Agenda – Council – May 27, 2021

Report – Standing Policy Committee on Water and Waste, Riverbank Management and the Environment – May 7, 2021

Item No. 1 Request for Budget Revision for the South End Sewage Treatment Plant (SEWPCC) Nutrient Removal/Expansion Capital Project

STANDING COMMITTEE RECOMMENDATION:

On May 18, 2021, the Executive Policy Committee concurred in the recommendation of the Standing Policy Committee on Water and Waste, Riverbank Management and the Environment and submitted the following to Council:

1. That a budget increase of $16,500,000 be approved for the Capital Budget for the SEWPCC Nutrient Removal/Expansion Project, in order for the Department to manage the upgrades/expansion to the SEWPCC facility and meet provincial licensing requirements. The total cost of the capital budget increase to be funded from the Environmental Projects Reserve.

2. That the Proper Officers of the City be authorized to do all things necessary to implement the intent of the foregoing.

Report – Standing Policy Committee on Water and Waste, Riverbank Management and the Environment – May 7, 2021

DECISION MAKING HISTORY:

EXECUTIVE POLICY COMMITTEE RECOMMENDATION:

On May 18, 2021, the Executive Policy Committee concurred in the recommendation of the Standing Policy Committee on Water and Waste, Riverbank Management and the Environment and submitted the matter to Council.

STANDING COMMITTEE RECOMMENDATION:

On May 7, 2021, the Standing Policy Committee on Water and Waste, Riverbank Management and the Environment concurred in the recommendation of the Winnipeg Public Service and submitted the matter to the Executive Policy Committee and Council.

ADMINISTRATIVE REPORT

Title: **REQUEST FOR BUDGET REVISION FOR THE SOUTH END SEWAGE TREATMENT PLANT (SEWPCC) NUTRIENT REMOVAL/EXPANSION CAPITAL PROJECT**

Critical Path: **Standing Policy Committee on Water and Waste, Riverbank Management and the Environment – Executive Policy Committee – Council**

AUTHORIZATION

Author	Department Head	CFO	CAO
T. W. Shanks, P. Eng., Acting Manager of Engineering Services	M. L. Geer, CPA, CA, Director, Water and Waste Department	C. Kloepfer	M. Ruta, Interim CAO

EXECUTIVE SUMMARY

The SEWPCC project is a significant milestone in City Council's commitment to protecting our rivers and Lake Winnipeg. The City of Winnipeg currently contributes four percent of the phosphorus load to Lake Winnipeg. The SEWPCC is scheduled to meet Environment Act License limits by end of 2021 and the City's overall phosphorus load will drop by 25 percent or to three percent of the total loads to Lake Winnipeg.

To successfully conclude the project, the public service is asking for a budget increase of $16,500,000 or 4.9 percent to the original Council approved budget of $335,600,000 for a total revised project budget of $352,100,000.

When Bid Opportunity 976-2016 was awarded in October 2017, the project was only carrying a five percent or $9 million contingency where a typical allowance would be in the range of 10 to 20 percent or $18 to $36 million. The Public Service was carefully monitoring contingency and have determined a budget increase is now necessary. The budget ask is within a Class 3 AACE Estimate which has a range of $268,500,000 to $436,300,000.

The budget amendment includes costs required for contract administration services, construction management services, commissioning services and construction contingency.

The additional project administration costs are required in order to manage the ongoing construction at SEWPCC, caused, in the City's determination, by contractor performance issues, and increased transportation costs associated with COVID-19 impacts.

The contractor awarded Bid Opportunity 976-2016 (NAC Constructors Ltd) is requiring additional project oversight and commissioning support beyond what was anticipated for the construction at SEWPCC. The Department has, and continues to, apply contract provisions to recover a portion of the additional costs identified in this report.

Additional project funds may be necessary depending on contractor performance. The project schedule and budget remain under close review.

RECOMMENDATIONS

1. That a budget increase of $16,500,000 be approved for the Capital Budget for the SEWPCC Nutrient Removal/Expansion Project, in order for the Department to manage the upgrades/expansion to the SEWPCC facility and meet provincial licensing requirements. The total cost of the capital budget increase to be funded from the Environmental Projects Reserve.

2. That the proper officers of the City be authorized to do all things necessary to implement the intent of the foregoing.

REASON FOR THE REPORT

Council approval is required to modify the capital budget of a project.

IMPLICATIONS OF THE RECOMMENDATIONS

The purpose of the report recommendation is to amend and increase the current capital project budget for the SEWPCC Nutrient Removal/Expansion Project.

Funds in the amount of $335,600,000 are included in the 2007-2015 Capital Budgets for SEWPCC Nutrient Removal/Expansion, Account Distribution No. 444 181000 200752 20320002EL, 2032000207 and 203210002B.

Economic Impact Analysis (EIA)

The estimated direct and indirect economic impact of this expenditure is:

Economic Impact	Manitoba	Rest of Canada
Gross Domestic Product (GDP)	$8.3 million	$1.0 million
Person Years of Employment	70	9
Federal Government Tax Revenue	$0.9 million	$0.1 million
Provincial Government Tax Revenue	$0.6 million	N/A

Source: Statistics Canada. Table 36-10-0594-01 Input-output multipliers, detail level. Note that the 2017 GDP at basic prices simple multiplier for architectural, engineering and related services [BS541300] was used to assess this investment. Federal and provincial government tax revenue estimates include GST, MRST, personal income taxes, corporate income taxes and other sources of taxes and fees. These are estimated using the multipliers noted above in conjunction with effective tax rates calculated from the economic accounts produced by Statistics Canada.

HISTORY/DISCUSSION

This project is to expand the capacity of the South End Sewage Treatment Plant (SEWPCC) for expected future flows and upgrade the treatment process to meet new more stringent effluent limits in the Environment Act Licence for the facility. In addition, the plant must operate continuously during the upgrade/expansion work and meet current effluent limits to the greatest extent possible.

In 2015, Council approved the total $335,600,000 project budget for the Nutrient Removal Upgrade/Expansion project at the SEWPCC. This project cost is identified as an AACE Class 3 estimate with a range of estimate of $268,500,000 to $436,300,000.

A total of four major construction contracts have been awarded for the upgrade and expansion works at SEWPCC. Additional contracts, as detailed in the ongoing project status report to the Standing Policy Committee on Finance, have been awarded to support the work at SEWPCC. Of the major construction contracts, contract 1 (Bid Opportunity 333-2014), contract 2 (Bid Opportunity 601-2015), and contract 3 (Bid Opportunity 899-2015) are complete. Contract 4 (Bid Opportunity 976-2016) awarded to NAC Constructors Ltd. (NAC) is ongoing.

Additional budget requirements are required in order for the Department to continue managing NAC, manage the ongoing SEWPCC project and meet Provincial Environment Act licence requirements:

- Additional consultant costs for Contract Administration have been and continue to be incurred due to contractor schedule delays. The upgrade and expansion construction and commissioning works are taking longer than contracted for. Accordingly, the provision of Contract Administration Services will be required for a longer period of time. As these services are based on a time-based fee structure, additional approved budget is required. The primary reason for the extension of the schedule, in the City's determination, is a result of poor

contractor performance and a lack of quality control of workmanship by the contractor prior to COVID-19.

- The Contractor's poor performance and schedule slippage may have been exacerbated by the COVID 19 pandemic, although if this has occurred, and if so, to what extent, is undetermined at this point.

- The Contractor's claims and appeals are also increasing the level of effort needed for Contract Administration and Construction Management services to address these issues. The number of claims and appeals by NAC is unusually high, requiring the City and Contract Administration to investigate and assess them. The majority of these claims and appeals relate to NAC's disagreement with the Department's adherence to the method of payment provided for in the contract, and enforcement of contractual performance measures and remedies.

- The Department has, and will continue to, apply available contractual provisions to recover a portion of the additional costs identified in this report. Measures have included reducing payments to NAC by amounts specified as liquidated damages for delays, identifying events of default and withholding payment where appropriate, and declining to advance payment(s) at times and in amounts where unnecessary and unwarranted.

- Construction Management Services for this final construction contract package for the SEWPCC upgrade/expansion is currently being performed by the Winnipeg Sewage Treatment Program (WSTP - Veolia) since June 2019. Due to the upgrade and expansion works taking longer to complete than originally anticipated, additional approved budget for the construction management services are also required.

- Increased shipping costs of materials from Korea, and delay of arrivals effecting final commissioning of the BNR facility.

At time of award for the final construction works package (Bid Opportunity 976-2016) for the SEWPCC facility upgrade/expansion (October 2017), the overall project contingency was approximately $9,403,936. In the award report the Public Service cautioned that the remaining project contingency was less than typical for a project of this size and complexity. At time of award, the contingency was five percent, while a typical percentage would be 10 to 20 percent or $18 to $36 million. Over the course of the project the Public Service has been monitoring contingency and as of December 31, 2020 this overall project contingency is currently at approximately $903,936. The current remaining project contingency allowance is not sufficient.

The breakdown of the $16,500,000.00 budget revision is summarized as follows:

Budget Revision	
Contract Administrative Services[1]	$10,840,000.00
Construction Management Services[2]	$ 2,660,000.00
Construction contingency allowance[3]	$ 2,000,000.00
Shipping cost Increase	$ 1,000,000.00
Total	$16,500,000.00

(1) Value was forecasted based on contract administrative services which are required to continue by the consultant, such as review of numerous contractor submittals, increase in witnessing contractor testing for automation works due to quality of work seen thus far, participation in various project related meetings, participation in construction and commissioning activities, increase in construction site inspection of contractor works due to quality of workmanship seen by the contractor onsite, preparation and submission of as-built drawings, provision of many operational documents for the new upgraded plant etc.

(2) Value was forecasted based on the construction management which are required to continue by the WSTP - Veolia team for activities such as, administering the contract changes and making recommendation to the City, coordinating with applicable parties to resolve project issues, monitoring and reviewing construction and commissioning schedules, coordinating all project related activities, review and certification of progress estimates submitted by contractor, reviewing and making determination on submitted claims by the contractor, lead and participate in numerous project related meetings, leading the commissioning activities with all required parties, etc.

(3) Value was forecasted based on the works still remaining to be completed under the final construction works package (bid opportunity 976-2016) and the potential unforeseen construction issues or unforeseen existing site issues that could be encountered, as the contractor is now getting into more intricate and complex works of the project, such as the biological process works, commissioning and automation works.

(4) Unforeseen shipping cost increases of the material from Korea. The cost of shipping has increased 200% and with increasing backlog of shipping there is an increase delay of approximately two months on final commissioning.

The increase to contract administration and construction management services will ensure the project delivery team is intact to project completion. The project site team consists of nine WSTP – Veolia staff augmented with 96 consulting staff working both on and off site.

The Department is recommending that an increase of $16,500,000 be approved for the Capital Budget for the SEWPCC Nutrient Removal/Expansion Project, in order for the Department to continue with the upgrades/expansion works to the SEWPCC facility and meet Provincial Environment Act licence requirements. The project schedule and budget remain under review and an update will be provided in the SEWPCC Financial Status Report for the period ending, December 31,2020.

FINANCIAL IMPACT

Financial Impact Statement

Date: April 13, 2021

Project Name:

First Year of Program **2021**

REQUEST FOR BUDGET REVISION FOR THE SOUTH END SEWAGE TREATMENT PLANT (SEWPCC) NUTRIENT REMOVAL/EXPANSION CAPITAL PROJECT

	2021	2022	2023	2024	2025
Capital					
Capital Expenditures Required	$ 16,500,000	$ -	$ -	$ -	$ -
Less: Existing Budgeted Costs	-	-	-	-	-
Additional Capital Budget Required	$ 16,500,000	$ -	$ -	$ -	$ -
Funding Sources:					
Debt - Internal	$ -	$ -	$ -	$ -	$ -
Debt - External	-	-	-	-	-
Grants (Enter Description Here)	-	-	-	-	-
Reserves, Equity, Surplus	16,500,000	-	-	-	-
Other - Enter Description Here	-	-	-	-	-
Total Funding	$ 16,500,000	$ -	$ -	$ -	$ -
Total Additional Capital Budget Required	$ 16,500,000				
Total Additional Debt Required	$ -				
Current Expenditures/Revenues					
Direct Costs	$ -	$ -	$ -	$ -	$ -
Less: Incremental Revenue/Recovery	-	-	-	-	-
Net Cost/(Benefit)	$ -	$ -	$ -	$ -	$ -
Less: Existing Budget Amounts	-	-	-	-	-
Net Budget Adjustment Required	$ -	$ -	$ -	$ -	$ -

Additional Comments: Capital Budgets for SEWPCC Nutrient Removal/Expansion are in Account Distribution No. 444 181000 200752 20320002EL, 2032000207 and 203210002B. A budget amendment increase of $16,500,000.00 is recommended to be approved for the Capital Budget for the SEWPCC Nutrient Removal/Expansion Project, in order for the Department to manage the upgrades/expansion to the SEWPCC facility and meet provincial licensing requirements. The total cost of the capital budget increase is to be funded from the Environmental Projects Reserve.

"Original signed by L. Szkwarek, CPA, CGA"
Lucy Szkwarek, CPA, CGA
Manager of Finance and Administration

CONSULTATION

This Report has been prepared in consultation with:

Legal Services (as to legal issues)
Infrastructure Planning Office

OURWINNIPEG POLICY ALIGNMENT

This report is in accordance with the OurWinnipeg policies through Section 02-2 Environment as it 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

WINNIPEG CLIMATE ACTION PLAN ALIGNMENT

N/A

SUBMITTED BY

Department: Water and Waste
Division: Engineering Services
Prepared by: Reetu Dewitt, P. Eng., Geoffrey Patton, P. Eng.
Date: April 13, 2021
File No.: S-926

ATTACHMENTS

Appendix A: 2021 Capital Budget Sheet for SEWPCC Upgrade/Expansion Project

Appendix A: 2021 Capital Budget Sheet for SEWPCC Upgrade/Expansion Project

WATER & WASTE - SEWAGE DISPOSAL SYSTEM FUND

Project Name: **South End Water Pollution Control Centre (SEWPCC) - Nutrient Removal / Expansion**

Standing Policy Committee:	Water and Waste, Riverbank Management and the Environment		
Dept ID:	200752	Investment Driver:	Regulatory
Department:	Water and Waste	Service:	Wastewater
Project:	203210002B	**OurWinnipeg:**	Environment

AUTHORIZATION	Previous Budgets	2021 Estimate	FORECAST 2022	2023	2024	2025	2026	Five-Year Forecast Total	Six-Year Total
Project Costs ($000's)	335,600	16,500	-	-	-	-	-	-	16,500
Financed by:									
Environmental Projects Reserve		16,500						-	16,500
								-	-

CASH FLOW	2021	2022	2023	2024	2025	2026	Beyond 2026	Total
Project Costs ($000's)	16,500	-	-	-	-	-	-	16,500
Financed by:								
Environmental Projects Reserve	16,500							16,500
								-

NET OPERATING IMPACT ($000's)	2021	2022	2023	2024	2025	2026
Operating costs						
Debt and finance charges						
Transfer to General Capital Fund						
Total Direct Costs	-	-	-	-	-	-
Less: Incremental Revenue/Recovery						
Net Cost/(Benefit)	-	-	-	-	-	-
Incremental Full Time Equivalent Positions	-	-	-	-	-	-

Class Estimate: See table below

@	2021	2022	2023	2024	2025	2026
Class Estimate	3					
Detailed Design & Construction	16,500					

The Province of Manitoba has issued the City of Winnipeg an Environment Act Licence requiring the treatment of nutrients (nitrogen (N) and phosphorus (P)) among other requirements at the SEWPCC.

The Implementation of Biological Nutrient Removal (BNR) will require a major plant upgrade and expansion. Also, the population within the SEWPCC service area is growing and will necessitate an effluent capacity upgrade. The project will address the BNR effluent quality limits and increased capacity requirements.

The expected life of the structures is 50 years, the expected life of electrical and mechanical components is 25 years, and the expected life for computer related systems is 10 years.