

2020 ANNUAL REPORT SANITARY SERVICING STRATEGY FUND

PLANNING & ENVIRONMENT SERVICES | June 2021

Message from the Chair

This is the 21st annual report of the Sanitary Servicing Strategy Fund (SSSF) program. Since the program's inception, the strategy has successfully encouraged growth and development in the city of Edmonton with its approach to financing the sanitary drainage network.

2020 will be remembered as a year dominated by COVID-19, which impacted all facets of day to day life for Edmontonians. It also marks a transformation in the strategy that guides future development of Edmonton, with the adoption of The City Plan in December.

The challenge and gift of The City Plan is the opportunity to reframe the city building approach that has been in place for decades, and rethink assumptions about planning and building our city networks, including the SSSF. Future reports will showcase the evolution of our Committee's approach to SSSF, so in that sense, 2020 will mark the end of an era for the program. It's an exciting time for City Administration and our partners, EPCOR and the Urban Development Institute.

The closing balance of the fund at the end of 2020 was \$56.6 million, compared to the 2019 year-end balance of \$66.3 million. Looking at the current balance and revenue forecast, I know that the SSSF will be able to meet the short-term development needs of Edmonton in the developing area.

Due to accelerated projected spending, the cash flow model shows a downward trend in the cash reserve in the medium term. Continued analysis and adjustments to the program will validate project timelines and we will always seek to optimize cash flow. Constantly testing and revisiting our assumptions helps us to ensure stability of the Fund, and will be especially important in the next few years.

Looking forward, the SSSF program is a microcosm of bigger challenges for Edmonton, and the next few years will enable adjustments that will better serve our citizens and businesses in the future. We look forward to kicking off 2021, including the opportunity to provide more information to the public about this essential city service.

Lindsey Butterfield, RPP, MCIP

Director Urban Growth & Open Space

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Executive Summary

The Sanitary Servicing Strategy Fund (SSSF) is a program managed by the City of Edmonton that pays for some of the deepest and largest sanitary sewer tunnels in Edmonton. The Fund has been in place for over 20 years and has allowed for the construction of essential sanitary pipes that support growth in Edmonton. It is funded by development fees and contributions from EPCOR, and stewarded by a committee made up of City staff, developers, and EPCOR staff. Having this representation ensures that the right voices are around the table to effectively advance technical work as well as make appropriate recommendations to the City Council. Since its inception, the Fund has been remarkably successful in its mandate to support growth and facilitate new development in Edmonton. To date, the SSSF has funded the construction of approximately 40 km of sanitary trunks at a cost of \$321 million.

This report provides the details of various planning and construction activities completed in the past year. Through 2020, the SSSF provided funding to construct the following projects:

- South Edmonton Sanitary Sewer (SESS) SW4 tunnel to support growth in Heritage Valley and Windermere neighborhoods,
- NC2/NC3 tunnel in north Edmonton,
- SA10a tunnel to support industrial development in the south east, and
- the SW1 pump station to optimize the conveyance capacity in the south system

In addition to these construction projects, the public was also engaged on the governance structure of the Fund with the purpose of bringing appropriate Council oversight to strategic decision making.

A study was also completed to evaluate financing options to mitigate medium to long term potential risks that might result in a cash flow deficit of the Fund.

Considering the current economic situation, the SSSF Oversight Committee has recommended a 2% inflation adjustments to the SSSF development fees for 2021. The closing balance of the Fund at the end of 2020 was \$56.6 million as compared to the 2019 year-end balance of \$66.3 million. Considering the current balance and revenue forecast, it is anticipated that the SSSF will be able to meet the short-term development needs within the city. Due to accelerated projected spending, the cash flow model shows a downward trend in the cash reserve in the medium term. However, the SSSF Oversight Committee, along with EPCOR, will continue to work closely to carefully consider decisions on the construction of future SSSF sanitary trunk segments.

1.0 Planning & Construction Activities in 2020

The following section outlines the planning and construction activities funded by the SSSF and completed in 2020.

1.1 Planning Projects

Riverview Area Servicing Plan Review

The project will update the ultimate servicing concept of Riverview area The servicing plan for the Riverview area is currently under review as EPCOR is evaluating the opportunity to use the West Edmonton Sanitary Sewer (WESS) system to service this area instead of the SESS system by considering the changing sewer generation volumes due the successful water conservation efforts in Edmonton. It will also eliminate a complex river crossing and improve cost effectiveness.

Once analysis is completed, the recommendation will be advanced to the Council for approval.

South Edmonton Sanitary Sewer (SESS) – Stage SW5 Design

SESS Stage SW5 will be a 1,810 m long trunk along Windermere Boulevard from Terwillegar Drive to the west of the Anthony Henday/Rabbit Hill Road interchange. The segment will serve developments in the south, specifically the Windermere area.

In 2019 \$650,000 was approved to complete the preliminary design of the SW5 segment. However, the project was put on hold in 2020 to assess the impact of potential changes in the Riverview servicing plan as described above.

SSSF Financing Options Study

The study identifies different options to deal with potential SSSF cash flow issues A financing study was initiated at the end of 2019 to identify potential funding and financing options to mitigate potential future risks of a cash flow deficit in the SSSF reserve. Deloitte was retained to conduct this study and a report was presented to the Oversight Committee in the second half of 2020. The report and recommendations have been received by the City and will be considered as part of future exercises to develop mitigation strategies in the event of forecasted shortfalls in the SSSF.

Governance Review Phase II and Public Engagement

Administration presented a recommended governance structure to the Executive Committee in September 2019, intended to bring greater Council oversight in SSSF decisions. Council asked the Administration to seek public input and further refine the recommended option.

SW5 will serve the Windermere area. Governance Review Phase II assessed the options to improve Council oversight in SSSF decisions In response, the Administration conducted an online survey in the fall 2020 to understand the public's level of awareness of the SSSF and how the public would like to be informed about decisions related to the Fund. More than 1,900 residents participated in the survey, some of whom participated in a subsequent virtual engagement session. The SSSF committee Terms of Reference were also updated to reflect the important role of the development industry and EPCOR as important advisors, and the City as having final decision making authority on fund expenditures.

A revised report with a refined governance structure and enhanced communication plan will be presented to City Council in the second quarter of 2021.

1.2 Construction Projects

The following section provides the details of projects under construction.

North Edmonton Sanitary Trunk (NEST) - Stage N1 RTC Gate

The NEST N1 RTC Gate project involves the design and construction of a Real Time Control (RTC) gate at 153rd Avenue and Manning Drive. This gate will be used to regulate flows in the Clareview Sanitary Trunk (CST) through storage utilization in the upstream NEST segments.

The project was commissioned and the assets were transferred to EPCOR Drainage Operations in June 2019. The project is still under warranty.

NEST - Stage NC2/NC3

NEST NC2/NC3 will connect the existing NC1 and NL1 trunk sections and will facilitate growth in north Edmonton The NEST NC2/NC3 tunnel will facilitate growth in north Edmonton and improve the existing NEST system. The NC2 & NC3 comprises two phases with Phase 1 already completed. Phase 2 of NC2/NC3 includes construction of a 2400 m tunnel parallel to 153rd Avenue from



Figure 1a: NEST NC2/NC3 Phase 2 Tunneling

Castle Downs Road to 88th Street. Once completed, these segments will provide additional storage, improve conveyance and regulate the flows in the existing system.

The project will optimize downstream flows through utilization of storage in the upstream trunk The tunneling work for Phase 2 was completed in mid 2020. Additional budget of \$7.04 million was approved in 2020 for tunnel lining as a corrosion protection measure to increase the lifespan of the asset. Fiberglass liner will be used for this purpose. The project is expected to be completed by June 2022.

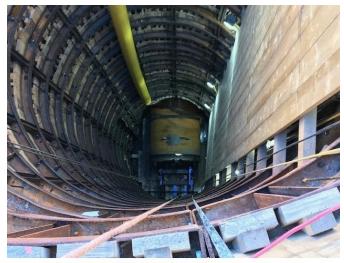


Figure 1b: NEST NC2/NC3 Working Shaft and Tunnel

SESS - Stage SW4

SESS Stage SW4 involves construction of a 1550 m long, 2.94 m diameter tunnel. It starts upstream of the existing SW3 segment at Ellerslie Road (southwest at

SESS SW4 will convey flows and provide wet weather storage for new development areas in south Edmonton. Whitemud Creek) and extends west toward Windermere Boulevard, (west of the Anthony Henday Drive/Rabbit Hill Road interchange). This stage will improve conveyance and increase wet weather storage to support growth in south Edmonton.

The tunneling component of the project has been completed and installation of slip lining is in progress. The project is expected to be



Figure 1c: SESS SW4, TBM and Retrieval Shaft

complete by the end of 2021.

SESS - Stage SA10a with Pump Station and Force Main

SESS SA10a is located in southeast Edmonton along 34 Street between 68 Avenue to 76 Avenue. The scope includes a 745 meters long, 3.05m diameter sanitary trunk, a pump station and a sanitary force main. This segment will provide sanitary storage and conveyance to support new development for the Maple Ridge, Pylypow and Southeast Industrial areas.



Figure 1d: SESS SA10a Tunneling

Poor ground conditions continued to be a challenge for the project. In 2020, 540 meters of the 735 meters of tunnel work was completed and the pump station and forcemain work is about 90% completed.

Challenging ground conditions and Covid-19 measures have had a negative impact on the boring productivity and may result in budget and time extension beyond what was approved in 2020. The SSSF Oversight Committee approved an additional \$8.9 million to address these challenges. The project is expected to be completed by September 2021.



Figure 1e: SESS SA10a, Construction of Pump Station

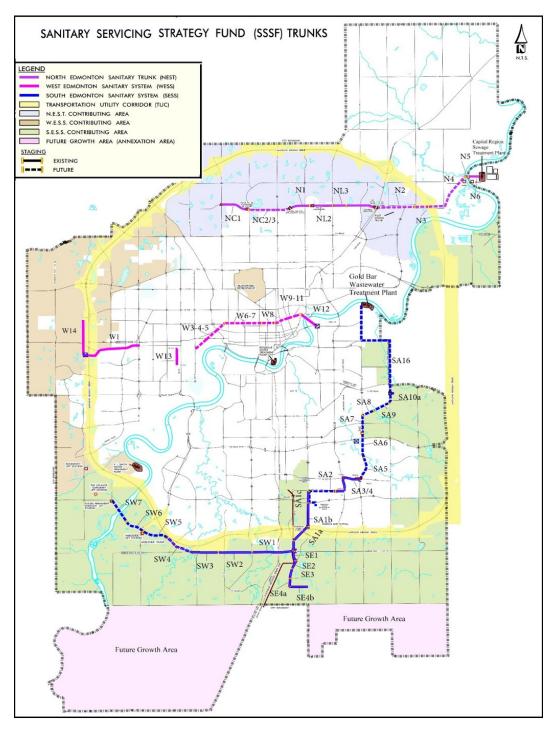
SESS SA10a will provide sanitary storage and conveyance for south eastern industrial areas.

SESS - SW1 Pump Station Upgrade

The SESS SW1 Pump Station Upgrade will support the needs of a growing population for the next 5-10 years. This pump station discharges the flow from SW trunk to SA trunk and needs to be upgraded to address the increased flow. The expansion will support population growth for the next 5 to 10 years at an estimated cost of \$3.72 million.

A contractor has been retained and detailed design is in progress. The project is expected to be completed by the end of 2021.

The location of all the projects under construction are depicted in Figure2. SSSF Major Sanitary Trunk Map.





Note: In May 2021, Council directed that future SSSF System Maps show multiple alignments for the SESS system and associated waste water treatment plant destinations. Figure 1 shows the potential destination of the SESS system based on the most current technical information.

2.0 SSSF Oversight and Sub-Committees

City Administration is authorized to manage and steward the SSS Fund as delegated by Council. The SSSF is governed through a governing body that consists of the SSSF Oversight Committee (OC) and two sub-committees as shown in the figure below.



SSSF Oversight Committee:

The Oversight Committee acts as a strategic decision-making body and ensures the appropriate management of the Fund. In 2020 the Oversight Committee consisted of the following members:

Members	Role	Organization
Lindsey Butterfield (Chair)	Director Urban Growth & Open Space	City of Edmonton
Mike Kohl	Representative Urban Development Institute (UDI)	UDI-Edmonton Region (ER)
David Kinders	Representative UDI	UDI-ER
Susan Monson	Representative UDI	UDI-ER
Susan Ancel	Director One Water Planning	EPCOR
Richard Brown	Director Drainage Construction Services	EPCOR
Howaida Hassan	General Supervisor Urban Growth	City of Edmonton
Oliver Zakoc	Director Finance	City of Edmonton
Khalid Aziz (Non-Voting)	SSSF Program Manager	City of Edmonton

Key accomplishments for the Oversight Committee in 2020 included the SSSF rate approval for 2021, approval of additional budgets for NC2/NC3 & SA10a, and coordination of public engagement activities on SSSF governance

The SSSF Oversight Committee had five virtual meetings in 2020. The following are the major decisions approved by the Oversight Committee:

- Revenue rate increase of 2% for 2021.
- Provide corrosion protection for NC2/NC3 with an additional budget of \$7.04 million.
- Approval of additional \$8.9 million to complete the SA10a project. The additional budget was required because of poor ground conditions and a safety incident.
- Completion of the SSSF 2019 Annual Report.

Planning & Management Committee:

The purpose of this committee is to review technical and planning matters and provide recommendations to the Oversight Committee for decision making. In 2020 the Planning & Management Committee was composed of following members:

Members	Role	Organization	
Howaida Hassan (Chair)	General Supervisor, Urban Growth	City of Edmonton	
Steve Jensen	Manager Growth Coordination	EPCOR	
Guillaume Vachon	Director, Project Management & Engineering	EPCOR	
Neal Upshall	General Supervisor, Development Coordination	City of Edmonton	
Leo Levasseur	Representative UDI	UDI-ER	
Otto Hedges	Representative UDI	UDI-ER	
Khalid Aziz	SSSF Program Manager	City of Edmonton	

Finance & Audit Committee:

This committee acts in an advisory capacity and provides oversight and transparency to the financial management of the SSSF program.The Finance & Audit Committee composed of the following members:

Members	Role	Organization	
Mike Kohl (Chair)	Representative UDI	UDI-ER	
Oliver Zakoc	Director, Financial & Corporate Services	City of Edmonton	
Melanie Cullingham	Finance Manager	City of Edmonton	
Debra Marston	Senior Manager, Capital Drainage Services	EPCOR	
Khalid Aziz	SSSF Program Manager	City of Edmonton	

3.0 Five-Year Construction Plan

The following table provides the summary of proposed major SSSF construction projects for the next five years (2021-2025). The proposed program supports orderly development throughout the City of Edmonton in a cost effective manner using available population and employment projections, as well as input from the development industry. It also strives to meet the important objective of maintaining a positive balance for the SSSF. The locations of the construction projects are shown in Figure 2.

Project	Start Date	Anticipated Completion Date	Budget (Million)
SESS SW1 Pump Station Upgrade	2019	2021	\$3.72
SESS Stage SW4	2015	2021	\$34.40
SESS Stage SA10a	2017	2021	\$36.79
NEST Stage NC2 & NC3 - Phase 2	2017	2022	\$50.04
SESS Stage SW5*	2019	2024	\$32.59

* The size and timing of SW5 is under review because of change in servicing needs. Note: All timings are estimated and subject to change based on funding availability.

4.0 Fund Balance

Based on current projections, the SSSF program is anticipated to be completed by 2059 with a fund balance of zero. The fund is currently in good health and expected to achieve its long term goals. However, there is a potential risk for the fund to go into a small deficit for a limited period in the early 2030s; the committees will monitor and mitigate the situation should it arise.

An Integrated Planning Study conducted by the City in 2017 indicated that various segments need to be expedited in the short to medium term based on the then growth projections. This, along with the new need for corrosion protection of future segments, demonstrated a faster draw down in the Fund than previously expected. In 2020, EPCOR initiated a review of all future segments including consideration of new construction standards, changing sewage generating rates considering water conservation, new techniques for managing inflow/infiltration and revised growth projections.

Based on the current information, the trend analysis indicates there is a risk for the cash flow to enter a negative balance in the next 10 to 15 years. However, any potential deficit will be for a limited time and the fund will eventually recover and stay in good health in the long term. Recommendations from the Financial Options Study will be used in developing strategies to mitigate potential shortfalls.

4.1 Statement of Fund Activities & Balance

The Statement of Fund Activities and Balance for 2020 is shown in Table 2. In addition Figure 3 shows each revenue component as a percentage of the total 2020 revenue. Figure 4 depicts the historical SSSF revenue breakdown, and Figure 5 shows the historical SSSF budgeted and real expenditures.

The SSSF is currently in good financial health and anticipated to fulfill its long term objectives. The Oversight Committee is continuously evaluating the potential risks to ensure the balance remains in the required range.

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Description	2019 Actual	2020 Actual	2020 Budget	2020 Variance
REVENUE				
Sanitary Sewer Trunk Charges - Single/Duplex Revenue	\$7,920,298	\$8,157,142	\$8,298,541	-\$141,399
Sanitary Sewer Trunk Charges - Multi Family Revenue	\$4,775,427	\$3,537,266	\$2,000,441	\$1,536,825
Sanitary Sewer Trunk Charges - Commercial/Industrial Revenue	\$1,472,354	\$1,655,690	\$2,018,655	-\$362,965
Sub-Total	\$14,168,079	\$13,350,098	\$12,317,637	
Expansion Assessment	\$2,914,660	\$2,880,189	\$4,474,621	-\$1,594,432
Utility Contribution	\$1,300,000	\$1,300,000	\$1,300,000	\$0
Interest Earned	\$1,347,147	\$577,049	\$786,213	-\$209,164
Total Revenue	\$19,729,886	\$18,107,336	\$18,878,471	-\$771,135
EXPENDITURES				
NEST NC2 & NC3	\$9,077,982	\$5,787,499	\$6,633,619	-\$846,120
N1 RTC Gate	\$562,443	\$90,816	\$9,000	\$81,816
SESS SA10A	\$8,784,096	\$15,569,703	\$11,082,198	\$4,487,505
SESS SW4	\$3,474,217	\$5,438,304	\$5,084,302	\$354,002
SESS SW5		\$355,383	\$2,542,131	-\$2,186,748
SW1 PS Upgrade	\$15,084	\$462,193	\$2,475,106	-\$2,012,913
Preliminary Studies	\$157,107	\$139,606		
Total Expenditures	\$22,070,929	\$27,843,504	\$27,826,356	-\$122,458
OPENING BALANCE	\$68,661,266	\$66,320,223	\$66,320,223	
Excess/(Deficit) of Revenue ove Expenditures	-\$2,341,043	-\$9,736,168	-\$8,947,885	-\$648,677
Ending Balance	\$66,320,223	\$56,584,055	\$57,372,338	-\$648,677

Table 2 – Statement of Fund Activities and Balance (Ending December 2020)

REVENUE:

Total revenue for 2020 was \$18,107,336 which is lower than the \$19,729,886 collected in 2019.

- Sanitary Sewer Trunk Charge (SSTC) For 2020, SSTC revenues totaled \$13.4 million which is lower by \$0.8 million than the \$14.2 million collected in 2019. Single-family/duplex developments contributed \$8.2 million in 2020 which is \$0.2 million higher than 2019. For the multi-family residential, the total collection this year was \$3.5 million, which is \$1.2 million lower than 2019. The remaining SSTC revenue, \$1.6 million, was collected from commercial, industrial, and institutional development that is near the same as 2019.
- Expansion Assessment (EA) For 2020, the total EA collected was \$2.9 million and nearly equal to the amount collected in 2019.

Total Revenue- \$18.1 million SSTC Revenue- \$13.4 million EA Revenue- \$2.9 million Utility Revenue- \$1.3 million Interest Earned- \$0.6 million

- **Utility Contribution** The Utility Contribution in 2020 was \$1.3 million, consistent with previous years.
- Interest Earned Total interest earned during 2020 was \$0.6 million. The lower rate of return compared to 2019 is due to the highly volatile investment market impacted by the pandemic.

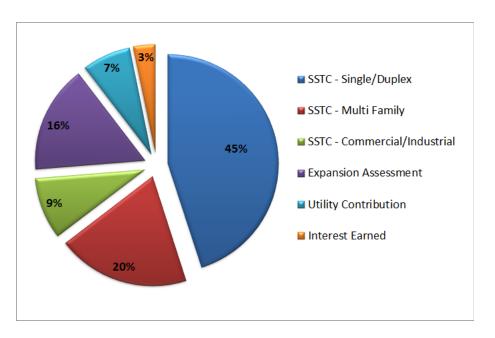


Figure 3: SSSF 2020 Revenue Breakdown

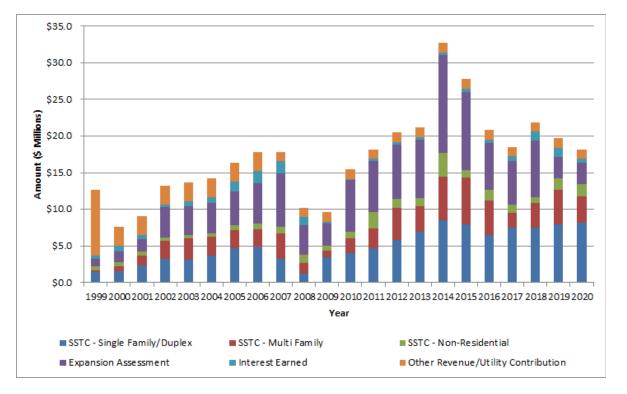


Figure 4: SSSF Historical Revenue Breakdown

EXPENDITURES:

The largest expenditure item in 2020 was \$15.6 million for the construction of SESS Stages SA10a. In addition, \$5.8 million was spent on the construction of NEST Stage NC2 - NC3 Phase 2, while the remainder was mainly spent on SESS Stage SW4, SW1 PS Upgrade and the NEST Stage N1 RTC Gate. Planning studies including SW5 preliminary design, the NEST staging plan and completion of the SSSF Financing Options Study.

As of December 2020, the Fund is committed to completing five projects under construction. The remaining cost for these five projects is \$70.4 million which is to be spent over the next five years. Although the committed cost of \$70.4 million exceeds the current fund balance of \$56.6 million, with the projected annual revenue inflow, the balance will remain positive in the next five years. The complete expenditure projection can be seen in Table 3.

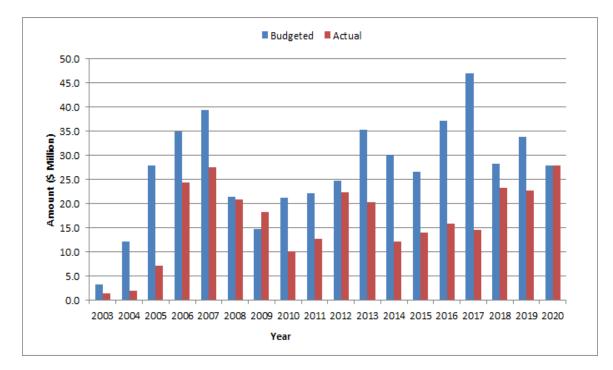


Figure 5: SSSF Historical Expenditures

4.2 Five-Year Cash Flow Projection

Table 3 shows the five-year revenue and expenditure (2021-2025) projections for the SSSF based on the current cash flow model.

Revenues

Opening Balance for 2021 - The SSSF closing reserve balance as of December 31, 2020 was \$56.6 million.

Revenues and Expenditures for 2020 – These are based on actual values recorded.

Interest (2021 – 2025) – The interest rate was assumed at one percent per annum.

Utility Contribution – This amount represents contributions from EPCOR for diversion of sanitary flows from the existing areas to the new trunk system constructed under the SSSF. These lands are located in Mill Woods and Castle Downs. The amount is calculated based on an estimate of the SSTC these lands would have to pay. Based on the results of the lot counts conducted in 2000, EPCOR would make annual contributions of \$2.6 million to the SSSF until 2014. In March 2006, City Council approved the recommendation to change the Utility Contribution amount to \$1.3 million commencing on January 1, 2007. The contributions will be in place until 2023 per the current assessment. **Sanitary Sewer Trunk Charge (SSTC)** – These charges are collected when an application is made for a development permit or sanitary service connection. This charge applies to all new development and redevelopment in the city.

Type of Development	2020 Rates	2021 Rates
Single-family/Duplex Residential	\$1,712/dwelling	\$1,746/dwelling
Secondary, garage & garden suite	\$758/dwelling	\$773/dwelling
Multi-family residential	\$1,222/dwelling	\$1,246/dwelling
Commercial, Industrial & Institutional	\$8,560/ha	\$8,731/ha

The following are the SSTC rates for 2020 and 2021:

Estimated SSTC revenues from 2021 to 2025 were based on the City's current development growth projections.

Expansion Assessment (EA) - This charge is an area-based assessment that is collected at the time of subdivision. The EA applies to those areas of the city that did not have an approved Neighborhood Structure Plan (NSP) before January 1, 1999.

There was a two per cent increase in 2021 revenue rates for both SSTC and EA. The 2020 and 2021 rates are as follows:

Contributing Areas	2020 Rates	2021 Rates
North Edmonton Sanitary Trunk (NEST)	\$24,447/ha	\$24,937/ha
South Edmonton Sanitary Trunk (SESS)	\$24,447/ha	\$24,937/ha
West Edmonton Sanitary Sewer (WESS)	\$30,563/ha	\$31,174/ha

Expenditures

Estimated Construction Costs – Estimates for 2021 to 2025 were based on the updated segment costs provided as a result of recent planning studies.

Table 3 – Five-Year Revenue and Expenditures Projection

	2020 (Actual)	2021	2022	2023	2024	2025
Opening Balance	66.3	56.6	42.5	46.1	53.9	63.5
Total Revenues	18.1	17.9	18.4	19.5	19.7	20.4
Total Expenditures	27.8	32	14.8	11.7	10.1	3.5
Closing Reserve Balance	\$56.60	\$42.50	\$46.10	\$53.90	\$63.50	\$80.40

Construction Costs

	Total 2021 - 2025	2021	2022	2023	2024	2025
SA10a*	10.4	10.4		-	-	-
SW4*	4.9	4.9		-	-	-
SW1 PS*	2.5	2.5		-	-	-
NC2/NC3*	14.2	9	5.2	-	-	-
SW5**	38.4	5.2	9.6	11.4	9.8	2.4
SW6	0.5					0.5
W3-5 incl conn	0.2					0.2
Preliminary Studies	1			0.3	0.3	0.4
Total	\$72.10	\$32.00	\$14.80	\$11.70	\$10.10	\$3.50

* Committed cost for under construction projects

** The size and timing of SW5 is under review because of change in servicing needs.

Note 1: 2022 forecast will be proposed to Council for approval through the budget adjustment process in 2021.

Note 2: All values are in millions of dollars

For more information, visit our website: www.edmonton.ca

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