

Joe Farag
 Acting Chief Financial Officer

 Financial Planning Division
 City Hall, 7th Floor, East Tower
 100 Queen Street West
 Toronto, Ontario, M5H 2N2

 Tel: 416-397-4229
 Fax 416-397-4465
 jlavita@toronto.ca
www.toronto.ca

2018 CAPITAL BUDGET BRIEFING NOTE

State of Good Repair (SOGR) Backlog

Issue/Background:

This briefing note presents the State of Good Repair (SOGR) Backlog for Tax and Rate Supported City Programs and Agencies, and the impact on the backlog as a result of the planned investments in the 2018 – 2027 Preliminary Capital Budget and Plan.

The City owns an inventory of physical assets valued at \$75 billion as shown in the Table 1.

Table 1
City's Physical Infrastructure

		Estimated Asset Value
Transportation Infrastructure	- 5,600 km of roads & 130 km of expressways - 900 bridges/culverts	\$13 Billion
Water & Wastewater Infrastructure	- 4 water filtration & 4 wastewater treatment plants - 10 reservoirs, 4 water storage tanks & 5 wastewater detention tanks - 105 pumping stations - 6,100 km of watermains & 10,500 km for wastewater distribution system	\$29 Billion
Public Transit System	- 2,101 buses & 260 streetcars/LRVs - 800 subway - Subway, buildings, trackwork, equipment, etc.	\$15 Billion
Buildings, Facilities & Fleet	- 5,800 properties and 26.5 million square feet of building space - More than 5,500 vehicles, ferries and vessels	\$15 Billion
Parkland & Other Land	8,106 hectares of parkland (= 13% of the land area of the City of Toronto)	\$3 Billion
Estimated Asset Value*		\$75 Billion

*Asset value does not include Toronto Housing Corporation units

The City's capital program is driven largely by the cost of maintaining these physical assets in a state of good repair. The City has an expansive asset inventory and its infrastructure is aging. Managing the accumulated SOGR backlog is a key capital strategic objective and priority for the City in order to ensure that current assets are able to support the delivery of City services and meet service outcomes.

When the capital investment in planned SOGR capital works is less than the annual SOGR need, the unfunded balance is added to the accumulated SOGR backlog. Conversely, should the investment in SOGR exceed the planned SOGR need, the balance is applied to the accumulated SOGR backlog, effectively reducing the balance.

In the absence of comparable benchmarks, the City has established its own state of good repair performance measure; *"backlog as a percentage of total asset value (replacement value)"* that is applied across its portfolio of assets. The benefits of gathering accurate asset data is that it provides a true picture of what the SOGR backlog is, as well as highlighting areas of growing need. This metric provides the City with year over year comparisons and trends that assist City Council in determining how best to apply scarce resources in making strategic investments to reduce the City's SOGR Backlog by Program and/or asset type. By employing this practice, the City can measure its progress in achieving SOGR objectives and conversely, can determine where additional investments are required. Details of the SOGR Backlog trend and percentage of total asset value can be found in the Capital Budget Notes for each Program and Agency.

In addition to the SOGR backlog metric, the City employs the practices such as conducting comprehensive asset condition assessments by asset type, the use of decision support tools to rank and prioritize reinvestment needs and debt funding scenario analysis. All form part of the City's regular capital planning process. These actions taken together reflect the City's strategic commitment to address the infrastructure deficit in a holistic fashion.

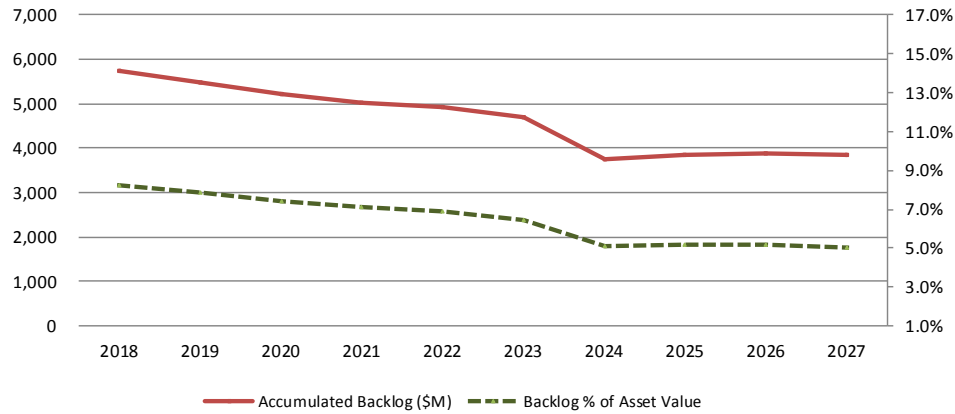
As City Programs and Agencies continue to implement asset management best practices, backlog funding pressures continue to rise as better information are received about the aging of the City's infrastructure. Further strategic funding sources will be required to reduce the backlog in future years.

Key Points:

- **Total City SOGR Backlog (Tax & Rate)**

- The 2018 to 2027 Preliminary Capital Budget & Plan allocates \$19.589 billion or 49% of funding to capital works that ensures City infrastructure required to deliver services to the citizens of Toronto are maintained in a state of good repair, including \$200 million in the new 2-year Interim funding for Toronto Housing Corporation and \$354.586 million new funding in other critical SOGR projects.
- As a result of this investment, the estimated accumulated SOGR backlog as a percent of asset value is projected to decline from \$5.881 billion at the end of 2017 to \$4.936 billion or 6.9% after 5 years in 2022 and to \$3.855 billion or 5.0% after 10 years in 2027 as shown in Chart 1.

**Chart 1
SOGR Backlog (Tax & Rate)**



Tax & Rate Supported Programs	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
Total Asset Value (\$M)	69,388	69,839	70,301	70,814	71,740	72,350	73,628	74,525	75,532	76,733
Accumulated Backlog (\$M)	5,735	5,475	5,216	5,036	4,936	4,692	3,762	3,858	3,898	3,855
Backlog % of Asset Value	8.3%	7.8%	7.4%	7.1%	6.9%	6.5%	5.1%	5.2%	5.2%	5.0%

- **Rate Supported Programs**

Currently, Toronto Water is the only Rate Program that has a SOGR backlog. At the end of 2018, the replacement value of Toronto Water's assets was estimated at \$28.640 billion incorporating both linear (watermains, sewers) and facility/plant (water treatment plants, wastewater treatment plants, pumping stations) assets.

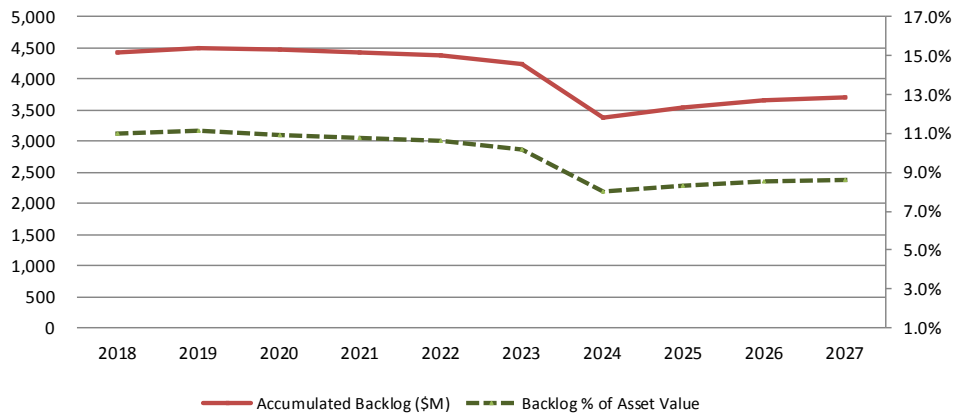
The 2017 year-end backlog of state of good repair work for linear and plant infrastructure renewal is projected at \$1.482 billion, representing 5.2% of the asset replacement value. Approximately 53% or \$0.790 billion of the backlog relates to linear infrastructure, with the remaining 47% or \$0.692 billion representing facilities.

The 10-Year Approved Capital Budget and Plan for Toronto Water dedicates \$6.210 billion or \$621 million on average annually, to address state of good repair, which is anticipated to effectively eliminate the backlog by 2027, which is anticipated to reduce the backlog to \$158.502 million or 0.5% of the total asset value by 2027, virtually eliminating the SOGR Backlog at the end of the 10-year period.

• **Tax Supported Programs**

The 2018 – 2027 Preliminary Tax Supported Capital Budget and Plan includes \$13.175 billion or 51% funding devoted to State of Good Repair projects. This capital investment will reduce SOGR backlog over the 10-year planning period, from 11.0% as a percentage of total asset value in 2018 to 8.6% of total asset value in 2027.

Chart 2
SOGR Backlog (Tax)

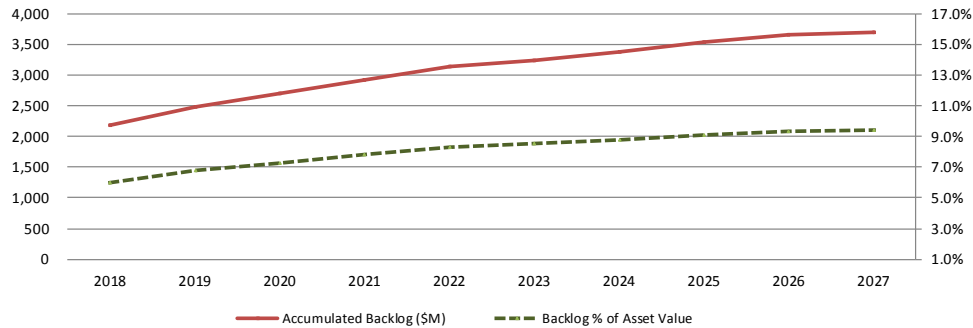


2018-2027 Submission	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
Total Asset Value (\$M)	40,184	40,474	40,755	41,062	41,381	41,737	42,065	42,403	42,737	43,085
Accumulated Backlog (\$M)	4,418	4,498	4,465	4,431	4,390	4,241	3,377	3,533	3,651	3,697
Backlog % of Asset Value	11.0%	11.1%	11.0%	10.8%	10.6%	10.2%	8.0%	8.3%	8.5%	8.6%

- The decline is primarily driven by the continued investment in F. G. Gardiner Expressway rehabilitation to eliminate the backlog associated with the Gardiner by year 2024.
- However, when the F.G. Gardiner Rehabilitation project is excluded from these estimates, the SOGR backlog over the next 10 years show an increase in City's accumulated SOGR requirement as outlined in Chart 3 on the following page. The SOGR backlog in this scenario will increase from 6.0% to 9.4% as a percentage of asset value over the 10-year period.

- **Tax Supported Programs excluding Gardiner**

**Chart 3
SOGR Backlog excluding Gardiner (Tax)**



Tax Supported Programs (without Gardiner)	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
Total Asset Value (\$M)	36,488	36,778	37,059	37,366	37,685	38,041	38,369	38,707	39,041	39,389
Accumulated Backlog (\$M)	2,192	2,489	2,700	2,918	3,130	3,240	3,377	3,533	3,651	3,697
Backlog % of Asset Value	6.0%	6.8%	7.3%	7.8%	8.3%	8.5%	8.8%	9.1%	9.4%	9.4%

- The SOGR backlog are is primarily found in the following programs: Transportation Services, Facilities Real Estate, Environmental and Energy (FREEE), Toronto Transit Commission (TTC), Toronto and Region Conservation Authority (TRCA), Toronto Public Library (TPL), and Parks, Forestry & Recreation (PF&R).
- Together, they make up \$4.072 billion or 92.6% of the \$4.399 billion SOGR backlog at the end of 2018. Over the 10 year period, these key Programs with SOGR backlog make up \$3.500 billion or 94.7% of the \$3.697 billion SOGR backlog by the end of 2027 summarized in Table 2 below.
- The increasing SOGR backlog is primarily driven by FREEE, PF&R, TTC and TPL based on revised data from completed condition assessments that more precisely accounts for SOGR needs in an effort to improve asset lifecycle management and more accurately identify and represent SOGR needs in the City's portfolio, as well as from capacity to spend analyses that adjusted estimates to realistically better match actual spending to project activities, thereby, increasing capital work that will not be addressed.
 - These increases are slightly offset by a decrease in TRCA, Transportation and Other Programs' SOGR Backlogs. TTC is the largest contributor to the 10 year SOGR backlog increase, with an increase of \$427 million over the 10 year period. FREEE has a significant increase in accumulated SOGR backlog of \$329 million over 10-year period increasing from \$341 million at the end of 2017 to \$670 million at the end of 2027.

Table 2
SOGR Backlog by Program – Summary

Program (\$M)	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	10 Yr Change
Transportation Services	683	766	876	978	1,073	1,170	1,223	1,307	1,375	1,444	1,513	830 ▲
F.G.Gardiner Expressway Rehabilitation	2,300	2,226	2,009	1,765	1,513	1,259	1,001					(2,300) ▼
Facilities Management, Real Estate & Environment	341	328	492	568	650	714	727	718	728	723	670	329 ▲
Parks, Forestry & Recreation	454	458	466	480	490	507	528	554	584	607	600	146 ▲
Toronto Transit Commission		26	56	101	153	201	244	285	328	376	427	427 ▲
Toronto & Region Conservation Authority	233	235	225	214	205	194	181	172	165	153	143	(90) ▼
Toronto Public Library	61	67	70	82	84	92	97	111	129	136	146	86 ▲
Other	327	313	304	277	264	253	240	231	224	211	197	(131) ▼
Total SOGR Backlog (end of Year)	4,399	4,418	4,498	4,465	4,431	4,390	4,241	3,377	3,533	3,651	3,697	(703) ▼
Total Asset Value (end of year)	39,952	40,184	40,474	40,755	41,062	41,381	41,737	42,065	42,403	42,737	43,085	
SOGR as % Asset Value	11.0%	11.0%	11.1%	11.0%	10.8%	10.6%	10.2%	8.0%	8.3%	8.5%	8.6%	

Comparison Analysis:

- Each year, new SOGR needs are added to the SOGR backlog balance, while additional capital investment in SOGR bring down the balance under investment could add to the balance as demonstrated in Table 3 in the following page. As a result in 2018, SOGR needs for Tax Supported Programs total \$1.687 billion of which \$1.668 billion of the SOGR backlog will be addressed. This will result in the 2018 accumulated SOGR backlog to increase by \$18.808 million or 0.4% as summarized in Table 3 below.
 - Targeted investments to address the SOGR backlog have reduced backlog in 2018 for City Programs such as Children Services, Fleet Services, Economic Development and Culture and FREEE and Agencies such as the Toronto Police Service, Sony Centre and Toronto Zoo. On the other hand, under investment have resulted in additional backlog build-up for and PF&R, Shelter Support & Housing Administration, Exhibition Place and Toronto Public Library.
- Over the 10 year period, the SOGR needs for Tax Supported Programs will total \$12.473 billion. However, the SOGR investment dedicated in the 2018 – 2027 Preliminary Capital Budget and Plan will address \$13.175 billion of SOGR requirements. This will result in the 10 year accumulated SOGR backlog to decrease by \$702.671 million or 16.0% by the end of 2027, from \$4.399 billion in 2018 to \$3.697 billion in 2027.

**Table 3
Percentage of State of Good Repair Backlog Addressed
in the 2018-2027 Preliminary Capital Budget and Plan by Program**

Program Description (000s)	2018					2018 - 2027				
	Accum. Backlog Beginning Balance	SOG Needs Added	SOG Backlog Addressed	Backlog Incr./ (Decr.)	Backlog % Incr/ (Decr.)	SOG Needs Added	SOG Backlog Addressed	Backlog Incr./ (Decr.)	Backlog % Incr/ (Decr.)	2027 Accum. Backlog Balance
Citizen Centred Services - A										
Children's Services	5,415	678	(1,473)	(795)	(14.7%)	8,886	(13,811)	(4,925)	(91.0%)	490
Court Services										
Economic Development and Culture	54,940	9,123	(11,801)	(2,678)	(4.9%)	109,140	(141,525)	(32,385)	(58.9%)	22,555
Long Term Care Homes Services	4,507	3,060	(3,060)		0.0%	49,239	(49,239)		0.0%	4,507
Parks, Forestry & Recreation	454,498	53,275	(50,082)	3,193	0.7%	805,186	(659,211)	145,975	32.1%	600,473
Shelter, Support & Housing Administration	7,477	168,738	(160,900)	7,838	104.8%	222,721	(214,500)	8,221	110.0%	15,698
Toronto Employment & Social Services										
Toronto Paramedic Services		1,380	(1,380)			9,505	(9,505)			
Sub-Total Citizen Centred Services - A	526,837	236,254	(228,696)	7,558	1.4%	1,204,677	(1,087,791)	116,886	22.2%	643,723
Citizen Centred Services - B										
City Planning										
Fire Services		100	(100)			1,600	(1,600)			
Transportation Services	2,982,328	278,261	(268,838)	9,423	0.3%	3,014,323	(4,484,035)	(1,469,712)	(49.3%)	1,512,616
Sub-Total Citizen Centred Services - B	2,982,328	278,361	(268,938)	9,423	0.3%	3,015,923	(4,485,635)	(1,469,712)	(49.3%)	1,512,616
Internal Corporate Services										
311 Toronto		2,657	(2,657)			16,154	(16,154)			
Facilities Management, Real Estate & Environment	341,472	36,744	(50,132)	(13,388)	(3.9%)	896,711	(567,749)	328,962	96.3%	670,434
Fleet Services	102,057	60,732	(71,482)	(10,750)	(10.5%)	647,878	(702,745)	(54,867)	(53.8%)	47,190
Information & Technology		30,729	(30,729)			241,208	(241,208)			
Sub-Total Internal Corporate Services	443,529	130,862	(155,000)	(24,138)	(5.4%)	1,801,951	(1,527,856)	274,095	61.8%	717,624
Office of the Chief Financial Officer										
Financial Services		8,211	(8,211)			37,474	(37,474)			
Sub-Total Office of the Chief Financial Officer		8,211	(8,211)			37,474	(37,474)			
Other City Programs										
Accountability Offices						1,400	(1,400)			
City Clerk's Office		935	(935)			5,795	(5,795)			
Corporate Initiatives		33,240	(33,240)			33,240	(33,240)			
IT Related Projects		(1,773)	1,773			(3,546)	3,546			
Pan Am Games										
Radio Replacement Project										
Sub-Total Other City Programs		32,402	(32,402)			36,889	(36,889)			
Agencies										
Exhibition Place	21,520	8,705	(4,365)	4,340	20.2%	96,566	(92,221)	4,345	20.2%	25,865
Sony Centre (Hummingbird)	23,319	446	(2,277)	(1,831)	(7.9%)	14,361	(2,277)	12,084	51.8%	35,403
Toronto & Region Conservation Authority	232,752	19,502	(17,690)	1,812	0.8%	94,985	(184,525)	(89,540)	(38.5%)	143,212
Toronto Police Service	25,212	27,372	(30,227)	(2,855)	(11.3%)	340,249	(348,742)	(8,493)	(33.7%)	16,719
Toronto Public Health		1,869	(1,869)			7,974	(7,974)			
Toronto Public Library	60,855	25,633	(19,969)	5,664	9.3%	250,011	(164,502)	85,509	140.5%	146,364
Toronto Zoo	82,976		(7,320)	(7,320)	(8.8%)		(54,794)	(54,794)	(66.0%)	28,182
Yonge-Dundas Square						450	(450)			
Sub-Total Other City Programs	446,634	83,527	(83,717)	(190)	(0.0%)	804,596	(855,485)	(50,889)	(11.4%)	395,745
Toronto Transit Commission										
Toronto Transit Commission		917,374	(891,219)	26,155		5,571,076	(5,144,127)	426,949		426,949
Sub-Total Toronto Transit Commission		917,374	(891,219)	26,155		5,571,076	(5,144,127)	426,949		426,949
Tax Supported Programs	4,399,328	1,686,991	(1,668,183)	18,808	0.4%	12,472,586	(13,175,257)	(702,671)	(16.0%)	3,696,657

*Funding to address the state of good repair backlog for City-owned facilities for Paramedic Services, Toronto Fire and Toronto Public Health is included in FREEE's 10-Year Capital Plan as asset management capital funding was transferred to FREEE in 2010.

Conclusion

Over the years, the City has implemented a series of Capital investment strategies to address the continued pressure from the SOGR backlog. This is evidenced by the significant decline of the backlog in some key areas such as the Rate Supported Programs (Toronto Water) and the elimination of Gardiner Expressway backlog. However, the backlog in some other areas continues to grow. The City needs sustainable long term financing strategies to address this issue on an on-going basis.

Prepared by: Teresa Huang, Senior Financial Planning Analyst, Financial Planning Division,
(416-397-4530), Teresa.huang@toronto.ca

Further information: Andy Cui, Manager, Financial Planning Division, (416) 397-4207,
andy.cui@toronto.ca

Date: December 12, 2017