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Federal Support for Bus Rapid Transit and Light Rail Transit Systems in Canada

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***Federal Support for Bus Rapid Transit
and Light Rail Transit Systems in Canada
(Background Paper)***

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FEDERAL SUPPORT FOR BUS RAPID TRANSIT AND LIGHT RAIL TRANSIT SYSTEMS IN CANADA

1 INTRODUCTION

In recent years, several Canadian cities have developed plans for rapid transit systems to improve the level of service of their existing public transit system and ease congestion on their roads. Accompanying these plans has been a debate over the appropriate technology to be used: bus rapid transit (BRT) or light rail transit (LRT).

This paper compares the key features of BRT and LRT systems and examines the current and proposed examples of each technology in the Canadian context. As well, it considers the potential linkages of such systems with other planned transportation such as interurban high-speed rail. It concludes with a description of Government of Canada infrastructure funding programs that include local and regional rapid transit projects as an eligible category of investment.

2 URBAN TRANSIT IN CANADA

In Canada, urban public transit is generally the responsibility of individual municipalities. In Ontario and British Columbia, the provincial governments have created the Metrolinx and TransLink regional transit authorities to provide regional transit service and coordinate public transit investments in the Greater Toronto Area and Metro Vancouver, respectively.¹ In addition, British Columbia's BC Transit is a provincial Crown agency responsible for providing public transit service to communities outside Metro Vancouver.²

As the cost of operating and expanding public transit systems is beyond the capacity of most municipalities to undertake on the basis of property taxes and transit fare revenues alone, the federal and provincial governments both provide funding to support public transit. Although public transit is not in federal jurisdiction, the Government of Canada has stated that investing in public transit "contributes to economic, environmental and social objectives."³

This support for public transit takes the form of transfers of federal and provincial gas tax revenue to municipalities as well as targeted, cost-shared infrastructure funding. This funding is not coordinated through any national transit strategy. As the Canadian Urban Transit Association notes, "Canada is the only G8 country without a federal policy of long-term, predictable transit investment."⁴

3 KEY FEATURES OF BUS RAPID TRANSIT AND LIGHT RAIL TRANSIT SYSTEMS

Rapid transit may be defined as "transit service separated partially or completely from general vehicular traffic and therefore able to maintain higher levels of speed, reliability and vehicle productivity than can be achieved by transit vehicles operating in mixed traffic."⁵ Hence, both bus rapid transit (BRT) and light rail transit (LRT) are

considered rapid transit, as is heavy rail transit (i.e., subways). However, although both BRT and LRT systems permit the rapid movement of large numbers of passengers over long distances in an urban setting, they differ in the technologies used, the infrastructure required to support the network, and their suitability to cities of various sizes.

3.1 BUS RAPID TRANSIT

According to the Canadian Urban Transit Association (CUTA), BRT “is a rubber-tired rapid transit service that combines stations, vehicles, running ways and a flexible operating plan into a high-quality, customer-focused service that is fast, reliable, comfortable and cost-efficient.”⁶ BRT systems can include some or all of the following elements:

- exclusive lanes, which can take the form of bus lanes on streets and highways or specially constructed busways;
- limited stops (i.e., stops spaced every 1000–1500 metres rather than the 300 metres often used for local bus service) to ensure rapid service;
- distinctive bus stops, larger bus shelters and dedicated stations;
- “Park’n’Ride” lots;
- transit priority measures at intersections, including traffic signal timing that gives priority to buses, and bus lanes that allow buses to jump car queues;
- pre-boarding fare payment at stops and stations;
- real-time route and schedule information at stations and display of the next stop on vehicles;
- modern, distinctive buses that provide high-level comfort and passenger amenities; and
- high-frequency, all-day service.⁷

3.2 LIGHT RAIL TRANSIT

Light rail transit involves the operation of a train on rails embedded either in a street lane or in a dedicated right-of-way.⁸ Service is often provided by single streetcars or multi-car trains propelled by electric motors using overhead wires as the source of power and is typically used in urban areas to link significant population centres.⁹

Although many LRT systems around the world operate in a dedicated right-of-way, some cities, such as Calgary and Houston, operate at least a portion of their lines on streets. In these cases, traffic priority signals and other traffic management techniques such as rail crossing gates are used to minimize delay and ensure the safe operation of trains in mixed traffic.¹⁰ In addition, like BRT systems, LRT networks often feature large shelters and stations and may use modern fare collection and intelligent transportation systems (ITS) such as real-time schedule information at station stops.

3.3 COMPARISON OF BUS RAPID TRANSIT AND LIGHT RAIL TRANSIT

At the core of current discussions in several Canadian cities over the future direction of their public transit systems is a debate over the relative merits of BRT and LRT.¹¹ This debate is fuelled by passionate proponents of both technologies and often clouded by inaccurate perceptions of the cost and nature of BRT and LRT systems. Indeed, BRT and LRT share many common advantages:

- they connect communities rapidly and reliably;
- they can reduce gridlock and improve mobility, particularly for lower-income residents;
- they can be designed to remove barriers for people with mobility impairments by ensuring that stations, platforms and vehicles are fully accessible; and
- they can reduce emissions, both through the displacement of car traffic as drivers shift to public transit and the use of lower-emissions transit technology (i.e., electricity for LRT, and hybrid, alternative fuel or electric trolley technology for BRT).

In terms of construction costs, according to CUTA, BRT systems generally “cost less to build than light rail [transit] because they do not need specialized electrical, track, vehicle maintenance or storage infrastructure.”¹² Indeed, the capital costs to construct a BRT system can range from less than \$100,000 per kilometre for a system operating on existing streets to a maximum of \$22 million per kilometre for a fully separated busway.¹³ By comparison, the capital cost to construct a kilometre of an LRT system ranges from \$5 million for an on-street system to \$48 million for a fully grade-separated line.¹⁴ A BRT system is therefore generally cheaper to build than an LRT one. However, the relative cost savings are reduced in BRT systems with segregated busways, as the costs are similar to those of an on-street LRT system.

However, with regard to operating costs, the advantage of BRT is less clear. In Calgary, a city with both LRT as well as a limited BRT system, the cost per revenue-hour of service for LRT was \$113 (2000 dollars) versus \$49 for BRT.¹⁵ Conversely, the cost per passenger for LRT was \$0.25 versus \$0.89 for BRT.¹⁶ Hence, although LRT can be more costly overall to operate than BRT, its greater carrying capacity yields a lower cost per passenger. Similar observations were also made in a 2001 study by the United States General Accounting Office (GAO) of U.S. cities that had either BRT, LRT or both.¹⁷ The GAO discovered that BRT systems generally had lower capital costs per mile than LRT systems but that neither system had a clear advantage in terms of operating costs.¹⁸

As a transit mode, BRT has several advantages over LRT. It is more flexible, as buses can change route in the event of road closures, and a single busway can support express and local routes, reducing the need for transfers.¹⁹ In addition, BRT systems do not require special facilities unless they are running on a dedicated route.²⁰ As well, BRT can be implemented incrementally, with new phases added as needed without disrupting the system. Finally, BRT systems can be converted to LRT at a later date if the necessary features are included at the design phase.²¹

However, LRT is often viewed more favourably than BRT by riders and policy-makers alike. Many transit users perceive LRT as faster, more reliable, cleaner and more comfortable than BRT.²² This perception can make LRT more attractive than BRT to discretionary users (i.e., those who can choose between travelling by car or public transit). In addition, LRT has a greater passenger capacity than BRT, particularly when the LRT system uses multi-car trains on a separate right-of-way. This increased capacity can make LRT more suitable for cities that need their public transit system to move large volumes of users in and out of the downtown core at peak hours. Finally, for many local governments, LRT is seen as a “world-class” technology that can provide a modern image of their city and stimulate economic growth.²³

Internationally, there is no clear consensus favouring either rapid transit technology. LRT systems are common in Europe, in many cases having supplanted older street-car networks. Indeed, many major European cities have both light and heavy rail transit systems with the former, along with buses, feeding into the heavy rail subway network. Several others, such as Paris, Stockholm, Helsinki and Hamburg, have BRT systems, often in addition to extensive heavy or light rail systems.

This is also the case in U.S. cities such as Los Angeles, New York and Boston, which are served by transit systems featuring heavy rail, light rail, bus rapid transit, conventional buses and commuter rail. In these cases, both BRT and LRT are part of larger integrated transit systems.

In South American cities such as Bogotá, Colombia, and Curitiba, Brazil, BRT was selected as the preferred rapid transit technology not only because of its lower capital cost but also because the busways can be constructed rapidly in the medians of existing roads, reducing cost and complexity. The BRT systems of Bogotá and Curitiba feature elevated station platforms and specially designed buses that permit rapid loading and off-loading, similar to light rail vehicles.²⁴

In Canada, the choice of whether to employ BRT or LRT technology is made by individual communities. Under the federal government’s infrastructure programs, the particular transit technology to be used in a given project is ultimately the choice of the project proponent.²⁵ As a result, given the relative merits of BRT and LRT, communities must reflect upon their current and future transit needs and their fiscal capacity to undertake the necessary capital investments when determining whether to adopt BRT or LRT as their preferred rapid transit technology.

4 CURRENT AND PROPOSED BUS RAPID TRANSIT AND LIGHT RAIL TRANSIT SYSTEMS IN CANADA

In 2010, more than a dozen Canadian cities have BRT or LRT systems as part of their public transit networks. To address traffic congestion as well as achieve climate-change and air-quality goals, many Canadian cities are either expanding their existing rapid transit network or planning to implement one.

4.1 CURRENT AND PROPOSED BUS RAPID TRANSIT SYSTEMS

In 2010, 10 Canadian cities operate a BRT system, and an additional 10 communities plan to create one.²⁶ Most of the existing BRT systems operate on arterial roads with transit priority measures; only Ottawa currently has a dedicated busway, although dedicated busways are under construction in Gatineau, Mississauga and York Region.²⁷ Among these arterial BRT systems are a two-corridor system in the Halifax Regional Municipality, a three-corridor Métrobus system operating principally in reserved bus lanes in Québec, and an iXpress service in the Region of Waterloo designed to serve as a precursor to a proposed LRT system for the region.²⁸

Several of the planned BRT systems are in smaller cities such as Victoria and London, where planners are looking to address future growth that will necessitate rapid transit but may not be able to justify the high capital costs of LRT.²⁹ However, to date, no final decision has been made in these communities on the specific technology to be used. On the other hand, larger cities such as Ottawa and Vancouver are planning expansions to their existing BRT systems to complement their rail-based rapid transit networks.³⁰ Appendix A provides detailed information on each of the 20 existing or planned BRT systems.

4.2 CURRENT AND PROPOSED LIGHT RAIL TRANSIT SYSTEMS

In addition to the heavy rail subway lines in Toronto and Montreal and the SkyTrain system in Vancouver, four Canadian cities currently operate light rail transit systems. However, two of these systems do not strictly meet the definition of light rail. One, Ottawa's O-Train, was originally introduced in 2001 as a pilot project. Given that it involves diesel-powered multi-car trains operating on a former freight railway line, it is perhaps best described as a hybrid between heavy and light rail.³¹ Similarly, Toronto's eleven electrified streetcar routes are not technically rapid transit, as they operate primarily in regular traffic lanes with frequent stops. However, Toronto's Transit City plan envisions bolstering the existing streetcar network with eight new LRT routes, with both networks using the same LRT vehicles.³²

Both Edmonton and Calgary operate LRT systems but use two very different models. Opened in 1978, Edmonton's 21-km line travels on both a shared rail right-of-way and a dedicated underground section through the downtown area.³³ By contrast, Calgary's C-Train LRT system has three lines totalling 46 km that run largely at grade with on-street operation in the downtown core.³⁴ Calgary's system was designed to be relatively basic (i.e., primarily surface operation, LRT cars without air conditioning). According to Calgary Transit officials, this was done not only to minimize "the cost and risks associated with system development," but also to enable "the LRT extensions to be delivered on time and within budget."³⁵

Both cities are working to expand their LRT systems. The city of Edmonton is planning a 3.1-km expansion of the system scheduled to be completed by 2014.³⁶ Calgary is not only undertaking improvements to the main LRT corridor, but also commencing work on extensions to the northeast and northwest sections of the LRT system.³⁷

In 2010, three cities are planning new LRT systems. Vancouver's Evergreen Line, an 11-km LRT line linking the Coquitlam, Port Moody and Lougheed city centres with the existing SkyTrain network, is scheduled to begin construction in 2011.³⁸ In Ottawa, plans for a 12.5-km light rail line that will use a portion of the existing bus Transitway with a 3.2-km tunnel under the downtown core are being examined.³⁹ Finally, the Region of Waterloo is pursuing a mixed LRT/BRT system with an LRT corridor linking the downtown cores of Waterloo and Kitchener and a BRT extension to Cambridge.⁴⁰

Appendix B provides more detailed information on existing and planned LRT systems.

4.3 POTENTIAL LINKAGES BETWEEN URBAN RAPID TRANSIT SYSTEMS AND INTERURBAN HIGH-SPEED RAIL

In February 2009, the governments of Canada, Ontario and Quebec announced that a contract had been awarded to EcoTrain Consortium to update the feasibility study for high-speed rail in the Québec–Windsor corridor.⁴¹ Although no decision has been made to date whether to develop an interurban high-speed rail network in Ontario and Quebec, several of the rapid transit projects being planned and constructed in the region include inter-modal nodes in their designs.

For example, the LRT lines of the Toronto Transit City plan will feature links not only to existing subway and rapid transit lines operated by the Toronto Transit Commission but also to rapid transit in York Region and Mississauga, GO Train service at several GO Transit stations, and VIA Rail at Union Station.⁴² Similarly, Ottawa's LRT project includes a plan to redevelop the existing Transitway station located at the Ottawa Train Station to provide an improved link between the planned LRT line and VIA Rail and possible commuter rail service.⁴³ These intermodal nodes will provide links between urban rapid transit systems and interurban rail services for transit users.

5 GOVERNMENT OF CANADA FUNDING AVAILABLE TO SUPPORT RAPID TRANSIT PROJECTS

As discussed earlier, public transit in Canada is normally provided by municipal governments, although in some cases, such as Metrolinx in Ontario and BC Transit in British Columbia, certain public transit services are provided on a regional basis by the provincial government. To provide federal support to public transit systems across the country, in recent years the Government of Canada has established a range of funding programs, many of which are cost-shared with provincial/territorial and local governments. In fact, since the Infrastructure Canada Program of the late 1990s, most federal infrastructure funding programs have included public transit as an eligible category of investment.

For example, under the \$4.3 billion Canada Strategic Infrastructure Fund, which supported large-scale strategic infrastructure projects across Canada, several major public transit projects received federal funding. These included the Canada Line

project in Vancouver, the Mississauga Bus Rapid Transit project, and Phase 2, Stage 1 of the York Region VIVA Bus Rapid Transit project.⁴⁴ In addition, the Government of Canada provided \$1.8 billion between 2005 and 2008 under the Public Transit Fund, Public Transit Capital Trust 2006, and Public Transit Capital Trust 2008 to support investments in public transit infrastructure in cities and communities.⁴⁵ Finally, the tax credit for public transit passes, launched on 1 July 2006, was designed to encourage the use of public transit by providing a non-refundable credit of 15% of the value of a transit pass (the credit is deducted from the tax owing by an individual in a particular year).⁴⁶

The following section provides a brief overview of recent federal funding programs for infrastructure that include public transit as an eligible category of investment.

5.1 BUILDING CANADA FUND

Announced in the 2007 federal budget as part of the Government of Canada's Building Canada Plan, the Building Canada Fund is an \$8.8 billion infrastructure fund that the government describes as designed "to advance national priorities important to all Canadians – a stronger economy, a cleaner environment and better communities" through the 2013–2014 fiscal year.⁴⁷ There are several eligible categories of investment under the Building Canada Fund, including the five "national priority" funding categories of core national highway system, drinking water, wastewater, public transit and green energy. In addition, there are multiple local and regional categories, including shortline rail infrastructure and sport and culture infrastructure.

The fund is composed of two components for major infrastructure and communities. The major infrastructure component is for major strategic projects of national and regional significance; projects are selected through joint federal-provincial/territorial negotiations. The communities component focuses on projects in communities with populations of less than 100,000; projects are selected based on applications from the communities.⁴⁸ Projects under both components are cost-shared between the various levels of government, with those proposed by Canadian cities being funded jointly by the federal, provincial/territorial and municipal levels of government.

The Building Canada Fund is allocated to each province and territory based on its population, and funding delivery is guided by an Infrastructure Framework Agreement negotiated by the Government of Canada with each jurisdiction. Several large-scale public transit projects have received funding under the Building Canada Fund's major infrastructure component, including the Toronto-York Spadina Subway Extension project, the Evergreen Line project in Vancouver, and the proposed improvements to transit in Ottawa.

5.2 INFRASTRUCTURE STIMULUS FUND

The Infrastructure Stimulus Fund, according to the 2009 federal budget in which it was announced, is a federal initiative to stimulate the economy and create jobs over two years. It provides \$4 billion in funding for the rehabilitation or construction of

provincial, territorial, municipal, and community infrastructure projects. Eligible projects include water, wastewater, public transit, roads, culture, parks, trails and community services infrastructure.⁴⁹

Funding under the Infrastructure Stimulus Fund was available for two years for projects that could begin construction quickly, be built during the 2009 and 2010 construction seasons, and be completed by 31 March 2011. Federal support for projects under the fund constituted up to one half (50%) of total eligible project costs. However, for local government and non-profit sector assets, the federal contribution was normally up to one third of total eligible project costs. Several public transit projects received funding under the fund, including upgrades to Calgary's LRT system, GO Transit improvements in the Greater Toronto Area, and improvements to Ottawa's Transitway system.

5.3 GAS TAX FUND

Under the Gas Tax Fund, municipalities will receive approximately \$11.8 billion between 2007 and 2014 to support investments in environmentally sustainable municipal infrastructure.⁵⁰ In addition, the Government of Canada announced in the 2008 federal budget that after the 2013–2014 fiscal year, the fund will become permanent, providing \$2 billion in funding annually. Under this fund, municipalities can pool, bank and borrow against this funding. Eligible categories for investment include public transit, water and wastewater infrastructure, community energy systems, solid waste management and local roads and bridges.

5.4 PROVINCIAL/TERRITORIAL BASE FUNDING INITIATIVE

Part of the Government of Canada's Building Canada Plan announced in the 2007 federal budget, the Provincial/Territorial Base Funding Initiative provides \$175 million to each province and territory for investment in its infrastructure.⁵¹ The initiative is cost-shared with provinces and territories. Federal funding is provided up front without a requirement to use the funding in the year in which it was provided, in order to maximize flexibility. Funding under this initiative may "be used for construction or rehabilitation of infrastructure in almost all Building Canada Fund eligible categories, as well as for Highway System infrastructure."⁵²

6 CONCLUSION

Many Canadian municipalities are expanding, constructing or planning rapid transit systems to address traffic congestion, growth and environmental issues. BRT, by virtue of its lower capital costs and scalability, remains a popular choice for many Canadian cities. LRT's greater carrying capacity makes it attractive for large cities such as Toronto, Vancouver and Calgary that need to move large numbers of riders in and out of employment centres at peak periods. LRT is also viewed by many policy-makers and the general public alike as being a cleaner, more reliable and more advanced "world-class" technology than BRT. This perception persists despite the fact that many BRT systems now feature articulated and double-decker buses equipped with new hybrid or alternative fuel technology.

The Government of Canada, in partnership with provincial/territorial and local governments, is supporting several rapid transit projects through the Building Canada Fund and the Infrastructure Stimulus Fund as well as the Gas Tax Fund. The federal government states that it invests in public transit through these programs to support its priorities of “a growing economy, a clean environment and safe and prosperous communities.”⁵³ As the cost of developing rapid transit systems is generally beyond the capacity of Canadian municipalities, implementing BRT and LRT projects currently in the planning stages will depend largely on continued federal and provincial infrastructure funding to local governments.

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APPENDIX A – CURRENT OR PLANNED BUS RAPID TRANSIT SYSTEMS IN CANADA (2010)*

Table A.1 – Current or Planned Bus Rapid Transit (BRT) Systems in Canada

Community	Current System	Proposed System	Announced Federal Funding	Transit Authority
Vancouver	"B-Line": 13 stations along one corridor with buses running along a mix of dedicated lanes and in mixed traffic. 25,000 riders daily.	Two new BRT lines planned (Hastings Street and 41 st Avenue corridors).		City of Vancouver Rapid Transit Office
Victoria	Limited transit signal priority on Douglas Street corridor.	19-km BRT line on Douglas Street corridor with first 2.8-km phase in planning phase.		BC Transit
Kelowna	Route 97 Express line connects Queensway Transit Exchange with UBC-Okanagan campus.	Incremental frequency increases planned for BRT line and expansion planned to Westbank Town Centre.	Federal contribution: \$15.5 million (\$10.9 million under the Building Canada Fund major infrastructure component and \$4.6 million under the Gas Tax Fund) Partner contributions: province of British Columbia \$24 million; city of Kelowna \$4.1 million; West Kelowna land contribution.	City of Kelowna
Calgary	Limited stop (42 stops over 47 km) along two corridors (Route 301 northwest and Route 302 southeast).	Planned service to other corridors in Southwest and North-central areas of Calgary. BRT service as precursor to future LRT C-Train expansion.	The Southeast Bus Rapid Transit "Park 'n'Ride" lots project was included in a package of transit improvements under the Building Canada Fund and Infrastructure Stimulus Fund with a total cost of \$270 million shared equally among Canada, Alberta and Calgary.	Calgary Transit

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Community	Current System	Proposed System	Announced Federal Funding	Transit Authority
Saskatoon	Four frequent-service DART (Direct Access Rapid Transit) routes in two corridors using distinctively liveried buses.			Saskatoon Transit
Winnipeg	The 3.6-km Southwest Rapid Transit corridor is under construction with a scheduled completion date of 2011. Buses currently operate in mixed traffic with bus-only lanes and on the bus-only Graham Transit Mall in downtown Winnipeg.	Possible 9–12-km extension to Southwest Rapid Transit corridor (may be BRT or LRT).		Winnipeg Transit
London		Mixed-traffic BRT operation between four shopping centre terminals, two post-secondary institutions, other key transit nodes and the downtown central business district.		City of London
Region of Waterloo	iXpress system features 13 stations along route on arterial roads linking Waterloo to Cambridge. Distinctive buses with intelligent transportation system technologies (e.g., electronic next-station boards) and transit priority measures at key intersections.	As part of the staged implementation of an LRT system, an adapted BRT system will be implemented between Kitchener and Cambridge with future plans to convert the system to LRT. There is also the possibility that the LRT plan may be supplanted by a BRT-based plan.	Federal contribution: \$3 million under the Government of Canada's Urban Transportation Showcase Program. Partner contributions: \$6.25 million from several partners, including the province of Ontario and the Region of Waterloo.	Region of Waterloo

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Community	Current System	Proposed System	Announced Federal Funding	Transit Authority
Hamilton		As part of the Metrolinx Regional Transportation Plan (MoveOntario 2020) released in 2008, five rapid transit corridors were identified in Hamilton. One corridor, the “B-Line” from McMaster University to Eastgate Square via downtown, was identified by Metrolinx as a top-15 regional transit priority and is currently in the planning stage. LRT is the preferred option for the city of Hamilton but no decision on the technology has been made to date.		City of Hamilton
York Region	Five VIVA routes in four corridors, featuring distinctive buses, transit priority lanes and signals and intelligent transportation system measures such as pre-payment and automatic vehicle location system.	Ongoing expansion of VIVA system through 2015 is in the planning and construction phase.	York VIVA Phase 1 Project Federal contribution: \$50 million under the Canada Strategic Infrastructure Fund. Partner contributions: province of Ontario \$50 million, York Region \$64.4 million. York VIVA Phase 2, Stage 1 Project Federal contribution: \$85 million under the Canada Strategic Infrastructure Fund conditional upon a matching provincial contribution.	VIVA
Mississauga		Construction underway on a 19-km east-west system with dedicated bus lanes parallel to Highway 403 and Eglinton Avenue, with service to commence in 2012–2013.	Federal contribution: \$83 million under the Canada Strategic Infrastructure Fund. Partner contributions: \$176 million from the province of Ontario and city of Mississauga.	Mississauga Transit

FEDERAL SUPPORT FOR BUS RAPID TRANSIT AND LIGHT RAIL TRANSIT SYSTEMS

Community	Current System	Proposed System	Announced Federal Funding	Transit Authority
Brampton		Construction underway on Phase 1 of Brampton Züm with first segment (Queen Street: Downtown Brampton to York University) scheduled to begin operation in fall 2010, with other segments to follow. System will operate in mixed traffic with queue-jump lanes, transit priority signals and distinctive buses and terminals/ shelters.	Federal contribution: \$95 million under the Canada Strategic Infrastructure Fund Partner contributions: province of Ontario \$95 million; city of Brampton is responsible for all remaining project costs.	City of Brampton
Toronto	BRT line (Route 196: York University Rocket) running on dedicated busway from Downsview Subway station to York University campus. Will be replaced by Toronto-York Spadina Subway extension.		Expansion of BRT to York University was included in a \$1.05 billion package of improvements to the TTC. The federal contribution to the package was \$350 million from the Canada Strategic Infrastructure Fund with the province of Ontario and city of Toronto also providing \$350 million each.	Toronto Transit Commission
Ottawa	Extensive Transitway system with 34 km of busways, transit lanes and mixed traffic. 240,000 riders daily.	Southwest Transitway Extension from Fallowfield to Barrhaven underway. Portion of existing Transitway to be converted to LRT. However, Transportation Master Plan includes new Transitway development in south and east of the city.	Southwest Transitway Extension from Fallowfield to Barrhaven received the following funding under the Infrastructure Stimulus Fund. Federal contribution: \$17.533 million. Partner contributions: province of Ontario \$17.533 million, city of Ottawa \$17.533 million.	OC Transpo
Gatineau		15-km, 12-station RapidBus system under construction featuring a busway shared with a bike path and railway line and transit priority lanes.	No federal contribution. Project is funded jointly by the province of Quebec and the city of Gatineau.	Société de transport de l'Outaouais

Community	Current System	Proposed System	Announced Federal Funding	Transit Authority
Montreal	45.5 km of reserved bus lanes with several routes running with reduced stop intervals. Median busway on Highway 10 and bus-only lanes on the Champlain Bridge.	Potential BRT service in several downtown corridors as well as along abandoned railway corridors.		Société de transport de Montréal
Québec	Three high-frequency Métrobus routes along two corridors featuring transit-only lanes, transit priority signals and distinctive stations and bus liveries.	Introduction of articulated buses is planned. Two new routes will be introduced in 2011 and 2012.		Société de transport de la Capitale
Saint John	Comex service provides weekday peak period BRT service between uptown Saint John and four outlying communities.	Saint John Transit has recently introduced two articulated buses to address demand on Comex routes. Comex routes may be expanded to address future demand.	Comex BRT service expansion supported by the federal Public Transit Capital Trust.	Saint John Transit
Halifax Regional Municipality	Three MetroLink routes in two major corridors link downtown Halifax with outlying districts. System features two terminals, "Park'n'Ride" lots, transit priority signals, queue-jump lanes and distinctive buses.		Federal contribution: \$4.1 million under the Government of Canada's Urban Transportation Showcase Program. Partner contributions: \$8.2 million from the province of Nova Scotia and the Halifax Regional Municipality.	Halifax Regional Municipality Metro Transit

NOTES

- * Source for the announced federal funding: Infrastructure Canada, [Creating Jobs – Building Communities](#).

APPENDIX B – CURRENT OR PLANNED LIGHT RAIL TRANSIT SYSTEMS IN CANADA (2010)*

Table B.1 – Current or Planned Light Rail Transit (LRT) Systems in Canada

Community	Current System	Proposed System	Announced Funding	Transit Authority
Vancouver	Three lines (Expo, Millennium and Canada Lines) with 47 stations over a 69-km system. 345,000 riders daily.	Construction of the 11-km Evergreen Line linking the Coquitlam, Port Moody and Lougheed city centres scheduled to begin construction in 2011.	Canada Line Federal contribution: \$450 million under the Canada Strategic Infrastructure Fund. Partner contributions: \$1.45 billion provided by the Government of British Columbia, TransLink and the Vancouver International Airport Authority. Evergreen Line Federal contribution: \$350 million under the Building Canada Fund major infrastructure component and \$66.7 million under the Public Transit Capital Trust 2008. Partner contributions: \$410 million from the province of British Columbia, \$400 million from TransLink and \$173 million from other project partners (including a potential public-private partnership).	Translink
Calgary	Three lines (south, northeast and northwest) with 37 stations over 46 km. System runs mainly on the surface in roadway medians or dedicated rights-of-way. 266,000 riders daily.	Improvements to downtown stations along 7 Avenue are underway as is planning for extensions to the northeast and northwest lines.	Various LRT improvement projects were included in a package of transit improvements under the Building Canada Fund and Infrastructure Stimulus Fund, with a total cost of \$270 million shared equally among Canada, Alberta and Calgary.	Calgary Transit
Edmonton	Single 21-km line with 15 stations that runs on a dedicated right-of-way, including an underground tunnel through the downtown core. 74,000 riders daily.	Planning is underway for a 3.1-km extension of the system to the northwest of the downtown core.	Federal contribution: \$100 million under the Building Canada Fund major infrastructure component and Infrastructure Stimulus Fund for LRT expansion and upgrading projects. Partner contributions: province of Alberta \$100 million, city of Edmonton \$100 million.	City of Edmonton

Community	Current System	Proposed System	Announced Funding	Transit Authority
Region of Waterloo		Detailed planning is underway for an LRT system running from Conestoga Mall in Waterloo to Fairview Park Mall in Kitchener. The proposed system will run on-street and in former railway rights-of-way. The LRT plan may be supplanted by a BRT-based plan.	Federal contribution: Up to \$265 million under the Building Canada Fund major infrastructure component conditional on the submission of a final project proposal. Partner contributions: province of Ontario \$300 million, region of Waterloo to provide remaining funding necessary to complete project.	Region of Waterloo
Toronto	Scarborough LRT line has six stations over 6.4 km and 42,250 riders daily.	Four priority Transit City LRT projects are currently planned: New 14-km Sheppard East LRT line is currently under construction and will open in 2013. Finch West LRT line will be 17 km in length and will provide connections among the Yonge subway, the Spadina subway extension and Humber College's North Campus. Construction is scheduled to begin in 2011 and be completed by 2015. Eglinton Crosstown LRT will be a 33-km line linking Kennedy Station in the east to Lester B. Pearson International Airport and the Mississauga Transitway in the west. The line will include a 10-km underground section and is scheduled to begin construction in 2010 with completion in 2020. Scarborough LRT line will be redeveloped and extended beginning in 2012.	Sheppard East LRT Federal contribution: \$333 million under the Building Canada Fund major infrastructure component. Partner contributions: province of Ontario \$617 million.	Toronto Transit Commission

Community	Current System	Proposed System	Announced Funding	Transit Authority
Ottawa	Diesel–electric O-Train is a five-station north–south line that uses heavy–rail technology.	Detailed planning is underway for a new 12.5-km line, including a 3.2-km downtown tunnel and conversion of sections of the existing bus Transitway.	Federal contribution: Up to \$600 million under the Building Canada Fund major infrastructure component. Partner contributions: province of Ontario \$600 million, city of Ottawa to provide remaining funding necessary to complete project.	City of Ottawa

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- * Source for the announced federal funding: Infrastructure Canada, [Creating Jobs – Building Communities](#).