

**Minutes – Standing Policy Committee on Finance and Economic Development –
March 7, 2025**

REPORTS

**Item No. 6 NEWPCC Upgrade: Power Supply and Headworks Facilities,
Project ID: 2031001304, 2031001310 and 203110013B,
Quarterly Project Status Report No. 38
For the Period Ended December 31, 2024**

STANDING COMMITTEE DECISION:

The Standing Policy Committee on Finance and Economic Development concurred in the recommendation of the Winnipeg Public Service and received the financial status of the NEWPCC Upgrade: Power Supply and Headworks Facilities project, as contained in this report, as information.

**Minutes – Standing Policy Committee on Finance and Economic Development –
March 7, 2025**

DECISION MAKING HISTORY:

Moved by Councillor Orlikow,

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

Carried

ADMINISTRATIVE REPORT

Title: NEWPCC Upgrade: Power Supply and Headworks Facilities,
Project ID: 2031001304, 2031001310 and 203110013B,
Quarterly Project Status Report No. 38
For the Period Ended December 31, 2024

Critical Path: Standing Policy Committee on Finance and Economic Development

AUTHORIZATION

Author	Department Head	CFO	CAO
C.D. Wiebe, P.Eng., CAMP, Manager Engineering Services	T. W. Shanks, M. Eng., P. Eng. Director, Water and Waste	T. Graham	S. Armbruster, Interim CAO

EXECUTIVE SUMMARY

Project On Schedule: Yes ☐ No ☒

Project On Adopted Budget: Yes ☐ No ☒

Percent of Schedule Complete: 72%

Percent of Adopted Budget Spent: 63%

The amended Capital Budget for the North End Sewage Treatment Plant (NEWPCC) Upgrade: Power Supply and Headworks Facilities project is \$517.855 million. Expenditures to date are \$325.788 million including a total of \$21.1 million incurred during this reporting period.

Headworks Facilities

Design is nearing completion. Issued for Construction (IFC) Design Submission packages have been submitted by Red River Solutions (RRS) and are under review. Ninety percent design submittal packages are complete and have been accepted.

Significant construction work has progressed during this reporting period, including:

- Concrete pours for interior structures of the Raw Sewage Pumping Station - H2 Chamber
- H1 Junction Chamber by-pass gate fabrication and construction of concrete liner wall and interior structures
- Grit building pipe supports, process piping, electrical cable trays, and cable installation
- Installation of roofing membrane, process piping, rainwater piping, and mechanical room equipment for the Solids Handling Building
- Installation of roofing membrane, cable trays, rainwater piping, air vapor barrier, and perforated screens for the Fine Screening Area
- Installation of conduit and cables, exterior cladding, rainwater piping, and roofing at the Main Control Building

The new Headworks Facility is anticipated to be completed in Q2 2026.

A total of 107 milestones have been reviewed and paid to the contractor, including 17 this reporting period.

Two over-expenditures were approved at the Standing Policy Committee on Water, Waste and Environment (SPC WWE) totaling \$1.47 million dollars for costs associated with additional disposal of contaminated soils, changes in water main size and routing, price increases for motor control centers, and changes in fibre optic cable requirements.

Two new over-expenditure reports will be considered at an upcoming SPC WWE meeting. These are for replacement of existing water mains within NEWPCC to maintain fire protection for existing structures and additional Owner's Advocate services required due to the extension of the Headworks Design Builder's contract.

Distributed Control System (DCS) Migration

The base programming and operator screens for the first area to be migrated has been completed by the System Integrator (Schneider Electric Systems Canada Inc.). The control panel for this area is built and is on-site.

The General Construction Contractor (Centec Electric and Controls Ltd.) has installed the control panel for the first area and is working on the pre-wiring of the new cables.

The DCS migration is anticipated to be completed in Q4 2027.

Primary Clarifier Upgrade

Design modifications are currently underway for the construction of a Scum Dewatering Building. Once complete, the City intends to issue a new tender in Q1 2025. The current Class 1 estimate for this work is \$21.1 million.

Ultraviolet Light (UV) Upgrade

AECOM Canada Ltd. (AECOM) has completed the 90 percent Design for the UV Upgrade. Trojan Technologies ULC is constructing the UV equipment to be supplied.

A tender has been issued for the supply of gates as they are a long-lead item. Motor control centres have been ordered under the existing standardized agreement.

NEWPCC Upgrade Audit

KPMG LLP concluded its audit on all three NEWPCC Upgrade projects. The audit report will be presented to the Executive Policy Committee on January 21, 2025.

Risk

The planned tie-in work to the existing NEWPCC Grit Area has been delayed due to weather and maintenance activities taking longer than anticipated. The project team is looking at options to mitigate.

The Advisory Committee has reviewed this report and recommends that the report be sent to the

Standing Policy Committee on Finance and Economic Development.

RECOMMENDATIONS

That the financial status of the NEWPCC Upgrade: Power Supply and Headworks Facilities project, as contained in this report, be received as information.

REASON FOR THE REPORT

Major Capital Projects are required to report quarterly to the Standing Policy Committee on Finance and Economic Development. The threshold for reporting is reviewed at the beginning of each multi-year budget cycle and revised, if required, for Council consideration. For the 2024-2027 multi-year budget cycle Council approved that the threshold be maintained at \$25 million. The Standing Policy Committee on Finance and Economic Development may also request reporting on any capital project.

IMPLICATIONS OF THE RECOMMENDATIONS

No implications.

HISTORY/DISCUSSION

See Appendix C – Key Project Events (History)

Construction (Update from last report)

NEWPCC Upgrade: Power Supply and Headworks Facilities

Headworks Facilities Design Build Execution

RFP 659-2018B: Issued for Construction (IFC) Design Submission packages have been submitted by Red River Solutions (RRS) and are under review. Ninety percent design submittal packages are complete.

The substantial completion date has been revised to March 31, 2026, due to differing ground conditions and the Northwest Interceptor (NWI) failure. The re-baselined schedule indicates the new Headworks facility will be operational by March 31, 2026. However, decommissioning will not be completed until Q2 2026. The project team is evaluating the contractual impacts of this.

Significant construction continues on site. Highlights include:

- Concrete pours for interior structures of the Raw Sewage Pumping Station - H2 Chamber continue.
- H1 Junction Chamber by-pass gate fabrication is ongoing; construction of concrete liner wall and interior structures is ongoing.

- Grit building pipe supports, process piping, electrical cable trays, and cable installation is ongoing. Installation of temporary protection covers for side gate actuators and space heaters for seasonal protection is complete. Installation of air vapor barrier is complete and installation exterior cladding is ongoing.
- Installation of roofing membrane for the Fine Screening Area on Level 3 is complete, level 2 is ongoing. Installation of cable trays, rainwater piping, air vapor barrier, and perforated screens and other accessories in the channels are ongoing.
- Installation of roofing membrane for the Solids Handling Building is nearing completion. Installation of process piping, rainwater piping, and mechanical room equipment is ongoing. Erection of equipment platforms is complete.
- Installation of the glycol lines and concrete repairs in the Y4 gallery are ongoing.
- Installation of exterior cladding, rainwater piping, and roofing at the Main Control Building is ongoing. Installation of conduit and cables is ongoing.
- Generator assembly, mechanical piping, and installation of miscellaneous electrical at the Standby Power Generator Facility is ongoing.
- Preparatory work to support the existing UV effluent conduit in advance of tunneling is complete.
- Installation of overflow piping is complete. Manhole construction and connection to existing overflow remains outstanding.

RRS has applied for a total of 107 milestone inspections to the Independent Certifier and all have been paid.

On November 22, 2024, SPC WWE approved an over-expenditure for the Headworks Facilities project in the amount of \$1,272,973.20 for an increase in water main size and routing, increases in pricing for motor control centers, and increase in required fibre optic cable.

Relief Events under Discussion

The project team and RRS continue to discuss the claim for cost increases for labour, material, equipment, and subcontractors. External legal has been reviewing the correspondence.

Approved Relief Event Costs to Date:

On September 9, 2024, the Standing Policy Committee on Water, Waste and Environment approved an over-expenditure for the Headworks Facilities project in the amount of \$200,709.32 for the additional costs associated with the disposal of contaminated soils.

Description:	Cost to Date
1. Contaminated soils (to date):	3.16 million ¹
2. Differing ground conditions:	8.16 million
3. Design Code Change:	2.03 million
Total:	13.35 million

Notes:

1. The total cost of contaminated soil remediation will increase as excavation work continues.

RFP 740-2022: Peguis Consultation & Special Projects Inc. was hired to provide archeological and heritage monitoring services to comply with the Province of Manitoba's Heritage Resource Branch's requirements. The archaeology team will continue to monitor excavations as required.

Other Power Supply and Headworks Facilities Projects

DCS Migration

RFP 76-2023: Schneider Electric Systems Canada Inc. is working on the following integration tasks:

- Finalizing system acceptance test (SAT) and system interface functional test (SIFT) plans
- Constructing and testing programmable logic controller (PLC) panel
- Review and acceptance of human-machine interface (HMI) screens is complete

Tender 385-2023: Centec Electric and Controls Ltd. is working on the following general construction tasks:

- Pre-wiring of Grit Area PLC cabinet
- Installing wireless access points in all existing control rooms
- Reviewing commissioning plan

Primary Clarifiers

RFP 785-2020: The redesign of Contract 2 for the construction of a Scum Dewatering Building has been reviewed by the City and comments have been returned to AECOM. AECOM is working on incorporating the changes into the revised design and tender package. A Class 1 estimate for this work was received at \$21.1 million.

Tender 463-2022: Once the design modifications have been finalized, the City intends to issue a new tender in Q1 2025.

Tender 1003-2022: Shop drawing review is complete and equipment to be supplied is ready for manufacturing by Fournier Industries Inc.

UV Upgrade

RFP 182-2015: AECOM Canada Ltd. has completed the 90 percent design and draft of the construction tender. On-going work includes:

- Pre-purchasing of gates and motor control centres
- Finalizing tender documents

Tender 975-2023: Trojan Technologies ULC is manufacturing the equipment to be supplied.

Table 1 – Contracts

Contracts (Open or Recently Close Contracts over \$250,000.00)							
Bid Opportunity #	Company Name	Description	Original Contract Award Value (GST & MRST extra as applicable)	Total Approved Over-Expenditures (Over-Expenditure amount only)	Date of Award	Date of Total Completion	Estimated % Complete
182-2015	AECOM Canada Ltd	Engineering Services for NEWPCC Upgrade – Phase 1	\$ 16,015,439	\$ 354,746	6-Jan-2016	6-Sep-2023	100
182-2015 (Phase 2)	AECOM Canada Ltd	Engineering Services for Headworks Upgrade – Phase 2	\$ 7,992,827	\$ -	8-Oct-2020	-	61
182-2015 (DCS Migration)	AECOM Canada Ltd	Engineering Services – DCS Migration	\$ 2,698,331	\$ -	8-Oct-2020	-	54
182-2015 (UV Upgrade) ¹	AECOM Canada Ltd	Engineering Services – UV Upgrade	\$ 3,503,000	\$ -	30-Oct-2023	-	18
102-2017	Blakes Cassels & Graydon LLP	External Legal Counsel - NEWPCC Upgrade Project	\$ 387,504	\$ -	23-Nov-2017	-	49
659-2018 B ¹	Red River Solutions	Design Build of NEWPCC Upgrade: Headworks Facilities	\$ 271,611,000	\$ 56,281,774	11-Jun-2021	-	72
785-2020	AECOM Canada Ltd	Engineering Services - Primary Clarification Upgrades	\$ 2,166,775	\$ 1,623,375	7-Jun-2021	-	44
64-2021 ²	Altus Group Limited	Independent Certifier Services	\$ 274,350	\$ -	21-Jul-2021	-	70
92-2022 ¹	Centec Electric & Controls Ltd	NEWPCC DCS Migration - Fibre Supply and Installation	\$ 1,333,196	\$ -	16-Jun-2022		99
740-2022	Peguis Consultation & Special Projects Inc.	Archaeological and Environmental Monitoring Services	\$ 75,000	\$ 175,000	31-Aug-2022		49
1003-2022 ¹	Fournier Industries	NEWPCC Primary Clarifiers - Procurement of Scum Presses and Associated Controls	\$ 1,155,405	\$ -	2-May-2023		10
76-2023 ¹	Schneider Electric Systems Canada Inc.	DCS Migration - Integrator Supply and Services	\$ 11,950,000	\$ -	27-Nov-2023		24
385-2023 ¹	Centec Electric & Controls Ltd	DCS Migration - General Construction	\$ 3,925,375	\$ -	6-May-2024		6
975-2023 ¹	Trojan Technologies ULC	UV Upgrade - Supply of Ultraviolet Disinfection Equipment	\$ 7,283,811	\$ -	6-May-2024		20
756-2013 (Extension 2) ¹ / PO 737847	EECOL Electric	UV Upgrade - Supply of Motor Control Centres	\$ 460,100	\$ -	Dec 12,/2024		0
Total			\$ 330,832,112.96	\$ 58,434,895			

¹The Original Contract Award Value includes MRST.

²This is a biparty agreement with cost shared equally between the design builder and the City. Only the amount related to City is indicated.

Upcoming Procurements:

Description	Anticipated Award Date
UV Construction	Q2 2025
Primaries - Scum Dewatering Building	Q2 2025

Schedule (Update from last report)

The revised schedule that incorporates the extension has been submitted. It indicates the new Headworks facility will be operational by March 31, 2026, however decommissioning will not be completed until Q2 2026. The project team is evaluating the contractual impacts of this. The completion dates for the UV Upgrades and Primaries will be determined in advance of issuing the construction tender.

Table 2 – Milestones

Milestones					
Deliverable		Original Targeted Completion Date	Revised Targeted Completion Date	Actual Completion Date	Estimated % Complete
Headworks Facilities					
1	Project Definition Report ¹	2017 Q2	2017 Q2	2017 Q2	100
2	Preliminary Design Report	2018 Q1	2018 Q3	2018 Q3	100
3	Cost Report ²	2018 Q3	2018 Q3	2018 Q3	100
4	Design Build RFP	2020 Q1	2020 Q1	2020 Q1	100
5	Design Builder Contract Award	2020 Q4	2021 Q2	2021 Q2	100
6	Design Build Substantial Completion	2025 Q4	2026 Q1	-	74
7	Design Build Final Completion	2026 Q4	2026 Q2	-	71
8	DCS Migration Substantial Completion	2027 Q4	-	-	15
9	Primary Clarification Substantial Completion	2023 Q4	TBD	-	-
10	UV Upgrades Substantial Completion	TBD	TBD	-	-

¹Owner's Advocate Class 5 Estimate

Risk (Update from last report)

New risk: Headworks tie-in to the existing NEWPCC Grit Area.

- RRS had planned to complete the tie-in work during the 2024/2025 and 2025/2026 low flow periods. The warm fall weather and maintenance activities taking longer than anticipated delayed the start of the tie-in work planned for the first low flow period. This delay may affect the commissioning schedule of the new Headworks Facility. The project team is looking at options to mitigate this including re-sequencing the tie-in work and/or allowing the work to continue later than originally planned.

The following are updates for ongoing risks:

- The project team and RRS continue to discuss the claim for cost increases for labour, material, equipment, and subcontractors. External legal is reviewing the correspondences. A budget amendment could be required for this claim.
- Redesign for the Primary Clarification Upgrade project is nearing completion. A revised Class 1 estimate of \$21.1 million was received. This is higher than the capital funds allocated to this project. After the Primary Clarification Upgrade, the UV Upgrade construction contract is the last major contract that needs to be tendered under the Power

Supply and Headworks capital budget. Once the UV Upgrade Class 1 estimate is received, the project team can review the overall Power Supply and Headworks capital budget and determine if projects can be deferred and/or if additional budget is required.

- RRS has provided a re-baselined schedule that reflects the facility in-use date of March 31, 2026, with decommissioning ongoing until Q2 2026. The project team is evaluating the contractual impacts of this.

Table 3 – Significant Risks and Mitigations Strategies

NEWPCC Upgrade: Power Supply and Headworks Facilities Project	
Significant Risks and Mitigation Strategies	
Headworks Facilities	
Risk Statement and Explanation	Risk Mitigation Management Plan
New	
Weather and planned maintenance activities delaying the Grit Area tie-in which may affect the commissioning schedule for the new Headworks Facility.	Consider options to re-sequence work or allow RRS to continue the work later than originally planned.
Ongoing:	
RRS has submitted a claim for cost increases for labour, material, equipment and subcontractors.	Review claims as they occur and determine if there is entitlement to relief under the Design Build Agreement.
Potential for insufficient budget to complete the NEWPCC Primary Clarification Upgrade Project.	An expression of interest was issued to confirm market capacity for the work and to notify potential bidders of the upcoming tender. City to issue a new tender with a revised scope of work. A budget amendment or deferral of project may need to be considered as pricing is likely higher than original budget.
Budget and schedule risks associated with the NWI failure.	A budget amendment was approved for the additional costs associated with the NWI failure. The City is working with insurers to determine level of coverage. The delay associated with the NWI failure has extended the overall project schedule and the date of substantial completion has been revised. There is potential this may cause coordination issues with future construction projects. Close coordination with other projects is being undertaken.
Impacted soils were discovered by RRS during soil stripping and early excavating work. More impacted soils may be uncovered during next phases of excavation.	Disposal locations for impacted soils have been identified as GFL or Prairie Green depending on the level of contaminant. Disposal plans have been reviewed and approved by the Province. Transportation of impacted soil to disposal sites is in progress. Site delineation plan and Phase 2 environmental soil sampling testing will be conducted for any future impacted soils discovery. The project team will investigate the lowest cost options for soil disposal if required.
Bid prices for other contracts within the Headworks Facilities budget may be higher due to existing market conditions as result of the pandemic.	Scope reduction options will be evaluated and included in the tender documents prior to issuing tender documents to the public. A budget amendment or deferral of project may need to be considered.
Due to multiple construction activities occurring at NEWPCC and construction work occurring in a congested site, limited site access and schedule conflicts/delays may occur affecting tie-ins and shutdowns during construction.	There is regular communications between project managers and consultants to ensure regular coordination of projects at NEWPCC.
NEWPCC is a continuously operating sewage treatment plant, the design builder may cause unintended shut downs or disruptions resulting in failure to meet the Environment Act Licence.	Project requirements include details on how the design builder coordinates with the City prior to tying in to the existing plant. Payment adjustments are included in the contract if unintended shut downs or disruptions occur.
Tariffs may be imposed on equipment procured internationally resulting in increased project costs.	Project requirements include tariffs within the definition of change in law which would be treated as a relief event if it occurs.
There could be excess noise, dust, and light during construction as a result of the project.	The project requirements include construction requirements related to noise. The design builder is also required to have a community impact mitigation plan to avoid such issues.
Due to construction occurring around existing infrastructure, destabilization or damage to existing structures may occur resulting in increased costs and potential schedule delays.	Project requirements include detailed requirements for working around existing infrastructure.
Accidents may occur on an active project construction site resulting in injuries and damaged property causing project delays and reduction in productivity.	Project requirements includes details on safety measures and the design builder is required to be COR certified.

There may be unknown conditions that may be associated with reusing existing facilities.	The DB agreement includes mechanism to deal with unforeseen conditions of existing facilities.
Unknown existing conditions related to geotechnical, environmental, and hazardous material may be encountered during construction causing schedule delays and additional costs.	Geotechnical investigations and environmental impact assessments are being carried out prior to construction to minimize unknowns.
Mitigated:	
Risk of failure of the Main Street Interceptor during construction.	A steel liner was installed within the Main Street Interceptor to minimize the risk of the interceptor failing during construction.
The existing automation system requires migration to an updated automation system as it is at end of life. Due to the age, there may be unforeseen circumstances resulting in quality issues, schedule delays and operational impacts.	This risk is best handled by the City; as a result, the scope was separated as a stand alone design bid build project. This risk also requires knowledgeable and qualified personnel. As part of Phase 2 of their existing contract, the design consultant will carry out the work due to their qualifications and extensive knowledge and experience on the existing automation system.
Closed:	
The standard good equipment provider has stated a significantly increased price and delivery timeline for motor control centers (MCC).	The standardized agreement for motor control centres was renewed after the award of the Headworks project and has affected the standardized pricing. An over-expenditure will be considered in November 2024 for this item.
Differing ground conditions as defined by the Design Build Agreement were encountered in two of the deep shafts. As a result, the contractor is claiming an increase in costs and a delay.	An over-expenditure was approved for the additional costs associated with the differing ground conditions. The schedule substantial completion date has been revised to account for the delay.
Excavation work under the UV outfall filled with water. RRS believes it is secondary effluent. The City disagrees as sampling results are more indicative of groundwater. The City rejected the claim for costs related to additional investigations but RRS has still proceeded. RRS may come back with further claims as a relief event depending on the findings of their investigation.	Additional excavation and sampling occurred and confirmed the water encountered was groundwater.
The Public Service submitted funding application for NEWPCC Headworks DB project for the Federal and Provincial funding under the Investing in Canada Infrastructure Program based on Council approval. Delay of the funding agreement or an agreement in principle may result in loss of a construction season causing increase in project costs and schedule delays.	This risk is now closed as the ICIP funding was approved and the design build agreement was executed before the proposal validity period.
No existing legislation on odour release threshold causing potential impact and complaints from neighbors resulting in post - construction renovations or changes in operation at additional cost.	A field study with dispersion modelling has been carried out. Since this risk is mainly applicable to the NEWPCC Upgrade: Nutrient Removal Project it will be identified at the start of that project.

Financial (Update from last report)

For further information, refer to Appendix B – Financial Forecast

The City continues to work with their insurers to determine the level of coverage for the NWI failure. An advance of \$2.85 million has been received for the claim.

Funding (Update from last report)

N/A

Table 4 – Project Funding Forecast

Funding Forecast			
Funding Source	Adopted Budget ¹ (in	Amended Budget ² (in	Committed (in
Class of Estimate	Class 5	Class 3	Class 3
NEWPCC Upgrade:			
Power Supply			
Retained Earnings ⁷		20.03	20.03
Environmental Projects Reserve ⁷		32.25	32.25
Total Power Supply		52.28	52.28
Headworks Facilities			
Retained Earnings ⁶	87.64	87.08	87.08
External Debt ^{3, 6}	690.29	147.72	147.72
Environmental Projects Reserve ^{3, 4}	17.66	17.91	17.91
Federal Government ^{3, 5}		116.11	116.11
Provincial Government ^{3, 5}		96.75	96.75
Total Headworks Facilities	795.59	465.57	465.57
Total	795.59	517.85	517.85

¹ Council adopted budget in 2016

² On February 28, 2019 Council approved the existing project be amended to consist of three projects. Project 1: Power Supply and Headworks Facilities; Project 2: Biosolids Facilities; Project 3: Nutrient Removal Facilities.

³ In a letter dated April 1, 2021, the Province of Manitoba confirmed that funding for Headworks Project would be reduced to \$96.749 million from \$100.300 million (Province) and to \$116.111 million from \$120.373 million (Federal), resulting in an increase of \$7.813 million to the City's share of costs.

⁴ On May 27, 2021 Council approved a budget increase of \$65 million funded by \$32.5 million debt and \$32.5 million Environmental Projects Reserve.

⁵ On July 23, 2021 Federal and Provincial ICIP funding of \$212.86 million was announced for the Headworks Project.

⁶ On February 22, 2024 Council approved a budget increase of \$65 million funded by \$25 million debt and \$19.475 million Retained Earnings.

⁷ Major Capital Projects Steering Committee requested that the Power Supply project and other work considered ineligible for Provincial and Federal funding be removed from funding forecast.

Property Acquisition (Update from last report)

N/A

Stakeholder Engagements/Communications (Update from last report)

The City continues to work with a number of stakeholders on this project including:

- Peguis First Nation regarding the cultural interest in the NEWPCC lands
- The Manitoba Government as the Provincial Regulator
- The International Institute for Sustainable Development, Lake Winnipeg Foundation, and Lake Winnipeg Indigenous Collective as environmental stakeholders

Audit (Update from last report)

KPMG LLP concluded its audit on all three NEWPCC Upgrade projects. The objective of the audit was to evaluate the existence, effectiveness, and adequacy of controls over the NEWPCC Upgrade projects. The Public Service has prepared their audit response and developed a plan to address the audit recommendations.

With the Headworks project nearing completion, not all of the audit recommendations can be implemented for this project. Recommendations for delegated authority to approve changes, risk management, contract and claims management, relationship management, and project planning document updates will be implemented for the Headworks project.

Subsequent Events after Report Period End Date

The final audit report was presented to the Executive Policy Committee on January 21, 2025. A number of the audit recommendations are in the process of being implemented, including increased frequency of risk reviews, project planning document updates, and internal planning workshops. The content and reporting frequency of the quarterly status project reports may change as the audit recommendations are implemented.

An over-expenditure report for the Headworks project was approved by the Standing Policy Committee on Water, Waste and Environment (SPC WWE) in February 2025 in the amount of \$1,226,852.87 for replacement of existing water mains within NEWPCC to maintain fire protection for existing structures.

An over-expenditure report for the Owner's Advocate was approved by the SPC WWE in February 2025 in the amount of \$1,654,424.00 for additional consulting services due to extension of the Headworks Facilities Design Builder's contract.

A report requesting delegation of authority to approve over-expenditures for the NEWPCC Upgrade projects was approved at the February 2025 meeting of the SPC WWE. It is moving forward for Council consideration. This report follows from audit recommendations 2: authority and accountability and 40: change order approval timelines.

Project cost impacts resulting from potential 25 percent retaliatory tariffs on all imported goods from Canada to the United States. This has the potential to impact items such as steel, process equipment (i.e. centrifuges), and electrical equipment.

FINANCIAL IMPACT

Financial Impact Statement Date: February 4, 2025

Project Name:

NEWPCC Upgrade Project: Power Supply and Headworks Facilities

Project IDs: 2031001304, 2031001310, 203110013B

Quarterly Project Status Report No. 38

For the Period Ended December 31, 2024

COMMENTS:

Financial Forecast for NEWPCC Upgrade Projects can be found in Appendix B.

A. Wiebe on behalf of

Lucy Szkwarek, CPA, CA

Manager of Finance & Administration

CONSULTATION

This Report has been prepared in consultation with:

N/A

OURWINNIPEG POLICY ALIGNMENT

This report aligns OurWinnipeg 2045, Policy 2.17 Regional Water Resource Management, by addressing long-term capacity of water-related systems including wastewater management. Objective: Protect and value ecosystems as essential components to quality of life through municipal activities and urban environment.

WINNIPEG CLIMATE ACTION PLAN ALIGNMENT

Consideration was given as to whether this report connects to the Winnipeg Climate Action Plan (CAP), and it was determined that the CAP is not applicable to this specific report.

WINNIPEG POVERTY REDUCTION STRATEGY ALIGNMENT

Consideration was given as to whether this report connects to the Winnipeg Poverty Reduction Strategy (PRS) and its Goals and Objectives, and it was determined that the PRS is not applicable to this specific report.

SUBMITTED BY

Department: Water and Waste Department
Division: Engineering Services Division
Prepared by: Linda McCusker, Project Director
Date: February 7, 2025

Appendices

Appendix A – Key Project Facts

Appendix B – Financial Forecast

Appendix C – Key Project Events (History)

Appendix D - Funding

Appendix A – Key Project Facts

Appendix A – Key Project Facts	
Project Name	NEWPCC Upgrade: Power Supply & Headworks Facilities
Business Owner (Department)	Water and Waste Department
Project ID	2031001304, 2031001310, and 203110013B
Project Sponsor	Director of Water and Waste
Department Responsible for Project Delivery	Water and Waste Department
Consultant Engineer (Company Name)	KGS Group Consulting Engineers and AECOM Canada Ltd.
Adopted Budget	\$795.95 Million
Class of Estimate (Adopted)	Class 5
Range of Estimate (Adopted)	-50% to +100% \$397.80 million to \$1,591.18 million
Amended Budget	\$517.855 million
Class of Estimate (Amended)	Class 3
Range of Estimate (Amended)	-20% to +30% \$414.284 million to \$673.212 million
<u>Project Scope</u>	
The Power Supply and Headworks Facilities projects will address end-of-life equipment at the front end of the plant and upgrade the power supply to provide adequate power capacity for the NEWPCC Upgrade Projects. The Project design will accommodate expected influent flows and loads to 2037 and take into account future regulatory trends and long term planning to year 2067.	
Major Capital Projects Advisory Committee Membership:	
<ul style="list-style-type: none"> - Matt Dryburgh, Acting Chief Administrative Officer - Tracy Graham, Chief Financial Officer - Geoffrey Patton, Director of Assets and Project Management - Danny Tooth, Acting Manager of Major Project Oversight - Tim Shanks, Director of Water and Waste - Cynthia Wiebe, Manager of Engineering Services, Water and Waste - Lucy Szkwarek, Manager of Finance and Administration, Water and Waste - Linda McCusker, Project Director, Winnipeg Sewage Treatment Program, Water and Waste 	

Appendix B – Financial Forecast

Appendix B - North End Sewage Treatment Plant (NEWPCC) Upgrade Projects Financial Forecast As of Dec 31, 2024

Project Component Deliverables	Budget (in 000's)			Expenditure Forecast (in 000's)								Surplus (Deficit) From Amended Budget	Variance Last Report	Change in Variance
	Adopted Budget	Council Approved Change	Amended Budget ¹	Actual Costs To Dec 31, 2024	Projected Costs					Total Forecasted Costs				
					2025	2026	2027	2028	2029					
Power Supply & Headworks Facilities Project ²														
Engineering, Design and Other	\$ 57,196	\$ (2,959)	\$ 54,237	\$ 38,745	\$ 5,801	\$ 5,361	\$ 4,021	\$ 379	\$ -	\$ 54,307	\$ (70)	\$ 3,053	\$ (3,123)	
Construction	\$ 621,011	\$ (225,299)	\$ 395,712	\$ 282,264	\$ 81,367	\$ 52,587	\$ 13,467	\$ 1,072	\$ -	\$ 430,757	\$ (35,045)	\$ (49,356)	\$ 14,311	
Land Acquisition	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
Internal Financing/Overhead Costs	\$ -	\$ 21,718	\$ 21,718	\$ 4,779	\$ 3,961	\$ 3,106	\$ 8,620	\$ -	\$ -	\$ 20,466	\$ 1,252	\$ 2,878	\$ (1,626)	
Contingency	\$ 117,383	\$ (71,195)	\$ 46,188						\$ 12,325	\$ 12,325	\$ 33,863	\$ 43,425	\$ (9,562)	
Total Project Budget	\$ 795,590	\$ (277,735)	\$ 517,855	\$ 325,788	\$ 91,129	\$ 61,054	\$ 26,108	\$ 1,451	\$ 12,325	\$ 517,855	\$ -	\$ -	\$ -	

% of Project Budget Spent³	
Power Supply & Headworks Facilities	63%

¹Amended budget and actual costs to date have been agreed to the City's general ledger and Monthly Capital Expenditures Report and include closed budget years

²On May 27, 2021, Council approved a budget increase of \$65M; On February 22, 2024 Council approved a budget increase of \$44.475M

³Actual costs to date / Amended budget

		Amount in '000's	
Project ID	Project Year	Amended Budget	Costs to Date
2031001304 ⁴	2004	\$214	\$214
2031001310 ⁴	2010	\$305	\$305
203110013B	2012 – 2021	\$517,336	\$325,269
Total Combined Project Budget		\$517,855	\$325,788
Breakdown by Project			
Ineligible Costs including Power Supply Project ⁵		\$52,281	\$52,281
Headworks Facilities Project ⁵		\$465,574	\$272,988
⁴ Does not appear in the Capital Expenditures Monthly Report as the funds have been expended and it is designated as a closed Project ID.			
⁵ Headworks Facility Project segregated for reporting purposes.			
⁶ Cost incurred before ICIP project approval date of May 28, 2021 are deemed ineligible.			

Appendix C – Key Project Events (History)

THE PROJECT

The goal of this project is to upgrade the North End Sewage Treatment Plant (NEWPCC) to meet new Regulatory Licence requirements regarding the maximization of nutrient removal and biosolids reuse and new effluent limits for nitrogen and phosphorous. The upgrade will also add wet weather treatment capability; add a new facility to treat the sludge from all three plants; and replace end-of-life equipment. The Project design will accommodate expected influent flows and loads to 2037. It will also consider future regulatory trends and long-term planning to the year 2067 to facilitate effective process or facility modifications should they be required.

A new power sub-station is required at the NEWPCC to accommodate the additional power demand of the upgrades at the facility. The power supply upgrade was delivered as a separate project from the main NEWPCC upgrade to allow for early procurement of long-lead items, such as transformers, to ensure that the electrical power upgrade is available for the new processes when needed.

The delivery method for NEWPCC Power Supply and Headworks Facilities Upgrade Projects is largely design build (DB) with a small scope being procured as design bid build (DBB).

The upgraded facility will have an economical whole-life cost and be an efficient and safe workplace for operational personnel. In addition, the plant must operate continuously during the work and continue to meet current effluent limits. The impact of construction and commissioning to the capacity of the treatment facility will be minimized as much as possible.

In 2003 Clean Environment Commission Hearings on the City's wastewater collection and treatment systems, Manitoba Conservation and Water Stewardship (now Manitoba Sustainable Development, the Regulator) notified the City that it intended to issue a licence for the NEWPCC that would require control of nutrients discharged to the Red River.

On May 16, 2007, Council authorized the Chief Administrative Officer to finalize the terms and conditions of a contribution agreement with the Government of Canada and the Province of Manitoba for funding of Wastewater Treatment Plant upgrades under the Canada Strategic Infrastructure Fund (CSIF).

On November 19, 2008, City Council authorized the Winnipeg Public Service to:

- Begin the procurement of a strategic partner that could bring private sector experience to the design, construction, finance, and potentially the operation of the North and South End Sewage Treatment Plants as well as potential operation of the West End Sewage Treatment Plant
- Authorize the Chief Administrative Officer to approve and issue the Request for Expressions of Interest followed by a Request for Qualifications and the Request for Proposals

On May 6, 2009 the Environment Act Licence (EAL) No. 2684 RRR was issued for the NEWPCC.

On May 19, 2010 Council:

- Directed the Chief Administrative Officer to approve and issue a Letter of Notification to Veolia in order to immediately begin design and construction of the South and North End Sewage Treatment Plant upgrades and expansion and biosolids handling facility
- Delegated the authority to the Chief Administrative Officer to “approve contract awards for upcoming South and North End Sewage Treatment Plant capital projects where the value of each contract does not exceed \$30 million and there are sufficient funds in a budget approved by Council

On June 16, 2011, the Save Lake Winnipeg Act amending sections of the Water Protection Act (Act) came into effect. Section 4.2(3) of the amended Act required the City to submit a plan that details how the City will comply with subsections 4.2(1) and (2).

The NEWPCC Upgrading Plan was submitted to the Regulator in compliance with Section 4.2(3) of the amended Water Protection Act on June 15, 2012. The Regulator approved the Upgrading Plan on October 2, 2012. The Department submitted the NEWPCC Master Plan and the revised NEWPCC Master Plan on September 27, 2013 and April 28, 2014 respectively. The Master Plan was approved by the Regulator on May 29, 2014.

In the Regulator’s Licence alteration Letter dated December 30, 2014, the project completion date was specified as December 2019. However, the Regulator was notified on June 23, 2016 that the project schedule was not achievable. Manitoba Sustainable Development acknowledged receipt of this notice on August 16, 2016 and indicated they had “no concerns at this time.” Regular schedule updates and progress reports continue to be submitted to Manitoba Sustainable Development on a quarterly basis.

In the second quarter of 2017, the Department reported that an updated conceptual design project cost estimate was received from the design consultant. This new information indicated costs over a billion dollars, much higher than the currently approved budget of \$795.59 million (Class 5 estimate).

The Adopted Budget, \$795.59 million, was based on a Class 5 cost estimate which has an Association for the Advancement of Cost Engineering (AACE) expected accuracy range of -50% and + 100% or \$397.80 million to \$1,591.18 million.

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 recommendation to Council requested approval to proceed with the project scope for Power Supply and Headworks Facilities. Other levels of Government funding for the remaining projects to complete the plant upgrade are required.

The three capital projects and Class 3 cost estimates (including interest charges) to complete the NEWPCC Upgrade are identified as:

1. NEWPCC Upgrade: Power Supply and Headworks Facilities - \$473 million
2. NEWPCC Upgrade: Biosolids Facilities - \$1.035 billion (revised from \$553 million)

3. NEWPCC Upgrade: Nutrient Removal Facilities - \$828 million

The total budget to upgrade NEWPCC is approximately \$1.854 billion; based on a class 3 cost estimate which has an AACE expected accuracy range of -20% and +30% or \$1.48 billion to \$2.41 billion. This amount includes an estimated \$155 million in interest charges to be capitalized during the construction period. The total budget was updated from \$1.789 billion to \$1.854 billion as a result of the budget amendment increase of \$65 million for the NEWPCC Upgrade: Power Supply and Headworks Facilities Capital Budget. The budget increase was approved by Council on May 27, 2021.

On December 5, 2019, a response was received from Manitoba Conservation and Climate, Environmental Approvals Branch with regards to the Notice of Alteration (NOA) for NEWPCC submitted by the City July 30, 2019. The response indicated that the NOA was not approved and that the City will be out of compliance with the Environmental Act Licence 2684 RRR and with the phosphorus compliance plan pursuant to the Water Protection Act in January 1, 2020. In the absence of an approved phosphorus compliance plan, the City was required to participate in two project committees namely; the Project Steering Committee and Project Advisory Committee.

On September 26, 2019, Council approved a 2019 capital project budget of \$552.712 million, for NEWPCC Upgrade: Biosolids Facilities, subject to final written confirmation of federal and provincial funding satisfactory to the Chief Financial Officer.

On January 30, 2020, Council approved \$15.334 million from the Biosolids Facilities Budget to commence engineering services.

On February 19, 2020, Minister Squires sent a letter to the Mayor indicating that additional funding of \$21.8 million is an initial payment to be allocated to the NEWPCC Upgrade Project under any potential ICIP arrangements, along with the previous allocation of \$34.4 million for a total of \$56.2 million.

On September 20, 2020 Council approved that the City agree to transfer \$321.24 million of Federal Government's funding under the ICIP from the Public Transit Infrastructure Stream to the Green Infrastructure Stream to fund the Federal Government's funding portion for the NEWPCC Upgrade: Headworks Facilities Project and the NEWPCC Upgrade: Biosolids Facilities Project as per the Province of Manitoba's requirement, subject to certain conditions.

The design build of the NEWPCC Power Supply Project was substantially completed in Q4 2020.

On March 25, 2021, Council adopted that:

- The Government of Canada and the Province of Manitoba be requested to provide confirmation of approval of ICIP for the NEWPCC Upgrade Projects: Headworks Facility Project and Biosolids Facility Project
- The Province of Manitoba be requested to confirm the City's recommended procurement methodology for the Biosolids Facility Project
- The Public Service be directed not to proceed with detailed engineering design for the Biosolids Facility design-bid-build project, in the amount of \$15.334 million, as approved

by Council on January 30, 2020, until such time as the confirmation requested in recommendations 1 and 2 have been received

In a letter dated April 1, 2021, the Province of Manitoba confirmed that funding for the Headworks Project will be reduced to \$96.749 million from \$100.300 million (Province) and to \$116.111 million from \$120.373 million (Federal). This means that the City's share of costs will increase by \$7.813 million as a result of the owner advocate costs incurred.

On May 18, 2021, the Executive Policy Committee concurred in the recommendation of the Public Service, as amended, that:

- The current Operation and Maintenance of Winnipeg's sewage treatment utility shall remain public and that the Operation and Maintenance not be included as part of the P3 market sounding
- That a single source contract be approved with Deloitte LLP of up to \$400 thousand to conduct a market sounding for a Design, Build and Financing P3 for the Biosolids and Nutrient Removal facilities projects of the NEWPCC upgrades
- That the Public Service report back to Council on the results of the market sounding and analysis

On May 27, 2021, Council approved:

- Red River Solutions, an Aecon Oscar Renda Joint Venture, as the Preferred Proponent for the Design Build of the NEWPCC Upgrade: Headworks Facilities Project
- A budget amendment increases of \$65 million for the NEWPCC Upgrade: Power Supply and Headworks Facilities Capital Budget, to be funded 50/50 through utility rates and debt financing
- Review of the AACE Class 3 cost estimates for Biosolids and Nutrient Removal Facilities projects and refer any increases to the 2022 capital budget process; and to update the ten-year water and sewer financial plan and report back to Council in October 2021

On May 31, 2021, the NEWPCC Upgrade: Headworks Facilities was approved for Federal and Provincial funding under the ICIP – Green Infrastructure – Environmental Quality Sub-stream, with Federal contributions up to \$116.111 million and Provincial Contributions up to \$96.750 million. Accordingly, the agreement for the design build of the NEWPCC Upgrade: Headworks Facilities was executed with RRS on June 11, 2021.

On July 23, 2021, a formal press release regarding the approval of funding through the ICIP application for the NEWPCC Upgrade: Headworks Facilities was carried out at the NEWPCC. All three levels of government were in attendance.

A joint news release by the Province of Manitoba and the City was issued on November 24, 2021 regarding the advancement of the City's funding application to the Federal Government of Canada for the NEWPCC Upgrade: Biosolids Facilities Project through the ICIP.

On February 24, 2022, Council approved that future tenders for the NEWPCC Upgrade Projects require bidders to include the following as part of their bid submissions:

- Specific information on its intended partnerships or self-directed plans to secure a skilled project labour workforce

- Estimated numbers of and classifications of skilled tradespersons to be employed
- 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.

On July 21, 2022 the City Council approved:

1. That the NEWPCC Upgrade: Biosolids Facilities Project be delivered using a Design Build procurement model
2. That the revised cost estimate for the NEWPCC Upgrade: Biosolids Facilities Capital Budget be referred to the 2024-2027 Multi-Year Budget Process
3. That the \$15,334,000.00 2019 Capital Budget for the NEWPCC Upgrade: Biosolids Facilities, approved on January 30, 2020, as part of the 2020-2023 Water and Sewer Rate Report, be funded from the Environmental Projects Reserve rather than external debt

On August 16, 2022, a formal press release regarding the approval of funding through the ICIP application for the NEWPCC Upgrade: Biosolids Facilities was carried out at the NEWPCC. All three levels of government were in attendance.

On February 22, 2024, Council approved a \$44.475 million budget increase for the NEWPCC Upgrade: Power Supply and Headworks Facilities project due to costs associated with the Northwest Interceptor failure. The budget amendment brings the total project cost to \$517.855 million.

RISKS AND RISK MITIGATION STRATEGIES

There are risks associated with the cost and schedule for a project that is this large and complex especially at the early stages. In addition, the final bid amounts for projects are unknown until the project agreement is finalized with the Design Builder.

An ongoing risk management strategy has been implemented for both the NEWPCC Upgrade Power Supply and Headworks Facilities Projects. It includes a proactive process of identifying risks, performing qualitative and quantitative risk analyses, creating response plan strategies, and ongoing monitoring. The risk management process is an active part of the management of the projects. The projects will also incorporate structured Hazard and Operability Analysis and a Construction Hazard Assessment Implication Review. Since detailed design and construction will be carried out through a DB contract, the Winnipeg Sewage Treatment Program will be identifying and transferring as much risk as reasonable to the Design Builder.

The Risk Registers for each of the Projects contain cost and schedule risks associated with design, procurement, construction, operation, and unknown events. This is reviewed and updated regularly.

Appendix D
North End Sewage Treatment Plant (NEWPCC) and Winnipeg Sewage Treatment Program (WSTP)

1) Funding for the NEWPCC is as follows:

NEWPCC Upgrade (in \$millions)	Total Cost	Funded to Date		Funding Pending		Total Funding		City Share of Costs
		Canada	Manitoba	Canada	Manitoba	Canada	Manitoba	
Funding by Project								
Power Supply and Headworks Facilities	\$ 517.85							
Power Supply and Other Ineligible	52.28	-	-	-	-	-	-	\$ 52.28
Headworks Facilities	421.10	\$ 63.63	\$ 53.05	\$ 52.48	\$ 43.70	\$ 116.11	\$ 96.75	\$ 208.24
Headworks Facilities - NWI Failure*	44.47	-	-	-	-	-	-	44.47
Biosolids Facilities	1,035.00	-	\$ -	200.87	\$ 167.38	200.87	167.38	666.75
Funding Dependent								
Nutrient Removal Facilities	828.06	-	-	-	-	-	-	18.00
Estimated Program Costs	\$ 2,380.91	\$ 63.63	\$ 53.05	\$ 253.35	\$ 211.08	\$ 316.98	\$ 264.13	\$ 989.74

2) Funding for the Winnipeg Sewage Treatment Programs is as follows:

WSTP All Projects (in \$millions)	Total Cost	Funded to Date		Funding Pending		Total Funding		City Share of Costs
		Canada	Manitoba	Canada	Manitoba ⁴	Canada	Manitoba	
WEWPCC Biological Nutrient Removal ¹	\$ 33.23	\$ 5.07	\$ 8.19	-	-	\$ 5.07	\$ 8.19	\$ 19.97
NEWPCC Centrate and UV Disinfection ¹	52.08	5.59	14.54	-	-	5.59	14.54	31.95
SEWPCC Nutrient Removal/Expansion	375.60	37.04	15.98	5.30	1.10	42.34	17.08	316.18
NEWPCC Power Supply and Headworks ²	517.85	63.63	53.05	\$ 52.48	\$ 43.70	116.11	96.75	304.99
NEWPCC Biosolids ³	1,035.00	-	-	200.87	167.38	200.87	167.38	666.75
NEWPCC Nutrient Removal ⁴	828.06	-	-	-	-	-	-	18.00
Estimated Program Costs	\$ 2,841.82	\$ 111.33	\$ 91.76	\$ 258.65	\$ 212.18	\$ 369.98	\$ 303.94	\$ 1,357.84

¹ WEWPCC Biological Nutrient Removal and NEWPCC Centrate and UV Disinfection have been completed.

² On July 23, 2021 the Federal and Provincial governments announced \$212.86 million in Investment in Canada Infrastructure Program (ICIP) funding for the NEWPCC Upgrade Power Supply and Headworks project. \$116.11 million in Federal and \$96.75 million in Provincial funding.

³ On August 16, 2022 the Federal and Provincial governments announced an additional \$368.25 million in ICIP funding for the NEWPCC Upgrade Biosolids project. \$200.87 million in Federal and \$167.38 million in Provincial funding. Committing a total of \$581.11 million in funding to the NEWPCC Upgrade.

⁴ On January 26, 2023 Council approved a \$18 million budget to start the enhanced preliminary design and procurement process for the NEWPCC Nutrient Removal project. The total budget for the NEWPCC Nutrient Removal project has not been approved.

* Northwest Interceptor (NWI)