

Minutes - Standing Policy Committee on Finance - October 15, 2015

REPORTS

**Item no. 7 South End Sewage Treatment Plant (SEWPCC) Upgrading and
Expansion Financial Status Report No. 7 for the Period from May 1,
2015 to July 31, 2015**

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 - October 15, 2015

DECISION MAKING HISTORY:

Moved by Councillor Pagtakhan,

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. 7 FOR THE PERIOD FROM MAY 1, 2015 TO JULY 31, 2015

Critical Path: The Standing Policy Committee on Finance

AUTHORIZATION

Author	Department Head	CFO	CAO/COO
D. E. Griffin, P. Eng. Acting Manager of Engineering Services Division	T. Shanks Acting Director of Water and Waste	M. Ruta	M. Jack COO

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 Fiscal Issues (now the Standing Policy Committee on Finance).

EXECUTIVE SUMMARY

This report identifies the financial status and significant events for the SEWPCC Upgrading and Expansion for the period May 1, 2015 to July 31, 2015.

IMPLICATIONS OF THE RECOMMENDATIONS

Implications and mitigation actions for these items are under review.

HISTORY / DISCUSSION

DISCUSSION:

1. MAJOR CAPITAL PROJECT STEERING COMMITTEE

Administrative policy for projects with capital cost exceeding \$10 million requires formation of Major Capital Project Steering Committee. The Committee has been formed and its members are:

Doug McNeil, Chief Administrative Officer
Michael Ruta, Chief Financial Officer
Diane Sacher, Director of Water and Waste
Maira Geer, 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 the report be sent to the Standing Policy Committee on Finance.

2. RISKS AND RISK MITIGATION STRATEGIES

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 Winnipeg Sewage Treatment Program, 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 – analysis has been completed for Contract 1, analysis session scheduled in early September 2015 for Contract 2
- Prior to the start of construction and quarterly during construction – third construction analysis has been completed
- Prior to the start of and at the end of commissioning

A project risk register is being kept throughout the project and will be updated by the formal analyses.

3. CHANGES FROM LAST REPORT

RFP 682-2012 (Professional Consulting Services)

- CH2M Hill submitted the 90% design and Bid Opportunity (601-2015) documents for the Contract 2 – High Rate Clarifier and Grit Removal Structural Concrete & Miscellaneous Works. Program Team review has been completed. The Bid Opportunity is anticipated to be issued for public tender end of August 2015.
- Detailed design is progressing on headworks, chemical building, electrical/ generator building, and the required modifications to the Administration Building.
- The Project Implementation Plan contract packaging (Bid Opportunities to be tendered) continues to be under review with the Consultant.
- An over expenditure report in the amount of \$2,490,642.00 was approved for additional Professional Consulting Services required for:
 - design and construction contract administration of the electrical substation
 - design modifications to implement the recommended value engineering proposals. There is an estimated capital cost savings of \$7 million from these modifications.
 - a three year groundwater depressurization program

- CH2M Hill is progressing on implementing the selected value engineering proposals into the design.
- CH2M Hill has indicated that due to project duration extension and contracting modifications not in their control their assignment budgets for escalation and project management will be insufficient to complete the work. CH2M Hill has been requested to provide the associated details for Program Team review.

RFP 353-2014 (Third Party Cost Consultant Services)

- Final Report has been submitted. The assignment is complete.

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

- Associated design work is progressing.
- Cost saving design proposed by the media supplier and validated by the design consultant is being implemented.

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

- Contractor design work is substantially complete.
- The Contract Equipment fabrication and delivery window has been extended. An associated Authorization for Contract Change was issued in the amount of \$9,321.60.

RFP 1067-2014 (Manitoba Hydro Load Interconnection Study)

- Manitoba Hydro has submitted their Load Interconnection Facilities Study Report.
- This assignment is substantially complete.
- The report identifies that upgrades are required to Manitoba Hydro's distribution system to provide the increased power demand to the upgraded SEWPCC facility. An associated estimated cost of \$1,468,715.00 +/- 10% is identified. The cost of the Manitoba Hydro system upgrades are to the account of the City of Winnipeg for which the current Project budget includes an allowance of \$1,142,000.
- Manitoba Hydro has issued an associated Construction Agreement template which is currently under review by the City's Legal Services Department.

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

- Relocation of the existing Liquid Oxygen Tank has been completed and modified shoring of the area is underway.
- Piling work is ongoing however the work is being impeded by an abnormally high occurrence of broken piles during installation. It is the Consultant's opinion that the breakage is being caused by atypical subsurface conditions which are beyond the control of the Contractor. The specifications related to pile installation have been adjusted in an effort to minimize pile breakage and maintain the design requirements. Additional pile dynamic testing is occurring to assist in this process.
- It is anticipated that the Contractor will be claiming costs for delays and additional effort associated with the pile breakage and testing. When received the claim(s) will be assessed by the Program Team for validity.
- The Consultant has identified that there is potential for pile movement due to frost penetration this coming winter. The issue and possible mitigation actions are under review.
- The source of an existing leak near the UV Building has been determined to be a joint in the existing outfall structure. The Consultant is investigating a suitable methodology to repair the joint.

Bid Opportunity 498-2015 (SEWPCC Asbestos Abatement)

- Two tenders were received.
- An award report has been issued for approval to contract with the low bidder, Western Waste Management Inc. in the amount of \$24,950.00. The pre tender estimate was \$60,000.00 +/- 10%.

4. ISSUES/RISKS REQUIRING FURTHER ATTENTION

COST RISK

Costs to the City identified in the Manitoba Hydro Load Interconnection Study Report are approximately \$327,000 higher than budgeted. The budgeted amount was based on earlier preliminary estimates from Manitoba Hydro.

Any additional costs associated with the noted piling issues will be reviewed and validated.

SCHEDULE

The schedule has been extended to allow for cost management exercises, such as a competitive bid process for professional consulting services, and a value engineering evaluation. A change in Manitoba Hydro corporate policy, which now requires the project to design and build an electrical substation, also contributed to the extension.

The project is scheduled to meet nutrient removal requirements by July 31, 2018. Manitoba Conservation and Water Stewardship (the Regulator), has been informed of this through regular progress reports, meetings, and correspondence.

In response the Regulator has instructed the City to submit a formal Letter of Alteration (LoA), asking for a new compliance date. See Appendix 3 for copy of the letter.

Current key schedule milestones are:

Milestone Description	Timeline	
	Previous Report	This Report
Complete Project Definition Report	May 2014	May 2014 ⁽¹⁾
Complete Preliminary Design Report	August 2014	November 2014
Start Detailed Design	March 2014	March 2014
Start Construction of Site Preparation and Piling	October 2014	October 2014
Start Construction of BNR Bioreactor	November 2015	May 2016
Complete Commissioning interim BNR configuration	July 2018	July 2018
Complete Commissioning of all project components		July 2019

⁽¹⁾ Substantial completion

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 \$59.41 million towards the south end sewage treatment plant upgrade.

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

5. WINNPEG SEWAGE TREATMENT PROGRAM (WSTP)

Under the WSTP Veolia is to provide advice to the City of Winnipeg in the design and construction of the SEWPCC project. As indicated in the latest WSTP Annual Report (tabled at City Council on July 15, 2015, Veolia is delivering value to the City of Winnipeg. In this project, the City of Winnipeg is benefitting from:

- Provision of expert advice on SEWPCC upgrade and expansion
- Share in the risks of the capital project delivery.

6. 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	Awarded	\$25,350,419.00	\$2,980,179.13
871-2013	Procurement of Free-Floating Media and Associated Appurtenances	Awarded	\$7,750,588.00	
873-2013	Procurement of High Rate Clarification Equipment	Awarded	\$2,052,500.00	
333-2014	Contract 1- Site Preparation Works	Awarded	\$22,646,510.00	
353-2014	For Construction Cost Consulting Services for SEWPCC Upgrading/Expansion Project	Completed	\$50,700.00	
572-2014	Provision for the Purchase or Lease of a Trailer for Office Space	Completed	\$184,000.00	
1067-2014	Manitoba Hydro Load Interconnection Study	Awarded	\$60,000.00	

Future major Bid Opportunities anticipated are:

- Contract 2 – High Rate Clarifier and Vortex Concrete Works
- Contract 3 - Major Concrete Works (Bioreactors and Secondary Clarifiers)
- Contract 4 – For the remaining works including mechanical, electrical and automation

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 2015	335,600,000 ¹	56,950,774	278,649,226
2016		46,704,144	231,945,082
2017		94,309,232	137,635,850
2018		111,376,040	26,259,810
2019		26,259,810	0
Total	335,600,000	335,600,000	

¹ Capital budget approved by Council

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

Project funding sources are as follows:

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.

FINANCIAL IMPACT

Financial Impact Statement

Date: September 16, 2015

Project Name:

**SOUTH END SEWAGE TREATMENT PLANT (SEWPCC) UPGRADING AND EXPANSION
FINANCIAL STATUS REPORT NO. 7 FOR THE PERIOD FROM MAY 1, 2015 TO JULY
31, 2015**

COMMENTS:

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

"Original signed by M. L. Geer, CPA, CA

Moira L. Geer, C. A.

Manager of Finance and Administration

CONSULTATION

In preparing this report there was consultation with:

N/A

OURWINNIPEG POLICY ALIGNMENT

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.

OurWinnipeg Reference: Section 02-2 Environment

SUBMITTED BY

Department: Water and Waste
Division: Engineering Services
Prepared by: N. A. Harrington, P. Eng.
Date: September 16, 2015
File No.: 020-17-08-25-01, S-926

c: Major Capital Project Steering Committee (email)
J. Veilleux, P. Eng., Water and Waste Department (email)
N. A. Harrington, P. Eng., Water and Waste Department (email)

ATTACHMENTS:

Appendix 1 – Funding: South End Sewage Treatment Plant (SEWPCC) and Winnipeg Sewage Treatment Program (WEWPCC)

Appendix 2 – Costs of SEWPCC Upgrading/Expansion Project

Appendix 3: Copy of letter to Province requesting revisions to the licence – hydraulic capacity, completion date etc. – result of June 17 meeting with Province

**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	2.11	6.08	29.23		31.34	6.08	109.58
GIF Wet Weather Flow	60.0			11.00	11.00	11.00	11.00	38.00
Other	128.6							128.60
Estimated Program Costs	335.6	2.11	6.08	40.23	11.00	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	2.11	6.08	40.23	11.00	42.34	17.08	276.18
NEWPCC Nutrient Removal/Upgrade	569.37		26.94		168.06		195.00	374.37
Estimated Program Costs	990.28	12.77	55.75	40.23	179.06	53.00	234.81	702.47

Notes:

- WEWPCC Biological Nutrient Removal and NEWPCC Centrate and UV Disinfection have been completed. The City's share of the SEWPCC project costs will be funded by the Environmental Projects Reserve (\$60 million) and debt financing (\$216.18 million). The funding distribution is subject to change, depending on the actual timing of spending and prevailing borrowing rates.

**SEWPCC UPGRADING/EXPANSION PROJECT
WATER AND WASTE DEPARTMENT - ENGINEERING DIVISION
Appendix 2
As at August 6, 2015**

Components	COSTS				PROJECTED COSTS TO COMPLETE					TOTAL	VARIANCE
	Approved Budget To Date ¹	Costs Incurred up to last report	Costs submitted this report	Total Costs Incurred to Date (per G/L 6-Aug-15)	2015	2016	2017	2018	Total Costs Remaining to Complete	Total Project Cost	Variance from Budget (Unfavourable)
A PROFESSIONAL SERVICES ²	45,375,820	15,537,978	2,270,326	17,808,304	6,320,926	9,763,289	5,565,885	5,092,468	824,948	45,375,820	0
B CONSTRUCTION	290,224,180	13,797,050	5,273,602	19,070,652	13,750,892	36,940,855	88,743,347	106,283,572	25,434,862	290,224,180	0
TOTALS	335,600,000	29,335,028	7,543,928	36,878,956	20,071,818	46,704,144	94,309,232	111,376,040	26,259,810	335,600,000	0

Percentage Complete

11%

1 Total budget of \$335.60 Million for the SEWPCC Upgrading/Expansion Project and Distribution of costs for Components A and B 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.

Appendix 3



Water and Waste Department • Service des eaux et des déchets

August 27, 2015

Your File No.: 1069.0
Our File Nos.: 020-17-08-11-00
020-17-08-11-0N

Manitoba Conservation and Water Stewardship
Environmental Approvals Branch
1007 Century Street
Winnipeg, MB R3H 0W4

Attention: Tracey Braun, M.Sc., Director

Dear Ms. Braun:

RE: Request for Alteration to Environment Act Licence No. 2716RR

Further to our meeting on June 17, 2015 the City of Winnipeg (City) is requesting an alteration to Environment Act Licence No. 2716RR for:

- Clause 14b to reflect that the South End Sewage Treatment Plant (SEWPCC) upgrade will meet the new effluent treatment requirements by July 31, 2018.
- Clause 23a to reflect that the maximum hydraulic capacity of the SEWPCC will be 420 mega litres per day (MLD) peak hourly flow; a process flow diagram is attached

In the existing Environment Act Licence No. 2716 RR licence clause 14b requires construction and commissioning activities to be completed by December 31st, 2015. Clause 23a specifies a maximum hydraulic capacity of 435.1 MLD.

On September 6, 2011 the City submitted the SEWPCC Concept Design Report. Table 1, which describes the main design flows, contains an error. The peak wet weather flow of 435 MLD is greater than the peak hourly flow of 415 MLD. The City is designing the SEWPCC plant to 420 MLD peak hourly flow, as per attached.

The SEWPCC upgrade will not be able to meet the new effluent treatment requirements by December 2015. The project schedule has been extended because of:

- The desire to have a competitive proposal process for engineering design services
- A value engineering review of the preliminary design which resulted in approximately seven million dollars in savings
- A change in Manitoba Hydro's corporate policy, which now requires the project to design an electrical substation.

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The City is optimizing the project schedule. These activities include:

- Pre-purchasing equipment, such as the Integrated Fixed Film Activated Sludge (IFAS) media and the high rate clarifier (HRC) wet weather flow equipment. These vendors will also be used for the North End Sewage Treatment Plant (NEWPCC) upgrade to save time on the procurement process and unify the process between the plants for operation and maintenance
- Optimizing construction activities in the schedule with the help of a Construction Manager and the City's strategic partner, Veolia
- Continuing concrete work activities throughout the winter
- Regular review and updates on project progress

The City and its design consultant are currently finalizing several construction contract packages. The components of these contracts that are necessary to meet the new effluent treatment requirements and are scheduled to be completed by July 31, 2018.

The SEWPCC will then be able to comply with the effluent treatment requirements using chemical nutrient removal. Additional construction past the July 31, 2018 date will be necessary to modify and repurpose existing plant facilities so that biological nutrient removal can be implemented.

This schedule is aggressive. The completion date for the project and the dates for licence compliance will be reviewed and subject to change as the design progresses and the construction contract packages are implemented.

Should you have any questions please contact Duane Griffin at 204-986-4483.

Yours truly,

Chris Carroll, P. Eng., MBA
Manager of Wastewater Services

MP/jr

Attachment

c: Geoffrey Patton, P. Eng, Water and Waste Department (email)
Duane Griffin, P. Eng, Water and Waste Department (email)
Jackie Veilleux, P. Eng, Water and Waste Department (email)
Renee Grosselle, Water and Waste Department (email)
Diane Sacher, P. Eng, Water and Waste Department (email)

SEWPCC BNR/HRC Flow Diagram
River level: 228 meters
June 2015



