



STAFF REPORT ACTION REQUIRED

Emergency repair work and permanent remedial work resulting from a storm sewer failure and road collapse on Finch Avenue West

Date:	September 21, 2009
To:	Government Management Committee
From:	Executive Director, Technical Services
Wards:	Ward 10 – (York Centre)
Reference Number:	P:\2009\Cluster B\Tec\GM09031 (AFS #10566)

SUMMARY

The purpose of this report is to advise on the procurement and status of the emergency repair work and on the permanent remedial work resulting from a storm sewer failure and road collapse on Finch Avenue West, between Dufferin Street and Wilmington Avenue and to request authority for Toronto Water to amend its 2009 Capital Budget.

RECOMMENDATIONS

The Executive Director of Technical Services recommends that:

1. Toronto Water's 2009 Capital Budget and 2010-2013 Capital Plan be increased by \$1,766,000.00 in WBS Element CWW468-07 Storm Sewer Replacement funded from Wastewater Capital Reserve Fund XR6004 to fund the cost of the emergency repairs.

Financial Impact

The \$1.766 million required to fund the emergency repair was not included in Toronto Water's approved 2009 Capital Budget; but can be accommodated from the Wastewater Capital Reserve Fund XR6004 and would increase Toronto Water's approved 2009 Capital Budget from \$504.238 million to \$506.014 million.

The Deputy City Manager and Chief Financial Officer have reviewed this report and agree with the financial impact information.

DECISION HISTORY

Purchasing and materials management has requested a copy of the report to support the sole source request for emergency repair works for an amount of \$1,000,000.00.

ISSUE BACKGROUND

On Friday, July 24, 2009, the road pavement on eastbound Finch Avenue West, about 150 metres east of Dufferin Street, caved in causing a deep sink hole. On the following morning, while attempts were made to repair this road collapse, the adjoining area also caved in causing a second sinkhole. Finch Avenue has since been closed between Dufferin Street and Wilmington Avenue to vehicular traffic. Pedestrian traffic is maintained along the north side of Finch Avenue.

Due to the urgent nature of the work required at this location, including carrying out emergency repairs, stabilizing the damaged area and identifying permanent remedial measures, it was determined that the time element would not permit a formal competitive bid process to engage appropriate service providers. It was anticipated that deep excavations would be required to reach the storm sewers depth (14m) and decide on permanent remedial measures. As such, a contractor with equipment and expertise to carry out deep excavations together with sewer repairs, and a consultant with experience in emergency remedial work for sewer and road failure situations were needed. Technical Services staff approached Clearway Group working on another City project at that time, and Engineering Consultant McCormick Rankin Corporation (MRC), to take on this task. Clearway Group is a competent contractor who has performed satisfactory work pertaining to all facets of municipal construction for the City, and as such, was considered capable of performing work as required in a timely manner. MRC is a capable Engineering Consultant who has successfully assisted the City in a recent emergency road failure project. Both Clearway Group and MRC had necessary equipment and resources to mobilize immediately, and therefore, considering the emergency nature of the project, Technical Services secured the services of Clearway Group and MRC on an emergency sole source basis.

Clearway Group mobilized on site on Monday, July 27, 2009, at 7:00 a.m. with necessary equipment to begin the stabilization work. All loose materials around the sink hole were removed and backfilled with unshrinkable fill to quickly stabilize the area and prevent any lateral movement of underground utility plants in the vicinity, particularly a trunk water main, a trunk sanitary sewer and a culvert connecting two sections of the reservoir in the area. This component of the emergency repair work was completed on Friday, August 28, 2009.

On July 27, 2009, McCormick Rankin Corporation (MRC) mobilized on site to provide on-site engineering services for: (a) assessing the site conditions and determining the

investigations required; (b) advice on immediate measures, (c) any necessary engineering designs required; (d) site supervision and construction administration.

COMMENTS

The following work plan was established by MRC in consultation with City staff of Technical Services, Transportation and Toronto Water Division:

Phase 1:

Carry out CCTV inspection of all sewers around the failure area to assess the pipe conditions.

Carry out extensive subsurface investigations to assess the road conditions.

Sink a shaft through the area of road failure to reach the storm sewer underneath.

Determine the cause of failure and carry out any immediate repairs.

Explore various options for permanent measures to restore the City's infrastructure effectively.

Phase 2:

Implement the best possible option for permanent measures.

Under Phase 1 works, CCTV inspections were completed by July 30, 2009 and the shaft excavation to expose the damaged sewer by August 14, 2009. The storm sewer underneath the sink hole was inspected through the shaft. The sewer was found to be deteriorated and damaged beyond repair and plugged with silt at the deep culvert to which it was connected. The culvert and a section of the sewer were observed to be permanently submerged under the water level of the reservoir causing the sewer pipes to severely surcharge during heavy rainfalls. The conclusion was that a combination of factors progressively contributed to the storm sewer failure and roadway collapse.

Abandoning the existing sewers and constructing new sewers rather than attempting to rehabilitate the existing system, was deemed the best option.

The emergency work under Phase 1, which includes initial site clean up, site securing, traffic control, road signage, emergency site stabilization, protective measures against flooding, storm sewer diversion, dewatering, deep shaft excavation, other exploratory and preparatory work and eventual backfilling of the shaft with unshrinkable fill, all performed by Clearway Construction Inc. is estimated at \$1,000,000.00 excluding GST.

A Purchase Order in the amount of \$1,000,000.00, excluding GST, is to be issued for the services provided by Clearway Construction Inc.

The total cost for the engineering services provided by MRC is estimated at \$150,000.00, excluding GST. A Purchase Order in the amount of \$150,000.00, excluding GST, is to be issued for MRC's services.

MRC's recommendation under Phase 2 works to restore the storm drainage system and prevent future sewer failures and road collapses entailed:

1. abandoning the existing deep storm sewers
2. installing new shallower storm sewers realigned towards the reservoir on the north side of Finch Avenue
3. installing new outfalls directly on to the reservoir
4. restoring the treed area described where disturbed by construction
5. and reinstating the roadway pavement

In order to be cost effective and to maintain the integrity of the service acquisition process, the proposed permanent remedial work under Phase 2, described above, was tendered through a fast tracked bid process. This remedial work is planned to be carried out expeditiously, working 7 days a week, and completed by the middle of October 2009.

The storm sewer installation with new outfalls, roadway restoration works, including road resurfacing, pavement markings and general clean-up is expected to be completed by October 10, 2009. All four lanes on Finch Avenue West between Dufferin Street and Wilmington Avenue are anticipated to be opened to traffic on or about Saturday, October 10, 2009.

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SIGNATURE

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