



THE CORPORATION OF THE CITY OF COURTENAY

STAFF REPORT

To: Council
From: Chief Administrative Officer
Subject: Sixth Street Bridge Options Analysis

File No.: 5335-20; 5400-02

Date: January 27, 2020

PURPOSE

The purpose of this report is to provide an update on the information requested in Council's resolution of September 24, 2019:

Moved by Cole-Hamilton and seconded by Frisch that Council direct staff to expedite delivery of a range of options and stakeholder engagement for the Sixth Street multi-use pedestrian-bike bridge concept to provide greater information related to the design cost, public safety features and funding source options simultaneously with the Fifth Street Bridge rehabilitation project update, and bring forward for consideration at a future Council meeting in January 2020.

Respectfully submitted,

David Allen, BES, CLGEM, SCLGM
Chief Administrative Officer

EXECUTIVE SUMMARY

The Sixth Street Multi-Use Active Transportation Bridge concept has been discussed within the community for many years. A Sixth Street Multi-Use Bridge is included in the recently completed Parks & Recreation Master Plan and referenced in the Transportation Master Plan for the City of Courtenay. The bridge is listed as a long-term improvement in the Parks and Trails Master Plan. The Downtown Courtenay Playbook also notes an additional crossing at Sixth Street should be explored further.

The potential for a Sixth Street Crossing generated a lot of dialogue during recent public consultation that occurred in November and December 2019. Further to Council's September direction, the project team has developed four bridge concepts to provide a range of aesthetic and costing options. The four options outlined within this report include:

1. Pre-Engineering Pedestrian Truss Bridge (Bowstring)
2. Modular Panel Bridge
3. Network Arch Bridge
4. Cable Stayed Bridge

The associated budgets for these options range from \$3 million - \$4.1 million. There is currently no funding identified within the City's capital budget or financial plan for a Sixth Street Bridge crossing, however the project would be a candidate for potential grant funding.

Limited stakeholder engagement has been undertaken and needs to be further explored in discussion with Council, pending a final decision on the Fifth Street Bridge Rehabilitation Project being considered in staff report at the January 27th 2020 council meeting.

BACKGROUND

The City of Courtenay is currently developing and evaluating various options for improving active transportation connections across the Courtenay River adjacent to downtown. In conjunction to this report, Urban Systems and Hatch Engineering are working with the City of Courtenay to review the options and connectivity of the potential new cantilevers on the Fifth Street Bridge to support improved cycling and pedestrian connections across the river. At the September 16th, 2019 Council meeting, Council directed staff to expedite delivery of a range of options for a Sixth Street Multi-Use Bridge concept in order to provide greater information related to the design, cost, public safety features and funding source options for a Sixth Street crossing.

- 1) This staff report provides various bridge options and costs, connectivity pieces and ultimately an evaluation and recommendation of the preferred Sixth Street Multi-Use Bridge.

Sixth Street Multi-Use Bridge

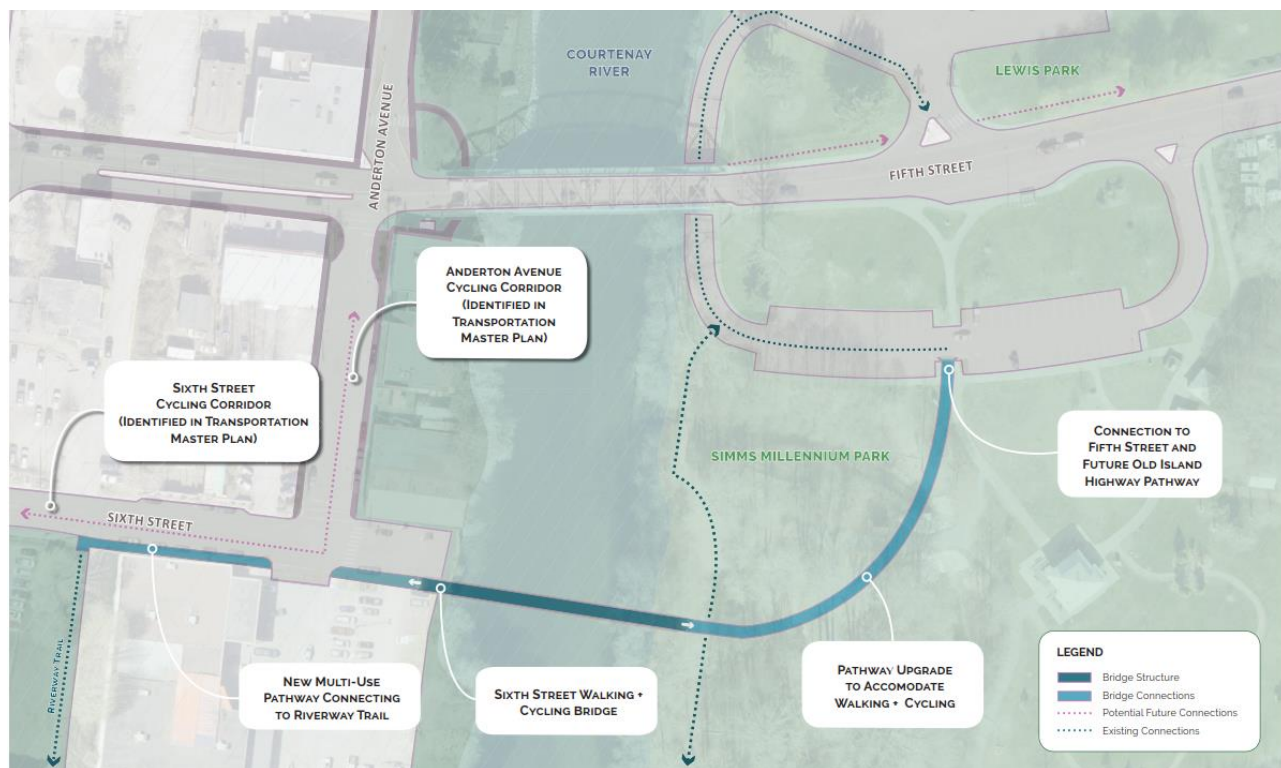
The Sixth Street Multi-Use Bridge concept has been a topic of discussion within the community and the municipality over the last 10 years. In 2015, Outlook Land Design and 3D Design prepared a Design Brief detailing a concept design for a Sixth Street Multi-Use Bridge. This design brief explored a cable-stayed structure that was 4.5 metres wide that provided connections to Simms Millennium Park and Sixth Street.

A Sixth Street Multi-Use Bridge is included in the recently completed Parks & Recreation Master Plan and referenced in the Transportation Master Plan for the City of Courtenay. The bridge is listed as a long-term improvement in the Parks and Trails Master Plan. In addition, the Downtown Courtenay Playbook also notes an additional crossing at Sixth Street should be explored further.

A Sixth Street Multi-Use Bridge would provide a dedicated cycling and pedestrian connection between downtown and Simms Millennium Park as well as a connection to the future cycling network along Sixth Street, Anderton Avenue, the Courtenay Riverway Trail, and the pathway connection to the Lewis Centre.

Figure 1 below shows the approximate location of the proposed Sixth Street Multi-Use Bridge and the connections to the park and the future cycling and pedestrian network.

Figure 1 – Sixth Street Overall Concept



A crossing at Sixth Street would be approximately 60 metres long. A steel superstructure would be required based on the span length. For the purpose of the report, four bridge types were reviewed to provide a range of aesthetic appeal and costs. The four bridge types are listed below and discussed in the appendix attached.

1. Pre-Engineering Pedestrian Truss Bridge (Bowstring)
2. Modular Panel Bridge
3. Network Arch Bridge
4. Cable Stayed Bridge

The associated preliminary cost estimates for these bridge options are \$3 million - \$4.1 million (2020 Dollars) including the structure, abutments and recommended connections to existing networks.

A detailed report, "Sixth Street Bridge Feasibility and Options Review" is attached for information.

Connectivity

Cycling and pedestrian connections to connect to a multi-use river crossing generated a lot of dialogue during preparation of this report. Concepts were developed to demonstrate how a potential Sixth Street multi-use pathway could connect into the larger network.

The goal of the bridge connections is to increase the safety, comfort and travelling experience for pedestrians and cyclists. The proposed bridge at Sixth Street would allow cyclists to avoid having to share the roadway with larger motorized vehicles while crossing the river and provide more space for all active users. Beyond the bridge footprint, it will be important that this approach is extended to the other connections to existing and future networks.

The Transportation Master Plan identifies long-term networks for both pedestrians and cyclists. The long-term cycling plan identifies Sixth Street, Anderton Avenue and Old Island Highway as proposed cycling corridors. The existing Courtenay Riverway Trail connects to Sixth Street just west of Anderton Avenue and would provide a recreational and commuting connection to the south from the proposed multi-use bridge. The Downtown Courtenay Playbook also notes an additional crossing at Sixth Street should be explored further.

The cost of these connections are included within the overall project estimates noted on the following page.

FINANCIAL IMPLICATIONS:

Table 1 provides a summary of the capital costs that would be expected for each bridge option. The costs have been separated into elements that include the supply and installation of the bridge in 2020 dollars. The costs also include contingencies and engineering allowances.

Table 1: Capital Cost Estimates

Project Element	Pre-engineered Truss	Modular Panel Bridge	Network Arch Bridge	Cable Stayed Bridge
Construction Duration	4.5 to 6 months	5.5 to 7 months	4.5 to 6 months	5.5 to 7 months
Costs				
Bridge Structure Costs ¹	\$0.65 - \$0.75 M	\$0.8 - \$0.935 M	\$1.3 - \$1.5 M	\$1.4 - 1.6 M
Abutments ¹	\$1.1 M	\$1.1 M	\$1.1 M	\$1.1 M
Geotechnical Ground Remediation (Allowance)	\$0.5 M	\$0.5 M	\$0.5 M	\$0.5 M
Connectivity to Existing Networks ²	\$0.35 M	\$0.35 M	\$0.35 M	\$0.35 M
Engineering and Project Management ³	\$0.4 M	\$0.45 M	\$0.5 M	\$0.55 M
Total	\$3 - \$3.1 M	\$3.2 - \$3.335 M	\$3.75 - \$3.95 M	\$3.9 - \$4.1 M

¹ All bridge structure related costs including structure and abutments include a 15% contingency.

² Pathway connectivity costs include a 25% contingency.

³ Engineering and Project management estimated at 15% of construction costs.

FUNDING OPPORTUNITIES

The City has applied for grant funding from the Federation of Canadian Municipalities Green Municipal Fund for the 6th St Options Analysis/Feasibility Study. If the grant is successful, it will fund approximately 50% of the study, which is approximately \$50K. The application is currently being reviewed and the City should know more in early February.

There is also an opportunity for further FCM grant funding for detailed design and construction of the bridge. A detailed application would need to be prepared, and would be subject to peer review. This application would also require a supporting motion from council, and that an appropriate capital funding source be identified in the City's Five Year Financial Plan. Additional work would be required to determine the capital funding schedule and grant intake timing.

In addition to obtaining grant funding, there are possible opportunities to partner with local community groups and clubs to help fund the project.

PROJECT TIMELINE

A timeline has not been developed as part of the feasibility study, and would be guided by the decision to proceed, available funding, and design and construction timelines. If there was a decision to proceed with the project it would be expected that the design of the bridge would take up to a year to complete and the construction would be expected to last five to seven months, depending on the preferred concept. To minimize impacts to the community and manage the City's capacity, it is recommended to not begin construction until the Fifth Street Bridge Rehabilitation Project is complete.

ADMINISTRATIVE IMPLICATIONS:

The Sixth Street Bridge Project has been led by the City of Courtenay Engineering department, with support from other departments within the City. Consultants with technical knowledge specific to this work have been utilized to develop and implement designs. Costs associated with external consultants are included in the project budget.

ASSET MANAGEMENT IMPLICATIONS:

The City has recently adopted an Asset Management Bylaw. This bylaw assigns the practice of Asset Management principles and advice related to Council decision-making to the CAO and staff. The Bylaw requires taking into account full life-cycle costs when making decisions regarding renewal, upgrade and acquisition of Tangible Capital Assets; and, that full life-cycle costs are considered to include the planning, procurement, creation, operation, maintenance, renewal and decommissioning of Tangible Capital Assets.

STRATEGIC PRIORITIES REFERENCE:

We proactively plan and invest in our natural and built environment

- Continued focus on asset management for sustainable service delivery
- Focus on infrastructure renewal rather than upgrades
- Continued support for social, economic and environmental sustainability solutions



- **Area of Control**
The policy, works, and programming matters that fall within Council's jurisdictional authority to act.
- ▲ **Area of Influence**
Matters that fall within shared or agreed jurisdiction between Council and another government or party.
- **Area of Concern**
Matters of interest outside Council's jurisdictional authority to act.

Strategic Priorities 2019 - 2022 NOW/NEXT

As part of the 2019 Strategic Priorities "Check in," a list of Council's NOW/NEXT priorities were adopted. An open house for the Fifth and Sixth Street Bridge was noted as a NOW priority. The open house was conducted in late November. Under the Advocacy/Partnerships section, the Sixth Street Bridge Grant Application was referenced, and this was submitted as noted previously in the staff report.

Strategic Priorities 2019 - 2022

As part of the Strategic Priorities for 2019 – 2022 the following are relevant to the Fifth Street Bridge Rehabilitation Project:

We proactively plan and invest in our natural and built environment

- Focus on asset management for sustainable service delivery
- ▲ Look for regional infrastructure solutions for shared services
- ▲ Advocate, collaborate and act to reduce air quality contaminants
- ▲ Support social, economic and environmental sustainability solutions

We plan and invest in methods of multi-modal transportation

- Move forward with implementing the City's Transportation Master Plan
- ▲■ Collaborate with regional and senior government partners to provide cost-effective transportation solutions

● **AREA OF CONTROL:** The policy, works and programming matters that fall within Council's jurisdictional authority to act

▲ **AREA OF INFLUENCE:** Matters that fall within shared or agreed jurisdiction between Council and another government or party

■ **AREA OF CONCERN:** Matters of interest that are outside Council's jurisdictional authority to act

Master Plan References

The Sixth Street Multi-Use Bridge is included in the recently completed Parks & Recreation Master Plan and referenced in the Transportation Master Plan for the City of Courtenay. The bridge is listed as a long-term improvement in the Parks and Trails Master Plan.

OFFICIAL COMMUNITY PLAN REFERENCE:

Regarding the Official Community Plan for Courtenay, the following goals of Section 5.0 Transportation are relevant:

5.2 Goals

1. Integrate land use changes with transportation planning to coordinate changes and increases to traffic patterns.
2. Development of a transportation system that provides choices for different modes of travel including vehicle, transit, pedestrian, cycling and people with mobility impairments.
3. Protect the integrity of the road classification system to facilitate the purpose and function of the specific road types.
4. Support an integrated transportation system that works towards reducing travel distances and congestion.
5. Support a transportation system that recognizes the importance of the character and overall appearance of the City.
6. Provide an effective transportation system that facilitates the movement of vehicles throughout the community and the Comox Valley to major regional services such as the Little River Ferry System and the Comox Valley Airport.

REGIONAL GROWTH STRATEGY REFERENCE:

The Fifth Street Bridge Rehabilitation Project is aligned with the transportation network goal from the Regional Growth Strategy:

Goal 4 - Transportation:

Develop an accessible, efficient and affordable multi-modal transportation network that connects Core Settlement Areas and designated Town Centres and links the Comox Valley to neighbouring communities and regions.



Chris Davidson, P.Eng
Manager of Engineering Projects

Appendix A – Sixth Street Bridge Feasibility and Options Review