

The Regional Municipality of York

Committee of the Whole
Environmental Services
February 11, 2021

Report of the Commissioner of Environmental Services

Delegated Authority for Award of Six Equipment Pre-Purchase Contracts at Duffin Creek Plant

1. Recommendation

Council authorize the Commissioner of Environmental Services to award and execute six equipment pre-purchase contracts associated with the Biosolids Treatment Replacement Project and the Digester Complex Upgrades Project at Duffin Creek Water Pollution Control Plant, to be competitively bid under future Request for Proposals.

2. Summary

This report seeks Council authorization for the Commissioner of Environmental Services to award and execute six equipment pre-purchase contracts required to supply critical design details and large complex equipment (including High Pressure Auxiliary Boiler, Boiler Feed Water Pumps, Continuous Emission Monitoring System, Linear Motion Mixers, Digester Covers and Waste Gas Burners) to be incorporated into future construction contracts for the Biosolids Replacement Project and Digester Complex Upgrades Project at Duffin Creek Water Pollution Control Plant (Duffin Creek Plant).

All procurements will be bid competitively. It is anticipated that a number of successful submissions will exceed \$2,000,000. Pursuant to Section 7 of the Region's Purchasing Bylaw, Council approval is required to award a Request for Proposal (RFP) over \$2,000,000.

Key Points:

- Delegation of authority to the Commissioner of Environmental Services supports achieving the project schedules and advances the goal of awarding the pre-purchase RFPs within 2021 and early 2022
- Specific engineering details of the pre-purchased equipment are required to complete detailed design for the facilities, development of related construction contracts and development of associated tendering schedules to commence in Q2 2022
- Prompt execution of pre-purchase contracts for specialized process equipment allows for coordination of lengthy delivery times within concurrent and dependant detailed designs and construction contracts

- Compressing schedules for issuing the interdependent contracts brings best value to the Region and provides security of capacity to service forecasted population growth through 2026 and beyond
- Delegated authority is requested for six equipment RFPs associated with the Biosolids Treatment Replacement Project and the Digester Complex Upgrades Project at Duffin Creek Plant

3. Background

Duffin Creek Plant is a critical infrastructure component of York Durham Sewage System

Duffin Creek Plant is a key facility servicing both York and Durham Regions that was built in the 1970's and transferred from the Province to the Regions in 1997. Since its assumption by the Regions, the York Durham Sewage System has expanded in stages to service growth in Durham and York. Through the 2000's Duffin Creek Plant has undergone works of the major Stage 3 Expansion Project as well as the Stage 1 and 2 Upgrades Project. Currently, the Biosolids Replacement and Digester Upgrades Projects are being implemented. These major works totalling \$1.1 Billion, ensure water/wastewater master plan capacity forecast demands of both Regions are met.

Delivery of Duffin Creek Plant Biosolids Replacement Project and Digester Complex Upgrades Project demands an aggressive schedule

The Biosolids Treatment Replacement Project is a large scale, technically complex project requiring extensive conceptual and pre-design phases that commenced in Q4 2017. Aspects of this project are now advancing into detailed design and procurement. Construction is scheduled for completion by 2028. Award of the first pre-purchase contract for supply of two fluidized bed incinerators was delegated to the Commissioner of Environmental Services at [January 30, 2020](#) Regional Council.

The Digester Complex Upgrades Project conceptual design commenced in January 2020 and advanced into detailed design through 2020 targeting commencement of pre-purchase procurement in Q3 2021 and construction completion in Q3 2027.

Pre-purchase equipment contracts have been effectively used for capital delivery of large infrastructure projects at Duffin Creek Plant

The procurement strategy to deliver large-scale complex project works through a combination of pre-purchase contracts for large critical equipment and construction tenders is a proven approach at Duffin Creek Plant as demonstrated through successful delivery of the Stage 3 Expansion and Stage 1 and 2 Upgrades Projects.

Pre-purchasing critical equipment ensures the Regions receive best value by minimizing markup of high-cost equipment through the construction tendering process. Simultaneously, the pre-purchase approach ensures vendors have a direct obligation and accountability to the Regions for specialised scope and cost negotiations. While this equipment pre-

purchasing approach is expected to deliver tangible cost and risk mitigation benefits, scheduling these multiple pre-purchase contracts adds procurement administration and schedule burdens that must be managed within the overall project schedule. These administration and time impacts can be mitigated in part by delegating the authority to award multiple pre-purchase contracts to the Commissioner of Environmental Services.

4. Analysis

Delegated authority supports project schedule

Table 1 shows cost estimates for the expected six proposed supply contracts identified at the current design stages, which range between \$1,500,000 and \$7,500,000.

Table 1
Cost Estimates for Six Equipment Pre-purchase Contracts

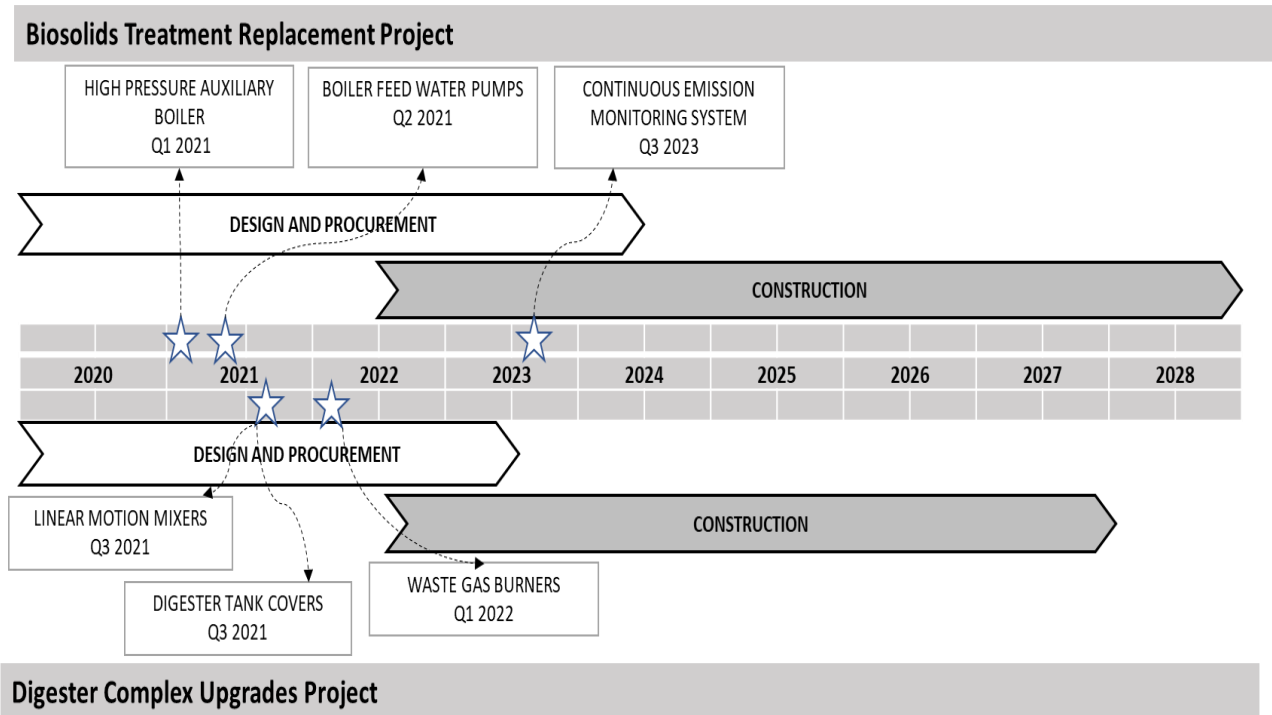
Pre-purchased Equipment	Construction Contract	Estimate (excluding contingency and HST)
High Pressure Auxiliary Boiler	Biosolids Treatment Replacement Project	\$2,500,000
Boiler Feed Water Pumps	Biosolids Treatment Replacement Project	\$1,500,000
Continuous Emission Monitoring System	Biosolids Treatment Replacement Project	\$2,000,000
Linear Motion Mixers	Digester Upgrades Project	\$1,500,000
Digester Tank Covers	Digester Upgrades Project	\$7,500,000
Waste Gas Burners	Digester Upgrades Project	\$1,500,000
Total Cost		\$16,500,000

Finalizing the six pre-purchase contract documents will occur in a staggered manner through 2021. Request for Proposals or Tenders for each specific contract will be released through the Procurement Office with the requisite award steps to follow.

Delegating authority to award six pre-purchase contracts allows for expedited design works and incorporation of critical information into major construction tender contracts, which are currently under design and scheduled for issue through the Procurement Office starting in Q2 2022.

Figure 1 illustrates the timing of the six pre-purchase contract awards within the overall schedules for the Biosolids Treatment Replacement Project and Digester Upgrades Project.

Figure 1
Pre-purchase Contract Awards Timeline



5. Financial

The 2020 10-year Capital Plan budget estimates for the overall Biosolids Treatment Replacement and Digester Complex Upgrade projects are summarized in Table 2 at a combined total of \$208,000,000. As part of the 2021 budget submission it is anticipated that these total project costs will increase given advancement of detailed design needs, identification of new regulatory requirements as well as additional repairs required for the digester complexes. Specific budget changes will be requested in the 2021 and 2022 budget submissions as design is completed over 2021.

This report requests delegation of authority to the Commissioner of Environmental Services for the award of six equipment pre-purchase contracts within the current estimated combined projects' budget of \$208,000,000. There is adequate capital spending authority in the 2020 Environmental Services Capital budget for these pre-purchase contracts.

Table 2
Biosolids Treatment Replacement and Digester Complex Upgrades Projects Cost Estimate Summary

Project	Budget Estimate
Biosolids Treatment Replacement Project	\$185,000,000
Digester Complex Upgrades Project	\$23,000,000
Total pre-design stage estimated cost	\$208,000,000

6. Local Impact

The Biosolids Replacement Project and Digester Upgrades Project are significant and complex undertakings. Successful delivery of these projects will ensure long-term reliable sewage and solids treatment capacity at Duffin Creek Plant for York and Durham communities. Eight municipalities in York Region are serviced by Duffin Creek Plant.

7. Conclusion

To meet strict delivery schedules of specialized equipment and to achieve targeted project milestones with construction completion by 2028, it is recommended that Council authorize the Commissioner of Environmental Services to award and execute six equipment pre-purchase contracts for the Biosolids Replacement Project and the Digester Complex Upgrades Project at Duffin Creek Plant.

For more information on this report, please contact Mike Rabeau, Director, Capital Planning and Delivery at 1-877-464-9675 ext. 75157. Accessible formats or communication supports are available upon request.

Recommended by:



Erin Mahoney, M. Eng.

Commissioner of Environmental Services

Approved for Submission:



Bruce Macgregor

Chief Administrative Officer

January 22, 2021
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