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## Flood Control Strategy Update – Brevoort Park South

### ISSUE

In December 2018, City Council approved the implementation of the nine-year \$54 million (M) Flood Control Strategy (FCS) to mitigate flooding in ten priority areas that have historically experienced frequent flooding. The purpose of this report is to provide an update on the strategy including the results of the Feasibility Assessment for the project to mitigate flooding in the area near Brevoort Park South, and to request approval to proceed with the project. This report also provides an update on future projects planned within the FCS.

### RECOMMENDATION

That the Standing Policy Committee on Environment, Utilities, and Corporate Services recommend to City Council that detailed design and construction of a storm water mitigation project in Brevoort Park South proceed in 2024, to mitigate flooding for the area of Early Drive and Tucker Crescent.

### BACKGROUND

The FCS is based on the principles of reducing flood impacts for the maximum number of properties within the available budget while maintaining the existing quality and service levels for both passive and active recreation opportunities in parks where the projects are constructed. The FCS framework for each project includes the following four phases:

- Phase One: High level Assessment (completed in 2018)
- Phase Two: Feasibility Assessment of each project
  - City Council to approve projects prior to proceeding to Phase Three
- Phase Three: Detailed Design and Public Engagement
- Phase Four: Construction

The status of the first 3 FCS projects is provided in the table below:

Project	Status	Details
W.W. Ashley Park Dry Pond	Complete	Open to the public
Churchill Park Dry Pond	Substantially Complete	Landscape maintenance in-progress and will open to the public fall 2023
Weaver Park Dry Pond	Construction	Will reach substantial completion this fall and open to the public in fall 2024

Photos of Churchill Park dry pond at substantial completion (October 2022) are shown in Appendix 1. Current construction photos of the first phase (February and March 2023) of the Weaver Park dry pond are shown in Appendix 2.

A Feasibility Assessment completed for the fourth project at Brevoort Park South to mitigate flooding for the intersection of Early Drive and Tucker Crescent shows the project is technically feasible and will reduce the flood risk for 41 residential buildings in a 1-in-10-year rain event. The details of the Feasibility Assessment are provided in Appendix 3.

### **DISCUSSION/ANALYSIS**

The proposed Brevoort Park South storm water storage project will reduce the flood risk in an area with a history of frequent flooding and expected future flooding with climate change. In 2018, the Early Drive and Tucker Crescent intersection area was rated fourth highest among the top 30 known high risk flood locations within the city based on the probability of flooding and the number of properties expected to flood during intense rain events.

The Administration is proposing to construct underground storage at Brevoort Park South for this project. Depending on underground storage costs, which will be confirmed through detailed design, some above ground storage may be required (dry pond, swaling, ditches, or other) to keep project costs within budget. A decision quality analysis was completed to support the feasibility assessment of this project and 12 alternatives were considered. The proposed option was determined optimal considering values of safety, environment, social impact, financial impact, operations and maintenance, and has minimal impact to recreational spaces.

In 2018, City Council approved the following projects known as projects 5-9 in the FCS.

5. Cumberland Avenue & Main Street (Cumberland Park)
6. Cumberland Avenue & 14<sup>th</sup> Street (Joint USask Project)
7. John A MacDonald Road & McCully Crescent (Kensington Wet Pond)
8. Avenue W S & 21<sup>st</sup> Street W (Cahill Park)
9. 3<sup>rd</sup> Avenue N & 24<sup>th</sup> Street E (storm sewer to the river)

Several areas included in the top 30 high risk flood locations from the 2018 report endured flooding in the June 20, 2022, rain event. This rain event prompted stakeholders from other areas on the high-risk flood list, but not currently included in the current FCS, to inquire when they would be getting a flood mitigation project to improve conditions in their area. In response to these inquiries, the City has re-evaluated projects 5 to 9 with other historical flood locations to ensure the City is addressing the highest risk (the maximum number of properties) locations with feasible design solutions within the FCS. The other flood locations analyzed included:

- Cairns Avenue & 7<sup>th</sup> Street
- Louise Avenue & Taylor Street
- Grosvenor Crescent & Taylor Street
- East Place & Louise Street

The modelling analysis confirmed that projects 5, 6, 8, and 9 continue to be higher risk locations and should be planned as part of the FCS from the above list. New information regarding Project 7 is discussed below.

Project 7 (John A MacDonald Road & McCully Crescent) appears to be less beneficial for reducing flood conditions compared to the intersections of East Place & Louise Street, Cairns Avenue & 7<sup>th</sup> Street, and Grosvenor Crescent & Taylor Street. At this time, analysis indicates the East Place & Louise Street intersection would be the location to be included in the remaining FCS program if Project 7 were to be removed from the strategy list. The Administration recommends reviewing the modelling results and if no new information is obtained or modelled, will formally recommend the location change in the next FCS report (2024). Note, if a new location is recommended instead of Project 7 it would also need to fit within the FCS budget. Consultations with the Parks, Recreation and Community Development departments would also need to occur prior to recommending the project location change. Other locations not included in this modelling analysis may also be reviewed before the next FCS report.

### **FINANCIAL IMPLICATIONS**

In 2019, the Government of Canada (Government) approved 40% cost sharing of the \$54.1M estimated FCS eligible expenses to a maximum of \$21.6M through the Disaster Mitigation and Adaptation Fund (DMAF). The City approved Storm Water Utility funding of \$32.4M (60%) through previously approved increases to the storm water utility management charge.

Projects 1 and 2 (W.W. Ashley Park and Churchill Park dry ponds) are anticipated to be \$7M under budget compared to the 2018 agreement costs. At this time, the final cost for Weaver Park is estimated at \$6.5M (\$1.2M under budget from 2018 agreement) based on current tender and pre-tender estimate for parks development.

The Brevoort Park South project cost estimate has increased by \$2.5M during the feasibility assessment due to a need for most of the storm water storage to be managed by an underground solution. The supporting rationale for the recommended option includes maintaining recreation service levels in Brevoort Park North, optimizing the limited green space available in Brevoort Park North and South, and to increase the distance from nearby schools from the construction area. The feasibility assessment cost estimate for 100% of the storm water volume to be stored underground is \$10.7M. This project has a maximum budget of \$10.3M. Detailed design work will identify opportunities to adjust the design to fit within budget.

The table below shows the 2018 FCS agreement estimates compared to current cost estimates. Based on updated construction costs and overall price increases due to inflation, the FCS program is estimated to be \$1.7M overbudget by the end of 2027. This does include 10% contingency (\$4M) for the remaining projects. The budgets will be reviewed as Projects 5-9 proceed to ensure the final costs will be within budget of the Government funding agreement (\$54.1M). Funding for the City's portion of the FCS

is available through Capital Project P.01619.07 Storm Sewer Trunk and Collection Flood Control Strategy.

Project Information			2018 DMAF Agreement			2023 Cost Estimate		
Project No.	Project Location	Const. Year	Total Eligible Costs	GOC Eligible Costs	COS Eligible Costs	Total Eligible Costs	GOC Eligible Costs	COS Eligible Costs
1	W.W. Ashley Park	2021	\$5.7M	\$2.3M	\$3.4M	\$3.4M	\$1.4M	\$2.0M
2	Churchill Park	2022	\$10.4M	\$4.2M	\$6.2M	\$5.8M	\$2.3M	\$3.5M
3	Weaver Park	2023	\$7.7M	\$3.1M	\$4.6M	\$6.5M	\$2.6M	\$3.9M
4	Brevoort Park South	2024	\$7.8M	\$3.1M	\$4.7M	\$10.3M	\$4.1M	\$6.2M
5	Cumberland Park	2025	\$3.2M	\$1.3M	\$1.9M	\$4.2M	\$1.7M	\$2.5M
6	USask	2025	\$3.2M	\$1.3M	\$1.9M	\$5.8M	\$2.3M	\$3.5M
7	John A MacDonald-McCully	TBD	\$4.4M	\$1.8M	\$2.6M	\$7.1M	\$2.8M	\$4.3M
8	Cahill Park	2026	\$3.2M	\$1.3M	\$1.9M	\$4.4M	\$1.8M	\$2.6M
9	24 <sup>th</sup> Street	2027	\$8.3M	\$3.3M	\$5.0M	\$8.3M	\$3.3M	\$5.0M
<b>Totals</b>			54.1M	21.6M	32.4M	55.8M	22.3M	33.5M

The Storm Water Utility is also funding internal costs for the FCS and the Aden Bowman Field Construction (\$4.9M) due to the Government determining these as ineligible expenses.

### OTHER IMPLICATIONS

Consultations with both the Parks Department and Recreation and Community Development Department emphasized the high community value of quality recreation and green infrastructure at Brevoort Park North and South. The underground storage option at Brevoort Park South is the preferred option to maintain recreation service levels at Brevoort Park North (large multi-purpose field and ball diamond) and Brevoort Park South after construction. While constructing a regular dry pond at Brevoort Park North would be more cost effective, the field size would be reduced by 65% and a dry pond would be located 45 meters from the nearby elementary school.

A Crime Prevention Through Environmental Design (CPTED) evaluation will be completed if the detailed design process leads to some amount of above ground storage being required at Brevoort Park South.

The underground storage will be designed to act as an underground dry pond, filling during large rain events and draining when the system regains capacity. Brevoort Park South would be landscaped to at least existing conditions after installation of the underground storage depending on the above ground storage requirement. Efforts will be made to preserve as many park trees as possible during the detailed design and construction phases of the underground storage project. If tree removal is required,

appropriate stakeholders will be informed, and the project will provide necessary compensation as outlined in City Council Policy C09-011 Trees on City Property. Residents near Brevoort Park North and South were notified of the project through a letter in January 2022. These residents were also informed in April 2023 of this report with instructions how to provide information or speak at the Standing Policy Committee or City Council meetings. The project team presented information regarding the project in advance of this report to the Brevoort Park Community Association, and shared additional information to promote this report through their communication streams.

### **NEXT STEPS**

Next steps include the following:

- Public Engagement with nearby residents and park users including sport groups, applicable schools, SOS Trees, Brevoort Park Community Association through the Engage webpage, flyers, surveys, and events (June 2023 to January 2024);
- Detailed design, costing and construction plan (June 2023 to December 2023);
- Construction tender and award (December 2023 to January 2024); and
- Construction (February 2024 to November 2024).

### **APPENDICES**

1. Churchill Park Dry Pond Substantial Completion Photos
2. Weaver Park Dry Pond Phase I Construction Photos
3. Brevoort Park South Storm Water Storage Project Feasibility Assessment
4. Project 5-9 Modelling Review

### Report Approval

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