

**Minutes – Standing Policy Committee on Finance and Economic Development –
January 12, 2023**

REPORTS

**Item No. 1 South End Sewage Treatment Plant (SEWPCC)
 Upgrading and Expansion,
 Project ID: 20320002EL, 2032000207, and 203210002B,
 Quarterly Project Status Report No. 33
 For the Period Ended October 31, 2022**

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 South End Sewage Treatment Plant (SEWPCC) Upgrading and Expansion, as contained in this report, as information.

**Minutes – Standing Policy Committee on Finance and Economic Development –
January 12, 2023**

DECISION MAKING HISTORY:

Moved by Councillor Lukes,

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

Carried

ADMINISTRATIVE REPORT

Title: South End Sewage Treatment Plant (SEWPCC) Upgrading and Expansion, Project ID: 20320002EL, 2032000207, and 203210002B, Quarterly Project Status Report No. 33 For the Period Ended October 31, 2022

Critical Path: Standing Policy Committee on Finance

AUTHORIZATION

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

Construction of the South End Sewage Treatment Plant (SEWPCC) Upgrade and Expansion continued during this reporting period of July 1 to October 31, 2022.

The C4 Contractor is behind schedule based on missing key contractual schedule milestones, including the Total Performance date of January 20, 2022. The Department continues to work with the Contract Administrator to assist the Contractor in developing a schedule for completion. The C4 Contractor's schedule and performance is being monitored to attempt to maintain the revised schedule.

The Project Team (Department, Contract Administrator and Engineer of Record) continues to assist the Contractor to conduct inspections, pre-test, and troubleshoot to reduce delays. This additional scrutiny continues due to the Contractor's limited quality assurance and quality control (QA/QC).

The lack of dedicated resources committed to the project by the C4 Contractor continues to be a risk. In particular, the C4 Contractor has not replaced the Commissioning Manager, but instead has a commissioning lead to coordinate, conduct and complete the commissioning works. The Department issued letters of default under the remedies of the contract regarding the project staffing and resources. The Contractor has not provided resources as requested in the letter of default. However, the Contractor has planned to have dedicated resources for each of the items of work to complete in the coming low flow period.

On April 14, 2022, the Province advised that the Notice of Alternation request, submitted by the City on February 25, 2022, for a revised compliance date was denied. However, the Province acknowledged the delays and accepted the submission as a compliance plan and required the City to continue the monthly and quarterly status reports.

Commissioning of the Biological Nutrient Removal (BNR) began on May 25, 2022. The plant was fully converted to a BNR on July 27, 2022. This is a major project milestone for achieving licence compliance. Testing indicates effluent meets licence conditions for total phosphorus (TP) and total nitrogen (TN). The BNR's performance is being monitored to optimize performance by the Engineer of Record. The BNR demonstration testing phase will be coordinated once the contractor corrects the outstanding deficiencies.

As a result of the schedule delays and contractor performance, a project budget revision report went forward and was approved by Council on July 21, 2022, for a budget increase of \$23,500,000.00. This increase covers additional contract administration, construction management, and increased transportation costs of BNR media.

The Advisory Committee has reviewed this report and recommends that the report be sent to the Standing Policy Committee on Finance.

RECOMMENDATIONS

That the financial status of the South End Sewage Treatment Plant (SEWPCC) Upgrading and Expansion, 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 (2022) or more report quarterly to the Standing Policy Committee on Finance. This threshold is adjusted annually for construction inflation as part of the annual Capital Budget approval. The Standing Policy Committee on Finance 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)

RFP 682-2012 (Professional Consulting Services)

- The Consultant continues to provide required Contract Administration services and

development of operational documents.

- Delay by the C4 Contractor continues to extend the requirements for the Consultant to be on site providing technical oversight and direction.
- The City is continuing to monitor Consultant performance with respect to work load and resources as the project extends.

RFP 871-2013 (Supply and Delivery of Free-Moving Media)

- On June 13, 2022, the last shipment of containers of the IFAS media were delivered to site. All media has been delivered and installed in the BNR. Commissioning services scheduled in 2022 are yet to be performed.

RFP 873-2013 (Supply and Delivery of High Rate Clarification Equipment)

- Commissioning services scheduled in 2022 are yet to be performed. It is anticipated that these services will occur in 2023.

Bid Opportunity 333-2014 (Contract C1 – Site Preparation Works)

- Legal Services has engaged external legal counsel to defend the City against the Contractor's claim.

Bid Opportunity 601-2015 (Contract C2 – High Rate Clarifier and Grit Removal Concrete and Miscellaneous Works)

- Final as-built drawings have been completed by the Consultant.

Bid Opportunity 976-2016 (Contract C4 – Sitewide Mechanical, Electrical, Concrete and Site Works)

- Construction is continuing in most areas of the plant. On April 4, 2022, the C4 Contractor successfully handed over the two new secondary clarifier units to the City. The C4 Contractor has continued working on completion of the upgraded Headworks Facilities including continued cleanup of identified construction and automation deficiencies. Refurbishment works for the existing secondary clarifiers 1 and 2 continues. The C4 contractor has also started decommissioning and construction activities on the existing HPO system.
- The Contractor continues working on deficiencies for a number of areas such as the headworks and chemical areas, which were identified during testing. Once deficiencies are addressed, the C4 Contractor can prepare for overall testing activities for the respective areas. The Contractor has completed various testing activities for the new electrical building.
- Seeding and startup of all three BNR trains has been completed. The Engineer of Record continues to monitor and optimize performance of the BNR system. The overall BNR demonstration testing phase will be coordinated and conducted once the C4 contractor corrects the outstanding deficiencies that have been identified.
- All three ferric chloride chemical dosing systems have been tested to dose chemical to Area R (BNR process area) during the initial BNR testing and seeding activities. This

ferric chemical dosing system will also be demonstration tested along with that of the BNR system.

- Additional deficiencies discovered within the High Rate Clarifier (HRC) area has delayed the start of testing activities. The C4 contractor is working to address these deficiencies.
- The C4 Contractor’s construction, instrument and control programming, and testing continue to be behind schedule for a number of contract interim milestones.
- The C4 Contractor’s QA/QC continues to be of concern to the Department and Contract Administrator. As a result, additional resources from the Engineer of Record and the Contract Administrator have been utilized and will continue to provide oversight.
- The Commissioning Manager for the C4 Contractor’s side has left from this role. Currently this role is being filled on an interim basis by the C4 Contractor’s Construction Manager and Project Superintendent. The Department and Contract Administrator are concerned, as this role is important for appropriate planning and coordination of project works, as well as the successful commissioning of works, and requires full-time personnel to fill the role.
- One of the main Electrical Superintendents for the C4 Contractor has left from this role. Currently the role will be filled by the C4 Contractor’s Electrical Production Superintendent. The Department and Contract Administrator are concerned with the C4 Contractor’s lack of resources on the project.
- As of October 31, 2022, the C4 Contractor has initiated a total of 721 appeals. The majority of these appeals challenge the determined valuation of individual progress certificate line items.
- External legal counsel continues to assist with C4 contractual issues and implementation of contract remedies.

Table 1 – Contracts

Appendix B - Project XXX Financial Forecast*
As at XXX XX, XXXX

Project Component Deliverables	Budget (in 000's)			Actual Costs To xxxxx	Expenditure Forecast (in 00)		
	Adopted Budget	Council Approved Change**	Amended Budget		Projected Costs		
					2017	2018	2019
Engineering, Design and Other	\$ 100,000	\$ -	\$ 100,000	\$ 75,000	\$ 15,000	\$ 12,000	\$ -
Construction	\$ 500,000	\$ -	\$ 500,000	\$ 236,000	\$ 185,000	\$ 98,000	\$ -
Land Acquisition	\$ 150,000	\$ -	\$ 150,000	\$ 175,000	\$ -	\$ -	\$ -
Internal Financing/Overhead Costs	\$ 60,000	\$ -	\$ 60,000	\$ 29,000	\$ 20,000	\$ 11,000	\$ -
Contingency	\$ 75,000	\$ -	\$ 75,000	\$ -	\$ -	\$ -	\$ -
Total Project Budget	\$ 885,000	\$ -	\$ 885,000	\$ 515,000	\$ 220,000	\$ 121,000	\$ -

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
1	Project Definition Report	2013 Q4	2014 Q2	2014 Q2	100%
2	Preliminary Design Report	2014 Q2	2014 Q4	2014 Q4	100%
3	Detailed Design	2014 Q4	2017 Q3	2017 Q3	100%
4	Construction of Site Preparation and Piling (Contract 1)	2014 Q2	2016 Q1	2016 Q1	100%
5	Construction of High Rate Clarifier and Grit Removal Structural and Misc. Works (Contract 2)	2016 Q3	2017 Q1	2017 Q1	100%
6	Construction of Major Concrete Works (Contract 3)	2017 Q4	2018 Q3	2018 Q3	100%
7	Construction of Remaining Works (Contract 4)	2021 Q4	2023 Q2		75%
8	Commissioning of interim BNR configuration	2016 Q4	2022 Q4		80%
9	Commissioning of all project components ¹	2021 Q3	2023 Q3		0%
10					

¹ Manitoba Sustainable Development Notice of Alteration dated September 12, 2017 - City of Winnipeg South End Water Pollution Control Centre (SEWPCC) - Environment Act Licence No. 2716 RR identifies that the construction and commissioning of the upgraded wastewater treatment plant shall be completed before December 31, 2021.

NOTE: Above dates represent Substantial Completion

Risk (Update from last report)

The C4 Contractor continues to be tracking behind schedule. Substandard testing, lack of an appropriate QA/QC program, and documentation continues to be a risk. The Contract Administrator has implemented commissioning meetings with the C4 Contractor to assist in ensuring activities required to move forward in commissioning and testing are being carried out by the C4 Contractor; any issues being faced in progressing the required activities forward are discussed during these meetings. The schedule continues to be monitored, as it impacts licence conditions and budget implications. The Contract Administrator has scheduled bi-weekly meetings with the C4 contractor.

Table 3 – Significant Risks and Mitigations Strategies

Significant Risks and Mitigation Strategies	
Risk Statement and Explanation	Risk Mitigation Management Plan
New:	
Ongoing:	
C4 contractor progress tracking behind schedule	The WSTP is reviewing each monthly schedule submission, providing commentary and meeting with the Contractor to rectify baseline issues. A review of previous schedule submissions, including four week look ahead and baseline, is being undertaken to assess the validity and continuity of the schedule.
C4 contractor testing and commissioning planning documentation typically substandard and/or incomplete	Daily testing/commissioning planning meetings are being held with the contractor
Actual Contract 4 construction performance takes longer than planned.	Key construction milestone dates with linked liquidated damages incorporated into Contract 4.
Process issues at the SEWPCC have delayed some scheduled construction activities.	Ongoing communication with Wastewater Services to facilitate construction activities when opportunity is available. Reschedule construction activities when possible.
COVID-19 Impact on construction schedule	Contract Administrator and Contractor are working to manage the impact.
1.0 mg/L Phosphorus Licence compliance date of December 31, 2020	Review with the Provincial Regulator
IFAS media delivery is being affected by COVID-19 impacts on the global shipping market. The Contractor has started the process to ship media overseas, but is running into difficulty securing shipping spots on vessels, and hence not being able to provide a firm shipping schedule. Due to the global pandemic, the shipping market has seen unpredictable market fluctuations, causing shipping prices to increase by more than 610%. Media is required for BNR seeding and start up.	The Department and Contract Administrator are currently in discussions with the supply Contractor on shipping of the media, as well both the Contractor and Contract Administrator are providing updates on shipping rate increases. Engineer of Record has reviewed the modelling and has determined that the BNR can be started with a minimum of 33% of the media in the BNR tanks. Currently approximately 80% of the media is on site and the last 20% in transit to be delivered June 2022. On June 13, 2022 the last shipment of IFAS media containers were delivered to site.
Mitigated:	
Rushed design to meet schedule resulting in a lower design quality and higher frequency of contract change orders.	Detailed review of the 100% design and bid opportunity document was performed using both internal and external resources.
Construction schedule was aggressive and actual construction takes significantly longer than planned.	3rd party review of project schedule was undertaken. Recommended schedule extension was implemented. Detailed monitoring of the construction contract progress implemented.
Limited countrywide contractor awareness of Contract 4 bid opportunity resulting in limited number of bidders.	Advance notice of C4 bid opportunity was posted on Materials Management website and MERX.
Unknown existing conditions are encountered during construction causing schedule delays and additional costs. Internal condition of high purity oxygen reactors is unknown.	Shutdown and interior inspection of existing high purity oxygen reactor was performed in February 2018.

Financial (Update from last report)

For further information, refer to Appendix B – Financial Forecast

The ongoing SEWPCC Upgrading and Expansion project costs and contingency allowance will be reviewed as the project progresses.

Funding (Update from last report)

N/A

Table 4 – Project Funding Forecast

Funding Forecast and Receivable			
Funding Source	Adopted Budget (in millions)	Amended Budget (in millions)	Committed (in millions)
Class of Estimate	Class 3		
City of Winnipeg Total	298.18	316.18	316.18
Retained Earnings	75.82	75.82	75.82
External Debt	222.36	200.36	200.36
Environmental Projects Reserve ^{1, 2}		40.00	40.00
Province of Manitoba	6.08	17.08	17.08
Federal Government of Canada	31.34	42.34	42.34
Total	\$ 335.60	\$ 375.60	\$ 375.60

1 On May 27, 2021 Council approved a budget increase of \$16.5 million.

2 On July 21, 2022 Council approved a budget increase of \$23.5 million.

Property Acquisition (Update from last report)

N/A

Stakeholder Engagements/Communications (Update from last report)

N/A

Subsequent Events after Report Period End Date

The C4 Contractor continues to work on correcting deficiencies found within the BNR process area in order to start the demonstration testing phase.

FINANCIAL IMPACT

Financial Impact Statement

Date: December 12, 2022

Project Name:

First Year of Program

South End Sewage Treatment Plant (SEWPCC) Upgrading and Expansion,

Project ID: 20320002EL, 2032000207 and 203210002B,

Quarterly Project Status Report No. 33

For the Period Ended October 31, 2022

Additional Comments:

Financial forecast for the SEWPCC Upgrade and Expansion project can be found in Appendix B.

Lucy Szkwarek, CPA, CGA

Lucy Szkwarek, CPA, CGA

Manager of Finance and 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

N/A

SUBMITTED BY

Department: Water and Waste Department

Division: Engineering Services

Prepared by: Reetu Dewitt, P. Eng., Senior Project Engineer

Date: December 15, 2022

Appendices

Appendix A – Key Project Facts

Appendix B – Financial Forecast

Appendix C – Key Project Events (History)

Appendix D - Funding

Appendix A – Key Project Facts

Appendix A – Key Project Facts	
Project Name	South End Sewage Treatment Plant (SEWPCC) Upgrading and Expansion
Business Owner (Department)	Water and Waste
Project ID	20320002EL, 2032000207 and 203210002B
Project Sponsor	Director of Water and Waste
Department Responsible for Project Delivery	Water and Waste
Consultant Engineer (Company Name)	CH2M Hill Canada Ltd.
Adopted Budget	\$335,600,000
Class of Estimate (Adopted)	3
Range of Estimate (Adopted)	-20% to +30% \$268,500,000 to \$436,300,000.
Amended Budget	\$375,600,000
Class of Estimate (Amended)	3
Range of Estimate (Amended)	-20% to +30% \$300,500,000 to \$488,300,000.
<u>Project Scope</u>	
<p>The project is to expand the capacity of the SEWPCC for expected 2031 flows and upgrade the process to meet new effluent limits for nitrogen and phosphorous. The project design is based on the lowest life cycle cost (Net Present Value, or NPV). In addition, the plant must operate continuously during the work and meet current effluent limits to the greatest extent possible.</p>	
Major Capital Projects Advisory Committee Membership:	
Michael Jack, Chief Administrative Officer	
Tim Shanks, Director of Water and Waste	
Geoff Patton, Director of Assets and Project Management	
Lucy Szkwarek, Manager of Finance and Administration, Water and Waste	
Catherine Kloepfer, Chief Financial Officer	
Colin Javra, Project Director Winnipeg Sewage Treatment Program	

Appendix B – Financial Forecast

Appendix B - Project SEWPCC Upgrading and Expansion Financial Forecast As at October 31, 2022

Project Component Deliverables	Budget (in 000's)			Actual Costs To Oct 31, 2022 ²	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		Projected Costs							
					2022	2023	2024	2025 and Beyond				
Engineering, Design and Other	\$ 45,351	\$ -	\$ 45,351	\$ 62,188	\$ 2,497	\$ 2,674	\$ 298	\$ -	\$ 67,657	\$ (22,306)	\$ (22,306)	\$ -
Construction	\$ 257,242	\$ -	\$ 257,242	\$ 235,662	\$ 6,228	\$ 40,008	\$ 2,111	\$ -	\$ 284,009	\$ (26,767)	\$ (25,687)	\$ (1,080)
Land Acquisition	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Internal Financing/Overhead Costs	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Contingency	\$ 33,007	\$ 40,000	\$ 73,007	\$ -	\$ 2,134	\$ 20,800	\$ 1,000	\$ -	\$ 23,934	\$ 49,073	\$ 47,993	\$ 1,080
Total Project Budget	\$ 335,600	\$ 40,000	\$ 375,600	\$ 297,850	\$ 10,859	\$ 63,482	\$ 3,409	\$ -	\$ 375,600	\$ -	\$ -	\$ -

% of Project Budget Spent (Actual Costs to Date / Adopted & Amended Budget)	89%		79%
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¹ Total budget of \$352.10 Million for the SEWPCC Upgrading and Expansion Project and Distribution of costs for Components was done by the Water and Waste Department. On May 27, 2021 Council approved a budget increase of \$16.5 Million, thereby revising the previous total budget of \$335.60 Million to the current \$352.10 Million. On July 21, 2022 Council approved a budget increase of \$23.5 Million, thereby revising the previous total budget of \$352.1 Million to the current \$375.6 Million. These are estimates and will be revised as the project progresses.

² Adopted and Amended budget, and actual costs to date have been agreed to the City's general ledger and Monthly Capital Expenditures Report, actual cost variance equals spending from closed budget years of \$10.918M. See below.

Project ID	Project Year	Adopted Budget	Costs to Date
20320002EL ¹	2002	\$222,752	\$222,752
20320002071	2007	\$10,695,000	\$10,695,000
203210002B	2012-2022	\$364,682,248	\$286,931,864
Total Project Budget		\$375,600,000	\$297,849,616

¹ 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)

HISTORY

1. THE PROJECT

The goal of this project is to expand the capacity of the SEWPCC for expected 2031 flows and upgrade the process to meet new effluent limits for nitrogen and phosphorous. The project design is based on the lowest life cycle cost (Net Present Value, or NPV). In addition, the plant must operate continuously during the work and meet current effluent limits to the greatest extent possible.

As a result of the 2003 Clean Environment Commission Hearings on the City's wastewater collection and treatment systems, Manitoba Conservation and Water Stewardship (the Regulator) notified the City that it intended to issue a licence for the South End Water Pollution Control Centre (SEWPCC) that would require control of nutrients discharged to the Red River.

Between 2001 to 2010, Council has approved \$203,250,000.00 for the Nutrient Removal Upgrade/Expansion at the SEWPCC.

On January 9, 2006, the Chief Financial Officer concurred with the recommendation to authorize an assignment to Stantec Consulting Ltd. for preliminary and conceptual engineering services related to the South End Water Pollution Control Centre upgrading and expansion at an estimated cost of \$3,250,000.00.

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.

In late 2007, the Winnipeg Public Service was directed to initiate an assessment of alternate project delivery methods for the SEWPCC upgrade and expansion. Consequently, the assignment to Stantec was suspended after the conclusion of the conceptual and preliminary engineering work.

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 Water Sewage Treatment Plant, and
- 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 June 19, 2009 the Regulator issued a revised Environment Act Licence No. 2716 R for the SEWPCC.

On November 25, 2009, the Chief Financial Officer approved an award to Taillieu Construction Ltd. for SEWPCC Installation of Outfall Pipe, Effluent Sampling Facility and Associated Works, Contract No. 2 at an estimated cost of \$4,884,450.00.

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; and
- 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 September 6, 2011, the City submitted to the Regulator, an engineering plan for the upgrading and expansion of the SEWPCC in accordance with Environment Act Licence No. 2716 R.

On April 18, 2012, the Regulator issued a revised Environment Act Licence No. 2716 RR for the SEWPCC effective May 1, 2012.

On October 5, 2012, the City submitted to the Regulator a revision to the engineering plan wherein the main treatment process was revised from Biological Aerated Filter to a Fixed-film Activated Sludge process.

On April 25, 2013, the Chief Administrative Officer approved a recommendation to award a contract to CH2M Hill Canada Ltd. to provide Professional Consulting Services for SEWPCC Upgrading/Expansion Project at an estimated cost of \$25,350,419.00.

On March 13, 2014, the Standing Policy Committee on Finance recommended that the South End Water Pollution Control Centre Financial Status reports and future reports pertaining to the North End, South End or West End Water Pollution Control Centre, include:

- the total amount of federal and provincial funding received to date as well as the balance of outstanding for Winnipeg ratepayers
- clarification of the cost estimates as a result of the regulatory requirements that have changed and the potential impact on the final budget; and
- a summary of the entire program in terms of funding from all levels of government

Environment Act Licence No. 2716 RR

On November 5, 2015 the City received a letter from the Province granting a Licence compliance extension to December 31, 2016, noting that consideration of further extensions will be subject to the City providing quarterly status reports and consultation with the Clean Environment Commission.

To comply with the Provincial Licence requirements the City hired Associated Engineering to conduct an Alternative Analysis Review. This report is an independent

review of the SEWPCC construction schedule, evaluating ways to accelerate the schedule and/or mitigate delays. The City and Associated Engineering met with the Clean Environment Commission multiple times to review the scope and findings of the report.

The factors contributing to the revised date include:

- contract detailed design is trending later than the original schedule
- critical low wastewater flow construction window will delay completion by 12 months
- there was no schedule contingency in the original project critical path; and
- there was no allocation in the schedule for project risk due to winter construction and unforeseen situations

The Alternative Analysis Review was submitted to Manitoba Sustainable Development on October 20, 2016.

A letter dated September 12, 2017 was received from Manitoba Sustainable Development – Environmental Approval Branch providing conditional approval of the City’s Notice of Alteration - City of Winnipeg South End Water Pollution Control Centre (SEWPCC) - Environment Act Licence No. 2716 RR project completion date. The approval indicates that construction and commissioning of the upgraded wastewater treatment plant is to be completed before December 31, 2021.

In December 2020, a Notice of Alteration for the interim phosphorous control process at the SEWPCC was submitted to the Province. The Province did not approve the request and required additional reporting and the submission of a revised schedule to full completion. The City has been reporting project status to the Province on a monthly and quarterly basis.

In September 2021, following a meeting with the Province, the City requested an extension to the Notice of Alteration date from September 30, 2021 to November 30, 2021. This was approved by the Province.

In November 2021, following a meeting with the Province, the Department submitted a Notice of Alteration to the Province stating that, due to the C4 Contractor’s performance preventing the completion of various critical pre-requisite works, seeding activities for the biological nutrient removal (BNR) process would not occur in 2021 and are anticipated to start in 2022.

In late December 2021, a power imbalance caused the protection controls to turn off for some pumps, which resulted in Integrated Fixed Film Activated Sludge (IFAS) media being released from the BNR system. The Engineer of Record investigated and recommended methods of IFAS media clean-up and recovery to the C4 Contractor. The C4 Contractor has cleaned up and recovered the media which was released to plant areas that were outside the BNR system.

As reported previously, a power imbalance in December 2021 resulted in a release of the integrated fixed film activated sludge (IFAS) media from the BNR tanks. This release delayed the commissioning of the Biological Nutrient Removal (BNR) system and led to an adjusted seeding start of June 2022. A revised Notice of Alteration was submitted to the Province on February 25, 2022, notifying of the delay and requesting a revised compliance date.

RFP 871-2013 (Supply and Delivery of Free-Moving Media)

- All IFAS media has been delivered to site

RFP 873-2013 (Supply and Delivery of High Rate Clarification Equipment)

- Delivery of HRC equipment to the site has been made
- Commissioning services scheduled in 2020 remain to be performed

Bid Opportunity 333-2014 (Contract C1 – Site Preparation Works)

- Contract achieved Total Performance February 17, 2016
- Legal Services has filed a Statement of Defence in response to the Subcontractor's Statement of Claim

Bid Opportunity 601-2015 (Contract C2 – High Rate Clarifier and Grit Removal Concrete and Miscellaneous Works)

- Contract achieved Total Performance March 10, 2017
- The Contractor has appealed the assessment of liquidated damages for failure to meet the contract dates for Substantial and Total Performance
- The Contractor has not responded to the CFO's letter of April 28, 2018 concerning their appeal

Bid Opportunity 899-2015 (Contract C3 – Bioreactors, Blower Building and Secondary Clarifiers Structural Concrete & Miscellaneous Work)

- The Contractor achieved Total Performance as of March 6, 2019
- The Contractor filed 21 appeals on contract 3. An agreement was reached with the Contractor for all C3 appeals and within the contract award value

Materials Management Reference 1089-2015 (Single Source Negotiation for Manitoba Hydro Works Associated with the South End Sewage Treatment Plant (SEWPCC) Nutrient Removal/Expansion Project)

- This contract is complete

RISKS AND RISK MITIGATION STRATEGIES

The project has proceeded on a fast-track basis with construction contracts proceeding completion of the design. The detailed design is now complete with the largest and last construction contract, Contract 4 tendered. The cost estimate for Contract 4 (C4), which has an identified accuracy range of -10% to + 10%, is higher than the project allocation for this work. The adopted project budget of \$335.6 million was based on a Class 3 cost estimate which had an AACE expected accuracy range of -20% to +30% or \$268.5 million to \$436.3 million. On May 27, 2021 Council approved a budget increase of \$16.5 Million, thereby approving an amended budget of \$352.1 Million.

An ongoing risk management strategy has been implemented for the project encompassing a proactive process of identifying and assessing project risk, defining appropriate risk handling strategies and plans, and monitoring those actions to completion.

Formal risk and opportunity analyses of the project are scheduled to be performed by the WSTP, the design consultant and key City stakeholders at the following project milestones:

- End of Project Definition design stage – this analysis has been completed
- End of Preliminary Design phase – this analysis has been completed
- At 60% and 90% completion of Detailed Design – these analyses have been completed
- Prior to the start of construction and quarterly during construction – Ongoing
- Prior to the start of, and again at the end of, commissioning

A project risk register is being kept throughout the project and is updated by the above formal analysis.

Appendix D – Funding

South End Sewage Treatment Plant (SEWPCC) and Winnipeg Sewage Treatment Program (WSTP)

1) Funding for the SEWPCC is as follows:

SEWPCC Nutrient Removal/Upgrade (in \$millions)	Total Cost	Funded to Date		Funding Pending		Total Funding		City Share of Costs
		Canada	Manitoba	Canada	Manitoba	Canada	Manitoba	
Environment Act Licence Driven Funding								
CSIF BNR	\$ 147.0	\$ 27.14	\$ 6.08	\$ 4.20	\$ -	\$ 31.34	\$ 6.08	\$ 109.58
Wet Weather								
GIF Flow	60.0	9.90	9.90	1.10	1.10	11.00	11.00	38.00
Other	168.6							168.60
Estimated Program Costs	\$ 375.6	\$ 37.04	\$ 15.98	\$ 5.30	\$ 1.10	\$ 42.34	\$ 17.08	\$ 316.18

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	552.71			200.87	167.38	200.87	167.38	184.46
NEWPCC Nutrient Removal ⁴	828.06					-	-	-
Estimated Program Costs	\$ 2,315.06	\$ 47.70	\$ 38.71	\$ 322.28	\$ 265.23	\$ 369.98	\$ 303.94	\$ 813.08

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

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

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

⁴ NEWPCC Upgrade Nutrient Removal project has not been approved.

