



October 27, 2022

Client File No.: 1071.0
Our File Nos.: S-1146, EMS
020-17-08-11-00
020-17-08-11-0N

Environment, Climate and Parks
Environmental Stewardship Division
Environmental Approvals Branch
1007 Century Street
Winnipeg, MB R3H 0W4

Attention: James Capotosto, A/Director

**RE: INTERIM PHOSPHOROUS REMOVAL QUARTERLY REPORT FOR JULY, AUGUST,
SEPTEMBER 2022**

The City of Winnipeg (City) is submitting a Quarterly Report for the periods of July, August, September (third Quarter) of 2022 in accordance with the conditional approval of the Notice of Alteration for the North End Sewage Treatment Plant (NEWPCC). Table 2 shows the schedule for the Interim Phosphorous Removal Project.

July

In July, Council concurred with the Public Service budget amendment recommendation adding \$6.5 million dollars to the project budget. The Tender for the construction phase of the project closed and two bids were received. The lowest qualified bid was from Trotter and Morton Industrial Contracting Inc. for \$16,105,505.24. This increased the total estimated project cost (including construction, contingencies, consulting, etc.) to \$19.3 million. With an approved capital budget of \$17.0 million, there were insufficient funds available to award this contract

August

In order to award the construction contract, the Public Service recommended transferring \$2.3 million from existing approved capital funds to the Interim Phosphorous Removal project. This will allow the project to be awarded without modifying scope, re-tendering and/or awarding the project in phases.

September

In September, the Standing Policy Committee on Water and Waste Riverbank Management and the Environment concurred with the Public Service's recommendation to transfer funds to this project account. The construction phase of the project was awarded to Trotter and Morton. Trotter and Morton submitted contract initiation documents and a project kickoff meeting was scheduled for October 5, 2022. A revised construction schedule will be accepted following the meeting.

A Scheduler was brought onto the project team. They will review the schedule as the project progresses looking for opportunities to accelerate it and/or mitigate risks with the contractor and consultant.

The estimated phosphorous concentrations throughout the various phases of the NEWPCC Upgrade remain the same as the previous quarterly report, shown in Table 1.

Table 1. Estimated phosphorous concentrations through various phases of the NEWPCC Upgrade

| Phase | Period | Estimated total phosphorous concentration in NEWPCC Final Effluent |
|--|---|--|
| Stage 1: Phosphorous reduction with existing infrastructure | Until August 2021 | Approximately 4.0 to 4.5 mg/L on average |
| Stage 2: Maximized phosphorous reduction through optimization with existing infrastructure | August 2021 to July 2023 | Approximately 3.5 mg/L on average |
| Stage 3: Interim phosphorous reduction through additional infrastructure as approved on May 28, 2021 | August 2023 to December 2030 | Approximately 2.5 to 3.0 mg/L on average (phosphorous levels may increase as City growth consumes sludge processing capacity) |
| Stage 4: Enhanced interim phosphorous reduction to as low as the 1.0 mg/L effluent phosphorous limit upon commissioning of the biosolids facility | January 2031 to January 2032 | 1 mg/L – beyond January 2032, 1 mg/L is dependant on the sludge loading levels. This assumes the maximum sludge generating scenario. |
| Stage 5: Ongoing phosphorous removal meeting the 1.0 mg/L effluent phosphorous limit upon commissioning of the biological nutrient removal facility | Dependent on constructability review and funding for NEWPCC Nutrient Removal Facility | 1 mg/L |

Phosphorous concentrations in the final effluent are reported in the NEWPCC's monthly compliance reports and can be found online: <https://winnipeg.ca/waterandwaste/sewage/compliance.stm>



Table 2. Schedule for Interim Phosphorous Removal

| Deliverable | Description | Contractual Dates | % Previously Reported in Q22022 | % Currently Complete (End of Q3 2022) | Originally Projected Date | Revised or Completed Date | Work Remaining |
|---------------------------------------|--|-------------------------------|---------------------------------|---------------------------------------|---------------------------|--|----------------|
| Consultant RFP | Draft, review, post for tender | N/A | 100% | 100% | July 2021 | July 31, 2021 | Complete |
| | Evaluation, Admin Report, Approvals, Award | N/A | 100% | 100% | September 30, 2021 | September 28, 2021 | Complete |
| Preliminary Design (PD) | PD plus reviews and approval by WWD | February 3, 2022 | 100% | 100% | March 31, 2022 | February 2, 2022 | Complete |
| Detailed Design (DD) | DD plus reviews and approval by WWD | May 18, 2022 | 100% | 100% | June 30, 2022 | May 18, 2022 | Complete |
| Construction Tender | Draft, review, post for tender | May 26 | 100% | 100% | June 30, 2022 | June 13, 2022 | Complete |
| | Tender posting period | May 26, 2022 to June 23, 2022 | 50% | 100% | June 30, 2022 | June 13, 2022 to July 22, 2022 | Complete |
| | Award Recommendation, Admin Report, Approvals, Award | July 15, 2022 | 0% | 100% | June 30, 2022 | September 22, 2022 | Complete |
| Construction and Commissioning | Substantial Performance | July 20, 2023 | 0% | 0% | June 30, 2023 | The construction schedule will be updated as part of the next quarterly report | |
| | Total Performance | August 31, 2023 | 0% | 0% | September 30, 2023 | | |
| | Warranty Period | August 31, 2024 | 0% | 0% | December 31, 2024 | | |
| Full Scale Testing and Implementation | Process review, dosing estimates, trouble shooting, optimization | August 31, 2024 | 0% | 0% | December 31, 2024 | | |
| Closeout | Certificate of Acceptance | September 2, 2024 | 0% | 0% | December 31, 2024 | | |


Phosphorous Optimization

The NEWPCC Operators have maximized ferric dosing to the sequencing batch reactors (SBRs) and digesters based on the existing ferric chloride pumping capacity. The average SBR effluent phosphorous load for Q3 2022 is 58.5 kg/day which corresponds with an average effluent concentration of 27.3 mg/L.

The kg/day load is higher this quarter because of settling issues in the centrate treatment facility. The issues were addressed and the Q4 centrate levels should return to historical trends. The SBRs are still performing better than intended in their original design and are below the licence limit of 119 kg/d specified in Clause 27 of the NEWPCC Licence No. 2684RRR.

Should you have any questions on this report, please contact Michelle Paetkau at 204-986-4904 or by email at mpaetkau@winnipeg.ca.

Sincerely,



Cynthia Wiebe P. Eng. CAMP
Manager of Engineering

Attachment

MP/dr

- c: Siobhan Burland Ross, M. Eng., P. Eng., Manitoba Conservation and Climate (email)
- Yvonne Hawryliuk, MSc, Manitoba Conservation and Climate (email)
- T. Shanks, P. Eng, Water and Waste Department (email)
- M. Paetkau, P. Eng., Water and Waste Department (email)
- C. Carrol, P. Eng., Water and Waste Department (email)
- R. Grosselle, Water and Waste Department (email)
- C. Javra, P. Eng., Water and Waste Department (email)