

TOWN OF TWO HILLS



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Policy Subject: Storm and Wastewater Systems Maintenance Management

POLICY STATEMENT:

The purpose of this policy is to establish priorities and a system of inspection for maintenance/renewal of the storm and wastewater systems within the Town of Two Hills. This policy will ensure that the Town's storm and wastewater infrastructure is maintained in a manner that will protect the environment, public health and safety, provide a high level of service, reduce capital replacement and long term insurance costs, protect the rate payer from the interruption of this important municipal operation and service, ensure the sustainability of the system and provide renewal funding that is sufficient and effectively spent. The object is to identify the system components that would benefit mostly beneficial treatment. By slowing the rate of deterioration, treatment can effectively increase the useful life of the storm and wastewater systems. The storm and wastewater systems maintenance program will be integrated with other municipal infrastructure maintenance program to minimize total cost and disruption to residents and businesses.

PROCEDURE:

Preventive Maintenance Program

Preventive Maintenance is a planned strategy used to implement mitigation measure in a timely manner so as to extend the useful service life of the wastewater system to an optimum length of time and thereby minimize the overall economic, social and environmental cost of the system operations. The maintenance program will consist of 5 steps as follow: Step 1 – Inventory, Step 2 – Inspection, Step 3 – Condition assessment, Step 4 – Impact assessment and categorization of repair priority, and Step 5 – Determining rehabilitation needs and methods.

DEFINITIONS:

1. **Step 1 – Inventory** – An up to date inventory of the sewage collection system shall be maintained. The database shall include the original design and construction information, as-built records, site condition, adjacent utilities, land use and surface structures. Information on reported defects, failures, complaints, maintenance records, inspection records, condition ratings, and rehabilitation records shall also be included in the database.



2. **Step 2 – Inspection** – The sewage collection system within the Town of Two Hills shall be divided in to 4 annual inspection areas, with the whole system being inspected over a 4 year period. Closed Caption Television (CCTV) with tilt and pan capabilities will be used as the main inspection tool to determine the pipes structural integrity. The CCTV shall also be fixed with a “Light Line” attachment to further assist in quantifying smaller sewer pipe deformations. Access / Man Holes shall be inspected by person-entry.

Inspection Area 1 – Shall be the area identified by the Foreman.

Inspection Area 2 – Shall be the area identified by the Foreman.

Inspection Area 3 – Shall be the area identified by the Foreman.

Inspection Area 4 – Shall be the area identified by the Foreman.

3. **Step 3 – Condition assessment** – There shall be two main types of defect or condition categories. *Service* defects are not structural in nature in and pertain to, but shall not be limited to, grease build-up, root intrusion, debris, encrustation, protruding service connections, and infiltration. *Structural* defects shall include, but shall not be limited to, open joints, pipe wall cracking, broken or collapsed pipes, pipe deformation, pipe sags and pipe erosion.

4. **Step 4 – Impact assessment and categorization of repair priority** - The criteria used to prioritize replacement or rehabilitation shall include not only the physical condition of the pipe but also the degree of impact of a sewer failure. The impact assessment shall rank the pipe segments in terms of six major factors – location, type of embedment soil, burial depth, pipe size, functionality and seismic zone. Sewer pipes showing structural defects shall be categorized for priority of repair according to the amount of deformity shown by the “light line” or other visibly physical defect detected by the CCTV as follows:

1st Priority 10% + of deformity of normal pipe diameter or visible severe surface cracks, severe pipe erosion or indications of severe exfiltration/infiltration shall be considered serious, requiring immediate action.

2nd Priority 5 to 9 % of deformity of normal pipe diameter or visible minor surface cracks, minor pipe erosion or indications of minor exfiltration/infiltration shall be considered less serious, requiring regular monitoring.

3rd Priority 0 to 4% of deformity of normal pipe diameter with little visible surface cracks, pipe erosion or indications of exfiltration/infiltration shall be considered as OK, requiring no extra monitoring or action.

Sewer pipes showing service defect shall be categorized for priority of repair or maintenance, according to the percentage amount of pipe flow area (cross-section) that remains open as per the following:



- 1st Priority** 26% + blockage of the pipe cross-section shall be considered serious requiring immediate action.
- 2nd Priority** 10 to 25% blockage of the pipe cross-section shall be considered less serious, requiring regular monitoring.
- 3rd Priority** 0 to 9% blockage of the pipe cross-section shall be considered as OK, requiring no extra monitoring or action.

5. **Step 5 – Determining rehabilitation needs, methods and future inspection frequency**

Rehabilitation needs, methods and future inspection frequency shall be determined by defect, with consideration of the type and severity of the defects, location, depth of burial, degree of urgency, budgetary constraints, functional requirement and required service life of the refurbished pipe.

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