

**Minutes – Standing Policy Committee on Finance and Economic Development –  
November 3, 2023**

**REPORTS**

**Item No. 3                   NEWPCC Upgrade: Power Supply and Headworks Facilities,  
Project ID: 2031001304, 2031001310 and 203110013B,  
Quarterly Project Status Report No. 33  
For the Period Ended August 31, 2023**

**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 3, 2023**

DECISION MAKING HISTORY:

Moved by Councillor Orlikow,

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

Carried

# ADMINISTRATIVE REPORT

**Title:** NEWPCC Upgrade: Power Supply and Headworks Facilities,  
Project ID: 2031001304, 2031001310 and 203110013B,  
Quarterly Project Status Report No. 33  
For the Period Ended August 31, 2023

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

## AUTHORIZATION

Author	Department Head	CFO	CAO
C. D. Wiebe, P. Eng., CAMP	T. W. Shanks, M. Eng., P. Eng.	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:

The Capital Budget for the NEWPCC Upgrade: Power Supply and Headworks Facilities project is \$473.38 million with expenditures to date totaling \$207.82 million. A total of \$27.77 million was spent during this reporting period (May 1 to August 31, 2023).

### 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:

- Tunnel 1 was completed; Tunnel 2 is approximately 41% complete and currently on hold due to the failure of the northwest interceptor (NWI).
- Repairs to the NWI are ongoing; the impact to cost and schedule are still to be determined.
- Various major concrete pours were completed throughout the footprint
- Insulation and cladding work at the Standby Power Generator Facility were completed.

A total of 35 milestones have been reviewed and paid to the contractor.

The potential Relief Event related to materially different ground conditions continues to be discussed between the City and RRS. The City continues to verify and evaluate the potential to impact cost and schedule.

RRS remains on schedule to achieve substantial completion by Q2 2025.

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

The RFP for the System Integrator that was planned to be awarded by the end of Q3 2023 is now in negotiations of the terms and conditions with the sole bidder. The sole bidder has altered some of the terms and conditions of the RFP. The last tender for general construction will be posted after award of the System Integrator contract.

### **Primary Clarifier Upgrade**

Detailed design of the upgrade works on the existing infrastructure is ongoing. The tender for the procurement of the scum presses and associated controls has been awarded.

### **Power Supply Upgrade**

The design build contractor has achieved total performance. The City has received final documentation to commence the warranty period.

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**

The Asset Management Administrative Standard FM-004 requires all projects with a total estimated cost of \$25 million (2023) or more report quarterly to the Standing Policy Committee on Finance and Economic Development. This threshold is reviewed at the beginning of each multi-year budget cycle. 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:** Red River Solutions (RRS) continues to track behind schedule during this

period as a result of design deliverables lagging, differing ground conditions, and the northwest interceptor (NWI) repair delays.

RRS continues to submit design submission packages at 60%, 90%, and Issued for Construction (IFC) for various portions of work.

Significant construction continues on site. Highlights include:

- Excavation of Tunnel 1 is complete; Tunnel 2 is approximately 41% complete. Tunneling work has been paused due to the failure of the NWI on June 7, 2023. Subsequent heavy rainfall events occurred on August 1 and August 11, 2023, that resulted in further chamber flooding and additional rework.
  - Dewatering, recovery of materials and equipment, and cleanup is progressing.
  - The City and RRS continue to work on a solution to repair the NWI and evaluate cost and schedule impact.
- Grit influent slabs and the north and south grit chambers at the Grit Building are complete. Rebar work for the roof and sides, and installation of grit pumps in the basement is underway.
- Various concrete pours, hydrostatic testing, damp proofing, and backfilling at the Fine Screening area are complete.
- Grade beams, main slab, and perimeter and interior curbs at the Solids Handling and Mechanical Rooms are complete.
- Grade beams, rebar, electrical, drainage piping, and floor slab at the Main Control Building are complete.
- Vapour barrier installation, sealing of roof gaps, insulation work, and wall cladding at the Standby Power Generator Facility are complete.
- Excavation, pile installation, pile caps, and void formwork at the Connection Gallery are complete. Some concrete pours for the walls and base slab are complete.

RRS has applied for a total of 35 milestone inspections to the Independent Certifier, all have been paid.

- On July 25, 2023, the City issued a change order to RRS approving the realignment of several Milestones to better reflect the sequence and progress of work being undertaken. Nineteen new Milestones were created by reallocating scope elements in existing Milestones; this brings the total number of Milestones to 125.

On August 11, 2023, an over expenditure of \$45,265.17 was approved by the Chief Administrator Officer (CAO). This included \$57,265.17 for the fifth payment of the contaminated soils relief event which currently totals \$2.93 million. It also included a payment adjustment credit of \$12,000.00.

#### Relief Events under Discussion

- 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. If verified, this will be treated as a relief event per the DBA. The City and RRS continue to verify and evaluate this notice and its impact on cost and schedule.

- On June 7, 2023, the NWI failed causing the raw sewage pump station (RSPS) and interceptor junction chamber shafts to fill with effluent. RRS is working to dewater, clean, recover work areas, and repair the NWI. To date, the City has issued RRS three Change Order Directives related to this work as follows:
- CHO-0028 – NWI Cleanup (upset limit of \$500,000);
- CHO-0029 – NWI Repair (upset limit of \$750,000); and
- CHO-0030 – Tunnel Boring Machine Recovery (upset limit of \$750,000).

RRS is tracking all costs associated with this event and continue to work with the City on a solution to repair the NWI, as well as evaluate schedule impacts.

- **RFP 740-2022:** Peguis Consultation & Special Projects Inc. was hired to provide archeological and heritage monitoring services to comply with the province’s Heritage Resource Branch’s (HRB) requirements for the project to complete a Heritage Resource Impact Assessment.

HRB’s investigation in the east Y4 tunnel area is complete. Work near the future outfall chamber is underway.

On May 11, 2023, Archeological Finds were discovered during prescreening of work areas at a future excavation location on the Headworks site. A blessing at the site was held with an Elder from Peguis First Nation on May 12, 2023. The Finds were subsequently determined to be an animal bone, some teeth and items consistent with grit material from the treatment process.

**Other Power Supply and Headworks Facilities Projects**

- **RFP 40-2014 – Power Supply:** On July 13, 2023, an over expenditure of \$56,500.00 was approved by the Manager of Engineering Services to complete the documentation, answer operational questions from the plant, and for the final warranty inspection.
- **RFP 182-2015 – DCS Migration:** Detailed design is at 100% review for the PCS panel & installation package.
- **RFP 1003-2022 – Primary Clarifiers:** On May 2, 2023, a tender for procurement of the scum presses and associated controls was awarded to Fournier Industries in the amount of \$1,155,404.54.

Table 1 – Contracts

NEWPCC Upgrade: Power Supply							
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>Power Supply Facility</b>							
40-2014 (Phase 2)	KGS Group Inc	Engineering Services for the Power Supply Upgrade – Phase 2	\$ 1,376,613	\$ 98,500	3-May-2018	-	98
599-2015 B <sup>1</sup>	Black & McDonald Limited	Design Build - Power Supply Upgrade Project	\$ 34,961,209	\$ 996,940	16-Apr-2018	28-Apr-23	100
		Completed Contracts	\$ 3,711,637	\$ 344,158			

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

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	-	33
182-2015 (DCS Migration)	AECOM Canada Ltd	Engineering Services – DCS Migration	\$ 2,698,331	\$ -	8-Oct-2020	-	38
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	\$ 3,316,821	11-Jun-2021	-	38
785-2020	AECOM Canada Ltd	Engineering Services - Primary Clarification Upgrades	\$ 2,166,775	\$ -	7-Jun-2021	-	37
64-2021 <sup>2</sup>	Altus Group Limited	Independent Certifier Services	\$ 274,350	\$ -	21-Jul-2021	-	39
92-2022	Centec Electric & Controls Ltd	NEWPCC DCS Migration - Fibre Supply and Installation	\$ 1,333,196	\$ -	16-Jun-2022		99
1003-2022	Fournier Industries	NEWPCC Primary Clarifiers - Procurement of Scum Pressed and Associated Controls	\$ 1,155,405	\$ -	2-May-2023		20
		Completed Contracts	\$ 1,904,692	\$ 133,715			

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

<sup>2</sup>This is a triparty 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>Power Supply Facility</b>					
1	Project Definition Report <sup>1</sup>	2015 Q3	2015 Q4	2015 Q4	100
2	Preliminary Design Report	2016 Q1	2016 Q4	2017 Q1	100
3	Cost Report <sup>2</sup>	2017 Q1	2017 Q2	2017 Q3	100
4	Design Build RFP	2016 Q2	2017 Q1	2017 Q1	100
5	Design Builder Contract Award	2017 Q2	2018 Q2	2018 Q2	100
6	Design Build Substantial Completion	2020 Q2	2020 Q4	2020 Q4	100
7	Design Build Final Completion	2020 Q4	2021 Q2	2023 Q3	100
<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)

On June 7, 2023, the northwest interceptor (NWI) failed due to an unknown preexisting crack in the concrete pipe combined with increased internal surcharge pressure from a significant rainfall event. As a result, two excavated shafts flooded. RRS continues working to dewater, clean, and recover work areas, and repair the tunnel boring machine.

The City, AECOM and RRS are working on a solution to repair the NWI. This will be dealt with as a Relief Event under the contract. RRS is tracking all costs associated with this event. Cost and schedule impacts are still being determined.

The City is working with their Insurers to determine the level of coverage.



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>New</b>	
Failure of the north west interceptor (NWI).	RRS is working to dewater, clean, recover work areas, and repair the NWI. RRS is tracking all costs associated with this event and continue to work with the City on a solution to repair the NWI, as well as evaluate schedule impacts.
<b>Ongoing:</b>	
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.	The City and its Owners Advocate are extensively reviewing the claims and all back-up information.
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 shutdowns 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)

For further information, refer to Appendix B – Financial Forecast

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

The tri-level agreement for the ICIP funding of the Headworks Project was fully executed August 4, 2023.

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 and Headworks Facilities			
Retained Earnings	87.64	87.64	87.64
External Debt <sup>3</sup>	690.29	114.90	114.90
Environmental Projects Reserve <sup>3,4</sup>	17.66	57.97	57.97
Federal Government <sup>3,5</sup>		116.11	116.11
Provincial Government <sup>3,5</sup>		96.75	96.75
<b>Total</b>	<b>795.59</b>	<b>473.38</b>	<b>473.38</b>

<sup>1</sup>Council adopted budget in 2016.

<sup>2</sup>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.

<sup>3</sup>In a letter dated April 1, 2021, the Province 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.

<sup>4</sup>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.

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

### **Property Acquisition** (Update from last report)

N/A

### **Stakeholder Engagements/Communications** (Update from last report)

The City continues to work 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**

The NWI repair is underway. The contractor has procured the materials for the repair of the interceptor and pre-construction work is underway. The new pipe will be put into place starting early October with an expected in-service date of October 8, 2023.

Relief Events Update:

<b>Description:</b>	<b>Cost to Date</b>
1. Contaminated soils (to date):	3.6 million
2. Differing ground conditions (initial payment):	3.8 million
3. Northwest Interceptor (initial payment):	2.5 million
<b>Total:</b>	<b>9.9 million</b>

Notes:

1. The total cost of contaminated soil remediation will increase as excavation work continues.
2. The City and contractor are still reviewing the delay claim. The amount included is the current agreed upon minimum delay days between the parties.
3. This value represents the hard costs to date associated with the NWI failure.

The limit of over-expenditure authority delegated to the CFO: \$10 million. Any further over-expenditures will require Council approval.

**FINANCIAL IMPACT**

**Financial Impact Statement**      **Date:**      [October 5, 2023](#)

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**Project Name:**  
**NEWPCC Upgrade Project:**  
**Power Supply and Headworks Facilities**  
**Project IDs: 2031001304, 2031001310, 203110013B**  
**Quarterly Project Status Report No. 33**  
**For the Period Ended August 31, 2023**

**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

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:** Colin Javra, Project Director

**Date:** October 6, 2023

## 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 (Company Name)</b>	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>	\$473.38 million
<b>Class of Estimate (Amended)</b>	Class 3
<b>Range of Estimate (Amended)</b>	-20% to +30% \$378.70 million to \$ 615.39 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>- Colin Javra, 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 August 31, 2023**

Project Component Deliverables	Budget (in 000's)			Actual Costs To Aug 31, 2023	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								
					2023	2024	2025	2026	2027				
<b>Power Supply &amp; Headworks Facilities Project<sup>2</sup></b>													
Engineering, Design and Other	\$ 57,196	\$ (2,959)	\$ 54,237	\$ 39,000	\$ 1,168	\$ 2,768	\$ 4,276	\$ 711	\$ 875	\$ 48,799	\$ 5,438	\$ 7,537	\$ (2,099)
Construction	\$ 621,011	\$ (263,149)	\$ 357,862	\$ 165,999	\$ 30,852	\$ 103,065	\$ 55,324	\$ 21,549	\$ 1,776	\$ 378,566	\$ (20,704)	\$ (15,311)	\$ (5,393)
Land Acquisition	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Internal Financing/Overhead Costs	\$ -	\$ 17,493	\$ 17,493	\$ 2,824	\$ 1,631	\$ 2,000	\$ 2,220	\$ 3,038	\$ 2,748	\$ 14,461	\$ 3,032	\$ 993	\$ 2,039
Contingency	\$ 117,383	\$ (73,595)	\$ 43,788	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 27,537	\$ 31,554	\$ 12,234	\$ 6,781	\$ 5,453
<b>Total Project Budget</b>	<b>\$ 795,590</b>	<b>\$ (322,210)</b>	<b>\$ 473,380</b>	<b>\$ 207,823</b>	<b>\$ 33,652</b>	<b>\$ 107,834</b>	<b>\$ 61,820</b>	<b>\$ 25,298</b>	<b>\$ 32,936</b>	<b>\$ 473,380</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>

% of Project Budget Spent <sup>3</sup>	
Power Supply & Headworks Facilities	44%

<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

<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	\$472,861	\$207,304
<b>Total Project Budget</b>		<b>\$473,380</b>	<b>\$207,823</b>

<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.



## 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 - \$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 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.

## **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 Nutrient Removal Facilities (in \$millions)	Total Cost	Funded to Date		Funding Pending		Total Funding		City Share of Costs
		Canada	Manitoba	Canada	Manitoba	Canada	Manitoba	
Provincial Funding								
Power Supply and Headworks Facilities	\$ 473.38			\$ 116.11	\$ 96.75	\$ 116.11	\$ 96.75	\$ 260.52
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>\$ 2,336.44</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ 316.98</b>	<b>\$ 264.13</b>	<b>\$ 316.98</b>	<b>\$ 264.13</b>	<b>\$ 927.27</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	Canada	Manitoba	
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>	473.38			116.11	96.75	116.11	96.75	260.52
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>\$ 2,797.35</b>	<b>\$ 47.70</b>	<b>\$ 38.71</b>	<b>\$ 322.28</b>	<b>\$ 265.23</b>	<b>\$ 369.98</b>	<b>\$ 303.94</b>	<b>\$ 1,295.37</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 based on a budget of \$552 million. \$200.87 million in Federal and \$167.38 million in Provincial funding.

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