DISRAELI FREEWAY AND BRIDGES PROJECT, WINNIPEG, MANITOBA

RAISING THE BAR ON REPLACING MUNICIPAL INFRASTRUCTURE

THE CANADIAN COUNCIL FOR PUBLIC-PRIVATE PARTNERSHIPS

2012 NATIONAL AWARD CASE STUDY

The Canadian Council for Public-Private Partnerships

Le Conseil Canadien pour les Partenariats Public-Privé

The Canadian Council For Public-Private Partnerships
2012 National Award Case Studies

C.W. Chuck Wills Award:
Disraeli Freeway and Bridges Project
Winnipeg, Manitoba

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Introduction

Public-private partnerships (PPPs or P3s) have become a common tool for building infrastructure and delivering services. Numerous projects are completed or underway across Canada involving a wide array of sectors and include hospitals, courthouses, roads, bridges, transit systems and water treatment facilities. Canadians and their governments at the municipal, provincial and federal level are seeing the benefits: on-time and on-budget delivery, value for money, long-term cost certainty and the delivery of state-of-the-art facilities to communities. This made-in-Canada P3 approach is garnering international attention, and opportunities are growing to take Canadian industry experience and expertise global.

The Canadian Council for Public-Private Partnerships (CCPPP) believes that when the spheres of government and business intersect there are many benefits for both, and is committed to promoting best practices and informing others about the P3 model.

Ever since 1998, CCPPP's National Awards for Innovation and Excellence have recognized the achievements of municipal, provincial/territorial and federal governments and their private-sector partners, recognizing projects that exemplify excellence in providing public facilities and services to Canadians.

Gold and Silver Awards are given annually for project financing, service delivery, and infrastructure. The selection panel may also recognize an exemplary project based on its unique merits. All of the winning projects are chosen on the basis of the following criteria:

- Innovative features;
- Relevance or significance as a national and/or international model;
- Economic benefit (job creation, enhanced economic value, export potential, etc.);
- Measurable enhancement of quality and excellence in service or project;
- Appropriate allocation of risks, responsibilities, and returns between partners; and
- Effective use of financing and/or use of non-traditional sources of revenue.

Since the inception of its Awards, CCPPP has also published 54 case studies that examine some of these exemplary P3 projects.

Designed to inspire others to consider innovative and efficient models for procuring public infrastructure, the studies highlight many of the lessons learned about public-private partnerships over the last 15 years. Each case provides a close look at how a successful P3 has worked, including how the partnership was established, its structure and operation, and its resulting benefits. A complete list is included in Appendix C.

Common Features

Although the case studies examine projects from a wide range of sectors and jurisdictions and point to a variety of benefits and trends, they share many common features. These include:

- Value for money to taxpayers related to on-time and on-budget construction;
- Innovative financing that has adapted to changes in the economy;
- Significant financial and social benefits both during construction and operation;
- Strong public-sector oversight through transparent procurement processes, competitive bidding, and fairness monitoring;
- Increased efficiencies when project design, building, financing and operation are integrated;
- Active engagement of and communication with community members and service users;
- Opportunities for Canadian companies to export their expertise; and
- A focus on outcomes rather than inputs, resulting in infrastructure that breaks new ground—whether in building design, technological innovation, or environmental standards.

In the early 21st century Canada is facing the complex challenges of population growth, urbanization, aging infrastructure, changing global trade patterns, and environmental sustainability. Public-private partnerships offer an innovative and cost-effective solution to meet the varied public infrastructure needs of Canadians.

CCPPP's 2012 Case Studies

Three case studies were developed from among CCPPP's 2012 national award winners for innovation and excellence in public-private partnerships.

The winners of the Gold and Silver Awards for Infrastructure, The BC Centre for the North and The Fort St. John Hospital and Residential Care Project, both overcame significant challenges unique to their northern location and climate. The BC Centre for the North exceeded the health authority's specifications and delivered ahead of schedule. Its innovations include its Aboriginal design elements, green design and extensive showcasing of wood, a key northern building material. The Fort St John Hospital project achieved its goals of creating a model of excellence for delivering quality rural health care.

The Centre hospitalier de l'Université de Montréal (the CHUM), recipient of the Gold Award for Project Financing, was funded with the single largest bond issue executed for a P3 transaction in Canada to date, and was the first financed at a BBB Category rating. This P3's innovative financing structure met the challenges of financing a project of this size and complexity.

CCPPP's Chuck Wills Award was won by the Disraeli Bridges and Freeway Project. Its private-sector partners replaced a stretch of busy freeway with a new road and two bridges on a major artery to downtown Winnipeg, minimizing the impact on traffic while still offering significant savings compared to the traditional delivery approach.

2012 Award Winners

The 2012 Awards selection panel conferred Gold Awards to projects for Excellence and Innovation in Project Financing, Infrastructure and Service Delivery, Silver Awards for Project Financing and Infrastructure, and an Award of Merit for Infrastructure. A P3 Champion and an outstanding municipal project were also honoured. CCPPP case studies are available for four of these award-winning projects.

Gold Award for Infrastructure: The BC Cancer Centre for the North

The $72.2 million BC Cancer Centre for the North in Prince George gives the communities of northern British Columbia closer access to cancer treatment and diagnostic services. The 54,000-square-metre facility has received LEED Gold certification and features extensive use of B.C. wood, a "living" roof, healing garden and spiritual care room. Plenary Health's design includes an underground parking lot, a feature that exceeded the public partners' specifications and provides real value to the patients, staff and visitors using the facility.

Silver Award for Infrastructure: Fort St. John Hospital and Residential Care Project

The new 55-bed hospital and 124-bed seniors' residential care facility that comprise Fort St. John's new Hospital and Residential Care Project, achieved through a partnership between ISL Health General Partnership and the Northern Health Authority, have been built to serve Northern B.C.'s growing Peace River community. The hospital, which replaces an older, smaller, facility, features enhanced and new medical services, a new birthing centre, and spiritual rooms. A two-storey link allows its services to be shared with the home-like wooden residential care facility. Both buildings have been given LEED Gold certification.

Award of Merit for Infrastructure: Northwest Anthony Henday Drive

The Northwest Anthony Henday Drive is a vital transportation link around northwest Edmonton. The project, a joint venture between Flatiron Constructors Canada, Parsons Overseas Company of Canada, and Graham Infrastructure, involved the design and construction of approximately 21 kilometres of new 4- and 6-lane divided roadways, including eight interchanges, five flyovers, and two railroad crossings. The total cost of the project, including management, operations and maintenance over the course of the 30-year contract, is $1.42 billion Net Present Value, the largest single transaction entered into by Alberta Transportation, for an estimated $240 million savings over traditional procurement.

Gold Award for Project Financing: Centre Hospitalier de l'Université de Montréal – CHUM

Three hospitals in downtown Montréal –the oldest in North America – will be replaced by CHUM, a new multi-building university hospital complex providing specialized care and acting as a tertiary referral centre for 1.7 million Quebecers. The principal 24-storey building will open in 2016. The $3.17 billion project, a partnership between Société en Commandite Santé Montréal Collectif and Infrastructure Québec, represents the largest senior debt funding amount of any Canadian P3 hospital transaction to date. The construction period required financing with an unusually long tenure, and the financing structure allows equity distributions during Phase 2 construction.

Silver Award for Project Financing: Humber River Regional Hospital New Acute Care Facility

The Humber River Regional Hospital New Acute Care Facility was procured through an availability-based P3 structure. The total cost of designing, building, financing, and operating North America's first fully digital hospital is $1.75 billion Net Present Value. Plenary Health Care Partnerships raised over $1 billion of private construction-phase financing from a combination of short-term and long-term bond proceeds and equity capital to be amortized over the concession term. At substantial completion, Humber River Regional Hospital will also give Plenary $611 million to repay the principal amount of the short-term senior bonds.

Gold Award for Service Delivery: Kelowna and Vernon Hospitals Project

Private partner Infusion Health KVH General Partnership designed and built 53,000 square metres of new space in the Jubilee Hospital Polson Tower in Vernon and the UBC Medical School Clinical Academic Campus and General Hospital Centennial Tower in Kelowna. With multiple facilities 50 kilometres apart falling under two regional health organizations within the BC Interior Health Authority, this groundbreaking P3 benefits from the efficiencies of a single help desk, integrated plant maintenance and consistent standards. Infusion began managing the existing facilities in 2009 and will also be responsible for the new facilities' maintenance for the next 30 years.

C.W. Chuck Wills Award: Disraeli Bridges and Freeway Project

The Disraeli Bridges Freeway Project is the winner of the Chuck Wills Award, presented to outstanding municipal P3 projects. It replaces a rapidly aging 2-kilometre stretch of freeway with a new road and two bridge structures over the Red River and CP Rail mainline. Plenary Roads' plan kept at least four lanes of a major artery into Winnipeg's downtown open at all peak travel times during construction. With a total capital cost of $195 million, the Design Build Finance Maintain project saved the City of Winnipeg approximately 17% in comparison to the traditional delivery approach.

2012 Champion: Monique Jérôme-Forget

Monique Jérôme-Forget, honoured as CCPPP's 14th Champion, has been a steadfast advocate of P3s as the catalyst to make Québec an infrastructure leader. A four-term Liberal member of Québec's national assembly, she served as the province's Treasury Board President, Minister of Government Services and Minister of Finance. PPP Québec was created and flourished during her term as Treasury Board President. Under Monique's leadership eight P3 projects were started, with an investment value of $6 billion. Many are now completed or under construction.

Acknowledgements

We would like to thank our Awards selection panel volunteers, who had the difficult task of choosing the best among the dozens of excellent projects at various stages of procurement and operation submitted for consideration in 2012. The panelists included:

- Peter Hepburn, Managing Director and Co-Head, Infrastructure Finance, National Bank Financial
- Cliff Inskip, Managing Director, Head of Infrastructure and Project Finance, CIBC World Markets
- Alain Massicotte, Partner, Blakes LLP, Montreal
- Alan Russell, Professor and Chair, Computer Integrated Design & Construction, Department of Civil Engineering with University of British Columbia, Vancouver

CCPPP Board members:

- Robert Beaumont, Partner with Osler Hoskin & Harcourt LLP
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- Cynthia Robertson, Principal Parkridge Consulting Inc. (Chair, CCPPP National Awards Committee)

We also appreciate the tangible support of the following sponsors for Canadian excellence in P3s, which makes the Awards program possible:

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CCPPP wishes to acknowledge and thank all those who assisted in the development of the case studies for their valuable input and PPP Canada for its research contribution.

PPP Canada

About CCPPP

Established in 1993, CCPPP is a national not-for-profit non-partisan, member-based organization with broad representation from across the public and private sectors. Its mission is to promote innovative approaches to infrastructure development and service delivery through public-private partnerships with all levels of government. The Council is a proponent of evidence-based public policy in support of P3s, facilitates the adoption of international best practices, and educates stakeholders and the community on the economic and social benefits of public-private partnerships. The Council organizes an annual conference that is recognized internationally as the premier forum bringing together senior government and business leaders in the P3 community at which the most successful Canadian public-private partnerships are celebrated through CCPPP's National Awards for Innovation and Excellence.

CCPPP's publications contribute to the ongoing development of Canada's expertise in public-private partnerships, emphasizing innovative and successful P3 practices and projects. All CCPPP publications, including case studies, research reports, surveys and guides can be purchased at www.pppcouncil.ca/bookstore.

Quick Facts – Disraeli Freeway and Bridges Project[1]

Project type

Design-Build-Finance-Maintain (DBFM)

Asset/Service

32-year 8-month agreement to design, build, finance and maintain a two-kilometre, four-lane freeway with new road and two bridge structures over the Red River and the CP Rail mainline:

- 32-month design and construction period; and
- 30-year maintenance term

The project also includes the construction of a separate and dedicated bridge for pedestrians and bicyclists.

Status

New roadway and bridges completed October 19, 2012

Partners

City of Winnipeg
Plenary Roads Winnipeg

Other Participants

Public Sector

- Deloitte & Touche LLP and MMM Group – transaction and financial advisors
- CIBC World Markets – capital markets and financial advisor
- Aikins, MacAulay & Thorvaldson LLP – legal advisors
- Knowles Consultancy Services Inc. – fairness advisor

Private Sector

- Plenary Group (Canada) Ltd. – P3 developer, equity provider
- PCL Constructors Canada Inc. – design-builder
- Wardrop – engineering and design consultant
- Stantec – roadwork design, underground utility design and coordination of other utilities
- Plenary Roads – operations and maintenance
- Davies Ward Phillips & Vineberg LLP – legal advisors

Financing

Capital Cost

- $195 million

Equity

- $15.8 million provided by Plenary Group (Canada) Ltd.

Senior Credit Facility

- $47.1 million short-term bank debt

Senior Notes

- $94.6 million long-term, fully amortizing, unrated private placement

Payments

- $75 million commissioning payment from the City of Winnipeg when the project was certified as safe for normal use
- Monthly service payments averaging $12.1 million per year based on availability and performance

Value for Money (VFM)

- $47.7 million or 17.1 per cent in cost savings compared to a traditional delivery approach
- VFM analysis compares the quantitative and qualitative costs of the private-sector proposal to the quantitative and qualitative costs of the public-sector comparator.

[1] Background and facts in this case study rely on the information contained in the award application submitted jointly by the project partners in September, 2012 to the Canadian Council for Public-Private Partnerships. Information from the submission has been supplemented and updated with information from the procurement documents, the project agreement, the project report, municipal council minutes and website, and personal interviews with project partner representatives.

Other features

- One of the largest bridge projects to date in the City of Winnipeg;
- Completed on time and on budget;
- A key issue for City of Winnipeg was to meet objectives established in an extensive public consultation process;
- Met objective to limit time Disraeli Freeway unavailable for traffic – DBFM procurement process allowed City of Winnipeg to harness private-sector innovation by challenging proponents to reduce closure time while staying within a designated maximum budget;
- Plenary Roads Winnipeg team developed new design, with new alignment, allowing the Disraeli Freeway to have a minimum of four lanes of traffic open during peak travel times (Monday to Friday, 6 a.m. to 6 p.m.) during construction, within City of Winnipeg's affordability cap;
- Design met a key public objective for a dedicated pedestrian bridge to link to the City of Winnipeg's expanding Active Transportation Network;
- Pedestrian bridge to use in-water piers of original bridge and be completed mid-2013 (post-commissioning of the new bridge).

Project website

http://www.winnipeg.ca/publicworks/MajorProjects/DisraeliBridges/

Overview

The Disraeli Freeway is a major arterial roadway connecting the northeast part of Winnipeg with the downtown core. The freeway and bridge structures (the freeway) carry approximately 42,000 vehicles daily. The freeway was at the end of its estimated useful life and in need of major rehabilitation or replacement.

The City of Winnipeg chose a design-build-finance-maintain (DBFM) public-private partnership (P3) procurement model for the project to replace the freeway. The Disraeli Freeway and Bridges project (the project) is a partnership agreement, between the City of Winnipeg (public sector) and Plenary Roads Winnipeg (private sector) for the construction of two kilometres of a new four-lane roadway and two new bridges crossing the Red River and the CP Rail main line. It includes a 32-month design and construction period and a 30-year maintenance period.

The project agreement is term-certain and performance-based. It reached financial close on March 30, 2010, and construction of the new roadway and bridges was completed, on time and on budget, on October 19, 2012. The project also includes the construction of a separate bridge dedicated to pedestrians, cyclists and other non-vehicular traffic using the in-water piers of the original bridge. This aspect of the project is to be completed by the summer of 2013.

Capital value of this project was significant for the City of Winnipeg and any cost overages had the potential to negatively impact its finances and tax rates, so achieving cost certainty and staying within budget were key considerations in selecting a P3 approach.

In addition, there were several issues of public concern that the City had to address, including limiting the time the roadway would be unavailable for traffic and dedicating lanes and sidewalks for cyclists and pedestrians.

The Chuck Wills Award is given periodically for outstanding P3 projects, and only to municipalities. By choosing a P3 approach, the City of Winnipeg successfully balanced the risks and rewards of rebuilding a major transportation artery and achieved its financial and social objectives. The project successfully balanced City budget constraints, bridge quality and aesthetics. It also promoted active transportation and minimized traffic disruption during construction. All of these objectives were achieved on time and within the City's budget. For these reasons, the CCPPP Awards Committee presented the Chuck Wills Award to the project.

This case study will highlight some of the key initiatives and decision-making strategies that contributed to the project's success, and will help to inform municipal officials across Canada contemplating similar freeway infrastructure projects.

Background and rationale

Winnipeg's Disraeli Freeway is a two-kilometre stretch of roadway completed in 1960 to connect Henderson Highway with Main Street, providing a vital link between the downtown and the northeastern portion of the city. It includes a bridge over the Red River and an overpass over the CP Rail main line, which were completed in 1959 and 1960 respectively.

The freeway is a major four-lane traffic artery, carrying approximately 42,000 vehicles to the city centre daily. Figure 1 shows the location of the freeway in the city.

Over the years there have been several repairs and modifications made to the bridge and the overpass. The bridge was originally built with an open grid steel deck. This deck was filled in with concrete in 1972. A concrete safety shape median barrier was constructed in 1978. In 1984, the bridge was resurfaced with asphalt and several repairs were undertaken: girder jacking beams were modified; rocker bearings were repositioned; abutment expansion joints were anchored; concrete sidewalks were repaired; new slope paving and roadside safety improvements were undertaken in the vicinity of the bridge and overpass.

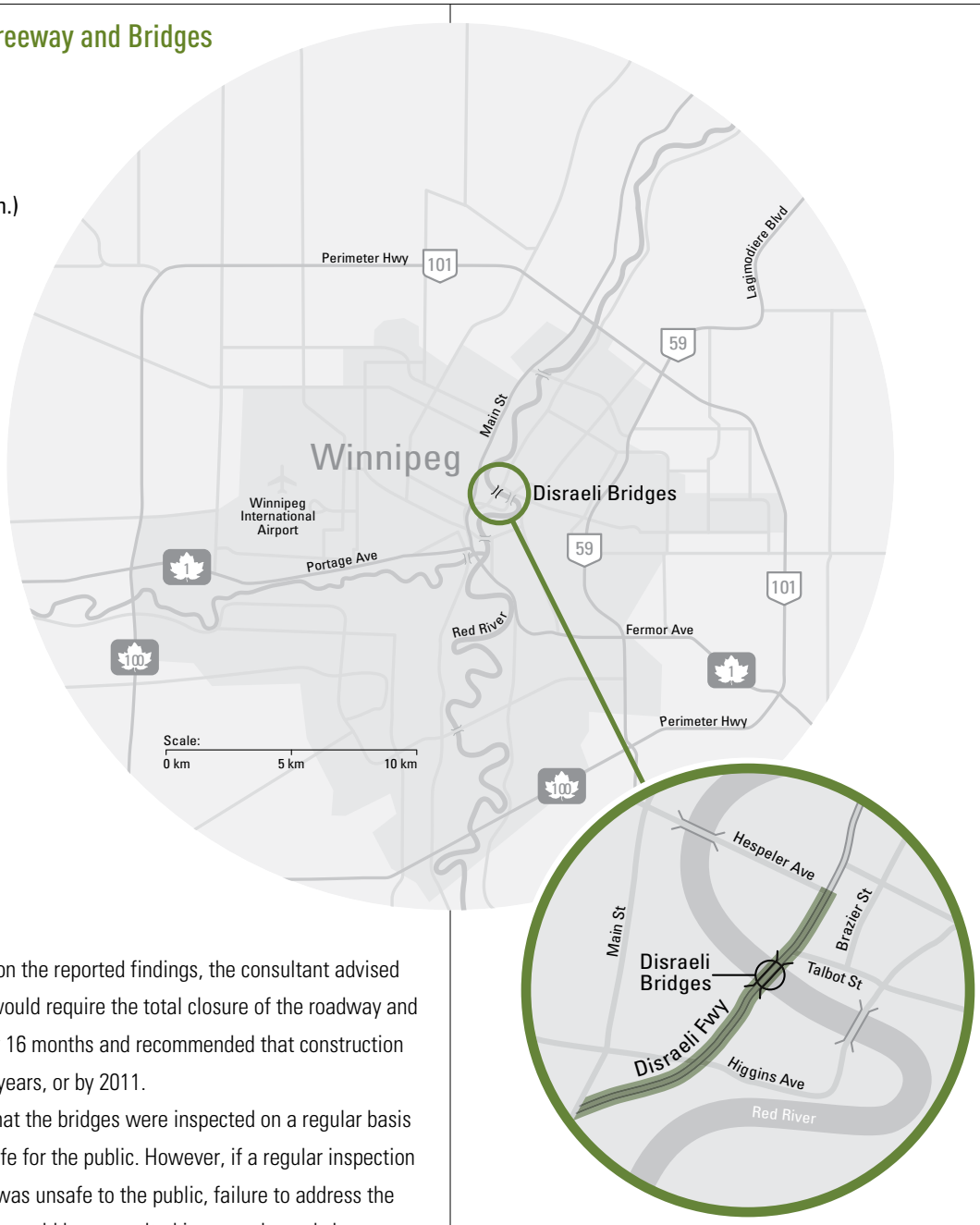
Deterioration of the structures progressed more rapidly than expected and major problems with the superstructure led to the need for rehabilitation. The deck had deteriorated due to corrosion and weld failures and the underlying structural steel support members were corroded and perforated. The concrete substructure units were also deteriorating due to exposure to chloride de-icing chemicals.

An engineering study was commissioned in January, 2006 to determine the safety and reliability of the bridge and overpass. The study included an assessment of the condition of the existing facility, an examination of possible rehabilitation alternatives and a preliminary design of the recommended rehabilitation project.

In December, 2006, the engineering consultant submitted the conceptual design and condition assessment reports. The recommended rehabilitation work involved refurbishment of the bridge foundations and steel girders, replacement of the existing bridge decks and rehabilitation of the approach roadway from Main Street to Hespeler Avenue.

Figure 1: Disraeli Freeway and Bridges Location Map

(In magnified view, project components are highlighted in green.)



Basing conclusions on the reported findings, the consultant advised that rehabilitation work would require the total closure of the roadway and bridges for approximately 16 months and recommended that construction be scheduled within five years, or by 2011.

It should be noted that the bridges were inspected on a regular basis and at no time were unsafe for the public. However, if a regular inspection had indicated the bridge was unsafe to the public, failure to address the condition of the structures could have resulted in an unplanned closure.

Municipal decision-making process

The City of Winnipeg had traditionally delivered infrastructure projects using a design-bid-build (DBB) procurement model. In this model design and construction are done separately from maintenance and operation and the city retains all project risks, which sometimes results in significant cost and time overruns. In the very early stages, there was political direction to pursue the rehabilitation of the Disraeli Bridges as a P3 project. The mayor and the majority of Council championed the P3 process based on the City's past successes with P3s. Previous experience encouraged City of Winnipeg councillors to consider alternative options that would transfer key risks, such as cost and time certainty, to a private-sector partner.

Council members were also interested in harnessing private-sector innovation to reduce road closure time and meet other socio-economic objectives such as improving the landscaping and aesthetics near the bridge and overpass and providing linkages to the active transportation network in the city.

The City of Winnipeg had experienced significant delays and cost overruns on the large Main-Norwood Bridge project. Protecting taxpayers from similar significant cost overruns on another major road project was particularly important to Council members since cost overruns had the potential to impact property taxes.

Council members also had to consider the condition of the existing roadway network and the infrastructure deficit that exists in the City of

Winnipeg, as in all major Canadian municipalities. Because of these issues, proper asset maintenance and ensuring the asset was in good condition at handback were key considerations in pursuing the P3 route. In the mid-1990s, the City of Winnipeg had procured the Charleswood Bridge using a P3 approach and it was noted that this bridge was well-maintained while some other road facilities were not, and were thus contributing to the City's infrastructure deficit.

In late 2007, as the process moved forward, the City of Winnipeg engaged Deloitte & Touche LLP (Deloitte) and MMM Group (MMM) to provide advice on the suitability of delivering the Disraeli Bridges rehabilitation project using a P3 delivery model. Deloitte was asked to prepare a business case comparing the value for money (VFM) of a traditional model to a P3 delivery model taking into account the risks the City would retain under the traditional model and the risks assumed by the private sector in the P3 model.

After completing its preliminary VFM analysis in February, 2008, Deloitte, with MMM, advised that the project was suitable for delivery using a DBFM approach and recommended that it should be delivered using a DBFM model.[2] Staff from the City's public works and corporate finance departments agreed with the recommendation based on the cost submitted in the 2008 Capital Budget[3] by the public works department for a traditional delivery approach. (See Appendix A for Winnipeg City Council discussion notes on the final report of Deloitte and MMM.)

At its May 14, 2008, Council meeting Winnipeg City Council authorized proceeding with the rehabilitation project based on a DBFM delivery model. The executive summary of the Deloitte/MMM final report and all City Council minutes are available on the City of Winnipeg's website at: http://www.winnipeg.ca/publicworks/MajorProjects/DisraeliBridges/

Municipal objectives

Because it affected a major arterial route to downtown Winnipeg, the project had a high profile and garnered a great deal of public and media interest. The City had to balance community and stakeholder requests with good fiscal management in determining its objectives for the project. The key objectives were:

- to update a critical piece of aging infrastructure;
- to protect taxpayers from cost overruns;
- to maintain availability of the freeway during the construction period so that a key artery was preserved and the impact of construction on local businesses and residents was minimized;
- to enhance the City of Winnipeg's Active Transportation initiative; and
- to be affordable and fit within the City's budget, given that property taxes had been frozen since 1997.

Description of the Project

The project includes the design, construction, financing and maintenance of a new two-kilometre Disraeli Freeway, including the bridge and overpass, to replace the existing structures. The old bridge was approximately 319 metres long, spanning the Red River as well as Midwinter Avenue, Rover Avenue and Gladstone Street. The overpass was approximately 388 metres long and spanned the Canadian Pacific Rail (CPR) mainline as well as Sutherland Avenue and Higgins Avenue. In total, there were 30 spans with an overall structure length of 707 metres. The project included the replacement of the old bridge and overpass, construction of new roadway and upgrades to the approach streets. Design of the bridge structures accommodates future expansion to six lanes. Construction was completed in October, 2012.

The new river bridge was built immediately to the west of the existing bridge and the new rail overpass was built immediately to the east of the existing overpass; the locations where the original structures began and ended were largely maintained. Because the old structures remained in use during the day while the new ones were built alongside them, commuting and driving times remained roughly the same throughout the construction period, and there was no significant traffic disruption; interconnection work was done at off-peak times in the evenings and overnight between 6 p.m. and 6 a.m.

The project also includes the construction of a separate pedestrian/cyclist bridge (an "active transportation" bridge), to be completed by the summer of 2013. Work on the pedestrian bridge commenced in October, 2012, with the commissioning of the new roadways, bridge and overpass. The old river bridge is being dismantled, the existing piers modified, and a new pedestrian bridge deck is being constructed and placed over the piers. This active transportation bridge will also be maintained by Plenary Roads Winnipeg over the same 30-year operating period for the main roads and bridges.

Figure 2 shows an aerial view of the project during construction. The design and construction phase of the project includes:

- six-lane approach streets;
- traffic interchanges;
- a right-of-way overpass for pedestrians;
- four-lane bridge spanning the CPR mainline;
- a four-lane bridge (or overpass) spanning the Red River;
- reorganized and improved vehicular access and exit points;
- revitalized landscaping and entrance points for adjacent communities;

[2] Deloitte & Touche LLP and MMM Group, *Analysis of Private Sector Involvement for the Disraeli Bridge, Executive Summary*, February 18, 2008.

[3] On December 18, 2007, Winnipeg City Council approved funding in the 2008 capital budget and its 2009 to 2013 Five-Year Forecast related to the Disraeli Bridges Rehabilitation Project for cash to capital for procurement, administration, internal contract works, and property acquisition in 2008, 2010 and lease payments in 2010, 2011, 2012, 2013 and beyond intended for a DBFM.

Figure 2: Aerial View During Construction

- improved lighting, landscape features and aesthetic elements to create a more attractive and residential feel for adjoining neighborhoods; and
- a lower-elevation pedestrian/cycling bridge connecting with existing cycling paths at Brazier Street and Annabella Street.

The maintenance phase of the project includes:

- inspection and reporting;
- emergency maintenance;
- operational maintenance of all designated components including landscaping, drainage, pavement markings, guide signs, cleanup, snow clearing and ice control;
- pavement surface maintenance;
- bridge structure maintenance;
- snow clearing and ice control;
- non-regulatory sign and landscape maintenance; and
- drainage maintenance.

Procurement Process

Selecting the P3 model

The business case identified four potential procurement alternatives for the project: traditional Design-Bid-Build (DBB) delivery, Design-Build (DB), Design-Build-Maintain (DBM), and Design-Build-Finance-Maintain (DBFM). The preliminary analysis, which was based on both quantitative and qualitative benefits, demonstrated that the DBFM model had the greatest potential to provide savings compared to a traditional model. Cost savings were estimated to be in the range of 10 to 16 per cent. Qualitative benefits were assessed based on key criteria for the project. Full details of the analysis have been published by the City of Winnipeg in the project report.[4]

Key reasons cited by the City for selecting a P3 model:

- to maximize taxpayer value for money;
- to ensure on-time and on-budget delivery;
- to transfer certain risks to the private sector; and
- to ensure that a well-maintained asset is transferred back to the City of Winnipeg in good condition at the end of the 30-year maintenance term.

Selecting a partner

Competitive process

On May 14, 2008, Winnipeg City Council authorized city staff to proceed with the project based on a DBFM delivery model and to move forward with a two-step procurement process that included a Request for Qualifications (RFQ) followed by a Request for Proposals (RFP). The goal for the procurement process was to obtain "the best possible bridge, within the available budget."[5]

Request for Qualifications

On June 18, 2008 a project information session was held by the City of Winnipeg for prospective bidders. The RFQ was subsequently issued on August 19, 2008, with a closing date of September 30, 2008. The RFQ evaluation criteria, shown in Table 1, assessed the approach, experience and qualifications, and financial strength and capacity of respondents. To qualify, respondents were required to obtain a minimum of 60 per cent of the points for each evaluation criterion.

[4] Deloitte & Touche LLP, *Winnipeg, Disraeli Bridges Project Value for Money Report*, February, 2013.

[5] Deloitte & Touche LLP, *Winnipeg, Disraeli Bridges Project Value for Money Report*, February, 2013, p. 13.

Table 1: RFQ Evaluation Criteria

Evaluation criteria	Overall Category Weighting
Project Lead ■ Organization, competitive advantage and management plan ■ Experience and qualifications of project lead ■ Experience and qualifications of key individual(s)	25
Design-Construction Member of Respondent's Team ■ Organization and plan ■ Experience and qualifications of member organization(s) ■ Experience and qualifications of key design individual(s) ■ Experience and qualifications of key construction individual(s)	30
Maintenance Member of Respondent's Team ■ Organization and plan ■ Experience of member organization ■ Experience and qualifications of key individual(s)	20
Financing Member of Respondent's Team ■ Financial condition ■ Financial capacity ■ Track record and experience ■ Approach	25
Total	**100**

Several submissions were received, all of which met the minimum requirements. On November 28, 2008, the three highest-scoring respondents were shortlisted to respond to the RFP. They were:

- **KMC Winnipeg:** Kiewit Management Co. (Project, Design-Construction, and Financing Lead); Bituminex Paving Ltd. (Maintenance Lead);
- **Plenary Roads Winnipeg:** Plenary Group (Canada) Ltd. (Developer and Equity Investor), PCL Constructors Canada Inc. (Design-Builder), Plenary Roads (Operation and Maintenance);
- **SNC-Lavalin Inc:** SNC-Lavalin Inc. (Project and Design Lead), SNC-Lavalin Constructors (Pacific) Inc. (Construction Lead), SNC-Lavalin ProFac Inc. (Maintenance Lead), SNC-Lavalin Inc., Investment Division (Financing Team Lead).

Request for Proposals

On December 19, 2008 the RFP was issued to the three pre-qualified proponents, setting out the bid process and the project requirements. An information meeting was held on January 21, 2009.

The draft project legal agreement (the draft agreement) was issued with the RFP, and included detailed technical specifications for the design, construction, and maintenance of the project. Proponents could provide comments on the draft agreement through commercially confidential meetings (CCMs) or in written form through the request-for-information process.

The RFP selection process consisted of three submissions requirement packages (SR Packages 1, 2 and 3), due in stages. There was also an optional innovation submission after SR Package 1.

- SR Package 1 required general information as well as selected preliminary technical reports that disclosed any unique design and construction intentions a proponent might have.
- Optional Innovation Submissions enabled proponents to get early feedback regarding the likely acceptability to the City of Winnipeg of their innovative design solutions.
- SR Package 2 was divided into two parts:
  - SR Package 2-A required proponents to provide more detailed technical plans and designs.
  - SR Package 2-B required the submission of a financial requirement appropriate to the proponent's technical plan, including its indicative financial model and indicative financing plan. The city engaged in engineering- and construction-focused CCMs with proponents to review the SR Package 2 submissions, and in cases where the submissions did not meet the technical requirements, provided appropriate written feedback.
- SR Package 3 required an updated financial model, a final financing plan and a financial offer from each proponent and closed on October 28, 2009.

The evaluation criteria for SR Package 3 included a combination of pass-fail and rated evaluations. In particular, the pass-fail criteria included a cap on the amount of the annual service payment proposed by a proponent. This ensured the project would fit within the City's budget.

There were also rated financial criteria, which awarded points based on lowest price, on a Net Present Value basis, and on the quality of the financing plan. Therefore, proponents were not only required to price within the city's budget, but were also rewarded if they reduced their price further.

The rated technical evaluation criteria were designed to give proponents an incentive to address project priorities such as load capacity, traffic disruption during construction, and inclusion of active transportation elements. Thus, the scoring also favoured a proponent able to provide elements that would meet the needs of the community as expressed

through the public consultation process (details of which will be discussed later in this case study).

Proponents could choose their own approaches to the project and propose either the refurbishment of existing structures, the construction of new structures, or a combination of refurbishment and new structures.

The RFP evaluation criteria are summarized in Tables 2 and 3.

Table 2: RFP Pass/Fail Evaluation Criteria

Pass/Fail Evaluation Criteria	Evaluation method
Technical Criteria ■ Project schedule ■ Environmental approval plan ■ Construction management plan ■ Safety plan ■ Public communications plan ■ Maintenance plan ■ Safety audit plan ■ Quality management system ■ Environmental management	Pass/Fail
Financial Criteria ■ Amount of annual service payment	Pass/Fail

Table 3: RFP Rated Evaluation Criteria

Rated Evaluation Criteria	Overall Category Weighting
Load Capacity of Vehicular Bridges Increased	20
Lane Closure Plan for Construction Period	20
Traffic Management Plan	10
Design Enhancements	20
Pedestrian/Cycling Corridor Solutions	10
Financial Offer	15
Financial Plan, Financial Capacity, and Ability to Reach Financial Close	5
Total	**100**

Name of private partner

On January 11, 2010, Plenary Roads Winnipeg was selected as the preferred proponent. Its design solution represented the best value to the City of Winnipeg and struck a balance between cost and minimizing traffic disruption. The Plenary Roads Winnipeg team's design with its new alignment ensured that no road closures would occur during peak travel times (Monday to Friday, 6 a.m. to 6 p.m.) during construction, and was within the City's affordability cap.

Early works agreement

In February, 2010, an early works agreement was entered into between Plenary Roads Winnipeg and the City of Winnipeg to facilitate specific works required to accelerate the schedule for river work and permitting.

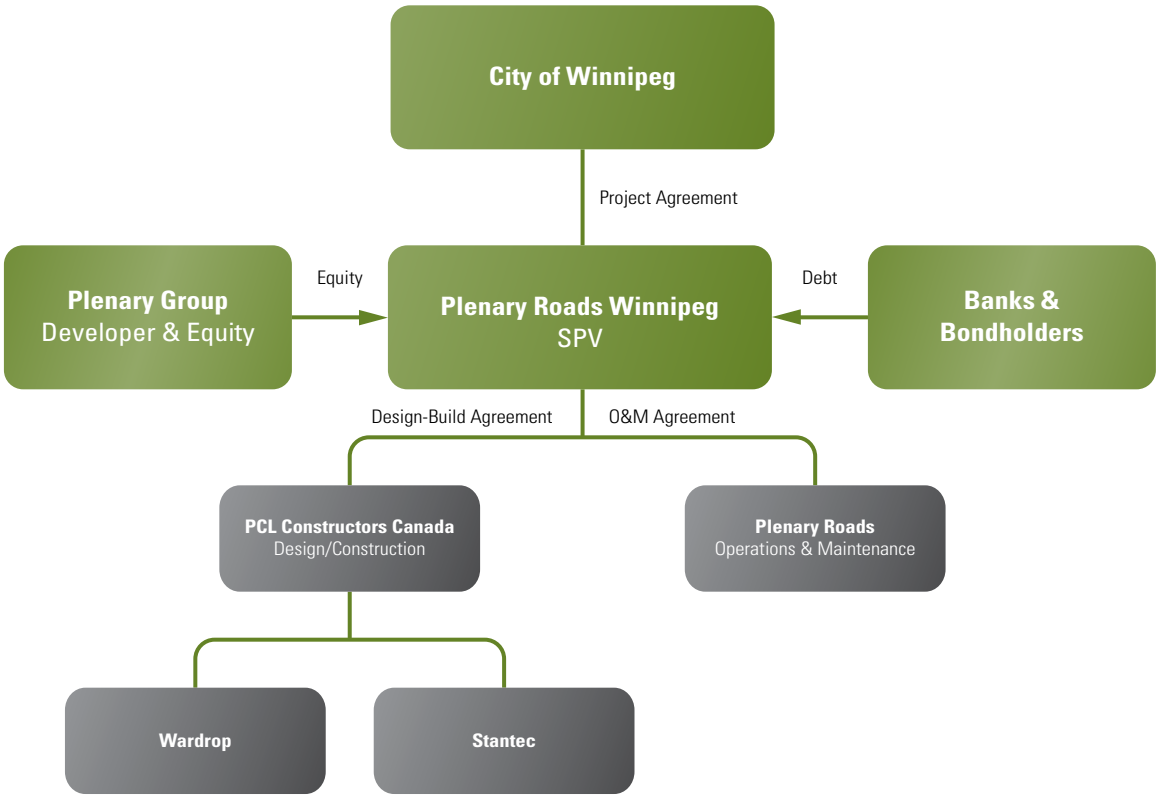
Commercial and financial close

After the preferred proponent was selected, the City of Winnipeg engaged in negotiations with Plenary Roads Winnipeg to finalize the financial aspects of the final project agreement and fine-tune the scope of the project to provide the best value. The project agreement reached commercial close on March 4, 2010, and financial close on March 30, 2010.

Fairness of the process

Knowles Consultancy Services Inc. (Knowles) acted as the fairness monitor for the project, attending all CCMs and reviewing and monitoring the communications, evaluations and decision-making processes associated with the project to ensure the process was fair, equitable, objective, transparent and properly documented. Knowles certified that these principles were maintained throughout the procurement process.

Figure 3: Partnership Structure



Overall Structure of the Project Agreement

The project agreement was signed by the City of Winnipeg and Plenary Roads Winnipeg, a special-purpose vehicle (SPV) formed to carry out the project. The agreement has a term of 32 years and eight months, with a 32-month design and construction period and a 30-year maintenance period. The project agreement specifies that design and construction of the new roadway, bridge and rail overpass were to be completed by October 2012, with the separate pedestrian/cyclist bridge to be completed by summer 2013.

The project agreement also specifies the technical requirements, the roles and responsibilities of each partner, the payments to be made by the City and the deductions for nonperformance. Figure 3 shows the structure of the partnership and Table 4 summarizes each partner's roles and responsibilities.

Key Terms and Conditions

Other key terms and conditions of the project agreement include the following:[6]

- **Traffic Management:** One of the main objectives of the city was to minimize traffic disruption during construction. Plenary Roads Winnipeg's actual performance during construction was monitored under a traffic accommodation incentive plan. If its performance was worse than planned, Plenary Roads Winnipeg would have been subject to fees for additional lane closures. In the actual construction period, Plenary Roads Winnipeg's performance was as planned, so no additional fees were incurred.
- **Ownership:** The City of Winnipeg owns the infrastructure and land at all times. For the duration of the project agreement, the city provides Plenary Roads Winnipeg with non-exclusive access to, and use of, relevant lands to execute the project. This is accomplished through a license granted in the project agreement. This ownership by the city also covers any fixed improvements that Plenary Roads Winnipeg may add to the infrastructure and the land.

[6] Deloitte & Touche LLP, *Winnipeg, Disraeli Bridges Project Value for Money Report*, February, 2013, p. 22.

Table 4: Roles and Responsibilities[7]

	Plenary Roads Winnipeg	City of Winnipeg[8]
Design	■ Detailed and final design in compliance with technical requirements	■ Preliminary design report ■ Design specifications (technical requirements) ■ Review and comment on detailed design (to ensure compliance with technical requirements)
Construction	■ Construction of project in compliance with technical requirements	■ Provide access to site and rights-of-way
Financing	■ All financing for the design, construction, operation and maintenance of the project over 32 years and 8 months	■ The City pays a commissioning payment of $75 million to Plenary Roads Winnipeg at substantial completion
Maintenance	■ Inspection and reporting ■ Emergency maintenance ■ Operational maintenance of all designated right-of-way components including but not limited to pedestrian level lighting, landscaping, drainage, pavement markings, guide signs, cleanup, snow clearing and ice control ■ Pavement surface maintenance ■ Bridge structure maintenance (including bridge structural and operational repairs); ■ Snow clearing and ice control ■ Landscape maintenance ■ Drainage maintenance	■ Monitoring and enforcement of payment adjustment regime ■ Regulatory signs ■ Roadway lighting and sign control maintenance

- **Handback:** The project agreement specifies, in detail, the minimum handback standards that Plenary Roads Winnipeg must meet on the expiry of the 30-year maintenance term. Handback inspections will be carried out over approximately five years prior to the expiry of the term with the City of Winnipeg's participation to determine the condition of the infrastructure. If its condition falls short of the handback requirements, Plenary Roads Winnipeg must either carry out a work plan designed to remedy the shortfall, or the City will be entitled to deduct the amount of funds required to carry out the work plan from the annual service payments and perform the work itself to fulfill the handback requirements.
- **Payment Adjustments:** The project agreement also specifies that adjustments will be made to the annual service payment if Plenary Roads Winnipeg does not meet the required technical and service performance standards. Examples of events that would result in payment deductions include unplanned lane closures after the commissioning date, and failure to remove graffiti within a defined response period.
- **Refinancing:** If at any time during the agreement Plenary Roads Winnipeg generates savings by refinancing at a lower rate, the City of Winnipeg is entitled to receive a 50 per cent share of the refinancing gain.

The project agreement also allowed for a bonus of up to $5 million for reduced closure time in the construction phase during peak traffic periods. As noted earlier, the RFP evaluation criteria rated proposals on the amount of bridge closure time during peak traffic hours that proponents included in their bids. The bonus provision in the project agreement stipulated that the private partner would be eligible for a bonus if, during actual construction, it was able to reduce the amount of closure time it had included in its bid. However, since the Plenary Roads Winnipeg solution required no closure time during peak traffic hours and had included none, this clause did not apply.

[7] Deloitte & Touche LLP, *Winnipeg, Disraeli Bridges Project Value for Money Report*, February, 2013, p. 18.

[8] Winnipeg has elected to maintain certain operational works since it has been determined that the City has the operational scale to best carry out these items.

Financial Arrangements

The RFP for the project was issued in late 2008, during the global financial crisis. The original proposal called for 100 per cent private-sector financing. As the financial markets recovered, the spread increased between the borrowing rate of the City of Winnipeg and the private-sector borrowing rate, which had a negative impact on the City of Winnipeg's projected VFM for the project. To deal with these changing capital markets, the City worked closely with its financial and transaction advisors (CIBC World Markets and Deloitte & Touche LLP) as well as all three proponents so that financing of the project was optimized and VFM was improved.

The solution was to replace some of the private-sector debt with city issued debt, as the City of Winnipeg was able to borrow at a lesser interest rate than the private sector. The City of Winnipeg would use the funds raised from the city issued debt to make a lump sum commissioning payment. However, careful consideration had to be made regarding the amount and timing of the commissioning payment, as reducing too much of the intended private-sector capital at risk too soon would alter the risk transfer in the project – i.e., it would put more risk back onto the city and reduce VFM. This was a fine balance to achieve. The section on risk transfer will discuss this issue in more detail.

It was determined that a $75 million commissioning payment from the City of Winnipeg would optimize financing and would achieve a 17.1 per cent VFM. As a result, the City had no capital at risk until the roadways were opened to traffic. The final financing and payment structures are described below.

Financing

Plenary Roads Winnipeg used a blend of private-placement long-term bond debt, short-term bank debt and long-term equity to finance the capital cost of the project, estimated at $195 million.

- $94.6 million senior notes: TD Securities Inc. acted as arranger for the long-term debt financing, which included a private placement with Canadian institutional investors;
- $47.1 million senior credit facility: Short-term bank debt was used to finance the construction phase of the project;
- $15.8 million equity provided by Plenary Group.

Payments

Commissioning payment

"Commissioning" was defined as having the main roadway from Main Street to Hespler Avenue open to traffic. The City of Winnipeg made a $75 million commissioning payment to Plenary Roads Winnipeg after the main roadway was certified by a safety auditor as safe for normal use, as a means of reducing the long-term cost of private financing.

The City of Winnipeg financed the commissioning payment with a combination of a long-term debenture ($25 million) issued by the City, medium-term internal financing ($31.7 million) and gas tax monies ($18.3 million) that were flowed through the provincial government from the federal government to the City.

To ensure that the pedestrian bridge was eventually delivered, there was a long stop date for delivery in the project agreement. If the bridge is not delivered by that date, there will be adjustments to the annual service payment.

Service payment

After commissioning, the City of Winnipeg is responsible for an annual service payment to be paid monthly to Plenary Roads Winnipeg, based on availability and performance requirements defined in the project agreement.

Service payments average $12.1 million annually and include two components:

1. a capital component – to pay for the capital cost of the infrastructure; and
2. a maintenance component – to pay for ongoing operations and maintenance services, lifecycle and renewal repair. The maintenance payment comprises approximately 15 per cent of the service payments and will be adjusted to the Consumer Price Index (CPI) annually.

If Plenary Roads Winnipeg does not meet the operational and maintenance standards set out in the project agreement it will face deductions to the service payment.

The net present value (NPV) of the annual service payments over the 30-year maintenance term is approximately $141.2 million. This calculation assumes a 6.05 per cent discount rate and is based on the project financial close date of March 30, 2010.

Risk Allocation

Under the P3 model, some key risks that would have been retained by the City of Winnipeg were contractually transferred to Plenary Roads Winnipeg. With a traditional delivery model, these risks and the availability of resources (staff to oversee the project, for instance) can lead to cost overruns and delays.

The report to City Council for the meeting of May 14, 2008 identified a key issue, related to risk transfer, for municipalities with major infrastructure renewal projects on the horizon:[9]

In the DBFM delivery model the proponent provides a complete turnkey solution. Normally the proponent is a consortium consisting of a financier, designer, contractor and maintenance provider. The consortium is responsible for financing, designing, constructing and maintaining the project over a specific period.

Using this model the City transfers the design, construction and maintenance risks as well as market- and time-related risks to the consortium which provides greater cost certainty to the City.

The City pays a premium, for the risk transferred, to protect against the significant costs associated with the risks, much like an insurance policy.

On further discussion of the business case, the report to City Council concludes that the value associated with the risk transfer outweighs the premium paid through additional financing costs:[10]

If the City were to construct this under a traditional approach and debt-finance this project on its own, requiring the City to borrow in two to three years' time, the rate that the City could borrow at is estimated to be 6 per cent.

This acknowledges the fact that the City can finance this project for a lower cost under traditional methods than the proposed DBFM. However, this assessment cannot be made in isolation and must consider the positive impacts on the Outline Business Case of a private-sector financier. A significant part of the VFM is because the private-sector financier has a vested interest in delivering the project on time and on budget. The Outline Business Case indicates that the value associated with this risk transfer exceeds the additional financing costs associated with this proposal.

Examples of risks transferred to Plenary Roads Winnipeg from the City of Winnipeg under the project agreement include the following:

Scheduling, project completion and delays

Plenary Roads Winnipeg agreed to achieve commissioning (meaning certification that the project is safe for normal vehicular use) of the roadway in October 2012. The construction schedule could only be modified in very limited circumstances, in accordance with the project agreement. Costs associated with delays would have been the responsibility of Plenary Roads Winnipeg; however, there were no delays, and the project reached commissioning in October 2012 as planned.

Permits and approvals

Plenary Roads Winnipeg was responsible for applying for, obtaining, maintaining, renewing and complying with all required permits and approvals.

Construction financing and price certainty

Plenary Roads Winnipeg was required to finance the design, construction, maintenance and operation of the project. Repayment began with a payment on commissioning of the project and will continue with monthly service payments over 30 years.

The private partner would have been responsible for any increased financing costs had there been any delay in reaching commissioning. This shifted significant financial risk to the private partner in the case of late delivery.

Commissioning and facility readiness

Plenary Roads Winnipeg was required to achieve a ready state for safe traffic usage at commissioning and coordinate the commissioning activity within the agreed-upon construction schedule. This ensured that the City of Winnipeg received a new, functional Disraeli Freeway, including associated bridges and approach roadways, before service payments commenced.

Activity protocols

Plenary Roads Winnipeg and the City of Winnipeg established a schedule for the submission of project documents that also took into account the time the City's internal engineering and review teams would need to review them, ensuring timely decisions and work progression.

Services and maintenance risk

As part of the project agreement, key risks associated with the operations and maintenance responsibility (including life cycle renewal) of the new Disraeli Freeway over the 30-year service period were transferred to Plenary Roads Winnipeg. The private partner's maintenance, through life cycle repair and renewal of the road and bridge structures, must meet the technical requirements set out in the project agreement. Under the project agreement, Plenary Roads Winnipeg faces deductions to its monthly payments if it does not meet its performance obligations.

Environmental contamination risk

The project was further complicated by the existence of known environmental contamination. During the bid process the City of Winnipeg worked closely with proponents and their lending teams as well as with its own technical and insurance advisors to develop a specifically tailored risk-transfer protocol to deal with the pre-existing contamination and related permitting issues. The City also mitigated this risk by purchasing special-purpose environmental insurance.

Table 5 lists some key risks transferred from the City of Winnipeg to the private partner. For a more complete risk allocation table, see Appendix B.

[9] City of Winnipeg, Council Minutes of May 14, 2008, p. 9 (see also Appendix A).
[10] City of Winnipeg, Council Minutes of May 14, 2008, p. 11 (see also Appendix A).

Table 5: Key Risks Transferred

Key risks transferred from the City of Winnipeg to Plenary Roads Winnipeg under the project agreement
Design compliance with the technical requirements
Construction price certainty
Scheduling, project completion and potential delays
Design coordination
General contamination
General permitting and approvals
Design and life cycle responsibility
Construction financing
Schedule contingency
Commissioning and traffic readiness
Safety and emergency response protocols

Project Timeline

The City of Winnipeg recognized the need for the project as far back as 2005, when regular maintenance and inspections showed the facility was aging more rapidly than expected. The engineering study commissioned in early 2006 established a timeline for the rehabilitation or replacement of the freeway and bridges that would maintain public safety.

Initiating a public consultation program early on in the process meant that the general public and local residents and businesses were able to play a meaningful role in the development of design concepts. In addition, the City of Winnipeg maintained an ongoing commitment to public involvement at all stages of the project.

Table 6 summarizes the overall project timeline.

Table 6: Timelines

2006 January

Engineering study commissioned by Winnipeg City Council

2006 April

Public Consultation Program Phase I – community profile and impact study completed

2006 December

Condition assessment and conceptual design reports submitted to City Council

2007 December 18

Funding approved by Winnipeg City Council in 2008 capital budget

2008 February

Final report of Deloitte & Touche LLP and MMM Group, *Analysis of Private Sector Involvement in the Rehabilitation of the Disraeli Bridge*

2008 May 14

Winnipeg City Council authorized DBFM delivery model

2008 June 18

Project information session for prospective bidders

2008 August 19

RFQ issued

2008 September 4

RFQ information session for registered prospective bidders

2008 September 23

Winnipeg City Council approved conceptual design recommended by stakeholder advisory committee

2008 September 30

RFQ closed

cont.

2008 November 28

Three highest-scoring respondents shortlisted

2008 December 19

RFP issued

2009 February 21

RFP information meeting

2009 October 28

RFP closed

2010 January 11

Preferred proponent selected

2010 March 4

Commercial close

2010 March 30

Financial close

2010 April – 2012 October

Design and construction phase

2012 October 19

Construction completed; new roadway and bridges certified safe and opened to traffic

2012 October 20 – 2042 October 19

Maintenance phase

2013 Summer

Dedicated pedestrian and cycle bridge to be completed

Benefits

Cost savings/value for money[11]

As noted earlier, the City of Winnipeg engaged Deloitte and Touche LLP and MMM Group to perform a VFM assessment of the project.[12] The VFM analysis compared the estimated total costs to the City of the P3 model (DBFM) to a traditional public–sector procurement model (DBB). This preliminary VFM analysis, carried out at the business case stage, was used to determine which procurement model would provide the City of Winnipeg with the best value.

The VFM analysis was updated at key milestones throughout the project to ensure the P3 approach continued to provide the best value. Since financial markets were unsettled during this time, at each milestone the VFM analysis was also updated for changes in capital markets.

The final VFM results, based on the actual costs of Plenary Roads Winnipeg's accepted proposal, demonstrated that the P3 approach provided the City of Winnipeg with an estimated value savings of approximately $47.7 million, or 17.1 per cent, in comparison to the traditional delivery approach. Table 7 and Figure 5 summarize the VFM assessment.[13]

[11] A VFM assessment is a comparison of the costs of delivering an infrastructure project using a P3 approach to those of a "traditional" procurement method such as Design-Bid-Build (DBB). The objective of VFM analysis is to ensure the public sector is using the procurement and project delivery method that provides taxpayers with the best overall value for their tax dollars.

[12] Deloitte & Touche LLP and MMM Group, *Analysis of Private Sector Involvement for the Disraeli Bridge, Executive Summary*, February 18, 2008.

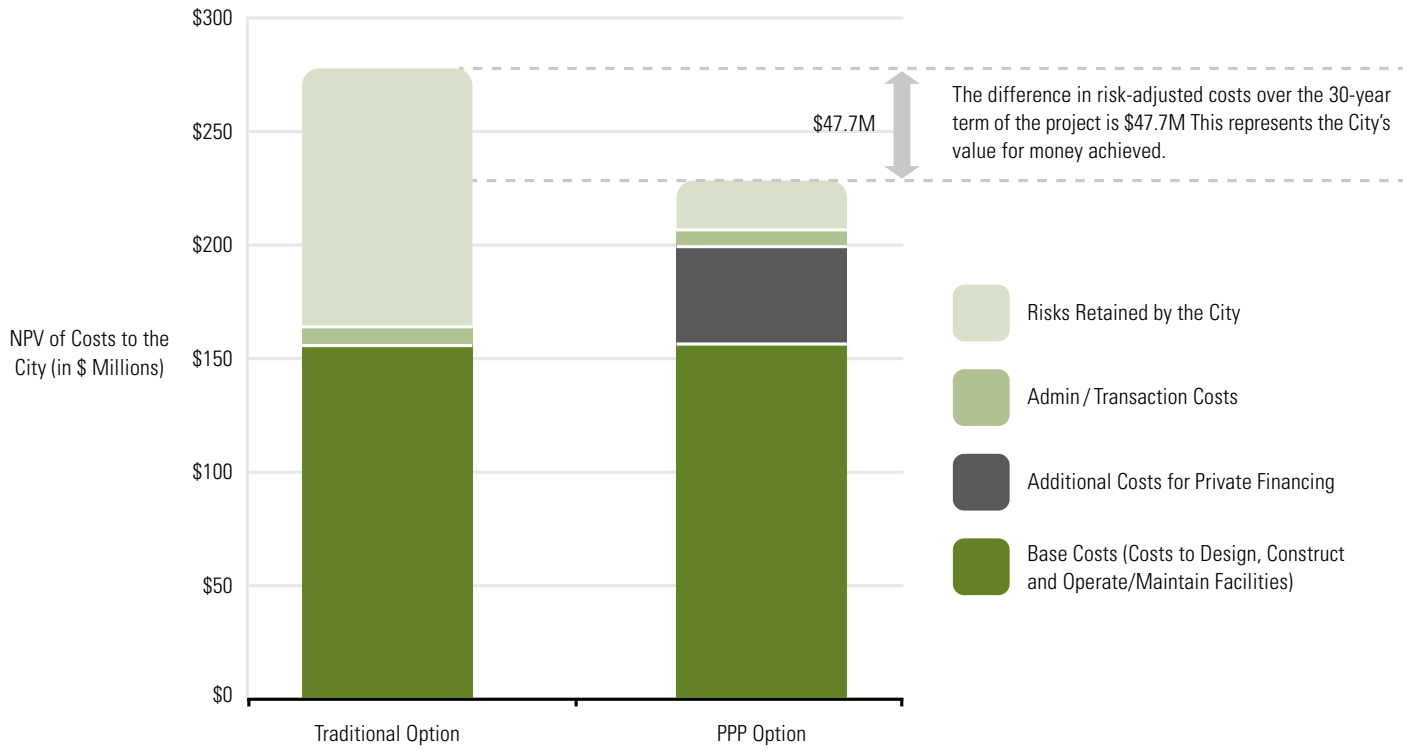
[13] See the *Winnipeg, Disraeli Bridges Project Value for Money Report* (February, 2013), prepared by Deloitte & Touche LLP for the City of Winnipeg for a complete explanation of the VFM analysis.

Table 7: Value for Money Savings

	Public-Sector Comparator (Traditional)	Public-Private Partnership (Design-Build-Finance-Maintain)
All costs provided on a Net Present Value*(discounted) basis ($ Million)		
Base Costs	$157.9	$200.4
Administration and Overhead	$6.2	$3.4
Transaction Costs	$1.2	$1.8
Risks Retained by the City	$113.4	$25.4
Net Present Cost	$278.7	$231.0
Value for Money Savings ($)**		**$47.7**
Value for Money Savings (%)***		**17.1%**

*6.05% discount rate based on the project financial close date of March 30, 2010.
**Net Present Cost of PSC minus Net Present Cost of PPP
***(Net Present Cost of PSC minus Net Present Cost of PPP) divided by Net Present Cost of PSC

Figure 5: Value for Money Savings



Other benefits

In addition to cost savings and value for money the project delivered other qualitative benefits, including:

- on-time delivery;
- a fixed price and on-budget delivery;
- the protection of taxpayers from cost and time overruns;
- the development of innovations to minimize interruption to traffic during construction;
- the guarantee of a well-maintained asset throughout the maintenance period; and
- the guarantee of an asset in good condition at the time of handback.

Other socio-economic benefits have also accrued to the community as a result of the project. For instance, the project supported 120 jobs at the peak of construction; the pedestrian bridge will form a key component of the city's Active Transportation (AT) network, connecting the AT corridor on the north and south sides of the Red River.

Improved landscape features enhance the residential feel of the adjoining neighbourhoods. For instance, a more park-like atmosphere has been created in proximity to some streets, and the architectural and landscaping features of the design buffer the sight and sound of the freeway.

Communications

With the public

At the same time as the commissioning of the condition assessment report and the development of the business case, the City of Winnipeg initiated a public consultation program, the goal of which was to provide opportunities for the public to contribute meaningfully to the project and ensure that it:

- was technically sound, cost-effective, environmentally responsible and safe;
- reflected the needs of the community and city in general; and
- was generally understood and accepted by those affected.

The pubic consultation program unfolded in three distinct phases:

1. The research phase resulted in the development of a community profile and impact study, which was completed in April 2006.
2. The second phase involved establishing a stakeholder advisory committee to work closely with the project consultants and the City of Winnipeg.
3. The third phase involved two-way communication, to provide the public with information about the project and obtain public input.

Stakeholder Advisory Committee

A Stakeholder Advisory Committee (SAC) was established with representatives from the nearby neighbourhoods of Elmwood, East Kildonan and Point Douglas. City-wide organizations were also represented. The purpose of the SAC was to work with the City of Winnipeg project team to provide input, identify issues and discuss reasonable options to enhance the project and help mitigate impacts during construction.

The committee was asked to focus on preliminary conceptual plans that had been studied by the consultants as best fitting the City's available budget while meeting rehabilitation upgrade standards, including some additional upgrades to improve safety and accessibility.

The SAC went through a series of eight meetings that included the presentation of project information, responses to questions and SAC discussion, the development of three project options to be presented to the broader public for input, the presentation of broader public input research and analysis, an evaluation and final decision-making process and recommendation of the preferred concept.

Public input

After considering the needs of all users of the freeway, the SAC developed three project options to present to the broad public. A six-page fold-out newsletter that included colour illustrations and maps was produced for door-to-door distribution to each address in the neighbourhoods closest to the freeway. Almost 11,000 newsletters were distributed in Point Douglas, Chalmers, Glenelm, Munroe West, Kildonan Drive and part of Rossmere from April 21 to April 23, 2008.

A similar publication in the form of a display advertisement was also published in the *Winnipeg Free Press* and a community newspaper, *The Herald*, on April 24, 2008, and the *Winnipeg Sun* on April 25, 2008. The newsletter and advertisements invited readers to provide written input on each of the three concepts and to attend one of three open houses to learn more about the project and put questions to the project team and the SAC.

A media release issued prior to the open houses resulted in widespread and accurate media coverage about the project. Open houses were held in three different locations within the project area, including the Norquay Community Centre in Point Douglas, the MTS Centre in downtown Winnipeg and the Good Neighbours Active Living seniors' centre in East Kildonan.

In addition, a random-sample telephone survey was conducted of 400 residents living in Point Douglas, Elmwood and East Kildonan, and a survey was undertaken of all the businesses (91 in total) along Henderson Highway from the Disraeli Bridges to Leighton. Detailed results of these surveys were presented to Winnipeg City Council.

In total, approximately 700 individuals registered their views about the project either through response coupons, open house comment sheets, general e-mails, phone calls or through mail-back surveys.

Although there were differences noted among the residential-survey, business-survey and informed-public groups, the biggest concern was how traffic would be dealt with during construction. Eighty-four per cent of respondents rated this aspect as important.[14]

Once the public input had been analyzed and the results presented, the SAC further assessed the three options. As a result, two new options were developed that were modifications of the original three, reflecting in particular the suggestions of cyclists and pedestrians to better incorporate the City of Winnipeg's existing Active Transportation network.

After full discussion, the SAC rated each option according to the project goals and following criteria:

- technically sound (function and design);
- needs of the community;
- needs of the city;
- cost-effectiveness (best value for money);
- environmentally responsible (encourages cycling, uses existing resources, construction impacts);
- personal safety (actual and perceived);
- access (connection to neighbouring communities); and
- generally understood and accepted by those affected.

Both modified options met the evaluative criteria the SAC had established for the project, but each did so in different ways. The SAC ultimately decided to recommend only one option to City Council, but requested that the Public Works Department provide Council with information about the second option as well.

The recommended design option included refurbishment of the existing roadway and bridges with an additional, separate, multi-use bridge over the river for cyclists and pedestrians. The SAC made this recommendation and the Public Works Department agreed with it on the basis that it best achieved the project objectives.

Based on this recommendation, City Council approved the concept for inclusion in the DBFM procurement documents as a minimum requirement for the project. This provided the opportunity for proponents to put forward creative solutions to meet users' needs.

Construction

Following the selection of the preferred proponent, the project team (which now included representatives from the City of Winnipeg and Plenary Roads Winnipeg) continued to inform the local community and the broader traveling public as design and construction plans moved forward. Open house information sessions were held in April, 2010, immediately after financial close, to present Plenary Roads Winnipeg's winning design concept and to provide information on the traffic management plan during construction.

Once construction commenced, public information was managed through the City. Plenary Roads Winnipeg worked with the City's communications team by providing information that allowed the City to update its website, as well as provide radio messaging regarding closures, transitions and other information needed by the public to plan their travel routes.

Between the partners

As long-term partners, the City of Winnipeg and Plenary Roads Winnipeg have developed a strong working relationship with informal working channels of communication at all levels. There is also a formal communications structure embodied in the project agreement and a protocol that acts as a baseline for communications.

Formal, meetings were regularly scheduled to work through strategic direction, design review, permitting and approvals and public communications efforts. Between these formal meetings, informal communications take place daily between the City's project personnel and Plenary Roads Winnipeg's team to drive the project forward.

The City of Winnipeg and Plenary Roads Winnipeg also included in the project agreement a commitment to make bona fide efforts to resolve any and all disputes arising between them by amicable negotiations at the lowest level of management before engaging the formal dispute resolution processes described in the project agreement.

Labour

The construction phase of the project created 120 jobs at the peak of construction. The maintenance period will have no impact on city staff since the project resulted in no loss of employment and required no transfer of City staff.

Monitoring

The construction phase of the project was overseen by a joint building committee made up of representatives from the City of Winnipeg and Plenary Roads Winnipeg. In addition, the financing arrangement between Plenary Roads Winnipeg and its lenders ensures that the project is subject to additional oversight, which may include:

- an independent budget review by a third-party cost consultant;
- monthly reporting and project monitoring by a third-party cost consultant; and
- a requirement that prior approval be secured for any changes made to the project budget in excess of a predetermined threshold.

[14] City of Winnipeg, *Report to Standing Policy Committee on Infrastructure Renewal and Public Works*, September 19, 2008.

View looking west across Disraeli Bridges under construction

The performance management framework for the maintenance phase of the project deals with two measures: performance against specifications and performance against outcomes.

The specification-based elements relate to the physical attributes of the road (i.e., amount of rutting, pot holes or cracks of a certain size). The project agreement requires Plenary Roads Winnipeg to respond to these events within a specified amount of time. If Plenary Roads Winnipeg does not perform to the standard set in the project agreement, there are abatement provisions which increase in proportion to the severity of the performance failure.

The outcome-based performance requirements relate to the "availability" of the road and bridges during the service period. They deal with events such as responsiveness in emergency situations (measured in period of time for response and assistance with emergency services as needed, which may include management of the flow of traffic), snow removal (measured in period of time after snowfall), management of ice accumulation, maintenance of landscaping and signage, and regular seasonal cleaning (measured in compliance within the set time frame).

Other Issues

Innovation

Design

Plenary Roads Winnipeg's design solution, which was to build a new bridge alongside the existing structure, facilitated a number of innovations that made the project more attractive for the City of Winnipeg:

- There was minimal disruption to traffic during the construction period, allaying the public's main concern about the project. Residents had full use of the existing bridges during peak travel times in the daytime; interconnection work was done during evenings and weekends.
- Now that the new bridge is completed, the old bridge piers are being used to support a separate and dedicated pedestrian bridge, connecting the AT corridors on the north and south sides of the river. This fulfilled another major public requirement to have the bridge enhance the active lifestyle of the City of Winnipeg residents.
- Using the existing bridge piers as the base of the new pedestrian bridge avoided their demolition and environmental disruption to the river.

"Whole-of-life" view

Plenary Roads Winnipeg's "whole-of-life" view drove a solution that not only minimized penalties under the project specifications but also minimized whole-of-life cost. The "whole-of-life" view is one of the key benefits of the DBFM model compared to procurement options that consider only first-in costs.

By considering NPV rather than construction cost, the city drove bidders to examine up-front capital expenditures which could reduce maintenance and lifecycle costs. Plenary Roads Winnipeg's solution spent significantly more on initial cost by building a road that exceeded design specifications. As a result, the road has superior wearing characteristics and will cost less to maintain. This in turn resulted in lower forecasted maintenance and lifecycle costs, which more than offset the initial capital investment, and thus drove a lower NPV.

According to Plenary Group's Vice President of Corporate Development, there are two major benefits to this approach for users and the City: "First and foremost, users benefit from a better-performing transportation route that minimizes downtime for maintenance. And second, at the end of the concession, the City continues to benefit from an asset that reduces ongoing maintenance and life cycle expenditures for the remaining life of the bridges."[15]

Environmental insurance

The Plenary Roads Winnipeg team worked closely with the City of Winnipeg to deal with pre-existing contamination, giving the City a motivated partner to share the risk and, more importantly, to guide the delivery of the project through significant environmental permitting and management. The City of Winnipeg was also able to obtain special-purpose environmental insurance to mitigate the majority of this potential risk and make the project financeable.

Financing solution

From a financing perspective, putting a competitive financing solution together in the face of a global economic crisis and known environmental contamination was a significant challenge that was overcome by the City of Winnipeg and Plenary Roads Winnipeg teams working together.

The innovative solution which replaced some of the private-sector debt with City-issued debt had to carefully balance the amount and timing of the commissioning payment so as to not alter the risk transfer in the project. The resultant $75 million commissioning payment from the City of Winnipeg optimized financing and achieved a 17.1 per cent VFM. As a result, the City had no capital at risk until the roadways were opened to traffic and construction risk was extinct.

Land acquisition

There were no issues or delays caused by the land acquisition process. The procurement process ensured that all lands required were identified by proponents and approved by the City before the final bids were submitted.

The City of Winnipeg subsequently ensured that the needed land was either acquired or any bylaws needed to expropriate the land were passed with sufficient lead time to allow the City to acquire the land in advance of construction. Where necessary, Plenary Roads Winnipeg worked with the City to alter the design to accommodate land acquisition.

Lessons learned

The City of Winnipeg's experience provides a number of lessons for municipalities looking for innovative solutions for infrastructure renewal in the face of restricted municipal budgets. The following activities and guidelines contributed to the City's success:

- Thorough research on the condition of the roadway and bridges established the need and a timeline for project completion;
- Open and effective communications and stakeholder-relations planning were required to ensure the public was informed and engaged where necessary and to meet the City of Winnipeg's communications requirements. Early involvement of stakeholders and the broader public contributed to the success of the stakeholder relations program;
- An effective and well-run procurement process drove innovation and efficient risk allocation. The result was strong competition and creative innovations that delivered a strong value-for-money result;
- Clear and consistent evaluation criteria contributed to a fair competitive process;
- The commissioning payment by the City of Winnipeg was used effectively to maximize VFM and reduce the annual payments to Plenary Roads Winnipeg while not jeopardizing or weakening the risk allocation;
- Recognizing that its staff had little experience in undertaking P3 projects, the City of Winnipeg looked for opportunities to learn about best practices in other jurisdictions by undertaking research and attending P3 conferences. The City also made use of experienced outside financial, transaction and legal advisors who could assist it in adapting best practices from other jurisdictions; and
- Having the majority of City Council publicly state their support prior to beginning the procurement process is essential.

[15] E-mail correspondence with Olivia MacAngus, Vice President, Corporate Development, Plenary Group, January 29, 2013.

Applicability to other municipalities

The City of Winnipeg is one of the first municipalities in Canada to take advantage of the P3 model for municipal transportation infrastructure. Appendix D shows a list of all municipal P3 projects in Canada to date.

The procurement approach and lessons learned by the City of Winnipeg in undertaking the Disraeli Freeway and Bridges project have broad application for other municipal infrastructure projects within and outside of Canada. The process was well-received by City staff and the public. The design outcome exceeded the City's expectations and was within its affordability constraints.

Having a strong political commitment was a key factor in the success of the City's project and adapting best practices from the experience of other jurisdictions was essential. Few municipalities in Canada have had experience with a P3 procurement model; however, the City of Winnipeg achieved success by leveraging the experience of British Columbia, Alberta, Ontario and Quebec, where the P3 model is now well-established as a procurement model. The experience of these provinces, and now of Winnipeg, can be drawn upon and customized to the needs of other municipalities so they can also benefit from the cost savings and innovation brought to the public sector by partnering with the private sector.

Concluding Comments

P3 procurement is an innovative way for municipalities to deliver on their commitments to maintain, update and improve public infrastructure. In choosing to procure the Disraeli Freeway and Bridges project using the P3 model, the City of Winnipeg has successfully taken advantage of private-sector financing, innovation, and project management to strategically rebuild a vital piece of municipal infrastructure, on time and on budget, while ensuring appropriate public control and ownership.

The Disraeli Freeway and Bridges project represented an important and high-profile infrastructure commitment by the City of Winnipeg. Accordingly, the comprehensive project communications protocol was proactive, guided by the public interest and reflected the principles of public accountability and transparency. All participants recognized the importance of a coordinated and consistent approach to communications. The City's communications and stakeholder relations program, developed and executed early in the project, contributed significantly to the project's success.

When the new bridge opened to traffic in the fall of 2012, it provided improved service as a key arterial route to downtown Winnipeg. When the pedestrian bridge opens in mid-2013, it will enhance the City of Winnipeg's Active Transportation network, safely linking the north and south shores of the Red River for cyclists and pedestrians. The innovations and efficient risk allocation this project achieved were the result of a well-run process by the City that attracted strong market interest and provided value for Winnipeg taxpayers.

By choosing a P3 delivery model the City attained a result that combined innovative design, function and affordability.

Testimonials

Public sector

The Disraeli Freeway and Bridges Project, a $195 million redevelopment of one of the City of Winnipeg's most significant roadways, is a partnership which is now providing the City with major transportation, economic, and environmental benefits –all within a predictable cost structure, in which risk is kept to a minimum. As such, this partnership is a key example of the way the City is striving to address its infrastructure challenges in an innovative and cost-effective way.

A Value-for-Money assessment of the project performed by Deloitte and Touche LLP estimates that this partnership will yield a value savings of 17.1 per cent, in comparison to the traditional delivery approach. The construction involved is significant consisting of a new vehicular bridge over the Red River, a major new railway overpass, and reconstruction of the linking roadways. However, our partnership with Plenary Roads Winnipeg enabled not only a predictable cost structure, but an innovative construction schedule which avoided closure of this major artery during peak travel times.

The Disraeli Freeway and Bridges Project partnership is a milestone for the City of Winnipeg in terms of risk management, scheduling, and construction approach. Its project financing design has enabled us to renew this crucial infrastructure, while ensuring we have a well-maintained asset that is returned to the City in good condition in 30 years' time.

I am proud of our civic team that led this project, and of the effective partnership with Plenary Roads Winnipeg which has made it a success. The results will benefit all the citizens who make use of this infrastructure.

Phil Sheegi
Chief Administrative Officer
City of Winnipeg

Private sector

Plenary Roads Winnipeg is excited to be a part of this project, which is such an important part of the city, linking North and South Winnipeg. Every project we develop is an important piece of public infrastructure for the local community and we are proud to be partners in delivering better quality of life for Canadians.

Because the Disraeli Bridge is a main artery for Winnipeggers to cross the Red River, maintaining traffic flows during construction was a major consideration. Plenary Group and the city adopted a solution to ensure a minimum of four lanes would remain open to traffic at rush hour, during the entirety of the construction period, to reduce the impact for affected businesses and the traveling public.

In addition, there is one aspect to this project which will really contribute to Winnipeggers' quality of life – the addition of an Active Transportation Link, which will allow cyclists and pedestrians to cross the river on their own bridge without having to worry about car traffic. I think this reflects the City's commitment to active, healthy living and the evolution of our lifestyles over the years.

In addition to the City staff, who have been great partners for us, I would like to highlight the importance of our local sub-trades which are critical to on-time and on-budget delivery of the project. Construction of this project was completed in fall 2012, and at the height of construction there were 120 local workers and trades at the site daily.

Mike Marasco
CEO
Plenary Concessions

Public Sector Contact

Jason Ruby
Manager Capital Projects
City of Winnipeg
4th Floor – 510 Main Street
Winnipeg, Manitoba 43B 1B9
204-986-3403
jruby@winnipeg.ca

Private Sector Contact

Brian Clark
Senior Vice President, Origination
Plenary Group (Canada)
Suite 710 – 505 Burrard Street
Vancouver, British Columbia V7X 1M4
604-638-3966
brian.clark@plenarygroup.ca

Appendix A: City of Winnipeg Council Minutes

May 14, 2008 (pages 7-11)

DISCUSSION:

Traditional Construction Delivery Model

The City has traditionally delivered projects using a Design/Bid/Build (DBB) model in which the design and construction are done separately. In this model the City retains all the project risks, which sometimes result in significant cost and time overruns on City projects.

Methodology to Review Construction Delivery Models

The procurement strategy for the delivery of the Disraeli Bridges Rehabilitation Project has been assessed and an Outline Business Case has been prepared by Deloitte. The process which they followed to establish that there is a sound business case for the use of DBFM for the delivery of the Disraeli Bridges Rehabilitation Project is considered to be industry best practice. The process is summarized as follows:

- Deloitte completed a thorough and detailed review of the Disraeli Bridges Rehabilitation Project using the documentation available from the Public Works Department and the conceptual design work carried out by the City's engineering consultant.
- A qualitative risk workshop was conducted with the aim of obtaining the City's view on the risks the project faces, and the ability of four delivery models to mitigate those risks. This workshop was attended by members of the Public Service's P3 committee and staff from the Public Works Department. It was identified through the risk analysis that a DBFM model presented the best risk profile for the project.
- During the risk assessment, refurbishment was examined in detail. It was considered that the reuse of existing bridge components could present a latent defect risk that may dissuade bidders. It was decided to include this specific question in a market sounding to obtain feedback prior to making a final decision on the proposed procurement method.
- A market sounding was carried out to obtain an indication of the market's receptiveness to the project and to obtain some input relative to the rehabilitation aspect and the project procurement process. Seven companies comprising local, national and international firms from both the construction and finance sector of the market were surveyed. All have experience in bridge construction and rehabilitation projects. From this exercise it was identified that, even considering that this is a rehabilitation project, the project scope, size and proposed procurement process would attract interest of organizations in the market globally.
- Case studies were carried out to identify similar projects that identify a stream of successful DBFM construction projects. These included four new bridge constructions and one hospital.
- The project delivery schedule was reviewed and a comparison between traditional DBB and DBFM delivery methods were made. Utilizing either the DBB or DBFM delivery model, the targets are achievable.
- Based on Deloitte's analysis of all the information collected the project delivery options were evaluated and compared against the City's objectives and the preferred option was identified to be the DBFM model.
- To reinforce the outline business case for the preferred option an indicative value for money analysis (VFM) was derived from the available information. This indicated that VFM would be achieved using a DBFM model.
- The conclusion of the outline business case prepared by Deloitte is that it is recommended that the City pursue a DBFM for the delivery of the Disraeli Bridges Rehabilitation.

Design/Build/Finance/Maintain Construction Model

In the DBFM delivery model the proponent provides a complete turnkey solution. Normally the proponent is a consortium consisting of a financier, designer, contractor and maintenance provider. The consortium is responsible for financing, designing, constructing and maintaining the project over a specific period.

Using this model the City transfers the design, construction and maintenance risks as well as market- and time-related risks to the consortium which provides greater cost certainty to the City.

The City pays a premium, for the risk transferred, to protect against the significant costs associated with the risks, much like an insurance policy.

Preliminary Value for Money Analysis

To reinforce the Outline Business Case for the preferred option a preliminary value for money analysis (VFM) was carried out using the information collected and Deloitte's experience on similar-value projects. To do so, a risk-adjusted public-sector comparator (PSC) is calculated. What this entails is taking the anticipated discounted cash flows associated with the traditional construction model, including estimates of the cost of risks associated with this method. For this particular case, the PSC was derived from the estimated cost developed by the City's engineering consultant during the conceptual design. It was then adjusted for the risk retained under this model, based on the current project estimated probable cost plus an addition for risk relating to Policy, Design, Construction and Lifecycle. Each of these risks was subdivided and an

estimated value and probability of occurrence for each of the subdivided risks was input into a Monte Carlo Simulation program.

The risk adjusted PSC is then compared against the discounted cash flows associated with the DBFM model to determine the preliminary VFM. For this particular project, the preliminary VFM favours the DBFM model. The preliminary VFM for this project is estimated to result in cost savings of up to 16 per cent.

The conclusion of the Outline Business Case prepared by Deloitte is that it is recommended that the City pursue a DBFM for the delivery of the Disraeli Bridges Rehabilitation Project. This should be achieved through a two-stage procurement process starting with the issue of a Request for Qualifications to select the three or four best-qualified proponents to be issued the subsequent Request for Proposal.

The Outline Business Case has primarily been established from analysis of documentation, discussion with City staff and workshop feedback, which established that a DBFM model should be pursued. There are, however, two areas of the Outline Business Case that required Deloitte to use their judgment based on their experience. These are the preliminary value for money assessment and the schedule comparison.

It should be noted that the DBFM capital cost has not been reduced to account for the private-sector efficiency and the ingenuity to account for the constraints created by a rehabilitation project, although such cost reductions under this model are not uncommon.

The outline schedule was reviewed and even with the longer procurement phase anticipated for the DBFM delivery, the project should be delivered within the same time frame as the conventional Design/Bid/Build.

The use of a DBFM model for the Disraeli Bridges Rehabilitation Project delivery is not expected to have any direct impact on City staff.

The maintenance part of the DBFM would include the physical maintenance of the asset, i.e., the deck and structure. Maintenance would not include snow clearing and cleaning, which the City is best placed to carry out.

The Outline Business Case identifies that the use of a DBFM model will provide value for money to the City. During the development of the project, and as part of the project plan, the business case and preliminary VFM must be updated at key points. This will provide transparency and ensure that VFM is being achieved, particularly when bids are received and the VFM can be recalculated using real costs in place of estimates, and when the associated costing of project risks are quantified by an expert panel. It is likely that the VFM will vary from the amount indicated in the Outline Business Case as the input information is refined. It is, however, unlikely that it will change to the extent that VFM is not being achieved.

In the current volatile construction market and bearing in mind the City's previous experience with significant budget overruns on multi-year capital projects, along with the Public Works Department's lack of resources, it is probable that the final project cost will be more than originally budgeted and at risk for timely delivery. This is a significant risk that justifies the premium for using a DBFM model.

It should be noted that this infrastructure investment will be made up of a combination of private-sector equity and debt financing. In the preparation of the Outline Business Case, a typical financing structure for a project such as this produced an effective financing cost to the City of 6.9 per cent. A second financing structure, requiring greater private-sector equity with a higher return to the investor, produced an effective financing cost to the City of 7.6 per cent. This second structure was produced to consider the developing issue within current global capital markets. If the City were to construct this under a traditional approach and debt-finance this project on its own requiring the City to borrow in two to three years' time, the rate that the City could borrow at is estimated to be 6 per cent.

This acknowledges the fact that the City can finance this project for a lower cost under traditional methods than the proposed DBFM. However, this assessment cannot be made in isolation and must consider the positive impacts on the Outline Business Case of a private-sector financier. A significant part of the VFM is because the private-sector financier has a vested interest in delivering the project on time and on budget. The Outline Business Case indicates that the value associated with this risk transfer exceeds the additional financing costs associated with this proposal.

Other Risk Considerations

The Disraeli Bridges Rehabilitation Project is a refurbishment which adds some specific risks relating to the condition of the existing structure, particularly when these components have to be retained. In the case of the Disraeli Bridge some of the piers and girders are to be retained. A market sounding was conducted to gauge how prospective proponents viewed the risks associated with these components. The consensus was that provided the City made the details of their own investigation available during the procurement process and allowed proponents access to conduct their own testing, then proponents would accept the risks based on them covering off what work they deem necessary in their proposal including their bid.

Public Works and Corporate Finance Departments' Recommendation

Corporate Finance and Public Works Departments recommend that the City pursue the DBFM model for the project delivery and subsequent maintenance of the Disraeli Bridges Rehabilitation Project. This recommendation is predicated on the information contained in the Outline Business Case and preliminary VFM which identifies that the City would likely achieve savings using the DBFM model.

Appendix B: Risk Matrix[16]

	The City of Winnipeg	Plenary Roads Winnipeg
Design and Construction		
Design & construction approvals – including environmental		■
Design deviation from concept approval		■
Design error		■
Patent infringement		■
Weather		■
Historical resources and environmental (known and disclosed)		■
Historical resources and environmental (unknown)	■	
Water/air/soil pollution – unknown pre-existing	■	
Water/air/soil pollution – known pre-existing	■	
Water/air/soil pollution – arising from work, including from known pre-existing sources		■
Land acquisition by the City to expand the right-of-way	■	
Land acquisition – possible laydown area	■	
All permits and regulatory authorizations		■
Delays by agencies, regulators, etc., other than the City		■
Delays by the City	■	
Construction cost overruns		■

	The City of Winnipeg	Plenary Roads Winnipeg
Design and Construction – continued		
Latent defects in refurbished bridge components, subject to City acceptance of design	■	
Latent defects in all replaced and new components of the works		■
Adequacy of insurance		■
Subcontractor insolvency		■
Changes in design and construction standards during the construction period	■	
Geotechnical and soil conditions		■
Labour disputes		■
Utility relocation and protection		■
Defective materials		■
Quality assurance and quality control		■
Achieving construction standards and specifications		■
Injunctions against construction (not caused by Plenary Roads Winnipeg)	■	
Labour and material availability		■
Workplace health and safety		■

[16] Deloitte & Touche LLP, *Winnipeg, Disraeli Bridges Project Value for Money Report*, February, 2013, p. 22.

Appendix B: Risk Matrix – continued

	The City of Winnipeg	Plenary Roads Winnipeg
Facility Expansion Risks		
Future interchanges or additional lanes ad ramp or expansion	■	
Risks During Maintenance Term		
Changes in standards, depending on nature of change	■	■
Weather		■
Labour disputes		■
Actual maintenance costs higher than anticipated		■
Damage/injury to third parties		■
Damage to works, dependent upon the cause	■	
Water/air/soil pollution		■
Third-party claims and accidents		■
Increased usage of authorized overload vehicles		■
Increased legal load limits	■	
Traffic accidents during maintenance term due to the performance of the contractor		■
Meeting handback standards		■
Meeting performance requirements		■
Labour and material availability		■
Change in law (general)	■	■
Force majeure	■	■

	The City of Winnipeg	Plenary Roads Winnipeg
Other Risks		
Discriminatory acts and discriminatory change in City bylaws	■	
Financial Risks		
Changes in benchmark rate between date of submission of SR-3 Package and date of financial close (if proponent elects to participate in capital payment adjustment mechanism in Form G-2)	■	
Changes in benchmark rate between date of submission of SR-3 Package and date of financial close (if proponent does not elect participate in capital payment adjustment mechanism in Form G-2)		■
Credit spread risk (shared in accordance with credit spread reset mechanism)	■	
Refinancing risk		■
All other financing risks		■
Inflation on construction costs		■
Inflation on estimated maintenance portion of City payments (per index factor)	■	

Appendix C: CCPPP's National Award Case Studies 1998 - 2012

Communications

Connecting Small Schools in Newfoundland (2003)

Defence

Communications Security Establishment Canada Long-Term Accommodation Project (2011)

Education

Alberta School Alternative Procurement – Phase 1 (ASAP I), Alberta (2010)
O'Connell Drive Elementary School, Nova Scotia (1998)

Energy

Britannia Landfill Gas to Electricity Project, Ontario (2005)
Vancouver Landfill Gas Cogeneration Project, B.C. (2003)
Bruce Nuclear Power Facility, Ontario (2000)
Waterloo Landfill Gas Power Project, Ontario (2000)

Government Services

Archives of Ontario – Offsite Archival Storage (2006)
Cook Chill Food Production Centre, Ontario (2005)
DriveTest: Ontario Driver Examination Services (2004)
Transforming the Delivery of Ontario's Social Assistance System (2003)
Emergency Service Mobile Communications in Ontario (2000)
Electronic Child Health Network, Toronto, Ontario (1999)
Teranet, Ontario (1998)

Health

B.C. Northern Health Facilities (BC Cancer Agency for the North; Fort St. John Hospital and Residential Care Project) (2012)
Centre Hospitalier de l'Université de Montréal Project (2012)
Glen Campus – McGill University Health Centre, Quebec (2010)
Women's College Hospital Redevelopment Project, Ontario (2010)
Royal Jubilee Hospital Patient Care Centre, B.C. (2009)
VIHA Residential Care and Assisted Living Capacity Initiative, B.C. (2007)
Abbotsford Regional Hospital and Cancer Centre, B.C. (2008, 2005)
Facility Management for the Royal Ottawa Health Care Group, Ontario (2000)
Devonshire Care Centre, Alberta (2000)
Shaikh Khalifa Medical Centre, United Arab Emirates (2000)

Justice & Corrections

Surrey Pretrial Services Centre Expansion, B.C. (2011)
Durham Consolidated Courthouse, Ontario (2007)
Central North Correctional Centre, Ontario (2002)
Five Corners Project, B.C. (2002)

Real Estate

Aurora College Family Student Housing, Northwest Territories (1999)
Legislative Chamber, Offices and Housing, Nunavut (1999)

Recreation & Culture

L'Adresse symphonique, Quebec (2011)
SHOAL Centre: Seniors Recreation Centre, B.C. (2004)
John Labatt Centre, London, Ontario (2002)
Skyreach Place, B.C. (2000)

Transportation

Canada Line, B.C. (2009)
Confederation Bridge, PEI (2009)
Highway 407 ETR, Ontario (2008 & 1999)
Autoroute 30, Montreal, Quebec (2008)
Northwest Anthony Henday Drive, Alberta (2008)
William R. Bennett Bridge, B.C. (2008)
Autoroute 25, Montreal, Quebec (2007)
Kicking Horse Canyon Project –Phase 2, B.C. (2007)
Golden Ears Bridge, B.C. (2006)
Anthony Henday Drive Southeast Leg Ring Road, Alberta (2005)
Sea-to-Sky Highway Improvement Project, B.C. (2005)
Sierra Yoyo Desan Resource Road , B.C. (2004)
Fredericton-Moncton Highway Project, New Brunswick (2003)
Belledune Port Authority, New Brunswick (2000)
Retendering Alberta's Highway Maintenance Contracts (2000)
Cobequid Pass Toll Highway, Nova Scotia (1998)

Water & Wastewater

Britannia Mine Water Treatment Plant, B.C. (2006)
Goderich Water and Sewer Services, Ontario (2000)
Port Hardy Treatment Project, B.C. (2000)

These case studies can be obtained through CCPPP's online bookstore at: www.pppcouncil.ca/bookstore

Appendix D: List of Municipal P3s (Under Construction & Operational)

Project Name	Model	Current Stage	Owner	Location
Environmental				
Britannia Landfill Gas to Electricity Project	DBFMO	Operational	Regional Municipality of Peel	Mississauga, ON
Brockton Water & Wastewater System	Operations & Maintenance	Operational	Municipality of Brockton	Brockton, ON
Canmore Water & Wastewater System	Operations & Maintenance	Operational	Town of Canmore	Canmore, AB
Enwave	Corporatization	Operational	Brookfield Asset Management Inc.	Toronto, ON
Goderich Water & Wastewater System	Operations & Maintenance	Operational	Town of Goderich	Goderich, ON
Moncton Water Treatment Facility	DBFMO	Operational	City of Moncton	Moncton, NB
Okotoks Water & Wastewater System	Design-Build-Operate	Operational	Town of Okotoks	Okotoks, AB
Port Hardy Water & Wastewater Treatment System	Design-Build-Operate	Operational	District of Port Hardy	Port Hardy, BC
Sooke Wastewater System	Design-Build-Operate	Operational	District of Sooke	Sooke, BC
Vancouver Landfill Gas Cogeneration Project	Build-Own-Operate	Operational	City of Vancouver	Delta, BC
Waterloo Landfill Gas Power Project	DBFMO	Operational	Regional Municipality of Waterloo	Waterloo, ON
Winnipeg Wastewater System	Service Contract	Operational	City of Winnipeg	Winnipeg, MB
Lac La Biche Wastewater Treatment Facility	Design-Build-Maintain-Operate	Under Construction	County of Lac La Biche	Lac La Biche, AB
Hospitals & Healthcare				
Ottawa Paramedic Service Headquarters	DBFM	Operational	City of Ottawa	Ottawa, ON
Recreation & Culture				
Bell Sensplex	DBFMO	Operational	City of Ottawa	Ottawa, ON
John Labatt Centre	DBFMO	Operational	City of London	London, ON
Mohawk 4-Ice Centre	DBFMO	Operational	City of Hamilton	Hamilton, ON
Powerade Centre	DBFMO	Operational	City of Brampton	Brampton, ON
Prospera Place	DBFMO	Operational	City of Kelowna	Kelowna, BC
Red Ball Internet Centre	DBFMO	Operational	Moncton 4Ice Sports Inc.	Moncton, NB
Shenkman Arts Centre & Orleans Town Centre	DBFMO	Operational	City of Ottawa	Ottawa, ON
SHOAL Centre	Design-Build-Finance	Operational	Town of Sidney	Sidney, BC
Pan Am Games Aquatics Centre, Field House & CSIO Project	Design-Build-Finance	Under Construction	University of Toronto	Toronto, ON
Pan/Parapan American Athletes' Village Project (West Don Lands)	Design-Build-Finance	Under Construction	Toronto 2015	Toronto, ON
Richcraft Sensplex	DBFMO	Under Construction	City of Ottawa	Ottawa, ON
Transportation				
Charleswood Bridge	DBFM	Operational	City of Winnipeg	Winnipeg, MB
Chief Peguis Trail Extension	DBFM	Operational	City of Winnipeg	Winnipeg, MB
Viva	Design-Build-Maintain-Operate	Operational	Regional Municipality of York	York Region, ON
Disraeli Freeway & Bridges	DBFM	Under Construction	City of Winnipeg	Winnipeg, MB
Ottawa LRT Project (Confederation Line)	DBFM	Under Construction	City of Ottawa	Ottawa, ON

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