



**Committee of the Whole Report
For the Meeting of January 25, 2018**

To: Committee of the Whole **Date:** January 18, 2018
From: Jonathan Huggett, P. Eng., Project Director
Subject: Johnson Street Bridge Replacement Project Quarterly Update

RECOMMENDATION:

That City Council receive this report for information.

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 project. This is the first quarterly report for 2018, with the next one scheduled for April 2018. Should any emergent issues arise, staff will provide an immediate update to Council.

During the last three months, the two rings, and lower counterweight were completed and installed in their final location in the bascule pier. The falsework (temporary supports required for installation) temporarily supporting the rings has been removed, though the falsework supporting the lower counterweight will remain in place until the bascule leaf can be attached to the rings. The bascule leaf currently located on a barge located at the north end of the inner harbour, will be lifted in to its final location commencing on Friday January 26th with the actual lift being on the Saturday.

During the lifting of the bascule leaf the main navigation channel will be closed from Friday January 26th for 9 days. This is because the navigational channel will be blocked by the leaf until it is fully attached to the rings and is able to be lifted out of the way.

Work has continued on the main bascule leaf and the associated walkways and cycle paths. The walkway and cycle path supports have been attached to the main bascule leaf and the aluminum plank riding surfaces have been attached. The main roadway surface has been completed and the handrails attached. Trial lighting of the leaf has also been undertaken.

South side and in-channel fendering is complete. Work continues on reviewing options for the north side fendering required to protect the bridge from outgoing vessels. Geotechnical investigations are complete and significant efforts are in progress to reduce the capital costs while still maintaining protection for the bridge. Council will be updated.

At the December 14, 2017 meeting, Council approved updated conceptual designs for the public realm areas surrounding the Johnson Street Bridge on the both the west and east sides. The work underway is focussed on the south west and south-east plaza areas and the David Foster walkway section which will be located under the east span of the new bridge. The City of Victoria's Artist in Residence and Indigenous Artist in Residence have produced concepts for the public art to be

located in a triangle shape area on the east side of the bridge and details of that proposed public art are now being finalized.

The new bridge is scheduled to open to traffic on March 31, 2018. Key dates involved in meeting that schedule are as follows:

1. Installation of main bascule span – January 27, 2018
2. Commissioning and testing of the new bridge – February through March 2018

The approved budget is \$105.06 million (see Appendix A). As of December 31, 2017 actual costs of \$96.08 million have been incurred.

There will be one more planned project budget increase request for fendering. Should additional unforeseen events occur before the completion of the project, Council will be advised.

The nearing of the completion of the new bridge has heightened public interest.

Media have taken a keen interest in the bridge assembly in Victoria and the City's Engagement department is working closely with the Project Director to ensure timely information and access to spokespeople. Numerous media opportunities have been held to explain the project and next steps in construction.

Staff continue working with the neighbouring residential areas on proactive engagement with neighbours to keep them informed of weekend or evening work and increased activity at the worksite.

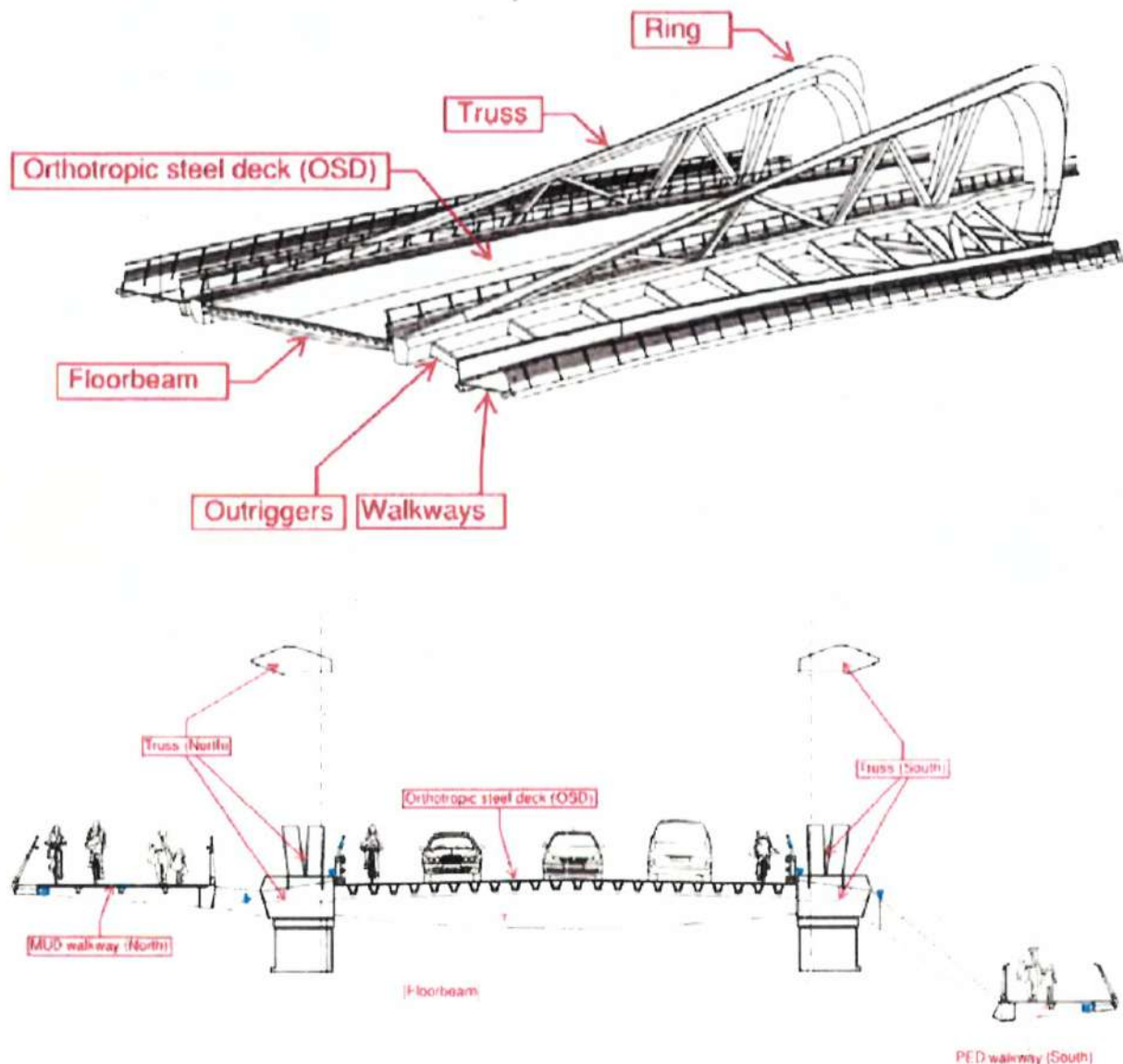
In the coming months as the bridge pieces are lifted into place, City staff have a communications and media plan in place to ensure that information about key milestones of interest to the public and the media are shared. Staff will also continue to communicate possible impacts such as road or marine channel closures, bridge lifts and other construction related impacts to the public, the media and stakeholders.

PURPOSE

As directed by Council, staff provides quarterly reports on the Johnson Street Bridge Replacement Project throughout the year. This is the first report for 2018, with the next update scheduled for April 2018.

RING AND LOWER COUNTERWEIGHT INSTALLATION AND ASSEMBLY

The following diagrams provide visual clarity of the main steel components being fabricated for the new bridge:



The north and south rings and lower counterweight were installed on December 9th and 10th, 2017. Following the rings and counterweight being lifted into place and supported on temporary steel falsework, all three components were carefully aligned and then the rings were bolted to the

counterweight. The rings were then lowered onto the machinery supporting them permanently and the ring falsework was removed.

Figure 1 –Attachment of Rings to Counterweight

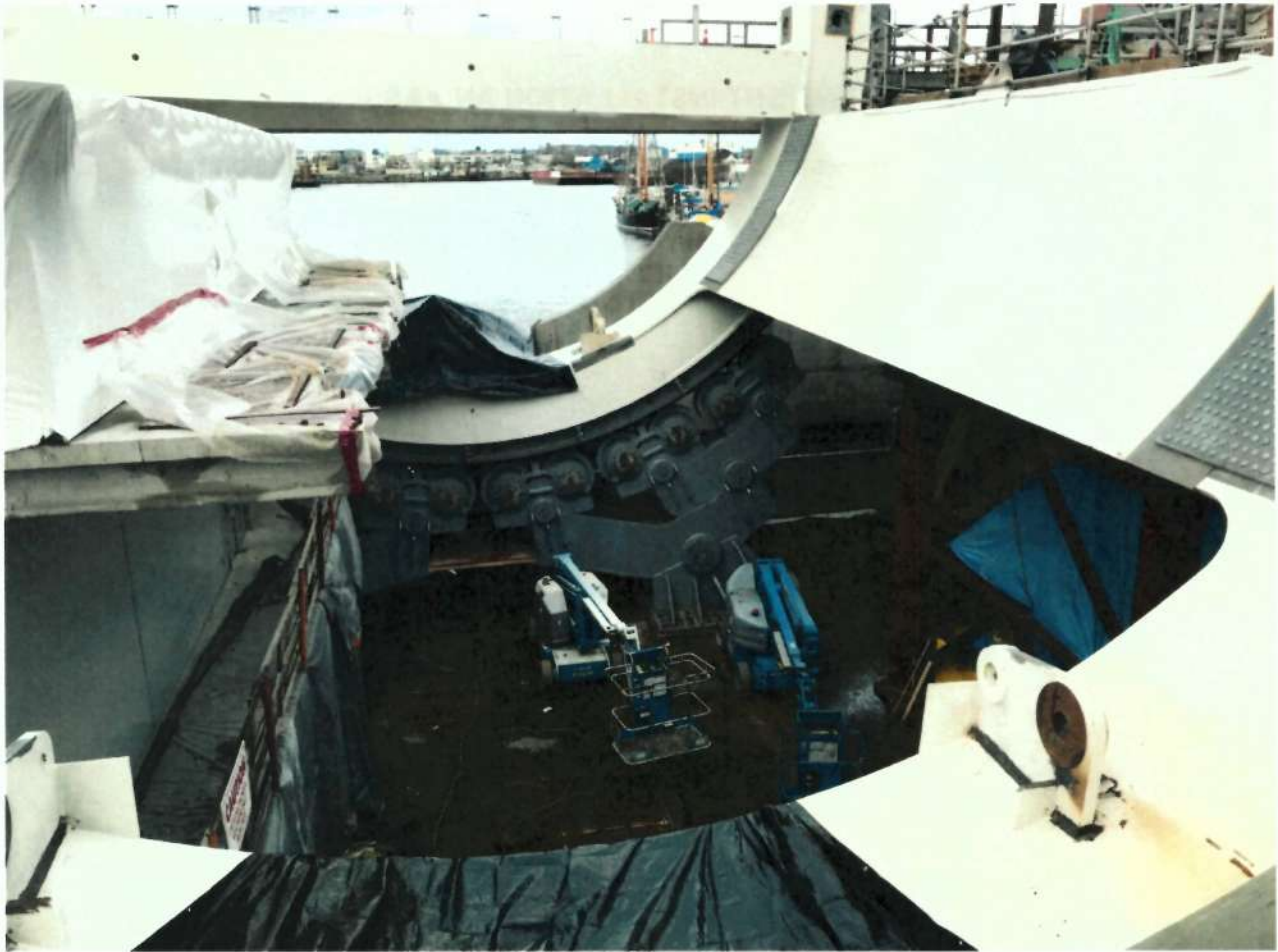


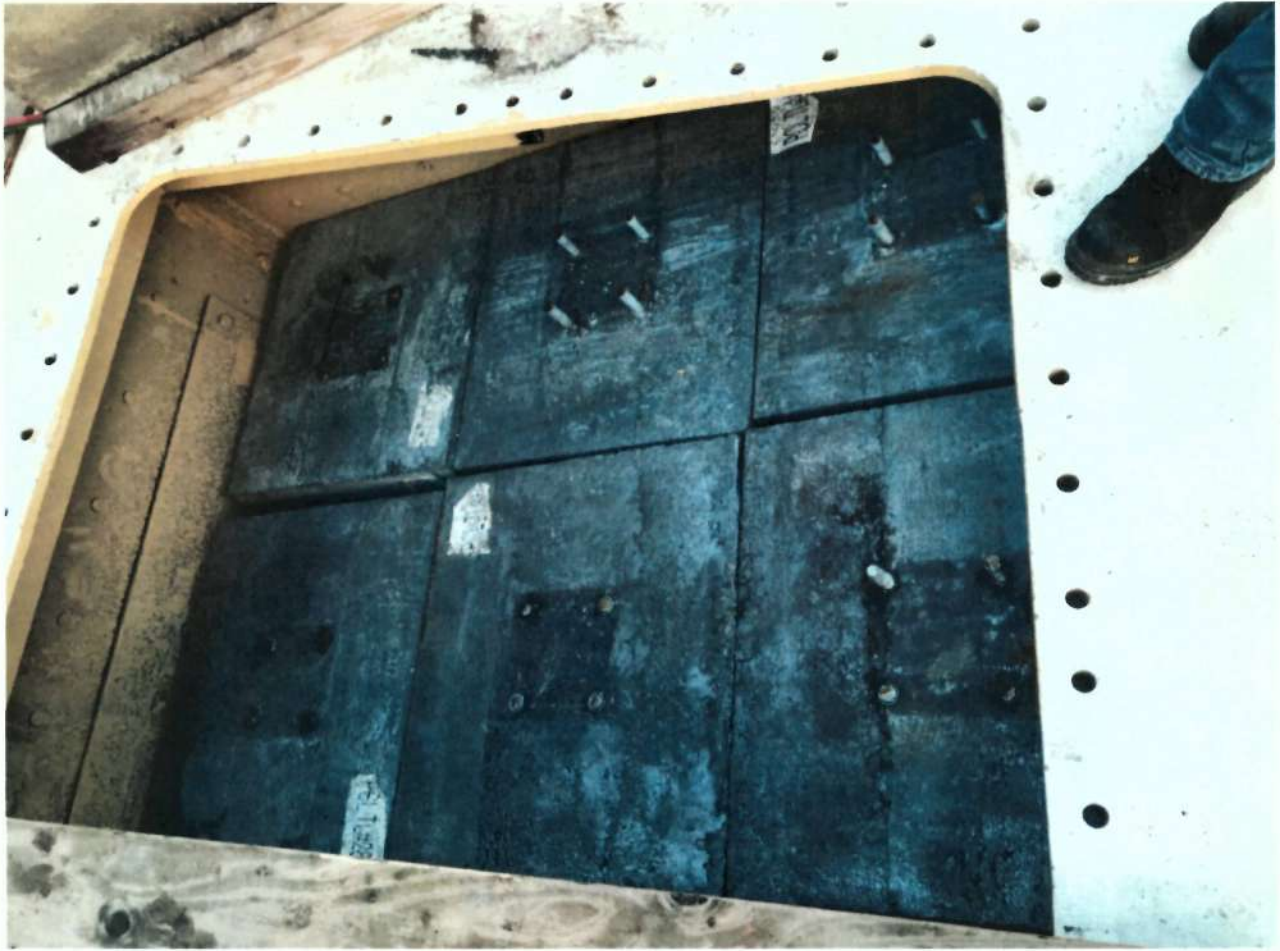
Figure 2 – Rings in Final Position on Equalizers and Machinery



LOADING OF COUNTERWEIGHTS

On completion of the installation of the rings and lower counterweights, ballast in the form of lead and steel plates was added to both the lower and upper counterweights (the latter are integral with the rings). The amount of ballast will be finalized once the bascule leaf is attached.

Figure 3 - Lead Blocks in Lower Counterweight to be sealed with cover plate.



FINAL ASSEMBLY OF BASCULE SPAN

Since September 17th, the main bascule leaf and the associated walkways and cycle paths have been on a barge at the north end of the harbour. The various parts will remain on the barge, and the walkway and cycle path supports will be attached to the main bascule leaf. The completed span will then be lifted in a single operation on Saturday January 27, 2018 and bolted to the rings which are aligned and in place.

Figure 4 – Current Status of the Bascule Leaf and associated outriggers



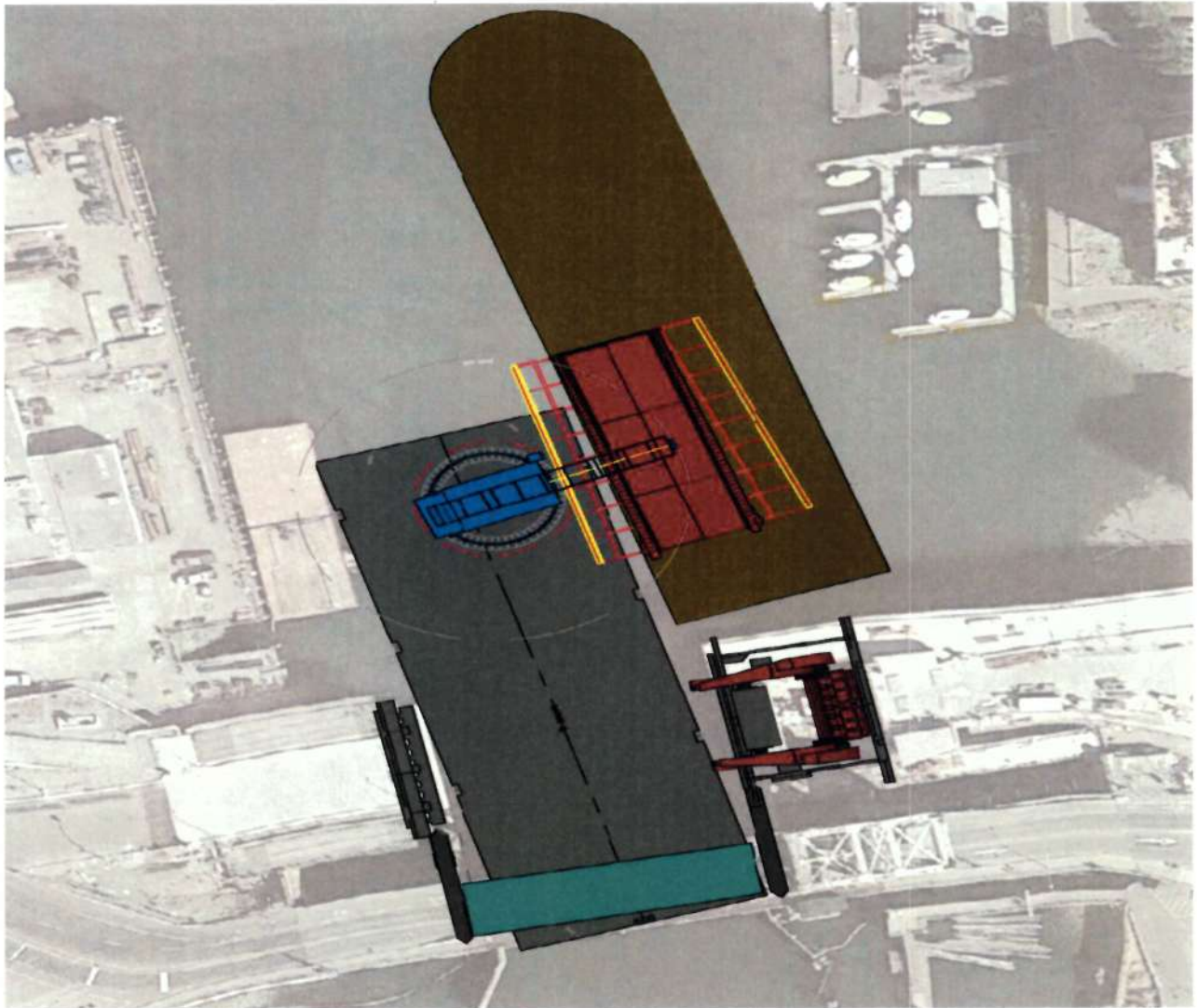
The following picture shows the multi-use path that has been attached to the main span before that is lifted into place on January 27, 2018.

Figure 5 – MUD Deck Surface for Bascule span



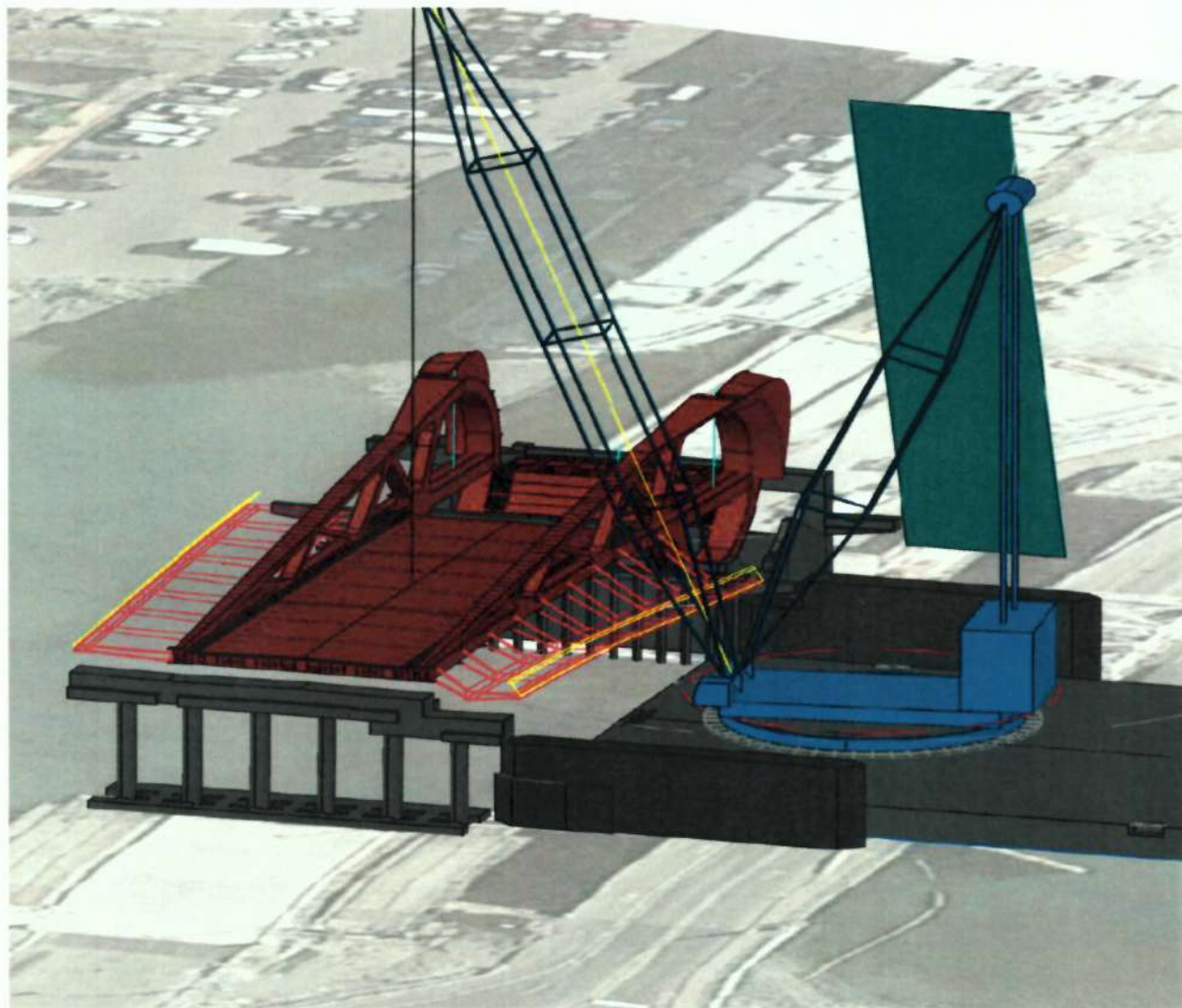
Starting on January 27, 2018, the main bascule leaf span will be lifted as one piece with all of the walkways and cycle tracks attached from the barge it currently sits on:

Figure 66 – Barge and Crane Position with Main Span



Once the span is in the air, the crane then moves under the existing bridge carrying the main span and rotating it ready to set it down in the correct position.

Figure 7 – Main Span lifted in place



The main span is then bolted to the rings. A detailed schedule for the entire bascule leaf lift and attachment is attached as Appendix C.

FENDERING UPDATE

South side and in-channel fendering is complete to protect the bridge from vessel collision. During the past quarter various ongoing tasks have been undertaken related to reviewing options for the north side fendering. This has included the drilling of geotechnical investigation holes to assess soil conditions, discussions with Telus regarding the stability of the adjacent Telus duct bank, and preliminary design work.

Other fendering work has also been undertaken during this quarter, including the removal of some of the old creosote coated piles both on the south side and in the in-channel areas. This has enabled a wider navigation channel to be established.

SCHEDULE UPDATE

The new bridge is scheduled to open to traffic on March 31st 2018. Key dates involved in meeting that schedule are as follows:

1. Installation of main bascule span – January 27, 2018
2. Commissioning and testing of the new bridge – February through March 2018

FINANCIAL IMPLICATIONS

The approved budget is \$105.06 million (see Appendix A). As of December 31, 2017 actual costs of \$96.08 million have been incurred including the following:

Vendor	Services	Budgeted	Invoiced	% Invoiced
WSP	Main Professional Services Contract: Project Management, design, procurement, administration, geotechnical engineering, permits	\$9.362 m	\$9.359 m	99.96%
WSP	Additional Professional Services: Subsequent changes to the contract such as: owner's quality control for steel fabrication; review of non-conformance reports; Hardesty & Hanover settlement payments; supplementary services; safety review; fendering; Janion design; etc.	\$2.656 m	\$2.570 m	96.74%
PCL	Main Bridge Contract:	\$62.935 m	\$58.963 m	93.69%
PCL	Additional Construction Services: Subsequent changes to the contract such as: hazardous waste and soil removal; installation of rip rap; pedestrian overpass modifications; increase to the environmental cash allowance; precast girder gaskets; safety revisions; Janion Plaza; handrail changes; pedestrian canopy changes; etc.	\$3.273 m	\$3.139 m	95.91%

The table below summarizes the allocation of the approved project completion contingency (see Appendix B for a detailed account of the contingency):

Original Project Completion Contingency	\$ 2,515,000
Add: Value Engineering Savings	300,000
Approved Funding March 2015	1,500,000
Approved Funding July 2015	2,554,000
Approved Funding May 2016	2,050,000
Project Completion Contingency December 2017	\$ 8,919,000
Less Committed Contingency	(8,403,759)
Unallocated Contingency December 2017	\$ 515,241

There will be one more planned project budget increase request for fendering. Should additional unforeseen events occur before the completion of the project, Council will be advised.

BRIDGE MANAGEMENT UPDATE

JSB Project support staff are working on a bridge management program to capture administrative, operational, and maintenance procedures regarding the new bridge. Once completed, these will be referenced by relevant (current and future) staff. The structure of the program has been developed; it covers the following:

- Asset description;
- Bridge administration;
- Operational programs and procedures;
- Maintenance programs and procedures;
- Security and safety;
- Upgrade, reconfiguration/modification;
- Replacement and disposal plans.

Development of the operations and maintenance of the program will take place closer to the end of the project.

City staff are planning for integration of the JSB as the city's biggest infrastructure to the city's new asset management system

PUBLIC REALM UPDATE

At the December 14, 2017 meeting, Council approved updated conceptual designs for the public realm areas surrounding the Johnson Street Bridge on the both the west and east sides. This includes a future waterfront park in Victoria West, a revised design for the Northern Junk plaza, and a revised landscape design for the triangle island to accommodate a public art installation.

The City of Victoria's Artist in Residence and Indigenous Artist in Residence were commissioned by Council to provide public art as part of this project. The artists have collaborated and developed a public art concept that will be sited on the triangle island in the form of a sculptural work of art with a sound installation. Council's Art in Public Places Committee approved the public art proposal.

Council approved a budget of \$650,000 by reallocating unused 2017 budgets to finance completion of the triangle island, as well as completion of landscaping at the Janion plaza, Johnson Street traffic median, and the Esquimalt and Harbour Road intersection. Staff are proceeding with implementation of these areas, and advancing to the detailed design stage, following this Council decision.

Council directed staff to report back on the rationale and implications of amending the Development Cost Charges (DCC) bylaw for parks DCCs. Should Council approve bylaw amendments, \$3 million in DCC funding could be used to fund the construction of the future Victoria West park (at the former 'S-curve' lands) with funding from development cost charges. This is subject to amending the City's Development Cost Charges Bylaw so that DCCs may be used to finance construction. Financing of the Northern Junk plaza will be considered in future pending the outcome of the rezoning application for the adjacent Northern Junk site. In the meantime, staff are working with PCL to establish interim connections through these areas, so the bridge connections are operational when the old bridge is decommissioned.

CITIZEN ENGAGEMENT UPDATE

The largest milestone to date took place in December 2017 when the lower counterweight and two steel rings that are part of the bridge superstructure were installed into the bascule pier. The Dynamic Beast crane barge arrived in Victoria and spent the weekend lifting the massive steel pieces into place, which has changed the skyline of the Upper Harbour. The lifting and installation of the steel pieces in Victoria mark major project milestones that staff are ensuring is well documented and communicated to the public.

Media have taken a keen interest in the bridge pieces arriving in Victoria and the City's Engagement department is working closely with the Project Director to ensure timely information and access to spokespeople. Numerous media opportunities have been held to explain the project and next steps in construction and the Times Colonist did a major feature in their weekend Islander section about how the new bridge works. Frequent website updates, photos, and social media posts are also being proactively shared. Public inquiries have also increased over the past couple of months following the steel's arrival and staff continue to answer questions and share information as needed.

Staff are also doing proactive engagement with local neighbours to keep them informed of weekend or evening work and increased activity at the bridge worksite. The City is working closely with PCL to keep noise and traffic disruptions to a minimum. Engagement staff are also working closely with PCL and Transport Canada to ensure that bridge and marine channel closures are communicated in advance to the public and affected stakeholders. At any time in the project where significant construction activities will create impacts, an email to stakeholders is sent and face-to-face meetings with City staff and PCL are held if necessary.

The next major milestone takes place January 26th – February 4th, when the bridge deck span that will complete the bridge superstructure is scheduled will be lowered into place by the Dynamic Beast crane barge. This marks the last major piece of the bridge to be installed and once the bridge deck span is connected to the rings the bridge will be raised for the first time. The public and media have been informed of how they can watch the lift event and City staff will be documenting the milestone with photos and video. Engagement staff are also working with Transportation to communicate advance notice of construction, planned detours and periodic bridge closures to the public and local businesses.

The next major milestone of the bridge project will be the opening event. City staff are putting together event plans and working with the Federal Government to coordinate an appropriate event to commemorate the opening of the new Johnson Street Bridge, while also paying tribute to the existing bridge.

Following the opening of the new bridge, there will still be significant work for PCL to complete as the existing bridge must be decommissioned. Public impacts will continue, as the construction site does not close when new bridge opens, it simply shifts to the south for several months. Proactive communication with the public and stakeholders will continue for construction impacts and marine channel closures required as the existing bridge is dismantled and barged away later this summer.

SAFETY AND ENVIRONMENT

Environmental monitoring is being conducted by Hemmera field representatives on a regular basis. Hemmera have been actively involved during the past quarter in various tasks that could have environmental impacts. An archaeological monitor from Stantec and a First Nations representative will be on-site during any excavation works.

UPDATE ON RISK MANAGEMENT

Effective risk management requires continuous monitoring and updating.

The primary risk issues, all of which have the potential to impact the project schedule, are as follows:

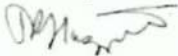
1. Completion of the steelwork assembly and painting
2. Installation and assembly of the steelwork
3. Testing and commissioning of the bridge operation

NEXT STEPS

Priority tasks over the next couple of months include the following:

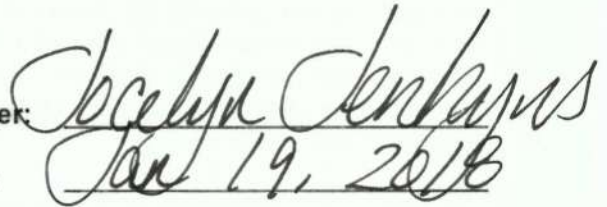
1. Continue to monitor steel work assembly and painting;
2. Monitor the proposed testing and commissioning procedures for the bridge to assure satisfactory operation;
3. Develop options for the north side fendering design and bring a report to Council regarding next steps;
4. Work with PCL to amend their demolition work related to the old bridge so that the removal of the abutments is consistent with the final plans for the public realm.

Respectfully submitted,



Jonathan Huggett, P. Eng.
Project Director

Report accepted and recommended by the City Manager:



Date:

Jan 19, 2018

List of Attachments

- Appendix A – Budget Update
- Appendix B – Contingency
- Appendix C – Closure Schedule