



**Transit Infrastructure Needs
for the Period 2006–2010
Summary Report**

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Transit Infrastructure Needs for the Period 2006–2010

Executive Summary

The Canadian Urban Transit Association (CUTA) has estimated the infrastructure requirements of transit systems across the country to be \$20.7 billion for the period 2006–2010.

In late 2005, CUTA surveyed its transit system members, asking them to detail their capital infrastructure needs for the next five years. Seventy systems responded; they represented 96.6% of total Canada-wide transit operations according to annual operating costs.

Transit systems were asked to divide their needs into four groups:

1. Currently planned rehabilitation/replacement
2. Rehabilitation/replacement contingent on external funding
3. Currently planned expansion/ridership growth
4. Expansion/ridership growth contingent on external funding

Of the \$20.7 billion required, 44% is needed to rehabilitate or renew existing infrastructure, while 56% is needed to expand service capacity for ridership growth. These figures speak to the dual need of replacement and of response to the growth potential for transit. Indeed, restoring transit infrastructure to a state of good repair and responding to the increasing mobility needs of the growing Canadian urban population are both critical.

Equally notable is the split between projects that are part of current plans (79%) versus those that are contingent on external funding (21%), which suggests a significant shortfall in funding for the period 2006–2010.

Transit systems estimate they will need almost \$9.1 billion during the period just to keep their equipment in a state of good repair. Even though the average age of the Canadian transit bus has decreased from 11 years to 10 years since the last infrastructure survey was completed in 2005, it is still well above the recommended vehicle age of 6 to 9 years. While rehabilitation and replacement projects totalling \$7.3 billion are currently planned, it is important to note that many of these investments have not yet been budgeted by the municipalities and local authorities in question, nor are they assured of receiving approval.

Transit systems estimate they will need to invest \$11.6 billion on expansion between 2006 and 2010 to meet projected demand. While there are tentative plans to invest \$8 billion, much of the work that needs to be done cannot proceed without the assistance of the federal and provincial governments.

It will be difficult to combat traffic congestion, air pollution and increasing greenhouse gas (GHG) emissions without these investments.

The trends are nonetheless encouraging, in that the total infrastructure needs have stabilized, after rising constantly since the late 1990s. Furthermore, the proportion of these needs that appear possible under existing funding programs has increased from half to three-quarter. This can be attributed in large part to the federal government's role in providing greater infrastructure investment in recent years,

and now through the transfer of a portion of the federal gas tax to municipalities.

Over 68% of the total amount is needed by Canada's three largest census metropolitan areas (CMA) — more specifically, the Toronto Transit Commission (TTC), York Region Transit (YRT) and GO Transit in the Greater Toronto Area; the Agence métropolitaine de transport (AMT) and the Société de transport de Montréal (STM) in Montréal; and TransLink in Vancouver. Added pressure from the increasing population of these CMAs reflects one of the many challenges public transit systems are facing in these urban centres and their surrounding suburbs.

The trends evident in comparing the infrastructure needs between 1999 and 2006 suggest transit infrastructure needs have increased 144% from \$8.5 billion to \$20.7 billion but are now stabilizing.

The results from this survey convey a clear message. If Canada's urban transit infrastructure investment needs are to be met, and if transit is expected to carry an increasing share of urban travel, there needs to be continued investment by both federal and provincial governments. For any government infrastructure strategy to be successful, it must provide long-term reliable funding. Transit systems require financial certainty if they are to successfully plan to meet the needs of Canadians now and in the future.

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1. Background

This is CUTA's fourth biannual infrastructure survey. In the 1990s, public transit systems across Canada came under unprecedented financial pressure as overall government investment dropped sharply. As a result, infrastructure needs have risen steadily, while the age of existing infrastructure has also risen. Only in recent years have overall investment levels rebounded. The results of the latest survey show that this increased investment is having a noticeable effect.

2. Methodology

Surveys were sent to all CUTA member transit systems whose vehicles together comprise more than 98% of the national urban transit fleet.

Transit systems were asked to list their budgeted capital infrastructure needs for the next five years (2006–2010) by dollar value. It was categorized by:

- expenditures for **replacement or rehabilitation** versus expenditures for **expansion** in response to population growth or promotion of new ridership;

- expenditures **currently planned** (under existing funding arrangements) in comparison to **additional needs that could only be met through new external investment**; and
- relative priority levels.

Infrastructure needs were further categorized by type:

1. buses (purchases or refurbishment);
2. other rolling stock — including heavy or light rail vehicles;
3. fixed guideways or rights-of-way (construction or enhancement);
4. maintenance facilities;
5. stations or terminals;
6. parking facilities — for commuters at stations, terminals or interchanges;
7. transit priority measures — infrastructure designed to give transit vehicles priority over other traffic flow;
8. customer amenities — including bus stop enhancements, shelters, signage, etc;
9. advanced technology — such as automatic vehicle location, advanced fare collection and customer information systems; and
10. other, which varied by responses.

3. Survey Results

Responses were received from 76% of Canadian transit systems, representing 96.6% of total Canada-wide transit operations according to annual operating costs.¹

The needs for transit capital and infrastructure were reported to total \$20.7 billions as indicated in Table 1.²

Infrastructure Rehabilitation and Replacement	Current Plans	Contingent on External Funding	Total
Bus Purchase or Refurbishment	\$2,830,830,574	\$384,589,881	\$3,215,420,455
Other Rolling Stock	\$2,369,572,566	\$226,453,503	\$2,596,026,069
Fixed Guideway or Rights-of-Way	\$932,686,581	\$177,410,148	\$1,110,096,730
Maintenance Facilities	\$809,557,559	\$217,768,622	\$1,027,326,181
Other	\$362,873,151	\$801,354,142	\$1,164,227,293
TOTAL	\$7,305,520,431	\$1,807,576,297	\$9,113,096,728
Infrastructure for Expansion or Ridership Growth	Current Plans	Contingent on External Funding	Total
Bus Purchases	\$858,706,376	\$295,224,301	\$1,153,930,677
Other Rolling Stock	\$2,272,066,660	\$316,882,182	\$2,588,948,842
Fixed Guideway Construction or Enhancement	\$2,359,438,296	\$1,853,265,098	\$4,212,703,394
Stations or Terminals	\$216,991,595	\$64,551,622	\$281,543,217
Parking Facilities	\$243,189,708	\$20,265,417	\$263,455,125
Transit Priority Measures	\$661,423,465	\$202,697,002	\$864,120,467
Customer Amenities	\$56,659,391	\$16,891,330	\$73,550,720
Maintenance Facilities	\$781,256,481	\$208,723,352	\$989,979,832
Advanced Technology	\$251,145,347	\$96,682,754	\$347,828,101
Other	\$330,307,499	\$496,454,462	\$826,761,961
TOTAL	\$8,031,184,817	\$3,571,637,520	\$11,602,822,337
GRAND TOTAL	\$15,336,705,248	\$5,379,213,817	\$20,715,919,065

Table 1 - Transit Infrastructure Needs 2006–2010

¹ Total direct operating expenses were extrapolated by 4.5% to reflect transit systems that did not respond.

² Not all transit systems had planned their infrastructure projects up to 2010 by the survey deadline and did not list all the projects that would be possible with new funding because of the uncertain cost estimates.

3.1 Rehabilitation or Replacement versus Expansion or Ridership Growth

3.1.1 Infrastructure Rehabilitation or Replacement

Of the \$20.7 billion total needed for transit infrastructure, over \$9.1 billion, or 44%, is needed to replace or rehabilitate existing infrastructure, while approximately \$11.6 billion is for expansion, to respond to population growth or to attract new ridership (see Figure 1).

As shown in Figure 2, nearly the \$7.3 billion or 80% of the funds are needed to replace or rehabilitate existing infrastructure was reported as part of current plans. Moreover, \$1.8 billion or 20% is contingent on new funding from the federal and provincial governments. Replacement and rehabilitation needs are the minimum investments necessary simply to keep the country's transit systems in a state of good repair.

Figure 3 outlines the division of categories within rehabilitation or replacement needs. Approximately \$3.2 billion will be needed simply to maintain fleets at their current sizes. More than \$2.6 billion will be needed to maintain other rolling stock, such as subways, light rail and commuter rail equipment, and \$1.1 billion will be needed to replace or rehabilitate existing fixed guideways or rights-of-way. Significant investments will also be needed to replace or refurbish maintenance facilities and other items including fare collection equipment, terminals and software to improve or implement intelligent transportation systems.

Figure 1 - Replacement vs. Expansion

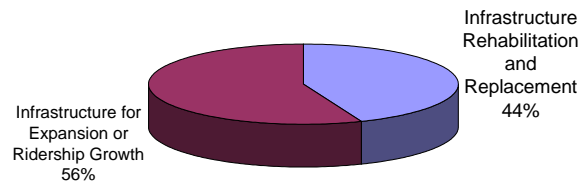


Figure 2 - Rehabilitation / Replacement Needs

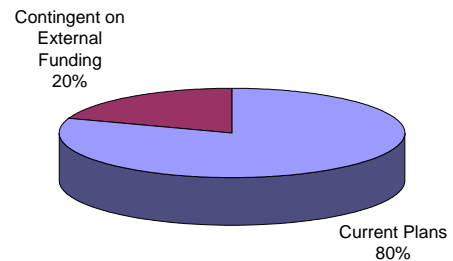
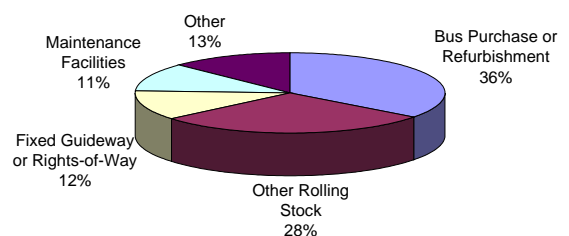


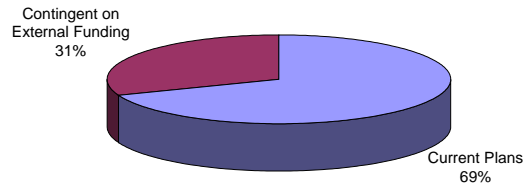
Figure 3 - Rehabilitation / Replacement Needs by Type



3.1.2 Infrastructure for Expansion or Ridership Growth

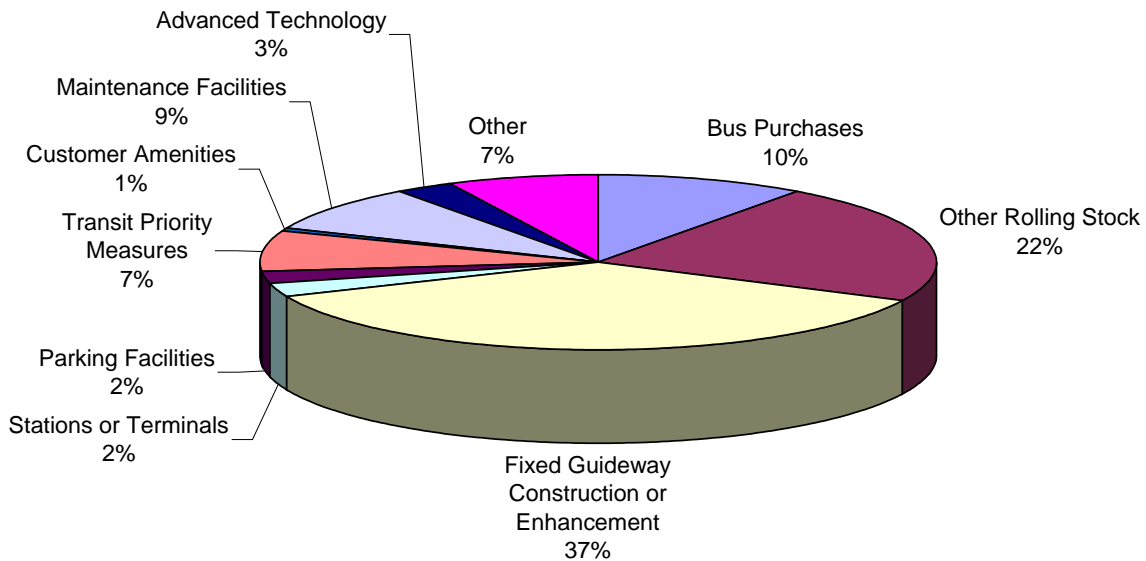
While transit systems reported they needed an estimated \$11.6 billion for expansion, nearly one-third of this remains unfunded (see Figure 4). For transit systems to prepare for population growth and attract new ridership, approximately \$3.6 billion of continued external investment by the upper orders of government will be necessary.

Figure 4 - Expansion / Ridership Growth Needs



Transit systems have indicated (Figure 5) that their top three priorities to accommodate expansion and future growth within the next five years are fixed guideway construction or enhancement, other rolling stock such as light rail transit (LRT), and bus purchases.

Figure 5 - Expansion / Ridership Growth Needs by Type



3.2 Current Plans versus Contingent on External Funding

Over \$15.3 billion was reported as part of the transit systems' current plans, and \$5.4 billion was identified as possible only with new, external sources of funding (see Figure 6). It is important to note in many instances, even "planned" expenditures may neither be budgeted nor approved.

3.2.1 Current Plans

As illustrated in Figure 7, over \$7.3 billion of infrastructure investment currently planned is intended simply to replace or rehabilitate existing equipment and facilities, whereas \$8 billion in expansion is needed for transit systems to respond to population growth and/or to increase transit's share of urban travel.

A further breakdown of the numbers shows that rolling stock, fixed guideways and bus purchases and refurbishment are the main priorities (see Figure 8). Plans exist to invest approximately \$4.3 billion on fixed guideways or rights-of-way as well as significant amounts in other rolling stock and maintenance facilities.

Figure 6 - Current Plans vs. Contingent on External Funding

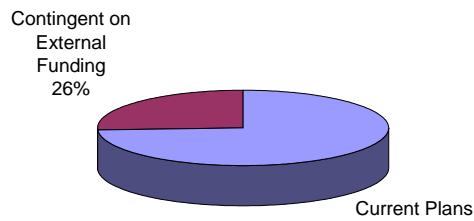


Figure 7 - Current Plans: Replacement vs. Expansion

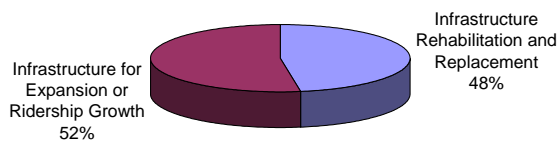
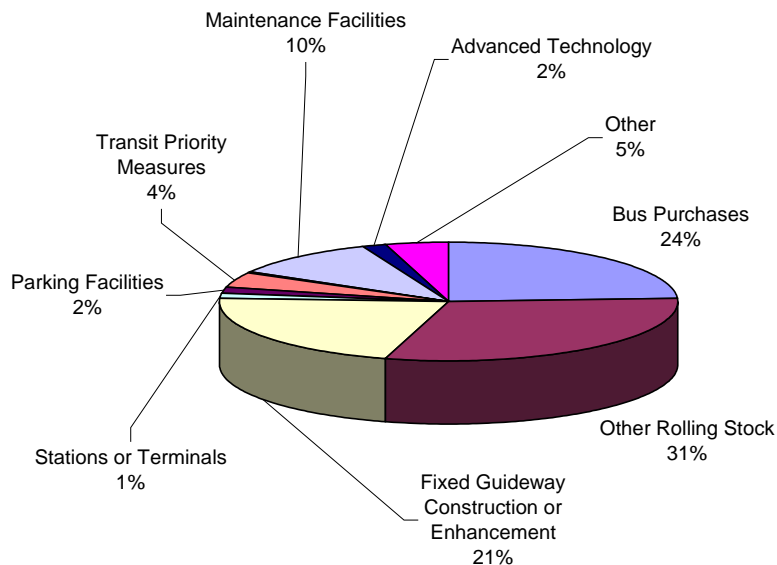


Figure 8 - Current Plans by Type of Investment



3.2.2 Contingent Funding

Sixty-six percent of the needed infrastructure funding that depends on new sources of external funding is slated for expansion or ridership growth (see Figure 9), whereas 34% is slated for transit infrastructure rehabilitation and replacement.

Figure 10 indicates that 38% of transit systems reported a need for external investment to fund larger projects like fixed guideways. It is also important to note that 24% of transit systems indicated that other projects such as bus rapid transit and light rail transit initiatives are contingent on external funding.

Figure 9 - Contingent: Replacement vs. Expansion

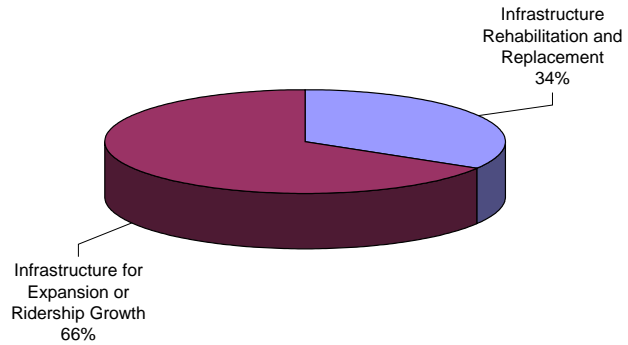
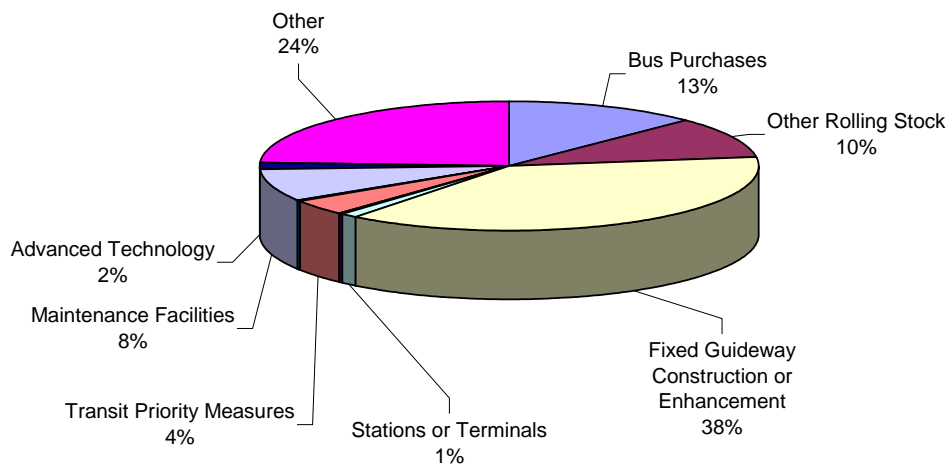


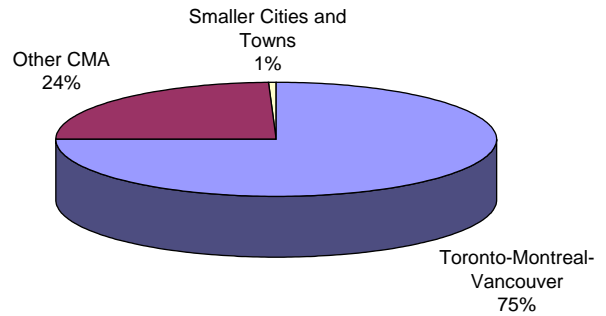
Figure 10 - Investments Contingent on External Funding, by Type



3.3 Geographic Distribution of the Infrastructure Needs

Not surprisingly, infrastructure needs are greatest in the largest urban areas. A full 75% of all infrastructure needs were reported by transit systems in the three largest CMAs (see Figure 11); and the infrastructure needs of the transit systems in the country's 25 CMAs together account for almost 99% of the national total. Nonetheless, the mobility needs of smaller communities cannot be neglected. While the costs are small, the benefits at a local level can be enormous.

Figure 11 - Transit Infrastructure Needs by Size of City



4. Trends

With a time series of four consecutive surveys now available, some discernable trends can be established

Figure 12 details the infrastructure needs from 1999 to 2006, showing an increase of 55%, from approximately \$9 billion to \$20 billion over this time frame.

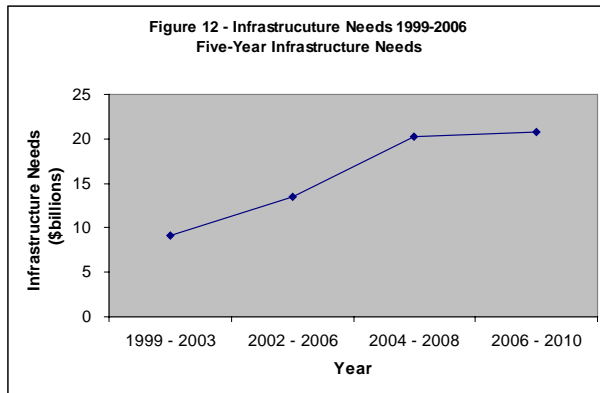
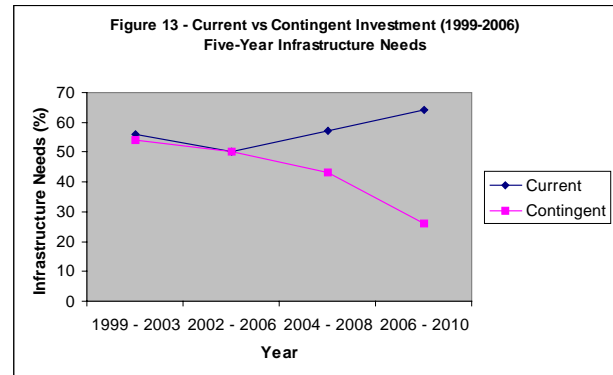


Figure 13 portrays the trends of investments possible under existing funding programs versus those contingent on new external investment. Current and contingent investments each represented about half of the total in 1999 and 2002.

More recently, the share of investments contingent on new external funding has dropped significantly, which appears to be a result of increasing federal and provincial government support, including the ability for transit systems to plan on the strength of promised transfer of funds from the federal gas tax.

It is important to note that many transit infrastructure projects are long range in nature and as funding arrangements become more available, transit systems will tend to count on them to plan for future replacement or expansion needs.



If transit infrastructure investment from the federal and provincial governments grows to meet the full needs and is maintained in the long term, it is conceivable that the current plateau could remain stable, with replacement needs declining as a proportion of the total, thereby making way for further expansion and capacity building.

5. Conclusion: The Continued Push to Meet Infrastructure Needs

The results of this survey demonstrate the continued need for large-scale, sustained investment in urban transit infrastructure, both for renewal and for expansion. Specifically, the following needs were identified:

- Rehabilitation and replacement of current infrastructure is equally as important as expansion and ridership growth.
- Buses were the clear priority in both cases.
- Fixed guideways and other rolling stock were also a priority, especially in expansion plans.

Currently, many transit systems are operating at or beyond their design capacity, and some systems are facing significant latent demand that cannot be satisfied without major investment in improvements to service.

Canadians are demanding cities with a high quality of life, where people and goods move freely, with affordable housing, clean air and reliable community services, including efficient public transit. Optimizing the economic, environmental and social benefits of public transit will require meeting the infrastructure needs outlined in this report. That, in turn, will require a long-term, sustainable investment stream from all levels of government that permits transit systems to plan effectively and systematically.