



City of Richmond

Report to Committee

To Public Works & Transportation - Mar 22, 2006

To: Public Works and Transportation Committee

Date: March 6, 2006

From: Robert Gonzalez, P.Eng.  
Director, Engineering

File: 10-6045-08-02/2006-Vol  
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Re: Drainage Pump Station Upgrades

Staff Recommendation

That the transfer of \$180,000 of capital funding from the Emergency Response Equipment (Project 40317) be approved to allow pump replacement at the No. 2 Road North, Ewen and No. 7 Road South drainage pump stations.

Robert Gonzalez, P.Eng.  
Director, Engineering  
(4150)

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<b>ROUTED TO:</b>	<b>CONCURRENCE</b>		<b>CONCURRENCE OF GENERAL MANAGER</b>		
Sewerage & Drainage.....	Y	<input checked="" type="checkbox"/>	N	<input type="checkbox"/>	
Budgets .....	Y	<input checked="" type="checkbox"/>	N	<input type="checkbox"/>	
<b>REVIEWED BY TAG</b>	YES	<input checked="" type="checkbox"/>	NO	<input type="checkbox"/>	<b>REVIEWED BY CAO</b>
		<i>DW</i>			YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>

## Staff Report

### Origin

The City's Drainage pump stations form a critical part of our ability to prevent flooding. There are currently three drainage pump stations that are in a condition whereby their operation is no longer economical and the City's ability to provide flood prevention service is compromised.

The purpose of this report is to seek Council's endorsement to utilize Emergency Response Equipment funds to replace worn pumps and associated hardware.

### Analysis

Fundamental to the City's ability to provide drainage, irrigation and flood prevention services is an intricate system of ditches/canals, drainage pipes and appurtenances and several pump stations. Given the average elevation of the City is approximately 1.0 metre above sea level, there is generally a requirement to pump drainage from the City during coincidental high tide and rainfall events. Drainage will discharge to the Fraser River without the aid of pumping during low tide situations.

The City currently operates and maintains 39 drainage pump stations, a few of which are nearing the end of their useful service life. Integral to many of the older pump stations is a pump referred to as the 'Jockey Pump'. The 'Jockey Pump' operates in advance of the main pumping system to avoid unnecessary power usage and equipment wear and tear.

There are presently three drainage pump stations (No. 2 Road North, Ewen and No. 7 Road South) whereby there is no funding available and the 'Jockey Pump' condition has deteriorated to a point where they can no longer be economically repaired nor can replacement parts be purchased. This condition forces the use of the main pumping system to provide the required flood prevention service thereby placing the larger, more expensive pumping related equipment at significant risk of being damaged beyond repair.

It is recommended that the 'Jockey Pumps' at the No. 2 Road North, Ewen and No. 7 Road South drainage pump stations be replaced with new pumps. Completion of this work will eliminate unnecessary wear-and-tear on the existing pumping systems, will allow more economic and reliable pump station operation and will extend the useful service life of these pump stations.

Funding of \$180,000 to complete the required upgrades is available in the 2002 Council approved Emergency Response Equipment project intended for the purchase of auxiliary generators. The approved budget of \$500,000 will still allow the purchase of a portion of the auxiliary generators to proceed. Pumps take priority as emergency response equipment over auxiliary generators, i.e., a generator is of no use if the pumping system is not in working condition.

### **Financial Impact**

The funding source identified to commence 'Jockey Pump' replacement has been identified as the Emergency Response Equipment (Project 40317), which has a current balance of \$320,500. Reallocating \$180,000 towards 'Jockey Pump' replacement leaves a remaining balance of \$140,500 for purchase of generators.

### **Conclusion**

The City's ability to economically and effectively discharge drainage from the No. 2 Road North, Ewen and No. 7 Road South drainage pump stations is compromised due to inoperable 'Jockey Pumps'. In order to proceed with 'Jockey Pump' replacement, staff recommend that Council approve reallocation of funds from the Emergency Response Equipment project. Replacement of the 'Jockey Pumps' will provide both economic and service reliability benefits and will extend the useful service life of the pump stations.



Jim V. Young, P. Eng.  
Manager Engineering Design and Construction  
(4610)

JVY:jvy