



**Governance and Priorities Committee Report
For the Meeting of November 19, 2015**

To: Governance and Priorities Committee **Date:** November 18, 2015
From: Jonathan Huggett, P. Eng.
Subject: Johnson Street Bridge Replacement Project Steelwork, Schedule, and Budget Update

RECOMMENDATIONS:

That City Council:

1. Direct staff to arrange for the H&H Engineer of Record (Keith Griesing) to appear before Council in public session on December 3, 2015 to present his opinions on the quality of the structural steel being fabricated in China.
2. Direct staff to advise PCL that the City will not accept the schedule proposing a January 2018 project completion date and that the City will not authorize any further progress payments until an acceptable schedule is received.
3. Reduce the budget revision request by 1.0 million from 2.253 million to 1.253 million and advise PCL that the City will recover 1.0 million from the next progress payment to offset the City's additional costs.
4. Direct staff to transfer to the Building and Infrastructure Reserve any costs recovered from other parties.
5. Direct staff to bring forward an amended Financial Plan Bylaw to the November 26, 2015 Council meeting.

BACKGROUND

Steelwork, Schedule, and Budget Implications

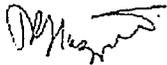
The fabrication of the steelwork in China by ZTSS continues to have quality and schedule problems. The current steel fabrication problems can be summarized as follows:

1. 75 cracked tack welds on the Orthotropic Steel Deck (OSD). These have been repaired but their cause is undetermined. Although they appear to be small, transverse cracks are significant issues. According to H&H, through cyclic loading of the structure during operation, a 3mm crack could propagate from a weld, into the base metal of the bridge and cause irreparable damage. Even if the cracks are repaired, there is a risk that this could occur or that other cracks could appear. An investigation of this issue is ongoing.
2. South truss dropped backing bar: PCL are currently working with the fabrication team to develop a proposed inspection and repair plan. This will involve drilling holes for borescope inspection and cutting access holes into the structure to allow safe access for repairs inside of the truss. The extent of this issue is unknown at this time.
3. South ring middle web fit up and assembly. Current efforts to resolve this issue include mapping the details of each tack weld placed on the south ring. H&H will need to evaluate these conditions and establish the desired repair criteria. This may include weld removal, re-inspection, backing bar replacement, and a fitness for service analysis performed by H&H.

The fabrication problems are significant and causing further delays to the delivery of the steelwork. There is concern that there are significant defects in the steelwork, despite the fact that this is the second time this steelwork is being fabricated, and that extra protections that have been put in place to improve quality. There is concern that further problems will arise before the steelwork is completed.

Meetings have been held with PCL, ATEMA, MMM, H&H to discuss these issues. Staff have explored options for the City to ensure that the steelwork quality is satisfactory and that the project schedule impacts are minimized. In addition funding continues to be a challenge. The public report today is requesting an additional \$2.253 million in funding be approved by Council, but since that repair was drafted, staff have discussed reducing that request by \$1 million which will be made up by deducting \$1 million from PCL's next progress claim.

Respectfully submitted,



Jonathan Huggett, P. Eng.
Project Director

Report accepted and recommended by the City Manager:



Date: November 18, 2015