Agenda – Council – July 21, 2022

Report – Standing Policy Committee on Water and Waste, Riverbank Management and the Environment – June 28, 2022

Item No. 3 Request for Budget Revision for the North End Sewage Treatment Plant (NEWPCC) Interim Phosphorous Removal Capital Project

STANDING COMMITTEE RECOMMENDATION:

On July 13, 2022, 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 $6,500,000.00 be approved for the Capital Budget for the North End Sewage Treatment Plant (NEWPCC) Interim Phosphorus Removal Project, in order for the Department to meet revised provincial licensing requirements.

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 – June 28, 2022

DECISION MAKING HISTORY:

EXECUTIVE POLICY COMMITTEE RECOMMENDATION:

On July 13, 2022, 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 June 28, 2022, 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

Alexis Kanu, Executive Director, Lake Winnipeg Foundation, submitted a communication dated June 28, 2022, with respect to the matter.

ADMINISTRATIVE REPORT

Title: REQUEST FOR BUDGET REVISION FOR THE NORTH END SEWAGE TREATMENT PLANT (NEWPCC) INTERIM PHOSPHOROUS REMOVAL 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
C. D. Wiebe, P. Eng., CAMP, Manager of Engineering Services	T. W. Shanks, M. Eng., P. Eng. Director, Water and Waste	C. Kloepfer	M. Jack

EXECUTIVE SUMMARY

This report is for the approval of a budget increase of $6,500,000 to the approved Capital Budget of the North End Sewage Treatment Plant (NEWPCC) Interim Phosphorus Removal Project. The intial Class 4 cost estimate of $10,400,000 was based on a conceptual design and bench scale testing. The preliminary design of the Interim Phosphorous Facility is now complete and indicates the need to modify the dosing points to maximize phosphorous removal while minimizing sludge production. Full scale testing and optimization of interim phosphorous removal following implementation will confirm extent of nutrient removal capabilities. The changes in design, combined with current market volatility, result in a Class 1 cost estimate of $17,000,000.

The scope of work for the Interim Phosphorous Removal project will ultimately be needed to meet the NEWPCC Upgrade provincial licence limit for phosphorous removal to 1 mg/L. This work was initially planned to occur as part of the NEWPCC Upgrade: Nutrient Removal Facilities project. It has been advanced to maximize phosphorous reduction now and to coordinate with the more aggressive approach to chemical interim phosphorous removal included as part of the revised provincial regulatory requirements for the NEWPCC Upgrade: Biosolids Facilities.

The total cost of the capital budget increase is to be funded from the Environmental Projects Reserve. Interim phosphorus removal is a requirement under the NEWPCC Licence Notice of Alteration, to reduce effluent phosphorous levels at the NEWPCC until phase 3 of the NEWPCC Upgrades is complete.

RECOMMENDATIONS

1. That a budget increase of $6,500,000 be approved for the Capital Budget for the North End Sewage Treatment Plant (NEWPCC) Interim Phosphorus Removal Project, in order for the Department to meet revised provincial licensing requirements.

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

Funds in the amount of $10,500,000 are included in the approved Capital Budget for Interim Phosphorus Removal Project, Account Distribution No. 444 181000 200752 2031002921 and will be funded from the Environmental Projects Reserve.

Not proceeding with the budget increase may result in the inability to meet the requirements for phosphorous removal under the revised NEWPCC Licence Notice of Alteration.

HISTORY/DISCUSSION

The North End Sewage Treatment Plant (NEWPCC) is currently non-compliant with its Environment Act Licence. Interim phosphorus removal, using chemicals, is a requirement under the NEWPCC Licence Notice of Alteration in order to reduce effluent phosphorous levels until Phase 3 of the NEWPCC Upgrades is complete.

The original scope of work for the Interim Phosphorus Removal Project was based on a conceptual plan developed in the Interim Phosphorus Removal Detail Review and Benchscale Testing Project, which was completed in December 2020. The report recommended two ferric chloride dosing points be added to the NEWPCC, in addition to sodium hydroxide dosing to help control the pH. The extra ferric chloride and new sodium hydroxide requirements would need more chemical storage tanks and a building to house the new tanks. A Class 4 cost estimate of $10,400,000 generated from this report was the basis for the budget for the Interim Phosphorus Removal Project. The accuracy of this estimate was indicated as -30% to +50% ($7,280,000 to $15,600,000).

The preliminary design was finalized in 2022. In that report, the consultant determined that a 20 percent increase in ferric chloride was required beyond what was indicated in the conceptual plan in order to maximize phosphorus removal while minimizing sludge production. This change resulted in an increased scope of work including the following:

- One extra ferric chloride dosing point
- One extra Chemical Storage Building
- Extra eyewash stations

- Upgrades to the compressed air system
- The addition of a rail spur

The scope of work for the Interim Phosphorous Removal project will ultimately be required to meet the NEWPCC Upgrade provincial licence requirement for phosphorous removal to 1 mg/L. This work was initially planned to occur as part of the NEWPCC Upgrade: Nutrient Removal Facilities project. It has been advanced to maximize phosphorous reduction now and to coordinate with the more aggressive approach to chemical interim phosphorous removal included as part of the revised provincial regulatory requirements for the NEWPCC Upgrade: Biosolids Facilities.

As part of the preliminary design, the cost estimate for the Interim Phosphorus Removal Project was refined to a Class 1 cost estimate. The class 1 estimate for the revised scope of work is $17,0000,000 ($6,600,000 higher than the conceptual plan cost estimate). This is due to the refined scope and current market volatility related to shipping and commodity costs.

The engineering and construction costs for the additional scope of work are estimated at $4,400,000.00. Failure to include these scope changes will result in the inability to supply the required amount of chemicals at varying locations necessary to maximize interim phosphorous reduction. The remainder of the cost increase is attributed to the changed market conditions.

City Engineering staff are recommending that an increase of $6,500,000 be approved for the Capital Budget of the NEWPCC Interim Phosphorus Removal Project, in order for the Department to meet the revised provincial requirements under the NEWPCC Licence Notice of Alteration.

FINANCIAL IMPACT

Financial Impact Statement

Date: June 9, 2022

Project Name:

First Year of Program **2022**

REQUEST FOR BUDGET REVISION FOR THE NORTH END SEWAGE TREATMENT PLANT (NEWPCC) INTERIM PHOSPHOROUS REMOVAL CAPITAL PROJECT

	2022	2023	2024	2025	2026
Capital					
Capital Expenditures Required	$ 6,500,000	$ -	$ -	$ -	$ -
Less: Existing Budgeted Costs	-	-	-	-	-
Additional Capital Budget Required	$ 6,500,000	$ -	$ -	$ -	$ -
Funding Sources:					
Debt - Internal	$ -	$ -	$ -	$ -	$ -
Debt - External	-	-	-	-	-
Grants (Enter Description Here)	-	-	-	-	-
Reserves, Equity, Surplus	6,500,000	-	-	-	-
Other - Enter Description Here	-	-	-	-	-
Total Funding	$ 6,500,000	$ -	$ -	$ -	$ -
Total Additional Capital Budget Required	$ 6,500,000				
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 Budget for Interim Phosphorus Removal Project is in Account Distribution No. 444 181000 200752 2031002921. A budget amendment increase of $6,500,000 is recommended to be approved for the Capital Budget for the Interim Phosphorus Removal Project in order for the Department to meet the requirements under the NEWPCC Licence Notice of Alteration. Total costs of the budget increase is to be funded from the Environmental Projects Reserve.

Lucy Szkwarek, CPA, CGA

Lucy Szkwarek, CPA, CGA
Manager of Finance and Administration

CONSULTATION

This Report has been prepared in consultation with:

N/A

OURWINNIPEG POLICY ALIGNMENT

OurWinnipeg Reference: Section 02-2 Environment

WINNIPEG CLIMATE ACTION PLAN ALIGNMENT

N/A

WINNIPEG POVERTY REDUCTION STRATEGY ALIGNMENT

N/A

SUBMITTED BY

Department: Water and Waste
Division: Engineering Services
Prepared by: Erica Campbell, C.E.T.
Date: June 9, 2022
File No.: S-1146

ATTACHMENTS:

Appendix A: 2022 Capital Budget Sheet for NEWPCC Interim Chemical Phosphorus Removal