CITY OF VICTORIA

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

To:	Governance and Priorities Committee	**Date:**	November 13, 2015
From:	Katie Hamilton, Director of Citizen Engagement and Strategic Planning Thomas Soulliere, Director of Parks, Recreation and Facilities Mandi Sandhu, Manager of Interdisciplinary Projects		
Subject:	David Foster Harbour Pathway – Heron Cove and Raymur Point Bridges		

RECOMMENDATION
That Council direct staff to proceed with detailed design and costing for two steel pony truss multi-modal bridges at Heron Cove and Raymur Point, at 39 metre and 49 metre lengths respectively.

EXECUTIVE SUMMARY
The design and consultation of two multi-use bridges at Heron Cove and Raymur Point has been identified as a priority through the 2015 Operational Plan and 2015-2018 Strategic Plan (Objectives eight and nine). Funding of almost $5.1 million is in place for these projects through a City of Victoria allocation of $3.1 million and external grant contributions from Bike BC and the Trans Canada Trail Foundations for $440,000 and $1.4 million respectively. Financial contributions have also been provided from Vancity for $100,000 and the David Foster Foundation for $50,000.

The City has engaged consulting firm Morrison Hershfield to provide conceptual and detailed designs and construction drawings for these bridges, as well as the surrounding landscape. The consultant has identified and assessed three options for bridge types [design] as well as options for the alignment [length] for each bridge.

Based on an assessment of the options by City staff, stakeholder input, site constraints and cost, a Steel Pony Truss bridge is recommended at both locations with a 39 metre bridge length at Heron Cove and 49 metre bridge length at Raymur Point. The construction of two multi-use bridges at Heron Cove and Raymur Point will close significant connection gaps along the David Foster Harbour Pathway, creating a more accessible, direct and pleasant route for residents and tourists.

PURPOSE
The purpose of this report is to obtain Council approval on the proposed bridge type and alignments at two locations - Heron Cove and Raymur Point (see Appendix A). Based on Council direction, detailed design and costing will be initiated in December 2015.

BACKGROUND
The 2008 *Victoria Harbour Pathway Plan,* which provides design guidance and an implementation framework for the pathway, identified the construction of Heron Cove and Raymur Point bridges as a key step towards improved connectivity. In 2013, consulting firm Morrison Hershfield was retained to provide conceptual and detailed design and construction drawings for the two multi-use bridges

and their surrounding landscape. At that time, an initial meeting with representatives from the Greater Victoria Cycling Coalition, James Bay Community Association, Transport Canada and private property owners (WorldMark and the Greater Victoria Harbour Authority) was held to inform stakeholders and gather preliminary feedback on the design and lengths/alignment of the multi-use bridges at these sites. At the meeting, there was general feedback from the stakeholder group that a low-profile, unobtrusive bridge design was preferred.

Funding for these projects is in place through a City of Victoria allocation of $3.1 million. In 2014 and 2015 the City was approved for $1.4 million in funding from the Trans-Canada Trail Foundation and $440,000 from Bike BC towards the completion of connection gaps at Heron Cove and Raymur Point as well as connections around the Johnson Street Bridge. Additionally, donations have been provided from Vancity for $100,000 and the David Foster Foundation for $50,000.

The 2015-2018 Strategic Plan and the 2015 Operational Plan identified four key deliverables for completion by 2018. These include:

1. Construction of two multi-modal bridges at Heron Cove and Raymur Point;
2. Development of two special places at Heron Cove and Ship Point;
3. Pathway improvements around the Johnson Street Bridge, including Reeson Park; and,
4. The installation of permanent wayfinding along the pathway.

The construction of the multi-modal bridges has been identified as a priority project over the next year, given the grant contributions that have been approved from partner agencies. At the same time, work is currently underway on the other three deliverables for the David Foster Harbour Pathway. Inter-disciplinary teams have been formed with representation from across most City departments. High-level project activities that are undertaken by these teams include developing a public engagement strategy for the two special places, working with the developer of the Northern Junk and Janion buildings to increase connectivity and complete gaps along the pathway, as well as participating in the development of a robust and comprehensive city-wide wayfinding strategy. Funding also has been allocated to the installation of permanent wayfinding.

OPTIONS AND ANALYSIS

The scope of work awarded to Morrison Hershfield included proposing three feasible bridge concepts, developing Class B cost estimates and submitting detailed design and construction drawings, as well as surrounding landscape. Design parameters included a maximum grade of 5%, a navigational clearance of 2.75 meters at Heron Cove to allow for passage of small-water crafts, a design life of 75 years and low-maintenance materials including sealed concrete, galvanized steel and/or treated timber. The three potential bridge design types are described and depicted in Table 1 below and depicted in Attachment B.

Table 1. Bridge Types

Bridge Type	Description and Image
Steel Pony Truss	Consists of two steel trusses on either side of the pathway deck. Having the main structural trusses projecting above the deck level increases the water clearance under the bridge.
Steel Plate Girder	Consists of three steel or concrete girders supporting the pathway deck above. The bridge would have to be raised approximately 1 m higher than a Steel Pony Truss bridge type due to the girders location below the deck.
Steel Tied-Arch	Consists of a steel arch projecting approximately five metres above the pathway deck, with vertical hangers supporting the weight of the deck. The water clearance would be similar to the Steel Pony Truss bridge type.

In addition to the identification of options for different types of bridges for the two sites, the consultant also provided options and costs for different alignments [lengths] as shown in Table 2 and 3 below.

Table 2. Heron Cove Bridge Type and Alignment Options

Option #	Option 1 Recommended	Option 2	Option 3
Bridge Type	Steel Pony Truss	Steel Girder	Steel Tied-Arch
Length (metres)	39	39	39
Width (metres)	4	4	4
Estimated Cost ($million)	$1.603-1.633	$2.011-2.040	$1.726-1.756
Impacts	Lowest cost, most durable structure type.	Pathway is raised approx. 1 m over Options 1 and 3 to achieve the required navigational clearance.	Higher profile not preferred by stakeholders.

Table 3. Raymur Point Bridge Type and Alignment Options

Option #	Option 1 Recommended	Option 2	Option 3	Option 4
Bridge Type	Steel Pony Truss	Steel Pony Truss	Steel Girder	Steel Tied-Arch
Length (metres)	49	39	39	39
Width (metres)	4	4	4	4
Estimated Cost (million)	$1.447 - $1.482	$1.586 - $1.617	$1.620 - $1.639	$1.657 - $1.688
Impacts	Natural extension of pathway, preferred by property owner lowest cost, most durable structure type	Requires widening of the existing split-pathway on the WorldMark property.	Below deck girder would be submerged during high tide. Raising the bridge (to avoid submergence) adds significant costs.	Higher profile (approximately 5 m) not preferred by property owner.

A Steel Pony Truss bridge is recommended for both Heron Cove and Raymur Point. Of the three bridge types presented the Steel Pony Truss is the most durable structure type, provides the most clearance above the water, was favoured by initial stakeholder input as being the most low profile and unobtrusive and is the least expensive. The Steel Plate Girder is not recommended due to the bridge girders being located below the deck, leading to reduced clearance above the water and partial submergence during high tide, unless the pathway is raised higher than the other options. The Steel-Tied Arch bridge is also a more viable option than the Steel Plate Girder as the bridge structural support system (steel arches) are above, rather than below the deck. However, this option was not favoured during initial stakeholder input as it was seen as distracting from the views of the landscape. The shorter 39 m alignment at Raymur Point poses numerous challenges. This section of the pathway, on WorldMark property, is split into two sections at different elevations, a lower, pedestrian pathway and an upper

Figure 1. Split Pathway around WorldMark Property at Raymur Point

cycling pathway. The shorter alignment would require extensive pathway improvements, including widening of the lower pathway or combining and levelling the split pathways to create a safe entry and exist point for users. The longer, 49 metre alignment is recommended because it connects at the end of Raymur Point where the split pathways have already merged. This results in a net decrease in estimated costs, even though the bridge itself is longer. The longer 49 m alignment will be more comfortable from a user perspective, with a wider approach and more pleasing sightlines. The longer alignment is also preferred by the property owner as it doesn't interfere with the privacy of guests.

Heron Cove does not have the same site constraints as Raymur Point. The 39 meter alignment is the least expensive option and would provide the most direct approach for pedestrians and cyclists.

All options for both bridges are costed for a four metre width. This width is at the high end of North America Guidelines range of 3.0 – 4.3 metres for two-way multi-use off street pathways. As part of the development of tender and construction documents, options for who manufactures the bridges will be explored.

COMMUNICATIONS AND PUBLIC ENGAGEMENT

City staff have been working with property owners whose approvals and consents are required for building the bridges. Further discussions will be undertaken following Council direction on the proposed bridges with neighbouring residents regarding place making for the sites, including aesthetic treatments such as color, design treatments for the concreate, and inclusion of informational signs. Project updates will be provided for the broader public about the proposed bridges, connectivity, and timelines. Staff will work closely with neighbouring properties and property owners, to mitigate any impacts during construction.

CONCLUSIONS

The construction of two multi-modal bridges at Heron Cove and Raymur Point will significantly improve connectivity and begin the implementation of enhancements to David Foster Harbour Pathway. Based on the information presented in this report, the Steel Pony Truss Bridges, for both Heron Cove and Raymur Point is recommended.

Detailed design and costing willbegin in December 2015 and is expected to be completed by the end of February of 2016. Tender and construction documents will be prepared concurrently with the detailed design and costing. Tendering and awarding of contracts will take place by the end of April 2016 with construction expected to begin in the spring. The target completion for both bridges is April 2017. Staff will report back to Council by June of 2016 on the progress of the bridges as well as other improvements to the pathway including special places, pathway linkages around and under the Johnson Street Bridge and wayfinding.

Respectfully submitted,

Shannon Jamison
Interdisciplinary Planner

Mandi Sandhu
Manager, Interdisciplinary Projects

Katie Hamilton
Director, Citizen Engagement and Strategic Planning

Thomas Soulliere
Director, Parks, Recreation and Facilities

Report accepted and recommended by the City Manager:

Date: November 13, 2015

List of Attachments
Attachment A: Heron Cove and Raymur Point Site Map
Attachment B: Bridge Options at Heron Cove and Raymur Point