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Committee Utility Services
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Wholesale Water Supply Asset Management Plan 2003

1. Purpose

To review the key policies incorporated in the Wholesale Water Supply Asset Management Plan and provide assurance that forward projections continue to be robust.

2. Background

The current Wholesale Water Supply Asset Management Plan was approved by the Utility Services Committee in June 1998. Given the nature of the wholesale water supply business and the long life of many of the assets, business changes are gradual. A new version of the Asset Management Plan (AMP) is near completion.

A significant portion of the information in the existing AMP will carry over to the new one, albeit in a different format in some cases.

3. Policies

All the current policies and assumptions have been exhaustively reviewed and there are no substantive changes proposed from these, that are incorporated in the existing plan.

This report provides the opportunity for a political oversight to ensure there continues to be a level of comfort with the underlying policies which drive asset maintenance, replacement, renewal and augmentation of the system. Clearly the AMP is a fundamental document that drives the future shape of our water supply infrastructure.

3.1 Customer Agreement

It is intended that the conditions and standards for wholesale water supply are set out in a customer agreement. Some progress has been made on an agreement but it may be the end of the 2003/04 financial year before it is completed.

A draft customer agreement was prepared a few years ago following a consultation process. However, the customers at the time required a large number of changes and there appeared to be insufficient common ground so the issue lapsed. It was raised again last year by one of our customers who obtained support from the other customers for submitting a customer prepared version to us. While there are issues to be resolved, it is believed that a satisfactory outcome is possible.

3.2 Water Quality

3.2.1 Drinking Water Standards

The GWRC policy on water quality is reflected in the Long Term Performance Target which states:

The quality of water supplied will continually meet the Ministry of Health's Drinking-Water Standards. The related water supply infrastructure will be maintained and improved to meet the standards specified in the Regional Water Supply Asset Management Plan.

The Council's policy is to achieve an A or A1 grading for treatment plants, where practical to do so. Te Marua Water Treatment Plant is already graded A. It is expected that Wainuiomata Water Treatment Plant, currently graded C, will achieve an A grading within a month or so as an application has been lodged with the Public Health Service. The Waterloo Water Treatment Plant is graded B and at present a higher grading is not possible without chlorination. The Hutt City Council has been asked to confirm its requirement for unchlorinated water in central Hutt City.

The current *Drinking-Water Standards for New Zealand: 2000* set a maximum turbidity for treated water at the treatment plants of 0.5 NTU for 95 percent of the time, or a change of no more than 0.2 NTU in 10 minutes. The maximum turbidity requirement will reduce to 0.1 NTU on 1 January 2005.

The new Drinking-Water Standards also changed the criteria for groundwater being classified as secure. Age tests have confirmed the Waiwhetu aquifer water is secure.

Certification to the ISO quality standard will be maintained. At present this is ISO 9002:1994, the next review will be to ISO 9001:2000. (See separate report in this order paper.)

The AMP has been prepared on this basis and no change is proposed.

3.3 Yield

Sufficient water will be available to customers to provide for a 1 in 50 year drought, provided demand does not exceed current demand forecasts. A 1 in 50 year drought is defined as a drought where the severity has an annual exceedance probability of 2 percent.

With current consumption levels and infrastructure, there is sufficient water for the existing population plus about an additional 20,000 persons before the drought criteria is breached.

Attachment 1 is the population projections for urban areas in metropolitan Wellington until 2022. The figures are from information supplied by Statistics New Zealand. On the basis of this information and the sustainable yield model used by Greater Wellington Water, it is possible to calculate when the annual probability of failure will reach 2 percent. Attachment 2 indicates that this is when the urban population reaches 377,000. The result is from a mathematical simulation technique. A simpler, though less rigorous method is to look at actual records of the last 110 years. The results are the brown triangles in Attachment 2.

3.4 Security of Supply

The Council has a “n-1” policy for security of water supply. This means that either Te Marua or Waterloo Water Treatment Plants could be out of commission and the daily base water requirement of 145 ML still met.

The Council manages water supply assets in accordance with a planned programme of maintenance. The AMP is prepared in accordance with the National Asset Management Steering Group guidelines.

The AMP has been prepared on this basis and no change is proposed.

3.5 Environmental Standards

The GWRC policy on environmental standards is reflected in the Long Term Performance Target which states:

All water supply activities will be undertaken in an environmentally sympathetic manner according to the principles of the Resource Management Act 1991.

The Council acquires and currently complies with all appropriate resource consents. Abstraction consents govern the quantity of water that can be drawn from each source and how much must remain. Consents are also sought for any discharges from the treatment plants. Most by-products from the plants are processed through waste water recovery plants and removed off-site.

The Council holds certification to ISO 14001 (the International Standard Organisation’s environmental management benchmark) for its wholesale water supply activities and this will be maintained.

The AMP has been prepared on this basis and no change is proposed.

3.6 Maintenance and Refurbishment

The following principles are in place and maintenance work will be completed when it becomes due and not deferred.

- All programmed maintenance is based on recommended industry standards that are progressively modified from experience based on observed failure rates.
- All programmed maintenance is initiated by work order and recorded on the computerised asset maintenance system.
- Asset refurbishment programmes are to be based on assessment of operational needs and maintenance history.
- All items of critical mechanical and electrical equipment will have standby backup in case of failure.
- Flow meters, level and pressure sensors and on-line water quality analytical equipment will be calibrated regularly. Calibration frequency and history will be recorded on the asset maintenance system.
- Automatic call out of maintenance or operational personnel will be generated on failure of critical equipment that affects reservoir levels of treatment plant outlet quality and flow.

The AMP is prepared on this basis.

3.7 Asset Management Plan

The AMP is prepared taking into account the principles set out in the Australia/New Zealand edition of the International Infrastructure Management Manual and is peer reviewed.

Management of the Stuart Macaskill Lakes will comply within the New Zealand Dams Safety Review Guidelines. These guidelines require ongoing detailed monitoring, and comprehensive five yearly safety reviews.

3.8 Risk

Considerable emphasis is placed on risk management in the AMP. Previously, much of the risk management related to seismic events, protecting raw and treated water from contamination. More recently, because of world events, greater emphasis has been placed on possible interference to the infrastructure by people. Provision is also made for formulating public health risk management plans as such plans will be a statutory requirement within a year or so.

4. Asset Conditions

The techniques used for asset condition assessment are dependent on the type of asset. Likewise the frequency of inspection. Since the initial AMP was prepared, there has been no perceived change in asset conditions with the exception of above ground pipelines. The average condition of these pipelines is worse than expected. Additional maintenance work has been programmed

together with more frequent inspections and incorporated in our financial projections.

5. Renewal and Replacement Plans

A schedule of useful lives for asset types was included in the previous AMP. This will be updated to take into account the information provided in the last asset valuation.

Generally the annual depreciation amount is similar to the capital expenditure, as shown in the latest 10 year plan. This is little different to the situation outlined in the first AMP.

6. Financial Overview

From a financial view point, there is nothing that has been revealed within the updating of the AMP that would cause us to change the financial projections as they are currently produced.

7. Improvement Plans

The current AMP included an improvement plan. A brief summary is provided as to progress over the last five years in Attachment 3. Some of the dates originally set were a little optimistic but generally good progress has been made. A new improvement plan will be incorporated in the new AMP.

8. Where to From Here

If the Committee is comfortable with the position as reflected above, then the AMP will be completed and referred to the Committee for approval.

9. Recommendations

That the Committee recommend to Council that it:

- (1) receive the report and note its contents.*
- (2) endorse the policies outlined in the report for incorporating into the Wholesale Water Supply Asset Management Plan.*

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Attachment 1: Population Projections

Attachment 2: Wellington Urban Population

Attachment 3: Wholesale Water Supply Asset Management Plan
(Improvement Plan – Update to June 2003)