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Sheppard Subway Extensions

Analysis of Funding Options for Toronto Transit Infrastructure Limited and the City of Toronto

November 7, 2011

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1.0 Executive Summary

The City of Toronto ("the City") and Toronto Transit Infrastructure Limited ("TTIL") are in the process of preparing a business case to assess extending the Sheppard subway line east and west of the existing Sheppard line. As part of that work, this report outlines a preliminary capital financing plan for the project and analyzes several funding options for consideration by the City.

1.1 Introduction and Project Background

Following the Toronto Municipal Election in October 2010, the newly elected Mayor of Toronto and the Province of Ontario ("the Province") agreed on a proposal to make changes to the $9.5 billion "5 in 10 Plan", which outlined a commitment from the Province to fund the "Big 5" Greater Toronto Area transit infrastructure projects. The purpose of these changes was to achieve the Mayor's goal of substituting subway lines for the surface rail lines that were originally contemplated in the plan. The Province agreed to maintain the $8.4 billion funding commitment to the Toronto-based projects in the plan; however, the majority of this funding would be allocated to the Eglinton-Scarborough Crosstown project, which will have considerable portions of the line constructed underground.

These changes to the "5 in 10 Plan" meant that the City would be responsible for implementing two extensions of the existing Sheppard Subway line:

- a western extension from Yonge-Sheppard Station to Downsview Station on the Spadina Subway line; and
- an eastern extension from Don Mills Station on the existing Sheppard Subway line to Scarborough City Centre.

The extensions of the Sheppard Subway will complete the line and, coupled with the extension of the Bloor-Danforth line to Scarborough City Centre, can create a "closed loop" that will facilitate efficient subway travel across the City and provide more options for GTA residents. With the population of the GTA expected to increase by about 1.7 million people and 0.7 million jobs over the next twenty years, the extensions on the Sheppard Subway line will help reduce congestion caused by this growth.

1.2 Project Costs

TTIL with the assistance of Metrolinx and its consultant Steer Davies Gleave ("SDG") is examining a number of project options. These options include:

- Option 1 – East and West Sheppard Subway Extension with 1992 Environmental Assessment ("EA") alignment at the Eastern End. Option 1 provides a continuous subway service between Downsview and Scarborough Centre Stations. A procurement and construction period of 9 years is assumed.
- Option 2 – East Sheppard Subway Extension only, with EA alignment at Eastern End. Option 2 is essentially the same as Option 1 except that the western section between Downsview and Yonge which was included in the original 1992 EA is excluded. A procurement and construction period of 7 years is assumed.
- Option 3 – East Sheppard Subway Extension only, with alternative Eastern Terminus Alignment. Option 3 is similar to Option 2, but with a different alignment between Agincourt and Scarborough and with a new station to be provided at Brimley instead of Progress. A procurement and construction period of 7 years is assumed.
- Option 4 – East Sheppard Subway Extension only to Victoria Park. Option 4 pursues an extension of the subway from Don Mills to Victoria Park and could advance the Project's in-service date due to the shorter section requiring less planning lead time when compared to the other options. A procurement and construction period of 5 years is assumed.

The rationale for the consideration of Option 3 in addition to Option 2 is that there is significantly higher development potential adjacent to the proposed Brimley station given its current relatively low density. Area around Progress station in Option 2 on the other hand is fairly developed and its land use is primarily industrial. The selection of Option 3 may require a revised EA submission.

Preliminary capital cost estimates for each option have been prepared by SDG and are summarized in the table below. It should be noted that the estimates have been prepared without design or engineering input. The estimates are based upon limited existing information for this project and work carried out on other similar transit projects with costs calculated to reflect both the engineering requirements anticipated for this project and expected local levels of pricing.

Sheppard Subway Extensions Project **Preliminary Cost Estimate**				
($ millions)	**Option 1**	**Option 2**	**Option 3**	**Option 4**
Extensions	East and West	East Only	East Only	East (to Victoria Park)
Length of New Tunnel	12.7 km	8.0 km	9.5 km	2.3 km
No. of New Stations	11	7	8	2
Construction Period	9 years	7 years	7 years	5 years
Capital Cost Before Inflation ($2011)	**$3,744**	**$2,436**	**$2,793**	**$803**
Capital Cost Inflation	*$556*	*$291*	*$333*	*$77*
Capital Cost Including Inflation*	**$4,300**	**$2,727**	**$3,126**	**$880**

* Assume construction to start in 2012. Exclude financing costs during construction period.

TTIL has indicated that Option 2 is the preferred alignment for the East Extension and it is therefore assumed in this report that the East Extension will be implemented according to the alignment in Option 2 with capital costs of $2,436 million in 2011 dollars (before adjusting for inflation). Capital costs of the West Extension are estimated at $1,308 million in 2011 dollars, calculated as the difference in capital costs between Option 1 and Option 2.

1.3 Overview of Funding Analysis

Major capital projects such as the Sheppard Subway Extensions require significant investments to implement. In this context, it is important to keep two fundamental questions in mind: where will the money be coming from (e.g., current budgetary allocation, debt issued by the government, private sector debt / equity, etc.) and what types of revenues will be used to support the investments being made (e.g., general tax revenues, development charges, etc.).

With respect to the issue of raising public debt, the factors to be considered include the capital budgets of the government and the ability and willingness of the government to raise debt. Based on discussions with the City, the ability of the City to raise debt for this Project is highly constrained. Accordingly, the focus in this report is placed on examining ways to finance the Project while not requiring the City to issue additional debt.

Our approach to this funding analysis includes the following elements:

- Establishing the investment requirements by reviewing the capital expenditures related to the Project.
- Considering the Federal and Provincial government funding available or planned.
- Estimating the financing that can be raised from three revenue tools identified by the City – namely Tax Increment Financing (“TIF”), Development Charges (“DC”), and sale of land/development rights owned by the City along the Sheppard East and Eglinton-Scarborough corridors.
- Identifying a range of other revenue tools that have been used in other jurisdictions to fund transit infrastructure investment and develop illustrative estimates of the revenue potential of these other revenue tools if applied in Toronto.
- Considering the amount of financing available under three delivery models; namely traditionally delivery, availability payment model, and concession model. To the extent there are funding gaps in each model, the

funding gaps are “translated” into annual requirements that may be met by revenues from revenue tools or additional government support.

Based on discussions with TTIL, it was determined that the East Extension is the priority and should be the focus of the funding analysis at this time. Accordingly, it is assumed that the funding sources and revenue tools identified in this report will be first used to support the East Extension (Option 2 identified previously). It is assumed that the West Extension will be supported from excess cash flow and additional government support beyond the currently identified funding, in addition to the TIF and DC revenues associated with the West Extension.

In summary, the following analytical approach is used in this report:

- The East Extension is the priority and will likely be implemented first. The capital costs of the East Extension are estimated at $2,436 in 2011 dollars (or $2,727 million including inflation). The government funding and revenue tools identified in this report are assumed to be used to finance the East Extension capital costs.
- The West Extension is assumed to be funded from excess cash flow, additional government support and TIF and DC revenues connected to the West Extension. Capital costs of the West Extension are estimated to be $1,308 million in 2011 dollars (or $1,573 million including inflation).

1.4 Overview of Potential Financing Sources and Structures

With the City looking to minimize the amount of recourse financing used on the Project, the City is interested in assessing the amount of funding that could potentially be available for the Project from non-traditional financing sources (i.e., sources other than tax-supported debt issued by the City). The non-traditional financing sources considered include:

- Revenue bonds supported by the TIF and DC revenues (“TIF Bonds” and “DC Bonds”). The TIF Bonds and the DC Bonds are assumed to be non-recourse for the purpose of this analysis.
- Private sector financing (both debt and equity) provided by the private sector under a public-private partnership (“P3”) delivery approach.

A P3 is an alternative model for delivering public services and funding infrastructure created through a cooperative venture between the public and private sectors. In this context, the term “partnership” is not intended to imply a legal partnership, but rather a symbiotic relationship of two or more entities to achieve a common goal. The arrangement is designed to leverage the expertise of all parties in meeting a public need by appropriately allocating risks, resources, rewards and responsibilities.

The private sector’s incentive to generate a return means that they are constantly looking for ways to improve the services offered to customers and may be more likely to come up with innovative ideas that provide better value to users. A P3 allows the public sector to take advantage of the innovation and refined processes that may be implemented by the private sector in financing or delivering a service to a level prescribed and enforced by the public sector. In doing so, the public sector can potentially improve their value for money by receiving a premium public service while staying within their available resources. A detailed value for money analysis should be conducted prior to implementing a P3 delivery model to assess whether the use of a P3 delivery model provides more value to the City than a traditional delivery model. Globally, P3s have helped deliver a broad range of modern assets and services that include high-quality service and maintenance activities to ensure that investments retain their value and that services meet public demand over the long-term.

This analysis contemplated three different delivery models, including two P3 models that combine the revenue bonds that can be supported by TIF and DC revenue with further private sector financing. The three delivery models are:

- Traditional delivery model with City issuing TIF and DC bonds;
- P3 delivery under an availability payment model; and
- P3 delivery under a concession model.

The traditional delivery model assumes that the City would undertake the Project and incur the capital expenditures directly. The funding available to the City to pay for the capital expenditures would include government contributions, TIF and DC bond proceeds, revenues from sale of development rights along the Sheppard East and Eglinton-Scarborough

Crosstown corridors, and additional funding in the form of revenues from other revenue tools or other government funding. With TIF and DC bonds issued during the construction period, the City will also receive TIF and DC revenues and pay debt service on the TIF and DC bonds during the construction period.

An availability payment model is a form of P3 in which a private sector partner ("Project Co") would propose a payment stream over a pre-defined period as compensation for the design, construction, financing and maintenance of the East Extension. This is often referred to as a design-build-finance-maintain ("DBFM") model and this type of procurement model has been used to deliver a number of major capital projects in Ontario and across Canada in recent years. Typically, the procuring entity provides Project Co with milestone payments at pre-defined dates and amounts during the construction period to help reduce the amount of long-term financing required. For the purposes of this analysis, it is assumed that the funding available to the City during the construction period through government contributions, TIF and DC bond proceeds and revenues from the sale of development rights will be used to make milestone payments to the private sector. The amount of capital costs not covered by milestone payments will be financed by the private sector. This private financing will be repaid from availability payments to be made by the City over a 30-year operating term. A key aspect of the availability payment model is that Project Co does not have to assume any risks related to revenue (as the schedule of availability payments included in the project agreement are essentially guaranteed by the City) and as a result can have a much more leveraged financing structure. This means that less equity is required from Project Co to finance the Project, which leads to a lower weighted average cost of capital for the Project.

A concession model is another form of P3 in which Project Co leverages all available funding to design, construct, finance and maintain the new subway extensions over a pre-defined period of time. As in the traditional model and the availability payment model, Federal and Provincial government contributions as well as proceeds from sale of City-owned development rights will be used to pay a portion of the capital costs. The main difference between the concession model and the other two models is that under the concession model the TIF and DC revenues are assumed to be transferred to the private sector. The private sector will then raise financing based on those revenue streams. For analytical purposes, it is assumed that the private sector will raise debt in a manner similar to issuing TIF and DC bonds, and also raise TIF and DC equity based on the projected excess of TIF and DC revenues over debt service. In essence under the concession model, the risk of the incremental tax and development charge revenues matching or exceeding the estimated amounts is transferred to Project Co. The excess revenue streams will likely be considered as high risk by potential investors and a higher rate of return will be required in return for providing the TIF and DC equity upfront.

In terms of private financing available under a P3 delivery approach, the private financing will need to be supported with revenue streams assigned to the private sector. In the availability model, the financing provided by the private sector during the construction period will be repaid by the City over the long term (assumed to be 30 years, which is typical for this type of model in Ontario) through an availability payment. The payments are called "availability payments" because they are typically linked to the availability for use and performance of the infrastructure to be developed and maintained by the private sector. Under the concession model, it is assumed that the private sector would provide an upfront contribution in return for receiving the TIF and DC revenues over the long term.

1.5 Summary of Findings

The three delivery models discussed above were considered, each incorporating the government funding and revenue tools that have been identified by the City (namely incremental taxes, development charges, and sale of City-owned development rights). In all three models, additional funding beyond those identified previously is required to fully finance the $2,727 million capital costs of the East Extension. The amounts and timing of the additional funding required differ across the three models.

Under the traditional model, there is a requirement of $914 million during the construction period and additional funding is required almost immediately. This means that if there are no additional Federal or Provincial contributions available for the Project, the City will either have to implement one or more of the other revenue tools within the first year of construction, or the City will have to use some form of interim debt financing to bridge the funding gap.

Under the availability payment model there is no requirement for additional funding from the City during the construction period as the private sector partner is responsible for financing the difference between the funding available for the Project

and the capital costs. By using an availability payment model, the City is able to defer the additional funding requirement of $736 million to the operating period (7 years) and provides the City with time to determine how that additional funding requirement can be met (i.e., additional government contribution or other revenue tools).

Under the concession model, there is a requirement for additional funding during the construction period of $739 million. While the requirement under the concession model is less than that of the traditional model, it still presents some of the same issues with respect to an immediate need for additional funding.

A summary of the additional funding required under each of the three models is presented below. It is expected that the additional funding required under all three models will come from some combination of additional Federal or Provincial government contributions and/or the implementation of one or more of the other revenue tools identified in Section 4.5.

Summary of City Funding Required for Each Model

($ millions)	Traditional Model	Availability Payment Model	Concession Model
Additional Funding Required During Construction	$914 (Total over years 1-7)	$0	$739 (Total over years 1-7)
Additional Funding Required During Operations	$0	$736* (Total over years 8-24)	$0

* This amount represents the total shortfall in years where TIF and DC revenues are less than the total of TIF and DC bond debt service and capital payments to Project Co

Given that the primary focus of this report is on funding the capital costs of the Project, and further, that the potential maintenance and rehabilitation costs have not been assessed in any significant detail, the results provided above do not include those future costs. Including future maintenance and rehabilitation costs are not expected to materially affect the amount of upfront funding available to finance the capital costs, but would highlight the need to cover those costs. Regardless of the delivery model chosen, these costs should be contemplated if viewing the Project from a whole life perspective.

2.0 Introduction

The City of Toronto ("the City") and Toronto Transit Infrastructure Limited ("TTIL"), a subsidiary corporation created by the Toronto Transit Commission ("TTC"), are in the process of preparing a business case to assess extending the Sheppard subway line both east and west of the existing Sheppard line. As part of that work, this report outlines a preliminary capital financing plan for the project and analyzes several funding options for consideration by the City.

2.1 Project Background and Description

The Transit City plan (announced in March 2007) identified the Sheppard East Light Rail Transit ("LRT") project as one of seven priority transit projects in the Greater Toronto Area ("GTA"). In April 2009, the Province of Ontario ("the Province") announced $9.5 billion in funding for the "Big 5" GTA transit infrastructure projects which included the construction of the Sheppard East LRT line in addition to the York Region VIVA Next Bus Rapid Transit project, the refurbishment of the Scarborough Rapid Transit ("RT") line, and the construction of the Finch LRT line and the Eglinton-Scarborough Crosstown LRT line.

The 2010 Ontario budget renewed the Province's commitment to fully fund the "Big 5" projects, but requested that Metrolinx, an agency of the Government of Ontario created to improve the coordination and integration of transportation in the Greater Toronto and Hamilton Area[1], develop a plan to reduce the funding requirements for these projects in the first five years by $4 billion. This resulted in the Metrolinx Board approving the "5 in 10 Plan" in May 2010, which adjusted the phasing of the projects to reduce the Province's financial commitment by $4 billion in the first five years while also ensuring that the projects were still constructed by 2020.

Following the Toronto Municipal Election in October 2010, the newly elected Mayor of Toronto and the Province agreed on a proposal to make changes to the "5 in 10 Plan". The purpose of these changes to the plan was to achieve the Mayor's goal of substituting subway lines for the surface rail lines that were originally contemplated. The Province agreed to maintain the $8.4 billion funding commitment to the Toronto-based projects in the plan; however, the majority of this funding would be allocated to the Eglinton-Scarborough Crosstown project, which will have considerable portions of the line constructed underground.

These changes to the "5 in 10 Plan" meant that the City would be responsible for implementing two extensions of the existing Sheppard Subway line:

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The key outcomes of the Sheppard Subway Extensions project ("the Project") are expected to be the following:

- safer and faster movement of people and goods across the GTA and connection to Canada's main transportation routes;
- reduced production of greenhouse gases and airborne pollutants;
- increased effectiveness of urban development and restructuring of urban growth patterns, including providing the opportunity for higher density, and mixed use development surrounding stations;

[1] Source: http://www.metrolinx.com/en/aboutus/metrolinxoverview/metrolinx_overview.aspx

- increased economic activity, including capitalizing on the presence of the emerging retail node at Sheppard and Leslie and commensurate employment and residential growth opportunities there;
- use of innovative technologies and practices to maximize the effectiveness of the project including an increased collaboration of the commercial and private sectors; and
- cost savings and quality enhancements in the design, construction and maintenance from private sector involvement.

In 1992, an Environmental Assessment Study ("EA") was conducted by the City and the TTC to determine the most appropriate options for improving transportation services in northeast Toronto. The study concluded that rapid transit along the Sheppard corridor would provide the most efficient and cost-effective alternative. Specifically, the study concluded that a rapid transit corridor along Sheppard, with a fully segregated right of way (e.g., subway), would help serve the high existing population and employment (in addition to future development opportunities) in the corridor, provide an alternative to auto use in a corridor where traffic pressures are expected to exceed possible expansion of the road system and accommodate existing high transit demand in the corridor.[2]

The Study provided the following conclusion:

> "While the initial capital costs for some options (e.g. busway, LRT) would be less expensive than a subway, they offer reduced quality of service, result in increased congestion on the road network, have negative environmental impacts on the local community, are unable to achieve future land use objectives, fail to respond to future ridership growth and carry increased operating costs. If Metropolitan Toronto is to fully achieve its urban structure, environmental and social goals, while at the same time choosing a technology with the most economical (capital and operating costs) performance in the long-run, a subway along Sheppard Avenue is the preferred choice."[3]

2.2 Project Costs

TTIL with the assistance of Metrolinx and its consultant Steer Davies Gleave ("SDG") is examining a number of project options. These options include:

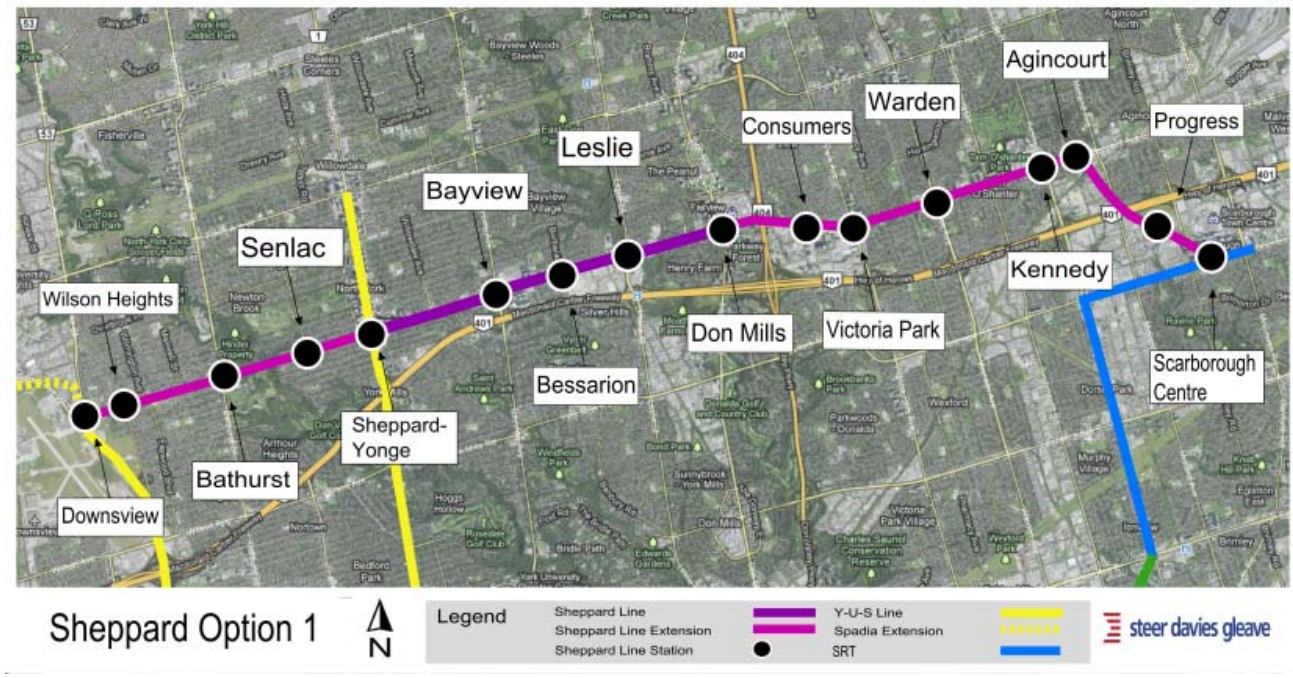
- Option 1 – East and West Sheppard Subway Extension with EA alignment at the Eastern End. Option 1 provides a continuous subway service between Downsview and Scarborough Centre Stations. A procurement and construction period of 9 years is assumed.
- Option 2 – East Sheppard Subway Extension only, with EA alignment at Eastern End. Option 2 is essentially the same as Option 1 except that the western section between Downsview and Yonge which was included in the original 1992 EA is excluded. A procurement and construction period of 7 years is assumed.
- Option 3 – East Sheppard Subway Extension only, with alternative Eastern Terminus Alignment. Option 3 is similar to Option 2, but with a different alignment between Agincourt and Scarborough and with a new station to be provided at Brimley instead of Progress. A procurement and construction period of 7 years is assumed.
- Option 4 – East Sheppard Subway Extension only to Victoria Park. Option 4 pursues an extension of the subway from Don Mills to Victoria Park and could advance the Project's in-service date due to the shorter section requiring less planning lead time when compared to the other options. A procurement and construction period of 5 years is assumed.

The rationale for the consideration of Option 3 in addition to Option 2 is that there is significantly higher development potential adjacent to the proposed Brimley station given its current relatively low density. Area around Progress station in Option 2 on the other hand is fairly developed and its land use is primarily industrial. The selection of Option 3 may require a revised EA submission.

The assumed alignment and stations for each of the above options are shown in the diagrams that follow.

[2] Sheppard Subway Environmental Assessment – Executive Summary
[3] ibid

It is important to note that while the Sheppard Subway Extensions project is the focus of this analysis, it is part of a broader transit system being planned by the City, which also includes the construction of the Eglinton-Scarborough Crosstown project. As mentioned earlier, the construction cost of the Eglinton-Scarborough Crosstown project (estimated at approximately $8.4 billion dollars in 2010$) is expected to be fully funded by the Provincial government, while the funding of the Sheppard Subway Extensions project is the responsibility of the City. Since both projects are considered to be significant improvements to the Toronto transit system and the Eglinton-Scarborough Crosstown will be funded by the Province, the incremental tax revenues generated by the Eglinton-Scarborough Crosstown can be used to help fund the Sheppard Subway Extensions project, as agreed to in the memorandum of understanding between the City and the Province. Details on how the incremental tax revenues are generated are discussed further in chapter 4.




Agincourt
Warden
Consumers
Leslie
Progress
Bayview
Kennedy
Don Mills
Victoria Park
Scarborough Centre
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Sheppard-Yonge
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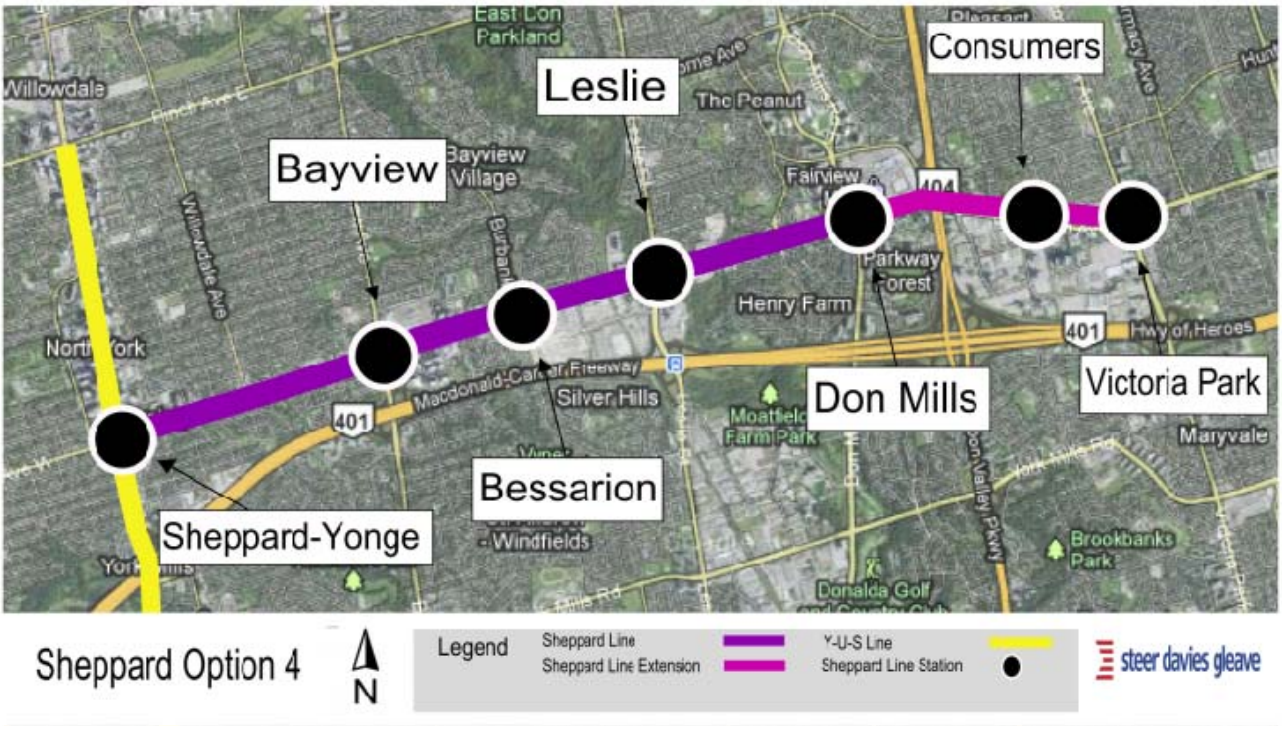

Preliminary capital cost estimates for each option have been prepared by SDG and are summarized in the table below. It should be noted that the estimates have been prepared without design or engineering input. The estimates are based upon limited existing information for this project and work carried out on other similar transit projects with costs calculated to reflect both the engineering requirements anticipated for this project and expected local levels of pricing.

Sheppard Subway Extensions Project **Preliminary Cost Estimate**				
($ millions)	**Option 1**	**Option 2**	**Option 3**	**Option 4**
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Capital Cost Inflation	*$556*	*$291*	*$333*	*$77*
Capital Cost Including Inflation*	**$4,300**	**$2,727**	**$3,126**	**$880**

* Assume construction to start in 2012. Exclude financing costs during construction period.

For reference, capital costs for the Project (including both the East and West Extensions) have been estimated previously by the TTC at $4,732 (2010$). Appendix A provides a more detailed comparison (by cost line item) of the SDG Option 1 cost estimate and the TTC cost estimate.

Based on discussions with TTIL, the preferred alignment for the East Extension is that under Option 2. It is assumed in this report that the East Extension will be implemented according to the alignment in Option 2 with capital costs of $2,436 million in 2011 dollars (before adjusting for inflation). Capital costs of the West Extension are estimated at $1,308 million in 2011 dollars, calculated as the difference in capital costs between Option 1 and Option 2. Total capital costs for both the East and West Extensions are therefore $3,744 million in 2011 dollars as indicated in Option 1 (the 1992 EA alignment).

2.3 Timeline

The preliminary capital cost estimates prepared by SDG included high-level assumptions on construction timeline. Based on discussions with TTIL, the East Extension will likely be the initial focus of the Project. Construction of the East Extension is assumed to start in 2012 with a construction period of 7 years to completion.

In this context, a number of key milestones will need to be achieved, including:

- ensuring that the required amount of funding for the Project is available;
- performing further analysis of the other revenue tools available to the City for raising funding for the Project;
- developing a detailed procurement strategy for the Project;
- finalizing the cost-benefit analysis for the Project with Metrolinx;
- updating environmental assessments conducted in 1992;
- receiving Federal and Provincial government support during the approvals process;
- completing property acquisition and utility reallocation in a timely matter;
- ensuring that the market is ready to move quickly; and
- having timely access to professional, design and construction services.

3.0 Project Funding

The City will have the primary responsibility for raising the necessary funding for the Sheppard Subway Extensions project. This chapter outlines our funding analysis approach and identifies the potential funding sources available for the Project from both the Federal and Provincial governments, as well as from the private sector.

3.1 Overview of Funding Analysis

Major capital projects such as the Sheppard Subway Extensions require significant investments to implement. Fundamentally, there are two key questions that need to be answered:

- **Where will the money be coming from?** In general, funding for investments in infrastructure can come from current budgetary allocation (i.e., pay-as-you-go), debt issued by the government, and private sector debt and/or equity. For a major transportation infrastructure project, the capital expenditures required in each year of construction can be very large relative to the annual budgetary allocations. There is often a need for the government to issue debt in order to raise the funds required. The private sector can also provide financing for infrastructure investment. Many projects have been successfully financed through the use of public-private partnerships ("P3s") or Alternative Financing Procurement ("AFP")[4]. From a cash flow perspective, if the capital expenditures in each year of construction are not met by sources of funding, there will be a capital funding gap.
- **What types of revenues will be used to support the investments made?** Regardless of whether the funding for the investments came from public debt or private financing, these funds will need to be recovered from one or many revenue sources. For example, government issued debt is typically serviced by general tax revenues. In P3s, financing provided by the private sector will need to be supported by payments from the government, who in turn will need one or many revenue sources to support those payments. Further discussion on P3 models is provided later in this report. Ultimately, there needs to be sufficient revenues to support the investments. The revenue sources may include general tax revenues and other revenue tools (such as tax increment financing, development charges, user fees, etc.).

With respect to the issue of raising public debt, the factors to be considered include the capital budgets of the government and the ability and willingness of the government to raise debt. Based on discussions with the City, the ability of the City to raise debt for this Project is highly constrained. Accordingly, the focus in this report is placed on examining ways to finance the Project while not requiring the City to issue additional debt.

As an overview, our approach to the funding analysis includes the following elements:

- Establishing the investment requirements by reviewing the capital expenditures related to the Project.
- Considering the Federal and Provincial government funding available or planned.
- Estimating the financing that can be raised from three revenue tools identified by the City – namely Tax Increment Financing ("TIF"), Development Charges ("DC"), and sale of land/development rights owned by the City along the Sheppard East and Eglinton-Scarborough corridors.
- Identifying a range of other revenue tools that have been used in other jurisdictions to fund transit infrastructure investment and develop illustrative estimates of the revenue potential of these other revenue tools if applied in Toronto.
- Considering the amount of financing available under three delivery models; namely traditionally delivery, availability payment model, and concession model. To the extent there are funding gaps in each model, the funding gaps are "translated" into annual requirements that may be met by revenues from revenue tools or additional government support. Further details are provided later in this report.

Throughout this report, a projection period of 50 years (2012 to 2061) is used which provides the basis for long term analysis. Years 1 through 7 are assumed to be the construction period (7 years), while years 8 through 50 are assumed to be the operating period (43 years). The construction period and operating period are referred to frequently when

[4] For simplicity and consistency, "P3" is the term used throughout this report to represent both P3 and AFP.

discussing the results of the analysis in chapter 5. All tables presented in the body of this report provide the total nominal (year of expenditure) amounts of the proceeds or costs being discussed. In instances where the totals are accumulated over a long period of time (e.g., the projected TIF and DC revenue streams), the equivalent net present value ("NPV") amounts are provided in Appendix B for reference. NPV is a commonly used financial measurement for future cash flows. For the purposes of this analysis, NPVs have been presented in Appendix B using a 5% and 10% discount rate and stated as of December 31, 2011. The 5% discount rate is a proxy for the City's long-term borrowing rate and helps show the current value of the cash flows to the City. The 10% discount rate is used to show the current value of the cash flows on a more risk-adjusted basis.

This analysis assumes that all regulatory and legislative steps related to the collection of the TIF and DC revenues over the 50 years and their allocation to the Project will be implemented accordingly. Appendix C provides an overview of the potential regulatory and legislative impediments to implementing these revenue tools and the other revenue tools identified in section 4.5 (as indicated by City staff).

The remainder of this chapter outlines our understanding of the capital funding requirements facing the City and the available and planned Federal and Provincial funding for this Project.

3.2 Capital Costs Funding Requirements

The Sheppard Subway Extension Project is a large project and it is likely that the Project will be implemented in stages. With the development of a detailed construction timeline, the phasing of the various aspects of the Project can then be determined by the City and TTIL. From a funding perspective, the focus of this report is on identifying funding sources that can be available upfront.

Based on discussions with TTIL, it is determined that the East Extension is the priority and should be the focus of the funding analysis at this time. Accordingly, it is assumed that the funding sources and revenue tools identified in this report will be first used to support the East Extension (Option 2 identified previously). It is assumed that the West Extension will be supported from excess cash flow and additional government support beyond the currently identified funding, in addition to the TIF and DC revenues associated with the West Extension.

In summary, the following analytical approach is used in this report:

- The East Extension is the priority and will likely be implemented first. The capital costs of the East Extension are estimated at $2,436 in 2011 dollars (or $2,727 million including inflation). The government funding and revenue tools identified in this report are assumed to be used to finance the East Extension capital costs.
- The West Extension is assumed to be funded from excess cash flow, additional government support and TIF and DC revenues connected to the West Extension. Capital costs of the West Extension are estimated to be $1,308 million in 2011 dollars (or $1,573 million including inflation).

3.3 Federal Government Contributions

Building Canada Fund

The Federal government has made a long-term commitment to infrastructure renewal in Canada in an effort to modernize infrastructure across the country, create jobs and support long-term economic growth.[5] A major component of that commitment is the *Building Canada Fund* ("BCF"). Its mandate is to advance national priorities that are important to all Canadians including a stronger economy, a cleaner environment and better communities all while addressing local and regional infrastructure needs. Public transit is one of five national priority funding categories under the BCF.[6]

Prior to the conversion of the Sheppard LRT line to subway extensions, the Federal government had pledged an estimated $333 million to the Province for the construction of the Sheppard LRT. The Province has indicated that they will

[5] Conservative Party of Canada 2011 Platform. Here for Canada - Stephen Harper's Low-Tax Plan for Jobs and Economic Growth.

[6] "Building Canada - Building Canada Fund." 13 Jan. 2011. Web. 15 Sept. 2011. <http://www.buildingcanada-chantierscanada.gc.ca/funprog-progfin/target-viser/bcf-fcc/bcf-fcc-eng.html>.

support Toronto's efforts to obtain these funds promised for the Sheppard LRT project so that the $333 million can flow to the City to help fund the Project.

PPP Canada

Another source of potential Federal funding available to the Project could be the P3 Canada Fund. The P3 Canada Fund is the first infrastructure fund in Canada to directly target P3 projects and is intended to improve the delivery of public infrastructure in the country and provide better value, timeliness and accountability by increasing the effective use of P3s.[7] The combined value of the P3 Canada Fund contribution with any other direct Federal assistance cannot exceed 25% of the direct construction costs of the project. If it is determined through the business case analysis that the Project should move forward as a P3, there is a possibility that additional Federal funding could be provided through this fund; however, the funds may not be immediately available as there is a lengthy application process for projects seeking P3 Canada fund contributions. PPP Canada ("P3C"), the entity responsible for reviewing P3 Canada Fund applications, is currently reviewing over 120 applications received at the end of June 2011. An announcement of projects that have been approved for P3 Canada funding will be made in the coming months. The next round of applications will be due during the summer of 2012.

Other Federal Government Support

Another potential source of Federal support on this Project may be for the Federal government to provide a loan guarantee or other form of financial backstop for the Project. The first-rate credit rating of the Federal government could lower the borrowing costs of the City and/or the private sector providing financing for the Project. For financing based on revenue streams from revenue tools such as TIF, a Federal guarantee could significantly increase the amount of financing available and reduce the interest rate required. While guarantees are not commonly provided by the Federal government, a similar situation took place earlier this year when the Federal government announced that it would provide a loan guarantee or equivalent financial support for the $6.2 billion Lower Churchill hydro project in Labrador. By providing this guarantee, the governments of Nova Scotia and Newfoundland and Labrador were able to borrow money at reduced rates (using the strength of the Federal government's credit rating) for this joint-development project.

3.4 Provincial Government Contributions

As indicated in the previous chapter, the majority of the $8.4 billion of Provincial funding dedicated to the Toronto-based projects in the "5 in 10 Plan" will be going towards the construction of the Eglinton-Scarborough Crosstown project. However, the Sheppard Subway Extensions project will receive a portion of that $8.4 billion if the aggregate costs for the Eglinton-Scarborough Crosstown project are less than that amount. If there are residual funds left over from the $8.4 billion, the Province has committed to provide up to $650 million of the residual funds to the Project.

3.5 Summary of Federal and Provincial Funding

The table below presents the amount of government funding currently planned for the Project and the assumptions used in our analysis with respect to timing of the contributions.

[7] "Overview - P3 Canada Fund." PPP Canada. Web. 16 Sept. 2011. <http://www.p3canada.ca/p3-canada-fund-overview.php>.

Summary of Government Funding		
($ millions)	Total	Timing Assumption
Federal Contribution*	$333	Year 1 and 2
Provincial Contribution**	$650	Year 2 and 3
Total	***$983***	

* Contribution from Building Canada Fund, not including potential for additional federal funding from other sources (e.g., P3 Canada Fund)

** Contribution from assumed savings realized on the Eglinton-Scarborough Crosstown

It is important to emphasize that while these figures are used throughout our report to determine the magnitude of the potential funding gap, there is the possibility that the savings from the Eglinton-Scarborough Crosstown project may not be realized, thereby reducing the funding available to the Sheppard Subway project. An early signal or confirmation from the Province that the funding will be available is key to the financing of the Project.

4.0 Revenue Streams to Support Government Funding

This chapter outlines non-traditional revenue streams that may be used to generate funding and support for the Project.

The City has identified three non-traditional revenue tools for detailed analysis. These three revenue tools are:

- tax increment financing ("TIF") revenues along the Sheppard Subway corridors and the Eglinton-Scarborough Crosstown corridor;
- special City-wide transit-related development charges ("DC"); and
- sale of development rights on City-owned land along the Sheppard Subway Extension corridors and the Eglinton-Scarborough Crosstown corridor.

The methodology and approach used to quantify these three revenue tools are discussed in this chapter.

As indicated previously, the focus of this report is on the financing of the Sheppard East Extension. Accordingly, only TIF revenues collected in the Sheppard East corridor and the Eglinton-Scarborough corridor are assumed to be available for funding the East Extension (the focus of this analysis). Additionally, the projected DC revenues are based on the construction of the East Extension only. It is assumed that any additional TIF or DC revenues that can be generated related to the construction of the West Extension will be available to the City to help fund the West Extension.

This chapter also provides a brief discussion on a range of other revenue tools that have been used in other jurisdictions to generate funding to support transit capital projects. Illustrative estimates of the revenue potential of these other revenue tools have been developed to provide an indication of where additional revenues could be generated from and to identify potential revenue tools for further analysis.

4.1 Tax Increment Financing Revenues

Tax increment financing is a public finance technique used by local government jurisdictions to fund infrastructure initiatives and stimulate economic development in designated geographic areas. This financing technique was originally used in California as a way to stimulate development in blighted areas and have since been authorized in 49 of the 50 US states. TIFs are much less prevalent in Canada. In Ontario, the Province only recently introduced them on a pilot basis for the Toronto-York Spadina Subway Extension ("TYSSE") and the West Don Lands redevelopment initiative.[8]

TIFs work by leveraging future tax revenue increases to finance current infrastructure projects through the dedication of the incremental tax revenue between the assessed value of designated areas ("TIF zones") prior to the development and its assessed value after the developments are completed. By doing this, future tax gains are leveraged to finance the present costs of eligible improvements in designated areas.

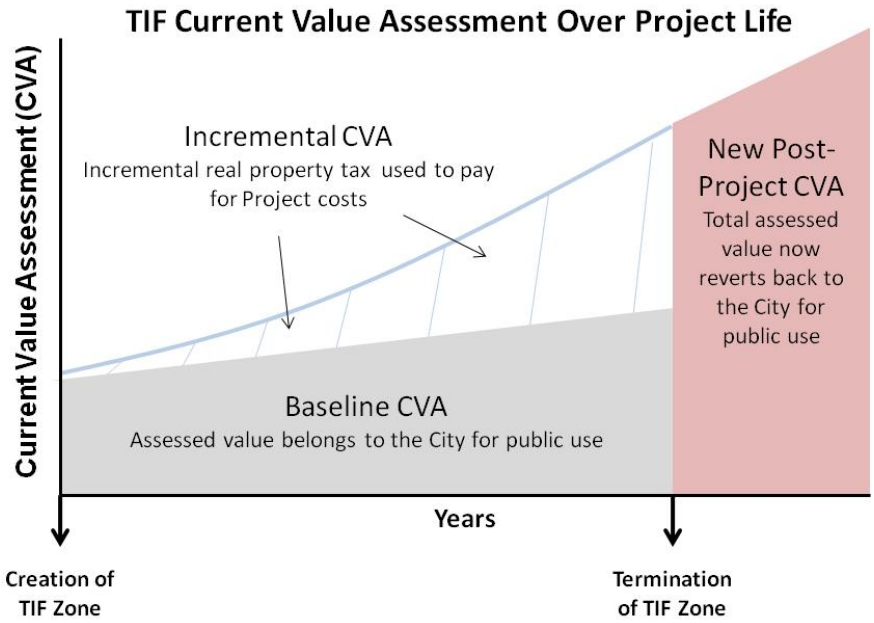
For TIFs in the US, once a development plan has been identified tax values in the designated area are typically frozen at their current, "pre-developed" assessed valuation. Then, the local government jurisdiction (or a conduit issuer) will issue bonds backed by the security of repayment from future tax revenues within that same designated area. The proceeds from the sale of those bonds are then used to help pay for the infrastructure improvements specified in the approved plan. Upon completion of these infrastructure improvements, tax values in the designated area are expected to rise due to increases in the current value assessments of the properties within the area. Any increase in revenues, above the "pre-development" assessed values, is dedicated to paying down the debt service on the TIF bonds that helped finance the initial development. Upon repayment of the bonds, the incremental revenues revert back to the traditional taxing entity.

The City has developed a potential TIF scheme that may be used for the Sheppard Subway Extension project designed to capture the real increase in value as a result of proximity to the new subway corridor without impacting taxpayers in the rest of the City. Under the City's scheme, it is assumed that the TIF zones will extend 800 metres (in all directions) from

[8] "Financing a Brownfield Project." *Ontario Ministry of Municipal Affairs and Housing*. Web. 20 Sept. 2011. <http://www.mah.gov.on.ca/Page223.aspx>.

each of the proposed stations on both the East Extension and Eglinton-Scarborough lines, whereby all incremental tax revenues collected in these corridors will be dedicated to funding the Project. A diagrammatic presentation of the proposed TIF zones can be found in Appendix D.

The exhibit below helps demonstrate the relationship between the baseline current value assessment ("CVA") and the incremental tax revenues available for the Project.



As indicated by the graph above, the increment value available for funding the Project is determined by the difference between the baseline CVA and any increase in assessed valuations in the TIF zone solely attributable to the construction of the Eglinton-Scarborough Crosstown and East Extension lines. The incremental CVA is made up of two components, each of which is highlighted in the estimate of potential TIF revenues:

- the tax increment uplift in existing property values; and
- the tax increment from new development in the TIF zones that has been accelerated and presumed to be incremental.

It should be noted that there is a fundamental difference between the TIF scheme currently considered by the City and the typical TIF that has been applied in the US. By way of background, in Ontario, all properties are subject to valuation based on CVA, and these values are updated by the Province's Municipal Property Assessment Corporation ("MPAC") through regular reassessments. With each reassessment, municipalities are required to reduce their property tax rates so that the reassessment (e.g., overall increases in property values) does not result in additional revenue. In the City of Toronto context, a tax zone around the subway corridors will be carved out from the tax base from the rest of the City allowing the real increase in values vis-à-vis the rest of the City to be measured and captured, without any impact on taxpayers in the rest of the City. If these tax zones were not carved out from the tax base for the rest of the City, the increase in value caused by proximity to the new subway corridors would go to reducing the tax rate for property taxpayers in the rest of the City.

In contrast, typical US TIFs involve freezing the baseline CVA, within the TIF zone, at the "predevelopment" level (which would be represented by a flat line in the graphic above rather than an upward sloping line). This style of TIF is usually applied in an attempt to revitalize blighted areas. In typical US TIFs, revenues are generated from all growth above an established fixed, non-increasing baseline whereas under the City's scheme, the TIF revenues would depend on value increases on existing properties beyond that which occurs in the rest of the City, and the excess growth beyond natural

growth. If a typical US-style TIF scheme is used instead of the scheme currently considered by the City, the amount of TIF revenues that can be generated could be significantly higher; however, the City would lose part of its tax base that would otherwise have been able to contribute towards budgetary levy increases. In addition, growth within the designated TIF zones that would have otherwise occurred in the absence of a subway is also lost, which has a corresponding impact on taxpayers in the rest of the City.

Quantification of potential TIF revenues requires forecasts of real estate growth over the long term. The ability to forecast real estate growth in Toronto requires a specialized skill-set. N. Barry Lyon Consultants Limited ("NBLC"), a multi-disciplinary real estate consulting firm that focuses on market research, urban planning, financial analysis and development management, was tasked with generating estimates for City-wide and corridor specific real estate growth.

NBLC developed three real estate growth forecast scenarios:

- **Baseline Scenario** – No new transit infrastructure is developed. Pipeline developments will occur over the forecast period, with the bulk of future development along the corridors taking place at existing nodes, primarily those already served by existing transit infrastructure;
- **Reference Scenario** – The Eglinton-Scarborough Crosstown is developed and both Sheppard Subway Extensions are built. Development occurs at sites identified in the potential development analysis over the forecast period according to the gross floor area ("GFA") projections and timing methodology noted in Appendix D; and
- **High-Growth Scenario** – Uses the reference scenario forecast and adds additional density in the strongest market areas.

These real estate growth scenarios were used as inputs to estimate TIF revenue potential as well as DC revenue potential (discussed later). A summary of the NBLC forecasting approach is provided in Appendix D.

Based on the real estate forecast inputs prepared by NBLC, City staff have developed estimates of the projected TIF revenues. The following assumptions have been used in quantifying the TIF revenues:

- The value-uplift component of the incremental tax revenue model assumes Provincial regulatory amendments will allow the City to capture the incremental tax revenues resulting from assessment value uplift in the subway corridors (i.e., if assessment values go up in the corridors at a rate greater than the rest of the City, then the City would not be required to make a corresponding reduction in the City-wide notional tax rate);
- The annual budgetary tax rate increase applied to residential properties has been assumed to be equal to inflation (i.e., 2.1% per annum); and
- The City will proceed towards reaching its Council-approved tax ratio target in 2020, meaning that the ratio between non-residential and residential tax rates will eventually be reduced to 2.5. The reduction in the tax ratio will be achieved by applying a lower tax rate increase each year to non-residential properties (i.e., 1/3 of the increase applied to residential properties).

The following table shows the total incremental revenues generated over the 50 years by component for both the reference scenario and the high-growth scenario. The NPV of the projected TIF revenue cash flows can be found in Appendix B.

Total TIF Zone Revenues Over 50 Years (2012 – 2061)			
($ millions)	**Tax Increment from Uplift**	**Tax Increment from New Development**	**Total**
Reference Scenario			
Total Value	$736	$4,582	**$5,318**
High-Growth Scenario			
Total Value	$739	$5,306	**$6,045**

The TIF revenue figures above have been quantified based on assumed real estate growth and the assumed impact that the Sheppard East Extension and Eglinton transit lines will have on property values and new development within the corridors. Further, it is assumed that the required tax policy and legislative amendments will be put in place to allow collection of these revenues.

4.2 Development Charge Revenues

Development charges are one-time, upfront fees levied on land development projects by the City in an effort to help fund the costs of capital infrastructure (e.g., roads, transit, sewers, emergency medical services, etc.) required to service growth. These charges are applied to all new developments within City limits and the revenues flow directly to the City. To help fund the Sheppard Subway Extensions project, the City is considering increasing the development charges on a City-wide basis and allocating a portion of these revenues to the Project. The City has already implemented a similar arrangement to help fund the TYSSE and it has been assumed that the Project will benefit from the same special treatment afforded by the Province with respect to the *Development Charges Act* as the TYSSE in terms of being exempted from the historical service cap and the 10% statutory reduction for transit projects.

In addition, City staff also made several specific input assumptions when calculating the development charge revenues in order to comply with various provisions of the *Development Charges Act*. When imposing DCs against land to pay for the capital costs of public infrastructure, the following must be considered:

- **Contributions from other levels of government cannot be recovered** – For the purposes of calculating the DC increases for the Project, the City assumed that the $650 million from the Province and the $333 million from the Federal government would be available for the Project. This $983 million was then subtracted from the total capital cost of the Project and DC calculations were based on the net City cost of the Project.
- **Any benefit to existing residents cannot be recovered** – For the purposes of calculating the DC increases for the Project, the City assumed that 40% would benefit existing residents, while 60% would benefit new growth. This assumption was based on the ratio established for the TYSSE in 2008. It is based on a balance between a ridership-based forecast ratio and the position that the subway would not be built in the absence of growth. This meant that 60% of the net City cost of the Project (from the bullet above) was used.
- **The allocation of DCs should be based on the ratio of expected residential and non-residential development** – For the purposes of calculating the DC increases for the Project, the City assumed a ratio of 70% residential to 30% non-residential. The population and employment forecasts for the planning period (10 years) were used as the basis for developing this ratio.

The development charges were assumed to increase at the rate of inflation (i.e., 2.1% per annum).

The development charge rates currently charged by the City are the lowest in the GTA. The table below provides the City of Toronto development charges currently applied to residential and non-residential units (as of February 1, 2011) and also indicates the anticipated increases to the DCs that could be applied as a result of the construction of the East Extension (based on the assumptions outlined above).

City of Toronto Development Charges		
Residential (per unit)	**Current DC (as of Feb 1, 2011)**	**Increase to DC for East Extension**
Single detached and semi-detached dwelling	$14,025.00	$3,213.92
Multiple dwelling unit	$11,240.00	$2,605.88
Apartment unit – two bedroom and larger	$9,040.00	$2,049.96
Apartment unit – one bedroom and bachelor	$5,823.00	$1,398.49
Dwelling room	$3,686.00	$868.63
Non-residential (per m^2)		
Industrial uses	–	–
All other non-residential uses*	$107.91	$40.24

* Applies to the non-residential gross floor area located on the ground floor only

Source: City of Toronto

City staff used the Ministry of Finance residential population forecast and NBLC's forecast of non-residential GFA and employment to estimate City-wide DC revenues over the next 50 years. Two general forecast scenarios were developed for both the reference scenario and the high-growth scenario:

- **Scenario 1 –** The City will continue its current policy of exempting industrial development from development charges and only charging non-residential development for the ground floor GFA; and
- **Scenario 2 –** The City will change its current policy and apply development charges to all non-residential development.

The table below presents a summary of the forecasted DC revenues for the reference and high-growth scenarios under the two scenarios outlined above. The NPV of the projected DC revenue cash flows can be found in Appendix B.

Total City-Wide DC Revenues Over 50 Years (2012 – 2061)		
($ millions)	**Scenario 1 – Current policy**	**Scenario 2 – Charge all non-residential**
Reference Scenario		
Total Value	$2,190	$2,850
High-Growth Scenario		
Total Value	$2,203	$2,878

For the purposes of our analysis, we have assumed Scenario 1, the current policy remains in place. In addition, a key assumption made by City staff in developing these DC revenue estimates was that the City will be able to continue re-applying the same assumptions in each future review of the development charges by-law. DC reviews are required every five years and it is assumed that the calculated charges will remain constant over the 50-year period.

These DC revenues will be used to help fund the Project in the same way the TIF revenues were used, in that the future City-wide DC revenues would be leveraged to finance the present costs of the Project. The City or a private partner would issue bonds supported by the future DC revenues and the proceeds would then be used to help pay for the infrastructure improvements.

4.3 City-Owned Development Revenues

An analysis of City-owned properties along the transit corridors was performed to determine whether any value could be generated from bringing these underutilized properties to market and allow for future redevelopment on these sites to help fund the Project. Over 600 municipal properties in the corridors were reviewed by City staff and NBLC to identify properties with future redevelopment potential.

For the purposes of the analysis, vacant residential land, surface parking lots and other underutilized properties with sites larger than 10,000 square feet were isolated (sites smaller than 10,000 square feet are not considered to have significant redevelopment potential). This filtering process reduced the number of eligible sites to approximately 100 properties. NBLC then examined the remaining sites, contrasting these properties with the land use policies of the City of Toronto Official Plan, to produce a final list of properties that would likely have the potential for future redevelopment based on location, site area, market demand, land use pattern and Official Plan policies. Through this screening process, 18 City-owned properties along the future transit corridors were identified as having significant redevelopment potential.

It should be noted that with the exception of the TTC Bus Terminal lands at Yonge and Eglinton, a central assumption in the projection of these land values is that the proposed transit services along both Sheppard and Eglinton are approved.

Once these sites were identified, the next step was to estimate the redevelopment potential of each City-owned property and estimate a value for each. NBLC used their understanding of planning policy and input gained from previous working sessions with community planning staff to develop projections of development (expressed in terms of GFA) for each City-owned site considered in this analysis. Land values were then estimated (on a per buildable square foot basis) for each site based on a thorough survey of land transactions throughout the GTA high-rise land market over the past 10 years.

The following table outlines the estimated minimum and maximum land value projections of the City-owned properties in both the Sheppard and Eglinton corridors.

Estimated Land Value of City-Owned Sites in Corridors

($ 2011)	Minimum	Maximum	Average (used in analysis)
Sheppard Corridor	$25,189,976	$30,974,988	$28,082,482
Eglinton Corridor	$158,607,811	$199,893,109	$179,250,460
Total (18 properties)	**$183,797,787**	**$230,868,097**	**$207,332,942**

The values projected represent an order of magnitude view of potential land-related revenues that could be dedicated to the Project; for the purposes of our analysis, we have assumed the average. It should be noted that City Council has already approved the transfer or turnover of several of the 18 properties identified to Build Toronto. This analysis has assumed that revenues received under Build Toronto related to these properties will be assigned to the Sheppard Subway

Extensions. It has also been assumed that no extraordinary servicing, environmental remediation or other unforeseen costs or physical limitation might restrict a site's value or ability to accommodate redevelopment.

For the purposes of funding the Project, it is assumed that these properties will be sold to developers at some point during the construction period to help pay for the capital costs of the Project. The assumptions as to when these values can be realized for funding purposes will be noted for each of the financing structures analyzed in chapter 5.

4.4 Summary of City-Identified Revenue Tools

The table below summarizes the revenue potential from the three revenue tools discussed previously. The total revenues over 50 years are presented as well as the timing of the revenues. These values provide the basis of the TIF revenues, DC revenues and proceeds from the sale of City-owned land assumptions used in the analysis of each of the three financing models.

Summary of City-Identified Revenue Tools Used in Analysis		
($ millions)	**Reference Scenario**	**Timing Assumption**
Total TIF Revenues	$5,318	Over 50 years (2012 – 2061)
Total DC Revenues	$2,190	Over 50 years (2012 – 2061)
City-Owned Development Revenues	$207	One-time sale (assumed to occur during construction)

4.5 Overview of Other Revenue Tools

In the previous sections, three revenue tools have been discussed in considerable detail, namely TIF, DC and sale of development rights. This section highlights a number of other revenue tools that could help generate revenues to fund the Project and summarizes the potential annual revenues that could be generated from each tool if implemented in Toronto.

The following are general descriptions of the revenue tools considered:

- **Zone-based tolls** – vehicles entering a defined zone within a city are charged a flat toll for using the roads within that zone. Multiple zones can be established within one city, where a flat toll for entering each zone would be levied. Tolls can be variable based on vehicle class and time of use.
- **Expressway tolls** – significant revenues could be generated if all or a portion of the expressways in the City are tolled. Expressway tolls are fairly common around the world, including Highway 407 north of Toronto; however, tolls are often collected on newly completed expressways and highways and there could be public opposition towards tolling an existing expressway or highway.
- **High-Occupancy Toll ("HOT") lanes** – HOT lanes are restricted lanes, typically on expressways, where only vehicles with a specified minimum number of passengers are permitted to travel free of charge. Vehicles without the minimum number of passengers are required to pay a toll for the use of the restricted lanes.
- **Vehicle kilometers travelled ("VKT")** – drivers pay a fee for each kilometre travelled on all types of roads within a designated area.
- **Parking sales tax** – works like most other sales taxes, where a percentage-based tax is levied on the price of paid-parking. Although a sales tax is already levied on paid-parking in the City through the HST, a parking sales tax would be in addition to the HST and the revenue would be designated for transit infrastructure.
- **Parking space levy** – a tax is imposed on owners of parking spaces. This is similar to traditional property taxation but is restricted to areas used for parking. For all eligible parking spaces an annual tax per stall or per square meter would be charged to the owner.
- **Regional sales tax** – would be similar to the HST, except that it would be levied only on goods and services sold

within a defined region. The tax could be levied on the same basket of goods and services as the HST, or could be designed to target a narrower consumption base.

- **Gasoline tax** – an addition to the excise tax that is levied on the sale of transportation fuels as a cost per unit sold.
- **Passenger vehicle charges** – while vehicle charges have recently been removed in the City, this revenue tool remains a possible option for consideration. Vehicle charges raise revenue through charging vehicle owners a fee (tax) when registering a new vehicle and/or renewing a vehicle registration, knows as vehicle registration fees.
- **Employer / payroll taxes** – a tax that an employer withholds on behalf of their employees and remits to the government. This would function similar to employer deductions for Federal and Provincial income taxes, where the tax is automatically withheld from an employee's pay. The payroll tax can be structured as a flat tax per pay period or as a percentage of gross pay in a given period, with those earning higher incomes paying more in taxes.

For each identified revenue tool, a brief discussion on how the revenue tool works, where the revenue tool has been implemented in other jurisdictions to fund major transit infrastructure projects and the assumptions used in developing the revenue estimates are provided in Appendix E.

It should be noted that the revenue estimates have been developed based on very limited analysis. No specific traffic or engineering studies were conducted. The purpose of the revenue estimates is to assist in identifying which revenue tools may have high revenue potential and may be selected for further in-depth analysis. No reliance should be placed on the revenue estimates contained herein. Further, no analysis has been performed on the costs of implementing each of the revenue tools such as system implementation, collection and monitoring costs. These costs could be significant and may consume a large portion of the gross revenues generated. These costs should be analyzed further once TTIL and the City have identified the tools that could potentially be implemented.

Below is a table summarizing the estimated annual revenue potential of each revenue tool and total revenues over a 50 year period.

Illustrative Revenue Estimates For Revenue Tools ($ millions)	Year 1 Revenues		Total over 50 years	
	Conservative Estimate	Aggressive Estimate	Conservative Estimate	Aggressive Estimate
Zone based tolls	95	136	8,237	11,860
Expressway tolls	70	556	6,048	48,388
HOT lanes	23	185	2,016	16,129
VKT Fees	883	1,766	76,806	153,612
Parking tax	26	105	2,292	9,169
Parking space levy	91	227	7,881	19,703
Regional sales tax	251	503	21,856	43,711
Gas tax	321	641	27,899	55,797
Passenger vehicle charge	84	168	731	1,461
Payroll tax	340	680	29,571	59,143

As shown above, there appears to be significant opportunities to generate revenues from various revenue tools to support the Project. Annual revenues that could be generated from individual revenue tools range from $23 million in the case of HOT lanes to $883 million in the case of VKT fees. The range of revenue tools and revenue estimates provide a context for assessing the potential for generating additional funds to support the project.

It is noted that the implementation of new revenue tools can be a complex undertaking and in many cases may require approval from the Province. This is an important factor that should be considered when assessing the implementation of the revenue tools. Furthermore, it may be more logical and convenient for the revenues to be collected by the Province.

In those cases, it is assumed that the City's portion of the revenues collected by the Province will be transferred back to the City for the purpose of supporting the Project.

Metrolinx is currently in the process of developing an Investment Strategy for transit improvement in the Greater Toronto-Hamilton Area. As part of developing their Investment Strategy, Metrolinx is analyzing a number of revenue tools (similar to the list above) that could potentially be implemented to help fund their capital plan. There could be an opportunity for the City to coordinate a roll-out of these tools with Metrolinx and subsequently share in the proceeds from the implementation of selected revenue tools to help fund the Project.

When contemplating which, if any, of the above revenue tools to implement, the following factors may be considered:

- Technical feasibility and the City's likely ability to implement the associated systems.
- Interoperability requirements of a new system with existing road tolling systems in the area (eg, Highway 407).
- Public acceptability of the various revenue tools.
- The costs associated with both implementation and on-going system related maintenance.
- Behavior effects of residents and the potential impact on these and other revenue sources after implementation.
- Equity and the extent to which costs are borne by those who use specific services.
- Timing for implementation.

5.0 Potential Financing Sources and Structures

This chapter provides an assessment of the amount of funding that could potentially be available to the City for the Project from non-traditional financing sources (i.e., sources other than tax-supported debt issued by the City)[9]. The non-traditional financing sources considered include:

- Revenue bonds supported by the TIF and DC revenues ("TIF Bonds" and "DC Bonds"). The TIF Bonds and the DC Bonds are assumed to be non-recourse for the purpose of this analysis.
- Private sector financing (both debt and equity) provided by the private sector under a P3 delivery approach. Two types of P3s have been considered – an availability model and a concession model.

There are various considerations in estimating the amount of TIF bond and DC bond proceeds. These include the risk profile and the growth pattern of the TIF and DC revenue streams. Further details are provided below.

In terms of private financing available under a P3 delivery approach, the private financing will need to be supported with revenues streams assigned to the private sector. In the availability model, the financing provided by the private sector during the construction period will be repaid by the City over the long term (assumed to be 30 years, which is typical for this type of model in Ontario) through an availability payment. The payments are called "availability payments" because they are typically linked to the availability for use and performance of the infrastructure to be developed and maintained by the private sector. Under the concession model, it is assumed that the private sector would provide an upfront contribution in return for receiving the TIF and DC revenues over the long term.

Combining the revenue bonds that can be supported by TIF and DC revenue and further private sector financing that can be available under a P3 delivery approach, three project delivery models have been analyzed in this report. The three delivery models are:

- Traditional delivery model with City issuing TIF and DC bonds
- P3 delivery under an availability payment model
- P3 delivery under a concession model

The key features of the three models are summarized in the table below. Further details are provided later in this chapter.

Summary of Delivery Models Contemplated in the Analysis

	Traditional Model	P3 Availability Payment Model	P3 Concession Model
Project Design and Construction	City/TTIL responsibility.	City/TTIL to define project requirements. Private sector responsible for design and construction.	City/TTIL to define project requirements. Private sector responsible for design and construction.
How to pay for capital costs	Provincial and Federal funding already identified and sale of City-owned development rights used to fund a portion of capital expenditures.	Provincial and Federal funding already identified and sale of City-owned development rights used to fund a portion of capital expenditures.	Provincial and Federal funding already identified and sale of City-owned development rights used to fund a portion of capital expenditures.

[9] Given that the underlying policy objective of the City is to issue no new debt with recourse to the City, scenarios including recourse debt have not been contemplated.

	City/TTIL to issue TIF and DC bonds and use proceeds to fund another portion of capital expenditures. City/TTIL to secure further funding from government contributions and/or other revenue tools to fund the remaining portion of capital expenditures.	City/TTIL to issue TIF and DC bonds and use proceeds to fund another portion of capital expenditures. Private sector partner to raise financing for the remaining capital costs.	Private sector partner to issue TIF and DC bonds and TIF and DC equity and use proceeds to fund another portion of capital expenditures. City/TTIL to secure further funding from government contributions and/or other revenue tools to fund the remaining portion of capital expenditures.*
Ownership of TIF and DC revenues	Used as security for TIF and DC bonds issued by the City/TTIL. Revenues in excess of the TIF and DC bond debt service return to the City.	Used as security for TIF and DC bonds issued by the City/TTIL. Revenues in excess of the TIF and DC bond debt service return to the City.	"Assigned" to private sector for use in raising private financing. All TIF and DC revenues in excess of the debt service obligations are retained by the private sector partner.
Financial obligation to private sector related to private financing	None	Availability payments made to private partner for 30 years following construction. City/TTIL to secure further funding from government contributions and/or other revenue tools to fund availability payments (if excess TIF and DC revenues are not sufficient to cover payments)	None beyond allowing private sector to keep excess TIF and DC revenues.
Asset Maintenance and Rehabilitation After Completion	City/TTIL responsibility.	City/TTIL to define performance requirements. Private sector partner responsible for asset maintenance and rehabilitation.	City/TTIL to define performance requirements. Private sector partner responsible for asset maintenance and rehabilitation.

* This further funding from City/TTIL is required to achieve a commercially viable Concession Model and will be dependent upon the amount of financing that can be raised by the private sector partner using the TIF and DC revenues.

It should be noted that under the concession model, the funding gap during the construction period can be covered by additional payments by the City / TTIL to the private sector partner during the construction period or during the operating period. For the purposes of this analysis, it has been assumed that the payments are made during the construction period.

Given that the primary focus of this report is on funding the capital costs of the Project, and further, that the potential maintenance and rehabilitation costs have not been assessed in any significant detail, the results provided below for each model do not include those future costs. Including future maintenance and rehabilitation costs are not expected to materially affect the amount of upfront funding available to finance the capital costs, but would highlight the need to cover those costs. Regardless of the delivery model chosen, these costs should be contemplated if viewing the Project from a whole life perspective.

In the remainder of this chapter, we first provide a discussion on the financial considerations related to TIF and DC bonds and then provide detailed discussions on each of the three delivery models and their implications.

5.1 TIF and DC Bond Securitization

The TIF and DC revenues that can be generated may be used to support revenue bonds and the proceeds from the sale of the revenue bonds can then be used to fund capital expenditures. Under this approach, the City would issue TIF and DC bonds on a non-recourse basis. Investors who purchase these bonds would be entitled to debt service payments paid out of TIF and DC revenues expected to be generated over time.

There are various factors that influence the amount of TIF and DC bonds that can be raised. These include:

- Risk profile of the revenue streams
- Pattern of the revenue streams
- Financial market requirements – in particular the debt service coverage ratio ("DSCR") and maximum annual debt service ("MADS")

For the purposes of the analysis, the amounts of TIF or DC bonds that can be issued are determined based on the debt service payments to be received by the bond investors in the future. The larger the future debt service payments, the higher the proceeds that can be received from bond investors. The debt service payments are in turn determined based on the cash flow available for debt service (e.g., TIF revenues) and a "safety margin". This safety margin is usually measured by the DSCR. As an example, if the DSCR required by the bond investors is 1.50x, for $15 million of projected TIF revenues in a future year, the annual debt service payment in that year should not be greater than $10 million.

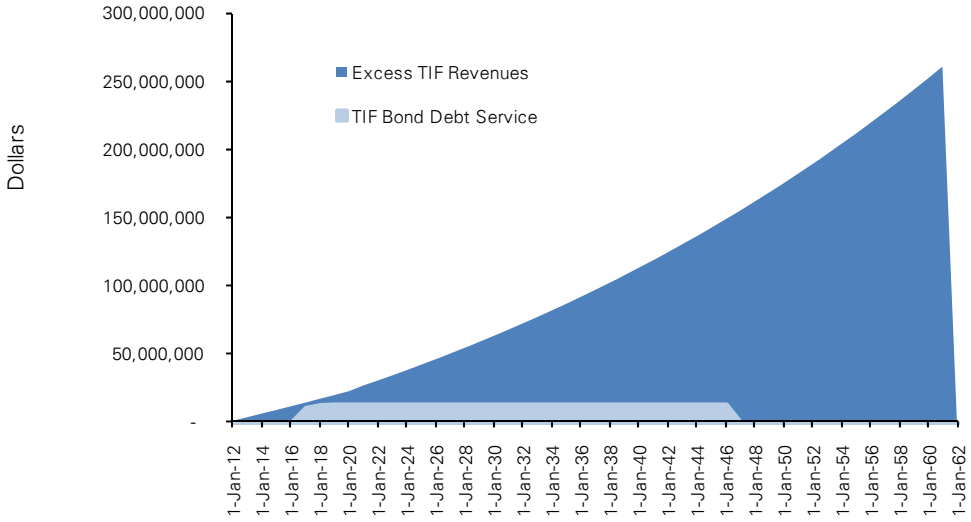
Another typical market requirement for investment grade bonds (used by rating agencies when rating these types of bonds) is that throughout the term of the bond cash flow available for debt service should cover at least one times the MADS. Investment grade bonds typically require a conservative debt structure with minimal dependency on future growth of revenues. The implication of this requirement is while TIF and DC revenues are projected to grow significantly over time, the amount of debt service payments in each year of the term is limited by the low TIF and DC revenues in the early years.

For the purpose of our analysis, the TIF and DC bonds were assumed to be issued in the fifth year of construction rather than the first year. By doing this, it increases the minimum cash flow available for debt service ("CFADS") and allows the MADS to increase as well. Issuing the bonds later in the construction period can also be beneficial in that it gives the TIF and DC revenues a track record of actual collected revenues versus projected revenues.

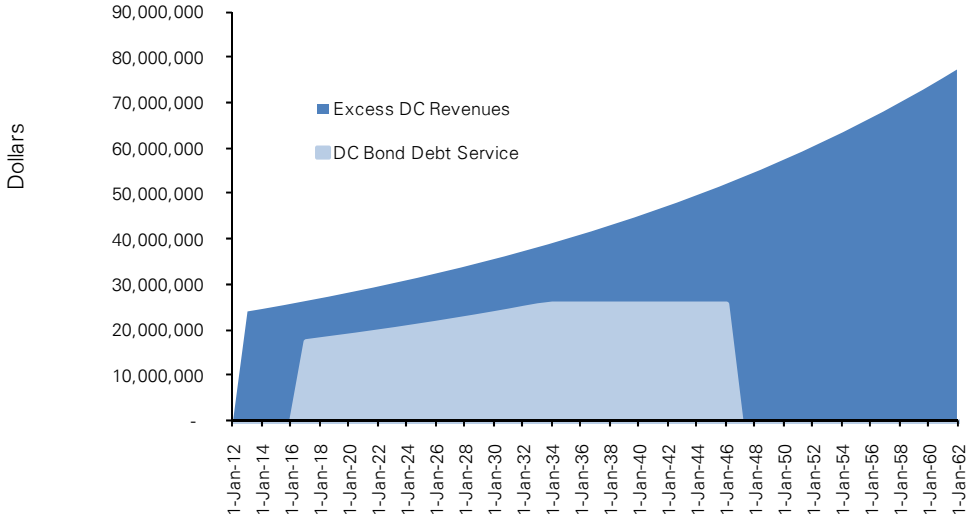
While TIF and DC revenues for the Project have been projected over a 50-year period, the maximum term over which the City is currently allowed to borrow (under the City of Toronto Act) is 40 years. The term of TIF financings in the US is typically no more than 30 years. For the purposes of our analysis, we have assumed a 30 year tenor for the TIF and DC bonds.

The graphs below show the projected TIF and DC revenues and the debt service payments supported by those revenue streams. As shown by the graphs, there is a significant amount of revenues that are not usable for bonding purposes (shown in the graphs as Excess TIF and Excess DC Revenues). This is because while the projections of TIF and DC revenues show significant growth over the years, that growth would be considered as high risk by investors (particularly for the TIF revenues).

TIF Revenues - Reference Scenario
(Total Revenues over 50 years = $5,318 million)



DC Revenues - Reference Scenario
(Total Revenues over 50 years = $2,190 million)



It should be noted that the projected TIF and DC revenues above are subject to risks. If some form of support or guarantee of the TIF and DC revenues is provided, the risk associated with these types of instruments can be reduced and the amount of upfront proceeds available to the Project can be increased. Since the City is looking for non-recourse financing options, this type of support or guarantee could be sought from the Federal government (as mentioned in Chapter 3).

It should also be noted that the use of TIF and DC financing may have an impact on the credit rating of the City as TIF and DC revenues that would otherwise be available to support tax-based debt are now being used to support the TIF and DC bonds.

The table that follows outlines the estimated proceeds that could be available from the TIF revenues and DC revenues. For ease of reference, the proceeds for the sale of City-owned development rights are also included. The table also indicates the assumed timing of the proceeds becoming available.

Proceeds Available Under TIF Bonds, DC Bonds and Sale of Development Rights		
($ millions)	**Total Amount**	**Timing**
TIF Bond Proceeds	$156	End of Year 5 (2016)
DC Bond Proceeds	$292	End of Year 5 (2016)
Proceeds from City-Owned Development Rights	$221*	End of Year 3 (2014)
Total Proceeds from Identified Revenue Sources	**$669**	

* value includes inflation of 2.1% per annum

5.2 Traditional Delivery with TIF and DC Bonds

Under this delivery model, the City would undertake the project and incur the capital expenditures directly. The funding available to the City to pay for the capital expenditures would include government contributions, TIF and DC bond proceeds, revenues from sale of development rights, and additional funding in the form of revenues from other revenue tools or other government funding. With TIF and DC bonds issued during the construction period, the City will also receive TIF and DC revenues and pay debt service on the TIF and DC bonds during the construction period.

The table below summarizes the funding and financing available to the City during the construction period.

Traditional Model - Funding Summary During Construction*		
($ millions)	**Total Over Period**	**Timing Assumption**
SOURCES		
Federal Contribution	$333	Year 1 and 2
Provincial Contribution	$650	Year 2 and 3
TIF Bond Proceeds	$156	Year 5
DC Bond Proceeds	$292	Year 5
City-Owned Development Rights	$221	Year 3
TIF Revenues	$65	Years 1-7
DC Revenues	$154	Years 2-7
Additional Funding Required	**$914**	**Years 1-7**
Total	***$2,784***	
USES		
Capital Cost Before Inflation (in $2011)	$2,436	Years 1-7
Capital Cost - Inflation	$291	Years 1-7
TIF Bond Debt Service - Interest	$19	Years 6-7
TIF Bond Debt Service - Principal	$2	Years 6-7
DC Bond Debt Service - Interest	$36	Years 6-7
DC Bond Debt Service - Principal	$0	Interest only Years 6-7
Total	***$2,784***	
Net Cash Flow During Construction	**$0**	

* East Extension only. West Extension assumed to be funded by further government contribution.

As indicated in the table above, the identified sources of funding are not sufficient to cover the capital costs and debt service obligations during the construction period. Further funding of approximately $914 million is required during the construction period. This further funding requirement may be met by other funding from Federal and Provincial governments and/or through the implementation of one or more of the other revenue tools discussed in section 4.5. To express the funding requirement on an annual basis, the amount of $914 million is equivalent to approximately $123 million per year for seven years assuming growth with inflation.

For the purposes of the analysis, the amount of funding required from the City was solved to ensure a net cash flow of $0 during the construction period. Due to the "lumpiness" of the construction expenditures during the period (i.e., year one costs are $177 million versus year 3 costs of $621 million) there are some years where there is a positive cash flow to the City while in others there is a negative cash flow. The City can place the annual positive cash flows into an escrow account, which can earn interest and be used to help pay for the cost of construction in years where there are negative cash flows. Another option for the City is to use bridge financing in the years where there is a negative cash flow. A breakdown of the annual cash flows under the traditional model can be found in Appendix F.

As indicated previously, the above analysis does not include funding for the West Extension. It is assumed that the West Extension will be a separate construction phase (which may run concurrently with the East Extension) and that it will be funded by additional government contribution and/or additional revenues from other revenue tools.

The table below summarizes the cash flows to the City during the operating period. The City would continue to receive the TIF and DC revenues and pay debt service on the TIF and DC bonds.

Traditional Model - Funding Summary During Operations		
($ millions)	Total Over Period	Timing Assumption
SOURCES		
TIF Revenues	$5,254	Years 8-50
DC Revenues	$2,036	Years 8-50
Additional Funding Required	**$0**	**Years 8-50**
Total	***$7,290***	
USES		
TIF Bond Debt Service - Interest	$173	Years 8-35
TIF Bond Debt Service - Principal	$159	Years 8-35
DC Bond Debt Service - Interest	$362	Years 8-35
DC Bond Debt Service - Principal	$301	Years 8-35
Total	***$994***	
Net Cash Flow During Operations	**$6,295**	

Under the traditional model, there is no further requirement for funding from the City during the operating period related to capital costs. The TIF and DC revenues are projected to sufficiently cover the debt service payments for the TIF and DC bonds. A surplus is projected to the City in the amount of $6,295 million over the 43-year operating period (2019 – 2061). While this surplus amount appears to be a substantial amount of money, it is important to understand that there are significant risks associated with realizing this total over time. Actual revenues and surpluses could be significantly less if the projections do not materialize. As discussed further in section 5.4, it is effectively estimated that private equity investors would be willing to pay $203 million today for the rights to these future excess TIF and DC revenues given the riskiness of those future cash flows.

5.3 Availability Payment Model

An availability payment model is a form of P3 in which a private sector partner ("Project Co") would propose a payment stream over a pre-defined period as compensation for the design, construction, financing and maintenance of the East Extension. This is often referred to as a DBFM model and this type of procurement model has been used to deliver a number of major capital projects in Ontario and across Canada in recent years.

Characteristics of the DBFM procurement model include:

- The City enters into a long-term contractual arrangement with Project Co;
- The City retains strategic control over service delivery and develops output specifications that must be met by Project Co during the maintenance period;
- Project Co takes full responsibility for design, construction and maintenance of the Project;
- Project Co accepts the responsibilities and risks of the design, construction, financing and maintenance aspects of the Project; and
- Payments are made by the City to Project Co for performance and availability of the subway lines.

Typically, the procuring entity provides Project Co with milestone payments at pre-defined dates and amounts during the construction period to help reduce the amount of long-term financing required. The assumption used in the DBFM model is that the funding available to the City during the construction period will be used to make milestone payments to the private sector. The amount of capital costs not covered by milestone payments will be financed by the private sector. This private financing will be repaid from availability payments to be made by the City over the 30-year operating term.

It is noted that availability payments in a DBFM contract usually consist of two components – a capital portion and a maintenance and rehabilitation ("M&R") portion. The capital portion is to compensate the private sector for private

financing provided. The M&R portion is to compensate the private sector for the maintenance costs and rehabilitation costs incurred to meet the technical performance required by the DBFM contract. Generally, there is no material financing involved with the maintenance and rehabilitation costs. As highlighted previously, for simplicity of comparison between the options (and due to the limited data available), the cash flows associated with maintenance and rehabilitation are excluded in this analysis. Further, it has been assumed that operation of the new subway service is not included in the scope of the P3 as it is expected that the TTC would be responsible for train operations.

Under an availability payment model, Project Co does not have to assume any risks related to revenue (as the schedule of availability payments included in the project agreement are essentially guaranteed by the City) and as a result can have a much more leveraged financing structure. This means that less equity is required from Project Co to finance the Project, which leads to a lower weighted average cost of capital for the Project.

In this context, the cash flows from the City's perspective during construction are highlighted in the table below. Using the available sources of government funding, as well as the up-front proceeds that may be derived from TIF and DC bond issuances (and net TIF and DC revenues during construction), it is estimated that the City could generate $1,814 million to offset capital costs. With capital costs of $2,727 million, it is projected that $914 million will be financed by the City's private sector partner. The key feature of the availability payment model (in comparison to the traditional) is that no additional funding is required from the City during the construction period.

Availability Payment Model - Funding Summary During Construction*		
($ millions)	**Total Over Period**	**Timing Assumption**
SOURCES		
Federal Contribution**	$333	Year 1 and 2
Provincial Contribution	$650	Year 2 and 3
TIF Bond Proceeds	$156	Year 5
DC Bond Proceeds	$292	Year 5
City-Owned Development Rights	$221	Year 3
TIF Revenues	$65	Years 1-7
DC Revenues	$154	Years 2-7
Financing Provided by Project Co	**$914**	**Years 3-7**
Total	***$2,784***	
USES		
Capital Cost (in $2011)	$2,436	Years 1-7
Capital Cost - Inflation	$291	Years 1-7
TIF Bond Debt Service - Interest	$19	Years 6-7
TIF Bond Debt Service - Principal	$2	Years 6-7
DC Bond Debt Service - Interest	$36	Years 6-7
DC Bond Debt Service - Principal	$0	Interest only Years 6-7
Total	***$2,784***	
Net Cash Flow During Construction	**$0**	

* East Extension only. West Extension assumed to be funded by further government contribution.

** Exclude potential additional federal funding from other sources (e.g., P3 Canada Fund)

It is worth noting that there may be issues with the availability of contractors and there can also be financial market limitations on the amount of financing available for a specific transaction. There have been a number of large transactions in Canada that exceed $1 billion in financing, the availability of financing may not be an issue under normal market

conditions and assuming the project is structured properly to meet lender's requirements. However, further analysis and market sounding should be performed prior to proceeding with the availability payment model.

The private sector partner will need to be compensated over time in return for providing the private financing (i.e., the capital portion of the availability payment). During the operating period, the City is projected to have excess TIF and DC revenues beyond the amounts required to service the TIF and DC bonds. Those excess revenues can be used to pay the availability payments to Project Co. However in the early years of the operating period (Years 8 to 24), it is projected that the excess revenues will not be sufficient to fully offset the availability payment. Further funding will be required from the City in those years.

For ease of comparison to the traditional and concession models, the TIF and DC revenues are assumed to continue until 2061, even though the final capital payment to Project Co will be made in 2048. As shown in the table below, it is projected that there is a total net surplus to the City of $4,208 million during the operating period. Similar to the surplus assumed under the traditional model, there are significant risks associated with actually realizing the TIF and DC revenues that make up this excess cash flow.

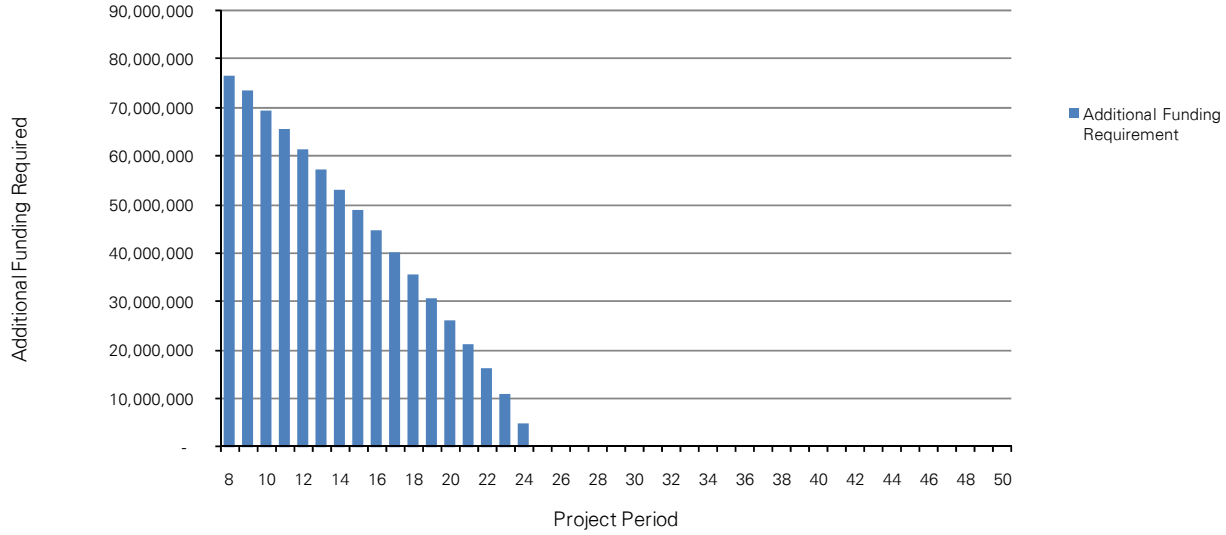
Availability Payment Model - Funding Summary During Operations		
($ millions)	**Total Over Period**	**Timing Assumption**
SOURCES*		
TIF Revenues	$5,254	Years 8-50
DC Revenues	$2,036	Years 8-50
Additional Funding Required	**$736**	**Years 8-24**
Total	***$8,026***	
USES		
TIF Bond Debt Service - Interest	$173	Years 8-35
TIF Bond Debt Service - Principal	$159	Years 8-35
DC Bond Debt Service - Interest	$362	Years 8-35
DC Bond Debt Service - Principal	$301	Years 8-35
Capital Payments to Project Co	$2,823	Years 8-37
Total	***$3,817***	
Net Cash Flow During Operations	**$4,208**	

* Assumes TIF and DC revenues continue to be collected and dedicated to the Project through to 2061

The amount of funding required from the City under the availability payment model during the operating period was based on the need to make capital payments to Project Co during the operating period. The estimated total amount of funding required from the City was approximately $736 million over the period from Year 8 (first year of full operations) to Year 24. This additional funding requirement may be met by other funding from Federal and Provincial governments and/or through the implementation of one or more of the other revenue tools discussed in section 4.5. Starting in Year 25, the TIF and DC revenues were sufficient for meeting the City's annual obligations for debt service and availability payments.

Detailed annual cash flows under the availability payment model can be found in Appendix F. When reviewing the profile of the $736 million funding requirement, on a year-by-year basis the requirement is projected to be $77 million in Year 8 and decreasing to approximately $5 million by Year 24. The following graph depicts the additional funding required on an annual basis from the start of the operating period.

Additional Funding Required During the Operating Period
(Total Requirement = $736 million)



5.4 Concession Model

A concession model is another form of P3 in which Project Co leverages all available funding to design, construct, finance and maintain the new subway extensions over a pre-defined period of time. As in the traditional model and the availability payment model, Federal and Provincial government contributions as well as proceeds from sale of City-owned development rights will be used to pay a portion of the capital costs. The main difference between the concession model and the other two models is that under the concession model the TIF and DC revenues are assumed to be transferred to the private sector. The private sector will then raise financing based on those revenue streams. For analytical purposes, it is assumed that the private sector will raise debt in a manner similar to issuing TIF and DC bonds as described earlier, and also raise TIF and DC equity based on the projected excess of TIF and DC revenues over debt service. In essence under the concession model, the risk of the incremental tax and development charge revenues matching or exceeding the estimated amounts is transferred to Project Co[10].

The excess revenue streams will likely be considered as high risk by potential investors and a higher rate of return will be required in return for providing the TIF and DC equity. The number of potential investor who may be interested in investing in the TIF and DC equity could be limited. One way to reduce the risk and potentially increase the number of investors interested would be to obtain some form of guarantee or backstop to the projected TIF and DC revenues from the Federal government.

While the excess revenue stream can be considered high risk, the private sector investor may also have a more optimistic view of the potential revenues. If the private sector uses a more aggress revenue forecast (i.e., using the High-Growth case rather than the Reference Case), the amount of TIF and DC equity that can be raised will increase. For the purpose of our analysis, the Reference Case is used.

Based on the above, the estimated impact of the concession model is summarized in the table below. It is estimated that the financing available from the private sector would include $448 million of TIF and DC bonds (or equivalent) and $203 million of equity. While the amount of upfront proceeds from the TIF and DC revenues is higher under the concession model when compared to the traditional model, it is projected that there is still a requirement for funding from the City of approximately $739 million during the construction period to fully meet capital costs. On an annual basis, this amount is equivalent to approximately $99 million per year for 7 years growing at inflation. Similar to the traditional model described

[10] It is assumed with this delivery model that these revenues may be effectively "ring fenced" from other City revenues so as to be seamlessly obligated to the private sector partner.

above, it is assumed that the City can implement one of the other revenue tools discussed in chapter 4 to meet the funding requirement during the construction period.

The table below summarizes the cash flows during the construction period under the concession model. A breakdown of the annual cash flows can be found in Appendix F.

Concession Model - Funding Summary During Construction*		
($ millions)	Total Over Period	Timing Assumption
SOURCES		
Federal Contribution**	$333	Year 1 and 2
Provincial Contribution	$650	Year 2 and 3
TIF Bond Proceeds	$156	Year 5
TIF Equity Financing	$129	Year 5
DC Bond Proceeds	$292	Year 5
DC Equity Financing	$74	Year 5
City-Owned Development Rights	$221	Year 3
TIF Revenues	$65	Years 1-7
DC Revenues	$154	Years 2-7
Additional Funding Required	**$739**	**Years 1-7**
Total	***$2,812***	
USES		
Capital Cost (in $2011)	$2,436	Years 1-7
Capital Cost - Inflation	$291	Years 1-7
TIF Bond Debt Service - Interest	$19	Years 6-7
TIF Bond Debt Service - Principal	$2	Years 6-7
TIF Equity Distribution	$11	Years 6-7
DC Bond Debt Service - Interest	$36	Years 6-7
DC Bond Debt Service - Principal	$0	Interest only Years 6-7
DC Equity Distribution	$18	Years 6-7
Total	***$2,812***	
Net Cash Flow During Construction	**$0**	

* East Extension only. West Extension assumed to be funded by further government contribution.

** Potential for additional federal funding from other sources (e.g., P3 Canada Fund)

During the operating period, the private sector will receive the TIF and DC revenues and make debt service payments to bond investors and equity distributions to equity investors. The City would not be required to provide any additional funding during the operating period; however, the City would also no longer be receiving the TIF and DC revenues as those would be directed to Project Co under the concession model. A summary of the cash flows during the operating period is provided below.

Concession Model - Funding Summary During Operations		
($ millions)	Total Over Period	Timing Assumption
SOURCES		
TIF Revenues	$5,254	Years 8-50
DC Revenues	$2,036	Years 8-50
Additional Funding Required	**$0**	**Years 8-50**
Total	***$7,290***	
USES		
TIF Bond Debt Service - Interest	$173	Years 8-35
TIF Bond Debt Service - Principal	$159	Years 8-35
TIF Equity Distribution	$4,922	Years 8-50
DC Bond Debt Service - Interest	$362	Years 8-35
DC Bond Debt Service - Principal	$301	Years 8-35
DC Equity Distribution	$1,373	Years 8-50
Total	***$7,290***	
Net Cash Flow During Operations	**$0**	

5.5 Summary

As discussed previously, the focus of this report has been on the financing of the capital costs associated with the East Extension of the Sheppard Subway. Capital costs of the East Extension have been estimated at $2,727 million.

Three principal delivery models have been considered, each incorporating the government funding and revenue tools that have been identified by the City (namely incremental taxes, development charges, and sale of surplus real estate). In all three models, additional funding beyond those identified previously is required to fully finance the $2,727 million capital costs of the East Extension. The amounts and timing of the additional funding required differ across the three models.

The additional funding required during the construction period and operating period under each delivery model is summarized below. A comparison of the additional funding requirement under each model in NPV terms can be found in Appendix B.

Summary of City Funding Required for Each Model			
($ millions)	Traditional Model	Availability Payment Model	Concession Model
Additional Funding Required During Construction	$914 (Total over years 1-7)	$0	$739 (Total over years 1-7)
Additional Funding Required During Operations	$0	$736* (Total over years 8-24)	$0

* This amount represents the total shortfall in years where TIF and DC revenues are less than the total of TIF and DC bond debt service and capital payments to Project Co

The timing of the additional funding required under each model is an important factor requiring further consideration. Under the traditional model, there is a requirement of $914 million during the construction period and additional funding is required almost immediately. This means that if there are no additional Federal or Provincial contributions available for the Project, the City will either have to implement one or more of the other revenue tools within the first year of construction, or the City will have to use some form of interim debt financing to bridge the funding gap.

Under the availability payment model there is no requirement for additional funding from the City during the construction period as the private sector partner is responsible for financing the difference between the funding available for the Project and the capital costs. By using an availability payment model, the City is able to defer the additional funding requirement to the operating period (7 years) and provides the City with time to determine how that additional funding requirement can be met (i.e., additional government contribution or other revenue tools).

Under the concession model, there is a requirement for additional funding during the construction period. While the requirement under the concession model is less than that of the traditional model, it still presents some of the same issues with respect to an immediate need for additional funding.

While there may be potential to reduce the funding requirement through a Federal government backstop of the projected TIF and DC revenues as discussed previously, it is expected that the additional funding required under all three models will come from some combination of additional Federal or Provincial government contributions and/or the implementation of one or more of the other revenue tools identified in Section 4.5.

There is considerable variation in the net cash flows of the Project to the City over the operating period across the three models. While it has been discussed throughout this chapter, it is important to note that the values provided in the table below are subject to risks. The values presented below are the total net cash flows to the City during the operating period (43 years); NPVs are provided in Appendix B.

Summary of Expected Net Cash Flow to the City During Operations

($ millions)	Traditional Model	Availability Payment Model	Concession Model
Net Cash Flow During Operations	$6,295	$4,208	$0

Under the traditional model, the amount over the 43 year operating is $6,295 million. This amount represents the excess TIF and DC revenues over the operating period. Under the availability payment model, this amount is $4,208 million. This figure is lower than under traditional delivery because the excess TIF and DC revenues are also used to cover the availability payments made to the private sector partner. Under the concession model, there is no net cash flow to the City during the operating period because all of the TIF and DC revenues have been “assigned” to the private sector partner and any excess is retained by Project Co.

Based on a review of revenue tools used in other jurisdictions, there appears to be significant opportunities to generate the necessary revenues to support the Project through implementation of new revenue tools. However, the implementation of new revenue tools can be a complex undertaking and in many case will require approval from the Province. Further analysis on the high revenue potential tools as determined by TTIL and the City is recommended.

For the West Extension of the Sheppard Subway, capital costs have been estimated at $1,573 million. It is assume that funding for the capital costs will be sourced from TIF and DC revenues associated with the West Extension, additional government contribution (e.g., P3 Canada fund) and additional revenues from other revenue tools.

In all cases, the above figures exclude the costs of future maintenance and rehabilitation as previously noted.

6.0 Next Steps

This chapter outlines some of the steps that will need to be taken by TTIL and the City if the non-traditional means of financing are to be implemented. For both TIF and DC bond securitization and P3 delivery, a comprehensive strategy for implementation will be required. This section provides a high level overview of the steps needed under each model.

It should be noted that this report is a preliminary analysis of the Sheppard Subway Extensions project and is of a high-level nature. Additional analyses should be performed to assess the financial feasibility of the project prior to moving to the procurement stage (i.e., issuing a Request for Qualifications). Section 6.2.3 below outlines the detailed analysis that should be completed during the pre-procurement phase.

6.1 TIF and DC Bond Securitization

If the City decides to move forward with a bonding model, the first and most important step the City will need to take is ensuring that there is a market for City-issued bonds backed by the incremental tax and development charge proceeds. To determine this, the City should hire a financial advisor to perform a market sounding exercise (on the City's behalf) to gauge the interest of various lenders, pension funds, life insurance companies and other potential investors in both Canada and the United States. By performing a market sounding, the City will be able to gain better insight into how the deal should be structured (e.g., recourse vs. non-recourse), term, the types of interest rates that could be expected based on the different structures and the levels of interest of the potential investors.

If it is determined that there would be sufficient appetite in the market for these types of financing instruments, the next step would be to ensure that the assumptions surrounding the estimation of the future TIF and DC revenues (as described in Chapters 4 and 5) are practical and can be applied moving forward.

With respect to the TIF revenues, the City will need to define and establish the TIF zones along the Sheppard and Eglinton corridors. Since this will be a new form of funding for the City, a number of amendments and alterations may need to be made to current legislation and by-laws by City Council to allow these revenues to be dedicated to the Project.

While increases to the City-wide development charges have already been implemented for the TYSSE, the same exemptions afforded to that project will once again need to be provided to the Sheppard Subway Extensions project. These two exemptions to the Development Charges Act are related to the historical service cap and the 10% statutory reduction for transit projects. Additionally, there would need to be some form of guarantee that the City will be able to continue re-applying the same assumptions in each future review of the development charges by-law for the 50-year period (currently, DC reviews are required every 5 years).

Appendix C highlights the potential legislative impediments to implementing the tax increment financing and development charge revenue tools.

If the City requires additional revenue to close a gap in funding, then City Council would also need to decide which revenue tool(s) should be implemented (from Chapter 4). Based on the revenue tool(s) selected, a series of additional steps would be required to impose these new revenue tools.

To a certain extent, all of the steps outlined above will also need to be taken if a P3 model is chosen. A market sounding would be highly beneficial if a concession model is selected because, regardless of who is issuing the bonds, it is still important to determine if the market would accept that type of bond issuance. Ensuring that the appropriate measures are put in place to allow the TIF and DC revenues to be available for the project term is required for both of the P3 models. Lastly, the approval and implementation of new revenue tools to eliminate a funding gap would also be required under both the availability payment model and the concession model.

6.2 Delivery Model and Procurement Strategy

The process for implementing either of the two P3 models currently contemplated by the City (availability payment and concession) would largely be the same. The key differences between an availability payment and concession model

relate to the degree of specificity in the technical requirements and the amount of performance monitoring that may be required.

The following highlights additional elements that should be considered when implementing a P3 model.

6.2.1 Project Authority

Under the two P3 approaches being contemplated, a Project Authority will likely be required to facilitate decision making and project management. The level of authority of the Project Authority will depend on the preferred governance structure. The key is to establish clear boundaries of what decisions are to be made by the Project Authority and what decisions are to be made at the City and Council level. For example, the Project Authority may be authorized to enter into a P3 contract with the preferred proponent provided certain conditions are met (e.g., affordability limit not exceeded).

The core responsibilities of the Project Authority would include:

- Approve the release of the RFQ and RFP documents;
- Approve the selection of RFP participants and the preferred proponent; and
- Approve the award and authorize the signing of a project agreement with the preferred proponent.

6.2.2 Project Office

A Project Office would be established to manage the planning and procurement process for the Project. The Project Office will work with the TTC, the City, Metrolinx, PPP Canada, and other stakeholders to develop and implement the Project. The activities of the Project Office would include:

- Preparing and issuing the RFP for advisors and managing the selecting process;
- Preparing and issuing the Project RFQ and RFP documents and managing the proponent selection process;
- Managing communications with prospective proponents;
- Developing the technical performance requirements for the P3;
- Developing the business structure and payment mechanism for the P3; and
- Preparing the draft and final project agreement.

The Project Office would consist of the following teams:

- **Project Manager**: The project manager will be responsible for overseeing the entire procurement process, which includes managing the day-to-day work, tasks and teams. The project manager will be supported by internal staff and external advisors as needed.
- **Technical Team:** The Technical Team would be responsible for providing input on all technical aspects of the Project and – particularly during RFQ/RFP preparation and evaluation. Areas of work of the Technical Team would include:
  - Site and land approvals
  - Design and construction requirements
  - Operations and maintenance requirements.
- **Financial Team:** The Financial Team will be responsible for providing input on all financial aspects of the Project including project structuring, value for money analysis, budgeting, and financial evaluation of proponents and proposals.
- **Legal Team**: The Legal Team will be responsible for preparation of various project documents including the RFQ, RFP, and project agreement.

The Project Manager and the various teams may be supported by external technical, financial, and legal advisors. Further, a fairness advisor is used in most P3s to help ensure that the procurement process is fair, transparent and competitive.

6.2.3 Procurement process

The five major project phases following the initial actions to form the project authority typically include the Pre-Procurement, RFQ, RFP, Closing and Project Implementation stages. A high level summary of the five major project stages and the expected duration of each task are provided below. It is important to note that when looking at the durations provided, several of the tasks can run concurrently and do not necessarily require other tasks to be completed prior to commencement.

Pre-procurement Stage	***Duration***
In general, the pre-procurement phase includes the following:	
▪ Hiring external technical, financial and legal advisors;	3-5 weeks
▪ Determining the preliminary design and costs;	8-12 months
▪ Performing environmental assessments and obtaining approvals;	4-6 months
▪ Completing a benefit case analysis (TTIL is currently working with Metrolinx);	8-12 weeks
▪ Developing a detailed delivery model analysis that builds on this report and provides both qualitative and quantitative analysis of the delivery model options for the Project including the traditional procurement approach and a range of P3 delivery models (e.g., DB, DBF, DBFM, sale leaseback, etc.);	3-4 months
▪ Developing robust financial models for the Project under both traditional and P3 delivery options to assess preliminary value for money estimates over the lifecycle of the Project and optimal risk allocation plans for the City;	8-12 weeks
▪ Building on this preliminary capital financing plan to develop a final plan that includes approved sources of funds available for the Project, the timing and any limitations of cash flows;	3-4 months
▪ Performing market soundings; and	4-6 weeks
▪ Developing a procurement strategy for the Project that establishes an accessible, fair and competitive environment to secure services and partners for the Project.	3-4 months

Request for Qualifications Stage	
In general, the request for qualifications phase includes the following:	
▪ Development of RFQ;	6-8 weeks
▪ Approval of RFQ;	1-2 weeks
▪ Announcement of transaction;	1 day
▪ Issuance of RFQ;	1 day
▪ Respondent information meeting;	1 day
▪ Responding to requests for information;	3-4 weeks
▪ Evaluation of submissions; and	2-3 weeks
▪ Proponent short listing.	3-5 days

Request for Proposals Stage	
In general, the request for proposals phase includes the following:	
▪ Development of RFP;	12-15 weeks

▪ Approval of RFP;	1-2 weeks
▪ Issuance of RFP;	1 day
▪ Drafting of project agreement;	4-6 months
▪ Responding to requests for information;	3-4 months
▪ Conducting commercially confidential meetings with each of the responding bidders (these can be related to design, payment mechanism or project agreement);	1 week per topic
▪ Evaluation of submissions;	6-8 weeks
▪ Receiving comments from bidders on the draft project agreement; (periodically)	3-4 months
▪ Selection of preferred proponent; and	2-3 weeks
▪ Issuance of the final project agreement.	1 week

Closing Stage	***Duration***

The Closing stage consists of:

▪ Executing the project agreement;	1-3 months
▪ Financial Close; and	1-3 months
▪ Signing of the contract.	1-2 weeks

Project Implementation Stage

The Project Implementation stage consists of the following:

▪ Monitoring the progress of facility construction which includes compliance with the executed contract; and	7-9 years
▪ Monitoring the progress of facility maintenance and rehabilitation, including compliance with the executed contract.	30-45 years

Appendix A – Comparison of TTC and SDG Cost Estimates

Comparison of TTC and SDG Cost Estimates			
TTC Estimate (East + West + Subway Yard) ($ millions, 2010$)		**SDG Estimate - Option 1 ($ millions, 2011$)**	
		Stations	$885
		Site Preparation	$1
		Permanent Roadworks	$13
		Community Relations Projects	$0
		Landscaping and Site Restoration	$1
Stations and Area Facilities	***$1,107***	***Sub-Total***	***$900***
		Guideway	$887
		Mainline Trackwork	$38
Running Structures and Special Structures	***$1,173***	***Sub-Total***	***$925***
		Utility Relocations	$9
		Power Supply and Distribution	$41
Utilities	***$53***	***Sub-Total***	***$49***
		Automatic Train Control	$32
		Security and Communications	$15
		Revenue Collection	$6
		Power and System Structures	$5
		Operations Preparation	$11
		Security Prior to Opening	$3
Operating Systems	***$329***	***Sub-Total***	***$73***
Subway Yard	***$500***	***Maintenance Facility***	***$138***
		Design	$172
		Management and Administration	$334
		Project Insurance	$42
		Testing and Commissioning	$6
Engineering and Management	***$666***	***Sub-Total***	***$554***
Contingency	***$998***	***Contingency***	***$737***

Comparison of TTC and SDG Cost Estimates			
TTC Estimate (East + West + Subway Yard) ($ millions, 2010$)		**SDG Estimate - Option 1 ($ millions, 2011$)**	
		Property	$214
		Route Survey	$2
		Environmental Mitigation and Investigation	$3
		Environmental Permitting	$2
Property / Easements	***$197***	***Sub-Total***	***$221***
Revenue Vehicles	***$109***	***Vehicles***	***$149***
HST Rebate	***($400)***	***n/a***	***$0***
TOTAL	**$4,732**	**TOTAL**	**$3,744**

* The TTC cost estimate for the maintenance facility was for a bigger facility than required for the additional vehicles related to the Sheppard Subway Extensions. The SDG estimate for the maintenance facility was based on a unit rate approach which was agreed upon with Metrolinx.

Appendix B – Net Present Values of Project Proceeds and Costs

Net Present Values

Net present value is an important concept to understand in financial analysis because it allows future cash flows or a series of future cash flows to be presented in today's dollars. Analyzing the NPV of future cash flows provides an opportunity to use the time value of money to assess the financial viability of long-term projects.

This appendix provides the NPVs (in addition to the total nominal amounts) of the values displayed in the noted tables throughout the body of the report. The NPVs are presented as of December 31, 2011 and discount rates of 5% and 10% have been used. As mentioned earlier in the report, the 5% discount rate is used as a proxy for the City's long-term borrowing rate and helps show the current value of the cash flows to the City, while the 10% discount rate is used to show the current value of the cash flows on a more risk-adjusted basis.

Table from Section 4.1:

TIF Zone Revenues Over 50-Year Term			
($ millions, NPV as of 12/31/11)	**Total Amount**	**NPV @ 5%**	**NPV @ 10%**
Reference Scenario	$5,318	$1,095	$341
High-Growth Scenario	$6,045	$1,249	$391

Table from Section 4.2:

City-Wide DC Revenues Over 50 Years (2012 – 2061)			
($ millions, NPV as of 12/31/11)	**Total Amount**	**NPV @ 5%**	**NPV @ 10%**
Reference Scenario			
Scenario 1 – Current Policy	$2,190	$619	$278
Scenario 2 – Charge all non-residential	$2,850	$815	$368
High-Growth Scenario			
Scenario 1 – Current Policy	$2,203	$623	$279
Scenario 2 – Charge all non-residential	$2,878	$823	$372

Table from Section 5.5:

Summary of City Funding Required for Each Model			
($ millions, NPV as of 12/31/11)	**Total Amount**	**NPV @ 5%**	**NPV @ 10%**
Traditional Model	$914	$752	$630
Availability Payment Model	$736	$388	$218
Concession Model	$739	$609	$510

Table from Section 5.5:

Summary of Expected Net Cash Flow to the City During Operations			
($ millions, NPV as of 12/31/11)	**Total Amount**	**NPV @ 5%**	**NPV @ 10%**
Traditional Model	$6,295	$1,175	$317
Availability Payment Model	$4,208	$535	$80
Concession Model	$0	$0	$0

Appendix C – Overview of Potential Legislative Impediments to Implementing Identified Revenue Tools

Potential Impediments to Implementing Identified Revenue Tools

This appendix highlights the legislative impediments that would need to be addressed, prior to implementation, for each of the revenue tools discussed in this report (as provided by City staff).

Tax Increment Financing

The only current authority for TIFs is under the Tax Increment Financing Act, 2006, S.O. 2006, c. 33, Sched. Z.7 (the "TIF Act"). This Act contemplates a means by which municipalities can get education tax increments, and requires a general regulation which has not yet been filed to allow municipalities to apply for such Provincial tax increments. The Province is on the record as indicating they will not participate in TIFs with respect to the proposed Sheppard Subway by providing provincial tax increments. Accordingly, the TIF Act does not provide the necessary authority for the City to issue a TIF bond.

Ontario Regulation 610/06 under the City of Toronto Act, 2006 (COTA), provides authority for the City to issue "revenue bonds" for long term financing of capital works. A revenue bond is defined by this Regulation as:

"(a) an agreement entered into by the City for the borrowing of money whereby the City secures its obligations under the agreement,

(i) with an interest in fees, charges or any other revenues that are not tax revenues of the City; or

(ii) with an interest in any other property of the City; or

(b) a tax increment financing revenue bond."

A "Tax increment financing revenue bond" is defined by the Regulation as:

"an agreement entered into by the City for the borrowing of money whereby the City secures its obligations under the agreement with both,

(a) an amount of taxes that are a "municipal tax increment" as defined in the Tax Increment Financing Act, 2006, and

(b) payment by the Minister of Finance to the City under a financing agreement authorized under clause 3(1)(c) of the Tax Increment Financing Act, 2006."

As revenue bonds cannot be secured by City tax revenue unless they are tax increment financing revenue bonds under the TIF Act (which these are unlikely to be unless the Province agrees to participate with provincial tax increments), there is currently insufficient authority for the City to issue TIF bonds.

Development Charge Revenue

The main impediment to the development charge revenues is the ability of the City to get the Province to afford them with the same special treatment with respect to the *Development Charges Act* as it did the TYSSE project in terms of being exempted from the historical service cap and the 10% statutory reduction for transit projects (as indicated in section 4.2).

Further, Section 35 of the *Development Charges Act* provides that money in a DC reserve fund can only be spent for capital costs as defined in the Act. It is yet to be determined if any provision in the Act would allow the City to use DC funds to support the issuance of bonds or other financing/borrowing schemes. It is expected that the City would need to make a request to the Province to specifically provide for the desired financing model (monetizing future development charge revenues). This request could be made by the City at the same time as the request to the Province to make the same amendments to the *Development Charges Act* as were made for the TYSSE.

Allocation of Revenue Streams to Private Partner (under the Concession Model)

Such a sale of revenue streams would amount to a sale of a debt owing to the City (i.e., the City would be selling its rights to collect and enforce the collection of taxes or DCs owing to it). Paragraph 2 of section 245 of COTA provides that the City may only sell debt in accordance with the prescribed conditions and restrictions on such a sale as may be prescribed

by regulation. The power of the Minister to prescribe such conditions and restriction by regulation can be found in clause 256(1)(a). To date the power to sell debts owing to the City in the form of taxation or DC revenues has not been prescribed by regulation. While the City has authority to issue revenue bonds (subject to the restrictions discussed above) and thereby has the authority to pledge a revenue stream as security for such a bond, it does not have authority to sell the revenue stream and the associated debt owing to the City. A regulation would be required to give the City such authority.

Other Revenue Tools

Various additional revenue tools have been identified in this report, the majority of which require additional legislative authority. These are outlined below:

Road Pricing

This includes Zone-based tolls, Expressway tolls, High-Occupancy Toll Lanes, and Vehicle Kilometres Travelled. All of these types of road tolls require additional authority. Section 41 and 116 of COTA require regulations to allow the City to impose road tolls. No such regulations have been filed to date.

Parking Pricing

Various forms of parking pricing are identified in the report. A parking sales tax is prohibited by COTA as all sales taxes are prohibited by paragraph 5 of subsection 267(2). A parking space levy may be permissible as a direct tax under Part X of COTA depending on how it is structured. If structured as a sales tax or a tax on parking lot owners' revenue or profit, or if structured as an indirect tax, it will be prohibited by section 267 of COTA.

Regional Sales Tax

All forms of sales taxes are prohibited by paragraph 5 of subsection 267(2) of COTA.

Gasoline Tax

The City is prohibited from imposing a tax on gasoline by paragraph 7 of subsection 267(2) of COTA. The City does receive a portion of Provincial gas tax revenue.

Passenger Vehicle Charges

A tax on vehicle ownership imposed on the renewal of permit registrations is permitted by COTA and was enacted by the City as the Personal Vehicle Tax, which was subsequently abolished by City Council.

A tax in the form of a vehicle sales tax is prohibited by paragraph 5 of subsection 267(2) of COTA.

Employer/Payroll Tax

A tax on income, revenue or profits is prohibited by paragraph 1 of subsection 267(2) of COTA.

Appendix D – Summary of NBLC Real Estate Forecast

Summary of NBLC Real Estate Forecast

The following is a summary of the approach used by NBLC in developing the real estate growth forecast scenarios used in the quantification of TIF and DC revenues.

Developing a Real Estate Forecast for Toronto

There are several interrelated factors influencing real estate growth that will impact the market and the nature of development patterns in the City and GTA, including:

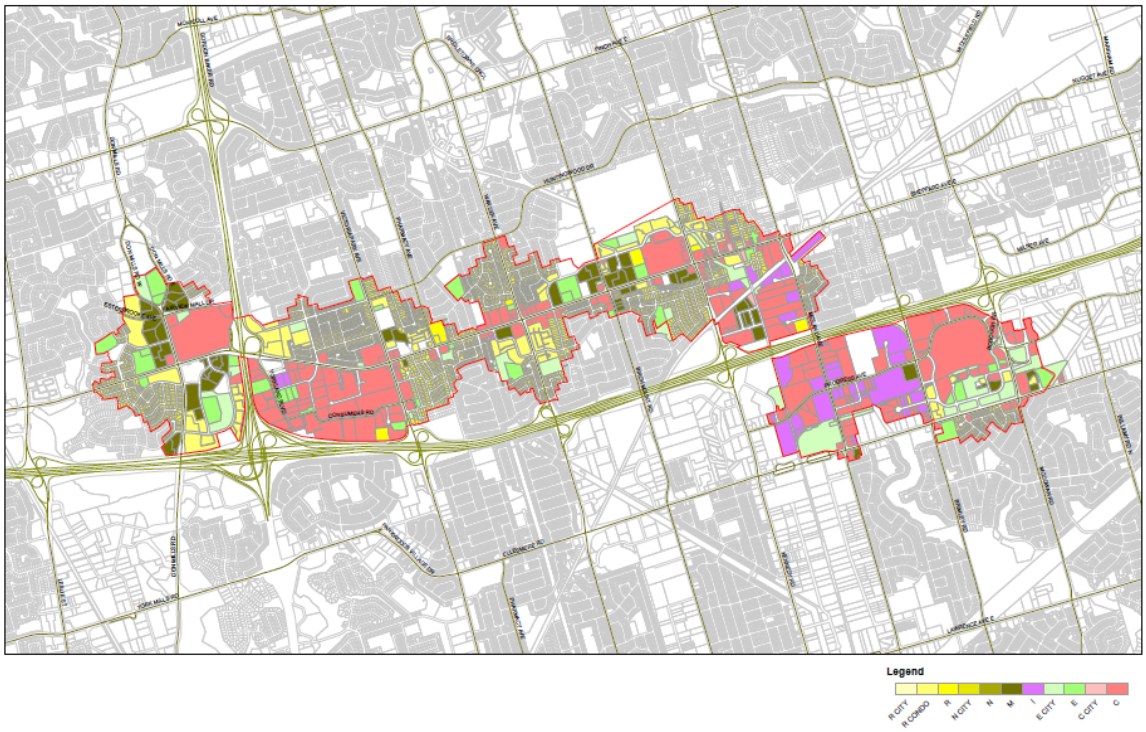
- **Affordability** – By far the most significant determinant when buying a home. As the land supply for lower density housing becomes increasingly limited, pricing for these homes will continue to rise, while in comparison, the opportunities for higher density housing are much greater and can offer improved affordability;
- **Transportation** – Transit that is part of an extensive network and offers frequent, continuous and low cost service is likely the most significant driver of intensification;
- **Proximity to high quality neighbourhoods** – Urban living within compact communities allows for people to live in neighbourhoods that they might not otherwise be able to access, due to affordability issues or the suitability of available homes;
- **Design and amenities** – Building architecture, security, concierge services, exercise facilities, entertainment rooms, and high-quality unit finishes all provide for increased user convenience and satisfaction. As a result, high-rise living will become increasingly attractive to a wider segment of the population;
- **Buyer groups** – there are four general buyer groups:
  - First-time buyers (25-35) – Typically attracted to condominiums due to the prospect of affordable ownership;
  - Move-up buyers (35-55) – Make up the smallest proportion of households living in apartments, due to their ability to afford other housing types and need to live close to community facilities such as schools and parks;
  - Empty nesters (55-75) and Retirees (75+) – No longer in need of a large family home, typically seek apartment living for its low maintenance, access to neighbourhood amenities and services, security and building facilities; and
  - Investors – People that purchase units and rent them out, seeking to capitalize on the lack of rental units in the marketplace and the desire to live in favoured areas.
- **Employment intensification** – Market demand for high-density employment developments.

When developing a real estate forecast for a 50 year period, there are additional factors that should be considered in determining the amount, location and type of growth in the City such as the population forecast, employment forecast and development forecast.

Population projections form an important foundation for both the employment and residential development forecasts produced in this analysis. NBLC utilized the Ontario Ministry of Finance's GTA population projection as the basis for its population forecasts which extended through to 2062. Assumptions with respect to average household size in the GTA were developed and an examination of the trend in unit sales by type was performed to determine an estimate of high density residential development for the 50 year forecast period. Distribution trends of high density development across the GTA were then examined to determine how those shares might change over time given the estimate of allocation of demand for the Sheppard and Eglinton lines.

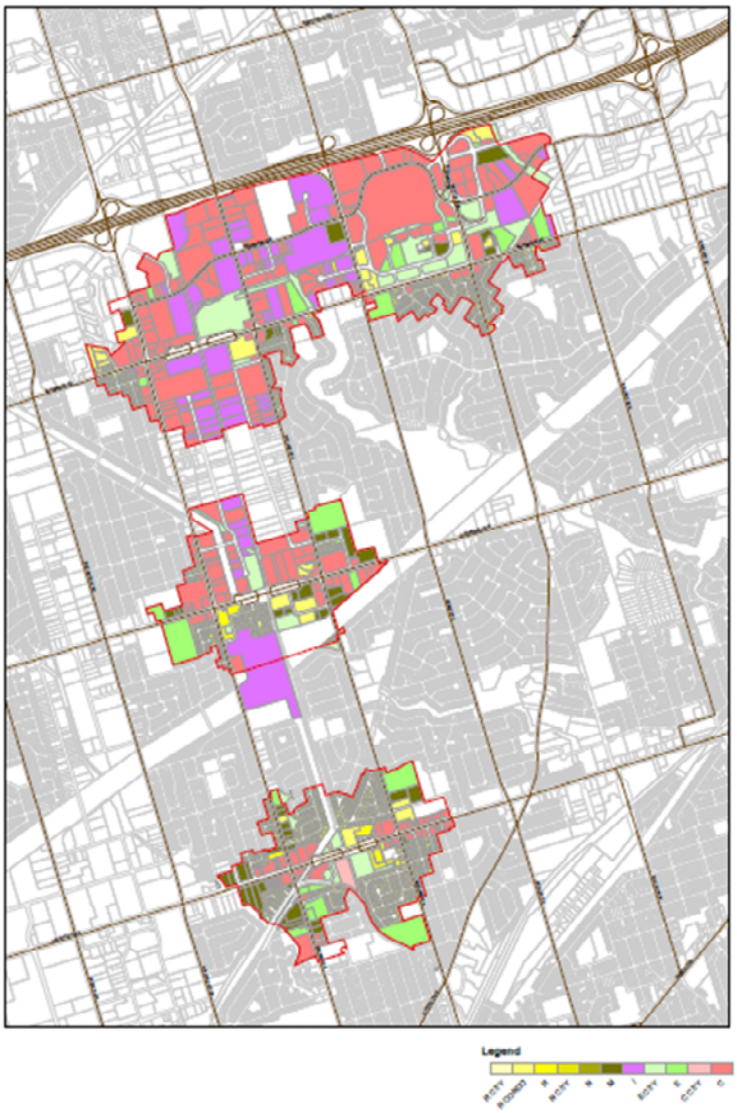
For the purposes of this analysis, the TIF zones were assumed to extend 800 metres in all directions from the proposed stations along the Sheppard East and Eglinton-Scarborough Crosstown corridors. The maps provided below show the boundaries for the TIF zones along these three corridors.

PROPOSED SHEPPARD EAST SUBWAY ALIGNMENT - 800M ZONE



Eglinton LRT Proposed Subway Alignment - 800M

PROPOSED SRT SUBWAY ALIGNMENT - 800M ZONE



Existing office employment figures and Colliers office inventory statistics were used to develop a potential demand forecast for future office space along the Sheppard and Eglinton corridors. This data was used to determine an average square footage per worker in the City. These figures were then combined with employment projections to determine the office gross floor area ("GFA") required to sustain projected employment growth in Toronto. It is assumed that as traffic congestion and commute times grow in the City, the demand for lifestyle oriented office space close to home will occupy a growing share of the Toronto office market over the next 50 years. Consequently, the employment forecast projects a growing demand for office space in the downtown core and along areas serviced by mass transit.

The demand forecast discussed above was then compared to the development capacity surrounding each planned station stop along both the Sheppard and Eglinton transit corridors. The goal of this analysis was to identify the sites that might be suitable for development and examine their relative market attractiveness with a view to determining if there was sufficient development capacity to accommodate the projected growth. This analysis was designed to develop an overall sense of the probability of redevelopment along each line, and an estimate of when redevelopment might occur in terms of the timing going forward.

Using this methodology, three distinct real estate growth forecast scenarios for the City were estimated to assist in calculating the TIF and DC revenues:

- **Baseline Scenario** – No new transit infrastructure is developed. Pipeline developments will occur over the forecast period, with the bulk of future development along the corridors taking place at existing nodes, primarily those already served by existing transit infrastructure;
- **Reference Scenario** – The Eglinton-Scarborough Crosstown is developed and both Sheppard Subway Extensions are built. Development occurs at sites identified in the potential development analysis over the forecast period according to the GFA projections and timing methodology noted above; and
- **High-Growth Scenario** – Uses the reference scenario forecast and adds additional density in the strongest market areas.

In developing the current value assessment ("CVA") estimates, a detailed literature review of studies that measured the impacts of transit on property values, throughout North America was conducted. The review took into account the type of proposed transit service, existing urban fabric and future built form along each corridor. The study results were then conservatively applied to the forecast base line property appreciations in order to estimate increased property appreciation along the Sheppard and Eglinton transit corridors as indicated in the table below. It should be noted that the appreciation percentages resulting from the addition of mass transit as outlined below represent the final spreads between the baseline scenario and the reference / high-growth scenarios by 2062 and are not annual percentages. This appreciation is in addition to the projected housing inflation already included in the baseline scenario.

Transit Influenced Appreciation

Type	Percentage Increase over Baseline CVA		Notes
	Reference	*High-Growth*	
Residential	8.00%	10.00%	– Significant increases in value within close proximity to high order transit. – Greatest value up-lift impacts higher density developments; tenants more likely to make use of and benefit from transit services on a daily basis.
Office	12.00%	15.00%	– Once located along transit, employers may have difficulty leaving the corridor without losing existing employees due to altered lifestyles / commuting patterns / housing to match current location.
Retail	16.00%	20.00%	– As residential density and ridership increases along a corridor, retail develops a captive consumer base. – Retailers either pay a premium to locate along transit corridors or lose transit riding consumers to competitors who do.
Industrial	2.40%	3.00%	– Positive impact of transit on industrial land value is largely mitigated by the low employment density and automotive / shipping intensive nature of land uses.

Source: NBLC

The table below summarizes the forecasted future development in the TIF zones and the growth in the municipal tax base as prepared by NBLC. This information was used as inputs to the estimation of TIF and DC revenues as prepared by City staff.

Summary of the Three Scenarios Developed by NBLC (Sheppard East and Eglinton-Scarborough)				
Scenario		**Development Potential Total GFA by Use (m^2)**	**CVA (2012)**	**CVA (2062)**
Baseline Scenario	Residential	1,737,804	$18,642,415,143	$53,472,721,645
	Multi- Residential	0	$4,174,004,476	$8,787,291,287
	Office	329,678	$2,331,707,211	$6,655,086,815
	Retail	74,564	$4,811,800,564	$10,560,871,595
	Industrial	0	$614,500,118	$1,293,671,715
	TOTAL	**2,142,046**	**$30,574,427,512**	**$80,769,643,057**
Reference Scenario	Residential	6,048,302	$18,642,415,143	$95,859,830,135
	Multi- Residential	0	$4,174,004,476	$9,490,274,590
	Office	915,981	$2,331,707,211	$10,931,969,703
	Retail	244,275	$4,811,800,564	$13,388,187,773
	Industrial	0	$614,500,118	$1,320,522,389
	TOTAL	**7,208,558**	**$30,574,427,512**	**$130,990,784,590**
High-Growth Scenario	Residential	6,794,509	$18,642,415,143	$104,354,430,581
	Multi- Residential	0	$4,174,004,476	$9,666,020,416
	Office	996,156	$2,331,707,211	$11,713,172,935
	Retail	247,375	$4,811,800,564	$13,871,345,283
	Industrial	0	$614,500,118	$1,332,481,866
	TOTAL	**8,038,041**	**$30,574,427,512**	**$140,937,451,081**

Source: NBLC

Appendix E – Discussion of Other Revenue Tools and Assumptions Used in Quantifying Other Revenue Tools

Discussion of Other Revenue Tools

For each identified revenue tool, a brief discussion is provided on how the revenue tool works and where the revenue tool has been implemented in other jurisdictions to fund major transit infrastructure projects. An illustrative estimate of the annual revenues that could be generated from each revenue tool if implemented in Toronto is also provided. The assumptions used in quantifying the other revenue tool amounts follow the discussion of the various tools.

1.0 Road Pricing

Road pricing involves levying charges against drivers for using their vehicles on selected roads. Several road pricing models exist and are in use throughout major cities in Canada and internationally. The road pricing models described in this section have been selected to illustrate the strategies that could be employed by the City and the magnitude of revenue potential associated with each strategy.

1.1 Zone-based Tolls

In a zone-based toll system, vehicles entering a defined zone within a city are charged a flat toll for using the roads within that zone. Multiple zones can be established within one city, where a flat toll for entering each zone would be levied. Tolls can be variable based on vehicle class and time of use. Through defining the zones, setting the charges and setting the time of day when charges are levied, policy makers can influence driver behaviour to reduce congestion and increase use of public transit.

- Several cities around the world have implemented zone-based tolling for their roads in an attempt to influence congestion. Two examples are:
- **London, England:** London has a Congestion Charging program that began in 2003 where vehicles are charged £10 for travelling in the congestion charge zone between 7:00am and 6:00pm, Monday to Friday.[11]
- **Stockholm, Sweden:** Stockholm has a Congestion Tax program that started in 2007 where vehicles are charged between SEK 10 and SEK 60 per day for travelling into or out of central Stockholm. The tax is only levied on weekdays and is lifted during the month of July and during any day preceding a public holiday.[12]

For the purpose of developing a broad revenue estimate, a simple zone-based toll revenue model has been assumed, using information from the 2006 City of Toronto Cordon Count.[13] The two cordons presented in the City of Toronto Cordon Count Information Bulletin have been used as the two zones for which tolling could be implemented. These zones are:

- The City of Toronto Boundary Cordon (Etobicoke Creek/427 to the west, Steeles Avenue to the north, and Pickering Townline/River Rouge to the east)
- The Central Area Cordon (Bathurst Street to the west, CP Rail North Toronto Subdivision to the north, and Bayview Avenue/Don River to the east)

The cordon count bulletin provides the average number of vehicles entering each cordon during peak hours. Peak hours are defined as 6:30am – 9:30 am for the City of Toronto Boundary Cordon and 7:00am – 10:00am for the Central Area Cordon. It is assumed that charges would only be levied against drivers entering the two zones in peak hours, which should correlate to times of peak road congestion. A charge would only be levied once per day per vehicle upon entering a specific zone. If a vehicle enters both zones in the same day during peak hours, then both tolls would be levied on that vehicle. The revenue potential of a zone-based toll is summarized below:

[11] Transport for London, *Congestion Charging*. <http://www.tfl.gov.uk/roadusers/congestioncharging/default.aspx>.

[12] Swedish Transport Agency, *Congestion Tax in Stockholm*, 2010. <http://www.transportstyrelsen.se/en/road/Congestion-tax/Congestion-tax-in-stockholm/>.

[13] City of Toronto, *2006 City of Toronto Cordon Count Program Information Bulletin*, 2007.

Rate Structure	Conservative Annual Estimate	Aggressive Annual Estimate
City Centre Zone: $4.00/day	$95 million	
City of Toronto Zone: $2.00/day		$136 million

1.2 Expressway Tolls

Significant revenues could be generated if all or a portion of the expressways in the City are tolled. Expressway tolls are fairly common around the world, including Highway 407 north of Toronto. However, tolls are often collected on newly completed expressways and highways. There could be public opposition towards tolling an existing expressway or highway.

To estimate the revenue potential, it is assumed that all or a portion of the expressways within the City's limits will be tolled. According to the Toronto Roads Classification System, there are 127 centreline kilometres of expressways in the City.[14] The revenue potential of this model is summarized in table below:

Rate Structure	Conservative Annual Estimate	Aggressive Annual Estimate
$0.05/km; tolls applied to 50% of City Expressways	$70 million	
$0.20/km; tolls applied to 100% of City Expressways		$556 million

From an implementation perspective, it would be beneficial for the City and the Province to discuss which party is best able to manage a road tolling solution (or that of the HOT lanes alternative described below) given the Province's experience with tolling on the Highway 407. If such an approach was pursued, an agreement would need to be created relating to the obligations of the expressway(s), the ownership of the revenues, and the implications to the Sheppard Subway project.

1.3 High-Occupancy Toll Lanes ("HOT")

High occupancy vehicle ("HOV") lanes are restricted lanes, typically on expressways, where only vehicles with a specified minimum number of passengers are permitted to travel. The use of HOV lanes by approved vehicles is typically free of charge. By implementing HOV lanes, drivers are encouraged to carpool, thus reducing the total number of vehicles using road networks.

To generate revenue from HOV lanes, vehicles with fewer passengers than the required minimum could pay a fee for the right to use the HOV lanes – thereby creating HOT leans.

Several cities have implemented HOT revenue generating models. Some examples are:

- **San Diego FasTrak**: There are currently 16 miles of I-15 Express Lanes operating in San Diego County, where solo drivers can use the lanes for a fee and carpool vehicles, motorcycles and zero-emission vehicles can use the lanes for free. The program will expand to 20 miles in 2011.[15]
- **Minnesota MnPass:** Two highways in and around Minneapolis, I-35W and I-394, allow solo drivers to access HOV lanes for a fee. Tolling takes place from 6:00am – 10:00am and 2:00pm to 7:00pm. Tolls are set through a dynamic system that adjusts the toll depending on traffic levels.[16]

[14] City of Toronto, *Road Classification System*, 2008.
[15] SANDAG 511, *Express Lanes*, 2011. <http://fastrak.511sd.com/Default.aspx>
[16] Minnesota Department of Transportation, *MnPass*, 2010. <http://www.mnpass.org/>

A preliminary HOT lane revenue model has been assumed for the purpose of revenue estimation, focusing on HOT lanes exclusively for expressways within City limits. As indicated above, there are 127 centreline kilometres of expressways in the City. The revenue model assumes there is only one HOT lane per direction on expressways. The percentage of expressway kilometres with HOT lanes is a variable, given the likelihood that not all sections of these roads would be suitable for adding HOT lane infrastructure. The revenue potential of this model is summarized in table below:

Rate Structure	Conservative Annual Estimate	Aggressive Annual Estimate
$0.05/km travelled; HOT on 50% of City Expressways	$23 million	
$0.20/km travelled; HOT on 100% of City Expressways		$185 million

1.4 Vehicle Kilometres Travelled (VKT)

In a VKT toll system, drivers pay a fee for each kilometre travelled on all types of roads within a designated area. Similar to a gasoline tax, this is a user fee system where the price that one pays to operate their vehicle is directly correlated to the amount that one drives.

VKT charges are levied in Germany and Austria where heavy trucks are required to pay a fee per km travelled on motorways within a designated area. Toll collection is based on mobile phone (GSM) and GPS technologies. Proponents of VKT charges have proposed replacing or adding to the gasoline tax in the United States with a Vehicle Miles Travelled tax.[17] Gasoline tax revenues could be expected to decrease as drivers switch to more fuel efficient vehicles.

A preliminary VKT revenue model has been assumed for revenue estimation purposes, based on estimated VKT for the City's driving population. The VKT per person in the City was estimated based on data from the 2007 Canadian Vehicle Survey published by Natural Resources Canada.[18] Total annual VKT for light vehicles in Canada was divided by the number of light vehicles in Canada to get an annual VKT value. With that value it is possible to estimate the revenue potential by applying a charge per kilometre to all VKT. The revenue potential of this model is summarized in the table below:

Rate Structure	Conservative Annual Estimate	Aggressive Annual Estimate
$0.05/VKT by City residents	$883 million	
$0.10/VKT by City residents		$1,766 million

2.0 Parking Pricing

Parking pricing involves generating revenue through taxation on parking spaces. Several parking pricing strategies are in use through major cities in Canada and internationally. In the City, there are a number of segments of parking through which revenue could be raised:

- On-street and off-street parking operated by the Toronto Parking Authority (TPA)
- Off-street commercial parking operated by private sector companies
- Off-street private and commuter parking (residential spaces, employee spaces)

[17] David Coyle et al., University of Minnesota, *From Fuel Taxes to Mileage-Based User Fees: Rationale, Technology, and Transitional Issues*, 2011.
[18] Natural Resources Canada's Office of Energy Efficiency, *2007 Canadian Vehicle Survey, Summary Report*, 2009.

- Other parking (universities, hospitals, shopping centres, TTC/GO commuter spaces)

The parking pricing models described in this section have been selected to illustrate the strategies that could be employed by the City and the magnitude of revenue potential associated with each strategy.

2.1 Parking Sales Tax

A parking sales tax works like most other sales taxes, where a percentage-based tax is levied on the purchase price of paid-parking. Although a sales tax is already levied on paid-parking in the City through the HST, a parking sales tax would be in addition to the HST and the revenue would be designated for transit infrastructure.

Several cities have implemented parking sales taxes to generate revenues. Some examples are:

- **City of San Francisco**: The City of San Francisco collects a 25% sales tax on all commercial off-street parking transactions within the city. Of the total revenue collected, 40% goes to a Municipal Transportation Fund and the remaining 60% goes to the city's General Fund.[19] The parking tax generated revenues of approximately $65 million in fiscal year 2009-2010. There is proposed legislation to increase the tax rate to 35%.[20]
- **City of Miami**: The City of Miami Parking Surcharge is a 15% tax imposed on all parking transactions in the city. The surcharge is imposed on hourly, daily, weekly, monthly and annual parking transactions, except for residential spaces. The revenue, up to a maximum of 80%, is used to reduce property and other taxes in Miami.[21]

A preliminary parking sales tax revenue model has been assumed based on the total number of paid parking spaces available for taxation. The number of parking spaces available for taxation and the baseline revenue for each category of parking has been taken from a TPA Discussion Paper on parking taxation[22] and the TPA annual report[23]. Conservative and aggressive sales tax rates have been applied to all parking revenue in the City and displacement factors have been incorporated to account for drivers' behaviour changes in response to higher parking costs. The revenue potential of this model is summarized in the table below:

Rate Structure	Conservative Annual Estimate	Aggressive Annual Estimate
5% tax rate on all parking	$26 million	
50% tax rate on all parking		$105 million

2.2 Parking Space Levy

In a parking space levy, a tax is imposed on owners of parking spaces. This is similar to traditional property taxation but is restricted to areas used for parking. For all eligible parking spaces an annual tax per stall or per square meter would be charged to the owner.

Several cities have implemented parking space levy to generate revenues. Some examples are:

- **Sydney, Australia**: The New South Wales (NSW) state government has a Parking Space Levy system where charges are currently $AUD 2,040 per Category 1 space $AUD720 per Category 2 space. Category 1 spaces are in higher-density areas, including the Sydney central business district. Revenue for 2009-2010 was $AUD97.7 million and all revenue was deposited into the Public Transport Fund managed by the NSW Office of State Revenue. The intention of the program is to discourage car use in the levied districts and use the revenue

[19] City and County of San Francisco Controller's Office, *Parking Tax*, 2006.
[20] City and County of San Francisco Controller's Office, *Parking Tax Increase and Tax on Valet Services: Economic Impact Report*, 2010.
[21] City of Miami, *City of Miami's Parking Facilities Surcharge Program*, 2011. <http://www.miamisurcharge.com/>.
[22] Toronto Parking Authority, *Discussion Paper, Parking Taxes: Options for Toronto*, March 2007.
[23] Toronto Parking Authority, *2009 Annual Report*.

to develop public transit infrastructure for use to and from or within those districts.[24]

- **Perth, Australia**: Owners of non-residential property with parking spaces must apply for a license. The annual license fees are $AUD 567.20 for short stay public parking spaces, $AUD 598.30 for long stay public parking spaces and tenant parking spaces. The revenue collected through license fees is used for expansion and operation of the Perth CAT bus system. [25]

A preliminary area-based parking tax revenue model has been developed for the City based on the estimated total number of off-street parking spaces. The estimated number of parking spaces in the City was taken from a TPA Discussion Paper on parking taxation.[26] The total number of parking spaces includes TPA off-street spaces, commercial spaces, university, hospital and special venue spaces, and non-charged off-street spaces. It is assumed that an average parking space is 32 square meters and conservative and aggressive tax rates per square meter have been applied to all off-street spaces. The revenue potential of this model is summarized in the table below:

Rate Structure	Conservative Annual Estimate	Aggressive Annual Estimate
$100/year/space on all off-street parking	$91 million	
$25/year/space on all off-street parking		$227 million

3.0 Regional Sales Tax

A sales tax generates revenue through a levy on the consumption of goods and services. In Ontario, the 13% HST is a sales tax that generates revenue for the Province of Ontario and the Federal government. A regional sales tax would be similar to the HST, except that it would be levied only on goods and services sold within a defined region. The tax could be levied on the same basket of goods and services as the HST, or could be designed to target a narrower consumption base. The revenues generated through a regional sales tax can be used for capital projects or the general operating budget for the jurisdiction in which it is levied. Therefore, in general, the individuals who are paying the new sales tax receive the benefits in the form of improved infrastructure or services.

Regional sales taxes have been employed in other cities to generate revenue for transit projects and other municipal spending programs. Some examples are:

- **New York City**: a 4.5% City sales tax, in addition to state sales taxes, is levied on many items sold within New York City. In addition to the City sales tax, a Metropolitan Commuter Transportation District surcharge of 0.375% is levied on most items.[27]
- **City of San Francisco**: the city levies a $0.005 transaction fee through a program called Proposition K. In 2003, 75% of voters in San Francisco approved Proposition K along with a 30 year Transportation Expenditure Plan. [28]

A preliminary regional sales tax model has been assumed for the City of Toronto. The model takes the total projected sales tax revenue for Ontario of $20.1 billion[29] (8% Provincial portion of the HST) in 2011-2012 and assumes that 25% of that revenue will come from sales taxes levied in the City of Toronto. Then, assuming that the regional sales tax is levied on the same basket of goods and services as the HST, a regional sales tax rate is applied to taxable consumption in the City. The revenue potential of this model is summarized in the table below:

[24] NSW Department of Transport, *Parking Space Levy*, 2011. < http://www.transport.nsw.gov.au/aboutus/psl.html>.
[25] Government of Western Australia Department of Transportation, *Licensed Parking in Perth*, 2010-2011.
[26] Toronto Parking Authority, *Discussion Paper, Parking Taxes: Options for Toronto*, March 2007.
[27] The City of New York, *Business and Excise Taxes, Sales and Use Tax*, 2011. <http://www.nyc.gov/html/dof/html/business/business_tax_nys_sales.shtml>.
[28] San Francisco County Transportation Authority, *About Proposition K*, 2011. <http://www.sfcta.org/content/view/11/27/>.
[29] Government of Ontario, *Ontario's Economic Outlook and Fiscal Plan*.

Rate Structure	Conservative Annual Estimate	Aggressive Annual Estimate
0.5% of purchase value	$251 million	
1.0% of purchase value		$503 million

4.0 Gasoline Tax

A gasoline tax is an excise tax that is levied on the sale of transportation fuels. The tax is generally levied as a cost per unit sold. Since a gasoline tax is a fixed amount per litre of fuel sold, the amount of tax revenue generated from the sale of a given volume of fuel is generally unaffected by price fluctuations. The relatively stable revenue stream could be valuable when the revenue is devoted to long term spending projects. The tax rate can vary based on the type of fuel (gasoline, diesel, marine, aviation) and certain vehicle classes could be exempt.

Some jurisdictions that have used gasoline sales taxes are:

- **British Columbia**: The Provincial government levies a Motor Fuel Tax on all fuel sold for use in internal combustion engines.[30] Clear gas and diesel fuel sold in the South Coast British Columbia transportation (SCTA) service region is taxed at a rate of $0.15 per litre. Clear gas and diesel fuel sold in the Victoria regional transit service area is taxed at a rate of $0.035 per litre. These taxes are dedicated to the respective transit authorities. A Provincial Motor Fuel Tax is also levied for general revenues at a rate $0.0175 in the SCTA and $0.0775 in all other parts of the province. [31]
- **Alberta**: The Alberta Fuel Tax Act allows for the Provincial government to levy taxes on the sale of all types of transportation fuels, including: gasoline and diesel at $0.09 per litre, liquid petroleum gas at $0.065 per litre, and aviation gas and jet fuel at $0.015 per litre.[32]

A preliminary revenue model has been developed based on the estimated total amount of gasoline sold in Toronto during 2010. The total volume of gasoline sold in Ontario during 2010 was approximately 16 billion litres[33], of which it is assumed 25% was sold in the City. Conservative and aggressive tax rates have been applied to the estimated gasoline sales. The revenue potential of this model is summarized in table below:

Rate Structure	Conservative Annual Estimate	Aggressive Annual Estimate
10 cents per litre	$321 million	
20 cents per litre		$641 million

5.0 Passenger Vehicle Charges

While vehicle charges have recently been removed in the City, this revenue tool remains a possible option for consideration. Vehicle charges raise revenue through charging vehicle owners a fee (tax) when registering a new vehicle and/or renewing a vehicle registration, knows as vehicle registration fees. Alternatively, vehicle charges could be imposed only on the purchase price of a new vehicle, known as a vehicle sales tax. In either scenario, the vehicle pricing is based on vehicle ownership and not vehicle use. As such, vehicle charges make owning a car more expensive, but unlike a fuel tax they might not have a large impact on the behaviour of drivers.

[30] British Columbia Ministry of Finance, *Motor Fuel and Carbon Tax FAQ*, 2011. <http://www.sbr.gov.bc.ca/business/Consumer_Taxes/MotorFuelTax_CarbonTax/faq.htm#top>.
[31] British Columbia Ministry of Finance, *Tax Bulletin: Tax Rates on Fuels*, 2011.
[32] Government of Alberta, *Current and Historic Alberta Tax Rates*, 2010. <http://www.finance.alberta.ca/publications/tax_rebates/rates/hist1.html#fuel>.
[33] Statistics Canada, *Sale of fuel used for road motor vehicles, by province and territory*.

Some jurisdictions that have used vehicle charges are:

- **New York City:** All vehicles registered to owners in New York City are subject to a vehicle use tax of $15 per year, levied at the time of original registration and renewals. Residents of the Metropolitan Commuter Transit District also must pay a supplemental fee of $25 per year, levied at the time of original registration and renewal.[34]
- **Quebec**: Owners of passenger vehicles registered in certain municipalities must pay an annual public transportation contribution of $30. Additionally, owners of vehicles registered on the island of Montreal must pay an additional $45 tax as a contribution to public transit. [35]

A preliminary revenue model has been assumed using vehicle registration fees as the revenue tool. A vehicle registration fee can be a flat fee that is applied to all classes of vehicles, or it can vary based on factors such as: vehicle class, vehicle age and fuel efficiency. For the purposes of this preliminary model, a flat vehicle registration fee for all passenger vehicles has been used. The number of vehicles registered in Ontario is roughly 11.2 million[36], of which it is assumes that 75% are passenger vehicles and it is further assumed that 25% are registered in Toronto. Conservative and aggressive vehicle registration fees have been applied to the total number of passenger vehicles in Toronto. The revenue potential of this model is summarized in table below:

Rate Structure	Conservative Annual Estimate	Aggressive Annual Estimate
$50 per vehicle / year	$84 million	
$100 per vehicle / year		$168 million

The above estimates have been prepared based on high level assumptions. It is noted that the City has previously implemented a Vehicle Registration Tax ("VRT") at $60 per year per personal vehicle. The VRT was effective as at September 1, 2008 but was cancelled as at January 1, 2011. Revenues collected were estimated at $48 million on an annual basis.

6.0 Employer / Payroll Tax

A payroll tax is a tax that an employer withholds on behalf of their employees and remits to the government. This would function similar to employer deductions for Federal and Provincial income taxes, where the tax is automatically withheld from an employee's pay. The payroll tax can be structured as a flat tax per pay period or as a percentage of gross pay in a given period, with those earning higher incomes paying more in taxes. This additional payroll tax could be paid out of the employers funds or could be passed on to the employee.

An example of a jurisdiction that has used payroll taxes to generated revenue for mass transit is in the State of Oregon. The Oregon Department of Revenue administers a payroll tax imposed directly on employers for the Tri-County Metropolitan Transportation District (TriMet) and the Lane County Mass Transit District (LTD). Most employers who pay wages within these districts must pay the transit payroll tax.[37] In the TriMet district the transit payroll tax rate is 0.006918% and in the LTD district the rate is 0.0067%.[38]

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[34] New York State Department of Motor Vehicles, *Registration Fees, Vehicle Use Taxes and Supplemental Fees for Passenger Vehicles,* 2011. < http://www.nydmv.state.ny.us/regfee.htm#localtax>.
[35] Government du Quebec, *Vehicle Registration – Cost of Registration Renewal for the Current Year*, 2011. < http://www.saaq.gouv.qc.ca/en/vehicle_registration/registration_cost/passenger.php >.
[36] Ontario Ministry of Transportation, *Quick Facts: Drivers and Vehicles*, 2011. < http://www.mto.gov.on.ca/english/about/quickfacts.shtml>.
[37] Oregon Department of Revenue, *Transit Payroll Taxes for Employers*, 2011. < http://www.oregon.gov/DOR/BUS/IC-211-503.shtml>.
[38] Oregon Department of Revenue, *Oregon Transit Payroll Taxes for Employers*, 2011.

A preliminary revenue model has been developed based on the estimated personal taxable income in Toronto. The total taxable income in Ontario in the 2008 tax year was roughly $340 billion, of which it is estimated that 25% was earned inside the City of Toronto. The model assumes a percentage tax is levied on all taxable income in Toronto. Conservative and aggressive tax rates have been applied to the estimate of taxable income in Toronto. The revenue potential of this model is summarized in the table below:

Rate Structure	Conservative Annual Estimate	Aggressive Annual Estimate
0.5% of earnings	$340 million	
1.0% of earnings		$680 million

Assumptions Used in Quantifying Other Revenue Tools

Assumptions Used in Quantifying Other Revenue Tools		
Assumptions	**Conservative**	**Aggressive**
Zone based tolls		
Zone	City Centre	City of Toronto
Daily Inbound Peak Period Traffic	109,000	313,900
Annual factor	310	310
Diversion	-30%	-30%
Toll rate	$4.00	$2.00
Traffic Growth Factor	0%	0%
Expressway Tolls		
Length of Expressway (km)	127	127
Portion Tolled	50%	100%
Average number of lanes	6.0	6.0
Expressway lane-km tolled	381	762
Vehicles per lane per day	10,000	10,000
Expressway vehicle-km per day (million)	3,810,000	7,620,000
Charge per km	$0.05	$0.20
Traffic Growth Factor	0%	0%
HOT lanes		
Length of Expressway (km)	127	127
Portion used for HOT	50%	100%
Number of HOT Lanes per road	2.00	2.00
HOT % of time charged	100%	100%
Charge per km	$0.05	$0.20
Max HOT km travelled per km of HOT (year)	3,650,000	3,650,000
Traffic Growth Factor	0%	0%
VKT Fees		
VKT in Canada per year (millions)	300,203	300,203
Population of Canada	34,000,000	34,000,000
Population of Toronto	2,500,000	2,500,000
Charge per km	$0.05	$0.10
Displacement Factor	-20.00%	-20.00%
Population Growth Rate	0.0%	0.0%

Assumptions Used in Quantifying Other Revenue Tools

Assumptions	Conservative	Aggressive
Parking Sales tax		
TPA On-street revenue	$44,429,778	$44,429,778
TPA Off-street revenue	$69,585,554	$69,585,554
TTC revenue	$3,000,000	$3,000,000
Commercial revenue	$300,000,000	$300,000,000
University revenue	$15,000,000	$15,000,000
Hospital revenue	$65,000,000	$65,000,000
Other revenue	$30,000,000	$30,000,000
Total revenue	**$527,015,332**	**$527,015,332**
Parking Sales Tax Rate	5%	20%
Displacement Factor	0.0%	0.0%
Regional Sales Tax		
2011 Projected Ontario Sales Tax Revenue	$20,100,000,000	$20,100,000,000
Est. Toronto % Share	20%	20%
Est. Toronto Share of Sales Tax Revenue	$4,020,000,000	$4,020,000,000
Ontario Portion of HST	8%	8%
Regional Sales Tax Rate	0.50%	1.00%
Gas tax		
Litres of gasoline sold in Ontario in 2010	16,035,847,000	16,035,847,000
Est. Toronto % Share	20%	20%
Est. Toronto Share of Gasoline Sales (litres)	3,207,169,400	3,207,169,400
Gas Tax Rate per litre	$0.10	$0.20
Passenger vehicle charge		
Number of registered vehicles in Ontario	11,200,000	11,200,000
Proportion of passenger vehicles	75%	75%
Toronto % Share	20%	20%
Toronto Share of Passenger Vehicles	1,680,000	1,680,000
Annual Passenger Vehicle Charge	$50.00	$100.00
Payroll tax		
Total taxable income in Ontario	$339,946,900,000	$339,946,900,000
Est. Toronto % Share	20%	20%
Est. Toronto Share of Taxable Income	$67,989,380,000	$67,989,380,000
Annual Payroll Tax Rate	0.50%	1.00%

Appendix F – Funding Analysis – Annual Cash Flows

Government Funding Available / Planned

Capital Costs - Option 2 (East Extension Only)								
Year		2012	2013	2014	2015	2016	2017	2018
Year of Construction	TOTAL	1	2	3	4	5	6	7
Construction Expenditures	**$2,726,980,000**	$182,490,000	$414,530,000	$678,870,000	$534,940,000	$381,780,000	$309,630,000	$224,740,000

Government Funding Available During Construction Period								
Year		2012	2013	2014	2015	2016	2017	2018
Year of Construction	TOTAL	1	2	3	4	5	6	7
Federal Contribution*	**$333,000,000**	$182,490,000	$150,510,000	$0	$0	$0	$0	$0
Provincial Contribution**	**$650,000,000**	$0	$264,020,000	$385,980,000	$0	$0	$0	$0
Total	***$983,000,000***	***$182,490,000***	***$414,530,000***	***$385,980,000***	***$0***	***$0***	***$0***	***$0***

* Contribution from Building Canada Fund, not including potential for additional federal funding from other sources (e.g., P3 Canada Fund)

** Contribution from assumed savings realized on the Eglinton-Scarborough Crosstown

Traditional Model

Traditional Model Funding Summary - During Construction								
Year		2012	2013	2014	2015	2016	2017	2018
Year of Construction	TOTAL	1	2	3	4	5	6	7
SOURCES								
Federal Contribution	**$333,000,000**	$182,490,000	$150,510,000	$0	$0	$0	$0	$0
Provincial Contribution	**$650,000,000**	$0	$264,020,000	$385,980,000	$0	$0	$0	$0
TIF Bond Proceeds	**$155,749,346**	$0	$0	$0	$0	$155,749,346	$0	$0
DC Bond Proceeds	**$292,339,235**	$0	$0	$0	$0	$292,339,235	$0	$0
City-Owned Development Rights	**$220,683,705**	$0	$0	$220,683,705	$0	$0	$0	$0
TIF Revenues	**$64,622,702**	$1,360,194	$3,927,455	$6,528,210	$9,162,933	$11,832,095	$14,536,173	$17,275,642
DC Revenues	**$153,562,658**	$0	$24,174,473	$24,723,513	$25,286,280	$25,863,147	$26,454,501	$27,060,745
Additional Funding Required	**$913,907,060**	**$122,560,826**	**$125,134,603**	**$127,762,430**	**$130,445,441**	**$133,184,795**	**$135,981,676**	**$138,837,291**
TOTAL	***$2,783,864,707***	***$306,411,020***	***$567,766,530***	***$765,677,858***	***$164,894,653***	***$618,968,619***	***$176,972,349***	***$183,173,677***
USES								
Capital Cost (in $2011)	**$2,435,829,738**	$177,174,757	$390,734,282	$621,262,218	$475,287,261	$329,326,782	$259,310,250	$182,734,186
Capital Cost - Inflation	**$291,150,262**	$5,315,243	$23,795,718	$57,607,782	$59,652,739	$52,453,218	$50,319,750	$42,005,814
TIF Bond Debt Service - Interest	**$19,264,552**	$0	$0	$0	$0	$0	$9,633,980	$9,630,572
TIF Bond Debt Service - Principal	**$1,943,324**	$0	$0	$0	$0	$0	$56,802	$1,886,522
DC Bond Debt Service - Interest	**$35,676,830**	$0	$0	$0	$0	$0	$17,636,334	$18,040,497
DC Bond Debt Service - Principal	**$0**	$0	$0	$0	$0	$0	$0	$0
TOTAL	***$2,783,864,707***	***$182,490,000***	***$414,530,000***	***$678,870,000***	***$534,940,000***	***$381,780,000***	***$336,957,116***	***$254,297,591***
NET CASH FLOW DURING CONSTRUCTION	**$0**	**$123,921,020**	**$153,236,530**	**$86,807,858**	**($370,045,347)**	**$237,188,619**	**($159,984,766)**	**($71,123,914)**

Traditional Model Funding Summary - During Operations											
Year		2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Year of Project	TOTAL	8	9	10	11	12	13	14	15	16	17
SOURCES											
TIF Revenues	**$5,253,610,278**	$20,050,976	$22,862,651	$26,960,093	$30,645,055	$34,411,340	$38,260,749	$42,195,121	$46,216,339	$50,326,323	$54,527,040
DC Revenues	**$2,035,973,245**	$27,682,270	$28,319,505	$28,972,882	$29,642,847	$30,329,850	$31,034,382	$31,756,910	$32,497,946	$33,258,007	$34,037,624
Additional Funding Required	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**
TOTAL	***$7,289,583,524***	***$47,733,246***	***$51,182,156***	***$55,932,975***	***$60,287,902***	***$64,741,190***	***$69,295,130***	***$73,952,031***	***$78,714,284***	***$83,584,330***	***$88,564,664***
USES											
TIF Bond Debt Service - Interest	**$172,675,654**	$9,517,381	$9,378,498	$9,231,282	$9,075,233	$8,909,822	$8,734,485	$8,548,628	$8,351,620	$8,142,792	$7,921,434
TIF Bond Debt Service - Principal	**$158,623,012**	$2,314,714	$2,453,597	$2,600,813	$2,756,862	$2,922,274	$3,097,610	$3,283,467	$3,480,475	$3,689,303	$3,910,661
DC Bond Debt Service - Interest	**$361,599,123**	$18,454,847	$18,267,883	$18,046,132	$17,969,985	$17,862,470	$17,721,024	$17,542,910	$17,325,208	$17,064,803	$16,758,371
DC Bond Debt Service - Principal	**$301,380,655**	$0	$611,787	$1,269,123	$1,791,914	$2,357,430	$2,968,564	$3,628,363	$4,340,089	$5,107,201	$5,933,379
TOTAL	***$994,278,444***	***$30,286,942***	***$30,711,765***	***$31,147,350***	***$31,593,994***	***$32,051,995***	***$32,521,683***	***$33,003,368***	***$33,497,392***	***$34,004,100***	***$34,523,845***
NET CASH FLOW DURING OPERATIONS	**$6,295,305,080**	**$17,446,304**	**$20,470,391**	**$24,785,625**	**$28,693,908**	**$32,689,194**	**$36,773,447**	**$40,948,663**	**$45,216,892**	**$49,580,230**	**$54,040,820**

Traditional Model Funding Summary - During Operations											
Year	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039
Year of Project	18	19	20	21	22	23	24	25	26	27	28
SOURCES											
TIF Revenues	$58,820,499	$63,208,752	$67,693,901	$72,278,089	$76,963,512	$81,752,412	$86,647,080	$91,649,860	$96,763,148	$101,989,392	$107,331,095
DC Revenues	$34,837,337	$35,657,731	$36,499,356	$37,362,847	$38,248,797	$39,157,859	$40,090,675	$41,047,937	$42,030,330	$43,038,601	$44,073,453
Additional Funding Required	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**
TOTAL	***$93,657,835***	***$98,866,484***	***$104,193,257***	***$109,640,936***	***$115,212,310***	***$120,910,270***	***$126,737,755***	***$132,697,797***	***$138,793,478***	***$145,027,993***	***$151,404,548***
USES											
TIF Bond Debt Service - Interest	$7,686,794	$7,438,076	$7,174,435	$6,894,975	$6,598,748	$6,284,747	$5,951,906	$5,599,095	$5,225,115	$4,828,696	$4,408,492
TIF Bond Debt Service - Principal	$4,145,301	$4,394,019	$4,657,660	$4,937,120	$5,233,347	$5,547,348	$5,880,189	$6,233,000	$6,606,980	$7,003,399	$7,423,603
DC Bond Debt Service - Interest	$16,402,368	$15,993,017	$15,526,289	$14,997,892	$14,403,252	$13,737,495	$13,009,956	$12,238,764	$11,421,301	$10,554,790	$9,636,289
DC Bond Debt Service - Principal	$6,822,523	$7,778,804	$8,806,615	$9,910,673	$11,095,947	$12,125,653	$12,853,192	$13,624,383	$14,441,846	$15,308,357	$16,226,859
TOTAL	***$35,056,986***	***$35,603,916***	***$36,164,999***	***$36,740,660***	***$37,331,294***	***$37,695,243***	***$37,695,243***	***$37,695,243***	***$37,695,243***	***$37,695,243***	***$37,695,243***
NET CASH FLOW DURING OPERATIONS	**$58,600,849**	**$63,262,568**	**$68,028,257**	**$72,900,276**	**$77,881,016**	**$83,215,028**	**$89,042,512**	**$95,002,555**	**$101,098,235**	**$107,332,751**	**$113,709,305**

Traditional Model Funding Summary - During Operations											
Year	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050
Year of Project	29	30	31	32	33	34	35	36	37	38	39
SOURCES											
TIF Revenues	$112,790,816	$118,371,171	$124,074,833	$129,904,537	$135,863,075	$141,953,305	$148,178,146	$154,540,584	$161,043,670	$167,690,523	$174,484,331
DC Revenues	$45,135,678	$46,226,068	$47,345,422	$48,494,595	$49,674,440	$50,885,849	$52,129,762	$53,407,114	$54,718,904	$56,066,129	$57,449,852
Additional Funding Required	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**
TOTAL	***$157,926,495***	***$164,597,239***	***$171,420,255***	***$178,399,132***	***$185,537,514***	***$192,839,154***	***$200,307,908***	***$207,947,698***	***$215,762,574***	***$223,756,652***	***$231,934,184***
USES											
TIF Bond Debt Service - Interest	$3,963,076	$3,490,935	$2,990,465	$2,459,968	$1,897,640	$1,301,573	$669,741	($0)	($0)	($0)	($0)
TIF Bond Debt Service - Principal	$7,869,019	$8,341,160	$8,841,630	$9,372,128	$9,934,455	$10,530,523	$11,162,354	$0	$0	$0	$0
DC Bond Debt Service - Interest	$8,662,677	$7,630,649	$6,536,699	$5,377,112	$4,147,950	$2,845,038	$1,463,952	$0	$0	$0	$0
DC Bond Debt Service - Principal	$17,200,470	$18,232,498	$19,326,448	$20,486,035	$21,715,197	$23,018,109	$24,399,196	$0	$0	$0	$0
TOTAL	***$37,695,243***	***$37,695,243***	***$37,695,243***	***$37,695,243***	***$37,695,243***	***$37,695,243***	***$37,695,243***	***$0***	***$0***	***$0***	***$0***
NET CASH FLOW DURING OPERATIONS	**$120,231,252**	**$126,901,996**	**$133,725,012**	**$140,703,889**	**$147,842,272**	**$155,143,911**	**$162,612,666**	**$207,947,698**	**$215,762,574**	**$223,756,652**	**$231,934,184**

Traditional Model Funding Summary - During Operations											
Year	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061
Year of Project	40	41	42	43	44	45	46	47	48	49	50
SOURCES											
TIF Revenues	$181,428,356	$188,525,929	$195,780,457	$203,195,422	$210,774,384	$218,520,984	$226,438,941	$234,532,058	$242,804,224	$251,259,414	$259,901,692
DC Revenues	$58,871,135	$60,331,092	$61,830,873	$63,371,683	$64,954,730	$66,581,299	$68,252,656	$69,970,191	$71,735,299	$73,549,376	$75,413,951
Additional Funding Required	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**
TOTAL	***$240,299,492***	***$248,857,021***	***$257,611,330***	***$266,567,105***	***$275,729,115***	***$285,102,283***	***$294,691,597***	***$304,502,249***	***$314,539,523***	***$324,808,790***	***$335,315,643***
USES											
TIF Bond Debt Service - Interest	($0)	($0)	($0)	($0)	($0)	($0)	($0)	($0)	($0)	($0)	($0)
TIF Bond Debt Service - Principal	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
DC Bond Debt Service - Interest	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
DC Bond Debt Service - Principal	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
TOTAL	***$0***	***$0***	***$0***	***$0***	***$0***	***$0***	***$0***	***$0***	***$0***	***$0***	***$0***
NET CASH FLOW DURING OPERATIONS	**$240,299,492**	**$248,857,021**	**$257,611,330**	**$266,567,105**	**$275,729,115**	**$285,102,283**	**$294,691,597**	**$304,502,249**	**$314,539,523**	**$324,808,790**	**$335,315,643**

Availability Payment Model

Availability Payment Model Cash Flows - During Construction								
Year		2012	2013	2014	2015	2016	2017	2018
Year of Construction	TOTAL	1	2	3	4	5	6	7
SOURCES								
Federal Contribution*	**$333,000,000**	$182,490,000	$150,510,000	$0	$0	$0	$0	$0
Provincial Contribution	**$650,000,000**	$0	$264,020,000	$385,980,000	$0	$0	$0	$0
TIF Bond Proceeds	**$155,749,346**	$0	$0	$0	$0	$155,749,346	$0	$0
DC Bond Proceeds	**$292,339,235**	$0	$0	$0	$0	$292,339,235	$0	$0
City-Owned Development Rights	**$220,683,705**	$0	$0	$220,683,705	$0	$0	$0	$0
TIF Revenues	**$64,622,702**	$1,360,194	$3,927,455	$6,528,210	$9,162,933	$11,832,095	$14,536,173	$17,275,642
DC Revenues	**$153,562,658**	$0	$24,174,473	$24,723,513	$25,286,280	$25,863,147	$26,454,501	$27,060,745
Financing Provided by Project Co	**$913,907,060**	**$0**	**$0**	**$11,492,450**	**$500,490,788**	**$0**	**$191,962,618**	**$209,961,205**
TOTAL	***$2,783,864,707***	***$183,850,194***	***$442,631,927***	***$649,407,878***	***$534,940,000***	***$485,783,824***	***$232,953,292***	***$254,297,591***
USES								
Capital Cost (in $2011)	**$2,435,829,738**	$177,174,757	$390,734,282	$621,262,218	$475,287,261	$329,326,782	$259,310,250	$182,734,186
Capital Cost - Inflation	**$291,150,262**	$5,315,243	$23,795,718	$57,607,782	$59,652,739	$52,453,218	$50,319,750	$42,005,814
TIF Bond Debt Service - Interest	**$19,264,552**	$0	$0	$0	$0	$0	$9,633,980	$9,630,572
TIF Bond Debt Service - Principal	**$1,943,324**	$0	$0	$0	$0	$0	$56,802	$1,886,522
DC Bond Debt Service - Interest	**$35,676,830**	$0	$0	$0	$0	$0	$17,636,334	$18,040,497
DC Bond Debt Service - Principal	**$0**	$0	$0	$0	$0	$0	$0	$0
TOTAL	***$2,783,864,707***	***$182,490,000***	***$414,530,000***	***$678,870,000***	***$534,940,000***	***$381,780,000***	***$336,957,116***	***$254,297,591***
NET CASH FLOW DURING CONSTRUCTION	**$0**	**$1,360,194**	**$28,101,927**	**($29,462,122)**	**$0**	**$104,003,824**	**($104,003,824)**	**$0**

* Potential for additional federal funding from other sources (e.g., P3 Canada Fund)

Availability Payment Model Funding Summary - During Operations											
Year		2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Year of Project	TOTAL	8	9	10	11	12	13	14	15	16	17
SOURCES											
TIF Revenues	**$5,253,610,278**	$20,050,976	$22,862,651	$26,960,093	$30,645,055	$34,411,340	$38,260,749	$42,195,121	$46,216,339	$50,326,323	$54,527,040
DC Revenues	**$2,035,973,245**	$27,682,270	$28,319,505	$28,972,882	$29,642,847	$30,329,850	$31,034,382	$31,756,910	$32,497,946	$33,258,007	$34,037,624
Additional Funding Required	**$736,230,410**	**$76,659,954**	**$73,635,867**	**$69,320,633**	**$65,412,350**	**$61,417,064**	**$57,332,811**	**$53,157,596**	**$48,889,366**	**$44,526,028**	**$40,065,439**
TOTAL	***$8,025,813,934***	***$124,393,200***	***$124,818,023***	***$125,253,608***	***$125,700,252***	***$126,158,253***	***$126,627,941***	***$127,109,627***	***$127,603,651***	***$128,110,358***	***$128,630,103***
USES											
TIF Bond Debt Service - Interest	**$172,675,654**	$9,517,381	$9,378,498	$9,231,282	$9,075,233	$8,909,822	$8,734,485	$8,548,628	$8,351,620	$8,142,792	$7,921,434
TIF Bond Debt Service - Principal	**$158,623,012**	$2,314,714	$2,453,597	$2,600,813	$2,756,862	$2,922,274	$3,097,610	$3,283,467	$3,480,475	$3,689,303	$3,910,661
DC Bond Debt Service - Interest	**$361,599,123**	$18,454,847	$18,267,883	$18,046,132	$17,969,985	$17,862,470	$17,721,024	$17,542,910	$17,325,208	$17,064,803	$16,758,371
DC Bond Debt Service - Principal	**$301,380,655**	$0	$611,787	$1,269,123	$1,791,914	$2,357,430	$2,968,564	$3,628,363	$4,340,089	$5,107,201	$5,933,379
Capital Payments to Project Co	**$2,823,187,749**	$94,106,258	$94,106,258	$94,106,258	$94,106,258	$94,106,258	$94,106,258	$94,106,258	$94,106,258	$94,106,258	$94,106,258
TOTAL	***$3,817,466,193***	***$124,393,200***	***$124,818,023***	***$125,253,608***	***$125,700,252***	***$126,158,253***	***$126,627,941***	***$127,109,627***	***$127,603,651***	***$128,110,358***	***$128,630,103***
NET CASH FLOW DURING OPERATIONS	**$4,208,347,740**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**

Availability Payment Model Funding Summary - During Operations											
Year	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039
Year of Project	18	19	20	21	22	23	24	25	26	27	28
SOURCES											
TIF Revenues	$58,820,499	$63,208,752	$67,693,901	$72,278,089	$76,963,512	$81,752,412	$86,647,080	$91,649,860	$96,763,148	$101,989,392	$107,331,095
DC Revenues	$34,837,337	$35,657,731	$36,499,356	$37,362,847	$38,248,797	$39,157,859	$40,090,675	$41,047,937	$42,030,330	$43,038,601	$44,073,453
Additional Funding Required	**$35,505,409**	**$30,843,691**	**$26,078,001**	**$21,205,982**	**$16,225,242**	**$10,891,231**	**$5,063,746**	**$0**	**$0**	**$0**	**$0**
TOTAL	***$129,163,245***	***$129,710,174***	***$130,271,258***	***$130,846,918***	***$131,437,552***	***$131,801,501***	***$131,801,501***	***$132,697,797***	***$138,793,478***	***$145,027,993***	***$151,404,548***
USES											
TIF Bond Debt Service - Interest	$7,686,794	$7,438,076	$7,174,435	$6,894,975	$6,598,748	$6,284,747	$5,951,906	$5,599,095	$5,225,115	$4,828,696	$4,408,492
TIF Bond Debt Service - Principal	$4,145,301	$4,394,019	$4,657,660	$4,937,120	$5,233,347	$5,547,348	$5,880,189	$6,233,000	$6,606,980	$7,003,399	$7,423,603
DC Bond Debt Service - Interest	$16,402,368	$15,993,017	$15,526,289	$14,997,892	$14,403,252	$13,737,495	$13,009,956	$12,238,764	$11,421,301	$10,554,790	$9,636,289
DC Bond Debt Service - Principal	$6,822,523	$7,778,804	$8,806,615	$9,910,673	$11,095,947	$12,125,653	$12,853,192	$13,624,383	$14,441,846	$15,308,357	$16,226,859
Capital Payments to Project Co	$94,106,258	$94,106,258	$94,106,258	$94,106,258	$94,106,258	$94,106,258	$94,106,258	$94,106,258	$94,106,258	$94,106,258	$94,106,258
TOTAL	***$129,163,245***	***$129,710,174***	***$130,271,258***	***$130,846,918***	***$131,437,552***	***$131,801,501***	***$131,801,501***	***$131,801,501***	***$131,801,501***	***$131,801,501***	***$131,801,501***
NET CASH FLOW DURING OPERATIONS	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$896,296**	**$6,991,977**	**$13,226,492**	**$19,603,047**

Availability Payment Model Funding Summary - During Operations											
Year	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050
Year of Project	29	30	31	32	33	34	35	36	37	38	39
SOURCES											
TIF Revenues	$112,790,816	$118,371,171	$124,074,833	$129,904,537	$135,863,075	$141,953,305	$148,178,146	$154,540,584	$161,043,670	$167,690,523	$174,484,331
DC Revenues	$45,135,678	$46,226,068	$47,345,422	$48,494,595	$49,674,440	$50,885,849	$52,129,762	$53,407,114	$54,718,904	$56,066,129	$57,449,852
Additional Funding Required	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**
TOTAL	***$157,926,495***	***$164,597,239***	***$171,420,255***	***$178,399,132***	***$185,537,514***	***$192,839,154***	***$200,307,908***	***$207,947,698***	***$215,762,574***	***$223,756,652***	***$231,934,184***
USES											
TIF Bond Debt Service - Interest	$3,963,076	$3,490,935	$2,990,465	$2,459,968	$1,897,640	$1,301,573	$669,741	$0	$0	$0	$0
TIF Bond Debt Service - Principal	$7,869,019	$8,341,160	$8,841,630	$9,372,128	$9,934,455	$10,530,523	$11,162,354	($0)	($0)	$0	$0
DC Bond Debt Service - Interest	$8,662,677	$7,630,649	$6,536,699	$5,377,112	$4,147,950	$2,845,038	$1,463,952	$0	$0	$0	$0
DC Bond Debt Service - Principal	$17,200,470	$18,232,498	$19,326,448	$20,486,035	$21,715,197	$23,018,109	$24,399,196	$0	$0	$0	$0
Capital Payments to Project Co	$94,106,258	$94,106,258	$94,106,258	$94,106,258	$94,106,258	$94,106,258	$94,106,258	$94,106,258	$94,106,258	$0	$0
TOTAL	***$131,801,501***	***$131,801,501***	***$131,801,501***	***$131,801,501***	***$131,801,501***	***$131,801,501***	***$131,801,501***	***$94,106,258***	***$94,106,258***	***$0***	***$0***
NET CASH FLOW DURING OPERATIONS	**$26,124,994**	**$32,795,738**	**$39,618,754**	**$46,597,631**	**$53,736,013**	**$61,037,653**	**$68,506,407**	**$113,841,440**	**$121,656,316**	**$223,756,652**	**$231,934,184**

Availability Payment Model Funding Summary - During Operations											
Year	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061
Year of Project	40	41	42	43	44	45	46	47	48	49	50
SOURCES											
TIF Revenues	$181,428,356	$188,525,929	$195,780,457	$203,195,422	$210,774,384	$218,520,984	$226,438,941	$234,532,058	$242,804,224	$251,259,414	$259,901,692
DC Revenues	$58,871,135	$60,331,092	$61,830,873	$63,371,683	$64,954,730	$66,581,299	$68,252,656	$69,970,191	$71,735,299	$73,549,376	$75,413,951
Additional Funding Required	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**
TOTAL	***$240,299,492***	***$248,857,021***	***$257,611,330***	***$266,567,105***	***$275,729,115***	***$285,102,283***	***$294,691,597***	***$304,502,249***	***$314,539,523***	***$324,808,790***	***$335,315,643***
USES											
TIF Bond Debt Service - Interest	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
TIF Bond Debt Service - Principal	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
DC Bond Debt Service - Interest	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
DC Bond Debt Service - Principal	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Capital Payments to Project Co	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
TOTAL	***$0***	***$0***	***$0***	***$0***	***$0***	***$0***	***$0***	***$0***	***$0***	***$0***	***$0***
NET CASH FLOW DURING OPERATIONS	**$240,299,492**	**$248,857,021**	**$257,611,330**	**$266,567,105**	**$275,729,115**	**$285,102,283**	**$294,691,597**	**$304,502,249**	**$314,539,523**	**$324,808,790**	**$335,315,643**

Concession Model

Concession Model Cash Flows - During Construction								
Year		2012	2013	2014	2015	2016	2017	2018
Year of Construction	TOTAL	1	2	3	4	5	6	7
SOURCES								
Federal Contribution*	**$333,000,000**	$182,490,000	$150,510,000	$0	$0	$0	$0	$0
Provincial Contribution	**$650,000,000**	$0	$264,020,000	$385,980,000	$0	$0	$0	$0
TIF Bond Proceeds	**$155,749,346**	$0	$0	$0	$0	$155,749,346	$0	$0
TIF Equity Financing	**$128,550,321**	$0	$0	$0	$0	$128,550,321	$0	$0
DC Bond Proceeds	**$292,339,235**	$0	$0	$0	$0	$292,339,235	$0	$0
DC Equity Financing	**$74,347,671**	$0	$0	$0	$0	$74,347,671	$0	$0
City-Owned Development Rights	**$220,683,705**	$0	$0	$220,683,705	$0	$0	$0	$0
TIF Revenues	**$64,622,702**	$1,360,194	$3,927,455	$6,528,210	$9,162,933	$11,832,095	$14,536,173	$17,275,642
DC Revenues	**$153,562,658**	$0	$24,174,473	$24,723,513	$25,286,280	$25,863,147	$26,454,501	$27,060,745
Additional Funding Required	**$739,451,421**	**$99,165,200**	**$101,247,670**	**$103,373,871**	**$105,544,722**	**$107,761,161**	**$110,024,145**	**$112,334,652**
TOTAL	***$2,812,307,060***	***$283,015,395***	***$543,879,597***	***$741,289,299***	***$139,993,934***	***$796,442,977***	***$151,014,819***	***$156,671,039***
USES								
Capital Cost (in $2011)	**$2,435,829,738**	$177,174,757	$390,734,282	$621,262,218	$475,287,261	$329,326,782	$259,310,250	$182,734,186
Capital Cost - Inflation	**$291,150,262**	$5,315,243	$23,795,718	$57,607,782	$59,652,739	$52,453,218	$50,319,750	$42,005,814
TIF Bond Debt Service - Interest	**$19,264,552**	$0	$0	$0	$0	$0	$9,633,980	$9,630,572
TIF Bond Debt Service - Principal	**$1,943,324**	$0	$0	$0	$0	$0	$56,802	$1,886,522
TIF Equity Distribution	**$10,603,938**	$0	$0	$0	$0	$0	$4,845,391	$5,758,547
DC Bond Debt Service - Interest	**$35,676,830**	$0	$0	$0	$0	$0	$17,636,334	$18,040,497
DC Bond Debt Service - Principal	**$0**	$0	$0	$0	$0	$0	$0	$0
DC Equity Distribution	**$17,838,415**	$0	$0	$0	$0	$0	$8,818,167	$9,020,248
TOTAL	***$2,812,307,060***	***$182,490,000***	***$414,530,000***	***$678,870,000***	***$534,940,000***	***$381,780,000***	***$350,620,674***	***$269,076,386***
NET CASH FLOW DURING CONSTRUCTION	**$0**	**$100,525,395**	**$129,349,597**	**$62,419,299**	**($394,946,066)**	**$414,662,977**	**($199,605,855)**	**($112,405,348)**

* Potential for additional federal funding from other sources (e.g., P3 Canada Fund)

Concession Model Funding Summary - During Operations											
Year		2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Year of Project	TOTAL	8	9	10	11	12	13	14	15	16	17
SOURCES											
TIF Revenues	**$5,253,610,278**	$20,050,976	$22,862,651	$26,960,093	$30,645,055	$34,411,340	$38,260,749	$42,195,121	$46,216,339	$50,326,323	$54,527,040
DC Revenues	**$2,035,973,245**	$27,682,270	$28,319,505	$28,972,882	$29,642,847	$30,329,850	$31,034,382	$31,756,910	$32,497,946	$33,258,007	$34,037,624
Additional Funding Required	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**
TOTAL	***$7,289,583,524***	***$47,733,246***	***$51,182,156***	***$55,932,975***	***$60,287,902***	***$64,741,190***	***$69,295,130***	***$73,952,031***	***$78,714,284***	***$83,584,330***	***$88,564,664***
USES											
TIF Bond Debt Service - Interest	**$172,675,654**	$9,517,381	$9,378,498	$9,231,282	$9,075,233	$8,909,822	$8,734,485	$8,548,628	$8,351,620	$8,142,792	$7,921,434
TIF Bond Debt Service - Principal	**$158,623,012**	$2,314,714	$2,453,597	$2,600,813	$2,756,862	$2,922,274	$3,097,610	$3,283,467	$3,480,475	$3,689,303	$3,910,661
TIF Equity Distribution	**$4,922,311,612**	$8,218,881	$11,030,556	$15,127,998	$18,812,959	$22,579,245	$26,428,653	$30,363,026	$34,384,243	$38,494,228	$42,694,945
DC Bond Debt Service - Interest	**$361,599,123**	$18,454,847	$18,267,883	$18,046,132	$17,969,985	$17,862,470	$17,721,024	$17,542,910	$17,325,208	$17,064,803	$16,758,371
DC Bond Debt Service - Principal	**$301,380,655**	$0	$611,787	$1,269,123	$1,791,914	$2,357,430	$2,968,564	$3,628,363	$4,340,089	$5,107,201	$5,933,379
DC Equity Distribution	**$1,372,993,468**	$9,227,423	$9,439,835	$9,657,627	$9,880,949	$10,109,950	$10,344,794	$10,585,637	$10,832,649	$11,086,002	$11,345,875
TOTAL	***$7,289,583,524***	***$47,733,246***	***$51,182,156***	***$55,932,975***	***$60,287,902***	***$64,741,190***	***$69,295,130***	***$73,952,031***	***$78,714,284***	***$83,584,330***	***$88,564,664***
NET CASH FLOW DURING OPERATIONS	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0

Concession Model Funding Summary - During Operations											
Year	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039
Year of Project	18	19	20	21	22	23	24	25	26	27	28
SOURCES											
TIF Revenues	$58,820,499	$63,208,752	$67,693,901	$72,278,089	$76,963,512	$81,752,412	$86,647,080	$91,649,860	$96,763,148	$101,989,392	$107,331,095
DC Revenues	$34,837,337	$35,657,731	$36,499,356	$37,362,847	$38,248,797	$39,157,859	$40,090,675	$41,047,937	$42,030,330	$43,038,601	$44,073,453
Additional Funding Required	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**
TOTAL	***$93,657,835***	***$98,866,484***	***$104,193,257***	***$109,640,936***	***$115,212,310***	***$120,910,270***	***$126,737,755***	***$132,697,797***	***$138,793,478***	***$145,027,993***	***$151,404,548***
USES											
TIF Bond Debt Service - Interest	$7,686,794	$7,438,076	$7,174,435	$6,894,975	$6,598,748	$6,284,747	$5,951,906	$5,599,095	$5,225,115	$4,828,696	$4,408,492
TIF Bond Debt Service - Principal	$4,145,301	$4,394,019	$4,657,660	$4,937,120	$5,233,347	$5,547,348	$5,880,189	$6,233,000	$6,606,980	$7,003,399	$7,423,603
TIF Equity Distribution	$46,988,403	$51,376,657	$55,861,805	$60,445,994	$65,131,417	$69,920,316	$74,814,985	$79,817,765	$84,931,053	$90,157,297	$95,499,000
DC Bond Debt Service - Interest	$16,402,368	$15,993,017	$15,526,289	$14,997,892	$14,403,252	$13,737,495	$13,009,956	$12,238,764	$11,421,301	$10,554,790	$9,636,289
DC Bond Debt Service - Principal	$6,822,523	$7,778,804	$8,806,615	$9,910,673	$11,095,947	$12,125,653	$12,853,192	$13,624,383	$14,441,846	$15,308,357	$16,226,859
DC Equity Distribution	$11,612,446	$11,885,910	$12,166,452	$12,454,282	$12,749,599	$13,294,711	$14,227,528	$15,184,790	$16,167,182	$17,175,454	$18,210,306
TOTAL	***$93,657,835***	***$98,866,484***	***$104,193,257***	***$109,640,936***	***$115,212,310***	***$120,910,270***	***$126,737,755***	***$132,697,797***	***$138,793,478***	***$145,027,993***	***$151,404,548***
NET CASH FLOW DURING OPERATIONS	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0

Concession Model Funding Summary - During Operations											
Year	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050
Year of Project	29	30	31	32	33	34	35	36	37	38	39
SOURCES											
TIF Revenues	$112,790,816	$118,371,171	$124,074,833	$129,904,537	$135,863,075	$141,953,305	$148,178,146	$154,540,584	$161,043,670	$167,690,523	$174,484,331
DC Revenues	$45,135,678	$46,226,068	$47,345,422	$48,494,595	$49,674,440	$50,885,849	$52,129,762	$53,407,114	$54,718,904	$56,066,129	$57,449,852
Additional Funding Required	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**
TOTAL	***$157,926,495***	***$164,597,239***	***$171,420,255***	***$178,399,132***	***$185,537,514***	***$192,839,154***	***$200,307,908***	***$207,947,698***	***$215,762,574***	***$223,756,652***	***$231,934,184***
USES											
TIF Bond Debt Service - Interest	$3,963,076	$3,490,935	$2,990,465	$2,459,968	$1,897,640	$1,301,573	$669,741	$0	$0	$0	$0
TIF Bond Debt Service - Principal	$7,869,019	$8,341,160	$8,841,630	$9,372,128	$9,934,455	$10,530,523	$11,162,354	($0)	($0)	($0)	($0)
TIF Equity Distribution	$100,958,721	$106,539,076	$112,242,738	$118,072,441	$124,030,980	$130,121,210	$136,346,051	$154,540,584	$161,043,670	$167,690,523	$174,484,331
DC Bond Debt Service - Interest	$8,662,677	$7,630,649	$6,536,699	$5,377,112	$4,147,950	$2,845,038	$1,463,952	$0	$0	$0	$0
DC Bond Debt Service - Principal	$17,200,470	$18,232,498	$19,326,448	$20,486,035	$21,715,197	$23,018,109	$24,399,196	$0	$0	$0	$0
DC Equity Distribution	$19,272,531	$20,362,920	$21,482,274	$22,631,448	$23,811,292	$25,022,702	$26,266,615	$53,407,114	$54,718,904	$56,066,129	$57,449,852
TOTAL	***$157,926,495***	***$164,597,239***	***$171,420,255***	***$178,399,132***	***$185,537,514***	***$192,839,154***	***$200,307,908***	***$207,947,698***	***$215,762,574***	***$223,756,652***	***$231,934,184***
NET CASH FLOW DURING OPERATIONS	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**

Concession Model Funding Summary - During Operations											
Year	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061
Year of Project	40	41	42	43	44	45	46	47	48	49	50
SOURCES											
TIF Revenues	$181,428,356	$188,525,929	$195,780,457	$203,195,422	$210,774,384	$218,520,984	$226,438,941	$234,532,058	$242,804,224	$251,259,414	$259,901,692
DC Revenues	$58,871,135	$60,331,092	$61,830,873	$63,371,683	$64,954,730	$66,581,299	$68,252,656	$69,970,191	$71,735,299	$73,549,376	$75,413,951
Additional Funding Required	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**
TOTAL	***$240,299,492***	***$248,857,021***	***$257,611,330***	***$266,567,105***	***$275,729,115***	***$285,102,283***	***$294,691,597***	***$304,502,249***	***$314,539,523***	***$324,808,790***	***$335,315,643***
USES											
TIF Bond Debt Service - Interest	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
TIF Bond Debt Service - Principal	($0)	($0)	($0)	($0)	($0)	($0)	($0)	($0)	($0)	($0)	($0)
TIF Equity Distribution	$181,428,356	$188,525,929	$195,780,457	$203,195,422	$210,774,384	$218,520,984	$226,438,941	$234,532,058	$242,804,224	$251,259,414	$259,901,692
DC Bond Debt Service - Interest	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
DC Bond Debt Service - Principal	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
DC Equity Distribution	$58,871,135	$60,331,092	$61,830,873	$63,371,683	$64,954,730	$66,581,299	$68,252,656	$69,970,191	$71,735,299	$73,549,376	$75,413,951
TOTAL	***$240,299,492***	***$248,857,021***	***$257,611,330***	***$266,567,105***	***$275,729,115***	***$285,102,283***	***$294,691,597***	***$304,502,249***	***$314,539,523***	***$324,808,790***	***$335,315,643***
NET CASH FLOW DURING OPERATIONS	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**

At KPMG Our Communities Matter

As one of Canada's leading professional services firms, we have an incredible opportunity to help our communities thrive by engaging our skills, knowledge, passions and financial resources to make a real difference.

As a firm with locations in more than 30 cities across Canada, we are actively connected to the communities where we operate – as a business, as an employer – in every sense. The issues that impact our communities are the same issues that impact our people and their families, our clients and our operations. So making a commitment to having a positive impact is how we recognize the significance of our relationship with the communities where we operate and live.

Being actively engaged in our communities has always been an important part of KPMG's culture. In 2009, we elevated our existing engagement to a whole new level by incorporating Community Leadership as one of the four key components of our overall business strategy.