

THE CITY OF EDMONTON
SANITARY SERVICING STRATEGY FUND



2014 ANNUAL REPORT

June 2015

Prepared by:
City of Edmonton
Financial Services and Utilities Department
Drainage Services Branch

Sanitary Servicing Strategy Fund 2014 Annual Report

MESSAGE FROM THE CHAIR OF THE MANAGEMENT COMMITTEE

Since its inception in 1999, the Sanitary Servicing Strategy (SSS) has been remarkably successful in its mandate to encourage growth and facilitate new developments within the City limits through the Sanitary Servicing Strategy Fund (SSSF). The objectives of this strategy are to meet the challenges of providing sanitary servicing to the new development areas through long term planning and constructing sanitary sewer trunks that will bring sewage from the new development into the existing trunk system, and eventually to the wastewater treatment plant.

This is the sixteenth annual report of the SSSF. The SSSF activities in 2014 included; construction of Stage SA1a tunnel and, detailed design of SA10a and SW4/SW5 in the South Edmonton Sanitary Sewer (SESS) system; finishing works for Stage NL2/NL3/N1 in the North Edmonton Sanitary Trunk (NEST) system; and remaining post construction works of WESS Stages W1, W13 and W14 in the West Edmonton Sanitary Sewer (WESS) system.

The SSSF Management and Operational Committees met three times this year as a combined committee to approve design, construction schedules and budgets for various segments to be undertaken, revenue rates for 2015, and to monitor construction progress and review the financial status of the Fund.

Since the start of the program, about 36.0 km of tunnels and sewers have been constructed to support approximately 65,000 single family lots in addition to other multi-family residential, commercial and industrial developments.

In 2014, the SSSF recorded revenue of \$32.7 million and the total expenditure was \$12.0 million, resulting in an increase of \$20.7 million to the fund. The closing balance at the end of 2014 was \$47.1 million as compared to the 2013 year-end balance of \$26.4 million. The revenues during 2014 were higher than anticipated because of increased development activities which put SSSF in a better financial position to meet the coming needs of development within the City. This year, the expenditures were below forecast mainly due to some delays in two major projects (SA1a and SA10a). The construction of SA10a is still on hold as the developers were not ready to sign the service agreement.

In the next five years, the updated SSSF cash flow model shows a decline in the fund balance. This decline is mainly due to increased project activities in the upcoming years. The focus in 2015 will be to finish; the remaining construction work of SESS Stage SA1a; detailed design and start construction of SESS SW4; detailed design phase of the new interim pump station at the downstream end of existing NEST NC1 storage tunnel, and carry out the proposed WESS Planning Update and SSSF Program Review studies. The last two activities will ensure that implementation schedules for the remaining segments can accommodate the latest growth projections.

Todd Wyman, P. Eng.
Chair, SSSF Management Committee

Sanitary Servicing Strategy Fund
2014 Annual Report

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1.0 PLANNING & CONSTRUCTION ACTIVITIES IN 2014

The following is a summary of the planning and construction activities completed under the Sanitary Servicing Strategy (SSS) in 2014 with some construction photos shown:

North Edmonton Sanitary Trunk (NEST) - Stage NC1- PS & FM

This stage is to construct a new pump station at the downstream end of existing NC1 storage tunnel with a 2.7 km long force main connecting to the downstream NEST NL1 section. This will serve as an interim solution to discharge additional flows to NL1 until NC2 and NC3 segments are constructed. This will also provide a quick solution to the potential risk of basement flooding in the servicing area, and would allow NC2/NC3 to be deferred beyond 2030.

The conceptual design has been completed, while the preliminary design is in progress. Value Engineering workshop was held to determine the most feasible site location for the pump station. The proposed site is owned by the City of Edmonton.

Land procurement will be necessary and may take up to one year (early 2016). Construction is expected to start in April 2016 and will be completed before the end of 2017.

South Edmonton Sanitary Sewer (SESS) – Stage SA1a

SESS Stage SA1a will connect the SW1 pump station at Ellerslie Road and Parsons Road to Stages SA1b & 1c at 91 Street and 9 Avenue. This will allow SESS flow to bypass the South East Regional Trunk Sewer (SERTS), which has limited available capacity. Construction of the 2.3 km long SA1a sanitary sewer was started in 2014. Drainage Services' tunneling crews mobilized in June to start in-house 1 km long tunneling portion. As of December 31, 2014 approximately 400 m of tunnel had been completed. The

construction for the remaining portion of 1.3 km was awarded to Shanghai Construction Group Canada (SCGC). SCGC mobilized in June, and started construction in October. By the year end 2014, SCGC had installed 256 m of tunnel. Construction completion for both; in-house and external sections is scheduled for fall 2015.

South Edmonton Sanitary Sewer (SESS) – Stage SA10a

The SESS Stage SA10a project will include construction of a 3050 mm diameter and a 750 meter long storage tunnel, pump station and force main along 34th Street, south of Sherwood Park Freeway to provide sanitary servicing to the Maple Ridge Industrial Area as well as Southeast Industrial and Pylypow Industrial areas. The total estimated cost of the project is about \$24 M and the SSSF committee has approved expenditures to the end of detailed design.

Drainage Design and Construction is currently reviewing the final detailed design drawings and tender documents.

The original schedule was to start construction in 2013 with the completion in 2015. However, the developers in Maple Ridge Industrial Area have not signed the service agreement, and thus the project is currently on hold.

South Edmonton Sanitary Sewer (SESS) – Stage SW4/SW5

SESS SW4/5 is a 2940 mm diameter, 3.4 km sanitary sewer that will provide servicing for additional growth in the Windermere area and further west. At the downstream end, it will tie into the existing SW3 sewer at Whitemud Creek. The preliminary design for SW4/5 was finalized in 2014. Detailed design subsequently commenced, with a geotechnical borehole investigation completed along the updated SW4/5 alignment. The final alignment for SW4 runs from Whitemud Creek north of Ellerslie Road, along the Anthony Henday Transportation Utility Corridor to Windermere Boulevard and 156 Street. SW5 continues along Windermere Boulevard to the Ambleside temporary pump station. Construction of SW4 will be completed through in-house tunneling crews. The construction is planned to start in 2015 and be completed in spring 2017. The total estimated construction cost for SW4/SW5 is about \$51.0 million.



Figure 1. SESS Stage SA1- Launching of the Tunnel Boring Machine (TBM)

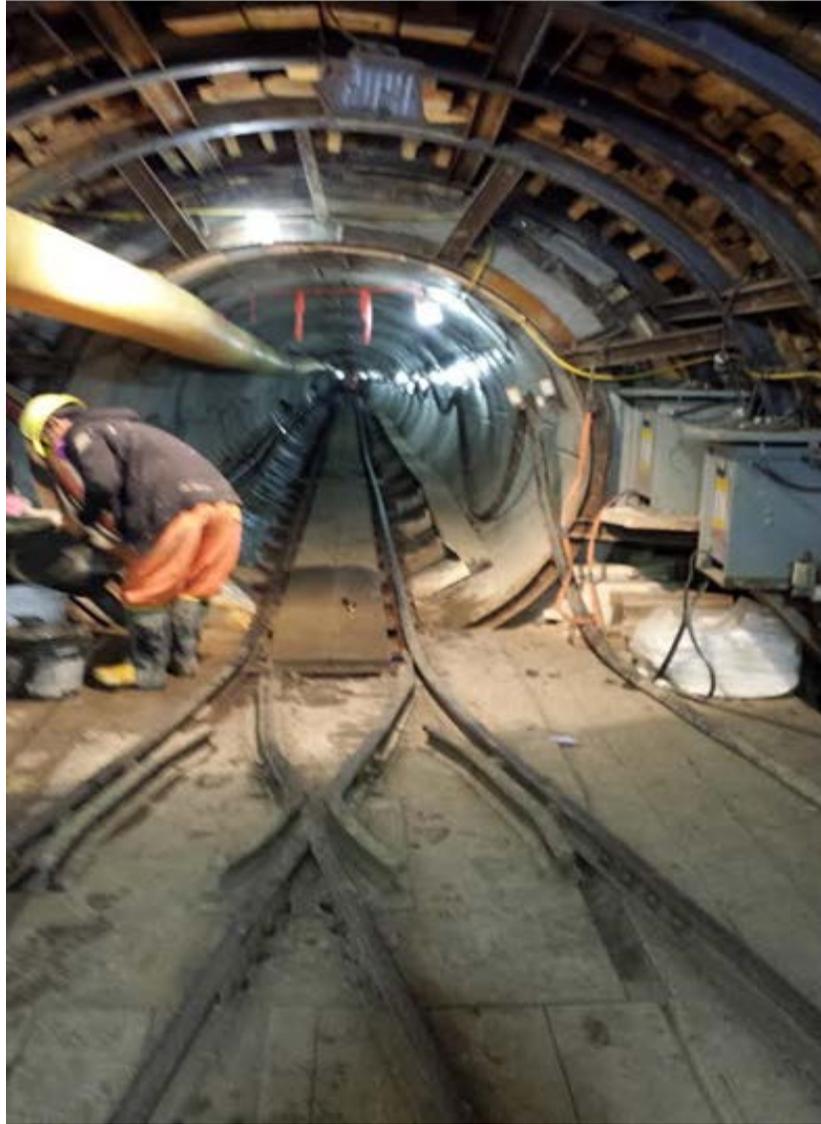


Figure 2. SESS Stage SA1 – TBM Excavation



Figure 3. SESS SA1a- TBM head breaking through the receiving shaft at MH 102



Figure 4. SESS SA1a – Pipe Jacking station in the working shaft at MH 103



Figure 5. SESS SA1a – Completed portion of Sa1a tunnel

2.0 MANAGEMENT AND OPERATIONAL COMMITTEES

The role of the **SSSF Management Committee** is to make decisions regarding revenues, expenditures and schedules that best meet the long-range plans of all stakeholders. The Committee has six members:

Chair: Director of Drainage Planning – Todd Wyman
Members: UDI Representative – Dave Kinders
UDI Representative – Wade Zwicker
Drainage Design & Construction – Clement Yong
Senior Planner of Current Planning – Tim Ford
General Supervisor of Infrastructure Planning – Fernando Sacluti (Secretary & Non-voting Member)

The Management Committee met three times in 2014 as a joint session with the SSSF Operational Committee. Some of the major decisions made are listed below:

- ◆ Approved initial budget of \$500,000 for SA10a to complete the detailed design, which was expected to be completed in July, 2014.
- ◆ Approved an expenditure amount of \$691,000 for NC1 Pump Station & Force main to cover costs for conceptual through detailed design.
- ◆ Approved motion to cut off the fund activity history and projection time frame from year 1999 to 2020 as shown in the 2013 annual report.
- ◆ Approved motion to set up 2015 SSSF rates with an initial 5% increase on top of the overall annual inflation of 4.7% calculated based on the most recent committee resolution to overcome expected fund shortfall. The final rate increase from year 2014 to 2015 is 9.7% in total.
- ◆ Approved the first three planned consulting services with a total amount of \$ 235,000 consisting of the following; the SSSF Program review (\$200,000), Financial Model Update (\$10,000), and Advisory Services (\$25,000) to move forward to assessing the financial status of the program in relation to current and remaining developments.

The **SSSF Operational Committee** reviews the need for new sanitary trunk facilities under the Sanitary Servicing Strategy regarding timing and capacity requirements, provides recommendations to, and flags relevant issues for consideration by the SSSF Management Committee. The Committee is made up of seven members:

Chair: General Supervisor of Strategic Planning – Fernando Sacluti
Members: Director of Drainage Construction– James Tan
UDI Representative – Leo Levasseur
UDI Representative – George Cantalini
Director of Development Coordination, Sustainable Development – Orest Gowda
Finance Manager, Drainage Services – Steve Cheung
Senior Engineer, Drainage Planning– Khalid Aziz (Joined the City of Edmonton in December, 2014)

The Operational Committee met three times in 2014 as a joint session with the SSSF Management Committee and achieved some of the following major accomplishments:

- ◆ Recommended initial expenditure for SA10a, for the completion of detailed design in the amount of \$500,000 which was expected to be completed in July, 2014.
- ◆ Recommended the \$691,000 initial expenditure for NC1 Pump Station & Force main to cover costs for conceptual through detailed design.
- ◆ Recommended the first three planned consulting services with a total amount of \$ 235,000 consisting of the following; the SSSF Program review (\$200,000), Financial Model Update (\$10,000), and Advisory Services (\$25,000) to move forward in assessing the financial status of the program in relation to current and remaining developments.
- ◆ Recommended a motion for Drainage Design & Construction to proceed with the detailed design of SESS SW4 & SW5 for an initial design budget of \$500,000, and to continue with the construction of the work and additional designs during construction as necessary, subject to a construction phase budget that has yet to be further approved.
- ◆ Recommended the WESS update planning study.

3.0 FIVE YEAR CONSTRUCTION PLAN

The following sections outline the proposed major SSS trunk construction program for the next five years (2015-2019). The proposed program aims to support orderly development throughout the City of Edmonton in a cost effective manner, using the latest population and employment projections available to the City, as well as input from the development industry. It also strives to meet the important objective of maintaining a positive balance for the Fund. The locations of the construction projects are shown in the attached map (Figure 6) on page 12.

2015 – South Edmonton Sanitary Sewer (SESS) Stage SA1a

SA1a construction will be completed in 2015. It is anticipated that the project will be completed within its \$27.5 million budget.

2015 – South Edmonton Sanitary Sewer (SESS) Stage SA10a

This section of SESS will be constructed along 34 Street south of 76 Avenue. It will provide sanitary servicing and wet weather storage to the early stages of development in the Maple Ridge Industrial Area. The project will include a pump station at 76 Avenue and 34 Street, with an interim discharge to the existing 74 Avenue sanitary sewer. Preliminary/detailed design work started in 2012 and is 95% completed. The land acquisition process for the property housing the future pump station is at subdivision stage. The construction is on hold as the developers were not ready to sign the service agreement.

2015 to 2017 – South Edmonton Sanitary Sewer (SESS) Stages SW4 & SW5

Detailed design of SW4/5 will be completed in April 2015. The early part of 2015 will be dedicated to completing engineering drawings, obtaining access approvals and ensuring power and services are available to the working site near the SW3 tie in by Whitemud Creek. Per the current plan, Drainage Services' construction crews will mobilize the site in June to construct the working shaft and hand tunnel the front undercut and tail tunnel. TBM tunneling will begin in December 2015. SW4 construction will continue through 2016 and be completed in spring 2017. SW4 will be commissioned by mid-2017. SW5 will be constructed immediately following completion of SW4, with construction completion planned for fall 2018.

2015 to 2017 – North Edmonton Sanitary Trunk (NEST) Stage NC1- PS1 & FM

Conceptual design for this stage was completed in 2014 and currently in preliminary design stage. Detailed design is expected to start in May 2015 and the construction to begin in April 2016. The project is expected to be completed before the end of 2017.

2015 – WESS Functional Plan Review

The WESS Functional Plan review will be carried out in 2015 to make certain that implementation schedules can accommodate the latest growth projections in the remaining WESS servicing area, and to ensure sufficient funds will be available to support the new required segments. As of March 2015, the Terms of Reference (TOR) and Request for Proposal (RFP) for the WESS Planning Update Study have been sent out to prospective consultants who will do the work. Assessment of the proponents is currently on process and the awarded consultant is expected to start the study in April 15, 2015 and be completed by September 15, 2015.

2016 – North Edmonton Sanitary Trunk (NEST) Stage N1 RTC

The N1 RTC gate is scheduled to be installed at 153 Avenue and Manning Freeway location in 2016. Installation of the RTC gates is required when flows from the 66 Street North Tunnel and from NL1 are coming. There is a need to study the pump decommissioning plan at NL1 before diverting the flow to the NEST tunnel.

2017 to 2019 - West Edmonton Sanitary Sewer (WESS) Stage W3, W4 & W5

These segments when connected together would ultimately increase the conveyance capacity of the sewer network from West Edmonton, through downtown and to the Gold Bar Waste Water Treatment Plant (GBWWTP). Construction of a 2340 mm, 2.6 km long tunnel along 142 Street to 125 Street is currently scheduled to begin in 2017 and is expected to provide sufficient storage to serve new developments.

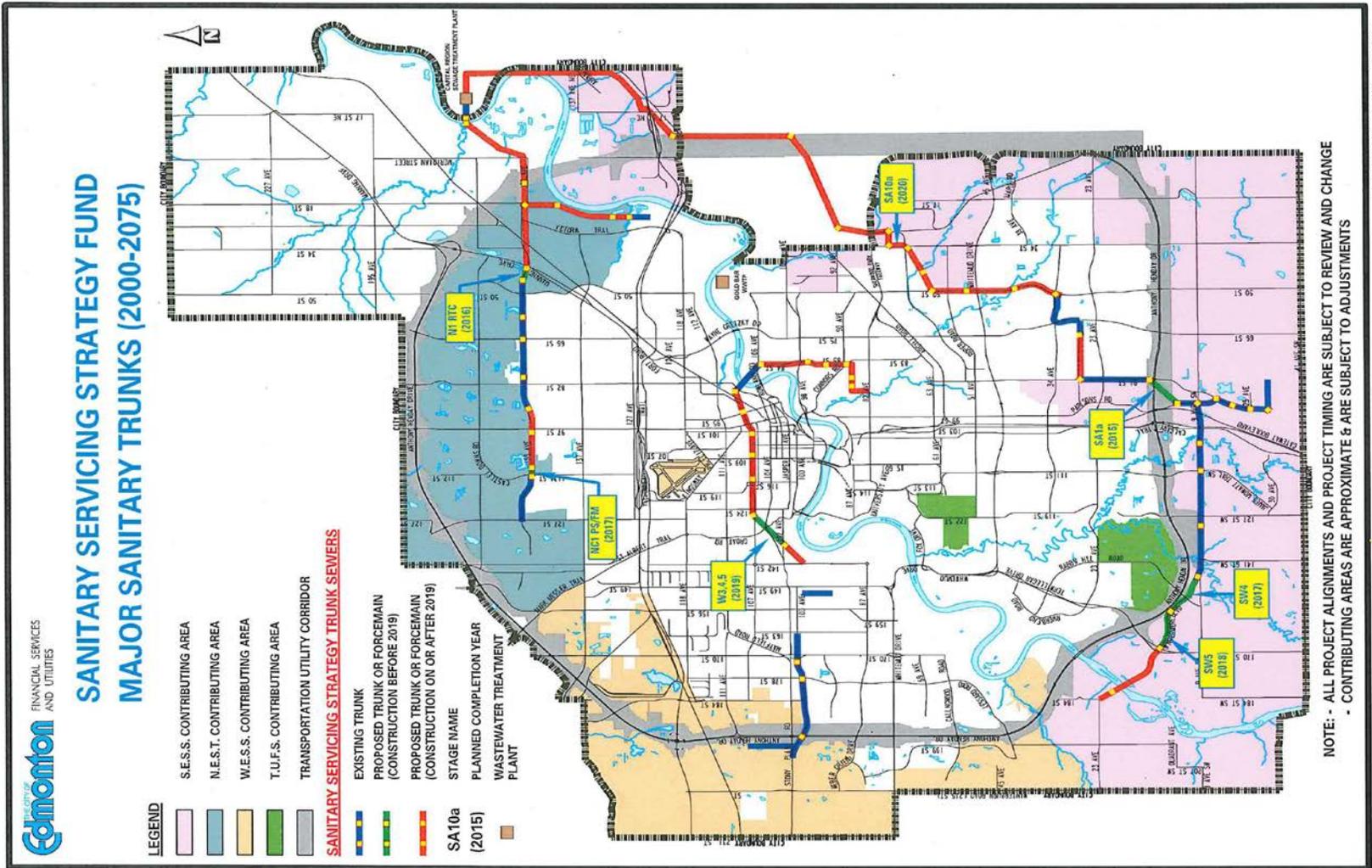


Figure 6

4.0 FUND BALANCE

4.1 TWENTY FIVE YEAR HISTORY & PROJECTION

The SSSF Financial Model was updated in 2014 to reflect the updated revenue rates and estimated project costs based on the applied current available inflation factors. Some major cost increases and adjusted construction schedules have been identified for projects that will be constructed within the next 5 years (2015-2019). The fund balance will remain in a positive position throughout these years due to higher than expected revenues added to the fund balance this year. Figure 7 on page 14 shows the twenty five year fund balance history and projection.

The following general assumptions have been adopted in the Financial Model:

- a) Revenue rates for 2015 were based on the total 9.7% increase from 2014 as approved by the SSSF committee.
- b) Revenue rates for 2016 and onward were based on the applied available inflation factors used by Finance capital model which is 3.0 % compounded annually until 2024.
- c) Annual inflation rates were also based on the above inflation factors.
- d) Annual interest rate for the fund is assumed to be 2.0% during the next 25 years.
- e) Population variables and other technical assumptions were based on the latest 2011 version of the financial model. Update of the model is expected to be done by mid of this year.

During the last September 2014 SSSF Joint Committee meeting, the 2015 SSSF annual rates were ratified by the committee and sent for bylaw approval by City Council. The recommended percentage increase to be used to determine 2015 SSSF rates effective January 1, 2015 was 9.7% in total; (i.e. initial 5% increase on top of the calculated 4.7% annual inflationary increase). The recommended SSSF Program Review in 2015 will examine various components of the strategy and will evaluate the financial aspect of the program in relation to remaining future developments.

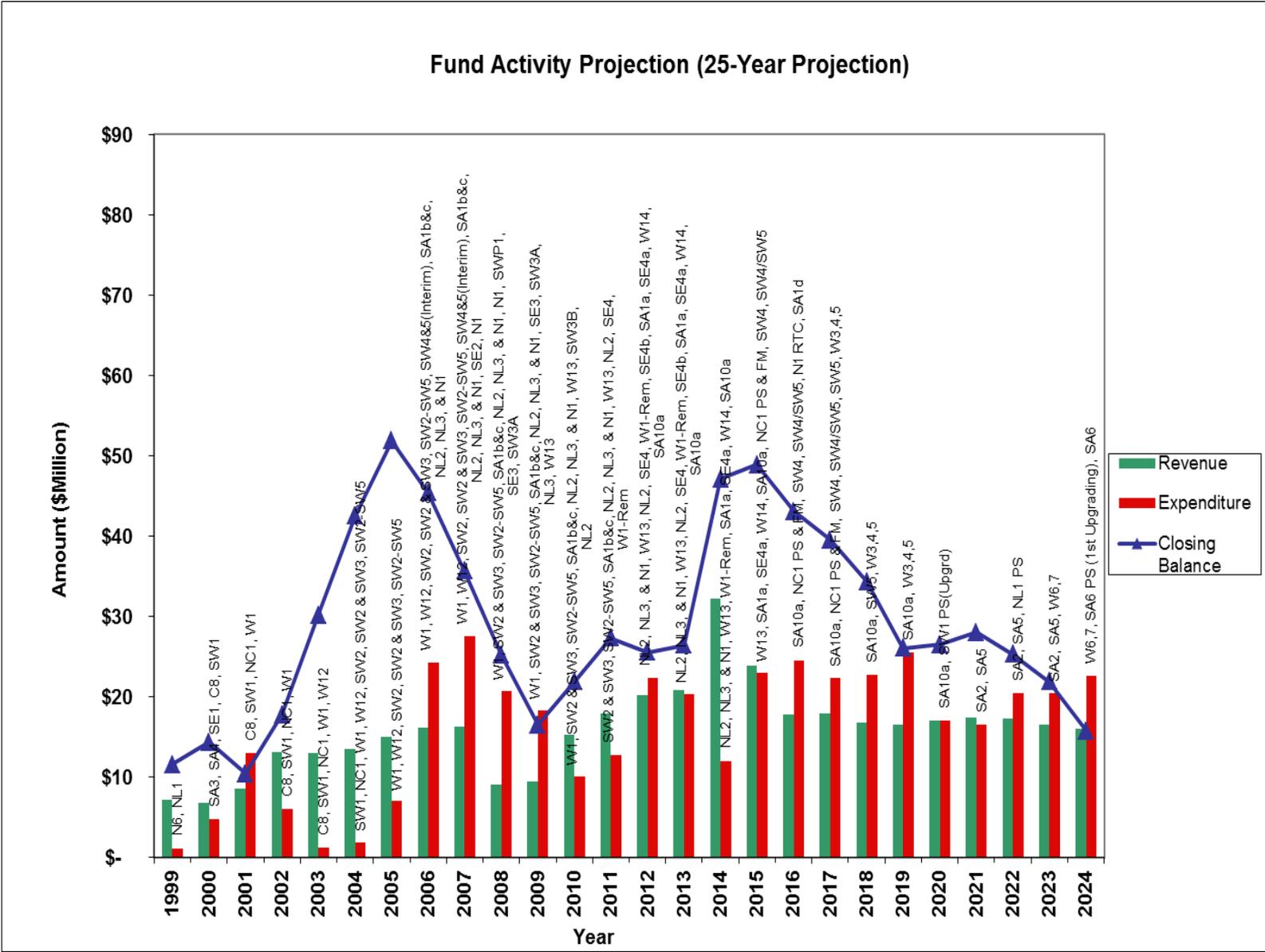


Figure 7

4.2 FIVE YEAR PROJECTION

Table 1 on page 17 shows the five-year revenues and expenditures projection (2015-2019) for the fund based on the latest information available.

REVENUES

Opening Balance for 2015 – The SSSF cash balance as of December 31, 2014 is \$47.1 M.

Interest (2015-2019) – Interest rates used were 2.0% per annum based on the estimated mid-year balance.

Utility Contribution – This amount represents contributions from the Sanitary Utility for diversion of sanitary flows from serviced City lands 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 Sanitary Sewer Trunk Charge (SSTC) these lands would have to pay. Based on results of the lot counts conducted in 2000, the Sanitary Utility would make annual contributions of \$2.6 million to the SSSF until 2014. In March 2006, the City Council approved the recommendation to change the Utility Contribution amount to \$1.3 million for 17 more years commencing on January 1, 2007.

Sanitary Sewer Trunk Charge (SSTC) – The SSTC is collected when an application is made for a development permit or sanitary service connection. This charge applies to all new and re-developments in the City. Rates for 2015 were increased by 9.7% from 2014. The following are the SSTC rates for 2014 and 2015:

<u>Type of development</u>	<u>2014</u>	<u>2015</u>
Single-family/Duplex Residential	\$1,304/dwelling	\$1,430/dwelling
Secondary, garage & garden suite	\$ 577/dwelling	\$ 633/dwelling
Multi-family Residential	\$ 931/dwelling	\$1,021/dwelling
Commercial, Industrial, Institutional	\$ 6,520/ha	\$7,152/ha

Expansion Assessment (EA) – The EA is an area-based assessment that is collected at the time of subdivision, development permit application, or sanitary service connection application. The EA applies to those areas of the City that did not have an approved Neighborhood Structure Plan (NSP) before January 1, 1999.

The 2015 EA rates were increased by 9.7% from 2014. The 2014 and 2015 rates for EA are as follows:

<u>Contributing Area</u>	<u>2014</u>	<u>2015</u>
North Edmonton Sanitary Trunk (NEST)	\$18,620/ha	\$20,426/ha
South Edmonton Sanitary Sewer (SESS)	\$18,620/ha	\$20,426/ha
Terwillegar and University Farms (TUFS)	\$18,620/ha	\$20,426/ha
West Edmonton Sanitary Sewer (WESS)	\$23,278/ha	\$25,536/ha

EXPENDITURES

Estimated Construction Costs – Construction cost estimates for the 2015 to 2019 time frame were based on the latest estimated cost and timing as a result of the completion of the functional reviews for NEST and SESS.

SANITARY SERVICING STRATEGY FUND-5 YEAR PROJECTION

	2014 Actual	2015	2016	2017	2018	2019
Opening Balance	\$ 26,423,774	\$ 47,114,726	\$ 48,934,975	\$ 43,092,218	\$ 39,554,620	\$ 34,350,185
Sanitary Sewer Trunk Charge	17,741,929	13,907,162	9,154,474	9,369,458	9,626,054	9,167,118
Expansion Assessment	13,250,883	8,670,100	7,349,609	7,284,658	5,896,780	6,121,316
Sanitary Utility Contribution	1,300,000	1,300,000	1,300,000	1,300,000	1,300,000	1,300,000
Interest earned	412,935	950,987	911,160	818,286	731,731	597,848
Total Revenues	32,705,747	24,828,249	18,715,243	18,772,402	17,554,565	17,186,282
Estimated Construction Costs	(11,638,502)	(22,247,000)	(24,058,000)	(21,810,000)	(22,259,000)	(25,004,000)
Preliminary Studies	(376,293)	(761,000)	(500,000)	(500,000)	(500,000)	(500,000)
Total Expenditures	(12,014,795)	(23,008,000)	(24,558,000)	(22,310,000)	(22,759,000)	(25,504,000)
Closing Reserve Balance	\$ 47,114,726	\$ 48,934,975	\$ 43,092,218	\$ 39,554,620	\$ 34,350,185	\$ 26,032,467

Construction Costs (Nominal Dollars)

	Total 2015-2019	2015	2016	2017	2018	2019
NC1 PS1&FM	12,000,000	568,000	5,051,393	6,380,607	-	-
SE4a	31,000	31,000	-	-	-	-
W13	65,000	65,000	-	-	-	-
W14	23,000	23,000	-	-	-	-
SA10a	11,658,168	40,000	-	-	-	11,618,168
SA1a	16,170,423	16,170,423	-	-	-	-
SA1d	3,500,000	-	3,500,000	-	-	-
SW4	30,156,184	5,349,577	14,806,607	10,000,000	-	-
SW5	21,222,230	-	-	4,512,328	16,709,902	-
N1 RTC	700,000	-	700,000	-	-	-
W3,4,5	19,851,995	-	-	917,065	5,549,098	13,385,832
Total	\$ 115,378,000	\$ 22,247,000	\$ 24,058,000	\$ 21,810,000	\$ 22,259,000	\$ 25,004,000

Table 1- Five Year Revenues and Expenditures Projection

4.3 STATEMENT OF FUND ACTIVITIES AND BALANCE

The Statement of Fund Activities and Balance for 2014 are shown on Table 2 on page 20. This table highlights the actual revenues and expenditures for both the 2013 and 2014 years, with emphasis on the 2014 budget and the resulting variances. Figure 8 on page 21 shows each revenue component as a percentage of the total revenues for 2014, while Figure 9 on page 22 indicates the yearly SSSF revenue breakdown. For the historical SSSF expenditures, Figure 10 on page 23 shows the yearly project expenses from when the program started until the current reporting year.

REVENUES

Total revenue for 2014 was \$32.7 M which is almost \$12.0 M higher than the amount collected in 2013 (\$21.2 M).

- ◆ **Sanitary Sewer Trunk Charge (SSTC)** – For 2014, the total SSTC revenue collected was \$17.7 M compared with the 2013 SSTC collection of \$11.6 M. For this year, single-family/duplex developments continue to contribute more than the multi-family developments, with the respective revenues being \$8.4 M versus \$ 5.9 M. This is similar to the situation in 2013 when the single-family/duplex contribution was \$6.9 M versus the multi-family total of \$3.5 M. The remaining 2014 SSTC revenues, \$3.4 M, came from commercial, industrial, and institutional sectors, which is bigger than the \$1.1 M collected in 2013.
- ◆ **Expansion Assessment (EA)** - For 2014, the total EA collected was \$13.3 M, higher than the \$7.9 M collected in 2013.
- ◆ **Utility Contribution** – Utility contribution in 2014 was \$1.3 M which is same as in the past years.
- ◆ **Interest Earned** – Total interest earned in 2014 was \$0.41 M, compared to \$0.31 M earned in 2013.

EXPENDITURES

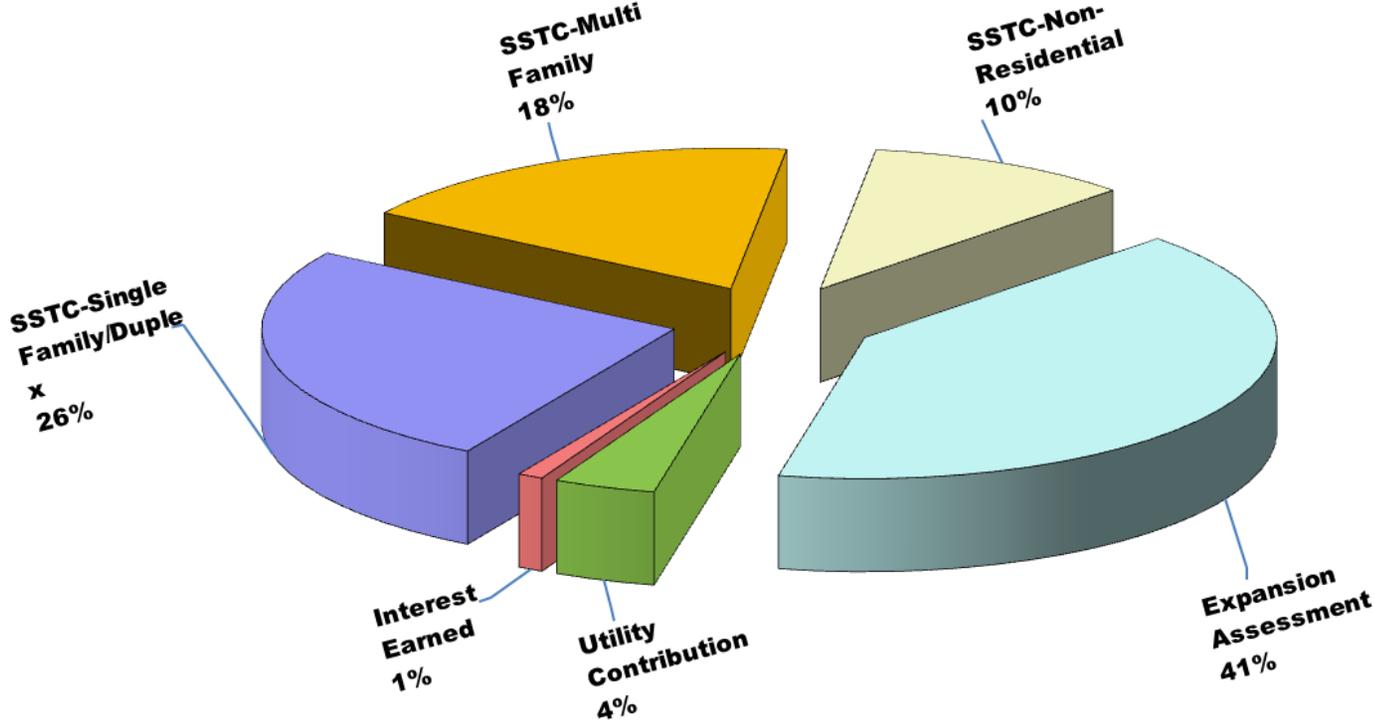
The largest single item of expenditure in 2014 was \$9.6 M for the construction of both the in-house and the contracted portion of SESS SA1a. Another \$1.58 M was spent for the remaining works of WESS W13 and W14, while the rest were spent for the completion of detailed design works for SA10a, and for the SESS and NEST planning update studies.

Sanitary Servicing Strategy Fund
Statement of Fund Activities and Balance
For the Period Ending December 31, 2014

	2013 Actual	2014 Actual	2014 Budget	2014 Variance
REVENUES				
Sanitary sewer trunk charge - single/duplex revenue	6,942,756	8,447,473	8,709,062	(261,589)
Sanitary sewer trunk charge - multi family revenue	3,520,757	5,949,671	5,676,960	272,711
Sanitary sewer trunk charge - commercial/industrial/institutional revenue	1,120,089	3,363,639	4,079,087	(715,448)
Rebate	-	(18,853)	-	(18,853)
Expansion assessment	7,965,727	13,250,883	7,879,054	5,371,829
Sanitary Utility Contribution	1,300,000	1,300,000	1,300,000	-
Interest earned	312,419	412,935	344,856	68,079
	21,161,748	32,705,748	27,989,019	4,716,729
EXPENDITURES				
NEST Stage NL2 & NL3	81,772	8,966	-	(8,966)
WESS W14	11,728,319	765,861	1,420,258	654,397
SESS SE4a	506,457	-	30,980	30,980
SESS SE4b	314,979	-	-	-
WESS W1 (Old Project)	480	12,284	-	(12,284)
WESS W13	4,948,264	814,057	859,813	45,756
Preliminary Studies	504,011	376,293	792,778	416,485
SESS SA10a	480,451	462,872	11,862,765	11,399,893
SESS SA1a	1,715,358	9,574,462	15,762,084	6,187,622
	\$ 20,280,091.00	\$ 12,014,795.00	\$ 30,728,678.00	\$ 18,713,883.00
Excess of Revenues over Expenditures	\$ 881,657.00	\$ 20,690,953.00	\$ (2,739,659.00)	\$ 23,430,612.00
Opening Balance	\$ 25,542,117.00	\$ 26,423,774.00	\$ 26,423,774.00	\$ -
Excess of Revenues over Expenditures	\$ 881,657.00	\$ 20,690,953.00	\$ (2,739,659.00)	\$ 23,430,612.00
Ending Balance	\$ 26,423,774.00	\$ 47,114,727.00	\$ 23,684,115.00	\$ 23,430,612.00

Table 2-Statement of Fund Activities and Balance

2014 SSSF REVENUES (\$32.7 M)



■ SSTC - Single Family/Duplex	■ SSTC - Multi Family	■ SSTC - Non-Residential
■ Expansion Assessment	■ Utility Contribution	■ Interest Earned

Figure 8

SSSF REVENUE BREAKDOWN

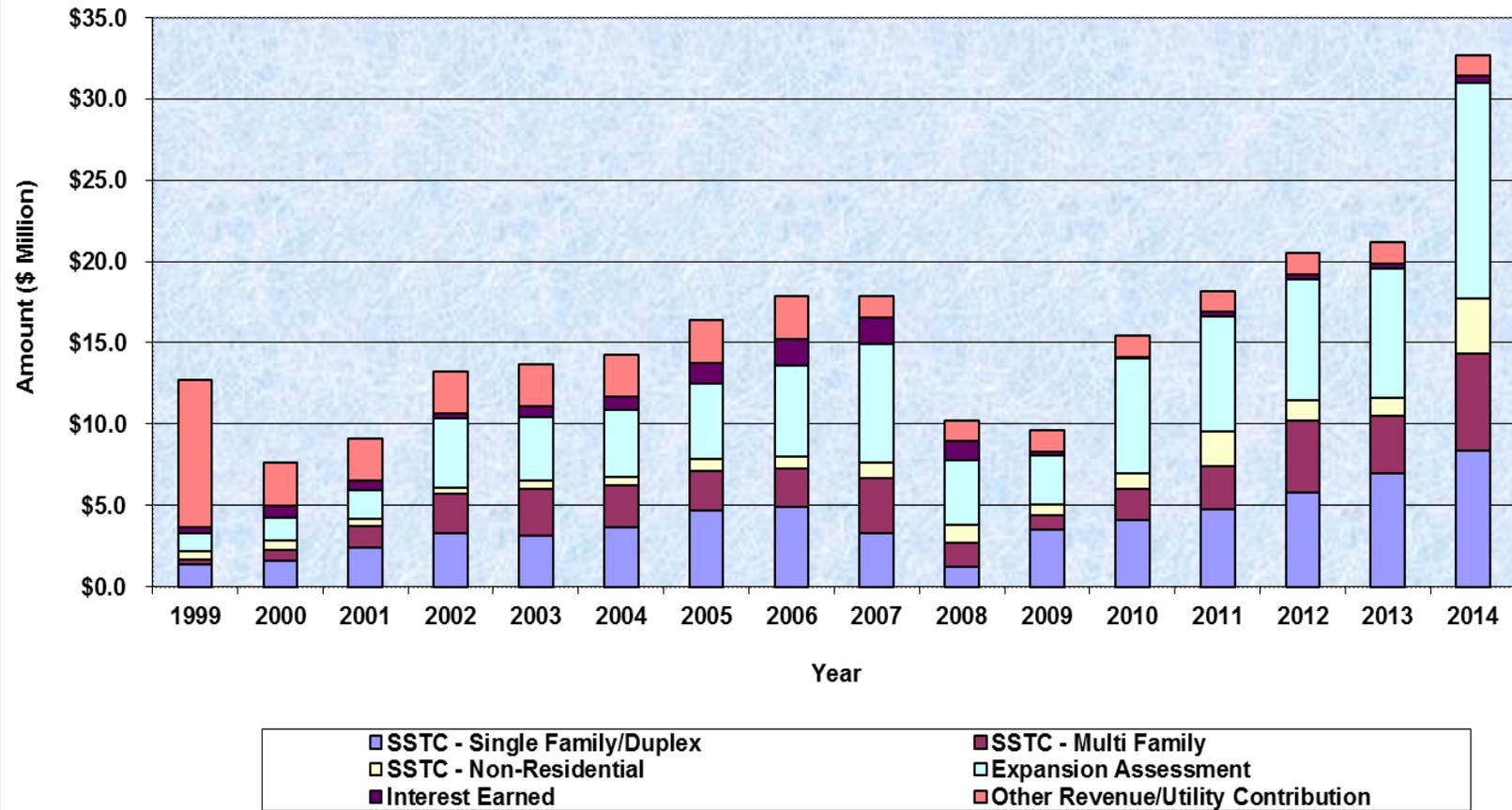


Figure 9

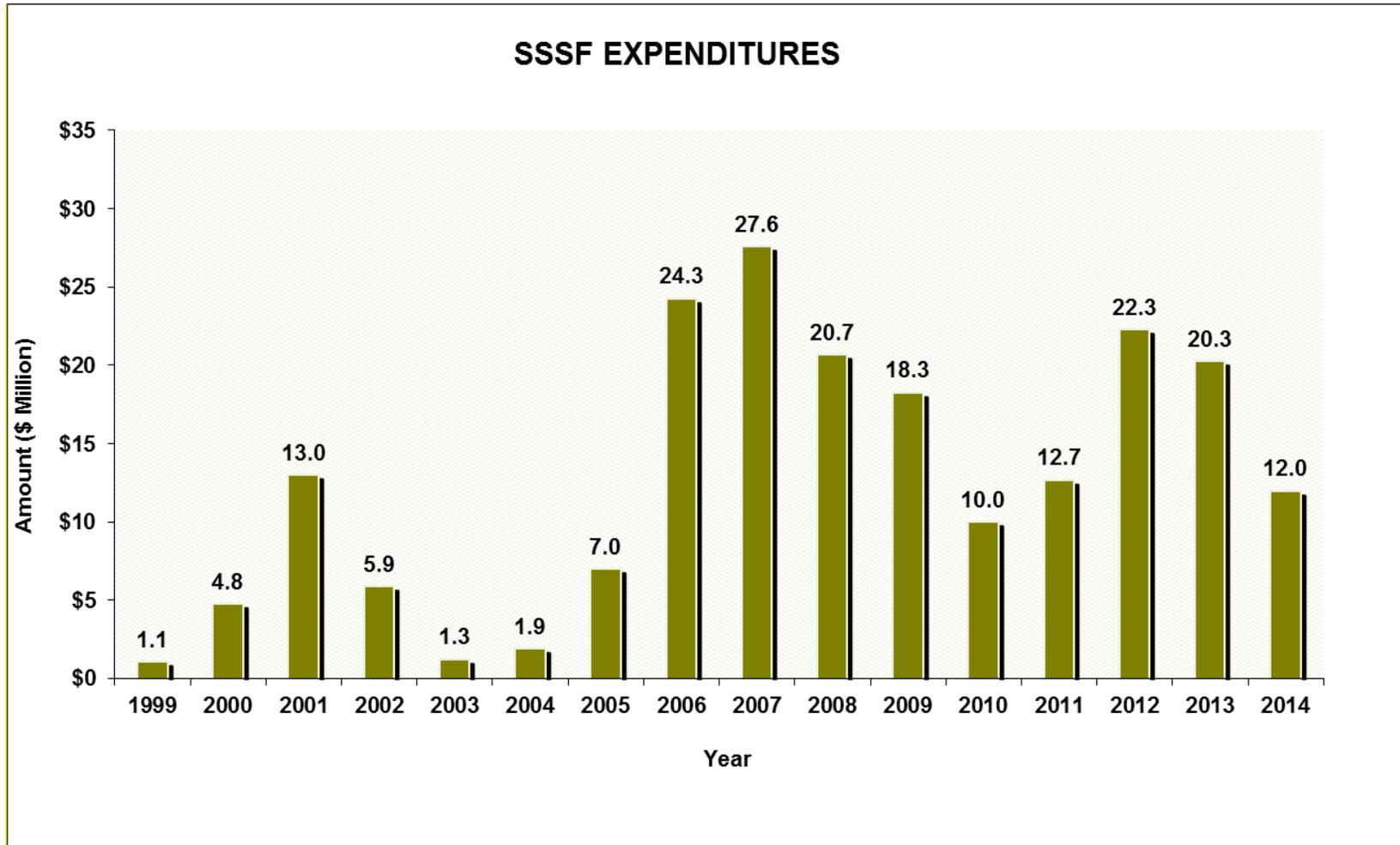


Figure 10

For more information, please:

Visit our website:

www.edmonton.ca/drainage

Inquiries may also be directed to:

[The City of Edmonton](#)

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