

# **THE CORPORATION OF THE MUNICIPALITY OF MISSISSIPPI MILLS**

## **STAFF REPORT**

**DATE:** January 31, 2023

**TO:** Committee of the Whole

**FROM:** Cory Smith, Director of Public Works

**SUBJECT: Wastewater Treatment – Treated Effluent Pipe Lining**

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### **RECOMMENDATION:**

**THAT the contract for the Mississippi Mills Effluent Pipe Relining be single sourced from Clean Water Works Inc. at a cost of \$156,830.48 (including HST).**

### **BACKGROUND:**

In March of 2022 there was a blockage of flow in final effluent outfall pipe for a length of 297m, immediately behind the soccer fields at the Civitan. Roots had infiltrated the concrete outfall pipe and did not allow the full capacity of treated wastewater to be discharged from the plant resulting in the outfall being unavailable for use. At the time of the incident, Mississippi Mills retained Clean Water Works Inc. to perform an inspection and cleaning of the affected pipe section which removed the roots from the pipe and allowed flow to resume at full capacity. The works to clear the outfall resulted in the outfall being out of service for 8 days and the Sewage treatment plant diverting the raw sewage to our overflow containment area in Cell A during this time period.

Staff completed a review of corrective actions, the review included considerations for replacement of the existing pipe in its current alignment, installation of a new outfall pipe parallel to the existing and switching over to the new pipe, and lining the existing outfall pipe with a structural liner.

### **DISCUSSION:**

The affected effluent pipe is approximately 297 meters in length and the pipe diameter varies between 450mm and 600mm in diameter. The entire section of pipe (from the plant to the outfall in the Mississippi River) is approximately 1,100 meters.

In reviewing the alternatives, staff requested that Clean Water Works Inc. prepare a quotation and work plan to clean the pipe (i.e., remove all roots and debris) and install a Cured In Place Pipe (CIPP) Lining. Staff also requested that Thomas Cavanaugh Construction Limited (TCCL) also prepare a quote and work plan to replace the affected

pipe in the existing alignment and in a parallel alignment. Both contractors selected to provide review and quotations were selected as a result of the contractors working with the Municipality on other contracts completing similar works in a timely competent manner, as well as the fact that both were involved in the emergency works, as a result they are both familiar with the unique challenges of this project.

In addition to costs, considerations for life expectancy, future root infiltration and disruption of service to the plant were all reviewed.

Life expectancy is an important consideration as this repair or replacement is a long term capital investment.

Future root infiltration is important as the roots appear to be fairly fast growing based on the video completed in December showing root infiltration is already causing restrictions in the outfall, since it was cleared in March. The roots are primarily coming from the trees and bushes adjacent to the outfall on Municipal property behind the soccer fields at the Civitan. Staff have completed some removals of the existing bushes, however additional removals is required. Staff will also be implementing a best practice of ensuring that areas where our pipes are covered in grass and other vegetation that all vegetation in the immediate area be cut annually to prevent deep rooting vegetation from damaging the pipes.

Disruption of service to the plant is also an important consideration as the plant needs to divert the raw sewage entering the plant to the attenuation pond known as cell A during the times when the outfall is being disrupted. It should be noted that during the March event that after 8 days of the outfall being out of service, sewage was required to be diverted from Cell A to Cell B. This is as a result of Cell A not being cleaned in over 20 years and having significant vegetative growth around the edge, a reduction in capacity of the attenuation area has occurred. Recommendations on cleaning the pond will come as part of a separate report.

## **OPTIONS:**

**Three options are discussed below, with Option 1 being the preferred.**

1. Structural lining of the existing outfall
  - a. Cost \$154,118.00 plus HST (design included, no reinstatement or landscaping costs)
  - b. Useful Life 60 Years (based on PSAB)
  - c. Infiltration of roots, there are no joints for roots to penetrate, likelihood very low.
  - d. Disruption of service to the plant, Approximately 2-3 Days (working hours only)
  - e. Considered maintenance, no formal Ministry Approval Required.

2. – Replacement of Pipe (Like for Like) existing alignment
  - a. Cost \$158,797.51 Plus HST (additional costs for design, reinstatement, landscaping and disposal of existing pipe.)
  - b. Useful life 70 Years (PVC pipe based on PSAB)
  - c. Infiltration of the roots, can occur at the joints where pipes meet. Likelihood low.
  - d. Disruption of service to plant Approximately 8 Days,
  - e. Considered like for like replacement/maintenance, no formal approval, but design to be completed and recorded.
3. Replacement of Pipe New alignment
  - a. Cost \$175,503.00 Plus HST (additional costs for design, reinstatement, landscaping, removal and disposal of existing pipe.)
  - b. Useful life 70 years (Based on PSAB)
  - c. Infiltration of roots, can occur at the joints where the pipes meet. Likelihood low.
  - d. Disruption of service to the plant, 2 – 3 days during time of connection to existing.
  - e. Considered new works, would require full design and approval. This may cause time delay.

## **FINANCIAL IMPLICATIONS:**

The 2022 budget carried \$275,000.00 for infiltration/sewer lining. These works fall under this portion of the budget and there is sufficient funds remaining in this account to cover the works. Based on the recommended option of Structural lining, with a total cost of \$154,118.00 plus non-recoverable HST of \$2,712.48, the contracted costs would be \$156,830.48, there is still sufficient funds to allow a 20% contingency of \$30,825.00 to accommodate any unforeseen costs and final clean up by municipal staff.

Single Source procurement has been reviewed by the CAO, Treasurer and Director of Public Works. As per section 4B the contractors who quotes were requested from were party to the original works and is considered an extension of the contract. They are also familiar with the site and its limitations. In addition the recommended option of lining has been regularly completed by Clean Water Works, who has been the only successful bidder for provision of these services over the past 10 years. In order to complete these works in a timely manner and to prevent additional costs of future root removal before repairs are completed, it is recommended that works proceed based on the quotation provided by Clean Water Works.

## **SUMMARY:**

Based on staff's review, structural lining of the existing pipe, is the most cost effective way to complete the necessary repairs on this pipe. It also has the least disruption of service to the plant, with very similar life expectancies from the product based on historical life expectancies used in our PSAB reporting. Structural lining also has the

lowest likelihood of future root infiltration. Staff therefore recommend single source procurement of structural lining be awarded to Clean Water Works.

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Respectfully submitted by,

Reviewed by:

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Cory Smith,  
Director of Public Works

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Ken Kelly,  
CAO