

**Minutes – Standing Policy Committee on Finance and Economic Development –  
November 27, 2024**

**REPORTS**

**Item No. 4                      NEWPCC Upgrade: Power Supply and Headworks Facilities,  
Project ID: 2031001304, 2031001310 and 203110013B,  
Quarterly Project Status Report No. 37  
For the Period Ended August 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 –  
November 27, 2024**

**DECISION MAKING HISTORY:**

Moved by Councillor Allard,

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. 37  
For the Period Ended August 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:** 69%

**Percent of Adopted Budget Spent:** 59%

The amended Capital Budget for the North End Sewage Treatment Plant (NEWPCC) Upgrade: Power Supply and Headworks Facilities project is \$517.86 million. Expenditures to date are \$304.68 million including a total of \$17.43 million incurred during this reporting period.

#### Headworks Facilities

Red River Solutions (RRS) continues to develop and issue design submittal packages at 90% and Issued for Construction (IFC) for various portions of work.

During this reporting period, RRS has focused on the following construction activities:

- Concrete pours for interior structures of the Raw Sewage Pumping Station - H2 Chamber are ongoing
- Preparatory work in advance of tunneling is ongoing in the H1 Junction Chamber including excavation and stabilization of the chamber walls around the Northwest Interceptor (NWI)
- Erection of structural steel and placement of hollow core roof panels at the Solids Handling and Mechanical Rooms is complete
- Installation of exterior walls at the Main Control Building is ongoing
- Various rebar, formwork, and concrete pours were completed throughout the project site

A total of 90 milestones have been reviewed and paid to the contractor including 13 this reporting period.

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

### **Distributed Control System (DCS) Migration**

Work is progressing on controller programming and construction of controller cabinets for the first two areas to be migrated under the System Integrator contract with Schneider Electric Systems Canada Inc.

Centec Electric and Controls Ltd. are on-site and have started the electrical work under the General Construction contract.

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

### **Primary Clarifier Upgrade**

Design modifications are currently underway for Contract 2 for the construction of a Scum Dewatering Building. Once complete, the City intends to issue a new tender.

The completion date for the Primary Clarifier Upgrade will be determined in advance of issuing the new tender.

### **Ultraviolet Light (UV) Upgrade**

AECOM Canada Ltd. has completed the Preliminary Design Report for the UV Upgrade and has submitted the 60 percent design drawings and specifications for review.

Trojan Technologies ULC is in the process of developing shop drawings for UV equipment to be supplied.

The completion date for the UV Upgrades will be determined in advance of issuing the tender.

### **NEWPCC Upgrade Audit**

KPMG LLP continues its audit on all three NEWPCC Upgrade projects. The audit is expected to be completed in Q4 2024.

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:** RRS continues to develop and issue design submittal packages at 90 percent and Issued for Construction (IFC) for various portions of work. The 90 percent packages are nearing completion.

The substantial completion date has been revised to March 31, 2026, due to differing ground conditions and the Northwest Interceptor (NWI) failure. A draft re-baselined schedule has been received that incorporates the schedule extension and is currently under review.

Significant construction continues on site. Highlights include:

- Concrete pours for interior structures of the Raw Sewage Pumping Station - H2 Chamber are ongoing
- Preparatory work in advance of tunneling is ongoing in the H1 Junction Chamber including excavation and stabilization of the chamber walls around the Northwest Interceptor
- Process and electrical installation and installation of influent channel frames and covers is ongoing in the Grit Building. Installation of access hatch frames and covers for the effluent channel is complete
- Various formwork, rebar, and concrete work at the Fine Screening area is ongoing. The roof slab is partially complete; East exterior wall and columns are complete
- Erection of structural steel and placement of hollow core roof panels at the Solids Handling and Mechanical Rooms is complete. Installation of monorail beams, rainwater piping, mechanical room equipment, and erection of equipment platforms is ongoing
- Installation of exterior walls (framing, cladding, and drywall) at the Main Control Building is ongoing. Installation of interior concrete masonry walls is nearing completion
- Generator assembly, mechanical piping, and installation of miscellaneous electrical at the Standby Power Generator Facility is ongoing
- Installation of miscellaneous electrical in the Y4 Connection Gallery is complete
- Preparatory work to support the existing UV effluent conduit in advance of tunneling is ongoing

- Installation of overflow piping is complete. Manhole construction and connection to existing overflow remains outstanding

RRS has applied for 13 milestone inspections this reporting period, for a total of 90, to the Independent Certifier and all have been paid.

The City continues to work with their insurers to determine the level of coverage for the NWI failure.

#### Relief Events under Discussion

On August 28, 2024, RRS submitted a follow-up correspondence outlining their position on entitlement to relief under the Design-Build Agreement for cost increases for labour, material, equipment, and subcontractors. The City is reviewing RRS's correspondence.

An over-expenditure for \$200,709.32 was approved on September 9, 2024, by the Standing Policy Committee on Water, Waste and Environment for additional cost associated with the disposal of contaminated soils.

#### Relief Event Costs to Date:

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

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 continues 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:
    - Controller programming
    - Operator HMI screen development
    - Construction of the controller cabinets for the first two areas to be migrated
    - Updating existing drawings for the Grit Area
  - **Tender 385-2023:** Centec Electric and Controls Ltd. is on site and have completed the wiring for the new operator workstations. Ongoing work includes:

- Wiring in all control rooms
  - Pre-wiring in the Grit Area for the installation of the first controller cabinet
  - Review of field wiring in the Grit Area
- **Primary Clarifiers**
  - **RFP 785-2020:** Contract 2 for the construction of a Scum Dewatering Building was tendered and only one bid was received. An Expression of Interest was issued to solicit feedback from contractors on Contract 2. The feedback confirmed market capacity was available and identified areas where the design could be modified to decrease costs. Redesign of selected design modifications for the Scum Dewatering Building is ongoing.

On June 27, 2024, the Director of Water and Waste approved a contract over-expenditure in the amount of up to \$243,203 for Professional Engineering Consulting Services related to the redesign and retendering of the NEWPCC Primary Clarification Upgrades project.

- **Tender 463-2022:** Upon completion of the design modifications, the City intends to issue a new tender.
- **UV Upgrade**

**RFP 182-2015:** AECOM Canada Ltd. has completed the Preliminary Design Report and has submitted the 60 percent design drawings and specifications for review. Ongoing work includes:

  - Evaluation of UV shutdown sequencing
  - Evaluation of the need to pre-purchase items with long lead times
  - Development of the 90 percent design package
  - **Tender 975-2023:** Trojan Technologies ULC is developing shop drawings for the equipment to be supplied.

Table 1 – Contracts

NEWPCC Upgrade: Headworks Facilities							
Contracts Table (Open or Recently Closed Contracts Over \$250,000.00)							
Bid Opportunity #	Company Name	Description	Original Contract Award Value (GST and MRST extra as applicable)	Total Approved Over-Expenditures (Over-Expenditure amount only)	Date of Award	Date of Completion	Estimated % Complete
<b>Headworks Facilities</b>							
182-2015	AECOM Canada Ltd	Engineering Services for NEWPCC Upgrade – Phase 1	\$ 16,015,439	\$ 354,746	6-Jan-2016	-	99
182-2015 (Phase 2)	AECOM Canada Ltd	Engineering Services for Headworks Upgrade – Phase 2	\$ 7,992,827	\$ -	8-Oct-2020	-	56
182-2015 (DCS Migration)	AECOM Canada Ltd	Engineering Services – DCS Migration	\$ 2,698,331	\$ -	8-Oct-2020	-	50
182-2015 (UV Upgrade) <sup>1</sup>	AECOM Canada Ltd	Engineering Services – UV Upgrade	\$ 3,503,000	\$ -	30-Oct-2023	-	14
1070-2015	Willis Canada	Owner-Controlled Insurance for Headworks	\$ 3,795,264	\$ -	8-Dec-2016	31-Dec-2022	100
102-2017	Blakes Cassels & Graydon LLP	External Legal Counsel - NEWPCC Upgrade Project	\$ 387,504	\$ -	23-Nov-2017	-	42
659-2018 B <sup>1</sup>	Red River Solutions	Design Build of NEWPCC Upgrade: Headworks Facilities	\$ 271,611,000	\$ 56,281,774	11-Jun-2021	-	67
785-2020	AECOM Canada Ltd	Engineering Services - Primary Clarification Upgrades	\$ 2,166,775	\$ 1,623,375	7-Jun-2021	-	43
64-2021 <sup>2</sup>	Altus Group Limited	Independent Certifier Services	\$ 274,350	\$ -	21-Jul-2021	-	58
92-2022 <sup>1</sup>	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		30
1003-2022 <sup>1</sup>	Fournier Industries	NEWPCC Primary Clarifiers - Procurement of Scum Presses and Associated Controls	\$ 1,155,405	\$ -	2-May-2023		0
76-2023 <sup>1</sup>	Schneider Electric Systems Canada Inc.	DCS Migration - Integrator Supply and Services	\$ 11,950,000	\$ -	27-Nov-2023		10
385-2023 <sup>1</sup>	Centec Electric & Controls Ltd	DCS Migration - General Construction	\$ 3,925,375	\$ -	6-May-2024		3
975-2023 <sup>1</sup>	Trojan Technologies ULC	UV Upgrade - Supply of Ultraviolet Disinfection Equipment	\$ 7,283,811	\$ -	6-May-2024		0
		<b>Total</b>	<b>\$ 334,167,277</b>	<b>\$ 58,434,895</b>			

<sup>1</sup>The Original Contract Award Value includes MRST.

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

### **Schedule** (Update from last report)

N/A



Table 2 – Milestones

Milestones					
Deliverable		Original Targeted Completion Date	Revised Targeted Completion Date	Actual Completion Date	Estimated % Complete
<b>Headworks Facilities</b>					
1	Project Definition Report <sup>1</sup>	2017 Q2	2017 Q2	2017 Q2	100
2	Preliminary Design Report	2018 Q1	2018 Q3	2018 Q3	100
3	Cost Report <sup>2</sup>	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	-	67
7	Design Build Final Completion	2026 Q4	2026 Q2	-	64
8	DCS Migration Substantial Completion	2027 Q4	-	-	3
9	Primary Clarification Substantial Completion	2023 Q4	TBD	-	-

<sup>1</sup>Owner's Advocate Class 5 Estimate

<sup>2</sup>Cost Consultant Class 3 Estimate

### **Risk** (Update from last report)

No new risks were identified during this reporting period. The following are updates for ongoing risks:

- RRS submitted a follow-up correspondence outlining their position on entitlement to relief under the Design-Build Agreement for cost increases for labour, material, equipment, and subcontractors. The City is reviewing RRS's correspondence.
- Redesign for the Primary Clarification Upgrade project is ongoing. A new tender with a revised scope of work will be issued upon completion of the redesign.
- RRS has provided a re-baselined schedule that reflects the revised substantial completion date of March 31, 2026.
- An over-expenditure report will be considered at the Standing Policy Committee on Water, Waste and Environment in November 2024 for the increase in pricing motor control centers due to the renewal of the standardized agreement. This risk has been moved from ongoing risk to closed risk in Table 3.

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
<b>New</b>	
<b>Ongoing:</b>	
RRS has submitted a claim for cost increases associated with the legacy impacts of the COVID-19 pandemic.	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.
<b>Mitigated:</b>	
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.
<b>Closed:</b>	
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

## **Funding** (Update from last report)

N/A

Table 4 – Project Funding Forecast

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

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 reported separately.

### **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 continues its audit on all three NEWPCC Upgrade projects. The objective of the audit is to evaluate the existence, effectiveness, and adequacy of controls over the NEWPCC Upgrade projects. The audit is expected to be completed in Q4 2024.

**Subsequent Events after Report Period End 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.

An over-expenditure report will be considered at the Standing Policy Committee on Water, Waste and Environment in November 2024 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.

<b>FINANCIAL IMPACT</b>
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**Financial Impact Statement**      **Date:**    [October 31, 2024](#)

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**Project Name:**

**NEWPCC Upgrade Project:**

**Power Supply and Headworks Facilities**

**Project IDs: 2031001304, 2031001310, 203110013B**

**Quarterly Project Status Report No. 37**

**For the Period Ended August 31, 2024**

**COMMENTS:**

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

*Lucy Szkwarek, CPA, CGA*

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Lucy Szkwarek, CPA, CGA

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, P.Eng., Project Director  
**Date:** October 31, 2024

## Appendices

Appendix A – Key Project Facts

Appendix B – Financial Forecast

Appendix C – Key Project Events (History)

Appendix D – Funding

## Appendix A – Key Project Facts

<b>Project Name</b>	NEWPCC Upgrade: Power Supply & Headworks Facilities
<b>Business Owner (Department)</b>	Water and Waste Department
<b>Project ID</b>	2031001304 , 2031001310 and 203110013B
<b>Project Sponsor</b>	Director of Water and Waste
<b>Department Responsible for Project Delivery</b>	Water and Waste Department
<b>Consultant Engineer</b> (Company Name)	KGS Group Consulting Engineers and AECOM Canada Ltd.
<b>Adopted Budget</b>	\$795.95 million
<b>Class of Estimate (Adopted)</b>	Class 5
<b>Range of Estimate (Adopted)</b>	-50% to +100% \$397.80 million to \$1,591.18 million.
<b>Amended Budget</b>	\$517.855 million
<b>Class of Estimate (Amended)</b>	Class 3
<b>Range of Estimate (Amended)</b>	-20% to +30% \$414.284 million to \$ 673.212 million
<b><u>Project Scope</u></b>	
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.	
<p style="text-align: center;"><b>Major Capital Projects Advisory Committee Membership:</b></p> <ul style="list-style-type: none"> <li>- Sherwood Armbruster, Interim Chief Administrative Officer</li> <li>- Moira Geer, Deputy Chief Administrative Officer</li> <li>- Tracy Graham, Chief Financial Officer</li> <li>- Geoffrey Patton, Director of Assets and Project Management</li> <li>- Danny Tooth, Acting Manager of Major Project Oversight</li> <li>- Tim Shanks, Director of Water and Waste</li> <li>- Lucy Szkwarek, Manager of Finance and Administration, Water and Waste</li> <li>- Linda McCusker, Project Director, Winnipeg Sewage Treatment Program, Water and Waste</li> </ul>	



## Appendix B – Financial Forecast

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

Project Component Deliverables	Budget (in 000's)			Actual Costs To Aug 31, 2024	Expenditure Forecast (in 000's)						Surplus (Deficit) From Amended Budget	Variance Last Report	Change in Variance
	Adopted Budget	Council Approved Change	Amended Budget <sup>1</sup>		Projected Costs					Total Forecasted Costs			
					2024	2025	2026	2027	2028				
Power Supply & Headworks Facilities Project <sup>2</sup>													
Engineering, Design and Other	\$ 57,196	\$ (2,959)	\$ 54,237	\$ 37,984	\$ 1,345	\$ 4,315	\$ 4,019	\$ 3,409	\$ 112	\$ 51,184	\$ 3,053	\$ 3,520	\$ (467)
Construction	\$ 621,011	\$ (263,149)	\$ 395,712	\$ 262,899	\$ 35,506	\$ 81,413	\$ 49,473	\$ 14,704	\$ 1,073	\$ 445,068	\$ (49,356)	\$ (47,884)	\$ (1,472)
Land Acquisition	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Internal Financing/Overhead Costs	\$ -	\$ 17,493	\$ 21,718	\$ 3,815	\$ 1,856	\$ 2,840	\$ 4,904	\$ 5,425	\$ -	\$ 18,840	\$ 2,878	\$ 2,878	\$ -
Contingency	\$ 117,383	\$ (73,595)	\$ 46,188						\$ 2,763	\$ 2,763	\$ 43,425	\$ 41,486	\$ 1,939
Total Project Budget	\$ 795,590	\$ (322,210)	\$ 517,855	\$ 304,698	\$ 38,707	\$ 88,568	\$ 58,396	\$ 23,538	\$ 3,948	\$ 517,855	\$ -	\$ -	\$ -

<b>% of Project Budget Spent<sup>3</sup></b>	
Power Supply & Headworks Facilities	59%

<sup>1</sup>Amended 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

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

<sup>3</sup>Actual costs to date / Amended budget

		Power Supply & Headworks Facilities Amount in '000's	
Project ID	Project Year	Amended Budget	Costs to Date
2031001304 <sup>4</sup>	2004	\$214	\$214
2031001310 <sup>4</sup>	2010	\$305	\$305
203110013B	2012 – 2021	\$517,336	\$304,179
<b>Total Combined Project Budget</b>		<b>\$517,855</b>	<b>\$304,698</b>
<b>Breakdown by Project</b>			
Ineligible Costs including Power Supply Project <sup>5</sup>		\$52,281	\$52,281
Headworks Facilities Project <sup>5</sup>		\$465,574	\$251,898
<sup>4</sup> Does not appear in the Capital Expenditures Monthly Report as the funds have been expended and it is designated as a closed Project ID.			
<sup>5</sup> Headworks Facility Project segregated for reporting purposes.			
<sup>6</sup> 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:

<b>NEWPCC Upgrade (in \$millions)</b>	<b>Total Cost</b>	<b>Funded to Date</b>		<b>Funding Pending</b>		<b>Total Funding</b>		<b>City Share of Costs</b>
		<b>Canada</b>	<b>Manitoba</b>	<b>Canada</b>	<b>Manitoba</b>	<b>Canada</b>	<b>Manitoba</b>	
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	-	-	-	-	-	-	-
<b>Estimated Program Costs</b>	<b>\$ 2,380.91</b>	<b>\$ 63.63</b>	<b>\$ 53.05</b>	<b>\$ 253.35</b>	<b>\$ 211.08</b>	<b>\$ 316.98</b>	<b>\$ 264.13</b>	<b>\$ 971.74</b>

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

<b>WSTP All Projects (in \$millions)</b>	<b>Total Cost</b>	<b>Funded to Date</b>		<b>Funding Pending</b>		<b>Total Funding</b>		<b>City Share of Costs</b>
		<b>Canada</b>	<b>Manitoba</b>	<b>Canada</b>	<b>Manitoba <sup>4</sup></b>	<b>Canada</b>	<b>Manitoba</b>	
WEWPCC Biological Nutrient Removal <sup>1</sup>	\$ 33.23	\$ 5.07	\$ 8.19	-	-	\$ 5.07	\$ 8.19	\$ 19.97
NEWPCC Centrate and UV Disinfection <sup>1</sup>	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 <sup>2</sup>	517.85	63.63	53.05	\$ 52.48	\$ 43.70	116.11	96.75	304.99
NEWPCC Biosolids <sup>3</sup>	1,035.00	-	-	200.87	167.38	200.87	167.38	666.75
NEWPCC Nutrient Removal <sup>4</sup>	828.06	-	-	-	-	-	-	-
<b>Estimated Program Costs</b>	<b>\$ 2,841.82</b>	<b>\$ 111.33</b>	<b>\$ 91.76</b>	<b>\$ 258.65</b>	<b>\$ 212.18</b>	<b>\$ 369.98</b>	<b>\$ 303.94</b>	<b>\$ 1,339.84</b>

<sup>1</sup> WEWPCC Biological Nutrient Removal and NEWPCC Centrate and UV Disinfection have been completed.

<sup>2</sup> 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.

<sup>3</sup> 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.

<sup>4</sup> NEWPCC Upgrade Nutrient Removal project has not been approved.

\* Northwest Interceptor (NWI)