Agenda – Council – January 26, 2023

Report – Standing Policy Committee on Water, Waste and Environment – January 6, 2023

Item No. 3 New Capital Project for NEWPCC Upgrade – Nutrient Removal Facilities

STANDING COMMITTEE RECOMMENDATION:

On January 17, 2023, the Executive Policy Committee concurred in the recommendation of the Standing Policy Committee on Water, Waste and Environment and submitted the following to Council:

1. That the NEWPCC Upgrade Nutrient Removal Facilities project be approved as a 2022 capital project, outside of the normal budget process, with an AACE Class 3 capital cost estimate for the EPD and procurement portions of the work of $3,000,000.00, included as Appendix A, to be funded from the Environmental Projects Reserve.

2. That, subject to approval of Recommendation 1, the 2023 Forecast of the 2022 Capital Budget for the NEWPCC Upgrade Nutrient Removal Facilities with an AACE Class 3 capital cost estimate of $15,000,000.00, be approved, to be funded from the Environmental Projects Reserve.

3. 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, Waste and Environment – January 6, 2023

DECISION MAKING HISTORY:

EXECUTIVE POLICY COMMITTEE RECOMMENDATION:

On January 17, 2023, the Executive Policy Committee concurred in the recommendation of the Standing Policy Committee on Water, Waste and Environment and submitted the matter to Council.

STANDING COMMITTEE RECOMMENDATION:

On January 6, 2023, the Standing Policy Committee on Water, Waste and Environment concurred in the recommendation of the Winnipeg Public Service and submitted the matter to the Executive Policy Committee and Council.

ADMINISTRATIVE REPORT

Title: NEW CAPITAL PROJECT FOR NEWPCC UPGRADE: NUTRIENT REMOVAL FACILITIES

Critical Path: Standing Policy Committee on Water, Waste and 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

The North End Sewage Treatment Plant's (NEWPCC) operating licence, issued by the Province, includes limits for phosphorus and nitrogen that the existing treatment process cannot meet. In addition, the Water Protection Act requires nutrient removal primarily by biological methods, maximum nutrient recovery, and beneficial reuse of biosolids. The NEWPCC Upgrade: Nutrient Removal Facilities project will upgrade the NEWPCC to address these regulatory requirements, increase wet weather treatment ability, and replace end of life equipment.

The Nutrient Removal Facilities project is currently unfunded, and requires an update to the preliminary design and a review of the procurement method. Once the update and review is complete, it will take an estimated three years for the procurement period, followed by six years for design, construction and commissioning.

The Public Service recommends a new 2022 capital project for NEWPCC Upgrade: Nutrient Removal Facilities. Funding of $3,000,000.00 in 2022 is required to start enhanced preliminary design (EPD) and to determine the procurement process; this work is anticipated to take about nine months. The 2023 forecasted funding of $15,000,000.00 will fund the procurement process up to award of construction. Additional funding for construction is still required and will be referred to future Capital Budget Submissions.

Upon approval of the new capital project for the Nutrient Removal Facility, the Department will proceed with the standard procurement process as per the Materials Management Policy and Administrative Standard FM-002.

RECOMMENDATIONS

1. That Council approve the NEWPCC Upgrade: Nutrient Removal Facilities project as a 2022 capital project, outside of the normal budget process, with an AACE Class 3 capital cost estimate for the EPD and procurement portions of the work of $3,000,000.00, included as Appendix A, to be funded from the Environmental Projects Reserve.

2. That, subject to approval of Recommendation 1, Council approve the 2023 Forecast of the 2022 Capital Budget for the NEWPCC Upgrade: Nutrient Removal Facilities with an AACE Class 3 capital cost estimate of $15,000,000.00, to be funded from the Environmental Projects Reserve.

3. 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 must authorize the creation of a new Capital Budget.

IMPLICATIONS OF THE RECOMMENDATIONS

The recommendations, if approved, will permit the award of contracts for EPD of the NEWPCC Upgrade: Nutrient Removal Facilities projects.

The new 2022 capital project, NEWPCC Upgrades: Nutrient Removal Facilities, is to be funded by the Environmental Projects Reserve as follows:

2022 Adopted Budget: $3,000,000.00
2023 Forecast Budget: $15,000,000.00

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

Economic Impact	Manitoba	Rest of Canada
Gross Domestic Product (GDP)	$12.4 million	$1.7 million
Person Years of Employment	94	14
Federal Government Tax Revenue	$1.2 million	$0.2 million
Provincial Government Tax Revenue	$1.0 million	N/A

Source: Statistics Canada. Table 36-10-0595-01 Input-output multipliers, detail level.

The evaluated expenditure for this project is $15.6 million. The expenditure and estimated impacts are in 2022 dollars. Contingency and internal staff costs are excluded from the analysis. Some additional elements of the expenditure may be excluded to align with macroeconomic accounting principles.

The 2018 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

The NEWPCC is the City's largest treatment plant and treats approximately 60% of the City's wastewater. It discharges to the Red River downstream of the Assiniboine River. The NEWPCC is licensed under the Environment Act Licence 2684 RRR, issued June 19, 2009. The initial licence required the NEWPCC to be upgraded by 2014. In 2014, a Notice of Alteration was approved to extend the upgrade completion date to 2019. The facility is currently not in compliance with this licence.

NEWPCC requires upgrading to meet the effluent quality limits specified in its Environment Act Licence and in The Water Protection Act. Effluent limits are intended to mitigate impacts on water quality in the Red River and further downstream in Lake Winnipeg and beyond.

On February 28, 2019, Council approved the recommendation to split the planned NEWPCC Upgrade project into three distinct projects and execute them based on process criticality and available funding.

The three capital projects that make up the NEWPCC Upgrade are:

1. NEWPCC Upgrade: Power Supply and Headworks Facilities (currently in construction)
2. NEWPCC Upgrade: Biosolids Facilities (currently in planning for procurement)
3. NEWPCC Upgrade: Nutrient Removal Facilities (currently unfunded)

In order to facilitate the timely completion of the upgrades, the Public Service recommends that the third project, NEWPCC Upgrade: Nutrient Removal Facilities, be approved as a new 2022 capital project.

- Funding of $3,000,000.00 in 2022 is required to engage a consultant to complete an EPD to review the previous designs, confirm the latest technologies and performance of equipment, obtain a revised class 3 cost estimate, and develop the procurement strategy
- Funding of $15,000,000.00 forecasted in 2023 will confirm technologies and engage legal and third-party contracts required to follow the procurement process up to, but not including, award of construction

Additional funding for construction is still required and will be referred to future Capital Budget Submissions.

Funding is available from the Environmental Projects Reserve.

FINANCIAL IMPACT

Financial Impact Statement

Date: December 6, 2022

Project Name:

First Year of Program **2022**

NEW CAPITAL PROJECT FOR NEWPCC UPGRADE: NUTRIENT REMOVAL FACILITIES

	2022	2023	2024	2025	2026
Capital					
Capital Expenditures Required	$ -	$ 3,500,000	$ 6,000,000	$ 8,500,000	$ -
Less: Existing Budgeted Costs	-	-	-	-	-
Additional Capital Budget Required	$ -	$ 3,500,000	$ 6,000,000	$ 8,500,000	$ -
Funding Sources:					
Debt - Internal	$ -	$ -	$ -	$ -	$ -
Debt - External	-	-	-	-	-
Grants (Enter Description Here)	-	-	-	-	-
Reserves, Equity, Surplus	3,000,000	15,000,000	-	-	-
Other - Enter Description Here	-	-	-	-	-
Total Funding	$ 3,000,000	$ 15,000,000	$ -	$ -	$ -
Total Additional Capital Budget Required	$ 18,000,000				
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: Funds for this new Capital project, if approved by Council, will be made available from the Environmental Projects Reserve. This funding will allow the Department to engage in consulting services to complete an enhanced preliminary design (EPD) that will review the previous designs and to confirm the latest technologies and performance of equipment. This EPD will also obtain a revised class 3 cost estimate and the development of the procurement strategy.

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

This report aligns with OurWinnipeg 2045 policies as follows:

Leadership and Good Governance
Objective 1: Establish and implement priority actions through evidence-informed decision-making processes.

Policy 1.6 Results-Based Budgeting: Invest City resources in prioritized, proactive, long-term community-beneficial outcomes.

Environmental Resilience:
Objective 1: Prioritize the transition to a resilient, low-carbon future through demonstrated organizational and community leadership, and collaborative actions that mitigate and adapt to a changing climate.

Objective 5: Protect and value ecosystems as essential components to life.

Policies:

2.1 Climate Action Targets: Pursue GHG reduction targets with a sense of urgency through meaningful climate action.

2.2 Climate Action Investment: Make climate action a higher priority by demonstrating its economic, social and environmental benefits to decision-makers.

2.17 Regional Water Resource Management: Protect local and regional watershed resources from the negative impacts of development, flooding and pollution.

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: C. Javra, P. Eng.
Date: December 12, 2022
File No.: 020-07-06-01-01

c: Director of Legal Services/City Solicitor, Legal Services Department (email**)**
WWD-Report-Processor (email)
J. Leygue, Water and Waste Department (email)

ATTACHMENTS:

Appendix A: NEWPCC Upgrade: Nutrient Removal Facilities Detail Sheet

Appendix A: NEWPCC Upgrade: Nutrient Removal Facilities Detail Sheet

WATER & WASTE - SEWAGE DISPOSAL SYSTEM FUND

Project Name: **NEWPCC Upgrade: Nutrient Removal Facilities**

Standing Policy Committee: Water and Waste, Riverbank Management and the Environment

Dept ID: 200752
Department: Water and Waste
Project: 203110030B

Investment Driver: Regulatory
Service: Wastewater
OurWinnipeg: Environmental Resilience

AUTHORIZATION	Previous Budgets	2022 Estimate	FORECAST 2023	2024	2025	2026	2027	Five-Year Forecast Total	Six-Year Total
Project Costs ($000's)	-	3,000	15,000	-	-	-	-	15,000	18,000
Financed by:									
Environmental Projects Reserve		3,000	15,000					15,000	18,000

CASH FLOW	2022	2023	2024	2025	2026	2027	Beyond 2027	Total
Project Costs ($000's)	-	3,500	6,000	8,500	-	-	-	18,000
Financed by:								
Environmental Projects Reserve		3,500	6,000	8,500				18,000

NET OPERATING IMPACT (000's)	2022	2023	2024	2025	2026	2027
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: 3

The Province is seeking to reduce nutrient loadings to Lake Winnipeg to reduce the associated algae blooms. The Province has placed a reduced nutrient loading on NEWPCC's operating licence; this includes new limits for phosphorous and nitrogen. The NEWPCC Upgrade: Nutrient Removal Facilities project will address the regulatory requirements and end of life equipment. The project includes an intermediate pumping station, biological nutrient removal reactors and clarifiers, upgrades to the ultraviolet disinfection system and wet weather treatment system.

The initial $18,000,000 will be used to update the preliminary design and cost estimate, determine the appropriate procurement methodology and commence procurement of the project. The remainder of the project funding is currently unfunded. Any budget increases resulting from the initial phase of work will be referred to the budget process.

The major benefits of constructing this project include ensuring regulatory compliance and maintaining essential level of service.

Significant risks associated with constructing this project include funding agreement approvals, project delay and the current volatile global market.
Significant risks of not constructing the project or deferring the project include inability to meet new regulations and inability to maintain essential level of service.

Approval of funding for the remaining works is conditional subject to securing Federal and Provincial Funding.

The expected life of the structural upgrades are 50 years, the expected life of the electrical and mechanical components are 25 years, and the expected life for technology assets are 10 years.