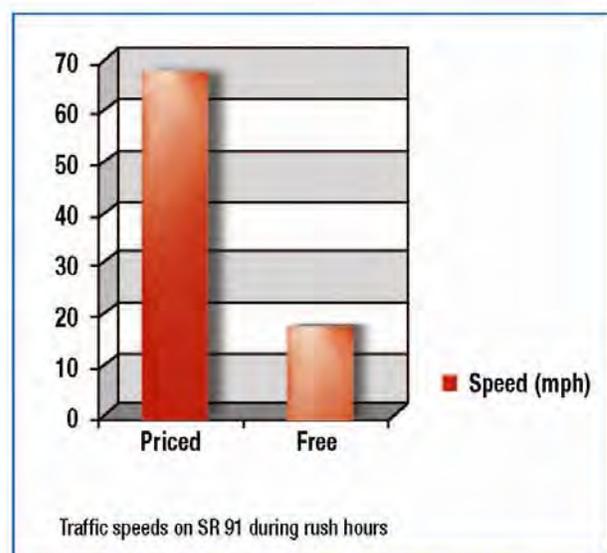
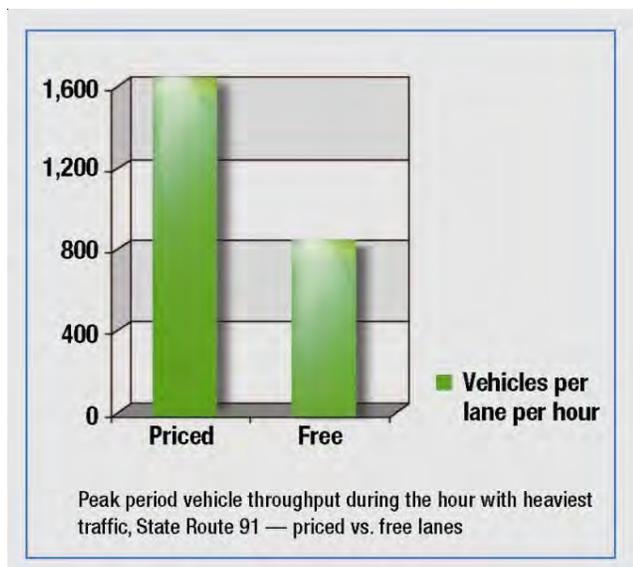
- 1) **“Road Tolls”** on all lanes of designated roads and/or highways, usually selected such that parallel untolled roads provide “free” alternative routes.
- 2) Tolls in some lanes – **“Express Lanes”** – of multi-lane highways, leaving other lanes untolled as a “free” alternative on the same highway.

- 3) **“High-Occupancy/Toll (HOT) lanes”**, like 2) above, but allowing vehicles with 2 or 3 or more occupants to use the HOT lanes free of charge.
- 4) **“Congestion Pricing”** which charges all vehicles travelling within a designated area (usually a city’s central area) with tolls charged as the vehicles cross a cordon to enter the area and/or as their presence is detected in the area.
- 5) **“Area-wide Tolling”** in which all vehicles using roads in the area (e.g. an entire metropolitan area, province, state or country) are charged (at various rates) for use of any road in the area.

Tolls can vary depending on the congestion level, and/or time of day. They can be calculated and collected manually (e.g. at manned toll barriers) or automatically based on camera-identification of licence plate numbers at detection points or on wireless communication with a transponder in each vehicle. The latter can take the form of local detection (e.g. at a gantry above a highway or at a cordon crossing) or remote detection from satellites in stationary orbits.

It is very important that, in evaluating alternative funding sources for urban and regional transportation, a mix of sources be considered that will provide not only more reliable, sufficient funding but also various types of pricing signals leading to more sustainable travel behaviour and land use, with resulting economic, environmental and social/health benefits.

Exhibit 1: Performance Benefits of Express Lanes on California S.R. 91



Source: “Congestion Pricing, A Primer”: Federal Highway Administration, December 2006.

3. *Benefits*

The many benefits to our society of sustainable funding for urban and regional transportation – as a prerequisite for timely delivery of necessary improvements based on sustainable planning principles – include the following:

ECONOMIC BENEFITS

- Urban and regional transportation systems that are consistently upgraded to keep transportation supply in balance with transportation demand. This provides a choice of transportation modes and sufficient capacity to enable fast, reliable and safe movements with a minimum of congestion and crowding, thereby reducing the economic costs of goods movements and passenger travel.
- Quicker, more reliable, less crowded home-work connections for people of all income levels, contributing to higher employment levels and greater productivity.
- Less dependence on the private automobile, thereby reducing both personal transportation costs and “external” societal costs due to negative impacts of undue auto-dependence such as traffic accidents, deaths and injuries, and health consequences including increasing levels of obesity and respiratory diseases.
- More compact, mixed use development, served and shaped by improved transit systems, helping to create people-friendly neighbourhoods, shorter work trips and urban centres which attract tourists and highly skilled labour forces, thereby contributing to economic competitiveness and prosperity of the region.
- Reduced costs in planning, delivering, operating, maintaining and rehabilitating urban and regional transportation facilities owing to a stable, predictable funding program that enables smooth, efficient delivery by public agencies and through public/private partnerships where appropriate.
- Lower-cost debt financing based on reliable revenue streams from sustainable funding sources, thereby tapping into private sector financial resources and encouraging innovative public/private approaches for transportation improvements. This enables up-front transit/transportation investments and providing early benefits to users and residents.
- Multi-modal urban and regional transportation systems, more capable of continuing to deliver efficient, effective service as the end of cheap oil leads to increasing fuel costs and the possibility of intermittent petroleum supplies.

- Increased economic competitiveness and ability to retain/attract economic investment and jobs, which will require well-maintained, multi-modal and inter-connected transportation networks. These are critical to reducing transportation costs and to improving reliability of shipment and delivery times, both of which are essential factors in an enterprise’s decision to locate in a particular region. The reduction of costs also contributes to gains in productivity which is another key factor in economic competitiveness.

ENVIRONMENTAL BENEFITS

- Reduced automotive emissions, leading to less polluted air and reduced contribution to climate change.
- Neighbourhoods with reduced intrusion from automotive traffic, less dust, noise and vibration, and greater safety for children, other pedestrians and residents.
- Reduced consumption of urban land and green spaces owing to reduced need for road network expansion, thereby increasing habitat for urban wildlife.

SOCIAL BENEFITS

- Reduced daily commuting times, allowing more time for family togetherness and activities.
- Improved public health owing to cleaner air and more use of active transportation involving walking and cycling.
- Improved transportation for the growing cohort of elderly people, including accessible transit and special services.

4. *How Big is the Shortfall?*

Issue Paper 38 by the Canadian Urban Transit Association (November 2010) notes that “...the infrastructure needs of Canadian transit systems have grown by a factor of 5 over the last decade, as communities increasingly rely on transit to reduce their dependence on automotive travel. As needs have grown, so has overall investment in transit infrastructure – but substantial gaps remain. Based on a survey of CUTA members, total transit infrastructure needs for the next five years are valued at \$53.5 billion, including \$12.8 billion (24%) to rehabilitate or renew infrastructure and \$40.7 billion (76%) to expand service to meet the growing mobility needs of the Canadian population. Of total infrastructure needs, only \$35.9 billion (72%) can be met by existing funding programs – leaving a funding gap of almost \$18 billion (28%).” Meeting this capital

investment gap of \$3-4 billion per year over the next five years will require additional funding programs.

Similar funding shortfalls also exist for Canada’s urban and regional road systems which, it is important to note, carry buses that serve a large percentage of transit riders. For example, the 2003 report by the Canadian Society for Civil Engineering titled “Civil Infrastructure Systems Technology Road Map 2003-2013” updates earlier work (“Report on the State of Municipal Infrastructure in Canada”, 1996, by the Federation of Canadian Municipalities and McGill University) to estimate that in 2003 the cost to bring municipal infrastructure to an acceptable state of good repair was \$57 billion, of which \$19 billion was the shortfall for municipal roads and bridges. This shortfall was up from \$14.4 billion in 1996 and was estimated to continue increasing unless new sources of funding are put in place. Assuming the same rate of increase since 2003, the shortfall as of 2014 would be about \$27 billion, requiring additional funding of \$5-6 billion per year to close the funding gap over the next five years.

Based on those estimates, the gap in capital funding for transit and roads/bridges in Canada’s urban regions over the next five years is about \$8-10 billion/year, in order to recover the accumulated shortfall over that five year period. If the “catch-up” period were doubled from five to ten years, the annual gap to be filled would be halved to about \$4-5 billion/year (over a longer period), assuming that incremental funding increases would also be made to address ongoing growth in capital requirements during the “catch-up” period and beyond.

Urban transit operations costs are partially recovered from fare revenues. For example, in 2008, based on CUTA data for Canadian conventional transit systems, total direct operating expenses were \$5.82 billion, and total operating revenues were \$3.13 billion – an average recovery rate of 54% for reporting transit systems – and total net operating expenses were \$2.69 billion. Based on an average growth rate for the next five years similar to that over the last 5 years (13%/year) the total annual net operating expenses of Canada’s conventional urban transit systems would be about \$3.4 billion/year in 2010 and \$5.6 billion/year in 2014. Assuming that operating costs for urban roads and bridges will continue to be funded from municipal revenues but that transit net operating costs may require alternative funding sources, the funding gap to be addressed by such sources would be increased by about an additional \$3-6 billion/year over the next five years.

The broadly estimated capital funding gap of \$8-10 billion per year in capital funding for urban and regional transit and urban roads and bridges is large, but recovering the accumulated shortfall over the next five years could be feasible if alternative funding sources are brought to bear, as discussed in Section 6 below. If a ten year recovery period were implemented, some or all of the net transit

operating cost could also potentially be funded from such alternative revenue sources.

5. *TransLink: An example of Revenue Sources and Expenditure Allocation*

Canada’s local governments have a variety of revenue sources and different ways of allocating funds. One example is provided by TransLink, which has funded and delivered urban transit and roads/bridges facilities and services in Metropolitan Vancouver since 2000, thereby having 12 years of experience in drawing on a wide variety of revenue sources for funding both urban transit and regional roads and bridges. These sources include not only property taxes and transit fares, but also fuel taxes, parking levies or taxes, and a utility levy, all of which were opened up as municipal transit funding sources by provincial legislation in British Columbia. More information on TransLink’s revenue sources and expenditures allocation over this period is available at www.translink.ca.

As shown in Exhibit 2, TransLink’s allocation of expenditures between capital investments and operations requirements for transit is projected for the next three years (2012-2014) to be \$1.397 billion (31.6%) for capital and \$3.017 billion (68.4%) for operations. Capital expenditures include “maintenance” (\$137 million), “state of good repair” (\$514 million), “upgrades to improve efficiency/effectives” (\$306 million) and “expansion” (\$436 million). Operations expenditures include “transit operations” (\$2,686 million) and “corporate and police” (\$331 million). Deducting projected transit fare and advertising revenue (\$1.541 billion) brings the net transit operating cost down to \$1.476 billion, approximately equal to the projected capital cost of \$1.397 billion. This example illustrates that capital costs and net operating costs will place roughly equal demands on alternative (non fare revenue) funding sources for transit systems in rapidly growing urban regions such as Metro Vancouver.

Exhibit 2: TransLink Projected Expenditure Allocation for Transit 2012-2014 (\$billions)

	Based on Gross Cost of Operations	Based on Net Cost of Operations*
Capital	1.397 (31.6%)	1.397 (48.6%)
Operations	3.017 (68.4%)	1.476 (51.4%)
Total	4.414 (100%)	2.873 (100%)

* Net cost of operations = gross cost (\$3.017 billion) less projected transit fare and advertising revenue

6. Alternative Funding Sources for More Sustainable Transportation

Cities around the world have employed different funding methods and sources. Several examples are provided by a recent paper (July 2010) by the Greater Toronto CivicAction Alliance.² The paper provides information on potential alternative funding sources which suggests that deployment of alternative funding sources – such as those outlined in this section – could close the funding gap, at least for capital requirements, of urban transit and roads/bridges in Canada. Exhibit 3, adapted from that paper, describes 12 alternative sources and the estimated net additional annual revenue per year that each source could yield if applied in the Greater Toronto and Hamilton Area (GTHA). As shown, five of the sources could yield \$1-2 billion per year each, if applied in the GTHA. The other

seven sources would have smaller yields – ranging from \$40-100 million to \$400-800 million per year each. If a suitable mix of sources were implemented in the GTHA, additional annual revenue of at least \$3 billion would arguably be achievable, sufficient to fund the capital and operating requirements of the GTHA's Regional Transportation Plan, The Big Move, published in 2008.

Exhibit 3 also lists, for each source, the assumed levy rates on which these revenue estimates are based, its significant policy advantages, and implementation/policy challenges to be considered. As outlined in column 4, a number of the funding sources have the important policy advantage (in addition to yielding revenue) of providing direct pricing incentives for drivers to make more sustainable travel choices, as discussed above in Section 2.

Exhibit 3: Potential Sources for Additional GTHA Transit/Transportation Funding (\$2008)

Source	Net Additional Revenue to GTHA	Basis of Estimate	Policy Advantages	Implementation and Policy Challenges
1. Road Tolls on GTHA Freeways (400 series highways and municipal controlled-access highways)*	\$1 - 2 B/year	10 - 20 ¢/km	Relieves congestion hot spots. Revenue grows with demand. Encourages more use of transit and active modes. Results in increased traffic speed, travel time reliability, and road capacity. Moderates road expansion spending.	Traffic diversion concerns. "Double taxation" concerns. Much better transit required first. Social equity concerns. Possible concerns about who takes on financial risk if a public-private partnership is involved.
2. Regional Gas/Diesel Fuel Tax	\$1 - 2 B/year	10 - 20 ¢/litre	Potential to reduce auto use marginally, but not focussing on hot spots. Encourages energy-efficient, low emission vehicles, more use of transit and active modes. Easy to administer.	Sales "leakage" to surrounding areas. Will decline per vehicle-km as fuel-efficiency improves. Best introduced when gas prices are low. Diversion of revenue from other uses.
3. Commercial Parking Levy	\$1 - 2 B/year	\$1.00 - 2.00 per day per space	Reduces auto use to commercial areas. Encourages more use of transit and active transportation. Administratively straightforward.	Employment "leakage" to areas surrounding the GTHA. A different version, the Commercial Concentration Tax, was rejected in GTA in early 1990's. Increased on-street parking concerns.
4. Regional Sales Tax	\$1 - 2 B/year	1 - 2% in addition to the HST	Administratively stable, reliable source.	No direct incentive for more sustainable transportation behaviour. Sales "leakage" to surrounding areas. A hard sell on top of the HST.

² Formerly the Toronto City Summit Alliance. See www.civicaaction.ca

Source	Net Additional Revenue to GTHA	Basis of Estimate	Policy Advantages	Implementation and Policy Challenges
5. High Occupancy Toll (HOT) Lanes or Express Lanes on GTHA Freeways	\$400 - 800 M/year for Express Lanes \$200 – 400 M/year for HOT Lanes	10 - 20 ¢/km for single-occupant vehicles (HOT Lanes) or for all vehicles (Express Lanes)	May encourage car-pooling. Increases person-carrying capacity and average speed on major highways. Can allow some toll-free lanes to remain on a multi-lane freeway.	Relatively small revenue versus infrastructure and enforcement costs.
6. HST Revenue from Gas/Diesel Sales Tax (Revenue dedicated partially or fully to GTHA transit.)	\$400 - 600 M/year	May 11/10 news report ** of \$895M additional gas tax revenue anticipated from 2010/11 HST	Same as above for Regional Gas/Diesel Fuel tax.	As above except province-wide application of HST avoids fuel sales “leakage” to areas surrounding the GTHA.
7. Central Area (C.A.) Congestion Levy on private vehicles entering Planning District1*** 6:30 am - 6:30 pm Monday - Friday.	\$250 - \$500 M/yr	\$5 - 10 per vehicle entry-charge at cordon	Reduces Central Area congestion (but congestion is worse elsewhere in the GTHA). Encourages more use of transit and active transportation. Improves mobility in Central Area.	Potential employment loss from Central Area. Congestion/parking pressure in areas surrounding the Central Area. Better transit needed first. Implementation cost and payment evasion issues.
8. Vehicle Registration Fee (Varies with vehicle GHG emission levels.)	\$200 - 400 M/year	\$100 - 200 per year per vehicle	Stable, reliable source. Encourages low-emission vehicles. Easy to administer.	Does not moderate amount of use of the vehicle.
9. Value Capture Levy (Provides revenue from higher property values/taxes in areas served by higher-order transit.)	\$50 - 100 M/year	N/A	Encourages compact development and increased transit use. May reduce land speculation.	Uncertainty in estimating increased value. Upward pressure on rents may force out small business and low income residents.
10. Utility Bill Levy	\$50 - 100 M/year	\$20 - 40 per year per household	Stable, reliable source. Easy to administer.	No direct incentive for more sustainable driver behaviour.
11. Employer Payroll Tax in Areas within walking distance of rapid transit. (Captures revenue from firms experiencing improved transit accessibility.)	\$40 - \$80 M/year	\$100 - 200 per year per full time employee	Stable, reliable source. Partially borne by incoming workers who benefit from improved transit.	Higher costs, potential loss of jobs in taxation zones. Transit benefits to local employees may not compensate for possible lower wages.
12. Federal and provincial infrastructure funding	\$1 - 2 B/year	Basis of Estimate: 25 - 50% of transit capital costs 25 – 50% of net transit operating costs	Administratively straightforward. Stable, relatively reliable source. Provides GTHA residents with a long-term commitment for reliable funding plus a stable policy framework from the federal and provincial governments.	Difficult in context of large federal/provincial deficits. No direct incentive for more sustainable transportation behaviour.

*Area-Wide Road Pricing is a larger scale road pricing option for possible subsequent implementation, as discussed in Section 4.3 of the CivicAction source paper for this exhibit.

**The Canadian Press. “Ontario NDP says HST will boost gas price”. May 10, 2010. CBC News. <http://www.cbc.ca/canada/toronto/story/2010/05/10/ontario-hst.html>

***Planning district 1 is the Central part of downtown Toronto.

Source: Adapted from “Time to Get Serious: Reliable Funding for GTHA Transit/Transportation Infrastructure” published by the Greater Toronto CivicAction Alliance (formerly the Toronto City Summit Alliance), July, 2010, available at www.civicaaction.ca.

The revenue sources are listed in declining order of estimated net revenue, with one exception: the twelfth, Federal and Provincial Urban Infrastructure Funding, is a potentially large funding source but is listed last to reflect the fact that it is not based on direct levies paid by GTHA residents/travellers but rather is a transfer of revenues from the two senior governments. If scaled up from the GTHA to all Canadian CMAs (see following paragraphs in this section), the estimated yield shown for this source is not necessarily more than current funding levels allocated in recent years by the federal and provincial governments for urban and regional transit/transportation. On this matter, for example, the federal government already provides significant funding through the \$2 billion per year Gas Tax Fund for municipal infrastructure, which includes urban transit and transportation infrastructure, and several provinces provide in excess of \$1 billion per year for urban and regional transit/transportation infrastructure.

Long-term federal and provincial infrastructure funding plans could, however, provide a framework for cost-effective delivery and maintenance of urban and regional transit/transportation systems and operations across Canada and enhanced achievement of the benefits listed above in Section 3.

The 2006 population of the GTHA was about 6 million people while the total population of Canada's 33 Census Metropolitan Areas (CMAs) in 2006 was about 21.5 million. Scaling up the GTHA potential revenue from alternative sources such as those in Exhibit 3 to the 33 CMAs but at a lower rate per capita (reflecting the lower densities and per capita expenditure levels for transit/transportation in the smaller CMAs) suggests that similar sources could yield enough revenue to close the \$8-10 billion per year funding gap identified in Section 4 over a five year period. Alternatively, the gap could potentially be closed during a ten year period if the yield from alternative sources were cut in half, or an intermediate yield level could be harnessed to close the capital funding gap over ten years and also address net transit operating costs.

7. Experience Elsewhere

Exhibit 4 lists the same 12 funding sources as in Exhibit 3, showing examples of where they have been successfully applied in various urban areas across North America and abroad. As indicated by this small sample, there is a substantial track record of successful and continuing urban/regional applications worldwide.

Exhibit 5 provides more detailed information on which of 37 revenue sources are used for urban transit funding in ten metropolitan regions worldwide: three in Canada, five in the United States and two elsewhere. It can be seen that most of the funding sources listed in Exhibit 3 are widely used elsewhere, in particular parking fees, fuel

taxes, road pricing, sales taxes, and senior government contributions, while utility taxes, value capture levies and vehicle fees are less widely used in the major urban areas listed. Other revenue sources shown as widely used are property taxes/municipal grants, transit fares, and non-fare operating revenues, which are used in various forms by all ten of the listed urban areas.

Decisions regarding possible employment of such user fees and beneficiary taxes will require careful consideration of many factors, including: estimated net revenue generated; reliability and growth prospects; behavioural incentives and policy impacts such as discussed in Section 2; reasonableness and affordability of levy rates; transparency of revenue use for improved transportation; technical feasibility and administrative efficiency; fairness of costs and benefits to various segments of area residents and travellers; and finally public and political acceptance based on such factors as well as on experience elsewhere.

Exhibit 4: Examples of Transit Funding Sources Used Elsewhere

1. **Road Tolls:** New York-New Jersey bridges & tunnels, Paris, Santiago, Melbourne
2. **Regional Gas/Diesel Fuel Tax:** Montreal, Vancouver, Edmonton, Calgary, Victoria
3. **Commercial Parking Levy:** Vancouver, Pittsburgh, Chicago, Perth
4. **Regional Sales Tax:** Denver, Seattle, Los Angeles County
5. **HOT Lanes or Express Lanes on Freeways:** California SR91, San Diego County, Minneapolis-St. Paul
6. **HST Revenue from Gas/Diesel Sales:** No current examples; possible future sub-set of 2. above
7. **Central Area Congestion Levy:** Singapore, London, Stockholm, Oslo
8. **Vehicle Registration Fee:** Montreal, Quebec City
9. **Value Capture Levy:** Los Angeles, Denver, Miami, Hong Kong
10. **Utility Bill Levy:** Vancouver, Calgary, Austin
11. **Employer Payroll Tax:** Paris, Oregon State
12. **Federal and provincial Infrastructure funding:** Major OECD countries provide predictable funding and related policy frameworks for urban/regional transit

Source: Adapted from CivicAction op cit, July, 2010.

Exhibit 5: Review of Transportation Revenue Sources in Selected Metropolitan Regions in the World

Source Type	Source*	Country		Canada					USA				Other		
		Region	Metro Vancouver	Toronto/ Hamilton	Montréal	New York	Boston	San Francisco	Seattle	Chicago	Perth, AU	London, UK			
Business Activity/Income Fees	Corporate Franchise Tax/Business Licensing Fees				✓										
	Employer/ Payroll Taxes				✓										
Non-fare operating revenues	Taxi Permits/License Fees		✓												✓
	Advertising Revenues		✓		✓										✓
Parking Fees	Right-of-Way Leases/Rents		✓		✓										✓
	Revenue Vehicle Rental		✓												✓
Property Tax/Municipal Contribution	Parking Sales Tax			✓											
	Parking Charges			✓											
Carbon Charges	Parking Stall Tax			✓											
	Property Tax		✓		✓										
Fuel-Related Taxes	Municipal Grant/General Revenues		✓		✓										✓
	Property Transfer Taxes/Mortgage Recording Fees		✓		✓										
Road Pricing	Cap-and-Trade/Offsets		✓												
	Carbon Tax		**		✓										
Sales Taxes	Motor Fuel Taxes		✓		✓										
	Petroleum Franchise Tax		✓		✓										
Senior Government Contribution	Project Tolls		✓												
	Cordon Area Pricing/Congestion Charge				✓										✓
Transit Fares	Road Tolls/HOT Lanes			✓											
	General Sales Tax				✓										
Utility Taxes	Vehicle Sales Tax				✓										
	Fare Evasion Citation Fees		✓												
Vehicle Fees	Federal Grants		✓		✓										✓
	Provincial/State Grants		✓		✓										✓
Value Capture	County/Regional Grant		✓		✓										✓
	Non-Governmental Grants		✓		✓										✓
Vehicle Fees	Transit Fares		✓		✓										✓
	Fare Evasion Citation Fees		✓												
Vehicle Fees	Hydro Levy			✓											
	Development Cost Charges/Impact Fees														
Vehicle Fees	Vehicle Inspection Fees (incl. AirCare)		✓												
	Abandoned Vehicle/Tow Fees				✓										
Vehicle Fees	Licensing Fees (vehicle or driver)				✓										
	Rental Car Tax				✓										
Vehicle Fees	Taxi Fare Levy				✓										
	Traffic Citation Fees				✓										
Vehicle Fees	Vehicle Registration Fee/Vehicle Personal Property Tax				✓										
	Vehicle Kilometres Traveled Fee				✓										

* This table only reflects funding sources dedicated to public transit. It is not a complete record of taxes and fees assessed in a given region. For instance, in the US, federal, state, and local fuel taxes are typically allocated to state DOTs for roads. These taxes are only included here when revenues are allocated to the public transit provider.

** Provincial carbon tax (currently revenue-neutral) may become a future revenue source that could be partially allocated for urban transit funding.

Source: TransLink, adapted and updated from Metrolinx information from 2008.



8. Conclusions

Sustainable funding from governments and derived user fees/levies are required to maintain, expand, operate and rehabilitate urban and regional transportation systems in Canada. The benefits are substantial and the negative consequences of continuing shortfalls – growing congestion/crowding, reduced economic prosperity, a continually degrading environment, and eroded social/health wellbeing – will generate costs greatly exceeding the investment required to bring our urban and regional transportation systems up to acceptable levels of effectiveness and efficiency. The user/beneficiary levies required, while significant, will more than repay urban/regional residents and travellers in terms of their economic prosperity, environmental well-being and overall quality-of-life. They could also promote innovation and gain new partners for joint public-private implementation of transportation improvements.

As noted earlier, the purpose of this briefing is not to advocate for the use of any specific funding source but rather to point out the need for more sustainable funding for urban/regional transportation systems. It also shows that alternative funding sources exist – and are widely used elsewhere. As noted, they could be used not only to help close the funding gap but also as incentives to encourage more efficient use of road systems and attract more use of transportation options that are cost-effective, environmentally benign, convenient and capable of serving and shaping more sustainable urban areas.

Adopting more sustainable funding sources (i.e. sources that are sufficient, dependable and provide incentives to use the transportation system more efficiently) can help create more sustainable urban and regional transportation in functional, economic, social and environmental terms.

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