Conceptual Storm Water Capacity Expansion and Funding Options

Funding Option Overview

Three options are summarized in the tables below to generate funding for storm water retention infrastructure for three of the top risk areas over five years for different levels of service: "1-in-10 Year" and "1-in-25 Year". In addition, community engagement and detailed engineering design work could be started in 2018 by re-allocating existing staff resources. If the costs for capacity expansion are more than the estimated concept level costs, adjustments to the asset preservation plan, an extension of the construction schedule, and other increases will be evaluated and reported.

Funding Options for for 1-in-10 Year Storm Water Capacity Expansion (Revenue In Millions)						
Funding Options	**2018**	**2019**	**2020**	**2021**	**2022**	**Total (2018 to 2022)**
Mill Rate (0.6% Annual Increase)	$ 1.3	$ 2.7	$ 4.0	$ 5.3	$ 6.7	**$ 20.0**
Flood Protection Program (FPP) ($66/meter)	$ 0.6	$ 5.0	$ 5.1	$ 5.1	$ 5.2	**$ 21.0**
ERU Increase (30%) & FPP Re-allocation	$ 1.9	$ 5.2	$ 5.0	$ 4.6	$ 4.1	**$ 20.8**

Funding Options for 1-in-25 Year Storm Water Capacity Expansion (Revenue In Millions)						
Funding Options	**2018**	**2019**	**2020**	**2021**	**2022**	**Total (2018 to 2022)**
Mill Rate (1.2% Annual Increase)	$ 2.6	$ 5.3	$ 8.0	$ 10.8	$ 13.5	**$ 40.3**
Flood Protection Program ($114)	$ 4.2	$ 8.6	$ 8.7	$ 8.9	$ 9.0	**$ 39.4**
ERU Increase (67%) & FPP Re-allocation	$ 4.3	$ 8.2	$ 8.7	$ 8.9	$ 9.1	**$ 39.2**

A borrowing strategy could be implemented in conjunction with any of the funding options to complete the design and construction more quickly but costs would increase due to interest costs and the higher cost of using consultants instead of available in-house design engineers.

Option 1: Mill Rate Increase

A 0.6% annual mill rate increase over five years (3.04% compounded increase) will generate $20.0 million over five years with a base budget of approximately $6.7 million by 2022. This could be a dedicated increase for increasing storm water capacity similar to the dedicated increase for sound walls. Over 25 years, approximately $154 million (excluding assessment growth) would be generated to increase storm water capacity in 30 flood risk areas.

A mill rate increase is appropriate to fund the storm water expansion because the improvement increases the level of service for storm water infrastructure in at risk areas to a level that is more consistent with the service level in other areas of the city. An option is to delay the mill rate increase until 2019 when construction costs start to be incurred.

Option 2: Flood Protection Program

A second funding option is to expand the scope of the temporary Flood Protection Program (FPP), increase the fee to $66.00 per water meter in 2018, and make the FPP permanent. The FPP increase and permanent extension would supersede City Council's recommendation on August 28, 2017, to extend and phase-out the FPP by December 31, 2021.

After intense rain events caused sewer backups in 2005, the temporary FPP was established with a $3.00 monthly charge on all water meters. The charge was increased to $4.50 per month ($54.00 annual) in 2009. The program was extended to sunset December 31, 2018, after generating about $44 million in revenues to fund damage from the 2005 sewer backups, a program for sewer backup valve installation, and superpipes to reduce sewer backups during severe rain events.

On August 28, 2017, City Council approved an extension and gradual phase-out of the FPP by December 31, 2021, to fund the current projected program deficit of $0.3 million and additional superpipes in areas at risk of sewer backups. Option 2 proposes that the scope of the FPP be expanded to include surface flooding, that the annual charge be increased, and that it be made permanent.

The following tables summarize the amount that single family residential, and small and large commercial properties would pay in total for storm water Equivalent Runoff Unit (ERU) and FPP charges for two service levels using the option to fund capacity expansion through the FPP. The maximum commercial charge assumes one water meter per property but many commercial properties have more than one meter.

Option 2: Fee Structure for "1-in-10 Year" Storm Water Capacity Expansion Annual Charges for Residential and Commercial Properties

	2017	2018	2019	2020	2021	2022	2017-2022 % Increase
Annual ERU Rate	$ 52.80	$ 52.80	$ 66.30	$ 79.80	$ 93.30	$ 106.80	102%
Annual FPP Rate	$ 54.00	$ 66.00	$ 66.00	$ 66.00	$ 66.00	$ 66.00	22%
Total Single Family Res	$ 106.80	$ 118.80	$ 132.30	$ 145.80	$ 159.30	$ 172.80	62%
Total Commercial Min	$ 159.60	$ 171.60	$ 198.60	$ 225.60	$ 252.60	$ 279.60	75%
Total Commercial Max	$ 4,542.00	$ 5,346.00	$ 6,696.00	$ 8,046.00	$ 9,396.00	$ 10,746.00	137%

Option 2: Fee Structure for "1-in-25 Year" Storm Water Capacity Expansion Annual Charges for Residential and Commercial Properties

	2017	2018	2019	2020	2021	2022	2017-2022 % Increase
Annual ERU Rate	$ 52.80	$ 52.80	$ 66.30	$ 79.80	$ 93.30	$ 106.80	102%
Annual FPP Rate	$ 54.00	$ 114.00	$ 114.00	$ 114.00	$ 114.00	$ 114.00	111%
Total Single Family Res	$ 106.80	$ 166.80	$ 180.30	$ 193.80	$ 207.30	$ 220.80	107%
Total Commercial Min	$ 159.60	$ 219.60	$ 246.60	$ 273.60	$ 300.60	$ 327.60	105%
Total Commercial Max	$ 4,542.00	$ 5,394.00	$ 6,744.00	$ 8,094.00	$ 9,444.00	$ 10,794.00	138%

The projected revenues for the FPP funding strategy are based on a 1.0% increase in the number of water meters in 2018 and a 1.5% annual increase from 2019 to 2022. An

FPP rate of $66.00 per water meter will generate approximately $5.2 million a year by 2022, and $155 million over 30 years.

Option 3: Equivalent Runoff Unit

The Storm Water Management Charge is based on a unit of measure known as an ERU, which many municipalities use for storm water utility billing. A single family residential (residential) dwelling is deemed to produce one ERU of storm water based on an average of 265.3 m^2 of impervious surface, such as roofs, driveways, and sidewalks.

One ERU valued at $52.80 per year ($4.40 per month) is the amount charged to residential properties. Commercial, industrial, and institutional (commercial) can generate significantly more storm water than residential properties generate; therefore, they are charged multiple ERUs ranging from an annual minimum of two ERUs ($105.60) to a maximum of 100 ERUs ($5,280) in 2018.

The seven-year phase-in of ERUs charged to commercial sites began in 2012 with increases to the annual caps. City Council approved incremental increases of $13.50 per year to the ERU Rate from 2019 to 2022 to fund storm water infrastructure maintenance and preservation and other business plan components. The following table shows the maximum approved charges for ERUs for commercial properties from 2012 to 2022.

Year	Maximum Commercial ERUs	ERU Rate	Maximum Annual Commercial Charge for ERUs
2012	10	$ 52.80	$ 528
2013	25	$ 52.80	$ 1,320
2014	40	$ 52.80	$ 2,112
2015	55	$ 52.80	$ 2,904
2016	70	$ 52.80	$ 3,696
2017	85	$ 52.80	$ 4,488
2018	100	$ 52.80	$ 5,280
2019	100	$ 66.30	$ 6,630
2020	100	$ 79.80	$ 7,980
2021	100	$ 93.30	$ 9,330
2022	100	$ 106.80	$ 10,680

Approximately one third of the ERU revenue is paid by Commercial customers and about two thirds is paid by residential (including multi-residential) customers.

The following tables summarize the amount that residential, and small and large commercial properties would pay in total for ERU and FPP charges for two service levels using the option to fund capacity expansion through an additional increase to the

ERU rate. By 2022, the largest commercial properties would pay up to $17,836 annually.

Option 3: Fee Structure for "1-in-10 Year" Storm Water Capacity Expansion Annual Charges for Residential and Commercial Properties							
	2017	2018	2019	2020	2021	2022	2017-2022 % Increase
Annual ERU Rate	$ 52.80	$ 68.64	$ 86.19	$ 103.74	$ 121.29	$ 138.84	163%
Annual FPP Rate	$ 54.00	$ 54.00	$ 40.50	$ 27.00	$ 13.50	$ -	-100%
Total Single Family Res	$ 106.80	$ 122.64	$ 126.69	$ 130.74	$ 134.79	$ 138.84	30%
Total Commercial Min	$ 159.60	$ 191.28	$ 212.88	$ 234.48	$ 256.08	$ 277.68	74%
Total Commercial Max	$ 4,542.00	$ 6,918.00	$ 8,659.50	$10,401.00	$12,142.50	$13,884.00	206%

Option 3: Fee Structure for "1-in-25 Year" Storm Water Capacity Expansion Annual Charges for Residential and Commercial Properties							
	2017	2018	2019	2020	2021	2022	2017-2022 % Increase
Annual ERU Rate	$ 52.80	$ 88.18	$ 110.72	$ 133.27	$ 155.81	$ 178.36	238%
Annual FPP Rate	$ 54.00	$ 54.00	$ 40.50	$ 27.00	$ 13.50	$ -	-100%
Total Single Family Res	$ 106.80	$ 142.18	$ 151.22	$ 160.27	$ 169.31	$ 178.36	67%
Total Commercial Min	$ 159.60	$ 230.35	$ 261.94	$ 293.53	$ 325.12	$ 356.71	124%
Total Commercial Max	$ 4,542.00	$ 8,871.60	$ 11,112.60	$13,353.60	$15,594.60	$17,835.60	293%

Neighbourhood Improvement Levy

Saskatoon's 1994 Local Improvement Program (Bylaw 5257 *The Local Improvement Procedure* Bylaw) allows for Neighbourhood Improvement Levies to be collected. [1]
A levy to fund the 14th Street storm sewer lining was previously applied to properties in south-central Saskatoon draining to the trunk. However, one resident's response to the 2017 flood impact survey indicated that even though he had paid the levy, he did not believe the improvement reduced the flooding on his street.

If a decision is made to expand the capacity of the storm water network in the three modelled at-risk areas, a $600 annual levy for 130 modelled properties that would benefit from increased storm water capacity would generate $1.9 million over 25 years, which is 10% of the estimated infrastructure cost. Alternative amounts could also be considered.

The main advantage to a levy would be the additional revenue and cost sharing for new infrastructure for those that benefit. Some residents who are at greatest risk of flooding may support the levy because reduced flood risk would improve their quality of life and increase the value of their property. The City's cost of providing higher service levels for storm water infrastructure in new neighbourhoods is passed on to property owners in the form of development levies.

[1] Assessing Owners' Share District Storm Sewers 16) In assessing the owner's share of the cost of construction of a district storm sewer, the said rate shall be specially assessed upon: (a) the land directly abutting upon the work; (b) the land not abutting directly on the work but deemed by Council to be benefitted thereby.

Neighbourhood Improvement Levies require that a majority of impacted property owners support the levies. Residents may not support the levy because of the following:

- A neighbourhood improvement levy was previously paid to fund storm water capacity but properties still flooded.
- Adding a new fixed annual cost may reduce the quality of life for some residents, particularly fixed income residents who may be required to make difficult decisions to adapt to the higher costs.
- Some of the property owners who would be required to pay may have experienced no or minimal flood damage, particularly if they have already made significant investments to make their properties more flood resilient.
- The cost may be considered high relative to the incremental cost of surface flood insurance. While many factors impact the cost of insurance, SGI indicated that the average cost is about $100 per year.
- Neighbourhood Improvement Levies have not been implemented in Saskatoon for many years. Other infrastructure improvements that primarily benefit specific areas have been funded through general revenues.
- Some properties would still be at risk of flooding during rain events that exceed “1-in-10 years”.

Another consideration is the administration cost that would be incurred for managing, billing and collecting the levies.

Federal Funding

An application for storm water capacity expansion will be made to the federal Disaster Mitigation and Adaptation Fund, which is a national, competitive, merit-based program, designed to support investments that will mitigate current and future climate risks, including floods. More information about the program is expected to be released by the Government of Canada in October 2017.

The Storm Water Utility will also leverage federal funding for eligible storm water activities from the National Disaster Mitigation Program, the Municipal Asset Management Program (maximum of $50,000 annually), and any Integrated Bilateral Agreements with the Province of Saskatchewan that provide funding for municipal infrastructure.

Storm Water Capacity Implementation Strategy

If City Council approves proceeding with increased infrastructure capacity, the following implementation is proposed:

One-Year (2018):

- Community engagement about the use of parks for storm water retention will be conducted in high-risk flood areas.

- The storm water model will be further refined based on survey results, and refined details on the infrastructure solution and funding strategy will be presented to City Council.

Five Years: (2018-2022):

- Detailed engineering plans and costs will be prepared for the top two high-risk flood areas: Ruth Street/Cairns Avenue (Area #1) and First Street/Dufferin Avenue (Area #2)
- Cascade Street/Dufferin Avenue (Area #3) will be further assessed, and high-level options and costs for Early Drive/Tucker Crescent (Area #4) and Seventh Street/Cairns Avenue (Area #5) will be completed.
- The next areas for more detailed engineering and construction will be prioritized.
- Constructed infrastructure solutions will be completed for three high-risk areas.
- Automated gates to close two high-risk intersections included in the top 30 ranked areas (Confederation Drive/Laurier Drive and Idylwyld Drive/Circle Drive) will be evaluated.

Twenty-Five Years (2018-2044)

- The funding options provide for implementation of service level infrastructure solutions for up to 30 areas at risk of surface flooding within the next 25 to 30 years. Implementing a borrowing plan will allow for quicker implementation but costs are expected to be higher to contract with engineering firms to supplement in-house resources.