

Minutes – Standing Policy Committee on Finance – July 6, 2017

REPORTS

**Item No. 6 South End Sewage Treatment Plant (SEWPCC) Upgrading and
Expansion Financial Status Report No. 14 for the Period from
February 1, 2017 to April 30, 2017**

STANDING COMMITTEE DECISION:

The Standing Policy Committee on Finance concurred in the recommendation of the Winnipeg Public Service and received the report as information.

Minutes – Standing Policy Committee on Finance – July 6, 2017

DECISION MAKING HISTORY:

Moved by Councillor Lukes,

That the recommendation of the Winnipeg Public Service be concurred in.

Carried

ADMINISTRATIVE REPORT

Title: SOUTH END SEWAGE TREATMENT PLANT (SEWPCC) UPGRADING AND EXPANSION FINANCIAL STATUS REPORT NO. 14 FOR THE PERIOD FROM FEBRUARY 1, 2017 TO APRIL 30, 2017

Critical Path: The Standing Policy Committee on Finance

AUTHORIZATION

Author	Department Head	CFO	CAO
G.K. Patton, P. Eng., Manager of Engineering Services	M. L. Geer, CPA, CA Director, Water and Waste Department	M. Ruta	D. McNeil

EXECUTIVE SUMMARY

This report identifies the financial status and significant events for the SEWPCC Upgrading and Expansion Project for the period February 1, 2017 to April 30, 2017. The project has proceeded on a fast-track basis with construction contracts proceeding completion of the design in order to meet provincial licensing requirements. The detailed design is now complete and a revised cost estimate has been prepared. Although within the Class 3 estimate accuracy range, the revised cost estimate now indicates a potential over approved budget situation of approximately \$37 million. The last and largest contract is currently out for tender until mid-July and the bid submissions will determine the actual budget situation.

RECOMMENDATIONS

That this report be received as information.

REASON FOR THE REPORT

Administrative Directive No. FM-004 requires quarterly reporting to the Standing Committee on Finance.

IMPLICATIONS OF THE RECOMMENDATIONS

There are no implications associated with receiving this report as information.

HISTORY / DISCUSSION

DISCUSSION:

1. THE PROJECT

The goal of this project is to expand the capacity of the SEWPCC for expected 2031 flows and upgrade the process to meet new effluent limits for nitrogen and phosphorous. The project design is based on the lowest life cycle cost (Net Present Value, or NPV). In addition, the plant must operate continuously during the work and meet current effluent limits to the greatest extent possible.

The project budget includes the following Project Identifications:

Project ID	Project Year	Adopted Budget
20320002EL ¹	2002	\$ 222,752
2032000207 ¹	2007	\$ 10,695,000
203210002B	2012-2015	\$324,682,248
Total Project Budget		\$335,600,000

¹Does not appear in the Capital Expenditures Monthly Report as the funds have been expended and it is designated as a closed Project ID.

The Executive Project Sponsor is the Director of Water and Waste. The Project Manager is Neil Harrington, P. Eng.

2. MAJOR CAPITAL PROJECT STEERING COMMITTEE

Administrative policy for projects with capital cost exceeding \$20 million requires formation of Major Capital Project Steering Committee. This threshold was approved by Council on October 28, 2015. Also included in the Council Approval was that the threshold be adjusted for construction inflation on an annual basis. Per Appendix 6 in the 2017 Capital Budget Book, the threshold for 2017 is \$21 million. The Committee has been formed and its members are:

Doug McNeil, Chief Administrative Officer
Georges Chartier, Chief Asset and Project Management Officer
Maira Geer, Director of Water and Waste
Lucy Szkwarek, Acting Manager of Finance and Administration, Water and Waste
Jackie Veilleux, Project Director Winnipeg Sewage Treatment Program, Water and Waste

The Committee has reviewed this report and recommended that it be sent to the Standing Policy Committee on Finance.

3. RISKS AND RISK MITIGATION STRATEGIES

The project has proceeded on a fast-track basis with construction contracts proceeding completion of the design. The detailed design is now complete with the largest and last construction contract, Contract 4 now issued for tender. The cost estimate for Contract 4 (C4), which has an identified accuracy range of -10% to +10% is higher than the project allocation for this work. The current project budget of \$335.6 million was based on a Class 3 cost estimate which had an AACE expected accuracy range of -20% to +30% or \$268.5 million to \$436.3 million.

An ongoing risk management strategy has been implemented for the project encompassing a proactive process of identifying and assessing project risk, defining appropriate risk handling strategies and plans, and monitoring those actions to completion.

Formal risk and opportunity analyses of the project are scheduled to be performed by the WSTP, the design consultant and key City stakeholders at the following project milestones:

- End of Project Definition design stage – this analysis has been completed
- End of Preliminary Design phase – this analysis has been completed
- At 60% and 90% completion of Detailed Design – these analyses have been completed
- Prior to the start of construction and quarterly during construction – Ongoing, ninth construction risk review scheduled for May 25, 2017
- Prior to the start of, and again at the end of, commissioning

A project risk register is being kept throughout the project and is updated by the above formal analysis. Global project risks of significance include:

Risk Matrix¹	
Risk Statement and Explanation	Mitigation
Rushed design to meet schedule resulting in a lower design quality and a higher frequency of contract change orders.	Detailed review of the 100% design and bid opportunity document was performed using both internal and external resources.
Construction Schedule was aggressive and actual construction takes significantly longer than planned.	3rd party review of project construction schedule was undertaken. Recommended schedule extension was implemented. Detailed monitoring of the construction contract progress implemented.
Unknown existing conditions are encountered during construction causing schedule delays and additional costs. Internal condition of HPO Reactors is unknown.	Shutdown and interior inspection of existing HPO Reactors scheduled for the fall of 2017.
During construction plant operations could be affected by construction tasks and construction work could be impacted by ongoing operational needs.	Detailed construction sequencing and commissioning plans developed. Detailed control system migration plan developed. These form part of the C4 bid opportunity documents.
Limited countrywide contractor awareness of Contract C4 bid opportunity resulting in limited number of bidders.	Advance notice of C4 bid opportunity was posted on Materials Management website and MERX. C4 Bid Opportunity is currently posted on Materials Management Website and MERX.

¹Risk Matrix is arranged vertically from higher to lower assessed risk

4. CHANGES FROM LAST REPORT

RFP 682-2012 (Professional Consulting Services)

- Detailed design is complete
 - Bid Opportunity 976-2016 (Contract 4) has been released for tender by Materials Management. The Bid Opportunity is available on the Materials Management website and the MERX website, Canada’s leading electronic tendering service.

- The detailed review by the Winnipeg Sewage Treatment Program of the Bid Opportunity documents prior to issuance, in conjunction with City of Winnipeg summer prorogued period impacting award approval, has slipped the anticipated construction start date for the C4 contract from July to October 2017.
- Construction Management/Contract Administration
The Consultant continues to provide temporary site Construction Manager/Contract Administrator services under the Optional Contract Administration Services of the assignment.
- The Program Team is preparing an Administrative Report for acquiring longer term site Construction Management/Contract Administration services. The report is expected to be finalized once Bid Opportunity 976-2016 has been awarded and the Contractor's schedule received.

RFP 871-2013 (Supply and Delivery of Free-Moving Media)

- The Contract Administrator has issued a Contemplated Change Order (CCN) to modify the delivery schedule to align with the construction schedule.

RFP 873-2013 (Supply and Delivery of High Rate Clarification Equipment)

- Contractor manufacturing is in progress.
- The Contract Administrator has issued a CCN to modify the delivery schedule to align with the construction schedule.

Reference 1089-2015 (Single Source Negotiation for Manitoba Hydro Works Associated with the South End Sewage Treatment Plant (SEWPCC) Nutrient Removal/Expansion Project)

- Planning, Property and Development has approved an easement request made by Manitoba Hydro to run a portion of the 66kV power line on City property. This is required due to conflicts with the right of way routing.
- The development of a construction services agreement with MB Hydro is ongoing.

Bid Opportunity 333-2014 (Contract C1 – Site Preparation Works)

- The contract achieved Total Performance on February 17, 2016.
- On July 1, 2016 the Contractor filed a Claim with respect to a final determination made by the Contract Administrator.
- A report outlining the background and rationale of the determinations that were made and appealed by the Contractor is being prepared for issuance to the Chief Financial Officer.

Bid Opportunity 601-2015 (Contract C2 – High Rate Clarifier and Grit Removal Concrete and Miscellaneous Works)

- Total Performance of the contract was achieved on March 10, 2017.
- The Contractor has been notified that the contract has incurred liquidated damages.

Bid Opportunity 899-2015 (Contract C3 – Bioreactors, Blower Building and Secondary Clarifiers Structural Concrete & Miscellaneous Work)

- The contract work is progressing and is considered behind schedule. The Contract Administrator continues to assess with the Contractor the validity of the schedules they are providing.
- As part of a schedule recovery plan the Contractor commenced a second shift in April 2017.
- Contractor has appealed a number of determinations made by the Contract Administrator to the Chief Financial Officer.

5. CURRENT ISSUES/RISKS REQUIRING FURTHER ATTENTION

Cost

The design consultant’s detailed cost estimate for the C4 contract bid opportunity exceeds the project allocation for this contract. The overall project remains within the identified Class 3 estimate range but approximately 11% beyond the approved budget representing \$37.3 million. Detailed reviews of the C4 cost estimate undertaken by the design consultant, the Winnipeg Sewage Treatment Program and an independent third party cost consultant identified that the preliminary design details costed in the Class 3 estimate where limited in their capability to convey the final design requirements and full extent of the work required for the electrical and automation scope of the project. The complexity in performing the final design construction tasks within the constraints of the existing operating SEWPCC facility, increases in US exchange rates and escalation additionally contributed to a higher C4 cost estimate.

Final costs for the SEWPCC Upgrading and Expansion Project will be known at the end of construction as contingencies are included.

6. SCHEDULE

Current key schedule milestones are:

Milestone Description	Timeline	
	Previous Report	This Report
Complete Project Definition Report	May 2014	May 2014
Complete Preliminary Design Report	November 2014	November 2014
Start Detailed Design	March 2014	March 2014
Start Construction of Site Preparation and Piling (Contract 1)	October 2014	October 2014
Start Construction on High Rate Clarifier and Grit Removal Structural Concrete and Misc. Works (Contract 2)	November 2015	November 2015
Start Construction Major Concrete Works (Contract 3)	May 2016	May 2016
Start Construction of Remaining Works (Contract 4)	July 2017	October 2017
Complete Commissioning interim BNR configuration	July 2020	July 2020
Complete Commissioning of all project components ¹	September 2021	September 2021

¹ SEWPCC Regulatory License 2716RR commissioning completion date was December 31, 2015. Compliance date has further been revised in consultation with the Province of Manitoba and the Clean Environment Commission. Construction on the SEWPCC Upgrade continues to progress expeditiously.

The schedule milestone dates identified in this report are based on the project consultant's updated project schedule and are consistent with the dates submitted to Manitoba Sustainable Development.

7. FINANCIAL ANALYSIS

The status of current Requests for Proposal and Bid Opportunities are as follows:

Request for Proposal or Bid Opportunity	Description	Current Status	Contract Value (GST and MRST extra as applicable)	Total Approved Over-Expenditures
682-2012	Professional Consulting Services for SEWPCC Upgrading/Expansion Project	Ongoing, CH2M Hill Canada Ltd.	\$25,350,419	\$6,233,179
57-2016	Professional Consulting Services for an independent review and alternative schedule analysis	Completed, Associated Engineering (Sask.) Ltd.	\$92,360	
871-2013	Procurement of Free-Floating Media and Associated Appurtenances	Ongoing, Veolia Water Technologies Canada Inc.	\$7,750,588	
873-2013	Procurement of High Rate Clarification Equipment	Ongoing, Veolia Water Technologies Canada Inc.	\$2,052,500	
333-2014	Contract 1 - Site Preparation Works	Construction Completed, PCL Constructors Ltd. has appealed certain CA determinations	\$22,646,510	
353-2014	For Construction Cost Consulting Services for SEWPCC Upgrading/Expansion Project	Completed, Hanscomb Ltd.	\$50,700	
572-2014	Provision for the Purchase or Lease of a Trailer for Office Space	Completed, B&B Rentals Inc.	\$184,000	
1067-2014	Manitoba Hydro Load Interconnection Study	Completed, Manitoba Hydro	\$60,000	
343-2015	Relocation of Lox Tank	Completed, Praxair Canada	\$62,715	
498-2015	Asbestos Abatement	Completed, Western Waste Management	\$24,950	

Request for Proposal or Bid Opportunity	Description	Current Status	Contract Value (GST and MRST extra as applicable)	Total Approved Over-Expenditures
601-2015	Contract 2 - High Rate Clarifier and Grit Removal Concrete and Miscellaneous Works	Work completed, Graham Construction and Engineering LP	\$9,549,100	
899-2015	Contract 3 - Bioreactors, Blower Building and Secondary Clarifiers Structural Concrete & Miscellaneous Work	Ongoing, NAC Constructors Ltd.	\$39,756,000	
797-2016	Manitoba Hydro relocation of existing primary electrical service cables	Completed, Manitoba Hydro	\$71,754	
	Total		\$107,651,596	\$6,233,179

Future major Bid Opportunities:

- Contract 4 – For the remaining works including mechanical, electrical and automation has been issued for tender.

Project funding

The approved capital and current projected budget are as follows:

YEAR	CAPITAL PROGRAM	ACTUAL + PROJECTED CASH FLOWS	CUMULATIVE CAPITAL BUDGET REMAINING
Up to 2017	335,600,000 ¹	127,747,070	207,852,930
2018		58,944,475	148,908,455
2019		54,447,180	94,461,275
2020		59,340,725	35,120,550
2021		72,457,045	-37,336,495
Total	335,600,000	372,936,495	-37,336,495

¹ Capital budget approved by Council

A summary of the budget to forecast comparison is contained in Appendix 2.

This project will receive \$37.42 million in Canadian Strategic Infrastructure and \$22 million in Green Infrastructure funding. The balance of the project cost will be funded using a combination of cash, Environmental Projects reserve and debt funding. Each of these sources are internally funded by rates as forecast in the Council approved rate report.

Overall Sewage Treatment Program Funding

The Province of Manitoba and the Government of Canada have committed \$287.8 million towards the sewage treatment plant upgrades:

The Province has committed:

- \$25 million from the Canada Strategic Infrastructure Fund program
- \$11 million from the Green Infrastructure Fund program
- \$3.8 million from the 2004 Urban Capital Projects Allocation
- \$195 million in its 2007 Throne Speech

The Government of Canada has committed:

- \$42 million from the Canada Strategic Infrastructure Fund program
- \$11 million from the Green Infrastructure Fund program

Of the total \$287.8 million committed to sewage treatment plant upgrades, the City projects federal and provincial funding of \$59.42 million towards the South End sewage treatment plant upgrade.

Funding for the SEWPCC and the WSTP is outlined in Appendix 1.

FINANCIAL IMPACT

Financial Impact Statement

Date:

May 19, 2017

Project Name:

**SOUTH END SEWAGE TREATMENT PLANT (SEWPCC) UPGRADING AND EXPANSION
FINANCIAL STATUS REPORT NO. 14 FOR THE PERIOD FROM FEBRUARY 1, 2017 TO APRIL
30, 2017**

COMMENTS:

As this report is submitted for informational purposes only, there is no financial impact associated with this recommendation.

"Original signed by L. Szkwarek, CPA, CGA"

Lucy Szkwarek, CPA, CGA

Acting Manager of Finance and Administration

CONSULTATION

In preparing this report there was consultation with:

N/A

OURWINNIPEG POLICY ALIGNMENT

This report is in accordance with the OurWinnipeg policies through

OurWinnipeg Reference: 02-2 Environment. The SEWPCC Nutrient Removal/Expansion will reduce the environmental impact of our citizens on the Red River and the downstream lakes and rivers. It is in collaboration with the Regulatory Licence requirements issued by the Province of Manitoba.

SUBMITTED BY

Department: Water and Waste
Division: Engineering Services
Prepared by: N. A. Harrington, P. Eng.
Date: June 12, 2017
File No.: 020-17-08-25-01, S-926

ATTACHMENTS:

Appendix 1 – Funding: South End Sewage Treatment Plant (SEWPCC) and Winnipeg Sewage Treatment Program (WSTP)
Appendix 2 – Costs of SEWPCC Upgrading/Expansion Project

Funding: South End Sewage Treatment Plant (SEWPCC) and Winnipeg Sewage Treatment Program (WSTP)

Appendix 1

1) Funding for the SEWPCC is as follows:

SEWPCC Nutrient Removal/Upgrade (in \$millions)	Total Cost	Funded to Date		Funding Pending		Total Funding		City Share of Costs
		Canada	Manitoba	Canada	Manitoba	Canada	Manitoba	
Environment Act Licence Driven Funding								
CSIF BNR	\$ 147.0	\$ 10.92	\$ 6.08	\$ 20.42		\$ 31.34	\$ 6.08	\$ 109.58
GIF Wet Weather Flow	60.0	4.35	6.44	6.65	4.56	11.00	11.00	38.00
Other	128.6					-	-	128.60
Estimated Program Costs	\$ 335.6	\$ 15.27	\$ 12.52	\$ 27.07	\$ 4.56	\$ 42.34	\$ 17.08	\$ 276.18

2) Funding for the Winnipeg Sewage Treatment Programs is as follows:

WSTP All Projects (in \$millions)	Total Cost	Funded to Date		Funding Pending		Total Funding		City Share of Costs
		Canada	Manitoba	Canada	Manitoba	Canada	Manitoba	
WEWPCC Biological Nutrient Removal	\$ 33.23	\$ 5.07	\$ 8.19			\$ 5.07	\$ 8.19	\$ 19.97
NEWPCC Centrate and UV Disinfection	52.08	5.59	14.54			5.59	14.54	31.95
SEWPCC Nutrient Removal/Expansion	335.60	15.27	12.52	27.07	4.56	42.34	17.08	276.18
NEWPCC Nutrient Removal/Upgrade	795.59		33.54		161.46	-	195.00	600.59
Estimated Program Costs	\$ 1,216.50	\$ 25.93	\$ 68.79	\$ 27.07	\$ 166.02	\$ 53.00	\$ 234.81	\$ 928.69

Notes:

- WEWPCC Biological Nutrient Removal and NEWPCC Centrate and UV Disinfection have been completed.

SEWPCC UPGRADING/EXPANSION PROJECT
WATER AND WASTE DEPARTMENT - ENGINEERING DIVISION
APPENDIX 2
As at April 30, 2017

Components	COSTS				PROJECTED COSTS TO COMPLETE					TOTAL	VARIANCE
	Approved Budget ¹	Costs Incurred up to last report	Costs submitted this report	Total Costs Incurred to date (per G/L) 30-Apr-17	2017	2018	2019	2020	Total Costs Remaining to Complete	Total Project Cost	Variance from Budget (Unfavourable)
A PROFESSIONAL SERVICES²	45,351,487	31,655,837	3,878,682	35,534,519	4,064,827	3,885,193	3,385,629	1,932,697	154,222	48,957,087	(3,605,600)
B CONSTRUCTION³	257,241,977	51,806,914	2,465,976	54,272,890	33,874,834	55,059,282	51,061,551	57,408,028	51,792,384	303,468,969	(46,226,992)
C CONTINGENCIES	33,006,536	3,201,267	(3,201,267)	0	0	0	0	0	20,510,439	20,510,439	12,496,097
TOTALS	335,600,000⁴	86,664,018	3,143,391	89,807,409	37,939,661	58,944,475	54,447,180	59,340,725	72,457,045	372,936,495	(37,336,495)

Percentage Complete 24%

¹ Total budget of \$335.60 Million for the SEWPCC Upgrading/Expansion Project and Distribution of costs for Components A), B) and C) was done by the Water and Waste Department. These are estimates and will be revised as the project progresses.

² Professional Services include Professional Engineering Services, other expert design and cost review, CSIF Funding Audits, Municipal Corporate Utility Model review, overhead and administration charges

³ Construction includes Commissioning and Construction Management Services

⁴ The Department has committed or included allowances for project costs as of April 30, 2017 in the approximate amount of \$147.7M of the approved \$335.6M budget. The remaining available project budget allocation is for Contract 4 and project contingency