Agenda – Executive Policy Committee – March 18, 2025

Report – Standing Policy Committee on Water, Waste and Environment – March 10, 2025

Item No. 1 Request for Budget Revision for the NEWPCC Upgrade: Nutrient Removal Facilities Project

STANDING COMMITTEE RECOMMENDATION:

On March 10, 2025, the Standing Policy Committee on Water, Waste and Environment concurred in the recommendation of the Winnipeg Public Service, as amended, and submitted the following to Council:

1. That a 2025 capital budget increase of $10,894,000 be approved for the NEWPCC Upgrade: Nutrient Removal Facilities project, to be funded from 2025 sewer rates as noted on Appendix A.

2. That a budget increase of $1,462,133,000 for the NEWPCC Upgrade: Nutrient Removal Facilities project be referred to the 2026 Budget Review Process.

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

Agenda – Executive Policy Committee – March 18, 2025

Report – Standing Policy Committee on Water, Waste and Environment – March 10, 2025

DECISION MAKING HISTORY:

STANDING COMMITTEE RECOMMENDATION:

On March 10, 2025, the Standing Policy Committee on Water, Waste and Environment passed the following motion:

WHEREAS it is imperative that the North End Water Pollution Control Centre (NEWPCC) Upgrade Project Three: Nutrient Removal proceed in order to comply with provincially-mandated biological nutrient removal requirements;

AND WHEREAS without the upgrades, the City of Winnipeg would have to stop approving major housing and industrial projects within the next several years;

AND WHEREAS it is prudent, in order to meet Project Three completion timelines, to begin project tendering as soon as possible;

AND WHEREAS approved capital projects must identify a funding source;

AND WHEREAS the report recommendation is to cash-finance Project Three: Nutrient Removal of the North End Water Pollution Control Centre (NEWPCC) using sewer rates;

AND WHEREAS the resulting sewer rates represent an unacceptably high financial burden on Winnipeg rate payers, with repeated annual increases several times higher than inflation;

AND WHEREAS in an effort to maintain affordability for Winnipeg rate payers, the Public Service has been directed in a separate motion amending Report 2 to work with its federal and provincial counterparts toward cost-sharing agreements for Project Three, potentially including alternative debt management strategies, intergovernmental partnerships and/or other long-term offsets;

THEREFORE BE IT RESOLVED that the recommendation of the Winnipeg Public Service be concurred in, with the following amendments:

- Delete Recommendation 1 in its entirety and replace with the following:

    "1. That a 2025 capital budget increase of $10,894,000 be approved for the NEWPCC Upgrade: Nutrient Removal Facilities project, to be funded from 2025 sewer rates as noted on Appendix A."

Report – Standing Policy Committee on Water, Waste and Environment – March 10, 2025

DECISION MAKING HISTORY (continued):

STANDING COMMITTEE RECOMMENDATION (continued):

- Add the following new Recommendation 2 and renumber the remaining recommendation accordingly:

    "2. That a budget increase of $1,462,133,000 for the NEWPCC Upgrade: Nutrient Removal Facilities project be referred to the 2026 Budget Review Process."

and submitted the matter to the Executive Policy Committee and Council.

ADMINISTRATIVE REPORT

Title: Request for Budget Revision for the NEWPCC Upgrade: Nutrient Removal Facilities Project

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 Department	T. Graham	S. Armbruster, Interim CAO

EXECUTIVE SUMMARY

This report provides an updated AACE Class 3 cost estimate for the North End Sewage Treatment Plant (NEWPCC) Upgrade: Nutrient Removal Facilities project and recommends a budget amendment to complete the Nutrient Removal project. This is the third and final major capital project of the NEWPCC Upgrades and is critical for compliance with the NEWPCC Environment Act Licence.

Revised Class 3 Cost Estimate

The revised Class 3 estimate presented in this report is $1.491 billion. This is an increase of $663 million, or 80 percent greater than the 2018 estimate. The new estimate is:

- the first comprehensive look at the Nutrient Removal Facility as a stand-alone project,
- the first incorporation of the current schedule realities (license deadlines and post-pandemic market conditions),
- the first to reflect the project being delivered independently/coordinated alongside the other major upgrades,
- the first to incorporate updated population growth estimates and new 2050 design life.

The revised cost estimate is based on the enhanced preliminary design (EPD) that reflects current project knowledge, including progress to date on the Headworks and Biosolids projects. It incorporates technology selections for biological nutrient removal and wet weather flow management, changes to the capacity and sizing of the system reflecting current growth projections, and reflects current market conditions and expected project timing. It was prepared by the engineering consultant and reviewed by an independent cost consultant. The major cost drivers for the increase are:

- Incorporating additional capacity and new growth projections for 2050 instead of 2037
- Optimizing wet weather flow management

- Inability to reuse existing infrastructure identified during the EPD
- Current market conditions, including ongoing volatility, escalation rates, and decreased risk tolerance

2025 Capital Budget Amendment

The Public Service is requesting a budget increase of $1.473 billion for the NEWPCC Upgrade: Nutrient Removal Facilities. This brings the amended capital budget to $1.491 billion. It's critical to demonstrate the City's commitment to this project and show potential bidders there are sufficient funds to undertake the work prior to issuing the Request for Qualifications.

There is an urgency to proceed with the Nutrient Removal project as soon as possible. Not only will this avoid additional costs due to schedule delay, these facilities will enable the City to:

- Increase hydraulic capacity through the plant, allowing the City to treat more flow during wet weather events;
- Maximize the use of biological phosphorous removal (saving digester capacity for continued residential and economic development in the City and the metro region); and
- Meet regulatory compliance and provide benefit to the waterways in the city and province as soon as possible.

Risk Mitigation

The Public Service will continue to do their due diligence to mitigate cost increases by:

- Undertaking significant market outreach to stimulate healthy competition for this project;
- Enhancing design/value engineering to reduce costs;
- Selecting the appropriate procurement model that, through proactive and sustained collaboration, allows innovation in process and design while balancing project risks and schedule; and
- Seeking additional funding sources that may be available.

RECOMMENDATIONS

1. That a Capital Budget increase of $1,473,027,000 be approved for the NEWPCC Upgrade: Nutrient Removal Facilities project, to be funded from sewer rates.

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

On May 27, 2021, Council directed the Public Service to review the AACE class 3 cost estimate for Nutrient Removal Facilities project and refer any increases to the capital budget process.

Council approval is required to modify the Capital Budget of a project.

IMPLICATIONS OF THE RECOMMENDATIONS

The purpose of the report recommendation is to increase the current Capital Budget for the NEWPCC Upgrade: Nutrient Removal Facilities by $1.473 billion.

Funds in the amount of $18 million are included in the approved Capital Budget for the NEWPCC Upgrade: Nutrient Removal Facilities project, Account Distribution No. 444 181000 200752 203110030B.

The NEWPCC Upgrade: Nutrient Removal Facilities project is required to meet the City's Environment Act Licence.

HISTORY/DISCUSSION

On February 28, 2019, Council approved the single NEWPCC Upgrade be executed as three separate capital projects to mitigate the risk associated with delivering a single large, complex, and lengthy project. The projects were identified as:

1. NEWPCC Upgrade: Power Supply and Headworks Facilities (Power Supply and Headworks)
2. NEWPCC Upgrade: Biosolids Facilities (Biosolids)
3. NEWPCC Upgrade: Nutrient Removal Facilities (Nutrient Removal)

The Nutrient Removal project is the third and final major capital project required to complete the NEWPCC Upgrades and meet the Environment Act Licence. This project will address regulatory requirements and end of life equipment. The upgrades will provide additional wet weather flow treatment and enable the biological removal and recovery of nutrients from the wastewater for beneficial reuse.

2018 NUTRIENT REMOVAL COST ESTIMATE

In a February 28, 2019 report to Council, the Public Service provided a cost estimate of $828 million for the Nutrient Removal project. This budget was based on an engineering consultant AACE class 3 construction cost estimate that was confirmed by an independent cost consultant.

In May 2021, Council requested updated class 3 estimates that reflect current market conditions for the Biosolids and Nutrient Removal projects. This request followed the Headworks DB contract award being $65 million higher than the affordability threshold. Cost increases for the Biosolids and Nutrient Removal projects were to be referred to the capital budget process.

On January 26, 2023, Council approved a capital budget of $18 million for the Nutrient Removal project ($3 million as part of the 2022 capital budget and $15 million in 2023). These funds were for enhanced preliminary design (EPD), an AACE class 3 cost estimate, and pre-procurement work.

2024 UPDATED NUTRIENT REMOVAL COST ESTIMATE

In October 2023, an engineering consultant was engaged to undertake the EPD and provide an updated class 3 construction cost estimate.

The EPD incorporated:

- Updated knowledge of project requirements, including technology selections for biological nutrient removal and wet weather flow management,
- Changes to the capacity of the system reflecting current growth projections,
- Changes in market conditions, and
- Escalation due to project timing.

The consultant updated the construction cost estimate, which was reviewed by an independent cost consultant. The 2024 Nutrient Removal AACE class 3 cost estimate was revised to $1.491 billion. This estimate has an expected accuracy range of -20 percent to +30 percent ($1.193 billion to $1.938 billion).

COMPARISON BETWEEN THE 2018 AND 2024 COST ESTIMATES

Between 2018 and 2024, the Nutrient Removal class 3 cost estimate increased by $663 million. This represents an 80 percent increase over the 2018 cost estimate of $828 million. The 2018 and 2024 cost estimates are summarized in the following table:

Cost Category	2018 Capital Cost Estimate ($000's)	2024 Capital Cost Estimate ($000's)	Increase from 2018 to 2024 ($000's)
Construction	536,250	1,098,342	562,092
Consultant & Other	34,973	115,427	80,454
Contingency	113,582	233,825	120,243
Administrative Charges	20,545	43,433	22,888
External Debt Charges	122,707	0	-122,707
Total	**$828,057**	**$1,491,027**	**$662,970**

The overall Nutrient Removal project cost was affected by the following:

Project Completion Date
The 2024 estimate assumes project completion in 2032, two years later than the 2018 estimate. This results in an additional two years of escalation.

Escalation Rate
In 2018, the City used a standard rate of 3 percent escalation annually. Since then, the market saw unprecedented escalation that far exceeded the assumed 3 percent rate. Market volatility and ongoing supply chain issues have resulted in increased material, equipment, fuel, labour, and shipping prices. Going forward, the 2024 estimate also applied a 4 percent escalation through to construction completion to more accurately reflect anticipated future market conditions.

Additional factors that impacted specific cost categories are described below.

Construction

Construction Costs increased by $562 million. This is primarily due to:

- Additional process capacity (growth) – In 2022, growth projections were updated during the Biosolids EPD. This resulted in an increase in required capacity for the Nutrient Removal process areas.

- Wet weather flow management – The updated EPD revised the approach for wet weather flow management to improve effluent quality while minimizing risks and overall lifecycle costs. This required an increase in secondary treatment capacity.

- Additional scope – During the EPD, a critical piece of infrastructure that was planned for reuse was found to be nearing end of life. As a result, a new secondary effluent line was added to the scope of the project.

- Phosphorus recovery system – The City has a vendor contract for phosphorous recovery equipment. Since this contract was signed in 2014, equipment costs have increased by approximately 500 percent. Assessments are currently underway to review available technologies and value engineer this process area.

- Decreased risk tolerance – Since 2018, there has been a decrease in the risk tolerance of Design Build teams. The ongoing market volatility has increased the contingency required for construction costs.

Consultant and Other

Consultant and Other Costs increased by $80 million. This is primarily due to:

- Change in procurement strategy – In 2018, the delivery model for the Nutrient Removal project was assumed to be a DB. Based on a recent market sounding and procurement model assessment, the project will likely be delivered using a Progressive Design Build (PDB) model. A PDB is a collaborative process and requires additional effort from the project's internal and external legal team, owner's advocate, and strategic partner during the development phase.

- Increased insurance premiums – Insurance market conditions have changed significantly since 2018 resulting in increased policy premiums.

Contingency

Contingency Costs have increased by $120 million in proportion with the Construction and Consultant & Other Cost increases and the market and project specific risks that have evolved since 2018.

Administrative Charges

Administrative Charges have increased by $23 million in proportion with Construction, Consultant & Other, and Contingency Costs.

External Debt Charges

External Debt Charges decreased by $122 million. The funding source for some of the Nutrient Removal project has changed from external debt to sewer rates resulting in no external debt charges.

2025 CAPITAL BUDGET AMENDMENT

The existing approved capital budget for Nutrient Removal of $18 million is sufficient to proceed with current pre-procurement activities. However, it's critical to demonstrate the City's commitment to this project to potential bidders prior to issuing the Request for Qualifications. This will increase the chances of having a successful procurement and advancing the project without delays.

The Public Service is requesting an increase of $1.473 billion for the NEWPCC Upgrade: Nutrient Removal Facilities, for an amended capital budget of $1.491 billion. Failure to amend the budget will impact the ability to deliver the critical Nutrient Removal upgrade. Not completing the upgrade will result in:

- Failure to comply with the Environment Act Licence and associated penalties,
- Limited growth and development within Winnipeg and the Metro Region,
- Reduced treatment efficiency of the aging infrastructure, leading to lower effluent quality and increased environmental impact, and
- Increased risk of equipment and infrastructure failure, requiring costly repair and/or higher operational costs.

RISK MITIGATION

Ongoing market volatility makes it difficult to estimate costs today for a project that won't start construction for another three years. The Public Service will do their due diligence to mitigate cost increases by:

- Undertaking significant market outreach to stimulate healthy competition for this project,
- Enhancing design/value engineering to reduce costs,
- Selecting the appropriate procurement model that, through proactive and sustained collaboration, allows innovation in process and design while balancing project risks and schedule, and
- Seeking additional funding sources that may be available.

NEXT STEPS

It's anticipated that the Nutrient Removal project will be procured using a PDB model, similar to what was done for the Biosolids project. Following Council approval of the amended capital budget, the Public Service will initiate a two-stage process to procure a design build team. The anticipated procurement schedule for the Nutrient Removal project is:

- Q3 2025 – Issue Request for Qualifications to shortlist proponents
- Q1 2026 – Issue Request for Proposals to shortlisted teams
- Q4 2026 – Award development phase

The development phase is expected to be between 18 to 24 months in duration. During this time, the development team will advance the design to approximately 60 percent and provide a price to complete the remaining design and construction activities. Construction is anticipated to take five years with substantial completion occurring in 2032.

The Public Service will continue to seek opportunities to generate schedule efficiencies while balancing project risks and costs, and continue to look for funding opportunities for the project to limit impacts on rate payers.

FINANCIAL IMPACT

Financial Impact Statement

Date: January 3, 2025

Project Name:

First Year of Program **2025**

REQUEST FOR BUDGET REVISION FOR THE NEWPCC UPGRADE: NUTRIENT REMOVAL FACILITIES PROJECT

	2025	2026	2027	2028	2029
Capital					
Capital Expenditures Required	$1,473,027,000	$ -	$ -	$ -	$ -
Less: Existing Budgeted Costs	-	-	-	-	-
Additional Capital Budget Required	$1,473,027,000	$ -	$ -	$ -	$ -
Funding Sources:					
Debt - Internal	$ -	$ -	$ -	$ -	$ -
Debt - External	-	-	-	-	-
Grants (Enter Description Here)	-	-	-	-	-
Reserves, Equity, Surplus	1,473,027,000	-	-	-	-
Other - Enter Description Here	-	-	-	-	-
Total Funding	$1,473,027,000	$ -	$ -	$ -	$ -
Total Additional Capital Budget Required	$1,473,027,000				
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 the NEWPCC Upgrade: Nutrient Removal Facilities is in Account Distribution No. 444 181000 200752 203110030B. Subject to approval of the revised 2025 to 2027 Revised Sewer Volume Rates, a budget amendment increase of $1.473 billion is recommended to be approved for the Capital Budget for the NEWPCC Upgrade: Nutrient Removal Facilities project. The total Capital Budget increase is to be funded from sewer rates.

Lucy Szkwarek, CPA, CGA

bah
31-Dec-24

Lucy Szkwarek, CPA, CGA
Manager of Finance and Administration

CONSULTATION

This Report has been prepared in consultation with:

- Legal Services Department

OURWINNIPEG POLICY ALIGNMENT

This report is in accordance with the OurWinnipeg 2045:

Goal: Environmental Resilience

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

Policy 2.17 Regional Water Resource Management.

WINNIPEG CLIMATE ACTION PLAN ALIGNMENT

NEWPCC Upgrade: Nutrient Removal Facilities Project aligns with the Strategic Opportunity #6 Waste Reduction and Diversion found on page 51 of the Climate Action Plan approved by Council on September 20, 2018; Key Directions 6.3 and 6.4.

The Water Protection Act requires the City to recover the nutrients from the biosolids to the maximum extent possible. The intent is for the facility to produce a Class A Biosolids which can be reused resulting in diversion of Biosolids from the landfill.

WINNIPEG POVERTY REDUCTION STRATEGY ALIGNMENT

On February 24, 2022, Council directed that bidders for the Nutrient Removal Facilities Project include the following in their submissions:

- Specific commitments to engage skilled labour including targets for employment of Indigenous peoples and other under-represented groups within the Manitoba market

- Proposed plans and partnerships with organizations to promote employment and training initiatives for Indigenous and other under-represented groups within the Manitoba market

This aligns with Goal 1 – Equity and a Culture of Caring are Demonstrated through Strategy Implementation and Systems Change; Topic – Community Benefits in City Projects of the Winnipeg Poverty Reduction Strategy Implementation Plan.

SUBMITTED BY

Department: Water and Waste
Division: Engineering Services
Prepared by: Robert Taylor and Cynthia Wiebe
Date: January 10, 2024
File No.: S-972

ATTACHMENTS:

Appendix A: 2025 Capital Budget Detail Sheet for NEWPCC Upgrade: Nutrient Removal Facilities