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Report to the Utility Services Committee
from Murray Kennedy, Strategy and Asset Manager

Water Treatment Plant Grading and Related Capital Works

1. Purpose

To obtain approval for Capital Works not currently budgeted, to achieve an early regrading of the Te Marua and Wainuiomata Water Treatment Plants (WTPs).

2. Introduction

As previously reported to the Committee in October and December last year, we have improved the treated water quality from the Te Marua and Wainuiomata WTPs. This resulted from the work carried out by a specialist process consultant last year.

As a result, we can avoid the expenditure of millions of dollars for upgrading the second process stream at the Te Marua WTP.

At present the Te Marua WTP is graded "A" and the Wainuiomata WTP is graded "C". Improvements in the water quality and changes in the treatment methods mean it is appropriate to apply for the WTPs to be regraded.

The Council's policy is to obtain an "A" grading, where practical to do so. As The Water Group holds ISO 9002 accreditation, it is possible to apply for the higher A1 grading.

3. Regrading Process

The Ministry of Health carries out the water treatment plant grading process, generally through Public Health Officers.

The Ministry has produced comprehensive documentation about how the process is

carried out.

Te Marua's "A" grading cannot be maintained without going through a regrading process. This is because the sedimentation/clarification stage of the water treatment is now not used, unless algae laden lake water is being treated. There is an obligation on The Water Group to show that the process provides water to the required quality without the clarifiers. To achieve this requires additional precision instrumentation in order to ensure the WTP continues to work within defined parameters.

At Wainuiomata the situation is slightly different. It was previously not possible to achieve higher than a "C" grading because of turbidity spikes. These have now been eliminated, however the production process is still fragile. Some additional precision instrumentation is required, together with changes to the control software.

Within one to two years it is expected the criteria for grading water treatment plants will become more stringent. The Ministry of Health issued a discussion document last year.

The water from the WTPs is of such a quality it is expected to meet the more stringent "A1" grading criteria, if the proposals in the Ministry's discussion document are introduced. Potentially, the main change is for the turbidity of the finished water not to exceed 0.1 NTU for 95 percent of the time. At present the criteria is 0.5 NTU for 95 percent of the time.

4. **Capital Costs**

Equipment required for the WTPs is:

- Aluminium analysers
- A spare streaming current detector
- High sensitivity turbidity meters
- Particle counter
- Control software changes

The estimated cost is \$210,000, including a 10 percent contingency.

5. **Timing**

This equipment was not allowed for in the Capital Works Programme for 1999/2000, as the process trials did not start until after the works programme was finalised. The costs could be included in next year's Capex Programme. In the meantime it would not be prudent to apply for regrading. Also, there are some small risks with regard to water quality. Essentially the average quality of the treated water will not be as good as we could achieve but would still be well within the *Drinking-Water Standards for New Zealand*.

6. **Finance**

The Capital Works budget for 1999/2000 is \$4.165 M. At the end of January the forecast is \$3.716 M, a difference of \$449,000.

One project will not proceed in the present year because the benefits do not appear to provide an adequate return on the investment.

Of the \$449,000, \$317,000 is from projects that have come in under budget or there has been a minor change in the scope of the work.

Hence, there is sufficient Capex funds available in the present financial year for the cost of the equipment and system programming changes.

7. **Summary**

Additional equipment is required at the Te Marua and Wainuiomata WTPs to ensure the higher quality of water achieved, through the process changes, can be maintained. Without the equipment it will not be practical to seek an "A1" grading for both plants.

The work can wait until next financial year, however there are sufficient funds available in the present year without exceeding the total allocated Capex budget.

8. **Recommendation**

That the Committee recommends to the Policy and Finance Committee in the half yearly review that the sum of \$210,000 be allocated for instrumentation and process control upgrading at the Te Marua and Wainuiomata Water Treatment Plants in 1999/2000, provided that the total Capital Works budget of \$4.165 M is not exceeded.

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