



Township of Wellington North

P.O. Box 125 • 7490 Sideroad 7 W • Kenilworth • ON • N0G 2E0

**TO: PUBLIC WORKS COMMITTEE
MEETING OF NOVEMBER 18, 2014**

**FROM: BARRY TROOD
WATER/SEWER SUPERINTENDENT**

**SUBJECT: WSS 2014-01 ARTHUR WASTEWATER INFLOW AND
INFILTRATION**

RECOMMENDATION

THAT the Public Works Committee receive for information report WSS 2014-01 Arthur Wastewater Inflow and Infiltration.

PREVIOUS REPORTS/CORRESPONDENCE PERTINENT TO THIS MATTER

- June 22, 2011 Memorandum-Christine Furlong Triton Engineering Services Limited-attached

BACKGROUND

It is apparent that there is a serious Inflow and Infiltration (I/I) issue occurring within the Arthur Village wastewater system. The recent GRCA performance evaluation report has indicated that the per capita flow L/per Day for 2013 was 746 in Arthur which far exceeds the 350-500 range typically found elsewhere within the GRCA catchment area. This amount is equivalent to approx. 1,800 people and much higher than previous years. Earlier I/I information indicated a 5 year average of 489 L/P/D up to and including the year 2010. (See attached) This amount is also above the MOE targeted maximum guideline of 450 L/P/D.

Given the recent information as it relates to I/I there is a number of options which the Township should give consideration to implementing in an effort to try reducing our I/I levels in the Village.



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OPTIONS-

1/ Smoke Testing of Sewer Mains

Smoke testing could be completed in areas identified as high I/I areas. This will confirm if there are any possible cross connections with the storm sewers and will also identify any residences or businesses where roof leaders may also be connected to the wastewater system. Once we identify these we can put plans into place to have both removed from our wastewater system.

2/ Identify all Houses That Have Sump Pumps or Drain Tiles Connected to the Wastewater System

The Township could explore door-to-door inspections to determine which houses/buildings that have their sump pumps or drain tiles feeding into our wastewater system. Once this is determined it will become necessary to then decide what steps we can take if any were to be disconnected. Issues may arise as to where the sump or drain tile water can go if not directed to the wastewater system. (i.e.: if outlet is to the yard and how will it impact the yard, the basement, possible icing or draining to a neighbour's yard or Township roads and sidewalks)

3/ Identify Leaking Manholes

Manholes are generally not in bad shape and only a few have been identified as leaking. Some have been repaired already however a few more should be either relined or re-grouted. Costing for this is in the neighbourhood of \$3,000 per manhole and up depending on the depth and what is needed to be repaired.

4/ Evaluate costing for repairs for leaking service laterals

This may be very costly and repairs may include lining or digging up and replacing up to the property line. Most houses in Arthur do not have clean outs which may be an issue for re-lining.

5/ Installation of Water Meters

Installation of water meters has been estimated to save anywhere between 8-15% of water usage once fully implemented. An estimated cost last associated with this was in the neighbourhood of \$1.3 million however this could be done in stages or sections at a time which could reduce the upfront costing. Staging of meter installation makes it extremely difficult to equalizing billing between metered users and flat rate users. A downfall of the meters is possible loss of revenue particularly from apartments which are currently flat rated per unit which would change to a metered rate for the whole building. This loss of revenue could possibly be balanced out with savings at the wastewater plant in terms of treatment costs and expansion Meters may in fact reduce water consumption but it does become an additional operational cost borne by the users. Meters require maintenance, repairs and regular software upgrades. Reduced consumption does not necessarily translate to reduced water bills..

6/ Education/ Incentive Program

A stepped up approach to inform the public as to the costs associated with treating water and wastewater. This can be done through the media, flyers, schools, Township website etc. Incentives for low flow products such as toilet replacements for example are also another option which could be looked at by the Township. The less water used the less water needing to be treated. In the long term this will save the Township the added costs associated with the unneeded extra treatment.



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FINANCIAL CONSIDERATIONS

Nearby municipalities have invested heavily (hundreds of thousands of dollars) in trying to deal with I/I with varied success. There does not appear to be a “magic bullet”.

The Arthur WWTP has continued to operate in compliance with the MOE requirements as it relates to discharge even while exceeding allowable average daily flow amounts. If the Township is successful in reducing I/I, it may allow for an opportunity to approach the MOE about rerating the Arthur WWTP from the current average daily flow of 1465 m³/d to a greater amount that the WWTP is currently proving able to handle. This could potentially allow for incremental growth in Arthur prior to a significant expansion of the plant.

PREPARED BY:

RECOMMENDED BY:

Barry Frood

Mike Givens

MICHAEL GIVENS
CHIEF ADMINISTRATIVE OFFICER

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