

**Minutes – Standing Policy Committee on Finance and Economic Development –
February 5, 2024**

REPORTS

**Item No. 2 NEWPCC Upgrade: Power Supply and Headworks Facilities,
Project ID: 2031001304, 2031001310 and 203110013B,
Quarterly Project Status Report No. 34
For the Period Ended November 30, 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 –
February 5, 2024**

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. 34
For the Period Ended November 30, 2023**

Critical Path: Standing Policy Committee on Finance and Economic Development

AUTHORIZATION

| Author | Department Head | CFO | CAO |
|---|--|-------------|---------|
| C. D. Wiebe, P. Eng., CAMP, Manager, Engineering Services | T. W. Shanks, M. Eng., P. Eng. Director, Water and Waste 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:

The Capital Budget for the NEWPCC Upgrade: Power Supply and Headworks Facilities project is \$473.38 million with expenditures to date totaling \$227.47 million. A total of \$19.65 million was spent during this reporting period (September 1 to November 30, 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:

- Tunneling work resumed at the Raw Sewage Pump Station; the second was completed
- The Northwest Interceptor (NWI) repair was completed; the impact to cost and schedule are still being determined
- The Interceptor Connection Chamber was excavated to above the Main Street Interceptor
- The Connection Gallery has been constructed
- Various major concrete pours were completed throughout the project site.

A total of 43 milestones have been reviewed and paid to the contractor.

An over-expenditure of \$6.4 million was approved by the CAO on October 26 for change orders relating to the failure of the NWI. Additional payments towards this event will be required in the future.

An over-expenditure of almost \$8.7 million was approved on November 24, 2023, by the Standing Policy Committee on Water, Waste and Environment for contaminated soils, Heritage Resource Monitoring, differing ground conditions, estimated costs to protect the Main Street Interceptor, and included an allowance for upcoming changes.

The 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.

Due to the materially different ground conditions and the NWI failure, a schedule extension will be required. The revised date is still being determined.

Distributed Control System (DCS) Migration

The Request for Proposal (RFP) for the System Integrator was awarded to Schneider Electric Systems on November 28, 2023. Work will begin immediately. The tender for general construction will be posted early January 2024.

Primary Clarifier Upgrade

On November 27, 2023, an over expenditure of \$1.38 million was approved by the Director of Water and Waste for additional design works, tendering services, construction services, and project contingency.

Contract 1 for the pre-purchase of the scum presses was awarded. Contract 2 was tendered; the one bid received was 80% higher than the Class 1 pre-bid estimate of \$17.1 million. The Project Team is analyzing the bid to determine a path forward.

Ultraviolet Light (UV) Upgrade

On October 30, 2023, an over-expenditure was approved by SPC on Water, Waste and Environment in the amount of \$5.148 million for consulting services. This over-expenditure will be cost shared by the NEWPCC Upgrade Power Supply and Headworks Facilities and the Biosolids Facilities capital budgets.

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:** RRS continues to track behind schedule during this period as a result of design deliverables lagging, differing ground conditions, and the NWI repair 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 submission packages at 60%, 90%, and Issued for Construction (IFC) for various portions of work.

Significant construction continues on site. Highlights include:

- Tunneling work restarted on September 25, 2023, after being paused due to the NWI failure on June 7, 2023.
 - Tunnel 2 has been completed.
 - The repair of the NWI has been completed; cost and schedule impact are being evaluated.
- Cleanup and installation of supports for the NWI at the Junction Chamber is progressing. Six out of eight beams are complete. Tunnel caps were re-installed.
- Excavation above the Main Street Interceptor at the Y5 Connection Chamber is complete. The City and RRS continue to work together on reinforcement options to minimize the risk to the Main Street Interceptor when it is exposed.
- Roof slab pour, installation of process piping, and painting in the basement at the Grit Building is complete. Grit pumps in the basement are installed. Installation of piping supports in the basement is ongoing.
- Formwork for channel walls at the Fine Screening area is complete. Various formwork, rebar, and concrete work is ongoing.
- Formwork, rebar, and concrete work at the Solids Handling and Mechanical Rooms is ongoing. Delivery of structural steel is ongoing.
- Erection of structural steel work at the Main Control Building is complete.

- Tank pads were completed and fuel tanks were installed at the Standby Power Generator Facility. Generator assembly continues.
- Construction of the Y4 Connection Gallery is complete.
- Piles to protect existing infrastructure from new construction at the existing UV effluent conduit have been installed. Heating and hoarding in preparation for dowel installations is ongoing.
- Grit effluent pipe installation is complete. Backfilling work is ongoing.

RRS has applied for a total of 43 milestone inspections to the Independent Certifier, all have been paid. On November 2, 2023, the City issued a change order to RRS approving an additional realignment of several milestones to better reflect the sequence and progress of work being undertaken. Ninety-three new milestones were created by reallocating scope elements in existing milestones; this brings the total number of milestones to 218.

On October 26, 2023, an over-expenditure of \$6.4 million was approved by the Chief Administrative Officer. This applies to Change Orders 28, 29 and 30 relating to the failure of the NWI. This over expenditure is the first of multiple payments towards these change orders.

- Change Order 28: \$1.5 million for charges towards cleanup of the NWI failure
- Change Order 29: \$1.5 million for charges towards repairing the NWI
- Change Order 30: \$3.4 million for charges towards recovering the tunnel boring machine (TBM)

On November 24, 2023, the Standing Policy Committee on Water, Waste and Environment concurred in the recommendation of the Winnipeg Public Service and approved an over expenditure of almost \$8.7 million. This includes \$35,630 for the sixth payment for the contaminated soils relief event that currently totals \$2.96 million; up to \$100,000 relating to Heritage Resource Monitoring; \$3.8 million for the differing ground conditions relief event; \$4.0 million to cover the estimated costs to protect the Main Street Interceptor; and \$696,519 for an allowance for upcoming changes.

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. This was determined to be a Relief Event as per the Design Build Agreement. The City and RRS continue to evaluate this Relief Event and its impact on cost and schedule. An agreement was signed by both Parties to provide RRS an ex gratia payment of \$3.8 million to cover some of the costs incurred.
- On June 7, 2023, the NWI failed causing the Raw Sewage Pump Station and interceptor junction chamber shafts to fill with sewage. RRS has completed the repair to the NWI and activities in the shafts have resumed. The City has issued RRS three Change Orders related to this work as follows:
 - CHO-0028 – NWI Cleanup (upset limit of \$3.5 million);
 - CHO-0029 – NWI Repair (upset limit of \$3.0 million); and
 - CHO-0030 – Tunnel Boring Machine Recovery (upset limit of \$3.5 million).

RRS has been tracking all costs associated with this event and are working to compile background information to provide to the City for payment. Discussions regarding the

cost and delay impacts due to this event are ongoing. It is likely that the total impact will be greater than the \$6.4 million ex gratia payment from October 26, 2023.

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

- **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 requirements. The archaeology team will continue to monitor intermittent soil sampling work as required.

Other Power Supply and Headworks Facilities Projects

- **RFP 182-2015 – DCS Migration:** The RFP for the System Integrator was awarded to Schneider Electric Systems Canada on November 28, 2023. Work will begin immediately. The tender for general construction will be posted early January 2024.
- **Primary Clarifiers**
 - **RFP 785-2020:** On November 27, 2023, an over expenditure of \$1.38 million was approved by the Director of Water and Waste for additional design works, tendering services, construction services, and project contingency.
 - **Tender 463-2022:** On November 28, 2023, a tender closed for the NEWPCC Primary Clarification Upgrade with only one bid. The bid received was approximately 80% higher than the class 1 cost estimate for this project. The Project Team is analyzing the bid to determine a path forward.
- **RFP 182-2015 – UV Upgrade:** On October 30, 2023, an over-expenditure was approved by SPC on Water, Waste and Environment in the amount of \$5.148 million. The over-expenditure is for AECOM to assist with project management, preliminary design, detailed design, tender preparation, and contract administration services for upgrading the UV equipment and UV building, along with a new flushing water system. This over-expenditure will be cost shared between the NEWPCC Upgrade: Power Supply and Headworks Facilities (\$3.503 million) and NEWPCC Upgrade: Biosolids Facilities (\$1.645 million) capital budgets.

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 |
| Power Supply Facility | | | | | | | |
| 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 ¹ | Black & McDonald Limited | Design Build - Power Supply Upgrade Project | \$ 34,961,209 | \$ 996,940 | 16-Apr-2018 | 28-Apr-23 | 100 |
| | | Total | \$ 36,337,822 | \$ 1,095,440 | | | |

¹The 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 |
| Headworks Facilities | | | | | | | |
| 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 | - | 39 |
| 182-2015 (DCS Migration) | AECOM Canada Ltd | Engineering Services – DCS Migration | \$ 2,698,331 | \$ - | 8-Oct-2020 | - | 42 |
| 182-2015 (UV Upgrade) | AECOM Canada Ltd | Engineering Services – UV Upgrade | \$ 3,503,000 | \$ - | 30-Oct-2023 | - | 0 |
| 102-2017 | Blakes Cassels & Graydon LLP | External Legal Counsel - NEWPCC Upgrade Project | \$ 387,504 | \$ - | 23-Nov-2017 | - | 42 |
| 659-2018 B ¹ | Red River Solutions | Design Build of NEWPCC Upgrade: Headworks Facilities | \$ 271,611,000 | \$ 18,674,000 | 11-Jun-2021 | - | 50 |
| 785-2020 | AECOM Canada Ltd | Engineering Services - Primary Clarification Upgrades | \$ 2,166,775 | \$ 1,380,172 | 7-Jun-2021 | - | 43 |
| 64-2021 ² | Altus Group Limited | Independent Certifier Services | \$ 274,350 | \$ - | 21-Jul-2021 | - | 45 |
| 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 |
| | | Total | \$ 307,137,827 | \$ 20,408,918 | | | |

¹The Original Contract Award Value includes MRST.

²This 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)

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. 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 when a path forward is determined.

Table 2 – Milestones

| Milestones | | | | | |
|------------------------------|--|-----------------------------------|----------------------------------|------------------------|----------------------|
| Deliverable | | Original Targeted Completion Date | Revised Targeted Completion Date | Actual Completion Date | Estimated % Complete |
| Power Supply Facility | | | | | |
| 1 | Project Definition Report ¹ | 2015 Q3 | 2015 Q4 | 2015 Q4 | 100 |
| 2 | Preliminary Design Report | 2016 Q1 | 2016 Q4 | 2017 Q1 | 100 |
| 3 | Cost Report ² | 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 Q2 | 100 |
| Headworks Facilities | | | | | |
| 1 | Project Definition Report ¹ | 2017 Q2 | 2017 Q2 | 2017 Q2 | 100 |
| 2 | Preliminary Design Report | 2018 Q1 | 2018 Q3 | 2018 Q3 | 100 |
| 3 | Cost Report ² | 2018 Q3 | 2018 Q3 | 2018 Q3 | 100 |
| 4 | Design Build RFP | 2020 Q1 | 2020 Q1 | 2020 Q1 | 100 |
| 5 | Design Builder Contract Award | 2020 Q4 | 2021 Q2 | 2021 Q2 | 100 |
| 6 | Design Build Substantial Completion | 2025 Q4 | 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 | - | - | - |

¹Owner's Advocate Class 5 Estimate

²Cost Consultant Class 3 Estimate

Risk (Update from last report)

The Main Street Interceptor will need to be exposed as part of the Headworks Facilities construction. To minimize the risk of the Main Street Interceptor failing in a similar manner to the NWI, the City and RRS are working together on reinforcement options. Costs for this additional work are being determined.

The bid received for the NEWPCC Primary Clarification Upgrade project exceeds the pre-bid estimate and allocated budget. The City is reviewing options to mitigate cost and schedule impacts.

Table 3 – Significant Risks and Mitigations Strategies

| NEWPCC Upgrade: Power Supply and Headworks Facilities Project | |
|---|---|
| Significant Risks and Mitigation Strategies | |
| Headworks Facilities | |
| Risk Statement and Explanation | Risk Mitigation Management Plan |
| <u>New</u> | |
| Risk of failure of the Main Street Interceptor during construction. | The City and RRS are working together on reinforcement options to minimize the risk to the Main Street Interceptor when it is exposed. |
| Potential for insufficient budget to complete the NEWPCC Primary Clarification Upgrade Project. | The City to review the bid received for the work and determine a path forward. |
| <u>Ongoing:</u> | |
| Schedule and budget risks associated with the failure of the NWI. | The City is working with Insurers to determine level of coverage. A future budget request will be required to address the additional costs associated with the NWI failure. The delay associated with the failure of the NWI 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. | 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 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. |
| Mitigated: | |
| The existing automation system requires migration to an updated automation system as it is at end of life. Due to the age, there may be unforeseen circumstances resulting in quality issues, schedule delays and operational impacts. | This risk is best handled by the City; as a result, the scope was separated as a stand alone design bid build project. This risk also requires knowledgeable and qualified personnel. As part of Phase 2 of their existing contract, the design consultant will carry out the work due to their qualifications and extensive knowledge and experience on the existing automation system. |
| Closed: | |
| The 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. |

Financial (Update from last report)

For further information, refer to Appendix B – Financial Forecast

Funding (Update from last report)

N/A

Table 4 – Project Funding Forecast

| Funding Source | Adopted Budget¹ (in millions) | Amended Budget² (in millions) | Committed (in millions) |
|---|---|---|------------------------------------|
| Class of Estimate | Class 5 | Class 3 | Class 3 |
| NEWPCC Upgrade: Power Supply and Headworks Facilities | | | |
| Retained Earnings | 87.64 | 87.64 | 87.64 |
| External Debt ³ | 690.29 | 114.90 | 114.90 |
| Environmental Projects Reserve ^{3,4} | 17.66 | 57.97 | 57.97 |
| Federal Government ^{3,5} | | 116.11 | 116.11 |
| Provincial Government ^{3,5} | | 96.75 | 96.75 |
| Total | 795.59 | 473.38 | 473.38 |

¹Council adopted budget in 2016.

²On 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.

³In 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.

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

⁵On 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 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

Relief Events Update:

| Description: | Cost to Date |
|----------------------------------|---------------------|
| 1. Contaminated soils (to date): | 3.0 million |

| | |
|---|---------------------|
| 2. Differing ground conditions (initial payment): | 3.8 million |
| 3. Northwest Interceptor (initial payment): | 6.4 million |
| Total: | 13.2 million |

Notes:

1. The total cost of contaminated soil remediation will increase as excavation work continues. (The total value was incorrectly noted as \$3.6 million in the previous report.)
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 ex gratia payment for the NWI failure.

A report will be forthcoming requesting a budget amendment due to the NWI failure. The report will also request approval of an over-expenditure for potential remaining costs associated with the NWI failure.

FINANCIAL IMPACT

Financial Impact Statement **Date:** [January 15, 2024](#)

Project Name:

NEWPCC Upgrade Project:

Power Supply and Headworks Facilities

Project IDs: 2031001304, 2031001310, 203110013B

Quarterly Project Status Report No. 34

For the Period Ended November 30, 2023

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

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: January 15, 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

| | |
|--|--|
| Project Name | NEWPCC Upgrade: Power Supply & Headworks Facilities |
| Business Owner (Department) | Water and Waste Department |
| Project ID | 2031001304 , 2031001310 and 203110013B |
| Project Sponsor | Director of Water and Waste |
| Department Responsible for Project Delivery | Water and Waste Department |
| Consultant Engineer (Company Name) | KGS Group Consulting Engineers and AECOM Canada Ltd. |
| Adopted Budget | \$795.95 million |
| Class of Estimate (Adopted) | Class 5 |
| Range of Estimate (Adopted) | -50% to +100% \$397.80 million to \$1,591.18 million. |
| Amended Budget | \$473.38 million |
| Class of Estimate (Amended) | Class 3 |
| Range of Estimate (Amended) | -20% to +30% \$378.70 million to \$ 615.39 million |
| <u>Project Scope</u> | |
| <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> | |
| Major Capital Projects Advisory Committee Membership: | |
| <ul style="list-style-type: none"> - Michael Jack, Chief Administrative Officer - Moira Geer, Deputy Chief Administrative Officer - Catherine Kloepfer, Chief Financial Officer - Geoffery Patton, Director of Assets and Project Management - Danny Tooth, Acting Manager of Major Project Oversight - Tim Shanks, Director of Water and Waste - Lucy Szkwarek, Manager of Finance and Administration, Water and Waste - Linda McCusker, Project Director, Winnipeg Sewage Treatment Program, Water and Waste | |

Appendix B – Financial Forecast

**Appendix B - North End Sewage Treatment Plant (NEWPCC) Upgrade Projects Financial Forecast
As of November 30, 2023**

| Project Component Deliverables | Budget (in 000's) | | | Actual Costs To Nov 30, 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 ¹ | | Projected Costs | | | | | | | | |
| | | | | | 2023 | 2024 | 2025 | 2026 | 2027 | | | | |
| Power Supply & Headworks Facilities Project² | | | | | | | | | | | | | |
| Engineering, Design and Other | \$ 57,196 | \$ (2,959) | \$ 54,237 | \$ 35,491 | \$ 411 | \$ 4,664 | \$ 4,437 | \$ 4,906 | \$ 2,333 | \$ 52,243 | \$ 1,994 | \$ 5,438 | \$ (3,444) |
| Construction | \$ 621,011 | \$ (263,149) | \$ 357,862 | \$ 188,960 | \$ 22,912 | \$ 83,358 | \$ 74,610 | \$ 28,667 | \$ 3,108 | \$ 401,615 | \$ (43,753) | \$ (20,704) | \$ (23,049) |
| Land Acquisition | \$ - | \$ - | \$ - | \$ - | \$ - | \$ - | \$ - | \$ - | \$ - | \$ - | \$ - | \$ - | \$ - |
| Internal Financing/Overhead Costs | \$ - | \$ 17,493 | \$ 17,493 | \$ 3,020 | \$ 1,569 | \$ 2,000 | \$ 2,220 | \$ 3,038 | \$ 2,748 | \$ 14,594 | \$ 2,899 | \$ 3,032 | \$ (133) |
| Contingency | \$ 117,383 | \$ (73,595) | \$ 43,788 | | | | | | \$ 4,928 | \$ 4,928 | \$ 38,860 | \$ 12,234 | \$ 26,626 |
| Total Project Budget | \$ 795,590 | \$ (322,210) | \$ 473,380 | \$ 227,470 | \$ 24,892 | \$ 90,022 | \$ 81,267 | \$ 36,612 | \$ 13,116 | \$ 473,380 | \$ - | \$ - | \$ - |

| % of Project Budget Spent ³ | |
|--|-----|
| Power Supply & Headworks Facilities | 48% |

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

²On May 27, 2021, Council Approved a budget increase of \$65M

³Actual costs to date / Amended budget

| Power Supply & Headworks Facilities Amount in '000's | | | |
|---|--------------|------------------|------------------|
| Project ID | Project Year | Amended Budget | Costs to Date |
| 2031001304 ⁴ | 2004 | \$214 | \$214 |
| 2031001310 ⁴ | 2010 | \$305 | \$305 |
| 203110013B | 2012 – 2021 | \$472,861 | \$226,951 |
| Total Project Budget | | \$473,380 | \$227,470 |

⁴Does 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 - \$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 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 | | | | | | | |
| Estimated Program Costs | \$ 2,336.44 | \$ - | \$ - | \$ 316.98 | \$ 264.13 | \$ 316.98 | \$ 264.13 | \$ 927.27 |

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 ¹ | \$ 33.23 | \$ 5.07 | \$ 8.19 | | | \$ 5.07 | \$ 8.19 | \$ 19.97 |
| NEWPCC Centrate and UV Disinfection ¹ | 52.08 | 5.59 | 14.54 | | | 5.59 | 14.54 | 31.95 |
| SEWPCC Nutrient Removal/Expansion | 375.60 | 37.04 | 15.98 | 5.30 | 1.10 | 42.34 | 17.08 | 316.18 |
| NEWPCC Power Supply and Headworks ² | 473.38 | | | 116.11 | 96.75 | 116.11 | 96.75 | 260.52 |
| NEWPCC Biosolids ³ | 1,035.00 | | | 200.87 | 167.38 | 200.87 | 167.38 | 666.75 |
| NEWPCC Nutrient Removal ⁴ | 828.06 | | | | | - | - | - |
| Estimated Program Costs | \$ 2,797.35 | \$ 47.70 | \$ 38.71 | \$ 322.28 | \$ 265.23 | \$ 369.98 | \$ 303.94 | \$ 1,295.37 |

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

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

³ On August 16, 2022 the Federal and Provincial governments announced an additional \$368.25 million in ICIP funding for the NEWPCC Upgrade Biosolids project based on a budget of \$552 million. \$200.87 million in Federal and \$167.38 million in Provincial funding.

⁴ NEWPCC Upgrade Nutrient Removal project has not been approved.