

# TORONTO TRANSIT COMMISSION REPORT NO.

**MEETING DATE:** January 12, 2011

**SUBJECT:** 2011-2015 CAPITAL PROGRAM AND 10 YEAR CAPITAL FORECAST

## **ACTION ITEM**

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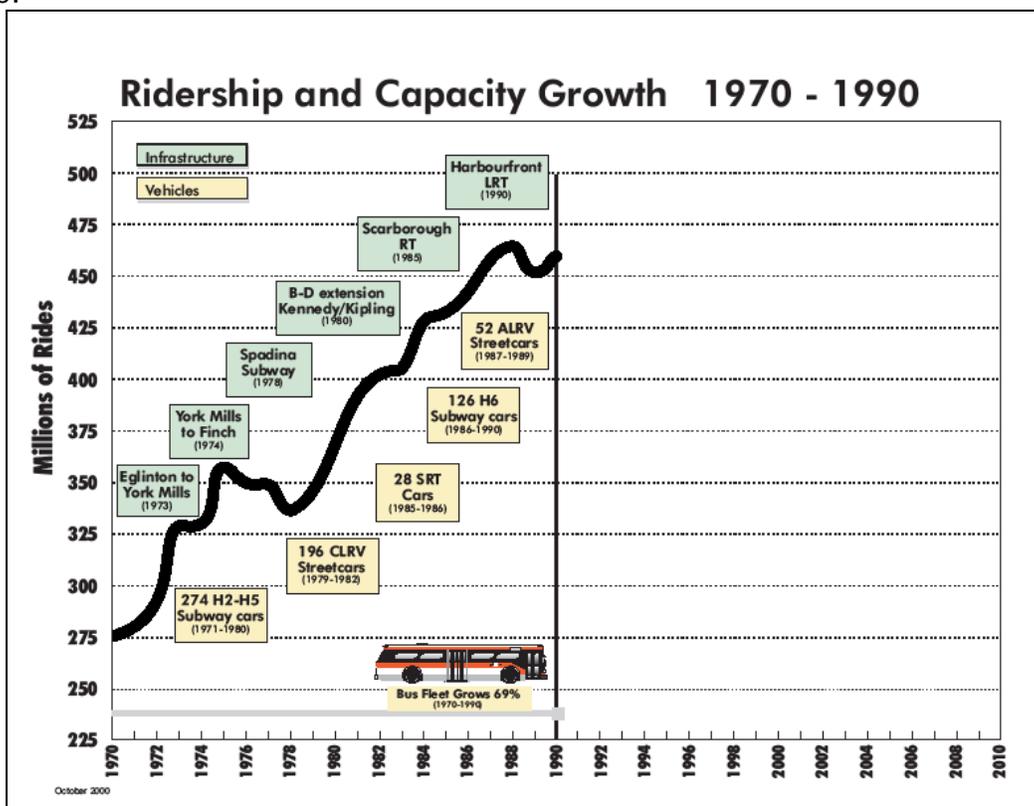
### **RECOMMENDATION**

It is recommended that the Commission:

- (1) Approve the following as set out in the detailed TTC 2011-2015 Capital Program Blue Books:
  - (a) the 2011 Capital Budget in the amount of \$904.5 million noting that identified capital funding sources are sufficient to fund the full year's capital budget request;
  - (b) the 2011-2020 TTC Capital Budget noting that for the 10-year period capital expenditures needed to maintain the existing transit system in a state-of-good-repair exceed the currently identified capital funding sources by about \$2.3 billion;
  - (c) Note that the 10-year capital funding shortfall is a continuation of the long term pattern of insufficient long-term capital funding for the TTC's capital needs. Over recent times, each capital budget process shows sufficient funding in the short-term and a significant lack of identified funding in the mid to long term. Also contained in this report is a series of possible funding package requests for the Provincial and Federal governments that if funded would in large measure fill in this 10-year shortfall;
  - (d) Forward this report to the City of Toronto as the TTC's formal capital budget request for approval by City Council
  - (e) the budget for the Toronto-York Spadina Subway Extension with an estimated final cost of \$2.634 billion, including \$524.9 million in 2011 and \$2.314 billion for the years 2011-2015;
- (2) Confirm support for the Strategic Funding Packages outlined in this report, and direct staff, in consultation with the City of Toronto, to prepare appropriate requests to the Province of Ontario, Metrolinx, and the Government of Canada in pursuit of funds for the TTC's base and capital expansion needs as outlined in this report.

**TRANSIT – HISTORICAL FUNDING CONTEXT**

The TTC is the third largest transit system in North America, behind only the massive systems in New York and Mexico City. The original Yonge subway system was opened in the 1950’s, with the Bloor-Danforth line opened in the mid 1960’s. The 1970-1990 period was one of remarkable growth for the TTC. One of the keys to this growth was a program of systematic expansion of the transit system based on long-term predictable capital and operating funding. During this period, the Provincial Government paid for 75% of the TTC’s capital funding needs and the municipal government paid the remaining 25%. This allowed for the construction of the Spadina subway, extension of the Yonge subway north to Finch, extension of the Bloor-Danforth subway to Kipling in the west and Kennedy in the east, construction of the Scarborough RT line and an expansion in the bus fleet by 70% as surface routes were extended into all corners of the suburbs. Over this same period, transit fares were set annually to cover 68% of the TTC’s annual operating expenses, under the Provincial-Municipal “User’s Fair Share” formula. This was the highest Revenue/Cost ratio of any mass transit system in North America and reflective of an extremely efficiently operated system. The Province and the municipal government paid for the remaining 32% of the operating costs on a 50/50 basis. TTC annual ridership grew by 70% over these two decades, while the city’s population grew by only 10%. The chart below shows that growth in ridership, how it was closely linked to the growth in employment and the regular expansion of the transit system. The TTC was widely recognized as one of the most successful mass transit systems in the world. This was truly a golden age for transit in Toronto.



Then the 1990's hit. Early in that decade, the country and the City were thrown into an economic recession. In particular, the City's financial district was extremely hard hit with job losses. Transit ridership and revenues fell, Provincial and city operating subsidies were cut by 40%, fares were raised and service was cut in attempts to balance the budget. Between 1992 and 1996, ridership fell by almost 20% or 90 million trips on an annual basis. Capital funding was cut back to the bare minimum, and in fact well beyond. The bus fleet aged and the rehabilitation of the aging subway system was looming (both vehicles reaching the end of their useful life and the original infrastructure). At the same time, there were extensive plans to expand the rail system under the Provincial Let's Move program that called for 7 new or expanded rail lines. There was simply not enough money to do everything.

The Let's Move plans were cancelled and operating funding from the Province was eliminated entirely. For the latter part of the 1990's and the first part of this past decade, riders were forced to pay in excess of 80% of the annual operating costs, well up from the historical "User's Fair Share". Service improvements were few and far between. Of necessity, almost all of the capital funding available was poured into the aging infrastructure and other than the construction of the Sheppard Subway, there was virtually no expansion of the transit system. But the city's population and employment levels grew and expansion was sorely needed.

In 2002 and 2003, the City approved a new Official Plan and the TTC introduced the Ridership Growth Strategy (RGS) plan. City population would grow dramatically over the next 20 or 30 years. With no space to build more arterial roads, that population growth would have to be focused on major arterials and be based on transit. The Official Plan was designed to ensure that no resident of the City of Toronto would be disadvantaged from a mobility perspective from not owning a car. That required higher order transit along those arterials. The TTC undertook an analysis of how best to serve that population growth and those arterials and the result was the Transit City Plan. This was a series of surface rail expansions within separated rights-of-way with sufficient capacity to handle the projected ridership demand for the next few decades.

As an interim step the Ridership Growth Strategy called for the TTC to introduce a series of bus improvements designed to encourage ridership and to ensure that the surface hours of operation were roughly consistent with the subway hours of operation. In 2008, this represented the largest single increase in bus service in decades. The TTC currently runs more service than it has ever done in its history and not surprisingly is carrying the highest levels of ridership in its history. In fact, during the economic recession of the past few years, TTC ridership has continued to grow to record levels. This is in stark contrast to most other major cities in North America (including New York, Chicago and Philadelphia) that have either seen ridership declines or stagnation during this recession. TTC ridership in 2009 topped 471 million (an increase of 4 million from 2008) and it topped 477 million rides, an all-time TTC record.

It is also dramatically different from the recession in the early 1990's when ridership plummeted. While it has been without the massive job losses in the City of Toronto, there still were job losses and economic decline. Unlike last time, operating subsidies were not cut

and service was not reduced. The result is the TTC has ridden out the current recession with a growth in ridership to record-high levels, not a steep ridership decline and catastrophic revenues losses experienced in the early 1990's. Somewhat surprisingly, ridership in 2010 was well above budget and higher than 2009 levels, despite last year's fare increase and the economic slowdown.

### **TRANSIT CAPITAL – CURRENT CONTEXT**

In addition to the RGS and the start of the Transit City program, the TTC placed a large contract to replace the existing fleet of streetcars that are at the end of their useful life, ordered the new Toronto Rocket subway trains and replaced the bulk of its bus fleet with modern energy efficient buses. This represents a significant investment in the Commission's fleet. These vehicle purchases have been made possible to varying degrees by capital assistance from both the Province and the Federal Government. In addition, these purchases were designed to meet several goals, not just the orderly replacement of vehicles at the end of their useful life.

The Toronto Rockets will not only replace aging vehicles, but they're designed with an open gangway concept to allow for a 8%-10% increase in passenger carrying capacity. This was an important consideration in designing these vehicles. There really are limited options for dealing with the increasing ridership demands on the Yonge subway. Making maximum use of this critical asset, while expensive in absolute dollars, is a cost-effective step before considering the construction of a new multi-billion dollar Downtown Relief subway Line (DRL) to handle some of the ridership burden the Yonge line faces. The Toronto Rockets are also designed to be by far the most reliable subway vehicles the TTC has ever acquired. When coupled with the Yonge-University-Spadina (YUS) Re-signalling project to permit automatic train operation, the construction of a 2nd platform at Union Station, the installation of additional cross-overs to assist in quicker recovery from major delays in the operation of the subway and the crowd control/vehicle loading improvements at the Bloor station of line, these new state-of-the-art trains will represent a substantial improvement in the operation of the YUS subway. The final piece in improving overall reliability of the YUS subway is the installation of Platform Edge Doors (PEDS). This would result in the barriers and doors on the edge of the subway platform that the subway train would align with upon entering a station. Both sets of doors would open allowing passengers to board and alight the train. The advantage of PEDS is that they would restrict unauthorized access to track level, block debris from going to track level and reduce other causes of delays within the system. These PEDS support the capacity increases that are necessary to accommodate ridership growth. As an ancillary benefit, it would address the issue of suicides within the subway system. Overall, PEDS will cost in the order of \$1 billion to install system-wide on the YUS and the BD lines. For the first time during the 2011-2020 period, the \$180 million needed to install PEDS on the YUS line on the "U" (St. George down to Union and up to Bloor) has been included in the budget. The remaining funds are identified in the budget in future years. The budget also includes the purchase of an additional 10 Toronto Rocket trains to accommodate that expected growth.

Overall, it is expected that a 30%-40% plus (perhaps as high as 50%) increase in carrying capacity in the peak hours of operation will ultimately result from this work, pushing out the

need for the DRL by many years. All parts of these improvements are ultimately needed because adding this carrying capacity to the YUS line will make it an even more critical transportation trunk. Unpalatable as delays on the line are today, adding 30% or 40% or 50% more riders means any delay no matter how small would have more negative impacts. The 2011-2020 program includes budgeted expenditures for all of these projects.

Similar projects to increase the Bloor-Danforth subway carrying capacity and reliability are also included in the budget. These include the \$431 million BD Automatic Train Control Re-signalling project that has been slated to commence installation at the end of the YUS project once it is completed over the next 5 years or so. These re-signalling projects are amongst the most technically complex projects the TTC is undertaking.

The order for new "legacy" Light Rail Vehicle (LRVs) was another major rail vehicle decision. With the existing fleet of streetcars (Canadian Light Rail Vehicles or CLRVs and Articulated Light Rail vehicles or ALRVs) reaching the end of their useful life, the TTC was faced with a very significant decision: replace the fleet with a new modern one or rebuild the old fleet to extend the useful life. The option to extend the useful life was carefully examined and would have cost in excess of \$200 million. To make such a significant rebuild decision would have necessitated keeping the fleet for many years into the future. In addition, there was no feasible technical way to make the fleet accessible. With the Province's AODA (Accessibility for Ontarians with Disabilities Act) requiring the entire transit system to be fully accessible no later than 2025, rebuilding the fleet, keeping the rebuilt vehicles as long as that investment would have necessitated and then subsequently ordering of new accessible replacement streetcars wouldn't have been completed in time to meet the legislated AODA timelines. Consequently, the Commission ordered a new, modern, accessible fleet of larger LRVs. Like the Toronto Rockets, these vehicles also have a larger passenger carrying capacity than the existing vehicles to accommodate ridership growth on the existing streetcar lines. The contract also has a Canadian content requirement to ensure at least 25% of the vehicle is manufactured in Canada, including the final assembly of the vehicles. The competitively bid RFP also resulted in these vehicles being purchased for a price over \$500 million lower than the 2nd compliant bid.

In addition to the acquisition of new fleets of vehicles, the TTC has been undertaking both selection/acquisition initiatives to house the new maintenance and storage facility for the LRVs as well as undertaking a major technical review of subway yard capacity. Several things about major rail maintenance facilities are important to understand. They tend to require extremely large tracts of land, meaning there will always be a relatively small number of suitable locations and, as the rail lines they service are all close or relatively close to residential areas, the yards can have issues integrating into local communities. Invariably it seems, and regardless of possible locations, local community opposition of some sort has to be addressed in ways that are sensitive to local needs, but also allow for operational efficiency and affordability.

The selection process for the new LRV Yard to accommodate the new fleet of legacy LRVs is an excellent case in point. There are only so many locations in the city big enough to house this yard within a reasonable distance to the streetcar lines. The selection of the TTC staff recommended location at the Ashbridges Bay site was the result of an exhaustive review of

suitable locations. Each one had its pros and cons. None was the ideal location from all aspects. Each site had competing uses. However, in the long run, this site was deemed to be the best overall fit and was acquired by the City for this purpose. As illustrative of the nature of the acquisition of these large sites, even this one has to deal with the issue of \$70 million of environmental clean-up costs to make the site suitable for the yard it will house. Despite the best efforts of TTC and City staff to address legitimate local concerns, opposition remains to this site. Major rehabilitation of the TTC's many decades old facilities at the existing Roncesvalles and Russell carhouse locations is also needed. The construction timelines are extremely tight to have these facilities ready for regular maintenance and operation of the fleet as it arrives.

The process for accommodating the new Toronto Rockets for the Yonge-University-Spadina subway line and the shifting of the T1 fleet to the Bloor-Danforth subway line necessitated a major subway yard capacity needs study. This study was released publicly at the January 2010 Commission meeting identifying major changes needed at both the Wilson Yard servicing the YUS subway and at the Greenwood Yard servicing the Bloor-Danforth subway. The results of these studies are included in the 2011-2020 TTC Capital Budget and represent a fairly substantial investment that needs to be made if future ridership growth on the YUS is to be accommodated.

The more significant of the changes are at the Wilson Yard complex. In addition to the structural changes needed to maintain the new fleet, there are other issues that need to be addressed. The first is that the trains are designed to be a "6 car consist" meaning the full train normally stays connected and not broken up into "married 2-car pairs" for maintenance purposes as the existing subway trains are. This change is necessitated by the open gangway concept of the new Toronto Rockets that can be broken apart into individual cars only if needed. This breakdown process takes several hours to complete and isn't practical for day-to-day operation meaning the trains will be maintained as train-sets. Some structural changes to the carhouse were needed as a result. The other important issue has to do with the capacity to move trains out of the yard and into service to feed the subway system for the morning rush hour. With the existing signal system and yard configuration, there is an absolute limit on the number of trains that can be fed onto the mainline both northbound and southbound within the current 1-hour period before the morning service begins. Given future ridership projections for the YUS line, this would mean that as additional trains are added to the line to meet peak service demand, there would not be sufficient time to load the entire line within the current time constraints. Staff are examining options for addressing this.

While all of this was going on, the TTC was continuing with other major capital initiatives, such as the on-going routine replacement/rehabilitation of the TTC's multi-billion dollar capital infrastructure. This entails everything from track replacements, tunnel, bridge and structure rehabilitation, bus and rail vehicle mid-life overhauls, operating system replacements, communications systems replacements and various IT system improvements. These types of capital investments rarely catch the imagination of the public like major system expansion or new rail vehicle purchases do, however, without them the system couldn't survive.

Another large project currently underway is the Fire Ventilation project to add larger fans and second exits to ensure a safe egress from the existing subway system in the event of a

major fire. This is the current fire code requirement that all new lines constructed must meet. However, most of the existing subway system was built before that requirement was in place. The TTC is the midst of a massive \$500 million project that will take well past 2020 to complete.

Another huge retrofit project the TTC is in the middle of is the Easier Access Phase III project that has to be completed by 2025 to meet AODA legislative requirements. This \$355 million project provides for the construction of elevators at all existing subway stations. Like the Fire Ventilation project, these retrofits are difficult, time-consuming and expensive to complete.

Over this 10-year period, the TTC will also spend \$386 million on new bus purchases for the conventional and Wheel-Trans systems to replace buses at the end of their useful life and to accommodate demand and about \$320 million on mid-life bus rebuilds to keep the fleet in proper working order.

The other work budgeted in the capital program budget is detailed in the documents accompanying this report.

### **2010-2019 CAPITAL PLAN DEFERRALS**

During the review process for the TTC's 2010-2014 Capital Program, certain TTC projects were deferred or deleted to accommodate the City's established debt targets. The combined impact of these capital budget reductions was in the order of \$1 billion and included the following key decision points:

- project deferrals of \$417 million beyond 2018 to offset an increased 1/3 City debt share on the 204 LRT car order, predominantly on mid-life bus rebuild and fire ventilation upgrade projects (June 2009);
- project amendments included in the Commission's consideration of the 2010-2014 Capital Program (September 24<sup>th</sup> Commission) which included changes to the bus and streetcar fleet, but primarily related to the further deferral beyond 2019 of the mid-life bus rebuild program (\$411 million);
- project amendments (October 29<sup>th</sup> Commission) necessary to live within a City ten-year funding shortfall of no more than \$300 million. This included deferrals (Fire Ventilation, Easier Access, CIS Replacement) and project deletions to "below the line" including Station Modernization and Industrial Facility requirements projects.

Following these amendments, the capital program was approved by City Council on December 8, 2009. At that time there still remained a gap of approximately \$300 million between projected capital expenditures and the funding available for them over the ten year period. The City agreed to address this shortfall during the 2011 budget cycle and this has been accommodated through revised debt targets for the TTC.

This capital plan included all known funding from senior levels of government and while City debt levels were significant in the initial years, there remained a big funding hole over the ten years. Due to the lack of long term funding commitments, and the fact that many capital

items were not funded, the resultant significant funding shortfall necessitated that action be taken to defer projects to provide a Council approved committed plan that was affordable in the short term, acknowledging that these project deferrals would need to be reassessed and resubmitted in the development of the 2011-2015 Capital Program and ten year forecast. Further, there were a number of initiatives which were not included in the plan, most of which were under review at the time which would further impact the capital requirements with estimated capital costs upwards of \$2 billion.

### **2011-2020 CAPITAL PLAN DEVELOPMENT**

The 2011-2015 Capital Program budget and ten-year forecast was developed with the intention of identifying all potential capital requirements on the basis of need rather than affordability. In past years, many initiatives were deferred outside of the envelope (based on funding targets or pending further clarity on the projects), but this has tended to result in an impending wave of future needs. These initiatives must all be considered to ensure that each is given the opportunity of an appropriate review and prioritization of the overall transit capital need. In addition, in most capital budget cycles the predominant focus was on the first five years of the ten-year plan, with allowances provided in the subsequent five years. As part of the 2011-2015 Capital Program budget development, greater emphasis has been placed on the latter five years to provide better definition of expected requirements so that the overall ten-year plan will be more representative of anticipated actual needs. The format and prioritization of the capital program however remained unchanged, with focus on the base state of good repair budget.

The 2011-2015 Capital Program and Ten-Year Forecast requirements for the proposed base capital program have been identified with the following impacts:

- 2010 will be under-spent by \$64 million (excluding carry forwards)
- 2011 will be under budget by \$9 million
- the 2010-2014 capital requirements will increase by \$1.0 billion (2011-2015 capital requirements will increase by \$1.4 billion)
- the 2010-2019 capital requirements will increase by \$2.2 billion (2011-2020 capital requirements will increase by \$2.0 billion)

The primary source of these plan changes (over the ten year period 2010-2019) includes the following projects:

#### Bus Fleet related (\$448 million)

- reinstatement of the bus rebuild program (\$313 million) \*
- purchase of replacement buses (\$55 million) \*
- purchase of WT buses (\$28 million)
- bus hoist replacements (\$52 million)

Subway Capacity (\$1,185 million)

- TR/T1 rail yard accommodation (\$491 million)
- purchase of 60 new subway cars for growth (\$161 million)
- T1 Subway Car overhauls (\$34 million)
- inclusion of Bloor-Danforth ATC Resignalling (\$319 million)
- introduction of platform edge doors on the YUS (\$180 million)

LRT Fleet / Facilities (\$272 million)

- increased costs for the Ashbridges Bay LRV facility (\$90 million)
- fare equipment to support the legacy LRVs (\$87 million)
- carhouse modifications to support the new LRV fleet (\$17 million)
- reconstruction of streetcar overhead & streetcar network upgrades (\$78 million)

Other (\$312 million)

- Fire Ventilation (\$17 million) \*
- industrial facility requirements (\$47 million) \*
- On-grade and structural paving (\$55 million) \*
- reintroduction of Transit Priorities (\$21 million) \*
- other project changes (\$172 million)

Review of these items and other projects was undertaken with a view to reducing the size of the increase in the proposed budget while ensuring that capital needs are appropriately considered and are adequate to meet both current and future needs. This review focused on the elements noted above and, most notably, on the bus rebuild program and a group of subway related projects and LRV related projects. Several elements of the projects deferred during the 2010 budget cycle have been added back (see asterisked items on the list above).

**2011-2015 CAPITAL PROGRAM**

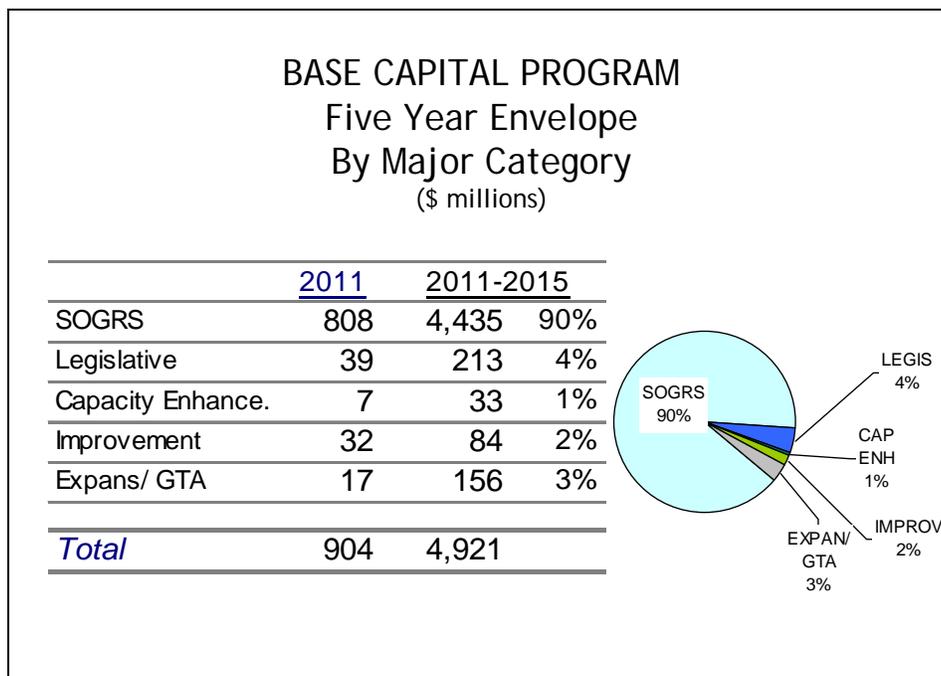
With an investment approaching \$11 billion in existing assets (many of which last for decades) and ridership volumes at record levels, the existing transit network must remain the TTC's first priority. The base capital program covers the acquisition of new and replacement transit assets needed by the TTC for the provision of public transit services within the City of Toronto and under contract with adjacent municipalities. In establishing the budget, a life-cycle approach is used. Detailed system inventories of each class of capital asset are maintained. Budgets are set to replace or rehabilitate assets based on condition assessments, engineering standards, legislative requirements or safety/environmental implications. A one-year budget, five-year program and ten-year forecast are developed: all designed to keep the TTC's capital assets in proper working order. The capital plan is constructed using the Commission's long standing capital budget priorities which remain:

1. State-of Good-Repair and Safety
2. Legislative
3. Capacity Enhancement
4. Improvement
5. Expansion

Each program or project element is described in detail in the 2011-2015 Capital Program Blue Books. Expansion initiatives, including the Toronto-York Spadina Subway Extension, a Transportation/Transit Plan as well as the Yonge North Subway Extension, and various Other TTC Recommended projects and Waterfront Initiatives are outside of the base capital program.

Expenditures for the next five years are budgeted in the order of \$4.9 billion as shown in Exhibit 1.

**Exhibit 1**



As can be seen from the exhibit, almost \$4.6 billion or 94% of the capital budget for the next five years is committed to state-of-good-repair/safety and legislative projects. In addition, 33% of budgeted expenditures for the next five years are for vehicle procurements and overhauls. Key elements of the \$904 million in base capital program for 2011 are outlined in the following chart:

<b>TTC - PROPOSED 2011 BASE CAPITAL PROGRAM</b>		
(\$ millions)		
Delivery of 35 Diesel Buses + 48 WT Vehicles	40	}
Purchase of 234 + 126 Subway Cars (delivery of first 138 cars & milestone payments)	75	
Purchase of 204 LRV Cars (milestone payments - first delivery 2012)	160	
Vehicle Overhaul Programs (Bus, WT, Subway, Streetcar)	28	}
3.1-3.3 Finishes, Equip, Yards & Roads	59	
3.4 Bridges & Tunnels	49	
3.9 LRV & CH (99), EA II&III (20), Facility Renewal (24), QW/MD/Birch Gar (15)	158	}
3.9 Fire Ventilation (20), Wilson CH & FA (14), PED (3), TR Mods (6)	43	
1. x Track Programs	52	}
2. x Signals Electrical Communications, OH & Poles (15), YUS ATO (63), Speed Control (7)	125	
4.2x NRV (11), 5. x Equipment (18), 6.1 Environ (12), 7. x IT (42)	83	
Other projects - incl Serv Plann (4)	32	}
<b>TTC REQUEST LEVEL</b>	<b><u>\$904</u></b>	

Approximately \$7.8 billion is required over the next 10 years for the base capital program, for which the key program elements are outlined in the attached Appendix A.

**BASE PROGRAM FUNDING**

Funding for TTC capital expenditures comes from several sources. There are federal and provincial gas taxes; both federal and provincial governments have also provided funding under programs such as, but not limited to, the CSIF (Canada Strategic Infrastructure Fund), ISF (Infrastructure Stimulus Fund), OBRP (Ontario Bus Replacement Fund), Transit City Funding and numerous other sources of funding. These types of funds are mostly project specific and expire once the funds are exhausted or the time limits expire.

The City of Toronto also provides direct capital funding to the TTC. The bulk of this is in the form of debt issuance and the City sets annual debt affordability targets. Ideally, all of the available funding sources added together would match the capital needs of the system. As set out in this report, that is not the case.

In addition to government funding noted about, the TTC has a depreciation charge levied against the TTC Operating Budget. This is normally in the order of \$15-\$25 million per year and provides a source of funding for expenditures paid towards short duration capital assets that qualify for capitalization for accounting purposes, but are shorter than the 10-yr minimal debt issuance by the City of Toronto. Other funding is also provided by some third party arrangements and Development Charges as levied under the Municipal Bylaw are also utilized as a limited source of funding for the TTC’s capital program.

All of these funding sources are summarized in the table below. In addition, the TTC capital needs described above are also summarized, resulting in a net multi-year capital funding shortfall of \$2.3 billion over 10 years.

**TTC 2011-2020 CAPITAL PROGRAM REQUIREMENTS & SOURCES OF FUNDING**

\$ millions

	<u>2010</u>	<u>2011</u>	<u>2012</u>	<u>2010- 2014</u>	<u>2011- 2015</u>	<u>2010- 2019</u>	<u>2011- 2020</u>
Vehicles	449	315	435	1,834	1,645	2,885	2,487
Infrastructure / Other	401	589	782	3,112	3,278	5,350	5,362
Proposed Capital Program Budget	850	904	1,217	4,946	4,922	8,235	7,848
<b>Funding Sources:</b>							
<b>Total Provincial Funding</b>	<b>298</b>	<b>234</b>	<b>249</b>	<b>1,100</b>	<b>914</b>	<b>1,630</b>	<b>1,401</b>
<b>Total Federal Funding</b>	<b>228</b>	<b>179</b>	<b>158</b>	<b>898</b>	<b>841</b>	<b>1,686</b>	<b>1,612</b>
<b>Total City Debt</b>	<b>394</b>	<b>452</b>	<b>520</b>	<b>1,841</b>	<b>1,612</b>	<b>2,423</b>	<b>2,129</b>
<b>Total Other Funding</b>	<b>76</b>	<b>57</b>	<b>36</b>	<b>223</b>	<b>172</b>	<b>345</b>	<b>296</b>
<b>Total Funding</b>	<b>997</b>	<b>922</b>	<b>963</b>	<b>4,062</b>	<b>3,539</b>	<b>6,085</b>	<b>5,439</b>
Funding Shortfall	-	-	254	1,048	1,401	2,315	2,427
Funding (Surplus)	(147)	(17)	-	- 165	- 17	- 165	- 17
				<b>884</b>	<b>1,383</b>	<b>2,150</b>	<b>2,410</b>
Net Funding Shortfall with 2010 Carried Forward					<b>1,236</b>		<b>2,262</b>

The full 10 year expenditure and funding requirements are summarized in Appendix B. As can be seen, there is a \$2.3 billion funding shortfall between what's needed to fund the base budget versus what is currently identified. As can also be seen, there is sufficient funding available to fully cover the 2011 capital expenditures, but insufficient for the future starting in 2012. In order to fulfill all of the capital needs and plans, this funding will have to be secured in some form from federal and provincial governments.

This pattern of enough money in the short-term and insufficient money in the long-run has been a constantly reoccurring one ever since the Province moved away from the 75% capital funding regime that was in place during the 1970s and 1990s. Each year, the funding shortfall is identified, a set of possible funding requests of the two upper levels of government is prepared, the formal funding request is made for consideration with senior levels of government and after a period of consideration, an announcement may be made on available funding. What is required is a return to the funding stability and planning certainty

of those decades. In the absence of that, staff in conjunction with City staff has prepared a list of possible funding packages that would form the basis of discussion with both the federal and provincial governments. Five funding packages are outlined below and if funded, would come close to filling this funding hole that exists over the next decade.

**FUNDING PACKAGES FOR PROVINCIAL AND FEDERAL GOVERNMENT**

<b>2011-2015 CAPITAL PROGRAM - STATUS AT JANUARY 2011 (AMENDED)</b>				
<b>SUMMARY OF KEY PROJECT PACKAGE ITEMS</b>				
<b>Program / Project Description / (\$ Millions)</b>	<b>Year 2011</b>	<b>Year 2012</b>	<b>2011 to 2015</b>	<b>2011 to 2020</b>
<b>PROPOSED PACKAGE ITEMS - EXPENDITURES</b>				
<b><u>LEGACY STREETCARS</u></b>	99	192	482	490
<b><u>SUBWAY CAPACITY</u></b>	9	60	748	1,401
<b><u>BUS FLEET</u></b>	27	57	315	607
<b><u>ACCESSIBILITY</u></b>	41	56	196	356
<b><u>FARE COLLECTION</u></b>	1	13	73	87
TOTAL - PACKAGE ITEMS	178	378	1,814	2,941
<i>FUNDING ASSUMPTION - 1/3 SHARE FROM EACH OF PROV / FED GOVTS</i>	\$ 119	\$ 252	\$ 1,209	\$ 1,961
<i>CURRENT FUNDING SHORTFALL 2011-2020 CAPITAL BUDGET &amp; PLAN (with 2010 CF)</i>	(165)	254	\$ 1,236	\$ 2,262
<b><u>REVISED FUNDING SHORTFALL WITH GOVT FUNDING PACKAGES</u></b>	<b><u>(284)</u></b>	<b><u>3</u></b>	<b><u>27</u></b>	<b><u>301</u></b>

These packages are more fully detailed in Appendix C.

While expansion of the transit system is critical to the long-term viability of the City of Toronto and the broader GTA, given the Commission's capital investment priorities and the existing ridership base, it would be inappropriate to spend money on system expansion if state-of-good-repair replacement and rehabilitation of the existing system is not fully funded. While some progress was achieved over the past several years with Metrolinx and the Provincial government to provide system expansion funding, as well as some additional SOGR funding, further long term commitments are required. The status of this Metrolinx funding commitment and the resultant impacts on base program funding are currently not known.

To address the substantial projected base program funding shortfalls noted above, staff has continued to meet with City, Provincial and Federal officials to consider funding of proposed funding packages and further discussions are expected to continue in the hopes that these efforts will result in the identification of ongoing, predictable and long term funding for the TTC's base capital program. A significant portion of this funding shortfall relates to the maturity or completion of specific program based contribution funding programs such as CSIF, ISF, TS, OBRP, Quickwins, etc which provided significant contributions in past years but which have not yet been extended or identified as having a successor type program for the continuing capital needs.

The following Key Project Funding Packages have been identified and should continue to be pursued with the intent of securing additional funding to address the funding gap for the base program. If funding was secured as outlined of 1/3 from each of the provincial and federal governments, the resulting funding shortfall would be effectively eliminated for 2011-15 (\$27 million) and would be minimal in magnitude for the ten years 2011-2020 (to a level of \$301 million).

1. Subway Capacity

The Yonge-University-Spadina subway is largely operating at maximum capacity during rush hour, particularly southbound from Finch station in the mornings, utilizing the existing technology of the line. These measures are all underway to improve the carrying capacity on the line from 30,000 per hour to 45,000 passengers per hour. To increase that capacity, the TTC has the following project plans which are already in place:

60 Toronto Rocket (TR) Trains (H4, H5 & H6 replacement and growth) are designed to be more reliable than current trains and can carry an extra 10% more riders. This increase in reliability and extra passenger carrying capacity effectively means we can carry more riders on the existing system than we are currently able to. In addition, through the exclusive operation of the TR fleet on the Y/U/S line, there will be the earlier realization of associated benefits such as: increased safety, reliability and efficiency.

- YUS Re-Signaling and Automatic Train Control: is one of the most significant initiatives the TTC has for increasing the capacity of the Yonge Subway. The existing signal system was installed when the line was built over 50 years ago. By replacing it with industry standard, state-of-the-art signaling equipment and equipping the line with automatic train control, closer headways (the time between trains) coupled with the new TR subway trains will result in a significant increase in carrying capacity and regularity of service will be achieved.
- Double tie crossovers will be installed south of College and south of St Clair and north of King to allow for more efficient system operation and replace obsolete signaling equipment.
- Union Station 2nd Platform (funded through Waterfront Toronto) will help alleviate the current overcrowding of the station and significantly increase the passenger boarding capacity of the station and should markedly reduce the dwell time at the station for trains loading and off-loading customers; contributing to more regular service on the YUS subway.

Yonge Bloor Capacity Improvements - (\$1 million): Yonge/Bloor is a major transfer point in the subway system and a study in 2011/2012 will evaluate the effectiveness of improvements in vertical capacity and dwell times to best accommodate increasing demand which would otherwise be a capacity constraint at this station. Additionally operating improvements to address the diversion of passengers to less populated cars at the Y-B station will improve the dwell time constraints at this station.

Automatic Train Control – (\$571 million): In 2007 the Province agreed to fully fund the installation of Automatic Train Control and Re-signalling of the Yonge-University-Spadina line as part of a Quick Wins program initiative. While the commitment was substantial and work is progressing, the announcement was limited to the Quick Wins term of 2009-2012 and there remains a funding shortfall of \$139 million for this project for the remaining scope to 2017. This work is necessary not only to replace the 50 year old signals, but, to assist in the introduction of automatic train control which will enhance the vehicle capacity of the line. In addition, following the completion of ATC work on the YUS line, the installation of ATC on the Bloor-Danforth (BD) line will improve safety and service reliability and efficiency of service which is also approaching capacity, noting that the once the TR trains are received, T1 cars will be redeployed to the BD line and equipped with ATC equipment to improve headway and the interoperability between the two line particularly at the transfer points. The ATC project on the BD line is a \$432 million project with costs of \$319 million over the next 10 years.

10 Additional TR Trains – (\$161 million): Fleet growth cars with delivery scheduled for 2015 will facilitate line expansion or reduced headway operation.

TR/T1 Rail Yard Accommodation – (\$658 million): The rail amalgamation study completed in 2010 identified modifications required to various subway yard complexes and facilities to accommodate proper delivery, storage and maintenance of up to 80 TR trains on the YUS line and the series cascading impacts from the transfer of all T1 cars to the BD line. Over time, the increased requirement to get additional trains into service will need to be revisited with alternatives including closing the subway early or building a North Yonge Tail track for storage (\$350 million not budgeted).

Platform Edge Doors (PEDs) for YUS - \$492 million: The retrofit of PED features for existing stations on the YUS will improve service reliability and customer safety as well as to improve platform environmental and debris conditions. This project will be coordinated with the ATC project schedule and Phase 1 (St George to Bloor) would address 13 priority downtown stations by 2013 at a cost of \$180 million. Following would be the completion of the remaining 19 YUS stations post 2020 at a cost of 312 million. PED installation on the BD line would follow subsequently at a currently estimated cost of \$510 million.

All of these improvements are needed to address subway capacity requirements before the alternative of building a Downtown Relief Line would be warranted.

### LRV Facilities

LRV Maintenance & Storage Facility (MSF) – (\$419 million): While one-third provincial funds have been secured for the acquisition of 204 LRV's to replace the TTC's current fleet of streetcars that are reaching the end of their 30-year life (\$1.163 billion), staff has had some discussions with government officials to consider the support of the cost for facility to accommodate running repairs and maintenance for the full LRV fleet as well as storage for 100 cars. The Ashbridges MSF project has a total cost of \$434 million with necessary construction by 2013 to accommodate the commencement of vehicle delivery.

Existing Carhouse Modifications New LRV – (\$72 million): Modifications at existing aging carhouse facilities (Roncesvalles, Russell, Harvey) are required to accommodate the light maintenance and some storage requirements for the new LRV cars. These include modifications to address state of good repair or replacement, operational and health and safety standards and new design impacts of the LRV cars technology.

### 3. Bus Fleet Requirements

Bus Hoist Replacements - (\$63 million): The bus garage facilities has a fleet of 146 bus hoist which are aging as well as require update to address safety zone or parallelogram lift standards and 103 are scheduled for replacement over the next 11 years.

Bus Rebuild Program - (\$321 million): With the changes in the fleet for new vehicle procurements and changing technology, as well as pending a review of the standard bus life, the bus rebuild program was removed from the 2010 capital plan. A complete review has now been done and the funds have been re-introduced for 120-240 bus rebuilds annually (over 1500 over the next 10 years) with commencement of the program in 2011.

Bus Procurement - (\$223 million): The purchase of 375 clean diesel buses is planned over the next 10 years based on the standard bus life of 18 years.

### 4. Accessibility

The Accessibility for Ontarians with Disabilities Act (AODA) requires full accessibility by 2025. The TTC is moving forward to achieve this goal with its bus fleet by 2012, its stations by 2020 and light rail by 2018. A senior government commitment for long-term sustainable funding for accessibility would assist with projects underway or required to meet AODA requirements such as vehicle modifications and standards compliance (\$38 million plus \$TBD), installation of elevators in all stations (\$278 million) and, Wheel-Trans vehicles (\$78 million) - as well as a contribution towards the Wheel-Trans operating budget.

### 5. Fare Collection

GTA Farecard (PRESTO) – (\$192 million not currently budgeted): This project reflects the costs (above and beyond the CSIF included funds of \$140 million) estimated a total of \$332 million to implement the Provincially backed PRESTO fare collection system at the

TTC. Staff is currently assessing the business case for an open payments system as directed by the Commission in May 2010 and pending this decision, funding from senior levels of government may be impacted.

POP LRV Fare Collection – (\$87 million): The new LRV cars will require ticket vending equipment on board the vehicle and off-board at select TTC streetcar stops. In addition, infrastructure work is required for concrete pads and power to support the installation of off-board equipment at 150 street level stops.

**EFFORTS TO SECURE SENIOR GOVERNMENT COMMITMENT TO FUNDING**

In addition to pursuing funding from senior levels of government, TTC senior management have undertaken a “Plan B” exercise with respect to planned fixed contract commitments which were anticipated to be awarded under the current 2011-2020 capital plan and have identified a number of projects which can be deferred on a temporary basis, pending approval or further direction from the Commission. These commitments will be deferred with the resultant impact that 2011 and/or 2012 cashflows will be reduced accordingly. If TTC and City officials prove to be unsuccessful in securing a commitment or announcement of funding of significant magnitude to address the existing funding shortfall requirements, staff will be required to take appropriate further action. This action may include alternative measures to reduce the funding shortfall as required, including the following course of action:

- Undertake a review of the TTC operation and services with respect to available funding and directed priorities to assess the impacts of revising levels of services /operations/staffing to match the system to a level which is affordable from both a capital investment and operating subsidy perspective.

Staff will be reporting back to the Commission by mid-year with the status of funding package decisions and Plan B actions taken to date and to recommend and/or seek direction on further actions required to address remaining funding shortfalls. Such actions are expected to feed directly into the 2012 capital budget process.

**BUDGET CONCLUSIONS**

The TTC is charged with the responsibility of providing efficient, safe and affordable public transit to the residents of the City of Toronto. The TTC represents an integral part of the transportation system of the City of Toronto and the GTA. Maintaining the existing system is critical to ensuring that ridership levels can be adequately serviced in a safe, efficient and cost effective manner. The Capital Program detailed in this report and the supporting documentation sets out how to keep the existing system in a state-of-good-repair, while maximizing the use and life of assets to meet existing and future transit needs. However, while the plans are practical and achievable, they are dependent upon funding from all three orders of government – funding that is predictable and long term.

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January 11, 2011  
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Attachment:           Appendix A - 2011-2020 Capital Program Summary  
                          Appendix B – 2011-2020 Capital Program & Sources of Funding  
                          Appendix C – Project Funding Packages

Supporting Documents: TTC 2011-2015 Capital Program Blue Book