



DEVELOPMENT AND INFRASTRUCTURE SERVICES – ENGINEERING SERVICES
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March 17, 2014

**DEVELOPMENT AND INFRASTRUCTURE SERVICES
JOINT ENGINEERING SERVICES & PUBLIC WORKS SERVICES
REPORT ES/PWS-2014-17**

TO: Committee of the Whole
SUBJECT: Davis Drive Field Verification Program
ORIGIN: Director, Engineering Services & Director, Public Works Services

RECOMMENDATION

THAT Development & Infrastructure Services Commission – Joint Engineering Services & Public Works Services Report 2014-17 dated February 17, 2014, be received and the following recommendations be adopted:

- 1. THAT Council approve Davis Drive Field Verification Program**
- 2. AND THAT Council approve the additional budget request of \$650,000**
- 3. AND THAT the additional budget be funded from the Asset Replacement Fund**

COMMENTS

In 2012, York Region began works on Davis Drive for the vivaNext Rapidway. As part of the project, the Town took advantage of the Region's project to include numerous essential infrastructure improvements such as spot sewer and watermain section replacements, as well as streetscaping works.

As Viva proceeded with its construction over the summer/fall of 2013, the Town was advised that corrosion was uncovered on five watermain service laterals and one watermain elbow. Viva also noticed discrepancies between the watermain materials and sizes shown in the "as-built" drawings as compared to what was actually found in the ground. Upon further investigation it was concluded that the existing watermain pipe itself appears to be in good condition, but the watermain fittings are susceptible to failure in the near future.

In an effort to mitigate future risk due to corrosion and to protect the future integrity of the new road surface and rapidway, Viva recommended a comprehensive field verification program to determine the extent of the corrosion issue and to estimate the costs of replacing corroded fittings. This has resulted in Viva requesting additional funding to confirm locations where corrosion might be an issue, as well as watermain pipe size, material and location. Town staff agrees that such investigation is highly recommended.

At the time of writing this report, the extent of the corrosion within the corridor is unknown. However, if locations of significant corrosion are not identified and repaired, there is a risk that breaks could occur at any time after the Davis Drive reconstruction is completed. Such imminent failures pose a health and safety risk in terms of fire protection and sanitation for the residents and businesses of the area, not to mention the disruption to daily activities of families and businesses affected by water service interruptions required for repairs. Also, once Davis Drive fully reconstructed, the expected breaks will require a significantly higher cost to repair due to the type of construction and the restoration that will be needed. The breaks may also have a negative impact on the RapidWay itself, causing potential disruption to public transit along the centre corridor. And furthermore, having to re-excavate a newly finished road can result in future road surface integrity issues, as well as creating a negative public perception.

With the assistance of the project consultant, RV Anderson, Staff has identified potential risk locations and is recommending spot checking of all service connections either by small diameter potholing or by full test pit excavations. Other non-invasive techniques such as ground probing radar or other geophysical methods have been considered but have been determined unsuitable for the investigations that are required.

There are two phases being proposed as part of the Field Verification Program:

Phase I Works: Complete test pits or potholing to uncover and inspect all mainline fittings/service laterals that could potentially be corroded. Fittings/service laterals found to have minor to moderate corrosion will be cathodically protected and an anode will be installed as per accepted standards. The anode works as a sacrificial metal which corrodes instead of the pipe. The sacrificial anode will extend the life of the fitting by 15 to 25 years.

Phase II Works: Any fittings that show severe corrosion will be repaired or replaced. At this time, staff is estimating that this category will comprise 20% of the fittings that are inspected.

Staff has received an estimate from Viva and its contractor Kiewit EllisDon (KED) of \$650,000 for the Phase I and II works. This amount includes Viva's field verification program, excavation, visual inspection of the existing fittings, the installation of anodes to prolong the life of fittings that are salvageable, the removal of soils impacted by corrosion and the replacement of the estimated 20% of the watermain fittings needing determined to be beyond salvage.

BUDGET IMPACT

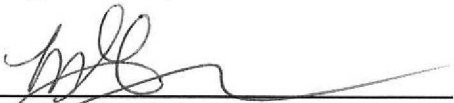
The Davis Drive Field Verification Program will require a budget of \$650,000. It is recommended that the funding source for this project be the asset replacement fund.

BUSINESS PLAN AND STRATEGIC PLAN LINKAGES

- Well Equipped & Managed... Efficient management of capital assets and municipal services to meet existing and future operational demands.
- Well Planned and Connected...continue to improve the quality of the road network within the Town of Newmarket.

CONTACT

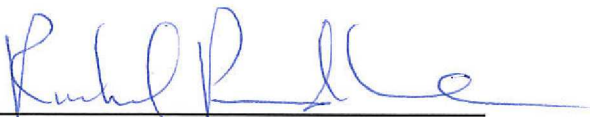
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