Minutes - Standing Policy Committee on Finance - April 9, 2015

REPORTS

Item No. 6 Biosolids – Alternative Disposal Delivery and Management System Financial Status Report No. 1 for the Period from November 1, 2014 to January 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.

DECISION MAKING HISTORY:

Moved by Councillor Pagtakhan,

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

Carried

David Sanders submitted a communication dated April 9, 2015, with respect to Biosolids – Alternative Disposal Delivery and Management System Financial Status Report No. 1 for the Period from November 1, 2014 to January 31, 2015

ADMINISTRATIVE REPORT

Title: **BIOSOLIDS – ALTERNATIVE DISPOSAL DELIVERY AND MANAGEMENT SYSTEM FINANCIAL STATUS REPORT NO. 1 FOR THE PERIOD FROM NOVEMBER 1, 2014 TO JANUARY 31, 2015**

Critical Path: **THE STANDING POLICY COMMITTEE ON FINANCE**

AUTHORIZATION

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

RECOMMENDATIONS

That this report be received as information.

REASON FOR THE REPORT

At its meeting held on December 16, 1999, City Council adopted a policy whereby all capital projects with a total estimated cost of $10 million or more be submitted by the associated Civic Department to the Standing Committee on Fiscal Issues (now the Standing Policy Committee on Finance) for review and recommendation prior to any bid solicitation being issued.

Administrative Directive No. FM-004 requires quarterly reporting to the Standing Committee on Fiscal Issues (now the Standing Policy Committee on Finance)

IMPLICATIONS OF THE RECOMMENDATIONS

- A portion of the Biosolids – Alternative Disposal Delivery and Management System budget will be integrated into the NEWPCC - Nutrient Removal/Upgrade budget.
- The final treatment options for the Biosolids Master Plan are dependent on Regulatory approval. The plan was submitted to the Regulator in September 2014.

HISTORY

Biosolids are the treated sludge and solids left over from sewage treatment; currently all sludge is treated via digestion at the North End sewage treatment plant (NEWPCC). The treated

sludge, known as biosolids, is then landfilled at Brady Road Resource Management Facility (BRRMF).

In June 2011 the Province of Manitoba amended the Water Protection Act of Manitoba to state the following for the City of Winnipeg NEWPCC:

- Section 4.2(2)5 Nutrients that are removed [from the treatment process] must be recovered and recycled to the maximum extent possible through application of the best available technologies
- Section 4.2(2)6 Biosolids and wastewater sludge remaining after the treatment process must be reused

In April 2012 the City received approval from the Regulator to construct a pilot biosolids composting facility at BRMMF.

In October 2012 the City received a letter from the Regulator, requiring the City to submit a Biosolids Master Plan that would meet the requirements of the Water Protection Act, due October 2014.

In September 2014 the City submitted its Biosolids Master Plan to the Regulator for their review.

DISCUSSION:

1. **MAJOR CAPITAL PROJECT STEERING COMMITTEE**

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

   Michael Jack, Acting Chief Administrative Officer
   Michael Ruta, Chief Financial Officer
   Diane Sacher, Director of Water and Waste
   Moira Geer, Manager of Finance and Administration, Water and Waste
   Jackie Veilleux, Project Director Winnipeg Sewage Treatment Program, Water and Waste

2. **DESCRIPTION OF PROJECT**

   The Regulator has directed the City to develop a Biosolids Master Plan that maximizes the reuse of nutrients and biosolids that are generated from the City's sewage treatment processes. The Biosolids Master Plan was submitted to the Regulators in September of 2014.

   Following the change in regulation, the City initiated the development of a pilot Biosolids composting program at BRRMF. Composting was selected for trial because it reuses nutrients and because the compost product could be readily utilized within BRRMF as a top cover/soil amendment.

   In addition to nutrient utilization and biosolids reuse, the objectives of the Master Plan are to:

- Evaluate proven biosolids technologies and treatment options in consultation with stakeholders, including the public
- Develop a plan with multiple beneficial reuse strategies for maximum flexibility and robustness

The City conducted a public engagement process in 2013 and 2014. A request for information questionnaire was posted on the City's Materials Management website to learn of possible biosolids treatment options. A biosolids stakeholder advisory committee (SAC) was also established with representatives from various industry, government, and environmental groups.

The role of the SAC was to:

- Review potential treatment options and public engagement materials
- Suggest guiding principles for the Biosolids Master Plan
- Suggest evaluation criteria that should be considered when selecting final treatment options

In addition to the SAC, the City also held two public open houses with surveys and questionnaires for attendees. A public engagement website and online discussion forum was also developed with material from the SAC and the open houses posted online. An omnibus survey also helped the City understand the public's concerns and values related to biosolids treatment.

The Biosolids Master Plan was submitted in September 2014 to the Regulator and is currently under their review. There are several final biosolids treatment options that turn the biosolids into reusable products (e.g. compost); the options that are considered within the plan include the following:

- Thermal oxidation with energy recovery
- Compost and soil products (e.g. topsoil and compost for public use)
- Land application (e.g. fertilizer for agricultural farms)
- Land reclamation (e.g. top soil for landfill cover)
- Drying and pelletizing biosolids

Before a final treatment option can be implemented the raw sludge must be digested/stabilized. Digestion is done to recover energy, reduce biosolids volume, and reduce pathogen content within the biosolids. Currently all sludge is digested at the NEWPCC. The Biosolids Master Plan recommends that the existing digestion facility should be upgraded. The upgrade will:

- Replace end of life equipment
- Incorporate nutrient recovery processes
- Increase the efficiency of the digestion process to reduce the quantity and pathogen content of the biosolids

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

This is done to:

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

The combination of final treatment options for the biosolids, following digestion, is dependent on regulatory approval. This combination will be finalized after the Regulator has reviewed the Biosolids Master Plan and issued a revised biosolids licence to the City.

3. RISKS AND RISK MITIGATION STRATEGIES

An ongoing risk management strategy has been implemented for the Biosolids Composting Pilot. It includes a proactive process of identifying, performing qualitative and quantitative risk analyses, response plan strategies and risk control.

The detailed design and construction of the digestion facility upgrade is being considered as part of the NEWPCC - Nutrient Removal/Upgrade; risk analysis for the digestion upgrade will be considered as part of that project. Formal risk and opportunity analyses of that 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.

A project risk register is being kept for the final biosolids treatment option(s) throughout the Biosolids Alternative Disposal Delivery and Management Program and will be updated by formal analyses.

4. ISSUES/RISKS REQUIRING FURTHER ATTENTION

COST RISK

The 2015 Biosolids – Alternative Disposal Delivery and Management System budget has been revised by $52.5 million to $274.1 million compared to the approved 2014 Capital Budget of $221.6 million. The budget was revised because:

- through the Biosolids Master Plan development the selected biosolids treatment upgrade at NEWPCC has resulted in additional capital costs. Based on life cycle costs the selected treatment process is the most advantageous to the City as the selected treatment will improve the quality of the biosolids produced therefore increasing the reuse options for this resource and will overall reduce the amount of biosolids produced reducing future operation and maintenance costs for the final biosolids treatment option; $30M
- construction inflation; $20M
- additional costs for the selected design – build procurement process (i.e. fairness advisor, legal costs); $2.5M

The estimates for the work described within the Biosolids Master Plan, including the digestion facility upgrades, are based on a Class 5 cost estimate with an expected accuracy range of between -50% and + 100%, as defined by the Association for the Advancement of Cost Engineering (AACE) International.

Cost estimates for the digestion facility upgrades will be refined during design as part of the NEWPCC - Nutrient Removal/Upgrade project.

Cost estimates for the final treatment option(s) are subject to future licence requirements, which will be established by the Regulator after they have approved the Biosolids Master Plan. Cost estimates will be refined after the Regulator has issued a biosolids licence.

It is AACE International accepted practice that cost estimates are adjusted as design progresses.

SCHEDULE

The final treatment option(s) for the biosolids that are recommended in the Biosolids Master Plan require regulatory approval. They cannot be implemented until the Regulator approves the Biosolids Master Plan and issues appropriate environmental licences. Currently there is no regulatory defined deadline for implementing the Biosolids Master Plan.

5. CURRENT PROJECT STATUS.

The construction of the Pilot Biosolids Composting Facility at BRRMF is currently in the commissioning phase. A two-year biosolids composting trial will commence after commissioning.

The Biosolids Master Plan, including the public engagement process and consulting assignments, was developed under the Winnipeg Sewage Treatment Program (WSTP). The Biosolids Master Plan was submitted in September 2014 and is pending regulatory review and approval.

The budget for the digestion facility upgrade will be transferred to the NEWPCC - Nutrient Removal/Upgrade budget.

6. WINNIPEG SEWAGE TREATMENT PROGRAM (WSTP)

Under the WSTP Veolia is to provide advice to the City of Winnipeg in the development of the Biosolids – Alternative Delivery and Management System. As indicated in the 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 sludge and biosolids treatment technologies
- Share in the risks of the capital project delivery

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)
153-2012	RFP for Professional Consulting Services for a Leaf and Yard Waste Composting Facility and a Pilot Biosolids Composting Facility at BRRMF	Awarded	$478,781.00[1]
839-2012	Construction of the BRRMF Leaf and Yard Waste and Pilot Biosolids Composting Facility	Awarded	$6,560,839.00[1]
89-2014	Professional Consulting Services for RFP Development and Recommendation for a Struvite Vendor	Awarded	$79,840.00
92-2014	Award of Contract for Supply and Delivery of Wood Chips for the Biosolids Compost Facility	Awarded	$340,000.00
506-2014	Supply and Delivery of a Struvite Recovery System	Under evaluation	

[1]Represents portion of contract funded from the Biosolids – Alternative Disposal Delivery and Management System Account

Future major Bid Opportunities:

- Integration of a portion of the Biosolids – Alternative Disposal Delivery and Management System budget into the NEWPCC - Nutrient Removal/Upgrade is being considered.

Project funding

The approved capital and 2015 projected budget are as follows:

YEAR	CAPITAL PROGRAM	ACTUAL + PROJECTED CASH FLOWS	CUMULATIVE CAPITAL BUDGET REMAINING
Up to 2014	49,644,031[1]		
2015	20,000,000[2]	15,116,140	54,527,891
2016	182,500,000[2]	8,000,000	229,027,891
2017	22,000,000[2]	17,500,000	233,527,891
2018		7,300,000	226,227,891
2019		20,000,000	206,227,891
Beyond 2019		206,227,891	0.00
Total	274,144,031	274,144,031	

[1]Capital budget approved by Council
[2]Capital Program requirements included in the 2015 Capital budget process

The project will be funded using a combination of cash, environmental projects reserve and debt funding. Each of these sources are internally funded by rates as forecasted in the Council approved rate report.

A summary of the budget to forecast comparison is contained in Appendix 1.

FINANCIAL IMPACT

Financial Impact Statement **Date:** **March 3, 2015**

Project Name:

BIOSOLIDS – ALTERNATIVE DISPOSAL DELIVERY AND MANAGEMENT SYSTEM FINANCIAL STATUS REPORT NO. 1 FOR THE PERIOD FROM NOVEMBER 1, 2014 TO JANUARY 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, CA"
Moira L. Geer, C. A.
Manager of Finance and Administration

CONSULTATION

In preparing this report there was consultation with:

N/A

SUBMITTED BY

Water and Waste Department
Engineering ServicesDivision
Prepared by: M. Paetkau, P. Eng.
Date: March 3, 2015
File No. S-928

Biosolids - Alternative Disposal Delivery and Management System
WATER AND WASTE DEPARTMENT - ENGINEERING DIVISION
APPENDIX 1
As at January 31, 2015

		COSTS			PROJECTED COSTS TO COMPLETE						TOTAL	VARIANCE	NOTE
	Components	Approved Budget To Date [1]	Costs submitted this report	Total Costs Incurred to Date	2015	2016	2017	2018	2019	Total Costs Remaining to Complete	Total Project Cost	Variance from Budget (Unfavourable)	
A	PROFESSIONAL SERVICES	68,536,008	3,954,895	3,954,895	1,203,568	2,000,000	4,375,000	1,825,000	5,000,000	50,177,545	68,536,008	0	[2]
B	CONSTRUCTION	205,608,023	6,346,974	6,346,974	3,610,703	6,000,000	13,125,000	5,475,000	15,000,000	156,050,346	205,608,023	0	
	TOTALS	274,144,031	10,301,869	10,301,869	4,814,271	8,000,000	17,500,000	7,300,000	20,000,000	206,227,891	274,144,031	0	
	Percentage Complete			4%									

[1] **Total budget of $274,144,031 Million includes 2015 Budget requirements for the Biosolids Alternative Disposal Delivery Program; Distribution of costs to Components A) and B) was done by the Water and Waste Department.**

[2] **Professional Services include Professional Engineering Services, other expert design and cost review, overhead and administration charges**