

TO: Secretary, Administration and Finance Committee
FROM: General Manager, Infrastructure Services Department
DATE: October 19, 2012
SUBJECT: State of the Bridges and Structures 2012
FILE: CK. 6050-1 and IS. 6050-104-1

RECOMMENDATION: that the following report be submitted to City Council recommending:

- 1) that the bridges and structures preservation service level be established as 'Service Level 'B'', with a targeted annual investment level of \$5 million per year (2013 dollars), and additional one time contributions totalling approximately \$48 million (2013 dollars), over the next 10 years; and
- 2) that the dollar amounts presented in this report be adjusted for construction inflation in each budget year that the approved capital program is delivered.

TOPIC AND PURPOSE

The purpose of this report is to present the State of the Bridges and Structures 2012 Report (Attachment 1) for information and discussion; and to request that the report be submitted to City Council recommending that a desired level of service target for Bridges and Structures be selected.

REPORT HIGHLIGHTS

1. The City of Saskatoon's bridge and structure inventory has an estimated replacement value of approximately \$831.4 million (2012 dollars).
2. A comprehensive long-term major preservation program has been prepared which has identified work totaling \$102 million over the next 20 years.
3. The Bridge Major Repair Reserve is currently significantly underfunded, in consideration of short and long-term preservation requirements.
4. Optimization of preservation funding will maximize the sustainability of this key component of the City's infrastructure, and minimize life-cycle costs.
5. It is the Administration's recommendation that a level of service classification of "B" is the preferred level of service target, based on least life cycle cost.

STRATEGIC GOAL(S)

- Asset and Financial Sustainability – Saskatoon invests in what matters
 - This strategy will reduce the gap in funding required to rehabilitate and maintain the City's bridges and structures;

- It will adopt and implement a corporate-wide asset management and rehabilitation philosophy; and
- It will protect the City's Credit rating.
- Moving Around – Saskatoon is a City on the Move
 - This strategy will ensure bridges and structures are in working order and in a good state of repair; and
 - It will also establish service levels to promote repair and maintenance of our bridges and structures.

BACKGROUND

Preservation of the City's bridges and structures is funded from the Bridge Major Repair Reserve. The current base annual contribution to the Bridge Major Repair Reserve, for bridge preservation, is \$520,000, which represents approximately 0.06% of the total infrastructure replacement value. This results in a level of service classification of "E", as described in Table 1 below. If this level of investment is maintained beyond 2019, the level of service classification will drop to "F". A level of service classification of "A" represents the highest level of service at the lowest long-term cost.

Table 1: Asset Level of Service

Level of Service	Asset Condition	Description
A	Getting Better Quickly	Sufficient expenditures to maintain and keep assets in optimal condition. Asset condition/value improves to optimal levels, eliminating any backlog.
B	Getting Better	Sufficient expenditures to increase asset condition/value and decrease backlog slowly over time. Once backlog is eliminated, the funding is sufficient to maintain condition without a backlog.
C	Maintained	Sufficient expenditures to keep assets in constant condition over time. The backlog remains constant.
D	Maintain Assets that are in Very Poor Condition	Sufficient expenditures to replace assets when they completely fail. Insufficient funding to treat all segments requiring preservation and restoration work. The backlog will slowly increase with time.
E	Getting Worse	Insufficient expenditures to maintain asset condition. Asset condition deteriorates annually. Some assets may need to be closed or removed from service.
F	Getting Worse Quickly	Asset condition/value decreases rapidly. Assets frequently removed from service due to deterioration as insufficient funding exists to replace all completely failed segments.

REPORT

The City of Saskatoon's bridge and structure inventory has an estimated replacement value of approximately \$831.4 million (2012 dollars). Effective asset management is necessary in order to optimize preservation activity planning and implementation in order to optimize financial investment and maximize the sustainability of this key component of the City's infrastructure. The State of the Bridges and Structures 2012 Report provides information on asset inventory, replacement value, current condition state and a preservation strategy.

The report provides a 20-year major preservation program for the City's bridges and structures, at a total cost of approximately \$102 million. The plan contains a mix of proactive and reactive projects which represents the least life cycle cost strategy.

Major bridge projects recommended to be completed within the next five years are as follows:

- University Bridge Rehabilitation (2013-14-15/\$13.8 million);
- Circle Drive North Over Idylwyld Drive Overpass Rehabilitation (2014/\$1.2 million);
- Idylwyld Drive Northbound Over 19th Street to 1st Avenue Overpass Rehabilitation (2015/\$2.0 million);
- Idylwyld Drive Northbound/Southbound Over 19th Street Overpass Rehabilitation (2015/\$4.1 million);
- Idylwyld Drive Over Ruth Street Overpass Rehabilitation (2015/\$5.6 million);
- 51st Street Over Idylwyld Drive Overpass Rehabilitation (2015/\$1.5 million); and
- Sid Buckwold Bridge Rehabilitation (2017/\$9.5 million).

The full five-year plan is estimated to cost \$38.8 million.

Three level of service options have been reviewed as follows:

Option 1 – Status Quo – Level of Service “E”

Under this option, the current annual base contribution to the Major Bridge Repair Reserve of \$520,000 per year would be maintained. This level of service is insufficient to accommodate the 20-year major preservation plan. Structures will need to be closed as deck failures occur, with major closures projected as follows:

- Idylwyld Drive Over Ruth Street Overpass (2025);
- Idylwyld Drive Northbound/Southbound Over 19th Street Overpass (2025);
- Spadina Crescent Bridge (2029);
- Circle Drive Northbound Over 14th Street Overpass (2029);
- 108th Street Over Circle Drive Overpass (2030);

- Idylwyld Drive Northbound Over 19th Street to 1st Avenue Overpass (2030);
- University Bridge (2031); and
- Sid Buckwold Bridge (2032).

Full deck replacements would be required before these structures could be reopened. The estimated cost of necessary deck replacements for these structures is estimated to be \$151.4 million. This value does not include additional work required to the remainder of the bridge inventory.

Option 2 – Maintain the Current Backlog – Level of Service “C”

Under this option, the 20-year major preservation program would be modified to address only reactive preservation projects, eliminating proactive projects from the plan. This approach would defer investment in the short-term. The current annual contribution to the Major Bridge Repair Reserve would increase, however, a mix of one-time contributions would be required to make up the budget shortfall for major rehabilitation projects to ensure the reserve does not go into a deficit position at any time. If the annual contribution were to be increased to \$2.0 million in 2013, with an annual increase equal to annual inflation, one-time contributions would be required as follows:

- \$32 million in 2013;
- \$23 million in 2018; and
- \$39 million in 2023.

The total investment in the 20-year major preservation program would be approximately \$112 million.

Option 3 – Mix of Proactive and Reactive Preservation Projects – Level of Service “B”

Under this option, the 20-year major preservation program, recommended in the State of the Bridges and Structures 2012 Report, would be followed. The current annual contribution to the Major Bridge Repair Reserve would increase, however, a mix of one-time contributions and borrowing would be required to make up the budget shortfall to ensure that the reserve does not go into a deficit position at any time. If the annual contribution were to be increased to \$5 million in 2013, with an annual increase equal to annual inflation, one-time contributions would be required to support the following anticipated additional spending:

- \$19.2 million in 2013;
- \$7.8 million in 2018; and
- \$20.9 million in 2023.

It is important to note that a level of service classification of “A” is not achievable within the next 15 to 20 years, due to the current backlog of reactive preservation projects. An

“A” level of service would represent a majority of proactive preservation projects with lower life cycle costs, when compared with the above options.

It is the Administration’s opinion that Option 3 is the preferred option, based on least life cycle cost. If base annual contributions do not keep pace with inflation, larger one-time contributions will be required to meet future project costs. For the purposes of this report, only one funding option per service level has been shown. However, there could be additional options to the funding in order to reach the selected level of service.

The Administration is requesting that the Committee forward this report to City Council, recommending that a desired level of service target for the preservation of bridges and structures be established as Level ‘B’ with an annual funding level of \$5 million, and additional contributions over the next 10 years as listed above.

OPTIONS TO THE RECOMMENDATION

An alternate service level can be established, however, the Administration feels that Service Level ‘B’ provides for an acceptable condition state for the bridge and structure inventory that is financially attainable.

POLICY IMPLICATIONS

There are no policy implications.

FINANCIAL IMPLICATIONS

Financial implications depend on the service level selected. A funding strategy will be forthcoming.

PUBLIC AND/OR STAKEHOLDER INVOLVEMENT

Public and/or stakeholder involvement is not applicable.

COMMUNICATION PLAN

The City has been undertaking a series of activities to proactively communicate the City’s Strategic Plan and specifically more information for each strategic goal. Since March 2012, the City has held major news conferences around the Strategic Plan, Sustainable Growth/Moving Around and Environmental Leadership.

The Administration is preparing to launch the strategic goal for Asset and Financial Sustainability – Saskatoon Invests In What Matters. The vision for this strategic goal outlines, “Our buildings, roads, and bridges are well managed and well maintained – meeting the needs of citizens and reflecting the pride and priorities of a modern 21st century city.”

Upon City Council adopting the recommendations in the State of the Bridges and Structures 2012 report, the information and deliverables will be communicated as part of the Asset and Financial Sustainability news conference. The news conference provides an opportunity to share the direction in achieving the long and short-term strategies. It will also provide an opportunity to show how the commitment will play a role in achieving other long-term strategies related to Environmental Leadership, Moving Around and Economic Diversity and Prosperity. The news conference will reach various audiences including the media, stakeholders and citizens.

In addition to a news conference, the information will be incorporated into the Strategic Plan web pages. Additional communications tools will be prepared to ensure citizens are informed about the commitment, deliverables and achievements the City of Saskatoon is making towards goals identified in the Strategic Plan. This may include, but is not limited to, news releases, webpage content, videos and social media tools including creating blog content and providing updates on twitter and Facebook.

ENVIRONMENTAL IMPLICATIONS

Any increase to the funded plan for bridges and structures rehabilitation work will increase the City's greenhouse gas emissions. Details of the funded plan will be forwarded to the Environmental Services Branch for detailed calculation.

PRIVACY IMPACT

There are no privacy implications.

SAFETY/CRIME PREVENTION THROUGH ENVIRONMENTAL DESIGN (CPTED)

A CPTED review is not required.

PUBLIC NOTICE

Public Notice, pursuant to Section 3 of Policy C01-021, Public Notice Policy, is not required.

ATTACHMENT

1. State of the Bridges and Structures 2012 Report.

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