

## City of Winnipeg

### Stage 2 – Southwest Rapid Transit Corridor Project P3 Business Case





# Table of Contents

Section 1: Executive Summary .....	3
Section 2: Glossary .....	6
Section 3: Project Description and Rationale.....	9
3.1. Strategic Context .....	9
3.2. Project Description.....	25
3.3. Options Considered in the Configuration of the Project.....	34
3.4. Investment Decision.....	37
3.5. Summary.....	38
Section 4: Procurement Options .....	39
4.1. Decision Making Methodology .....	39
4.2. Procurement Objectives and Constraints .....	40
4.3. P3 Screening.....	42
4.4. Preliminary Procurement Options Analysis.....	42
Section 5: Qualitative Analysis .....	51
5.1. Qualitative Criteria and Methodology.....	51
5.2. Qualitative Analysis .....	55
5.3. Results .....	61
5.4. Recommended Project Delivery Model.....	62
5.5. Market Sounding.....	64
Section 6: Value for Money Analysis .....	73
6.1. Value for Money Methodology.....	73
6.2. Project Costs .....	75
6.3. Financial Assumptions .....	75
6.4. Project Financing Assumptions .....	76
6.5. Risk Analysis and Quantification .....	78
6.6. Preliminary Value for Money Assessment .....	83
Section 7: Integrated Recommendation .....	85
7.1. Recommended Project Delivery Model.....	85

Section 8: Project Funding and Affordability.....	86
8.1.    Sources of Funds during Construction.....	86
8.2.    Sources of Funds during Maintenance Period .....	87
Section 9: Procurement Strategy .....	88
9.1.    Recommended Procurement Process.....	88
9.2.    Procurement Governance.....	92
9.3.    Project Team .....	94
9.4.    Project Resourcing and Budget.....	98
9.5.    Key Procurement Documents .....	98
Section 10: Implementation Plan.....	99
10.1.   Project Status .....	99
10.2.   Approvals .....	102
10.3.   Project Schedule.....	103
10.4.   Stakeholder Engagement and Communications.....	103
10.5.   Project Schedule and Implementation Plan / Next Steps .....	105
Appendix A. Province of Manitoba Funding Commitment Letter .....	106
Appendix B. Project Cost Inputs.....	108
Appendix C. Risk Assessment Results.....	111
Appendix D. Project Funding Summary.....	112



# Section 1: Executive Summary

## Project Need

Since the 1970's, the City of Winnipeg (herein referred to as the “City” or “Winnipeg”) has identified the need for a rapid transit infrastructure to support the City’s long-term growth objectives. This need has been articulated most recently in *OurWinnipeg*, the City’s strategic plan, and its Transportation Master Plan (“TMP”). The benefits delivered by the rapid transit system are becoming increasingly important as the City plans for the growth of its population to approximately one million residents by 2031. Based on this expected growth in population and corresponding congestion levels, the City’s highest priority rapid transit project is the Southwest Corridor that connects the downtown with the rapidly growing southwest sector and the University of Manitoba.

Stage 1 of the Southwest Rapid Transit Corridor (“**Southwest Transitway**” or “**Transitway**”), the initial phase of Winnipeg’s rapid transit network (3.6 kilometres in length, located between downtown and Pembina Highway and Jubilee Avenue) opened for service in April 2012 and is being used by a Bus Rapid Transit (“**BRT**”) network of 13 routes, providing fast, frequent, reliable service throughout the day on all days of the week. Rapid transit routes access the Stage 1 transitway at four locations to provide trips without transfer for passengers travelling between the southwest part of the City and downtown. The City is now progressing with its plans to develop Stage 2 of the Southwest Transitway (“**Stage 2**” or the “**Project**”), which is the subject of this business case (“**Business Case**”). The Project includes a 7.6 kilometre southerly extension of the existing infrastructure of Stage 1 from Pembina Highway and Jubilee Avenue to the University of Manitoba on an exclusive transitway constructed within existing Manitoba Hydro and CN Rail rights-of-way.

The implementation of the \$590 million capital investment associated with Stage 2 is expected to give rise to numerous long-term benefits associated with increased transit ridership, reduced roadway congestion and greenhouse gas emissions and new transit-oriented development opportunities which are in line with the key strategic goals outlined within the City’s Sustainable Transportation Strategy (associated with the *OurWinnipeg* plan) as well as the specific rapid transit-oriented strategic goals and objectives in the TMP.

## Public-Private Partnership Approach

The City is planning to undertake a public-private partnership (“**P3**”) approach for the delivery of the Project given the alignment of its objectives with the expected benefits that a P3 model brings. The City is a municipal leader in Canada in using the P3 model for procuring major capital infrastructure and has previously procured three transportation projects using P3 models, including the Disraeli Bridges and Chief Peguis Trail Extension projects in recent years.

Based on the City’s assessment of the range of project delivery models relative to its objectives, a Design Build Finance Maintain (“**DBFM**”) is recommended as the preferred P3 procurement and contract approach for the Project. The key characteristics of the DBFM contract structure are:

- **Bundled Design, Construction and Maintenance (including Lifecycle):** One private sector entity (“**Private Partner**”) is responsible for design, construction, maintenance and long-term rehabilitation (lifecycle) of the Project. This provides strong incentives for design and construction work which is cost efficient, integrated (reduces design coordination issues), and results in an infrastructure which is economical to maintain over the long term as measured against performance standards that will not change.

- **Risk Transfer:** Design, construction, and maintenance risks are transferred to the Private Partner which would have the right experience and expertise to carry out these roles. The market consultations conducted for this Project indicate strong interest among private sector entities to participate in this Project under a DBFM model.
- **Cost and Schedule Certainty:** Given the City's future strategic direction for transit and transportation in the City, a P3 approach would provide the City with more certainty on completion of the Project within their timelines. In addition, annual and long-term maintenance costs will be fixed (subject to annual inflation adjustments) which will enable the City to plan for program costs over the long-term.
- **Payment on Performance:** The DBFM model involves the withholding of payment to the Private Partner until construction is completed to the specifications and requirements of the City (commissioning is achieved) as well as if the maintenance performance is not up to the requirements and/or standards of the City. The Private Partner would be penalized for failure of performance over the course of the long-term maintenance period.
- **Private Capital at Risk:** The DBFM model involves investment of private capital, which adds a high degree of Project due diligence, third-party oversight, and strong incentives for timely completion during the construction period. The DBFM model also includes long-term private capital, required to fund the portion of construction payments which have been withheld and are paid out over the maintenance term, providing the same discipline, oversight, and strong incentives for performance throughout the maintenance term. In addition, this private capital is at risk if the performance standards are not met.

The Project's significant capital size and complex construction coordination and related risks make it well suited to a P3 model under an appropriate risk allocation structure. Some potential challenges of the Project include construction staging area limitations, traffic management requirements, railway infrastructure and utility realignment and related third party interface along the Project corridor. Therefore, there is potentially significant benefit in combining the design and construction for the Project with a single entity responsible for the coordination and interface of all such Project activities. For example, any construction delays or increased costs caused by schedule acceleration, lack of resources (equipment, materials, labour), inefficient coordination with subcontractors, or final design not conforming to the City's performance and service specifications, will be accounted by the Private Partner under the DBFM model.

The P3 model's transfer of construction delay and cost risk in addition to long-term maintenance and lifecycle risks are recognized as significant advantages to the City for this Project while also providing the City with sufficient security coverage against construction or maintenance period performance. Based on risk assessment findings for the Project, the DBFM model is expected to provide robust value for money ("VFM") to the City arising from risk transfer primarily during the construction and maintenance phases of the Project. The VFM assessment quantifies and compares the risks retained by the public sector under the traditional method of procurement (Design Bid Build ("DBB"), also referred to as the Public Sector Comparator ("PSC")), to the proposed P3 model (DBFM) in addition to a comparison of the projected cash flows under each model. The differential in the Net Present Value ("NPV") of the total costs between the PSC and P3 options, inclusive of retained risk, is estimated as the VFM savings of the P3 model.

Conducting various sensitivity and scenario analyses illustrates that the DBFM Project Delivery Model with a 30 year term generates expected VFM savings within a range of 10.5% to 16.7% relative to the City's traditional delivery model.

## Project Funding

Historically, the biggest barrier to the Project's development is the inability for capital funding to be secured from all three levels of government. At this time, the City and Province of Manitoba have committed significant funding to the Project as summarized below, with the balance of funds requested from the federal government through PPP Canada, as supported by this Business Case. The Province has outlined a capital funding commitment of \$225 million which will be matched by the City, and PPP Canada's commitment would be 25% of the Project's eligible capital costs and will be subject to the

approval of this Business Case. Specific terms, conditions and timing of the contributions from the Province and PPP Canada are expected to be finalized in the spring / early summer of 2014.

	City of Winnipeg	Province of Manitoba	PPP Canada	Total
<b>Share of Total Project Cost</b>	\$225 million	\$225 million	\$140 million	\$590 million

As illustrated in the table above, net of the expected funding contribution from PPP Canada, the City and the Province will share the balance of the costs during the procurement and construction phase equally.


## Next Steps

In parallel with the Business Case, the City is also engaged in several other tasks to move the Project forward. These include: completing the functional design work for the Project; concluding negotiations with the Province and PPP Canada on funding contributions; progressing with land acquisitions and environmental assessment processes; and confirming operating protocols with third-parties (Manitoba Hydro and CN).

As a next step for Council, the City will consider the submission of the Business Case, scheduled to be presented for approval at an upcoming meeting. Approval of the Business Case will allow City staff to proceed with formal preparations for the launch of the P3 procurement process that shall commence with release of the Request for Qualifications (“**RFQ**”) to the market in the second quarter of 2014. The procurement schedule has been planned to meet the City's target construction completion date by end of 2019.

# Section 2: Glossary

Term	Definition
<b>ASP</b>	Means the Annual Service Payment that would be paid by the City to the Private Partner over the operations / Maintenance Period of the Project.
<b>Base Rate</b>	Based on the Government of Canada long-term bond rate plus additional spread to reflect possible future increase in interest rates up to Financial Close.
<b>Business Case</b>	This document, which assesses a range of infrastructure Project Delivery Models and recommends an optimal model that provides demonstrable public benefits and Value for Money.
<b>BRT</b>	Refers to Bus Rapid Transit.
<b>CAO</b>	Refers to the City's Chief Administrative Officer.
<b>Commercial Close</b>	Means that at Commercial Close, both the bidder and the Project sponsor will have reached agreement on all the contractual documents, including the Project Agreement, in addition to all relevant technical issues. At Commercial Close the Project Agreement may be signed by the parties and then held until Financial Close.
<b>Commercially Confidential Meetings or CCM</b>	Means a confidential meeting between a project sponsor and the private sector to negotiate on the Project Agreement and engage in a meaningful dialogue to discuss design development, innovations, financing, legal, and technical terms and conditions.
<b>Market Consultations</b>	Refers to market sounding consultations - confidential interactive sessions conducted with potential P3 partners to gain further insight from a range of P3 industry participants into the various components of the Project.
<b>Contract Term</b>	The duration of the PA from Commercial Close to end of contract encompassing both the Construction Phase and Maintenance Period.
<b>Cost of Equity / Return on Equity</b>	Refers to the typical rate of return required by equity investors on P3 projects.
<b>City or Winnipeg</b>	Refers to the City of Winnipeg.
<b>Design-Bid-Build or DBB</b>	Means a Project Delivery Model where the public sector procures a design through consulting engineers, and tenders that design for construction via general contractor. The contractor is paid via progress payments and no private financing is needed for construction of the infrastructure. Following completion the public sector assumes responsibility for operations and maintenance of the infrastructure, either through its own staff or via short-term O&M / maintenance only contracts with private firms.
<b>Design-Build-finance or DBf</b>	Means a Project Delivery Model where the public sector selects a single Private Partner to take responsibility for the design and construction of the infrastructure. The public sector typically does not provide any payment to the Private Partner until substantial completion, requiring the private sector to obtain financing for construction (an alternate option would be for milestone payments during construction). The partner executes on its obligation to complete the Project and hand over to the public sector. Operations and maintenance is then the responsibility of the public sector. Following completion the public sector assumes responsibility for operations and maintenance of the infrastructure, either through its own staff or via short-term operations & maintenance (O&M) / maintenance only contracts with private firms.
<b>Design-Build-Finance-Maintain or DBfM</b>	Means a Project Delivery Model where a Private Partner is selected to take responsibility for the design, construction, and maintenance of infrastructure, typically for a set term. During construction, a significant portion of payment is held back, requiring the Private Partner to obtain financing for construction costs. Following completion, the held back funds are then paid to the private sector over the Maintenance Period as part of an annual service fee.
<b>Design-Build-finance-Maintain or DBfM</b>	Means a Project Delivery Model where a Private Partner is selected to take responsibility for the design, construction, and maintenance of infrastructure, typically for a set term. During construction, a significant portion of payment is held back, requiring the Private Partner to obtain financing for construction costs. Following substantial completion, the private sector is paid back by the public sector for its construction financing. The public sector makes payment for maintenance of the



Term	Definition
	infrastructure over the Maintenance Period as part of an annual service fee.
<b>Design-Build-finance-Operate-Maintain or DBfOM</b>	Means a Project Delivery Model where a Private Partner is selected to take responsibility for the design, construction, operations, and maintenance of infrastructure, typically for a set term. During construction, a significant portion of payment is held back, requiring the Private Partner to obtain financing for construction costs. Following substantial completion, the private sector is paid back by the public sector for its construction financing. The public sector makes payment for operations and maintenance of the infrastructure over the Operating Term as part of an annual service fee. An "f" used within the description of the Project Delivery Models denotes that short-term (construction) private financing would be used by the Project.
<b>Design-Build-Finance-Operate-Maintain or DBFOM</b>	Means a Project Delivery Model where a Private Partner is selected to take responsibility for the design, construction, operations, and maintenance of infrastructure, typically for a set term. During construction, a significant portion of payment is held back, requiring the Private Partner to obtain financing for construction costs. Following completion, the held back funds are then paid to the private sector over the Operating Term as part of an annual service fee. An "F" used within the description of the Project Delivery Models denotes that long-term private financing that extends into the O&M / Maintenance term would be used by the Project.
<b>Dillon</b>	Refers to Dillon Consulting Limited, the City's technical advisor on the Project.
<b>Discount Rate</b>	A discount rate is the rate at which cash flows are discounted back to a common date.
<b>EAP</b>	Refers to Environmental Assessment Proposal.
<b>Eligible Project Capital Costs</b>	Refers to the capital costs of the Project that are eligible for funding from PPP Canada. The eligible capital costs are comprised of: direct construction costs; interest during construction and financing fees; SPV costs; technical / financial / P3 advisory fees.
<b>Evaluation Criteria</b>	Refers to the qualitative criteria developed in order to assess and rank each of the Project Delivery Models in Section 5:.
<b>Financial Close</b>	The moment in the procurement process when all approvals have been obtained, financing is secured and capital is ready to flow, and the Project receives the Notice to Proceed.
<b>LRT</b>	Refers to Light Rail Transit.
<b>MCWS</b>	Refers to Manitoba Conservation and Water Stewardship.
<b>Maintenance Period</b>	Refers to the portion of the Contract Term from substantial completion to end of contract (the 30 year maintenance term of the asset).
<b>Milestone Payment</b>	Payment made to Project Co during construction if a particular set of construction activities have occurred.
<b>Nominal \$</b>	A value that has been unadjusted for interest or inflation or other factors.
<b>Notice to Proceed</b>	Letter received by the Project Co to begin work on the Project.
<b>NPV</b>	The difference between the present value (the current worth of a future sum of money or stream of cash flows given a specified rate of return) of cash inflows and the present value of cash outflows. NPV provides an indication of the profitability of an investment.
<b>Operating Term</b>	Refers to the portion of the Contract Term from substantial completion to end of contract (the 30 year operating term of the asset).
<b>PA</b>	Refers to the Project Agreement.
<b>PP</b>	Refers to the Preferred Proponent stage, the final stage between RFP submission and Commercial and Financial Close.
<b>PPP Canada</b>	The federal agency that provides funding to eligible PPP projects.
<b>Private Financing Spread</b>	Refers to the private sector long-term financing credit spread which reflects the additional credit risk of the financing as compared to a long-term Government of Canada financing.
<b>Private Partner</b>	The private sector counterparty to a PA. Also referred to as Project Co.
<b>Project or Stage 2</b>	Means the Stage 2 of the Southwest Rapid Transit Corridor (also referred to as "Southwest Transitway" or "Transitway").
<b>Project Co</b>	Generic term used to refer to the City's Private Partner under any type of PPP structure. Also referred to as the Project Co.
<b>Project Delivery Model</b>	Means a particular allocation of roles, responsibilities, and risks between the public sector and the private sector, in relation to an infrastructure Project. Examples of Project Delivery Models include Design-Bid-Build (DBB), Design-Build-Finance (DBf), Design-Build-finance-Maintain (DBfM), Design-Build-Operate-Maintain (DBfOM), Design-Build-Finance-Maintain (DBFM), and Design-Build-Finance-

Term	Definition
	Operate-Maintain (DBFOM).
<b>Project Team</b>	Refers to the City staff assisted by its advisors retained for the purpose of developing the Business Case, including Deloitte and Dillon.
<b>Public Private Partnership or PPP or P3</b>	Refers generally to an approach for procurement of public infrastructure where the private sector assumes a significant share of the responsibility for the delivery and the performance of the infrastructure, typically characterized by performance based payment, a long concession term, and a requirement for private financing of at least a portion of the capital costs. The DBf, DBfM, DBfOM, DBFM, and DBFOM Project Delivery Models are commonly considered as types of PPP.
<b>Public Sector Comparator or PSC</b>	The traditional Project Delivery Model used as the basis to compare the costs and benefits of a PPP in a VFM analysis.
<b>Reserve</b>	The funds that the City will generate from the annual tax increase that will be placed into the Southwest Rapid Transit – Stage 2 Reserve.
<b>RFC</b>	Refers to Request for Clarifications submitted during the RFQ/RFP submission evaluation process.
<b>RFP</b>	Refers to the Request for Proposals typically issued to solicit binding proposals under a PPP procurement approach.
<b>RFQ</b>	Refers to the Request for Qualifications typically issued to pre-qualify a short-list of bidders under a PPP procurement approach.
<b>Short Listed Project Delivery Model</b>	The Project Delivery Model which best meets these objectives as outlined in the Qualitative Analysis in Section 5.
<b>Southwest Transitway or Transitway</b>	Refers to the existing Stage 1 (opened in April 2012) and Stage 2 of the Southwest Rapid Transit Corridor in Winnipeg.
<b>SPV</b>	Refers to a Special Purpose Vehicle, a company set up by the Private Partner for purposes of submitting a proposal to undertake and manage the Project.
<b>Substantial Completion</b>	Means the date at which the Project is sufficiently complete to go into operations.
<b>Substantial Completion Payment or SCP</b>	Means a specified lump sum payment defined in the Project Agreement provided to the Project Co upon certification of substantial completion.
<b>TAC</b>	Means the Technical Advisory Committee comprised of individuals from the City's Project Team.
<b>TMP</b>	Refers to the City's Transportation Master Plan.
<b>TOD</b>	Refers to Transit-Oriented Development.
<b>Target DSCR</b>	Refers to the target Debt Service Coverage Ratio ("DSCR") of the Project that is to be maintained for the duration of the term of the Project. The DSCR is calculated as the total debt service obligations in the period divided by the total cash available for debt servicing.
<b>Value for Money or VFM</b>	Refers to the risk-adjusted cost-benefit analysis as further defined in Section 6:.

# Section 3: Project Description and Rationale

The rapid transit concept has been contemplated in Winnipeg for more than four decades, and the benefits delivered by this system are becoming increasingly important as the City prepares to reach a population of approximately one million by 2031. This section of the Business Case highlights the strategic context for the Project, including an overview of the Project Sponsor and discussion of the needs and expected outcomes; a description of the Project and the various configuration options considered; and a summary of the political and financial commitments in support of the Project.

## 3.1. Strategic Context

The strategic context for the Project is discussed below, including background on the Project Sponsor, a description of the Project, and discussion of the specific needs and expected outcomes supporting the implementation of the Project.

### 3.1.1 Role of Project Sponsor

The City of Winnipeg is the capital and largest city in the Province of Manitoba. It is located near the longitudinal centre of North America at the junction of the Red and Assiniboine Rivers, and is situated approximately 100 km from the United States border. The City covers an area of approximately 464 square kilometres, and was incorporated in 1873.

The City's population of 704,800 in 2012 represents over half of the population in Manitoba, and results in the City being the seventh largest municipality in Canada. Following a period of modest population growth in the late 1980's and no growth in the 1990's, the City has experienced renewed growth with a population increase of over 67,000 people over the past decade and approximately 10,000 people per year from 2009 - 2012<sup>1</sup>. This growth has been attributed primarily to a significant increase in immigration, as well as a net inflow of people from other parts of Canada. The Conference Board of Canada's August 2012 Population Forecast predicts growth of approximately 90,000 people over the next ten years, and 205,000 people in the next twenty-three years<sup>2</sup>.

Winnipeg's economy is one of the most diversified in Canada, with key industries including transportation and distribution, aerospace, agribusiness, finance and insurance, biotechnology and life sciences, information and communications technology, media, electric power, apparel and furniture manufacturing. During the recession in 2009, Winnipeg's economy experienced a modest 0.5% decline in comparison to the decline of 3% experienced in the greater Canadian economy. In conjunction with the expected growth in the City's population, Winnipeg's economy is expected to grow by approximately 31,000 jobs over the next five years.

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<sup>1</sup> "The Community Trends Report: Selected Demographic and Economic Information." City of Winnipeg, Oct. 2013. Web. 16 Dec. 2013.

<sup>2</sup> Ibid.

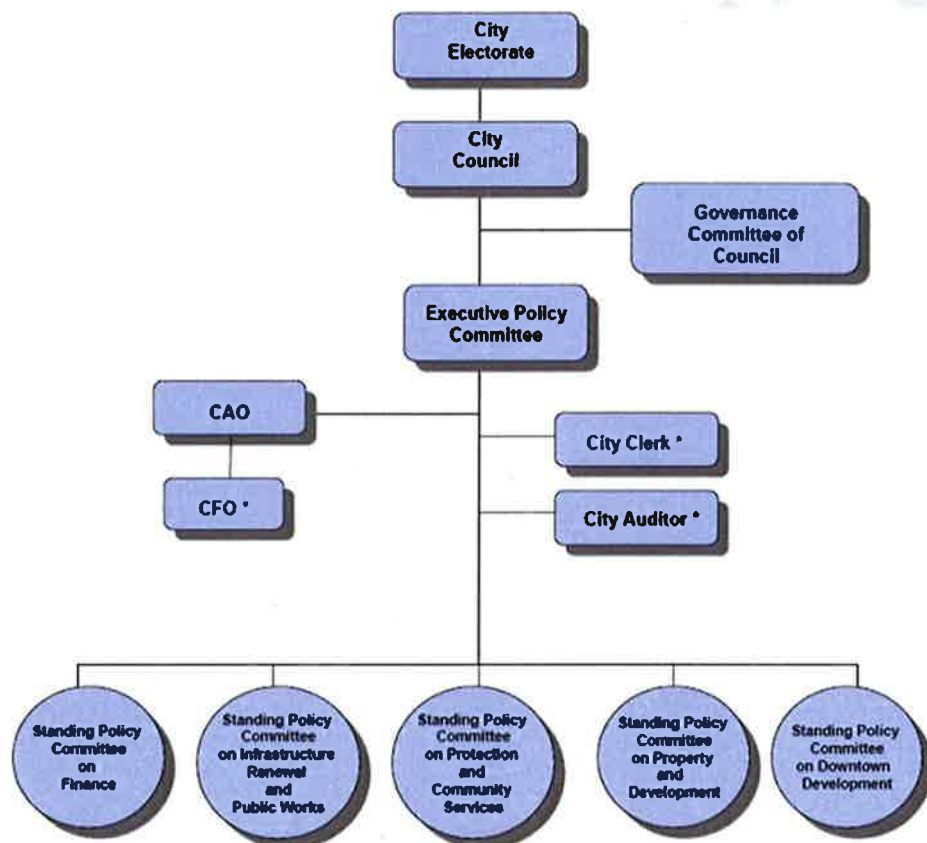
## Mandate and Governance Structure

Winnipeg is governed by a unicameral legislative body comprised of fifteen city councillors and a mayor, with elections occurring every four years. Councillors are each elected to represent one of the fifteen wards into which the City has been divided, while the mayor is elected through a direct popular vote and serves as the Chief Executive of the City. The municipal government's authority is prescribed by the City of Winnipeg Charter, which succeeded the City of Winnipeg Act and came into effect on January 1, 2003<sup>3</sup>.

The departments of the municipal government are responsible for day-to-day operations and the provision of services through the Winnipeg Police Service, Fire and Paramedic Service, Planning, Property and Development, Public Works, Community Services, Transit, and Water and Waste departments. Overall leadership and direction is provided by the Chief Administrative Officer ("CAO"), who also reports to the City Council.

The City's organization is provided in Figure 1<sup>4</sup>:

Figure 1: City of Winnipeg's Organization and Governance Structure



\* CFO, City Auditor and City Clerk have statutory reporting relationship to City Council

## Budget and Fiscal Capacity

Funding for the City is received primarily through taxation revenues, sales of services and regulatory fees, and transfers from other levels of government. The budgeting process includes public consultation, initial budget development, tabling of preliminary budgets, and budget finalization. Operating budgets contain three years of budget information, and capital budgets include six years of budget information. Each department prepares operating and capital budgets that, following consolidation by the Corporate Finance

<sup>3</sup> "History of City Government." *Winnipeg - City Government*. City of Winnipeg, n.d. Web. 16 Dec. 2013.

<sup>4</sup> "City Organization By-law No. 7100/97." *City Clerk's EGovernment*. City of Winnipeg, 5 Nov. 1997. Web. 16 Dec. 2013.



Branch, are considered by the City's Standing Policy Committees, Executive Policy Committee, and City Council for approval. The City's annual program (operating and capital) expenditures approximated \$1.3 billion in 2011 and 2012.

The Public Service prepares a draft Capital Budget that details each capital project on a separate capital budget sheet. The draft Capital Budget is then reviewed and/or revised and recommended to Council by a Capital Working Group made up of three Councillors. Projects are selected based on priority within the resources available. The draft Capital Budget being recommended to Council is then published and public consultation sessions are held, which give the public an opportunity to provide feedback. After that, the Capital Budget is presented to Council for approval where the public has additional opportunity to provide feedback. Once approved by Council, the detailed Capital Budget is published on the City's website.

### ***Leadership and Experience with Delivering Major Transportation Capital Projects***

Section 284(2) of The City of Winnipeg Charter stipulates that before December 31 of each fiscal year, City Council must adopt a Capital Budget for the following year and a capital forecast for the five subsequent fiscal years. On December 17, 2013, City Council adopted the 2014 annual capital budget and the 2015 to 2019 five-year forecast, with City Government Infrastructure Projects of \$2.7 billion planned over the next six years<sup>5</sup>.

The City has a strong track record in overseeing the successful delivery of major transportation capital projects through both traditional and public-private partnership ("P3") contracting methods. Major capital projects in which the City of Winnipeg Public Works and Transit Departments have been involved in recent years include<sup>6</sup>:

- Disraeli Bridges - \$195 million (DBFM Public-Private Partnership with Plenary Roads Winnipeg) (completed);
- Southwest Rapid Transit Corridor (Stage 1) - \$138 million (completed);
- Chief Peguis Trail Extension - \$110 million (DBFM Public-Private Partnership with DBF2 Limited Partnership) (completed);
- Plessis Road Underpass - \$77 million;
- Waverley West Arterial Roads - \$74.7 million; and
- Charleswood Bridge - \$10 million (DBFM Public-Private Partnership with DBF Ltd.), in combination with Moray Street reconstruction (\$5 million) and William Clement Parkway Extension (completed).

All capital projects undertaken by the City, including those highlighted above, are required to be delivered in line with the appropriate oversight and approval procedures consistent with the organizational and governance structure denoted in Figure 1. The specific roles and responsibilities of each entity presented in Figure 1 are discussed in further detail in Section 9.2.

### ***Stage 2 –Southwest Transitway***

Following the completion of Stage 1 of the Southwest Transitway project, the City is now progressing with its plans to develop Stage 2 of the Southwest Transitway, which is the subject of this Business Case. The Project includes a southerly extension of the BRT facility from Pembina Highway and Jubilee Avenue to the University of Manitoba on an exclusive transitway constructed within existing Manitoba Hydro and CN Rail rights-of-way. A full description of the Project components is included in Section 3.2.1.

### ***Project Authorities and Oversight***

Given the integration of the Project with the development of the City's rapid transit system, the Project is being led by key individuals within the Winnipeg Transit department. Specifically, the Project Manager is Bjorn Radstrom (Manager of Service Development at Winnipeg Transit), and the Project Champion is Dave Wardrop (Director of Transit). Figure 2 below outlines the City's line of authority required and

<sup>5</sup> "2014 Preliminary Budget: Operating and Capital." City of Winnipeg, 29 Nov. 2013. Web. 18 Dec. 2013.

<sup>6</sup> "Major Projects." *Winnipeg - Public Works Department*. City of Winnipeg, 23 May 2013. Web. 16 Dec. 2013.

approved for overseeing the Project and the procurement process. The nature and structure of oversight provided by each authority outlined below is described further in Section 9.2 of this Business Case.

**Figure 2: Project Line of Authority**



### 3.1.2 Need for the Project

The need for the Project is driven primarily by current and expected future growth in the City and the resulting strain of this growth on the existing transportation infrastructure. This section discusses these factors and highlights the integration of the Project with the City's long-term plan, in addition to providing an overview of the history of rapid transit planning in Winnipeg and the City's current plan for rapid transit development.

#### ***Population Growth***

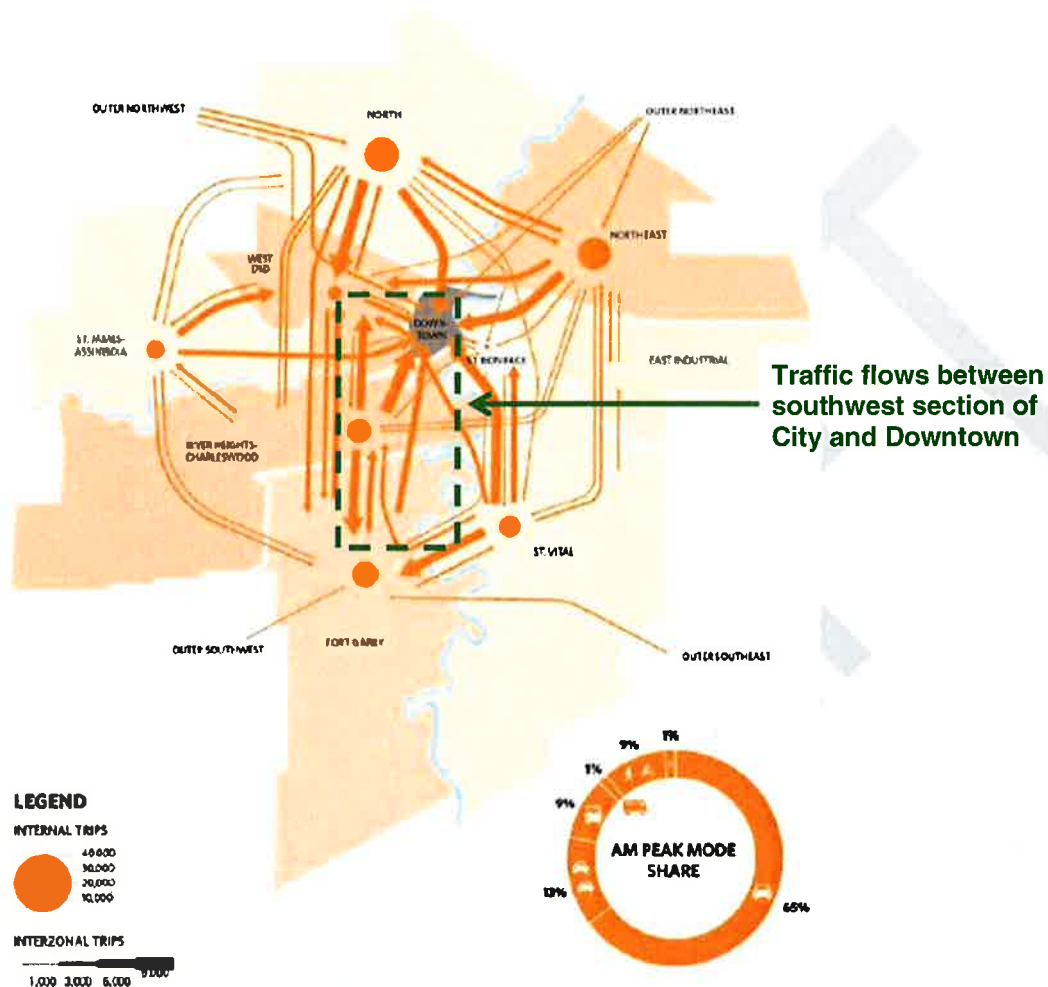
The population of Winnipeg is expected to grow by approximately 200,000 persons between 2006 and 2031, resulting in a population of approximately one million people in the City and surrounding area by 2031. Housing demand is expected to significantly increase, with an expected 100,000 dwellings needed over the next twenty-three years. In 2012 alone, the City experienced a 25% increase in housing starts over the previous year, with the most significant growth attributable to multiple family dwellings. Between 2000 and 2012, there was a 129% increase in the average price of a new house, and CMHC is forecasting the average price of a new house to rise another 4% to 2014.

This growth is expected to occur most extensively in the southwest part of Winnipeg, which has a current population of 75,000 and is expected to grow by over 40% over the next 20 years. There are three major industrial areas and several commercial areas in the southwest part of the City that are experiencing even higher growth. In addition, the province's two largest universities (the University of Manitoba - 30,000 students/staff, and the University of Winnipeg - 10,000 students/staff) are located within the service area of the Southwest Transitway and are expanding their campuses and educational offerings.

The following graphic illustrates major travel patterns in Winnipeg during the morning peak period (7:00 am – 9:00 am). A significant proportion of this travel occurs in the southwest quadrant of the city. Unique

to this travel corridor are substantial two-way travel flows (northbound to/through downtown, and southbound to/from the University of Manitoba and commercial/industrial areas) that is replicated in the opposite directions during the afternoon peak period. Moreover, the extensive post-secondary, commercial, and health care land uses in the corridor generate a high level of travel in both directions during off-peak periods<sup>7</sup>.

**Figure 3: Travel Flows over 1,000 Trips and Mode Share - AM Peak Period**



Source: Transportation Master Plan (2011)

The growth in this area of the City is placing tremendous strain on the existing transportation infrastructure. The major arterial street in the area, Pembina Highway, is already highly congested with average traffic volumes of approximately 60,000 vehicles each weekday. This volume is expected to increase as development continues in the City's southwest quadrant. To accommodate the growth in development and population, there are only limited opportunities to expand the road infrastructure. Although a high level of transit service operates on Pembina Highway, it is subject to significant delays and slow speeds caused by the traffic congestion. The increasing travel times along Pembina Highway, coupled with the resulting decrease in the reliability of the transit schedule, threatens Winnipeg's ability to provide a high quality transit service to its citizens.

<sup>7</sup> "Winnipeg Transportation Master Plan." City of Winnipeg, 1 Nov. 2011. Web.

## ***Integration with City's Long-Term Plan***

In 2011, Winnipeg's City Council introduced *OurWinnipeg*, the City's long-term development plan. *OurWinnipeg* was developed through input by over 42,000 Winnipeggers, and as such, reflects the key strategic priorities of Winnipeggers. *OurWinnipeg* presents a 25-year vision for the physical, social, environmental and economic development to position the City for sustainable growth and ensure Winnipeg's future competitiveness. The vision outlined in *OurWinnipeg* is brought into action through supporting Direction Strategies, including the Sustainable Transportation Strategy which highlights the following key strategic goals<sup>8</sup>:

- a) A transportation system that is dynamically integrated with land use.
- b) A transportation system that supports active, accessible and healthy lifestyle options.
- c) A safe, efficient and equitable transportation system for people, goods and services.
- d) Transportation infrastructure that is well maintained.
- e) A transportation system that is financially sustainable.
- f) A transportation system that reduces its greenhouse gas emissions footprint and meets or surpasses climate change and emissions reduction goals set by the City and the Province.

These key strategic goals form the basis of the City's TMP approved by City Council in 2011. The purpose of the TMP is to "present a long-term strategy to guide the planning, development, renewal and maintenance of a multi-modal transportation system in a manner that is consistent with projected needs, and aligned with the City's growth and the overall vision for a sustainable Winnipeg and region."

With respect to rapid transit, the TMP states:

*"Rapid transit is necessary for Winnipeg's on-going growth. It is needed to ensure that residents are provided with a viable alternative to the automobile, to reduce existing and future road congestion, and to build a transportation system that is capable of serving future generations. Rapid transit is also essential for shaping land use in a manner that achieves the objectives of OurWinnipeg and Complete Communities".*

The TMP identifies the following "Key Direction" with respect to the development of a rapid transit network within the City:

*"Expansion of Winnipeg's transit network and services will enhance transit as a mode choice if it provides good coverage and a basic level of service to all areas of the City and an effective network of rapid transit."*

The Rapid Transit section of the TMP includes the following specific directions:

- "Implement a rapid transit network as part of the transit system to provide a viable alternative to the automobile and to reduce existing and future road congestion".
- "Align land use and transportation planning decisions to support the rapid transit network".

## ***History of the Rapid Transit Concept***

The concept of a rapid transit system for Winnipeg has been contemplated for more than four decades. Rapid transit has been identified in some form in virtually all major development and transportation plans since the 1970's including<sup>9</sup>:

- Winnipeg Area Transportation Study (1968);
- Plan Winnipeg (1986);
- Plan Winnipeg...Toward 2010 (1993);

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<sup>8</sup> Ibid.

<sup>9</sup> Ibid.

- TransPlan 2010 (1998);
- Plan Winnipeg 2020 (2001); and
- OurWinnipeg (2010).

In addition, there have been numerous studies of rapid transit in one or more corridors including the following:

- Monorail for Portage Corridor (1972);
- Southwest Transit Corridor Study (1973);
- Benefit Cost Analysis of Winnipeg's Proposed BRT Phase 1 Project (2004);
- Rapid Transit Task Force (2005);
- Southwestern Transit Corridor Stage 1 Preliminary Design Report (2006); and
- Eastern Transit Corridor Functional Design Report (2006).

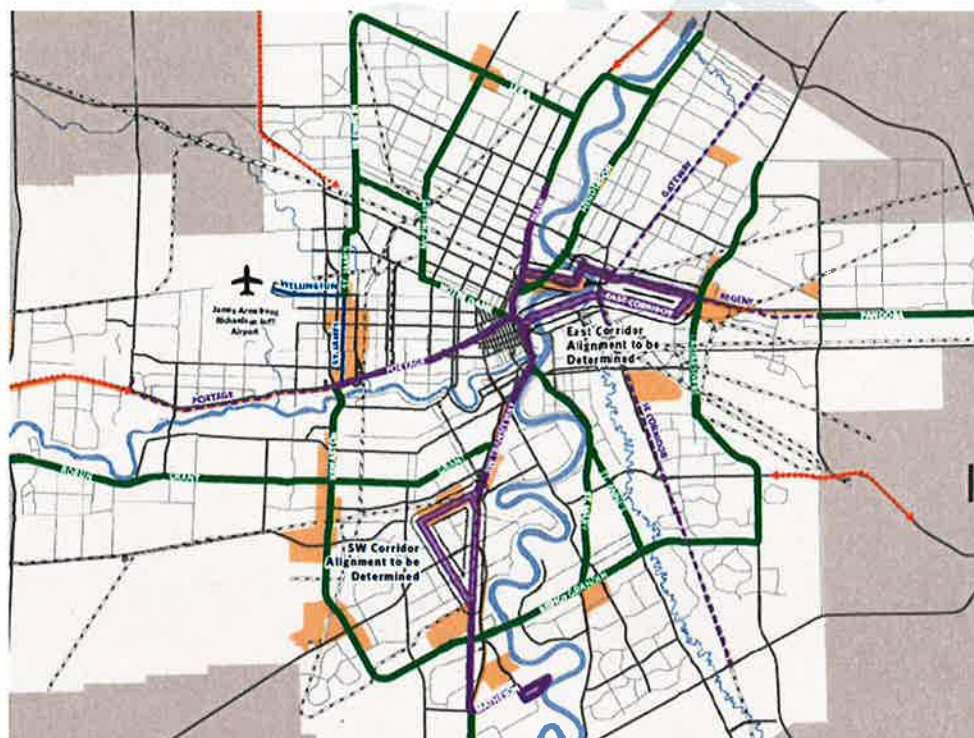
Progress on the development of a rapid transit system over the past few decades has largely been constrained by availability of funding.

### ***Current and Planned Rapid Transit Development***

The City's TMP identifies an initial network of four rapid transit corridors to be developed, including<sup>10</sup>:

- Southwest Corridor (parallel to Pembina Highway using existing CN Rail and Manitoba Hydro rights-of-way)
- Eastern Corridor (parallel to Nairn and Regent Avenues)
- Western Corridor (within or parallel to Portage Avenue)
- Northern Corridor (within or parallel to Main Street)

**Figure 4: Winnipeg Rapid Transit Map<sup>11</sup>**



<sup>10</sup> Ibid.

<sup>11</sup> Subsequent to the release of the Transportation Master Plan, the alignment for Stage 2 of the Southwest Transitway was determined through the Alignment Study conducted by Dillon Consulting Limited in 2012.



## LEGEND

	Potential Quality Corridors		Airport Link
	Rapid Transit Corridor (to 2031)		Potential Regional Connections
	Rapid Transit Corridor (beyond 2031)		Transit-supportive Growth Areas

Source: Transportation Master Plan (2011)

Following development of the initial network, the TMP identifies two additional corridors for development that branch from the Eastern Corridor to serve the northeast and southeast quadrants of the City:

- Northeast Corridor (within the former CPR Marconi subdivision adjacent to Gateway/Raleigh Streets)
- Southeast Corridor (within the CPR Emerson subdivision parallel to Archibald Street)

Figure 5: Summary of Rapid Transit Corridors

Indicator	Rapid Transit Corridor					
	Southwest	West	East	North	Southeast	Northeast
	Graham Mall to U of M	Portage & Main to Century	Graham Mall to Lagimodiere	Graham Mall to Burrows	Nairn to Bishop Grandin	Nairn to Perimeter Hwy
Length (km)	13.5	4.9	5.8	2.5	7.3	7.3
2031 Peak Point Ridership (peak hour) <sup>(1)</sup>	1800	2050	1600	3200	250	500
2031 Average residential and employment density within 500 m of corridor (total residents+jobs per ha) <sup>(2)</sup>	76	151	90	187	23	35
Number of Regional Mixed-Use Centres within 1 km. <sup>(3)</sup>	0	1	1	0	0	0
Number of major redevelopment sites within 1 km. <sup>(4)</sup>	5	0	1	1	1	1

### NOTES

(1) Estimated based on Winnipeg Travel demand Model. Typically 1,200 passengers per hour is considered the minimum threshold for dedicated rapid transit facilities.

(2) Ideally densities of 125 persons plus jobs per hectare are required to support rapid transit along the majority of the corridor.

(3) Based on mixed use centres identified in OurWinnipeg.

(4) Based on major redevelopment sites identified in OurWinnipeg.

Source: Transportation Master Plan (2011)

Based on the rate of population growth and congestion levels as discussed earlier in this section, the City's highest priority rapid transit project is the Southwest Corridor that connects downtown with Winnipeg's rapidly growing southwest sector and the University of Manitoba. Stage 1 of the Southwest Transitway, the initial phase of Winnipeg's rapid transit network, was constructed during 2009-2011. The Stage 1 transitway (3.6 kilometres in length, located between downtown and Pembina & Jubilee, with three highly developed stations<sup>12</sup>) opened for service in April 2012 and is used by a BRT network of 13 routes, providing fast, frequent, reliable service throughout the day on all days of the week. Rapid transit routes access the transitway at four locations to provide trips without transfer for passengers travelling between the southwest part of the City and downtown.

<sup>12</sup> Three stations were initially built as part of Stage 1 (Harkness, Osborne, and Fort Rouge). A fourth station (Jubilee) is being added to Stage 1 as part of an existing agreement between the City and the developer of The Yards at Fort Rouge. This station is planned to be built prior to the start of construction of Stage 2.

Figure 6: Southwest Transitway Map – Stages 1 and 2



Source: Dillon Consulting Limited (2014)

The northern limit of the Stage 1 transitway is on the edge of downtown at Queen Elizabeth Way & Stradbrook. From north to south, the Stage 1 transitway parallels the west side of the CN mainline through Harkness and Osborne Stations, overpasses Osborne Street (a busy arterial), and underpasses the CN mainline to then parallel the east side of the tracks through Fort Rouge Station and the Fort Rouge Yards (a transit-oriented development currently under construction) to the Stage 1 southern limit at Pembina & Jubilee. South of Pembina & Jubilee, rapid transit buses operate in mixed traffic via Pembina Highway. Constructed at a cost of \$138 million, the Stage 1 project included the transitway, three stations, a 200-metre tunnel, a 100-metre bridge, parallel active transportation paths and bicycle storage facilities at the stations.

During the 2007-2013 period, the City undertook a major "Transit Improvement Program" in conjunction with its rapid transit initiative. Improvements were focused on major arterial streets in which high levels of transit service operate. In these "Transit Quality Corridors", on-street transit priority measures (reserved lanes, queue jumps, transit signal priority), upgrades to stops and stations, new park-and-ride facilities, and Intelligent Transportation Technology to provide real-time passenger information tools were implemented. This integrated set of improvements, in conjunction with the completion of Stage 1, has greatly improved the speed, reliability, comfort, accessibility, and convenience of transit service in the City<sup>13</sup>.

The City's next rapid transit project is Stage 2 of the Southwest Corridor. The subject of this Business Case, this Project will extend the Transitway southerly from Pembina & Jubilee to the University of Manitoba using land within Manitoba Hydro and CN Rail rights-of-way for most of its alignment. This Project is consistent with the strategic direction identified in the City's TMP and will provide essential transportation infrastructure required to accommodate the new growth in the southwest part of the City.

### 3.1.3 Expected Outcomes of the Project

The implementation of Stage 2 of the Southwest Transitway is expected to give rise to numerous benefits which meet the key strategic goals outlined within the City's Sustainable Transportation Strategy (associated with the *OurWinnipeg* plan) as well as the specific rapid transit-oriented strategic goals and objectives found throughout the Transportation Master Plan. These benefits are discussed in further detail below.

#### **Increased Transit Ridership**

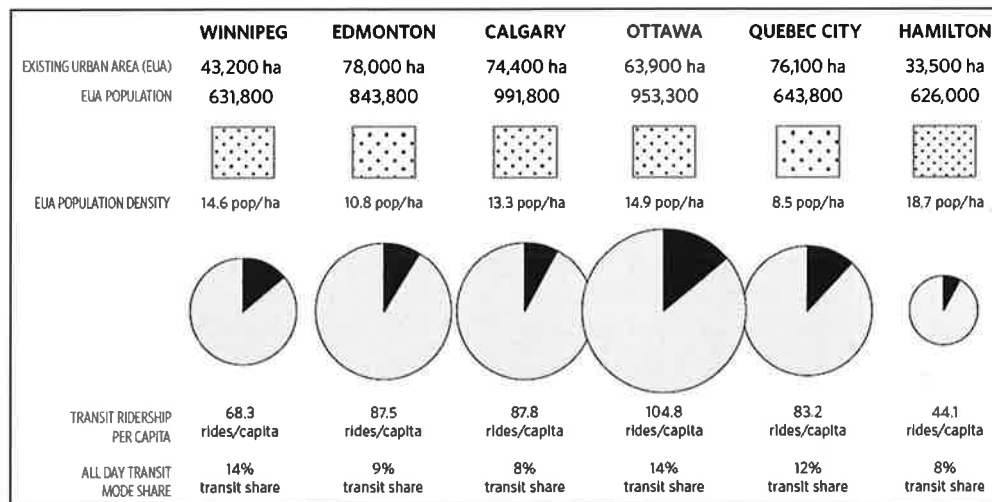
Amongst the underlying goals of the TMP is expansion of the range of travel options that are available to residents, workers, students and visitors, and to ensure that people are not dependent on one single

<sup>13</sup> [REDACTED] "Winnipeg's First Rapid Transit Corridor - Southwest Transitway." Dillon Consulting Limited, n.d. Web. 16 Dec. 2013.

mode. This requires public transit to be an easy and convenient option for moving people in a way that is fast and convenient enough to compete with the private automobile, which is made possible by the development of an effective network of higher order transit involving rapid transit facilities and quality corridors<sup>14</sup>.

The TMP states that Winnipeg compares favourably to similar-sized cities in Canada in terms of population density, with somewhat higher densities than some of the peer cities, as evidenced in Figure 7:

**Figure 7: Comparison of Peer City Population Densities and Transit Ridership**



Source: Transportation Master Plan (2011)

Further, the Rapid Transit Task Force's 2005 report, "Made in Winnipeg" states that while 55% of Winnipeggers report using transit, only 15% are "transit dependent" riders who have no realistic alternative to using public transit<sup>15</sup>. Transit rides per capital are therefore lower in Winnipeg, while cities with established rapid transit systems, such as Ottawa (BRT), Edmonton and Calgary (LRT) experience comparatively higher transit ridership due to the rapid transit system's attractiveness as a mode choice<sup>16</sup>.

In addition to shortening travel times and improving service reliability for existing passengers, rapid transit investments in major corridors in many cities have resulted in increased ridership. The "Made in Winnipeg" report provides statistics on ridership gains following BRT investments in the following cities<sup>17</sup>:

- Los Angeles: 30% increase in two years;
- Miami: 80% increase in four years;
- Brisbane: 60% increase in eighteen months;
- Vancouver: 20% increase in one year; and
- Boston: 70% increase in ten months.

The report further emphasizes that "ridership gains of between 5 and 25% are common", and cites examples of significant levels of ridership growth attributable to BRT investments, such as 23% for Vancouver's "B-Lines" and 33% for the "MetroRapid" lines in Los Angeles.

The Stage 2 Project will increase the length of the Transitway from 3.6 kilometres to 11.2 kilometres and permit buses to bypass significant traffic congestion on Pembina Highway. With the improvements in speed and reliability for the existing rapid transit routes, combined with population growth, ridership is expected to grow an additional 12% to 15% in the initial years following construction.

<sup>14</sup> "Winnipeg Transportation Master Plan." City of Winnipeg, 1 Nov. 2011. Web.

<sup>15</sup> "Made in Winnipeg: Rapid Transit Solution." Rapid Transit Task Force, Sept. 2005. Web. 3 Dec. 2013.

<sup>16</sup> "Winnipeg Transportation Master Plan." City of Winnipeg, 1 Nov. 2011. Web.

<sup>17</sup> "Made in Winnipeg: Rapid Transit Solution." Rapid Transit Task Force, Sept. 2005. Web. 3 Dec. 2013.



Increased transit ridership (modal split) is supportive of the Key Direction within the Transportation Master Plan which states that *"Expansion of Winnipeg's transit network and services will enhance transit as a mode choice if it provides good coverage and a basic level of service to all areas of the City and an effective network of rapid transit."*

### ***Reduction in Traffic Congestion and Travel Times***

Based on the forecasted population growth of approximately 200,000 persons between 2006 and 2031, current trends in vehicle ownership suggest that this growth will be coupled by the addition of over 120,000 vehicles within the City and surrounding area. An increase of 50% in vehicle-kilometres traveled in the morning peak hour is anticipated. This will result in "choke points" where travel demand will significantly exceed capacity<sup>18</sup>.



By providing an attractive alternative to driving, the resulting decrease in the number of vehicles along the route can significantly reduce congestion. [REDACTED] highlights a source which identifies that "on a highway lane with 2,000 vehicles per hour a 5% reduction in traffic volumes will typically increase travel speed by about 20 miles per hour and eliminate the stop-and-go conditions". In addition to improvements in modal split, the construction of dedicated transitways limits the number of buses in the general traffic lanes, which further reduces congestion along the route<sup>20</sup>.

Reduction in traffic congestion is supportive of Rapid Transit Direction One within the Transportation Master Plan, which focuses on *"[implementing] a rapid transit network as part of the transit system to provide a viable alternative to the automobile and to reduce existing and future road congestion."*

Paramount to the implementation of the Project is the capacity for decreases in travel times for commuters traveling along Pembina Highway, which is becoming increasingly congested due to the significant population growth in the southwest quadrant of the City. Improvements to travel times are expected to accrue to both drivers and rapid transit users as transit vehicles will operate on a dedicated route separated from the major arterial road.

According to a report issued by the Transportation Research Board, "Busways on dedicated rights-of-way generally save 2 to 3 minutes per mile compared with pre-BRT conditions, including time for stops. Bus lanes on arterial streets typically save 1 to 2 minutes per mile."<sup>21</sup> The Rapid Transit Task Force's "Made in Winnipeg" report cites reductions in travel of time of 16% in Vancouver and 29% in Los Angeles following

<sup>18</sup> "Winnipeg Transportation Master Plan." City of Winnipeg, 1 Nov. 2011. Web.

<sup>19</sup> [REDACTED]

<sup>20</sup> "Made in Winnipeg: Rapid Transit Solution." Rapid Transit Task Force, Sept. 2005. Web. 3 Dec. 2013.

<sup>21</sup> "Bus Rapid Transit, Volume 1: Case Studies in Bus Rapid Transit." *Transportation Research Board*. Federal Transit Administration, n.d. Web. 6 Dec. 2013.

the implementation of rapid transit routes, primarily attributable to higher travel speeds, on-street transit priority measures, dedicated busways, and fewer stops<sup>22</sup>.

The Stage 1 section of the Southwest Transitway yielded travel time savings of 4-8 minutes on trips between the centre of Downtown and the University of Manitoba, with greater time savings being realized during peak periods. Given the greater length of Stage 2, it is expected that 5-8 minutes of time savings will result from the construction of Stage 2, depending on the time of day.

In addition to anticipated time savings, a rapid transit corridor in the vicinity of Pembina Highway is also expected to improve access to the growing housing developments in the City's southwest corner, as well as to the University of Manitoba's approximately 30,000 students; and to serve a large contingent of the approximately 70,000 workers and 16,000 students commuting daily to downtown Winnipeg<sup>23</sup>.

Increased transit ridership by event attendees at the newly constructed Investors Group Field located within the University of Manitoba campus (i.e. the southern terminus of the Project) has also been observed, and integration of a rapid transit system at this hub will play a key role in providing efficient transportation to the location. Based on experience during the 2013 CFL season, approximately 13,000 people use transit for events at the stadium. This represents a 40% transit mode split and is significantly higher than the 3% transit mode split for events at the former stadium near Polo Park. The availability of rapid transit service has been a significant factor in the increased mode split. A fully built-out Transitway will provide significant improvements in travel time, reliability, and comfort for spectators attending events at the stadium.

Decrease in travel times is supportive of Key Strategic Goal three within the Transportation Master Plan, which focuses on providing "a safe, efficient and equitable transportation system for people, goods and services."

### ***Improved Transit Service and Schedule Reliability***

Public workshop discussions conducted in January and February 2005 as part of the development of the "Made in Winnipeg" report revealed that the key weaknesses of Winnipeg's transit service related to the frequency of buses, comfort of stops, and timing of buses<sup>24</sup>. Another questionnaire identified speed, reliability, and frequent service as the most important transit service attributes. These conclusions are still deemed to be valid at the time of the writing of this report. As the most important factors to transit users, service frequency and reliability are therefore critical components to be addressed by a rapid transit service.

In response to the report, the "Transit Improvement Program" (described above) led to the implementation of several initiatives to improve the speed, reliability, comfort, accessibility and convenience of on-street transit service in the Quality Corridors. However, the "Made in Winnipeg" report also identified that dedicated transitways provide the greatest opportunity for transit vehicles to achieve faster travel times and meet posted schedules, resulting from the limitation/removal of interference by other traffic. This results in the highest degree of service reliability within these corridors, especially when coupled with automatic vehicle location and real-time passenger information at stations.

The Stage 1 transitway provides all these features, including high speeds, high reliability, attractive and comfortable stations, state-of-the-art buses, and real-time passenger information. High frequency service is provided throughout the day on all days of the week, ranging from 45 buses per hour per direction during weekday peak periods, and 7 to 8 buses per hour per direction during evenings. Due to the high operating speeds on a fully built-out Transitway, increased frequencies can be operated with only a

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<sup>22</sup> "Made in Winnipeg: Rapid Transit Solution." Rapid Transit Task Force, Sept. 2005. Web. 3 Dec. 2013.

<sup>23</sup> "Downtown Trends: Downtown Winnipeg Market Research." Downtown Winnipeg Business Improvement Zone, 2007. Web. 30 Jan. 2014.

<sup>24</sup> "Made in Winnipeg: Rapid Transit Solution." Rapid Transit Task Force, Sept. 2005. Web. 3 Dec. 2013.

modest increase in fleet size to carry the additional ridership that is expected after the Stage 2 Project is completed.

Improved transit service and schedule reliability meets the objectives of a "high-quality transit experience" as outlined within the Transportation Master Plan to include *good coverage, direct service, frequent service, fast service, reliable service, and a comfortable ride.*

### **Transit-Oriented Development**

The development of BRT corridors presents an opportunity for Transit-Oriented Development ("TOD"), which is consistent with *OurWinnipeg* and the *Complete Communities Direction Strategy*. Winnipeg's Transit-Oriented Development Handbook, which guides and facilitates mixed-use, pedestrian-oriented infill development along rapid transit corridors and high-frequency transit corridors, defines TOD as follows:

*"Moderate to higher density compact mixed-use development, located within an easy five to ten minute (approximately 400m to 800m) walk of a major transit stop. TOD involves high quality urban development with a mix of residential, employment and shopping opportunities, designed in a pedestrian oriented manner without excluding the automobile. TOD can be new construction or redevelopment of one or more buildings whose design and orientation facilitate the use of convenient and sustainable modes of transportation, including public transit and Active Transportation."*<sup>25</sup>

The TMP illustrates the effect of residential neighbourhood development around areas with high-quality transit by reference to areas such as Portage, Main, Notre Dame, Sargent, and Osborne, which were previously served by streetcar lines. As emphasized by the document, "The medium density Residential neighbourhoods that surrounded these corridors reflect the desirability and need for residents to live near high-quality transit."<sup>26</sup>

Development patterns in Winnipeg became more auto-oriented in the 1960's as private automobile use increased in prominence. Although the comparatively slow growth in Winnipeg spared the City from the congestion being experienced in fast growing urban centres, the current population growth signals a need to accommodate a higher population and the resulting growth in travel demand.

Forecasts of population and employment growth based on current development trends show that there will be continued pressure to grow outward. This will result in travel flows becoming more dispersed in the future. Major employment developments and continued expansion of industrial areas in the outer areas will shift travel from traditional destinations such as Downtown<sup>27</sup>. *OurWinnipeg* highlights a key goal of the City to be "[accommodating] a greater proportion of the City's future growth within the existing built boundary. This would be accomplished through redevelopment and intensification in the City's transit-supportive land use areas... Increasing transportation choice to and from these areas will be essential to encourage growth."<sup>28</sup> Creating infrastructure that supports TOD is therefore not only a key strategic priority of the City, but also represents a significant opportunity to shape the City's growth over the future and to limit urban sprawl by encouraging compact urban development. The TMP identifies four designated TOD sites along the Southwest Transitway corridor, including the Fort Rouge Yards; the Southwood Golf Course lands; the former Sugar Beet lands near Pembina and Bishop Grandin; and the Parker lands west of Pembina and south of the CN main line. These are identified in greater detail in Section 3.2.1.

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<sup>25</sup> "Winnipeg Transit-Oriented Development Handbook." City of Winnipeg, 2011. Web. 25 Nov. 2013.

<sup>26</sup> "Winnipeg Transportation Master Plan." City of Winnipeg, 1 Nov. 2011. Web.

<sup>27</sup> Ibid.

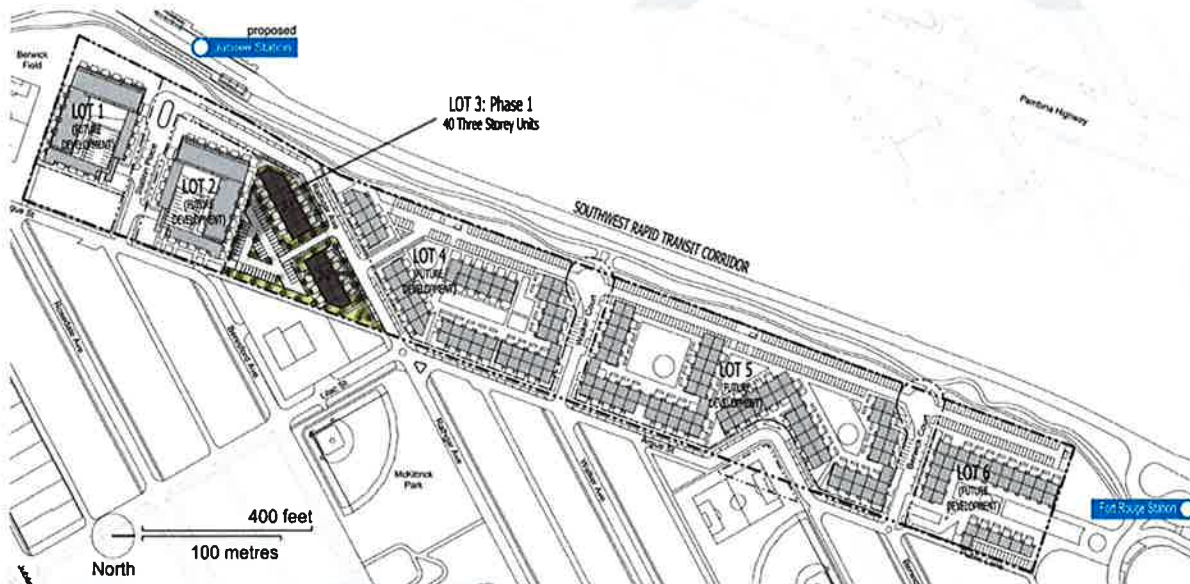
<sup>28</sup> Ibid.



Recent development announcements since the opening of the Stage 1 corridor, and in anticipation of the Stage 2 development, have indicated a strong interest by developers in TOD projects along the Southwest Transitway which may include mixed-use development with higher densities, and potentially reduced per-unit parking requirements, consistent with the *OurWinnipeg* plan. These developments include the following:

- In October 2012 GEM Equities announced an infill housing project in the former CN Fort Rouge Yards immediately adjacent to the completed Stage 1 of the Southwest Transitway, representing the first TOD in the City<sup>29</sup>. This 900-unit TOD project, The Yards at Fort Rouge (Figure 8) is presently under construction..
- In December 2013 the planned development of a 19-storey high rise with an expected cost between \$35 and \$40 million adjacent to the Stage 1 Harkness station on Stradbrook Avenue was announced<sup>30</sup>.
- In the spring of 2013, the City of Winnipeg granted approvals for a five story mixed-use commercial and office building at the southwest corner of Osborne Street & Corydon, adjacent to the Osborne Station on the Southwest Transitway<sup>31</sup>.
- Streetside Development Corporation is planning a multi-family development (apartment building and townhouses) immediately adjacent to the Fort Rouge Station on the Southwest Transitway.

**Figure 8: Site Development Plan, The Yards at Fort Rouge**



Source: Fortrougeyards.com (2014)

Further, concurrent with the development of the TOD Handbook, the City completed an evaluation of its zoning districts, design guidelines, and policy framework in the context of promoting TOD and developed the Planned Development Overlay, which permits the modification of existing zoning requirements to enable TOD and mixed-use infill. In conjunction with the Planned Development Overlay, the City also amended its planning and development review processes to support TOD developments through a collaborative planning process. This is achieved through Technical Advisory Committees which work with the developer from the initiation of the project to proactively assist and provide a more detailed review and support of development plans. This support is intended to improve developers' confidence in the project's ability to succeed through the approval process, and to enable more flexible arrangements of zoning requirements to support TOD development.

<sup>29</sup> "Winnipeg Transit Deal Paves Way for Development." CBC News, 17 Oct. 2012. Web. 17 Dec. 2013.

<sup>30</sup> McNeill, Murray. "Residential Highrise Planned next to Rapid-transit Hub." Winnipeg Free Press, 13 Dec. 2013. Web. 13 Dec. 2013.

<sup>31</sup> "257 Osborne Street." Imperial Properties. N.p., n.d. Web. 20 Mar. 2014. <<http://www.imperialproperties.ca/257>>.

The Planned Development Overlay framework and the City's support of TOD design has been evidenced by the Fort Rouge Yards redevelopment, through which an amendment of the zoning document was approved to reduce parking requirements below levels otherwise required. Specifically, the zoning document stipulates that the City's parking minimum requirements shall be the parking maximum requirements on that site. Another major TOD site is currently in the planning process and is moving forward with a parking minimum requirement that is 50% lower than what the City's zoning bylaw requires, with the support of the City's Planning, Property and Development department.

A significant benefit of TOD is an increase in transit ridership by people who live and/or work within transit-oriented developments. [REDACTED] identifies that "well designed, concentrated, mixed-use development around transit nodes can boost patronage as much as five to six times higher than comparable development away from transit"<sup>32</sup>.

In addition to generating higher ridership, rapid transit corridors provide an impetus for new residential, commercial and retail development fully integrated with rapid transit stations. The Transportation Research Board's "Case Studies in Bus Rapid Transit" cites reported land development benefits of up to \$675 million (US) in new construction around transit stations along the Ottawa Transitway; \$302 million in new and improved development along Allegheny County's East Busway, and an increase in property values of 20% near Brisbane's South East Busway, which has been primarily attributed to the busway's construction<sup>33</sup>. [REDACTED] emphasizes appreciation in land values around transit lines of between 2 and 5%, primarily attributable to the high level of investment and development in these areas. Concurrently, the creation of high-density, pedestrian-friendly environments in proximity to transit lines improves the transit ridership potential of the development, and therefore reinforces the effectiveness of the rapid transit system.

Transit-oriented development is consistent with Key Strategic Goal One within the Transportation Master Plan, which envisions "*a transportation system that is dynamically integrated with land use.*" It is also supportive of Rapid Transit Direction Two, which focuses on "*[aligning] land use and transportation planning decisions to support the rapid transit network.*"

### **Local Economic Impacts**

In addition to the transit-oriented development opportunities described above, the development of the Project would have numerous favourable effects to the Winnipeg economy resulting from local materials and equipment purchases, construction/contractor involvement, and other spin-off activity stemming from the development. In addition, BRT development presents a significant opportunity for job creation, both during construction and throughout the maintenance period. A high-level approximation of the job creation provided by the Project, suggests the following:

- The construction phase of the Project would create approximately 3,692 person years of employment based on the approximate capital value of the Project (\$600 million), a high-level assumption of labour being 40% of total costs and an assumed annual average construction salary of \$65,000<sup>34</sup> per year; and
- The maintenance phase of the Project would create approximately 923 person years of employment, based on the estimate of maintenance costs (approximately \$100 million in nominal dollars over 30 years) and a high-level assumption of labour representing 60% of such costs.

<sup>32</sup> [REDACTED]

<sup>33</sup> "Bus Rapid Transit, Volume 1: Case Studies in Bus Rapid Transit." *Transportation Research Board*. Federal Transit Administration, n.d. Web. 6 Dec. 2013.

<sup>34</sup> Approximated from average weekly construction earnings of \$1,036.77 taken from Statistics Canada (December 2013), plus 15% overhead costs.

The purchases and jobs involved in the construction, development and ongoing maintenance of the Transitway will also result in increased income and sale taxation revenues to the Provincial and Federal governments.

Lastly, the facilitation of downtown accessibility and revitalization, improved travel times and schedule reliability, and improved traffic flow through a major arterial roadway each contribute toward further growth and productivity within the City.

### **Revitalization of Downtown Area**

Winnipeg's downtown area has seen significant revitalization in recent years through developments including the Graham Transit Mall, MTS Centre, Manitoba Hydro Place, and Centrepont. In addition, existing parking lots within the downtown, including the developing "Sports, Hospitality and Entertainment District" (SHED) are being converted into higher-value uses, such as SoPo Square, SkyCity Centre, and the expansion of the RBC Convention Centre.

In revitalising the downtown landscape, these developments result in a reduction to the availability of parking spaces in the area. A reliable rapid transit service operating via the Graham Transit Mall into the heart of Winnipeg's downtown area will provide a viable and less expensive alternative to commuters while enhancing citizens' access to the revitalised downtown area.

The revitalization of Winnipeg's downtown area is consistent with Key Strategic Goal One within the within the Transportation Master Plan, which envisions *"a transportation system that is dynamically integrated with land use."*

### **Reduction in Greenhouse Gas Emissions**

According to the Institute for Transportation & Development Policy, vehicle emissions are the fastest growing source of greenhouse gas emissions worldwide, and currently represent 24% of greenhouse gas emissions from fossil sources<sup>35</sup>. Increases in vehicle emissions are most significantly attributable to higher levels of private automobile use, as evidenced by the estimated increase from 982 million passenger vehicles worldwide in 2007 to 2.6 billion in 2050. The implementation of a rapid transit system also offers significant opportunities for reductions in greenhouse gas emissions as users shift from high-consumption private automobiles to public transit and active transportation travel modes.

Operating efficiencies within a BRT system resulting from higher operating speeds can also allow fewer buses to serve a greater number of passengers<sup>36</sup>. As indicated in [REDACTED], "gains in pollution mitigation are highest for rapid transit alignments that promote high ridership. More people using rapid transit will equate to less automobile trips, decreasing overall fossil fuel consumption and greenhouse gas emissions."<sup>37</sup>

According to study conducted by Nelson\Nygaard Consulting Associates, reductions in greenhouse gas emissions related to rapid transit systems have been reported as follows<sup>38</sup>:

- Los Angeles Metro Rapid: net reduction in annual CO<sub>2</sub> emissions of 9,188 metric tons; and
- Vancouver 98 B-Line: savings of 1,200 metric tons of CO<sub>2</sub> per year.

<sup>35</sup> "Bus Rapid Transit Planning Guide." Institute for Transportation & Development Policy, June 2007. Web. 30 Jan. 2014.

<sup>36</sup> "Made in Winnipeg: Rapid Transit Solution." Rapid Transit Task Force, Sept. 2005. Web. 3 Dec. 2013.

<sup>37</sup> [REDACTED]

<sup>38</sup> Millard-Ball, Adam. "Bus Rapid Transit and Carbon Offsets." NelsonNygaard Consulting Associates, Nov. 2008. Web. 30 Jan. 2014.



In the case of the Metro Rapid BRT, annual CO<sub>2</sub> reductions were estimated at 0.3 metric tons per new daily rider. Thus, a BRT system has the potential to significantly reduce greenhouse gas emissions with increases in ridership.

Reductions in greenhouse gas emissions are consistent with Key Strategic Goal Six within the Transportation Master Plan, which envisions *"a transportation system that reduces its greenhouse gas emissions footprint and meets or surpasses climate change and emissions reduction goals set by the City and the Province."*

### 3.2. Project Description

As noted in earlier sections of this Business Case, the rapid transit concept has been studied by the City for many years, with specific focus on the Southwest Transitway corridor given its identification as a priority corridor by the City. The various recent studies and consultations undertaken with respect to the Project are listed in the table below for reference.

**Table 1: Overview of Studies and Planning Reports**

Study	Date	Study Outcomes
<b>Functional Design Study Southwestern Transit Corridor</b>	1984	<ul style="list-style-type: none"> <li>Functional Alignment of Southwestern Transit Corridor from Downtown Winnipeg to Bison Drive was recommended.</li> </ul>
<b>Made in Winnipeg: Rapid Transit Solution<sup>39</sup> (Rapid Transit Task Force)</b>	2005	<ul style="list-style-type: none"> <li>City Council encouraged to adopt a formal policy to acquire rail rights-of-way for future rapid transit and active transportation purposes;</li> <li>Bus Rapid Transit is the best solution for Winnipeg; and</li> <li>Design and construction of the BRT system should consider conversion to LRT in the future.</li> </ul>
<b>Southwestern Transit Corridor Stage 1 Preliminary Design Report</b>	2006	<ul style="list-style-type: none"> <li>Preliminary Design of the first stage of Winnipeg's Southwestern Transit Corridor between Queen Elizabeth Way &amp; Stradbroke and Pembina &amp; Jubilee.</li> </ul>
<b>Eastern Transit Corridor Functional Design Report</b>	2006	<ul style="list-style-type: none"> <li>Functional Design of Winnipeg's Eastern Corridor between downtown Winnipeg and Plessis Road in Transcona.</li> </ul>
<b>OurWinnipeg / Transportation Master Plan<sup>40</sup> (City of Winnipeg)</b>	2011	<ul style="list-style-type: none"> <li>Identifies a strategic commitment by the City to implement a rapid transit network as part of the transit system, and to align land use and transportation planning decisions to support the rapid transit network.</li> </ul>
<b>Southwest Rapid Transit Corridor Stage 2 Alignment Study (Dillon Consulting Limited)</b>	2012	<ul style="list-style-type: none"> <li>Recommended Stage 2 route alignment through the Parker Lands and along the Manitoba Hydro transmission corridor.</li> </ul>
<b>Preliminary Engineering Study for Upgrading the Pembina Highway Underpass (Dillon Consulting Limited)</b>	2013	<ul style="list-style-type: none"> <li>Functional design report for widening of Pembina Highway.</li> </ul>
<b>Functional Design Study (Dillon Consulting Limited)</b>	[Ongoing]	<ul style="list-style-type: none"> <li>Functional Design for Stage 2 of the Southwest Transitway between Pembina &amp; Jubilee to Markham Road and the University of Manitoba;</li> <li>Functional Design of Stations;</li> <li>Functional Design of Active Transportation Paths;</li> <li>Environmental Assessment;</li> <li>Public Engagement (November 18-19, 2013; February 24-25, 2014);</li> <li>Refinement of the Capital Cost Estimate / Cost-Benefit Analysis; and</li> <li>Implementation Planning.</li> </ul>

<sup>39</sup> "Made in Winnipeg: Rapid Transit Solution." Rapid Transit Task Force, Sept. 2005. Web. 3 Dec. 2013.

<sup>40</sup> "Winnipeg Transportation Master Plan." City of Winnipeg, 1 Nov. 2011. Web.

This section provides a detailed overview of the scope of the Project, including a description of the key components of the Project from a design and construction perspective.

### 3.2.1 Project Scope

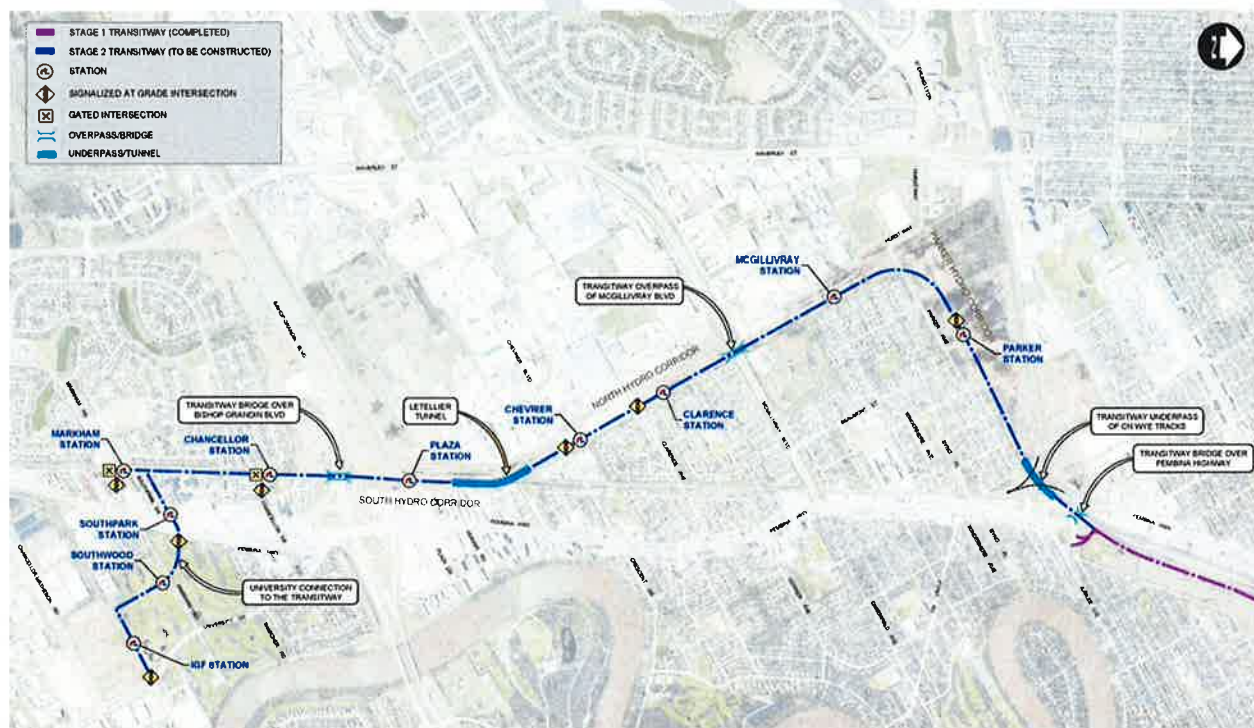
#### *Project Location*

The existing Stage 1 of the Southwest Transitway is a BRT facility that includes a 3.6 km grade-separated exclusive right-of-way, three highly-developed transit stations, a 200 metre tunnel beneath the CN main line, a 100 metre bridge over a major arterial roadway, and active transportation facilities.

Stage 2 involves the 7.6 km extension of the existing infrastructure of Stage 1 of the Southwest Transitway from Pembina Highway and Jubilee Avenue southward towards the University of Manitoba. A recent alignment study developed by Dillon Consulting Limited ("**Dillon**") for the City identified the preferred alignment that was subsequently approved by City Council, which runs "through the Parker/Manitoba Hydro Lands paralleling Parker Avenue and then shifts to locate within the Manitoba Hydro right-of way until it intersects the existing CN track, north of Bishop Grandin and then continues south along the east side of the CN rail line to Markham Road."<sup>41</sup> The Dillon study notes that this alignment provides direct access to various neighbourhoods at intermediate points along the Transitway, to the new TOD lands identified above, to the University of Manitoba and Investors Group Field through the TOD lands on the north edge of the university, and to new growth communities in the Waverley West area; along with alternate extensions of additional phases into southwest Winnipeg.

A map that indicates the selected Transitway alignment is provided in Figure 9.

**Figure 9: Proposed Transitway Alignment and Approximate Station Locations for the Project**



Source: Dillon Consulting Limited (2014)

<sup>41</sup> [REDACTED] "Southwest Rapid Transit Corridor Stage 2 Alignment Study." Dillon Consulting Limited, 3 Jan. 2013. Web.



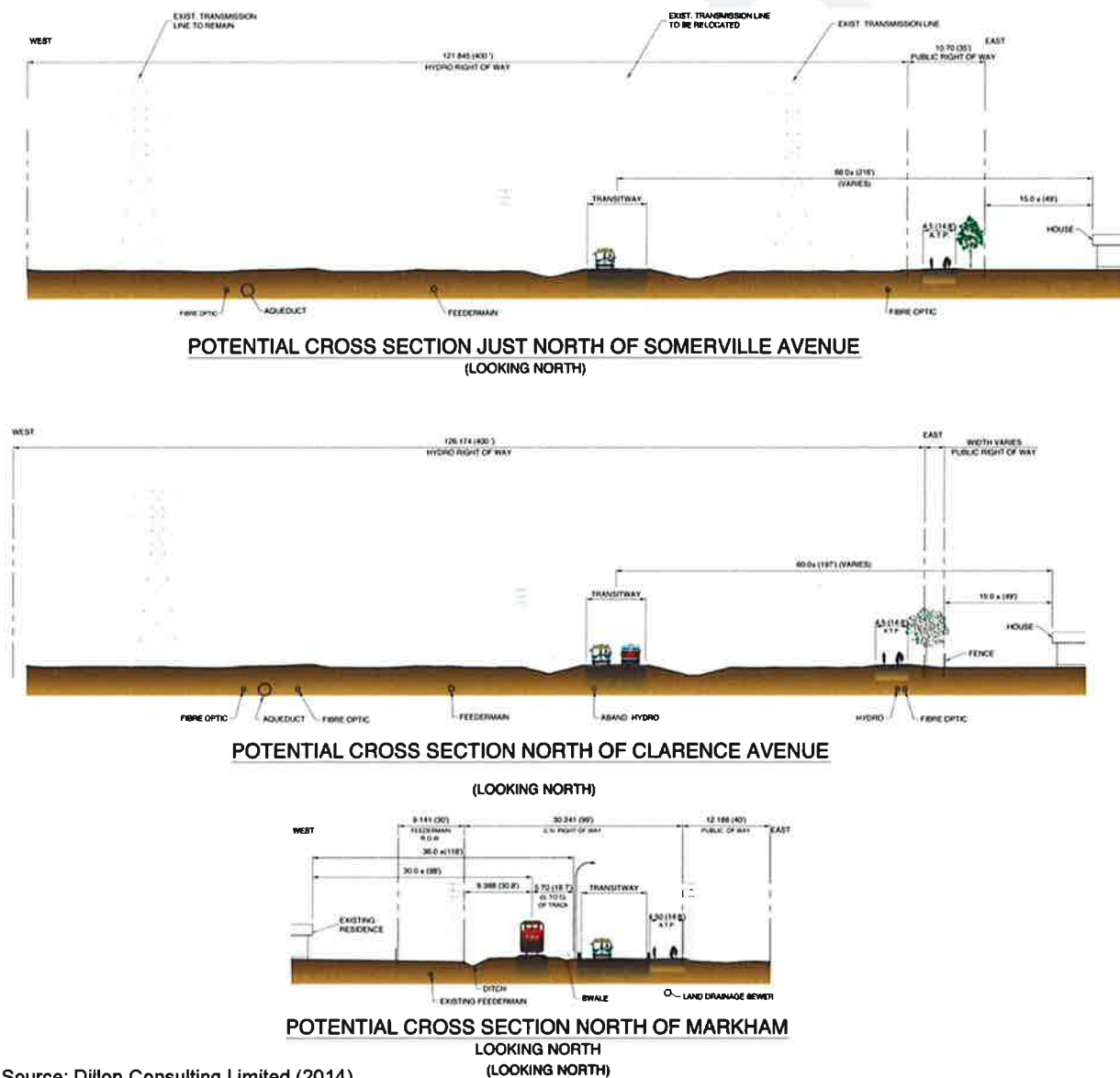
## Elements of Project Scope

The Project involves the construction of the following infrastructure elements<sup>42</sup>:

- Approximately 7.6 km of runningway to extend the Transitway from Pembina Highway & Jubilee Avenue to Markham Road and to the University of Manitoba;
- Between stations, the runningway will include a 3.5 metre lane and a shoulder allowance in each direction. Within each station, two lanes will be constructed in each direction to allow express buses and deadheading buses to overtake other buses that may be boarding passengers and to provide for bus turning movements between the runningway and the street system.

The following figures illustrate the proposed location of the bus runningway in relation to other features within the corridor such as existing transmission towers, underground utilities, property lines and adjacent structures.

**Figure 10: Cross Sections of Runningway**



Source: Dillon Consulting Limited (2014)

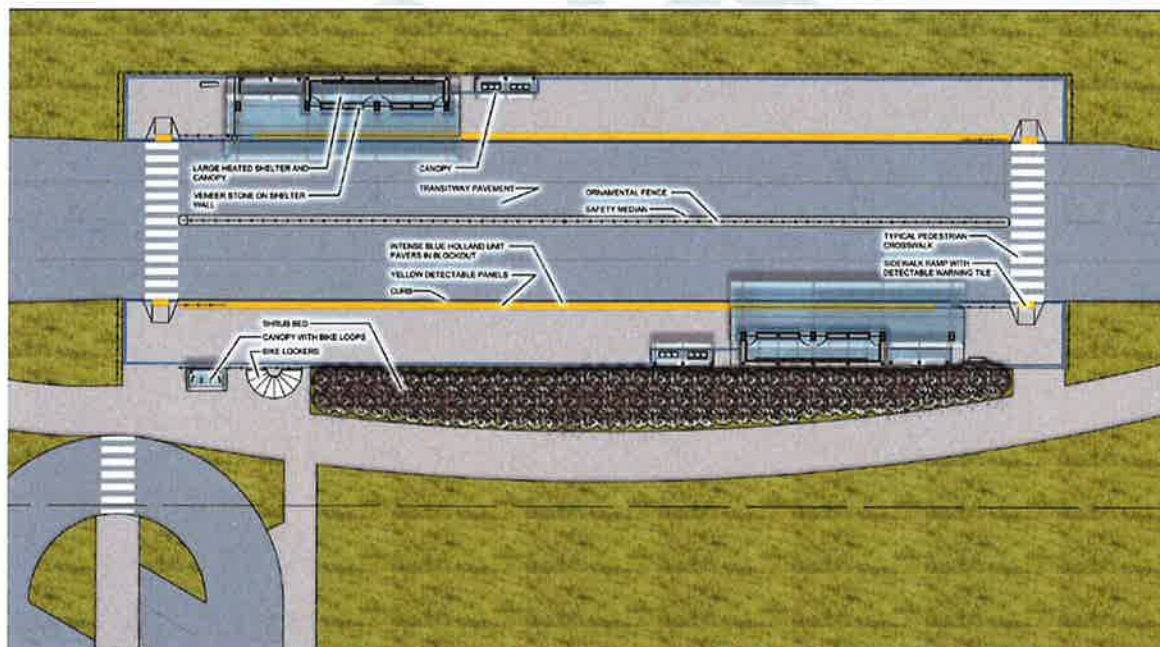
<sup>42</sup> Information provided by Dillon Consulting Limited, Feb. 2014.

- Widening of Pembina Highway by one lane through the Jubilee Underpass:
  - This will occur at the north limit of the Project and involves the widening of the northbound roadway through the underpass from two lanes to three lanes. This widening will improve the northbound capacity of the roadway and reduce existing congestion that results from the very high traffic volumes through the underpass (60,000 vehicles per day; 6,000 vehicles during the peak hour).
  - The widening of the roadway will result in the relocation of an existing combined sewer outfall. As a result, a land drainage sewer system will be constructed.
- Construction of a new CN rail bridge over Pembina Highway and demolition of the existing CN rail bridge structure;
  - The existing rail bridge over Pembina accommodates three tracks of CN's main line and a service road. To accommodate the additional northbound lane on Pembina Highway and the new Transitway bridge, the existing CN bridge over Pembina Highway will need to be replaced by a new and longer rail bridge at a location north of the existing rail bridge. The new CN bridge will accommodate four tracks and an improved service road, with a structure length of 76.5 metres and a structure width of 18.0 metres.
- Construction of a new Transitway bridge over Pembina Highway;
  - A new Transitway bridge over Pembina will be constructed as part of the southerly extension of the Southwest Transitway and is required to be constructed between the Jubilee Overpass and the new CN rail bridge over Pembina Highway. The bridge will accommodate one Transitway lane in each direction and a two-way Active Transportation path adjacent to the northbound Transitway lane, which will be separated from the lane by a physical barrier. The structure will be 80.0 metres long and 15.7 metres wide, with Transitway lanes (including shoulders) 5 metres in width.
- Construction of a new Transitway underpass of CN wye tracks at the CN Portage Junction;
  - Two wye tracks exist at the Portage Junction rail lands: the CN Letellier rail line and the WC02 spur line. These wye tracks will be required to be re-aligned with the relocated CN Rivers tracks. A new Transitway underpass of each of the CN wye tracks will be constructed to provide a grade-separation between the Transitway and the wye tracks. The CN Letellier structure will be 84.4 meters long and 6.05 meters wide, while the WC02 structure will be 69.0 meters long and 6.05 meters wide.
- Construction of a Transitway overpass of McGillivray Boulevard;
  - The McGillivray overpass will accommodate one Transitway lane in each direction and a two-way Active Transportation path adjacent to the northbound Transitway lane. The structure will be 72 metres in length and 15.7 metres in width between Mechanically Stabilized Earth (MSE) walls, which will be used to minimize impacts on hydro and underground infrastructure.
- Construction of a Transitway tunnel beneath the CN Letellier rail line (Letellier Tunnel);
  - A new Transitway tunnel will be constructed at approximately Chevrier Boulevard to transition the Transitway from the Manitoba Hydro right-of-way on the west side of the CN Letellier tracks to the east side of the tracks. The Letellier Tunnel will be constructed beneath the CN Fort Garry Industrial Leads and the CN Letellier track, and will include a covered tunnel approximately 200 metres in length with retaining walls approximately 200 metres in length approaching the north tunnel entrance and 225 metres in length approaching the south tunnel entrance.
- Construction of a new CN Letellier rail bridge over Bishop Grandin Boulevard;
  - Between the south end of the Letellier Tunnel and a point south of Markham Road, segments of the existing track, signals and switches will be relocated westerly within the CN Letellier right-of-way to accommodate the Transitway alignment. The new CN bridge over Bishop Grandin Boulevard will be constructed parallel to and immediately west of the existing rail bridge. The structure will be 96.6 metres in length and 7.6 metres to accommodate one track, with four spans.
- Construction of a new Transitway bridge over Bishop Grandin Boulevard;

- The Transitway bridge over Bishop Grandin Boulevard will be constructed in the current location of the existing rail bridge. This bridge will accommodate one Transitway lane in each direction and a two-way Active Transportation path adjacent to the northbound Transitway lane. The bridge will be a four-span structure, 97.4 metres in length and 15.7 metres in width.
- Construction of roadway connections between the Transitway and the street system;
- Seven modern transit stations along the Stage 2 Transitway:
  - Parker Station (between Georgina and Beaumont, north of Parker);
  - McGillivray Station (north of McGillivray, near Seel Avenue);
  - Clarence Station (between Clarence and Waller);
  - Chevrier Station (north of Chevrier);
  - Plaza Station (east side of CN Letellier track at west limit of the Public Road referred to as Plaza Drive);
  - Chancellor Station (a “split” station on the east side of the CN Letellier track, with platforms on opposite sides of Chancellor); and
  - Markham Station (east side of the CN Letellier track, north of Markham).
- Two new stops on the Transitway connection to the University of Manitoba;
  - These stops will be located at Southpark Drive near Pembina, and on the University's Southwood lands near the Transitway and Markham intersection.

Major features of stations include large heated shelters, canopies over the platforms, station identification and wayfinding signage, pedestrian lighting, illuminated signage, information kiosks, electronic BUSwatch signs to display real-time bus departure information, bike racks and lockers, benches, and recycling receptacles. Graphic depictions of the proposed design of small, large, and split stations, as well as a photograph of major elements at a typical station, are provided in the figures below;

**Figure 11: Illustrative Depiction of Small Station**



Source: Dillon Consulting Limited (2014)



[illegible]

### Figure 13: Illustrative Depiction of Split Station

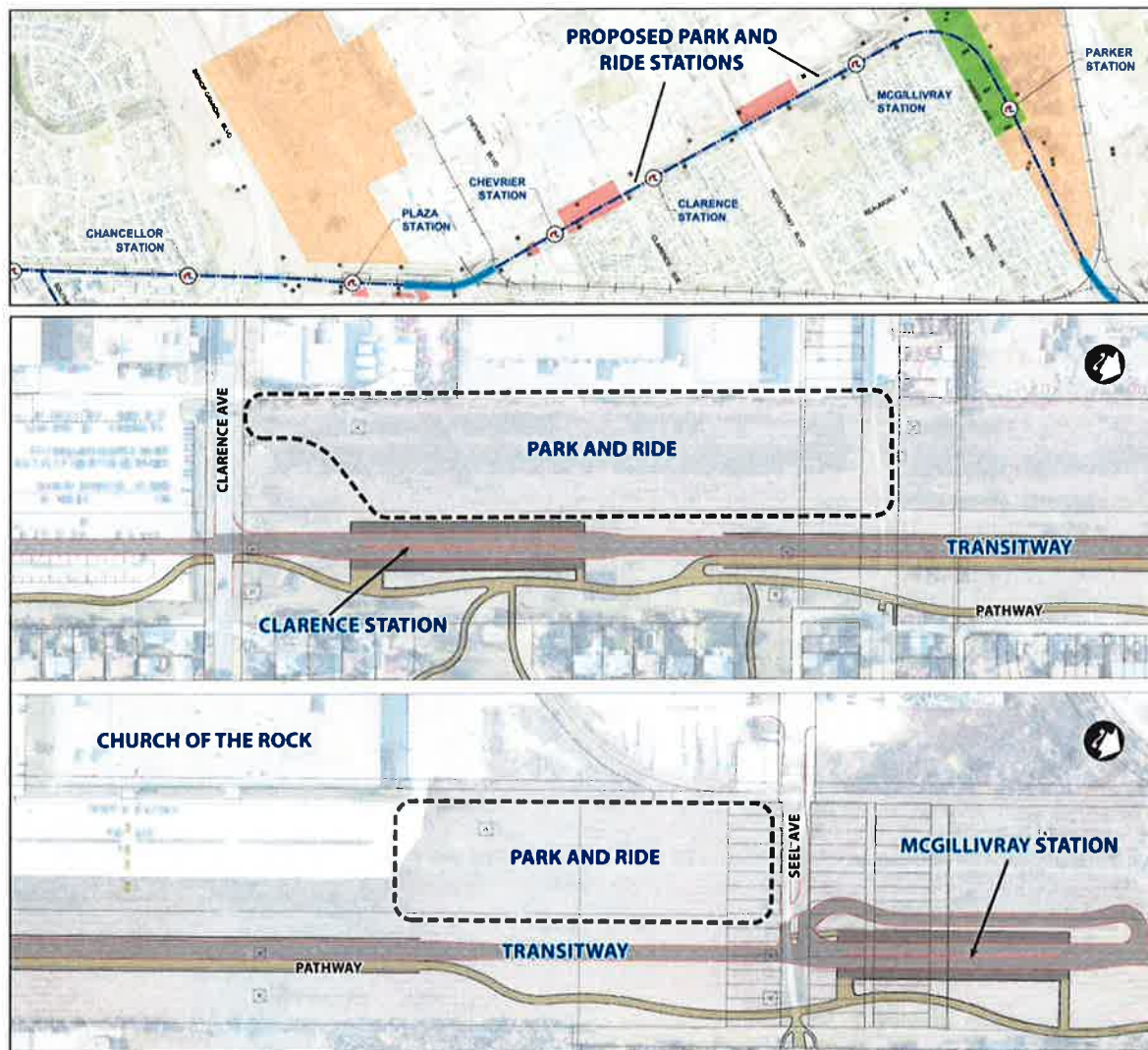


**Figure 14: Illustrative Photo of Station Design (existing Fort Rouge Station)**



- A new, special-purpose event day transit station at Investors Group Field to accommodate buses serving major events at the stadium. The station will be located adjacent to the stadium and will feature an overhead pedestrian walkway between the stadium entrance and the station's large central loading platform to segregate pedestrian movements from bus operations.
- Construction of new park-and-ride facilities in close proximity to the Clarence and McGillivray stations along route, potentially located as depicted in the following graphics;

Figure 15: Proposed Park-and-Ride Stations



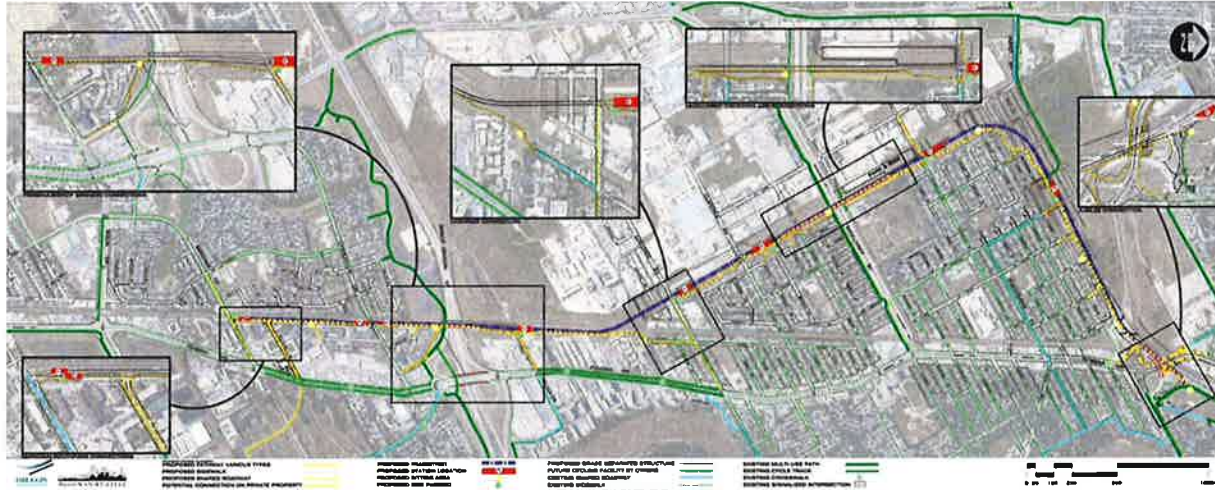
Source: Dillon Consulting Limited (2014)

- Upgrades to existing stops on the Fort Garry campus of the University of Manitoba:
  - University of Manitoba Station on Dafoe Road;
  - School of Music stop;
  - Northbound University Crescent at Matheson Road; and
  - Northbound University Crescent at Dafoe.
- Transit signal priority technology, which will enable buses to communicate with the traffic signal controllers to provide priority to rapid transit service. This technology will be implemented at the following intersections:
  - Georgina Street (near Parker Station);
  - Clarence Avenue (near Clarence Station);
  - Chevrier Boulevard (near Chevrier Station);
  - Chancellor Boulevard (near Chancellor Station);
  - Markham Drive (near Markham Station);
  - Markham Drive and Pembina Highway;
  - Southpark Drive and Pembina Highway; and
  - University Crescent (near IGF Station).



- A new Active Transportation path along the Transitway with full integration of cycling facilities at the stations. The paths will be 4.5 metres in width and will be constructed on each side of Pembina Highway. The proposed walking and cycling paths, and connections to the existing pedestrian/bicycle network along the route are illustrated in Figure 16 below.

**Figure 16: Proposed Active Transportation Paths**



Source: Dillon Consulting Limited (2014)

- City utility relocation work
- Manitoba Hydro relocation work
- CN railway line relocation work

## Land Requirements



## Development Opportunities

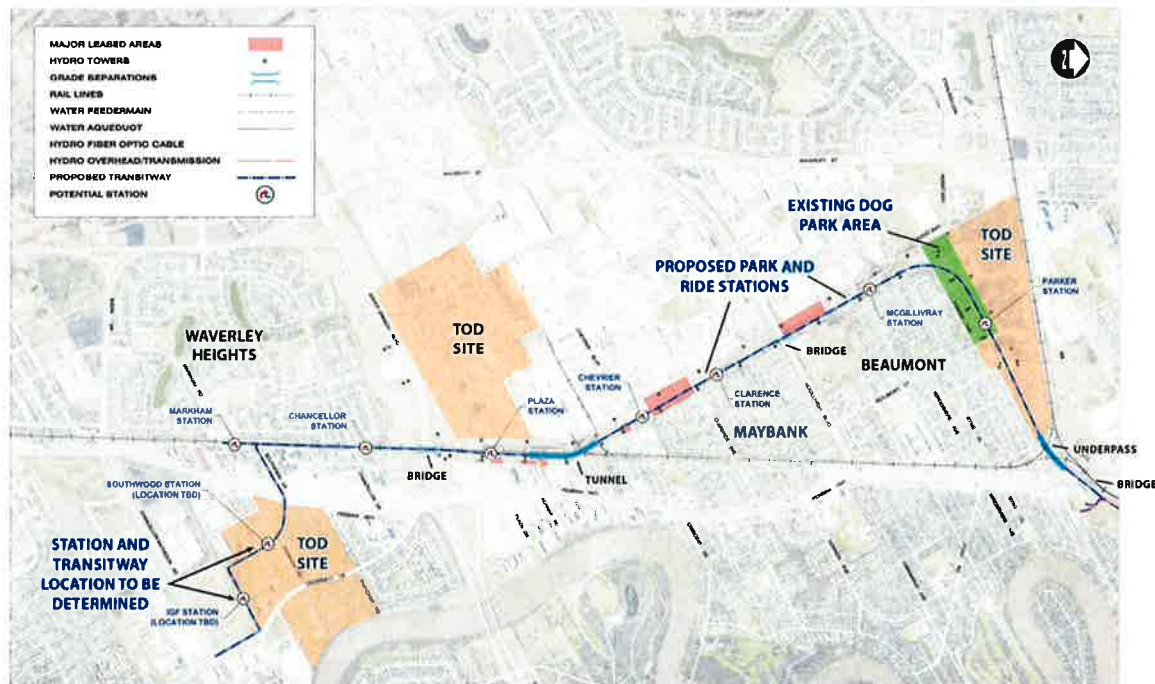
Dillon's study also examined the opportunities for TOD under the optimal alignment, noting that the characteristics of the route could accommodate a new Neighbourhood Medium Density TOD Zone of up to 50 units per net acre<sup>43</sup>. This "typology", or place type, considers the characteristics of the TOD zones and the optimal redevelopment opportunities available, as considered within Winnipeg's TOD Handbook. Specific TOD zones identified along the route include the Parker Lands, the Sugar Beet lands, the former Southwood Golf Course, the single-family residential area south of Bishop Grandin, as well as mixed use possible within the Fort Garry Business Park.

<sup>43</sup> [REDACTED] "Southwest Rapid Transit Corridor Stage 2 Alignment Study." Dillon Consulting Limited, 3 Jan. 2013.

Web.

<sup>44</sup> Ibid.

Figure 17: TOD Sites Along the Stage 2 Southwest Transitway



Source: Dillon Consulting Limited (2014)



### Future Conversion to LRT

The design specifications for the Project will require the infrastructure to be designed in a way that would allow conversion to a Light Rail Transit (“LRT”) system at a later date should such a conversion be warranted. In order to accommodate future conversion, the transitway will need to satisfy the design requirements of an LRT system, including heavier load requirements, longer station lengths, and wider turning radii. These requirements will be addressed during the procurement process through the functional design criteria specified by the City. For clarity, a conversion to LRT is not included within the scope envisioned for the Project.

### 3.2.2 Expected Benefits of the Project

The preferred alignment offers the opportunity to connect service on the Transitway to the University of Manitoba, downtown and several neighbourhoods in the southwestern and western parts of the City through a comprehensive network of rapid transit routes that provide one-seat trips for most travel to/from/within the service area, and a continuous Active Transportation Path between the southwest part of the City and the downtown.

<sup>45</sup> Ibid.

The development of the Project is expected to meet the increasing travel demands within the southwest region of the City by achieving the Expected Outcomes discussed in Section 3.1.3 above. Specifically, an exclusive right-of-way for provision of the BRT system would reduce congestion along Pembina Highway, and would thereby improve travel times for both transit passengers and motorists along the route. This would in turn improve the reliability of transit service along the corridor. The increased capacity, faster travel times and improved service reliability afforded by the rapid transit system would contribute to a trend toward increased transit ridership, which would facilitate a revitalization of downtown parking areas into higher-value real estate; and transit-oriented development along the corridor would contribute to the City's development and limit urban sprawl. Further, the shift toward public transit from private-use automobiles resulting from increased transit ridership would reduce the greenhouse gas emissions in Winnipeg.

As identified above, each of these benefits is directly in line with the key strategic objectives identified in Winnipeg's Transportation Master Plan and the City's *OurWinnipeg* 25-year strategic plan. As these documents were prepared in consultation with over 42,000 citizens, the tenets of this plan are in line with, and represent, the needs and desires of the greater Winnipeg population.

### **3.3. Options Considered in the Configuration of the Project**

As summarized in Table 1 in Section 3.2, numerous studies have been undertaken to assess the ability of a rapid transit system to adequately serve the transportation needs of the growing Winnipeg population in line with the City's planning objectives. Further, these studies have also addressed the key technical elements, such as transit technology and route alignment, which are expected to drive the optimal development of the Project. The alternative solutions that were considered for the Project are discussed below, along with a summary of the alignment study that was conducted to determine the optimal route for the Stage 2 Transitway.

#### **3.3.1 Alternative Solutions**

This section summarizes the assessment of various options for transit delivery method and outlines the City's rationale for the BRT technology as the preferred solution for this Project

##### ***Technology Selection (BRT vs. LRT)***

The Rapid Transit Task Force's "Made in Winnipeg" report evaluated the options of Bus Rapid Transit (BRT) and Light Rail Transit (LRT). The study involved a review of twenty LRT systems in the United States and three in Canada, as well as over thirty-five BRT systems in Canada, the United States, South America, Australia and England. The studies focused on the structures, capital and operating costs, passenger capacities, and key features of the implemented systems, and related these factors to the implementation of a BRT system or to various alternative LRT systems (traditional LRT, electric LRT, and diesel). In addition, the study compared BRT and LRT systems with respect to functional requirements, design features, schedule adherence, and the ability for existing infrastructure to be used to support rapid transit development. The study also involved consultation with technical experts and the general public.

The report's evaluation concluded the following<sup>46</sup>:

- Both BRT and LRT can fulfill the functional requirements of a rapid transit system providing high capacity, high performance, urban transit routes and services.
- BRT and LRT share the same key features including runningways, transit priority measures, real-time passenger information systems, centralized stations with passenger amenities, brand identity, presence and sense of permanence.
- The key features of a rapid transit system have a greater effect on system performance (speed, frequency, reliability) than the choice of vehicle (bus or train).
- Rapid transit systems with more exclusive runningways (separated from other vehicles) have the most reliability and schedule adherence.

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<sup>46</sup> "Made in Winnipeg: Rapid Transit Solution." Rapid Transit Task Force, Sept. 2005. Web. 3 Dec. 2013.



- For the Southwest Transit Corridor in particular, the complexity created by the proximity of major utilities (CN mainline and branch lines, Manitoba Hydro transmission lines and sub-stations, aqueduct, major water and sewer mains, intersecting arterial roadways) and the pattern of available capital funding require that the corridor be constructed in stages. The BRT approach (where transit vehicles can operate both on the transitway and on regular streets) enables each stage to be put into service immediately after construction. In comparison, LRT requires the complete line to be constructed before any service can be operated and any benefits realized. The BRT approach permits an earlier return on rapid transit investment than would otherwise be possible for the Southwest Corridor.

**Figure 18: Conceptual Route Network for the Southwest Transitway**



Within the corridor's catchment area, there are important service and productivity advantages that make BRT a preferred technology choice for the Southwest Transit Corridor:

- While new TODs will be built adjacent to the rapid transit stations, a significant proportion of the service area for the corridor is beyond walking distance of the Transitway stations. BRT routes can operate on a combination of the local collector street system in each neighbourhood and the transitway to provide “one-seat” travel without transfer to and from major destinations such as downtown. For rail-based systems where vehicles are “tethered” to the tracks, a feeder bus network must be utilized by passengers to transfer to and from the rapid transit line. Minimizing the need to transfer is a major service advantage that BRT offers in a catchment area of the type served by the Southwest Corridor.

- For expected future levels of demand within the catchment area, BRT can provide much more frequent service along the corridor than can an LRT system. For example, peak headways at stations would be every two to three minutes for a BRT system as compared to approximately 12 to 15 minutes for an LRT system. During off-peak periods, headways would range between 5 and 8 minutes for BRT, versus 20 to 30 minutes for LRT.
- The BRT technology can be more easily integrated with other transit initiatives implemented by the City, including on-street transit priority measures on the downtown portion of the rapid transit route path, automated bus communications systems that feed real-time passenger information channels, and the electronic fare collection system.
- The BRT approach can provide service into the heart of the downtown using the existing Graham Transit Mall as the main service spine. The operating geometry of LRT would require a less convenient routing path for passengers within the downtown.
- Because the Southwest Transitway is adjacent to Winnipeg Transit's main operating garage, the BRT's transitway can be used by any bus in the fleet to make a deadhead trip between the garage and a route terminal at the start and end of service. This provides a significant operating economy that would not be available with an LRT application.

Based on these considerations, a Bus Rapid Transit system is considered to provide the optimal delivery method that best suits current rapid transit requirements in the southwest sector of Winnipeg.

### 3.3.2 Summary of Project Feasibility

This section summarizes the results of the 2013 Dillon study which assessed the feasibility of four alignment options for the Project and concluded on the optimal route based on various decision factors.

#### *Alignment of Project*

As noted, a study was prepared by Dillon in January 2013 to examine the alignment options for the alignment of the Project. The study contemplated four options for the future alignment of the Stage 2 Transitway<sup>47</sup>:

- Concept 1A – Parker / Manitoba Hydro Lands Paralleling CN West Rail Line
- Concept 1B – Parker / Manitoba Hydro Lands Paralleling Parker Avenue
- Concept 2 – CN Letellier Subdivision
- Concept 3 – Pembina Highway Centre Median.

The study recommended a preferred alignment that best meets the City's objectives (Concept 1B) and City Council approved this alignment in March 2013.

Due to the extensive property, dislocation, and reconstruction costs, as well as significant safety concerns associated with Concept 3, this option was determined to be not viable and was excluded in the evaluation process. In considering both BRT and LRT technologies, Concepts 1A and 1B were seen as being more suited to BRT and Concept 2 was seen as being more suited to LRT based on transit service design, transferring requirements, flexibility of the system, walking distance to the stations, and development density<sup>48</sup>. However, each alternative was considered to be compatible with either BRT or LRT. The alignment decision-making included consideration of technical feasibility, capital cost estimates, and development impacts of the various alignment alternatives. In addition to technical analysis, the study included public open houses to invite further feedback from stakeholders. Based on the review and evaluation performed, the study found Concept 1B (Parker / Manitoba Hydro Lands Paralleling Parker Avenue) to be the best alignment for the Project, provided the City maintains a high level of transit service on Pembina Highway<sup>49</sup> (Concept 1B is the route alignment provided in Figure 9).

<sup>47</sup> [REDACTED] "Southwest Rapid Transit Corridor Stage 2 Alignment Study." Dillon Consulting Limited, 3 Jan. 2013.

Web.

<sup>48</sup> Ibid.

<sup>49</sup> Ibid.

The preferred route alignment identified in Figure 9 has the following characteristics:

- Does not cross any rivers or designated wetlands<sup>50</sup>;
- Comprises a new transitway which is not part of a new subdivision (greenfield); and
- Does not involve the acquisition of any lands that have outstanding claims, include those by First Nations communities.

As such, the alignment does not require any further approvals with respect to the factors identified above.

### 3.4. Investment Decision

A summary of the key rationale for undertaking the Project, as well as the current and anticipated political and financial commitments in support of the Project, are included below.

#### 3.4.1 Rationale for Pursuit of the Project

As identified above, the need for the Project is being driven by a number of strategic factors:

- **Population growth** – high levels of growth within the City, particularly in the southwest quadrant, have expanded the need for efficient and accessible transit;
- **Traffic congestion** – high levels of development and population growth in the City's southwest quadrant have increased traffic loads on Pembina Highway, contributing to congestion and reducing the efficiency of traffic flow along the route;
- **Transit schedule reliability** – high levels of congestion along Pembina Highway have impacted the ability of the City to maintain a reliable Transit service schedule;
- **Economic development** – opportunities for transit-oriented development and downtown revitalization have underscored the benefit of implementing a rapid transit system; and
- **Environmental sustainability** – the increased efficiency and modal split achievable through the implementation of a rapid transit system can reduce greenhouse gas emissions from the City's urban transportation system.

Since the 1970's, the City has clearly identified the need for a rapid transit infrastructure. This need has been articulated most recently in *OurWinnipeg*, the City's long-term strategic plan, and the Transportation Master Plan.

#### 3.4.2 Political and Financial Commitments


As identified in the TMP, the concept of a rapid transit system for Winnipeg has been contemplated for more than four decades, and has been identified in some form in virtually all official City development plans since the 1970's. Thus, there has been a significant amount of political impetus to support the system's development. Historically, the biggest barrier to the Project's development is the inability for funding to be secured from all three levels of government. At this time, the City and Province have committed significant funding to the Project as summarized below, with the balance of funds requested from the federal government through PPP Canada, as supported by this Business Case.

[REDACTED]

[REDACTED]

<sup>50</sup> Refers to designated wetlands as identified by the official Manitoba Network of Protected Areas. The Parker Lands are not included in this network.

<sup>51</sup> "2014 Preliminary Budget: Operating and Capital." City of Winnipeg, 29 Nov. 2013. Web. 18 Dec. 2013.



To ensure that the City's future P3 commitments do not overly restrict future Council's decision making ability in future Capital Budgets, the City has set a self-imposed limit ("**P3 cap**") on future P3 payments. On December 15, 2009, Council adopted that the annual lease/service payments and debt serving costs for tax-supported P3 projects be funded annually up to a maximum of 30% of the cash to capital (i.e., property taxes transferred to capital) and federal gas tax. The City is currently reviewing whether Transit activities are best classified as a tax supported activity or a utility. If best classified as a utility, no adjustment of the P3 cap would be required. If best classified as a tax supported activity, the P3 cap would have to be raised by Council to accommodate the Project. This approval will be sought from Council in conjunction with this Business Case in April 2014.

### ***Provincial Funding***

On November 19, 2013 the Province of Manitoba announced that it will contribute \$225 million to match the City's capital funding commitment of \$225 million related to the Project. Premier Selinger supported the development of the Project by making reference to the growing population of Winnipeg and stating that "the hallmark of any thriving big city is a modern, efficient public transit system... building rapid transit will mean good jobs to get the work done and it will connect families with opportunities across this great city, well into the future<sup>52</sup>." The Province further highlighted its support of the Project in its *Five-Year Plan to Build a Stronger Manitoba*, which outlines the Province's \$5.5 billion, five-year plan to address Manitoba's core infrastructure priorities<sup>53</sup>.

Following these announcements, the Province has provided a commitment letter dated March 6, 2014 (included in Appendix A) to the City confirming its matching investment of up to \$225 million to be provided in support of the Project through the 2014 Provincial Budget. As stated in the letter, the Province will commit \$6 million towards the Project in 2014, building on the \$5 million commitment made in 2013. Assumptions in respect of the Province's financial commitment as part of the City's overall funding plan for the Project are detailed further in Section 8:.

### ***Federal Funding***

The City is considering a P3 with a private-sector partner to Design-Build-Finance-Maintain the infrastructure under a 30 year contract term, and has applied to PPP Canada for the maximum of 25% of eligible Project costs ("Eligible Project Capital Costs") to assist the City in facilitating the required level of funding to deliver the Project.

## **3.5. Summary**

As illustrated above, the Project will play an instrumental role in the development of a transportation infrastructure that can appropriately accommodate the needs of Winnipeg's growing population. Through numerous studies conducted over many years, the City has demonstrated the need for – and a commitment to – developing a rapid transit infrastructure, specifically in the southwest quadrant of Winnipeg. More recent work relating to the Project has resulted in the determination of an optimal route alignment and commitment of funds by the Municipal and Provincial governments that, when combined with the requested funds through PPP Canada, would permit the successful delivery of the Project.

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<sup>52</sup> "Province, City Announce Funding to Extend Rapid Transit into Southwest Winnipeg." News Releases. Province of Manitoba, 19 Nov. 2013. Web.

<sup>53</sup> "The Five-Year Plan to Build a Stronger Manitoba." Province of Manitoba, n.d. Web. 11 Mar. 2014.



# Section 4: Procurement Options

This section defines the City's decision making methodology towards short-listing a preferred P3 delivery model ("**Project Delivery Models**"). The methodology identifies the City's procurement objectives and constraints which are utilized to establish a range of Project Delivery Models that are described in detail in this section and form the basis for the Qualitative Analysis presented in Section 5:

## 4.1. Decision Making Methodology

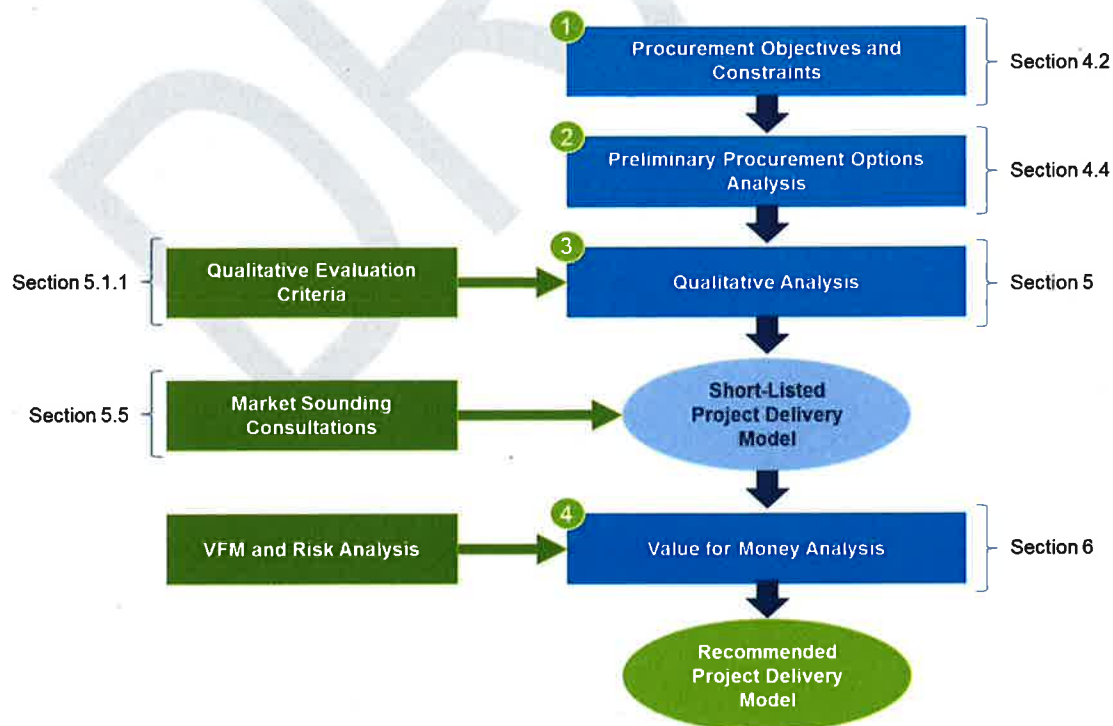
Procurement of the Project Delivery Models refers to the manner in which the public sector contracts with a Private Partner to deliver an infrastructure project. There exists a range of potential Project Delivery Models from conventional public sector-led design, tender, construct and operate models to P3s involving varying levels of responsibilities and risks allocated between the public and private sector.

One of the main objectives of this Business Case is to determine the preferred Project Delivery Model that:

- Appropriately allocates the risks to the party best able to manage them;
- Is commercially viable; and
- Results in Value for Money for the City as the Project sponsor.

Figure 19 below illustrates the methodology utilized to select the recommended Project Delivery Model for the Project.

**Figure 19: Project Delivery Option Assessment Process**



The process entails identifying as a first step, the City's procurement objectives in line with the stated Project goals, objectives and constraints to ensure that the ultimate recommendation will meet the City's requirements. The second step in the process is to describe each of the considered Project Delivery Models and identify how each of the models would be applicable to the Project and the roles and responsibilities therein.

The third step is to undertake a qualitative assessment of the Project Delivery Models to short-list the options for further consideration and analysis. This assessment is undertaken based on the City's qualitative evaluation criteria against which each of the Project Delivery Models are evaluated to identify the short-listed Project Delivery Model(s). The qualitative assessment will also reflect feedback gathered through the market sounding consultations ("Market Consultations") process with regard to the likely level of private sector interest in the short-listed options.

The short-listed Project Delivery Model(s) is then put to the final test through a quantitative assessment comprising of a Value for Money analysis which will confirm whether the model(s) generates a positive value for money relative to the traditional delivery model. The optimal Project Delivery Model will then be recommended as the one that drives the highest value for money, consistent with the Project's procurement objectives and constraints.

## 4.2. Procurement Objectives and Constraints

The procurement objectives and constraints under consideration by the City while evaluating the range of Project Delivery Models are described below.

### 4.2.1 Procurement Objectives

As part of the process outlined above, the City has identified the following key procurement objectives for the Project, as noted in Table 2 below.

Table 2: City's Procurement Objectives

Primary Objectives	Description
<b>Cost and Schedule Certainty</b>	There should be strong incentives in place for the construction to be completed on time and on budget, and the party responsible for construction should bear the consequences of delay and/or cost overruns.
<b>Risk Transfer</b>	The City wishes to transfer and secure appropriate risks, such as design and construction risks as well as risks during the Maintenance Period, to the private sector.
<b>Performance Security</b>	The private sector's performance during the construction and maintenance periods should be assured through a liquid form of performance security which can easily be leveraged by the City if need be.
<b>Private Sector Market Interest, Capacity, and Expertise</b>	There should be significant interest from potential private sector market participants in the Project which would promote fair and transparent competition amongst the potential participants with the required capacity, expertise, and experience to undertake the Project.
<b>Strategic Alignment</b>	There should be an appropriate alignment with the City's program delivery strategies and policies geared towards new large scale infrastructure projects.
<b>Alignment of Construction, Maintenance and Lifecycle Costs</b>	The City wishes to engage a Private Partner for a long-term basis on the Project and hence there should be incentives for the Private Partner responsible for the annual maintenance and lifecycle costs to make appropriate considerations on design and construction versus long-term maintenance to optimize value.

## 4.2.2 Procurement Constraints for the City

It is important to identify any constraints that could restrict the City from pursuing certain Project Delivery Models. These constraints are described below:

### 1. Public Ownership of the Southwest Transitway

Considering that the Project provides an essential public service to the residents of the City, it is essential that the City maintain ownership and control. This objective aligns with the existing operational Stage 1 of the Southwest Transitway, which is owned by the City, which will ensure continuity of the entire Transitway. In addition, City will also receive funding from the Province of Manitoba for the Project and has also applied for Government of Canada funding support through the P3 Canada Fund, both of which would require public ownership as conditions precedents. As a result, the City will own and control the Project.

### 2. City Retains Bus Operations on the Transitway

The “Operations” components for the various Project Delivery Models would not include the transfer of operational elements associated with the provision of public transit services as this would be problematic in that the Transitway represents an integrated element of the overall transit system. Transit buses operating on the corridor will not be limited to operating on the corridor, and will continue on into mixed traffic and seamlessly transition from Rapid Transit to regular transit service. As such, limiting private sector operations to the Transitway is not efficient from the City’s operational and service delivery perspective. Therefore, the City will maintain the operations as the proposed system will form part of integrated bus transit system.

The City has considered the following factors regarding the inclusion of public transit operations within the Project:

- Inclusion of bus operations in the Private Partner’s scope may make the Project potentially more attractive to a limited number of potential private sector entities who are engaged in transit operations, however, would make the Project unattractive to most private sector players active in the P3 market in Canada today (this was further evidenced during the Market Consultations in Section 5.5).
- Private Partners would need to obtain, operate, house, and maintain a relatively small fleet of transit vehicles, which would not be cost effective.
- Winnipeg Transit would have to give up a significant degree of planning and operational control over Rapid Transit (“RT”) service, eliminating the existing efficiencies resulting from interlining RT routes with non-RT routes.
- Winnipeg Transit would have to oversee both its own system and the Private Partner’s system, in order to ensure both systems operated seamlessly from a passenger perspective. There is significant risk inherent in ensuring that service quality would not be negatively impacted. This coordination would require significant internal resources.
- The Private Partner would need to be agile to make changes to service as required/dictated by Winnipeg Transit, including the provision of additional vehicles, adding risk and complexity to the coordination of operations.
- Latent defects of the existing bus fleet would need to be managed and appropriately allocated, potentially adding cost if retained by the Private Partner.
- The maintenance of the buses would be linked to a maintenance facility that would have to be built for the buses transferred to the private sector; or a new facility would have to be built. Neither of these options is economically feasible for the City.

Hence, the City considers the disadvantages of including the purchase, operations, and maintenance of the buses as part of the Project significantly outweigh any potential advantages. Therefore the “Operations” component of the P3 Project Delivery Models would only include the routine maintenance elements of the Project, including but not limited to, routine maintenance of the civil infrastructure.

### 4.3. P3 Screening

The City is planning to undertake a P3 approach for the delivery of the Project given the alignment of its objectives with the expected benefits that a P3 model may bring. In particular, the Project's significant capital size and complex construction coordination and related risks make it well suited to a P3 model under an appropriate risk allocation structure. The P3 model's transfer of construction delay and cost risk in addition to long-term maintenance and lifecycle risks are recognized as significant advantages to the City for this Project while also providing the City with sufficient security coverage against construction or Maintenance Period performance. In addition, given the City's future strategic direction for transit and transportation in the City, a P3 approach would provide the City with more certainty on completion of the Project within their timelines while also appealing to the right Private Partners with the experience and expertise to undertake a project of such size and scope.

Some potential challenges of the Project include construction staging area limitations, traffic management requirements, railway infrastructure and utility realignment and related third party interface along the Project corridor. Therefore, there is potentially significant benefit in combining the design and construction for the Project with a single entity responsible for the coordination and interface of all such Project activities. Furthermore, an opportunity for innovation exists as it pertains to construction of the civil components as well as managing construction scheduling and coordination. Innovation and alternative approaches to balancing construction and lifecycle costs may also be realized through a P3 approach.

The City is a municipal leader in Canada in using the P3 model for procuring major capital infrastructure and has previously procured three transportation projects using P3 models as noted earlier:

- **Charleswood Bridge (DBFM):** The Charleswood Bridge was delivered in the 1990s and was one of the first P3 projects in Canada.
- **Disraeli Bridges (DBFM) and Chief Peguis Trail Extension (DBFM):** More recently, the City delivered two major road projects using a P3 approach. The Disraeli Bridges project was able to harness private sector innovation to avoid a lengthy closure of a main artery into Winnipeg's downtown within the City's budget. The Chief Peguis Trail Extension completed a section of Winnipeg's inner ring-road approximately one year ahead of schedule.

This Project would be the largest P3 undertaken by the City of Winnipeg and would move beyond roadways and bridges into the public transit sector, a key strategic driver to support future growth in the City.

### 4.4. Preliminary Procurement Options Analysis

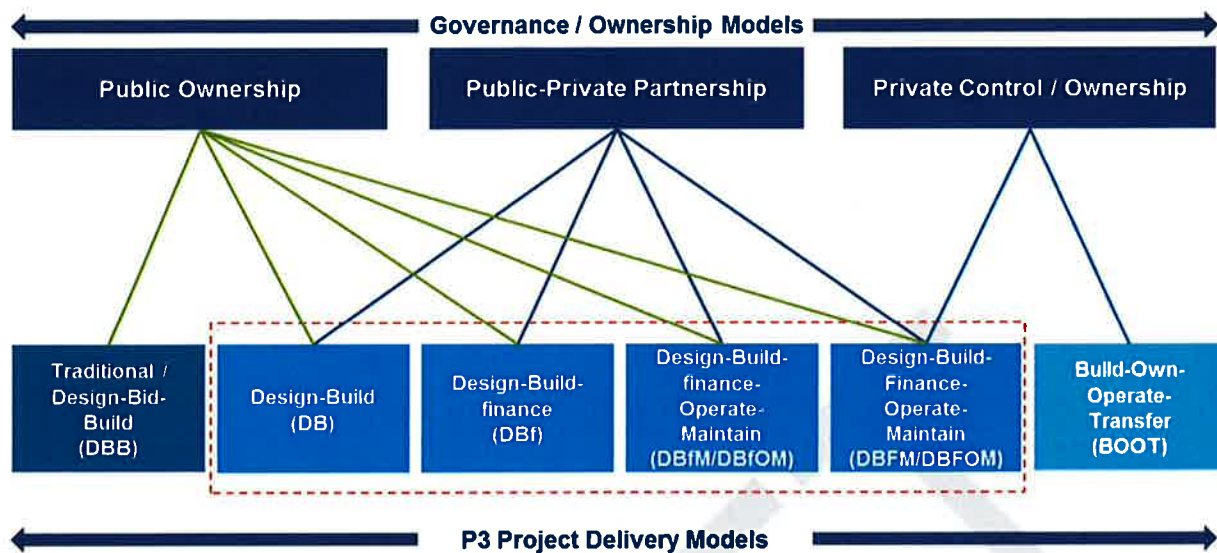
This section describes, in general terms, the range of Project Delivery Models considered by the City, as set out in Figure 20. At a high level, delivery of an infrastructure project includes design, construction, maintenance and/or operation of the asset(s) as well as financing of construction (short-term and long-term financing). Project Delivery Models generally differ from one another in terms of:

- Allocation of responsibility for design, construction and maintenance (including lifecycle); and,
- The timing and method of paying the Private Partner, and whether the selected timing and method of payment is deferred thereby requiring the private sector to obtain financing.

The models provided in Figure 20 are based on market knowledge, experience, as well as the City's procurement objectives and constraints. Generally speaking, most infrastructure delivery models in Canada fall in the middle of the spectrum (i.e., public-private partnerships) and stop short of full privatization. A P3 arrangement allows the public sector to retain public ownership of the infrastructure asset and also transfers risks to the private sector that it does not wish to or is unable to manage. Each Project Delivery Model differs in terms of the degree of risk and responsibility delegated to the private sector, duration of private sector involvement, and method of securing contractor performance.



Figure 20: Project Delivery Models\*



Project Delivery Models are defined via contract terms related to roles / responsibilities, prescriptive or non-prescriptive specification, payment mechanism, and form of security

\* As the Project does not involve operations of the buses that use the Transitway, the Business Case does not examine Project Delivery Models that involve private sector bus operations on the Transitway.

The discussion of Project Delivery Models frequently refers to the concept of “securing performance” or “performance security”. There are a number of security mechanisms, as listed below, which the City may employ. In looking at some of the more common forms of security, the key consideration underpinning the analysis as to which form to use, is the liquidity of each (i.e. the ease with which the City can enforce the security in case of poor performance without reliance on protracted court processes and/or arbitration). Methods of performance security are:

- **Performance Bonds:** Bonding is considered less liquid than other securities since cashing a bond requires considerable time and effort and the process may be contested by the surety company (i.e. the bonding company).
- **Letters of Credit:** Letters of credit are more liquid than performance bonds and backed by the issuing banks guarantee providing the City with additional comfort on ability to pay. However letters of credit are typically more costly than bonding and have an impact on the Private Partner's balance sheet (i.e. it is recognized as a contingent liability).
- **Performance Based Payment:** This is considered a more liquid form of performance security than a letter of credit or a Performance Bond as the City can hold back payment in case of poor performance by the Private Partner. Generally, payment for performance is considered to be more comprehensive when the Private Partner has private capital at risk and must perform in order to repay debt and equity holders<sup>54</sup>. The other attractive feature of this security is that the City is in full control of making performance payments and does not risk having to deal with a surety or a bank for enforcement.

#### 4.4.1 Design-Bid-Build – Traditional Public Sector Procurement Approach

Through a public sector approach, the City would typically procure similar capital projects through a Design-Bid-Build Project Delivery Model.

**Figure 21: Design-Bid-Build Structure**

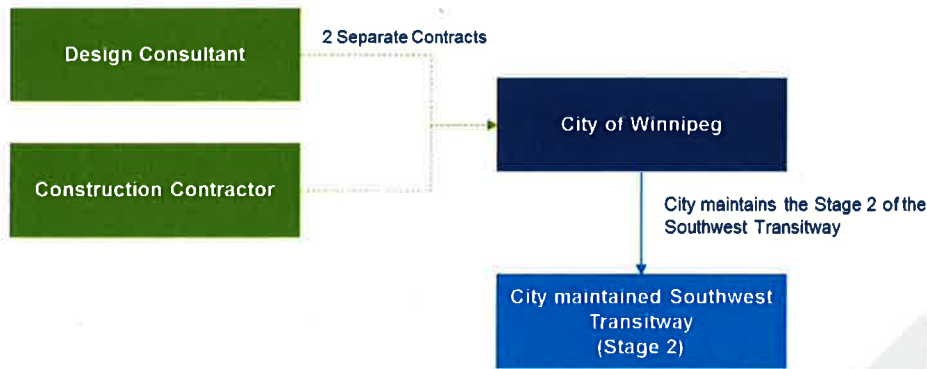


Table 3 illustrates the roles and responsibilities of the City and the Private Partners under the DBB structure.

**Table 3: Roles & Responsibilities under DBB Project Delivery Model**

Role	City of Winnipeg	Private Partner
<b>Approvals</b>		
• Environmental Assessment (EA) approvals	✓	
• Manitoba Hydro approvals	✓	
• CN approvals	✓	
• Other approvals	✓	
<b>Design</b>		
• Develop Functional Design <sup>1</sup>	Technical Advisor	
• Develop Detailed Design <sup>2</sup>	Technical Advisor	
<b>Design and Construction Co-ordination</b>	✓	
<b>Construction</b>	Contractor	
<b>Maintenance</b>		
• Maintain the Project over the long-term, including routine maintenance of civil infrastructure and summer/winter operations	✓	
• Comply with performance specifications / requirements	✓	
• Meet and exceed all environmental and health & safety requirements	✓	
• Comply with hand-back requirements	N/A	
• Long-term lifecycle maintenance (major capital refurbishment of civil infrastructure, including pavement and structures)	✓	
<b>Financing</b>		
• Short-Term Private Financing (During Construction)	N/A	
• Long-Term Private Financing (During Maintenance Period)	N/A	
• Long-Term Public Financing	✓	
<b>Ownership of the Project (Maintenance Period and End of Term)</b>	✓	

**Notes:**

1) A Functional Design Study for the Project is currently near completion. The Functional Design Study will typically include the following components: alignment, Transitway entrance / exit locations, station locations, park & ride locations, structures required, active transportation path requirements, impact on utilities, property requirements, and initial capital cost estimate.

2) Detailed Design would typically include: final Transitway alignment and grades, final design, type and elevations of bridge structures/tunnels, final design of required land drainage works, fit out of stations, landscaping, active transportation alignment and grades, aesthetics, signage, traffic signalling, and passenger information systems.

Under a DBB, the City leads the design and construction of the infrastructure. The City takes responsibility for the procurement of all design work through a consulting engineering firm, and tenders the construction works to one or more private sector general construction firms. The City assumes responsibility for the design and would play a strong construction management and coordination role. Payment for construction is made through progress or milestone payments to construction contractors during the construction period. The City would likely fund progress/milestone payment during construction through traditional long-term public debenture financing. Due to this method of payment, construction contractors do not have to obtain significant amounts of private financing in order to carry out construction. Performance is secured through less liquid methods including performance bonding and limited construction warranties. At completion, the City leads the testing and commissioning process.

Following completion, the infrastructure is turned over to the City which then assumes full responsibility for maintenance of the Transitway. Although budgeting and payment for the maintenance period may be carried out in any manner chosen by the City, typically annual operating budgets are funded based on the annual budgeting process which results in a high risk of deferred maintenance which in turn causes accelerated depreciation (i.e., useful life does not meet expected design life). Under a DBB, the City typically owns the infrastructure at all times.

Under a “typical” DBB model (i.e. as defined for purposes of the VFM assessment), the City is assumed to be responsible for all maintenance risk.

**The DBB is retained as a theoretical Public Sector Comparator.**

### 4.4.2 Design-Build-finance

Under a Design-Build-finance (“**DBf**”)<sup>55</sup> model, design and all Engineering, Procurement, and Construction (“**EPC**”) roles are integrated with a single private sector design-build contractor (Project Co / Private Partner). Therefore, design and construction risks are shifted to the Private Partner.

**Figure 22: DBf Structure**

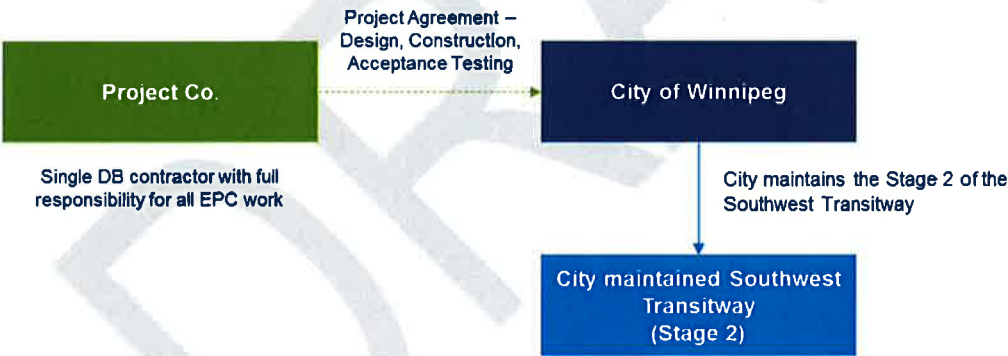


Table 4 illustrates the roles and responsibilities of the City and the Private Partner under the DBf structure.

**Table 4: Roles & Responsibilities under DBf Project Delivery Model**

Role	City of Winnipeg	Private Partner
<b>Approvals</b>		
• Environmental Assessment (EA) approvals	✓	

<sup>55</sup> An “f” used within the description of the Project Delivery Models denotes that short-term (construction) private financing would be used by the Project. Where the “F” is used to describe the Project Delivery Model, it denotes that long-term private financing that extends into the O&M term is being used.

Role	City of Winnipeg	Private Partner
• Manitoba Hydro approvals	✓	✓
• CN approvals	✓	✓
• Other approvals	✓	
<b>Design</b>		
• Develop Functional Design <sup>1</sup>	Technical Advisor	
• Develop Detailed Design <sup>2</sup>		✓
<b>Design and Construction Co-ordination</b>		✓
<b>Construction</b>		✓
<b>Maintenance</b>		
• Maintain the Project over the long-term, including routine maintenance of civil infrastructure and summer/winter operations	✓	
• Comply with performance specifications / requirements	✓	
• Meet and exceed all environmental and health & safety requirements	✓	
• Comply with hand-back requirements	N/A	
• Long-term lifecycle maintenance (major capital refurbishment of civil infrastructure, including pavement and structures)	✓	
<b>Financing</b>		
• Short-Term Private Financing (During Construction)		✓
• Long-Term Private Financing (During Maintenance Period)		N/A
• Long-Term Public Financing	✓	
<b>Ownership of the Project (Maintenance Period and End of Term)</b>	✓	

**Notes:**

1) A Functional Design Study for the Project is currently near completion. The Functional Design Study will typically include the following components: alignment, Transitway entrance / exit locations, station locations, park & ride locations, structures required, active transportation path requirements, impact on utilities, property requirements, and initial capital cost estimate.

2) Detailed Design would typically include: final Transitway alignment and grades, final design, type and elevations of bridge structures/tunnels, final design of required land drainage works, fit out of stations, landscaping, active transportation alignment and grades, aesthetics, signage, traffic signalling, and passenger information systems.

As with the DBB, the City leads the Functional Design Study component of the design phase. The Functional Design Study will take design to approximately 30% of the total requirement. However, the Private Partner takes responsibility for the detailed design and construction of the Project.

The DBf model typically does not provide any payment to Project Co until substantial completion is achieved (an alternative option would be milestone payments during the construction period). This is considered a form of performance-based payment and thus provides robust performance security – Project Co is not paid until it executes on its obligation to complete the infrastructure in compliance with specifications (i.e., payment on performance). Project Co must obtain financing from private sector lenders to bridge the construction period. This structure strongly incentivizes Project Co to complete construction on time and in conformance with specifications in order to receive payment and repay its lenders.

Given that under a “typical” DBf contract no payments are made to the Private Partner until substantial completion, the construction is financed through a combination of debt either on a non-recourse project finance basis or a corporate finance term loan / credit facility (financed on the Private Partner’s balance sheet). This type of finance typically carries significant oversight and due diligence by the banks both upfront and throughout the construction period. From the City’s perspective, the lender provides additional oversight and discipline over Private Partner. Further, the lender would also ask for security and diligence which tends to limit events like cost overruns, delays by the Private Partner etc. However, this oversight



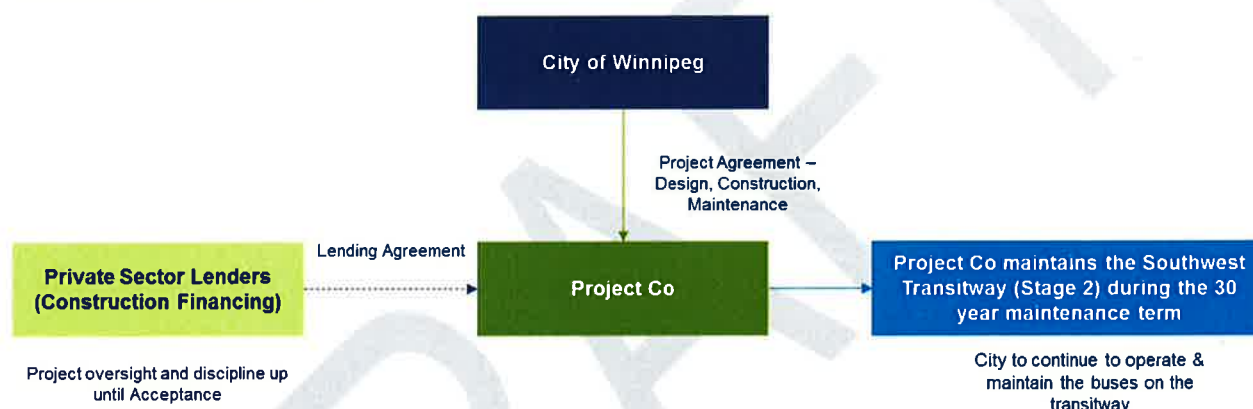
by lenders would only be available until construction is complete and the Transitway is accepted as the banks would then be repaid at substantial completion.

As with the DBB model, the infrastructure is turned over to the City following completion. The City would assume full responsibility for maintenance of the Transitway, usually funding the maintenance period costs through the annual budgeting process. Similar considerations as with DBB regarding the potential for deferred maintenance apply. Project Co may provide limited warranties following final completion, but generally does not have long-term responsibility for the quality of design and construction. Under a DBf, the City would own the infrastructure at all times.

#### 4.4.3 Design-Build-finance-Maintain / Design-Build-finance-Operate-Maintain

As with the DBf model, under the Design-Build-finance-Maintain (“**DBfM**”) and Design-Build-finance-Operate-Maintain (“**DBfOM**”) model, a single Private Partner has the final design and EPC responsibilities and is required to raise private financing to fund the construction costs with payment from the City only received upon substantial completion. The key difference in this model relative to the DBf is that maintenance responsibilities are also included as part of the contractual obligations.

Figure 23: DBfM / DBfOM Structure



The table below illustrates the roles and responsibilities of the City and the Private Partner under the DBfM / DBfOM structure.

Table 5: Roles & Responsibilities under DBfM / DBfOM Project Delivery Model

Role	City of Winnipeg	Private Partner
<b>Approvals</b>		
• Environmental Assessment (EA) approvals	✓	
• Manitoba Hydro approvals	✓	✓
• CN approvals	✓	✓
• Other approvals	✓	
<b>Design</b>		
• Develop Functional Design <sup>1</sup>	Technical Advisor	
• Develop Detailed Design <sup>2</sup>		✓
<b>Design and Construction Co-ordination</b>		
		✓
<b>Construction</b>		
		✓
<b>Maintenance</b>		
• Maintain the Project over the long-term, including routine maintenance of civil infrastructure and summer/winter operations		✓

Role	City of Winnipeg	Private Partner
• Comply with performance specifications / requirements		✓
• Meet and exceed all environmental and health & safety requirements		✓
• Comply with hand-back requirements		✓
• Long-term lifecycle maintenance (major capital refurbishment of civil infrastructure, including pavement and structures)	✓	
<b>Financing</b>		
• Short-Term Private Financing (During Construction)		✓
• Long-Term Private Financing (During Maintenance Period)		N/A
• Long-Term Public Financing	✓	
<b>Ownership of the Project (Maintenance Period and End of Term)</b>	✓	

Notes:

1) A Functional Design Study for the Project is currently near completion. The Functional Design Study will typically include the following components: alignment, Transitway entrance / exit locations, station locations, park & ride locations, structures required, active transportation path requirements, impact on utilities, property requirements, and initial capital cost estimate.

2) Detailed Design would typically include: final Transitway alignment and grades, final design, type and elevations of bridge structures/tunnels, final design of required land drainage works, fit out of stations, landscaping, active transportation alignment and grades, aesthetics, signage, traffic signalling, and passenger information systems.

The City would provide capital and maintenance funding, as required, within the contractual agreement with the Private Partner. The Private Partner would have strong incentives to complete construction on time and in accordance with specifications in order to receive payment and repay lenders (for financing of all construction obligations up to substantial performance). Performance would be secured through the performance based payment approach. A variant DBfM / DBfOM structure would involve milestone payments to the Private Partner during construction, reducing construction financing but also reducing incentives for on-time completion and requiring other forms of performance security such as bonding. The City would likely fund the completion payment (and/or milestone payments) during construction through long-term financing by traditional public debenture.

Further, since the Private Partner is responsible for maintaining the Project, this should result in more care being taken during the design-build phase and potentially result in a higher quality asset.

Under all forms of DBfM / DBfOM, the Private Partner would be responsible for regular and rehabilitative maintenance of the Project including routine maintenance of civil infrastructure and summer/winter operations, for a period of 30 years in exchange for an annual maintenance fee. During this Maintenance Period, the Private Partner would have to comply with specifications developed by the City. The Private Partner would be responsible for ensuring that the civil infrastructure and other assets that are constructed meet the performance specifications set out by Winnipeg Transit (in the Project Agreement). Payments would be subject to a payment mechanism which would apply deductions (payment adjustments) for poor maintenance (as measured against the specifications). However, Private Partner would have no private capital at risk during the maintenance period (since all construction costs have been repaid) and therefore the City would have to rely on more limited and less liquid methods of performance security such as letters of credit and performance bonds.

At the end of contract term for the Project, the Private Partner would be responsible for complying with hand-back provisions (as set out in the Project Agreement) in order to return the Southwest Transitway to the City (Stage 1 and Stage 2). A series of condition assessments would be required prior to hand-back and the City will have the ability to hold back payments where deficiencies are identified and appropriate Private Partner remedial plans are not put in place to the City's satisfaction. Under this option, the public sector maintains ownership of the infrastructure at all times.

#### 4.4.4 Design-Build-Finance-Maintain / Design-Build-Finance-Operate-Maintain

As with the DBf and DBfM / DBfOM models, under the Design-Build-Finance-Maintain or Design-Build-Finance-Operate-Maintain (“**DBFOM**”) model, the final design, construction, and long-term maintenance responsibilities are integrated with a single Private Partner (Project Co). The Private Partner is not paid for construction until substantial completion (resulting in a requirement to source private sector financing) or is paid through milestone / progress payments, and generally assumes significant design and construction risks. The Private Partner has strong incentives to complete construction on time and in accordance with specifications in order to receive payment and repay lenders.

The key distinction between the DBFM / DBFOM model and the DBfM / DBfOM model is significant amount of private capital (debt and equity) that is to be repaid by the City over the remaining term of the Project. This private capital is at risk as part of the performance-based payment and is the most significant and highly liquid form of security. The security provided through the private capital at risk will be an order of magnitude greater than the limited letter of credit security provided as part of the DBfM / DBfOM.

Figure 24: DBFM / DBFOM Structure

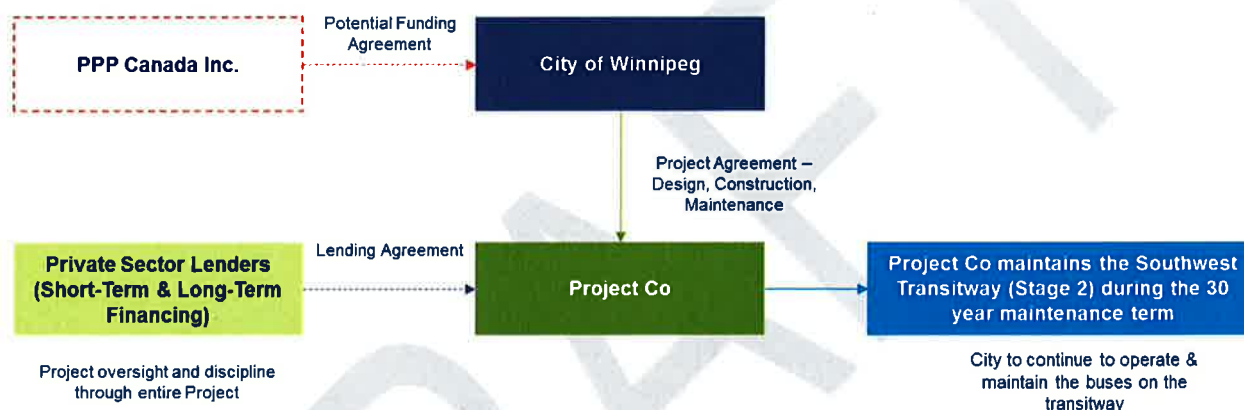


Table 6 illustrates the roles and responsibilities of the City and the Private Partner under the DBFM / DBFOM structure.

Table 6: Roles & Responsibilities under DBFM / DBFOM Project Delivery Model

Role	City of Winnipeg	Private Partner
<b>Approvals</b>		
• Environmental Assessment (EA) approvals	✓	
• Manitoba Hydro approvals	✓	✓
• CN approvals	✓	✓
• Other approvals	✓	
<b>Design</b>		
• Develop Functional Design <sup>1</sup>	<b>Technical Advisor</b>	
• Develop Detailed Design <sup>2</sup>		✓
<b>Design and Construction Co-ordination</b>		
		✓
<b>Construction</b>		
		✓
<b>Maintenance</b>		
• Maintain the Project over the long-term, including routine maintenance of civil infrastructure and summer/winter operations		✓

Role	City of Winnipeg	Private Partner
<ul style="list-style-type: none"> <li>Comply with performance specifications / requirements</li> </ul>		✓
<ul style="list-style-type: none"> <li>Meet and exceed all environmental and health &amp; safety requirements</li> </ul>		✓
<ul style="list-style-type: none"> <li>Comply with hand-back requirements</li> </ul>		✓
<ul style="list-style-type: none"> <li>Long-term lifecycle maintenance (major capital refurbishment of civil infrastructure, including pavement and structures)</li> </ul>	✓	
<b>Financing</b>		
<ul style="list-style-type: none"> <li>Short-Term Private Financing (During Construction)</li> </ul>		✓
<ul style="list-style-type: none"> <li>Long-Term Private Financing (During Maintenance Period)</li> </ul>		✓
<ul style="list-style-type: none"> <li>Long-Term Public Financing</li> </ul>	✓	
<b>Ownership of the Project (Maintenance Period and End of Term)</b>	✓	

Notes:

1) A Functional Design Study for the Project is currently near completion. The Functional Design Study will typically include the following components: alignment, Transitway entrance / exit locations, station locations, park & ride locations, structures required, active transportation path requirements, impact on utilities, property requirements, and initial capital cost estimate.

2) Detailed Design would typically include: final Transitway alignment and grades, final design, type and elevations of bridge structures/tunnels, final design of required land drainage works, fit out of stations, landscaping, active transportation alignment and grades, aesthetics, signage, traffic signalling, and passenger information systems.

Under this model, the Private Partner will be responsible for the overall construction of the bid design and the City would have to work with the Private Partner to complete all required approvals, such as the EA, Manitoba Hydro, and CN approvals, as required.

The City would likely fund the substantial completion payment through a contribution from the Province of Manitoba. The City may also fund part of the substantial completion payment through funding received from the P3 Canada Fund (up to 25% of Eligible Project Capital Costs), if the Project is approved by PPP Canada.

At the end of construction and commissioning, the Private Partner would be responsible for annual routine maintenance and periodic major lifecycle renewal over the term of the contract (30 year Maintenance Period) and would be paid monthly based on their bid annual maintenance costs and periodic lifecycle costs, adjusted for inflation, plus a capital payment amortized over the term for recovery of capital (for the long-term financing). As with the DBfM / DBfOM model, the Private Partner would be responsible for ensuring that the civil infrastructure and other assets that are constructed meet the performance specifications set out by Winnipeg Transit.

The Private Partner would have debt and equity capital at risk over the length of the contract term. Payments would be subject to a payment mechanism which would apply deductions for poor performance (payment adjustments), as measured against the output specifications. Since repayment of this private capital would be at risk, the Private Partner would have very strong incentives to ensure the long-term quality of the infrastructure and maintenance services.

The combination of gradual repayment of capital and performance-based payment would be the most robust form of performance security. It would be difficult for the Private Partner to abandon its contractual obligations since it would be obligated to continue to perform in order to repay its debt and equity investors. This output-based approach would help ensure that maintenance would not be deferred. The payment mechanism would be set out in the Project Agreement.

The Private Partner would have to comply with hand-back requirements at the end of the term, as stipulated in the Project Agreement. A series of condition assessments would be required prior to hand-back and the City will have the ability to hold back payments where deficiencies are identified and appropriate Private Partner remedial plans are not put in place to the City's satisfaction. As with the other Project Delivery Models, the City would own the infrastructure at all times.



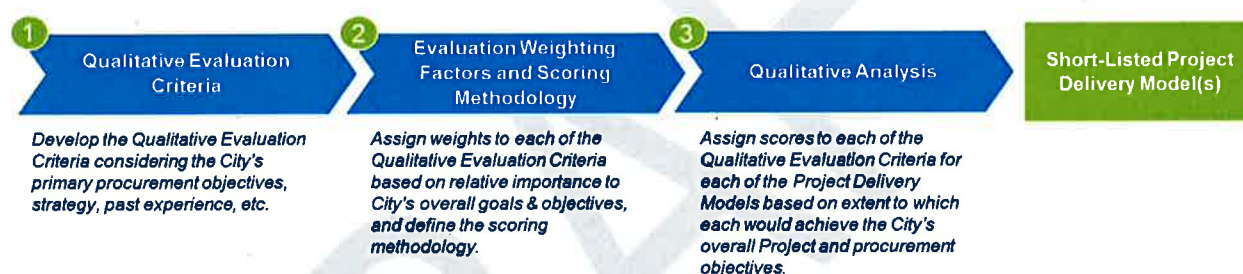
# Section 5: Qualitative Analysis

Further to the Procurement Objectives and Constraints identified in Sections 4.2 and 4.2.2, this section sets out the qualitative criteria, methodology and assessment for screening the Project Delivery Models to determine the short-listed Project Delivery Models for the Project. The section also outlines the strategy for engaging with private sector market participants and the key findings from the Market Consultations with respect to their interest in the Project and feedback on key issues.

## 5.1. Qualitative Criteria and Methodology

Figure 25 below sets out the process that has been undertaken by Deloitte in collaboration with the City's team in analyzing the Project Delivery Models identified in Section 4.4.

**Figure 25: Qualitative Analysis Methodology**



### 5.1.1 Qualitative Evaluation Criteria

The qualitative criteria have been developed considering the City's primary procurement objectives, policy and strategic direction, past experience with similar P3 projects, as well as insights from market soundings and precedent transactions ("**Evaluation Criteria**"). In collaboration with the City's team, the following set of broad Evaluation Criteria have been developed in order to assess and rank each of the Project Delivery Models.

**Table 7: Qualitative Evaluation Criteria**

Evaluation Criteria	Description
<b>1. Cost and Schedule Certainty</b>	
1.1. Incentives to complete construction on time	<ul style="list-style-type: none"> <li>The extent to which the Project Delivery Model provides incentives and other contract mechanisms to ensure that construction is completed on time.</li> </ul>
1.2. Entity responsible for construction and maintenance to bear the consequences of delay and/or cost overruns	<ul style="list-style-type: none"> <li>The extent to which the Project Delivery Model allows for the entity responsible for construction and maintenance to bear the consequences of delay and/or cost overruns during either of the construction and/or the maintenance periods.</li> </ul>
1.3. Cost certainty to the City through fixed maintenance prices for the entire Maintenance Period of the Project	<ul style="list-style-type: none"> <li>The extent to which the Project Delivery Model provides a greater degree of cost certainty to the City through fixed commitments on maintenance prices for the entire Maintenance Period, with such commitments backed by appropriate security to ensure compliance.</li> </ul>
<b>2. Private Sector Market Interest, Capacity, and Expertise</b>	
2.1. Interest from potential market participants	<ul style="list-style-type: none"> <li>The extent to which each Project Delivery Model generates interest from potential market participants for the Project, while promoting fair and transparent</li> </ul>

Evaluation Criteria	Description
	competition.
2.2. Capacity of potential market participants to undertake the Project	<ul style="list-style-type: none"> <li>The extent to which the Project Delivery Model attracts the right potential market participants that have the required capacity to undertake the Project.</li> </ul>
2.3. Expertise and experience in maintaining the Project	<ul style="list-style-type: none"> <li>As the City plans to integrate the maintenance of Stage 1 and Stage 2 after the completion of construction, this criterion measures the extent to which the Project Delivery Model allows the City to leverage the expertise and experience of a Private Partner in maintaining and completing periodic major lifecycle maintenance (only Stage 2), on similar facilities.</li> </ul>
<b>3. Alignment of Construction, Maintenance and Lifecycle Costs</b>	
3.1. Whole-life approach to the assets from the start of the design phase	<ul style="list-style-type: none"> <li>The extent to which the Project Delivery Model implements a whole-life approach to the assets from the start of the design phase, incenting the entity responsible for maintenance (Stage 1 and Stage 2) and lifecycle costs (Stage 2 only) to make appropriate considerations on design and construction versus long-term maintenance to optimize value.</li> </ul>
<b>4. Performance Security</b>	
4.1. Secures performance during the construction phase	<ul style="list-style-type: none"> <li>The extent to which the Project Delivery Model secures performance during the construction phase with very liquid forms of security that can be easily leveraged by the City, if needed, to further incentivize performance.</li> </ul>
4.2. Secures performance during the Maintenance Period	<ul style="list-style-type: none"> <li>The extent to which the Project Delivery Model secures performance during the Maintenance Period with very liquid forms of security, that can be easily leveraged by the City, if need be, to further incentivize performance.</li> </ul>
<b>5. Strategic Alignment</b>	
5.1. Alignment with the program delivery strategies and policies of the City	<ul style="list-style-type: none"> <li>The extent to which the Project Delivery Model aligns with the program delivery strategies and policies of the City, related to new, large scale infrastructure projects.</li> </ul>
5.2. In-line with City's prior experience with similar infrastructure projects	<ul style="list-style-type: none"> <li>The extent to which the Project Delivery Model is in-line with the City's prior experience with similar to new, large scale infrastructure projects.</li> </ul>
<b>6. Risk Transfer</b>	
6.1. Transfer of significant design and construction risks to the private sector	<ul style="list-style-type: none"> <li>The extent to which the Project Delivery Model transfers significant design and construction risks to the private sector, reducing the risks borne by the City with respect to the Project.</li> </ul>
6.2. Private capital at risk during construction phase	<ul style="list-style-type: none"> <li>The extent to which during the construction period, private capital is at risk to ensure that the private sector ultimately bears construction related performance risks.</li> </ul>
6.3. Private capital at risk during Maintenance Period	<ul style="list-style-type: none"> <li>The extent to which during the maintenance period, private capital is at risk to ensure that the private sector ultimately bears maintenance-related performance risks.</li> </ul>

### 5.1.2 Evaluation Weighting Factors and Scoring Methodology

As part of the qualitative analysis methodology, the relative importance of the Evaluation Criteria defined in Table 7 is determined through assigning weights to the criteria in relation to how each criterion ranks in importance to the City's overall strategic goals and objectives of the Project. The weights of each criterion were developed through feedback / input from the City during an "Evaluation Workshop" as well as post-workshop. The weights established for each of the criteria are provided in Table 8.

**Table 8: Evaluation Criteria Weights**

Criteria	Sub-Totals			Totals	
	Maximum Raw Score	Sub-Weights	Sub-Weighted Score	Criteria Weight	Criteria Score
<b>1. Cost and Schedule Certainty</b>					
1.1. Incentives to complete construction	5.0	30.0%	1.5		

Criteria	Sub-Totals			Totals	
	Maximum Raw Score	Sub-Weights	Sub-Weighted Score	Criteria Weight	Criteria Score
on time					
1.2. Entity responsible for construction and maintenance to bear the consequences of delay and/or cost overruns	5.0	30.0%	1.5		
1.3. Cost certainty to the City through fixed maintenance prices for the entire Maintenance Period of the Project	5.0	40.0%	2.0		
<b>Total Criteria Weighted Score</b>			<b>5.0</b>	<b>20.0%</b>	<b>1.0</b>
<b>2. Private Sector Market Interest, Capacity and Expertise</b>					
2.1. Interest from potential market participants	5.0	30.0%	1.5		
2.2. Capacity of potential market participants to undertake the Project	5.0	30.0%	1.5		
2.3. Expertise and experience in maintaining the Project	5.0	40.0%	2.0		
<b>Total Criteria Weighted Score</b>			<b>5.0</b>	<b>15.0%</b>	<b>0.8</b>
<b>3. Alignment of Construction, Maintenance and Lifecycle Costs</b>					
3.1. Whole-life approach to the assets from the start of the design phase	5.0	100.0%			
<b>Total Criteria Weighted Score</b>			<b>5.0</b>	<b>10.0%</b>	<b>0.5</b>
<b>4. Performance Security</b>					
4.1. Secures performance during the construction phase	5.0	50.0%	2.5		
4.2. Secures performance during the Maintenance Period	5.0	50.0%	2.5		
<b>Total Criteria Weighted Score</b>			<b>5.0</b>	<b>20.0%</b>	<b>1.0</b>
<b>5. Strategic Alignment</b>					
5.1. Alignment with the program delivery strategies and policies of the City	5.0	50.0%	2.5		
5.2. In-line with City's prior experience with similar infrastructure projects	5.0	50.0%	2.5		
<b>Total Criteria Weighted Score</b>			<b>5.0</b>	<b>10.0%</b>	<b>0.5</b>
<b>6. Risk Transfer</b>					
6.1. Transfer of significant design and construction risks to the private sector	5.0	30.0%	1.5		
6.2. Private capital at risk during construction phase	5.0	35.0%	1.8		
6.3. Private capital at risk during maintenance period	5.0	35.0%	1.8		
<b>Total Criteria Weighted Score</b>			<b>5.0</b>	<b>25.0%</b>	<b>1.2</b>
<b>Total Evaluation Score</b>				<b>100%</b>	<b>5.0</b>

The evaluation of the Project Delivery Models has required consideration of a wide range of Evaluation Criteria. It is necessary to reflect the relative importance of each of the Evaluation Criteria. Therefore,

scores have been weighted to account for the relative importance of various Evaluation Criteria. Figure 26 and the narrative below provide a brief explanation of the scoring methodology.

**Figure 26: Illustrative Example of Qualitative Evaluation Scoring Methodology**

Criteria	Weighting	DBB	DBFM / DBFOM
<b>1. Cost and Schedule Certainty</b>			
1.1. Incentives to complete construction on time.	30.0%	1.0	5.0
		0.3	1.5
1.2. Entity responsible for construction and operations to bear the consequences of delay and/or cost overruns.	30.0%	1.0	5.0
		0.3	1.5
1.3. Cost certainty to the City through fixed operating and maintenance prices for the entire operating term of the Project.	40.0%	1.0	5.0
		0.4	2.0
<b>Criteria Un-weighted Score</b>	<b>100.0%</b>	<b>1.0</b>	<b>5.0</b>
<b>Total Criteria Weighted Score</b>	<b>20.0%</b>	<b>0.2</b>	<b>1.0</b>
<b>2. Private Sector Market Interest, Capacity and Expertise</b>			
*****			
<b>Total Criteria Weighted Score</b>	<b>12.5%</b>	<b>0.0</b>	<b>0.8</b>
<b>3. Alignment of Construction, Operations, and Lifecycle Costs</b>			
*****			
<b>Total Criteria Weighted Score</b>	<b>10.0%</b>	<b>0.2</b>	<b>0.9</b>
*****			
<b>Total Evaluation Score</b>		<b>1.5</b>	<b>4.5</b>
<b>Percentage of Available Points</b>		<b>30%</b>	<b>90%</b>

- Evaluation Category** – The term “Evaluation Category” refers to a group of qualitative evaluation factors. In this example, “Cost and Schedule Certainty” is the Evaluation Category.
- Evaluation Criteria** – The term “Evaluation Criteria” refers to each individual qualitative evaluation criterion. In this example, the evaluation criterion numbered 1.1, 1.2, and 1.3 are referred to as Evaluation Criteria.
- Raw Criteria Score** – Each Project Delivery Model is assigned a score from 0 to 5, based on how well that Project Delivery Model satisfies each Evaluation Criteria.
- Sub-Criteria Weighting Factor** – Each Evaluation Criteria has been assigned a weighted factor from 0% to 100%. The weighting factor accounts for the City’s view of the relative importance of each particular Evaluation Criteria.
- Weighted Criteria Score** – The Raw Criteria Score is multiplied by the weighting factor, to yield the Weighted Criteria Score.
- Sum of Criteria Scores** – The Weighted Criteria Scores for each Evaluation Criteria are summed. This yields the “Un-weighted Score” for the Evaluation Category as a whole.
- Evaluation Category Weighting Factor** – An additional weighting factor is applied for the Evaluation Category as a whole. The weighting factor accounts for the City’s view of the relative importance of the Evaluation Category as a whole.
- Total Weighted Score** – The Evaluation Category Weighting Factor is multiplied by the Criteria Un-weighted Score (Item 6), to yield the Total Weighted Score for the Evaluation Category
- Summation and Total Score** – The Total Weighted Scores for each Evaluation Category are summed to yield the Total Score for the Service Delivery Option. The Total Score may be expressed as a score out of 5, or as a percentage of the maximum Total Score.



## 5.2. Qualitative Analysis

Each Project Delivery Model has been evaluated and scored based on the Evaluation Criteria and has been assigned a score. The scoring reflects the extent to which each Project Delivery Model should achieve the City's overall Project and procurement objectives. The Project Delivery Models have been scored on a relative basis. For each Evaluation Criteria, a score of 5 is assigned to the Project Delivery Model which should optimally achieve the City's objectives. This does not signify that the "optimal" Project Delivery Model is necessarily without any risks; rather it signifies that the "optimal" Project Delivery Model best addresses the City's objectives relative to the other models.

Figure 27: Evaluation Scale



Scoring for each of the evaluation criteria has been completed through input and feedback obtained from respondents from the City's team. The scoring for each Project Delivery Model is set out in Sections 5.2.1 to 5.2.6, along with a summary of each Evaluation Criteria and a summary of the rationale for the scoring assigned to the Project Delivery Models.

### 5.2.1 Cost and Schedule Certainty

This evaluation criterion measures the extent to which the Project Delivery Models would allow the City to attain certainty with regards to the overall Project costs and on-time completion of the Project through the following factors:

- Incentives to complete construction on time;
- Transfer of responsibility to private sector entity responsible for construction and maintenance to bear consequences of delay and / or cost overruns; and
- Cost certainty to the City through fixed pricing for maintenance costs for the entire Maintenance Period of the Project.

The qualitative evaluation of the Project Delivery Models is provided in Table 9 below.

Table 9: Qualitative Evaluation - Cost and Schedule Certainty

Delivery Options	Score	Explanation
<b>1.1. Incentives to complete construction on time</b>		
DBB	1	<ul style="list-style-type: none"> <li>• During the construction phase, payments are made to the construction contractor through progress payments based on work in place.</li> <li>• As the contractor does not have to undertake material amounts of private financing, there is less incentive to complete construction on time.</li> </ul>
DBf	4	<ul style="list-style-type: none"> <li>• More incentive to complete construction on time as payment is made only at substantial completion to the Private Partner – i.e. the Private Partner is not paid until it executes on its obligation to complete the Project.</li> <li>• Incentivizes the Private Partner to complete construction on time and in conformance with specifications in order to receive payments from the City and to repay its lenders.</li> </ul>
DBfM / DBfOM	4	<ul style="list-style-type: none"> <li>• Under a Substantial Completion Payment structure, the Private Partner obtains financing to fund the costs to be incurred during the construction period and hence would have strong incentives to complete construction on time and in accordance with specifications in order to receive payment and repay lenders (for construction financing).</li> </ul>
DBFM / DBFOM	5	<ul style="list-style-type: none"> <li>• Same as DBfM / DBfOM with slightly more oversight and due diligence during the</li> </ul>

Delivery Options	Score	Explanation
		construction period due to the long-term private capital in the Project after completion of construction.
<b>1.2. Entity responsible for construction and maintenance to bear the consequences of delay and/or cost overruns</b>		
DBB	2	<ul style="list-style-type: none"> <li>As design and construction roles are split between two private sector entities, the City would be responsible for design coordination. Hence any issues that may result in change orders or delays in construction and / or cost overruns, the City would be liable. Penalties can be applied towards the construction contractor if it fails to meet the construction timelines.</li> <li>City assumes full responsibility for maintenance and any cost overruns or unexpected costs must be borne by the City under the DBB model.</li> </ul>
DBf	3	<ul style="list-style-type: none"> <li>Design and construction coordination would be responsibility of Private Partner who would be responsible for any delays and /or cost overruns during construction.</li> <li>Same as DBB for maintenance responsibilities.</li> </ul>
DBfM / DBfOM	4	<ul style="list-style-type: none"> <li>Private Partner would be responsible for all cost overruns (excluding any cost overruns caused by the Sponsor) during the construction and maintenance periods.</li> </ul>
DBFM / DBFOM	4	<ul style="list-style-type: none"> <li>Same as DBfM / DBfOM</li> </ul>
<b>1.3. Cost certainty to the City through fixed maintenance prices for the entire Maintenance Period of the Project</b>		
DBB	1	<ul style="list-style-type: none"> <li>Maintenance services would be provided by the City and the City would have less cost certainty with regards to the maintenance costs.</li> </ul>
DBf	1	<ul style="list-style-type: none"> <li>Same as DBB.</li> </ul>
DBfM / DBfOM	5	<ul style="list-style-type: none"> <li>The DBfM / DBfOM model includes a long-term maintenance component which would include fixed pricing for maintenance, based on pricing submitted during a competitive procurement process.</li> <li>The pricing for maintenance services would be based on the successful bid by the Private Partner (subject to changes for inflation and extraordinary events) – providing a significant degree of cost certainty.</li> </ul>
DBFM / DBFOM	5	<ul style="list-style-type: none"> <li>Same as DBfM / DBfOM</li> </ul>

Generally speaking, based on the evaluation above, the Project Delivery Models that provide the most cost certainty to the City during the construction and Maintenance Periods (such as DBfM / DBfOM and DBFM / DBFOM) and provide the most incentive towards completion of construction on schedule (such as DBf, DBfM / DBfOM, and DBFM / DBFOM) were scored the highest from amongst the Project Delivery Models.

## 5.2.2 Private Sector Market Interest, Capacity, and Expertise

This evaluation criterion considers an assessment of private sector expertise with the various Project Delivery Models as well as feedback from the Market Consultations (details provided in Section 5.5.4) conducted with potential market participants to assess their interest in the Project as well as their capacity and expertise to successfully undertake the Project, depending upon which Project Delivery Model is chosen for the Project.

The qualitative evaluation of the Project Delivery Models is provided in Table 10 below.

**Table 10: Qualitative Evaluation – Private Sector Market Interest, Capacity, and Expertise**

Delivery Options	Score	Explanation
<b>2.1. Private Sector Market Interest</b>		
DBB	3	<ul style="list-style-type: none"> <li>There would be interest from the market, however it would be limited to mostly local constructors.</li> <li>In addition, although there may be sufficient contractor capacity in the local market, the size of the Project would likely preclude these entities from leading the Project on their own.</li> <li>However, Project may be split up into a number of smaller contracts that might create a</li> </ul>

Delivery Options	Score	Explanation
		greater "lead contractor" role which might mitigate capacity issues to some extent.
DBf	4	<ul style="list-style-type: none"> <li>Higher interest from the market than the DBB, however the design &amp; construction and the maintenance responsibilities would be divided into separate contracts.</li> </ul>
DBfM / DBfOM	4	<ul style="list-style-type: none"> <li>There would be greater market interest than the DBB and the DBf models with all components of the Project bundled into one primary private sector contractor (Project Co).</li> <li>Interest would be generated from the slightly larger and more national / international contractors.</li> <li>However, the small maintenance scope for the Project would limit interest from the market to some extent.</li> </ul>
DBFM / DBFOM	5	<ul style="list-style-type: none"> <li>High interest from the market for the Project (evidenced from feedback from Market Consultations).</li> <li>Larger interest from the private sector, as compared to the DBfM / DBfOM model, due to the long-term private capital component in the Project which would attract the larger developers and equity investors to bid for the Project, along with local and national contractors.</li> </ul>

## 2.2. Capacity of potential market participants to undertake the Project

DBB	4	<ul style="list-style-type: none"> <li>The DBB model would be able to attract mostly large local contractors to bid on the Project and undertake the significant construction component of the Project.</li> </ul>
DBf	4	<ul style="list-style-type: none"> <li>The DBf model would attract the larger national contractors (which would look to team up with local contractors) to bid for the Project with the capacity to undertake the large construction portion of the Project due to the construction financing aspect introduced in the model.</li> </ul>
DBfM / DBfOM	4	<ul style="list-style-type: none"> <li>The DBfM / DBfOM model would be able to attract potential market participants with the capacity to undertake the Project.</li> <li>Similar to the DBf, larger national contractors would look to team up with the local contractors.</li> </ul>
DBFM / DBFOM	5	<ul style="list-style-type: none"> <li>Market participants indicated that the Project is a good size and as it is not particularly complex, there would not be capacity issues from the market.</li> <li>Large developers would have the necessary capacity to undertake the Project and would look to team up with national and local contractors.</li> </ul>

## 2.3. Expertise and experience in maintaining the Project

DBB	3	<ul style="list-style-type: none"> <li>As City would be responsible for the long-term maintenance of the Project, the DBB model only partially meets the City's objectives</li> </ul>
DBf	3	<ul style="list-style-type: none"> <li>Same as DBB.</li> </ul>
DBfM / DBfOM	5	<ul style="list-style-type: none"> <li>The Private Partner would be responsible for the maintenance of the Project under the DBfM / DBfOM and the Market Consultations indicated that the market would have the right expertise and experience to integrate the maintenance of Stage 1 and Stage 2 and lifecycle of Stage 2 only within the Project.</li> </ul>
DBFM / DBFOM	5	<ul style="list-style-type: none"> <li>Same as DBfM / DBfOM</li> </ul>

As demonstrated by the evaluation above, the Project Delivery Models that are likely to generate the most interest from the potential market participants, as substantiated through the Market Consultations, as well as will allow market participants with the adequate capacity and expertise to undertake the Project (such as DBfM / DBfOM and DBFM / DBFOM) to participate are scored highly.

### 5.2.3 Alignment of Construction, Maintenance and Lifecycle Costs

The evaluation criterion measures the extent to which the Project Delivery Models allows for the implementation of a whole-life approach to the infrastructure assets that would make appropriate considerations on design and construction versus long-term maintenance to optimize value of the assets.

The qualitative evaluation of the Project Delivery Models is provided in Table 11 below.

**Table 11: Qualitative Evaluation – Alignment of Construction, Maintenance and Lifecycle Costs**

Delivery Options	Score	Explanation
<b>3.1. Whole-life approach to the assets from the start of the design phase</b>		
DBB	1	<ul style="list-style-type: none"> <li>Separate maintenance contracts required. Limited link between construction and maintenance could result in sub-optimal construction decisions given long-term nature of the assets.</li> </ul>
DBf	1	<ul style="list-style-type: none"> <li>Same as above.</li> </ul>
DBfM / DBfOM	3	<ul style="list-style-type: none"> <li>Private Partner responsible for construction and maintenance thereby encouraging long-term planning during design and construction.</li> <li>Transfer of maintenance risk to the Private Partner with incentives to consider long-term maintenance performance of the Project since poor lifecycle performance will cause cost overruns over the life of the Project which would be borne by the Private Partner.</li> <li>Lower risk transfer than the DBfM / DBfOM model due to a less robust security package over the Maintenance Period</li> </ul>
DBFM / DBFOM	5	<ul style="list-style-type: none"> <li>Similar to the DBfM / DBfOM model over the construction term and Maintenance Period with the exception of having a higher risk transfer to the private sector during the Maintenance Period – Capital payment over the Maintenance Period provides security to anchor the transferred risk.</li> </ul>

Under this evaluation criterion, the Project Delivery Models which integrate design, construction, and long-term maintenance are rated highly (such as DBfM / DBfOM and DBFM / DBFOM) since this integration should provide incentives to consider long-term maintenance and lifecycle performance during the design and construction phase.

## 5.2.4 Performance Security

The Performance Security criterion measures the extent to which the Project Delivery Models provide a robust security package on performance of the private sector during the construction and maintenance phase of the Project.

The qualitative evaluation of the Project Delivery Models is provided in Table 12 below.

**Table 12: Qualitative Evaluation – Performance Security**

Delivery Options	Score	Explanation
<b>4.1. Secures performance during the construction phase</b>		
DBB	1	<ul style="list-style-type: none"> <li>Performance is only secured during construction through less liquid methods, such as limited construction warranties. Does not provide high degree of security during construction.</li> </ul>
DBf	5	<ul style="list-style-type: none"> <li>Significantly more performance security during construction than the DBB model as the Private Partner is only paid at substantial completion. This is considered a form of performance-based payment and thus provides robust performance security – Private Partner is not paid until it executes on its obligation to complete the infrastructure in compliance with specifications (i.e., payment on performance).</li> </ul>
DBfM / DBfOM	5	<ul style="list-style-type: none"> <li>Same as DBf.</li> </ul>
DBFM / DBFOM	5	<ul style="list-style-type: none"> <li>Same as DBf.</li> </ul>
<b>4.2. Secures performance during the Maintenance Period</b>		
DBB	1	<ul style="list-style-type: none"> <li>The City assumes full responsibility for the maintenance of the Project and therefore maintains all risk of performance during the maintenance period.</li> </ul>
DBf	1	<ul style="list-style-type: none"> <li>Same as above.</li> </ul>



Delivery Options	Score	Explanation
DBfM / DBfOM	2	<ul style="list-style-type: none"> <li>Under this model, the Project Co would be responsible for all maintenance (routine and lifecycle) of the Project during the Maintenance Period.</li> <li>Payments would be subject to a payments mechanism which would apply deductions for poor performance during the Maintenance Period which would provide performance security to the City.</li> <li>Performance secured through limited and less liquid methods of performance security such as letters of credit and performance bonds.</li> </ul>
DBFM / DBFOM	4	<ul style="list-style-type: none"> <li>Similar to DBfM / DBfOM with the addition that the City would have the most liquid form of performance security through the private capital at risk during the Maintenance Period which would be paid out through the capital payments from the City, dependent upon performance requirements being met (Also discussed later in Section 5.2.6).</li> </ul>

As indicated by the evaluation above, the Project Delivery Models that provide the most liquid forms of security during the construction period (such as DBf, DBfM / DBfOM, and DBFM / DBFOM) and during the maintenance period (such as DBfM / DBfOM and DBFM / DBFOM) scored the highest with the DBFM / DBFOM amongst all providing the most liquid forms of security overall.

## 5.2.5 Strategic Alignment

The assessment of the Project Delivery Models against the “Strategic Alignment” Evaluation Criteria is undertaken considering the City’s strategies, policies, and experience with regards to large scale Greenfield infrastructure projects, as identified in Section 4.3. The qualitative evaluation of the Project Delivery Models is provided in Table 13 below.

**Table 13: Qualitative Evaluation – Strategic Alignment**

Delivery Options	Score	Explanation
<b>5.1. Alignment with the program delivery strategies and policies of the City</b>		
DBB	1	<ul style="list-style-type: none"> <li>The City is looking to undertake a P3 approach for delivery of new large infrastructure projects. The DBB model does not provide the appropriate risk allocation structure relating to transference of schedule and cost risk – as the City would maintain responsibility for construction of various elements of the Project.</li> </ul>
DBf	2	<ul style="list-style-type: none"> <li>The DBf model provides transference of coordination risk during the construction period to the Private Partner, in addition to combining the design / engineering and construction components, which the City considers significantly important when undertaking large scale infrastructure projects.</li> <li>City exposed to more maintenance risk.</li> </ul>
DBfM / DBfOM	3	<ul style="list-style-type: none"> <li>Similar to the DBf model with the addition that this model provides the City with a greater risk allocation structure through transference of risk during the maintenance period to the Private Partner.</li> <li>Through the bundling of the construction and maintenance responsibilities to the Private Partner under this Project Delivery Model, innovation and alternative approached to balancing construction and lifecycle costs can also be realized – which would align with the City's strategic objectives.</li> <li>City exposed to more maintenance risk.</li> </ul>
DBFM / DBFOM	4	<ul style="list-style-type: none"> <li>Similar to DBfM / DBfOM with the addition that this model provides the City with less exposure to risk over the Maintenance Period.</li> </ul>
<b>5.2. In line with the City's prior experience with similar infrastructure projects</b>		
DBB	4	<ul style="list-style-type: none"> <li>Not in line with City's past experience on similar infrastructure projects such as the Charleswood Bridge, Disraeli Bridges, and Chief Peguis Trail projects. However, City has experience with DBB on Stage 1 of the Southwest Transitway and other transportation projects.</li> </ul>
DBf	4	<ul style="list-style-type: none"> <li>Same as DBB model.</li> </ul>
DBfM / DBfOM	4	<ul style="list-style-type: none"> <li>Same as DBB model.</li> </ul>

Delivery Options	Score	Explanation
DBFM / DBFOM	5	<ul style="list-style-type: none"> <li>The City has previously successfully implemented three P3 projects through the DBFM Project Delivery Model – Charleswood Bridge, Disraeli Bridges, and Chief Peguis Trail projects.</li> </ul>

## 5.2.6 Risk Transfer

This evaluation criterion assesses the Project Delivery Models in terms of the transference of risk during the construction and maintenance periods provided by each of the models. The more risk that is transferred from the City to the private sector, the more benefit it would provide to the City and meet their procurement objectives (note the VFM analysis that considers the appropriate degree of risk transfer associated with the short-listed Project Delivery Model is assessed in Section 6:). The evaluation is undertaken with the following considerations:

- Whether there is efficient integration of design and construction responsibility
- Definition of output based standards to clarify responsibilities and risk transfer
- Extent to which private capital is at risk during the construction and maintenance periods.

The qualitative evaluation of the Project Delivery Models is provided in Table 14 below.

**Table 14: Qualitative Evaluation – Risk Transfer**

Delivery Options	Score	Explanation
<b>6.1. Transfer of significant design and construction risks to the private sector</b>		
DBB	2	<ul style="list-style-type: none"> <li>The DBB model splits the design and construction roles between two or more entities. City would retain responsibility for management and coordination of construction.</li> <li>Hence, design coordination encountered during construction may result in change orders for which the City would be liable.</li> </ul>
DBf	5	<ul style="list-style-type: none"> <li>Responsibility for design, construction, testing, and commissioning is bundled with one private sector entity to minimize design, coordination, and construction risks borne by City.</li> </ul>
DBfM / DBfOM	5	<ul style="list-style-type: none"> <li>Same as DBf model.</li> </ul>
DBFM / DBFOM	5	<ul style="list-style-type: none"> <li>Same as DBf model.</li> </ul>
<b>6.2. Private capital at risk during construction phase</b>		
DBB	2	<ul style="list-style-type: none"> <li>No private capital at risk during the construction phase of the Project as private sector construction firm is paid based on progress payments. No private sector financing undertaken by the contractor.</li> </ul>
DBf	5	<ul style="list-style-type: none"> <li>The DBf model includes a payment mechanism during the construction period that delays payment for construction until substantial completion of the Project.</li> <li>This form of payment mechanism requires the private sector to obtain private financing for construction and hence private capital is at risk during the construction period – Private Partner must perform in order to repay its lenders.</li> </ul>
DBfM / DBfOM	5	<ul style="list-style-type: none"> <li>Same as DBf model.</li> </ul>
DBFM / DBFOM	5	<ul style="list-style-type: none"> <li>Same as DBf model.</li> </ul>
<b>6.3. Private capital at risk during maintenance period</b>		
DBB	2	<ul style="list-style-type: none"> <li>No private sector entity involved during the maintenance period as the City assumes responsibility for maintenance of the Project. Therefore, there is no private capital at risk during this period.</li> </ul>
DBf	2	<ul style="list-style-type: none"> <li>No private capital at risk during the maintenance period as all private capital is repaid by the Private Partner at the completion of construction of the Project and handover to the City.</li> </ul>
DBfM / DBfOM	3	<ul style="list-style-type: none"> <li>The Private Partner assumes responsibility for the maintenance of the Project during the maintenance period which results in significant transfer of risk to the private sector during this period – as payment mechanism would penalize for poor maintenance.</li> <li>However, as no private capital is at risk during this period (paid out at completion of construction), this would limit the amount of risks that would be borne by the Private Partner</li> </ul>

Delivery Options	Score	Explanation
		during this period.
DBFM / DBFOM	5	<ul style="list-style-type: none"> <li>Same as the DBfM / DBfOM model in terms of transfer of responsibility of maintenance of the Project.</li> <li>In addition, under the DBFM / DBFOM model, the Private Partner has significant long-term private capital at risk over the maintenance period which can only be repaid through maintenance of the Project in accordance with the City's specifications in exchange for payments over the Project term.</li> </ul>

The Project Delivery Models that transferred significant construction roles (such as DBf, DBfM / DBfOM, and DBFM / DBFOM) as well as maintenance roles (such as DBfM / DBfOM and DBFM / DBFOM) to the private sector scored the highest.

### 5.3. Results

Summary of the Qualitative Analysis results are presented in the Figure 28 below.

**Figure 28: Summary of Qualitative Analysis Scoring**

Criteria	Weighting	DBB	DBf	DBfM / DBfOM	DBFM / DBFOM
<b>1. Cost and Schedule Certainty</b>					
1.1. Incentives to complete construction on time.	30.0%	1.0	4.0	4.0	5.0
		0.3	1.2	1.2	1.5
1.2. Entity responsible for construction and operations to bear the consequences of delay and/or cost overruns.	30.0%	2.0	3.0	4.0	4.0
		0.6	0.9	1.2	1.2
1.3. Cost certainty to the City through fixed maintenance prices for the entire maintenance term of the Project.	40.0%	1.0	1.0	5.0	5.0
		0.4	0.4	2.0	2.0
<b>Criteria Un-weighted Score</b>	<b>100.0%</b>	<b>1.3</b>	<b>2.5</b>	<b>4.4</b>	<b>4.7</b>
<b>Total Criteria Weighted Score</b>	<b>20.0%</b>	<b>0.3</b>	<b>0.5</b>	<b>0.9</b>	<b>0.9</b>
<b>2. Private Sector Market Interest and Capacity</b>					
2.1. Interest from potential market participants.	30.0%	3.0	4.0	4.0	5.0
		0.9	1.2	1.2	1.5
2.2. Capacity of potential market participants to undertake the Project	30.0%	4.0	4.0	4.0	5.0
		1.2	1.2	1.2	1.5
2.3. Expertise and experience in maintaining the Project	40.0%	3.0	3.0	5.0	5.0
		1.2	1.2	2.0	2.0
<b>Criteria Un-weighted Score</b>	<b>100.0%</b>	<b>3.3</b>	<b>3.6</b>	<b>4.4</b>	<b>5.0</b>
<b>Total Criteria Weighted Score</b>	<b>15.0%</b>	<b>0.5</b>	<b>0.5</b>	<b>0.7</b>	<b>0.8</b>
<b>3. Alignment of Construction, Maintenance, and Lifecycle Costs</b>					
3.1. Whole-life approach to the assets from the start of the design phase.	100.0%	1.0	1.0	3.0	5.0
<b>Total Criteria Weighted Score</b>	<b>10.0%</b>	<b>0.1</b>	<b>0.1</b>	<b>0.3</b>	<b>0.5</b>
<b>4. Performance Security</b>					
4.1. Secures performance during the construction phase.	50.0%	1.0	5.0	5.0	5.0
		0.5	2.5	2.5	2.5
4.2. Secures performance during the maintenance term.	50.0%	1.0	1.0	2.0	4.0
		0.5	0.5	1.0	2.0
<b>Criteria Un-weighted Score</b>	<b>100.0%</b>	<b>1.0</b>	<b>3.0</b>	<b>3.5</b>	<b>4.5</b>
<b>Total Criteria Weighted Score</b>	<b>20.0%</b>	<b>0.2</b>	<b>0.6</b>	<b>0.7</b>	<b>0.9</b>
<b>5. Strategic Alignment</b>					
5.1. Alignment with the program delivery strategies and policies of the City.	50.0%	1.0	2.0	3.0	4.0
		0.5	1.0	1.5	2.0
5.2. In-line with City's prior experience with similar infrastructure projects.	50.0%	4.0	4.0	4.0	5.0
		2.0	2.0	2.0	2.5
<b>Criteria Un-weighted Score</b>	<b>100.0%</b>	<b>2.5</b>	<b>3.0</b>	<b>3.5</b>	<b>4.5</b>
<b>Total Criteria Weighted Score</b>	<b>10.0%</b>	<b>0.3</b>	<b>0.3</b>	<b>0.4</b>	<b>0.5</b>
<b>6. Risk Transfer</b>					
6.1. Transfer of significant design and construction risks to the private sector.	30.0%	2.0	5.0	5.0	5.0
		0.6	1.5	1.5	1.5
6.2. Private capital at risk during construction phase.	35.0%	2.0	5.0	5.0	5.0
		0.7	1.8	1.8	1.8
6.3. Private capital at risk during maintenance period.	35.0%	2.0	2.0	3.0	5.0
		0.7	0.7	1.1	1.8
<b>Criteria Un-weighted Score</b>	<b>100.0%</b>	<b>2.0</b>	<b>4.0</b>	<b>4.3</b>	<b>5.0</b>
<b>Total Criteria Weighted Score</b>	<b>25.0%</b>	<b>0.5</b>	<b>1.0</b>	<b>1.1</b>	<b>1.3</b>
<b>Total Evaluation Score</b>	<b>100.0%</b>	<b>1.8</b>	<b>3.0</b>	<b>4.0</b>	<b>4.8</b>
<b>Percentage of Available Points</b>		<b>36.1%</b>	<b>60.6%</b>	<b>79.3%</b>	<b>95.8%</b>

As illustrated in the figure above, the DBFM / DBFOM model scores the highest with an overall score of 4.8 with the next highest score attained by the DBfM / DBfOM model of 4.0. The DBfM / DBfOM model differs only slightly from the DBFM / DBFOM model due to the lack of private capital at risk component during the maintenance period of the Project. Conversely, the DBB model scores the lowest with a score of only 1.8 as it mostly fails to meet the City's objectives under the various Evaluation Criteria. **Note that for ease of reference in subsequent sections of this Business Case and in order to remain consistent with the City's view of the scope elements of the Project, the "DBFM / DBFOM" model will be termed as "DBFM".**

The City's typical construction delivery model is a DBB model using a standard form of construction contract that has been tested and applied against numerous projects that are typically of a smaller size and scale than the Project and does not include a long-term maintenance obligation in the scope of the contractor. Current P3s use the best practice of bundling design-construction- maintenance through the design-life of the infrastructure for new legacy, large scale projects such as the Project. The Qualitative Analysis illustrates this difference, with the main advantage of the DBFM / DBFOM being that the same contract counterparty is responsible for all components, thus eliminating any "finger pointing" if the Project does not perform.

## **5.4. Recommended Project Delivery Model**

### **5.4.1 Key Features**

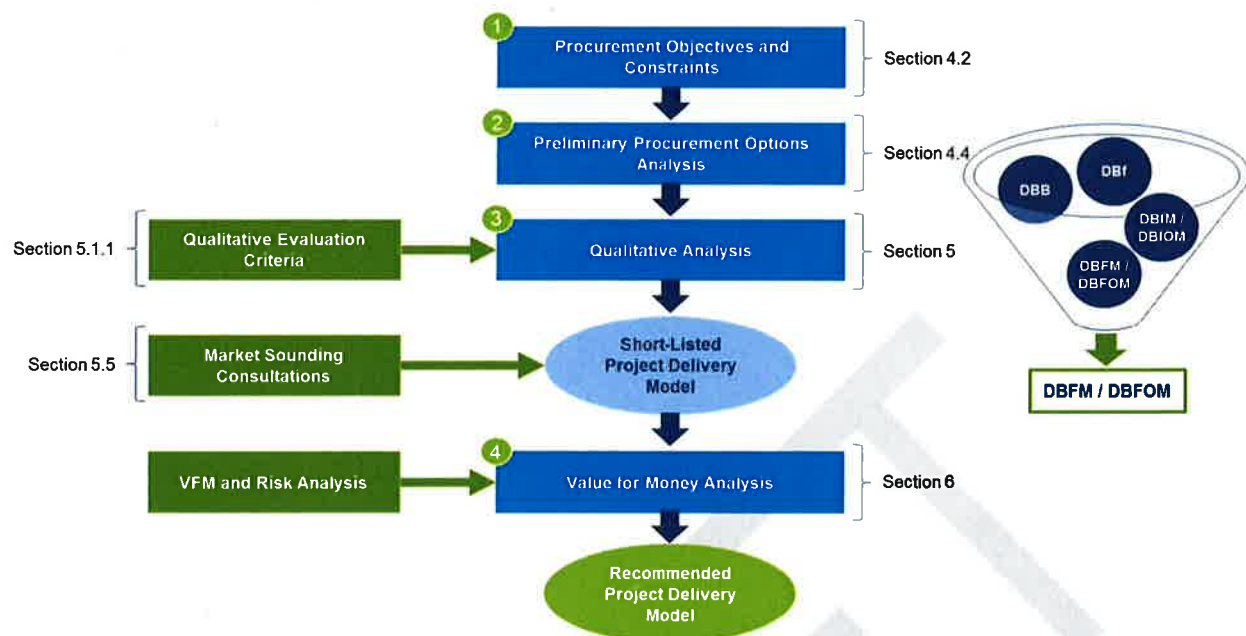
As noted in Section 4.2, the City's key procurement objectives for the Project include:

- Cost and Schedule Certainty;
- Risk Transfer;
- Performance Security;
- Private Sector Market Interest, Capacity, and Expertise;
- Strategic Alignment; and
- Alignment of Construction, Maintenance and Lifecycle Costs.

The Evaluation Criteria for the Project have been designed to select the Project Delivery Model which best meets these objectives. Based on the Qualitative Analysis conducted, the highest rated Project Delivery Model is the DBFM model ("**Short Listed Project Delivery Model**"). The DBFM model meets all of the City's procurement objectives as well as conforms to the City's constraints from the Project, as described in Section 4.2.2.



Figure 29: Project Delivery Model Assessment



In addition, the Market Consultations (presented in Section 5.5) indicated that there was significant interest from the potential market participants if the Project was structured as a DBFM P3. There also exist precedents for projects of similar size and scope that have been previously implemented by the City through the DBFM model.

The key characteristics of the DBFM model are:

- **Bundled Design, Construction and Maintenance (Including Lifecycle):** One private sector entity is responsible for design, construction maintenance and long-term rehabilitation (lifecycle maintenance) of the Project. This provides strong incentives for design and construction work which is cost efficient, integrated (reduces design coordination issues), and results in an infrastructure which is economical to maintain as measured against performance standards that will not change.
- **Risk Transfer:** Design, construction, and maintenance risks are transferred to the Private Partner which would have the right experience and expertise to carry out these roles.
- **Payment on Performance:** The DBFM model involves the withholding of payment to the Private Partner until construction is completed to the specifications and requirements of the City (i.e., until commissioning is achieved) as well as if the maintenance performance is up to the requirements / standards of the City. The Private Partner would be penalized for failure of performance over the course of the long-term maintenance period.
- **Private Capital:** The DBFM model involves investment of private capital, which adds a high degree of Project due diligence, third-party oversight, and strong incentives for timely completion during the construction period. The DBFM model also includes long-term private capital, required to fund the portion of construction funding which has been withheld and is paid out over the Maintenance Period, providing the same discipline, oversight, and strong incentives for performance throughout the Maintenance Period. In addition, this private capital is at risk if the performance standards are not met.

### 5.4.2 Allocation of Roles and Responsibilities

The tables below outline the proposed allocation of responsibilities between the City and the Private Partner under a DBFM Project Delivery Model during the design & construction period as well as maintenance period.

**Table 15: Roles & Responsibilities for Design and Construction Period Scope Items**

Design and Construction Period Scope Items	City of Winnipeg	Private Partner
Manitoba Hydro utility relocation pre-works (prior to construction)	✓ (MH)	
Detailed design and engineering		✓
Construction works (structures, roadworks, noise attenuation, stations, landscaping, active transportation pathways, drainage works, park-and-ride facilities)		✓
Construction of roadway connections between the Transitway and street system		✓
City utilities relocation works		✓
CN rail relocation works		✓
Manitoba Hydro and other 3 <sup>rd</sup> Party utilities relocation works		✓
Traffic signals at road intersections	• ✓	
Roadway signage	• ✓	

**Table 16: Roles & Responsibilities for Maintenance Period Scope Items**

Maintenance Period Scope Items	City of Winnipeg	Private Partner
Routine annual maintenance of civil infrastructure (pavement, bridges, pedestrian/bicycle paths) – Stage 1 and Stage 2		✓
Periodic major maintenance and rehabilitation of civil infrastructure (pavement, bridges, pedestrian/bicycle paths) – Stage 1	✓	
Periodic major maintenance and rehabilitation of civil infrastructure (pavement, bridges, pedestrian/bicycle paths) – Stage 2		✓
Winter maintenance (sanding, snow removal and de-icing) – Stage 1 and Stage 2		✓
Summer maintenance (storm water drainage systems, grass cutting, street cleaning, pedestrian/bicycle path cleaning) – Stage 1 and Stage 2		✓
Station maintenance – annual and periodic (including graffiti) – Stage 2		✓
Passenger information systems maintenance* – Stage 1 and Stage 2	✓	
Signal prioritization and maintenance* – Stage 1 and Stage 2	✓	
Bus operations – Stage 1 and Stage 2	✓	
Pembina Highway O&M	✓	
City utilities maintenance	✓	
CN track infrastructure maintenance	✓ (CN)	
Manitoba Hydro utilities infrastructure maintenance	✓ (MH)	
Maintenance of roadway connections between the Transitway and street system	✓	

## 5.5. Market Sounding

Market Consultations were conducted by Deloitte on behalf of the City to gain further insight from a range of P3 industry participants into the various components of the Project. The purpose of the Market Consultations was to engage in a confidential interactive session with potential P3 partners to hear their perspectives on the possible procurement process, experiences with similar projects, potential interest in the Project and key Project issues. The Market Consultations sought input on key topics such as Project

scope, transaction structure and risk allocation. The results from the Consultations were used to support the assumptions applied in this Business Case.

### 5.5.1 Approach

The Market Consultations were conducted on a confidential, non-attributable basis and participation in the Market Consultations by the market participants does not preclude participation in any future P3 procurement process. The market participants were provided with a market sounding guide that provided background information on the Project. The Market Consultations were scheduled for 1 hour periods and all interviews were conducted via teleconference over the December 2013-January 2014 period. In addition to Deloitte, staff from the City, Dillon and PPP Canada participated in the Market Consultations.

For the purposes of the Market Consultations, the following key details/assumptions were provided to the participants with regards to the Project that would aid the participants in developing an understanding of the Project in preparation of the Market Consultations.

**Table 17: Key Market Consultation Information**

Item	Details
<b>Schedule &amp; Project Scope</b>	
<b>Project Delivery Model</b>	DBFM
<b>P3 Contract Precedent / Template</b>	The Chief Peguis Trail and Disraeli Bridges P3 precedents, which were based primarily on the Alberta P3 Highways template.
<b>Project Capital Size</b>	Approximately \$600 Million
<b>Anticipated Project Timelines</b>	<ul style="list-style-type: none"> <li>• PPP Canada Board Submission – June 2014</li> <li>• RFQ Release – Q4 2014</li> <li>• RFP Release – Q1 2015</li> <li>• Financial Close – Q4 2015</li> </ul>
<b>Design &amp; Construction and Financial Structure</b>	
<b>Design &amp; Construction Term</b>	3 to 4 years
<b>Design &amp; Construction Scope</b>	Construction will include ~ 7 km of roadwork, grade crossings, 7 stations, the Pembina Highway underpass and widening, CN Overpass and Track relocation, and utility relocations (both City and private)
<b>Financial Structure</b>	<p>The Private Partner would finance long-term 50% of capitalized construction costs with the balance to paid by the City via Substantial Completion Payment and/or Milestone Payments</p> <p>The Private Partner will be repaid during the Maintenance Period of 25 to 30 years on an availability basis provided that performance requirements are met</p>
<b>Operations &amp; Maintenance</b>	
<b>Operation Term</b>	25 to 30 years
<b>Operations and Maintenance Scope</b>	<ul style="list-style-type: none"> <li>• For the ~ 7 Km of roadwork, grade crossings, 7 stations and the Pembina Highway underpass. The Private Partner will be responsible for:</li> <li>• Annual roadway and structure maintenance and periodic lifecycle maintenance; and</li> <li>• Operations including snow removal / management, and summer operations / cleaning.</li> </ul> <p>To maximize operational flexibility and ensure a seamless integration of the transit service into the broader transit network, the City will utilize its existing fleet of 575 buses to deliver the Service - the Private Partner will not be required to procure, operate or maintain these buses.</p>
<b>P3 Financing Assumptions (Preliminary for Market Feedback)</b>	
<b>Capital Contributions from Public Sector</b>	<ul style="list-style-type: none"> <li>• 50% of Total Capital Costs paid at Substantial Completion</li> <li>• 25% funding from PPP Canada</li> <li>• 25% funding from City / Province</li> </ul>

### 5.5.2 Participants

In consultation with the City staff and Dillon, a list of potential market sounding participants was prepared comprising of firms that would be expected to bid on the Project with strong expertise as well as experience on past projects with similar size and scope. The Market Consultation participants selected consisted of various developers, contractors, engineering firms, lenders, and debt arrangers to ensure a balanced pool of interviewees and ensure that feedback on all key aspects of the Project is obtained. Of the 25 private sector firms contacted for the Market Consultations, 23 firms agreed to participate in the Market Consultations. Overall, the interviewees indicated a significant level of interest in the Project. [REDACTED] below provides the list of the firms consulted.

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### 5.5.3 Questions and Discussion Topics

The Market Consultations were based around the following key questions and discussion topics, provided in [REDACTED] below, to obtain feedback from the market participants.

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

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[illegible]

#### 5.5.4 Responses and Key Findings

The Market Consultations provided input on various topics such as:

- Private sector interest in the Project;
- Project scope, transaction structure and procurement process for the Project;
- Key Project risks, particularly around interface issues with third parties during construction; and,
- Financial viability and expected funding market conditions.

Key findings are summarized in [REDACTED] below:

[illegible]

100

[REDACTED]  
 [REDACTED]  
 [REDACTED]  
 [REDACTED]  
 [REDACTED]

Figure 1 is a line graph titled "Percentage of respondents who believe that the U.S. should take action to reduce global warming, broken down by age group and education level." The Y-axis represents the percentage of respondents, ranging from 0 to 100 in increments of 20. The X-axis represents the education level, with categories: High School, College, and Graduate. There are four data series representing different age groups: 18-29 (solid line with circles), 30-49 (dashed line with squares), 50-69 (dotted line with triangles), and 70+ (dash-dot line with diamonds). All four series show an upward trend as education level increases. The 70+ age group consistently shows the highest percentage of respondents believing in taking action, while the 18-29 age group shows the lowest.

Age Group	High School	College	Graduate
18-29	~45%	~55%	~65%
30-49	~55%	~65%	~75%
50-69	~65%	~75%	~85%
70+	~75%	~85%	~95%

100



[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]



[REDACTED]

[REDACTED]

### 5.5.5 Summary

The Market Consultations indicated that there is a significant level of interest from potential market participants, with specific reference to the Project's size and scope as a P3. The feedback obtained during the Market Consultations with respect to design and construction, maintenance, and financing issues were used to support the assumptions applied in the Qualitative Analysis in Section 5.2 for the determination of the short-listed Project Delivery Model.

DRAFT

# Section 6: Value for Money Analysis

Based on the Qualitative Analysis and the information gathered through the Market Consultations, the DBFM model has been selected as the short-listed Project Delivery Model for the Project. A final step in the Project Delivery Model assessment process, as identified in Figure 19 is to determine whether the short-listed Project Delivery Model provides the most VFM for the City.

## 6.1. Value for Money Methodology

The VFM assessment quantifies and compares the risks retained by the public sector under the traditional method of procurement (DBB, also referred to as the Public Sector Comparator), to the proposed P3 model (DBFM) in addition to a comparison of the projected cash flows under each Project Delivery Model. The differential in the NPV of the total costs between the PSC and P3 options, inclusive of retained risk, is estimated as the VFM savings of the P3 model.

### 6.1.1 Context and Purpose of the VFM analysis

When considering the VFM analysis, the following must be noted:

- VFM analysis is applied as a decision assist tool to quantify the estimated costs and benefits of the Project Delivery Models on a risk adjusted basis.
- The VFM results should be considered together with the financial analysis and broader objectives to ensure a full analysis of the Project.
- VFM results will vary over time and are highly sensitive to financing assumptions. Results within this Business Case are preliminary in nature and based on the assumptions stated herein. If the City proceeds with a P3 procurement process, the VFM will be updated during the procurement process (i.e., before issuance of the RFP and at Commercial Close and Financial Close).
- The risk assessment in a VFM is a comparative assessment; any quantification of risk should only be viewed within this context and not interpreted on an absolute or stand-alone basis.

The VFM is intended to demonstrate feasibility of the Project Delivery Model relative to a traditional procurement for each of the components and the overall Project.

### 6.1.2 Methodology

The Project Team has conducted a VFM assessment based on Infrastructure Ontario (“IO”) VFM methodology which is considered as a best practice in Canadian P3 projects and is consistent with guidelines developed by PPP Canada, in its Value for Money guidelines. The methodology is based on the following three principles:

- All construction, maintenance and lifecycle costs are equalized for the PSC and the P3 options; i.e., no efficiencies are assumed under the P3 structure.
- The Discount Rate is equal to the City’s long-term borrowing rate and includes no other risk factors – this prevents the Discount Rate from driving “value”.
- The core of the VFM is a detailed risk matrix that uses historical performance data that is adjusted as required to reflect the specific risks of the Project as quantified through risk workshops (described below).

In addition, specific considerations items relating to the VFM analysis are noted below<sup>56</sup>.

- No adjustment has been made for “competitive neutrality” – i.e., an adjustment to account for the benefit of certain taxes and other items paid by the private sector under a P3 that would not be paid to government under a traditional procurement model. Since the City obtains tax revenues directly from the private sector, this benefit to the City is the same under both the PSC and the DBFM.
- The City’s base case cost of borrowing is based on the rate that the City could obtain if it borrowed funds to finance the Project. The Discount Rate used for the VFM assessment is the same as the City’s estimated cost of borrowing based on a Government of Canada 30-year bond plus applicable margin (credit spread).

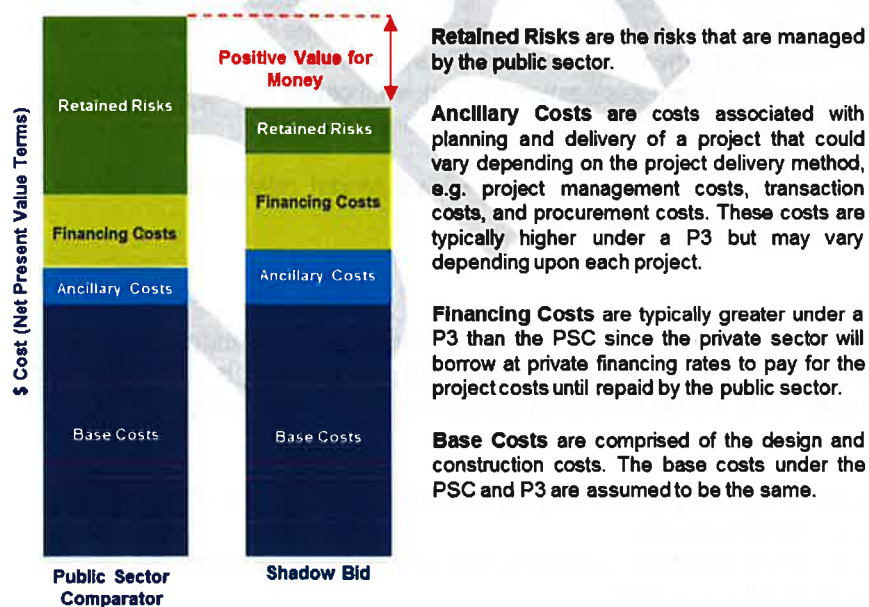
The VFM assessment compares the net present costs of:

- An estimation of the total, risk-adjusted costs of delivering the Project under a P3 model (the “**Shadow Bid**” or “**P3 Model**”); and
- A Public Sector Comparator or specifically the DBB model, which estimates the total risk-adjusted costs of delivering the Project under the public sector’s traditional method of delivering public infrastructure projects.

Figure 30 illustrates how value is demonstrated through the VFM calculation. The cash cost in the P3 model, before adjusting for risk, is higher than the cash cost under the Public Sector Comparator. This is generally the result of the higher financing costs incurred by the private sector, as well as higher ancillary costs related to the planning and delivery of the Project. However, after adjusting for risks transferred to the private sector, the P3 Model may present a lower risk adjusted cost. This would result when the higher private sector financing costs and higher ancillary costs are offset by the risk transfer and mitigation of public sector risks under a P3 model.

The purpose of the VFM analysis is therefore to quantify the estimated amount, if any, by which the net present costs of the Project when delivered as a P3 Model are lower than delivery under the Public Sector Comparator.

**Figure 30: VFM - Comparison between PSC and Shadow Bid**



<sup>56</sup> The VFM methodology applied by Deloitte within this Business Case uses a risk assessment tool that is proprietary to Deloitte, but follows industry best practices as defined by Infrastructure Ontario and other procurement agencies in Canada and worldwide.



## 6.2. Project Costs

The Project base cost inputs are set out in Appendix B. These inputs have been included in the financial model which was used to develop the VFM analysis. The financial model includes the DBB scenario (used as the Public Sector Comparator) and the DBFM scenario and utilizes common assumptions of the construction, maintenance and lifecycle base costs for the PSC and the P3 Model. The costing and technical inputs have been provided by Dillon, the City's technical advisors for the Project. Based on the costing and financing assumptions (Sections 6.3 and 6.4), the Project has a total capital cost of \$590M.

The VFM analysis is determined at the “project-level” and does not consider the impact of a potential PPP Canada contribution. Though the financial model assumes that for the DBFM, the City / Province provides Project Co with a Substantial Completion Payment (“**SCP**”) worth 35% of the Project capital cost with the remaining 25% coming from PPP Canada (total SCP of 60%), the VFM analysis ignores the specific source of the funding (i.e., City, Province, PPP Canada). This is for modeling and analysis purposes only and does not change the City’s intention to secure PPP Canada funding for up to 25% of the Project capital cost. Other cost inputs include ancillary costs generally associated with the planning and delivery of an infrastructure project, such as project management costs and transaction costs (e.g. legal, financial advisory fees). The ancillary costs assumptions utilized in the financial model are based on precedent projects such as the Disraeli Bridges and the Chief Peguis Trail projects previously undertaken by the City and are provided in Appendix B.

### 6.3. Financial Assumptions

The financial assumptions are set out in [REDACTED] below. These inputs have been included in the financial model which was used to develop the VFM analysis.

[illegible]

[REDACTED]

[REDACTED]

[REDACTED]

The financing structure of the Project, including the mix between public and private sector financing and the relevant project financing assumptions are described in the sections below.

[illegible]

Table 22 presents the Project financing assumptions used in the development of the financial model for the Business Case, which were developed through past experience and consideration of recent projects completed within the Canadian P3 market, and were further confirmed through the Market Consultations.

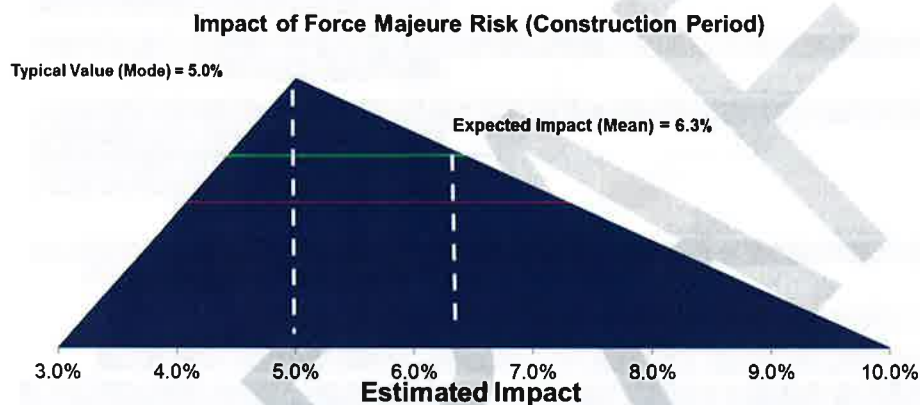
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this Project. The risk allocation was based on past experience, typical risk allocation in DBB and DBFM contracts, and risk allocation seen in transportation infrastructure projects.

- **Risk workshop:** Two risk workshops were conducted (November 2013 and February 2014) which were attended by team members from Winnipeg Transit, Deloitte, Dillon, and PPP Canada. Further information on attendees can be found in Section 6.5.2 below.
- **Risk assessment:** Through the workshop, participants ranked each relevant risk in terms of high, medium, or low probability and/or impact. The results were mapped onto the “quantitative” risk assessment to ensure directional consistency.
- **Statistical simulation:** A statistical simulation is run to yield a distribution of impacts for each risk based on the minimum (10<sup>th</sup> percentile), typical / most likely (model), and maximum (90<sup>th</sup> percentile) impacts contained in the risk matrix in order to calculate the expected value of the total risk retained by the City. For this purpose, the Monte Carlo simulation provides a set of outputs for each risk including the mean impact result. The mean impact is used as the expected impact for each risk. Most risk impacts are “triangular” distributions (as illustrated in Figure 31), meaning that the range of potential impacts is skewed toward the right. This reflects the fact that the “worst case” scenario for a particular risk has more range than the “best case” scenario, which cannot have an impact more favourable than 0.0%. Therefore, the expected impact is the mean value. The mode (most likely / typical value) often fails to reflect the wider range of worse-than-typical outcomes.

**Figure 31: Illustration of Risk Impact Quantification**



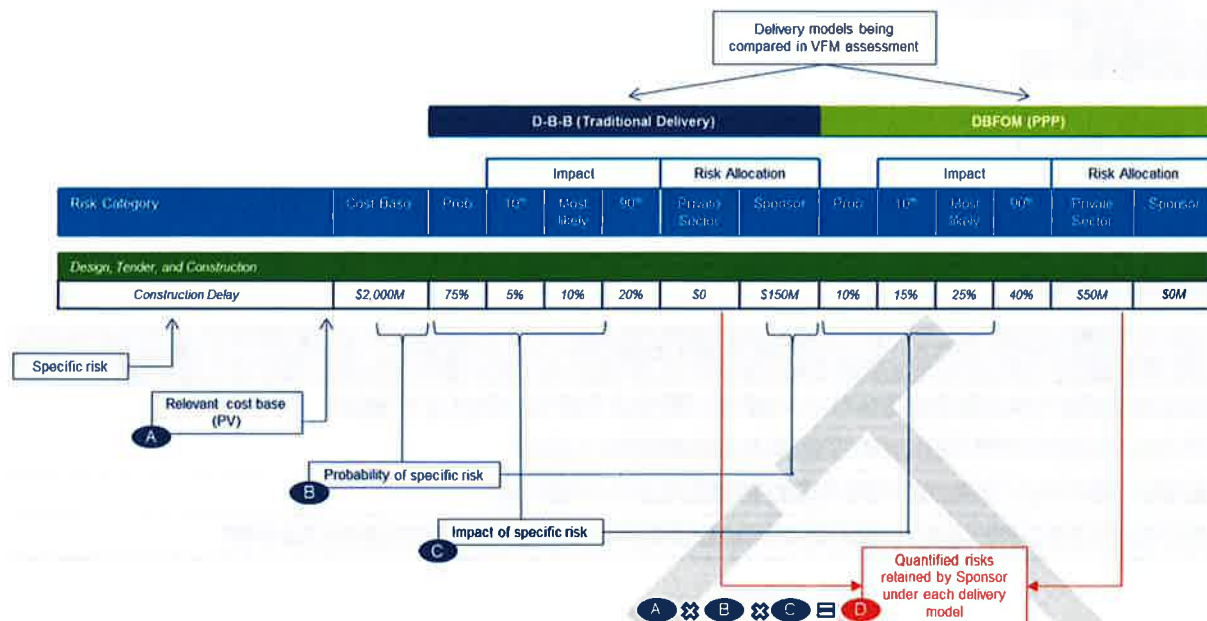
The statistical simulation provides an expected value for the impact of each risk, under both the DBFM and the DBB Delivery Models. Each risk quantified under the DBB and the DBFM is based on the product of:

- The cost base;
- The probability of occurrence;
- The expected impact; and
- The risk allocation.

Based on the risk workshop results, each risk for each component was quantified based on the factors identified above, in the manner illustrated in Figure 32.



Figure 32: Illustration of Quantification of Risks Retained



Note that risks retained by the private sector do not affect VFM results, because the VFM assessment is carried out from the public sector's perspective. Factor "C" represents a range or distribution.

## 6.5.2 Risk Workshop

As noted above, the Project Team convened for two risk workshops which were both facilitated by Deloitte and which followed the approach depicted in Figure 33.

Figure 33: Risk Workshop Approach



- Risk Workshop #1 was conducted in November 2013 by the Project Team. During the risk workshop, the risk assessment methodology and the completeness and accuracy of the risks listed in the risk matrix were reviewed. The risk workshop participants were provided with the draft risk matrix, developed by Deloitte, and discussed each of the risks in the matrix to determine probability and impact. Each team member then took one week to reflect on the matrices and provide their comments.
- Risk Workshop #2, was conducted in February 2014 for the purpose of obtaining further feedback and finalizing the risk allocations, probabilities, and impacts of the key risks related to the DBFM alternative. The probabilities and impacts of the other risks were assessed "off-line" by Deloitte and confirmed via review by the Project Team.





Delivery Models. The Project Agreement will use the SCP or take-out payment to ensure the construction budget and schedule being met.

The above risk quantification is consistent with City's objectives documented in Section 4.2.1, calling for the cost and schedule certainty, performance security and optimal risk transfer, which will be secured by a well-developed Project Agreement.

## 6.6. Preliminary Value for Money Assessment

The cash flow models and the risk assessment results are integrated to produce the preliminary VFM assessment of the Project. The VFM results presented below are expressed as a percentage. The VFM for the Project has been developed based on the inputs and assumptions provided in Section 6.3 and Section 6.4 and the risk assessment results presented in Section 6.5.4.

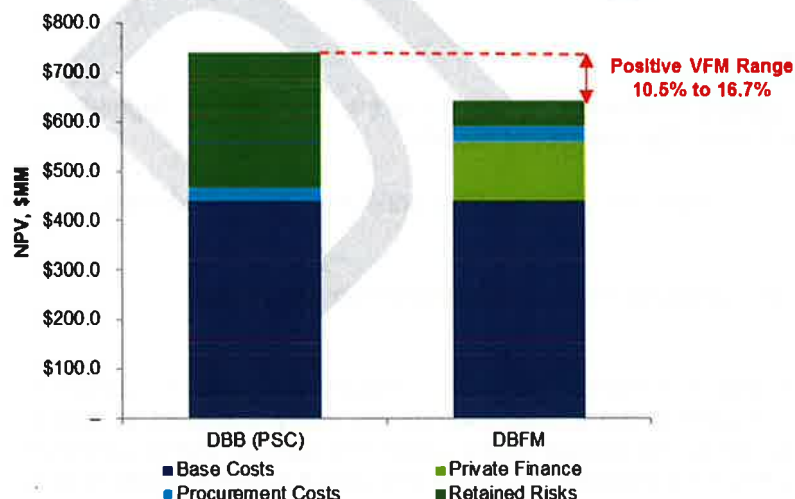
The DBFM Project Delivery Model provides robust VFM due to risk transfer primarily during the construction and maintenance phases of the Project. Although the design and development of the Southwest Transitway with future conversion capability to an LRT system is technically complex, the key risks associated with the Project are generally risks that can be controlled and mitigated by the private sector. Therefore, the transfer of these risks to a private sector counterparty that has experience and expertise in construction and maintenance of roadways is expected to result in VFM savings. Hence, although the higher financing costs under the DBFM approach are outweighed by the reduced risks retained by the City under the DBFM approach thus driving positive VFM.

A range of VFM results has been generated through conducting sensitivity and scenario analyses (using a combination of the sensitivity parameters) to determine impact on VFM from a potential change in future market conditions based on the following parameters:

1. **City Discount Rate:** + / - 25 bps;
2. **Construction Costs Inflation Rate:** 2.5% to 4.5%; and
3. **Private Financing Long-Term Credit Spread:** 170 bps to 230 bps.

Conducting various sensitivity and scenario analyses illustrates that the DBFM Project Delivery Model with a 30 year term generates expected VFM savings within a range of 10.5% to 16.7% relative to the City's PSC, as illustrated in Figure 34.

**Figure 34: VFM Comparison Between DBB (PSC) and DBFM (PPP Delivery Model)**





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# Section 7: Integrated Recommendation

## 7.1. Recommended Project Delivery Model

Based on the qualitative analysis contained in Sections 4 and 5, the evaluation of Project Delivery Models demonstrated that the DBFM structure is best-suited to meet the City's objectives. The VFM analysis contained in Section 6: confirms that the Project procured using a DBFM Project Delivery Model will provide positive value for money under a range of sensitivity assumptions, achieved through an appropriate degree of risk transfer from the City to Project Co throughout the Project lifecycle (i.e., design, construction and maintenance phases).

Thus, based on the summary of the qualitative evaluation of Project Delivery Models and the quantitative VFM analysis of the DBFM option relative to the Public Sector Comparator, a procurement approach based on a DBFM contractual structure is recommended for this Project. In addition, the Market Consultation process described in Section 5.5 confirmed that there is strong interest from the private sector in participating in the Project under such a model.

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# Section 9: Procurement Strategy

This section describes the proposed procurement approach with respect to the recommended Project Delivery Model and key considerations. The section also presents the City's proposed procurement governance structure and an overview of the Project Team and required advisory support that has been identified to deliver the Project.

## 9.1. Recommended Procurement Process

Section 7: has identified the DBFM structure as the recommended Project Delivery Model for the Project to go to market. The next step is to develop a procurement process for the City and its funders to move the Project from planning to construction as described in this section.

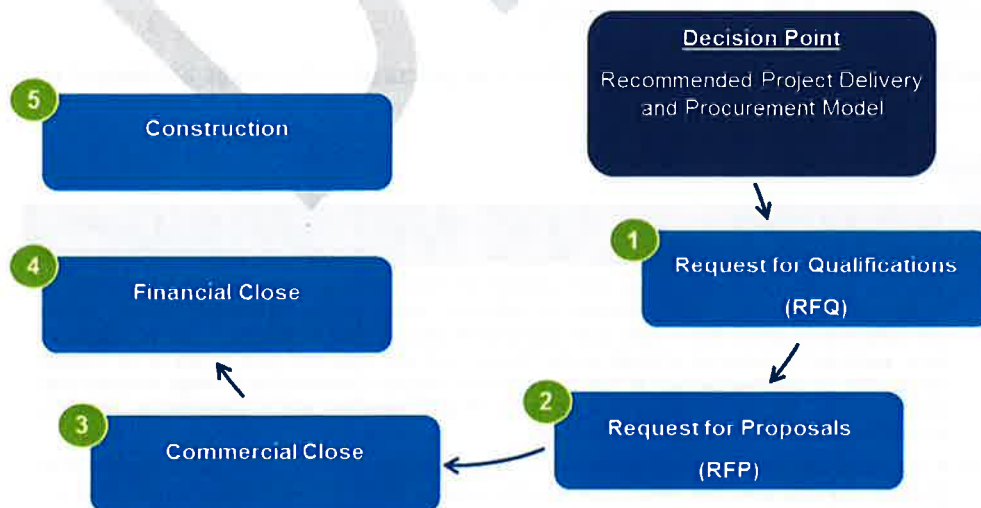
### 9.1.1 Recommended Procurement Process for the Stage 2 Project

The City has successfully followed best practices in P3 procurement processes in delivering two prior transportation projects – Disraeli Bridges and Chief Peguis Trail. For both projects, the City adopted a two-stage procurement strategy comprising a Request for Qualification phase to short-list up to three (3) qualified consortia followed by a Request for Proposal (“RFP”) to select the preferred proponent that offered best value to the City. This two-stage approach is considered to be the market standard in the Canadian P3 market for DBFM transactions and the City followed appropriate processes to ensure an accessible, fair and competitive environment was in place governing both these procurements.

Given the City's past experience and positive track record with P3 procurements in the transportation sector and the market's familiarity and comfort with such processes as evidenced through the Market Consultations, a two-stage procurement process similar to the Disraeli Bridges and Chief Peguis Trail projects is recommended for the Project. The City will ensure that the procurement process complies with applicable procurement policies and regulations including the City's Materials Management policies as well as the Province's P3 legislation.

The figure below shows the work flow of a typical process, followed by a brief overview of the key elements of the RFQ and RFP stage leading up to Commercial and Financial Close.

**Figure 35: Stages of a Market-standard P3 Procurement Process**



### ***Request for Qualifications (RFQ)***

An RFQ is issued by the public sector sponsor in the early stage of the procurement process to qualify applicant teams based on their experience in design, construction and maintenance of similar projects, as well as their financial strength and capacity to undertake the project and obtain financing required. The RFQ feeds into the RFP review process by short-listing the applicant teams who meet the desired qualifications. A typical RFQ process will typically take up to 3 to 4 months from the time RFQ is issued to the selection of qualified respondents.

### ***Request for Proposal (RFP)***

The RFP stage is a more detailed process requiring the qualified respondents (or proponents) to submit a proposal on how they will deliver the project to the specifications described in the procurement documents and with a proposed fixed price. The RFP stage will include the evaluation of the submissions scored in accordance with the evaluation criteria set out by the public sector sponsor. The RFP process typically takes on average, 6 to 8 months to complete from RFP release to receipt of submissions. During this RFP open period, commercially confidential meetings are held with qualified respondents to allow open dialogue with the sponsor to seek clarification on the design specifications or other aspects of the Project Agreement ("PA") and RFP.

### ***Preferred Proponent***

Preferred Proponent ("PP") stage is the final stage between RFP submission and Commercial and Financial Close. The PP will be the qualified respondent that has submitted a proposal which receives the highest score as per the evaluation criteria specified in the RFP. In the PP stage, the terms of the contract are finalized and signed and financing is secured as required.

### ***Commercial and Financial Close***

Commercial Close refers to the point of time when the PP agrees to the terms and conditions as described in the PA. At this point, the PA is final and subject to the PP completing a rate setting protocol to lock in the required financing (called Financial Close). These typically occur within days of one another.

## **9.1.2 Procurement Considerations**

As noted, the analysis presented in this Business Case indicates that the DBFM Project Delivery Model is expected to meet the City's key procurement objectives described in detail in section 4.2. As a general rule, a procurement process will generate the most value for money if:

- It attracts a high degree of market interest to drive bidder competition;
- It is designed such that it is open, fair and transparent; and
- It allows for a degree of innovation from the bid community.

The table below describes the rationale and the extent to which the procurement process envisaged will meet the considerations to drive value for money.

**Table 26: Key Procurement Considerations**

Key Considerations	Stage 2 Project Procurement
Establishing and retaining market interest to ensure competitive process	<ul style="list-style-type: none"><li>• Over the December 2013-January 2014 period, the City's Market Consultations (described in Section 5.5) resulted in detailed discussions with over twenty market participants providing them with information about the Project and anticipated procurement timelines. Thus the range of firms expected to have an interest in the Project are well informed and aware of its current status prior to commencement of the procurement. Market Consultation findings indicate that there is a high degree of market interest in the Project, which in turn is expected to generate strong competition in a procurement process.</li><li>• A key consideration is the significant level of construction activity expected in Central and Western Canada over the next 12-24 months, underscoring the importance of ensuring the Project is released to the market at the earliest possible time to ensure it remains a target opportunity for a broad set of potential bidders. In this context, the City will strive to advance the</li></ul>

Key Considerations	Stage 2 Project Procurement
	<p>Project in line with the timeframes shared during the Market Consultation process to ensure interested parties can accordingly continue with bid team preparations and internal processes.</p> <ul style="list-style-type: none"> <li>• As part of its pre-marketing plans, the City will authorize its financial advisor to provide a brief update regarding current Project status and anticipated timelines to all firms that participated in the Market Consultation process, to ensure they are aware of the Project's progress and impending transaction process.</li> <li>• The City plans to widely publish the RFQ to solicit and retain sufficient competitive tension throughout the process. Up till the release of the RFQ, the City will continue to monitor market developments to ensure sufficient interest continues to exist for the Project leading up to the procurement launch.</li> </ul>
Open, fair and transparent process	<ul style="list-style-type: none"> <li>• A two-staged procurement process involving both a RFQ and RFP stage will ensure that the process remains open and transparent, allowing only qualified respondents to proceed to the detailed proposal stage. All teams will receive access to the same level and detail of information throughout the procurement process.</li> <li>• A comprehensive evaluation framework will be developed for each of the RFQ/RFP documents to ensure a rigorous process and, by documenting the evaluation results, insulate the City from any claims of unfairness. The evaluation framework establishes a staged evaluation process and tasks teams to undertake each phase. It ensures that the evaluation process yields a result that is fair, defensible, and clearly identifies the Preferred Proponent to take on the Project.</li> <li>• The City also plans to engage qualified respondents at the RFP stage with Commercially Confidential Meetings ("CCMs"), providing an opportunity for them to better understand the Project requirements and to provide feedback on key technical, commercial and legal issues during the procurement.</li> <li>• During the RFQ/RFP evaluation process, the City will set up a single point of contact to issue Request for Clarifications ("RFC") to as well as answer questions from the applicant teams (at the RFQ stage) and qualified respondents (at the RFP stage). All the questions and answers will be posted to the entire bid community, communications will be documented, and transaction documents including the final project agreement will be disclosed to the public.</li> <li>• To ensure compliance with best practices, an independent fairness advisor will be utilized to provide an opinion as to whether the process was carried out in a manner that is consistent with the procurement documents issued to applicant teams and qualified respondents and was carried out with openness, transparency, integrity and accountability.</li> </ul>
Innovation	<ul style="list-style-type: none"> <li>• By virtue of selecting a delivery model that incorporates the "Design" element of the Project, the City is allowing a certain degree of innovation from the private sector in how the Project is designed, working within the parameters of the design specifications. For this Project, findings from the Market Consultations suggested several potential areas for innovation including material selection, traffic management, construction scheduling and coordination etc. A key consideration noted during the Market Consultations was ensuring that the output specifications were sufficiently "open" to allow qualified respondents to bring innovative solutions to the Project.</li> </ul>

### 9.1.3 Evaluation Process Considerations

The City intends to utilize precedent RFQ and RFP evaluation criteria from the Chief Peguis Trail project as a starting point, that may be refined based on current P3 market best practices.


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The high level procurement timeline for the Project is provided in Figure 36 below. Additional activities including land acquisitions, environmental approvals and utility works have also been identified. The status of these activities is further described in Section 10.1.

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On this basis, the City expects to commence the procurement process with the issuance of the RFQ to the market in July 2014, with applicant team submissions due in October 2014. Assuming a funding announcement from PPP Canada with respect to its participation in the Project is made by late-2014, the City would then proceed with the release of the RFP to the qualified respondents in December 2014, and allow for an open period of eight (8) months with bid submissions due in July 2015.

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# Section 10: Implementation Plan

## 10.1. Project Status

One of the key goals of this Business Case is to recommend an optimal Project Delivery Model and procurement process for the Project that provides the greatest value for money to the City in accordance with its objectives and constraints. This Business Case has assessed the DBFM model as the recommended structure to contract with the private sector in a P3 arrangement. The City, as a next step, will need to review and approve the submission of this Business Case to PPP Canada scheduled to be presented for approval at an upcoming meeting before proceeding to a procurement process.

Leading up to this meeting, City staff has organized a series of seminars to present technical and financial background covering key elements of the Project to provide Councilors with relevant information on the Project in advance of the upcoming Council meeting. The City will be requesting Council to approve the Project and funding plan, formally submit the Business Case to PPP Canada and proceed with the procurement process with the issuance of the RFQ in July 2014.

In parallel with the Business Case, the City is also engaged in several other tasks to move the Project forward. The current status of these tasks is described below.

### ***Manitoba PPP Legislation***

Based on the City's review of the information requirements contained in the regulations associated with the Province's P3 legislation (The Public-Private Partnerships Transparency and Accountability Act), it is anticipated that the contents of this Business Case are in compliance with the applicable requirements. It is also understood that as part of these regulations, the City is required to conduct a public meeting with respect to the P3 procurement approach. The City will conduct the public consultation prior to the release of the RFQ, as required by the Province.

### ***Functional Design***

Dillon is currently engaged on behalf of the City to progress the design work including confirmation of the alignment of the Project and expects to complete the Functional Design Study by August 2014. It is noted that sufficient design work has been completed such that the cost estimates developed to date as part of the scope of the Functional Design Study provide a level of cost accuracy of +/- 15%, in line with PPP Canada's Schematic Design Estimate Guide.

### ***Funding Plan***

As noted in Section 3.4.2 and 8.1, the Province has confirmed its capital commitment to the Project in an amount up to \$225 million. The City is currently negotiating with the Province with regard to the specific terms and conditions of this capital contribution to the Project and expects to reach an agreement that outlines the funding protocols by April 2014. The City will also finalize the funding plan for its share of Project costs in conjunction with this Business Case for Council approval in April 2014. PPP Canada is expected to review the Business Case in May-June 2014, subsequent to which the City will await a funding decision.





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### **Environmental Approvals**

In advance of the physical work for the Project, an Environmental Assessment Proposal ("EAP") is being prepared for submission to Manitoba Conservation and Water Stewardship ("MCWS"), as per the Environment Act and the Environment Act Proposal Report Guidelines.

Major activities which have been undertaken to complete the EAP include:

- A field survey of the entire Project area was undertaken on October 1, 2013. At that time, the only wetland or depressional areas observed were some areas of cattails with no water present. Milkweed (habitat for monarch butterfly, a listed species) was found to be present in two small areas, but otherwise there were no listed/rare plant or animal species observed.
- An assessment of potential environmental effect during construction and operation related interactions with the biophysical environment (e.g., vegetation, wildlife, stormwater, air, and noise) and socio-economic environment (e.g., land use, Heritage Resources) as per the Environment Act Proposal Report Guidelines. The assessment and mitigative measures will be reported within the EAP.
- A proof of contact was undertaken with Manitoba Heritage Resources Branch and it has been confirmed that there are no heritage sites in the area.
- Meetings with Manitoba Conservation Project Officers to discuss the scope and depth of certain assessment parameters. A greenhouse gas assessment and/or inventory is not required for the EAP. A human health risk assessment is not required for the EAP.
- Public consultation has been ongoing since fall 2013. This information will be included as part of the EAP submission and will be appended to the EAP upon consultation completion.

From the activities completed at the time of writing, no significant issues of concern have been identified.

The EAP is to be filed with MCWS upon completion of the public consultation and integration of assessment and mitigating actions into the EAP. EAP is planned to be filed in late March 2014 with an 8 to 12 week review period by MCWS and its Technical Advisory Committee members.

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### 10.3. Project Schedule

The table in Section 9.1.4 provides an integrated Project schedule that identifies key milestones during the P3 procurement process in addition to the anticipated timeframe of other Project activities leading up to construction commencement including: public consultations; land acquisitions; environmental approvals; funding negotiations; and Manitoba Hydro pre-works.

### 10.4. Stakeholder Engagement and Communications

The City is committed to comprehensive stakeholder communication and engagement both during the planning stage of the Project as well during the procurement and construction phases. The City has prepared a Public Engagement and Communications Strategy to guide key communication protocols and messaging in relation to the development of the Project. The Strategy covers the following distinct phases of public engagement during the Project:

- Round 1 and 2 – Functional Design (October to February 2014)
- Round 3 – P3 Business Case and VFM (March to April 2014)
- Round 4 – Procurement (May 2014 to November 2015)
- Round 5 – Construction (November 2015 to November 2019)
- Round 6 – Pre-opening (November 2019 to April 2020)

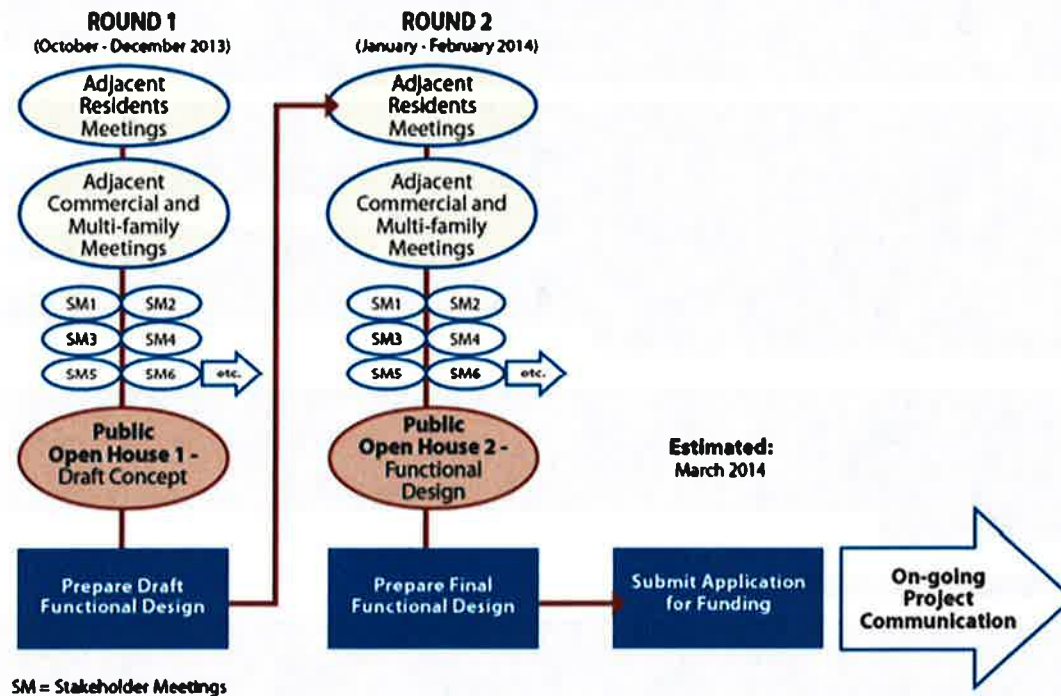
This section provides an overview of current public engagement activities as part of the functional design process and planned activities during the subsequent stages of the Project.

During the development of the functional design for the Project, two rounds of public engagement were undertaken over a five month period between October 2013 and February 2014. Round 1 was conducted early in the process to communicate the general alignment of the transitway, to outline the scope of the Project, to understand expectations of stakeholders and the public, and to gather feedback for consideration by the design team. Following the preparation of a draft functional design for the Project, Round 2 was undertaken to receive feedback to refine the functional design and to respond to stakeholder questions.



This two-round process is illustrated below:

**Figure 38: Public Engagement Process during Functional Design Study**



During both rounds, a comprehensive set of consultation mechanisms were employed including individual and stakeholder group meetings, public open house events, telephone conversations, public notification, and the use of a project website to provide materials, project updates, and accommodate public comment. The Round 1 Public Open Houses were held on November 18 and 19, 2013. The Round 2 Public Open Houses were held on February 24 and 25, 2014. During Rounds 1 and 2, an extensive list of stakeholder contacts was established. As the functional design is further refined over the spring and summer of 2014, further consultation will take place with stakeholders.

The decision to support this Project will be brought to City Council at an upcoming meeting, as noted earlier. In addition, Provincial legislation requires that the public be offered the opportunity to view and comment on the P3 Business Case and VFM results. If it is determined by the Province that the P3 Business Case and VFM must have their own public forum (i.e. public consideration by SPC-IRPW, EPC and Council is insufficient in terms of public consultation), a public open house strictly dealing with the P3 Business Case and VFM would be scheduled in April or May 2014.

During the procurement process, the Project website will be updated on an ongoing basis and periodic news releases will be issued to keep the public current on the status of the Project (e.g. transitway plan, benefits, costs, funding, procurement method, timelines, planned transit service changes, etc.). The RFP will include a requirement for the Project Co to participate in a public engagement program managed by the City throughout the course of the Project.

After the Private Partner has been selected, the City will collaborate with the Project Co to build on the earlier consultation initiative to develop a detailed public engagement program to communicate Project designs, construction staging plans, and updates throughout the final design and construction stages of the Project. An important element of this program includes the provision of detailed public information on how to use the revised transit network that will go into effect when the Transitway is opened for service. Like the consultation process used for the functional design, a combination of methods will be used to engage the public, including individual and group meetings, open houses, public notices, and the Project website.

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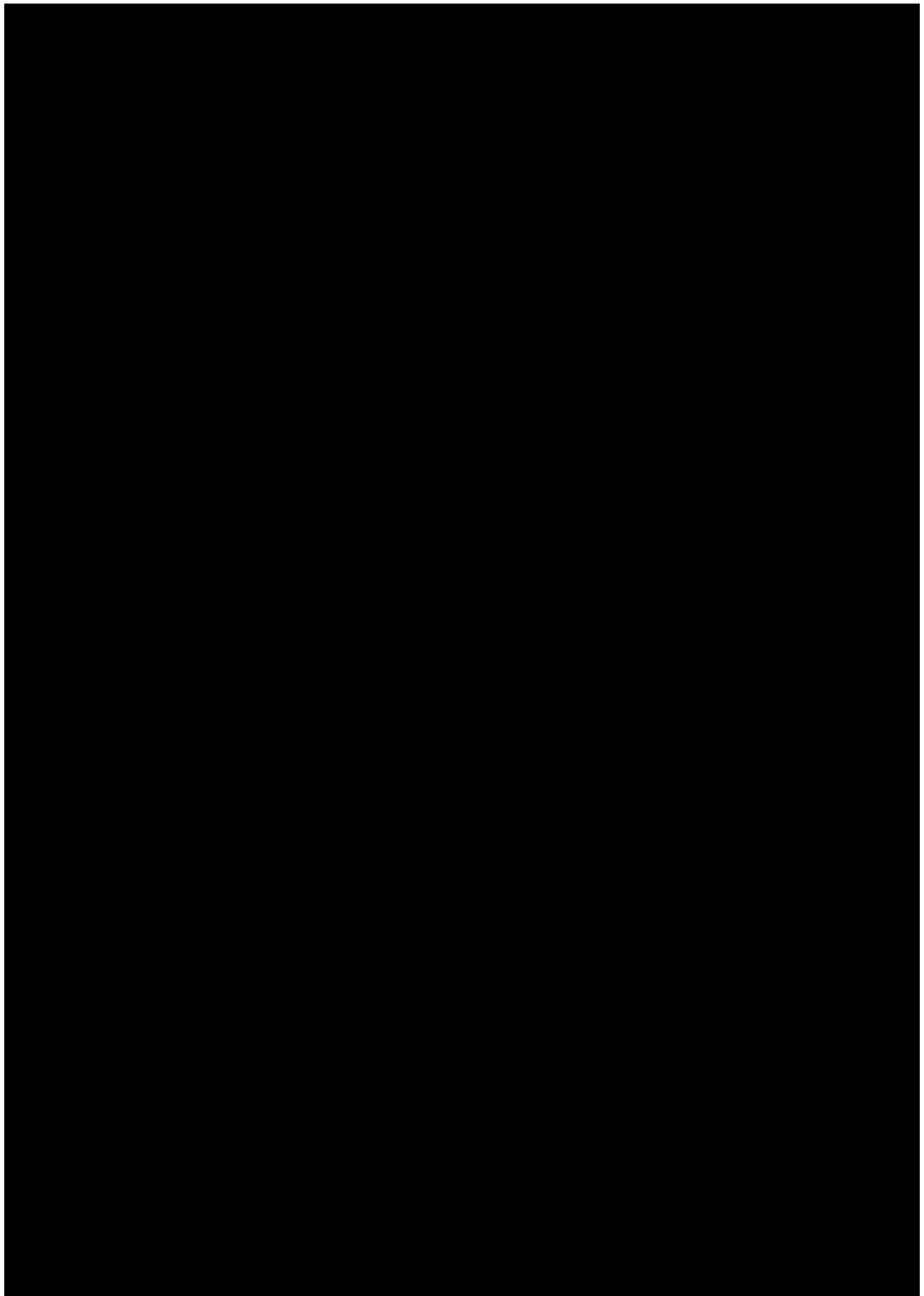
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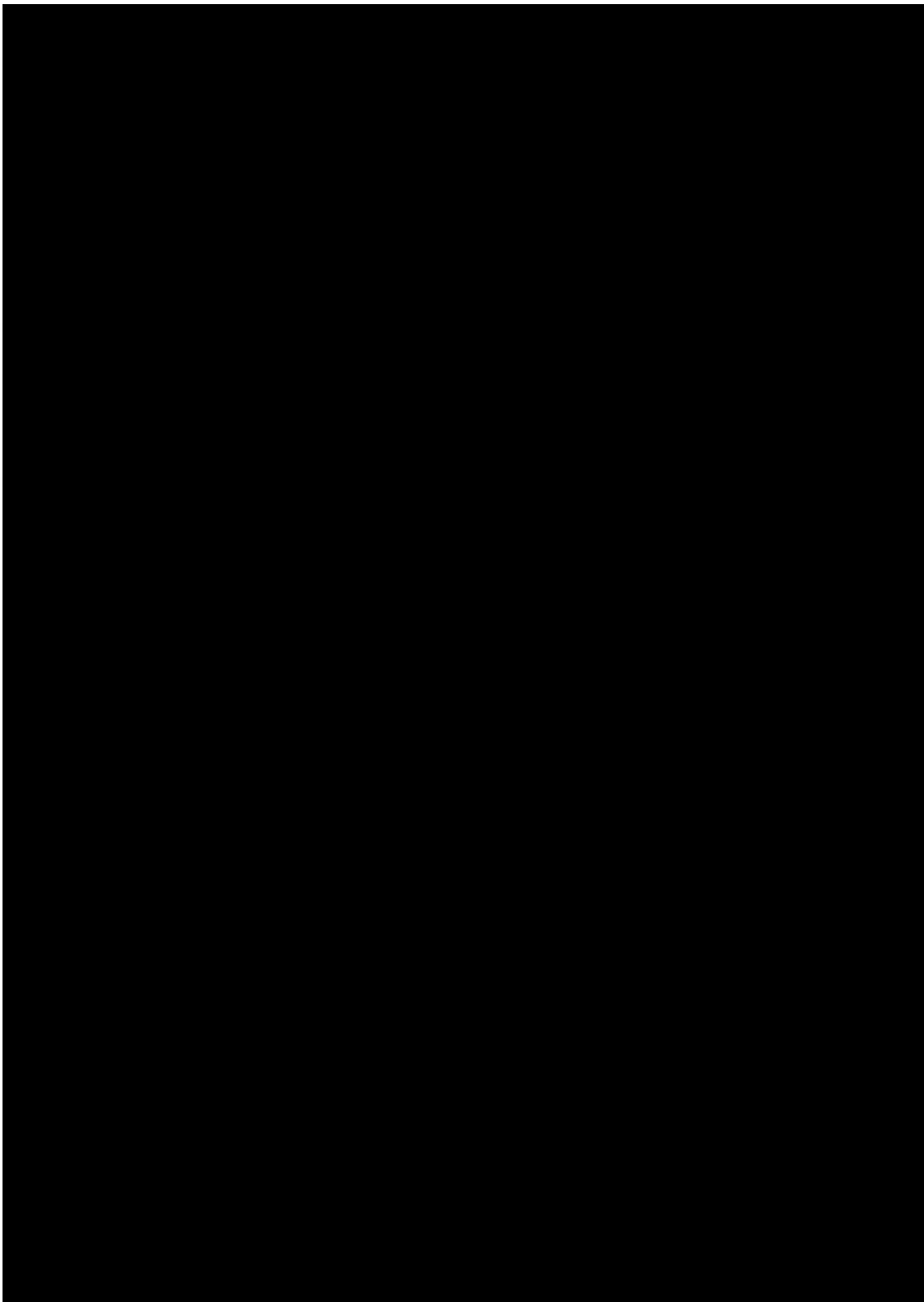
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