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Committee Parks, Forests & Utilities  
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Assets and Compliance

## Wholesale water capital works programme 2008/9 half year review

### 1. Purpose

The purpose of this report is to present a summary of the financial position of the projects making up the 2008/9 wholesale water capital works programme as at 31 December 2008. Approval is being sought within the overall budget for additional expenditure on a number of projects, including one new project.

### 2. Significance of the decision

The matters for decision in this report do not trigger the significance policy of the Council or otherwise trigger section 76(3)(b) of the *Local Government Act 2002*.

### 3. Summary of capital works programme outcome

The forecast expenditure for 2008/9 Annual Plan projects is \$4,858,036 against a budget of \$5,007,000, a difference of approximately \$149,000.

Number of projects	Number of projects completed	Budget \$	Forecast \$	Variance %
59	21	5,007,000	4,858,036	-3

### 4. Underspend expected in 2008/9

#### 4.1 Summary

An underspend total of approximately \$941,000 is forecast within the 2008/9 capital works programme for a variety of reasons, as described below.

A detailed list of projects, where underspending is expected, is contained in Attachment 1.

## **4.2 Underspending - reduced scope**

### **4.2.1 General**

The scope of a number of projects has been reduced, resulting in a saving of approximately \$441,000.

This figure is comprised of five projects - three significant projects as itemised in Attachment 1. The dominant factor in the reduction of scope of these three significant projects is the discovery of similar but alternative, more economical, solutions during the investigation phase.

### **4.2.2 Emergency pumping station, Whitehead Road, Karori (Birdwood Street pipe)**

Capacity has advised that they no longer support the proposal to construct an emergency pumping station at Whitehead Road to feed water directly into the Karori Zone in an emergency. However, they will support the direct connection of the Karori Pumping Station into the Kelburn zone that will allow a limited flow to be supplied to Karori through an existing cross connection between the zones. The forecast cost for the Kelburn zone connection is \$80,000, compared with a budget of \$207,000.

### **4.2.3 Waiwhetu aquifer monitoring**

A risk assessment of the Waiwhetu aquifer monitoring project determined that it is more effective to carry out continuous water quality monitoring at the Waterloo Water Treatment Plant production wells rather than install new monitoring wells upstream of the existing wellfield. The forecast cost for the monitoring equipment is \$80,000, compared with a budget of \$170,000.

### **4.2.4 Data analysis and reporting**

This project has been deferred to allow sufficient time to carry out adequate business analysis and to align with corporate management strategy.

## **4.3 Underspend -deferred/delayed projects**

### **4.3.1 Waterloo lightning protection and stage 2 system optimiser**

These two projects have been deferred to 2009/10 as there are insufficient resources available within the Control Systems Team. The main reason for this resource shortage is the amount of additional work that has been required to maintain progress on the Te Marua control system replacement project.

### **4.3.2 Upper Hutt aquifer**

Progress on investigation of the Upper Hutt aquifer project has been slower than anticipated, as the timing for the project is dependent on the final form of the Wellington Regional Water Strategy, which is not expected to be known until mid-2009.

#### 4.3.3 Central business district reservoir

Wellington City Council has decided that this jointly funded project is to be deferred. Greater Wellington Regional Council (GWRC) funding has been rebudgeted in the draft 2009 Long-term Community Council Programme (LTCCP) for the period 2012/15.

## 5. Projects where additional costs are expected

### 5.1 Summary

The forecast of additional costs totals \$792,036. There are a variety of reasons for the expected additional costs, as set out below. A detailed list of projects where additional costs are expected is contained in Attachment 1.

### 5.2 Additional costs - scope has increased

#### 5.2.1 Waterloo Water Treatment Plant - replace equipment

An annual budget of \$100,000 is provided to fund equipment that fails or requires replacement for other reasons. This year expenditure on these replacements is forecast to be \$66,389 in excess of the budget. \$118,000 has been allocated or spent to date and the forecast includes an unallocated sum of \$50,000 to cover any unplanned failures/replacements required between January 2009 and 30 June 2009. In some years expenditure for this type item has been under budget.

#### 5.2.2 Gear Island Water Treatment Plant - replace equipment

An annual budget of \$40,000 is provided to fund equipment that fails or requires replacement for other reasons. This year expenditure on these replacements is forecast to be \$13,000 in excess of the budget. This forecast includes an unallocated sum of \$10,000 to cover any unplanned failures/replacements required between January 2009 and 30 June 2009. To date two critical replacement projects have been funded from this budget - the refurbishment of the Gear Island well pump and the replacement of a section pipework.

#### 5.2.3 Upgrade distribution system for future demand

An annual budget of \$135,000 is provided for the upgrade of the distribution system covering minor future demand works. This year the expenditure forecast is \$15,000 in excess of the budget.

In December 2008 the Wellington City Council road sealing programme identified the sealing of the Thorndon Central Business. The recommissioning of the OK main, which is affected by this programme, was identified as a future project. This was escalated to avoid the need for resealing at a later date. No planned work affecting the sealed area by Wellington City Council is permitted within two years of new seal being laid.

#### 5.2.4 Te Marua distributed control system replacement

The annual budget for this project was approved at \$400,000. The expected forecast to completion is \$50,000 in excess of the budget. This increase is largely because of additional work required to solve numerous “hidden” faults within the existing equipment and controls. The programme for the distributed control system project has been as comprehensive as possible, including an allowance for an estimated number of unknowns we expect to encounter

#### 5.2.5 Replace air valves on the Kaitoke to Karori main

An annual budget of \$250,000 is provided for the replacement of air valves on the Kaitoke to Karori main. Survey results have identified a total of 84 valves which are due for replacement and housing. Because of an increased scope for housing and an underestimation of traffic control costs, the forecast to complete the programme of work for 2008/9 is \$210,000 in excess of the budget.

Traffic management cost forecasts for each installation have increased from approximately \$6,500 to \$12,500.

The original budget set for this year has covered some procurement costs and the installation of six valves.

### 5.3 Additional costs - projects where additional costs are expected

#### 5.3.1 Te Marua, Wainuiomata and Waterloo diesel upgrades

A budget of \$225,000 is provided in the Annual Plan for upgrading the diesel storage facilities at Te Marua, Wainuiomata and Waterloo Water Treatment Plants. Through the tender assessment process, additional work and costs have been identified. The forecast total project cost for 2008/9 is \$250,000.

#### 5.3.2 Completion of 2007/8 projects

It is difficult to perfectly match the programming of all projects to the financial year and inevitably there is a need to fund the completion of a few projects from the previous financial year. This funding requirement for 2008/9 is forecast to be \$62,122.

## 6. Unplanned projects

To date there has been one unplanned project executed since 1 July 2008 where there has been no budget allocation. This is the Stuart Macaskill Lake 1 apron repair, which was carried out between July and November 2008. The total project forecast is \$279,000.

Report No. 08.534 to the Parks, Forests and Utilities Committee in July 2008 informed the Committee of the need to carry out this urgent work. The Committee approved the repair of the Lake 1 apron seal within the 2008/9 wholesale water capital works programme at an estimated cost of \$140,000.

Wet weather in July, August and September 2008 had a significant detrimental effect on the progress and cost of the work. Higher than normal rainfall resulted in more equipment and work required, and delays. Temporary timber bunds and awnings were constructed. Pumps and pipework were installed to minimise the amount of stormwater flow through the work area. The work area required regular cleaning of silt and water following rainfall.

The intricate nature of the work and the unforeseen site conditions resulted in higher than estimated cost.

The installation of the seal was completed in November 2008. Lake filling started immediately, allowing the lake to be full by 31 December 2008.

Water flowing from monitoring drains beneath the joint seal is indicating minor leakage through the seal. This minor leakage is not a concern.

The total cost of the work to design and repair the Lake 1 apron joints is approximately \$279,000. Underspend on other projects in the 2008/09 capital works programme has allowed this work to be financed without increasing the total capital works budget for this year.

## **7. Additional information**

### **7.1 Mt Climie permanent repeater installation**

The existing repeater at the Mt Climie site has been damaged and needs repair. A temporary solution has been installed to ensure communications continue. As a number of other organisations are using the same facilities at this site we are exposed to a degree of risk to our communications. Therefore, a sum of \$70,000 has been allocated from the minor works budget to cover the design, fabrication and installation of a permanent replacement repeater at this site. At this time the scope of work has not been fully confirmed and so the estimate will be firmed up in the third quarter.

### **7.2 Te Marua hydro-generation project**

An annual budget of \$200,000 has been provided for this project. The scope has increased, which could have an impact of 15 percent of the budget figure. However, the benefits from the additional expenditure outweigh the costs. The additional work means that there will be no manual interface required by staff, the pressure surges on the pipeline will be minimised and we will have full automation of generation and lake filling. We will have a firmer estimate of the final forecast in the third quarter.

### **7.3 Raroa Road shaft and dropper (Karori fault crossing)**

This is a seismic mitigation project that was planned for 2009/10 but escalated as a result of work being carried out by the Karori Sanctuary. Civil work is required for the installation of a pile casing and dropper for the future pipe deviation work that features in the LTCCP for year 2009/10. This has been funded from the seismic protection budget and has a forecast of \$100,000.

## 8. Summary of forecast savings and additional expenditure

Summary of project savings and additional expenditure by asset type

Category	Budget \$	Forecast \$	Variance %
Source projects	170,000	80,000	-52.94
Treatment plant projects	1,962,000	2,341,059	19
Pipeline projects	505,000	730,000	45
Pumping stations and reservoirs	407,000	80,000	-80
Monitoring and control projects	713,000	408,000	-43
Minor works, seismic protection and completion of 2005/6 projects.	750,000	898,977	20
New sources (Upper Hutt wellfield)	500,000	320,000	-36
<b>Total</b>	<b>5,007,000</b>	<b>4,858,036</b>	<b>-3</b>

## 9. Conclusion

Underspending of approximately \$941,000 is forecast for the capital works programme, principally through reduction in scopes and the deferment of three large projects.

Additional costs of approximately \$792,036 have been identified as a result of increased scope and one unplanned project. The net result is a forecast underspend of approximately \$148,964 in the 2008/9 wholesale water capital works programme.

## 10. Recommendations

*That the Committee recommends that Council:*

- (1) **Receives** the report.
- (2) **Notes** the forecast cost reduction of \$941,000 and total net underspend of \$148,964 in the capital works programme, as detailed in attachment 1.
- (3) **Approves** the increased expenditure on capital works programme projects of \$792,036, as detailed in attachment 1.
- (4) **Approves** the expenditure on the unplanned project, Stuart Macaskill Lake 1 apron repair, of \$279,000.

Report prepared by:



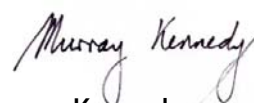
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**Attachment 1 - 2008/9 capital works programme - details of expected changes**

## 2007/8 capital works programme - details of expected changes

Savings	December forecast	
	\$	Total
<i>Projects where scope has been reduced</i>		
Waiwhetu aquifer monitoring wells	90,000	
Wainuiomata Water Treatment Plant cladding	14,000	
Te Marua sodium hypochlorite plant	10,000	
Emergency pumping station, Whitehead Road, Karori (Birdwood Street pipeline)	127,000	
Ampla	200,000	441,000
<i>Projects deferred</i>		
Waterloo lightning protection	15,000	
Upper Hutt aquifer	180,000	
Central business district reservoir (deferred to 2012 to 2015)	200,000	395,000
<i>Projects delayed to be rebudgeted</i>		
System optimisation, stage 2 (deferred to 2009/10)	105,000	105,000
<i>Projects where costs are expected to be reduced</i>		
<b>Total expected savings</b>		<b>941,000</b>

Additional costs	December forecast	
	\$	Total
<i>Projects where scope has increased</i>		
Waterloo Water Treatment Plant - replace equipment	66,389	
Gear Island Water Treatment Plant- replace equipment	13,000	
Upgrade distribution system for future demand (recommissioning Orongorongo to Karori main)	15,000	
Te Marua - replace distribution control system	50,000	
Distribution air valves - Kaitoke to Karori main	210,000	354,389
<i>Projects where additional costs are expected or have been incurred</i>		
Waterloo, Wainuiomata and Te Marua Water Treatment Plants - diesel tank and dispensing pump	25,000	
Emergency supply points	17,525	
Te Marua fault movement mitigation	54,000	96,525
<i>Completion of 2007/8 projects</i>	62,122	62,122
<i>Proposed new projects</i>		
Stuart Macaskill Lake 1 apron joint	279,000	279,000
<b>Total additional costs</b>		<b>792,036</b>

Summary	\$	Total
Total 2007/8 project savings		(941,000)
Total 2007/8 additional costs		792,036
Total 2007/8 net savings		(148,964)
Funding to be rebudgeted		105,000
Net saving against 2008/9 capital works budget		43,964