

Governance and Priorities Committee Report For the May 07, 2015 Meeting

To:

Governance and Priorities Committee

Date:

May 1, 2015

From:

Jonathan Huggett, P. Eng.,

Project Director

Subject:

Johnson Street Bridge Replacement Project Quarterly Update

Executive Summary

Quarterly reports are prepared on the Johnson Street Bridge Replacement Project throughout the year to keep Council and the community updated on this important Capital Project. This is the second quarterly report for 2015, with the next one scheduled for August.

Since the last update, the project schedule has been revised to reflect delays in the delivery of the structural steel and now identifies January 2017 as the target date the new bridge will open for public use, with a total project completion date of June 2017 allowing for the existing bridge to be demolished. The overall bridge construction continues to see significant progress on the concrete foundation, including the abutments, walls and rest piers. The most significant highlight from this past quarter was the largest single concrete pour in recent Victoria history, which took place on February 13, 2015. This massive concrete pour involved approximately 1100 cubic meters of concrete arriving in 120 concrete truck loads and now forms the foundation of the new bascule pier. Also highlighted in this report is an overview of other significant construction progress, as well as a review of and location identification for the many retaining walls related to the project.

The revised project schedule, resulting in a 15 month delay, has had a financial impact on the project budget, specifically in the areas of insurance, additional City costs, professional consulting services, legal costs for mediation, and the unallocated contingency to completion. These costs were presented to Council on March 26, 2015, where a \$4.8 million budget increase was requested for the project. Council has indicated its intent to require closer oversight of additional expenditures, and as a result a \$1.5 million budget increase was granted by Council. This brings the total budget for the Johnson Street Bridge Project to \$94.3 million.

The City is a recipient of Federal Build Canada Grant funding of \$21 million and UBCM Gas Tax funding of \$16.5 million. Transport Canada has approved an extension to the Federal Funding for the project until March 2018. Additionally, in April the City sent a formal request to the UBCM for an extension to the General Strategic Priorities Fund Grant funding for the JSB Project. It is anticipated that this request will be met with the UBCM's approval in the near future.

Clarity was provided to the public and the media regarding the seismic stability design of the new bridge, which was also provided in both a report to Council and in a technical briefing.

Mediation regarding various claims for additional costs by both PCL and MMM and its sub consultant is on-going with the exchanges of information between the parties taking place in expectation of the first of several formal mediation sessions in the fall.

With steel fabrication restarting in March, the Project Director, along with representatives from MMM and PCL, visited the steel fabrication plant in China from April 27th to May 2nd to review the onsite steel

quality oversight. The City has stated that any steel not meeting the highest quality and safety specifications will not be accepted and the project team wanted to review the new steel quality control plan to ensure it has been implemented properly and is being followed. Relevant steel updates from this trip will be verbally and visually presented at the time of the GPC meeting on May 7th.

Last month, a technical briefing and Q&A session for all interested media outlets was held and was well attended. The briefing outlined the steps in steel fabrication, the new project schedule and budget, an overview of the bridge's seismic design and the technical aspects of building the new bridge. Staff are also in the process of preparing a detailed briefing and update for Council on the public realm to seek further feedback and direction.

Recommendation:

That Council receive this report for information.

Respectfully submitted,

Jonathan Huggett, P.Eng. Project Director

Report accepted and recommended by the City Manager:

May 1, 2015

Date:

Governance and Priorities Committee Report
Johnson Street Bridge Replacement Project Quarterly Update

Purpose

As directed by Council, staff provides quarterly reports on the Johnson Street Bridge Replacement Project throughout the year. This is the second report for 2015, with the next update scheduled for August.

Project Schedule

The initial work schedule identified in the PCL contract identified the date of September 30, 2015 as the date to complete the new bridge and total completion of the project, which would include dismantling of the old bridge and completion of all landscaping was to be undertaken no later than March 2016.

However, with the fabrication of steel delayed and re-commencing in March, the Contractor, along with their fabricator ZTSS, have revised the project schedule for the balance of the project and are now identifying the new bridge being available for use in January 2017, with total project completion June 2017.

The following table indicates the updated project schedule as it was presented at the Technical Briefing to the media on April 7, 2015:

Key Milestones	
Steel Fabrication & Shipping	March 1, 2015 - June 5, 2016 (66 weeks)
Bridge Machinery Fabrication	Feb. 23, 2015 - Nov. 23, 2015 (39 weeks)
Bridge Decks – East	June 26, 2015 - Oct. 23, 2015 (17 weeks)
Bridge Decks – West	June 26, 2015 - Sept. 18, 2015 (12 weeks)
Bridge Machinery Installation	Nov. 23, 2015 - Feb 1, 2016 (10 weeks)
Site Shut Down	Feb. 23, 2016 - June 5, 2016 (15 weeks)
Steel Bridge Erection	June 5, 2016 - Sept. 18, 2016 (15 weeks)
Bascule Span (Miscellaneous):	Sept. 18, 2016 - Nov 27, 2016 (10 weeks)
Traffic shift/bridge ready for traffic	Jan. 15, 2017
Demolition	Jan. 15, 2017 - April 16, 2017 (13 weeks)
Project completion	June 25, 2017

Steel Fabrication Status

Steel fabrication resumed in March. An improved Quality Management Plan and Inspection and Testing Plan are now in place at the steel fabrication plant.

Regular inspections by the fabricator and the contractor's quality control consultants are being conducted. This ensures that the bridge is constructed to the highest standard of the design. Any steel not meeting the highest quality and safety specifications will not be accepted.

The Project Director, along with representatives from MMM and PCL, visited the steel fabrication plant in China from April 27th to May 2nd to review the onsite steel quality oversight.

Seismic Design

On March 12, 2015 a presentation was made to Council to explain the performance of the seismic design of the new bridge. It was confirmed in writing by MMM and its subconsultant Hardesty and

Hanover that the final design is based on the most comprehensive, onerous and relevant design requirements for bascule bridges in North America.

The new Johnson Street Bridge has been designed as a "Critical Bridge" – the equivalent definition of "Lifeline Bridge," which is the performance required by the City. The design of the new bridge will allow the bridge to be available to all traffic after a design earthquake of 1/1000 year return period. The bridge is expected to "be usable by emergency vehicles and for security/defense purposes immediately after a large subduction earthquake, e.g. a 2500 year return period event."

Financial Overview

The revised project schedule has had a financial impact on the project budget, specifically in the areas of insurance, additional city costs, professional consulting services, legal costs for mediation, and the unallocated contingency to completion. These costs were presented to Council on March 26, 2015, and a \$4.8 million budget increase was requested for the Project. Council has indicated its intent to require closer oversight of additional expenditures, and as a result Council granted a \$1.5 million budget increase. This brings the total budget for the Johnson Street Bridge Project to \$94.3 million.

As of March 31, 2015, the following has been accounted for:

- MMM has invoiced \$8.463 million from the budget of \$9.362. This reflects the following professional services: project management, design, procurement, administration, geotechnical engineering, and permits.
- MMM has invoiced \$377,475 of the \$611,313 in additional services budgeted from the contingency. These services include: owner's quality control for the steel fabrication, the steel detailing workshop, supplementary services, unforeseen geotechnical engineering, utility mapping, seismic design review, and additional designing.
- PCL has invoiced \$24.384 million, representing 38.74% of the \$62.935 million contract price.
 PCL has invoiced an additional \$276,734 for cofferdam and hazardous disposal budgeted from the contingency.

The originally approved contingency was \$2.515 million. Value engineering resulted in a \$300,000 savings on the east abutment. Council approved an additional \$1.5 million towards the project contingency March 26, 2015 and to the end of March 2015, \$1,545,792 (including the \$276,734 and \$611,313 from MMM and PCL) has been allocated from the contingency with \$2,769,208 remaining. No additional contingency funds are being requested at this time.

For a detailed account of the current JSB budget and contingency items, please see appendices A and B.

Grant Funding

Building Canada Fund Contribution Agreement

Transport Canada has approved an extension of funding for the Project until March 2018 for the Building Canada Fund Contribution Agreement (see attached letter in Appendix C). The previous deadline for the federal government's contribution was March 2017.

UBCM General Strategic Priorities Fund

On April 23, 2015, the City sent a formal request to the UBCM for an extension to the General Strategic Priorities Fund Grant for the JSB Project. It is anticipated that this request will be met with the UBCM's approval in the near future.

Mediation Update

Mediation continues involving legal counsel and representatives of the City, PCL, MMM and Hardesty and Hanover. The current activities involve exchanges of information between the parties and responses to detailed questions. Sessions involving the mediator will occur once a full exchange of information has occurred. The first mediation session is likely to be in early fall.

It is anticipated that several mediation sessions at various stages in the project will be required. As an example discussions regarding the consequences of the delay in the fabrication of the steel cannot be determined until the steel has been delivered.

Fendering Update

Design of the fendering on the in-channel and south side is complete and construction has been mostly completed. The fendering design on the north side of the bridge is being further investigated. The following activities are anticipated over the next quarter:

- A review of alternate designs for fendering on the north side;
- A meeting with key stakeholders and regulatory agencies including Transport Canada, Harbour Master, Water Lot owners on the north side of the bridge, and water users. The last consultation on this matter was in November 2013;
- Pricing of various options by PCL;
- · Selection of the preferred alternate for presentation to Council.

Safety and Environment

As part of the PCL Environmental Management Plan, Hemmera, PCL's environmental consultants, do weekly inspections of the worksite, which are reported to Transport Canada. Additionally, Transport Canada also does monthly inspections of the project. There are no significant environmental impacts to report since the last quarterly update.

Overall site safety remains a priority and no major accidents within the PCL site have been reported. Outside the PCL site, an accident occurred involving a cyclist on March 31, 2015 who was badly injured in a BC Hydro work zone. Police and WCB are investigating this incident on an ongoing basis. No official reports have been released at this time.

Update on Risk Management

Effective Risk Management requires continuous monitoring and updating. The following are the current significant project risks and their mitigation strategy:

Risk	Detail	Mitigation				
Delivery of Steelwork being fabricated in China	The quality and timing of the steel is perhaps the most critical issue facing the Project	A meeting at the ZTSS plant in China took place on the 28 and 29 April and updated visuals and a verbal report will be submitted to Council on May 9.				
Financial consequences of mediation	The financial consequences of the mediation are not yet known, and may not be known for some time.	City staff are working with legal counsel to ensure a full and accurate exchange of information with the other parties occurs. Any agreement on financial issues requires the approval of Council.				
Fendering	There are financial challenges related to the north side fendering.	Re-evaluation of the north side fendering designs together with a stakeholder consultation				
Public Realm design	Need to ensure both public acceptance and financial viability of the public realm	Drafting a public consultation and work strategy to ensure that Council's expectation regarding				

	issues	the public realm are met. This obviously includes for full and significant input and direction of Council.			
Management of Contingency Funding	In the March 2015 report staff identified \$4.8 million in contingency funding requirements. Council approved \$1.5 million and directed that Council wanted detailed updates on major contingency funding items	Project Director is preparing detailed contingency funding reports, and is looking for cost savings opportunities.			
Machinery Issues	A critical part of the bridge is the machinery operation. Work is about to commence on production of the machinery.	Regular off site inspections of the machinery fabrication are being carried out. Hardesty and Hanover have engaged a specialist machinery expert familiar with this kind of work.			

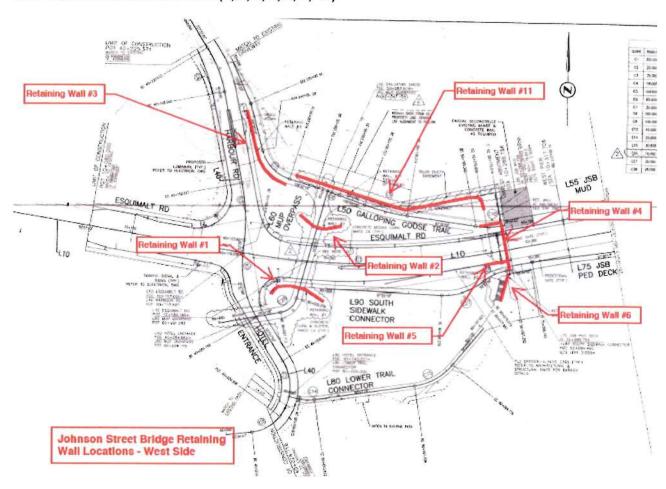
Retaining Walls

In order to provide visual clarity to Council on the retaining walls related to the JSB Project, this report contains on the following pages, diagrams showing the location of all of the relevant retaining walls on the east and west sides of the bridge

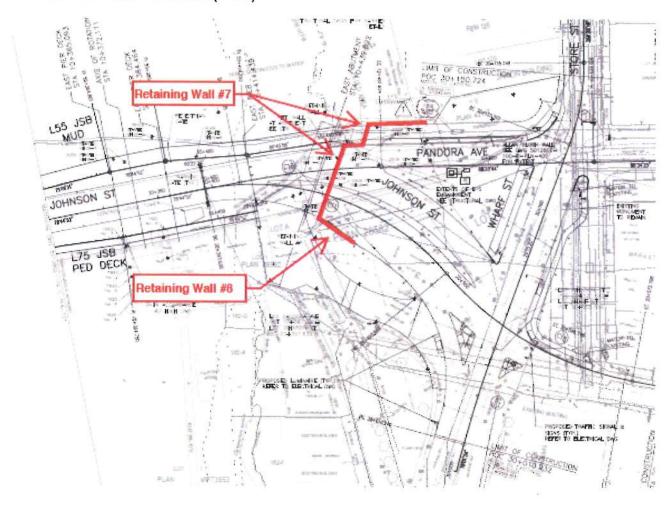
A summary of the progress on the retaining walls is as follows:

- Wall 1 under design review as it relates the pedestrian overpass;
- Wall 2 under design review as it relates the pedestrian overpass:
- Wall 3 constructed;
- Wall 4 under construction, 75% complete;
- Wall 5 future work;
- Wall 6 to be constructed after removal of old JSB;
- Wall 7 preliminary preparations are underway, construction to commence this summer;
- Wall 8 to be constructed after removal of old JSB;
- Wall 9 removed from design;
- Wall 10 removed from design;
- Wall 11 construction to commence shortly after completion of Wall 4.

JSB West Side Wall Locations (1, 2, 3, 4, 5, 6, 11)



JSB East Side Wall Locations (7 & 8)



Construction Progress - West Side Approach

Delta Hotel and Harbour Road access

The Delta Hotel saw substantial completion of the access to their hotel from the newly constructed Harbour Road. City staff worked closely with Delta management to ensure a safe and acceptable opening of the roadway. Also under improvement was the E&N trail access, which now has a stop, controlled dedicated crosswalk for users.



View from Harbour Road into the Delta Hotel site



New E&N Trail access to Harbour Road and sidewalk connection to Esquimalt Road

Harbour road at Esquimalt Road

The north east corner of Harbour Road has seen retaining and multi-use trail construction in the past quarter. Focus will now shift to the adjoining Wall 11 and pedestrian overpass.

City staff identified a need where an improved interim bike box was installed to better accommodate the large volumes of cyclist traffic southbound on Harbour Road at Esquimalt Road. This bike box helps to create both a more inviting and functional environment for cyclists.



Harbour Road intersection with improved bike box on Harbour Road/Retaining Wall 3 in background shrouded in protective plastic covering.

West Abutment

The completion of the west abutment up to bridge deck level marks a major milestone. Work from there has shifted to the west on the backfill behind the abutment and the construction of Wall 4. This will allow the area west of the water to now rise up to road level. Relatively soon the new bridge approach will be seen to take shape.

Wall 4, currently under construction, is an engineered wall that assembles much like stacking blocks. Used in concert with a system of "tiebacks" to the soils behind the wall, this wall sits directly behind the west abutment to provide support to the road structure and will tie together with Wall 11 which delineated 203 Harbour Road from the future multi-use trail.



West Abutment (tallest) and Wall 4 (under construction)

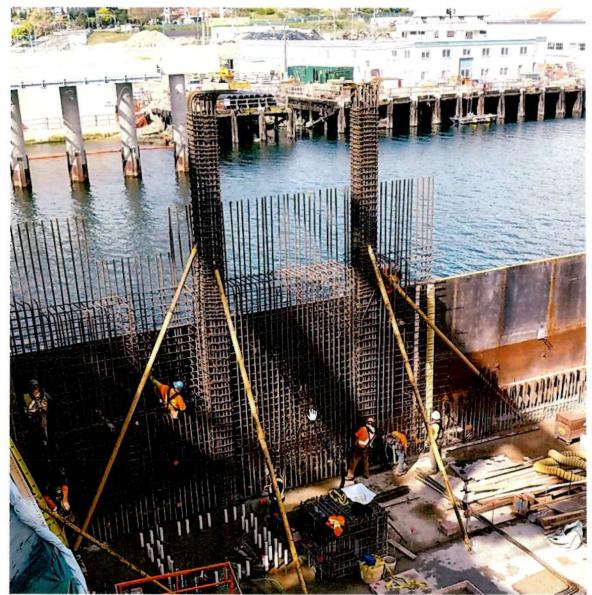
Bridge Crossing Site

Those past few months have also seen significant completions within the water area itself. The west rest pier, east intermediate pier, and abutment pier are all now substantially complete.



Intermediate pier on the east side (between shore and bascule)

The bascule itself continues to make great progress. January saw the "Big Pour" take place. This massive operation required months of planning and preparation and was successfully completed. This is essentially like getting the foundation and concrete floor complete in home construction. Since then, crews have been focused on building walls that will have a major impact to those passing by as the bascule quickly grows up out of the sea.



In the bascule, with the "Big Pour" completed for the floor/base, rebar can be seen shooting skyward where concrete walls are soon to be poured.

Construction Progress - East Side Approach

EPS Fill Zone and Abutment

The east side abutment is a specialized piece of engineering work that has started construction. This zone has been commonly referred to as the EPS Zone, or, the foam zone. To accommodate the geotechnical restrictions here, fill material placed when Pandora Avenue was first created are being removed and replaced with a special foam material that can withstand the weight of the road above, while reducing the amount of weight placed behind the abutment wall. These constructions will, over time, help to ensure that there is no ground settlement. This will further ensure proper alignment between bridge and road structures.



An excavator sitting alongside the Janion works within the foam zone. East Abutment pier is seen on the left.

Behind the construction fencing on the north west corner of Pandora and Store, PCL crews have started construction on underground infrastructure such as water supply, drainage, and other items.



Underground water main installation progressing - view looking east up Pandora

Throughout the Project, PCL and the City continue to work proactively with the Janion building to create a seamless integration. Part of that work has been the consideration of the David Foster Way connection between the multi-use path and the Janion Building itself. Forethought has been given to

future design of the connection and some construction measures have been taken to help ease the final construction of that trail connection.



Architecture concept for David Foster Way access on the south face of the Janion

Hydro Service

Scheduled for completion in early May, new BC Hydro infrastructure which supplies power to the bridge has been under construction from the base of Yates Street to the north side of Pandora Avenue. It was necessary to relocate this service to accommodate bridge development projects as well as the sale of Bridgehead Green.



Crews can be seen working at the intersection of Johnson and Wharf.

Community Engagement

Throughout the project, staff have maintained correspondence with stakeholders and media in an effort to keep the public informed about ongoing construction and answer questions about the bridge project.

Last month, a technical briefing and Q&A session for all media and the public was held and was well attended. The briefing outlined the steps in steel fabrication, the new project schedule and budget, an overview of the bridge's seismic design and the technical aspects of building the new bridge.

Recently, Council requested an update and further discussions around the public realm. Staff are currently preparing a briefing presentation, including the history of the public realm, along with an update to seek further feedback and direction regarding certain aspects such as handrails, walkways, lighting and public art that will be presented to Council in a workshop format in the near future.

Previous public engagement sessions specific to the public realm areas of the new Johnson Street Bridge took place in 2012 with a report being created and presented to Council at that time. Recommendations included the addition of new sidewalk and pedestrian crossings, plaza amenities, traffic calming measures, and naturalized landscaping including exposed bedrock. Public realm renderings have also been created in order to demonstrate the pathway connections, plaza furnishings and landscaping as outlined in the contract for the bridge project.

This staff briefing being created will update and inform Council about the feedback the public has already provided, as well as present the additional possibilities for the public realm that exist today.

Recommendation:

That Council receive this report for information.

Attachments

- Appendix A Budget Update
- Appendix B Project Completion Contingency
- Appendix C Building Canada Fund Contribution Agreement Funding Extension Approval

Appendix A

Budget Update	Budget	Contingency/ Tax allocation	Adjusted Budget	Actuals (Mar 31 2015)
Project Component				
Professional Services				
Design Management, Design & Contract Administration ¹	10.675	0.209	10.884	9.877
Design consultant optimization	0.250	*	0.250	0.240
Development Costs to end 2010 ¹	1.330	0.003	1.333	1.333
Approvals & Permitting ¹	1.100	0.029	1.129	1.125
Legal/Procurement ²	0.730	0.029	0.759	0.883
Subtotal	14.085	0.269	14.354	13.458
Construction Costs				
Main Bridge Contract ⁷	63.235	(0.294)	62.941	24.384
Project Completion Contingency	2.515	0.300	2.815	1.113
Additional Condtingency		1.500	1.500	-
Subtotal	65.750	1.506	67.256	25.496
General Construction				
Early Marine Works, Rail Bascule Removal ³	2.400	0.023	2.423	2.428
Insurance ³	1.500	0.017	1.517	1.157
Other Works & TELUS Duct Removal ⁴	2.265	0.271	2.536	1.644
Subtotal	6.165	0.311	6.476	5.229
City Costs (over 5 years) ⁵	1.900	(0.305)	1.595	1.034
Property	1.000	•	1.000	0.997
Finance Fees	1.000	¥	1.000	0.249
Value Added Tax (HST/PST) ⁶	2.900	(0.281)	2.619	
Total	92.800	1.500	94.300	46.464

Notes:

- 1. Adjustment for tax allocation from Value Added Tax budget
- 2. Additional legal work from Denton
- 3. Rounding of original budget
- 4. Increase for Public Art; Undefined Scope; Tax allocation and misc additional expenses
- 5. Reduction in Project Contingency to offset increases to Legal and General Construction
- 6. Offset tax allocated to Professional Services and Other Works & Telus Duct Removal
- 7. Two increases to the Main Bridge Contract paid for out of the Project Completion Contingency: Hazardous waste disposal \$34K; West cofferdam soil disposal \$243K.

Appendix B

			Orginial Contract	Kn	own to March 2015 ¹			If Remaining Unknows Materialize
Project Completion Contingency (as per Schedule C - Schedule of Prices)		\$2	\$ 2,515,000.00		4,015,000.00			\$ 2,769,208.36
								Remaining
Allocated Contingency	Contract line	ı	Budget		Committed	Eli	minated costs	Unknown
A. Archaeological \$250,000	Α	\$	250,000	\$	100,000			\$ 150,000
B. Unforeseen Geotechnical and Subsurface Conditions \$600,000	В		600,000.00	1980	19,000.00			581,000.00
C. Hazardous Materials \$250,000	С		250,000.00	1	331,374.01			#1
D. Girder Span Depth \$30,000	D		30,000.00		-			30,000.00
E. Structural Steel Overrun (see Article 4.4 of Agreement) \$600,000	E		600,000.00		10 0 1	1	(600,000.00)	+
F. Imported Fill \$80,000	F		80,000.00		•		(2)	80,000.00
G. Hydro Relocation and Power Supply \$150,000	G		150,000.00		357,426.00			-
H. City Services \$200,000	Н		200,000.00		7,532.71			192,467.29
I. Environmental Permitting and Processing \$25,000	1		25,000.00		2,187.50			22,812.50
J. Multi Use Trail Overpass Bridge (if changed to steel) \$250,000	J	1	250,000.00		-			250,000.00
K. Additional structural support for Fendering \$462,500	K		462,500.00		· *			462,500.00
L. City Quality Assurance for Structural Steel \$75,000	L		75,000.00		168,000.00			-
M. Requirement for additional seabed land \$50,000	M		50,000.00					50,000.00
N. Fabrication Shop Drawing . Third Party Detailer \$50,000	N		50,000.00		15,000.00			35,000.00
Add: MMM CO#3 Resolution of China Fabrication QA/QC NCR's \$50,000	0		50,000.00		155,958.24			-
Add: MMM CO #4 Workshop \$53,156	Р		53,156.00		53,156.00			-
Add: MMM CO #5 Supplementary Services \$264,600	Q		264,600.00		264,600.00			
Add: MMM CO #7 Utiltiy Mapping \$4,200	R		4,200.00		4,200.00			-
Add: MMM CO #8 Seismic Design \$13,700	S		13,700.00		13,700.00			
Add: MMM CO #9 Additional Designing \$53,657	T		53,657.18		53,657.18			1.0
		\$3	3,511,813.18	\$	1,545,791.64	\$	(600,000.00)	\$ 1,853,779.79
							Savings not	Remaining
			Budget		Realized		achievable	Unknown
Value Engineering Savings								
A. Replace Indicative Design with attached configuration including shortening of East of Attachment 1 to this Appendix C) \$900,000	end span (see	\$	900,000.00	\$	300,000.00	\$	(450,000.00)	\$ 150,000.00
B. Replace West Pier with extended pile configuration \$125,000			125,000.00					125,000.00
C. Replace Indicative Design of West Abutment (see Attachment 2 to this Appendix C) \$350,000			350,000.00		i			350,000.00
D. Reduction of piles under Bascule Pier \$185,000 E. Lighting – optimizing lighting design \$500,000			185,000.00					185,000.00
			500,000.00					500,000.00
The state of the		\$ 1		\$	300,000.00	\$	(450,000.00)	\$1,310,000.00
Remaining Contingency	Minimum AVS	\$	163,186.82	\$	2,769,208.36			\$ 2,225,428.57

Notes

^{1.} Includes additional \$1.5 million contigency

Appendix C

Ministre de l'Infrastructure, des Collectivités et des Affaires intergouvernementales et ministre de l'Agence de développement économique du Canada pour les régions du Québec



Minister of Infrastructure, Communities and Intergovernmental Affairs and Minister of the Economic Development Agency of Canada for the Regions of Quebec

Ottawa, Canada K1A 1M8

MAR 2 5 2015

Her Worship Lisa Helps Mayor City of Victoria No. 1 Centennial Square Victoria, BC V8W 1P6

Dear Mayor Helps:

Thank you for your correspondence of February 2, 2015, regarding the Johnson Street Bridge Replacement Project contribution agreement being funded under the Building Canada Fund Major Infrastructure Component (BCF-MIC). I have noted your request for an extension of the agreement for the project.

The Government of Canada agrees that the Johnson Street Bridge Replacement Project is an important initiative that provides critical links between the City of Victoria, Victoria West and surrounding municipalities. Our Government is proud to be contributing to this key investment.

Pending the negotiation of an amendment to the existing Canada-City of Victoria contribution agreement, I am prepared to grant a one-year extension of the agreement term to March 31, 2018. Federal officials will be in contact with their counterparts at the City of Victoria shortly, to prepare this amendment for our joint signature. Under the existing agreement, the Government of Canada is providing up to 33% of the total eligible project costs to a maximum federal contribution of \$21 million.

Although the Government of Canada is prepared to grant the request for an extension, I must emphasize that no additional BCF funding will be granted for this agreement.

Any ineligible costs, cost overruns, costs associated with funding shortfalls or costs related to the ongoing operation and maintenance of the project will remain the sole responsibility of the City of Victoria.

Yours Sincerely.

Thank you for your continued collaboration on this matter.

Denis Lebel, P.C., M.P.

