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TO:	**CHAIR AND MEMBERS CIVIC WORKS COMMITTEE MEETING ON MAY 5, 2015**
FROM:	**JOHN BRAAM, P.ENG. MANAGING DIRECTOR, ENVIRONMENTAL AND ENGINEERING SERVICES & CITY ENGINEER**
SUBJECT	**GREENBRIER CRESCENT EMERGENCY SANITARY SEWER REPAIR**

RECOMMENDATION

That, on the recommendation of the Managing Director, Environmental and Engineering Services & City Engineer, the following report **BE RECEIVED** for information.

PREVIOUS REPORTS PERTINENT TO THIS MATTER

None.

BACKGROUND

PURPOSE:

The purpose of this information report is to provide a status update on the Greenbrier Crescent sanitary sewer replacement project, an emergency sewer system repair initiated on March 13, 2015.

CONTEXT:

The local sanitary sewer on Greenbrier Crescent not only serves the immediately adjacent properties, but also conveys high volume sanitary flows from the nearby Westmount Pumping Station to the City's Greenway Wastewater Treatment Plant. The severely deteriorated condition of this pipe represented an imminent risk, with high social, economic and environmental impacts. An action plan was prepared and immediately acted upon to mitigate these risks.

DISCUSSION:

Greenbrier Crescent is a local street located in the Westmount community (reference map below). What's unique about its 40 year old, 375mm diameter concrete sanitary sewer is that it not only services the adjacent properties, but that it conveys high volumes of sanitary sewage flows that are discharged from the nearby Westmount Pumping Station.

Through the City's annual Closed Circuit Television (CCTV) sewer inspection program, serious deterioration of the Greenbrier sanitary sewer was discovered. This deterioration is a direct result of exposure to hydrogen sulphide gas, which is a corrosive gas that has the potential to penetrate and weaken the structural integrity of concrete sanitary sewers. The pipe damage on Greenbrier is so extensive that all considerations for rehabilitating the pipe through trenchless technology methods were dismissed. The volume of wastewater conveyed through the local neighbourhood elevated the degree of risk and concern. The potential for a pipe collapse was imminent and the impact would undoubtedly result in significant social, environmental and economic impacts to the immediate community. Given the severity of the issue, the Managing Director, Environmental and Engineering Services & City Engineer declared the issue an emergency, allowing immediate repair.

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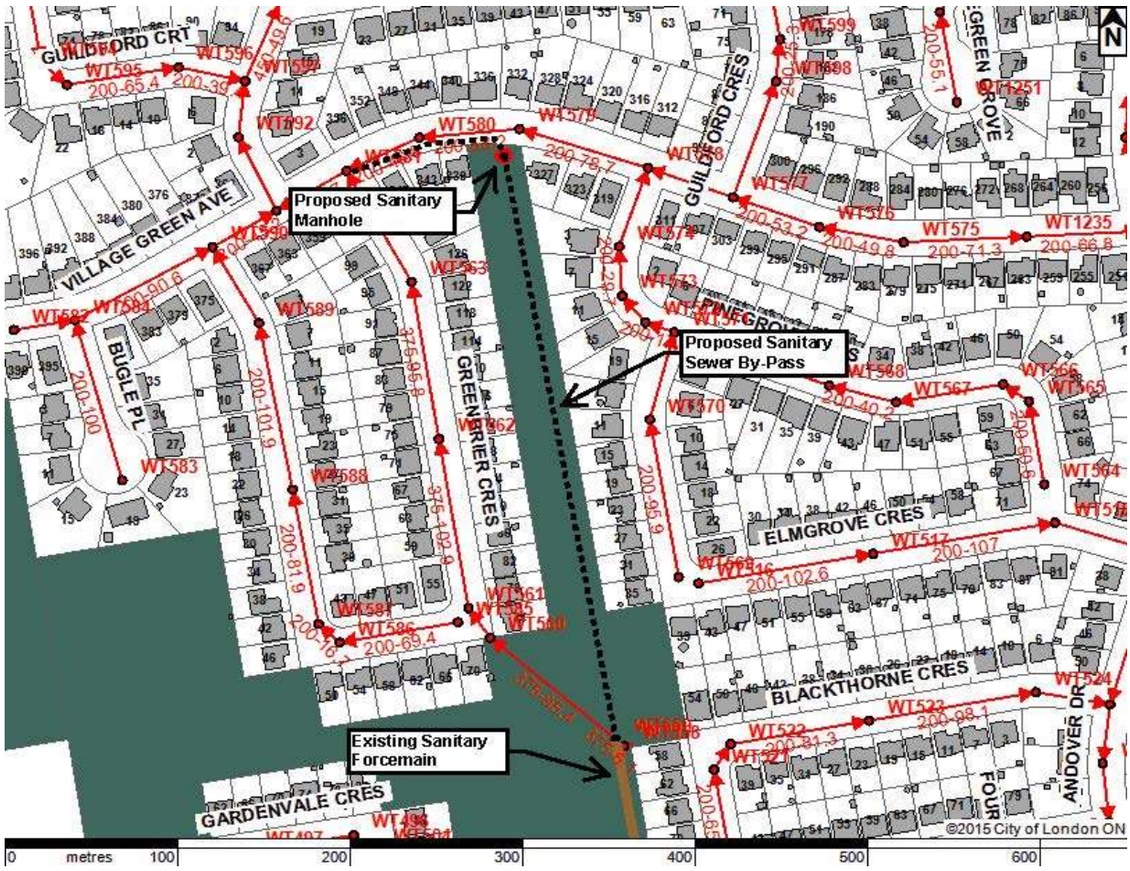
A team comprising of engineering and operational staff was formed to develop short and longer term service strategies. Serious consideration was given to economics, response time and the most viable alignment that would impose the least number of social and environmental impacts to the community, including use of the neighbourhood park, its pathways, children's playground equipment, an existing baseball field, green spaces and landscape features such as existing trees.

Based on a thorough engineering review, a final strategy was developed that entailed the construction of a sanitary sewer by-pass, essentially diverting high volume sanitary flows from the Westmount Pumping Station around Greenbrier's deteriorated sanitary sewer. As shown in the illustration below, the response team proposed a sanitary sewer by-pass alignment utilizes existing green space. This green space forms part of the Westmount Lions Park. The construction of a new manhole within the green space was not only intended to intercept the proposed sanitary sewer by-pass, but also intended to reduce the anticipated velocity of the flow discharged from the pumping station. This is a proactive measure in reducing future hydrogen sulphide gas. A minor section of new sanitary pipe along Village Green also forms part of the design. The proposed design has now been built.

The existing sewer pipe carrying flows north, toward Greenway has also been affected by H2S; however, its current condition is such that it can be rehabilitated through the City's annual sewer re-lining program. This work will be scheduled at an appropriate time following the emergency work.



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Progress Update:

The following provides a snap shot of work completed and outstanding work as at April 24, 2015.

Completed:

- distribution of property owner/tenant information letters on March 16, 2015 over a reasonably significant catchment area,
- traffic control set up (detour)
- re-construction of the Village Green Ave. sanitary sewer,
- construction of the manhole in the Westmount Lions Park green space,
- construction of the sanitary sewer by-pass within the park's green space
- manhole construction at the intersection of Village Green Ave. and Greenbrier Crescent including tie-in of the newly constructed Village Green Ave. sanitary sewer by-pass pipe,
- removal of an existing manhole near the Westmount Pumping Station and connection of the new sanitary sewer by-pass to existing.

Outstanding Work:

- site restoration - tentatively scheduled for the week of April 27th
- future re-lining of downstream sewers

Budget:

All labour, equipment and material associated with the completion of this project has been borne by the Sewer Operations Division under its 2015 Council approved budgets. The final anticipated cost associated with the completion of this work is estimated at $220,000. A review of the impact of this on the service area's 2015 capital and operating programs is presently being undertaken.

Conclusions

An imminent sewer pipe failure with significant, potential consequences has been averted. The work was undertaken as an emergency repair under the authority of the City Engineer. Costs are proposed to be managed within existing budgets.

PREPARED BY:	**REVIEWED AND CONCURRED BY:**
RICK PEDLOW **DIVISION MANAGER, SEWER OPERATIONS**	**JOHN LUCAS, P. ENG.** **DIRECTOR, WATER AND WASTEWATER**
RECOMMENDED BY:	
JOHN BRAAM, P.ENG. **MANAGING DIRECTOR, ENVIRONMENTAL & ENGINEERING SERVICES & CITY ENGINEER**	