

**Minutes - Standing Policy Committee on Finance - September 17, 2015**

**REPORTS**

**Item No. 13            North End Sewage Treatment Plant (NEWPCC) Biological Nutrient  
Removal Upgrade Financial Status Report No. 4 for the Period  
from April 1, 2015 to June 30, 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 - September 17, 2015**

DECISION MAKING HISTORY:

Moved by Councillor Pagtakhan,

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

Carried

## ADMINISTRATIVE REPORT

**Title:** NORTH END SEWAGE TREATMENT PLANT (NEWPCC) BIOLOGICAL NUTRIENT REMOVAL UPGRADE FINANCIAL STATUS REPORT NO. 4 FOR THE PERIOD FROM APRIL 1, 2015 TO JUNE 30, 2015

**Critical Path:** The Standing Policy Committee on Finance

### AUTHORIZATION

Author	Department Head	CFO	CAO
K. Zurek, P. Eng. Acting Manager of Engineering Services	G. K. Patton, P. Eng. Acting Director, Water and Waste Department	M. Ruta	M. Jack

### 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 NEWPCC Biological Nutrient Removal Upgrading and Expansion for the period April 1, 2015 to June 30, 2015.

### IMPLICATIONS OF THE RECOMMENDATIONS

The NEWPCC Upgrade will include a digestion facility, therefore a portion of the Biosolids – Alternative Disposal Delivery and Management System budget will be integrated into the NEWPCC - Nutrient Removal/Upgrade in the 2016 budget.

A combined heat and power (CHP) facility may be included as part of the NEWPCC Upgrade based on the results of a business case. However, budget for the CHP facility is not included in the current NEWPCC - Nutrient Removal/Upgrade budget or Biosolids – Alternative Disposal Delivery and Management System budget at this time.

There are tight project constraints associated with the installation/removal of high voltage lines into the plant that can only be carried out by Manitoba Hydro in the fall or spring due to high power demands in the summer and winter.

## HISTORY

### 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 NEWPCC Power Supply Project. It includes a proactive process of identifying risks, performing qualitative and quantitative risk analyses, creating response plan strategies and ongoing monitoring.

Formal risk and opportunity analyses of the project are scheduled to be performed by the Winnipeg Sewage Treatment Program (WSTP), the design consultant and key City stakeholders during conceptual and preliminary design. Since detailed design and construction will be carried out through a design build (DB) contract; the WSTP will be transferring as much risk as reasonable to the design builder through the design build contract.

A project risk register will be kept throughout the project and will be updated by formal analyses. The project will also incorporate structured Hazard and Operability Analysis and Construction Hazard Assessment Implication Review.

#### 3. CHANGES FROM LAST REPORT

##### **NEWPCC Power Supply Upgrade:**

The conceptual design for the NEWPCC Power Supply Upgrade is in progress and the Project Definition Report – 60% Complete has been submitted for review.

The fairness advisor contract to monitor the NEWPCC Power Supply Upgrade design build procurement process has been awarded.

##### **NEWPCC Upgrade:**

As recommended by the Biosolids Master Plan, the NEWPCC Upgrade will include a digestion facility; therefore \$225.25 million will be transferred from the Biosolids – Alternative Disposal Delivery and Management System budget into the NEWPCC - Nutrient Removal/Upgrade in 2016 budget year.

The digestion process is being considered as part of the NEWPCC - Nutrient Removal/Upgrade to:

- Reduce the risks associated with the phasing of the tie-ins and process commissioning;
- Improve the biosolids implementation schedule; and
- Facilitate a more optimized layout for the entire NEWPCC site.

A Request for Proposal was posted on the City's website in April 2015 to engage the services of a professional consulting firm to act as both the owner's advocate for the design build and the consultant for the design bid build for the NEWPCC Upgrade.

The award of the supply and delivery of the struvite recovery system is in progress. The struvite recovery system will harvest the phosphorous at the NEWPCC sewage treatment plant for use as a fertilizer. This system is being pre-selected before the design of the upgrade because aspects of struvite recovery systems are vendor specific and this must be considered when designing tie-ins to the treatment plant.

#### **4. ISSUES/RISKS REQUIRING FURTHER ATTENTION**

##### **Cost risk**

The project preliminary budget is currently estimated to be \$569.37 Million. The estimate is based on Class 5 cost estimate with an expected accuracy range of between -50% and +100%. It is anticipated that the estimate will be refined based on cost estimates from design consultants for the NEWPCC Power Supply and the NEWPCC upgrade projects at the completion of the conceptual design and preliminary design phases.

A Thermal Hydrolysis with Mesophilic Anaerobic Digestion (TH-MAD) process will be installed as part of the NEWPCC upgrade based on the Biosolids Master Plan. The TH-MAD process will generate more bio-gas than the existing process and will also require a significant amount of high pressure steam to aid the sludge digestion. This bio-gas could be used as an energy source for the boilers to produce the steam for the TH-MAD process or it could be used by a combined heat and power (CHP) facility to produce both steam and electricity. The steam from the CHP could be used by the TH-MAD process while the electricity produced could be used to offset electricity costs.

The owner's advocate for the NEWPCC Upgrade will develop a business case to determine the viability of building and using a CHP facility versus the use of boilers for the bio-gas. Costs related to the design construction of the CHP facility have not been included in the Biosolids – Alternative Disposal Delivery and Management System budget or the NEWPCC - Nutrient Removal/Upgrade budget. These costs will be added to the NEWPCC budget if justified by the business case.

It is American Association of Cost Engineering (AACE) International accepted practice that cost estimates are adjusted as design progresses.

## Schedule

Current planned key schedule milestones for the professional engineering services for the NEWPCC Power Supply Upgrade project as provided by the consultant is as follows:

Milestone Description	Timeline
Complete Project Definition Report	July 2015
Complete Preliminary Design Report	March 2016
Issue Design Builder RFP	May 2016
Design Builder Contract Award	February 2017

- Detailed design and construction schedule for the NEWPCC Power Supply Upgrade Project will be provided upon project award to the design builder.

Project schedules for the NEWPCC BNR upgrade will be included in future reports when design commences.

## Sewage Treatment Program Funding

The Province of Manitoba has committed \$234.8 million towards the sewage treatment plant upgrades:

- \$25 million is committed from the Canada Strategic Infrastructure Fund program.
- \$11 million is committed from the Green Infrastructure Fund program.
- \$3.8 million is committed from the 2004 Urban Capital Projects Allocation.
- \$195 million committed by the Province of Manitoba in its 2007 Throne Speech.

Of the total \$234.8 million committed to sewage treatment plant upgrades, the City projects provincial funding of \$195 million towards the north end sewage treatment plant upgrade.

There are no federal funds committed for this project.

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

## 5. WINNIPEG SEWAGE TREATMENT PROGRAM (WSTP)

Under the WSTP, Veolia is to provide advice to the City of Winnipeg in the design and construction of the NEWPCC projects. As indicated in the latest WSTP Annual Report (tabled at City Council on June 25, 2014), Veolia is delivering value to the City of Winnipeg. In this project, the City of Winnipeg is benefitting from:

- Savings from reduced rates in consulting services.
- Provision of expert advice on NEWPCC Power supply upgrade and procurement strategy of the future NEWPCC upgrade.
- Sharing in the risks of the capital project delivery.

## 6. FINANCIAL ANALYSIS

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

<b>RFP or Bid Opportunity</b>	<b>Description</b>	<b>Current Status</b>	<b>Contract Value (GST &amp; MRST extra as applicable)</b>
40-2014	Professional Engineering Consulting Services for the NEWPCC Power Supply Upgrade	Contract awarded	\$1,180,110.00
10-2015	Fairness Advisor for the NEWPCC Power Supply Upgrade Project	Contract awarded	\$37,620.00
506-2014	Supply and Delivery of a Struvite Recovery System	Award process in progress	TBD
182-2015	Professional Engineering Consulting Services for the North End Sewage Treatment Plant (NEWPCC) Upgrade	RFP Posted	TBD

## 7. PROJECT FUNDING

The approved capital and current projected budget are as follows:

<b>YEAR</b>	<b>CAPITAL PROGRAM</b>	<b>ACTUAL + PROJECTED CASH FLOWS</b>	<b>CUMULATIVE CAPITAL BUDGET REMAINING</b>
Up to 2015	143,214,000	3,345,000	139,869,000
2016	426,156,000	22,018,000	544,007,000
2017		29,806,000	514,201,000
2018		190,014,000	324,187,000
2019		158,995,000	165,192,000
Beyond 2019		165,192,000	0
<b>Total</b>	<b>569,370,000</b>	<b>569,370,000</b>	

<sup>1</sup>Capital budget approved by Council

<sup>2</sup>Capital Program requirements included in the 2015 - 2019 Capital Budget Estimates

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

Project funding sources are as follows:

- This project will receive \$195 Million in Provincial funding. The balance of \$374.37 Million will be funded using a combination of cash, Environmental Projects reserve and debt funding. Each of these sources is internally funded by rates as forecast in the Council approved rate report.

## FINANCIAL IMPACT

### **Financial Impact Statement**

Date: **July 16, 2015**

#### **Project Name:**

**NORTH END SEWAGE TREATMENT PLANT (NEWPCC) BIOLOGICAL NUTRIENT REMOVAL UPGRADE FINANCIAL STATUS REPORT NO. 4 FOR THE PERIOD FROM APRIL 1, 2015 TO JUNE 30, 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, 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 NEWPCC Biological Nutrient Removal Upgrade 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.

Our Winnipeg Reference - Section 02-2 Environment

## SUBMITTED BY

Water and Waste Department  
Engineering Services Division  
Prepared by: R.Y. Adedapo, P. Eng.  
File No. S-972  
Date: July 16, 2015



**Funding: North End Sewage Treatment Plant (NEWPCC) and Winnipeg Sewage Treatment Program (WSTP)**  
**Appendix 1**

1) Funding for the NEWPCC is as follows:

<b>NEWPCC Nutrient Removal/Upgrade (in \$millions)</b>	<b>Total Cost</b>	<b>Funded to Date</b>		<b>Funding Pending</b>		<b>Total Funding</b>		<b>City Share of Costs</b>
		<b>Canada</b>	<b>Manitoba</b>	<b>Canada</b>	<b>Manitoba</b>	<b>Canada</b>	<b>Manitoba</b>	
Provincial Funding								
Environment Act Licence Driven	466.00		26.94		168.06	-	195.00	271.00
Other	103.37							103.37
<b>Estimated Program Costs</b>	<b>569.37</b>		<b>26.94</b>		<b>168.06</b>		<b>195.00</b>	<b>374.37</b>

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

<b>WSTP All Projects (in \$millions)</b>	<b>Total Cost</b>	<b>Funded to Date</b>		<b>Funding Pending</b>		<b>Total Funding</b>		<b>City Share of Costs</b>
		<b>Canada</b>	<b>Manitoba</b>	<b>Canada</b>	<b>Manitoba</b>	<b>Canada</b>	<b>Manitoba</b>	
WEWPCB 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
SEWPCB 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
<b>Estimated Program Costs</b>	<b>990.28</b>	<b>12.77</b>	<b>55.75</b>	<b>40.23</b>	<b>179.06</b>	<b>53.00</b>	<b>234.81</b>	<b>702.47</b>

Notes:

- WEWPCB Biological Nutrient Removal and NEWPCC Centrate and UV Disinfection have been completed.
- The City's share of the NEWPCC project costs will be funded by cash (\$82.7 million) and debt financing (\$291.7 million). The funding distribution is subject to change, depending on the actual timing of spending and prevailing borrowing.

**NEWPCC BNR UPGRADE  
WATER AND WASTE DEPARTMENT - ENGINEERING DIVISION  
APPENDIX 2  
As at July 14, 2015**

Components	COSTS				PROJECTED COSTS TO COMPLETE				TOTAL	VARIANCE	
	Approved Budget To Date <sup>1</sup>	Costs Incurred up to last report	Costs submitted this report	Total Costs Incurred to Date (per G/L) July 14, 2015	2015	2016	2017	2018	Total Costs Remaining to Complete	Total Project Cost	Variance from Budget ( Unfavourable )
A PROFESSIONAL SERVICES <sup>2</sup>	59,565,000	2,365,000	192,770	2,557,770	685,230	13,955,000	15,649,000	15,546,000	11,172,000	59,565,000	0
B CONSTRUCTION	509,805,000	102,000	0	102,000	0	8,063,000	14,157,000	174,468,000	313,015,000	509,805,000	0
<b>TOTALS</b>	<b>569,370,000</b>	<b>2,467,000</b>	<b>192,770</b>	<b>2,659,770</b>	<b>685,230</b>	<b>22,018,000</b>	<b>29,806,000</b>	<b>190,014,000</b>	<b>324,187,000</b>	<b>569,370,000</b>	<b>0</b>

Percentage Complete

0.5%

<sup>1</sup> Total budget of \$569.37 Million for the NEWPCC BNR Upgrade and Distribution of costs to Components A) and B) was done by the Water and Waste Department. These are estimates and will be revised as the project progresses.

<sup>2</sup> Professional Services include Professional Engineering Services, other expert design and cost review, overhead and administration charges