



# Staff Report

## Infrastructure and Public Works

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**Report To:** Committee of the Whole  
**Meeting Date:** March 18, 2019  
**Report Number:** CSPW.19.028  
**Subject:** Contracted Services for Condition Assessment of the Sanitary and Storm Sewer Systems  
**Prepared by:** Mike Humphries, C.E.T. Engineering Design Technologist

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### A. Recommendations

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THAT Council receive Staff Report CSPW.19.028, entitled “Contracted Services for Condition Assessment of the Sanitary and Storm Sewer Systems”;

AND THAT Council direct Staff to proceed with the condition assessments of the sanitary and storm sewers systems as within the 2019 budget utilizing a contractor to undertake the condition assessments.

### B. Overview

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This report is being provided to Council to explore the feasibility of the Town completing the condition assessments of the sanitary and storm sewers internally.

### C. Background

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As part of the Town’s asset management initiative a program was introduced in 2018 to conduct CCTV inspections to obtain condition assessments for all of the Town’s sanitary and storm sewers over a 7 year period (“the Works”). A contractor was retained in 2018 and has completed the first year of the 7 year program.

During the 2019 Budget deliberations Council reviewed Project No. 1-315-4171 “Condition Assessment of the Sanitary and Storm Sewer Systems”. Council requested that Staff report on whether or not this Work could be completed “in house”. This report provides an analysis of the anticipated costs based on Staff’s best estimate that may be incurred both short and long term.

### **Equipment Requirements**

In order to facilitate the Work, the Town would have to purchase the appropriate equipment. The Work requires specialized equipment to flush and clean the sewers. This would consist of a vacuum truck outfitted with high pressure jetting equipment. The vacuum truck alone could cost \$650,000 depending on specialized equipment (Figure 1).

**Figure 1: Sewer Jetting & Vacuum Truck**



An inspection vehicle would also be required (Figure 2). This vehicle would house the camera and computer system and could cost over \$275,000 to purchase and equip. It is common practice to utilize a third vehicle that carries additional personnel and equipment necessary for traffic control. This vehicle would cost around \$50,000 to purchase and outfit. There will be additional costs for tools and equipment. Including equipment for confined space entry and traffic control and is estimated to cost in the range of \$10,000.

**Figure 2: Typical Sewer Inspection Vehicle**



The initial costs to provide suitable equipment to complete the Work efficiently and effectively are estimated to be in excess of \$985,000. It is anticipated that this equipment would have to be replaced every 10 years. The costs of fuel, insurance, repairs and maintenance could reach upwards of \$100,000 per year.

### **Employees**

The Work requires an operator that is certified through the National Association of Sewer Service Companies (NASSCO) in both the Pipeline Assessment Certification Program (PACP) and the Lateral Assessment Certification Program (LACP). This is the North American standard for pipeline defect identification and assessment.

The current sewer inspection program is set up to inspect all sewers in the Town over a period of 7 years. This estimate was based on the Town's GIS sewer data at the time the initial budget was developed. As the Town's asset management program progresses, Staff have been refining the data and eliminating sewers owned by others, such as private developments, sewers not yet assumed and sewers owned by the County. It is anticipated that this 7 year program could now be completed in 6 years or less. Once the entire Town has been inspected a review of the program will be completed to assess the continued inspection needs. Under the current program this amounts to approximately 10-12 weeks sewer inspection work per year. Once the initial program is completed it is expected that this time frame can be reduced.

It is anticipated that at least 4 staff would be required and that a minimum of 2 would be certified in PACP/LACP. Using the Town's proposed 2019 salary grid these 4 employees would cost \$105,000 in salaries and benefits and an additional \$20,000 for other employee costs, such as memberships, training, and clothing. Note that the salary estimate is only for the three months of expected work per year and doesn't include additional supervisory costs. The key to a successful program would be finding exceptional inspection operators and retaining them long term. This would be difficult given that this is only three months' worth of work per year.

There are opportunities for the vacuum truck to clean Town catchbasins and assist other divisions but this would be minimal and amount to less than 1 week per year. This would mean that the crew would be engaged for only 25% of the year. There may be opportunity for the vacuum truck operator and traffic control person to be utilized in a similar capacity in other divisions for the remainder of the year. The certified inspection operators may be utilized within the water or wastewater divisions. There may also be opportunity to offer this service to adjacent municipalities to offset some of the costs.

### **Other Miscellaneous Costs and Considerations**

There will be other costs to consider such as a facility to house the equipment and staff, automobile and liability insurance, vehicle licensing, fuel costs, computer software upgrades and yearly software service agreements (NASSCO PACP/LACP certified software), and computer replacement every 3 years. There would also be costs associated with water for flushing/cleaning and disposal of debris that are unaccounted for in this analysis.

There are also some risks associated with this Work that would otherwise be absorbed by the Contractor. They would include the risk of damage to private property through flushing and cleaning resulting in costly sewer back up claims. There is also increased risk related to confined space entry (hazardous work environment), injuries from high pressure jetting, and hazards from working in the roadway for extended periods of time. With the use of Contractors the Town would minimize the direct associated risks.

### **D. Analysis**

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It is expected that a minimum of 4 staff would be required for the sewer inspection crew at an estimated cost of \$125,000 for the 3 month period. The capital cost plus staffing and operating costs until end of 2024 would be \$2,335,000. The residual value of equipment at the end of the remaining 6 years may be in the range of \$350,000 for a net cost of \$1,985,000 without staff termination considerations.

The Draft 2019 Budget contains \$184,700 for 2019. If the work is completed by 2024 as originally anticipated, the total cost to complete the work with external contractors is \$1,170,000. The Town will undertake CCTV inspections after 2024 but it's not expected to be of the same scope as the initial system inventory and condition assessment.

Since the required workload would be completed over 10-12 weeks per year for the next 6 years and less thereafter, Staff feel that it would not be prudent to invest in new equipment and staff. The Town does not have enough sewer infrastructure or related work to justify an internal sewer inspection crew at this time.

Staff recommend that Council direct Staff to proceed with the condition assessments of the sanitary and storm sewers systems as within the 2019 budget utilizing a Contractor to undertake the condition assessments.

## **E. The Blue Mountains Strategic Plan**

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- Goal #4: Promote a Culture of Organizational & Operational Excellence  
Objective #4 To Be a Financially Responsible Organization  
Objective #5 Constantly Identify Opportunities to Improve Efficiencies and Effectiveness
- Goal #5: Ensure Our Infrastructure is Sustainable  
Objective #1 Develop a Long-Term Asset Management Plan for the Maintenance, Renewal and Replacement of Existing Infrastructure  
Objective #3 Implement Best Practices in Sustainable Infrastructure

## **F. Environmental Impacts**

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Greenhouse gas will be generated from the Work.

Cleaning, flushing and inspection of the sewers on a regular basis will limit the likelihood of sewer blockages and minimize the discharge of untreated sewage to the natural environment.

## **G. Financial Impact**

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In the 2019 budget Staff are carrying a budget of \$184,700 with a similar budget projection to 2024 to complete the initial 7 year project. After 2024 this project budget will be reduced as only major trunks or problem areas will be inspected on a regular basis whereas other local pipes may only be inspected every 10 to 15 years.

Although this project will be completed annually the amount of specialized equipment and Staff requirements doesn't make it prudent to do this work in-house.

## **H. In Consultation With**

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Sam Dinsmore, Deputy Treasurer/Manager of Accounting and Budgets  
Allison Kershaw, Manager of Water and Wastewater Services  
Jim McCannell, Manager of Roads and Drainage

## **I. Public Engagement**

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The topic of this Staff Report has not been subject to a Public Meeting and/or a Public Information Centre as neither a Public Meeting nor a Public Information Centre are required.

Comments regarding this report should be submitted to Mike Humphries, Engineering Design Technologist, [ipwinfo@thebluemountains.ca](mailto:ipwinfo@thebluemountains.ca)

## **J. Attached**

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None.

Respectfully submitted,

***Mike Humphries***

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Mike Humphries C.E.T.  
Engineering Design Technologist

***Reg Russwurm***

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For more information, please contact:

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