



Corporate *NO: R148*

Report *COUNCIL DATE: July 4, 2000*

REGULAR COUNCIL

TO: Mayor & Council **DATE: June 27, 2000**

FROM: General Manager, Engineering **FILE: 4759-000**

SUBJECT: Low Pressure Sewer System - Operational Parameters

RECOMMENDATION

That Council endorse the 'septic tank effluent pumping' method proposed for the previously approved low-pressure sewer system for areas that are unserviceable by gravity sewer systems, recognizing that this method will entail septic tank pump-out costs as well as pumping energy costs to the owners on such systems.

INTENT

To establish a corporate position on the servicing standards for properties that pump via a low-pressure sewer system.

BACKGROUND

Regular Council of May 31, 1999, approved the use of 'low-pressure sewer systems' for subdivisions which are below the City's trunk sewer system and where community sewage lift station would not be economical. This innovative approach allows a number of small pockets of land that were previously uneconomical to develop to now do so.

Council's approval of this alternative to septic method of sewage disposal was supported by the Boundary Health Unit because, with the soil and ground-water conditions prevailing in Surrey, septic method of sewage disposal is not suitable for properties of less than 2 acres.

Consequently the low-pressure force main system whereby each household pumps their own sewage up to the trunk sewer through a jointly used City force main is the best way for these smaller pockets of land to be able to develop.

DISCUSSION

In a 'low-pressure sewerage system', sewage is transported under pressure through a small diameter pipe, usually not more than 100mm (4") in diameter. The one drawback with this type of system is that owing to the nature of intermittent pumping from the various individual homes connected, there is a tendency for emulsified grease and garburated solids to settle out within the low-pressure force main and cause blockages, which the City then has to clear. This creates additional utility costs and potential lower levels of service for the residents as well as potential liability for the City.

A pro-active solution to overcoming this disadvantage of the low-pressure force main system is to trap oils, grease and solids ahead of the force main.

Certain jurisdictions which have adopted the low-pressure method of sewage transportation have taken such measures to prevent solids from entering into the small diameter pressure sewers in order to eliminate the problem of blockages. The attached sketch shows a typical set-up of this method of trapping solids and grease using a septic tank. This method of Septic Tank Effluent Pumping is commonly referred to as the 'STEP' method. While this method will improve the reliability of the low-pressure force main system and, hence, the level of service for the residents, it will mean that residents will have to bear the costs periodically pumping out their septic tank. Pump-outs cost around \$150, with an average pump-out frequency being every two to three years.

However, from an overall community perspective, such pump-out costs are much lower than having to unblock the force main through flushing or, at worse case, actually digging up the force main for repairs.

CONCLUSION

Considering the pros and cons of trapping grease and solids ahead of the force main system, it is our conclusion that it is most appropriate to place the onus on the property owners to look after the functional aspects of the system within their own property (i.e., pumping out their septic tank). Purchasers will be made aware that the house is on a low-pressure system, with the requirement for septic tank pumping, through a covenant on the title. We should note that the Boundary Health Unit has validated the use of a septic tank as proposed in this report.

Jorgen Johansen, P. Eng.

General Manager, Engineering

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Attachment

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