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**Review of the South Coast British Columbia  
Transportation Authority (TransLink)**

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**Internal Audit & Advisory Services  
Ministry of Finance**

October 2012



# Table of Contents

## Section

Page No.

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<b>Abbreviations</b> .....	<b>i</b>
<b>Executive Summary</b> .....	<b>1</b>
<b>Introduction</b> .....	<b>6</b>
<b>Purpose and Objectives</b> .....	<b>8</b>
<b>Approach</b> .....	<b>9</b>
<b>Overall Conclusion</b> .....	<b>10</b>
<b>1.0 Revenue</b> .....	<b>12</b>
<b>2.0 Transit Services</b> .....	<b>18</b>
2.1 Rail Services .....	19
2.2 Bus Services .....	20
2.2.1 Network Management.....	21
2.2.2 Driver Scheduling.....	23
2.2.3 Non-Productive Time .....	24
2.2.5 HandyDART.....	29
<b>3.0 Capital Asset Management</b> .....	<b>31</b>
3.1 Asset Management Strategy.....	31
3.2 Major Road Network .....	32
<b>4.0 Financial Management</b> .....	<b>34</b>
4.1 Budgeting.....	34
4.2 Cumulative Funded Surplus.....	36
4.3 Debt Management .....	38
<b>5.0 Operating Expenditures</b> .....	<b>40</b>
5.1 Staffing.....	40
5.2 Compensation.....	43
5.3 Incentive Programs .....	45
5.4 Benefits .....	46
5.5 Overtime .....	47
5.6 Other Expenditures .....	48
5.7 Information Technology .....	49
5.8 Procurement .....	50

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<b>6.0</b>	<b>Compass Card and Fare Gates .....</b>	<b>53</b>
<b>7.0</b>	<b>Transit Police and Transit Security .....</b>	<b>54</b>
<b>8.0</b>	<b>Transportation Property and Casualty Company Inc. ....</b>	<b>58</b>
	<b>Appendix A - Additional Cost Saving Efficiencies .....</b>	<b>59</b>
	<b>Appendix B - Summary of Recommendations.....</b>	<b>60</b>

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## Abbreviations

BC	British Columbia
BCRTC	British Columbia Rapid Transit Company Ltd.
BTS	Business Technology Services
CEO	Chief Executive Officer
CFS	Cumulative Funded Surplus
CMBC	Coast Mountain Bus Company Ltd.
CNG	Compressed Natural Gas
DRP	Disaster Recovery Plan
FTE	Full Time Equivalent
IT	Information Technology
MFA	Municipal Finance Authority
MRN	Major Road Network
OMR	Operations, Maintenance and Rehabilitation
OTRM	One-time Re-earnable Merit
SSD	Strategic Sourcing Department
TPCC	Transportation Property and Casualty Company Inc.
WCE	West Coast Express Ltd.
the Act	<i>South Coast British Columbia Transportation Authority Act</i>



## Executive Summary

The South Coast British Columbia Transportation Authority (TransLink) is responsible for planning, financing and managing public transit, as well as the Major Road Network and other transport modes, within the Metro Vancouver region. Significant components of public transit are the delivery of rail services and bus services through BC Rapid Transit Company Ltd. and Coast Mountain Bus Company Ltd., respectively.

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### Revenue

TransLink receives approximately 33% of its total revenue from fares, with the remainder coming primarily from fuel and property taxes. This means that as TransLink expands its services, an increasing amount of financial support is needed from sources other than fares as tax revenues do not automatically increase with expansion. TransLink underwent considerable expansion between 2007 and 2010, with the addition of the Canada Line and numerous bus routes causing expenditures to grow at a much faster rate than revenues. Achieving the right balance between passenger fares and the various types of taxation, as well as the overall amount of revenue required, is challenging for TransLink and its many stakeholders.

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### Transit Service

The delivery of rail services is efficient and resources are maximized, although there are opportunities for cost savings by decreasing the frequency of SkyTrain services during non-peak times.

The delivery of bus services is more challenging and there are numerous pressures on the bus division that impact overall cost efficiency and effectiveness, including operator and route scheduling, fleet and facilities management, and the delivery of non-conventional bus services. There are also opportunities to enhance financial performance and productivity in this area.

TransLink's Transit Service Guidelines for productivity standards seem low with a majority of routes having a minimum productivity standard of 30% at peak time. A significant percentage (43%) of bus routes operate at less than half capacity.

Bus driver scheduling is complex and driver absenteeism is high. Effectiveness can be measured through trends in the use of overtime and non-productive wage costs. While these trends show increased cost efficiency over the last five years, increasing the use of split shifts can help to continue these positive trends.

The seven transit centres across the region are operating at maximum capacity. It is not clear whether the location of transit centres is optimal as costs associated with non-productive time are high in comparison to industry standards. There are opportunities to increase cost efficiency across the network.

Fleet management has been problematic with the number of surplus vehicles exceeding industry standards. In particular, there are too many trolleys and limited opportunity to maximize their use without costly infrastructure expansion. Direct fleet maintenance costs have increased at a higher rate than fleet size and service hours and steps should be taken to reduce both fleet size and maintenance costs.

The Community Shuttle program also has high operating costs and low productivity and the service is not optimized. Steps should be taken to increase the overall efficiency and effectiveness of the service.

TransLink's custom transit service, HandyDART, is a premium service with high operating costs coupled with low productivity and the service is underperforming in comparison to industry standards. Increasing the use of the supplemental taxi service in place of HandyDART can generate cost savings and boost productivity.

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Capital Asset  
Management

TransLink manages a total asset portfolio valued in excess of \$10 billion which includes facilities, structures, rolling stock (buses and trains), systems, stations and track. In addition, TransLink is responsible for providing funding to municipalities for the upkeep of, and improvements to the Major Road Network.

To ensure these assets are maximized, TransLink needs to develop a comprehensive, integrated long term capital asset management strategy to drive detailed asset planning, investment and maintenance of capital assets across the enterprise.

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Major Road  
Network

TransLink is maximizing the resources dedicated to the Major Road Network. However, there is no planned funding to address maintenance and upgrading of the majority of bridge structures across Metro Vancouver resulting in estimated deferred maintenance funding pressure of approximately \$13 million annually.

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Budget and Debt  
Management

TransLink has a conservative approach to financial management which, over the last ten years, has led to an average annual budget surplus of \$32.6 million (including extraordinary items). In addition, they have developed multiple resources to address unexpected



financial challenges, including contingencies within the annual budgets, a cumulative funded surplus, a \$500 million line of credit to support their short term debt program, and access to growing debt sinking funds which can be costly to maintain. A less risk averse approach may help TransLink reduce the need for future fare and taxation increases.

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Expenditures

Operating costs include expenditures related to the day to day delivery of bus, rail and SeaBus services as well as maintenance and administration of the multi-modal transportation system. Expenditures include labour, contracted services (e.g., research, consulting, outside services, etc.), fuel, materials, and administrative expenses.

Expenditures were found to be reasonable although there are opportunities to continue reducing discretionary costs. While TransLink compensation is reasonable when compared to other organizations of similar size, employee benefit packages should be reviewed for further cost savings.

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Information Technology

The information technology function within TransLink is effectively governed and is supported by sound practices that ensure appropriate alignment with business strategy and priorities. TransLink's disaster recovery plan needs to be enhanced to ensure that information technology operations can resume quickly in the event of a disruption (e.g., fire, earthquake, data breach, etc.).

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Procurement

Although the organization's procurement practices have improved over the past few years, TransLink should ensure that it adheres to its policies and procedures and should clearly demonstrate value for money in procurement, using competitive processes whenever possible.

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Fare Collection

A new fare collection system, to be fully implemented in 2013, is expected to reduce fare evasion because gates will control access to fare paid zones (i.e., a SeaBus and a SkyTrain station). The new system is also expected to enhance security and provide data on ridership, which will assist with bus route planning and scheduling.

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Transit Police and TransLink Security

TransLink has a dedicated police force and security service to protect passengers, staff and property and to reduce fare evasion. Recently enacted legislation is expected to reduce fare evasion because it increases TransLink's ability to collect fines from passengers who have not paid to use the transit system. A police and security hiring freeze should be implemented until the impact of the new legislation and fare gates on staffing levels is known.

Summary of Efficiencies

TransLink identified \$57 million in cost saving and revenue increasing efficiencies in their 2012 Plan. Many of the efficiencies identified during this review were discussed with TransLink and we are encouraged to see some have been incorporated within their 2013 Base Plan. Based on the information available at the time, this review quantified an additional \$41 million (detailed in Appendix A). However, all recommendations provide savings opportunities for TransLink to investigate, and potential savings available far exceed the \$41 million.

Summary of Efficiencies and Cost Savings

Already implemented or assumed in TransLink's 2012 Plan	
Cost Savings	\$30 M
Revenue Increases	\$27 M
	\$57 M
New efficiencies introduced in TransLink's 2013 Base Plan	
Cost Savings	\$17 M
Revenue Increases	\$24 M
	\$41 M
Average annual efficiencies assumed in TransLink's 2013 Base Plan	\$98 M
2012 Review efficiencies not yet reflected in TransLink's 2013 Base Plan	\$41 M
<b>Average annual total efficiencies and cost savings identified</b>	<b>\$139 M</b>

Executive Steering Committee Observation

*Throughout the review, the Steering Committee observed an overarching emphasis by TransLink in its business decisions and culture to focus on customer service. While this is a critical area of focus for any business, for those that are publically funded and to respect the taxpayer contribution, a balance must also be sought between service for users and efficiency of operations.*

*It is the committee's observation that TransLink's decisions on services and investments are sometimes based on community by community pressure or requests from individual local governments, rather than technical or financial merit. TransLink should ensure that a rigorous process is employed to review all expansion requests, large or small, to ensure that that they are financially sustainable and contribute to TransLink's strategic transit plans.*

\* \* \*

We would like to thank the management and staff at TransLink, the Ministry of Transportation and Infrastructure, the TransLink Commissioner, and Shirocca Consulting for their cooperation and assistance throughout this review.



Chris D. Brown, CA  
Assistant Deputy Minister  
Internal Audit & Advisory Services  
Ministry of Finance

## Introduction

The South Coast British Columbia Transportation Authority (TransLink) is Metro Vancouver's regional transportation authority. The purpose of the authority, as outlined in the *South Coast British Columbia Transportation Authority Act (the Act)*, is to provide a regional transportation system that is efficient and that supports regional growth, environmental objectives and economic development of its service region.

TransLink employs over 6,300 people to deliver transportation services to 23 communities in the Metro Vancouver area, and covers an area of 1,800 square kilometres. It operates more than 220 bus routes, four train lines and a SeaBus service. In 2011, TransLink provided over six million hours of transit services and carried approximately 232 million passengers through contractors and TransLink subsidiaries, including the Coast Mountain Bus Company Ltd. (CMBC), the British Columbia Rapid Transit Company Ltd. (BCRTC) which operates the SkyTrain, and West Coast Express Ltd. (WCE). It also shares responsibility with the Metro Vancouver municipalities for the major road and bridge network (encompassing over 2,300 lane kilometres of roads and bridges) and for regional cycling infrastructure. TransLink's annual operating budget is \$1.36 billion.

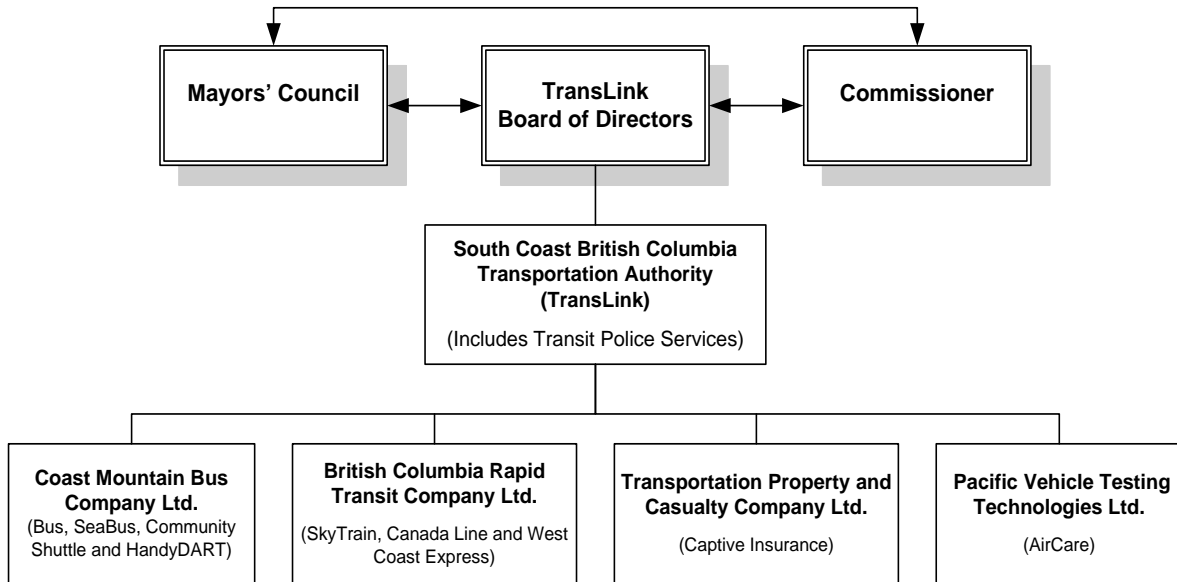
TransLink is governed by three parties (Board of Directors, Commissioner and Mayors' Council), that work in partnership to ensure an effective and efficient transportation system in the TransLink service region.

The Board is responsible for setting strategic direction and supervising the management of TransLink administers affairs. The Commissioner approves short-term fares, customer satisfaction/complaint processes and reports to the Mayors' Council annually on TransLink's performance against its plan. The Mayors' Council appoints the Board and the Commissioner, and approves TransLink's financial and transportation plans.

TransLink is comprised of corporate services and four subsidiary companies: CMBC, BCRTC, a captive insurance corporation and AirCare. TransLink delivers its services through its subsidiaries, CMBC, BCRTC, and through contractors. TransLink Corporate provides organizational leadership and general corporate services [e.g., strategic transportation planning, finance, procurement, human resources and information technology (IT)].

The structure brings together the different entities responsible for service delivery across TransLink and provides for flexibility in the delivery of those services.

The relationship between TransLink, its subsidiaries and its governing bodies is shown in the chart below:



In December 2011, TransLink applied to the TransLink Commissioner for approval of fare increases totalling 12.5% effective January 1, 2013. An incremental portion of the fare increase was rejected in March 2012 concluding that the increase would cause undue hardship on the public and would deter people from using the transit system.

An efficiency review completed by an independent consultant, on behalf of the TransLink Commissioner, in March 2012, found that there is room to reduce costs without impacting programs and services.

## Purpose and Objectives

This review examined areas identified in the TransLink Efficiency Review, in addition to areas excluded from that review.

The review evaluated and as appropriate, made recommendations with respect to the following:

1. Assess TransLink's Planning and Forecasting, including:
  - a. service level planning, including ridership, scheduling and capacity utilization; and
  - b. reliability of fiscal forecasts to help plan, budget and manage costs.
2. Assess TransLink's Financial Performance, including:
  - a. utilization of centralized corporate service delivery;
  - b. operating and administrative costs, including employee compensation and incentive programs;
  - c. cost mitigation strategies and operating efficiencies;
  - d. debt and financial management;
  - e. land use management;
  - f. procurement, including fuel, operating supplies and capital assets;
  - g. security and policing costs and utilization; and
  - h. capital asset management and utilization.
3. Examine other matters (exclusive of TransLink's governance) that may arise over the course of the review as deemed appropriate by the review team.

Where identified, the report makes recommendations to achieve cost savings and to ensure cost benefit and efficiency are considered in resource utilization.

## Approach

Internal Audit and Advisory Services conducted a broad review of TransLink, working with an Executive Steering Committee. The approach included:

- conducting interviews with key management and staff across TransLink and related stakeholders;
- reviewing and analyzing legislation and policies;
- researching comparable information from other relevant organizations and other jurisdictions;
- reviewing and analyzing financial reports and variance reports; and
- reviewing and analyzing key operations and processes.

The AirCare program was excluded from this review given the significant program changes that will be implemented at the end of 2014.

## Overall Conclusion

TransLink has many stakeholders, with the 23 communities it operates in of particular importance. Maintaining effective working relationships and developing collaborative solutions to revenue challenges, service delivery needs and capital planning is critical in ensuring its operations are maximized and efficiently delivered.

TransLink receives approximately 33% of its total revenue from fares, with the remainder coming primarily from fuel and property taxation. TransLink has fundamental challenges with its revenue sources as there are limits as to what the public are willing to pay in both fares and taxation to fund public transit. TransLink needs to work with stakeholders to determine the regional priorities and appropriate level of service that can be provided at a sustainable balance of fares and taxation.

TransLink's overarching emphasis on customer service and customer satisfaction has led to significant expansion of bus and rail services and the costs associated with their delivery. The frequency of SkyTrain service in non-peak times and bus routes with low ridership are examples of service levels that result in high operating costs.

TransLink is a large, complex organization, which manages a total asset portfolio valued in excess of \$10 billion, yet has no integrated long term capital asset management strategy to drive capital spending.

TransLink has a conservative approach to managing its operations. This is particularly evident in its financial management, having developed several costly safety nets. A less risk averse approach may help TransLink reduce the need for future fare and taxation increases.

A review of expenditures found spending to be reasonable, although there are opportunities to reduce discretionary costs. Employee compensation is reasonable when compared to other organizations of similar size although employee benefit packages should be examined for further cost savings.

TransLink has a dedicated police force and security service to protect passengers, staff and property as well as to reduce fare evasion. The installation of gates to control entry to SkyTrain stations is currently underway, but at this time, TransLink has no plans to reduce the level of its police force.



TransLink identified \$57 million in cost saving and revenue increasing efficiencies in their 2012 Plan. Many of the efficiencies identified during this review were discussed with TransLink and we are encouraged to see some have been incorporated within their 2013 Base Plan. Based on the information available at the time, this review quantified an additional \$41 million (detailed in Appendix A). However, all recommendations provide savings opportunities for TransLink to investigate, and potential savings available far exceed the \$41 million.

#### Summary of Efficiencies and Cost Savings

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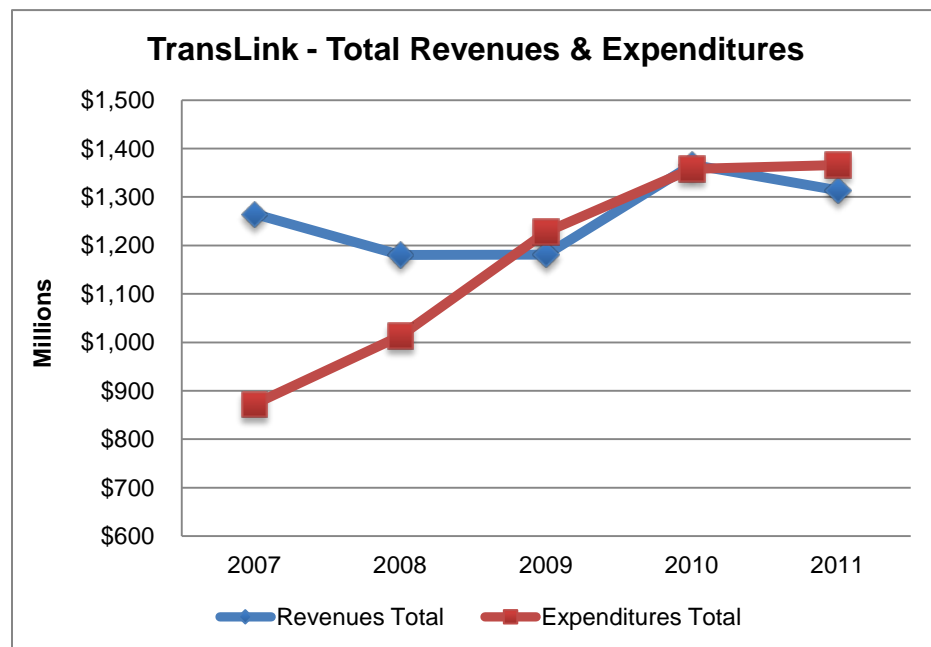
*Executive Steering Committee Observation*

*The Steering Committee feels that TransLink can be more aggressive in realizing savings than what has been identified in their 2013 Base Plan and that specific areas to be looked at include low utilized bus routes, overly conservative budgeting, fuel management, procurement practices, benefit and incentive programs, and transit policing. Given the challenging economic times, it is imperative that tax dollars be spent as efficiently and effectively as possible.*

## 1.0 Revenue

Public transportation systems typically require some form of ongoing financial support to supplement fare revenues collected from passengers. TransLink receives 33% of its total revenue from fares, with the remainder coming primarily from taxation (fuel, property and parking taxes, and BC Hydro levies). This means that as TransLink expands its services, an increasing amount of financial support is needed from sources other than fares as tax revenues do not automatically increase with expansion.

TransLink underwent considerable expansion between 2007 and 2010, with the addition of the Canada Line and numerous bus routes. This expansion caused expenditures to grow at a much faster rate than revenues as shown in the following graph.



Source: TransLink Audited Financial Statements.

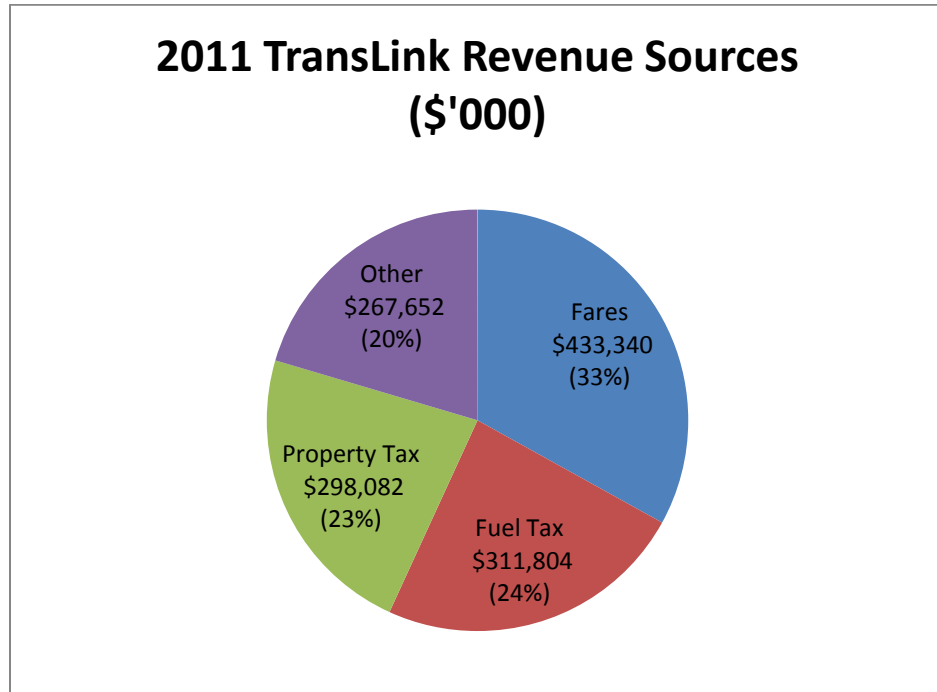
Achieving the right balance between passenger fares and the various types of taxation, as well as the overall amount of revenue required, is challenging for TransLink and its many stakeholders. Each revenue stream has its own inherent challenges and, increases can impact the overall system, for example, increases in fares can bring ridership down. Alternatively, increases in fuel tax might increase ridership but can also motivate drivers to increase carpooling, decrease vehicle usage, purchase more fuel efficient vehicles, or merely purchase more fuel outside of TransLink's taxation area.

As a result, TransLink and the Mayors' Council need to work together to find a balance between regional priorities, service levels and the amount local taxpayers are willing to pay for public transit through both fares and taxation.

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Revenue  
Sources

TransLink currently has the following revenue sources to fund its transit services as shown in the following chart.



Source: TransLink Audited Financial Statements

**Transit Fares** - Transit fare revenue increased 36% between 2007 and 2011 to \$433.3 million. The increase was caused primarily by the Canada Line entering service in 2009, expanding service levels and higher fares.

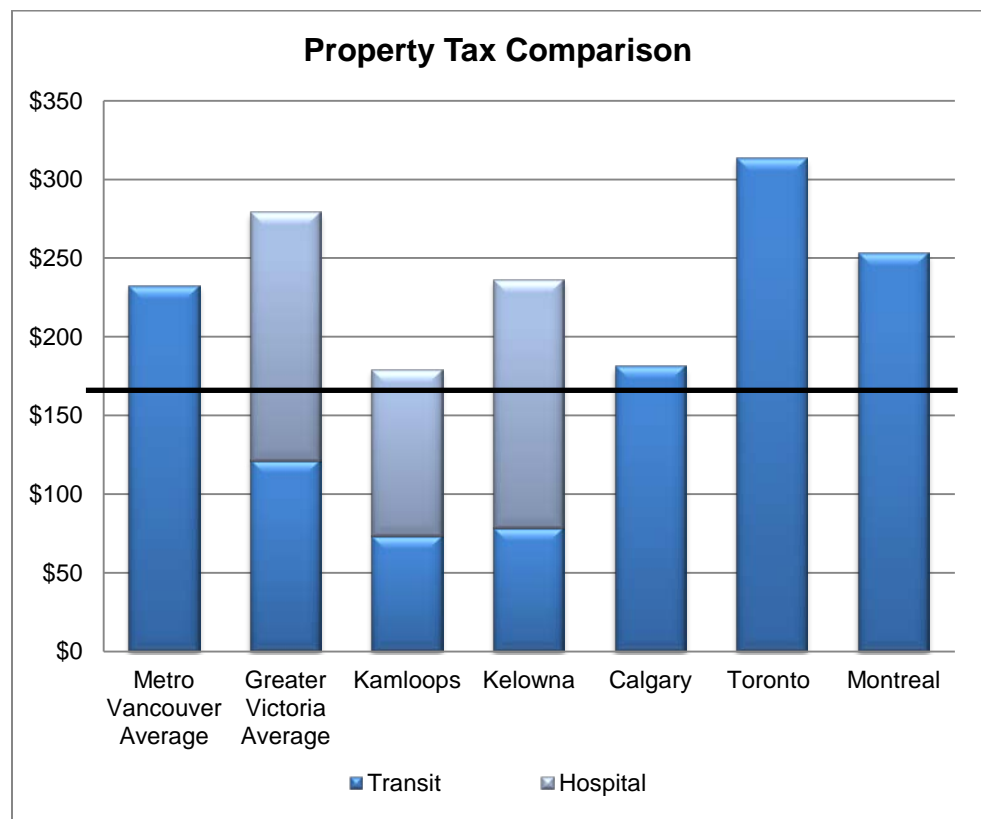
**Fuel Tax** - Fuel tax revenue increased 17% between 2007 and 2011 to \$311.8 million. On April 1, 2012 the fuel tax applied to fuel sales in TransLink's service area increased by 2 cents to 17 cents per litre.

**Property Tax** - Property tax revenue increased 11% between 2007 and 2011 to \$280.1 million. TransLink receives property tax revenues from real estate in its operating area. Legislation enables TransLink to increase the property tax revenues by 3% each year.

TransLink also receives a separate property tax (called the Replacement Tax) that is capped at \$18.0 million per year.

Historically, British Columbia (BC) municipalities collected 40% of hospital capital costs through property taxes. When TransLink was created, it was agreed that the Province of BC would assume full responsibility for paying for hospital capital in Metro Vancouver. The Province's funding of hospital capital created property tax room in the region to help pay for TransLink. Therefore, Metro Vancouver agreed to increase funding to TransLink through property taxes. As shown in the graph below, the amount of property taxes paid for transit in the Metro Vancouver area is lower than the combined health capital and transit tax burden in Victoria and Kelowna despite a much larger transit system.

Property tax paid to TransLink includes funding for the Major Road Network (MRN), on average \$64, which is normally paid through municipal property taxes in other jurisdictions. Removing this amount of road spending results in an average net tax of \$168 (as shown by the line below); lower than any of the comparators shown.



In addition to fare, fuel tax and property tax revenues, approximately 20% of TransLink's revenues come from other sources, some of which are described in greater detail below.

**Transit Levy** - A transit levy of \$1.90 per month is included in the BC hydro bills of customers in TransLink's service area. This levy has remained unchanged since 1991.

**Parking Rights Tax** - A 21% parking tax payable to TransLink is assessed on the rental of commercial off street parking spaces of any duration.

**Investment Income** - At the end of 2011, TransLink had \$241 million in investments. Over 90% of the funds are invested in term deposits and money market mutual funds, with the remainder invested in government and Crown corporation bonds.

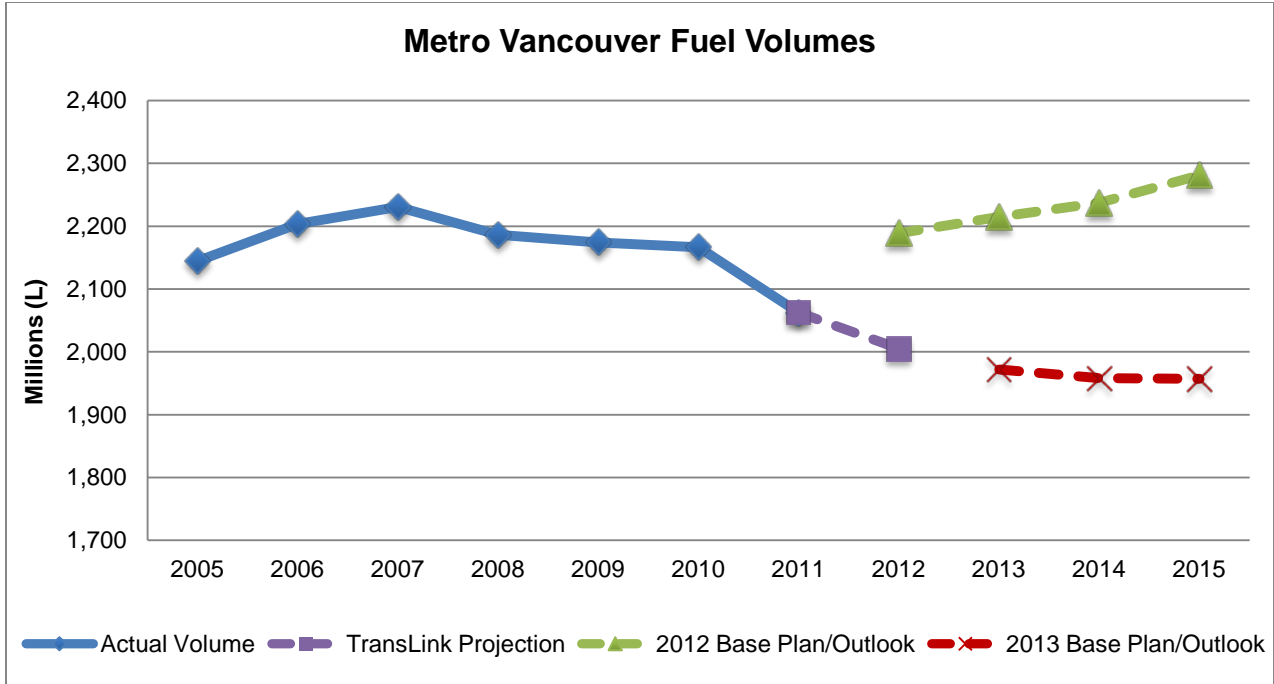
**Real Estate** - TransLink's real estate portfolio has a net book value of approximately \$528 million with a much higher fair market value. The real estate management program is becoming more sophisticated and strategic, with a focus on maximizing revenue from its real estate holdings and surplus property. TransLink is rezoning surplus properties prior to disposal to maximize their sale price and taking advantage of the increase in land values of properties surrounding new SkyTrain stations.

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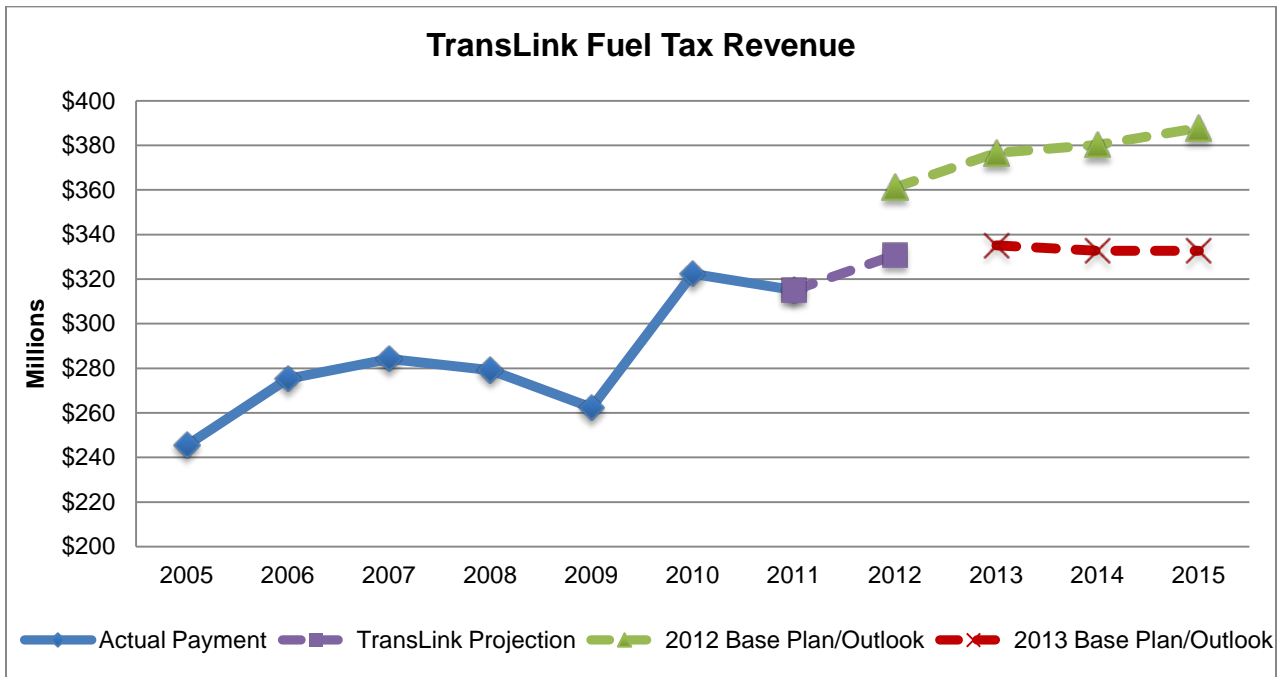
Fuel Tax  
Revenue

TransLink's 2013 Base Plan estimates a \$144 million fuel tax revenue shortfall over the 2013 to 2015 period based on forecasted fuel volumes across the Metro Vancouver area. The shortfall is the difference between what was projected in their 2012 plan and their updated forecast in the 2013 plan.

TransLink's 2012 fuel volume forecast (prepared in 2011) is consistent with 2010 and earlier actual levels. This forecast was prepared before the decline in volumes, which continued into 2012, was fully known. A growth factor, that was overly optimistic, further magnified the estimated shortfall from the 2012 forecast. The 2013 Base Plan, issued in September 2012, reflects the decline in fuel volumes as shown in the following graph.



Fuel taxes are applied at a rate of 17 cents per litre; therefore fluctuations in volume directly impact TransLink’s revenues. As illustrated in the graph below, a three cent per litre tax increase, effective January 2010, increased revenue by approximately \$60 million. An additional two cents per litre was implemented in April 2012. TransLink’s \$144 million forecasting shortfall is the difference between the revenue projections in the 2012 plan and the updated 2013 plan for the years 2013 to 2015.

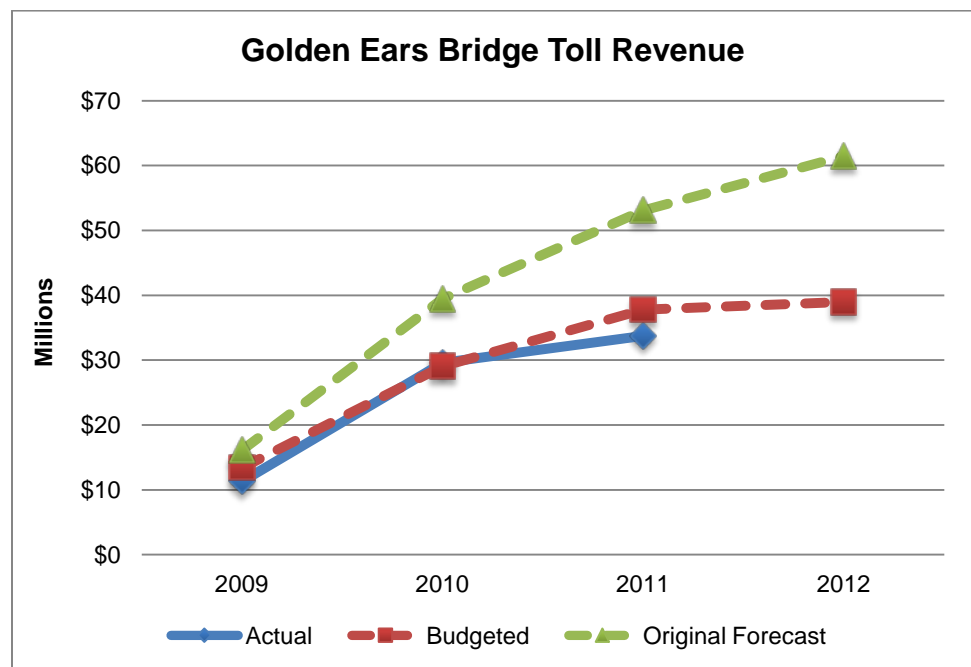


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## Toll Revenue

In June 2009, the Golden Ears Bridge replaced the Albion Ferry connecting Pitt Meadows and Langley, and is currently the only toll bridge in the Metro Vancouver area, until the new Port Mann Bridge is opened.

The original demand forecast has proven to be overly optimistic. The bridge is experiencing an increasing annual loss (\$22 million in 2010, \$38 million in 2011 and budgeted at \$41 million in 2012). Although the actual crossings are increasing, they are currently only about 60% of the original forecast. Various promotions were offered on bridge tolls following a pricing strategy study conducted in 2011. Both the pricing study and the discount events showed that the price did not influence the number of crossings.



Given the current average toll of \$3.95 per crossing, the number of crossings will have to double for bridge operations to break even at this time. TransLink plans to review the Golden Ears Bridge toll pricing after the new Port Mann toll bridge opens and traffic patterns have stabilized.

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## Revenue Efficiencies

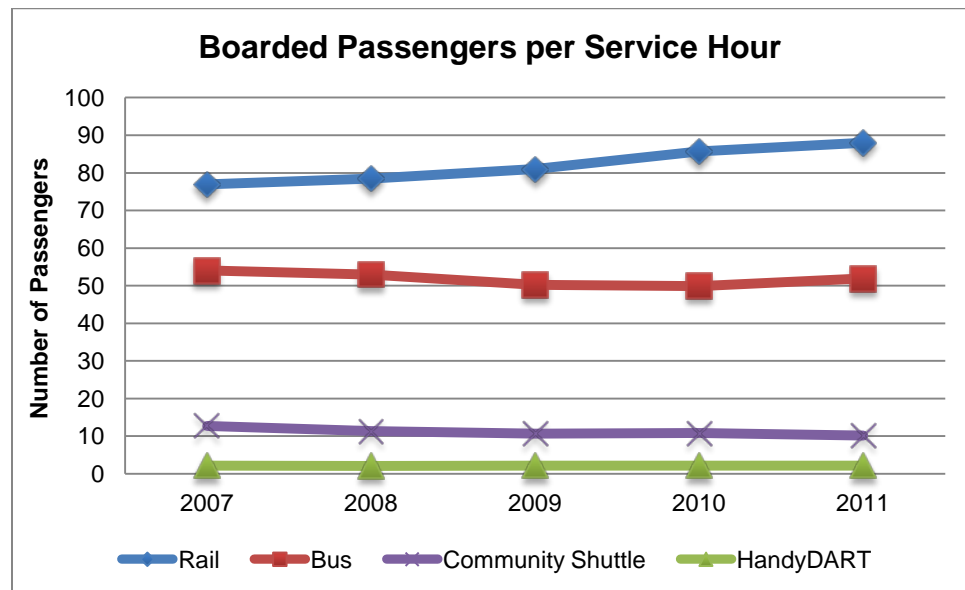
TransLink's 2013 Base Plan identified \$24 million in revenue-increasing efficiencies by reallocating bus resources to higher demand routes, increasing ridership, and leveraging real estate assets. This is in addition to the \$27 million committed to in the 2012 Base Plan.

## 2.0 Transit Services

TransLink is responsible for planning, financing and operating public transit services, including the MRN, within the Metro Vancouver region. Under *the Act*, each year TransLink is required to prepare a Base Plan covering a three year period and an Outlook plan covering the next seven years. The plans must outline transit services and major capital projects and must use only established funding and projected borrowing within its approved limits. A Supplemental Plan is required for any proposed service expansion requiring funding beyond its approved limits.

Transit services are planned and delivered within an integrated system where smaller Community Shuttle buses connect outlying areas and lower ridership routes to the major transit network. In addition, TransLink operates SeaBuses and provides custom transit service (HandyDART) to physically and cognitively challenged riders.

The graph below shows the productivity by transit mode, measured by the number of boarded passengers per service hour which is an important efficiency measure of the service. Rail is the most efficient of all the transit modes but is limited in its routes so buses are used to connect passengers to the rail system whenever possible. Over the 2007 to 2011 period, the efficiency of rail services has increased, while the efficiency of bus services has declined. Both Community Shuttle and HandyDART efficiency have remained relatively stable over the same period. The SeaBus service, not noted in the graph, transports 585 boarded passengers per service hour.





## 2.1 Rail Services

The TransLink subsidiary BCRTC is responsible for the operations and maintenance of SkyTrain (Expo and Millennium Lines), and the management of the Canada Line and the WCE operating agreements, both of which are operated by third parties.

Overall, BCRTC is an efficient operation and rail services are optimized with benchmarks for cost efficiency, productivity and train utilization that are on par with American Public Transportation Association standards.

Although the overall costs for rail service have increased by 24% between 2007 and 2011, it was due to a 26% increase in service hours. BCRTC would have been able to keep operating cost increases at less than the inflation rate for this period had service hours remained at 2007 levels.

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### Rail Fleet and Facilities Management

Resources are targeted to critical aging systems and rail fleet maintenance costs have been relatively stable and contained. Between 2007 and 2011, SkyTrain maintenance costs increased 6.22%, less than the rate of inflation.

BCRTC follows established maintenance schedules for its assets and has been able to extend the life of SkyTrain cars beyond original estimates. 114 of the 258 (44%) cars that are currently in service are the original SkyTrain vehicles and are considered to have reached the end of their projected useful life cycle of 25 years. These cars will be refurbished at a total cost of \$55 million, rather than replaced at an estimated cost of \$157.5 million. The refurbishment should extend their useful cycle by an additional 15 years.

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### Demand

BCRTC considers SkyTrain boardings during peak times, (6:00am to 9:00am and 3:00pm to 6:00pm), to have been at maximum capacity for several years and additional cars are required to address unmet demand. To address peak time demand, the 2012 Supplemental Plan includes service level increases of 4.7% by adding 28 cars during peak hours.

During peak times, the frequency of service currently averages 108 seconds between trains on the main line (Waterfront to Columbia) and 180 seconds on the remaining branch lines. Frequency is reduced by 50% during non-peak times (after 6:00pm on weekdays and all day Saturday and Sunday). This frequency has been in place since 2002.

Decreasing frequency during all non-peak times presents cost savings opportunities. The frequency of midday service and early weekday and weekend service on the Expo/Millennium Line could be reduced by one to two minutes thereby generating annual savings of \$1.57 million.

**Recommendation:**

- (1) **TransLink should decrease SkyTrain frequency during all non-peak times.**

---

Rail Service  
Efficiencies

TransLink's 2013 Base Plan included some frequency reductions during weekend service amounting to \$0.47 million, as well as other efficiencies totalling \$1.29 million in savings. Decreasing frequencies during week days would generate an additional \$1.1 million in cost savings.

---

Executive  
Steering  
Committee  
Observation

*Reductions in rail service frequency during non-peak times should be implemented for both weekends and weekdays. Reducing frequency by one to two minutes would provide over \$1 million in additional savings with minimal impact on overall service.*

## 2.2 Bus Services

CMBC is responsible for the provision of bus service across Metro Vancouver, including conventional bus, community shuttle and SeaBus services. CMBC also manages operating agreements for the contracted services of regional community shuttle services, HandyDART and West Vancouver bus services.

TransLink and CMBC share responsibility for network planning, monitoring and revision with TransLink being responsible for the global enterprise-wide view based on longer term goals, objectives and strategies. CMBC is responsible for the day-to-day operations of the bus network and for implementing TransLink's direction. Together their shared goals are to meet customer demand, minimize overloaded buses and reduce complaints from customers and operators.

CMBC's operating costs increased by 18% between 2007 and 2011 (\$432 million to \$509 million), primarily due to a 10% increase in service hours. CMBC has maintained the growth in the hourly cost of service, at approximately the inflation rate of 7.5%.

While CMBC has effectively managed their hourly costs of service delivery, there are a number of pressures impacting effectiveness and efficiency, including: operator and route scheduling, fleet and facilities management, and the delivery of non-conventional bus services.

## 2.2.1 Network Management

As of 2011, there were 221 bus routes making up the network including 161 conventional and 60 Community Shuttle routes.

Total conventional bus service hours have increased by 10% between 2007 and 2011 while productivity, measured by the number of passengers per service hour, has declined by 3.6%.

Over the same period, Community Shuttle service hours increased by almost 20% while productivity declined by over 20%.

TransLink's current approach to bus service delivery is based on future-oriented demand shaping and not always on current service demands and needs. This can lead to operating inefficiencies across the network as opportunities to scale back low performing routes or segments of routes are identified but not addressed based on overall network goals.

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### Low Performing Routes

TransLink's Transit Service Guidelines for productivity seem low with a majority of routes having a minimum productivity standard of 30% at peak time and routes that are not meeting these guidelines are costing \$3 million annually. Productivity standards for bus services are based on peak period bus capacity utilization (the total number of boardings over the total number of available spaces per trip). During weekday peak times, minimum capacity levels on the highest performing routes (B-Line and Express) are only 50%, 30% for other conventional bus routes, and 25% for community shuttles; non-peak times have lower minimum productivity standards.

While TransLink has network and route performance data, the modifications that are made to the system are not intended to reduce costs, but rather to reallocate service hours in an effort to boost productivity and fare revenue. This has had positive results and the majority of TransLink's resources are invested in services that perform with higher than 50% capacity utilization used to measure route performance.

However, of TransLink's 221 routes, 95 (approximately 43%) operate at less than 50% capacity with annual operating costs exceeding \$56 million as detailed in the following tables.

2011 Low Performing Conventional Bus Routes			2011 Low Performing Community Shuttle Routes		
Average Capacity Utilization	Number of Routes	Annual Average Cost (\$ 000's)	Average Capacity Utilization	Number of Routes	Annual Average Cost (\$ 000's)
0-10%	4	366	0-10%	10	1,113
11-20%	6	1,414	11-20%	15	2,992
21-30%	4	3,075	21-30%	17	5,741
31-40%	16	18,500	31-40%	4	1,571
41-50%	14	16,936	41-50%	5	4,438
<b>Totals</b>	<b>44</b>	<b>\$40,291</b>	<b>Totals</b>	<b>51</b>	<b>\$15,855</b>

For conventional bus service, the worst performing route at 2% utilization has an average of one passenger at any given time, traveling on a regular 40 foot bus that could carry a maximum of 55 passengers, with operating costs of \$100 per hour. The best of the lowest performing routes, at 20% utilization, has an average of 11 passengers travelling at any given time. For community shuttle, the worst performers, at 5% capacity, have one passenger travelling at any given time on a bus that costs \$53 per hour to operate and has a capacity of 24 passengers.

TransLink's proposed service plans do not address 22 of the lowest performing routes totaling over 55,000 service hours. Addressing these routes presents a range of cost saving opportunities including conversions from larger buses to smaller buses, service reductions, or route cancellations. Eight of these 22 routes are conventional bus routes. Converting these eight to community shuttle service would generate annual savings of \$500,000. Cancelling all 22 routes generates annual savings of \$3.7 million based on average operating cost.

TransLink intends to review and update their Transit Service Guidelines in 2013.

### **Recommendation:**

- (2) **TransLink and the Mayors' Council should re-evaluate the productivity guidelines to determine an appropriate level.**
- (3) **TransLink should address the lowest performing routes by converting to shuttles, reducing or cancelling service.**

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Executive  
Steering  
Committee  
Observation

*TransLink should be more aggressive in addressing the low performing bus routes than what is currently planned in their 2013 Base Plan. TransLink spends over \$56 million annually on routes that have less than 50% utilization and over \$8.8 million on routes with less than 30% utilization. Community pressure to provide or continue service on routes with low utilization has a negative impact on delivering on the priorities for the region.*

## 2.2.2 Driver Scheduling

Scheduling is a complex balancing act involving a number of variables including service levels, transit centre locations, number and length of shifts, and driver availability.

Based on idle time and overtime utilization, the size of CMBC's current bus driver workforce at 2,990 is on par with industry standards. From 2007 to 2011, service hours and the number of bus drivers increased at the same rate of 10%.

While TransLink's strategy for driver scheduling has resulted in increased cost efficiency over time, as measured by idle time costs and use of overtime, areas for further improvement include shift length, absenteeism, and Spareboard staffing.

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Shift Length

The length of a shift is a key cost driver as drivers are paid a minimum 7.5 hours even if fewer hours are worked and receive overtime when shifts exceed 7.5 hours. Over the period 2009 to 2012, the number of shift lengths between 7 and 7.5 hours has increased; however, the number of these shifts is still only 36% of the total shifts overall.

The use of split shifts can increase cost efficiency by scheduling drivers during peak times. The collective agreement allows the use of split shifts for up to 43% of total shifts per day, but excludes the use of split shifts on Sundays. As utilization has been relatively flat at 26% annually between 2007 and 2011, there is room to utilize split shifts further to maximize cost efficiency. Increasing the use of split shifts from 26% to the maximum of 43% during weekday and Saturday services would generate annual savings ranging from \$750,000 to \$1 million.

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Absenteeism

Driver absenteeism cost \$12.1 million in 2011 with the average driver off for over 14 sick days per year. While CMBC has employed a range of strategies to reduce absenteeism there currently are a total of 173 conventional bus drivers (almost 6% of the total workforce) not on active duty due to short or long term disability. As a result, the number of Spareboard drivers is significantly higher than the minimum required in the collective agreement.

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## Spareboard

A Spareboard is used to ensure that there are a sufficient number of drivers to cover absenteeism, reduce the need for excessive overtime, and serve the network every day. Drivers on the Spareboard report to their assigned transit centre daily and are assigned shifts on the basis of seniority. Not all Spareboard drivers may be assigned yet they are still paid for their shift, therefore, controlling the size of the Spareboard drivers is a key component to controlling wage costs.

The collective agreement stipulates a minimum of 8% of scheduled drivers are required on the Spareboards across the network. In 2012, the actual Spareboard size has been 15%, a difference of an estimated 208 drivers. In 2011, allowances totaling \$1.22 million were paid to bus drivers who were not utilized, an amount equivalent to 26 drivers. To reduce these costs, CMBC underwent a layoff of 20 drivers in May and June of this year.

### **Recommendations:**

- (4) **TransLink should increase the utilization of split shifts to maximize cost efficiency.**
- (5) **TransLink should continue to address absenteeism.**

### **2.2.3 Non-Productive Time**

Non-productive time occurs when buses are out of service in the course of their route and when additional time, known as recovery, is added to a route to help ensure reliability of the service. While some non-productive time is essential to maintain on-time performance for the route to operate reliably, every hour the vehicle is not in service is an expense to CMBC and must be minimized as much as possible.

CMBC's recovery time is high at 25% of revenue hours and exceeds the industry standard of 17.8%. CMBC has previously established targets to reduce conventional bus service recovery time by approximately 140,000 hours over the five year period 2012 to 2016. This would result in cost savings of \$7.7 million based on recovery time operating costs of \$55 per hour. During the review CMBC identified 40,000 recovery hours to be reduced by the end of 2012. This represents cost savings totalling \$2.2 million. An average of 25,000 hours per year will be needed to reach their target. This would generate an additional \$1.5 million in annual savings.

CMBC operates seven transit centres (bus depots) throughout the Metro Vancouver region located in Burnaby, North Vancouver, Surrey, Richmond, Oakridge, Port Coquitlam and Vancouver. The location of transit centres impacts non-productive time and overall network productivity. Start and end points of routes should be as close as possible to the transit centre they are assigned to in order to minimize non-productive time and costs.

Given the high cost on the system, TransLink and the municipalities need to work together to identify suitable locations for bus depots. As an example, the North Vancouver Transit Centre is scheduled to close in 2015 displacing over 80 buses to the Burnaby Transit Centre. A similar number of buses will then be displaced from Burnaby to the new Hamilton Transit Centre in Richmond. While this may result in some short term savings, it is not an effective long term strategy as transit centres need to be strategically located to maximize cost efficiencies.

Analysis of transit centres and corresponding routes has not been completed in a number of years. For example, the community shuttle fleet was re-deployed five years ago to three transit centres, Port Coquitlam, Surrey and Oakridge, in order to gain economies of scale. However, this approach has resulted in increased non-productive time and costs making it unclear if any benefits have been realized.

### **Recommendations:**

- (6) TransLink should undertake efforts to achieve recovery time reduction targets.**
- (7) TransLink and municipalities should work together to identify suitable locations for transit centres.**

## **2.2.4 Fleet Management**

CMBC's fleet consists of a range of different bus models and sizes. There are 1,835 buses in all, consisting of diesel buses, hybrid and Compressed Natural Gas (CNG) buses, trolleys, smaller community shuttles, HandyDART buses, and three SeaBuses. The oldest buses in the fleet entered into service in 1995 with the newest buses being added this year.

Fleet management has been problematic as the fleet is currently oversized and direct maintenance costs of vehicles have grown faster than fleet size and service needs since 2007.

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## Fleet Life Cycle

CMBC considers a number of factors when determining the life of its fleet including debt servicing, maintenance and fuel costs. Cost comparisons of the different fleet types are conducted and serve to inform TransLink's future direction with respect to environmentally friendly and sustainable choices.

A life cycle cost comparison for the four major categories of 40 foot conventional buses (diesel, hybrid, CNG and trolley) is outlined in the table below. The analysis shows that CNG buses are the most economical choice for 40 foot standard size buses with an average cost at least \$25,000 less per year.

Bus Type	Purchase Price of 40 foot Bus	Fuel / Year	Bus Maint / Year	Trolley Overhead Maint / Yr	Carbon Credit	Useful Life	Lifetime Costs	Avg Cost / Year
CNG	\$500,000	\$7,605	\$46,614		(\$81)	17	<b>\$1,420,355</b>	<b>\$83,550</b>
Diesel	\$430,000	\$41,235	\$42,392		\$0	17	<b>\$1,851,652</b>	<b>\$108,921</b>
Hybrid	\$590,000	\$34,032	\$42,392		(\$517)	17	<b>\$1,880,423</b>	<b>\$110,613</b>
Trolley	\$1,000,000	\$14,284	\$37,697	\$15,757	(\$2,415)	20	<b>\$2,306,450</b>	<b>\$115,323</b>

Replacement of all 500 CMBC 40 foot diesel buses with CNG would generate annual savings of \$12.7 million. The analysis does not take into account the capital costs or feasibility of converting required infrastructure. It is estimated that it could cost up to \$70 million to convert the transit centres to accommodate CNG buses, indicating a five to six year payback period.

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## Fleet Size

CMBC has reduced the overall fleet size between 2007 and 2011. However, the bus fleet has over 80 surplus vehicles as a result of procurement decisions based on funding availability and planned service expansion that was later cancelled. During the course of this review CMBC indicated they plan on taking steps to reduce the size of the fleet over the next one to two years.

Business cases for fleet procurement did not contain clear linkages to service level needs, and the analysis of alternative service options and operating costs impacts were not well documented or clearly presented. As a result, fleet purchases were not necessarily consistent with need based on actual service levels.

As an example, the business case for the 2009 trolley expansion did not adequately analyze the costs of other fleet types, service level needs, and impacts on existing routes. As a result there are too many trolleys in the fleet and limited opportunity to maximize their use without costly infrastructure expansion.



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Fleet  
Maintenance

CMBC has established preventative maintenance programs which help to ensure the useful life of its buses are maximized; however, bus maintenance costs have increased significantly faster than increases in fleet size and service hours since 2007. This is largely due to engine performance problems encountered on some fleet types, an aging fleet, and technical specialization requiring additional staff.

As shown in the following table, direct vehicle maintenance costs for all three conventional bus types have increased at a rate higher than the 7.5% rate of inflation from 2007 to 2011. In particular, the CNG bus maintenance costs rose rapidly mainly due to premature engine failure and an aging fleet as warranty coverage expired, although we were advised that this technology has improved in recent models.

Per-vehicle Direct Maintenance	2007	2008	2009	2010	2011	Increase
Conventional diesel (include standard, articulating diesel & hybrids)	\$33,613	\$39,176	\$40,877	\$41,737	\$42,392	26%
CNG	11,564	21,732	31,709	40,940	46,614	303%
Trolley	25,274	29,366	29,127	38,452	37,697	49%
<b>Average</b>	<b>\$28,598</b>	<b>\$34,419</b>	<b>\$36,616</b>	<b>\$39,767</b>	<b>\$40,457</b>	<b>41%</b>

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Maintenance  
Staff

Since 2007, CMBC's fleet maintenance staffing level has increased by more than 30%, outpacing increases in both maintenance hours and fleet size. CMBC enlarged its maintenance team in 2009 to 2010 in preparation for fleet expansion and the Olympics. The staffing level has not been reduced since then to match decreased maintenance hours and the number of buses. Subsequently there may be an excess number of bus maintenance staff and staffing levels could be reduced to generate savings. For example, a 10% reduction in maintenance and servicing staff would generate annual savings of \$3.7 million.

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Community  
Shuttle  
Maintenance

Community Shuttle services are intended to deliver transit services to areas where the use of conventional buses would not be feasible for cost efficiency or for physical reasons. Of the 175 community shuttles, 141 are operated and maintained by CMBC, while the remaining 34 are operated and maintained by private contractors. The small buses used for CMBC Community Shuttle services have had maintenance costs increase from \$8,300 to \$27,000 per vehicle since 2007 greatly outpacing inflation.

As shown in the following table, contracted shuttles had lower per unit direct maintenance costs since 2009 compared to CMBC-run shuttle vehicles without impacting vehicle safety or lifespan. If TransLink were to reduce their shuttle maintenance costs to a level consistent with the contracted costs, the savings would be \$1.4 million annually for the entire fleet.

Direct Maintenance Per-Vehicle	2007	2008	2009	2010	2011	Change
CMBC-run Shuttles	\$ 8,310	\$ 14,648	\$ 22,346	\$ 27,552	\$ 26,996	224%
Contracted Shuttles	\$ 23,463	\$ 14,528	\$ 12,973	\$ 15,356	\$ 16,990	-28%

## Trolleys

Trolleys operate in the high urban density population areas of Vancouver with a fleet of 262 trolley buses on 14 routes. Currently, TransLink is the only transit system in Canada operating trolley buses.

Trolley overhead infrastructure is costly to install and maintain, and investment is needed for the aging trolley bus infrastructure (poles and hydro lines), which has been in place since the 1940's. Trolley overhead costs approximately \$1.5 to \$2 million per kilometre to install, and total trolley overhead maintenance costs approximately \$4 million annually. There is limited opportunity to expand the use of trolley buses without having to expand the existing trolley infrastructure.

Given the life expectancy of the current trolley fleet, a decision needs to be made by 2020 on the future of trolley buses: continue operating trolleys, expand the trolley fleet, or eliminate the service in favour of conventional buses. To date, no business case or planning has been initiated on this.

While the need for a decision is several years in the future, TransLink's business case should include examining other viable options that incorporate the cost of infrastructure upgrades, replacement and maintenance.

### Recommendations:

- (8) **TransLink should explore the feasibility of compressed natural gas fleet expansion based on fleet life cycle cost comparisons.**
- (9) **TransLink should ensure business cases for fleet expansion are clearly linked to planned service needs and levels.**
- (10) **TransLink should review the appropriate level of the bus maintenance work force.**
- (11) **TransLink should compare internal and contracted community shuttle maintenance practices to identify opportunities for increased cost efficiency.**

## 2.2.5 HandyDART

HandyDART is TransLink's custom transit service providing door-to-door service for mobility impaired riders. This service is provided using the smaller community shuttle size buses. The primary difference between the two is that HandyDART buses are equipped with a hydraulic wheelchair lift at the back of the bus.

HandyDART has low productivity, high operating costs and is underperforming in comparison to industry standards. From 2007 to 2011, annual operating expenditures increased by 54%, raising operating costs above \$77 per hour. Based on the latest industry data available, 2010 HandyDART operating costs per hour of \$70 were approximately 9% higher than the Canadian average of \$64 per hour.

Over the same five year period, boarded passengers and service hours increased by 10% while productivity has remained flat at 2.2 passengers per service hour. This means that, based on the average trip of 30 minutes, there is only one passenger on average on a bus at any given time.

HandyDART productivity is lower than the Canadian average of 2.5, the Toronto average of 3.34, the Edmonton average of 2.66 and the Victoria average of 2.57. As well, HandyDART costs per passenger trip at \$32 are 18% higher than the Canadian average of \$27 per passenger trip.

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### HandyDART Operations

HandyDART services are delivered in three ways:

1. Through an operating agreement with a contracted service which utilizes a schedule based on groupings of common origins and destinations. The number of runs required to provide the service is determined daily. Contracted services account for approximately 87% of passenger service at a cost of approximately \$32 per passenger trip.
2. Through Supplemental Taxi Services at a cost of approximately \$24 per passenger trip. The use of supplemental taxis is currently limited by the HandyDART operating agreement. If TransLink could increase the use of supplemental taxi hours, it would generate substantial savings. For example, increasing taxi services from the current 5,000 to 30,000 hours, which still only represents 5% of total service hours, would generate annual savings of approximately \$1 million.

3. Through the TaxiSaver program introduced by BC Transit in the early 1990's as a supplement to the HandyDART service costing \$16.37 per trip. Users purchase taxi coupons at 50% of the cost with the balance subsidized by TransLink. TransLink's more accessible conventional buses make the TaxiSavers program outdated and TransLink was considering its cancellation. However, strong stakeholder opposition and complexities in delivering services to this group led TransLink to reverse its plans. It was anticipated that most TaxiSaver customers would use conventional transit rather than HandyDART, resulting in improved asset utilization and productivity of custom transit.

**Recommendation:**

- (12) **TransLink should increase the use of supplemental taxi services.**

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Bus Service  
Efficiencies

TransLink's 2013 Base Plan identified a number of bus service cost savings efficiencies, which include reduction of recovery time and fleet management. However, an additional \$5.2 million in cost saving opportunities exist in areas such as low performing routes and driver scheduling.

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## 3.0 Capital Asset Management

TransLink manages a total asset portfolio valued in excess of \$10 billion which includes facilities, structures, buses and trains, communication systems, stations, and track. In addition, TransLink is responsible for providing funding to municipalities for the upkeep and improvements to the MRN.

Despite this significant asset base, TransLink does not have a long term capital asset strategy in place to manage its assets or assets under joint management with municipalities under the MRN, limiting TransLink's ability to strategically plan for their capital needs.

### 3.1 Asset Management Strategy

Asset management is the strategic process of operating, maintaining, upgrading and expanding physical assets effectively throughout their life cycle. Its objective is better decision making based upon quality information and well-defined objectives. An asset management strategy is critical to ensure assets are maximized and are closely linked to organizational goals and objectives.

Although TransLink prepares many business and service strategies, a formal capital asset management strategy is lacking at this time. The strategy should include:

- goals, objectives and performance measures;
- condition assessments based on a set of standards; and
- capital maintenance plans to assist in estimating future maintenance costs.

TransLink employs a life cycle approach (e.g., preventative maintenance) to maximize the useful life of assets; however, it is largely limited to buses and trains and is not used across the entire organization.

In addition, mission critical fleet, facilities and other infrastructure essential to the provision of public transit, are not identified.

The 2012 three year capital plan identified capital projects totaling almost \$400 million (26% of the original plan) that have been cancelled, deferred or reduced. The absence of an overall strategy creates uncertainty as to how these changes impact the organization or will affect future service delivery.

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**Transport 2045**

TransLink's asset management plan, Transport 2045, which is still under development, is the foundation for an enterprise-wide asset management approach. The plan is based on a State of Good Repair model, which maintains physical assets to meet service levels in a manner that minimizes costs and maximizes their useful life.

Transport 2045 is focused on asset replacement, and does not address utilization, maintenance or disposal. Further, replacement is based on the hypothetical useful life of an asset and not on the actual condition of the asset.

Apart from State of Good Repair criteria, it is unclear how Transport 2045 connects to TransLink's capital plan prioritization.

### **3.2 Major Road Network**

Under the *Act*, TransLink is responsible for ongoing maintenance and capital improvements to the MRN, which is carried out through different programs. The MRN currently consists of over 2,300 lane kilometres of roads and bridges. A lane kilometre is defined by the length of any given segment multiplied by the number of driving and parking lanes.

Three funding programs exist to address the MRN: Operations, Maintenance and Rehabilitation (OMR) with funding levels at an average of 70% of total cost, and Minor Capital Works, and bicycle infrastructure, which are equally cost shared with municipalities. Under a new funding framework to be introduced in 2013, TransLink will increase funding of OMR to cover 100% of the costs and will reduce the minor capital allocation by an equivalent amount.

Road servicing funded through OMR must meet prescribed standards based on safety, reliability and road use. OMR funding is intended to cover an average level of service with the municipalities absorbing the additional costs if a higher standard is desired. Recent cost comparisons show that TransLink is paying a reasonable amount for OMR work performed by municipalities.

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**Cash Flow  
Forecasting**

TransLink contributes to minor capital projects performed within its service region. The projects are planned and approved annually, including budgets and timelines, and costs shared equally with the municipality conducting the project.

The variance between actual and planned budgets is high due to municipal project implementation which is often later than approved schedules. Later implementation disrupts cash flow forecasts and financial management. For example, one year had a budget of more than \$100 million and only \$12.5 million in actual expenses. The following three years had no budgeted dollars, yet \$48.7 million of actual expenses. The cash flow volatility may be leading to unnecessary financing costs and/or not appropriately matching costs with funding.

Minor Capital Works projects may take up to four years to complete. TransLink has suggested creating a limit of three years to assist with the accuracy of cash flow forecasting. The shorter timeframe is reasonable as the program is targeted to smaller improvement projects that are ready for construction.

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## Bridges

Across Metro Vancouver there are 90 bridge structures. TransLink owns five bridges: Knight Street, Westham Island, Golden Ears (contracted operations and maintenance), Pattullo and the pedestrian/bike bridge beneath the Canada Line Skybridge. TransLink sets aside funds for the maintenance and rehabilitation of these five structures with the exception of seismic retrofitting of the Pattullo Bridge estimated to be \$200 million. The cost to replace Pattullo is estimated between \$800 million and \$1 billion with funding not yet included in TransLink's financial plans.

There is no funding plan for the remainder of these bridge structures. The structures are excluded from the annual OMR Program and bridge maintenance is subject to ad hoc funding under the Minor Capital Works Program. In 2008 TransLink compiled a condition inventory of the structures in which it estimated the annual required investment for rehabilitation, replacement, seismic upgrades and annual maintenance to be approximately \$13 million per year for the next 10 years (following seismic upgrades this figure is reduced to \$9.7 million per year for the next 35 years).

### **Recommendations:**

- (13) TransLink should develop an enterprise-wide capital asset management strategy, including roads and bridges.**
- (14) TransLink should work with the municipalities to identify reasonable timeframes for the Minor Capital Works program.**

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## 4.0 Financial Management

TransLink has a very conservative approach to financial management, as shown by surpluses in each of the last 10 years. Multiple safety nets have been developed including contingencies, a Cumulative Funded Surplus (CFS), a \$500 million line of credit, and access to growing debt sinking funds. These resources are costly to maintain. In addition, consistently incurring surpluses could mean that TransLink is collecting more taxation and fare revenue than required in a particular year. While fiscal prudence is appropriate when dealing with public funds, being overly conservative can have its own costs.

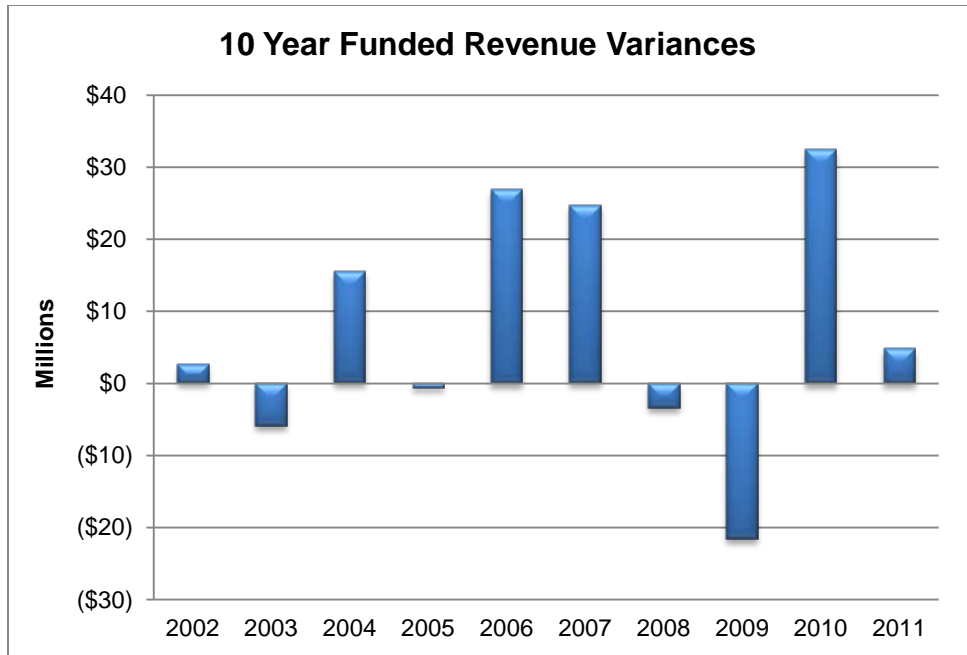
A less risk averse approach may help TransLink reduce the need for future fare and taxation increases. The organization's budget surpluses have enabled TransLink to build financial reserves in its CFS to pay for future expenses and withstand revenue and expenditure challenges that exceed the annual contingency budgets.

### 4.1 Budgeting

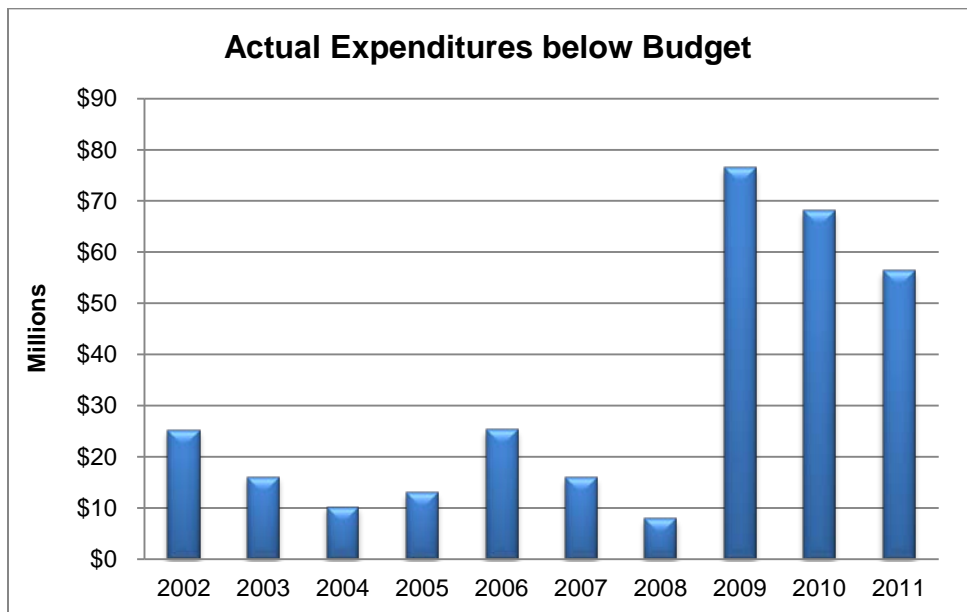
While TransLink's budgeting process is applied consistently across the enterprise and the assumptions used are based on estimates obtained from reliable and knowledgeable sources, their risk adverse approach to financial management has resulted in the organization consistently having surpluses. From 2002 to 2011, TransLink's budgeting anticipated a combined deficit of \$24 million (including extraordinary items such as gains and losses on the sale of capital assets and reorganization costs); however, a \$302 million surplus was realized. The average annual surplus was \$30.2 million over the 10 year period.

During that period, TransLink's operating revenues exceeded budgeted amounts in six of the ten years at an average of \$7.55 million (before extraordinary items) per year over the entire period. The following graph illustrates the magnitude of the annual revenue variances.





In each of the past ten years, TransLink’s forecasted operating expenditures were higher than actual by an average of \$31 million (before extraordinary items). The following graph illustrates the magnitude of the annual expenditure variances. The large variances during the 2009 to 2011 period were due to a variety of factors, including volatile fuel prices, cancelled service expansion, low interest rates, cost saving initiatives and unused budget contingencies.



Adopting a less conservative approach to budgeting would reduce the annual average budget surplus of approximately \$30 million.

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## Contingencies

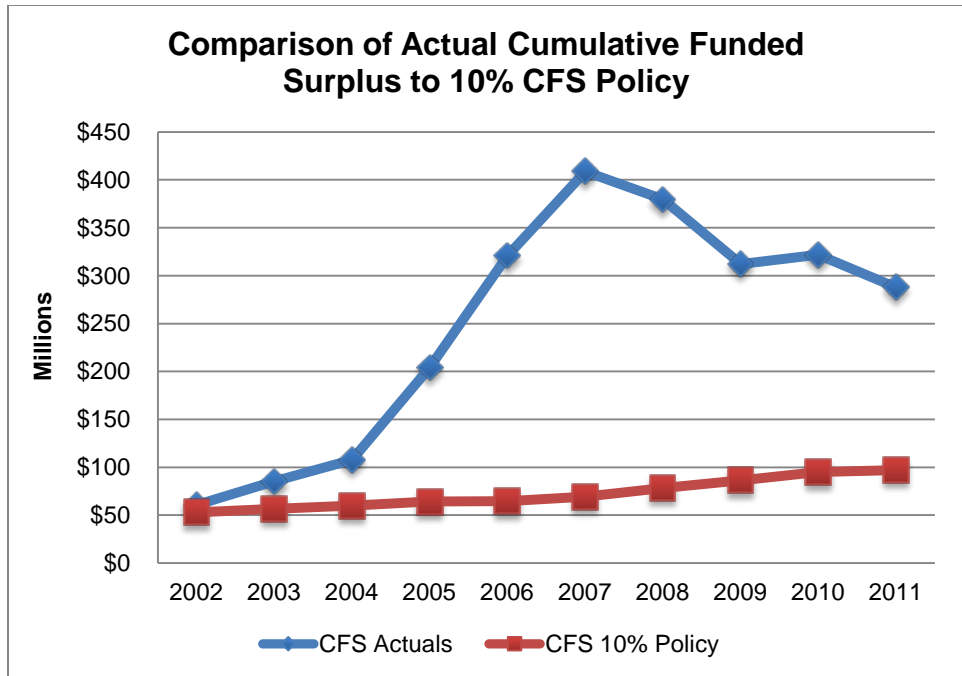
Six of the last ten budgets included contingencies that ranged from \$2.1 to \$11.2 million; however, TransLink only utilized the provisions once during this period. These contingencies have contributed to the actual results being better than the budgeted results.

At the project level, a conservative budgeting approach is also followed. Dual contingencies are used, in which contingencies are developed at both a sub-project level and at a project level; these contingencies are generally an applied percentage amount and do not appear to be based on project risks. Construction and equipment projects had an average contingency of 19%, which is high for capital projects. Another example of TransLink's fiscal conservatism is a proposed policy that requires each capital project to have a contingency based on risk plus an additional contingency of 5% on the overall capital budget.

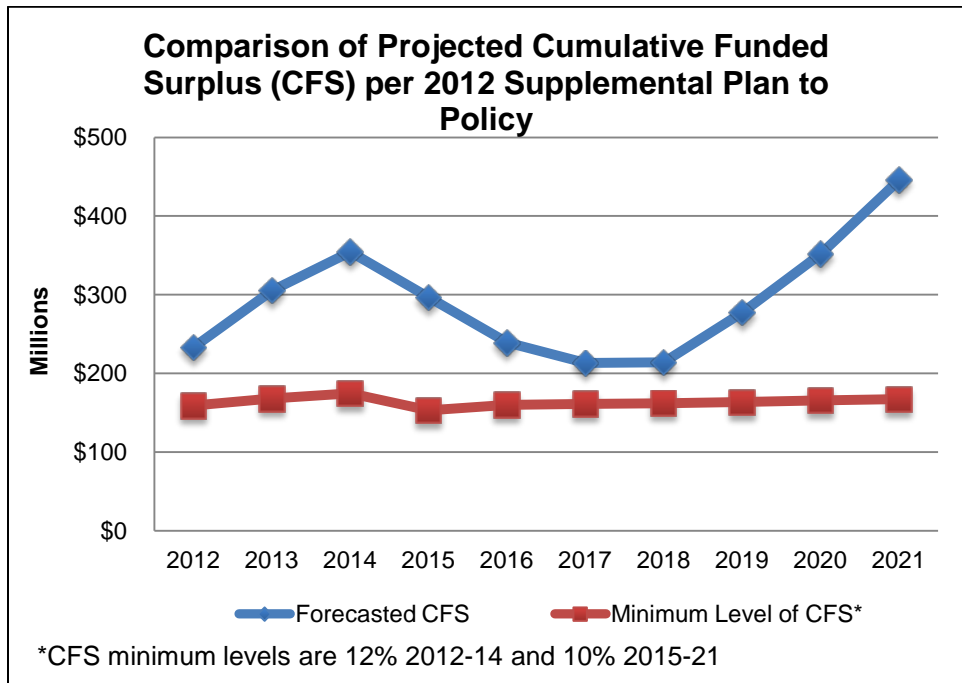
## 4.2 Cumulative Funded Surplus

TransLink maintains a CFS, which is the total of all surpluses and deficits earned by the organization since it was created. The *Act* requires that TransLink's expenditures in a given year must not exceed the total of that year's revenues and the accumulated surpluses from prior years. The CFS is another financial cushion that can be used to deal with unforeseen financial events. The existence of the CFS should enable TransLink to develop tighter budgets because any revenue shortfalls and/or higher than expected expenditures can be absorbed using the CFS.

TransLink's policy is to maintain a minimum surplus balance of 12% of total funded expenditures (less debt service costs and before the contingency) for the three-year plan and 10% for the seven-year outlook. As the following graph demonstrates, the actual CFS balance has been consistently higher than the minimum levels required by TransLink's policy.



TransLink's 2012 Supplemental Plan is forecasting the surplus will reach \$445.7 million by 2021, an excess of \$278.5 million (62%) over policy requirements. As shown in the following graph, the expected decline in the fund between 2015 and 2018 is attributed to the Evergreen Line coming into service, scheduled fleet replacements, infrastructure maintenance, and debt obligations.



TransLink's 2013 Base Plan is forecasting that the CFS will decline during the next three years to minimum policy levels.

**Recommendation:**

**(15) TransLink should reduce their fiscal conservatism and periodically undertake a zero based budgeting process.**

### 4.3 Debt Management

TransLink issues short term debt to meet cash flow needs and long term debt to finance its capital projects. At the end of 2011, TransLink owed \$88.6 million in short term debt and \$2.4 billion in long term debt. It is anticipated that TransLink's long term debt will rise to \$3.3 billion in 2015 and begin declining in 2016.

Most of TransLink's long term debt has been obtained through the Municipal Finance Authority (MFA), which requires funds (sinking funds) to be set aside each year to pay off the debt. In 2010, TransLink began directly accessing the capital markets.

TransLink also has a \$500 million line of credit available to support its short term debt program. TransLink incurs a fee each year, \$400,000 in 2011 and \$225,000 in 2012, to maintain the credit availability despite TransLink never having accessed these funds.

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Sinking Fund

While TransLink's non-MFA debt agreements do not require that sinking funds be established to pay off the debt, their own internal policy requires the creation of sinking funds; another example of being very conservative.

Although a debt repayment strategy can be worthwhile, the non-MFA sinking funds are costly to maintain as the investment income TransLink earns on these funds is less than the interest cost of the associated debt. Under the 2012 Supplemental Plan, the difference between the interest earned and paid could cost TransLink over \$20 million in non-MFA debt agreements between 2011 and 2020. The use of sinking funds may be appropriate when TransLink's borrowing needs are not so high. Eliminating sinking funds at this time may generate average annual savings of up to \$3 million for the next three years with further savings in the future.

**Recommendation:**

**(16) TransLink should reduce the financial impact of maintaining multiple resources to manage financial challenges.**

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Financial  
Management  
Efficiencies

Adopting a less conservative approach to budgeting would allow TransLink to eliminate annual average budget surpluses of \$30 million. As well, eliminating the use of sinking funds at this time may generate average annual savings of up to \$3 million for the next three years and increased amounts beyond that.

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*Executive  
Steering  
Committee  
Observation*

*As Senior Executives in public sector organizations, we understand and value the need to be fiscally prudent and manage to a budget. We also understand the need to set budgets and contingencies that challenge our organizations and ensure that taxpayers are not asked to fund surpluses on a continual basis.*

## 5.0 Operating Expenditures

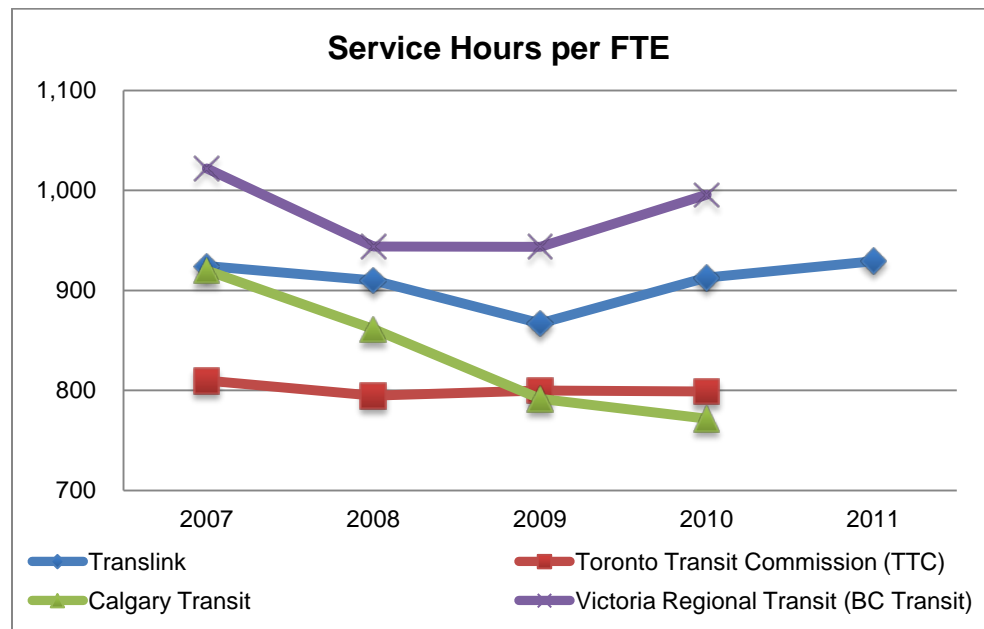
TransLink's expenditures were approximately \$1.36 billion in 2011 (57% higher than in 2007) and include labour, contracted services, fuel, materials, and administrative expenses. These costs have increased largely due to service expansion (increased service hours, implementation of new rail services) and maintaining and implementing infrastructure.

TransLink expenditures were found to be reasonable; however, there are always opportunities to lower discretionary spending. Additional areas were identified for improvement in staffing, fuel management, and procurement.

## 5.1 Staffing

Transit is a labour intensive operation with over 6,300 staff, consisting of predominately union employees (over 90%). TransLink's total complement of full time equivalents (FTE) increased 14% (approximately 5,580 to 6,360) between 2007 and 2011, largely due to service expansion (service hours increased by 17%) and the extra service required during the 2010 Olympics.

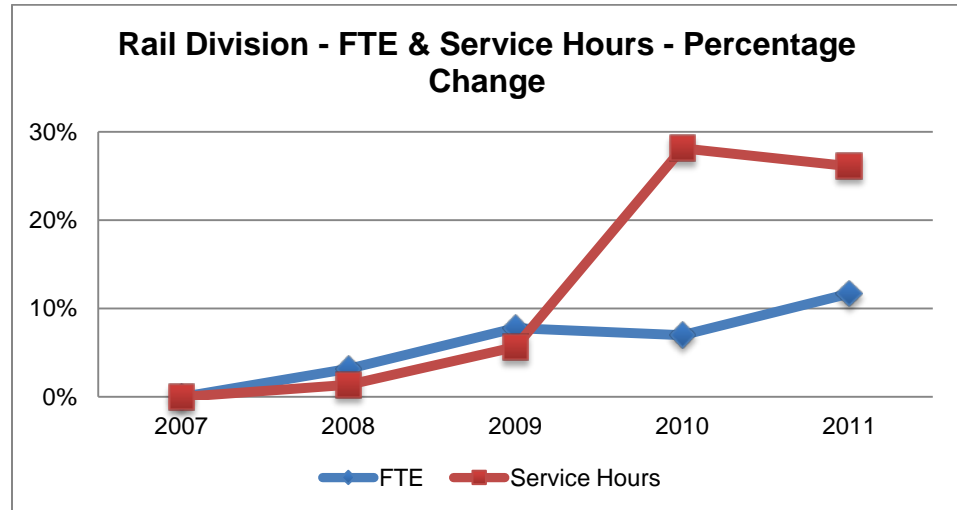
The following graph demonstrates that productivity is reasonable when compared to the other transit agencies.



Note: The above chart was generated using data from Canadian Urban Transit Association reports for Calgary, Toronto and Victoria transit agencies and actual data provided by TransLink. TransLink data excludes all contracted services (i.e., Canada Line, HandyDART, West Coast Express and the West Vancouver bus service).

## Rail Division

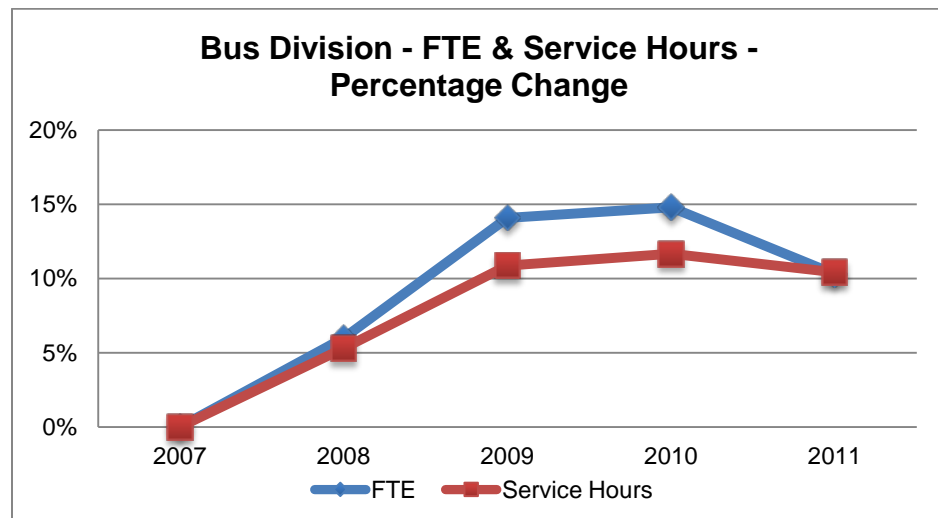
The rail division's 621 FTEs comprise approximately 10% of TransLink's total FTEs. Compared to other modes of transit, rail services are less labour intensive, therefore SkyTrain service hours can be increased with relatively small increases in staff. The 12% FTE growth shown in the following graph is primarily due to expanded service hours.



Note: Canada Line service hours are excluded.

## Bus Division

The bus division is more labour intensive, accounting for over 80% of TransLink's total FTEs. Changes to the bus division's FTEs generally follow changes to bus service hours which, as shown in the graph below, resulted in an FTE increase of 10% (approximately 4,665 to 5,145) between 2007 and 2011. The reduction of bus division employees in 2011 was due to the centralization of some business functions and the subsequent transfer of employees to the corporate division.



Note: Service hours excludes contractor service hours.

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Corporate  
Division

TransLink's corporate division has grown by approximately 50 FTEs (27%) since 2007, excluding the centralization of the business technology and human resource functions in 2010 and 2011. This is in response to increases in expenditures of 57% and total service delivery hours of 17%. While the subsidiary companies are responsible for the day to day operations, the corporate division is responsible for business technology, human resources, planning, engineering, finance and other enterprise-wide services, which include the subsidiaries.

TransLink has been centralizing some services during the past few years (i.e., human resources, IM/IT, procurement, engineering and planning). TransLink estimates that over \$750,000 per year is being saved through centralized services.

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Contractors

TransLink uses numerous contractors in key positions particularly in IT and engineering functions (e.g., project managers, business analysts) due, in part, to hiring freezes. These independent contractors work for TransLink for extended periods of time, are provided with offices and workstations, and are paid up to three times more than the equivalent employee position. While the use of contractors is sometimes the most appropriate business decision, TransLink would be better served if a significant number were employed positions and the functions were brought in-house.

**Recommendation:**

**(17) TransLink should replace contracted positions with staff positions.**

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Span of Control

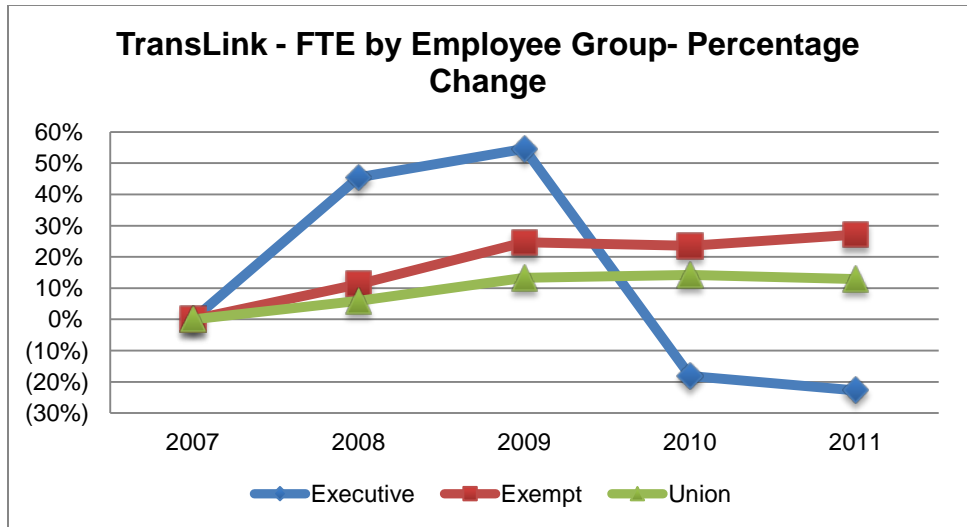
In addition to 17 executive staff across TransLink, there are 28 directors, 150 managers, approximately 480 other excluded staff and over 5,600 union employees. On average, the proportion of managers to staff in the organization is 1:25. The span of control is reasonable when considering the large number of staff and the need to have supervisors at the depots and on different shifts throughout the day.

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FTE by  
employee group

TransLink's staff complement consists of the executive team, exempt (non-union) employees and union employees. Using 2007 as a base year, the following graph shows that while the number of executive staff has decreased, the exempt and union employees have increased with service hour increases (as previously discussed).

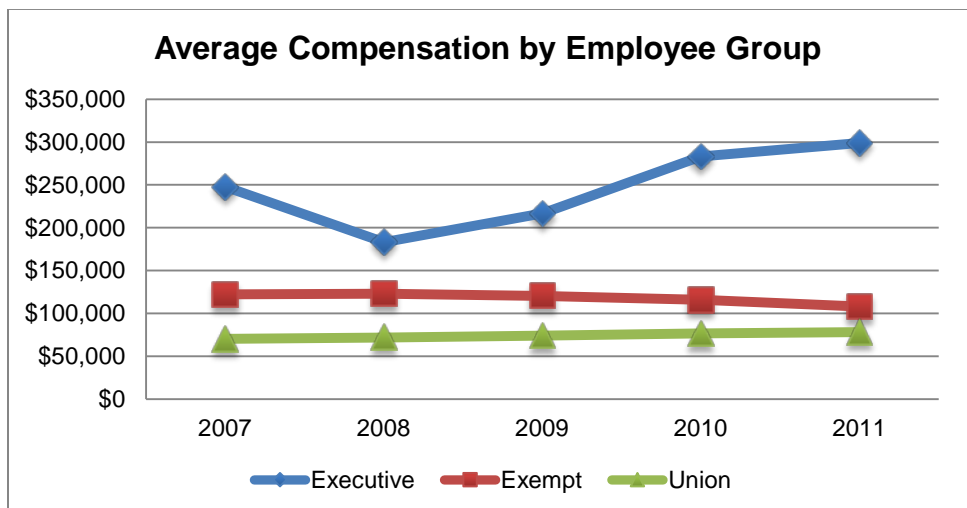




## 5.2 Compensation

Total compensation throughout the organization increased 24%, between 2007 and 2011, due to the growth of the organization (FTEs) and salary increases. In 2011 compensation constituted approximately 38% (\$520 million) of TransLink’s total expenditures. Compensation cost drivers include service levels, overtime, absenteeism, and the benefits prescribed within the collective agreements.

The following graph shows the average compensation by employee group. Executive FTE reductions occurred as a result of eliminating positions and reclassifying lower pay level positions into their exempt compensation plan. As a result of this change in the composition of the executive team, the average compensation per person increased. Average compensation for exempt and union staff remained fairly stable.



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Executives

Between 2007 and 2011, the size of TransLink's executive team experienced significant volatility growing from 22 members to a high of 34 in 2009 and has now been reduced to 17. However, with the smaller executive team the total executive compensation decreased by 31% between 2009 and 2011 to the current amount of \$5.08 million.

TransLink's executive compensation structure (base salary, incentives, pension and other benefits) is in the mid range and reasonable. On a periodic basis external benchmarking is completed to determine whether TransLink's executive compensation plan is reasonable and comparable to the BC public sector and North American public transportation providers.

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Exempt Employees

While the total number of non-union FTEs increased by approximately 27% (from 430 to 548) between 2007 and 2011, the overall compensation increased by 12% (\$52.6 million to \$59.2 million). Salaries of non-union staff were comparable to those in the BC government and lower than crown corporations.

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Union Employees

The number of union employees increased by 13% between 2007 and 2011, while the total compensation increased by approximately 25% (\$360.7 million to \$453 million) over that same period.

TransLink's union staff are members of one of three unions with six separate collective agreements. With some exceptions, the terms of the six collective agreements are generally comparable to the BC Government and Service Employees Union's agreement with the provincial government and the Canadian Office and Professional Employees agreements with BC Hydro and ICBC.

These collective agreements set the framework for labour costs in which TransLink must operate. Work must be scheduled in compliance with these agreements but still address service delivery requirements. Some of the terms in the agreements may lead to cost increases. For example, employees under some collective agreements are paid shift premiums for working on Sundays. Depending on the union, the premium can range from 25% to 50% of an employee's hourly rate.

**Recommendation:**

**(18) TransLink and its operating companies should work with the unions to improve productivity and cost effectiveness.**

### 5.3 Incentive Programs

TransLink has two short term incentive programs. One program is available to executives and is subject to the achievement of all corporate and personal goals, and board approval. The second program is available to some exempt staff who are at their maximum salary and have exceeded their personal performance goals. Both programs are also subject to the organization's ability to pay.

During the 2007 to 2011 period, approximately \$1.7 million was paid out under these two incentive pay programs. No incentive payments were made to the executive staff in 2009 because the corporate goals were not achieved.

The executives' short term incentive plan is designed to reward them (up to 20% of their annual base salary and up to 30% for the Chief Executive Officer (CEO)) for the achievement of their individual performance objectives and for their influence over corporate success.

The 2011 corporate goals were reviewed and found to be easily achieved. For example, one goal was to manage controllable expenses within 2% of that year's financial plan (budget); TransLink expenses have been under budget every year for the last ten years by approximately 3%, which made this goal easily attainable.

Samples of individual executive 2011 annual performance plans were reviewed and performance goals were found to be reasonable. During this review, TransLink's executives' short term incentive plan for 2012 was put on hold, pending TransLink's further review of comparator public sector organizations.

The CEO also participates in a three year Long Term Incentive Plan effective January 2010. Under this plan, the CEO may earn up to 20% of his/her base salary upon achievement of Board determined goals and measures. Payment of the Long Term Incentive Plan is staggered over a three year period and is approved at the discretion of the board.

CMBC, TransLink Corporate (since 2011), and BCRTC (since 2012) have a One-time Re-earnable Merit program (OTRM), to recognize exempt employees who have achieved surpassing performance overall and who are at the top of their pay grade. Over a five year period, a total of \$226,000 was paid out as OTRM. The total number of employees awarded an OTRM payment decreased from 30 in 2007 to 6 in 2011.

## **Recommendation:**

**(19) TransLink should ensure corporate incentive program targets are sufficiently challenging and achieving desired objectives.**

### **5.4 Benefits**

Employee benefits reviewed included executive perquisite allowances, health, and retirement benefits. Some benefits are comparable to provincial government employee benefits such as the executive vehicle perquisites and coverage for extended health and dental.

Additional benefits received by TransLink staff include free transit passes, a taxable benefit, for current full time TransLink employees (and one family member) and retired staff (and spouse) subject to a minimum number of years of service. It is uncertain as to how often these passes are utilized and therefore the actual value could not be determined. Implementation of the Compass Card will provide better information to quantify the benefit obtained by staff.

As well, retirement benefits are more generous than the benefits provided to provincial government retirees as premiums are subsidized by TransLink (e.g., MSP, extended health, dental and life insurance).

TransLink Corporate and CMBC exempt staff extended health programs provide up to 17 days off (in addition to annual vacation) to be used either as time off, paid out or credits towards their extended health plan. The option was to compensate for an increase in work week hours (from 35 to 37.5 hours) that occurred in the 1980s. In 2012, approximately 4,425 days will be provided to employees under this program.

In lieu of discretionary overtime, BCRTC exempt employees receive 6.5% of their regular salary that may be taken as cash, pension supplement or as time off (up to 15 days maximum) in any combination, as operational requirements permit. However, this benefit is extended to those exempt staff who also get paid for overtime.

There is more than one employee benefit package being administered across the organization. There may be opportunities to consider a more corporate approach to benefits to gain cost efficiencies and effectiveness.

## Recommendation:

**(20) TransLink and its operating companies should analyze their benefit programs, and move towards a corporate approach, to reduce costs.**

### 5.5 Overtime

There are a number of conditions that create the need for overtime within TransLink such as absenteeism, capital projects, and special events. TransLink's overtime costs were \$20.5 million in 2011, a decrease of 28% since 2007.

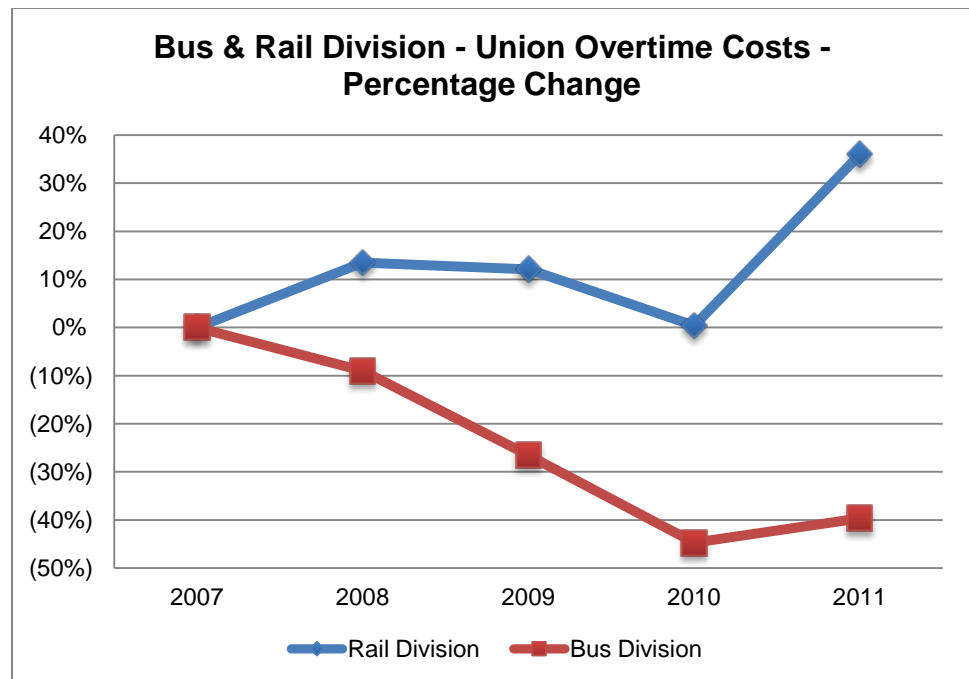
While most divisions within TransLink have experienced an increase in overtime ranging from 35% to 60%, a 40% decrease within the bus division (which has the largest complement of staff) has contributed to the significant overall decrease.

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#### Union Staff Overtime

From 2007 to 2011, overtime costs incurred by union employees decreased by 29% (\$28.1 to \$19.9 million). Most of the overtime costs are incurred by CMBC and BCRTC as they employ the majority of staff and have a direct service function.

The graph below shows that the bus division's overtime costs have declined overall since 2007 while the rail division's overtime has grown.



The bus division conducts extensive tracking, monitoring and follow up of overtime costs. Although, the bus division's Spareboard helps reduce overtime costs, it may not significantly reduce overall compensation costs as CMBC must have a minimum number of spare operators available, as previously discussed.

The rail division's overtime costs rose in 2011 due to an increase in maintenance work and shortage of skilled labour. Recently, the rail division has undertaken some initiatives to reduce the need for overtime.

## 5.6 Other Expenditures

Other expenditures were reviewed and found to be reasonable. These included administration expenditures, professional and legal fees, and marketing and communication. As well, spending policies are in place at each of the subsidiaries and are being followed. While no unusual material transactions came to our attention, the organization should still look for opportunities to reduce discretionary expenses. For example:

- Administration expenses are approximately 1% of total expenditures (\$8.8 million in 2011). Examples of expenditures include employee recognition/activities, advertising, travel, business meeting and food and beverage. While total administration expenditures have decreased 3% over the last five years, there are still opportunities to reduce spending in these areas.
- Over \$6 million was spent on marketing and communications. While the majority of expense related to printing costs of monthly passes, tickets etc., opportunities to reduce additional meal costs included in these expenditures and public promotional prizes should be considered.
- In 2011 approximately \$20 million was spent on professional and legal fees. Most of these were consultant fees related to various projects such as numerous IT related projects, transit studies, strategic policies and planning.
- Governance costs, which included oversight by the Mayors' Council, the Transportation Commissioner, the TransLink board and its subsidiary boards decreased by 11% to approximately \$1.1 million between 2008 and 2011.

## **Recommendation:**

**(21) TransLink should work on reducing discretionary spending across the enterprise.**

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### Fuel

TransLink's diesel fuel costs are driven by the level of service provided and by the price of fuel. CMBC spent between \$35 million and \$48 million annually on diesel fuel during the 2007 to 2011 period. TransLink locks in the cost of up to 75% of its fuel needs 12 months before it is required, at a 6 to 8 cent per litre premium.

BC Ferries and the Toronto Transit Commission use various hedging strategies to purchase their fuel. These methods could help TransLink reduce its fuel costs, even though the methods may carry more risk and require some expertise to execute.

## **Recommendation:**

**(22) TransLink should investigate alternate methods to procure diesel fuel, including hedging strategies.**

## **5.7 Information Technology**

Overall, the IT function within TransLink is effectively governed and is supported by sound practices that ensure appropriate alignment with business strategy and priorities.

The IT function at TransLink is represented primarily by the Business Technology Services (BTS) department, which provides services to TransLink and CMBC. As of July 2012, BTS had 128 FTEs and 17 contractors managing approximately 170 applications that support transit and administrative operations. The Transit Police and BCRTC currently retain their own technology divisions that consist of four and nine staff, respectively. TransLink is currently reviewing the advantages and disadvantages of transferring these staff to BTS.

BTS is led by a Chief Information Officer who has the appropriate authority, responsibility, accountability, and reporting lines to effectively lead the IT function.

IT is engaged in all facets of TransLink's daily operations. The technology used in the operations center, for example, allows for up to the minute tracking of bus locations and monitoring of the trolley power grid. The amount of technology present on each bus is also significant.

An external review conducted in 2007 concluded that the IT function was under-funded, under-resourced, and was receiving limited attention from TransLink's executive team. As a result of this external review, IT staffing levels have now almost doubled in size. Recent efforts have also been made to amalgamate the IT function under a single department to help offset future cost increases. BTS represents just over 2% (including contractors) of TransLink's total FTE count which is less than the industry average for transportation organizations of 4% in 2011.

While the BTS department has developed significantly over recent years there continues to be a lack of documentation in some areas and inconsistent application of some procedures.

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Disaster  
Recovery

Disaster Recovery Planning is an IT function that ensures controls and processes are in place to recover the IT capacity of an organization in the event of a disruption (e.g., fire, earthquake, data breach, etc.).

A new Disaster Recovery Plan (DRP) was completed in June 2012. However, the DRP covers only the primary data centre, requires the purchase of new hardware and has not yet been tested. TransLink stated that it would take several weeks to get IT operations running again using the current DRP; this could seriously impact transit operations. A project is currently scheduled to begin in 2013 to update the DRP that will include an offsite backup data centre location and will allow for greatly improved recovery times.

### **Recommendation**

**(23) TransLink should place a priority on updating its Disaster Recovery Plan for its critical systems and facilities.**

## **5.8 Procurement**

TransLink's procurement function, represented by the Strategic Sourcing Department (SSD), procured over \$300 million in goods, services and construction in 2011 and this is expected to rise to over \$450 million in 2012. SSD has been responsible for providing centralized procurement for TransLink Corporate for many years. Starting in 2011, SSD began playing a larger role in the procurement process of the operating subsidiaries. However, the subsidiaries are still responsible for specialized procurements with the guidance and assistance of SSD.



Although TransLink's procurement practices have matured significantly over the last few years, the organization's procurement policies and procedures are not always followed, and procurements are not always conducted in a fair, open and transparent manner. Documented or updated policies and procedures are also needed in some essential areas, such as pre-qualified vendor list management. TransLink needs to adhere to its procurement policies, in conjunction with the practice of sound professional judgement, to ensure good value for money.

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Procurement  
Practices

Numerous examples were found where TransLink procurement policies were not followed. TransLink is responsible for conducting procurements in a fair, open and transparent manner that provides good value for money, but this has not always been the case. The following issues were noted during the sampling of procurement files:

- Since 2010, over 75% of contracts valued at over \$25,000 were procured in a non-competitive manner, totaling over \$75 million.
- Multiple examples were found where work of a similar nature was split between several contracts.
- Pre-qualification lists never expire and new vendors cannot be added to the lists; TransLink does not have any written policies and procedures regarding pre-qualified vendors list.
- Cost was not sufficiently considered in the selection process, leading to the most expensive vendors winning the process approximately half of the time.
- Since 2010, approximately 85% of the procurements requiring a Notice of Intent were not posted on BC Bid.
- One in three contracts were amended. Of those amended, half more than doubled the value of the original contract. The amendment rate increases to 45% for direct awarded contracts.
- Contracts and contract amendments were consistently signed late, leading to goods and services being received before the contracts were signed.

## Recommendations:

**(24) TransLink should develop pre-qualified vendors list policies and procedures.**

**(25) TransLink should adhere to its own procurement policies and procedures.**

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Executive  
Steering  
Committee  
Observation

*TransLink should be vigorous in their approach to obtaining value for money in procurement as even a 1% reduction in this area would result in projected savings of over \$4 million per year. Given the amount of annual procurement done by TransLink, establishing and practicing sound procurement policies and procedures has the potential to provide significant dollar savings.*

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Operating  
Agreements

Long term, high value operating agreements may not be achieving value for money. Pricing is not sufficiently considered in bid evaluations and the agreements are extended multiple times, which over time may erode market competitiveness and value for money.

In addition, the agreements may not transfer an appropriate level of cost or performance risk to service providers as they do not include penalty or performance clauses to support strong financial and operational outcomes.

## Recommendation:

**(26) TransLink should clearly demonstrate value for money in procurement and when negotiating operating agreements.**

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Expenditure  
Efficiencies

TransLink's 2013 Base Plan identifies reductions of CMBC administrative expenditures of \$0.73 million. Opportunities exist to reduce similar expenditures across the enterprise.

Converting the IT and engineering contracted positions to employee positions would generate annual savings of more than \$1.5 million and allow the business knowledge gained by the contractors to be retained with the organization.

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## 6.0 Compass Card and Fare Gates

TransLink's current fare collection system for SkyTrain is based on the honour system and does not physically restrict people from entering a fare paid zone. However, passengers may be requested by a police officer or security person to present proof of a valid fare. The current system is susceptible to fare evasion and contributes to a perception that the system is unsafe. In addition, the existing fare collection system is unable to capture ridership data that would assist TransLink with bus route planning and service scheduling.

TransLink is implementing a new fare collection system, called Compass, to resolve these issues; it will be fully implemented by June 2013. It is a "smart card" system with gates that will control access to fare paid zones (i.e., a SeaBus and a SkyTrain station). Passengers will scan their smart cards on a card reader when they enter a fare paid zone and will scan their card again when they leave the zone. The addition of gates enhances the perception of security and fare compliance as well as providing data on ridership.

The total budget for implementation of the smart card and fare gate project is estimated at \$171 million, of which \$70 million will come from the federal and provincial governments. The system is expected to have a net financial benefit of \$22 million over fifteen years through reduced fare evasion losses, lower printing costs of tickets, increased ridership from an improved perception of safety, and improved bus efficiency (e.g., faster loading times).

Research conducted by TransLink of smart card systems in use at other transit agencies indicates that the amount of smart card fraud is significant; it is similar to credit card fraud and will exist regardless of the security features in place. This issue will require the Transit Police to develop more sophisticated investigative techniques and have officers trained to investigate IT related fraud.

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## 7.0 Transit Police and Transit Security

Public transit studies indicate that there is a relationship between the public's perception of safety on a transit system and ridership. The level of policing and security is based on how much is desired and what can be afforded.

TransLink has both a dedicated police force and a security service to ensure the safety of its passengers and staff, and to reduce fare evasion. There are similarities in some of the functions performed by Transit Police and Transit Security although the system is designed to reduce overlap.

Other Canadian transit systems rely on municipal police officers from the respective jurisdictions, and security services to prevent and deal with crime and to reduce the travelling public's fear of crime. TransLink's service area is unique in that its operation spans 22 police jurisdictions whereas each of the other Canadian transit systems operate in one police jurisdiction.

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### Mandates and Authority

The Transit Police Service's primary focus is the rail system and its mandate is to maintain public safety. Transit Police officers have full police powers and can make arrests, enforce the Criminal Code of Canada (on and off transit property) and carry firearms.

Transit Security's primary focus is on the bus system. Its mandate is the protection and security of transit employees and passengers, and the protection of CMBC's corporate assets. Transit Security officers do not currently work on SkyTrain platforms due to issues between the unions representing Transit Security and the SkyTrain Attendants. The unions are sensitive to potential overlapping responsibilities being performed by members of the other union. The SkyTrain Attendants are responsible for customer service, emergency response, station operations, and performing fare inspections.

When an individual is being issued a fare evasion ticket, Transit Police officers have the authority to check the person for warrants and other offence related information using various police databases. In 2011, these checks resulted in the Transit Police arresting over 750 fugitives. Transit Security does not have access to the police databases.

Although the Transit Police and Transit Security have different mandates, there are areas of overlap. Newly passed legislation enables TransLink to appoint 'fare inspectors' to write fare evasion tickets. All Transit Police officers are fare inspectors and TransLink has designated 20 Transit Security officer positions as fare inspectors.

The Transit Security officers will not have any authority to demand identification or to detain fare evaders in an attempt to obtain identification and write a ticket. Therefore, the Transit Police and Transit Security will have to work in partnership by having one or more security personnel accompany one or more police officers on patrol. This partnership may also help avoid or reduce the need for additional police resources.

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#### Expenditures

The cost of the Transit Police increased from \$17.9 million in 2007 to \$27.1 million in 2011, which included \$22.9 million for salaries, overtime and benefits. The average 2011 salary (including benefits) for Transit Police officers was approximately \$102,300, which is generally comparable with municipal and Royal Canadian Mounted Police departments.

The number of Transit Police employees increased from 157 in 2007 to 234 in 2011. This includes 167 sworn police officers and 67 civilian support staff. Most of this increase occurred when the Canada Line became operational in 2009 and Vancouver hosted the 2010 Olympics.

The cost of Transit Security increased from \$4 million in 2007 to \$5.7 million in 2011, which included \$5.3 million for salaries, overtime and benefits for 76 staff (up from 64 in 2007). The average 2011 salary (including benefits) for the Transit Security officers was approximately \$65,000. Security guards at TransLink earn between \$20.88 and \$35.71 per hour (before benefits and overtime), with the average hourly wage being \$27.20; this is higher than the industry average of \$12 to \$15 per hour.

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#### Overtime

Overtime costs have been a significant issue for the Transit Police. A study on overtime cost drivers resulted in the implementation of new management controls that helped reduce overtime costs by \$295,000 (51%) during the first six months of 2012 when compared to the same period in 2011. However, part of this saving is due to the Vancouver Canucks being eliminated during the first round of the Stanley Cup playoffs; overtime costs during the 2011 Stanley Cup playoffs were approximately \$100,000.

Overtime costs have not been as significant an issue for Transit Security, averaging between 4% and 6% of total remuneration.

Due to union agreement stipulations, both Transit Police and Transit Security receive Sunday premiums when they work Sunday shifts.

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Expenditure  
Controls

The Transit Police department has enhanced its expenditure controls during the past year to reduce costs and to ensure that funds are spent only on high priority goods and services. The controls include purchasing some goods through local police departments (e.g., uniforms, ammunition, and fuel) and increasing the oversight of sick and injured staff.

The police's vehicle fleet has also been reduced from 44 to 36 vehicles. The police vehicles are used for investigations, prisoner transportation, station lockup, assisting the jurisdictional police respond to emergency situations, and attending witness interviews.

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Fare Evasion

Fare evasion occurs when a passenger in a fare paid zone has not paid a fare or has not paid the appropriate fare. This includes the use of fraudulently produced tickets or cards.

The estimated fare evasion has increased 120% from \$6.6 million in 2001 to \$14.5 million on 2011 while ridership has increased 21% from 294 million to 355 million passengers over the same period of time. The estimated fare evasion reached a peak in 2010 but has declined as the number of fare evasion tickets has increased.

Fare evasion and the associated loss of revenue have increased over the last five years. TransLink believes that some of the contributing factors are:

- The increase in fares by more than 11% in 2010, which has resulted in transit being less affordable to some people.
- The significant expansion of the post-secondary education transit pass program (U-Pass), which has increased the profitability of illegally manufacturing, selling and buying these types of passes.
- The launch of the Canada Line and the overall increase in ridership (more passengers means more fare evasion).
- Media reports claiming that there is no consequence to fare evasion, which has resulted in more passengers willing to evade paying for transit fares.
- The current economic downturn, which has increased the number of chronic fare evaders.

Although the fare gates are expected to significantly reduce fare evasion, TransLink currently has no plans to adjust the size of the Transit Police force after the gates are installed. However, once the effect of the fare gates implementation is known, the need, number, and necessary skill sets of the Transit Police should be examined.

**Recommendation:**

**(27) TransLink should freeze police and security hiring and conduct an efficiency review to determine appropriate staffing levels after the impact of the new legislation and fare gates is known.**

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*Executive  
Steering  
Committee  
Observation*

*TransLink should consider reducing Transit Police and Transit Security to pre-Olympic levels after the installation of fare gates is completed. Fare gates should dramatically reduce the amount of fare evasion and discourage people looking to commit crimes on the transit system. Reducing to pre-Olympic levels would generate savings in excess of \$5 million per year.*

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## 8.0 Transportation Property and Casualty Company Inc.

The Transportation Property and Casualty Company Inc. (TPCC) is an insurance company owned by TransLink that provides coverage for automobile physical damage, general liability and property (up to specified limits) solely to TransLink. Commercial insurance is purchased to provide coverage above TPCC's limits, which range from \$100,000 to \$2 million depending on the type of insurance.

In 2011, a review conducted by an insurance consultant concluded that TPCC enhances TransLink's risk management program and provides economic benefits to its shareholder. The risk management benefits provided by TPCC include coverage for risks not usually insurable, flexibility in program design (e.g., coverage, deductibles, limits), reduced need for commercial insurance, and broader and simpler insurance contracts.

TPCC is in a strong financial position, exceeding most industry benchmarks. As a result, TransLink has been able to experience low, stable insurance premiums and a positive return on investment.



## Appendix A - Additional Cost Saving Efficiencies

Report Section	Efficiencies
2.1	TransLink's 2013 Base Plan included some frequency reductions during weekend service amounting to \$0.47 million, as well as other efficiencies totalling \$1.29 million in savings. Decreasing frequencies during week days would generate an additional \$1.1 million in cost savings.
2.2	Translink's 2013 Base Plan identified a number of bus service cost savings efficiencies which include reduction of recovery time and fleet management. However, an additional \$5.2 million in cost saving opportunities exist in areas such as low performing routes and driver scheduling.
4.1	Adopting a less conservative approach to budgeting would allow TransLink to eliminate annual average budget surpluses of \$30 million.
4.3	Eliminating the use of sinking funds at this time may generate average annual savings of up to \$3 million for the next three years and increased amounts beyond that.
5.1	Converting the IT and engineering contracted positions to employee positions would generate annual savings of more than \$1.5 million and allow the business knowledge gained by the contractors to be retained with the organization.

## Appendix B - Summary of Recommendations

1	TransLink should decrease SkyTrain frequency during all non-peak times.
2	TransLink and the Mayors' Council should re-evaluate the productivity guidelines to determine an appropriate level.
3	TransLink should address the lowest performing routes by converting to shuttles, reducing or cancelling service.
4	TransLink should increase the utilization of split shifts to maximize cost efficiency.
5	TransLink should continue to address absenteeism.
6	TransLink should undertake efforts to achieve recovery time reduction targets.
7	TransLink and municipalities should work together to identify suitable locations for transit centres.
8	TransLink should explore the feasibility of compressed natural gas fleet expansion based on fleet life cycle cost comparisons.
9	TransLink should ensure business cases for fleet expansion are clearly linked to planned service needs and levels.
10	TransLink should review the appropriate level of the bus maintenance work force.
11	TransLink should compare internal and contracted community shuttle maintenance practices to identify opportunities for increased cost efficiency.
12	TransLink should increase the use of supplemental taxi services.
13	TransLink should develop an enterprise-wide capital asset management strategy, including roads and bridges.
14	TransLink should work with the municipalities to identify reasonable timeframes for the Minor Capital Works program.
15	TransLink should reduce their fiscal conservatism and periodically undertake a zero based budgeting process.
16	TransLink should reduce the financial impact of maintaining multiple resources to manage financial challenges.
17	TransLink should replace contracted positions with staff positions.

<b>18</b>	TransLink and its operating companies should work with the unions to improve productivity and cost effectiveness.
<b>19</b>	TransLink should ensure corporate incentive program targets are sufficiently challenging and achieving desired objectives.
<b>20</b>	TransLink and its operating companies should analyze their benefit programs, and move towards a corporate approach, to reduce costs.
<b>21</b>	TransLink should work on reducing discretionary spending across the enterprise.
<b>22</b>	TransLink should investigate alternate methods to procure diesel fuel, including hedging strategies.
<b>23</b>	TransLink should place a priority on updating its Disaster Recovery Plan for its critical systems and facilities.
<b>24</b>	TransLink should develop pre-qualified vendors list policies and procedures.
<b>25</b>	TransLink should adhere to its own procurement policies and procedures.
<b>26</b>	TransLink should clearly demonstrate value for money in procurement and when negotiating operating agreements.
<b>27</b>	TransLink should freeze police and security hiring and conduct an efficiency review to determine appropriate staffing levels after the impact of the new legislation and fare gates is known.