

April 9, 2015

To: Members,
Public Works & Infrastructure Committee

Re: Victoria Avenue East between Prince of Wales Drive and Coleman Crescent – Bridge
Replacements and Roadway Widening and Improvements

RECOMMENDATION

That this report be received and filed.

CONCLUSION

The purpose of this report is to provide members with an update on the scope of the Victoria Avenue East bridge replacements, roadway widening and rehabilitation, and pedestrian crossing improvements.

Tendering is scheduled for spring 2015 with construction expected to start June 1, 2015..

Roadway widening will address capacity issues and will make this section of Victoria Avenue consistent through to the west of Coleman Crescent. Engaging in this work also provides an opportunity to make enhancements to the existing pedestrian crossing. Options for a below grade pathway connection were considered however, a design could not be found that would meet required design standards, accommodate accessibility requirements or that would function year round. Enhancements to the at-grade crossing will include space for a mid-crossing refuge for cyclists and pedestrians and enhanced signals with improved signal timing. This crossing would be similar to the intersections of Victoria Avenue and Truesdale Drive and University Drive, which all experience even higher traffic volumes than Coleman Crescent.

Intersection safety concerns will also be addressed by closing access to Eastgate Drive to the east of Coleman Crescent. Access to properties along Eastgate drive will be provided from westbound Victoria Avenue or from Prince of Wales Drive. Closing access to Eastgate Drive eliminates the need for the Eastgate Drive bridge, changing the scope of the work from repairing/replacing to removing the bridge.

BACKGROUND

The planning involved in replacing and upgrading the infrastructure around the Victoria Avenue bridges over Pilot Butte Creek east of Coleman Crescent has been underway for several years. In July 2013, the replacement of the bridges became critical after an engineering report indicated structural capacity issues with the timber bridge on eastbound Victoria Avenue.

In April 2014, the City commissioned an engineering consultant to design replacement options for the bridges. The drawings and specifications for the recommended design were finalized in late August 2014, which did not allow enough time to tender and replace the bridges in 2014. Project tendering was delayed until spring 2015, which provided an opportunity for the contract to include portions of proposed future roadway widening and improvements between Coleman Crescent and Prince of Wales Drive. Combining the two projects significantly reduces inconveniences for commuters. Significant cost savings are likely to occur, as portions of the road widening and improvements can occur simultaneously with stages of the bridge replacements.

The scope of the work now includes:

- Replacing the two bridges on Victoria Avenue that cross Pilot Butte Creek;
- Roadway widening on Victoria Avenue between Coleman Crescent and Prince of Wales Drive due to increasing traffic demands;
- Addressing the safety concerns at the intersection of Eastgate Drive and Coleman Crescent, which will eliminate the need for the bridge on Eastgate Drive;
- Rehabilitating the existing but severely rutted lanes on Victoria Avenue between Coleman Crescent and Prince of Wales Drive; and
- Enhancements to the pedestrian/cycling crossing across Victoria Avenue.

DISCUSSION

Bridge Replacement

The most critical element of this project are the bridge replacements because any further delay in replacing these structures could lead to possible closure or weight restrictions on the timber bridge on the eastbound lanes. An engineering study was conducted and the use of precast concrete box culverts was chosen as the best option. A detailed cost-benefit analysis of all the options is included in Appendix A.

Compared to a traditional bridge, precast concrete box culverts have a longer service life (100 versus 75 years), lower annual maintenance and operating costs, lower construction costs, significantly lower long-term rehabilitation costs (up to \$10M over the life of the culvert), are able to support heavier loads, and can be built over a shorter construction time (one season versus two).

None of the options could provide a below grade pathway that would meet City of Regina design standards, accommodate accessibility requirements or function year round.

Pedestrian Crossing Enhancements

The connectivity for the Pilot Butte pathway system across Victoria Avenue is currently provided by an existing at-grade crossing at Coleman Crescent. The crossing does not allow sufficient time for slower pedestrians and cyclist to cross the road and it does not provide safe refuge if they fail to cross in the time provided. Given the other infrastructure upgrades, the opportunity exists to improve the current level of service of the crossing.

There are a number of options to enhance the safety and effectiveness of the at-grade crossing, including: space for mid-crossing refuge for cyclists and pedestrians; enhanced pedestrian signals and signs; improved pavement marking or crossing delineation; and changes to signal timing to ensure comfortable crossing times.

A pedestrian underpass was considered however the option comes with substantial operational and functional challenges. The pathway would not meet City of Regina design standards, and would pose safety concerns. Steep grades would require using switch-backs, which are challenging for cyclists and snow clearing equipment while only meeting the minimum accessibility requirements. To function year round, the underpass would also require a sump pump and would still flood during seasonal and wet weather.

A pedestrian overpass was also considered however the option comes with substantial long-term maintenance and rehabilitation costs. When assessed against the Transportation Master Plan, the existing crossing provides an adequate level of service that does not warrant the costs associated with operating and maintaining an overpass.

There is also a need to provide an active transportation connection along Prince of Wales Drive, including across Victoria Avenue. The commercial and residential developments north and south of Victoria Avenue along Prince of Wales Drive generate pedestrian and cyclist demand that is expected to exceed the demand at Coleman Crescent. In accordance with the proposed TMP, the Administration has chosen to maintain the existing at-grade crossing but with enhanced amenities. A detailed cost-benefit analysis of the available options is included in Appendix B.

It should be noted that replacing the existing bridges with concrete box culverts and the above recommendation for enhancements at the existing at-grade crossing do not preclude the option to construct a pedestrian overpass at this location at a future date.

Roadway Widening and Safety Issues on Eastgate Drive

Previous engineering studies have identified traffic related safety issues at the intersection of Coleman Crescent and Eastgate Drive. The current configuration of the intersection, and its close proximity to Victoria Avenue, increase the potential for traffic accidents as it results in frequent unsafe turning, weaving, and crossing movements. The current configuration needs to be altered in order to mitigate the safety issues that would be created by roadway widening. The alteration will involve closing access to Eastgate Drive to the east of Coleman Crescent and providing access to properties along Eastgate Drive either from westbound Victoria Avenue or from Prince of Wales Drive.

This also eliminates the need to repair or replace the Eastgate Drive timber bridge that crosses over Pilot Butte Creek. Eliminating the need to replace or repair the bridge is advantageous because the bridge is in poor condition and will require replacement within the next five years with a recent engineering analysis recommending that load restrictions for certain types of truck configurations be put in place.

After considering multiple options, the Administration will proceed with the realignment of Eastgate Drive to connect to the westbound lanes of Victoria Avenue. This option provides the best safety solutions and costs \$500,000, which is \$700,000 to \$1,200,000 less than the other options considered. It will also save the City an estimated \$800,000 in future replacement costs by removing the existing deteriorated bridge on Eastgate Drive. Figures and a detailed cost-benefit analysis of the available options are included in Appendix C.

RECOMMENDATION IMPLICATIONS

Financial Implications

The overall estimated cost for the project is \$9.8M. A summary of the breakdown of the project's main components and funding sources is as follows:

- The total estimated cost to replace the existing bridges with concrete box culverts is \$3.5M and is fully recoverable from the Ministry of Highways and Infrastructure up to \$6.5M. The remaining \$3M could potentially be allocated towards other Urban Highway Connector Program related projects, subject to approval of the Ministry.
- The cost of the roadway widening elements and improvements are estimated at \$5.1M. This portion of the project will be funded by a combination of current contributions and the Service Agreement Fund up to \$5.6M.

- The estimated cost to repair and repave the existing rutted lanes on Victoria Avenue between Coleman Crescent and Prince of Wales Drive is \$1.2M and will be funded out of capital budget for the Roadways Street Infrastructure Renewal program.

Environmental Implications

There are no environmental implications related to this report. There will be no adverse impacts to Pilot Butte Creek and all necessary regulatory approvals for the bridge replacements have been obtained.

Policy and/or Strategic Implications

The project directly aligns with the OCP sections on managing growth and improving financial viability.

Manage Growth: The addition of the growth related infrastructure is directly aligned with managing growth. The infrastructure will allow for the expected increase in traffic volumes and extend the functional lifespan of the Victoria Avenue corridor.

Improve Financial Viability: The combination of work into a single project will ultimately reduce costs by taking advantage of economies of scale.

Other Implications

Delaying the bridge replacement project further could have the following implications:

- The loss of up to \$6.5M in funding from UHCP;
- Increased tender pricing;
- Postponing construction to 2016; and
- Possible closure or weight restrictions on the timber bridge on eastbound lanes.

The scope of the project will affect traffic along Victoria Avenue, however, the design of the bridge replacements and roadway widening elements will minimize traffic disruptions.

Accessibility Implications

The design of the additional roadway widening elements will provide accessibility that is consistent with North American design standards.

COMMUNICATIONS

Given the project's complexity, Provincial funding interests, high volume of traffic (30,000-50,000 vehicles per day each direction), and potential changes to access on Eastgate Drive, a detailed communications strategy has been developed to ensure the public is adequately informed of the upcoming work and understand the rationale of the selected options.

Communication strategy components include but are not limited to:

- A Public Information Session – a public info open house will be held prior to the start of construction. Poster boards illustrating the proposed work, potential changes to access to Eastgate Drive and corresponding traffic accommodation plans will be available for public viewing.

- A Stakeholder Flyer Drop – prior to the public info open house, a flyer drop will be distributed to local business and residents adjacent to project area providing details of the upcoming work and potential impacts it may have on them. The flyer will also include the date and location of the informational open house.
- Advance signage including variable message boards will be placed along project route to notify travelling public of the work and anticipated schedule prior to start of construction
- The Saskatchewan Trucking Association will be contacted prior to construction starting to inform their members of the proposed traffic accommodations.
- A joint media event with the Province will also be held prior to launching the project.

DELEGATED AUTHORITY

There is no delegated authority associated with this report and it is for informational purposes only.

Respectfully submitted,



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Respectfully submitted,



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