

**Agenda – Standing Policy Committee on Finance and Economic Development –  
May 10, 2024**

**REPORTS**

**Item No. 1                   NEWPCC Upgrade: Power Supply and Headworks Facilities, Project  
ID: 2031001304, 2031001310 and 203110013B, Quarterly Project  
Status Report No. 35 For the Period Ended February 29, 2024**

**WINNIPEG PUBLIC SERVICE RECOMMENDATION:**

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

# ADMINISTRATIVE REPORT

**Title: NEWPCC Upgrade: Power Supply and Headworks Facilities,  
Project ID: 2031001304, 2031001310 and 203110013B,  
Quarterly Project Status Report No. 35  
For the Period Ended February 29, 2024**

**Critical Path: Standing Policy Committee on Finance and Economic Development**

## AUTHORIZATION

Author	Department Head	CFO	CAO
B. Jones, P. Eng., Acting Manager, Engineering Services	T. W. Shanks, M. Eng., P. Eng., Director, Water and Waste Department	C. Kloepfer	M. Jack

## EXECUTIVE SUMMARY

Project On Schedule: Yes  No

Project On Adopted Budget: Yes  No

Percent of Schedule Complete:

Percent of Adopted Budget Spent:

On February 22, 2024, Council approved a \$44.475 million budget increase for the North End Sewage Treatment Plant (NEWPCC) Upgrade: Power Supply and Headworks Facilities project due to costs associated with the Northwest Interceptor (NWI) failure. The budget amendment brings the total project cost to \$517.855 million. Expenditures to date are \$247.95 million including a total of \$20.48 million incurred during this reporting period (December 1, 2023 to February 29, 2024).

### Headworks Facilities

Red River Solutions (RRS) continues to develop and issue design submittal packages at 60%, 90%, and Issued for Construction (IFC) for various portions of work.

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

- Concrete work at the Raw Sewage Pump Station – H2 Chamber is in progress with multiple pours for the liner walls to occur over the next few months
- The installation of steel beams and supports for the NWI steel liner in the H1 Junction Chamber is complete
- The Main Street Interceptor in the Y5 Connection Chamber has been exposed and preparatory work for liner installation is nearing completion. Liner installation is expected to be complete in March 2024
- Various rebar, formwork, and concrete pours were completed throughout the project site

A total of 63 milestones have been reviewed and paid to the contractor.

An over-expenditure for \$37.85 million was approved on February 22, 2024 by Council for costs associated with the NWI failure.

An over-expenditure report will be considered at an upcoming meeting of the Standing Policy Committee on Water, Waste and Environment for the design code change and the additional costs associated with the differing ground conditions.

Due to the materially different ground conditions and the NWI failure, a schedule extension will be required. The revised date will be determined in the coming months.

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

Work has begun on the network and programming under the System Integrator contract with Schneider Electric Systems Canada Inc.

The tender for general construction has closed and the team is evaluating bids.

### **Primary Clarifier Upgrade**

Contract 2 for the construction of a Scum Dewatering Building was tendered and one bid was received and was substantially higher than the Class 1 pre-bid estimate. It was determined it would not be in the best interest of the City to award the contract. An Expression of Interest will be issued to confirm market capacity for the work and to notify potential bidders of the upcoming tender. Upon completion of the Expression of Interest, the City intends to issue a new tender with a revised scope of work.

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

Preliminary design is underway for the UV upgrade.

On January 19, 2024, the tender for the Supply of Ultraviolet Disinfection Equipment closed. The award will be considered at the May meeting of the Standing Policy Committee on Water, Waste and Environment.

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 track behind schedule during this period as a result of design deliverables lagging, differing ground conditions, and the NWI failure delays. Due to the materially different ground conditions and the NWI failure, a schedule extension will be required which will revise the substantial completion date of Q2 2025. This date is currently under review.

RRS continues to submit design packages at 60%, 90%, and IFC for various portions of work. The 60% and 90% packages are nearing completion.

Significant construction continues on site. Highlights include:

- Concrete base slab in the Raw Sewage Pumping Station – H2 Chamber is poured and cured. Heating and hoarding, and dewatering work are ongoing. Formwork, rebar work, and concrete pours for the liner walls will be ongoing for the next few months
- Installation of steel beams and associated supports for the NWI steel liner at the H1 Junction Chamber are complete. Excavation work for base slab to begin
- Some of the liner wall in the Y5 Connection Chamber has been completed to allow for the stabilization of the Main Street Interceptor. Excavation work to expose the Main Street Interceptor is complete. Preparatory work to install the liner has been initiated with liner installation expected to occur in March 2024
- Application of coating to the grit cells at the Grit Building is complete. Installation of duct chutes, steel ladders at grit cells, first layer grit trays, and slide gates are complete. Installation of piping supports in the basement is complete. Installation of flushing water lines, grit pumps piping, and electrical cable tray supports at basement level are ongoing
- Roof slab for the north corridor and the north parapet wall at the Fine Screening area are complete. Various formwork, rebar, and concrete work is ongoing
- Delivery and erection of structural steel at the Solids Handling and Mechanical Rooms is ongoing
- Installation and alignment of hollow core (roof level) at the Main Control Building is

complete

- Four transformers were delivered and installed at the Transformer Yard
- Generator assembly at the Standby Power Generator Facility continues
- Electrical cable tray installations in the Y4 Connection Gallery is ongoing
- Dowel installation and construction of concrete support beams at the existing UV effluent conduit are complete
- Underground flushing water line installation and backfilling work is complete
- Installation of overflow piping is ongoing. 21 of 52 pipes are currently installed

RRS has applied for a total of 63 milestone inspections to the Independent Certifier, all have been paid.

On February 22, 2024, Council concurred in the recommendations of the Standing Policy Committee on Water, Waste, and Environment and the Executive Policy Committee to approve Over-Expenditure No. 9 and an associated budget increase of \$44.475 million for the costs associated with the NWI failure. Contract changes in Over-Expenditure No. 9 included clean-up, repair, tunnel boring machine recovery, and schedule delay costs associated with the NWI failure. Over-Expenditure No. 9 included an upset limit of up to \$29.95 million for the schedule delay, however this item has now been settled at \$23.25 million (\$6.7 million less than anticipated). The City continues to work with their Insurers to determine the level of coverage for the NWI failure.

#### Relief Events under Discussion

*Differing Ground Conditions:* On September 23, 2022, RRS notified the City they had encountered materially different site ground conditions than the information available during the pursuit of the project. This was determined to be a Relief Event as per the Design Build Agreement. An agreement was signed by both Parties to provide RRS an initial payment of \$3.8 million to cover some of the costs incurred.

*Design Code Change:* Certain concrete structures for the Headworks Facilities project are designed to meet the requirements of the American Concrete Institute (ACI code). Subsequent to proposal submission by RRS, there was a change in the ACI code that resulted in an increase in the amount of rebar required for the work. The design code change qualifies as a Relief Event as per the Design Build Agreement as the design code change came into effect after the proposal Submission Deadline.

An over-expenditure report will be considered at an upcoming meeting of the Standing Policy Committee on Water, Waste and Environment for the design code change and the additional costs associated with the differing ground conditions.

#### Relief Events Costs to Date:

<b>Description:</b>	<b>Cost to Date</b>
1. Contaminated soils (to date):	3.0 million
2. Differing ground conditions (initial payment):	3.8 million
3. Design Code Change:	0
<b>Total:</b>	<b>6.8 million</b>

Notes:

1. The total cost of contaminated soil remediation will increase as excavation work continues.
  2. An over-expenditure report will be forthcoming on this matter for the additional costs beyond the initial payment.
  3. An over-expenditure report will be forthcoming on this matter.
- **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:** Work has begun on the network and programming under the System Integrator contract with Schneider Electric Systems Canada Inc. Mobilization to site should occur by the end of March 2024.
  - **Tender 385-2023:** The tender for general construction has closed and the team is evaluating bids.
- **Primary Clarifiers**
  - **RFP 785-2020:** Redesign of the Scum Dewatering Building for Contract 2 is underway.
  - **Tender 463-2022:** Contract 2 for the construction of a Scum Dewatering Building was tendered and one bid was received and substantially higher than the Class 1 pre-bid estimate. It was determined it would not be in the best interest of the City to award the contract. An Expression of Interest will be issued to confirm market capacity for the work and to notify potential bidders of the upcoming tender. Upon completion of the Expression of Interest, the City intends to issue a new tender with a revised scope of work.
- **UV Upgrade**
  - **RFP 182-2015:** Preliminary design is underway.
  - **Tender 975-2023:** On January 19, 2024, the Tender for the Supply of Ultraviolet Disinfection Equipment closed. The award will be considered at the May meeting of the Standing Policy Committee on Water, Waste and Environment.
- **Power Supply Upgrades**
  - The Power Supply Upgrades project is complete and in the warranty phase.
  - A total of \$52.281 million of the NEWPCC Upgrade: Power Supply and Headworks Facilities budget was expended on the Power supply Upgrades and other work

- considered ineligible for Provincial and Federal funding.
- The contracts table for the Power Supply Upgrades has been removed from this report.

Table 1 – Contracts

NEWPCC Upgrade: Headworks Facilities							
Contracts Table (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 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	-	45
182-2015 (DCS Migration)	AECOM Canada Ltd	Engineering Services – DCS Migration	\$ 2,698,331	\$ -	8-Oct-2020	-	44
182-2015 (UV Upgrade)	AECOM Canada Ltd	Engineering Services – UV Upgrade	\$ 3,503,000	\$ -	30-Oct-2023	-	4
1070-2015	Willis Canada	Owner-Controlled Insurance for Headworks	\$ 3,795,264	\$ -	8-Dec-2016		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	\$ 56,524,000	11-Jun-2021	-	59
785-2020	AECOM Canada Ltd	Engineering Services - Primary Clarification Upgrades	\$ 2,166,775	\$ 1,380,172	7-Jun-2021	-	46
64-2021 <sup>2</sup>	Altus Group Limited	Independent Certifier Services	\$ 274,350	\$ -	21-Jul-2021	-	51
92-2022	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	\$ 250,000	\$ -	31-Aug-2022		0
1003-2022	Fournier Industries	NEWPCC Primary Clarifiers - Procurement of Scum Pressed and Associated Controls	\$ 1,155,405	\$ -	2-May-2023		0
76-2023	Schneider Electric Systems Canada Inc.	DCS Migration - Integrator Supply and Services	\$ 11,950,000	\$ -	27-Nov-2023		0
		<b>Total</b>	<b>\$ 323,133,091</b>	<b>\$ 58,258,918</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)

Due to the materially different ground conditions and the NWI failure, a schedule extension will be required which will revise the substantial completion date of Q2 2025 for the Design Build

contract. Once the new substantial completion date is established, the milestone dates in Table 2 will be revised.

The overall project schedule for the Primary Clarification upgrades will also be updated upon award of the revised tender.

The milestones associated with the Power Supply Upgrades have been removed from Table 2 below as the project is complete and in the warranty phase.

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	2025 Q2	-	-
7	Design Build Final Completion	2026 Q4	2025 Q3	-	-
8	DCS Migration Substantial Completion	2027 Q4	-	-	-
9	Primary Clarification Substantial Completion	2023 Q4	-	-	-

<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 in this reporting period. The following risk mitigation measures for ongoing risks were determined during this reporting period:

- A steel liner will be installed within the Main Street Interceptor to mitigate the risk of the interceptor failing during construction
- An Expression of Interest will be issued for the Primary Clarification Upgrade project to confirm market capacity and notify bidders of the upcoming tender. A new tender will be issued with a revised scope of work after the Expression of Interest
- A budget increase has been approved for the NWI failure
- An over-expenditure report is forthcoming for the differing ground conditions Relief Event
- The project delays due to the NWI failure and the differing ground conditions will require a schedule extension. Potential acceleration options will be evaluated



Table 3 – Significant Risks and Mitigations Strategies

<b>NEWPCC Upgrade: Power Supply and Headworks Facilities Project</b>	
<b>Significant Risks and Mitigation Strategies</b>	
<b>Headworks Facilities</b>	
<b>Risk Statement and Explanation</b>	<b>Risk Mitigation Management Plan</b>
<b><u>New</u></b>	
None	
<b><u>Ongoing:</u></b>	
Risk of failure of the Main Street Interceptor during construction.	A steel liner will be installed within the Main Street Interceptor to minimize the risk of the interceptor failing during construction.
Potential for insufficient budget to complete the NEWPCC Primary Clarification Upgrade Project.	An expression of interest to be 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.
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 will impact the overall project schedule. There is potential this may cause coordination issues with future construction projects. Close coordination with other projects is being undertaken. Acceleration efforts are being reviewed.
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.	The City and its Owners Advocate will review further claims if necessary to determine whether they are an impact to the Project.
The standard good equipment provider has stated a significantly increased price and delivery timeline for motor control centers (MCC).	The City will evaluate any changes against the standardized agreement to determine if changes are within the existing contract.
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 report will be forthcoming for this matter. A schedule extension will be required.
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.
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.
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 it occurs.
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 infrastructures.
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 to include mechanism to deal with unforeseen conditions of existing facilities. Proponents will also be provided access to the site for due diligence and examination.
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. It is also anticipated that contracting with a single entity responsible for construction risks would minimize impact.
<b>Mitigated:</b>	
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 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.
The Project may be affected due to project costs now estimated to be \$1.8 billion.	A Class 3 cost estimate was carried out after preliminary design to validate the budget. An independent cost consultant was also retained to provide a Class 3 estimate.
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)

Refer to Appendix B – Financial Forecast.

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

On February 22, 2024, Council approved a \$44.475 million increase to the NEWPCC Upgrade:

Power Supply and Headworks Facilities budget. Table 4 has been updated to include the budget amendment.

Table 4 – Project Funding Forecast

<b>Funding Forecast</b>			
<b>Funding Source</b>	<b>Adopted Budget<sup>1</sup> (in millions)</b>	<b>Amended Budget<sup>2</sup> (in millions)</b>	<b>Committed (in millions)</b>
<b>Class of Estimate</b>	<b>Class 5</b>	<b>Class 3</b>	<b>Class 3</b>
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, Lake Winnipeg Indigenous Collective as environmental stakeholders

### **Subsequent Events after Report Period End Date**

On March 1, 2024, RRS submitted a Relief Event notice regarding cost increases for labour, material, equipment and subcontractors associated with the legacy impacts of COVID-19 pandemic. The notice could ultimately result in cost and schedule increases. The notice is currently under review.

On March 7, 2024, during an excavation for overflow piping, several objects were uncovered including glass bottles, plates, kettles, metal scraps etc. Work was stopped in the area and Peguis Consultation & Special Projects Inc. is investigating the objects in consultation with the Provincial Heritage Resources Branch.

**FINANCIAL IMPACT**

**Financial Impact Statement**      **Date:**      [April 3, 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. 35**

**For the Period Ended February 29, 2024**

**COMMENTS:**

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

*Lucy Szkwarek, CPA, CGA*

Lucy Szkwarek, CPA, CGA

Manager of Finance & Administration

## CONSULTATION

This Report has been prepared in consultation with:

N/A

## OURWINNIPEG POLICY ALIGNMENT

[Click here to enter text.](#)

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

N/A

## 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:** April 5, 2024  
**File:** S-972

## 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>	
<p>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>	
<b>Major Capital Projects Advisory Committee Membership:</b>	
<ul style="list-style-type: none"> <li>- Michael Jack, Chief Administrative Officer</li> <li>- Moira Geer, Deputy Chief Administrative Officer</li> <li>- Catherine Kloepfer, Chief Financial Officer</li> <li>- Geoffery 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 February 29, 2024

Project Component Deliverables	Budget (in 000's)			Actual Costs To Feb 29, 2024	Expenditure Forecast (in 000's)					Total Forecasted Costs	Surplus (Deficit) From Amended Budget	Variance Last Report	Change in Variance
	Adopted Budget	Council Approved Change	Amended Budget <sup>1</sup>		Projected Costs								
					2024	2025	2026	2027	2028				
<b>Power Supply &amp; Headworks Facilities Project<sup>2</sup></b>													
Engineering, Design and Other	\$ 57,196	\$ (2,959)	\$ 54,237	\$ 36,315	\$ 3,460	\$ 4,184	\$ 4,563	\$ 2,195	\$ -	\$ 50,717	\$ 3,520	\$ 1,994	\$ 1,526
Construction	\$ 621,011	\$ (263,149)	\$ 395,712	\$ 208,418	\$ 117,900	\$ 72,725	\$ 37,520	\$ 5,108	\$ -	\$ 441,671	\$ (45,959)	\$ (43,753)	\$ (2,206)
Land Acquisition	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Internal Financing/Overhead Costs	\$ -	\$ 17,493	\$ 21,718	\$ 3,220	\$ 2,000	\$ 2,840	\$ 5,116	\$ 5,643	\$ -	\$ 18,820	\$ 2,898	\$ 2,899	\$ (1)
Contingency	\$ 117,383	\$ (73,595)	\$ 46,188						\$ 6,647	\$ 6,647	\$ 39,541	\$ 38,860	\$ 681
<b>Total Project Budget</b>	<b>\$ 795,590</b>	<b>\$ (322,210)</b>	<b>\$ 517,855</b>	<b>\$ 247,953</b>	<b>\$ 123,360</b>	<b>\$ 79,749</b>	<b>\$ 47,199</b>	<b>\$ 12,946</b>	<b>\$ 6,647</b>	<b>\$ 517,855</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>

% of Project Budget Spent <sup>3</sup>	
Power Supply & Headworks Facilities	48%

<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	\$247,434
<b>Total Combined Project Budget</b>		<b>\$517,855</b>	<b>\$247,953</b>
<b>Breakdown by Project</b>			
Ineligible Costs including Power Supply Project <sup>6</sup>		\$52,281	\$52,281
Headworks Facilities Project <sup>5</sup>		\$465,574	\$195,672
<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 increase 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 – Funding

### 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	\$49.34	\$ 41.11	\$ 66.77	\$ 55.64	\$ 116.11	\$ 96.75	\$ 208.24
Headworks Facilities - NWI Failure*	44.47	-	-	-	-	-	-	44.47
Funding Dependent								
Biosolids Facilities	1,035.00	-	-	200.87	167.38	200.87	167.38	666.75
Nutrient Removal Facilities	828.06	-	-	-	-	-	-	-
<b>Estimated Program Costs</b>	<b>\$ 2,380.91</b>	<b>\$49.34</b>	<b>\$ 41.11</b>	<b>\$ 267.64</b>	<b>\$ 223.02</b>	<b>\$ 316.98</b>	<b>\$ 264.13</b>	<b>\$ 971.74</b>

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 <sup>4</sup>	Canada	Manitoba	
WEWPCB 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
SEWPCB 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	49.34	41.11	\$ 66.77	\$ 55.64	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>\$97.04</b>	<b>\$ 79.82</b>	<b>\$ 272.94</b>	<b>\$ 224.12</b>	<b>\$ 369.98</b>	<b>\$ 303.94</b>	<b>\$ 1,339.84</b>

<sup>1</sup> WEWPCB 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)