



CITY OF RICHMOND

REPORT TO COMMITTEE

TO: Public Works and Transportation Committee

DATE: May 3, 2000

FROM: Eric G. Gilfillan
Director, Operations

FILE: 6650-01

RE: Knight Street Bridge Watermain

STAFF RECOMMENDATION

1. That the City of Richmond purchase 1500 metres of portable watermain and required accessories at a cost of \$75,000.
2. That the source of funding be the 2000 Water Utility Budget.

Eric G. Gilfillan
Director, Operations

Att. 1

FOR ORIGINATING DIVISION USE ONLY		
ROUTED TO:	CONCURRENCE	CONCURRENCE OF GENERAL MANAGER
Engineering	Y <input type="checkbox"/> N <input type="checkbox"/>	
Finance	Y <input type="checkbox"/> N <input type="checkbox"/>	
Fire Rescue	Y <input type="checkbox"/> N <input type="checkbox"/>	

STAFF REPORT

ORIGIN

On January 15, 2000 a large construction crane under transport by a river barge collided with the deck of the Knight Street Bridge. This resulted in extensive damage to the access catwalk and the City of Richmond's 450 mm. watermain. This accident required shutting down this sole source water supply system for a total of 25 days. (see attached photo 1 / Attachment 1)

As this watermain is the only water supply to Mitchell Island, it was necessary to install a bypass water supply from the City of Vancouver. This was accomplished by utilizing the Vancouver Fire Department's emergency above ground water supply system, at a cost to the City of \$25,000. Vancouver's system may not be available for our use if another emergency event occurs where they also require the equipment. (see attached photo's 2 – 6 / Attachment 1)

ANALYSIS

The repair work to the bridge was contracted out to the engineering firm of Buckland and Taylor. Due to the damage location and height at which the repair crews were required to work, the lengthy repair and planning period resulted from the need to develop specialized work procedures, engineered designs and to secure equipment and materials for the watermain repairs.

The repairs by contractor to the watermain commenced on Feb 2, 2000 and were completed on Feb 4, 2000. City crews then started to, test and disinfect the watermain. The watermain was back into full service as of Feb. 9, 2000.

The Knight Street Bridge incident demonstrated a need for the City of Richmond to consider purchasing an above ground emergency watermain system. This system would be utilized on a regular basis by operations staff to maintain a water supply to residences and businesses during extended demand and planned shutdowns or, in the event of a localized watermain failure.

Current Situational Analysis

Half of our current inventory of our water distribution system is comprised of Asbestos Cement (AC.) watermains. Approximately 25 percent of that inventory was installed in the 1950's, at which time the expected life cycle of the AC watermains was thought to be approximately 80 years. Our soil conditions and soft drinking water have shortened the life-cycle of the AC watermains; as a result, some are closer to the end of their operational life-cycle than expected. We are in the process of assessing the current condition of Asbestos Cement watermains by sample testing; results are varied, demonstrating a range of 0-12 years remaining in life expectancy.

The Richmond Fire/Rescue also supports the need for an emergency water delivery system in the event of a large scale natural disaster such as an earthquake or, the ability to bring additional water supply to low volume areas during a fire event.

This system could be installed on a trailer for quick response and would be available for use by either the Fire Services or Public Works Operations staff.

FINANCIAL IMPACT

The cost of such a system (which includes 1500 meters of hose, fittings and a trailer) has been estimated at \$75,000. Funding can be accommodated from the Water Utility Budget for 2000.

CONCLUSION

The Knight Street Bridge watermain event has demonstrated the need for alternative methods of providing continued service to the community during an emergency. The Acquisition of a portable water system is a positive step towards this goal.

Steve McClurg
Manager, Water Services

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Photo 1 Damaged 450mm watermain under the Knight Street Bridge



Photo 2 Tie in to the Mitchell Island watermain through the fire hydrants



Emergency bypass hose beside the off ramp to Mitchell Island from Vancouver.
Photo 3 & 4



Photo 5 & 6 Vancouver side going to the bridge and source fire hydrant

